Appendix H

Ecological Support Text, Tables, and Briefs

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ECF-Hanford-11-0158 *Tier 2 Terrestrial Plant and Invertebrate Preliminary Remediation Goals (PRGs) for Nonradionuclides for Use at the Hanford Site* H-430

Attachments

CHPRC-00784 *Tier 1 Risk Based Soil Concentrations Protective of Ecological Receptors at the Hanford Site* ..... Attachment H1-i

CHPRC-01311 *Tier 2 Risk Based Soil Concentrations Protective of Ecological Receptors at the Hanford Site* ..... Attachment H2-i

DOE-STD-1153-2002 *A Graded Approach for Evaluating Radiation Doses to Aquatic and Terrestrial Biota* ..... Attachment H3-i

Narrative Discussion of Potential for Effects on Endangered Species ..... Attachment H4-i

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Terms

CERCLA	*Comprehensive Environmental Response, Compensation, and Liability Act of 1980*
COPEC	contaminants of potential ecological concern
EPC	exposure point concentration
NEPA	National Environmental Policy Act
OU	operable unit
PRG	preliminary remediation goal
PNNL	Pacific Northwest National Laboratory
RCBRA	River Corridor Baseline Risk Assessment
RI/FS	remedial investigation/feasibility study
SESP	Site Environmental Surveillance Program
SMDP	Scientific Management Decision Process
SSL	soil screening level

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H1.Introduction

Appendix H provides the support documentation for ecology related items of the remedial investigation/feasibility study (RI/FS). Details include flora and fauna lists potentially onsite or in the county, risk evaluation tables, the associated environmental calculation, and other information as outlined in the sections below. This appendix also contains *Ecological Risk Evaluation for the 100-DR-1, 100-DR-2, 100-HR-1 and 100-HR-2 Source Operable Units* (ECF-100DR1-11-0006) and associated tables. The calculation and tables are in electronic format and recorded on compact disk included with this appendix.

H2.Sample Locations

This section contains the sample locations for the contaminants of potential ecological concern (COPEC) at wastes sites identified in Scientific Management Decision Process (SMDP) as shown in Figures H-1 through H-36.

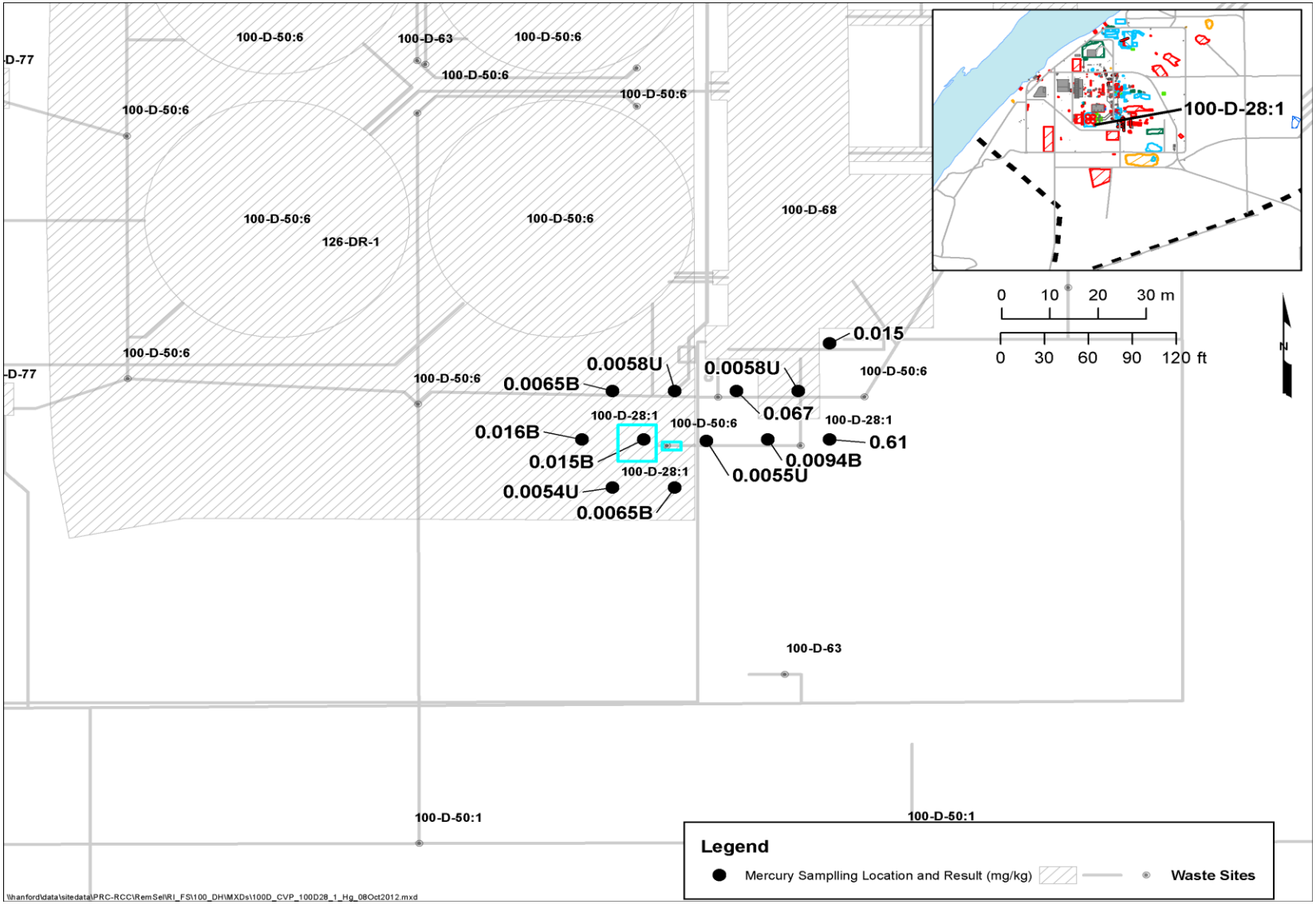

Figure H-1. Replacement Septic System (100-D-28:1) Sampling Locations and Associated Mercury Results

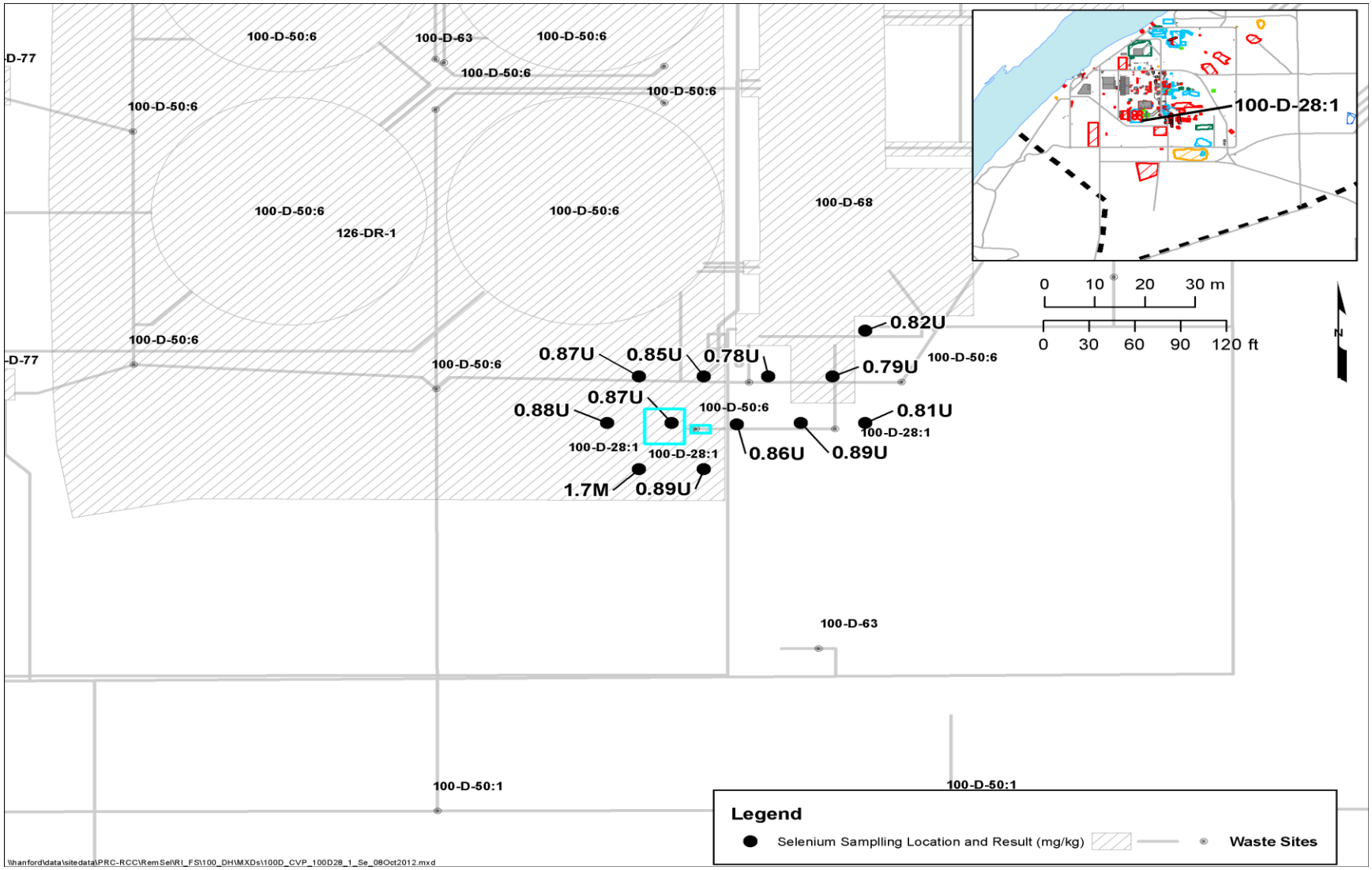

Figure H-2. Replacement Septic System (100-D-28:1) Sampling Locations and Associated Selenium Results

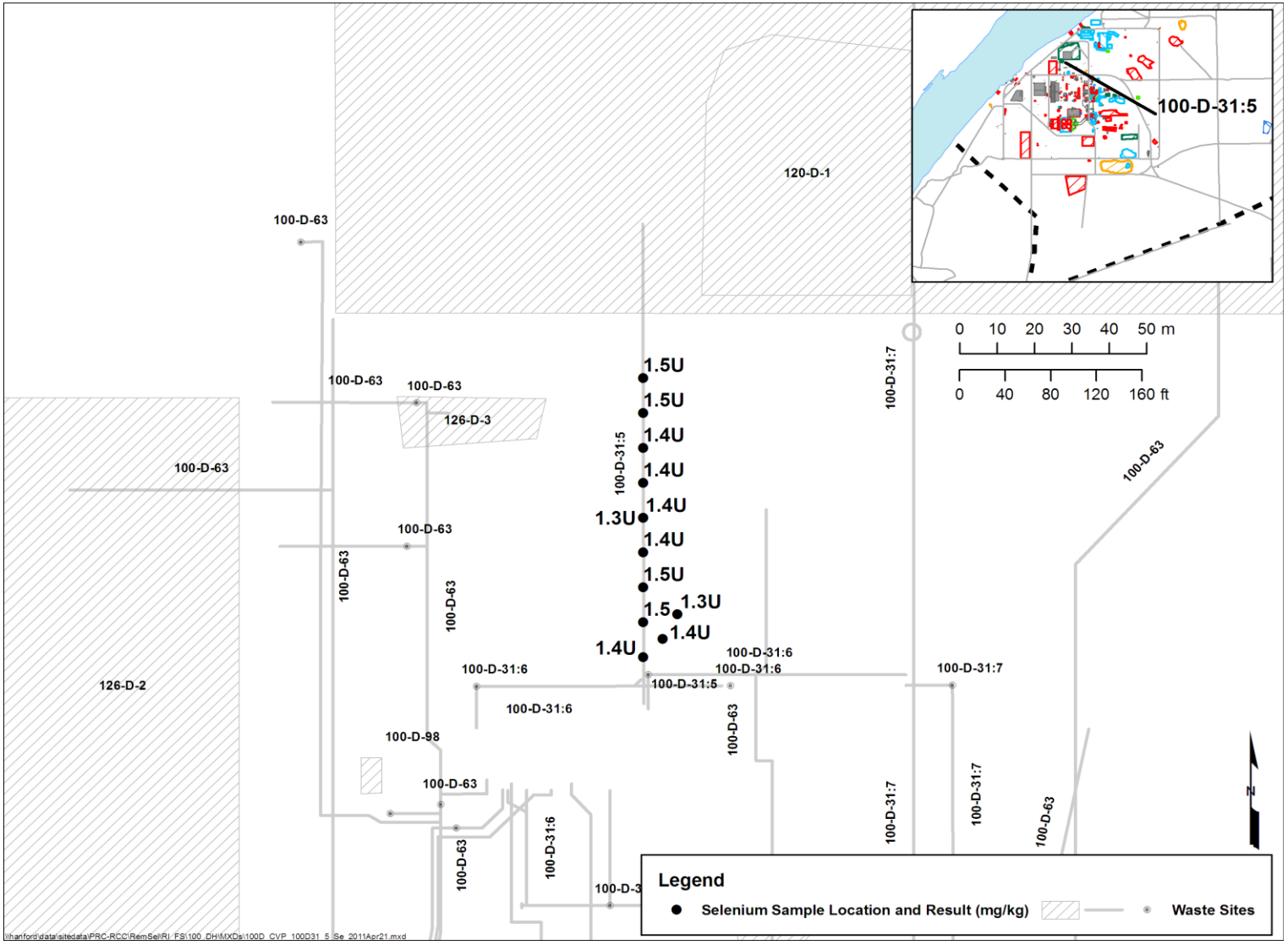

Figure H-3. 188-D Ash disposal Pipeline (100-D-31:5) Sampling Locations and Associated Selenium Results

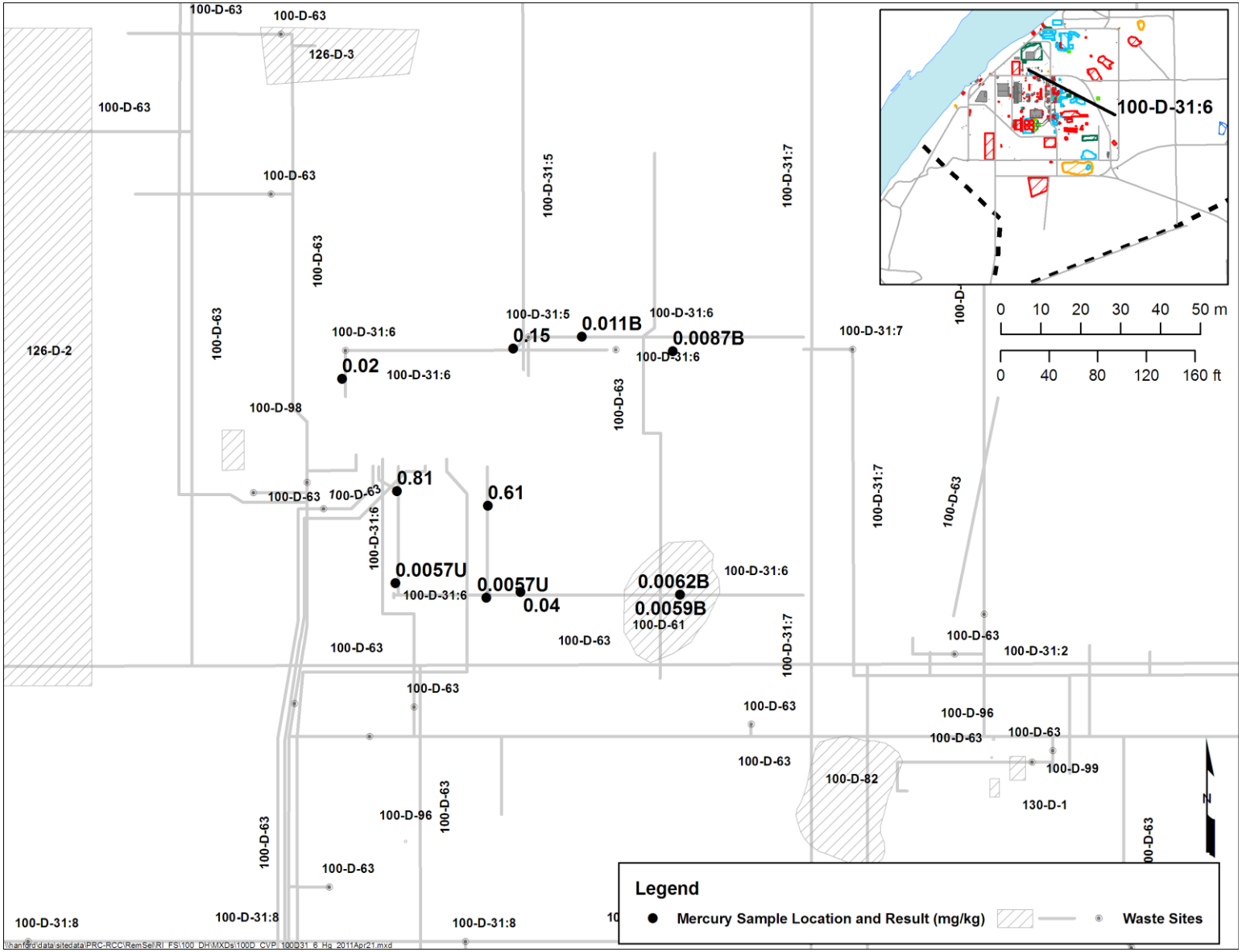

Figure H-4. 184-D Powerhouse Sewer Pipelines (100-D-31:6) Sampling Locations and Associated Mercury Results

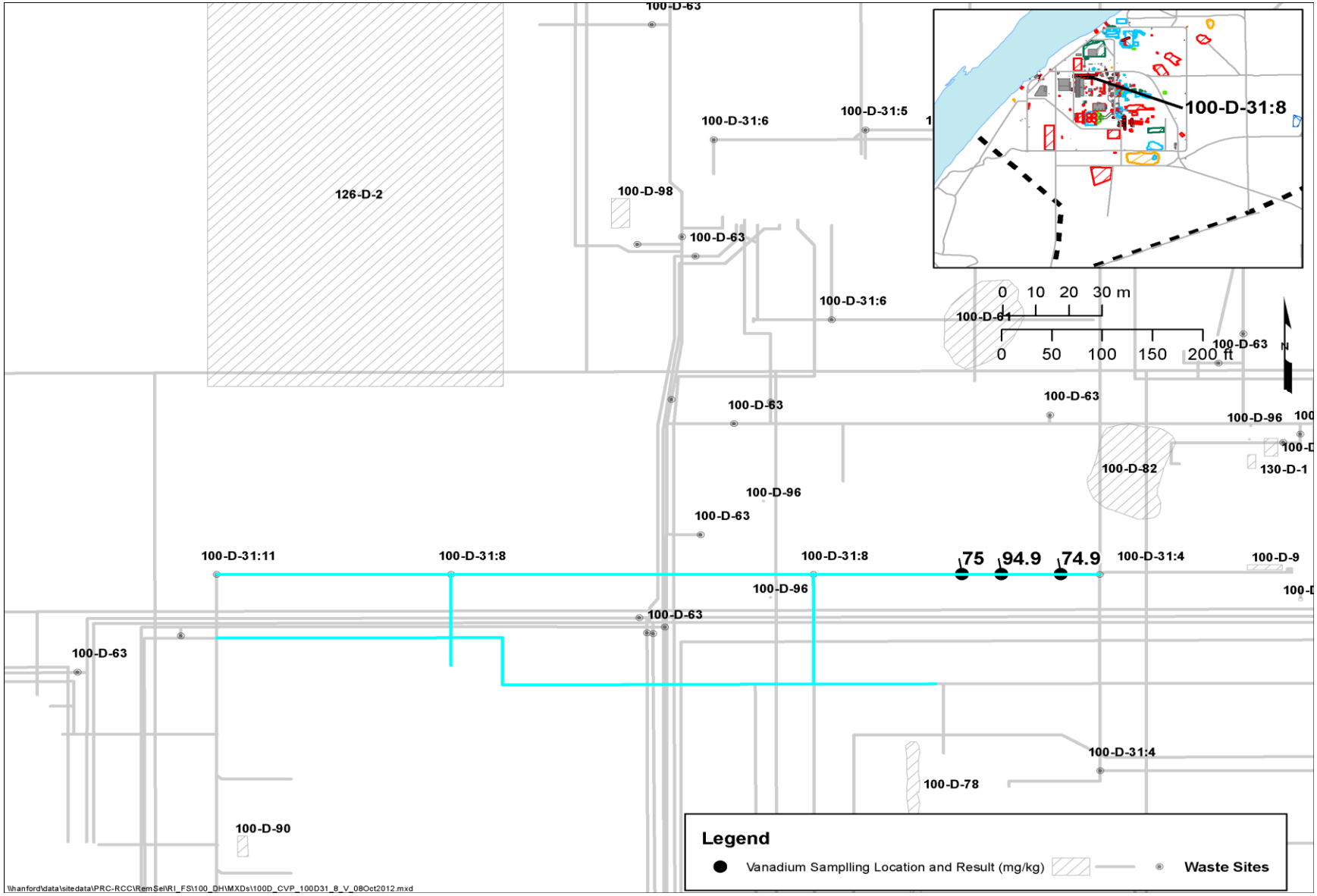

Figure H-5. Land Bridge (100-D-31:8) Sampling Locations and Associated Vanadium Results

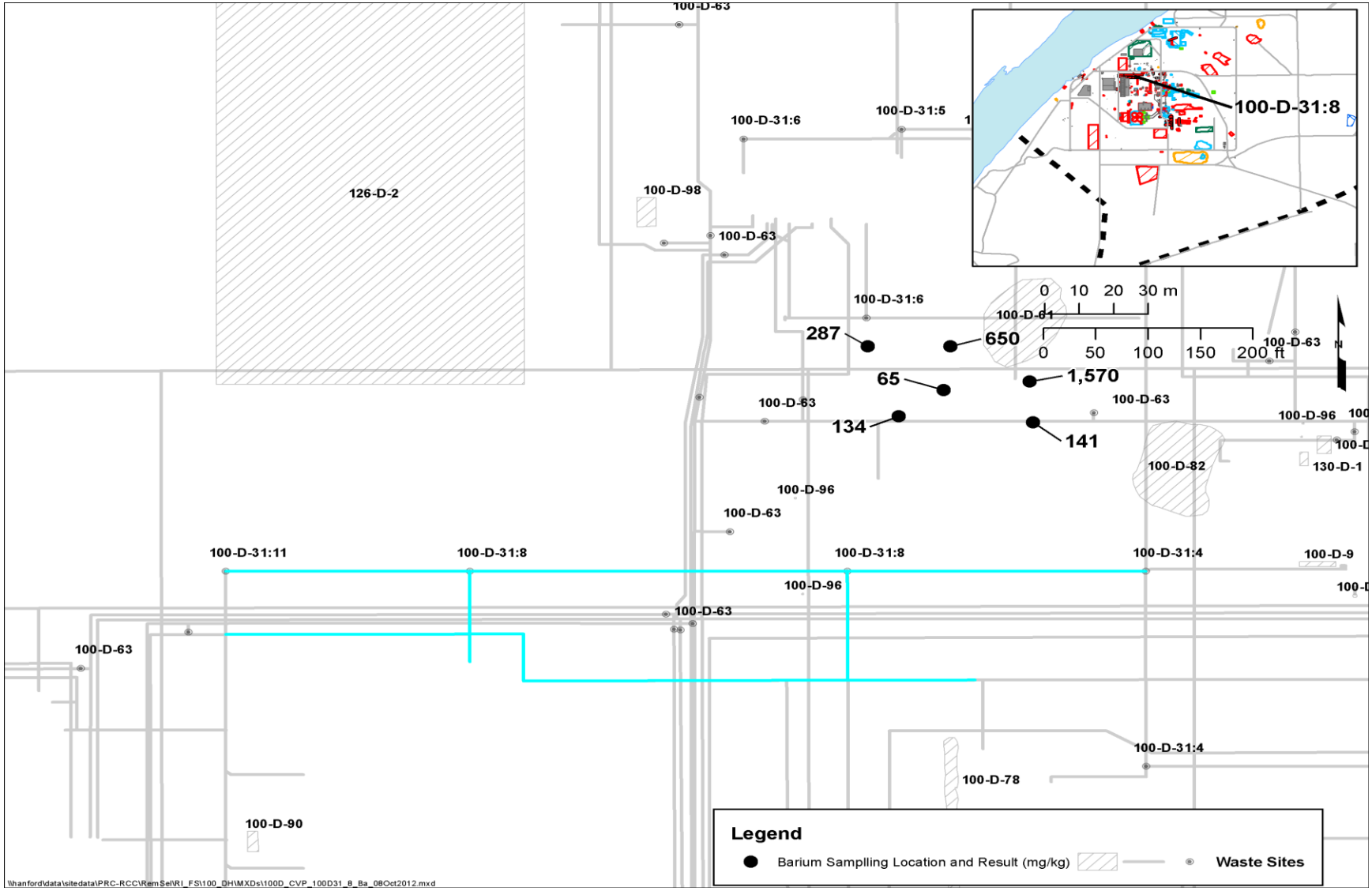

Figure H-6. Land Bridge (100-D-31:8) Sampling Locations and Associated Barium Results

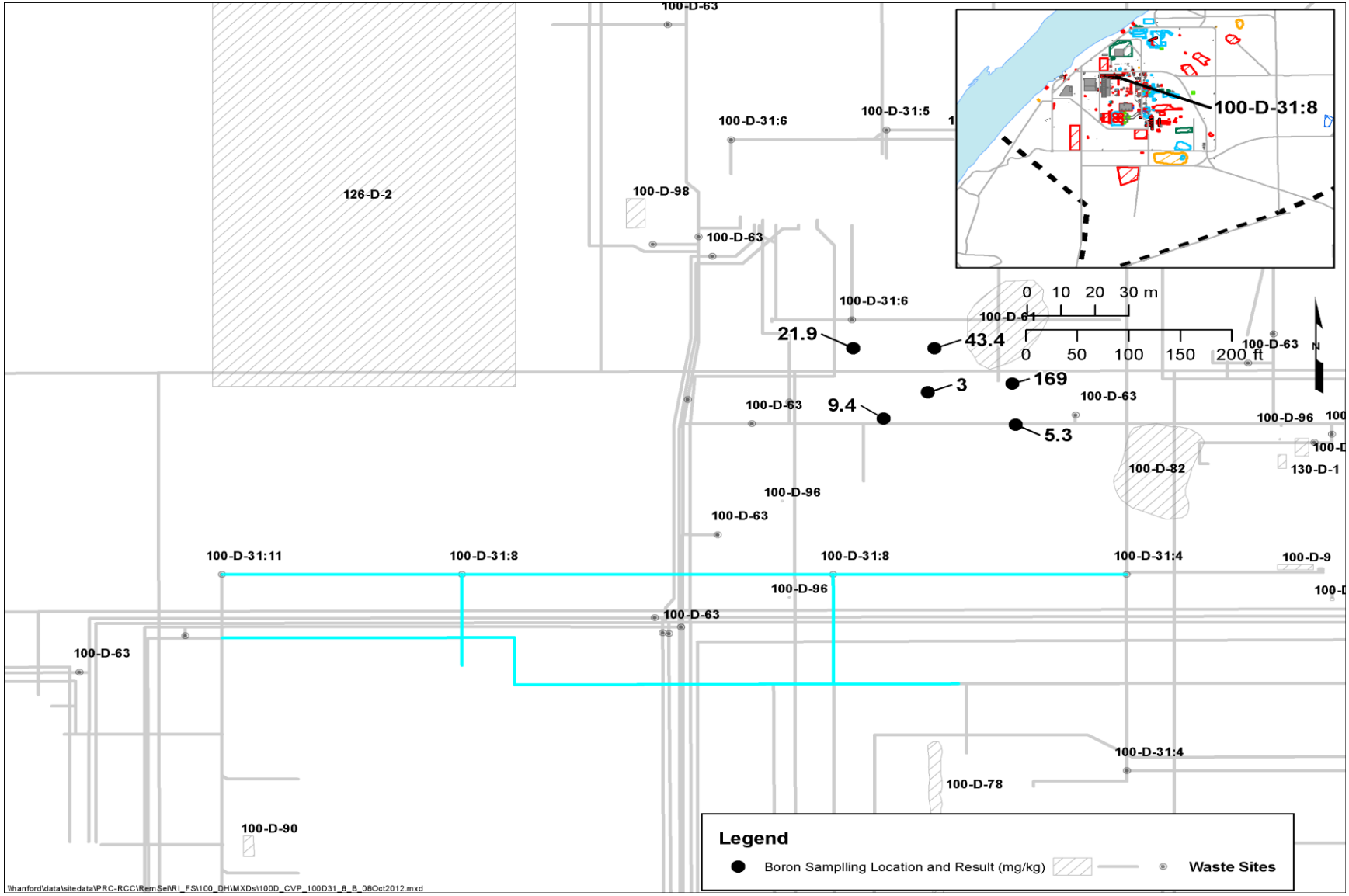

Figure H-7. Land Bridge (100-D-31:8) Sampling Locations and Associated Boron Results

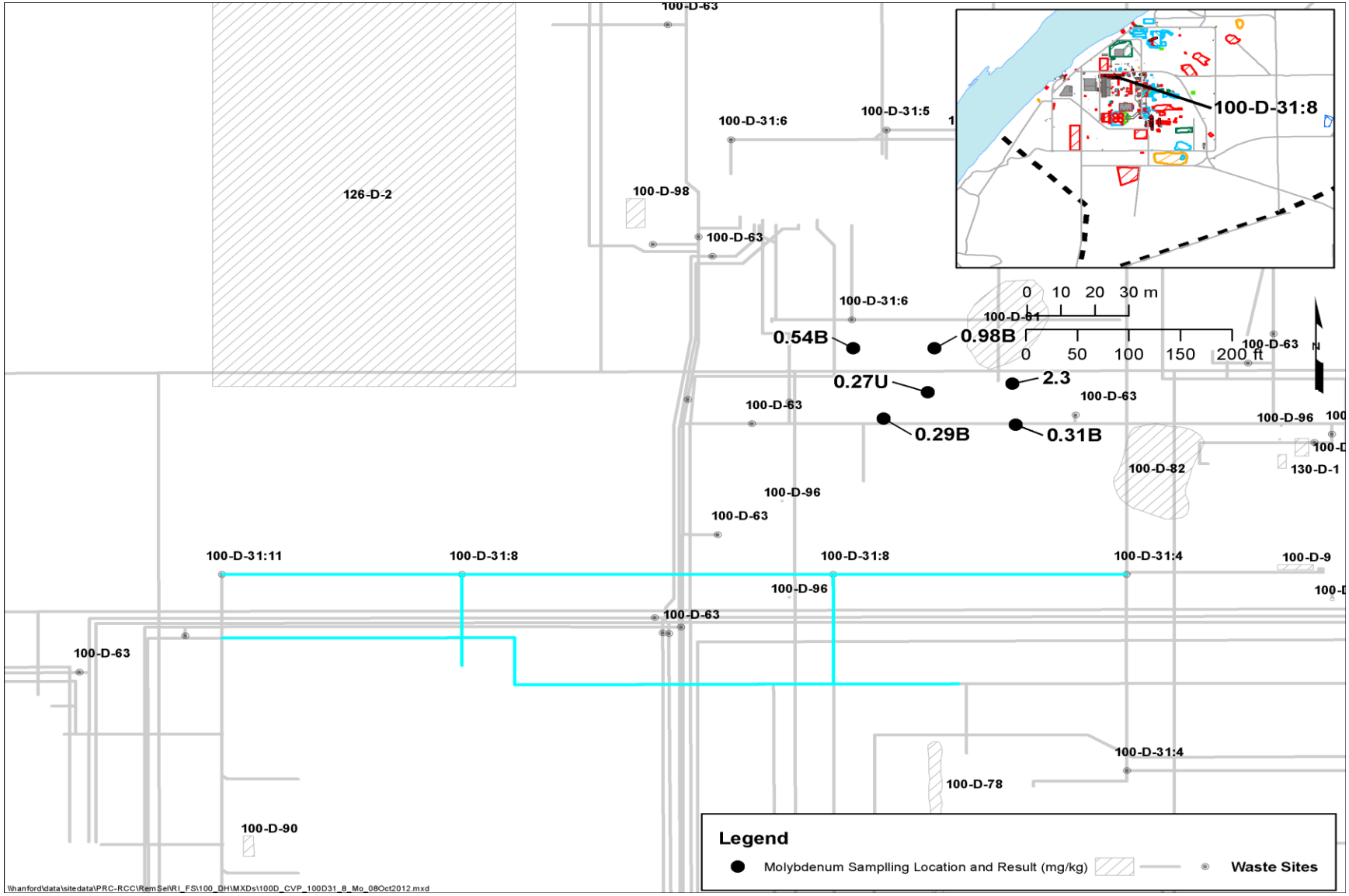

Figure H-8. Land Bridge (100-D-31:8) Sampling Locations and Associated Molybdenum Results

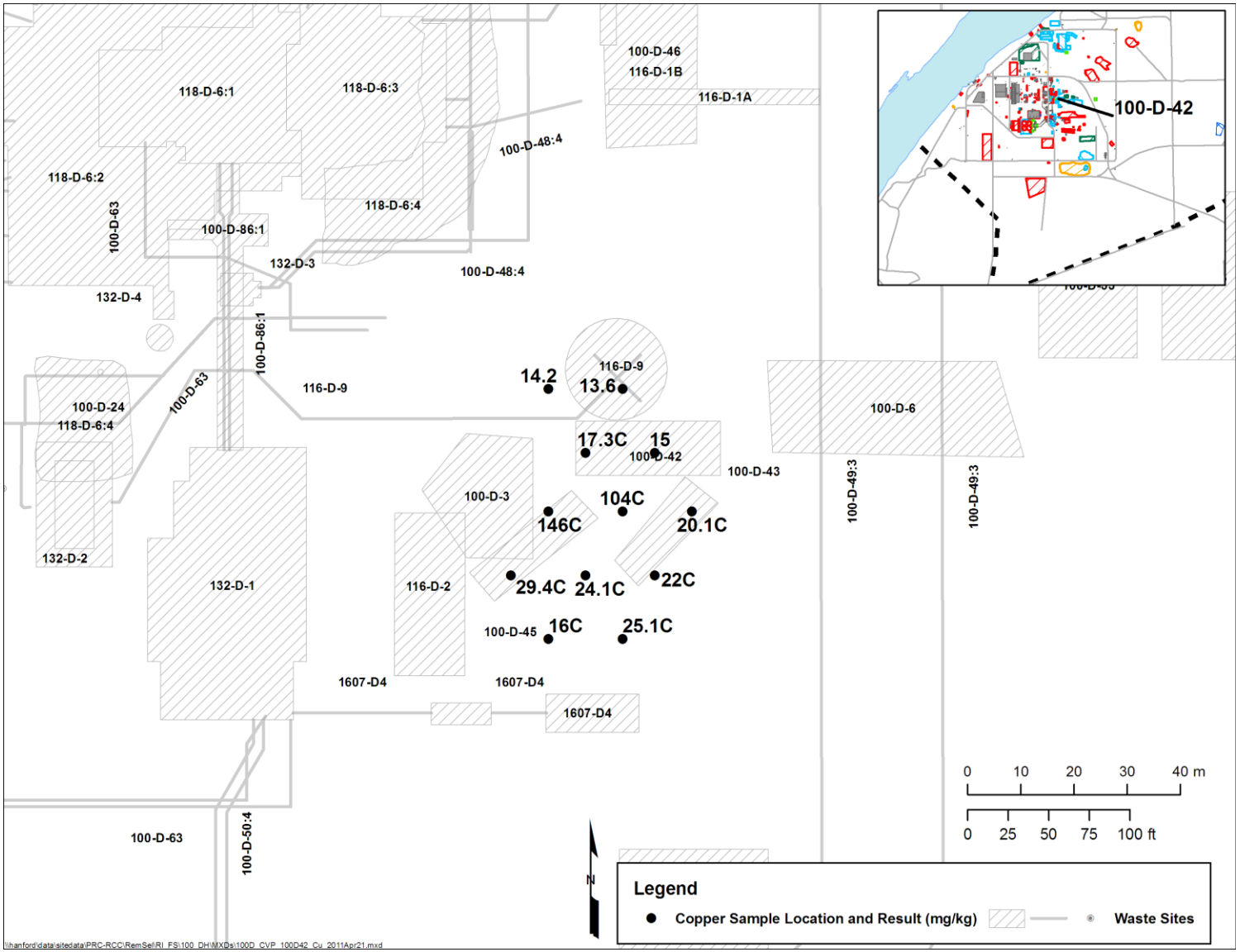

Figure H-9. Buried VSR Thimble Sites (100-D-42, 100-D-43, 100-D-45) Sampling Locations and Associated Copper Results

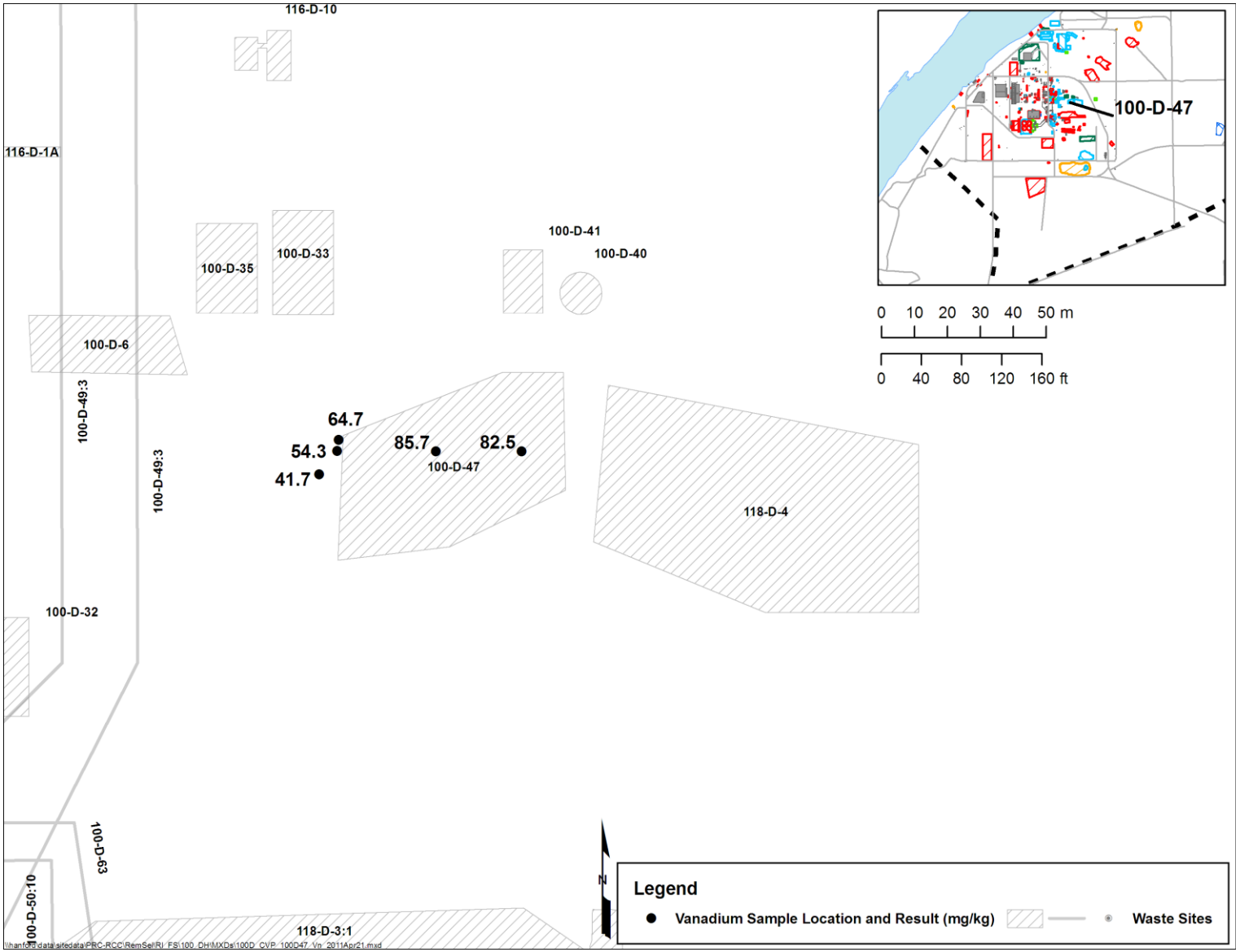

Figure H-10. Burial Ground 4E (100-D-47) Sampling Locations and Associated Vanadium Results

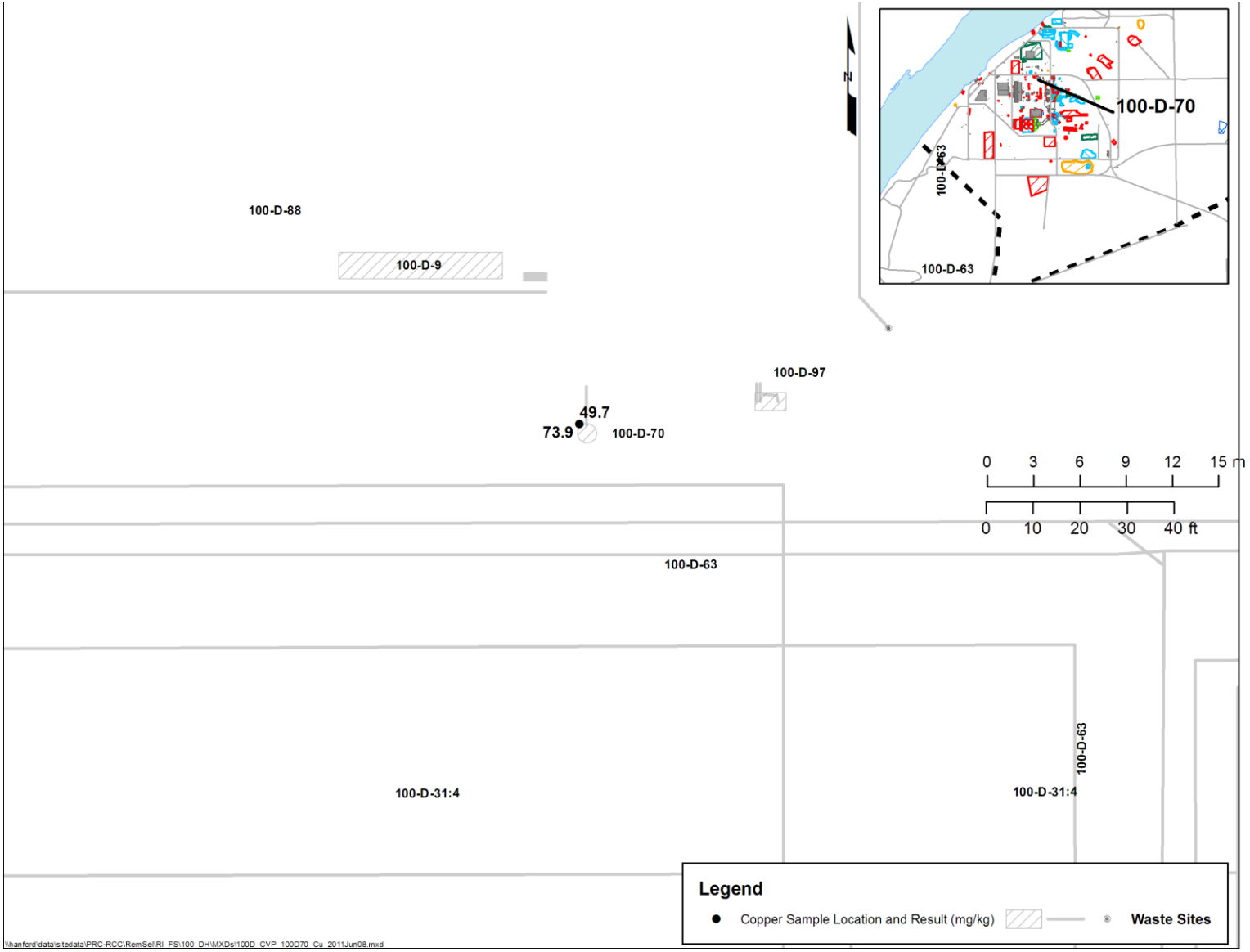

Figure H-11. 184DA Steam Generating Dry Well (100-D-70) Sampling Locations and Associated Copper Results

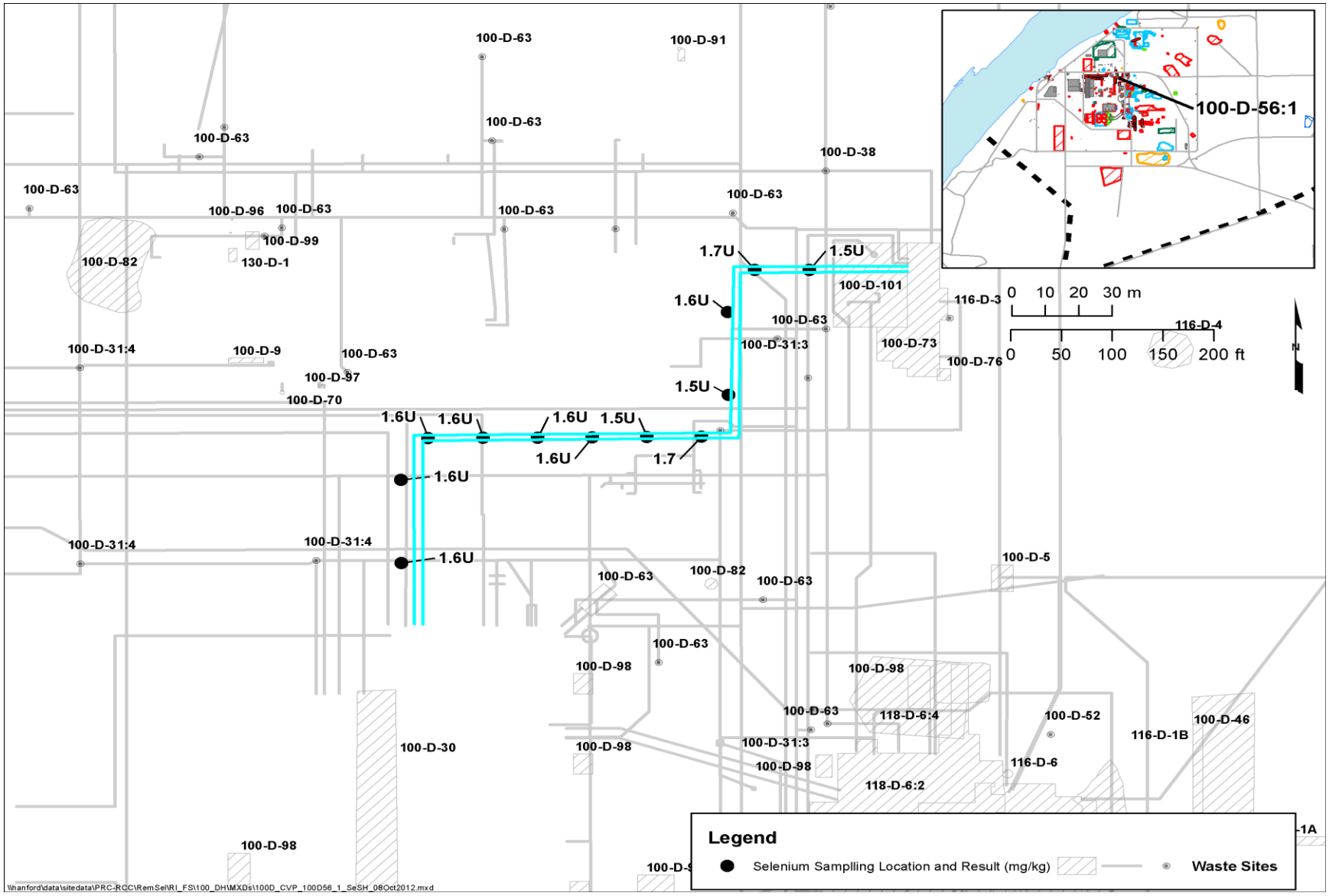

Figure H-12. (100-D-56:1) Shallow Sampling Locations and Associated Selenium Results

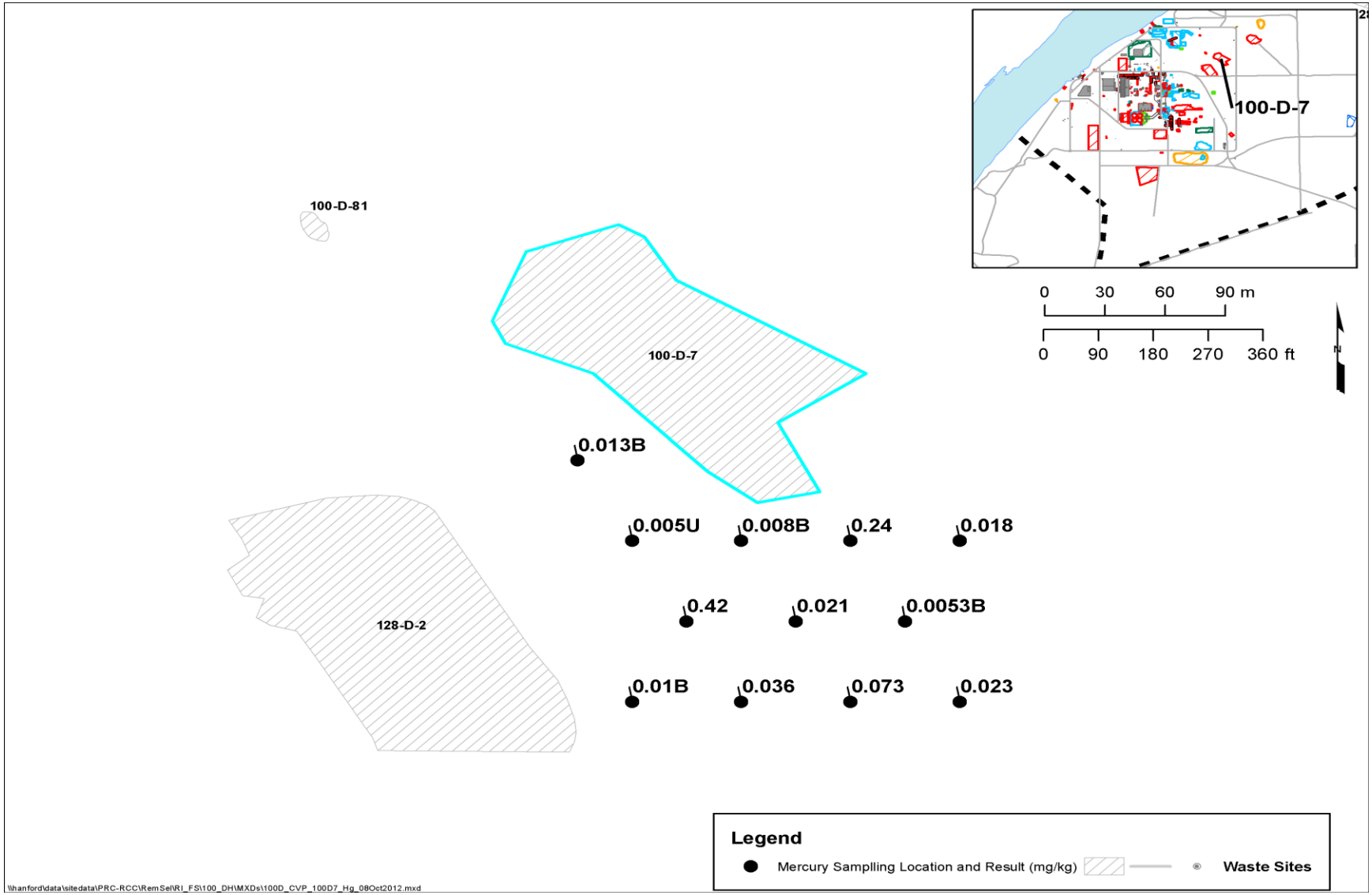

Figure H-13. Staging Pile Area Footprint (100-D-7) Sampling Locations and Associated Mercury Results

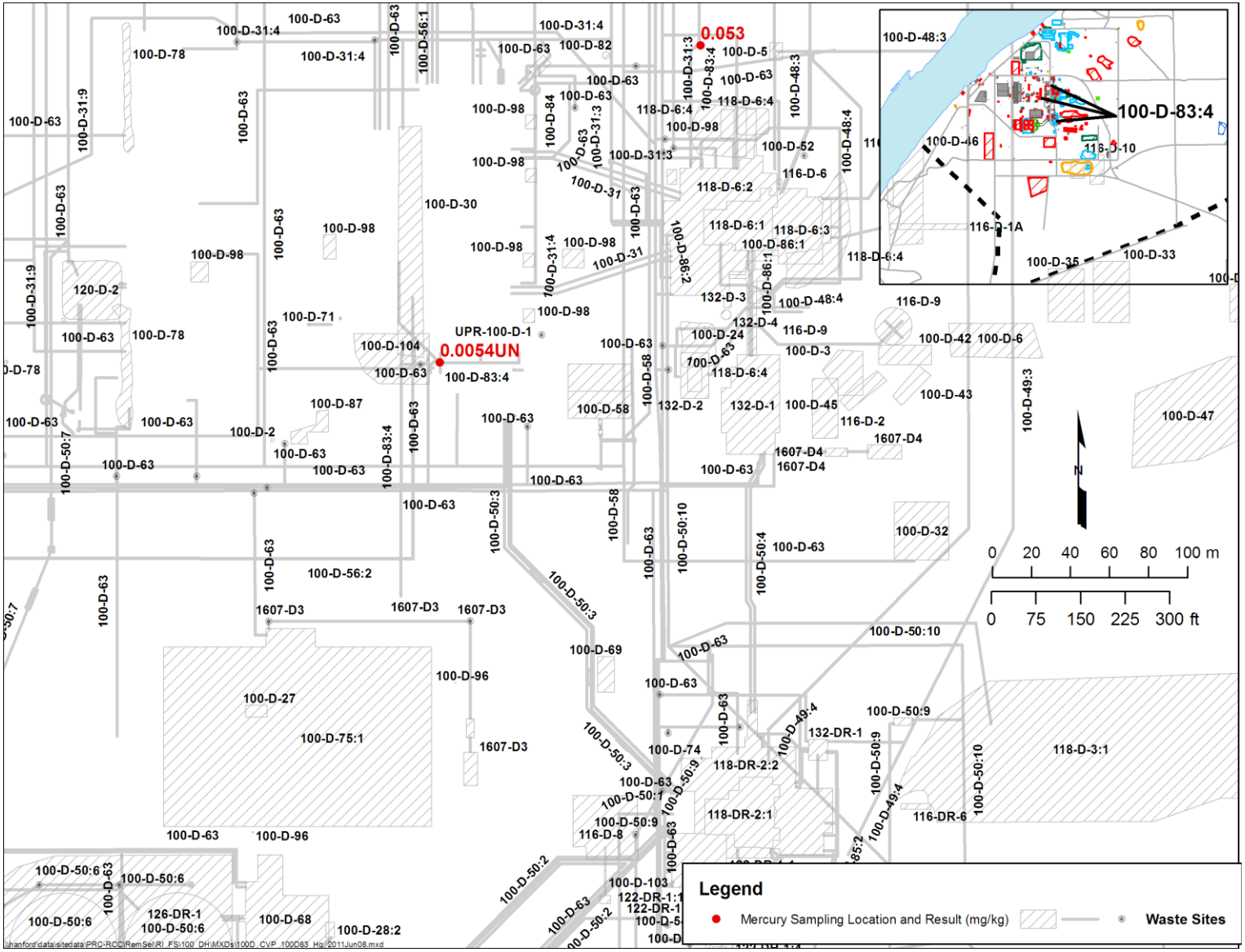

Figure H-14. Additional Treated Water Pipelines (100-D-83:4) Sampling Locations and Associated Mercury Results

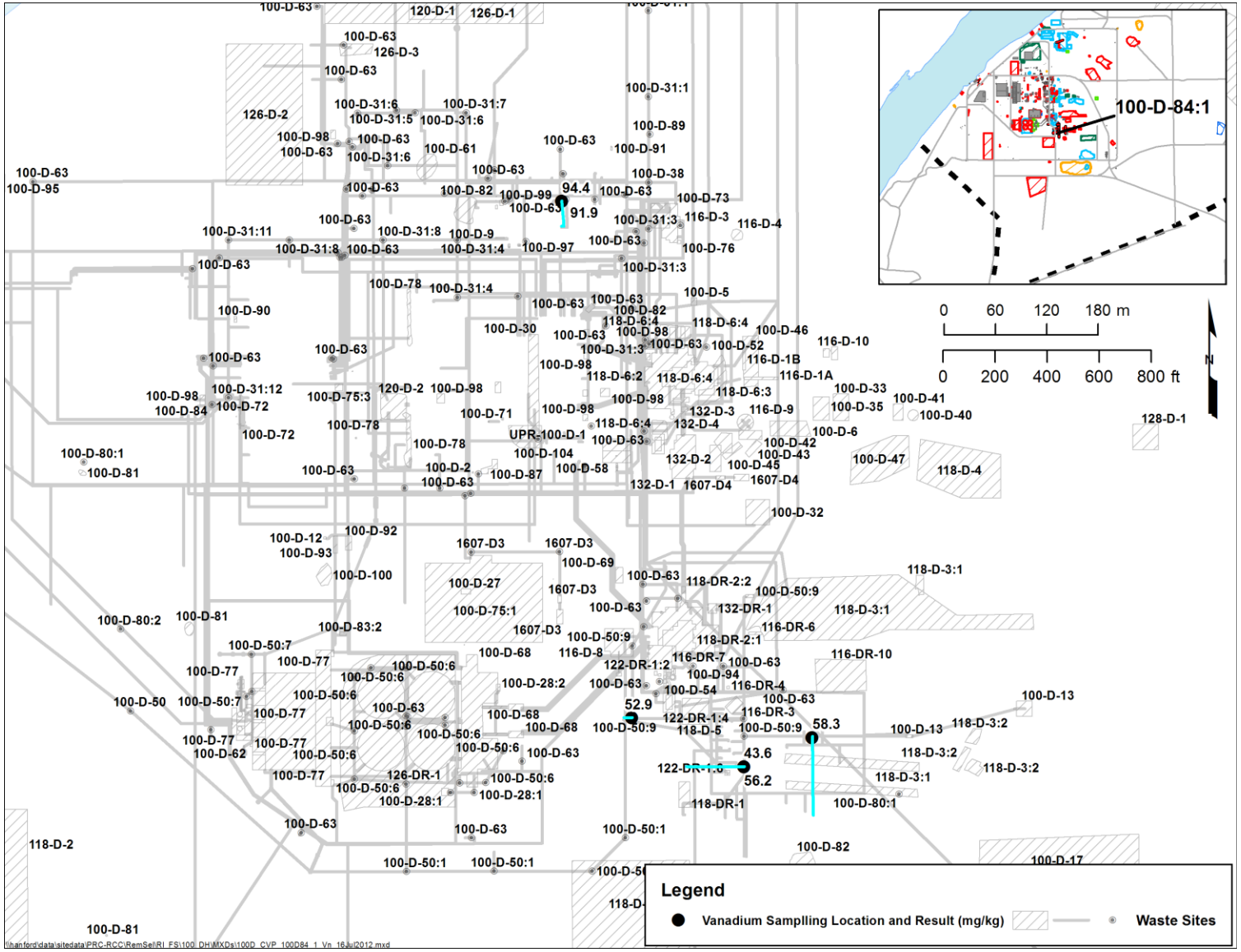

Figure H-15. (100-D-84:1) Sampling Locations and Associated Vanadium Results

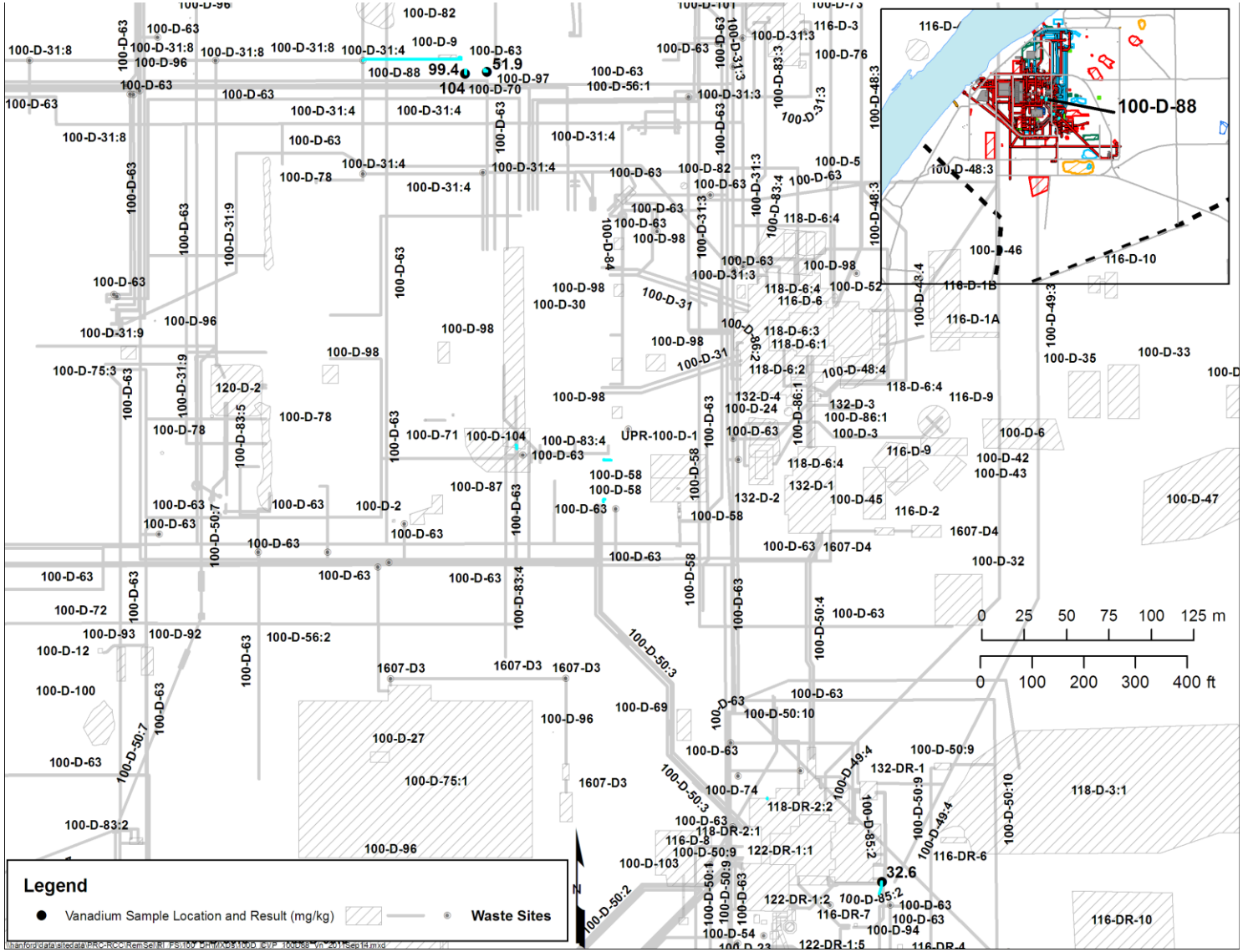

Figure H-16. 100-D Miscellaneous Pipelines (100-D-88) Sampling Locations and Associated Vanadium Results

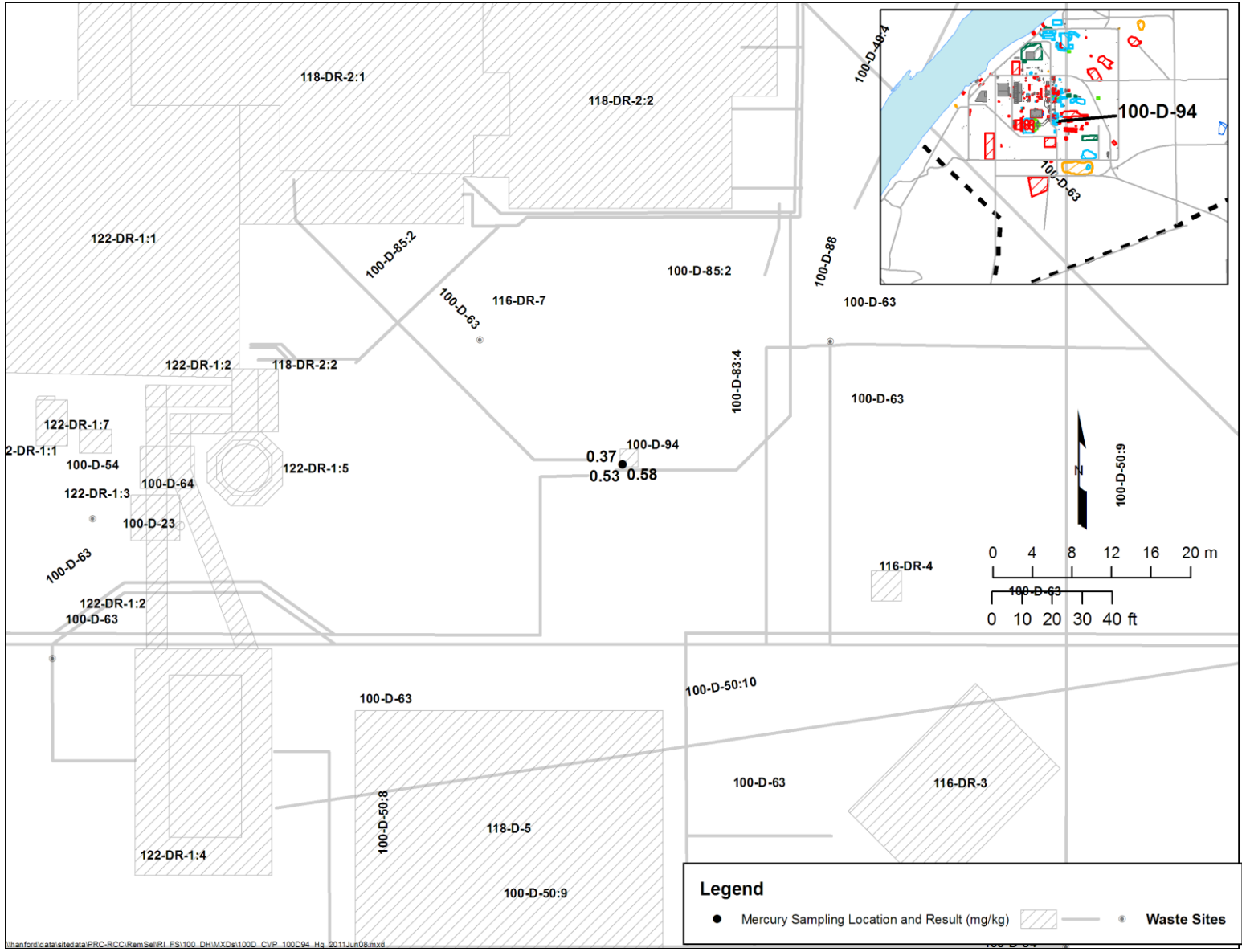

Figure H-17. Dichromate Contaminated Pit associated with 187-DR (100-D-94) Sampling Locations and Associated Mercury Results

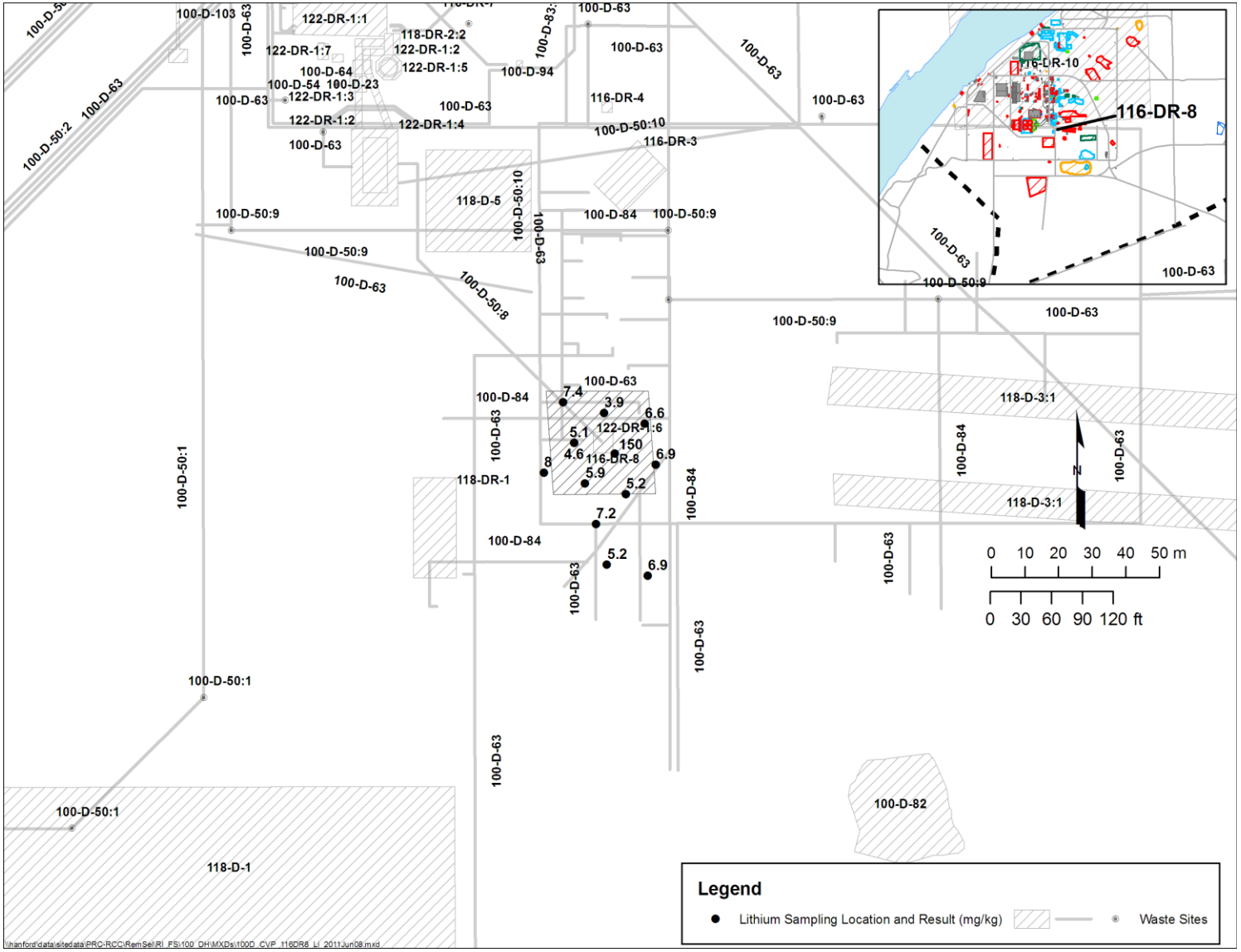

Figure H-18. Seal Pit Crib (116-DR-8) Sampling Locations and Associated Lithium Results

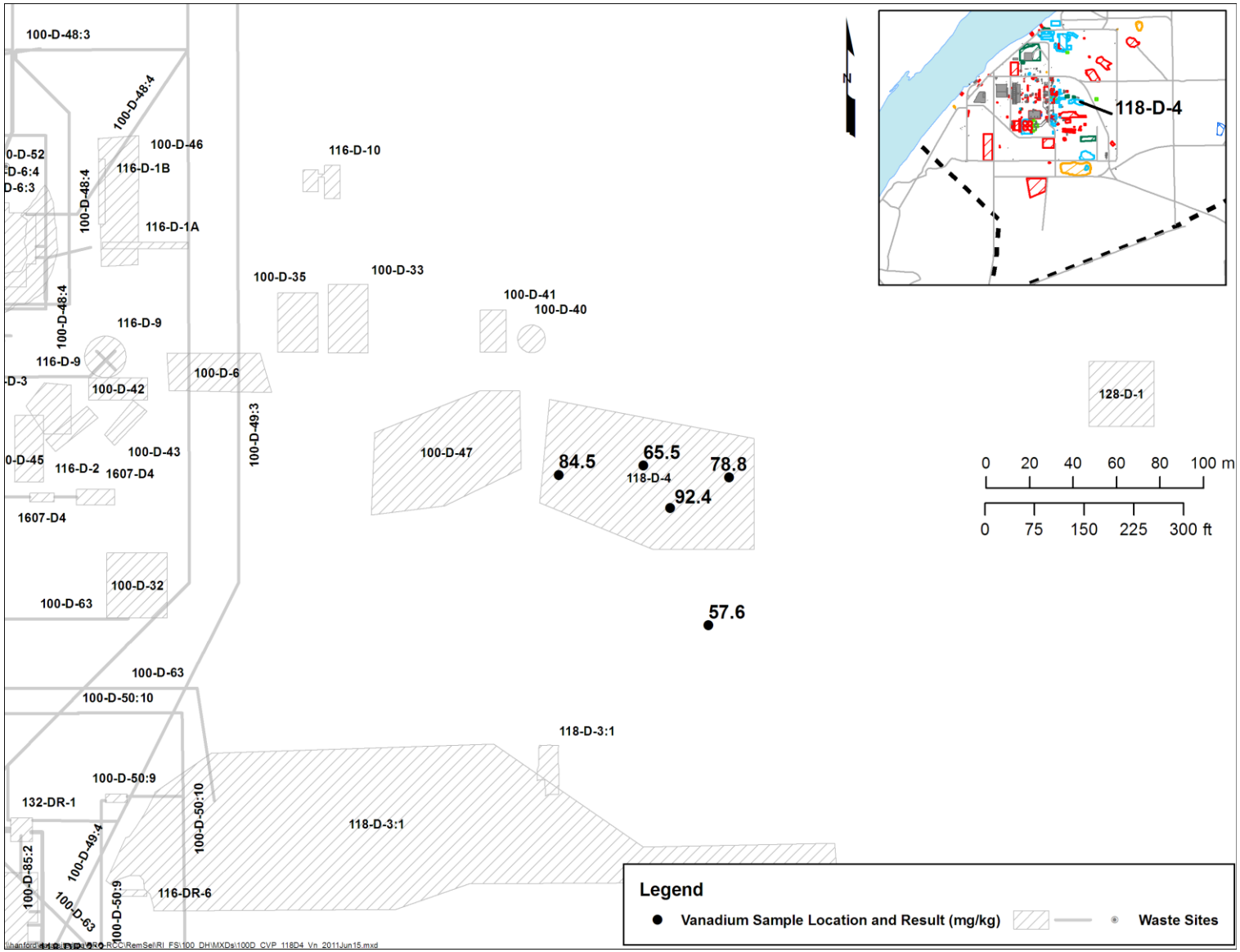

Figure H-19. 118-D-4 Burial Ground (118-D-4) Sampling Locations and Associated Vanadium Results

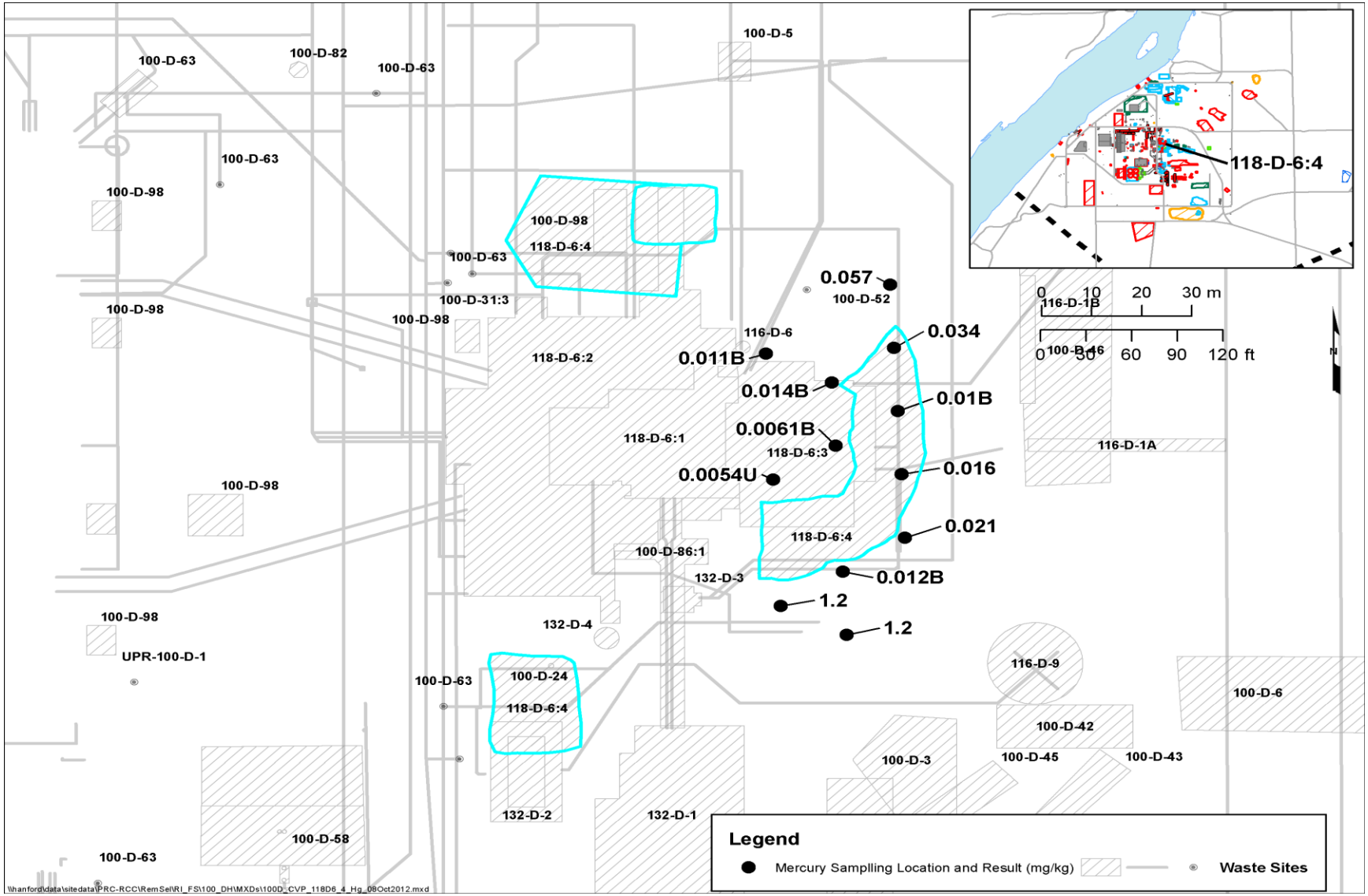

Figure H-20. (118-D-6:4) Sampling Locations and Associated Mercury Results

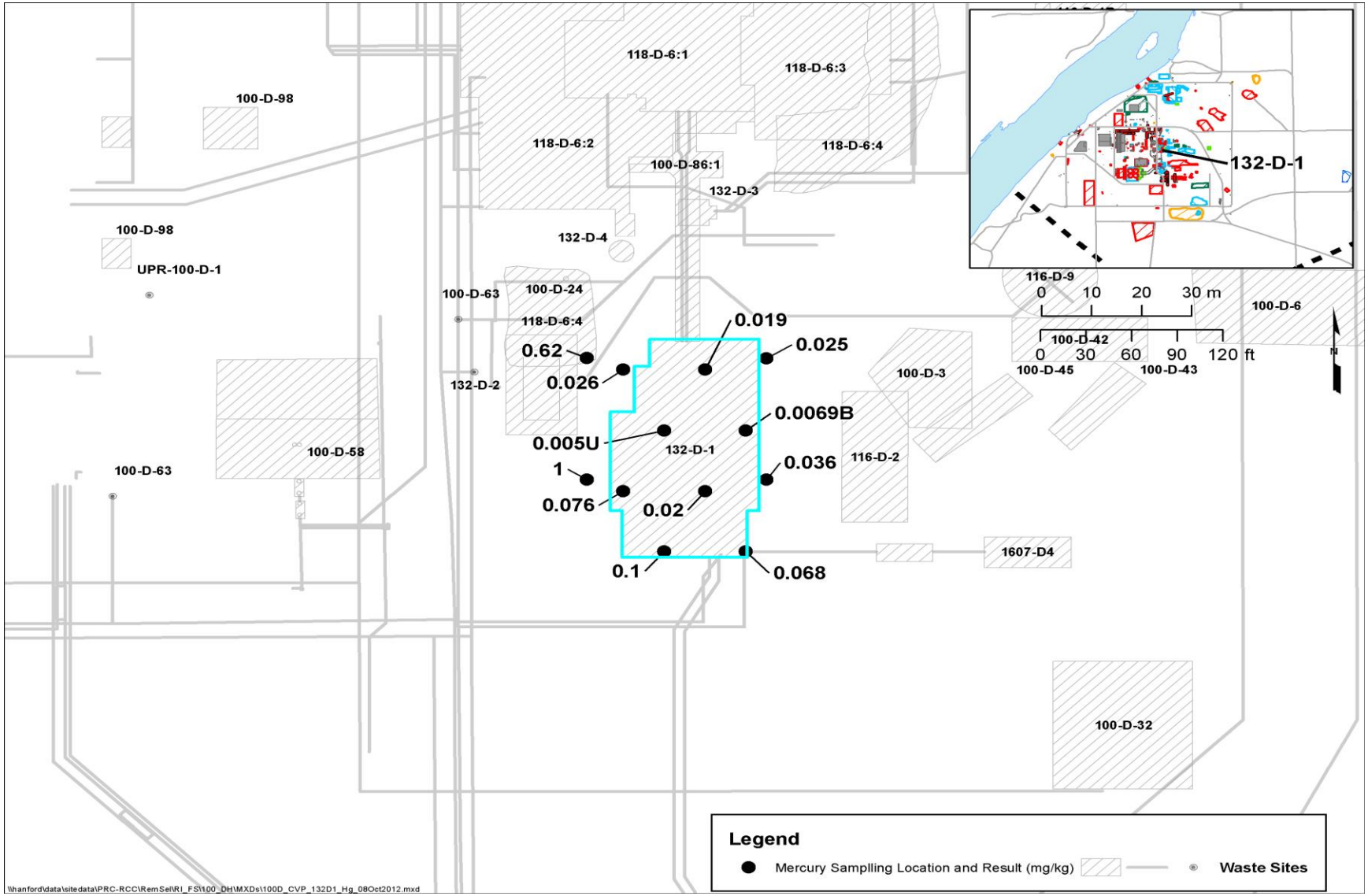

Figure H-21. (132-D-1) Shallow Sampling Locations and Associated Mercury Results

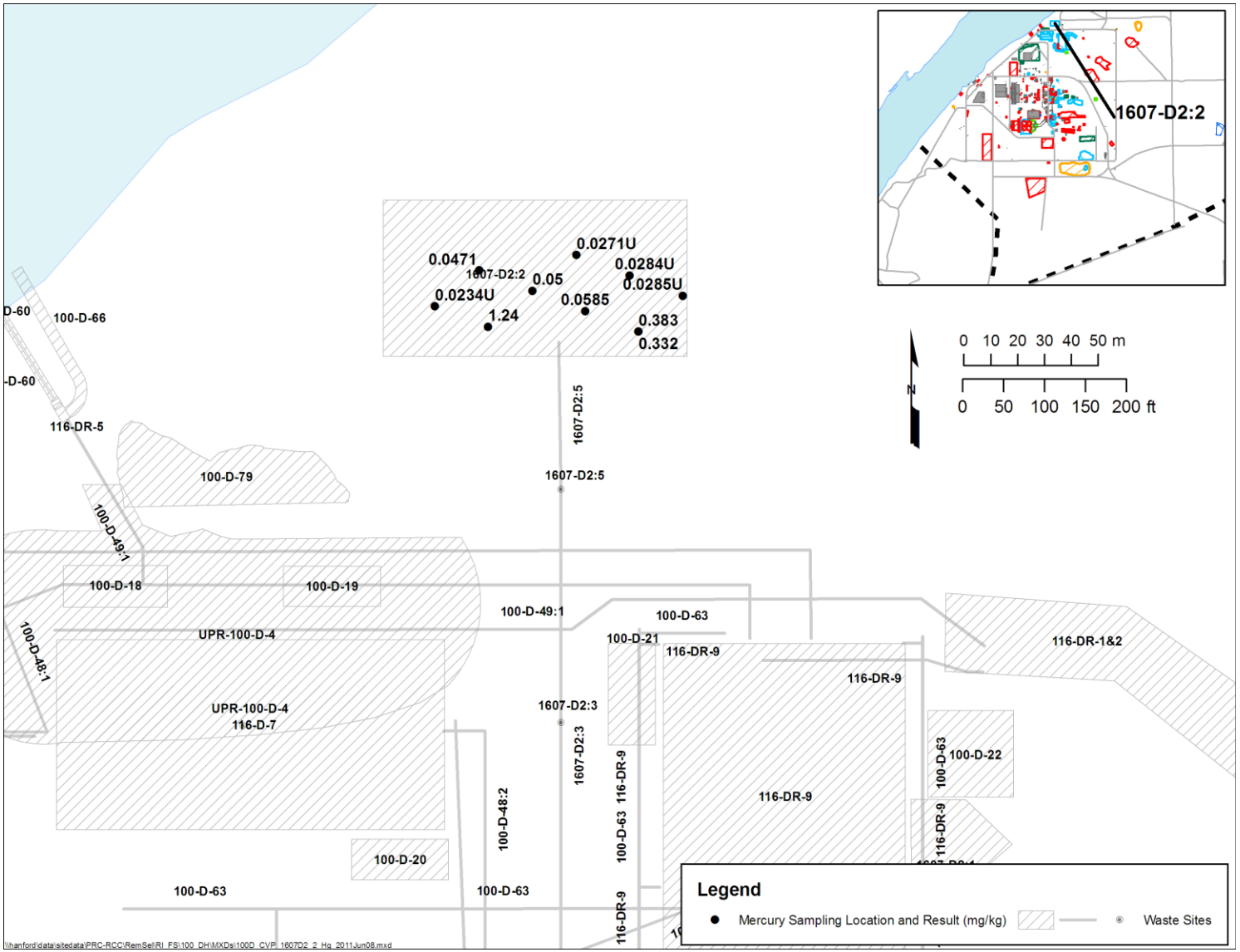

Figure H-22. Sanitary Sewer System (1607-D2:2) Sampling Locations and Associated Mercury Results

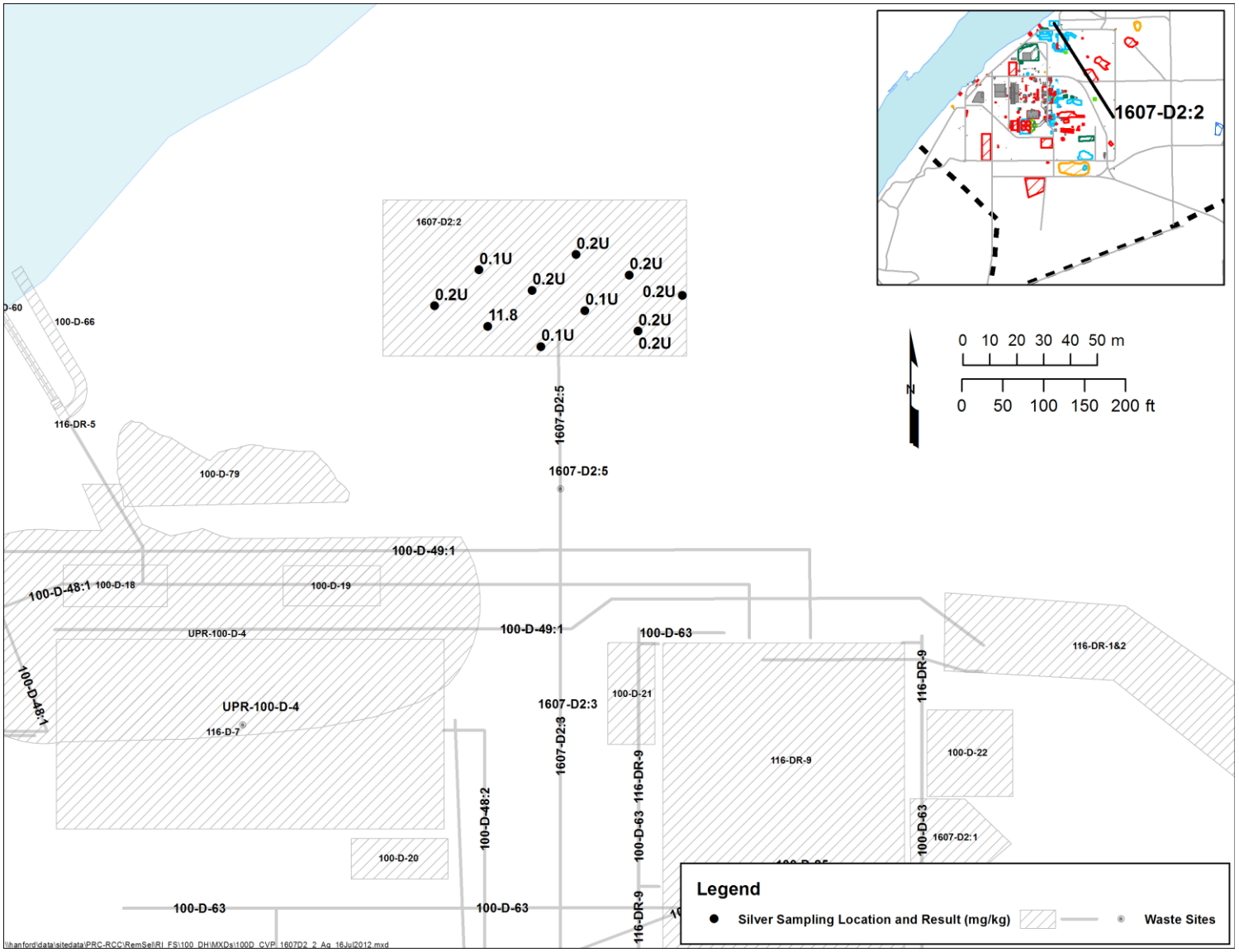

Figure H-23. Sanitary Sewer System (1607-D2:2) Sampling Locations and Associated Silver Results

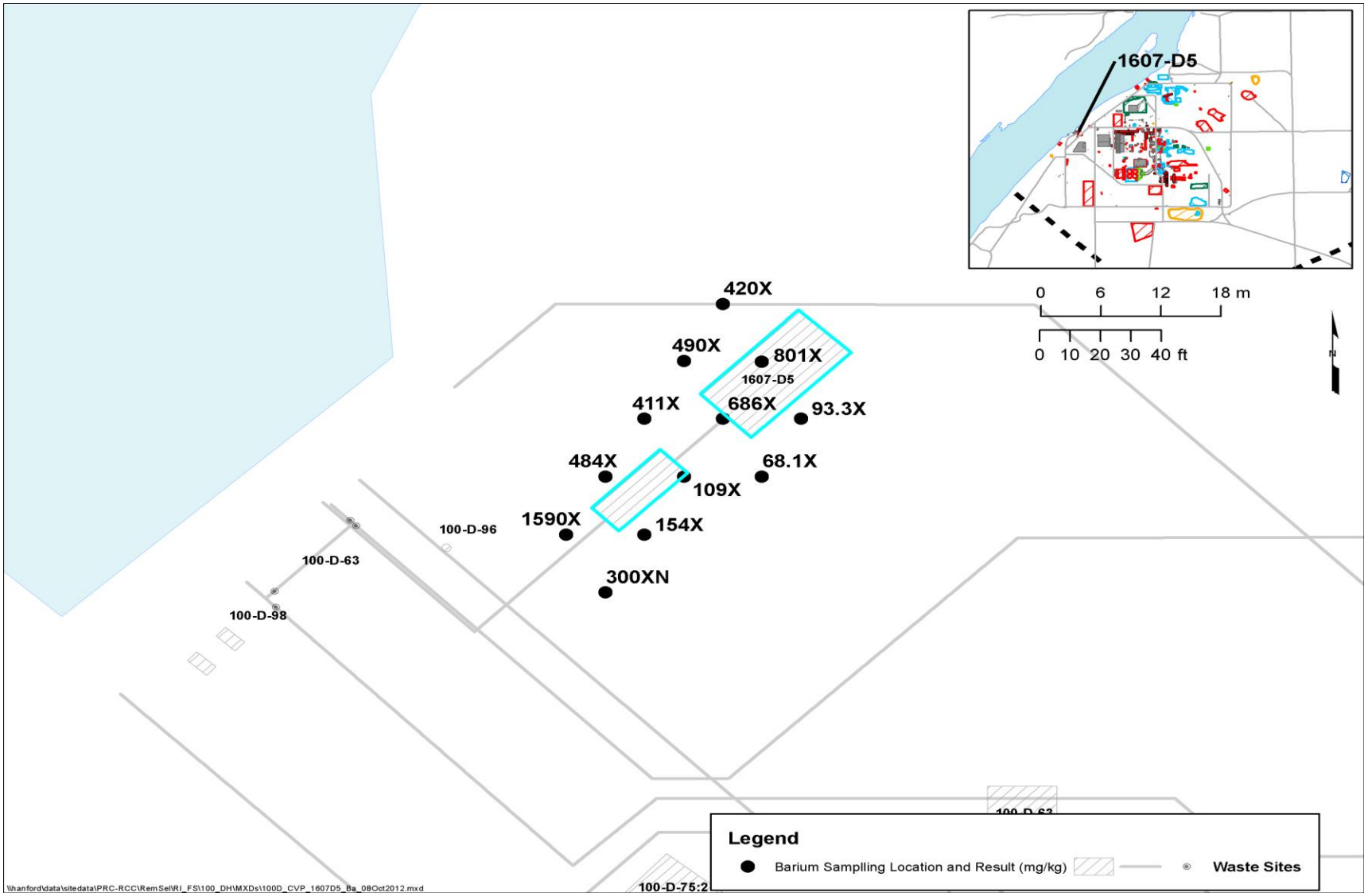

Figure H-24. (1607-D5) Sampling Locations and Associated Barium Results

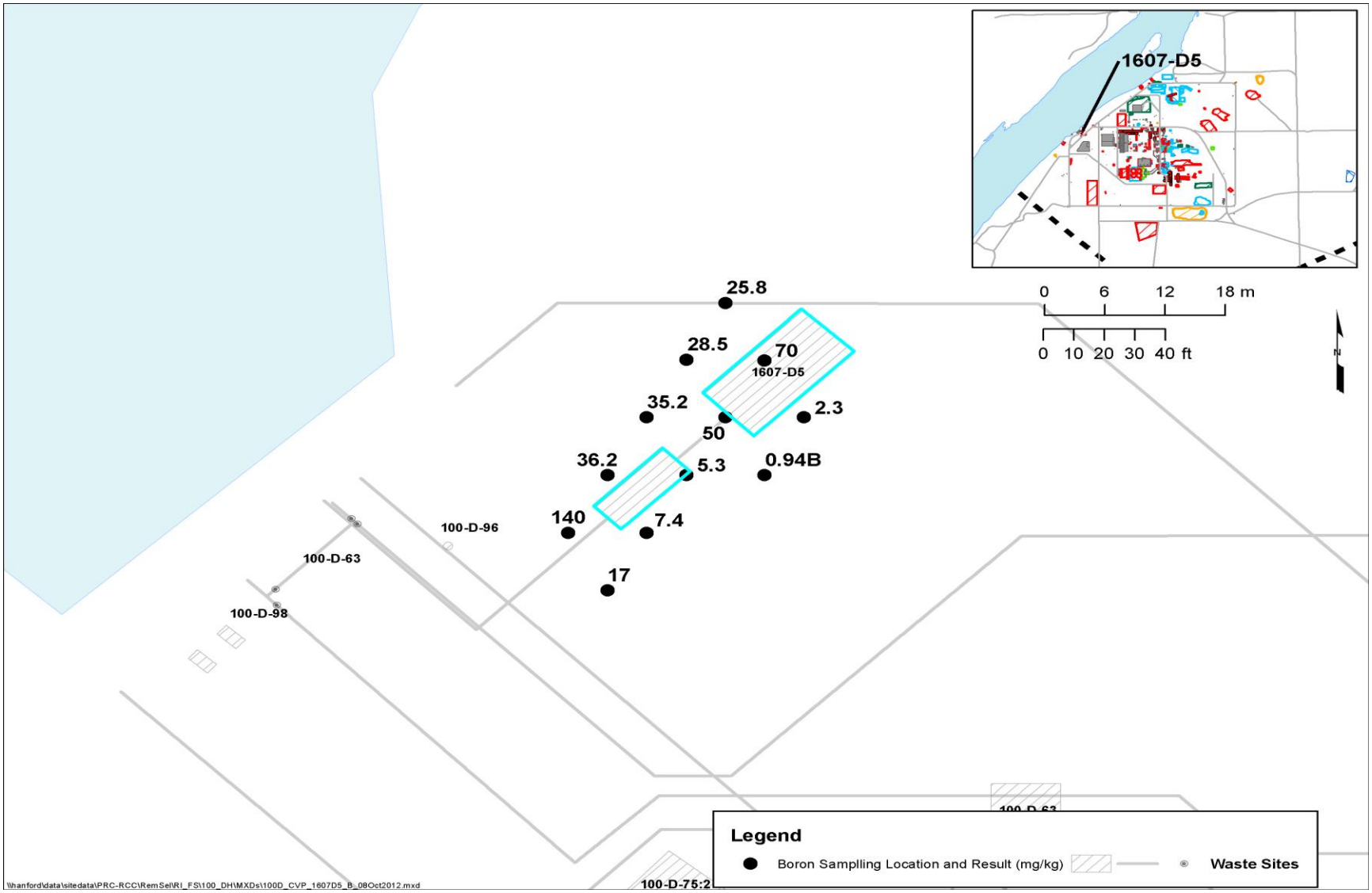

Figure H-25. (1607-D5) Sampling Locations and Associated Boron Results

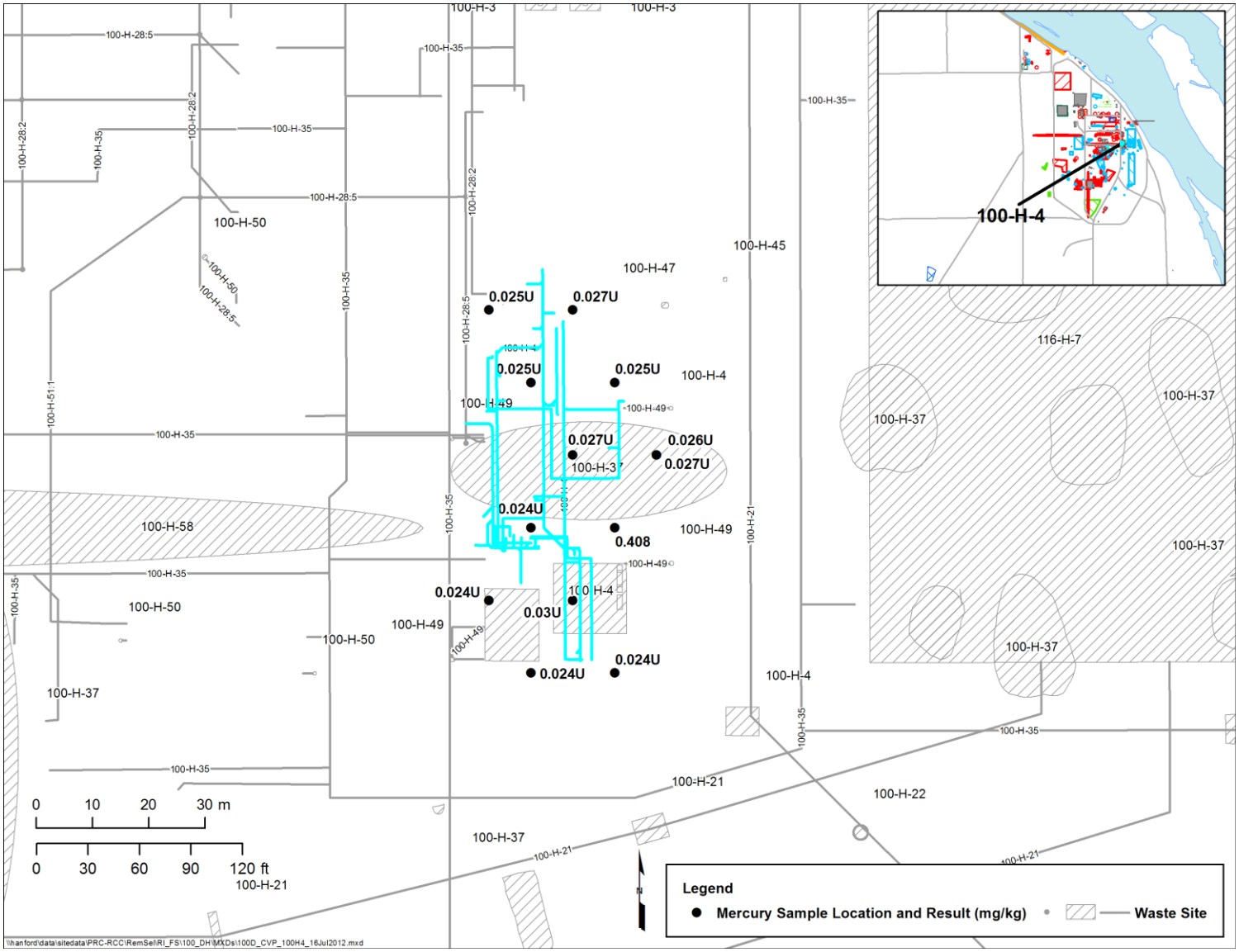

Figure H-26. 1717-H Hot Shop (100-H-4) Sampling Locations and Associated Mercury Results

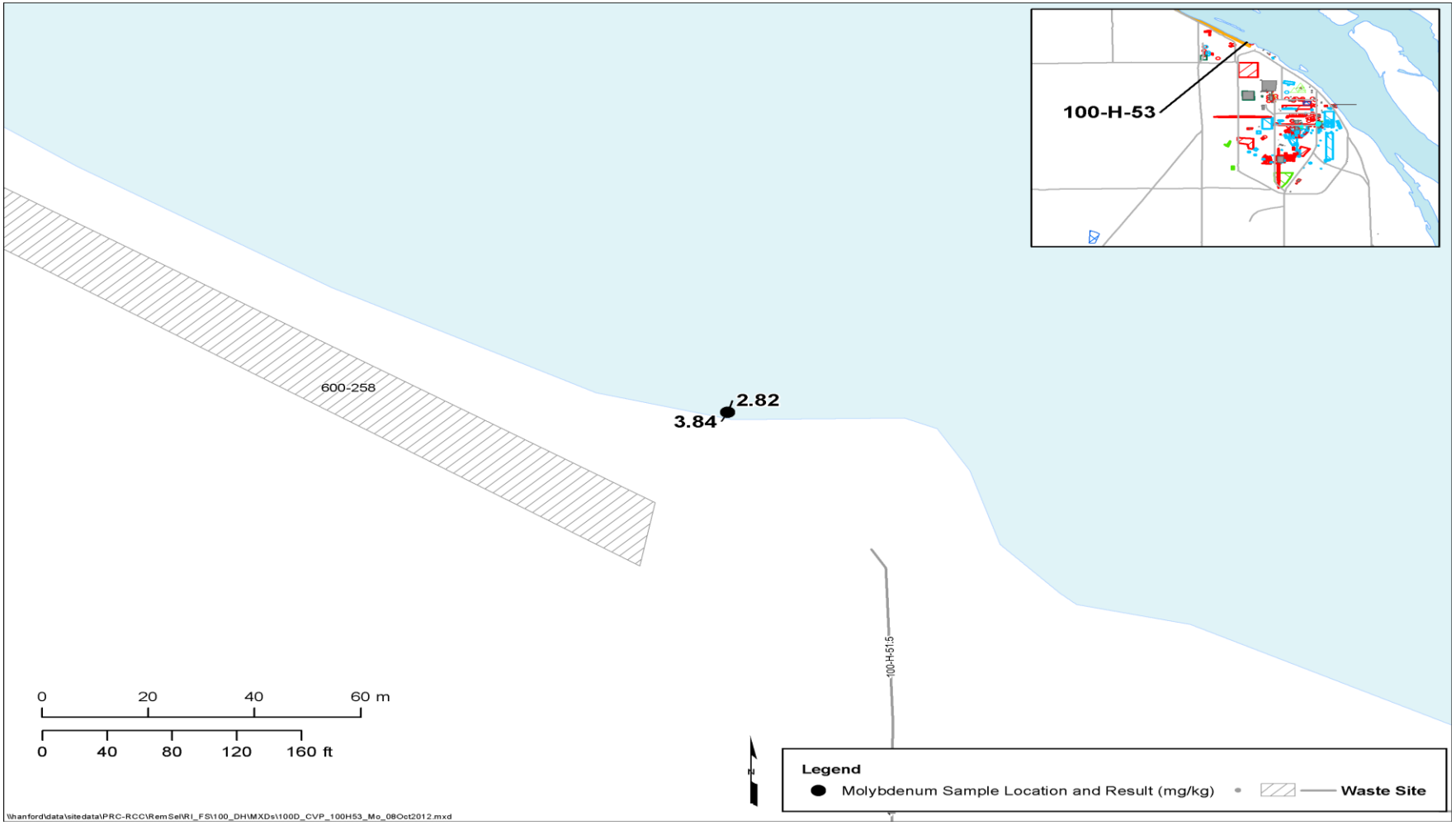

Figure H-27. (100-H-53) Sampling Locations and Associated Molybdenum Results

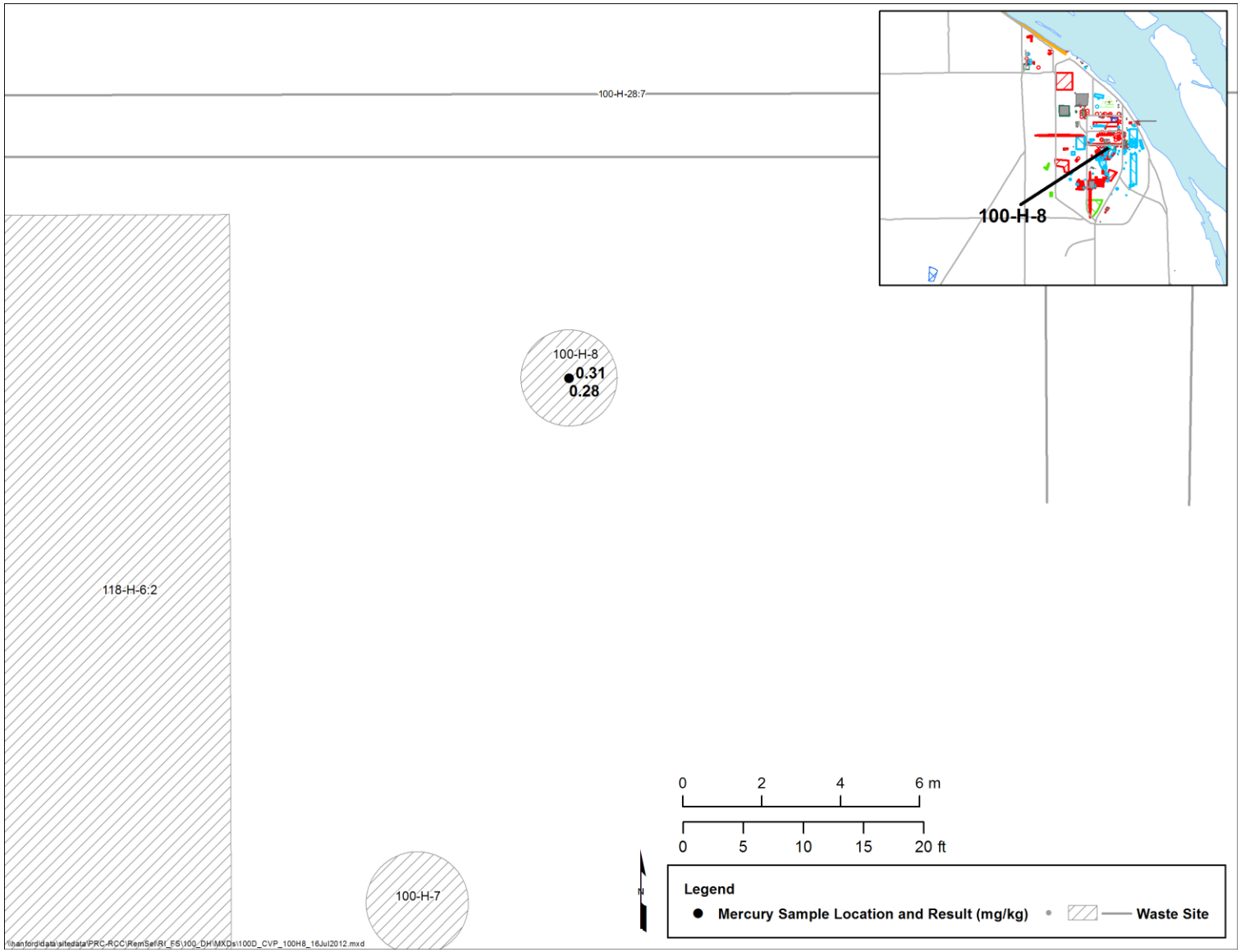

Figure H-28. French Drain B (100-H-8) Sampling Locations and Associated Mercury Results

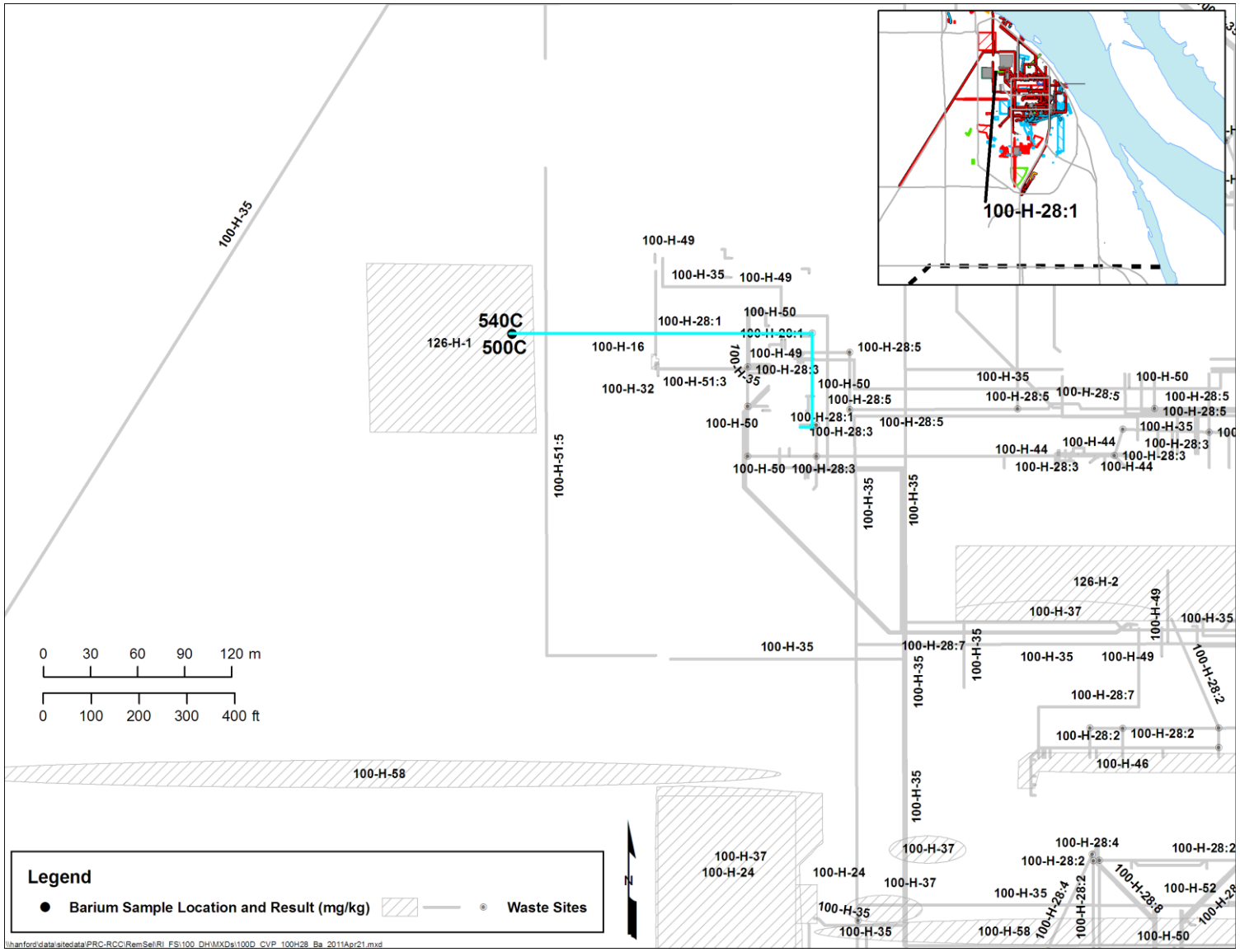

Figure H-29. 184-H Power House Ash Sluicing Line (100-H-28:1) Sampling Locations and Associated Barium Results

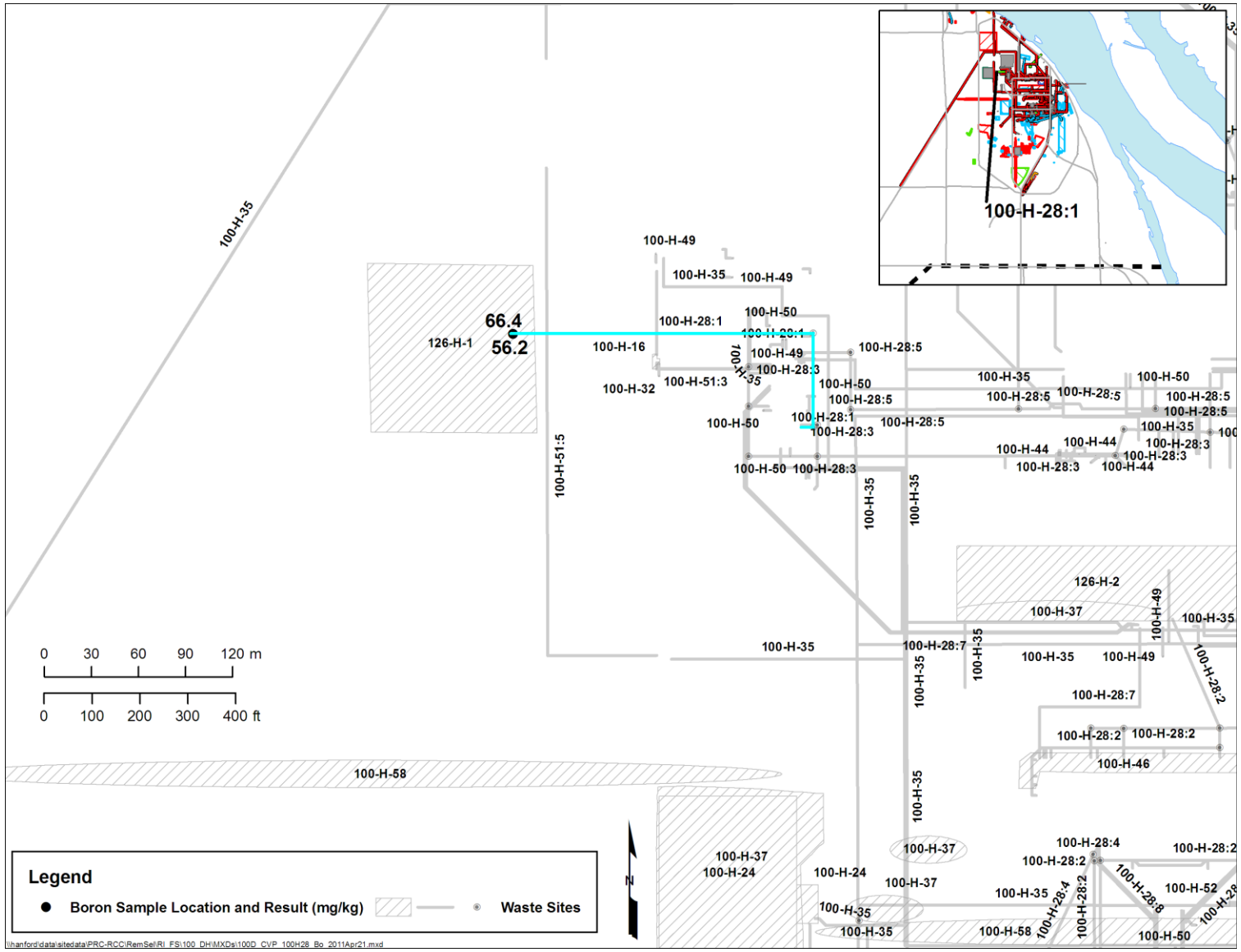

Figure H-30. 184-H Power House Ash Sluicing Line (100-H-28:1) Sampling Locations and Associated Boron Results

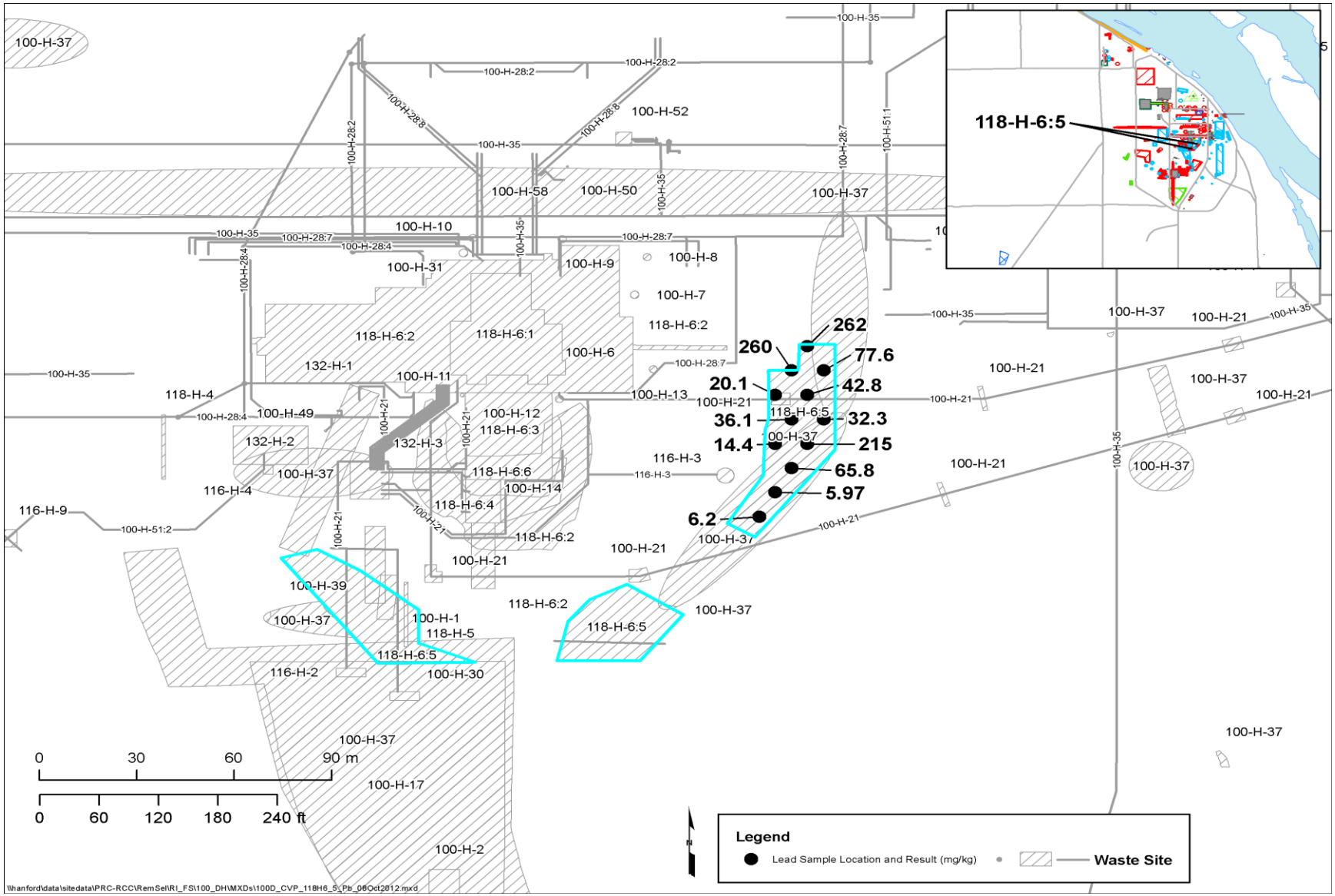

Figure H-31. (118-H-6:5) Sampling Locations and Associated Lead results

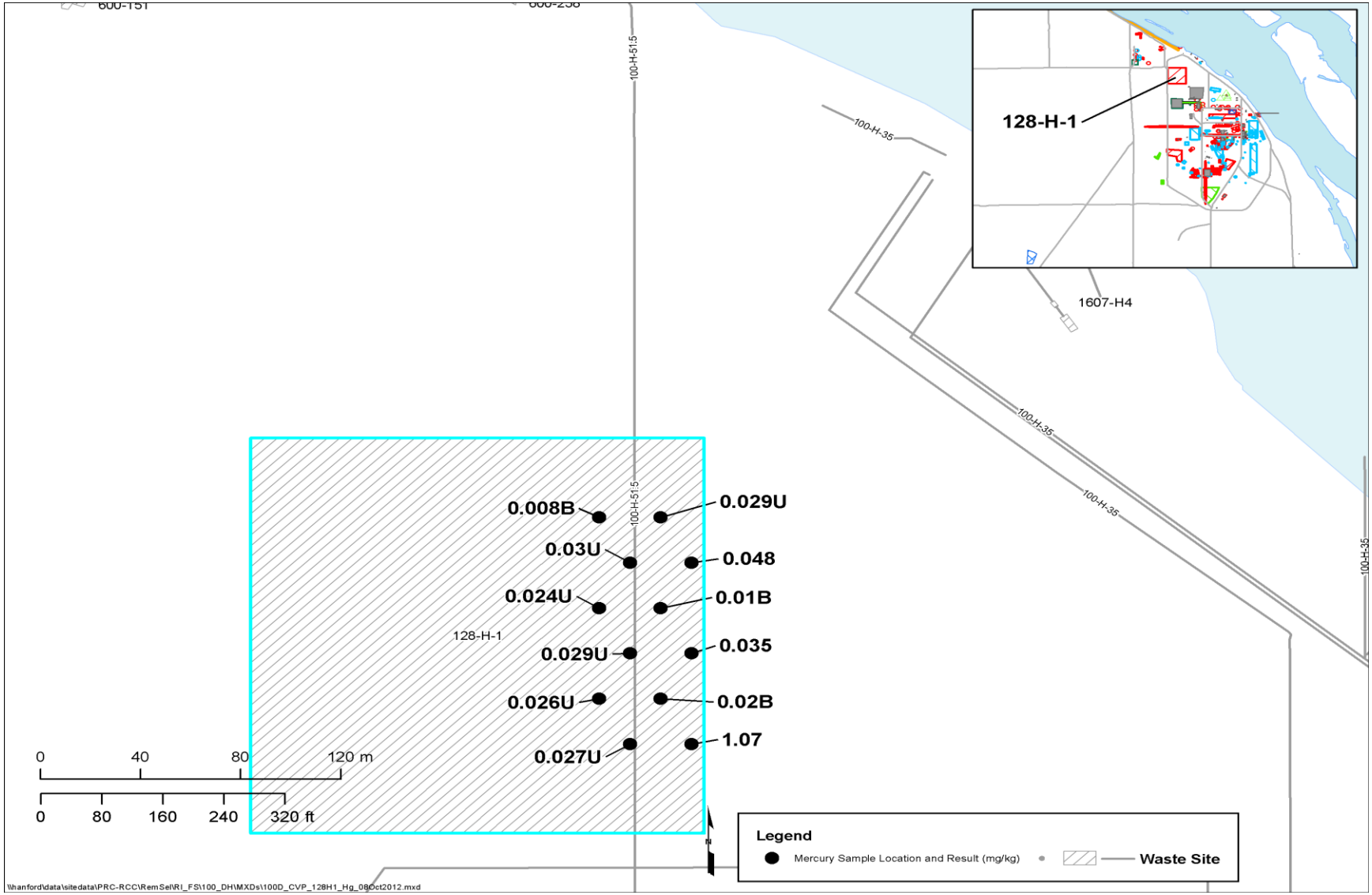

Figure H-32. 100-H Burning Pit Waste Site (128-H-1) Shallow 4 Sampling Locations and Associated Mercury Results

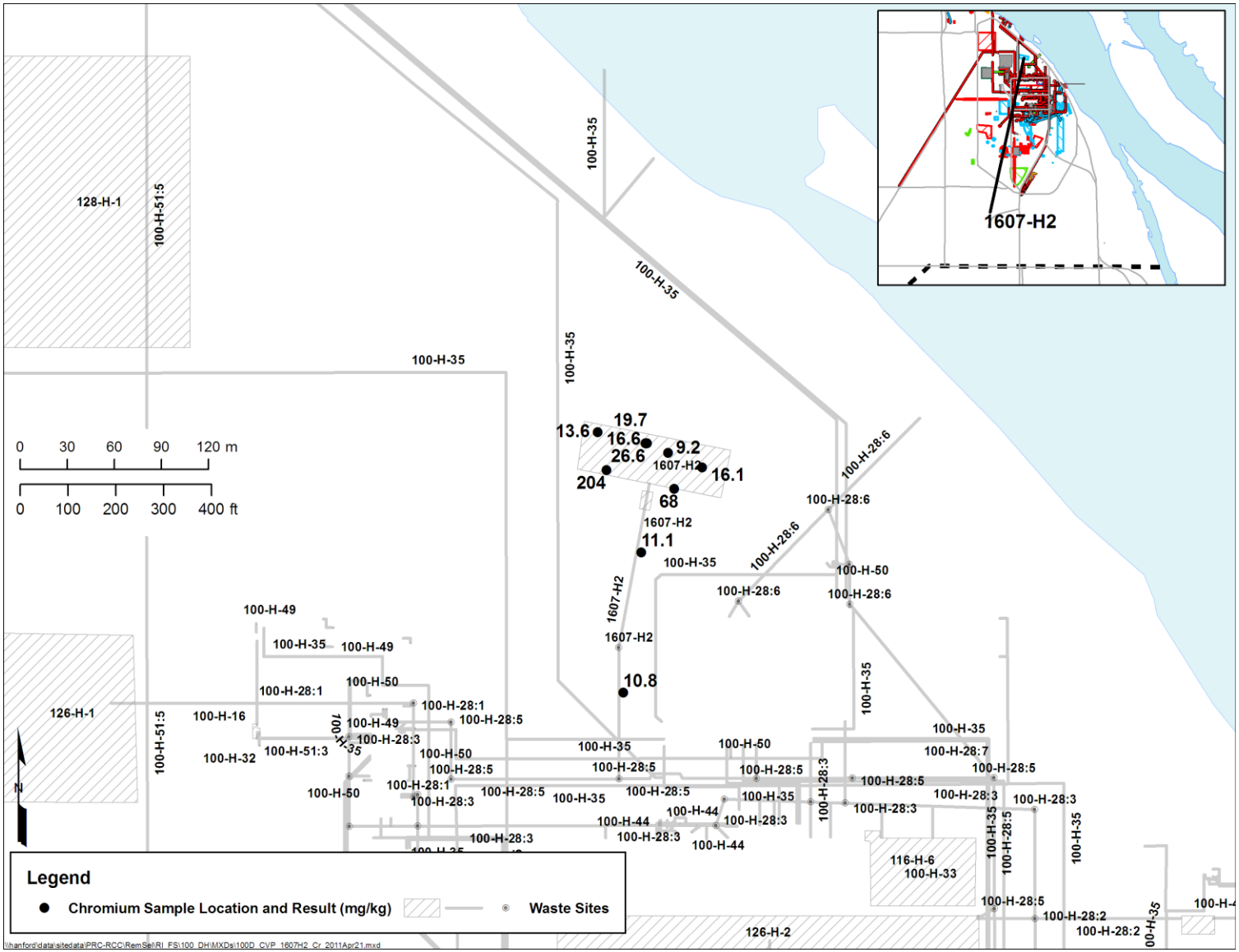

Figure H-33. Septic System (1607-H2) Sampling Locations and Associated Chromium Results

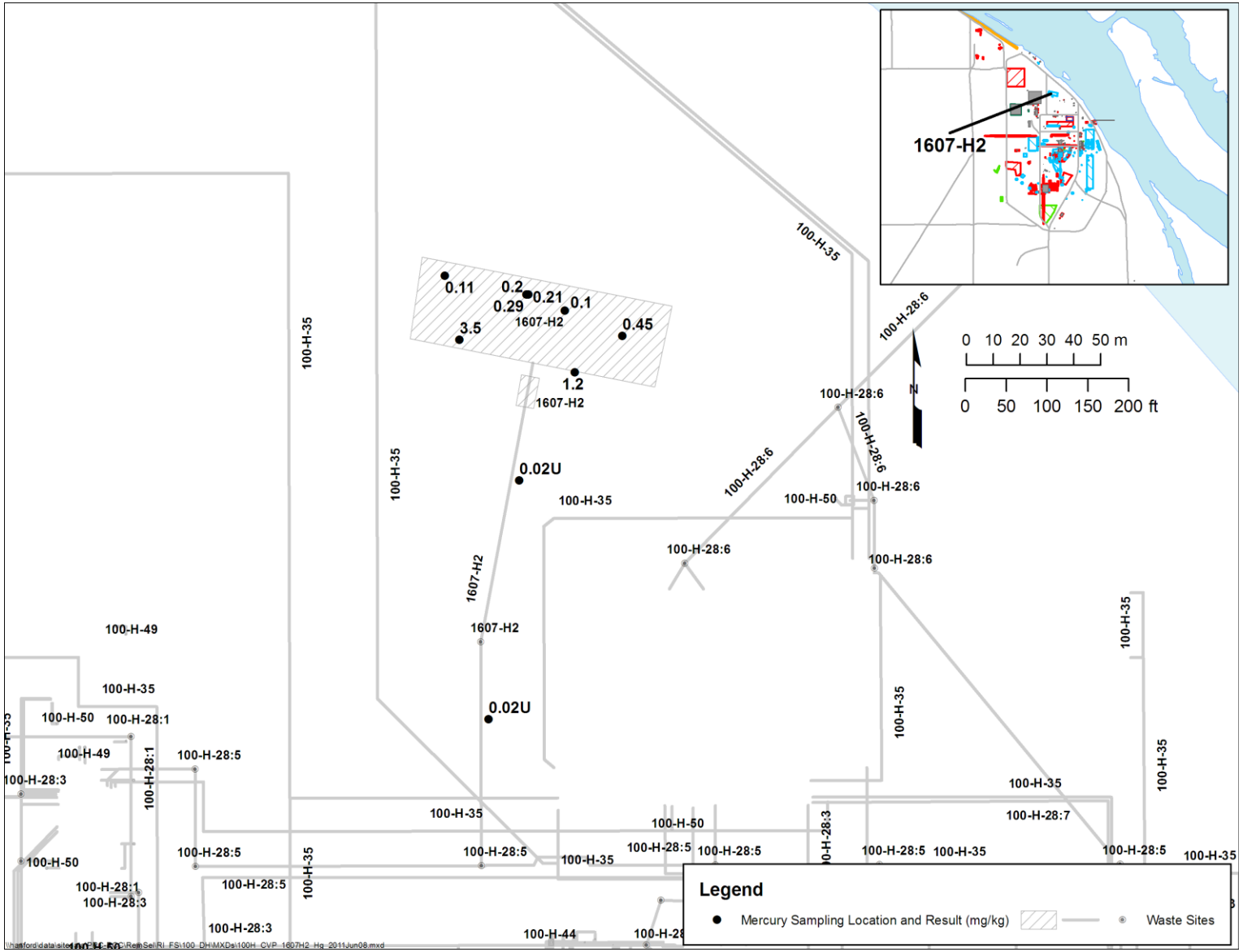

Figure H-34. Septic System (1607-H2) Sampling Locations and Associated Mercury Results

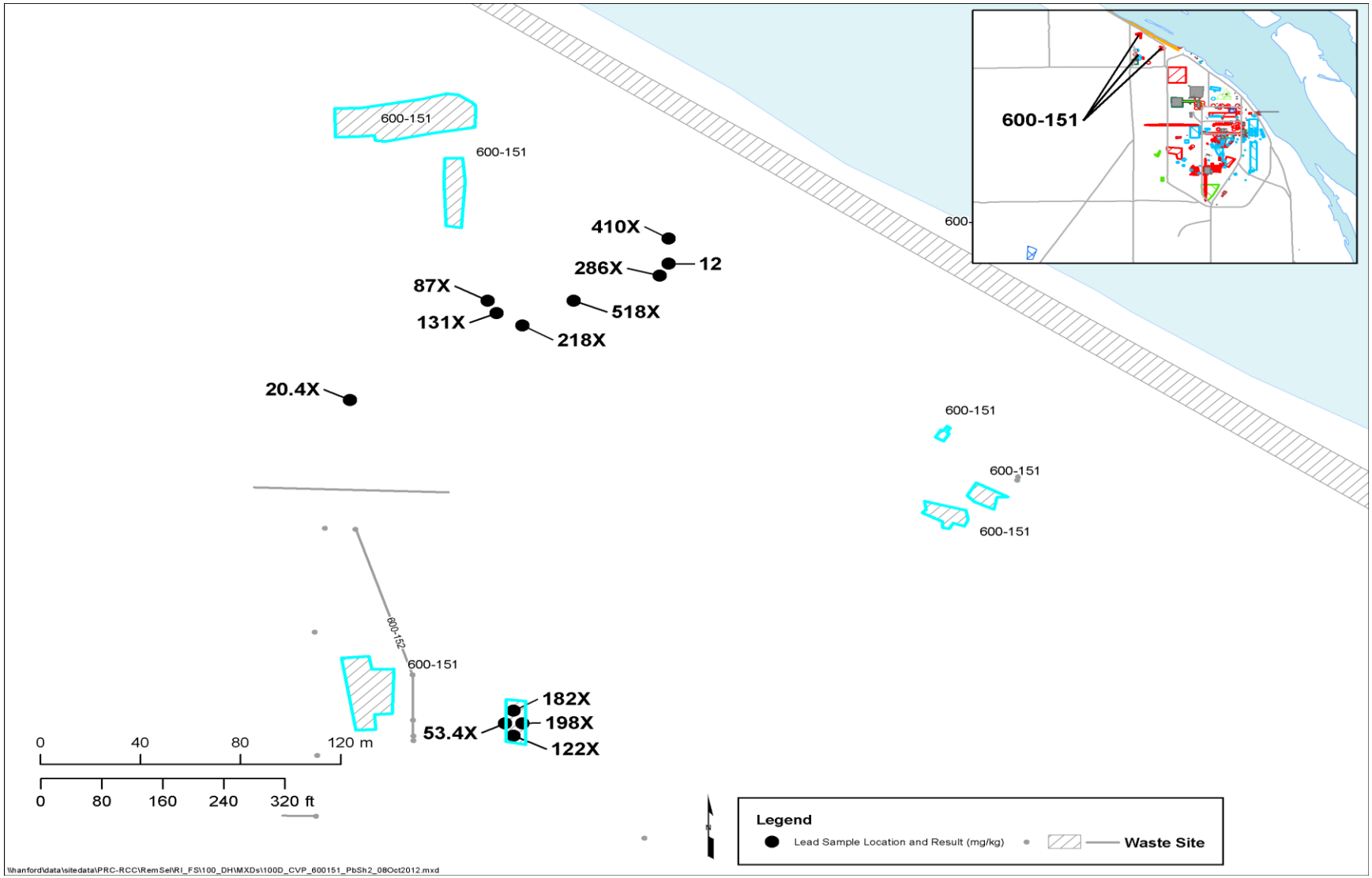

Figure H-35. (600-151) Shallow 2 Sampling Locations and Associated Lead Results

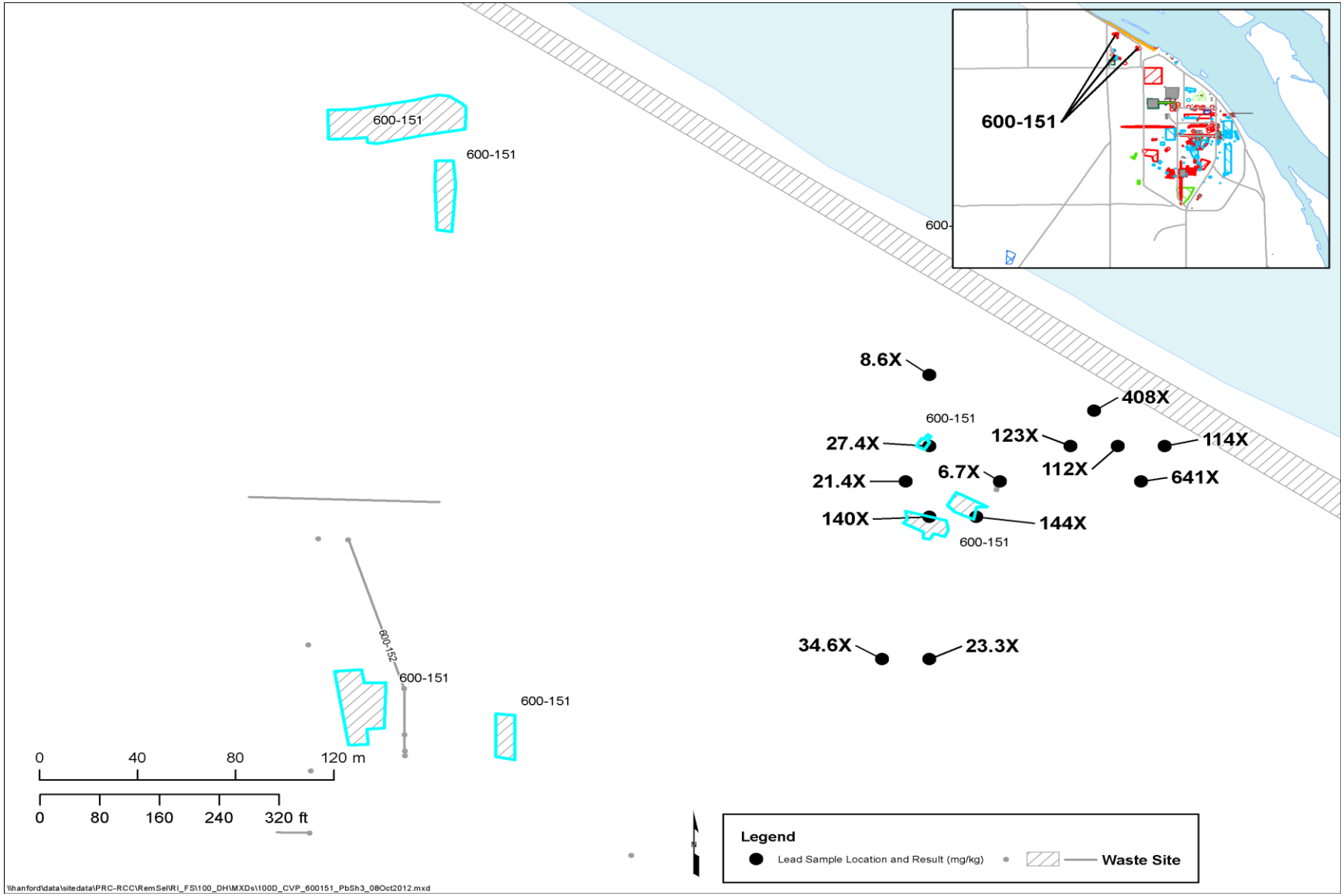

Figure H-36. (600-151) Shallow 3 Sampling Locations and Associated Lead Results

H3.Terrestrial Ecological Risk Evaluation

This section contains the terrestrial ecological risk evaluation calculations in Tables H-1 through Table H-20 as referenced in Chapter 7 of this report. Tables H-1 through H-19 listed in the contents above are in electronic format and recorded on compact disk included with this appendix.

Tables H-1 through H-6 present the supporting documentation of the values included in the terrestrial ecological risk evaluation (toxicity reference values, exposure factors, bioconcentration factors, area use factors). Tables H-7 through H-20 present the ecological risk calculations. These include the soil exposure point concentration (EPC) comparison to soil screening levels (SSL), background, and preliminary remediation goals (PRG) for each waste site and the subsequent SMDP rationale (Table H-20).

Table H-1. Avian Toxicity Reference Values for SSL Calculation

Group	Soil Constituent	Form/Surrogate Analyte	Primary Study	Test Species	Test Species Body Weight (kg)	Duration	Exposure Route	General Effect Endpoint	Specific Effect Endpoint	Uncertainty Factors Applied	Uncertainty Factor Type	NOAEL (mg/kg/d)	RCBRA NOAEL	LOAEL (mg/kg/d)	RCBRA LOAEL	Secondary Source	Notes	Selected Avian NOAEL TRV (mg/kg/d)	RCBRA NOAEL	Selected Avian LOAEL TRV (mg/kg/d)
Metals	Aluminum	aluminum sulfate	Carriere et al., 1986	ringed dove	0.155	4 month	oral in diet	reproduction				109.7		---		ES/ER/TM-86/R3		**109.7**		**---**
	Antimony																	---	---	---
	Arsenic	arsenic oxide	Holcman and Stibilj, 1997*	chicken	1.6	19 days during reproduction	oral in diet	reproduction	progeny count			2.24	2.24	---	22	OSWER Directive 9285.7-62		---	---	---
	Arsenic	sodium arsenate	Stanley et al., 1994	mallard	1	>10 weeks	oral in diet	reproduction				9.3		40.3				9.3	2.24	40.3
	Barium	barium hydroxide	Johnson et al., 1960	1-day old chicks	0.121	4 weeks	oral in diet	mortality		0.1	subchronic-chronic	20.8	73.5	41.7	131	ES/ER/TM-86/R3		20.8	73.5	41.7
	Beryllium																	---	---	---
	Bismuth																	---	---	---
	Boron	boric acid	Smith and Anders, 1989	mallard	1	3 weeks pre-, during, and 3 weeks post-reproduction	oral in diet	reproduction	egg fertility, duckling growth, embry and duckling mortality			28.8	2.92	100	14.4	ES/ER/TM-86/R3		28.8	2.92	100
	Cadmium	multiple forms	multiple studies*	multiple species								1.47	1.47	---	20	OSWER Directive 9285.7-65	Geometric mean of NOAELs for reproduction and growth	1.47	1.47	---
	Cadmium	cadmium sulfate	Leach et al., 1979*	chicken	1.6	12 weeks during egg laying	oral in diet	reproduction	egg production, progeny count			0.593	---	2.37	---	OSWER Directive 9285.7-65	lowest bounded reproductive LOAEL above the geometric mean NOAEL from EcoSSL	---	---	2.37
	Chromium (3+)	multiple forms	multiple studies*	chicken				reproduction and growth				2.66	2.66	---	5	OSWER Directive 9285.7-66	Geometric mean of NOAELs for reproduction and growth	2.66	2.66	---
	Chromium (3+)	chrome alum doceahydrate	Haseltine et al., unpublished*	black duck	1.17	180-190 days	oral in diet	reproduction	reproductive success			0.569	---	2.78	---	OSWER Directive 9285.7-66	lowest bounded reproductive LOAEL above the geometric mean NOAEL from EcoSSL	---	---	2.78
	Cobalt	multiple forms	multiple studies*	multiple species				growth	body weight			7.61	---		---	OSWER Directive 9285.7-67	Geometric mean of NOAELs for reproduction and growth	7.61	---	
	Cobalt	cobalt chloride	Hill, 1979*	chicken	0.328	5 weeks	oral in diet	growth	body weight			3.89	---	7.8	---	OSWER Directive 9285.7-67	lowest bounded reproductive LOAEL above the geometric mean NOAEL from EcoSSL	---		7.8
	Copper	copper	al Ankari et al., 1998*	chicken	1.5161	84 days during egg laying	oral in diet	reproduction	eggs per nest			4.05	4.05	12.1	61.7	OSWER Directive 9285.7-68	value is highest bounded NOAEL lower than the lowest bounded LOAEL value for reproduction, growth or survival; LOAEL is from same	4.05	4.05	12.1

Table H-1. Avian Toxicity Reference Values for SSL Calculation

Group	Soil Constituent	Form/Surrogate Analyte	Primary Study	Test Species	Test Species Body Weight (kg)	Duration	Exposure Route	General Effect Endpoint	Specific Effect Endpoint	Uncertainty Factors Applied	Uncertainty Factor Type	NOAEL (mg/kg/d)	RCBRA NOAEL	LOAEL (mg/kg/d)	RCBRA LOAEL	Secondary Source	Notes	Selected Avian NOAEL TRV (mg/kg/d)	RCBRA NOAEL	Selected Avian LOAEL TRV (mg/kg/d)
																	study			
	Lead	lead acetate	Edens and Garlich, 1983*	chicken	1.81	4 weeks during egg laying	oral in diet	reproduction	progeny count			1.63	1.63	3.26	11.3	OSWER Directive 9285.7-70	value is highest bounded NOAEL lower than the lowest bounded LOAEL value for reproduction, growth or survival; LOAEL is from same study	1.63	1.63	3.26
	Lithium																	---		---
	Manganese	multiple forms	multiple studies*	multiple species				reproduction and growth				179	179	---	377	OSWER Directive 9285.7-71	Geometric mean of NOAELs for reproduction and growth	179	179	---
	Manganese	manganese chloride tetrahydrate	Southern and Baker, 1983*	chicken	0.316	14 days	oral in diet	growth	body weight			261	---	348	---	OSWER Directive 9285.7-71	lowest bounded growth or reproductive LOAEL above the geometric mean NOAEL from EcoSSL	---	---	348
	Mercury	methyl mercury	Heinz and Hoffman, 1998; Heinz, 1979	mallard	1	2.5 months to two generations	oral in diet	reproduction				0.068	0.019	0.37	0.9			0.068	0.019	0.37
	Molybdenum	Sodium molybdate	Lepore and Miller, 1965	chicken	1.5	21 days through reproduction	oral in diet	reproduction	embryonic viability	0.1	LOAEL-NOAEL	3.53	---	35.3	35.3	ES/ER/TM-86/R3		3.53	---	35.3
	Nickel	multiple forms	multiple studies*	multiple species				reproduction and growth				6.71	6.71	---	107	OSWER Directive 9285.7-76	Geometric mean of reproduction and growth studies	6.71	6.71	---
	Nickel	nickel chloride hexahydrate	Martinez and Diaz, 1996*	chicken	1.8901	42 days	oral in diet	growth	body weight			5.76	---	11.5	---	OSWER Directive 9285.7-76	lowest bounded growth or reproductive LOAEL above the geometric mean NOAEL from EcoSSL	---	---	11.5
	Selenium	sodium selenite	El-Begearmi and Combs, 1982*	chicken	0.328	2 weeks	oral in diet	survival	mortality			0.29	0.29	0.579	1	OSWER Directive 9285.7-72	value is highest bounded NOAEL lower than the lowest bounded LOAEL value for reproduction, growth or survival; LOAEL is from same study	0.29	0.29	0.579
	Silver	silver acetate	Jensen et al., 1974*	turkey	0.662	5 weeks	oral in diet		growth	0.1	LOAEL-NOAEL	2.02	2.02	20.2	54.4	OSWER Directive 9285.7-77	lowest growth, reproduction, or survival LOAEL, with NOAEL estimated by application of UF	2.02	2.02	20.2
	Strontium																	---		---

Table H-1. Avian Toxicity Reference Values for SSL Calculation

Group	Soil Constituent	Form/Surrogate Analyte	Primary Study	Test Species	Test Species Body Weight (kg)	Duration	Exposure Route	General Effect Endpoint	Specific Effect Endpoint	Uncertainty Factors Applied	Uncertainty Factor Type	NOAEL (mg/kg/d)	RCBRA NOAEL	LOAEL (mg/kg/d)	RCBRA LOAEL	Secondary Source	Notes	Selected Avian NOAEL TRV (mg/kg/d)	RCBRA NOAEL	Selected Avian LOAEL TRV (mg/kg/d)
	Thallium											---	0.35	---	3.5			---	0.35	---
	Tin	bis(Tributyltin) oxide (TBTO)	Schlatterer et al., 1993	Japanese quail	0.15	6 weeks during reproduction	oral in diet	reproduction	egg weight and hatchability			6.8	---	16.9	---	ES/ER/TM-86/R3		6.8	---	16.9
	Uranium	depleted metallic	Haseltine and Sileo, 1983	black duck	1.25	6 weeks	oral in diet	growth, mortality, organ pathology	mortality, body weight, blood chemistry, liver or kidney effects	0.1	subchronic-chronic	16	78	---	---	ES/ER/TM-86/R3		16	78	---
	Vanadium	sodium metavanadate	Hill, 1979*	chicken	1.042	5 weeks	oral in diet	growth	body weight			0.344	0.344	0.688	---	OSWER Directive 9285.7-75	value is highest bounded NOAEL lower than the lowest bounded LOAEL value for reproduction, growth or survival; LOAEL is from same study	0.344	0.344	0.688
	Zinc	multiple forms	multiple studies*	multiple species				reproduction and growth				66.1	66.1	---	131	OSWER Directive 9285.7-73	Geometric mean of reproduction and growth studies	66.1	66.1	---
	Zinc	zinc acetate	Gibson et al., 1986*	chicken	2	10 weeks	oral in diet	reproduction	progeny count			57.3	---	66.5	---	OSWER Directive 9285.7-73	lowest bounded growth or reproductive LOAEL above the geometric mean NOAEL from EcoSSL	---	---	66.5
General Inorganics	Ammonia/Ammonium																	---		---
	Chloride																	---		---
	Cyanide																	---		---
	Fluoride		Pattee et al., 1988	screech owl	0.18	1 mo	oral in diet	reproduction	hatching success			7.8		32		ES/ER/TM-86/R3		7.8		32
	Iodine																	---		---
	Nitrate/Nitrite																	---		---
	Phosphate																	---		---
	Sulfate/Sulfite																	---		---
	Total Organic Carbon																	---		---
Volatile Organics	1,1-dichloroethane	1,2-dichloroethane (DCA)	Alumot et al., 1976b	chicken	1.6	2 yr	oral in diet	reproduction	reduced egg production			17.2		34.4		ES/ER/TM-86/R3		17.2		34.4
	1,1-dichloroethene	1,2-dichloroethane (DCA)	Alumot et al., 1976b	chicken	1.6	2 yr	oral in diet	reproduction	reduced egg production			17.2		34.4		ES/ER/TM-86/R3		17.2		34.4
	1,1,1-trichloroethane	1,2-dichloroethane (DCA)	Alumot et al., 1976b	chicken	1.6	2 yr	oral in diet	reproduction	reduced egg production			17.2		34.4		ES/ER/TM-86/R3		17.2		34.4
	1,1,2-trichloroethane	1,2-dichloroethane (DCA)	Alumot et al., 1976b	chicken	1.6	2 yr	oral in diet	reproduction	reduced egg production			17.2		34.4		ES/ER/TM-86/R3		17.2		34.4
	1,1,2,2-tetrachloroethane	1,2-dichloroethane (DCA)	Alumot et al., 1976b	chicken	1.6	2 yr	oral in diet	reproduction	reduced egg production			17.2		34.4		ES/ER/TM-86/R3		17.2		34.4

Table H-1. Avian Toxicity Reference Values for SSL Calculation

Group	Soil Constituent	Form/Surrogate Analyte	Primary Study	Test Species	Test Species Body Weight (kg)	Duration	Exposure Route	General Effect Endpoint	Specific Effect Endpoint	Uncertainty Factors Applied	Uncertainty Factor Type	NOAEL (mg/kg/d)	RCBRA NOAEL	LOAEL (mg/kg/d)	RCBRA LOAEL	Secondary Source	Notes	Selected Avian NOAEL TRV (mg/kg/d)	RCBRA NOAEL	Selected Avian LOAEL TRV (mg/kg/d)
	1,2-dichlorobenzene	1,2-dichloroethane (DCA)	Alumot et al., 1976b	chicken	1.6	2 yr	oral in diet	reproduction	reduced egg production			17.2		34.4		ES/ER/TM-86/R3		17.2		34.4
	1,2-dichloroethane (DCA)	NA	Alumot et al., 1976b	chicken	1.6	2 yr	oral in diet	reproduction	reduced egg production			17.2		34.4		ES/ER/TM-86/R3		17.2		34.4
	1,3-dichlorobenzene	1,2-dichloroethane (DCA)	Alumot et al., 1976b	chicken	1.6	2 yr	oral in diet	reproduction	reduced egg production			17.2		34.4		ES/ER/TM-86/R3		17.2		34.4
	2-butanone (Methyl Ethyl Ketone/MEK)	2-hexanone	Abou-Donia et al., 1982	chicken	1.7	90 days	oral gavage	survival, pathology, neurotoxicity	weight loss and ataxia	0.1	LOAEL-NOAEL	10		100				10		100
	2-hexanone	NA	Abou-Donia et al., 1982	chicken	1.7	90 days	oral gavage	survival, pathology, neurotoxicity	weight loss and ataxia	0.1	LOAEL-NOAEL	10		100				10		100
	Benzene	xylene	Hill and Camardese, 1986	Japanese quail		5 days	oral in diet	growth and mortality		0.01	subacute-chronic	40.7		---			5 day dietary exposure to 4066 mg/kg/d had no effect	40.7		---
	Butanol																	---		---
	Carbon Tetrachloride	1,2-dichloroethane (DCA)	Alumot et al., 1976b	chicken	1.6	2 yr	oral in diet	reproduction	reduced egg production			17.2		34.4		ES/ER/TM-86/R3		17.2		34.4
	Chlorobenzene	1,2-dichloroethane (DCA)	Alumot et al., 1976b	chicken	1.6	2 yr	oral in diet	reproduction	reduced egg production			17.2		34.4		ES/ER/TM-86/R3		17.2		34.4
	Chloroform	1,2-dichloroethane (DCA)	Alumot et al., 1976b	chicken	1.6	2 yr	oral in diet	reproduction	reduced egg production			17.2		34.4		ES/ER/TM-86/R3		17.2		34.4
	Cis-1,2-dichloroethylene	1,2-dichloroethane (DCA)	Alumot et al., 1976b	chicken	1.6	2 yr	oral in diet	reproduction	reduced egg production			17.2		34.4		ES/ER/TM-86/R3		17.2		34.4
	Dichloromethane (Methylene Chloride)	1,2-dichloroethane (DCA)	Alumot et al., 1976b	chicken	1.6	2 yr	oral in diet	reproduction	reduced egg production			17.2		34.4		ES/ER/TM-86/R3		17.2		34.4
	Ethyl Benzene	xylene	Hill and Camardese, 1986	Japanese quail		5 days	oral in diet	growth and mortality		0.01	subacute-chronic	40.7		---			5 day dietary exposure to 4066 mg/kg/d had no effect	40.7		---
	Methyl Isobutyl Ketone	2-hexanone	Abou-Donia et al., 1982	chicken	1.7	90 days	oral gavage	survival, pathology, neurotoxicity	weight loss and ataxia	0.1	LOAEL-NOAEL	10		100				10		100
	n-butyl Benzene	xylene	Hill and Camardese, 1986	Japanese quail		5 days	oral in diet	growth and mortality		0.01	subacute-chronic	40.7		---			5 day dietary exposure to 4066 mg/kg/d had no effect	40.7		---
	Tetrachloroethylene	1,2-dichloroethane (DCA)	Alumot et al., 1976b	chicken	1.6	2 yr	oral in diet	reproduction	reduced egg production			17.2		34.4		ES/ER/TM-86/R3		17.2		34.4
	Toluene	xylene	Hill and Camardese, 1986	Japanese quail		5 days	oral in diet	growth and mortality		0.01	subacute-chronic	33.3		---			5 day dietary exposure to 4066 mg/kg/d had no effect	40.7		---
	Trans-1,2-dichloroethylene	1,2-dichloroethane (DCA)	Alumot et al., 1976b	chicken	1.6	2 yr	oral in diet	reproduction	reduced egg production			17.2		34.4		ES/ER/TM-86/R3		17.2		34.4
	Trichloroethylene (TCE)	1,2-dichloroethane (DCA)	Alumot et al., 1976b	chicken	1.6	2 yr	oral in diet	reproduction	reduced egg production			17.2		34.4		ES/ER/TM-86/R3		17.2		34.4
	Xylene	NA	Hill and Camardese, 1986	Japanese quail		5 days	oral in diet	growth and mortality		0.01	subacute-chronic	40.7		---			5 day dietary exposure to 4066 mg/kg/d had no effect	40.7		---

Table H-1. Avian Toxicity Reference Values for SSL Calculation

Group	Soil Constituent	Form/Surrogate Analyte	Primary Study	Test Species	Test Species Body Weight (kg)	Duration	Exposure Route	General Effect Endpoint	Specific Effect Endpoint	Uncertainty Factors Applied	Uncertainty Factor Type	NOAEL (mg/kg/d)	RCBRA NOAEL	LOAEL (mg/kg/d)	RCBRA LOAEL	Secondary Source	Notes	Selected Avian NOAEL TRV (mg/kg/d)	RCBRA NOAEL	Selected Avian LOAEL TRV (mg/kg/d)
Polycyclic Aromatic Hydrocarbons	Acenaphthene	aromatic hydrocarbon mixture	Patton and Dieter, 1980	mallard	1.23	7 mo	oral in diet	growth	liver weight			32.5	---	325	---		Mixture of ethylbenzene, 1,2,3,4-tetrahydronaphthalene, dimethylnaphthalene, 2,3,3-trimethylindolenine, acenaphthene, acenaphthylene, phenanthrene, 2-methylbenzothiazole, dibenzothiophene, and 2,6-dimethylquinoline	32.5	---	325
	Acenaphthylene	aromatic hydrocarbon mixture	Patton and Dieter, 1980	mallard	1.23	7 mo	oral in diet	growth	liver weight			32.5	---	325	---		Mixture of ethylbenzene, 1,2,3,4-tetrahydronaphthalene, dimethylnaphthalene, 2,3,3-trimethylindolenine, acenaphthene, acenaphthylene, phenanthrene, 2-methylbenzothiazole, dibenzothiophene, and 2,6-dimethylquinoline	32.5	---	325
	Anthracene	aromatic hydrocarbon mixture	Patton and Dieter, 1980	mallard	1.23	7 mo	oral in diet	growth	liver weight			32.5	---	325	---		Mixture of ethylbenzene, 1,2,3,4-tetrahydronaphthalene, dimethylnaphthalene, 2,3,3-trimethylindolenine, acenaphthene, acenaphthylene, phenanthrene, 2-methylbenzothiazole, dibenzothiophene, and 2,6-dimethylquinoline	32.5	---	325
	Benzo(a)pyrene	benzo(a)anthracene	Beall, 2007	bobwhite quail		60 d	oral in diet	growth				0.65		---			NOAEL based on mean exposure over 60-day duration of the study.	0.65		---
	Benzo(a)anthracene	NA	Beall, 2007	bobwhite quail		60 d	oral in diet	growth				0.65		---			NOAEL based on mean exposure over 60-day duration of the study.	0.65		---
	Benzo(b)fluoranthene	benzo(a)anthracene	Beall, 2007	bobwhite quail		60 d	oral in diet	growth				0.65		---			NOAEL based on mean exposure over 60-day duration of the study.	0.65		---
	Benzo(ghi)perylene	benzo(a)anthracene	Beall, 2007	bobwhite quail		60 d	oral in diet	growth				0.65		---			NOAEL based on mean exposure over 60-day duration of the study.	0.65		---
	Benzo(k)-fluoranthene	benzo(a)anthracene	Beall, 2007	bobwhite quail		60 d	oral in diet	growth				0.65		---			NOAEL based on mean exposure over 60-day duration of the study.	0.65		---
	Chrysene	benzo(a)anthracene	Beall, 2007	bobwhite quail		60 d	oral in diet	growth				0.65		---			NOAEL based on mean exposure over 60-day	0.65		---

Table H-1. Avian Toxicity Reference Values for SSL Calculation

Group	Soil Constituent	Form/Surrogate Analyte	Primary Study	Test Species	Test Species Body Weight (kg)	Duration	Exposure Route	General Effect Endpoint	Specific Effect Endpoint	Uncertainty Factors Applied	Uncertainty Factor Type	NOAEL (mg/kg/d)	RCBRA NOAEL	LOAEL (mg/kg/d)	RCBRA LOAEL	Secondary Source	Notes	Selected Avian NOAEL TRV (mg/kg/d)	RCBRA NOAEL	Selected Avian LOAEL TRV (mg/kg/d)
																	duration of the study.			
	Dibenz(ah)anthracene	benzo(a)anthracene	Beall, 2007	bobwhite quail		60 d	oral in diet	growth				0.65		---			NOAEL based on mean exposure over 60-day duration of the study.	0.65		---
	Fluoranthene	benzo(a)anthracene	Beall, 2007	bobwhite quail		60 d	oral in diet	growth				0.65		---			NOAEL based on mean exposure over 60-day duration of the study.	0.65		---
	Fluorene	aromatic hydrocarbon mixture	Patton and Dieter, 1980	mallard	1.23	7 mo	oral in diet	growth	liver weight			32.5	---	325	---		Mixture of ethylbenzene, 1,2,3,4-tetrahydronaphthalene, dimethylnaphthalene, 2,3,3-trimethylindolenine, acenaphthene, acenaphthylene, phenanthrene, 2-methylbenzothiazole, dibenzothiophene, and 2,6-dimethylquinoline	32.5	---	325
	Indeno[1,2,3-cd]pyrene	benzo(a)anthracene	Beall, 2007	bobwhite quail		60 d	oral in diet	growth				0.65		---			NOAEL based on mean exposure over 60-day duration of the study.	0.65		---
	2-Methylnaphthalene	aromatic hydrocarbon mixture	Patton and Dieter, 1980	mallard	1.23	7 mo	oral in diet	growth	liver weight			32.5	---	325	---		Mixture of ethylbenzene, 1,2,3,4-tetrahydronaphthalene, dimethylnaphthalene, 2,3,3-trimethylindolenine, acenaphthene, acenaphthylene, phenanthrene, 2-methylbenzothiazole, dibenzothiophene, and 2,6-dimethylquinoline	32.5	---	325
	Naphthalene	aromatic hydrocarbon mixture	Patton and Dieter, 1980	mallard	1.23	7 mo	oral in diet	growth	liver weight			32.5	---	325	---		Mixture of ethylbenzene, 1,2,3,4-tetrahydronaphthalene, dimethylnaphthalene, 2,3,3-trimethylindolenine, acenaphthene, acenaphthylene, phenanthrene, 2-methylbenzothiazole, dibenzothiophene, and 2,6-dimethylquinoline	32.5	---	325

Table H-1. Avian Toxicity Reference Values for SSL Calculation

Group	Soil Constituent	Form/Surrogate Analyte	Primary Study	Test Species	Test Species Body Weight (kg)	Duration	Exposure Route	General Effect Endpoint	Specific Effect Endpoint	Uncertainty Factors Applied	Uncertainty Factor Type	NOAEL (mg/kg/d)	RCBRA NOAEL	LOAEL (mg/kg/d)	RCBRA LOAEL	Secondary Source	Notes	Selected Avian NOAEL TRV (mg/kg/d)	RCBRA NOAEL	Selected Avian LOAEL TRV (mg/kg/d)
	Phenanthrene	aromatic hydrocarbon mixture	Patton and Dieter, 1980	mallard	1.23	7 mo	oral in diet	growth	liver weight			32.5	---	325	---		Mixture of ethylbenzene, 1,2,3,4-tetrahydronaphthalene, dimethylnaphthalene, 2,3,3-trimethylindolenine, acenaphthene, acenaphthylene, phenanthrene, 2-methylbenzothiazole, dibenzothiophene, and 2,6-dimethylquinoline	32.5	---	325
	Pyrene	Benzo(a)anthracene	Beall, 2007	bobwhite quail		60 d	oral in diet	growth				0.65		---			NOAEL based on mean exposure over 60-day duration of the study.	0.65		---
	Low MW PAHs	aromatic hydrocarbon mixture	Patton and Dieter, 1980	mallard	1.23	7 mo	oral in diet	growth	liver weight			32.5	---	325	---		Mixture of ethylbenzene, 1,2,3,4-tetrahydronaphthalene, dimethylnaphthalene, 2,3,3-trimethylindolenine, acenaphthene, acenaphthylene, phenanthrene, 2-methylbenzothiazole, dibenzothiophene, and 2,6-dimethylquinoline	32.5	---	325
	High MW PAHs	benzo(a)anthracene	Beall, 2007	bobwhite quail		60 d	oral in diet	growth				0.65		---			NOAEL based on mean exposure over 60-day duration of the study.	0.65		---
Petroleum	Gasoline Range Organics	No. 2 Fuel	Szaro et al., 1981	mallard	1	18 weeks	oral in diet	mortality and growth	reduced growth			500	---	5000	---			500	---	5000
	TPH - Diesel	No. 2 Fuel	Szaro et al., 1981	mallard	1	18 weeks	oral in diet	mortality and growth	reduced growth			500	---	5000	---			500	---	5000
	TPH - Kerosene	No. 2 Fuel	Szaro et al., 1981	mallard	1	18 weeks	oral in diet	mortality and growth	reduced growth			500	---	5000	---			500	---	5000
Semivolatile Organics	Normal paraffin hydrocarbons	aliphatic hydrocarbon mixture	Patton and Dieter, 1980	mallard	1.23	7 mo	oral in diet	growth				813	---	---	---		Mixture of n-paraffins (tridecane, pentadecane, hexadecane, heptadecane, octadecane, and nonadecane), iso-paraffins (2,2,4,6,6-pentamethylheptane, 2,2,4,4,6,8,8-heptamethylnonane, and 2,6,10,14-tetramethylpentadecane), and 2-ring cyclo-paraffins (decahydronaphthalene)	813	---	---
	Phenol																	---		---

Table H-1. Avian Toxicity Reference Values for SSL Calculation

Group	Soil Constituent	Form/Surrogate Analyte	Primary Study	Test Species	Test Species Body Weight (kg)	Duration	Exposure Route	General Effect Endpoint	Specific Effect Endpoint	Uncertainty Factors Applied	Uncertainty Factor Type	NOAEL (mg/kg/d)	RCBRA NOAEL	LOAEL (mg/kg/d)	RCBRA LOAEL	Secondary Source	Notes	Selected Avian NOAEL TRV (mg/kg/d)	RCBRA NOAEL	Selected Avian LOAEL TRV (mg/kg/d)
	2-methylphenol (ocresol)																	---		---
	4-methylphenol (pcresol)																	---		---
	2,4-dinitrotoluene	NA	Johnson et al., 2005	bobwhite quail		60 d	oral gavage	hematoxicity and mortality	hematoxicity and mortality	0.01(for NOAEL) 0.25 (for LOAEL)	subchronic-chronic, inter-species differences	0.01		1.3		39-EJ-1138-01D	study and value selected based on an extensive review of available literature - documented in USACHPPM	0.01		1.3
	Bis[2-ethylhexyl] phthalate	NA	Peakall, 1974	ringed dove	0.155	4 wk (during reproduction)	oral in diet	reproduction		NA		1.1				ES/ER/TM-86/R3		1.1		---
	Total PCBs	aroclor 1254	Dahlgren et al., 1972	ring-necked pheasant	1	17 weeks during egg laying	oral via gelatin capsule	reproduction	reduced egg hatchability	0.1	LOAEL-NOAEL	0.18	0.18	1.8	1.8	ES/ER/TM-86/R3		0.18	---	1.8
	Aroclor 1016	aroclor 1254	Dahlgren et al., 1972	ring-necked pheasant	1	17 weeks during egg laying	oral via gelatin capsule	reproduction	reduced egg hatchability	0.1	LOAEL-NOAEL	0.18	---	1.8	---	ES/ER/TM-86/R3		0.18	---	1.8
	Aroclor 1221	aroclor 1254	Dahlgren et al., 1972	ring-necked pheasant	1	17 weeks during egg laying	oral via gelatin capsule	reproduction	reduced egg hatchability	0.1	LOAEL-NOAEL	0.18	---	1.8	---	ES/ER/TM-86/R3		0.18	---	1.8
	Aroclor 1232	aroclor 1254	Dahlgren et al., 1972	ring-necked pheasant	1	17 weeks during egg laying	oral via gelatin capsule	reproduction	reduced egg hatchability	0.1	LOAEL-NOAEL	0.18	---	1.8	---	ES/ER/TM-86/R3		0.18	---	1.8
	Aroclor 1242	aroclor 1254	Dahlgren et al., 1972	ring-necked pheasant	1	17 weeks during egg laying	oral via gelatin capsule	reproduction	reduced egg hatchability	0.1	LOAEL-NOAEL	0.18	---	1.8	---	ES/ER/TM-86/R3		0.18	---	1.8
	Aroclor 1248	aroclor 1254	Dahlgren et al., 1972	ring-necked pheasant	1	17 weeks during egg laying	oral via gelatin capsule	reproduction	reduced egg hatchability	0.1	LOAEL-NOAEL	0.18	---	1.8	---	ES/ER/TM-86/R3		0.18	---	1.8
	Aroclor 1254	aroclor 1254	Dahlgren et al., 1972	ring-necked pheasant	1	17 weeks during egg laying	oral via gelatin capsule	reproduction	reduced egg hatchability	0.1	LOAEL-NOAEL	0.18	0.1	1.8	1	ES/ER/TM-86/R3		0.18	0.1	1.8
	Aroclor 1260	aroclor 1254	Dahlgren et al., 1972	ring-necked pheasant	1	17 weeks during egg laying	oral via gelatin capsule	reproduction	reduced egg hatchability	0.1	LOAEL-NOAEL	0.18	2.15	1.8	3	ES/ER/TM-86/R3		0.18	2.15	1.8
	Aroclor 1262	aroclor 1254	Dahlgren et al., 1972	ring-necked pheasant	1	17 weeks during egg laying	oral via gelatin capsule	reproduction	reduced egg hatchability	0.1	LOAEL-NOAEL	0.18	2.15	1.8	3	ES/ER/TM-86/R3		0.18	2.15	1.8
Herbicide	Dichloroprop																	---		---
Pesticide	Aldrin	NA	Hall et al., 1971	ring-necked pheasant		6 weeks	oral via gelatin capsule	growth		0.1(for NOAEL) 0.25 (for LOAEL)	subchronic-chronic	0.007		0.035		39-EJ-1138-01J	study and value selected based on an extensive review of available literature - documented in USACHPPM	0.007		0.035

Table H-1. Avian Toxicity Reference Values for SSL Calculation

Group	Soil Constituent	Form/Surrogate Analyte	Primary Study	Test Species	Test Species Body Weight (kg)	Duration	Exposure Route	General Effect Endpoint	Specific Effect Endpoint	Uncertainty Factors Applied	Uncertainty Factor Type	NOAEL (mg/kg/d)	RCBRA NOAEL	LOAEL (mg/kg/d)	RCBRA LOAEL	Secondary Source	Notes	Selected Avian NOAEL TRV (mg/kg/d)	RCBRA NOAEL	Selected Avian LOAEL TRV (mg/kg/d)
	beta-1,2,3,4,5,6-Hexachloro-cyclohexane	gamma hexachlorobenzene (lindane)	Chakravarty and Lahiri, 1986; Chakravarty et al., 1986	mallard	1	8 wks	oral intubation	reproduction	eggshell thickness, egg number, etc.	0.1	for interspecies uncertainty	0.571		0.857		87-MA02T6-05C	study and value selected based on an extensive review of available literature - documented in USACHPPM	0.571		0.857
	alpha-Chlordane	chlordane	Stickel et al., 1983	red-winged blackbird	0.064	84 d	oral in diet	mortality				2.14		10.7		ES/ER/TM-86/R3		2.14		10.7
	gamma-Chlordane	chlordane	Stickel et al., 1983	red-winged blackbird	0.064	84 d	oral in diet	mortality				2.14		10.7		ES/ER/TM-86/R3		2.14		10.7
	Dichlorodiphenyl-dichloroethylene	DDT	Cecil et al., 1978	chicken		30 d	oral in diet	growth	body weight			0.227		2.27		OSWER Directive 9285.7 57	value is highest bounded NOAEL lower than the lowest bounded LOAEL value for reproduction, growth or survival; LOAEL is from same study	0.227		---
	Dichlorodiphenyl-dichloroethylene	DDT	Heath et al., 1969	mallard		1 yr	oral in diet	reproduction	reproductive success			0.563		1.892		OSWER Directive 9285.7 57	value is lowest reproductive LOAEL above the NOAEL used for the EcoSSL; NOAEL is from same study	---		1.892
	Dichlorodiphenyl-trichloroethane	NA	Cecil et al., 1978	chicken		30 d	oral in diet	growth	body weight			0.227		2.27		OSWER Directive 9285.7 57	value is highest bounded NOAEL lower than the lowest bounded LOAEL value for reproduction, growth or survival; LOAEL is from same study	0.227		---
	Dichlorodiphenyl-trichloroethane	NA	Heath et al., 1969	mallard		1 yr	oral in diet	reproduction	reproductive success			0.563		1.892		OSWER Directive 9285.7 57	value is lowest reproductive LOAEL above the NOAEL used for the EcoSSL; NOAEL is from same study	---		1.892
	Dieldrin	NA	Nebeker et al., 1992	mallard		24 d	oral in diet	growth	body weight			0.0709		3.78		OSWER Directive 9285.7 56	value is highest bounded NOAEL lower than the lowest bounded LOAEL value for reproduction, growth or survival; LOAEL is from same study	0.0709		---
	Dieldrin	NA	Wiese et al., 1968	crowned guinea fowl		21 month	oral in diet	reproduction	number of progeny			0.0671		0.223		OSWER Directive 9285.7 56	value is lowest reproductive LOAEL above the NOAEL used for the EcoSSL; NOAEL is from same study	---		0.223
	Endosulfan I	endosulfan	Abiola, 1992	gray partridge	0.4	4 wk (during reproduction)	oral in diet	reproduction				10		---		ES/ER/TM-86/R3		10		---

Table H-1. Avian Toxicity Reference Values for SSL Calculation

Group	Soil Constituent	Form/Surrogate Analyte	Primary Study	Test Species	Test Species Body Weight (kg)	Duration	Exposure Route	General Effect Endpoint	Specific Effect Endpoint	Uncertainty Factors Applied	Uncertainty Factor Type	NOAEL (mg/kg/d)	RCBRA NOAEL	LOAEL (mg/kg/d)	RCBRA LOAEL	Secondary Source	Notes	Selected Avian NOAEL TRV (mg/kg/d)	RCBRA NOAEL	Selected Avian LOAEL TRV (mg/kg/d)
	Endosulfan II	endosulfan	Abiola, 1992	gray partridge	0.4	4 wk (during reproduction)	oral in diet	reproduction				10		---		ES/ER/TM-86/R3		10		---
	Endosulfan sulfate	endosulfan	Abiola, 1992	gray partridge	0.4	4 wk (during reproduction)	oral in diet	reproduction				10		---		ES/ER/TM-86/R3		10		---
	Endrin aldehyde	endrin	Spann et al., 1986	mallard	1.15	>200 d	oral in diet	reproduction				0.3		---		ES/ER/TM-86/R3		0.3		---
	Methoxychlor																	---		---

Notes:

Uncertainty factors were used to adjust all measured effect concentrations to chronic NOAELS and chronic LOAELs as follows:

LOAEL to NOAEL = 0.1

Subchronic to chronic = 0.1

where:

chronic = >12 weeks or during critical lifestage

subchronic = 4 to 12 weeks

These uncertainty factors are consistent with methods used in development of the EcoSSLs (OSWER Directive 9285.7-55) and are more conservative than uncertainty factors recommended in Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments: Interim Final (EPA 540-R-97-006).

*Study information and calculated NOAELs and LOAELs for these sources were taken directly from the cited EcoSSL report developed by the EPA. All other primary sources were obtained, reviewed, and TRVs were extracted or developed from the study.

EcoSSL = Ecologicla Soil Screenign Level

EPA = United States Evironmental Protection Agency

LOAEL = lowest observable adverse effect level

NOAEL = no observable adverse effect level

mg/kg/d = milligram per kilogram per day

TRV = toxicity reference value

USACHPPM = United States Army Center for Health Promotion and Preventive Medicine

Bold = values selected as the avian TRVs

Table H-2. Mammalian Toxicity Reference Values for SSL Calculation

Group	Soil Constituent	Form/Surrogate Analyte	Primary Study	Test Species	Test Species Body Weight (kg)	Duration	Exposure Route	General Effect Endpoint	Specific Effect Endpoint	Uncertainty Factors Applied	Uncertainty Factor type	NOAEL (mg/kg/d)	LOAEL (mg/kg/d)	Secondary Source	Notes	Selected Mammalian NOAEL TRV (mg/kg/d)	RCBRA NOAEL	Selected Mammalian LOAEL TRV (mg/kg/d)
Metals	Aluminum	aluminum chloride	Ondreicka et al., 1966	mouse	0.03	3 generations	oral in water	reproduction	offspring growth	0.1	LOAEL-NOAEL	1.93	19.3	ES/ER/TM-86/R3	Note that soil pH must be <5.5 (EPA, 2003) for Al to be bioavailable.	**1.93**		**19.3**
	Antimony	antimony trichloride	*Rossi et al., 1987	rat	0.33	31 days	oral in water	reproduction	progeny body weight			0.059	0.59	OSWER Directive 9285.7-61	value is highest bounded NOAEL lower than the lowest bounded LOAEL value for reproduction, growth or survival; LOAEL is from same study	0.059	0.059	0.59
	Arsenic	sodium arsenite	*Neiger and Osweiler, 1989	dog	10.1	8 weeks	oral in diet	growth	reduced body weight			1.04	1.66	OSWER Directive 9285.7-62	value is highest bounded NOAEL lower than the lowest bounded LOAEL value for reproduction, growth or survival; LOAEL is from same study	1.04	1.04	1.66
	Barium	multiple forms	*multiple studies	multiple species								51.8		OSWER Directive 9285.7-63	geometric mean of NOAELs for reproduction and growth	---	73.5	---
	Barium	barium chloride	NTP, 1994	rat	0.35	105 weeks	oral in water	nephrotoxicity	increased kidney weight			45	75		study selected because NOAEL is similar to EcoSSL, study is of long duration, and a LOAEL was identified.	45	---	75
	Beryllium	beryllium sulfate	*Schroeder and Mitchener, 1975	rat	0.486	lifetime	oral in water	longevity				0.532		OSWER Directive 9285.7-64	Same study as ES/E/TM-86/R3, but used different body weight in calculation of NOAEL	0.532	---	---
	Bismuth															---		---
	Boron	boric acid or Borax	Weir and Fischer, 1972	rat	0.35	three generations	oral in diet	reproduction	sterility			28	93.6	ES/ER/TM-86/R3		28	28	93.6
	Cadmium	cadmium acetate	*Yuhas et al., 1979	rat	0.43	2 weeks	oral in water	growth	body weight			0.77	7.7	OSWER Directive 9285.7-65	value is highest bounded NOAEL lower than the lowest bounded LOAEL value for reproduction, growth or survival; LOAEL is from same study	---	0.77	---
	Cadmium	cadmium chloride	Sutou et al., 1980a and 1980b	rat	0.303	6 weeks during reproduction	oral gavage	reproduction	reduced fetal survival			1	10	ES/ER/TM-86/R3	The ORNL TRV for cadmium was selected as it represents reproductive effects, is a longer study, and is comparable to the TRV used for EcoSSLs	1		10
	Chromium (6+)	multiple forms	*multiple studies	multiple species				reproduction and growth				9.24		OSWER Directive 9285.7-66	geometric mean of NOAELs for reproduction and growth	9.24	9.24	---
	Chromium (6+)	sodium dichromate	Chowdhury and Mitra, 1995	rat	0.3084	90 days	oral gavage	reproduction	testes weight			20	40	OSWER Directive 9285.7-66	lowest bounded reproductive LOAEL above the geometric mean NOAEL from EcoSSL	---	---	40
	Chromium (3+)	multiple forms	*multiple studies	multiple species				reproduction and growth				2.4		OSWER Directive 9285.7-66	geometric mean of NOAELs for reproduction and growth	2.4	9.24	---
	Chromium (3+)	chromium sulfate	*Zahid et al., 1990	mouse	0.0249	35 days	oral in diet	reproduction	sperm cell counts	0.1	LOAEL-NOAEL	0.962	9.62	OSWER Directive 9285.7-66	lowest reproductive LOAEL above the geometric mean NOAEL from EcoSSL	---	---	9.62

Table H-2. Mammalian Toxicity Reference Values for SSL Calculation

Group	Soil Constituent	Form/Surrogate Analyte	Primary Study	Test Species	Test Species Body Weight (kg)	Duration	Exposure Route	General Effect Endpoint	Specific Effect Endpoint	Uncertainty Factors Applied	Uncertainty Factor type	NOAEL (mg/kg/d)	LOAEL (mg/kg/d)	Secondary Source	Notes	Selected Mammalian NOAEL TRV (mg/kg/d)	RCBRA NOAEL	Selected Mammalian LOAEL TRV (mg/kg/d)
	Cobalt	multiple forms	*multiple studies	multiple species				reproduction and growth				7.33		OSWER Directive 9285.7-67	geometric mean of NOAELs for reproduction and growth	7.33	---	---
	Cobalt	cobalt chloride	*Domingo et al., 1985	rat	0.3	28 days	gavage	reproduction	progeny body weight			5.45	10.9	OSWER Directive 9285.7-67	lowest bounded reproductive LOAEL above the geometric mean NOAEL from EcoSSL	---	---	10.9
	Copper	copper sulfate pentahydrate	*Allcroft et al., 1961	pig	100	4 weeks	oral in diet	growth	body weight			5.6	9.34	OSWER Directive 9285.7-68	value is highest bounded NOAEL lower than the lowest bounded LOAEL value for reproduction, growth or survival; LOAEL is from same study	5.6	5.6	9.34
	Lead	lead acetate	*Kimmel et al., 1980	rat	0.3	7 weeks during gestation	oral in water	growth	body weight			4.7	8.9	OSWER Directive 9285.7-68	value is highest bounded NOAEL lower than the lowest bounded LOAEL value for reproduction, growth or survival; LOAEL is from same study	4.7	4.7	8.9
	Lithium	lithium carbonate	Marathe and Thomas, 1986	rat	0.35	days 6-15 of gestation	oral in diet	reproduction	reduced number of offspring			9.4	18.8	ES/ER/TM-86/R3		9.4		18.8
	Manganese	multiple forms	*multiple studies	multiple species				reproduction and growth				51.5		OSWER Directive 9285.7-71	geometric mean of NOAELs for reproduction and growth	51.5	51.5	---
	Manganese	manganese oxide	*Rehnberg et al., 1980	rat	0.0566	20 days	gavage	reproduction, growth	reproductive organ histology, body weight			21	71	OSWER Directive 9285.7-71	lowest bounded growth or reproductive LOAEL above the geometric mean NOAEL from EcoSSL	---	---	71
	Mercury	methylmercury chloride	Verschuuren et al., 1976a	rat	0.35	three generations	oral in diet	reproduction	pup viability			0.032	0.16	ES/ER/TM-86/R3		0.032	1.41	0.16
	Molybdenum	molybdate (MoO4)	Schroeder and Mitchener, 1971	mouse	0.03	three generations	oral in water	reproduction	reproductive success, number of runts	0.1	LOAEL-NOAEL	0.26	2.6	ES/ER/TM-86/R3		0.26	---	2.6
	Nickel	nickelous chloride	*Pandey and Srivastava, 2000	mouse	0.025	35 days	oral (other)	reproduction	sperm cell counts			1.7	3.4	OSWER Directive 9285.7-76	value is highest bounded NOAEL lower than the lowest bounded LOAEL value for reproduction, growth or survival; LOAEL is from same study	1.7	1.7	3.4
	Selenium	sodium selenite	*Mahan and Moxon, 1984	pig	17.8	37 days	oral in diet	growth	body weight			0.143	0.215	OSWER Directive 9285.7-72	value is highest bounded NOAEL lower than the lowest bounded LOAEL value for reproduction, growth or survival; LOAEL is from same study	0.143	0.143	0.215
	Silver	silver acetate	*Van Vleet, 1976	pig	8.86	40 days	oral in diet	growth	body weight	0.1	LOAEL-NOAEL	6.02	60.2	OSWER Directive 9285.7-77	lowest growth, reproduction, or survival LOAEL, with NOAEL estimated by application of UF	6.02	6.02	60.2
	Strontium	strontium chloride	Skoryna, 1981	rat	0.35	3 yrs	oral in water	growth	body weight			263		ES/ER/TM-86/R3		263		---

Table H-2. Mammalian Toxicity Reference Values for SSL Calculation

Group	Soil Constituent	Form/Surrogate Analyte	Primary Study	Test Species	Test Species Body Weight (kg)	Duration	Exposure Route	General Effect Endpoint	Specific Effect Endpoint	Uncertainty Factors Applied	Uncertainty Factor type	NOAEL (mg/kg/d)	LOAEL (mg/kg/d)	Secondary Source	Notes	Selected Mammalian NOAEL TRV (mg/kg/d)	RCBRA NOAEL	Selected Mammalian LOAEL TRV (mg/kg/d)
	Thallium	thallium sulfate	Formigli et al., 1986	rat	0.365	60 days	drinking water	reproduction	sperm motility	0.05 and 0.25	subchronic LOAEL-chronic NOAEL; subchronic LOAEL-chronic LOAEL	0.015	0.075	ES/ER/TM-86/R3; 37 EJ1138 01O	study and value selected based on an extensive review of available literature - documented in USACHPPM	0.015	0.0071	0.075
	Tin	bis(tibutyltin) oxide (TBTO)	Davis et al., 1987	mouse	0.03	days 6-15 of gestation	oral intubation	reproduction	reduced fetal weight and fetal survival			23.4	35	ES/ER/TM-86/R3		23.4	---	35
	Uranium	uranyl acetate	Domingo et al., 1989a	mouse	0.028	gestational days 6-15	drinking water	reproduction	pup survival and body weight	0.1	LOAEL-NOAEL	0.28	2.8		Statistically significant 25.5% fetal growth reduction at a dose of 2.8 mg U/kg/d.	0.28	0.1	2.8
	Vanadium	sodium orthovanadate	*Sanchez et al., 1991	mouse	0.047	12 days during gestation	gavage	reproduction	ODVP			4.16	8.31	OSWER Directive 9285.7-75	value is highest bounded NOAEL lower than the lowest bounded LOAEL value for reproduction, growth or survival; LOAEL is from same study	4.16	4.16	8.31
	Zinc	various forms	*multiple studies	multiple species				reprodution and growth				75.4		OSWER Directive 9285.7-73	geometric mean of NOAELs for reproduction and growth	75.4	75.4	---
	Zinc	zinc sulfate	*Miller et al., 1989	cattle	580	14 weeks	oral in diet	reproduction	progeny body weight			37.9	75.9	OSWER Directive 9285.7-73	lowest bounded growth or reproductive LOAEL above the geometric mean NOAEL from EcoSSL	---		75.9
General Inorganics	Ammonia/Ammonium															---		---
	Chloride															---		---
	Cyanide	potassium cyanide	Tewe and Maner, 1981	rat	0.273	gestation and lactation	oral in diet	reproduction	juvenile growth			68.7	---	ES/ER/TM-86/R3		68.7		---
	Fluoride	sodium fluoride	Aulerich et al., 1987	mink	1	382 days	oral in diet	reproduction	kit survival			31.37	52.75	ES/ER/TM-86/R3		31.37		52.75
	Iodine	potassium iodide	Aulerich et al., 1978	mink	1	breeding through lactation	oral in diet	reproduction	kit survival			1.37	13.7			1.37		13.7
	Nitrate/Nitrite	potassium nitrate	Sleight and Atallah, 1968	guinea pig	0.86	143-204 days	oral in water	reproduction	number of live births			507	1130	ES/ER/TM-86/R3		507		1130
	Phosphate															---		---
	Sulfate/Sulfite															---		---
	Total Organic Carbon															---		---
Volatile Organics	1,1-dichloroethane	1,2-dichloroethane (DCA)	Lane et al., 1982	mouse	0.035	2 generations	oral in water	reproduction				50	---	ES/ER/TM-86/R3		50		---
	1,1-dichloroethene	NA	Quast et al., 1983	rat	0.35	2 years	oral in water	mortality, body weight				30	---	ES/ER/TM-86/R3		30		---
	1,1,1-trichloroethane	NA	Lane et al., 1982	mouse	0.035	2	oral in	reproduction				1000	---	ES/ER/TM-		1000		---

Table H-2. Mammalian Toxicity Reference Values for SSL Calculation

Group	Soil Constituent	Form/Surrogate Analyte	Primary Study	Test Species	Test Species Body Weight (kg)	Duration	Exposure Route	General Effect Endpoint	Specific Effect Endpoint	Uncertainty Factors Applied	Uncertainty Factor type	NOAEL (mg/kg/d)	LOAEL (mg/kg/d)	Secondary Source	Notes	Selected Mammalian NOAEL TRV (mg/kg/d)	RCBRA NOAEL	Selected Mammalian LOAEL TRV (mg/kg/d)
						generations	water							86/R3				
	1,1,2-trichloroethane	1,1,1-trichloroethane	Lane et al., 1982	mouse	0.035	2 generations	oral in water	reproduction				1000	---	ES/ER/TM-86/R3		1000		---
	1,1,2,2-tetrachloroethane	1,1,1,2-tetrachloroethane	NTP, 1983	rat		103 wks	oral gavage	nephrotoxicity		0.1	LOAEL-NOAEL	8.93	89.3	IRIS	Verified on IRIS (http://www.epa.gov/ncea/iris/subst/0265.htm) Dec 11, 2009	8.93		89.3
	1,2-dichlorobenzene	NA	NTP, 1985	rat		2 yrs	oral gavage	survival and pathology				85.7	---	IRIS	Verified on IRIS (http://www.epa.gov/ncea/iris/subst/0408.htm) Dec 11, 2009	85.7		---
	1,2-dichloroethane (DCA)	NA	Lane et al., 1982	mouse	0.035	2 generations	oral in water	reproduction				50	---	ES/ER/TM-86/R3		50		---
	1,3-dichlorobenzene	1,2-dichlorobenzene	NTP, 1985	rat		2 yrs	oral gavage	survival and pathology				85.7	---	IRIS	Verified on IRIS (http://www.epa.gov/ncea/iris/subst/0408.htm) Dec 11, 2009	85.7		---
	2-butanone (Methyl Ethyl Ketone/MEK)	NA	Cox et al., 1975	rat	0.35	2 generations	oral in water	reproduction	reduced litter size and pup survival			1771	4571	ES/ER/TM-86/R3		1771		4571
	2-hexanone	NA	O'Donoghue et al., 1978	rat		13 month	oral in water	neurotoxicity				5	36.1	IRIS	Verified on IRIS (http://www.epa.gov/ncea/iris/subst/1019.htm) Dec 11, 2009; NOAEL is BMDL10 value; LOAEL is BMD10 value	5		36.1
	Benzene	NA	Wolf et al., 1956	rat	0.175-0.250	187 days	oral gavage	survival and pathology	hemotoxicity			0.7	7			0.7		7
	Butanol	NA	EPA, 1986	rat		13 weeks	oral gavage	hypoactivity/ataxia				125	500	IRIS	Verified on IRIS (http://www.epa.gov/ncea/iris/subst/0140.htm) Dec 11, 2009	125		500
	Carbon Tetrachloride	NA	Alumot et al., 1976a	rat	0.35	2 yrs	oral in diet	reproduction				16	---	ES/ER/TM-86/R3		16		---
	Chlorobenzene	NA	Monsanto Co., 1967	dog		13 weeks	oral in capsules	liver pathology				19.5	38.7	IRIS	Verified on IRIS (http://www.epa.gov/ncea/iris/subst/0399.htm) Dec 11, 2009	19.5		38.7
	Chloroform	NA	Palmer et al., 1979	rat	0.35	13 wk	oral intubation	liver, kidney, gonad condition	gonadal atrophy	0.1	subchronic-chronic	15	41	ES/ER/TM-86/R3		15		41
	Cis-1,2-dichloroethylene	1,2-dichloroethylene	Palmer et al., 1979	mouse	0.03	90 days	oral in water	body and organ weights				45.2	---	ES/ER/TM-86/R3		45.2		---
	Dichloromethane (Methylene Chloride)	NA	NCA, 1982	rat	0.35	2 yrs	oral in water	liver histology				5.85	50	ES/ER/TM-86/R3		5.85		50
	Ethyl Benzene	NA	Wolf et al., 1956	rat	0.175-0.250	182 days	oral gavage	survival and pathology	liver and kidney histopathology			136	408			97.1		291
	Methyl Isobutyl Ketone	2-butanone (Methyl Ethyl Ketone/MEK)	Cox et al., 1975	rat	0.35	2 generations	oral in water	reproduction	reduced litter size and pup survival			1771	4571	ES/ER/TM-86/R3		1771		4571
	n-butyl Benzene	isopropyl benzene	Wolf et al., 1956	rat	0.175-0.250	194 days	oral gavage	survival and pathology	increased kidney weight			110	330			110		330

Table H-2. Mammalian Toxicity Reference Values for SSL Calculation

Group	Soil Constituent	Form/Surrogate Analyte	Primary Study	Test Species	Test Species Body Weight (kg)	Duration	Exposure Route	General Effect Endpoint	Specific Effect Endpoint	Uncertainty Factors Applied	Uncertainty Factor type	NOAEL (mg/kg/d)	LOAEL (mg/kg/d)	Secondary Source	Notes	Selected Mammalian NOAEL TRV (mg/kg/d)	RCBRA NOAEL	Selected Mammalian LOAEL TRV (mg/kg/d)
	Tetrachloroethylene	1,1,2,2-tetrachloroethylene	Buben and O'Flaherty, 1985	mouse	0.03	6 weeks	oral gavage	hepatotoxicity		0.1	LOAEL-NOAEL	1.4	7	ES/ER/TM-86/R3		1.4		7
	Toluene	NA	Gospe et al., 1994	rat	0.2	gestation days 6-19	oral gavage	reproduction	maternal weight loss			52	520			52		520
	Trans-1,2-dichloroethylene	1,2-dichloroethylene	Palmer et al., 1979	mouse	0.03	90 days	oral in water	body and organ weights				45.2	---	ES/ER/TM-86/R3		45.2		---
	Trichloroethylene (TCE)	NA	Buben and O'Flaherty, 1985	mouse	0.03	6 weeks	oral gavage	hepatotoxicity		0.01	LOAEL-NOAEL subchronic-chronic	0.7	7	ES/ER/TM-86/R3		0.7		7
	Xylene	xylene mixture	NTP, 1986	rat		103 wks	oral gavage	behavior growth mortality				179	350			179		350
Polycyclic Aromatic Hydrocarbons	Acenaphthene	NA	EPA, 1989a	mouse	0.03	90 days	oral gavage	hepatotoxicity	liver weight changes and cellular hypertrophy			175	350	IRIS	Verified on IRIS (http://www.epa.gov/ncea/iris/subst/0442.htm) Dec 9, 2009	175	65.6	350
	Acenaphthylene	acenaphthene	EPA, 1989a	mouse	0.03	90 days	oral gavage	hepatotoxicity	liver weight changes and cellular hypertrophy			175	350	IRIS	Verified on IRIS (http://www.epa.gov/ncea/iris/subst/0442.htm) Dec 9, 2009	175	65.6	350
	Anthracene	NA	EPA, 1989b	mouse	0.03	90 days	oral gavage	survival and pathology	reduced body weight			1000	---	IRIS	Verified on IRIS (http://www.epa.gov/ncea/iris/subst/0434.htm) Dec 9, 2009	1000	65.6	---
	Benzo(a)pyrene	NA	Mackenzie and Angevine, 1981	mouse	0.03	gestation days 7-16	oral intubation	reproduction	reduced pregnancy rate and fertility	0.1	LOAEL-NOAEL	1	10	ES/ER/TM-86/R3; 39-EJ-1138-01P	study and value selected based on an extensive review of available literature - documented in USACHPPM	1	---	10
	Benzo(a)anthracene	benzo(a)pyrene	Mackenzie and Angevine, 1981	mouse	0.03	gestation days 7-16	oral intubation	reproduction	reduced pregnancy rate and fertility	0.1	LOAEL-NOAEL	1	10	ES/ER/TM-86/R3; 39-EJ-1138-01P	study and value selected based on an extensive review of available literature - documented in USACHPPM	1	---	10
	Benzo(b)fluoranthene	benzo(a)pyrene	Mackenzie and Angevine, 1981	mouse	0.03	gestation days 7-16	oral intubation	reproduction	reduced pregnancy rate and fertility	0.1	LOAEL-NOAEL	1	10	ES/ER/TM-86/R3; 39-EJ-1138-01P	study and value selected based on an extensive review of available literature - documented in USACHPPM	1	---	10
	Benzo(ghi)perylene	benzo(a)pyrene	Mackenzie and Angevine, 1981	mouse	0.03	gestation days 7-16	oral intubation	reproduction	reduced pregnancy rate and fertility	0.1	LOAEL-NOAEL	1	10	ES/ER/TM-86/R3; 39-EJ-1138-01P	study and value selected based on an extensive review of available literature - documented in USACHPPM	1	---	10
	Benzo(k)fluoranthene	benzo(a)pyrene	Mackenzie and Angevine, 1981	mouse	0.03	gestation days 7-16	oral intubation	reproduction	reduced pregnancy rate and fertility	0.1	LOAEL-NOAEL	1	10	ES/ER/TM-86/R3; 39-EJ-1138-01P	study and value selected based on an extensive review of available literature - documented in USACHPPM	1	---	10
	Chrysene	benzo(a)pyrene	Mackenzie and Angevine, 1981	mouse	0.03	gestation days 7-16	oral intubation	reproduction	reduced pregnancy rate and fertility	0.1	LOAEL-NOAEL	1	10	ES/ER/TM-86/R3; 39-EJ-1138-01P	study and value selected based on an extensive review of available literature - documented in	1	---	10

Table H-2. Mammalian Toxicity Reference Values for SSL Calculation

Group	Soil Constituent	Form/Surrogate Analyte	Primary Study	Test Species	Test Species Body Weight (kg)	Duration	Exposure Route	General Effect Endpoint	Specific Effect Endpoint	Uncertainty Factors Applied	Uncertainty Factor type	NOAEL (mg/kg/d)	LOAEL (mg/kg/d)	Secondary Source	Notes	Selected Mammalian NOAEL TRV (mg/kg/d)	RCBRA NOAEL	Selected Mammalian LOAEL TRV (mg/kg/d)
															USACHPPM			
	Dibenz(ah)anthracene	benzo(a)pyrene	Mackenzie and Angevine, 1981	mouse	0.03	gestation days 7-16	oral intubation	reproduction	reduced pregnancy rate and fertility	0.1	LOAEL-NOAEL	1	10	ES/ER/TM-86/R3; 39-EJ-1138-01P	study and value selected based on an extensive review of available literature - documented in USACHPPM	1	---	10
	Fluoranthene	NA	EPA, 1988	mouse	0.03	13 weeks	oral gavage	nephropathy	increased liver wt and pathology			125	250	IRIS	Verified on IRIS (http://www.epa.gov/ncea/iris/subst/0444.htm) Dec 9, 2009	125	65.6	250
	Fluorene	NA	EPA, 1989c	mouse	0.03	13 weeks	oral gavage	hemotoxicity				125	250	IRIS	Verified on IRIS (http://www.epa.gov/ncea/iris/subst/0435.htm) Dec 9, 2009	125	65.6	250
	Indeno[1,2,3-cd]pyrene	benzo(a)pyrene	Mackenzie and Angevine, 1981	mouse	0.03	gestation days 7-16	oral intubation	reproduction	reduced pregnancy rate and fertility	0.1	LOAEL-NOAEL	1	10	ES/ER/TM-86/R3; 39-EJ-1138-01P	study and value selected based on an extensive review of available literature - documented in USACHPPM	1	---	10
	2-Methylnaphthalene	NA	Murata et al., 1997	mouse	0.0425	81 wks	oral in diet	survival and pathology	pulmonary pathology			50.3	113.8			50.3		113.8
	Naphthalene	NA	NTP, 1992	rat	0.24	days 6-15 of gestation	oral gavage	reproduction	maternal weight loss			50	150			50	65.6	150
	Phenanthrene	anthracene	EPA, 1989b	rat	0.03	90 days	oral gavage	survival and pathology	reduced body weight			1000	---	IRIS	Verified on IRIS (http://www.epa.gov/ncea/iris/subst/0434.htm) Dec 9, 2009	1000	65.6	---
	Pyrene	NA	EPA, 1989d	mouse	0.03	13 weeks	oral gavage	nephropathy				75	125	IRIS	Verified on IRIS (http://www.epa.gov/ncea/iris/subst/0445.htm) Dec 9, 2009	75	60	125
	Low MW PAHs	1-naphthaleneacetic acid	*Verschuuren et al., 1976b	rat	0.247	6 weeks	oral in diet	growth	reduced body weight			65.6	328	OSWER Directive 9285.7-78	value is highest bounded NOAEL lower than the lowest bounded LOAEL value for reproduction, growth or survival; LOAEL is from same study	65.6	---	328
	High MW PAHs	benzo(a)pyrene	*Culp et al., 1998	mouse	0.038	55 weeks	oral in diet	survival	reduced survival			0.615	3.07	OSWER Directive 9285.7-78	value is highest bounded NOAEL lower than the lowest bounded LOAEL value for reproduction, growth or survival; LOAEL is from same study	0.615	0.615	3.07
Petroleum	Gasoline Range Organics	JP-8 jet fuel	Cooper and Mattie, 1996	rat	0.35	gestation days 6-15	oral gavage	reproduction	adult and fetal weight; fetal mortality			1000	1500			1000		1500
	TPH - Diesel	JP-8 jet fuel	Cooper and Mattie, 1996	rat	0.35	gestation days 6-15	oral gavage	reproduction	adult and fetal weight; fetal mortality			1000	1500			1000		1500
	TPH - Kerosene	JP-8 jet fuel	Cooper and Mattie, 1996	rat	0.35	gestation days 6-15	oral gavage	reproduction	adult and fetal weight; fetal mortality			1000	1500			1000		1500
Semivolatile Organics	Normal paraffin hydrocarbons	JP-8 jet fuel	Cooper and Mattie, 1996	rat	0.35	gestation days 6-15	oral gavage	reproduction	adult and fetal weight; fetal mortality			1000	1500			1000		1500

Table H-2. Mammalian Toxicity Reference Values for SSL Calculation

Group	Soil Constituent	Form/Surrogate Analyte	Primary Study	Test Species	Test Species Body Weight (kg)	Duration	Exposure Route	General Effect Endpoint	Specific Effect Endpoint	Uncertainty Factors Applied	Uncertainty Factor type	NOAEL (mg/kg/d)	LOAEL (mg/kg/d)	Secondary Source	Notes	Selected Mammalian NOAEL TRV (mg/kg/d)	RCBRA NOAEL	Selected Mammalian LOAEL TRV (mg/kg/d)
	Phenol	NA	EPAOTS0573686	rat		gestation days 6-15	oral gavage	reproduction	reduced fetal weight	0.1	for interspecies uncertainty	12	36	87-MA02T6-05E	study and value selected based on an extensive review of available literature - documented in USACHPPM	12		36
	2-methylphenol (ocresol)	NA	Hornshaw et al., 1986	mink	0.958	6 month	oral in diet	reproduction				313	---	ES/ER/TM-86/R3	calculations have been updated to use body weight and ingestion data from primary source	313		---
	4-methylphenol (pcresol)	2-methylphenol (ocresol)	Hornshaw et al., 1986	mink	0.958	6 month	oral in diet	reproduction				313	---	ES/ER/TM-86/R3	calculations have been updated to use body weight and ingestion data from primary source	313		---
	2,4-dinitrotoluene	NA	Ellis et al., 1979	dog		24 months	oral in capsules	hemotoxicity and mortality	hemotoxicity and mortality			0.67	1.4	39-EJ-1138-01D	NOAEL and LOAEL are LED10 and ED10 values, respectively calculated using EPA benchmark dose software. Study for benchmark calculation selected based on an extensive review of available literature - documented in USACHPPM	0.67		1.4
	Bis[2-ethylhexyl] phthalate	NA	Lamb et al., 1987	mouse	0.03	105 days (during reproduction)	oral in diet	reproduction				18.3	183	ES/ER/TM-86/R3		18.3		183
	Total PCBs	aroclor 1254	McCoy et al., 1995	Oldfield mouse	0.014	12 months	oral in diet	reproduction	reduced number of litters, pup body weight, and pup survival	0.1	LOAEL-NOAEL	0.068	0.68	ES/ER/TM-86/R3		0.068	0.068	0.68
	Aroclor 1016	aroclor 1016	EPA-600/3-80-033	mink	1	18 months	oral in diet	reproduction	reduced kit growth			1.37	3.43	ES/ER/TM-86/R3		1.37	---	3.43
	Aroclor 1221	aroclor 1254	McCoy et al., 1995	Oldfield mouse	0.014	12 months	oral in diet	reproduction	reduced number of litters, pup body weight, and pup survival	0.1	LOAEL-NOAEL	0.068	0.68	ES/ER/TM-86/R3		0.068	---	0.68
	Aroclor 1232	aroclor 1254	McCoy et al., 1995	Oldfield mouse	0.014	12 months	oral in diet	reproduction	reduced number of litters, pup body weight, and pup survival	0.1	LOAEL-NOAEL	0.068	0.68	ES/ER/TM-86/R3		0.068	---	0.68
	Aroclor 1242	aroclor 1242	Bleavins et al., 1980	mink	1	7 months	oral in diet	reproduction	total reproductive failure	0.1	LOAEL-NOAEL	0.069	0.69	ES/ER/TM-86/R3		0.069	---	0.69
	Aroclor 1248	aroclor 1248	Barsotti et al., 1976	Rhesus monkey	5	14 months	oral in diet	reproduction	reduced pregnancy and live birth rates	0.1	LOAEL-NOAEL	0.0087	0.087	ES/ER/TM-86/R3	recalculated: study reports PCB consumption of 0.43 mg PCB/day	0.0087	---	0.087
	Aroclor 1254	aroclor 1254	McCoy et al., 1995	Oldfield mouse	0.014	12 months	oral in diet	reproduction	reduced number of litters, pup	0.1	LOAEL-NOAEL	0.068	0.68	ES/ER/TM-86/R3		0.068	0.611	0.68

Table H-2. Mammalian Toxicity Reference Values for SSL Calculation

Group	Soil Constituent	Form/Surrogate Analyte	Primary Study	Test Species	Test Species Body Weight (kg)	Duration	Exposure Route	General Effect Endpoint	Specific Effect Endpoint	Uncertainty Factors Applied	Uncertainty Factor type	NOAEL (mg/kg/d)	LOAEL (mg/kg/d)	Secondary Source	Notes	Selected Mammalian NOAEL TRV (mg/kg/d)	RCBRA NOAEL	Selected Mammalian LOAEL TRV (mg/kg/d)
									body weight, and pup survival									
	Aroclor 1260	aroclor 1254	McCoy et al., 1995	Oldfield mouse	0.014	12 months	oral in diet	reproduction	reduced number of litters, pup body weight, and pup survival	0.1	LOAEL-NOAEL	0.068	0.68	ES/ER/TM-86/R3		0.068	0.611	0.68
	Aroclor 1262	aroclor 1254	McCoy et al., 1995	Oldfield mouse	0.014	12 months	oral in diet	reproduction	reduced number of litters, pup body weight, and pup survival	0.1	LOAEL-NOAEL	0.068	0.68	ES/ER/TM-86/R3		0.068	0.611	0.68
Herbicide	Dichloroprop															---		---
Pesticide	Aldrin	NA	Treon and Cleveland, 1955	rat	0.35	3 generations	oral in diet	reproduction	number of litters and offspring mortality		---	0.2	1	ES/ER/TM-86/R3		0.2		1
	beta-1,2,3,4,5,6-Hexachlorocyclohexane	NA	Van Velsen et al., 1986	rat	0.35	13 weeks	oral in diet	growth, blood chemistry, organ histology	gonadal atrophy in male and female rats	0.1	chronic-subchronic	0.4	2	ES/ER/TM-86/R3		0.4		2
	alpha-Chlordane	chlordane	Narotsky and Kavlock, 1995	rat		GD-6-19	oral gavage	reproduction	post natal pup viability	0.1	LOAEL-NOAEL	2.1	21	87-MA02T6-05A	study and value selected based on an extensive review of available literature - documented in USACHPPM	2.1		21
	gamma-Chlordane	chlordane	Narotsky and Kavlock, 1995	rat		GD-6-19	oral gavage	reproduction	post natal pup viability	0.1	LOAEL-NOAEL	2.1	21	87-MA02T6-05A	study and value selected based on an extensive review of available literature - documented in USACHPPM	2.1		21
	Dichlorodiphenyl-dichloroethylene (DDE)	DDT	Wrenn et al., 1970	rat		15 days (during gestation)	oral gavage	reproduction				0.147	0.735	OSWER Directive 9285.7-55	value is highest bounded NOAEL lower than the lowest bounded LOAEL value for reproduction, growth or survival; LOAEL is from same study	0.147		0.735
	Dichlorodiphenyl trichloroethane (DDT)	NA	Wrenn et al., 1970	rat		15 days (during gestation)	oral gavage	reproduction				0.147	0.735	OSWER Directive 9285.7-55	value is highest bounded NOAEL lower than the lowest bounded LOAEL value for reproduction, growth or survival; LOAEL is from same study	0.147		0.735
	Dieldrin	NA	Harr et al., 1970	rat		750 days	oral in diet	reproduction			---	0.015	0.03	OSWER Directive 9285.7-56	value is highest bounded NOAEL lower than the lowest bounded LOAEL value for reproduction, growth or survival; LOAEL is from same study	0.015		0.03
	Endosulfan I	endosulfan	Dikshith et al., 1984	rat	0.35	30 days (not during reproductio	oral intubation	reproduction and blood chemistry		0.1	chronic-subchronic	0.15	---	ES/ER/TM-86/R3	no effects observed at highest dose	0.15		---

Table H-2. Mammalian Toxicity Reference Values for SSL Calculation

Group	Soil Constituent	Form/Surrogate Analyte	Primary Study	Test Species	Test Species Body Weight (kg)	Duration	Exposure Route	General Effect Endpoint	Specific Effect Endpoint	Uncertainty Factors Applied	Uncertainty Factor type	NOAEL (mg/kg/d)	LOAEL (mg/kg/d)	Secondary Source	Notes	Selected Mammalian NOAEL TRV (mg/kg/d)	RCBRA NOAEL	Selected Mammalian LOAEL TRV (mg/kg/d)
						n)												
	Endosulfan II	endosulfan	Dikshith et al., 1984	rat	0.35	30 days (not during reproduction)	oral intubation	reproduction and blood chemistry		0.1	chronic-subchronic	0.15	---	ES/ER/TM-86/R3	no effects observed at highest dose	0.15		---
	Endosulfan sulfate	endosulfan	Dikshith et al., 1984	rat	0.35	30 days (not during reproduction)	oral intubation	reproduction and blood chemistry		0.1	chronic-subchronic	0.15	---	ES/ER/TM-86/R3	no effects observed at highest dose	0.15		---
	Endrin aldehyde	endrin	Good and Ware, 1969	mouse	0.03	120 d (during reproduction)	oral in diet	reproduction	reduced parental survival, litter size, and no. yng/d	0.1	LOAEL-NOAEL	0.092	0.92	ES/ER/TM-86/R3		0.092		0.92
	Methoxychlor	NA	Gray et al., 1988	rat	0.35	11 month (during reproduction)	oral in diet	reproduction	fertility and litter size reduced		---	4	8	ES/ER/TM-86/R3		4		8

Notes:

Uncertainty factors were used to adjust all measured effect concentrations to chronic NOAELS and chronic LOAELs as follows:

LOAEL to NOAEL = 0.1

Subchronic to chronic = 0.1

where:

chronic = >12 weeks or during critical lifestage

subchronic = 4 to 12 weeks

These uncertainty factors are consistent with methods used in development of the EcoSSLs (OSWER Directive 9285.7-55) and are more conservative than uncertainty factors recommended in *Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments: Interim Final* (EPA 540-R-97-006).

*Study information and calculated NOAELs and LOAELs for these sources were taken directly from the cited EcoSSL report developed by the EPA. All other primary sources were obtained, reviewed, and TRVs were extracted or developed from the study.

Bold = values selected as the mammalian TRVs

Acronyms:

BMD10 = Benchmark dose resulting in observed effects for 10 percent of test species

EcoSSl = ecological soil screening level

EPA = United States Evironmental Protection Agency

IRIS = Integrated Risk Information System

LOAEL = lowest observable adverse effect level

NOAEL = no observable adverse effect level

mg/kg/d = milligram per kilogram per day

TRV = toxicity reference value

USACHPPM = United States Army Center for Health Promotion and Preventive Medicine

Table H-3. Exposure Factors for Bird and Mammal Endpoint Species

Assessment Endpoint Functional Group	Endpoint Species	Body Weight (kg)	Notes	Source	Food Intake (kg/kg-bw/d, dw)	Notes	Source	Diet Composition: % of Diet as Mammals/ Birds	Diet Composition: % Diet as Invertebrates	Diet Composition: % of Diet as Plants	Diet Composition: Major Food Items	Diet Composition: Source	Diet Composition: % of Diet as Soil	Soil Ingestion Site (kg/kg-(bw/d)[b]	Notes	Source
Granivorous bird	California Quail	0.18	Median from multiple studies	Robel, 1969 Roseberry and Klimstra, 1971 Guthery et al., 1988	0.078	Average of food ingestion rates over 4 seasons from exposure factors handbook for bobwhite (EPA, 1993). Rate based on diet of commercial game food with only 5 to 10 percent water content; therefore, assumed dry weight.	Koerth and Guthery, 1990	0	0	100	Primarily a granivore, but also ingests some animal matter (primarily snails) and green forage. It is assumed this species ingests 100 percent plants (seeds) for screening-level dose calculation purpose.		6.1	0.00476	Value for mourning dove assumed representative of California Quali. Median soil ingestion rate estimated for mourning dove in Table 3 of the EcoSSL guidance. The median was selected as the best measure of central tendancy that is unbiased by outliners.	OSWER Directive 9285.7-55
Omnivorous bird	Meadowlark	0.0995	Median from multiple studies	Wiens and Rotenberry, 1980 Maher, 1979	0.12	Allometric estimation for 'omnivorous birds' normalized to kg/kg-bw/d using median body weightsfrom multiple studies	Nagy, 2001[a]	0	63	37	Ground forager that consumes both plant material (primarily seeds) and invertebrates (primarily arthropods). Percentages represent averages for >1900 meadowlarks studied across North America.	Lanyon, 1994	2.08	0.0025	Data regarding soil ingestion of western meadowlarks are unavailable. For the purposes of this ERA, it was assumed that soil ingestion for meadowlarks is similar to that derived for the American robin.	ES/ER/TM-125
Insectivorous bird	Killdeer	0.0756	Median from multiple studies	Purdue and Haines, 1977 Stegeman, 1955 Jackson and Jackson, 2000 Dunning, 1993	0.192	Allometric estimation for 'Charadriiformes' normalized to kg/kg-bw/d using median body weightsfrom multiple studies	Nagy, 2001[a]	0	100	0	Primarily consume terrestrial invertebrates, especially earthworms, grasshoppers, beetles, and snails. Forages in terrestrial and aquatic habitats.	Jackson and Jackson, 2000	7.3	0.0140	Data regarding soil ingestion of killdeer are unavailable. For the purposes of this ERA, it was assumed that soil ingestion for killdeer is similar to that of the least sandpiper. However, it should be noted that this value is likely somewhat higher than the actual soil ingestion for killdeer because killdeer do not probe in the soil/sediment. Jackson and Jackson (2000) reported grit to be 4.5% by volume of the esophageal contents in 15 killdeer, which suggests that a value of 7.3% may be a conservative estimate.	Beyer et al., 1994

Table H-3. Exposure Factors for Bird and Mammal Endpoint Species

Assessment Endpoint Functional Group	Endpoint Species	Body Weight (kg)	Notes	Source	Food Intake (kg/kg-bw/d, dw)	Notes	Source	Diet Composition: % of Diet as Mammals/ Birds	Diet Composition: % Diet as Invertebrates	Diet Composition: % of Diet as Plants	Diet Composition: Major Food Items	Diet Composition: Source	Diet Composition: % of Diet as Soil	Soil Ingestion Site (kg/kg-(bw/d)[b]	Notes	Source
Carnivorous bird	Red-tailed Hawk	1.179	Median from multiple studies	Craighead and Craighead,1956 Steenhof,1983 Springer and Osborne,1983	0.035	High end estimate (estimate* 1.25) presented in Table 1 of the EcoSSL guidance (OSWER Directive 9285.7-55). Based on empirical ingestion data from Craighead and Craighead (1956)	OSWER Directive 9285.7-55	100	0	0	Primarily eat small mammals such as mice, shrews, voles, rabbits, and squirrels, but also eat birds, lizards, snakes, and large insects, depending on availability. Assumed 100 percent small mammal diet for screening-level dose calculation purposes.	EPA,1993	2.4	0.00085	Median soil ingestion rate estimated for red-tailed hawk in Table 3 of the EcoSSL guidance. The median was selected as the best measure of central tendancy that is unbiased by outliners.	OSWER Directive 9285.7-55
Granivorous mammal	Great Basin pocket mouse	0.0175	Median from multiple studies	Scheffer,1938 O'Farrell et al.,1975 Schreiber,1978	0.123	Allometric estimation for 'granivorous mammals' normalized to kg/kg-bw/d using mean weight as reported by Scheffer, 1938, O'Farrell et al., 1975, and Schreiber, 1978	Nagy, 2001[a]	0	0	100	Diet consists primarily of seeds; however, insects (e.g., insect larvae reported in pocket mice from eastern Washington; Kritzman, 1974) may be consumed in the spring before seeds become available. Diet assumed to be 100 percent plants (seeds) for screening-level dose calculation purpose.	Kritzman,1974	2	0.00246	Data regarding soil ingestion of granivorous mammals are unavailable. For the purposes of this ERA, it was assumed that soil ingestion for pocket mice is similar to that of the white-footed mouse.	Beyer et al., 1994
Omnivorous mammal	Deer Mouse	0.0194	Median from multiple studies	O'Farrell, et al., 1975 Silva and Downing, 1995	0.166	Allometric estimation for 'omnivorous mammals' normalized to kg/kg-bw/d using median body weightsfrom multiple studies	Nagy, 2001[a]	0	50	50	Diet consists of plant material (primarily seeds) and terrestrial invertebrates (mainly insects). Approximation for diet of deer mice in Colorado over all seasons was 50 percent plants and 50 percent invertebrates.	EPA, 1993	2	0.0033	Assumed to be similar to the white-footed mouse because of similar dietary and foraging habits.	Beyer et al., 1994

Table H-3. Exposure Factors for Bird and Mammal Endpoint Species

Assessment Endpoint Functional Group	Endpoint Species	Body Weight (kg)	Notes	Source	Food Intake (kg/kg-bw/d, dw)	Notes	Source	Diet Composition: % of Diet as Mammals/ Birds	Diet Composition: % Diet as Invertebrates	Diet Composition: % of Diet as Plants	Diet Composition: Major Food Items	Diet Composition: Source	Diet Composition: % of Diet as Soil	Soil Ingestion Site (kg/kg-(bw/d)[b]	Notes	Source
Insectivorous mammal	Grasshopper mouse	0.0346	Median from multiple studies	Wied, Maximilian, Prinz zu., 1839 McKinney and Pasley, 1974 BHI-01757	0.098	Allometric estimation for 'insectivorous mammals' normalized to kg/kg-bw/d using median body weightsfrom multiple studies	Nagy, 2001[a]	0	100	0	Animal material contributed 89 percent of the total food consumed and cultivated grains represented less than 5 percent of the total in the stomach contents of field-trapped grasshopper mice from 90 locations across 13 states. Diet assumed to be 100 percent invertebrates for screening-level dose calculation purposes.	Bailey and Sperry, 1929	0.9	0.00088	Assumed to be similar to the short-tailed shrew because of similar dietary and foraging habits. Median soil ingestion rate estimated for short-tailed shrew in Table 3 of the EcoSSL guidance. The median was selected as the best measure of central tendancy that is unbiased by outliners.	OSWER Directive 9285.7-55
Carnivorous mammal	Badger	7.6	Median from multiple studies	Messick and Hornocker, 1981 Silva and Downing, 1995	0.0347	Allometric estimation for 'carnivorous mammals' normalized to kg/kg-bw/d using median body weightsfrom multiple studies	Nagy, 2001[a]	100	0	0	Carnivores that primarily eat small rodents (rats, mice, ground squirrels, pocket gophers), thought some reptiles, insects, birds, and carrion are consumed. Assumed 100 percent small mammal diet for screening-level dose calculation puposes.	Long, 1973	5.2	0.00181	Data regarding soil ingestion of badgers are unavailable. Because the badger is a burrowing mammal, soil ingestion may be similar to that of the prairie dog. It was assumed that the median soil ingestion of the two prairie dog species with available data (2.7 and 7.7 percent) would be representative of the badger.	Beyer et al., 1994

Notes: **Bold** and underlined text indicates life-history parameters that were used in the initial screening exposure calculations.

a. Nagy (2001) regression equation format --> dry matter g/day/g body weight = a(grams body weight)^b/g body weight

b. Soil ingestion is equal to the percent soil in diet multiplied by the food ingestion rate as follows: soil ingestion = (percent soil/100* food ingestion rate)

BW = body weight

DW = dry weight

EPA = United States Environmental Protection Agency

Group	*a*	*b*
Birds		
omnivorous birds	0.670	0.627
Galliformes	0.088	0.891
Charadriiformes	0.522	0.769
Mammals		
carnivorous mammals	0.153	0.834
granivorous mammals	0.659	0.413
insectivorous mammals	0.373	0.622

Table H-4. Biotransfer Factors and Regression Models Used for Refined SSL Calculations

Group	Analyte	Regression Models[a]				Bioaccumulation Factors			Kow
		B0	B1	Source	Notes[b]	BAF	Source	Notes[b]	
Soil to Plants									
Radionuclides	Americium-241					0.00496	Beresford et al., 2008	CR review	
	Antimony-125					0.025	Beresford et al., 2008	From Coughtrey et al. (1983) suggested value for natural vegetation (A.A. Balkema Vol. 3); Note one CR review value of CR=41	
	Carbon-14					890	Beresford et al., 2008	Specific activity model; FASSET	
	Cesium-134					0.693425575	Beresford et al., 2008	CR review	
	Cesium 137					0.693425575	Beresford et al., 2008	CR review	
	Cobalt-60					0.0135	Beresford et al., 2008	IAEA TRS364 value for grass	
	Curium-244					0.000275	Beresford et al., 2008	IAEA TRS364 value for grass	
	Europium-152					0.00519802	Beresford et al., 2008	Estimated from stable concs. in soils & angiosperms values presented Coughtrey and Thorne (1983; A.A. Balkema Vol. 1)	
	Europium-154					0.00519802	Beresford et al., 2008	Estimated from stable concs. in soils & angiosperms values presented Coughtrey and Thorne (1983; A.A. Balkema Vol. 1)	
	Europium-155					0.00519802	Beresford et al., 2008	Estimated from stable concs. in soils & angiosperms values presented Coughtrey and Thorne (1983; A.A. Balkema Vol. 1)	
	Hydrogen-3 (tritium)					150	Beresford et al., 2008	Specific activity model; FASSET	
	Neptunium-237					0.01725	Beresford et al., 2008	IAEA TRS363 value for grass	
	Nickel-63					0.1875	Beresford et al., 2008	CR review	
	Plutonium-238					0.014425378	Beresford et al., 2008	CR review; note some reviews report values in range 10-2 - 10-8 but present data in manner which cannot be used. Primary source here is Sheppard review of IUR data	
	Plutonium-239/240					0.014425378	Beresford et al., 2008	CR review; note some reviews report values in range 10-2 - 10-8 but present data in manner which cannot be used. Primary source here is Sheppard review of IUR data	
	Radium-226					0.039440524	Beresford et al., 2008	CR review	
	Radium-228					0.039440524	Beresford et al., 2008	CR review	
	Strontium 90					0.206811821	Beresford et al., 2008	CR review	
	Technetium-99					20.00829611	Beresford et al., 2008	CR review	
	Thorium-232					0.043740981	Beresford et al., 2008	CR review	
	Uranium-234					0.0145507	Beresford et al., 2008	CR review	
	Uranium-235					0.0145507	Beresford et al., 2008	CR review	
	Uranium-238					0.0145507	Beresford et al., 2008	CR review	
Metals	Aluminum					0.00287	BJC/OR-133	Median - Table D-1 validation data	
	Antimony	-3.233	0.938	OSWER Directive 9285.7-55	Derived from measured data in Appendix A	0.0102	BJC/OR-133	Median - Table D-1 validation data	
	Arsenic, Total all valence states	-1.992	0.564	BJC/OR-133	Single variable regression; EcoSSLs used BAF	0.0375	BJC/OR-133	Median - Table 6; cited in OSWER Directive 9285.7-55	
	Arsenic (III)	-1.992	0.564	BJC/OR-133	Single variable regression; EcoSSLs used BAF	0.0375	BJC/OR-133	Median - Table 6; cited in OSWER Directive 9285.7-55	
	Arsenic (V)	-1.992	0.564	BJC/OR-133	Single variable regression; EcoSSLs used BAF	0.0375	BJC/OR-133	Median - Table 6; cited in OSWER Directive 9285.7-55	
	Barium					0.156	BJC/OR-133	Median - Table D-1 validation data; cited in OSWER Directive	

Table H-4. Biotransfer Factors and Regression Models Used for Refined SSL Calculations

Group	Analyte	Regression Models[a]				Bioaccumulation Factors			Kow
		B0	B1	Source	Notes[b]	BAF	Source	Notes[b]	
Soil to Plants									
								9285.7-55	
	Beryllium	-0.5361	0.7345	OSWER Directive 9285.7-55	Derived from measured data in Appendix A				
	Bismuth					0.005	ORNL-5786	Figure 2.2	
	Boron					5.714	USACHPPM, 2004	Median - Table 4-6 leaf tissue	
	Cadmium	-0.476	0.546	BJC/OR-133	Cited in OSWER Directive 9285.7-55 (Table 4a)	0.586	BJC/OR-133	Median - Table 6	
	Chromium (total)					0.041	BJC/OR-133	Median - Table D-1 validation data; cited in OSWER Directive 9285.7-55	
	Chromium (+3)					0.041	BJC/OR-133	Median - Table D-1 validation data; cited in OSWER Directive 9285.7-55	
	Chromium (+6)					0.041	BJC/OR-133	Median - Table D-1 validation data; cited in OSWER Directive 9285.7-55	
	Cobalt					0.00745	BJC/OR-133	Median - Table D-1 validation data; cited in OSWER Directive 9285.7-55	
	Copper	0.669	0.394	BJC/OR-133	Cited in OSWER Directive 9285.7-55 (Table 4a)	0.124	BJC/OR-133	Median - Table 6	
	Lead	-1.328	0.561		Cited in OSWER Directive 9285.7-55 (Table 4a)	0.0389	BJC/OR-133	Median - Table 6	
	Lithium					0.004	ORNL-5786	Figure 2.2	
	Manganese					0.0792	BJC/OR-133	Median - Table D-1 validation data; cited in OSWER Directive 9285.7-55	
	Mercury	-0.996	0.544	BJC/OR-133	Single variable regression	0.0652	BJC/OR-133	Median - Table 6	
	Molybdenum					1.2504	USACHPPM, 2004	Median - Table 4-6 leaf tissue	
	Nickel	-2.224	0.748	BJC/OR-133	Cited in OSWER Directive 9285.7-55 (Table 4a)	0.018	USACHPPM, 2004	Median - Table 6	
	Selenium	-0.678	1.104	BJC/OR-133	Cited in OSWER Directive 9285.7-55 (Table 4a)	0.672	USACHPPM, 2004	Median - Table 6	
	Silver					0.014	BJC/OR-133	Median - Table D-1 validation data	
	Strontium					0.207	Beresford et al., 2008	CR review	
	Thallium					0.004	ORNL-5786	Figure 2.2	
	Tin					1	Default		
	Uranium					0.021	USACHPPM, 2004	Median - Table 4-6 leaf tissue	
	Vanadium					0.00485	BJC/OR-133	Median - Table D-1 validation data	
	Zinc	1.575	0.555	BJC/OR-133	Cited in OSWER Directive 9285.7-55 (Table 4a)	0.366	BJC/OR-133	Median - Table 6	
General Inorganics	Ammonia/Ammonium								
	Chloride								
	Cyanide								
	Fluoride					0.006	ORNL-5786	Figure 2.2	
	Iodine					0.05	ORNL-5786	Figure 2.2	
	Nitrate/Nitrite								

Table H-4. Biotransfer Factors and Regression Models Used for Refined SSL Calculations

Group	Analyte	Regression Models[a]				Bioaccumulation Factors			Kow
		B0	B1	Source	Notes[b]	BAF	Source	Notes[b]	
Soil to Plants									
	Phosphate								
	Sulfate/Sulfite								
	Total Organic Carbon								
Volatile Organics	1,1-dichloroethane						OSWER Directive 9285.7-55	Kow (1.79) outside of range of Kow-based models for plants (OSWER Directive 9285.7-55); BAF is undefined.	1.79
	1,1-dichloroethene						OSWER Directive 9285.7-55	Kow (2.13) outside of range of Kow-based models for plants (OSWER Directive 9285.7-55); BAF is undefined.	2.13
	1,1,1-trichloroethane						OSWER Directive 9285.7-55	Kow (2.48) outside of range of Kow-based models for plants (OSWER Directive 9285.7-55); BAF is undefined.	2.48
	1,1,2-trichloroethane						OSWER Directive 9285.7-55	Kow (2.05) outside of range of Kow-based models for plants (OSWER Directive 9285.7-55); BAF is undefined.	2.05
	1,1,2,2-tetrachloroethane						OSWER Directive 9285.7-55	Kow (2.39) outside of range of Kow-based models for plants (OSWER Directive 9285.7-55); BAF is undefined.	2.39
	1,2-dichlorobenzene					2.45	OSWER Directive 9285.7-55	Log Kow model for nonionic organics (rinsed plants); log Kow = 3.43 (EPA, 1995)	3.43
	1,2-dichloroethane (DCA)						OSWER Directive 9285.7-55	Kow (1.47) outside of range of Kow-based models for plants (OSWER Directive 9285.7-55); BAF is undefined.	1.47
	1,3-dichlorobenzene					2.23	OSWER Directive 9285.7-55	Log Kow model for nonionic organics (rinsed plants); log Kow = 3.53 (EPI, 2011)c	3.53
	2-butanone (Methyl Ethyl Ketone/MEK)						OSWER Directive 9285.7-55	Kow (0.29) outside of range of Kow-based models for plants (OSWER Directive 9285.7-55); BAF is undefined.	0.29
	2-hexanone						OSWER Directive 9285.7-55	Kow (1.38) outside of range of Kow-based models for plants (OSWER Directive 9285.7-55); BAF is undefined.	1.38
	Benzene						OSWER Directive 9285.7-55	Kow (2.13) outside of range of Kow-based models for plants (OSWER Directive 9285.7-55); BAF is undefined.	2.13
	Butanol						OSWER Directive 9285.7-55	Kow (0.8) outside of range of Kow-based models for plants (OSWER Directive 9285.7-55); BAF is undefined.	0.8
	Carbon Tetrachloride						OSWER Directive 9285.7-55	Kow (2.73) outside of range of Kow-based models for plants (OSWER Directive 9285.7-55); BAF is undefined.	2.73
	Chlorobenzene						OSWER Directive 9285.7-55	Kow (2.86) outside of range of Kow-based models for plants (OSWER Directive 9285.7-55); BAF is undefined.	2.86
	Chloroform						OSWER Directive 9285.7-55	Kow (1.92) outside of range of Kow-based models for plants (OSWER Directive 9285.7-55); BAF is undefined.	1.92
	Cis-1,2-dichloroethylene						OSWER Directive 9285.7-55	Kow (1.86) outside of range of Kow-based models for plants (OSWER Directive 9285.7-55); BAF is undefined.	1.86
	Dichloromethane (Methylene Chloride)						OSWER Directive 9285.7-55	Kow (1.25) outside of range of Kow-based models for plants (OSWER Directive 9285.7-55); BAF is undefined.	1.25
	Ethyl Benzene					3.21	OSWER Directive 9285.7-55	Log Kow model for nonionic organics (rinsed plants); log Kow = 3.14 (EPA, 1995)	3.14
	Methyl Isobutyl Ketone						OSWER Directive 9285.7-55	Kow (1.19) outside of range of Kow-based models for plants (OSWER Directive 9285.7-55); BAF is undefined.	1.19
	n-butyl Benzene					1.67	OSWER Directive 9285.7-55	Log Kow model for nonionic organics (rinsed plants); log Kow = 3.84 (EPI, 2011)c	3.84

Table H-4. Biotransfer Factors and Regression Models Used for Refined SSL Calculations

Group	Analyte	Regression Models[a]				Bioaccumulation Factors			Kow
		B0	B1	Source	Notes[b]	BAF	Source	Notes[b]	
Soil to Plants									
	Tetrachloroethylene						OSWER Directive 9285.7-55	Kow (2.67) outside of range of Kow-based models for plants (OSWER Directive 9285.7-55); BAF is undefined.	2.67
	Toluene						OSWER Directive 9285.7-55	Kow (2.75) outside of range of Kow-based models for plants (OSWER Directive 9285.7-55); BAF is undefined.	2.75
	Trans-1,2-dichloroethylene						OSWER Directive 9285.7-55	Kow (2.07) outside of range of Kow-based models for plants (OSWER Directive 9285.7-55); BAF is undefined.	2.07
	Trichloroethylene (TCE)						OSWER Directive 9285.7-55	Kow (2.71) outside of range of Kow-based models for plants (OSWER Directive 9285.7-55); BAF is undefined.	2.71
	Xylene					3.43	OSWER Directive 9285.7-55	Log Kow model for nonionic organics (rinsed plants); log Kow = 3.07 (EPA, 1995)	3.07
Polycyclic Aromatic Hydrocarbons	Acenaphthene	-5.562	-0.8556	OSWER Directive 9285.7-55	Derived from measured data in Appendix C or Figure 4				
	Acenaphthylene	-1.144	0.791	OSWER Directive 9285.7-55	Modeled using the rinsed PAH-specific equation				
	Anthracene	-0.9887	0.7784	OSWER Directive 9285.7-55	Derived from measured data in Appendix C or Figure 4				
	Benzo(a)pyrene	-2.0615	0.975	OSWER Directive 9285.7-55	Derived from measured data in Appendix C or Figure 4				
	Benzo(a)anthracene	-2.7078	0.5944	OSWER Directive 9285.7-55	Derived from measured data in Appendix C or Figure 4				
	Benzo(b)fluoranthene					0.31	OSWER Directive 9285.7-55	Median BAF calculated from measured data in Appendix C	
	Benzo(ghi)perylene	-0.9313	1.1829	OSWER Directive 9285.7-55	Derived from measured data in Appendix C or Figure 4				
	Benzo[k]fluoranthene	-4.6482	0.1668	OSWER Directive 9285.7-55	Derived from measured data in Appendix C or Figure 4				6.2
	Chrysene	-2.7078	0.5944	OSWER Directive 9285.7-55	Derived from measured data in Appendix C or Figure 4				
	Dibenz(ah)anthracene					0.13	OSWER Directive 9285.7-55	Median BAF calculated from measured data in Appendix C	
	Fluoranthene					0.5	OSWER Directive 9285.7-55	Median BAF calculated from measured data in Appendix C	
	Fluorene	-5.562	-0.8556	OSWER Directive 9285.7-55	Derived from measured data in Appendix C or Figure 4				
	Indeno[1,2,3-cd]pyrene					0.11	OSWER Directive 9285.7-55	Median BAF calculated from measured data in Appendix C	
	2-Methylnaphthalene	-1.3205	4.544	OSWER Directive 9285.7-55	Based on LMW PAH rinsed model in Figure 4				3.86
	Naphthalene					12.2	OSWER Directive 9285.7-55	Median BAF calculated from measured data in Appendix C	
	Phenanthrene	-0.1665	0.6203	OSWER	Derived from measured data in Appendix C				

Table H-4. Biotransfer Factors and Regression Models Used for Refined SSL Calculations

Group	Analyte	Regression Models[a]				Bioaccumulation Factors			Kow
		B0	B1	Source	Notes[b]	BAF	Source	Notes[b]	
Soil to Plants									
				Directive 9285.7-55	or Figure 4				
	Pyrene					0.72	OSWER Directive 9285.7-55	Median BAF calculated from measured data in Appendix C	
	Total PAHs	0.083	0.3015	OSWER Directive 9285.7-55	Derived from measured data in Appendix C or Figure 4				
	Low MW PAHs	-1.3205	0.4544	OSWER Directive 9285.7-55	Derived from measured data in Appendix C or Figure 4				
	High MW PAHs	-1.7026	0.9469	OSWER Directive 9285.7-55	Derived from measured data in Appendix C or Figure 4				
	TPH - Diesel								
	TPH - Kerosene								
	Normal paraffin hydrocarbons								
	Phenol						OSWER Directive 9285.7-55	Kow (1.48) outside of range of Kow-based models for plants (OSWER Directive 9285.7-55); BAF is undefined.	1.48
	2-methylphenol (ocresol)						OSWER Directive 9285.7-55	Kow (1.99) outside of range of Kow-based models for plants (OSWER Directive 9285.7-55); BAF is undefined.	1.99
	4-methylphenol (pcresol)						OSWER Directive 9285.7-55	Kow (1.95) outside of range of Kow-based models for plants (OSWER Directive 9285.7-55); BAF is undefined.	1.95
	2,4-dinitrotoluene	1.873	-0.3768	Tsao and Sample, 2005		0.376	Tsao and Sample, 2005	Median BAF for foliage, all plants, from Table 3.3-1	2.01
	Bis[2-ethylhexyl] phthalate					0.07	OSWER Directive 9285.7-55	Log Kow model for nonionic organics (rinsed plants); log Kow = 7.30 (EPA, 1995)[c]	7.3
	Total PCBs					0.17	OSWER Directive 9285.7-55	Log Kow model for nonionic organics (rinsed plants); log Kow = 6.29 (EPI, 2011)c	6.29
Semivolatile Organics	Aroclor 1016					0.30	OSWER Directive 9285.7-55	Log Kow model for nonionic organics (rinsed plants); log Kow = 5.69 (ChemIDplus Lite)c	5.69
	Aroclor 1221					0.78	OSWER Directive 9285.7-55	Log Kow model for nonionic organics (rinsed plants); log Kow = 4.65 (ChemIDplus Lite)c	4.65
	Aroclor 1232					0.99	OSWER Directive 9285.7-55	Log Kow model for nonionic organics (rinsed plants); log Kow = 4.4 (ChemIDplus Lite)c	4.4
	Aroclor 1242					0.16	OSWER Directive 9285.7-55	Log Kow model for nonionic organics (rinsed plants); log Kow = 6.34 (ChemIDplus Lite)c	6.34
	Aroclor 1248					0.18	OSWER Directive 9285.7-55	Log Kow model for nonionic organics (rinsed plants); log Kow = 6.2 (ChemIDplus Lite)c	6.2
	Aroclor 1254					0.14	OSWER Directive 9285.7-55	Log Kow model for nonionic organics (rinsed plants); log Kow = 6.5 (ChemIDplus Lite)c	6.5
	Aroclor 1260					0.05	OSWER Directive 9285.7-55	Log Kow model for nonionic organics (rinsed plants); log Kow = 7.55 (ChemIDplus Lite)c	7.55
	Aroclor-1262								

Table H-4. Biotransfer Factors and Regression Models Used for Refined SSL Calculations

Group	Analyte	Regression Models[a]				Bioaccumulation Factors			Kow
		B0	B1	Source	Notes[b]	BAF	Source	Notes[b]	
Soil to Plants									
Pesticides	Dichloroprop								
	Aldrin					0.14	OSWER Directive 9285.7-55	Log Kow model for nonionic organics (rinsed plants); log Kow = 6.50 (EPA, 1995)[c]	6.5
	beta-1,2,3,4,5,6-Hexachlorocyclohexane					1.72	OSWER Directive 9285.7-55	Log Kow model for nonionic organics (rinsed plants); log Kow = 3.81 (EPA, 1995)[c]	3.81
	alpha-Chlordane					0.16	OSWER Directive 9285.7-55	Log Kow model for nonionic organics (rinsed plants); log Kow = 6.32 (EPA, 1995)[c]	6.32
	gamma-Chlordane					0.16	OSWER Directive 9285.7-55	Log Kow model for nonionic organics (rinsed plants); log Kow = 6.32 (EPA, 1995)[c]	6.32
	Dichlorodiphenyldichloroethylene	-2.5119	0.7524	OSWER Directive 9285.7-55	Regression model for total DDTs from Table 4b				6.76
	Dichlorodiphenyltrichloroethane	-2.5119	0.7524	OSWER Directive 9285.7-55	Regression model for total DDTs from Table 4b				6.53
	Dieldrin					0.41	OSWER Directive 9285.7-55	Empirical BAF from Table 4b	5.37
	Endosulfan I					1.31	OSWER Directive 9285.7-55	Log Kow model for nonionic organics (rinsed plants); log Kow = 4.10 (EPA, 1995)[c]	4.1
	Endosulfan II					1.31	OSWER Directive 9285.7-55	Log Kow model for nonionic organics (rinsed plants); log Kow = 4.10 (EPA, 1995)[c]	4.1
	Endosulfan sulfate					1.98	OSWER Directive 9285.7-55	Log Kow model for nonionic organics (rinsed plants); log Kow = 4.10 (EPI, 2011)c	3.66
	Endrin aldehyde					1.44	OSWER Directive 9285.7-55	Log Kow model for nonionic organics (rinsed plants); log Kow = 4 (EPA, 1995)[c]	4
	Methoxychlor					0.52	OSWER Directive 9285.7-55	Log Kow model for nonionic organics (rinsed plants); log Kow = 5.08 (EPA, 1995)[c]	5.08
Soil to Terrestrial Invertebrates									
Radionuclides	Americium-241					0.1006	Beresford et al., 2008	CR review	
	Antimony-125					0.2525	Beresford et al., 2008b	Same as gastropod (most conservative invertebrate CR)	
	Carbon-14					430	Beresford et al., 2008	Assume same as worm	
	Cesium-134					0.1341	Beresford et al., 2008	CR review	
	Cesium 137					0.1341	Beresford et al., 2008	CR review	
	Cobalt-60					0.0035	Beresford et al., 2008	CR review	
	Curium-244					0.1374	Beresford et al., 2008	CR review	
	Europium-152					0.0008	Beresford et al., 2008	Same as soil invertebrate	
	Europium-154					0.0008	Beresford et al., 2008	Same as soil invertebrate	
	Europium-155					0.0008	Beresford et al., 2008	Same as soil invertebrate	

Table H-4. Biotransfer Factors and Regression Models Used for Refined SSL Calculations

Group	Analyte	Regression Models[a]				Bioaccumulation Factors			Kow
		B0	B1	Source	Notes[b]	BAF	Source	Notes[b]	
Soil to Plants									
	Hydrogen-3 (tritium)					150	Beresford et al., 2008	Assume same as worm	
	Neptunium-237					0.1006	Beresford et al., 2008	Same as Am gastropod	
	Nickel-63					0.0086	Beresford et al., 2008	CR review	
	Plutonium-238					0.0388	Beresford et al., 2008	CR review	
	Plutonium-239/240					0.0388	Beresford et al., 2008	CR review	
	Radium-226					0.0900	Beresford et al., 2008	CR review	
	Radium-228					0.0900	Beresford et al., 2008	CR review	
	Strontium 90					0.4066	Beresford et al., 2008	CR review	
	Technetium-99					0.3700	Beresford et al., 2008	Assume maximum available value in lack of data	
	Thorium-232					0.0088	Beresford et al., 2008	Assume U Soil invertebrate	
	Uranium-234					0.0088	Beresford et al., 2008	Same as soil invertebrate	
	Uranium-235					0.0088	Beresford et al., 2008	Same as soil invertebrate	
	Uranium-238					0.0088	Beresford et al., 2008	Same as soil invertebrate	
Metals	Aluminum					0.043	ES/ER/TM-220	Median - Table C.1	
	Antimony					1	ORNL-5786 cited in OSWER Directive 9285.7-55	Assumed earthworm conc = soil conc according to (Table 4a)	
	Arsenic	-1.421	0.706	ES/ER/TM-220	Sample et al., 1999 cited in OSWER Directive 9285.7-55 (Table 4a)	0.224	ES/ER/TM-220	Median - Table 11	
	Arsenic (III)	-1.421	0.706	ES/ER/TM-220	Sample et al., 1999 cited in OSWER Directive 9285.7-55 (Table 4a)	0.224	ES/ER/TM-220	Median - Table 11	
	Arsenic (V)	-1.421	0.706	ES/ER/TM-220	Sample et al., 1999 cited in OSWER Directive 9285.7-55 (Table 4a)	0.224	ES/ER/TM-220	Median - Table 11	
	Barium					0.091	ES/ER/TM-220	Median - Table 11; cited in OSWER Directive 9285.7-55	
	Beryllium					0.045	ES/ER/TM-220	Median - Table C.1; cited in OSWER Directive 9285.7-55	
	Bismuth					1	Default		
	Boron					**1**	Default		
	Cadmium	**2.114**	**0.795**	ES/ER/TM-220	Sample et al., 1999 cited in OSWER Directive 9285.7-55 (Table 4a)	7.708	ES/ER/TM-220	Median - Table 11	
	Chromium					**0.306**	ES/ER/TM-220	Median - Table 11; cited in OSWER Directive 9285.7-55	
	Chromium (+3)					**0.306**	ES/ER/TM-220	Median - Table 11; cited in OSWER Directive 9285.7-55	
	Chromium (+6)					**0.306**	ES/ER/TM-220	Median - Table 11; cited in OSWER Directive 9285.7-55	
	Cobalt					**0.291**	ES/ER/TM-220	Median - Table 11; cited in OSWER Directive 9285.7-55	
	Copper	1.675	0.264	ES/ER/TM-220	General regression - low r^2	**0.515**	ES/ER/TM-220	Median - Table 11; cited in OSWER Directive 9285.7-55	
	Lead	**-0.218**	**0.807**	ES/ER/TM-220	Sample et al., 1999 cited in OSWER Directive 9285.7-55 (Table 4a)	0.266	ES/ER/TM-220	Median - Table 11	
	Lithium					**0.046**	ES/ER/TM-220	Median - Table C.1	
	Manganese	**-0.809**	**0.682**	ES/ER/TM-220	Sample et al., 1999 cited in OSWER Directive 9285.7-55 (Table 4a)	0.054	ES/ER/TM-220	Median - Table 11	
	Mercury	**0.0781**	**0.3369**	ES/ER/TM-220	General regression, not including validation data	1.693	ES/ER/TM-220	Median - Table 11	
	Molybdenum					**0.953**	ES/ER/TM-220	Median - Table C.1	

Table H-4. Biotransfer Factors and Regression Models Used for Refined SSL Calculations

Group	Analyte	Regression Models[a]				Bioaccumulation Factors			Kow
		B0	B1	Source	Notes[b]	BAF	Source	Notes[b]	
Soil to Plants									
	Nickel	3.677	-0.26	ES/ER/TM-220	regression not significant	**1.059**	ES/ER/TM-220	Median - Table 11	
	Selenium	**-0.075**	**0.733**	ES/ER/TM-220	Sample et al., 1999 cited in OSWER Directive 9285.7-55 (Table 4a)	0.985	ES/ER/TM-220	Median - Table 11	
	Silver					**2.045**	ES/ER/TM-220	Median - Table C.1; cited in OSWER Directive 9285.7-55	
	Strontium					**0.4066**	Beresford et al., 2008	CR review	
	Thallium					**0.0541**	USACHPPM, 2004	Median - Table 4-5 (Insecta)	
	Tin					**0.08**	ORNL-5786	No data available for invertebrates; assumed to be similar to uptake to small mammals (from Figure 2.25)	
	Uranium					**0.033**	ES/ER/TM-220	Median - Table C.1	
	Vanadium					**0.042**	ES/ER/TM-220	Median - Table C.1; cited in OSWER Directive 9285.7-55	
	Zinc	**4.449**	**0.328**	ES/ER/TM-220	Sample et al., 1999 cited in OSWER Directive 9285.7-55 (Table 4a)				
General Inorganics	Ammonia/Ammonium								
	Chloride								
	Cyanide								
	Fluoride								
	Iodine								
	Nitrate/Nitrite								
	Phosphate								
	Sulfate/Sulfite								
	Total Organic Carbon								
Volatile Organics	1,1-dichloroethane					**1.010**	OSWER Directive 9285.7-55	Calculated using model from OSWER Directive 9285.7-55 and log Koc and Kow from EPI, 2011e	1.79
	1,1-dichloroethene					**1.011**	OSWER Directive 9285.7-55	Calculated using model from OSWER Directive 9285.7-55 and log Koc and Kow from EPI, 2011e	2.13
	1,1,1-trichloroethane					**1.013**	OSWER Directive 9285.7-55	Calculated using model from OSWER Directive 9285.7-55 and log Koc and Kow from EPI, 2011e	2.49
	1,1,2-trichloroethane					**1.010**	OSWER Directive 9285.7-55	Calculated using model from OSWER Directive 9285.7-55 and log Koc and Kow from EPI, 2011e	1.89
	1,1,2,2-tetrachloroethane					**1.013**	OSWER Directive 9285.7-55	Calculated using model from OSWER Directive 9285.7-55 and log Koc and Kow from EPI, 2011e	2.39
	1,2-dichlorobenzene					**1.018**	OSWER Directive 9285.7-55	Calculated using model from OSWER Directive 9285.7-55 and log Koc and Kow from EPI, 2011e	3.43
	1,2-dichloroethane (DCA)					**0.988**	OSWER Directive 9285.7-55	Calculated using model from OSWER Directive 9285.7-55 and log Koc and Kow from EPI, 2011e	1.47
	1,3-dichlorobenzene					**1.018**	OSWER Directive 9285.7-55	Calculated using model from OSWER Directive 9285.7-55 and log Koc and Kow from EPI, 2011e	3.53
	2-butanone (Methyl Ethyl Ketone/MEK)					**0.094**	OSWER Directive 9285.7-55	Calculated using model from OSWER Directive 9285.7-55 and log Koc and Kow from EPI, 2011e	0.29
	2-hexanone					**0.207**	OSWER Directive 9285.7-55	Calculated using model from OSWER Directive 9285.7-55 and log Koc and Kow from EPI, 2011e	1.38
	Benzene					**1.011**	OSWER Directive 9285.7-55	Calculated using model from OSWER Directive 9285.7-55 and log Koc and Kow from EPI, 2011e	2.13

Table H-4. Biotransfer Factors and Regression Models Used for Refined SSL Calculations

Group	Analyte	Regression Models[a]				Bioaccumulation Factors			Kow
		B0	B1	Source	Notes[b]	BAF	Source	Notes[b]	
Soil to Plants									
	Butanol					**0.478**	OSWER Directive 9285.7-55	Calculated using model from OSWER Directive 9285.7-55 and log Koc and Kow from EPI, 2011e	0.61
	Carbon Tetrachloride					**1.015**	OSWER Directive 9285.7-55	Calculated using model from OSWER Directive 9285.7-55 and log Koc and Kow from EPI, 2011e	2.83
	Chlorobenzene					**1.015**	OSWER Directive 9285.7-55	Calculated using model from OSWER Directive 9285.7-55 and log Koc and Kow from EPI, 2011e	2.84
	Chloroform					**1.011**	OSWER Directive 9285.7-55	Calculated using model from OSWER Directive 9285.7-55 and log Koc and Kow from EPI, 2011e	1.97
	Cis-1,2-dichloroethylene					**1.011**	OSWER Directive 9285.7-55	Calculated using model from OSWER Directive 9285.7-55 and log Koc and Kow from EPI, 2011e	2.09
	Dichloromethane (Methylene Chloride)					**1.007**	OSWER Directive 9285.7-55	Calculated using model from OSWER Directive 9285.7-55 and log Koc and Kow from EPI, 2011e	1.25
	Ethyl Benzene					**1.016**	OSWER Directive 9285.7-55	Calculated using model from OSWER Directive 9285.7-55 and log Koc and Kow from EPI, 2011e	3.15
	Methyl Isobutyl Ketone					**0.197**	OSWER Directive 9285.7-55	Calculated using model from OSWER Directive 9285.7-55 and log Koc and Kow from EPI, 2011e	1.31
	n-butyl Benzene					**1.022**	OSWER Directive 9285.7-55	Calculated using model from OSWER Directive 9285.7-55 and log Koc and Kow from EPI, 2011e	4.38
	Tetrachloroethylene					**1.018**	OSWER Directive 9285.7-55	Calculated using model from OSWER Directive 9285.7-55 and log Koc and Kow from EPI, 2011e	3.4
	Toluene					**1.014**	OSWER Directive 9285.7-55	Calculated using model from OSWER Directive 9285.7-55 and log Koc and Kow from EPI, 2011e	2.73
	Trans-1,2-dichloroethylene					**1.011**	OSWER Directive 9285.7-55	Calculated using model from OSWER Directive 9285.7-55 and log Koc and Kow from EPI, 2011e	2.09
	Trichloroethylene (TCE)					**1.012**	OSWER Directive 9285.7-55	Calculated using model from OSWER Directive 9285.7-55 and log Koc and Kow from EPI, 2011e	2.42
	Xylene					**1.016**	OSWER Directive 9285.7-55	Calculated using model from OSWER Directive 9285.7-55 and log Koc and Kow from EPI, 2011e	3.12
Polycyclic Aromatic Hydrocarbons	Acenaphthene					**1.470**	OSWER Directive 9285.7-55	Modeled from Kow based on Jager (1998) [Table 5]	3.92
	Acenaphthylene					**22.9**	OSWER Directive 9285.7-55	Modeled from Kow based on Jager (1998) [Table 5]	
	Anthracene					**2.42**	OSWER Directive 9285.7-55	Modeled from Kow based on Jager (1998) [Table 5]	
	Benzo(a)pyrene					**1.33**	OSWER Directive 9285.7-55	Modeled from Kow based on Jager (1998) [Table 5]	
	Benzo(a)anthracene					**1.59**	OSWER Directive 9285.7-55	Modeled from Kow based on Jager (1998) [Table 5]	
	Benzo(b)fluoranthene					**2.6**	OSWER Directive 9285.7-55	Modeled from Kow based on Jager (1998) [Table 5]	
	Benzo(ghi)perylene					**2.94**	OSWER Directive 9285.7-55	Modeled from Kow based on Jager (1998) [Table 5]	
	Benzo[k]fluoranthene					**2.6**	OSWER Directive 9285.7-55	Modeled from Kow based on Jager (1998) [Table 5]	6.2
	Chrysene					**2.29**	OSWER Directive 9285.7-55	Modeled from Kow based on Jager (1998) [Table 5]	
	Dibenz(ah)anthracene					**2.31**	OSWER Directive 9285.7-55	Modeled from Kow based on Jager (1998) [Table 5]	
	Fluoranthene					**3.04**	OSWER Directive 9285.7-55	Modeled from Kow based on Jager (1998) [Table 5]	
	Fluorene					**9.57**	OSWER Directive 9285.7-55	Modeled from Kow based on Jager (1998) [Table 5]	
	Indeno[1,2,3-cd]pyrene					**2.86**	OSWER Directive 9285.7-55	Modeled from Kow based on Jager (1998) [Table 5]	
	2-Methylnaphthalene					**1.020**	OSWER Directive 9285.7-55	Calculated using model from OSWER Directive 9285.7-55 and log Koc and Kow from EPI, 2011e	3.86

Table H-4. Biotransfer Factors and Regression Models Used for Refined SSL Calculations

Group	Analyte	Regression Models[a]				Bioaccumulation Factors			Kow
		B0	B1	Source	Notes[b]	BAF	Source	Notes[b]	
Soil to Plants									
	Naphthalene					**4.4**	OSWER Directive 9285.7-55	Modeled from Kow based on Jager (1998) [Table 5]	
	Phenanthrene					**1.72**	OSWER Directive 9285.7-55	Modeled from Kow based on Jager (1998) [Table 5]	
	Pyrene					**1.75**	OSWER Directive 9285.7-55	Modeled from Kow based on Jager (1998) [Table 5]	
	Total PAHs								
	Low MW PAHs								
	High MW PAHs								
	TPH - Diesel								
	TPH - Kerosene								
	Normal paraffin hydrocarbons								
	Phenol					**0.235**	OSWER Directive 9285.7-55	Calculated using model from OSWER Directive 9285.7-55 and log Koc and Kow from EPI, 2011e	1.46
Semivolatile Organics	2-methylphenol (ocresol)					**0.336**	OSWER Directive 9285.7-55	Calculated using model from OSWER Directive 9285.7-55 and log Koc and Kow from EPI, 2011e	1.95
	4-methylphenol (pcresol)					**0.333**	OSWER Directive 9285.7-55	Calculated using model from OSWER Directive 9285.7-55 and log Koc and Kow from EPI, 2011e	1.94
	2,4-dinitrotoluene					**0.184**	OSWER Directive 9285.7-55	Calculated using model from OSWER Directive 9285.7-55 and log Koc and Kow from EPI, 2011e	1.98
	Bis[2-ethylhexyl] phthalate					**41.144**	OSWER Directive 9285.7-55	Calculated using model from OSWER Directive 9285.7-55 and log Koc and Kow from EPI, 2011e	7.6
	Total PCBs	**1.41**	**1.36**	Sample et al., 1999	Combined model and validation data sets, Table 3	**6.67**	Sample et al., 1999	Median, combined model and validation datasets, Table 2	
	Aroclor 1016	**1.41**	**1.36**	Sample et al., 1999	Combined model and validation data sets, Table 3	**6.67**	Sample et al., 1999	Median, combined model and validation datasets, Table 2	
	Aroclor 1221	**1.41**	**1.36**	Sample et al., 1999	Combined model and validation data sets, Table 3	**6.67**	Sample et al., 1999	Median, combined model and validation datasets, Table 2	
	Aroclor 1232	**1.41**	**1.36**	Sample et al., 1999	Combined model and validation data sets, Table 3	**6.67**	Sample et al., 1999	Median, combined model and validation datasets, Table 2	
	Aroclor 1242	**1.41**	**1.36**	Sample et al., 1999	Combined model and validation data sets, Table 3	**6.67**	Sample et al., 1999	Median, combined model and validation datasets, Table 2	
	Aroclor 1248	**1.41**	**1.36**	Sample et al., 1999	Combined model and validation data sets, Table 3	**6.67**	Sample et al., 1999	Median, combined model and validation datasets, Table 2	
	Aroclor 1254	**1.41**	**1.36**	Sample et al., 1999	Combined model and validation data sets, Table 3	**6.67**	Sample et al., 1999	Median, combined model and validation datasets, Table 2	
	Aroclor 1260	**1.41**	**1.36**	Sample et al., 1999	Combined model and validation data sets, Table 3	**6.67**	Sample et al., 1999	Median, combined model and validation datasets, Table 2	
	Aroclor-1262								
Pesticides	Dichloroprop								
	Aldrin					**1.033**	OSWER Directive 9285.7-55	Calculated using model from OSWER Directive 9285.7-55 and log Koc and Kow from EPI, 2011e	6.5
	beta-1,2,3,4,5,6-Hexachlorocyclohexane					**1.021**	OSWER Directive 9285.7-55	Calculated using model from OSWER Directive 9285.7-55 and log Koc and Kow from EPI, 2011e	4.14
	alpha-Chlordane					**1.031**	OSWER Directive 9285.7-55	Calculated using model from OSWER Directive 9285.7-55 and log Koc and Kow from EPI, 2011e	6.22

Table H-4. Biotransfer Factors and Regression Models Used for Refined SSL Calculations

Group	Analyte	Regression Models[a]				Bioaccumulation Factors			Kow
		B0	B1	Source	Notes[b]	BAF	Source	Notes[b]	
Soil to Plants									
	gamma-Chlordane					**1.036**	OSWER Directive 9285.7-55	Calculated using model from OSWER Directive 9285.7-55 and log Koc and Kow from EPI, 2011e	7
	Dichlorodiphenyldichloroethylene	**2.4771**	**0.8804**	OSWER Directive 9285.7-55	Regression derived from measured data				6.76
	Dichlorodiphenyltrichloroethane	**2.1247**	**0.8689**	OSWER Directive 9285.7-55	Regression derived from measured data				6.53
	Dieldrin					**14.70**	OSWER Directive 9285.7-55	Median BAF	5.37
	Endosulfan I					**1.184**	OSWER Directive 9285.7-55	Calculated using model from OSWER Directive 9285.7-55 and log Koc and Kow from EPI, 2011e	3.66
	Endosulfan II					**1.184**	OSWER Directive 9285.7-55	Calculated using model from OSWER Directive 9285.7-55 and log Koc and Kow from EPI, 2011e	3.66
	Endosulfan sulfate					**1.184**	OSWER Directive 9285.7-55	Calculated using model from OSWER Directive 9285.7-55 and log Koc and Kow from EPI, 2011e	3.66
	Endrin aldehyde					**6.686**	OSWER Directive 9285.7-55	Calculated using model from OSWER Directive 9285.7-55 and log Koc and Kow from EPI, 2011e	4.8
	Methoxychlor					**3.739**	OSWER Directive 9285.7-55	Calculated using model from OSWER Directive 9285.7-55 and log Koc and Kow from EPI, 2011e	5.08
Soil to Small Mammal									
Radionuclides	Americium-241					**0.041**	Beresford et al., 2008	CR review	
	Antimony-125					**2.1465E-06**	Beresford et al., 2008	Constant dietary CR [assume shrub diet] Beresford et al., 2004	
	Carbon-14					**1340**	Beresford et al., 2008	Specific activity model; FASSET	
	Cesium-134					**2.87**	Beresford et al., 2008	CR review - reindeer data not included	
	Cesium 137					**2.87**	Beresford et al., 2008	CR review - reindeer data not included	
	Cobalt-60					**0.30**	Beresford et al., 2008	CR review	
	Curium-244					**0.041**	Beresford et al., 2008	Assume Am mammal	
	Europium-152					**0.002**	Beresford et al., 2008	Allometric prediction using USDoE (EPIC vole parameters, grass CR of 1E-2)	
	Europium-154					**0.002**	Beresford et al., 2008	Allometric prediction using USDoE (EPIC vole parameters, grass CR of 1E-2)	
	Europium-155					**0.002**	Beresford et al., 2008	Allometric prediction using USDoE (EPIC vole parameters, grass CR of 1E-2)	
	Hydrogen-3 (tritium)					**150**	Beresford et al., 2008	Specific activity model; FASSET	
	Neptunium-237					**0.041**	Beresford et al., 2008	Same as Am mammal	
	Nickel-63					**0.072**	Beresford et al., 2008	CR review but based on stable Ni concentrations in mammalian tissues and 'general' soil concentrations FWCR = 3.87e-3 (in: Coughtrey and Thorne, 1983, A.A. Balkema, Vol. 2). Note 1 study gives high conc. in bone which may increase CR circa 10x)	
	Plutonium-238					**0.023**	Beresford et al., 2008	CR review	
	Plutonium-239/240					**0.023**	Beresford et al., 2008	CR review	
	Radium-226					**0.027**	Beresford et al., 2008	CR review - reindeer data not included	
	Radium-228					**0.027**	Beresford et al., 2008	CR review - reindeer data not included	

Table H-4. Biotransfer Factors and Regression Models Used for Refined SSL Calculations

Group	Analyte	Regression Models[a]				Bioaccumulation Factors			Kow
		B0	B1	Source	Notes[b]	BAF	Source	Notes[b]	
Soil to Plants									
	Strontium 90					**1.74**	Beresford et al., 2008	CR review - reindeer data not included	
	Technetium-99					**0.37**	Beresford et al., 2008	FASTer prediction	
	Thorium-232					**0.00012**	Beresford et al., 2008	CR review	
	Uranium-234					**0.00011**	Beresford et al., 2008	CR review	
	Uranium-235					**0.00011**	Beresford et al., 2008	CR review	
	Uranium-238					**0.00011**	Beresford et al., 2008	CR review	
Metals	Aluminum					**0.0263**	ES/ER/TM-219	Median - Table C.1 (general)	
	Antimony						ORNL-5786 cited in OSWER Directive 9285.7-55	**0.001* 50 * Cdiet (from Table 4a)**	
	Arsenic	**-4.8471**	**0.8188**	ES/ER/TM-219	cited in OSWER Directive 9285.7-55 (Table 4a) - general	0.0038	ES/ER/TM-219	Median - Table 2 (general)	
	Arsenic (III)	**-4.8471**	**0.8188**	ES/ER/TM-219	cited in OSWER Directive 9285.7-55 (Table 4a) - general	0.0038	ES/ER/TM-219	Median - Table 2 (general)	
	Arsenic (V)	**-4.8471**	**0.8188**	ES/ER/TM-219	cited in OSWER Directive 9285.7-55 (Table 4a) - general	0.0038	ES/ER/TM-219	Median - Table 2 (general)	
	Barium					**0.0168**	ES/ER/TM-219	Median - Table 2 (general); cited in OSWER Directive 9285.7-55	
	Beryllium						ORNL-5786 cited in OSWER Directive 9285.7-55 (table 4a)	**0.001 * 50 * Cdiet (from Table 4a)**	
	Bismuth					**1**	Default value	Default Value	
	Boron					**1**	Default value	Default Value	
	Cadmium	**-1.2571**	**0.4723**	ES/ER/TM-219	cited in OSWER Directive 9285.7-55 (Table 4a) - herbivore	0.7568			
	Chromium	**-1.4599**	**0.7338**	ES/ER/TM-219	cited in OSWER Directive 9285.7-55 (Table 4a) - general	0.0605	ES/ER/TM-219	Median - Table 2 (general)	
	Chromium (+3)	**-1.4599**	**0.7338**	ES/ER/TM-219	cited in OSWER Directive 9285.7-55 (Table 4a) - general	0.0605	ES/ER/TM-219	Median - Table 2 (general)	
	Chromium (+6)	**-1.4599**	**0.7338**	ES/ER/TM-219	cited in OSWER Directive 9285.7-55 (Table 4a) - general	0.0605	ES/ER/TM-219	Median - Table 2 (general)	
	Cobalt	**-4.4669**	**1.307**	ES/ER/TM-219	cited in OSWER Directive 9285.7-55 (Table 4a) - general	0.1000	ES/ER/TM-219	Median - Table 2 (general)	
	Copper	**2.042**	**0.1444**	ES/ER/TM-219	cited in OSWER Directive 9285.7-55 (Table 4a) - general	0.5999	ES/ER/TM-219	Median - Table 2 (general)	
	Lead	**0.0761**	**0.4422**	ES/ER/TM-219	cited in OSWER Directive 9285.7-55 (Table 4a) - general	0.1233	ES/ER/TM-219	Median - Table 2 (general)	
	Lithium					**1**	Default value	Default Value	
	Manganese					**0.0205**	ES/ER/TM-219	Median - Table C.1 (general)	
	Mercury					**0.054**	ES/ER/TM-219	Median - Table 2 (general)	
	Molybdenum					**1**	Default value		
	Nickel	**-0.2462**	**0.4658**	ES/ER/TM-219	cited in OSWER Directive 9285.7-55 (Table 4a) - general	0.3524	ES/ER/TM-219	Median - Table 2 (general)	
	Selenium	**-0.4158**	**0.3764**	ES/ER/TM-219	cited in OSWER Directive 9285.7-55 (Table 4a) - general	0.2107	ES/ER/TM-219	Median - Table 2 (general)	

Table H-4. Biotransfer Factors and Regression Models Used for Refined SSL Calculations

Group	Analyte	Regression Models[a]				Bioaccumulation Factors			Kow
		B0	B1	Source	Notes[b]	BAF	Source	Notes[b]	
Soil to Plants									
	Silver					**0.0040**	ES/ER/TM-219	Median - Table C.1 (general)	
	Strontium					**1.74**	Beresford et al., 2008	CR review - reindeer data not included	
	Thallium					**0.1124**	ES/ER/TM-219	Median - Table 2 (general)	
	Tin					**0.08**	ORNL-5786	Figure 2.25	
	Uranium					**0.0002**	ORNL-5786	Figure 2.25	
	Vanadium					**0.0123**	ES/ER/TM-219	Median - Table C.1 (general)	
	Zinc	**4.3632**	**0.0706**	ES/ER/TM-219	cited in OSWER Directive 9285.7-55 (Table 4a) - herbivore	0.8984	ES/ER/TM-219	Median - Table 2 (general)	
General Inorganics	Ammonia/Ammonium								
	Chloride								
	Cyanide								
	Fluoride								
	Iodine								
	Nitrate/Nitrite								
	Phosphate								
	Sulfate/Sulfite								
	Total Organic Carbon								
Volatile Organics	1,1-dichloroethane					**0.0109**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 1.79 (EPA, 1995)[d]	1.79
	1,1-dichloroethene					**0.0186**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 2.13 (EPA, 1995)[d]	2.13
	1,1,1-trichloroethane					**0.0305**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 2.48 (EPA, 1995)[d]	2.48
	1,1,2-trichloroethane					**0.0165**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 2.05 (EPA, 1995)[d]	2.05
	1,1,2,2-tetrachloroethane					**0.0270**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 2.39 (EPA, 1995)[d]	2.39
	1,2-dichlorobenzene					**0.0882**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 3.43 (EPA, 1995)[d]	3.43
	1,2-dichloroethane (DCA)					**0.0063**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 1.47 (EPA, 1995)[d]	1.47
	1,3-dichlorobenzene					**0.0963**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 3.53 (EPI, 2011)d	3.53
	2-butanone (Methyl Ethyl Ketone/MEK)					**0.0006**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 0.29 (EPI, 2011)d	0.29
	2-hexanone					**0.0053**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 1.38 (EPI, 2011)d	1.38
	Benzene					**0.0186**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 2.13 (EPA, 1995)[d]	2.13
	Butanol					**0.0017**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 0.8 (EPA, 1995)[d]	0.8

Table H-4. Biotransfer Factors and Regression Models Used for Refined SSL Calculations

Group	Analyte	Regression Models[a]				Bioaccumulation Factors			Kow
		B0	B1	Source	Notes[b]	BAF	Source	Notes[b]	
Soil to Plants									
	Carbon Tetrachloride					**0.0420**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 2.73 (EPA, 1995)[d]	2.73
	Chlorobenzene					**0.0490**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 2.86 (EPA, 1995)[d]	2.86
	Chloroform					**0.0135**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 1.92 (EPA, 1995)[d]	1.92
	Cis-1,2-dichloroethylene					**0.0122**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 1.86 (EPA, 1995)[d]	1.86
	Dichloromethane (Methylene Chloride)					**0.0042**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 1.25 (EPA, 1995)[d]	1.25
	Ethyl Benzene					**0.0666**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 3.14 (EPA, 1995)[d]	3.14
	Methyl Isobutyl Ketone					**0.0037**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 1.19 (EPA, 1995)[d]	1.19
	n-butyl Benzene					**0.1227**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 3.84 (EPI, 2011)d	3.84
	Tetrachloroethylene					**0.0390**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 1.79 (EPA, 1995)[d]	2.67
	Toluene					**0.0430**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 1.79 (EPA, 1995)[d]	2.75
	Trans-1,2-dichloroethylene					**0.0170**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 1.79 (EPA, 1995)[d]	2.07
	Trichloroethylene (TCE)					**0.0410**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 1.79 (EPA, 1995)[d]	2.71
	Xylene					**0.0619**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 1.79 (EPA, 1995)[d]	3.07
Polycyclic Aromatic Hydrocarbons	Acenaphthene					**0**	OSWER Directive 9285.7-55	Assumed to be negligible	
	Acenaphthylene					**0**	OSWER Directive 9285.7-55	Assumed to be negligible	
	Anthracene					**0**	OSWER Directive 9285.7-55	Assumed to be negligible	
	Benzo(a)pyrene					**0**	OSWER Directive 9285.7-55	Assumed to be negligible	
	Benzo(a)anthracene					**0**	OSWER Directive 9285.7-55	Assumed to be negligible	
	Benzo(b)fluoranthene					**0**	OSWER Directive 9285.7-55	Assumed to be negligible	
	Benzo(ghi)perylene					**0**	OSWER Directive 9285.7-55	Assumed to be negligible	
	Benzo[k]fluoranthene					**0**	OSWER Directive 9285.7-55	Assumed to be negligible	
	Chrysene					**0**	OSWER Directive 9285.7-55	Assumed to be negligible	
	Dibenz(ah)anthracene					**0**	OSWER Directive 9285.7-55	Assumed to be negligible	
	Fluoranthene					**0**	OSWER Directive 9285.7-55	Assumed to be negligible	
	Fluorene					**0**	OSWER Directive 9285.7-55	Assumed to be negligible	
	Indeno[1,2,3-cd]pyrene					**0**	OSWER Directive 9285.7-55	Assumed to be negligible	
	2-Methylnaphthalene					**0**	OSWER Directive 9285.7-55	Assumed to be negligible	
	Naphthalene					**0**	OSWER Directive 9285.7-55	Assumed to be negligible	
	Phenanthrene					**0**	OSWER Directive 9285.7-55	Assumed to be negligible	

Table H-4. Biotransfer Factors and Regression Models Used for Refined SSL Calculations

Group	Analyte	Regression Models[a]				Bioaccumulation Factors			Kow
		B0	B1	Source	Notes[b]	BAF	Source	Notes[b]	
Soil to Plants									
	Pyrene					**0**	OSWER Directive 9285.7-55	Assumed to be negligible	
	Total PAHs					**0**	OSWER Directive 9285.7-55	Assumed to be negligible	
	Low MW PAHs					**0**	OSWER Directive 9285.7-55	Assumed to be negligible	
	High MW PAHs					**0**	OSWER Directive 9285.7-55	Assumed to be negligible	
	TPH - Diesel					**0**	OSWER Directive 9285.7-55	Assumed to be negligible	
	TPH - Kerosene					**0**	OSWER Directive 9285.7-55	Assumed to be negligible	
	Normal paraffin hydrocarbons					**0**	OSWER Directive 9285.7-55	Assumed to be negligible	
	Phenol					**0.0064**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 1.48 (EPA, 1995)[d]	1.48
	2-methylphenol (ocresol)					**0.0150**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 1.99 (EPA, 1995)[d]	1.99
	4-methylphenol (pcresol)					**0.0141**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 1.95 (EPA, 1995)[d]	1.95
	2,4-dinitrotoluene					**0.0155**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 2.01 (EPA, 1995)[d]	2.01
	Bis[2-ethylhexyl] phthalate					**0.0945**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 7.3 (EPA, 1995)[d]	7.3
	Total PCBs					**0.1792**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 6.29 (EPA, 2010)d	6.29
	Aroclor 1016					**0.2104**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 5.69 (ChemIDplus Lite)d	5.69
Semivolatile Organics	Aroclor 1221					**0.1883**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 4.65 (ChemIDplus Lite)d	4.65
	Aroclor 1232					**0.1704**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 4.4 (ChemIDplus Lite)d	4.4
	Aroclor 1242					**0.1756**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 6.34 (ChemIDplus Lite)d	6.34
	Aroclor 1248					**0.1855**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 6.2 (ChemIDplus Lite)d	6.2
	Aroclor 1254					**0.1630**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 6.5 (ChemIDplus Lite)d	6.5
	Aroclor 1260					**0.0750**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 7.55 (ChemIDplus Lite)d	7.55
	Aroclor-1262								
	Dichloroprop								
	Aldrin					**0.1630**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 6.5 (EPA, 1995)[d]	6.5
Pesticides	beta-1,2,3,4,5,6-Hexachlorocyclohexane					**0.1201**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 3.81 (EPA, 1995)[d]	3.81
	alpha-Chlordane					**0.1771**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 6.32 (EPA, 1995)[d]	6.32

Table H-4. Biotransfer Factors and Regression Models Used for Refined SSL Calculations

Group	Analyte	Regression Models[a]				Bioaccumulation Factors			Kow
		B0	B1	Source	Notes[b]	BAF	Source	Notes[b]	
Soil to Plants									
	gamma-Chlordane					**0.1771**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 6.32 (EPA, 1995)[d]	6.32
	Dichlorodiphenyldichloroethylene	**3.6401**	**0.641**	OSWER Directive 9285.7-55	Regression derived from measured data [Appendix D]	0.1410	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 6.76 (EPA, 1995)[d]	6.76
	Dichlorodiphenyltrichloroethane	**1.1788**	**0.7254**	OSWER Directive 9285.7-55	Regression derived from measured data [Appendix D]	0.1606	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 6.53 (EPA, 1995)[d]	6.53
	Dieldrin					**1.20**	OSWER Directive 9285.7-55	Median BAF	5.37
	Endosulfan I					**0.1455**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 4.1 (EPA, 1995)[d]	4.1
	Endosulfan II					**0.1455**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 4.1 (EPA, 1995)[d]	4.1
	Endosulfan sulfate					**0.1072**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 3.66 (EPA, 2010)d	3.66
	Endrin aldehyde					**0.1368**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 4 (EPA, 1995)[d]	4
	Methoxychlor					**0.2093**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 5.08 (EPA, 1995)[d]	5.08

a. Regression models are in the form of LN(plant, invertebrate, or small mammal concentration) = B0 + B1(LN (soil concentration).

b. Notes refer to tables and appendices in the cited references, not tables or appendices of this report.

c. BAFs for uptake of organics with log Kows between 3 and 8 to plants were derived using log BAF = -0.4057*(logKow)+1.781 (rinsed plants, OSWER Directive 9285.7-55).

d. BAFs for uptake of organics to small mammals were derived using log BAF = $-0.099(\text{logKow})^2 + 1.07(\text{logKow}) - 3.56$; this regression is for uptake to fat and represents the lipid concentration rather than whole body.

e. BAFs for uptake of organics to invertebrates were derived using BAF = (0.87*(logKow)/(Koc*foc) (OSWER Directive 9285.7-55), where foc = 0.01.

BAF = Bioaccumulation Factor

Cdiet = concentration in small mammal diet (assumed to be 50 percent plants and 50 percent invertebrates)

EPA = United States Environmental Protection Agency

IAEA = International Atomic Energy Association

PCBs = polychlorinated biphenyls

TPH = total petroleum hydrocarbons

USACHPPM = United States Army Center for Health Promotion and Preventive Medicine

Table H-5. Biotransfer Factors and Regression Models Used for PRG Calculations

Analyte	Partial Site-Specific Bioaccumulation Models[a]								
	Terrestrial Plants			Terrestrial Arthropod			Small Mammal		
	B0	B1	Median BAF	B0	B1	Median BAF	B0	B1	Median BAF
Silver	-3.636	0.340				0.034			0.004
Aluminum			0.012			0.006	-3.636	0.964	
Arsenic			0.047	-0.450	0.544				0.004
Boron			23.481			5.626			1.020
Barium			0.250			0.056			0.122
Beryllium	-0.536	0.735				0.021			b
Cadmium	-0.591	0.547		0.132	0.654		-0.505	0.506	
Cobalt			0.011			0.011	-3.449	0.957	
Chromium			0.124			0.060			0.105
Copper			0.306	2.077	0.332		1.918	0.169	
Mercury	-0.973	0.538				0.889			0.090
Lithium			0.072			0.014			0.031
Manganese			0.154			0.053			0.041
Molybdenum			3.548			1.864			1.916
Nickel	-0.528	0.476				0.093	-0.323	0.445	
Lead	-1.607	0.577		-1.943	0.726		-0.662	0.552	
Antimony	-3.233	0.938				0.0075			b
Selenium	-0.505	1.040				1.161			0.652
Strontium [elemental]			1.744			0.403			0.866
Tin			2.165			0.971			1.403
Thallium			0.050			0.056	-1.936	0.558	
Uranium - Calculated Total			0.041	-1.028	1.078		0.202	1.342	
Vanadium	-9.118	2.383				0.010			0.015
Zinc	1.965	0.479		3.520	0.315				2.056

Notes:

a. Regression models are in the form of LN (plant, invertebrate, or small mammal concentration) = B0 + B1(LN (soil concentration).

b. Concentration in small mammal tissue = 0.001*50* concentration in the diet which was assumed to be arthropods

where:

B0 = Intercept

B1 = Slope

LN = natural log

BAF = Bioaccumulation Factor

Table H-6. Home Range Values for Hanford Wildlife

Assessment Endpoint Functional Group	Endpoint Species	Home Range (Square Feet)	Home Range (Acres)	Home Range (Square Meters)	Home Range (Hectares)	Notes	Source
Granivorous bird	California Quail	1132560	26	105218	10.5	4 coveys under various conditions, in California	CWHR, 2012
Omnivorous bird	Meadowlark	236700	7.5	30351	3	varied from 1.2 to 6.1 ha (3-15 ac), and mostly were 2.8 to 3.2 ha (7-8 ac)	Lanyon, 1956 and 1957 as noted in CWHR, 2012
Insectivorous bird	Killdeer	862,488 - 4,303,728	19.8-98.8	80,128 - 399,829	8.0-39.98	adult males and females during breeding season, Minnesota	Mace, 1971
Carnivorous bird	Red-tailed Hawk	10,759,320 - 107,593,200	247-2470	999,574 - 9,995,735	100-1000	depending on location, topography, habitat, and prey availability	CWHR, 2012
Granivorous mammal	Great Basin pocket mouse	5,663 - 24,829	0.13 to 0.57	526 - 2,307	0.05 to 0.25	females in Washington State	O'Farrell et al. 1975
Omnivorous mammal	Deer Mouse	9670	0.222	890	0.09	Idaho dessert	Bowers and Smith, 1979
Insectivorous mammal	Grasshopper mouse	252648	5.8	23472	2.3	The unusually large home range is associated with its predatory life style	cited as Blare (1953) by McCarty 1978
Carnivorous mammal	Badger	17,206,200 - 25,831,080	395-593	1,598,508 - 2,399,786	160-240	females:160, males:240	(Kurta, 1995; Long, 1999
Herbivorous mammal	Elk	210,972,644-1,650,107,467	4843-37881	19,600,000-153,300,000	1960-15330	females:160, males:240	PNNL-13331

Notes:

ADW = Animal Diversity Web

BNA The Birds of North America

Table H-7. 100-D Area Ecological Evaluation Based on SSLs for Surface Soils (0 to 15 feet [0 to 4.6m])

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
100-D-1_Shallow	non-Rad	Arsenic	7440-38-2	µg/kg	2027.46	1.0E+04	2.0E-01	1.9E+05	1.1E-02
100-D-1_Shallow	non-Rad	Barium	7440-39-3	µg/kg	67984.77	3.3E+05	2.1E-01	1.3E+06	5.1E-02
100-D-1_Shallow	non-Rad	Beryllium	7440-41-7	µg/kg	202.04	1.0E+04	2.0E-02	1.4E+04	1.5E-02
100-D-1_Shallow	non-Rad	Boron	7440-42-8	µg/kg	2100.00	5.0E+02	**4.2E+00**	1.3E+05	1.6E-02
100-D-1_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.08	2.2E+03	3.6E-05	9.2E+02	8.5E-05
100-D-1_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	10134.61	4.0E+02	**2.5E+01**	3.8E+04	2.7E-01
100-D-1_Shallow	non-Rad	Cobalt	7440-48-4	µg/kg	8617.09	1.3E+04	6.6E-01	1.1E+05	7.7E-02
100-D-1_Shallow	non-Rad	Copper	7440-50-8	µg/kg	20106.64	5.0E+04	4.0E-01	1.1E+05	1.9E-01
100-D-1_Shallow	non-Rad	Hexavalent Chromium	18540-29-9	µg/kg	417.00	No Value	--	1.3E+06	3.4E-04
100-D-1_Shallow	non-Rad	Lead	7439-92-1	µg/kg	3960.56	5.0E+04	7.9E-02	3.6E+04	1.1E-01
100-D-1_Shallow	non-Rad	Manganese	7439-96-5	µg/kg	322020.59	2.2E+05	**1.5E+00**	5.8E+06	5.6E-02
100-D-1_Shallow	non-Rad	Mercury	7439-97-6	µg/kg	7.30	1.0E+02	7.3E-02	1.9E+03	3.9E-03
100-D-1_Shallow	non-Rad	Methylene chloride	75-09-2	µg/kg	1.42	No Value	--	1.7E+05	8.6E-06
100-D-1_Shallow	non-Rad	Molybdenum	7439-98-7	µg/kg	350.00	2.0E+03	1.8E-01	1.4E+04	2.5E-02
100-D-1_Shallow	non-Rad	Nickel	7440-02-0	µg/kg	11343.41	3.0E+04	3.8E-01	3.3E+04	3.5E-01
100-D-1_Shallow	non-Rad	Pyrene	129-00-0	µg/kg	17.00	1.8E+04	9.4E-04	6.0E+05	2.8E-05
100-D-1_Shallow	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	µg/kg	12186.97	2.0E+05	6.1E-02	3.6E+08	3.4E-05
100-D-1_Shallow	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	µg/kg	43478.14	No Value	--	No Value	--
100-D-1_Shallow	non-Rad	Vanadium	7440-62-2	µg/kg	63050.63	2.0E+03	**3.2E+01**	3.1E+04	**2.0E+00**
100-D-1_Shallow	non-Rad	Zinc	7440-66-6	µg/kg	43844.65	5.0E+04	8.8E-01	6.8E+04	6.5E-01
100-D-13_Shallow_Focused	non-Rad	2,4-DB(4-(2,4-Dichlorophenoxy)butanoic acid)	94-82-6	µg/kg	11.00	No Value	--	No Value	--
100-D-13_Shallow_Focused	non-Rad	4,4'-DDT (Dichlorodiphenyltrichloroethane)	50-29-3	µg/kg	0.66	No Value	--	8.8E+02	7.5E-04
100-D-13_Shallow_Focused	non-Rad	Arsenic	7440-38-2	µg/kg	3100.00	1.0E+04	3.1E-01	1.9E+05	1.6E-02
100-D-13_Shallow_Focused	non-Rad	Barium	7440-39-3	µg/kg	70600.00	3.3E+05	2.1E-01	1.3E+06	5.3E-02
100-D-13_Shallow_Focused	non-Rad	Beryllium	7440-41-7	µg/kg	1000.00	1.0E+04	1.0E-01	1.4E+04	7.2E-02
100-D-13_Shallow_Focused	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	74.00	1.0E+05	7.4E-04	4.5E+04	1.6E-03
100-D-13_Shallow_Focused	non-Rad	Boron	7440-42-8	µg/kg	4900.00	5.0E+02	**9.8E+00**	1.3E+05	3.7E-02
100-D-13_Shallow_Focused	non-Rad	Cadmium	7440-43-9	µg/kg	66.00	4.0E+03	1.7E-02	1.6E+03	4.1E-02
100-D-13_Shallow_Focused	Rad	Cesium-137	10045-97-3	pCi/g	0.20	2.2E+03	9.1E-05	9.2E+02	2.2E-04
100-D-13_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	10900.00	4.0E+02	**2.7E+01**	3.8E+04	2.9E-01
100-D-13_Shallow_Focused	non-Rad	Cobalt	7440-48-4	µg/kg	7000.00	1.3E+04	5.4E-01	1.1E+05	6.3E-02
100-D-13_Shallow_Focused	non-Rad	Copper	7440-50-8	µg/kg	13400.00	5.0E+04	2.7E-01	1.1E+05	1.3E-01
100-D-13_Shallow_Focused	non-Rad	Di-n-butylphthalate	84-74-2	µg/kg	64.00	No Value	--	No Value	--
100-D-13_Shallow_Focused	non-Rad	Dinoseb(2-secButyl-4,6-dinitrophenol)	88-85-7	µg/kg	3.00	No Value	--	No Value	--
100-D-13_Shallow_Focused	non-Rad	Fluoride	16984-48-8	µg/kg	1400.00	No Value	--	2.3E+06	6.1E-04
100-D-13_Shallow_Focused	non-Rad	Lead	7439-92-1	µg/kg	6300.00	5.0E+04	1.3E-01	3.6E+04	1.8E-01
100-D-13_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	271000.00	2.2E+05	**1.2E+00**	5.8E+06	4.7E-02
100-D-13_Shallow_Focused	non-Rad	Mercury	7439-97-6	µg/kg	14.00	1.0E+02	1.4E-01	1.9E+03	7.5E-03
100-D-13_Shallow_Focused	non-Rad	Molybdenum	7439-98-7	µg/kg	680.00	2.0E+03	3.4E-01	1.4E+04	4.9E-02
100-D-13_Shallow_Focused	non-Rad	Nickel	7440-02-0	µg/kg	11000.00	3.0E+04	3.7E-01	3.3E+04	3.4E-01
100-D-13_Shallow_Focused	non-Rad	Nitrate	14797-55-8	µg/kg	27500.00	No Value	--	3.4E+08	8.1E-05
100-D-13_Shallow_Focused	non-Rad	Nitrogen in Nitrate	NO3-N	µg/kg	1800.00	No Value	--	No Value	--
100-D-13_Shallow_Focused	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	µg/kg	6700.00	No Value	--	No Value	--

Table H-7. 100-D Area Ecological Evaluation Based on SSLs for Surface Soils (0 to 15 feet [0 to 4.6m])

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
100-D-13_Shallow_Focused	non-Rad	Phenol	108-95-2	µg/kg	22.00	3.0E+04	7.3E-04	1.5E+06	1.5E-05
100-D-13_Shallow_Focused	Rad	Rads SOF	---	pCi/g	--	--	1.0E-04	--	2.7E-04
100-D-13_Shallow_Focused	non-Rad	Selenium	7782-49-2	µg/kg	890.00	5.2E+02	**1.7E+00**	1.9E+03	4.7E-01
100-D-13_Shallow_Focused	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	µg/kg	2600.00	No Value	--	No Value	--
100-D-13_Shallow_Focused	non-Rad	Uranium	7440-61-1	µg/kg	1500.00	5.0E+03	3.0E-01	3.6E+04	1.9E-03
100-D-13_Shallow_Focused	Rad	Uranium-234	13966-29-5	pCi/g	0.10	5.2E+04	1.9E-06	6.4E+03	1.5E-05
100-D-13_Shallow_Focused	Rad	Uranium-238	U-238	pCi/g	0.18	1.6E+04	1.2E-05	5.2E+03	3.6E-05
100-D-13_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	46400.00	2.0E+03	**2.3E+01**	3.1E+04	**1.5E+00**
100-D-13_Shallow_Focused	non-Rad	Zinc	7440-66-6	µg/kg	122000.00	5.0E+04	**2.4E+00**	6.8E+04	**1.8E+00**
100-D-15_Shallow_1	non-Rad	Aroclor HI	---	µg/kg	--	--	4.0E-04	--	1.1E-02
100-D-15_Shallow_1	non-Rad	Aroclor-1254	11097-69-1	µg/kg	7.37	4.0E+04	1.8E-04	1.5E+03	5.0E-03
100-D-15_Shallow_1	non-Rad	Aroclor-1260	11096-82-5	µg/kg	8.54	4.0E+04	2.1E-04	1.5E+03	5.8E-03
100-D-15_Shallow_1	non-Rad	Arsenic	7440-38-2	µg/kg	3199.43	1.0E+04	3.2E-01	1.9E+05	1.7E-02
100-D-15_Shallow_1	non-Rad	Barium	7440-39-3	µg/kg	64052.51	3.3E+05	1.9E-01	1.3E+06	4.8E-02
100-D-15_Shallow_1	non-Rad	Beryllium	7440-41-7	µg/kg	190.71	1.0E+04	1.9E-02	1.4E+04	1.4E-02
100-D-15_Shallow_1	non-Rad	Boron	7440-42-8	µg/kg	1510.11	5.0E+02	**3.0E+00**	1.3E+05	1.1E-02
100-D-15_Shallow_1	non-Rad	Cadmium	7440-43-9	µg/kg	61.77	4.0E+03	1.5E-02	1.6E+03	3.8E-02
100-D-15_Shallow_1	non-Rad	Chromium	7440-47-3	µg/kg	11800.94	4.0E+02	**3.0E+01**	3.8E+04	3.1E-01
100-D-15_Shallow_1	non-Rad	Cobalt	7440-48-4	µg/kg	6697.69	1.3E+04	5.2E-01	1.1E+05	6.0E-02
100-D-15_Shallow_1	non-Rad	Copper	7440-50-8	µg/kg	12272.74	5.0E+04	2.5E-01	1.1E+05	1.2E-01
100-D-15_Shallow_1	non-Rad	Hexavalent Chromium	18540-29-9	µg/kg	130.00	No Value	--	1.3E+06	1.0E-04
100-D-15_Shallow_1	non-Rad	Lead	7439-92-1	µg/kg	4546.37	5.0E+04	9.1E-02	3.6E+04	1.3E-01
100-D-15_Shallow_1	non-Rad	Manganese	7439-96-5	µg/kg	277857.01	2.2E+05	**1.3E+00**	5.8E+06	4.8E-02
100-D-15_Shallow_1	non-Rad	Mercury	7439-97-6	µg/kg	29.29	1.0E+02	2.9E-01	1.9E+03	1.6E-02
100-D-15_Shallow_1	non-Rad	Molybdenum	7439-98-7	µg/kg	379.67	2.0E+03	1.9E-01	1.4E+04	2.7E-02
100-D-15_Shallow_1	non-Rad	Nickel	7440-02-0	µg/kg	10447.03	3.0E+04	3.5E-01	3.3E+04	3.2E-01
100-D-15_Shallow_1	non-Rad	Total petroleum hydrocarbons - motor oil (high boiling)	TPH/OILH	µg/kg	8272.09	No Value	--	No Value	--
100-D-15_Shallow_1	non-Rad	Vanadium	7440-62-2	µg/kg	54073.17	2.0E+03	**2.7E+01**	3.1E+04	**1.7E+00**
100-D-15_Shallow_1	non-Rad	Zinc	7440-66-6	µg/kg	39833.06	5.0E+04	8.0E-01	6.8E+04	5.9E-01
100-D-15_Shallow_2	non-Rad	4,4'-DDD (Dichlorodiphenyldichloroethane)	72-54-8	µg/kg	3.62	No Value	--	No Value	--
100-D-15_Shallow_2	non-Rad	4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	µg/kg	5.69	No Value	--	4.0E+02	1.4E-02
100-D-15_Shallow_2	non-Rad	Arsenic	7440-38-2	µg/kg	4025.36	1.0E+04	4.0E-01	1.9E+05	2.1E-02
100-D-15_Shallow_2	non-Rad	Barium	7440-39-3	µg/kg	84308.89	3.3E+05	2.6E-01	1.3E+06	6.4E-02
100-D-15_Shallow_2	non-Rad	Beryllium	7440-41-7	µg/kg	269.69	1.0E+04	2.7E-02	1.4E+04	1.9E-02
100-D-15_Shallow_2	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	427.00	1.0E+05	4.3E-03	4.5E+04	9.4E-03
100-D-15_Shallow_2	non-Rad	Boron	7440-42-8	µg/kg	1652.40	5.0E+02	**3.3E+00**	1.3E+05	1.2E-02
100-D-15_Shallow_2	non-Rad	Cadmium	7440-43-9	µg/kg	964.98	4.0E+03	2.4E-01	1.6E+03	5.9E-01
100-D-15_Shallow_2	non-Rad	Chromium	7440-47-3	µg/kg	14486.33	4.0E+02	**3.6E+01**	3.8E+04	3.8E-01
100-D-15_Shallow_2	non-Rad	Cobalt	7440-48-4	µg/kg	7879.98	1.3E+04	6.1E-01	1.1E+05	7.1E-02
100-D-15_Shallow_2	non-Rad	Copper	7440-50-8	µg/kg	20641.12	5.0E+04	4.1E-01	1.1E+05	1.9E-01
100-D-15_Shallow_2	non-Rad	Hexavalent Chromium	18540-29-9	µg/kg	172.70	No Value	--	1.3E+06	1.4E-04
100-D-15_Shallow_2	non-Rad	Lead	7439-92-1	µg/kg	7174.78	5.0E+04	1.4E-01	3.6E+04	2.0E-01
100-D-15_Shallow_2	non-Rad	Manganese	7439-96-5	µg/kg	326394.50	2.2E+05	**1.5E+00**	5.8E+06	5.6E-02

Table H-7. 100-D Area Ecological Evaluation Based on SSLs for Surface Soils (0 to 15 feet [0 to 4.6m])

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
100-D-15_Shallow_2	non-Rad	Mercury	7439-97-6	µg/kg	24.50	1.0E+02	2.5E-01	1.9E+03	1.3E-02
100-D-15_Shallow_2	non-Rad	Molybdenum	7439-98-7	µg/kg	553.38	2.0E+03	2.8E-01	1.4E+04	4.0E-02
100-D-15_Shallow_2	non-Rad	Nickel	7440-02-0	µg/kg	13099.46	3.0E+04	4.4E-01	3.3E+04	4.0E-01
100-D-15_Shallow_2	non-Rad	Selenium	7782-49-2	µg/kg	477.00	5.2E+02	9.2E-01	1.9E+03	2.5E-01
100-D-15_Shallow_2	non-Rad	Total petroleum hydrocarbons - motor oil (high boiling)	TPH/OILH	µg/kg	32560.00	No Value	--	No Value	--
100-D-15_Shallow_2	non-Rad	Vanadium	7440-62-2	µg/kg	60475.17	2.0E+03	**3.0E+01**	3.1E+04	**1.9E+00**
100-D-15_Shallow_2	non-Rad	Zinc	7440-66-6	µg/kg	92810.11	5.0E+04	**1.9E+00**	6.8E+04	**1.4E+00**
100-D-2_Shallow_Focused	non-Rad	Arsenic	7440-38-2	µg/kg	2100.00	1.0E+04	2.1E-01	1.9E+05	1.1E-02
100-D-2_Shallow_Focused	non-Rad	Barium	7440-39-3	µg/kg	65000.00	3.3E+05	2.0E-01	1.3E+06	4.9E-02
100-D-2_Shallow_Focused	non-Rad	Beryllium	7440-41-7	µg/kg	190.00	1.0E+04	1.9E-02	1.4E+04	1.4E-02
100-D-2_Shallow_Focused	non-Rad	Boron	7440-42-8	µg/kg	3300.00	5.0E+02	**6.6E+00**	1.3E+05	2.5E-02
100-D-2_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	7300.00	4.0E+02	**1.8E+01**	3.8E+04	1.9E-01
100-D-2_Shallow_Focused	non-Rad	Cobalt	7440-48-4	µg/kg	7000.00	1.3E+04	5.4E-01	1.1E+05	6.3E-02
100-D-2_Shallow_Focused	non-Rad	Copper	7440-50-8	µg/kg	14500.00	5.0E+04	2.9E-01	1.1E+05	1.4E-01
100-D-2_Shallow_Focused	non-Rad	Hexavalent Chromium	18540-29-9	µg/kg	410.00	No Value	--	1.3E+06	3.3E-04
100-D-2_Shallow_Focused	non-Rad	Lead	7439-92-1	µg/kg	8900.00	5.0E+04	1.8E-01	3.6E+04	2.5E-01
100-D-2_Shallow_Focused	non-Rad	Lithium	7439-93-2	µg/kg	4700.00	2.0E+03	**2.4E+00**	5.2E+05	9.1E-03
100-D-2_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	294000.00	2.2E+05	**1.3E+00**	5.8E+06	5.1E-02
100-D-2_Shallow_Focused	non-Rad	Molybdenum	7439-98-7	µg/kg	920.00	2.0E+03	4.6E-01	1.4E+04	6.6E-02
100-D-2_Shallow_Focused	non-Rad	Nickel	7440-02-0	µg/kg	11800.00	3.0E+04	3.9E-01	3.3E+04	3.6E-01
100-D-2_Shallow_Focused	non-Rad	Strontium	7440-24-6	µg/kg	24600.00	No Value	--	4.2E+06	5.8E-03
100-D-2_Shallow_Focused	non-Rad	Tin	7440-31-5	µg/kg	2400.00	5.0E+04	4.8E-02	2.0E+05	1.2E-02
100-D-2_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	50100.00	2.0E+03	**2.5E+01**	3.1E+04	**1.6E+00**
100-D-2_Shallow_Focused	non-Rad	Zinc	7440-66-6	µg/kg	51300.00	5.0E+04	**1.0E+00**	6.8E+04	7.6E-01
100-D-20_Shallow	Rad	Americium-241	14596-10-2	pCi/g	0.21	2.2E+04	9.5E-06	4.8E+03	4.2E-05
100-D-20_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	1.49	2.2E+03	6.7E-04	9.2E+02	1.6E-03
100-D-20_Shallow	Rad	Cobalt-60	10198-40-0	pCi/g	0.07	6.1E+03	1.2E-05	8.1E+02	9.0E-05
100-D-20_Shallow	Rad	Europium-152	14683-23-9	pCi/g	0.55	1.5E+04	3.8E-05	1.7E+03	3.2E-04
100-D-20_Shallow	Rad	Plutonium-239/240	PU-239/240	pCi/g	0.04	1.3E+04	3.2E-06	6.3E+03	6.5E-06
100-D-20_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	2563.02	5.0E+03	5.1E-01	3.6E+04	3.3E-03
100-D-20_Shallow	Rad	Uranium-234	13966-29-5	pCi/g	0.77	5.2E+04	1.5E-05	6.4E+03	1.2E-04
100-D-20_Shallow	Rad	Uranium-235	15117-96-1	pCi/g	0.04	2.7E+04	1.3E-06	4.4E+03	8.2E-06
100-D-20_Shallow	Rad	Uranium-238	U-238	pCi/g	0.86	1.6E+04	5.5E-05	5.2E+03	1.7E-04
100-D-21_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.03	2.2E+03	1.3E-05	9.2E+02	3.0E-05
100-D-22_Shallow	Rad	Americium-241	14596-10-2	pCi/g	0.06	2.2E+04	2.7E-06	4.8E+03	1.2E-05
100-D-22_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.20	2.2E+03	9.1E-05	9.2E+02	2.2E-04
100-D-22_Shallow	Rad	Cobalt-60	10198-40-0	pCi/g	0.03	6.1E+03	5.5E-06	8.1E+02	4.2E-05
100-D-22_Shallow	Rad	Europium-152	14683-23-9	pCi/g	0.37	1.5E+04	2.5E-05	1.7E+03	2.2E-04
100-D-22_Shallow	non-Rad	Lead	7439-92-1	µg/kg	7200.00	5.0E+04	1.4E-01	3.6E+04	2.0E-01
100-D-22_Shallow	Rad	Rads SOF	---	pCi/g	--	--	2.6E-04	--	4.0E-03
100-D-22_Shallow	Rad	Total beta radiostrontium	SR-RAD	pCi/g	0.30	3.6E+03	8.5E-05	9.1E+01	3.3E-03
100-D-22_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	2500.40	5.0E+03	5.0E-01	3.6E+04	3.2E-03
100-D-22_Shallow	Rad	Uranium-238	U-238	pCi/g	0.84	1.6E+04	5.4E-05	5.2E+03	1.6E-04
100-D-24_Shallow_Focused	non-Rad	Arsenic	7440-38-2	µg/kg	2300.00	1.0E+04	2.3E-01	1.9E+05	1.2E-02
100-D-24_Shallow_Focused	non-Rad	Barium	7440-39-3	µg/kg	60300.00	3.3E+05	1.8E-01	1.3E+06	4.6E-02
100-D-24_Shallow_Focused	non-Rad	Beryllium	7440-41-7	µg/kg	271.00	1.0E+04	2.7E-02	1.4E+04	1.9E-02
100-D-24_Shallow_Focused	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	57.53	1.0E+05	5.8E-04	4.5E+04	1.3E-03

Table H-7. 100-D Area Ecological Evaluation Based on SSLs for Surface Soils (0 to 15 feet [0 to 4.6m])

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
100-D-24_Shallow_Focused	non-Rad	Boron	7440-42-8	µg/kg	1900.00	5.0E+02	**3.8E+00**	1.3E+05	1.4E-02
100-D-24_Shallow_Focused	non-Rad	Cadmium	7440-43-9	µg/kg	201.00	4.0E+03	5.0E-02	1.6E+03	1.2E-01
100-D-24_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	6200.00	4.0E+02	**1.6E+01**	3.8E+04	1.6E-01
100-D-24_Shallow_Focused	non-Rad	Cobalt	7440-48-4	µg/kg	7600.00	1.3E+04	5.9E-01	1.1E+05	6.8E-02
100-D-24_Shallow_Focused	non-Rad	Copper	7440-50-8	µg/kg	15300.00	5.0E+04	3.1E-01	1.1E+05	1.4E-01
100-D-24_Shallow_Focused	non-Rad	Di-n-butylphthalate	84-74-2	µg/kg	21.53	No Value	--	No Value	--
100-D-24_Shallow_Focused	non-Rad	Hexavalent Chromium	18540-29-9	µg/kg	243.00	No Value	--	1.3E+06	2.0E-04
100-D-24_Shallow_Focused	non-Rad	Lead	7439-92-1	µg/kg	4100.00	5.0E+04	8.2E-02	3.6E+04	1.2E-01
100-D-24_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	295000.00	2.2E+05	**1.3E+00**	5.8E+06	5.1E-02
100-D-24_Shallow_Focused	non-Rad	Mercury	7439-97-6	µg/kg	65.00	1.0E+02	6.5E-01	1.9E+03	3.5E-02
100-D-24_Shallow_Focused	non-Rad	Methylene chloride	75-09-2	µg/kg	7.15	No Value	--	1.7E+05	4.3E-05
100-D-24_Shallow_Focused	non-Rad	Molybdenum	7439-98-7	µg/kg	466.00	2.0E+03	2.3E-01	1.4E+04	3.3E-02
100-D-24_Shallow_Focused	non-Rad	Nickel	7440-02-0	µg/kg	9800.00	3.0E+04	3.3E-01	3.3E+04	3.0E-01
100-D-24_Shallow_Focused	Rad	Rads SOF	---	pCi/g	--	--	5.3E-05	--	2.2E-04
100-D-24_Shallow_Focused	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	1955.76	5.0E+03	3.9E-01	3.6E+04	2.5E-03
100-D-24_Shallow_Focused	Rad	Uranium-233/234	U-233/234	pCi/g	0.57	5.2E+04	1.1E-05	6.4E+03	8.9E-05
100-D-24_Shallow_Focused	Rad	Uranium-238	U-238	pCi/g	0.66	1.6E+04	4.2E-05	5.2E+03	1.3E-04
100-D-24_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	48700.00	2.0E+03	**2.4E+01**	3.1E+04	**1.6E+00**
100-D-24_Shallow_Focused	non-Rad	Zinc	7440-66-6	µg/kg	41600.00	5.0E+04	8.3E-01	6.8E+04	6.1E-01
100-D-28:1_Overburden	non-Rad	Anthracene	120-12-7	µg/kg	32.39	2.9E+04	1.1E-03	6.8E+05	4.8E-05
100-D-28:1_Overburden	non-Rad	Antimony	7440-36-0	µg/kg	615.72	5.0E+03	1.2E-01	6.0E+03	1.0E-01
100-D-28:1_Overburden	non-Rad	Arsenic	7440-38-2	µg/kg	2242.01	1.0E+04	2.2E-01	1.9E+05	1.2E-02
100-D-28:1_Overburden	non-Rad	Barium	7440-39-3	µg/kg	57527.24	3.3E+05	1.7E-01	1.3E+06	4.4E-02
100-D-28:1_Overburden	non-Rad	Benzo(a)anthracene	56-55-3	µg/kg	878.88	1.8E+04	4.9E-02	6.4E+04	1.4E-02
100-D-28:1_Overburden	non-Rad	Benzo(a)pyrene	50-32-8	µg/kg	126.83	1.8E+04	7.1E-03	7.6E+04	1.7E-03
100-D-28:1_Overburden	non-Rad	Benzo(b)fluoranthene	205-99-2	µg/kg	165.25	1.8E+04	9.2E-03	3.9E+04	4.2E-03
100-D-28:1_Overburden	non-Rad	Benzo(k)fluoranthene	207-08-9	µg/kg	80.24	1.8E+04	4.5E-03	3.9E+04	2.1E-03
100-D-28:1_Overburden	non-Rad	Boron	7440-42-8	µg/kg	1041.67	5.0E+02	**2.1E+00**	1.3E+05	7.8E-03
100-D-28:1_Overburden	non-Rad	Cadmium	7440-43-9	µg/kg	72.87	4.0E+03	1.8E-02	1.6E+03	4.5E-02
100-D-28:1_Overburden	non-Rad	Carbazole	86-74-8	µg/kg	76.00	No Value	--	No Value	--
100-D-28:1_Overburden	non-Rad	Chromium	7440-47-3	µg/kg	9398.84	4.0E+02	**2.4E+01**	3.8E+04	2.5E-01
100-D-28:1_Overburden	non-Rad	Chrysene	218-01-9	µg/kg	559.49	1.8E+04	3.1E-02	4.5E+04	1.3E-02
100-D-28:1_Overburden	non-Rad	Cobalt	7440-48-4	µg/kg	7750.76	1.3E+04	6.0E-01	1.1E+05	7.0E-02
100-D-28:1_Overburden	non-Rad	Copper	7440-50-8	µg/kg	14726.52	5.0E+04	3.0E-01	1.1E+05	1.4E-01
100-D-28:1_Overburden	non-Rad	Dibenz[a,h]anthracene	53-70-3	µg/kg	48.00	1.8E+04	2.7E-03	4.4E+04	1.1E-03
100-D-28:1_Overburden	non-Rad	Fluoranthene	206-44-0	µg/kg	373.81	1.8E+04	2.1E-02	8.4E+05	4.5E-04
100-D-28:1_Overburden	non-Rad	Hexavalent Chromium	18540-29-9	µg/kg	284.00	No Value	--	1.3E+06	2.3E-04
100-D-28:1_Overburden	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	95.50	1.8E+04	5.3E-03	3.6E+04	2.7E-03
100-D-28:1_Overburden	non-Rad	Lead	7439-92-1	µg/kg	13258.41	5.0E+04	2.7E-01	3.6E+04	3.7E-01
100-D-28:1_Overburden	non-Rad	Manganese	7439-96-5	µg/kg	283916.77	2.2E+05	**1.3E+00**	5.8E+06	4.9E-02
100-D-28:1_Overburden	non-Rad	Mercury	7439-97-6	µg/kg	78.55	1.0E+02	7.9E-01	1.9E+03	4.2E-02
100-D-28:1_Overburden	non-Rad	Molybdenum	7439-98-7	µg/kg	330.00	2.0E+03	1.7E-01	1.4E+04	2.4E-02
100-D-28:1_Overburden	non-Rad	Nickel	7440-02-0	µg/kg	10387.08	3.0E+04	3.5E-01	3.3E+04	3.2E-01
100-D-28:1_Overburden	non-Rad	Pyrene	129-00-0	µg/kg	826.61	1.8E+04	4.6E-02	6.0E+05	1.4E-03
100-D-28:1_Overburden	non-Rad	Vanadium	7440-62-2	µg/kg	54468.60	2.0E+03	**2.7E+01**	3.1E+04	**1.8E+00**
100-D-28:1_Overburden	non-Rad	Zinc	7440-66-6	µg/kg	42796.28	5.0E+04	8.6E-01	6.8E+04	6.3E-01
100-D-28:1_Shallow	non-Rad	Acenaphthene	83-32-9	µg/kg	45.00	2.0E+04	2.3E-03	1.1E+06	4.1E-05
100-D-28:1_Shallow	non-Rad	Anthracene	120-12-7	µg/kg	110.00	2.9E+04	3.8E-03	6.8E+05	1.6E-04

Table H-7. 100-D Area Ecological Evaluation Based on SSLs for Surface Soils (0 to 15 feet [0 to 4.6m])

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
100-D-28:1_Shallow	non-Rad	Antimony	7440-36-0	µg/kg	380.00	5.0E+03	7.6E-02	6.0E+03	6.4E-02
100-D-28:1_Shallow	non-Rad	Arsenic	7440-38-2	µg/kg	2257.59	1.0E+04	2.3E-01	1.9E+05	1.2E-02
100-D-28:1_Shallow	non-Rad	Barium	7440-39-3	µg/kg	63401.77	3.3E+05	1.9E-01	1.3E+06	4.8E-02
100-D-28:1_Shallow	non-Rad	Benzo(a)anthracene	56-55-3	µg/kg	31.96	1.8E+04	1.8E-03	6.4E+04	5.0E-04
100-D-28:1_Shallow	non-Rad	Benzo(a)pyrene	50-32-8	µg/kg	47.34	1.8E+04	2.6E-03	7.6E+04	6.2E-04
100-D-28:1_Shallow	non-Rad	Benzo(b)fluoranthene	205-99-2	µg/kg	38.76	1.8E+04	2.2E-03	3.9E+04	9.9E-04
100-D-28:1_Shallow	non-Rad	Benzo(k)fluoranthene	207-08-9	µg/kg	20.00	1.8E+04	1.1E-03	3.9E+04	5.1E-04
100-D-28:1_Shallow	non-Rad	Beryllium	7440-41-7	µg/kg	90.00	1.0E+04	9.0E-03	1.4E+04	6.5E-03
100-D-28:1_Shallow	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	160.00	1.0E+05	1.6E-03	4.5E+04	3.5E-03
100-D-28:1_Shallow	non-Rad	Boron	7440-42-8	µg/kg	1300.00	5.0E+02	**2.6E+00**	1.3E+05	9.8E-03
100-D-28:1_Shallow	non-Rad	Cadmium	7440-43-9	µg/kg	129.93	4.0E+03	3.3E-02	1.6E+03	8.0E-02
100-D-28:1_Shallow	non-Rad	Carbazole	86-74-8	µg/kg	120.00	No Value	--	No Value	--
100-D-28:1_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	9867.48	4.0E+02	**2.5E+01**	3.8E+04	2.6E-01
100-D-28:1_Shallow	non-Rad	Chrysene	218-01-9	µg/kg	47.15	1.8E+04	2.6E-03	4.5E+04	1.1E-03
100-D-28:1_Shallow	non-Rad	Cobalt	7440-48-4	µg/kg	8100.69	1.3E+04	6.2E-01	1.1E+05	7.3E-02
100-D-28:1_Shallow	non-Rad	Copper	7440-50-8	µg/kg	15361.60	5.0E+04	3.1E-01	1.1E+05	1.4E-01
100-D-28:1_Shallow	non-Rad	Dibenzofuran	132-64-9	µg/kg	43.00	No Value	--	No Value	--
100-D-28:1_Shallow	non-Rad	Fluoranthene	206-44-0	µg/kg	30.33	1.8E+04	1.7E-03	8.4E+05	3.6E-05
100-D-28:1_Shallow	non-Rad	Fluorene	86-73-7	µg/kg	50.00	2.9E+04	1.7E-03	1.8E+05	2.9E-04
100-D-28:1_Shallow	non-Rad	Hexavalent Chromium	18540-29-9	µg/kg	203.44	No Value	--	1.3E+06	1.6E-04
100-D-28:1_Shallow	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	35.83	1.8E+04	2.0E-03	3.6E+04	1.0E-03
100-D-28:1_Shallow	non-Rad	Lead	7439-92-1	µg/kg	7143.85	5.0E+04	1.4E-01	3.6E+04	2.0E-01
100-D-28:1_Shallow	non-Rad	Manganese	7439-96-5	µg/kg	305115.91	2.2E+05	**1.4E+00**	5.8E+06	5.3E-02
100-D-28:1_Shallow	non-Rad	Mercury	7439-97-6	µg/kg	571.98	1.0E+02	**5.7E+00**	1.9E+03	3.1E-01
100-D-28:1_Shallow	non-Rad	Molybdenum	7439-98-7	µg/kg	410.00	2.0E+03	2.1E-01	1.4E+04	2.9E-02
100-D-28:1_Shallow	non-Rad	Naphthalene	91-20-3	µg/kg	46.00	2.9E+04	1.6E-03	1.0E+05	4.6E-04
100-D-28:1_Shallow	non-Rad	Nickel	7440-02-0	µg/kg	11863.60	3.0E+04	4.0E-01	3.3E+04	3.6E-01
100-D-28:1_Shallow	non-Rad	Phenol	108-95-2	µg/kg	28.00	3.0E+04	9.3E-04	1.5E+06	1.9E-05
100-D-28:1_Shallow	non-Rad	Pyrene	129-00-0	µg/kg	90.67	1.8E+04	5.0E-03	6.0E+05	1.5E-04
100-D-28:1_Shallow	non-Rad	Selenium	7782-49-2	µg/kg	1700.00	5.2E+02	**3.3E+00**	1.9E+03	9.0E-01
100-D-28:1_Shallow	non-Rad	Vanadium	7440-62-2	µg/kg	54614.51	2.0E+03	**2.7E+01**	3.1E+04	**1.8E+00**
100-D-28:1_Shallow	non-Rad	Zinc	7440-66-6	µg/kg	59413.73	5.0E+04	**1.2E+00**	6.8E+04	8.8E-01
100-D-28:1_Staging Pile Area Footprint	non-Rad	4,4'-DDT (Dichlorodiphenyltrichloroethane)	50-29-3	µg/kg	0.97	No Value	--	8.8E+02	1.1E-03
100-D-28:1_Staging Pile Area Footprint	non-Rad	Alpha-BHC	319-84-6	µg/kg	0.49	No Value	--	No Value	--
100-D-28:1_Staging Pile Area Footprint	non-Rad	Aroclor-1254	11097-69-1	µg/kg	3.30	4.0E+04	8.3E-05	1.5E+03	2.2E-03
100-D-28:1_Staging Pile Area Footprint	non-Rad	Arsenic	7440-38-2	µg/kg	2591.53	1.0E+04	2.6E-01	1.9E+05	1.4E-02
100-D-28:1_Staging Pile Area Footprint	non-Rad	Barium	7440-39-3	µg/kg	63110.49	3.3E+05	1.9E-01	1.3E+06	4.8E-02
100-D-28:1_Staging Pile Area Footprint	non-Rad	Benzo(a)anthracene	56-55-3	µg/kg	12.00	1.8E+04	6.7E-04	6.4E+04	1.9E-04
100-D-28:1_Staging Pile Area Footprint	non-Rad	Benzo(a)pyrene	50-32-8	µg/kg	21.00	1.8E+04	1.2E-03	7.6E+04	2.8E-04
100-D-28:1_Staging Pile Area Footprint	non-Rad	Benzo(b)fluoranthene	205-99-2	µg/kg	19.50	1.8E+04	1.1E-03	3.9E+04	5.0E-04
100-D-28:1_Staging Pile Area Footprint	non-Rad	Benzo(k)fluoranthene	207-08-9	µg/kg	16.00	1.8E+04	8.9E-04	3.9E+04	4.1E-04
100-D-28:1_Staging Pile Area Footprint	non-Rad	Beryllium	7440-41-7	µg/kg	44.00	1.0E+04	4.4E-03	1.4E+04	3.2E-03
100-D-28:1_Staging Pile Area Footprint	non-Rad	Boron	7440-42-8	µg/kg	1500.00	5.0E+02	**3.0E+00**	1.3E+05	1.1E-02
100-D-28:1_Staging Pile Area Footprint	non-Rad	Cadmium	7440-43-9	µg/kg	79.33	4.0E+03	2.0E-02	1.6E+03	4.9E-02
100-D-28:1_Staging Pile Area Footprint	non-Rad	Chromium	7440-47-3	µg/kg	8532.39	4.0E+02	**2.1E+01**	3.8E+04	2.2E-01
100-D-28:1_Staging Pile Area Footprint	non-Rad	Chrysene	218-01-9	µg/kg	48.00	1.8E+04	2.7E-03	4.5E+04	1.1E-03
100-D-28:1_Staging Pile Area Footprint	non-Rad	Cobalt	7440-48-4	µg/kg	8475.44	1.3E+04	6.5E-01	1.1E+05	7.6E-02

Table H-7. 100-D Area Ecological Evaluation Based on SSLs for Surface Soils (0 to 15 feet [0 to 4.6m])

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
100-D-28:1_Staging Pile Area Footprint	non-Rad	Copper	7440-50-8	µg/kg	15936.71	5.0E+04	3.2E-01	1.1E+05	1.5E-01
100-D-28:1_Staging Pile Area Footprint	non-Rad	Fluoranthene	206-44-0	µg/kg	27.57	1.8E+04	1.5E-03	8.4E+05	3.3E-05
100-D-28:1_Staging Pile Area Footprint	non-Rad	Hexavalent Chromium	18540-29-9	µg/kg	236.58	No Value	--	1.3E+06	1.9E-04
100-D-28:1_Staging Pile Area Footprint	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	41.00	1.8E+04	2.3E-03	3.6E+04	1.2E-03
100-D-28:1_Staging Pile Area Footprint	non-Rad	Lead	7439-92-1	µg/kg	4779.75	5.0E+04	9.6E-02	3.6E+04	1.3E-01
100-D-28:1_Staging Pile Area Footprint	non-Rad	Manganese	7439-96-5	µg/kg	290097.62	2.2E+05	**1.3E+00**	5.8E+06	5.0E-02
100-D-28:1_Staging Pile Area Footprint	non-Rad	Mercury	7439-97-6	µg/kg	8.45	1.0E+02	8.5E-02	1.9E+03	4.5E-03
100-D-28:1_Staging Pile Area Footprint	non-Rad	Molybdenum	7439-98-7	µg/kg	340.00	2.0E+03	1.7E-01	1.4E+04	2.4E-02
100-D-28:1_Staging Pile Area Footprint	non-Rad	Nickel	7440-02-0	µg/kg	10461.63	3.0E+04	3.5E-01	3.3E+04	3.2E-01
100-D-28:1_Staging Pile Area Footprint	non-Rad	Pyrene	129-00-0	µg/kg	100.00	1.8E+04	5.6E-03	6.0E+05	1.7E-04
100-D-28:1_Staging Pile Area Footprint	non-Rad	Vanadium	7440-62-2	µg/kg	43439.30	2.0E+03	**2.2E+01**	3.1E+04	**1.4E+00**
100-D-28:1_Staging Pile Area Footprint	non-Rad	Zinc	7440-66-6	µg/kg	38595.50	5.0E+04	7.7E-01	6.8E+04	5.7E-01
100-D-29_Overburden	non-Rad	Antimony	7440-36-0	µg/kg	686.26	5.0E+03	1.4E-01	6.0E+03	1.2E-01
100-D-29_Overburden	non-Rad	Arsenic	7440-38-2	µg/kg	2301.93	1.0E+04	2.3E-01	1.9E+05	1.2E-02
100-D-29_Overburden	non-Rad	Barium	7440-39-3	µg/kg	62795.95	3.3E+05	1.9E-01	1.3E+06	4.8E-02
100-D-29_Overburden	non-Rad	Beryllium	7440-41-7	µg/kg	355.85	1.0E+04	3.6E-02	1.4E+04	2.6E-02
100-D-29_Overburden	non-Rad	Boron	7440-42-8	µg/kg	1128.11	5.0E+02	**2.3E+00**	1.3E+05	8.5E-03
100-D-29_Overburden	non-Rad	Chromium	7440-47-3	µg/kg	7050.35	4.0E+02	**1.8E+01**	3.8E+04	1.9E-01
100-D-29_Overburden	non-Rad	Cobalt	7440-48-4	µg/kg	7730.92	1.3E+04	6.0E-01	1.1E+05	6.9E-02
100-D-29_Overburden	non-Rad	Lead	7439-92-1	µg/kg	2762.99	5.0E+04	5.5E-02	3.6E+04	7.8E-02
100-D-29_Overburden	non-Rad	Manganese	7439-96-5	µg/kg	297023.16	2.2E+05	**1.4E+00**	5.8E+06	5.1E-02
100-D-29_Overburden	non-Rad	Mercury	7439-97-6	µg/kg	7.40	1.0E+02	7.4E-02	1.9E+03	4.0E-03
100-D-29_Overburden	non-Rad	Molybdenum	7439-98-7	µg/kg	260.00	2.0E+03	1.3E-01	1.4E+04	1.9E-02
100-D-29_Overburden	non-Rad	Nickel	7440-02-0	µg/kg	9804.01	3.0E+04	3.3E-01	3.3E+04	3.0E-01
100-D-29_Overburden	Rad	Rads SOF	---	pCi/g	--	--	5.3E-05	--	1.7E-03
100-D-29_Overburden	Rad	Total beta radiostrontium	SR-RAD	pCi/g	0.14	3.6E+03	4.0E-05	9.1E+01	1.6E-03
100-D-29_Overburden	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	493.54	5.0E+03	9.9E-02	3.6E+04	6.3E-04
100-D-29_Overburden	Rad	Tritium	10028-17-8	pCi/g	0.01	1.7E+06	8.6E-09	4.2E+02	3.5E-05
100-D-29_Overburden	Rad	Uranium-234	13966-29-5	pCi/g	0.15	5.2E+04	2.9E-06	6.4E+03	2.4E-05
100-D-29_Overburden	Rad	Uranium-238	U-238	pCi/g	0.17	1.6E+04	1.1E-05	5.2E+03	3.2E-05
100-D-29_Overburden	non-Rad	Vanadium	7440-62-2	µg/kg	65107.42	2.0E+03	**3.3E+01**	3.1E+04	**2.1E+00**
100-D-29_Overburden	non-Rad	Zinc	7440-66-6	µg/kg	42896.74	5.0E+04	8.6E-01	6.8E+04	6.3E-01
100-D-29_Shallow	non-Rad	Antimony	7440-36-0	µg/kg	617.84	5.0E+03	1.2E-01	6.0E+03	1.0E-01
100-D-29_Shallow	non-Rad	Arsenic	7440-38-2	µg/kg	2842.86	1.0E+04	2.8E-01	1.9E+05	1.5E-02
100-D-29_Shallow	non-Rad	Barium	7440-39-3	µg/kg	67886.58	3.3E+05	2.1E-01	1.3E+06	5.1E-02
100-D-29_Shallow	non-Rad	Beryllium	7440-41-7	µg/kg	240.00	1.0E+04	2.4E-02	1.4E+04	1.7E-02
100-D-29_Shallow	non-Rad	Boron	7440-42-8	µg/kg	5333.33	5.0E+02	**1.1E+01**	1.3E+05	4.0E-02
100-D-29_Shallow	non-Rad	Cadmium	7440-43-9	µg/kg	49.33	4.0E+03	1.2E-02	1.6E+03	3.0E-02
100-D-29_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.08	2.2E+03	3.8E-05	9.2E+02	9.0E-05
100-D-29_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	8317.42	4.0E+02	**2.1E+01**	3.8E+04	2.2E-01
100-D-29_Shallow	non-Rad	Cobalt	7440-48-4	µg/kg	7282.22	1.3E+04	5.6E-01	1.1E+05	6.5E-02
100-D-29_Shallow	non-Rad	Lead	7439-92-1	µg/kg	3051.20	5.0E+04	6.1E-02	3.6E+04	8.6E-02
100-D-29_Shallow	non-Rad	Manganese	7439-96-5	µg/kg	292329.99	2.2E+05	**1.3E+00**	5.8E+06	5.0E-02
100-D-29_Shallow	non-Rad	Mercury	7439-97-6	µg/kg	10.00	1.0E+02	1.0E-01	1.9E+03	5.4E-03
100-D-29_Shallow	non-Rad	Molybdenum	7439-98-7	µg/kg	290.00	2.0E+03	1.5E-01	1.4E+04	2.1E-02
100-D-29_Shallow	non-Rad	Nickel	7440-02-0	µg/kg	9776.69	3.0E+04	3.3E-01	3.3E+04	3.0E-01
100-D-29_Shallow	Rad	Rads SOF	---	pCi/g	--	--	6.2E-05	--	2.3E-04
100-D-29_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	853.41	5.0E+03	1.7E-01	3.6E+04	1.1E-03

Table H-7. 100-D Area Ecological Evaluation Based on SSLs for Surface Soils (0 to 15 feet [0 to 4.6m])

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
100-D-29_Shallow	Rad	Tritium	10028-17-8	pCi/g	0.01	1.7E+06	8.0E-09	4.2E+02	3.2E-05
100-D-29_Shallow	Rad	Uranium-234	13966-29-5	pCi/g	0.26	5.2E+04	5.1E-06	6.4E+03	4.1E-05
100-D-29_Shallow	Rad	Uranium-235	15117-96-1	pCi/g	0.03	2.7E+04	1.0E-06	4.4E+03	6.5E-06
100-D-29_Shallow	Rad	Uranium-238	U-238	pCi/g	0.29	1.6E+04	1.8E-05	5.2E+03	5.6E-05
100-D-29_Shallow	non-Rad	Vanadium	7440-62-2	µg/kg	60568.62	2.0E+03	**3.0E+01**	3.1E+04	**2.0E+00**
100-D-29_Shallow	non-Rad	Zinc	7440-66-6	µg/kg	40906.03	5.0E+04	8.2E-01	6.8E+04	6.0E-01
100-D-29_Shallow_Focused	non-Rad	Antimony	7440-36-0	µg/kg	400.00	5.0E+03	8.0E-02	6.0E+03	6.7E-02
100-D-29_Shallow_Focused	non-Rad	Arsenic	7440-38-2	µg/kg	2300.00	1.0E+04	2.3E-01	1.9E+05	1.2E-02
100-D-29_Shallow_Focused	non-Rad	Barium	7440-39-3	µg/kg	49000.00	3.3E+05	1.5E-01	1.3E+06	3.7E-02
100-D-29_Shallow_Focused	non-Rad	Beryllium	7440-41-7	µg/kg	270.00	1.0E+04	2.7E-02	1.4E+04	1.9E-02
100-D-29_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	8200.00	4.0E+02	**2.1E+01**	3.8E+04	2.2E-01
100-D-29_Shallow_Focused	non-Rad	Cobalt	7440-48-4	µg/kg	5800.00	1.3E+04	4.5E-01	1.1E+05	5.2E-02
100-D-29_Shallow_Focused	non-Rad	Lead	7439-92-1	µg/kg	2300.00	5.0E+04	4.6E-02	3.6E+04	6.5E-02
100-D-29_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	270000.00	2.2E+05	**1.2E+00**	5.8E+06	4.7E-02
100-D-29_Shallow_Focused	non-Rad	Nickel	7440-02-0	µg/kg	8600.00	3.0E+04	2.9E-01	3.3E+04	2.6E-01
100-D-29_Shallow_Focused	Rad	Rads SOF	---	pCi/g	--	--	7.7E-06	--	1.1E-04
100-D-29_Shallow_Focused	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	286.67	5.0E+03	5.7E-02	3.6E+04	3.7E-04
100-D-29_Shallow_Focused	Rad	Tritium	10028-17-8	pCi/g	0.03	1.7E+06	2.0E-08	4.2E+02	8.0E-05
100-D-29_Shallow_Focused	Rad	Uranium-234	13966-29-5	pCi/g	0.08	5.2E+04	1.6E-06	6.4E+03	1.3E-05
100-D-29_Shallow_Focused	Rad	Uranium-238	U-238	pCi/g	0.10	1.6E+04	6.1E-06	5.2E+03	1.9E-05
100-D-29_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	44000.00	2.0E+03	**2.2E+01**	3.1E+04	**1.4E+00**
100-D-29_Shallow_Focused	non-Rad	Zinc	7440-66-6	µg/kg	33000.00	5.0E+04	6.6E-01	6.8E+04	4.9E-01
100-D-3_Shallow_Focused	Rad	Cesium-137	10045-97-3	pCi/g	0.13	2.2E+03	5.7E-05	9.2E+02	1.4E-04
100-D-3_Shallow_Focused	Rad	Rads SOF	---	pCi/g	--	--	6.1E-05	--	1.6E-04
100-D-3_Shallow_Focused	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	50.44	5.0E+03	1.0E-02	3.6E+04	6.4E-05
100-D-3_Shallow_Focused	Rad	Uranium-235	15117-96-1	pCi/g	0.11	2.7E+04	4.0E-06	4.4E+03	2.5E-05
100-D-31:1, 100-D-31:2_Overburden	non-Rad	Acetone	67-64-1	µg/kg	6.67	No Value	--	No Value	--
100-D-31:1, 100-D-31:2_Overburden	non-Rad	Aroclor-1254	11097-69-1	µg/kg	9.81	4.0E+04	2.5E-04	1.5E+03	6.7E-03
100-D-31:1, 100-D-31:2_Overburden	non-Rad	Arsenic	7440-38-2	µg/kg	2952.75	1.0E+04	3.0E-01	1.9E+05	1.6E-02
100-D-31:1, 100-D-31:2_Overburden	non-Rad	Barium	7440-39-3	µg/kg	76789.11	3.3E+05	2.3E-01	1.3E+06	5.8E-02
100-D-31:1, 100-D-31:2_Overburden	non-Rad	Benzo(a)anthracene	56-55-3	µg/kg	1.50	1.8E+04	8.3E-05	6.4E+04	2.3E-05
100-D-31:1, 100-D-31:2_Overburden	non-Rad	Benzo(a)pyrene	50-32-8	µg/kg	1.17	1.8E+04	6.5E-05	7.6E+04	1.5E-05
100-D-31:1, 100-D-31:2_Overburden	non-Rad	Benzo(b)fluoranthene	205-99-2	µg/kg	2.39	1.8E+04	1.3E-04	3.9E+04	6.1E-05
100-D-31:1, 100-D-31:2_Overburden	non-Rad	Benzo(k)fluoranthene	207-08-9	µg/kg	1.17	1.8E+04	6.5E-05	3.9E+04	3.0E-05
100-D-31:1, 100-D-31:2_Overburden	non-Rad	Beryllium	7440-41-7	µg/kg	215.36	1.0E+04	2.2E-02	1.4E+04	1.5E-02
100-D-31:1, 100-D-31:2_Overburden	non-Rad	Boron	7440-42-8	µg/kg	2017.55	5.0E+02	**4.0E+00**	1.3E+05	1.5E-02
100-D-31:1, 100-D-31:2_Overburden	non-Rad	Cadmium	7440-43-9	µg/kg	81.84	4.0E+03	2.1E-02	1.6E+03	5.0E-02
100-D-31:1, 100-D-31:2_Overburden	non-Rad	Chromium	7440-47-3	µg/kg	8844.44	4.0E+02	**2.2E+01**	3.8E+04	2.3E-01
100-D-31:1, 100-D-31:2_Overburden	non-Rad	Chrysene	218-01-9	µg/kg	1.67	1.8E+04	9.3E-05	4.5E+04	3.8E-05
100-D-31:1, 100-D-31:2_Overburden	non-Rad	Cobalt	7440-48-4	µg/kg	7970.72	1.3E+04	6.1E-01	1.1E+05	7.2E-02
100-D-31:1, 100-D-31:2_Overburden	non-Rad	Copper	7440-50-8	µg/kg	15457.91	5.0E+04	3.1E-01	1.1E+05	1.4E-01
100-D-31:1, 100-D-31:2_Overburden	non-Rad	Fluoranthene	206-44-0	µg/kg	4.60	1.8E+04	2.6E-04	8.4E+05	5.5E-06
100-D-31:1, 100-D-31:2_Overburden	non-Rad	Fluoride	16984-48-8	µg/kg	900.00	No Value	--	2.3E+06	4.0E-04
100-D-31:1, 100-D-31:2_Overburden	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	2.84	1.8E+04	1.6E-04	3.6E+04	8.0E-05
100-D-31:1, 100-D-31:2_Overburden	non-Rad	Lead	7439-92-1	µg/kg	3626.00	5.0E+04	7.3E-02	3.6E+04	1.0E-01
100-D-31:1, 100-D-31:2_Overburden	non-Rad	Manganese	7439-96-5	µg/kg	318306.22	2.2E+05	**1.5E+00**	5.8E+06	5.5E-02
100-D-31:1, 100-D-31:2_Overburden	non-Rad	Mercury	7439-97-6	µg/kg	13.00	1.0E+02	1.3E-01	1.9E+03	7.0E-03
100-D-31:1, 100-D-31:2_Overburden	non-Rad	Methylene chloride	75-09-2	µg/kg	3.36	No Value	--	1.7E+05	2.0E-05

Table H-7. 100-D Area Ecological Evaluation Based on SSLs for Surface Soils (0 to 15 feet [0 to 4.6m])

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
100-D-31:1, 100-D-31:2_Overburden	non-Rad	Molybdenum	7439-98-7	µg/kg	386.42	2.0E+03	1.9E-01	1.4E+04	2.8E-02
100-D-31:1, 100-D-31:2_Overburden	non-Rad	Nickel	7440-02-0	µg/kg	10376.91	3.0E+04	3.5E-01	3.3E+04	3.2E-01
100-D-31:1, 100-D-31:2_Overburden	non-Rad	Nitrate	14797-55-8	µg/kg	4032.10	No Value	--	3.4E+08	1.2E-05
100-D-31:1, 100-D-31:2_Overburden	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	µg/kg	710.05	No Value	--	No Value	--
100-D-31:1, 100-D-31:2_Overburden	non-Rad	Pyrene	129-00-0	µg/kg	5.68	1.8E+04	3.2E-04	6.0E+05	9.5E-06
100-D-31:1, 100-D-31:2_Overburden	Rad	Rads SOF	---	pCi/g	--	--	5.0E-05	--	2.2E-04
100-D-31:1, 100-D-31:2_Overburden	non-Rad	Total petroleum hydrocarbons - motor oil (high boiling)	TPH/OILH	µg/kg	9120.00	No Value	--	No Value	--
100-D-31:1, 100-D-31:2_Overburden	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	1756.53	5.0E+03	3.5E-01	3.6E+04	2.2E-03
100-D-31:1, 100-D-31:2_Overburden	Rad	Uranium-233/234	U-233/234	pCi/g	0.66	5.2E+04	1.3E-05	6.4E+03	1.0E-04
100-D-31:1, 100-D-31:2_Overburden	Rad	Uranium-238	U-238	pCi/g	0.59	1.6E+04	3.7E-05	5.2E+03	1.1E-04
100-D-31:1, 100-D-31:2_Overburden	non-Rad	Vanadium	7440-62-2	µg/kg	58650.34	2.0E+03	**2.9E+01**	3.1E+04	**1.9E+00**
100-D-31:1, 100-D-31:2_Overburden	non-Rad	Zinc	7440-66-6	µg/kg	44390.46	5.0E+04	8.9E-01	6.8E+04	6.6E-01
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Acenaphthene	83-32-9	µg/kg	18.20	2.0E+04	9.1E-04	1.1E+06	1.7E-05
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Acetone	67-64-1	µg/kg	4.29	No Value	--	No Value	--
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Anthracene	120-12-7	µg/kg	3.04	2.9E+04	1.1E-04	6.8E+05	4.5E-06
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Antimony	7440-36-0	µg/kg	659.17	5.0E+03	1.3E-01	6.0E+03	1.1E-01
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Aroclor HI	---	µg/kg	--	--	6.8E-04	--	1.8E-02
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Aroclor-1254	11097-69-1	µg/kg	15.90	4.0E+04	4.0E-04	1.5E+03	1.1E-02
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Aroclor-1260	11096-82-5	µg/kg	11.10	4.0E+04	2.8E-04	1.5E+03	7.5E-03
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Arsenic	7440-38-2	µg/kg	2936.32	1.0E+04	2.9E-01	1.9E+05	1.6E-02
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Barium	7440-39-3	µg/kg	81895.83	3.3E+05	2.5E-01	1.3E+06	6.2E-02
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Benzo(a)anthracene	56-55-3	µg/kg	9.04	1.8E+04	5.0E-04	6.4E+04	1.4E-04
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Benzo(a)pyrene	50-32-8	µg/kg	9.92	1.8E+04	5.5E-04	7.6E+04	1.3E-04
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Benzo(b)fluoranthene	205-99-2	µg/kg	12.24	1.8E+04	6.8E-04	3.9E+04	3.1E-04
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Benzo(k)fluoranthene	207-08-9	µg/kg	8.32	1.8E+04	4.6E-04	3.9E+04	2.1E-04
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Beryllium	7440-41-7	µg/kg	222.51	1.0E+04	2.2E-02	1.4E+04	1.6E-02
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Boron	7440-42-8	µg/kg	2139.48	5.0E+02	**4.3E+00**	1.3E+05	1.6E-02
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Cadmium	7440-43-9	µg/kg	95.27	4.0E+03	2.4E-02	1.6E+03	5.9E-02
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	9619.51	4.0E+02	**2.4E+01**	3.8E+04	2.5E-01
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Chrysene	218-01-9	µg/kg	8.85	1.8E+04	4.9E-04	4.5E+04	2.0E-04
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Cobalt	7440-48-4	µg/kg	9241.16	1.3E+04	7.1E-01	1.1E+05	8.3E-02
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Copper	7440-50-8	µg/kg	17019.02	5.0E+04	3.4E-01	1.1E+05	1.6E-01
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Dibenz[a,h]anthracene	53-70-3	µg/kg	2.36	1.8E+04	1.3E-04	4.4E+04	5.4E-05
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Fluoranthene	206-44-0	µg/kg	31.28	1.8E+04	1.7E-03	8.4E+05	3.7E-05
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Fluorene	86-73-7	µg/kg	3.30	2.9E+04	1.1E-04	1.8E+05	1.9E-05
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Hexavalent Chromium	18540-29-9	µg/kg	204.74	No Value	--	1.3E+06	1.6E-04
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	16.67	1.8E+04	9.3E-04	3.6E+04	4.7E-04
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Lead	7439-92-1	µg/kg	4509.60	5.0E+04	9.0E-02	3.6E+04	1.3E-01
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Manganese	7439-96-5	µg/kg	350951.97	2.2E+05	**1.6E+00**	5.8E+06	6.1E-02
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Mercury	7439-97-6	µg/kg	10.00	1.0E+02	1.0E-01	1.9E+03	5.4E-03
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Methylene chloride	75-09-2	µg/kg	3.92	No Value	--	1.7E+05	2.4E-05
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Molybdenum	7439-98-7	µg/kg	451.18	2.0E+03	2.3E-01	1.4E+04	3.2E-02
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Nickel	7440-02-0	µg/kg	10622.97	3.0E+04	3.5E-01	3.3E+04	3.3E-01
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Nitrate	14797-55-8	µg/kg	45529.95	No Value	--	3.4E+08	1.3E-04
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Nitrite	14797-65-0	µg/kg	1800.00	No Value	--	3.4E+08	5.3E-06
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	µg/kg	8616.53	No Value	--	No Value	--
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Pyrene	129-00-0	µg/kg	10.48	1.8E+04	5.8E-04	6.0E+05	1.8E-05

Table H-7. 100-D Area Ecological Evaluation Based on SSLs for Surface Soils (0 to 15 feet [0 to 4.6m])

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
100-D-31:1, 100-D-31:2_Shallow	Rad	Rads SOF	---	pCi/g	--	--	5.2E-05	--	2.2E-04
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Silver	7440-22-4	µg/kg	174.13	2.0E+03	8.7E-02	5.0E+04	3.5E-03
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Total petroleum hydrocarbons - motor oil (high boiling)	TPH/OILH	µg/kg	22431.67	No Value	--	No Value	--
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	1861.24	5.0E+03	3.7E-01	3.6E+04	2.4E-03
100-D-31:1, 100-D-31:2_Shallow	Rad	Uranium-233/234	U-233/234	pCi/g	0.64	5.2E+04	1.2E-05	6.4E+03	1.0E-04
100-D-31:1, 100-D-31:2_Shallow	Rad	Uranium-238	U-238	pCi/g	0.63	1.6E+04	4.0E-05	5.2E+03	1.2E-04
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Vanadium	7440-62-2	µg/kg	69961.00	2.0E+03	**3.5E+01**	3.1E+04	**2.3E+00**
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Zinc	7440-66-6	µg/kg	50885.76	5.0E+04	**1.0E+00**	6.8E+04	7.5E-01
100-D-31:10_Overburden	non-Rad	4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	µg/kg	0.48	No Value	--	4.0E+02	1.2E-03
100-D-31:10_Overburden	non-Rad	Arsenic	7440-38-2	µg/kg	2617.76	1.0E+04	2.6E-01	1.9E+05	1.4E-02
100-D-31:10_Overburden	non-Rad	Barium	7440-39-3	µg/kg	67626.41	3.3E+05	2.1E-01	1.3E+06	5.1E-02
100-D-31:10_Overburden	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	103.19	1.0E+05	1.0E-03	4.5E+04	2.3E-03
100-D-31:10_Overburden	non-Rad	Boron	7440-42-8	µg/kg	1283.33	5.0E+02	**2.6E+00**	1.3E+05	9.7E-03
100-D-31:10_Overburden	non-Rad	Cadmium	7440-43-9	µg/kg	99.45	4.0E+03	2.5E-02	1.6E+03	6.1E-02
100-D-31:10_Overburden	non-Rad	Chromium	7440-47-3	µg/kg	7761.65	4.0E+02	**1.9E+01**	3.8E+04	2.0E-01
100-D-31:10_Overburden	non-Rad	Cobalt	7440-48-4	µg/kg	7309.07	1.3E+04	5.6E-01	1.1E+05	6.6E-02
100-D-31:10_Overburden	non-Rad	Copper	7440-50-8	µg/kg	15562.61	5.0E+04	3.1E-01	1.1E+05	1.5E-01
100-D-31:10_Overburden	non-Rad	Fluoride	16984-48-8	µg/kg	1218.57	No Value	--	2.3E+06	5.3E-04
100-D-31:10_Overburden	non-Rad	Hexavalent Chromium	18540-29-9	µg/kg	411.92	No Value	--	1.3E+06	3.3E-04
100-D-31:10_Overburden	non-Rad	Lead	7439-92-1	µg/kg	3692.15	5.0E+04	7.4E-02	3.6E+04	1.0E-01
100-D-31:10_Overburden	non-Rad	Manganese	7439-96-5	µg/kg	289762.71	2.2E+05	**1.3E+00**	5.8E+06	5.0E-02
100-D-31:10_Overburden	non-Rad	Mercury	7439-97-6	µg/kg	15.81	1.0E+02	1.6E-01	1.9E+03	8.5E-03
100-D-31:10_Overburden	non-Rad	Molybdenum	7439-98-7	µg/kg	290.00	2.0E+03	1.5E-01	1.4E+04	2.1E-02
100-D-31:10_Overburden	non-Rad	Nickel	7440-02-0	µg/kg	9988.16	3.0E+04	3.3E-01	3.3E+04	3.1E-01
100-D-31:10_Overburden	Rad	Nickel-63	13981-37-8	pCi/g	20.00	No Value	--	No Value	--
100-D-31:10_Overburden	non-Rad	Nitrogen in Nitrate	NO3-N	µg/kg	1040.39	No Value	--	No Value	--
100-D-31:10_Overburden	non-Rad	Nitrogen in Nitrite	NO2-N	µg/kg	400.00	No Value	--	No Value	--
100-D-31:10_Overburden	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	µg/kg	880.00	No Value	--	No Value	--
100-D-31:10_Overburden	non-Rad	Phenol	108-95-2	µg/kg	29.00	3.0E+04	9.7E-04	1.5E+06	1.9E-05
100-D-31:10_Overburden	Rad	Rads SOF	---	pCi/g	--	--	1.2E-04	--	4.0E-03
100-D-31:10_Overburden	Rad	Total beta radiostrontium	SR-RAD	pCi/g	0.36	3.6E+03	1.0E-04	9.1E+01	3.9E-03
100-D-31:10_Overburden	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	µg/kg	1977.62	2.0E+05	9.9E-03	3.6E+08	5.6E-06
100-D-31:10_Overburden	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	µg/kg	5361.21	No Value	--	No Value	--
100-D-31:10_Overburden	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	712.88	5.0E+03	1.4E-01	3.6E+04	9.1E-04
100-D-31:10_Overburden	Rad	Uranium-234	13966-29-5	pCi/g	0.24	5.2E+04	4.6E-06	6.4E+03	3.7E-05
100-D-31:10_Overburden	Rad	Uranium-238	U-238	pCi/g	0.25	1.6E+04	1.6E-05	5.2E+03	4.9E-05
100-D-31:10_Overburden	non-Rad	Vanadium	7440-62-2	µg/kg	41549.38	2.0E+03	**2.1E+01**	3.1E+04	**1.3E+00**
100-D-31:10_Overburden	non-Rad	Zinc	7440-66-6	µg/kg	36532.28	5.0E+04	7.3E-01	6.8E+04	5.4E-01
100-D-31:10_Shallow	non-Rad	4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	µg/kg	2.20	No Value	--	4.0E+02	5.5E-03
100-D-31:10_Shallow	non-Rad	4,4'-DDT (Dichlorodiphenyltrichloroethane)	50-29-3	µg/kg	1.40	No Value	--	8.8E+02	1.6E-03

Table H-7. 100-D Area Ecological Evaluation Based on SSLs for Surface Soils (0 to 15 feet [0 to 4.6m])

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
100-D-31:10_Shallow	non-Rad	Arsenic	7440-38-2	µg/kg	2720.52	1.0E+04	2.7E-01	1.9E+05	1.4E-02
100-D-31:10_Shallow	non-Rad	Barium	7440-39-3	µg/kg	60424.37	3.3E+05	1.8E-01	1.3E+06	4.6E-02
100-D-31:10_Shallow	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	91.66	1.0E+05	9.2E-04	4.5E+04	2.0E-03
100-D-31:10_Shallow	non-Rad	Boron	7440-42-8	µg/kg	1400.00	5.0E+02	**2.8E+00**	1.3E+05	1.1E-02
100-D-31:10_Shallow	non-Rad	Cadmium	7440-43-9	µg/kg	162.08	4.0E+03	4.1E-02	1.6E+03	9.9E-02
100-D-31:10_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.07	2.2E+03	3.1E-05	9.2E+02	7.4E-05
100-D-31:10_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	7199.09	4.0E+02	**1.8E+01**	3.8E+04	1.9E-01
100-D-31:10_Shallow	non-Rad	Cobalt	7440-48-4	µg/kg	9426.32	1.3E+04	7.3E-01	1.1E+05	8.5E-02
100-D-31:10_Shallow	non-Rad	Copper	7440-50-8	µg/kg	16569.81	5.0E+04	3.3E-01	1.1E+05	1.6E-01
100-D-31:10_Shallow	non-Rad	Fluoride	16984-48-8	µg/kg	1476.26	No Value	--	2.3E+06	6.5E-04
100-D-31:10_Shallow	non-Rad	Lead	7439-92-1	µg/kg	3201.17	5.0E+04	6.4E-02	3.6E+04	9.0E-02
100-D-31:10_Shallow	non-Rad	Manganese	7439-96-5	µg/kg	310284.52	2.2E+05	**1.4E+00**	5.8E+06	5.4E-02
100-D-31:10_Shallow	non-Rad	Mercury	7439-97-6	µg/kg	9.43	1.0E+02	9.4E-02	1.9E+03	5.1E-03
100-D-31:10_Shallow	non-Rad	Molybdenum	7439-98-7	µg/kg	250.00	2.0E+03	1.3E-01	1.4E+04	1.8E-02
100-D-31:10_Shallow	non-Rad	Nickel	7440-02-0	µg/kg	9326.39	3.0E+04	3.1E-01	3.3E+04	2.9E-01
100-D-31:10_Shallow	non-Rad	Nitrogen in Nitrate	NO3-N	µg/kg	7582.34	No Value	--	No Value	--
100-D-31:10_Shallow	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	µg/kg	13545.21	No Value	--	No Value	--
100-D-31:10_Shallow	Rad	Rads SOF	---	pCi/g	--	--	4.7E-05	--	1.4E-04
100-D-31:10_Shallow	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	µg/kg	1000.00	2.0E+05	5.0E-03	3.6E+08	2.8E-06
100-D-31:10_Shallow	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	µg/kg	5700.00	No Value	--	No Value	--
100-D-31:10_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	587.74	5.0E+03	1.2E-01	3.6E+04	7.5E-04
100-D-31:10_Shallow	Rad	Uranium-234	13966-29-5	pCi/g	0.18	5.2E+04	3.5E-06	6.4E+03	2.9E-05
100-D-31:10_Shallow	Rad	Uranium-238	U-238	pCi/g	0.20	1.6E+04	1.3E-05	5.2E+03	4.0E-05
100-D-31:10_Shallow	non-Rad	Vanadium	7440-62-2	µg/kg	65877.05	2.0E+03	**3.3E+01**	3.1E+04	**2.1E+00**
100-D-31:10_Shallow	non-Rad	Zinc	7440-66-6	µg/kg	45509.78	5.0E+04	9.1E-01	6.8E+04	6.7E-01
100-D-31:10_Shallow_Focused	non-Rad	4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	µg/kg	0.71	No Value	--	4.0E+02	1.8E-03
100-D-31:10_Shallow_Focused	non-Rad	Arsenic	7440-38-2	µg/kg	2500.00	1.0E+04	2.5E-01	1.9E+05	1.3E-02
100-D-31:10_Shallow_Focused	non-Rad	Barium	7440-39-3	µg/kg	64600.00	3.3E+05	2.0E-01	1.3E+06	4.9E-02
100-D-31:10_Shallow_Focused	non-Rad	Beryllium	7440-41-7	µg/kg	33.00	1.0E+04	3.3E-03	1.4E+04	2.4E-03
100-D-31:10_Shallow_Focused	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	91.00	1.0E+05	9.1E-04	4.5E+04	2.0E-03
100-D-31:10_Shallow_Focused	non-Rad	Boron	7440-42-8	µg/kg	1800.00	5.0E+02	**3.6E+00**	1.3E+05	1.4E-02
100-D-31:10_Shallow_Focused	non-Rad	Cadmium	7440-43-9	µg/kg	180.00	4.0E+03	4.5E-02	1.6E+03	1.1E-01
100-D-31:10_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	6900.00	4.0E+02	**1.7E+01**	3.8E+04	1.8E-01
100-D-31:10_Shallow_Focused	non-Rad	Cobalt	7440-48-4	µg/kg	9200.00	1.3E+04	7.1E-01	1.1E+05	8.3E-02
100-D-31:10_Shallow_Focused	non-Rad	Copper	7440-50-8	µg/kg	15300.00	5.0E+04	3.1E-01	1.1E+05	1.4E-01
100-D-31:10_Shallow_Focused	non-Rad	Fluoride	16984-48-8	µg/kg	1400.00	No Value	--	2.3E+06	6.1E-04
100-D-31:10_Shallow_Focused	non-Rad	Lead	7439-92-1	µg/kg	3800.00	5.0E+04	7.6E-02	3.6E+04	1.1E-01
100-D-31:10_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	318000.00	2.2E+05	**1.5E+00**	5.8E+06	5.5E-02
100-D-31:10_Shallow_Focused	non-Rad	Mercury	7439-97-6	µg/kg	5.80	1.0E+02	5.8E-02	1.9E+03	3.1E-03
100-D-31:10_Shallow_Focused	non-Rad	Nickel	7440-02-0	µg/kg	9300.00	3.0E+04	3.1E-01	3.3E+04	2.9E-01
100-D-31:10_Shallow_Focused	non-Rad	Nitrogen in Nitrate	NO3-N	µg/kg	1200.00	No Value	--	No Value	--
100-D-31:10_Shallow_Focused	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	µg/kg	1500.00	No Value	--	No Value	--
100-D-31:10_Shallow_Focused	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	µg/kg	2300.00	2.0E+05	1.2E-02	3.6E+08	6.5E-06

Table H-7. 100-D Area Ecological Evaluation Based on SSLs for Surface Soils (0 to 15 feet [0 to 4.6m])

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
100-D-31:10_Shallow_Focused	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	µg/kg	5600.00	No Value	--	No Value	--
100-D-31:10_Shallow_Focused	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	1866.37	5.0E+03	3.7E-01	3.6E+04	2.4E-03
100-D-31:10_Shallow_Focused	Rad	Uranium-238	U-238	pCi/g	0.63	1.6E+04	4.0E-05	5.2E+03	1.2E-04
100-D-31:10_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	58300.00	2.0E+03	**2.9E+01**	3.1E+04	**1.9E+00**
100-D-31:10_Shallow_Focused	non-Rad	Zinc	7440-66-6	µg/kg	47800.00	5.0E+04	9.6E-01	6.8E+04	7.1E-01
100-D-31:3, 100-D-31:4_Overburden	non-Rad	4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	µg/kg	29.00	No Value	--	4.0E+02	7.3E-02
100-D-31:3, 100-D-31:4_Overburden	non-Rad	4,4'-DDT (Dichlorodiphenyltrichloroethane)	50-29-3	µg/kg	5.60	No Value	--	8.8E+02	6.4E-03
100-D-31:3, 100-D-31:4_Overburden	non-Rad	Acenaphthene	83-32-9	µg/kg	100.00	2.0E+04	5.0E-03	1.1E+06	9.1E-05
100-D-31:3, 100-D-31:4_Overburden	non-Rad	Anthracene	120-12-7	µg/kg	200.00	2.9E+04	6.9E-03	6.8E+05	3.0E-04
100-D-31:3, 100-D-31:4_Overburden	non-Rad	Arsenic	7440-38-2	µg/kg	1854.69	1.0E+04	1.9E-01	1.9E+05	9.8E-03
100-D-31:3, 100-D-31:4_Overburden	non-Rad	Barium	7440-39-3	µg/kg	66352.32	3.3E+05	2.0E-01	1.3E+06	5.0E-02
100-D-31:3, 100-D-31:4_Overburden	non-Rad	Benzo(a)anthracene	56-55-3	µg/kg	158.93	1.8E+04	8.8E-03	6.4E+04	2.5E-03
100-D-31:3, 100-D-31:4_Overburden	non-Rad	Benzo(a)pyrene	50-32-8	µg/kg	114.00	1.8E+04	6.3E-03	7.6E+04	1.5E-03
100-D-31:3, 100-D-31:4_Overburden	non-Rad	Benzo(b)fluoranthene	205-99-2	µg/kg	79.07	1.8E+04	4.4E-03	3.9E+04	2.0E-03
100-D-31:3, 100-D-31:4_Overburden	non-Rad	Benzo(k)fluoranthene	207-08-9	µg/kg	47.96	1.8E+04	2.7E-03	3.9E+04	1.2E-03
100-D-31:3, 100-D-31:4_Overburden	non-Rad	Beryllium	7440-41-7	µg/kg	120.32	1.0E+04	1.2E-02	1.4E+04	8.6E-03
100-D-31:3, 100-D-31:4_Overburden	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	94.33	1.0E+05	9.4E-04	4.5E+04	2.1E-03
100-D-31:3, 100-D-31:4_Overburden	non-Rad	Boron	7440-42-8	µg/kg	1300.00	5.0E+02	**2.6E+00**	1.3E+05	9.8E-03
100-D-31:3, 100-D-31:4_Overburden	Rad	Cesium-137	10045-97-3	pCi/g	0.15	2.2E+03	6.8E-05	9.2E+02	1.6E-04
100-D-31:3, 100-D-31:4_Overburden	non-Rad	Chromium	7440-47-3	µg/kg	7300.80	4.0E+02	**1.8E+01**	3.8E+04	1.9E-01
100-D-31:3, 100-D-31:4_Overburden	non-Rad	Chrysene	218-01-9	µg/kg	83.04	1.8E+04	4.6E-03	4.5E+04	1.9E-03
100-D-31:3, 100-D-31:4_Overburden	non-Rad	Cobalt	7440-48-4	µg/kg	9490.62	1.3E+04	7.3E-01	1.1E+05	8.5E-02
100-D-31:3, 100-D-31:4_Overburden	non-Rad	Copper	7440-50-8	µg/kg	18617.40	5.0E+04	3.7E-01	1.1E+05	1.7E-01
100-D-31:3, 100-D-31:4_Overburden	non-Rad	Fluoranthene	206-44-0	µg/kg	181.60	1.8E+04	1.0E-02	8.4E+05	2.2E-04
100-D-31:3, 100-D-31:4_Overburden	non-Rad	Fluorene	86-73-7	µg/kg	59.00	2.9E+04	2.0E-03	1.8E+05	3.4E-04
100-D-31:3, 100-D-31:4_Overburden	non-Rad	Fluoride	16984-48-8	µg/kg	1000.00	No Value	--	2.3E+06	4.4E-04
100-D-31:3, 100-D-31:4_Overburden	non-Rad	Hexavalent Chromium	18540-29-9	µg/kg	177.00	No Value	--	1.3E+06	1.4E-04
100-D-31:3, 100-D-31:4_Overburden	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	200.60	1.8E+04	1.1E-02	3.6E+04	5.6E-03
100-D-31:3, 100-D-31:4_Overburden	non-Rad	Lead	7439-92-1	µg/kg	3373.63	5.0E+04	6.8E-02	3.6E+04	9.5E-02
100-D-31:3, 100-D-31:4_Overburden	non-Rad	Manganese	7439-96-5	µg/kg	318256.91	2.2E+05	**1.5E+00**	5.8E+06	5.5E-02
100-D-31:3, 100-D-31:4_Overburden	non-Rad	Mercury	7439-97-6	µg/kg	15.29	1.0E+02	1.5E-01	1.9E+03	8.2E-03
100-D-31:3, 100-D-31:4_Overburden	non-Rad	Methylene chloride	75-09-2	µg/kg	1.30	No Value	--	1.7E+05	7.8E-06
100-D-31:3, 100-D-31:4_Overburden	non-Rad	Molybdenum	7439-98-7	µg/kg	480.00	2.0E+03	2.4E-01	1.4E+04	3.4E-02
100-D-31:3, 100-D-31:4_Overburden	non-Rad	Naphthalene	91-20-3	µg/kg	47.00	2.9E+04	1.6E-03	1.0E+05	4.7E-04
100-D-31:3, 100-D-31:4_Overburden	non-Rad	Nickel	7440-02-0	µg/kg	9701.68	3.0E+04	3.2E-01	3.3E+04	3.0E-01
100-D-31:3, 100-D-31:4_Overburden	non-Rad	Nitrogen in Nitrate	NO3-N	µg/kg	617.50	No Value	--	No Value	--
100-D-31:3, 100-D-31:4_Overburden	non-Rad	Nitrogen in Nitrite	NO2-N	µg/kg	410.00	No Value	--	No Value	--
100-D-31:3, 100-D-31:4_Overburden	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	µg/kg	590.00	No Value	--	No Value	--
100-D-31:3, 100-D-31:4_Overburden	non-Rad	Pyrene	129-00-0	µg/kg	630.00	1.8E+04	3.5E-02	6.0E+05	1.1E-03
100-D-31:3, 100-D-31:4_Overburden	Rad	Rads SOF	---	pCi/g	--	--	1.8E-04	--	2.4E-03
100-D-31:3, 100-D-31:4_Overburden	non-Rad	Selenium	7782-49-2	µg/kg	1200.00	5.2E+02	**2.3E+00**	1.9E+03	6.3E-01
100-D-31:3, 100-D-31:4_Overburden	Rad	Total beta radiostrontium	SR-RAD	pCi/g	0.19	3.6E+03	5.3E-05	9.1E+01	2.1E-03
100-D-31:3, 100-D-31:4_Overburden	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	µg/kg	2400.00	2.0E+05	1.2E-02	3.6E+08	6.7E-06

Table H-7. 100-D Area Ecological Evaluation Based on SSLs for Surface Soils (0 to 15 feet [0 to 4.6m])

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
100-D-31:3, 100-D-31:4_Overburden	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	µg/kg	5558.33	No Value	--	No Value	--
100-D-31:3, 100-D-31:4_Overburden	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	2042.38	5.0E+03	4.1E-01	3.6E+04	2.6E-03
100-D-31:3, 100-D-31:4_Overburden	Rad	Uranium-234	13966-29-5	pCi/g	0.59	5.2E+04	1.1E-05	6.4E+03	9.2E-05
100-D-31:3, 100-D-31:4_Overburden	Rad	Uranium-238	U-238	pCi/g	0.69	1.6E+04	4.4E-05	5.2E+03	1.3E-04
100-D-31:3, 100-D-31:4_Overburden	non-Rad	Vanadium	7440-62-2	µg/kg	70800.79	2.0E+03	**3.5E+01**	3.1E+04	**2.3E+00**
100-D-31:3, 100-D-31:4_Overburden	non-Rad	Zinc	7440-66-6	µg/kg	47795.50	5.0E+04	9.6E-01	6.8E+04	7.1E-01
100-D-31:3_Shallow	non-Rad	4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	µg/kg	0.26	No Value	--	4.0E+02	6.5E-04
100-D-31:3_Shallow	non-Rad	4,4'-DDT (Dichlorodiphenyltrichloroethane)	50-29-3	µg/kg	1.60	No Value	--	8.8E+02	1.8E-03
100-D-31:3_Shallow	non-Rad	Acenaphthene	83-32-9	µg/kg	12.00	2.0E+04	6.0E-04	1.1E+06	1.1E-05
100-D-31:3_Shallow	non-Rad	Arsenic	7440-38-2	µg/kg	2174.80	1.0E+04	2.2E-01	1.9E+05	1.2E-02
100-D-31:3_Shallow	non-Rad	Barium	7440-39-3	µg/kg	60235.18	3.3E+05	1.8E-01	1.3E+06	4.6E-02
100-D-31:3_Shallow	non-Rad	Benzo(a)anthracene	56-55-3	µg/kg	42.00	1.8E+04	2.3E-03	6.4E+04	6.6E-04
100-D-31:3_Shallow	non-Rad	Benzo(a)pyrene	50-32-8	µg/kg	19.92	1.8E+04	1.1E-03	7.6E+04	2.6E-04
100-D-31:3_Shallow	non-Rad	Benzo(b)fluoranthene	205-99-2	µg/kg	44.00	1.8E+04	2.4E-03	3.9E+04	1.1E-03
100-D-31:3_Shallow	non-Rad	Benzo(k)fluoranthene	207-08-9	µg/kg	10.22	1.8E+04	5.7E-04	3.9E+04	2.6E-04
100-D-31:3_Shallow	non-Rad	Beryllium	7440-41-7	µg/kg	146.65	1.0E+04	1.5E-02	1.4E+04	1.1E-02
100-D-31:3_Shallow	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	4300.00	1.0E+05	4.3E-02	4.5E+04	9.5E-02
100-D-31:3_Shallow	non-Rad	Boron	7440-42-8	µg/kg	1200.00	5.0E+02	**2.4E+00**	1.3E+05	9.0E-03
100-D-31:3_Shallow	non-Rad	Cadmium	7440-43-9	µg/kg	72.00	4.0E+03	1.8E-02	1.6E+03	4.4E-02
100-D-31:3_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	7656.10	4.0E+02	**1.9E+01**	3.8E+04	2.0E-01
100-D-31:3_Shallow	non-Rad	Chrysene	218-01-9	µg/kg	45.00	1.8E+04	2.5E-03	4.5E+04	1.0E-03
100-D-31:3_Shallow	non-Rad	Cobalt	7440-48-4	µg/kg	9345.91	1.3E+04	7.2E-01	1.1E+05	8.4E-02
100-D-31:3_Shallow	non-Rad	Copper	7440-50-8	µg/kg	18361.51	5.0E+04	3.7E-01	1.1E+05	1.7E-01
100-D-31:3_Shallow	non-Rad	Fluoranthene	206-44-0	µg/kg	97.00	1.8E+04	5.4E-03	8.4E+05	1.2E-04
100-D-31:3_Shallow	non-Rad	Fluoride	16984-48-8	µg/kg	991.67	No Value	--	2.3E+06	4.4E-04
100-D-31:3_Shallow	non-Rad	Hexavalent Chromium	18540-29-9	µg/kg	181.00	No Value	--	1.3E+06	1.5E-04
100-D-31:3_Shallow	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	54.00	1.8E+04	3.0E-03	3.6E+04	1.5E-03
100-D-31:3_Shallow	non-Rad	Lead	7439-92-1	µg/kg	3311.19	5.0E+04	6.6E-02	3.6E+04	9.3E-02
100-D-31:3_Shallow	non-Rad	Manganese	7439-96-5	µg/kg	302830.88	2.2E+05	**1.4E+00**	5.8E+06	5.2E-02
100-D-31:3_Shallow	non-Rad	Mercury	7439-97-6	µg/kg	18.53	1.0E+02	1.9E-01	1.9E+03	9.9E-03
100-D-31:3_Shallow	non-Rad	Methylene chloride	75-09-2	µg/kg	2.03	No Value	--	1.7E+05	1.2E-05
100-D-31:3_Shallow	non-Rad	Molybdenum	7439-98-7	µg/kg	380.00	2.0E+03	1.9E-01	1.4E+04	2.7E-02
100-D-31:3_Shallow	non-Rad	Nickel	7440-02-0	µg/kg	9006.25	3.0E+04	3.0E-01	3.3E+04	2.8E-01
100-D-31:3_Shallow	non-Rad	Nitrogen in Nitrate	NO3-N	µg/kg	1219.17	No Value	--	No Value	--
100-D-31:3_Shallow	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	µg/kg	1248.33	No Value	--	No Value	--
100-D-31:3_Shallow	non-Rad	Pyrene	129-00-0	µg/kg	97.00	1.8E+04	5.4E-03	6.0E+05	1.6E-04
100-D-31:3_Shallow	Rad	Rads SOF	---	pCi/g	--	--	6.9E-05	--	2.9E-04
100-D-31:3_Shallow	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	µg/kg	2766.67	2.0E+05	1.4E-02	3.6E+08	7.8E-06
100-D-31:3_Shallow	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	µg/kg	6439.80	No Value	--	No Value	--
100-D-31:3_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	2553.54	5.0E+03	5.1E-01	3.6E+04	3.3E-03
100-D-31:3_Shallow	Rad	Uranium-234	13966-29-5	pCi/g	0.75	5.2E+04	1.5E-05	6.4E+03	1.2E-04
100-D-31:3_Shallow	Rad	Uranium-238	U-238	pCi/g	0.86	1.6E+04	5.5E-05	5.2E+03	1.7E-04

Table H-7. 100-D Area Ecological Evaluation Based on SSLs for Surface Soils (0 to 15 feet [0 to 4.6m])

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
100-D-31:3_Shallow	non-Rad	Vanadium	7440-62-2	µg/kg	71700.09	2.0E+03	**3.6E+01**	3.1E+04	**2.3E+00**
100-D-31:3_Shallow	non-Rad	Zinc	7440-66-6	µg/kg	47716.07	5.0E+04	9.5E-01	6.8E+04	7.0E-01
100-D-31:4_Shallow	non-Rad	2-Methylnaphthalene	91-57-6	µg/kg	23.00	2.9E+04	7.9E-04	6.0E+03	3.8E-03
100-D-31:4_Shallow	non-Rad	4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	µg/kg	0.61	No Value	--	4.0E+02	1.5E-03
100-D-31:4_Shallow	non-Rad	Acetone	67-64-1	µg/kg	7.40	No Value	--	No Value	--
100-D-31:4_Shallow	non-Rad	Anthracene	120-12-7	µg/kg	562.19	2.9E+04	1.9E-02	6.8E+05	8.3E-04
100-D-31:4_Shallow	non-Rad	Aroclor-1254	11097-69-1	µg/kg	19.00	4.0E+04	4.8E-04	1.5E+03	1.3E-02
100-D-31:4_Shallow	non-Rad	Arsenic	7440-38-2	µg/kg	2164.68	1.0E+04	2.2E-01	1.9E+05	1.1E-02
100-D-31:4_Shallow	non-Rad	Barium	7440-39-3	µg/kg	62686.95	3.3E+05	1.9E-01	1.3E+06	4.7E-02
100-D-31:4_Shallow	non-Rad	Benzo(a)anthracene	56-55-3	µg/kg	648.84	1.8E+04	3.6E-02	6.4E+04	1.0E-02
100-D-31:4_Shallow	non-Rad	Benzo(a)pyrene	50-32-8	µg/kg	1900.00	1.8E+04	1.1E-01	7.6E+04	2.5E-02
100-D-31:4_Shallow	non-Rad	Benzo(b)fluoranthene	205-99-2	µg/kg	1600.00	1.8E+04	8.9E-02	3.9E+04	4.1E-02
100-D-31:4_Shallow	non-Rad	Benzo(k)fluoranthene	207-08-9	µg/kg	920.00	1.8E+04	5.1E-02	3.9E+04	2.4E-02
100-D-31:4_Shallow	non-Rad	Beryllium	7440-41-7	µg/kg	128.66	1.0E+04	1.3E-02	1.4E+04	9.2E-03
100-D-31:4_Shallow	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	138.18	1.0E+05	1.4E-03	4.5E+04	3.0E-03
100-D-31:4_Shallow	non-Rad	Boron	7440-42-8	µg/kg	1000.00	5.0E+02	**2.0E+00**	1.3E+05	7.5E-03
100-D-31:4_Shallow	non-Rad	Cadmium	7440-43-9	µg/kg	85.00	4.0E+03	2.1E-02	1.6E+03	5.2E-02
100-D-31:4_Shallow	non-Rad	Carbazole	86-74-8	µg/kg	230.00	No Value	--	No Value	--
100-D-31:4_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.06	2.2E+03	2.8E-05	9.2E+02	6.7E-05
100-D-31:4_Shallow	non-Rad	Chlordane	57-74-9	µg/kg	0.37	1.0E+03	3.7E-04	5.0E+04	7.3E-06
100-D-31:4_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	7357.63	4.0E+02	**1.8E+01**	3.8E+04	1.9E-01
100-D-31:4_Shallow	non-Rad	Chrysene	218-01-9	µg/kg	1900.00	1.8E+04	1.1E-01	4.5E+04	4.3E-02
100-D-31:4_Shallow	non-Rad	Cobalt	7440-48-4	µg/kg	11170.07	1.3E+04	8.6E-01	1.1E+05	1.0E-01
100-D-31:4_Shallow	non-Rad	Copper	7440-50-8	µg/kg	16124.71	5.0E+04	3.2E-01	1.1E+05	1.5E-01
100-D-31:4_Shallow	non-Rad	Dibenz[a,h]anthracene	53-70-3	µg/kg	176.32	1.8E+04	9.8E-03	4.4E+04	4.0E-03
100-D-31:4_Shallow	non-Rad	Dibenzofuran	132-64-9	µg/kg	92.00	No Value	--	No Value	--
100-D-31:4_Shallow	non-Rad	Fluoranthene	206-44-0	µg/kg	4200.00	1.8E+04	2.3E-01	8.4E+05	5.0E-03
100-D-31:4_Shallow	non-Rad	Fluorene	86-73-7	µg/kg	242.75	2.9E+04	8.4E-03	1.8E+05	1.4E-03
100-D-31:4_Shallow	non-Rad	Fluoride	16984-48-8	µg/kg	950.00	No Value	--	2.3E+06	4.2E-04
100-D-31:4_Shallow	non-Rad	Hexavalent Chromium	18540-29-9	µg/kg	437.17	No Value	--	1.3E+06	3.5E-04
100-D-31:4_Shallow	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	975.26	1.8E+04	5.4E-02	3.6E+04	2.7E-02
100-D-31:4_Shallow	non-Rad	Lead	7439-92-1	µg/kg	4636.26	5.0E+04	9.3E-02	3.6E+04	1.3E-01
100-D-31:4_Shallow	non-Rad	Manganese	7439-96-5	µg/kg	322668.67	2.2E+05	**1.5E+00**	5.8E+06	5.6E-02
100-D-31:4_Shallow	non-Rad	Mercury	7439-97-6	µg/kg	41.83	1.0E+02	4.2E-01	1.9E+03	2.2E-02
100-D-31:4_Shallow	non-Rad	Methylene chloride	75-09-2	µg/kg	1.31	No Value	--	1.7E+05	7.9E-06
100-D-31:4_Shallow	non-Rad	Molybdenum	7439-98-7	µg/kg	320.00	2.0E+03	1.6E-01	1.4E+04	2.3E-02
100-D-31:4_Shallow	non-Rad	Nickel	7440-02-0	µg/kg	10005.83	3.0E+04	3.3E-01	3.3E+04	3.1E-01
100-D-31:4_Shallow	non-Rad	Nitrogen in Nitrate	NO3-N	µg/kg	565.83	No Value	--	No Value	--
100-D-31:4_Shallow	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	µg/kg	435.74	No Value	--	No Value	--
100-D-31:4_Shallow	non-Rad	Pyrene	129-00-0	µg/kg	1276.15	1.8E+04	7.1E-02	6.0E+05	2.1E-03
100-D-31:4_Shallow	Rad	Rads SOF	---	pCi/g	--	--	8.0E-05	--	2.8E-04
100-D-31:4_Shallow	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	µg/kg	9750.00	2.0E+05	4.9E-02	3.6E+08	2.7E-05
100-D-31:4_Shallow	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	µg/kg	36219.44	No Value	--	No Value	--
100-D-31:4_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	1929.33	5.0E+03	3.9E-01	3.6E+04	2.5E-03

Table H-7. 100-D Area Ecological Evaluation Based on SSLs for Surface Soils (0 to 15 feet [0 to 4.6m])

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
100-D-31:4_Shallow	Rad	Uranium-234	13966-29-5	pCi/g	0.55	5.2E+04	1.1E-05	6.4E+03	8.7E-05
100-D-31:4_Shallow	Rad	Uranium-238	U-238	pCi/g	0.65	1.6E+04	4.1E-05	5.2E+03	1.3E-04
100-D-31:4_Shallow	non-Rad	Vanadium	7440-62-2	µg/kg	85009.00	2.0E+03	**4.3E+01**	3.1E+04	**2.7E+00**
100-D-31:4_Shallow	non-Rad	Zinc	7440-66-6	µg/kg	48937.20	5.0E+04	9.8E-01	6.8E+04	7.2E-01
100-D-31:4_Shallow_Focused	non-Rad	Antimony	7440-36-0	µg/kg	473.00	5.0E+03	9.5E-02	6.0E+03	7.9E-02
100-D-31:4_Shallow_Focused	non-Rad	Arsenic	7440-38-2	µg/kg	2520.00	1.0E+04	2.5E-01	1.9E+05	1.3E-02
100-D-31:4_Shallow_Focused	non-Rad	Barium	7440-39-3	µg/kg	58700.00	3.3E+05	1.8E-01	1.3E+06	4.4E-02
100-D-31:4_Shallow_Focused	non-Rad	Beryllium	7440-41-7	µg/kg	219.00	1.0E+04	2.2E-02	1.4E+04	1.6E-02
100-D-31:4_Shallow_Focused	non-Rad	Boron	7440-42-8	µg/kg	825.00	5.0E+02	**1.7E+00**	1.3E+05	6.2E-03
100-D-31:4_Shallow_Focused	non-Rad	Cadmium	7440-43-9	µg/kg	60.00	4.0E+03	1.5E-02	1.6E+03	3.7E-02
100-D-31:4_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	9490.00	4.0E+02	**2.4E+01**	3.8E+04	2.5E-01
100-D-31:4_Shallow_Focused	non-Rad	Cobalt	7440-48-4	µg/kg	9050.00	1.3E+04	7.0E-01	1.1E+05	8.1E-02
100-D-31:4_Shallow_Focused	non-Rad	Copper	7440-50-8	µg/kg	17600.00	5.0E+04	3.5E-01	1.1E+05	1.6E-01
100-D-31:4_Shallow_Focused	non-Rad	Fluoranthene	206-44-0	µg/kg	5.73	1.8E+04	3.2E-04	8.4E+05	6.8E-06
100-D-31:4_Shallow_Focused	non-Rad	Hexavalent Chromium	18540-29-9	µg/kg	190.00	No Value	--	1.3E+06	1.5E-04
100-D-31:4_Shallow_Focused	non-Rad	Lead	7439-92-1	µg/kg	3460.00	5.0E+04	6.9E-02	3.6E+04	9.7E-02
100-D-31:4_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	346000.00	2.2E+05	**1.6E+00**	5.8E+06	6.0E-02
100-D-31:4_Shallow_Focused	non-Rad	Molybdenum	7439-98-7	µg/kg	472.00	2.0E+03	2.4E-01	1.4E+04	3.4E-02
100-D-31:4_Shallow_Focused	non-Rad	Nickel	7440-02-0	µg/kg	10500.00	3.0E+04	3.5E-01	3.3E+04	3.2E-01
100-D-31:4_Shallow_Focused	non-Rad	Nitrate	14797-55-8	µg/kg	5900.00	No Value	--	3.4E+08	1.7E-05
100-D-31:4_Shallow_Focused	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	µg/kg	1480.00	No Value	--	No Value	--
100-D-31:4_Shallow_Focused	Rad	Rads SOF	---	pCi/g	--	--	5.4E-05	--	2.2E-04
100-D-31:4_Shallow_Focused	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	2024.23	5.0E+03	4.1E-01	3.6E+04	2.6E-03
100-D-31:4_Shallow_Focused	Rad	Uranium-233/234	U-233/234	pCi/g	0.56	5.2E+04	1.1E-05	6.4E+03	8.8E-05
100-D-31:4_Shallow_Focused	Rad	Uranium-238	U-238	pCi/g	0.68	1.6E+04	4.3E-05	5.2E+03	1.3E-04
100-D-31:4_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	75300.00	2.0E+03	**3.8E+01**	3.1E+04	**2.4E+00**
100-D-31:4_Shallow_Focused	non-Rad	Zinc	7440-66-6	µg/kg	48600.00	5.0E+04	9.7E-01	6.8E+04	7.2E-01
100-D-31:5_Overburden	non-Rad	Arsenic	7440-38-2	µg/kg	4058.62	1.0E+04	4.1E-01	1.9E+05	2.1E-02
100-D-31:5_Overburden	non-Rad	Barium	7440-39-3	µg/kg	259913.67	3.3E+05	7.9E-01	1.3E+06	2.0E-01
100-D-31:5_Overburden	non-Rad	Beryllium	7440-41-7	µg/kg	492.10	1.0E+04	4.9E-02	1.4E+04	3.5E-02
100-D-31:5_Overburden	non-Rad	Boron	7440-42-8	µg/kg	20105.26	5.0E+02	**4.0E+01**	1.3E+05	1.5E-01
100-D-31:5_Overburden	non-Rad	Chromium	7440-47-3	µg/kg	12462.43	4.0E+02	**3.1E+01**	3.8E+04	3.3E-01
100-D-31:5_Overburden	non-Rad	Cobalt	7440-48-4	µg/kg	9645.93	1.3E+04	7.4E-01	1.1E+05	8.7E-02
100-D-31:5_Overburden	non-Rad	Copper	7440-50-8	µg/kg	17652.19	5.0E+04	3.5E-01	1.1E+05	1.7E-01
100-D-31:5_Overburden	non-Rad	Lead	7439-92-1	µg/kg	8925.21	5.0E+04	1.8E-01	3.6E+04	2.5E-01
100-D-31:5_Overburden	non-Rad	Manganese	7439-96-5	µg/kg	371944.54	2.2E+05	**1.7E+00**	5.8E+06	6.4E-02
100-D-31:5_Overburden	non-Rad	Mercury	7439-97-6	µg/kg	141.76	1.0E+02	**1.4E+00**	1.9E+03	7.6E-02
100-D-31:5_Overburden	non-Rad	Molybdenum	7439-98-7	µg/kg	1146.36	2.0E+03	5.7E-01	1.4E+04	8.2E-02
100-D-31:5_Overburden	non-Rad	Nickel	7440-02-0	µg/kg	14926.04	3.0E+04	5.0E-01	3.3E+04	4.6E-01
100-D-31:5_Overburden	non-Rad	Nitrate	14797-55-8	µg/kg	28748.54	No Value	--	3.4E+08	8.5E-05
100-D-31:5_Overburden	non-Rad	Selenium	7782-49-2	µg/kg	1728.33	5.2E+02	**3.3E+00**	1.9E+03	9.1E-01
100-D-31:5_Overburden	non-Rad	Vanadium	7440-62-2	µg/kg	65425.63	2.0E+03	**3.3E+01**	3.1E+04	**2.1E+00**
100-D-31:5_Overburden	non-Rad	Zinc	7440-66-6	µg/kg	56473.99	5.0E+04	**1.1E+00**	6.8E+04	8.3E-01
100-D-31:5_Shallow	non-Rad	Arsenic	7440-38-2	µg/kg	3275.71	1.0E+04	3.3E-01	1.9E+05	1.7E-02
100-D-31:5_Shallow	non-Rad	Barium	7440-39-3	µg/kg	144276.89	3.3E+05	4.4E-01	1.3E+06	1.1E-01
100-D-31:5_Shallow	non-Rad	Beryllium	7440-41-7	µg/kg	230.80	1.0E+04	2.3E-02	1.4E+04	1.7E-02
100-D-31:5_Shallow	non-Rad	Boron	7440-42-8	µg/kg	10483.76	5.0E+02	**2.1E+01**	1.3E+05	7.9E-02
100-D-31:5_Shallow	non-Rad	Cadmium	7440-43-9	µg/kg	241.86	4.0E+03	6.1E-02	1.6E+03	1.5E-01

Table H-7. 100-D Area Ecological Evaluation Based on SSLs for Surface Soils (0 to 15 feet [0 to 4.6m])

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
100-D-31:5_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	12394.73	4.0E+02	**3.1E+01**	3.8E+04	3.3E-01
100-D-31:5_Shallow	non-Rad	Cobalt	7440-48-4	µg/kg	8126.45	1.3E+04	6.3E-01	1.1E+05	7.3E-02
100-D-31:5_Shallow	non-Rad	Copper	7440-50-8	µg/kg	15737.49	5.0E+04	3.2E-01	1.1E+05	1.5E-01
100-D-31:5_Shallow	non-Rad	Lead	7439-92-1	µg/kg	7455.96	5.0E+04	1.5E-01	3.6E+04	2.1E-01
100-D-31:5_Shallow	non-Rad	Manganese	7439-96-5	µg/kg	331457.57	2.2E+05	**1.5E+00**	5.8E+06	5.7E-02
100-D-31:5_Shallow	non-Rad	Mercury	7439-97-6	µg/kg	240.00	1.0E+02	**2.4E+00**	1.9E+03	1.3E-01
100-D-31:5_Shallow	non-Rad	Molybdenum	7439-98-7	µg/kg	700.00	2.0E+03	3.5E-01	1.4E+04	5.0E-02
100-D-31:5_Shallow	non-Rad	Nickel	7440-02-0	µg/kg	12578.89	3.0E+04	4.2E-01	3.3E+04	3.9E-01
100-D-31:5_Shallow	non-Rad	Nitrate	14797-55-8	µg/kg	46046.55	No Value	--	3.4E+08	1.4E-04
100-D-31:5_Shallow	non-Rad	Selenium	7782-49-2	µg/kg	1500.00	5.2E+02	**2.9E+00**	1.9E+03	7.9E-01
100-D-31:5_Shallow	non-Rad	Vanadium	7440-62-2	µg/kg	54695.62	2.0E+03	**2.7E+01**	3.1E+04	**1.8E+00**
100-D-31:5_Shallow	non-Rad	Zinc	7440-66-6	µg/kg	89616.66	5.0E+04	**1.8E+00**	6.8E+04	**1.3E+00**
100-D-31:6_Overburden	non-Rad	4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	µg/kg	0.30	No Value	--	4.0E+02	7.5E-04
100-D-31:6_Overburden	non-Rad	Antimony	7440-36-0	µg/kg	556.00	5.0E+03	1.1E-01	6.0E+03	9.3E-02
100-D-31:6_Overburden	non-Rad	Arsenic	7440-38-2	µg/kg	3551.24	1.0E+04	3.6E-01	1.9E+05	1.9E-02
100-D-31:6_Overburden	non-Rad	Barium	7440-39-3	µg/kg	110920.40	3.3E+05	3.4E-01	1.3E+06	8.4E-02
100-D-31:6_Overburden	non-Rad	Beryllium	7440-41-7	µg/kg	1379.87	1.0E+04	1.4E-01	1.4E+04	9.9E-02
100-D-31:6_Overburden	non-Rad	Boron	7440-42-8	µg/kg	5998.26	5.0E+02	**1.2E+01**	1.3E+05	4.5E-02
100-D-31:6_Overburden	non-Rad	Cadmium	7440-43-9	µg/kg	60.11	4.0E+03	1.5E-02	1.6E+03	3.7E-02
100-D-31:6_Overburden	non-Rad	Chromium	7440-47-3	µg/kg	9736.03	4.0E+02	**2.4E+01**	3.8E+04	2.6E-01
100-D-31:6_Overburden	non-Rad	Chrysene	218-01-9	µg/kg	14.00	1.8E+04	7.8E-04	4.5E+04	3.1E-04
100-D-31:6_Overburden	non-Rad	Cobalt	7440-48-4	µg/kg	8947.36	1.3E+04	6.9E-01	1.1E+05	8.0E-02
100-D-31:6_Overburden	non-Rad	Copper	7440-50-8	µg/kg	24687.16	5.0E+04	4.9E-01	1.1E+05	2.3E-01
100-D-31:6_Overburden	non-Rad	Dieldrin	60-57-1	µg/kg	3.00	No Value	--	2.1E+01	1.4E-01
100-D-31:6_Overburden	non-Rad	Fluoride	16984-48-8	µg/kg	1709.00	No Value	--	2.3E+06	7.5E-04
100-D-31:6_Overburden	non-Rad	Heptachlor epoxide	1024-57-3	µg/kg	1.00	No Value	--	No Value	--
100-D-31:6_Overburden	non-Rad	Hexavalent Chromium	18540-29-9	µg/kg	606.69	No Value	--	1.3E+06	4.9E-04
100-D-31:6_Overburden	non-Rad	Lead	7439-92-1	µg/kg	7536.80	5.0E+04	1.5E-01	3.6E+04	2.1E-01
100-D-31:6_Overburden	non-Rad	Manganese	7439-96-5	µg/kg	355498.34	2.2E+05	**1.6E+00**	5.8E+06	6.1E-02
100-D-31:6_Overburden	non-Rad	Mercury	7439-97-6	µg/kg	870.00	1.0E+02	**8.7E+00**	1.9E+03	4.7E-01
100-D-31:6_Overburden	non-Rad	Molybdenum	7439-98-7	µg/kg	326.06	2.0E+03	1.6E-01	1.4E+04	2.3E-02
100-D-31:6_Overburden	non-Rad	Nickel	7440-02-0	µg/kg	11582.61	3.0E+04	3.9E-01	3.3E+04	3.6E-01
100-D-31:6_Overburden	non-Rad	Nitrogen in Nitrate	NO3-N	µg/kg	3654.16	No Value	--	No Value	--
100-D-31:6_Overburden	non-Rad	Vanadium	7440-62-2	µg/kg	66498.89	2.0E+03	**3.3E+01**	3.1E+04	**2.1E+00**
100-D-31:6_Overburden	non-Rad	Zinc	7440-66-6	µg/kg	65613.64	5.0E+04	**1.3E+00**	6.8E+04	9.7E-01
100-D-31:6_Shallow	non-Rad	Antimony	7440-36-0	µg/kg	800.00	5.0E+03	1.6E-01	6.0E+03	1.3E-01
100-D-31:6_Shallow	non-Rad	Arsenic	7440-38-2	µg/kg	3998.17	1.0E+04	4.0E-01	1.9E+05	2.1E-02
100-D-31:6_Shallow	non-Rad	Barium	7440-39-3	µg/kg	105117.61	3.3E+05	3.2E-01	1.3E+06	8.0E-02
100-D-31:6_Shallow	non-Rad	Benzo(a)anthracene	56-55-3	µg/kg	8.00	1.8E+04	4.4E-04	6.4E+04	1.3E-04
100-D-31:6_Shallow	non-Rad	Beryllium	7440-41-7	µg/kg	1273.58	1.0E+04	1.3E-01	1.4E+04	9.1E-02
100-D-31:6_Shallow	non-Rad	Boron	7440-42-8	µg/kg	5859.75	5.0E+02	**1.2E+01**	1.3E+05	4.4E-02
100-D-31:6_Shallow	non-Rad	Cadmium	7440-43-9	µg/kg	103.20	4.0E+03	2.6E-02	1.6E+03	6.3E-02
100-D-31:6_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	10797.55	4.0E+02	**2.7E+01**	3.8E+04	2.8E-01
100-D-31:6_Shallow	non-Rad	Chrysene	218-01-9	µg/kg	9.30	1.8E+04	5.2E-04	4.5E+04	2.1E-04
100-D-31:6_Shallow	non-Rad	Cobalt	7440-48-4	µg/kg	9066.41	1.3E+04	7.0E-01	1.1E+05	8.1E-02
100-D-31:6_Shallow	non-Rad	Copper	7440-50-8	µg/kg	26377.29	5.0E+04	5.3E-01	1.1E+05	2.5E-01

Table H-7. 100-D Area Ecological Evaluation Based on SSLs for Surface Soils (0 to 15 feet [0 to 4.6m])

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
100-D-31:6_Shallow	non-Rad	Fluoride	16984-48-8	µg/kg	1171.55	No Value	--	2.3E+06	5.1E-04
100-D-31:6_Shallow	non-Rad	Hexavalent Chromium	18540-29-9	µg/kg	363.35	No Value	--	1.3E+06	2.9E-04
100-D-31:6_Shallow	non-Rad	Lead	7439-92-1	µg/kg	8354.38	5.0E+04	1.7E-01	3.6E+04	2.4E-01
100-D-31:6_Shallow	non-Rad	Manganese	7439-96-5	µg/kg	330083.22	2.2E+05	**1.5E+00**	5.8E+06	5.7E-02
100-D-31:6_Shallow	non-Rad	Mercury	7439-97-6	µg/kg	576.97	1.0E+02	**5.8E+00**	1.9E+03	3.1E-01
100-D-31:6_Shallow	non-Rad	Molybdenum	7439-98-7	µg/kg	460.00	2.0E+03	2.3E-01	1.4E+04	3.3E-02
100-D-31:6_Shallow	non-Rad	Nickel	7440-02-0	µg/kg	12585.41	3.0E+04	4.2E-01	3.3E+04	3.9E-01
100-D-31:6_Shallow	non-Rad	Nitrogen in Nitrate	NO3-N	µg/kg	6984.91	No Value	--	No Value	--
100-D-31:6_Shallow	non-Rad	Vanadium	7440-62-2	µg/kg	65022.94	2.0E+03	**3.3E+01**	3.1E+04	**2.1E+00**
100-D-31:6_Shallow	non-Rad	Zinc	7440-66-6	µg/kg	63960.15	5.0E+04	**1.3E+00**	6.8E+04	9.4E-01
100-D-31:7_Overburden	non-Rad	2-Butanone	78-93-3	µg/kg	1.96	No Value	--	3.1E+06	6.3E-07
100-D-31:7_Overburden	non-Rad	4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	µg/kg	0.67	No Value	--	4.0E+02	1.7E-03
100-D-31:7_Overburden	non-Rad	Acetone	67-64-1	µg/kg	13.00	No Value	--	No Value	--
100-D-31:7_Overburden	non-Rad	Antimony	7440-36-0	µg/kg	404.17	5.0E+03	8.1E-02	6.0E+03	6.8E-02
100-D-31:7_Overburden	non-Rad	Aroclor-1260	11096-82-5	µg/kg	8.20	4.0E+04	2.1E-04	1.5E+03	5.6E-03
100-D-31:7_Overburden	non-Rad	Arsenic	7440-38-2	µg/kg	1861.77	1.0E+04	1.9E-01	1.9E+05	9.8E-03
100-D-31:7_Overburden	non-Rad	Barium	7440-39-3	µg/kg	66232.49	3.3E+05	2.0E-01	1.3E+06	5.0E-02
100-D-31:7_Overburden	non-Rad	Benzo(a)anthracene	56-55-3	µg/kg	4.00	1.8E+04	2.2E-04	6.4E+04	6.3E-05
100-D-31:7_Overburden	non-Rad	Beryllium	7440-41-7	µg/kg	1700.00	1.0E+04	1.7E-01	1.4E+04	1.2E-01
100-D-31:7_Overburden	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	73.26	1.0E+05	7.3E-04	4.5E+04	1.6E-03
100-D-31:7_Overburden	non-Rad	Boron	7440-42-8	µg/kg	2304.64	5.0E+02	**4.6E+00**	1.3E+05	1.7E-02
100-D-31:7_Overburden	non-Rad	Cadmium	7440-43-9	µg/kg	46.00	4.0E+03	1.2E-02	1.6E+03	2.8E-02
100-D-31:7_Overburden	non-Rad	Chromium	7440-47-3	µg/kg	6037.81	4.0E+02	**1.5E+01**	3.8E+04	1.6E-01
100-D-31:7_Overburden	non-Rad	Cobalt	7440-48-4	µg/kg	8774.94	1.3E+04	6.8E-01	1.1E+05	7.9E-02
100-D-31:7_Overburden	non-Rad	Copper	7440-50-8	µg/kg	20400.00	5.0E+04	4.1E-01	1.1E+05	1.9E-01
100-D-31:7_Overburden	non-Rad	Fluoride	16984-48-8	µg/kg	1300.00	No Value	--	2.3E+06	5.7E-04
100-D-31:7_Overburden	non-Rad	Lead	7439-92-1	µg/kg	2665.17	5.0E+04	5.3E-02	3.6E+04	7.5E-02
100-D-31:7_Overburden	non-Rad	Manganese	7439-96-5	µg/kg	304517.89	2.2E+05	**1.4E+00**	5.8E+06	5.3E-02
100-D-31:7_Overburden	non-Rad	Methylene chloride	75-09-2	µg/kg	2.40	No Value	--	1.7E+05	1.5E-05
100-D-31:7_Overburden	non-Rad	Molybdenum	7439-98-7	µg/kg	514.33	2.0E+03	2.6E-01	1.4E+04	3.7E-02
100-D-31:7_Overburden	non-Rad	Nickel	7440-02-0	µg/kg	9125.02	3.0E+04	3.0E-01	3.3E+04	2.8E-01
100-D-31:7_Overburden	non-Rad	Nitrogen in Nitrate	NO3-N	µg/kg	939.49	No Value	--	No Value	--
100-D-31:7_Overburden	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	µg/kg	687.39	No Value	--	No Value	--
100-D-31:7_Overburden	Rad	Rads SOF	---	pCi/g	--	--	4.3E-05	--	1.2E-03
100-D-31:7_Overburden	Rad	Total beta radiostrontium	SR-RAD	pCi/g	0.11	3.6E+03	2.9E-05	9.1E+01	1.2E-03
100-D-31:7_Overburden	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	µg/kg	1766.67	2.0E+05	8.8E-03	3.6E+08	5.0E-06
100-D-31:7_Overburden	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	µg/kg	3875.97	No Value	--	No Value	--
100-D-31:7_Overburden	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	472.32	5.0E+03	9.5E-02	3.6E+04	6.0E-04
100-D-31:7_Overburden	Rad	Uranium-234	13966-29-5	pCi/g	0.16	5.2E+04	3.1E-06	6.4E+03	2.5E-05
100-D-31:7_Overburden	Rad	Uranium-238	U-238	pCi/g	0.16	1.6E+04	1.0E-05	5.2E+03	3.1E-05
100-D-31:7_Overburden	non-Rad	Vanadium	7440-62-2	µg/kg	66619.46	2.0E+03	**3.3E+01**	3.1E+04	**2.1E+00**
100-D-31:7_Overburden	non-Rad	Zinc	7440-66-6	µg/kg	42803.75	5.0E+04	8.6E-01	6.8E+04	6.3E-01
100-D-31:7_Shallow	non-Rad	2-Butanone	78-93-3	µg/kg	1.79	No Value	--	3.1E+06	5.7E-07
100-D-31:7_Shallow	non-Rad	Acetone	67-64-1	µg/kg	8.03	No Value	--	No Value	--

Table H-7. 100-D Area Ecological Evaluation Based on SSLs for Surface Soils (0 to 15 feet [0 to 4.6m])

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
100-D-31:7_Shallow	non-Rad	Arsenic	7440-38-2	µg/kg	1391.37	1.0E+04	1.4E-01	1.9E+05	7.3E-03
100-D-31:7_Shallow	non-Rad	Barium	7440-39-3	µg/kg	66248.28	3.3E+05	2.0E-01	1.3E+06	5.0E-02
100-D-31:7_Shallow	non-Rad	Beryllium	7440-41-7	µg/kg	1500.00	1.0E+04	1.5E-01	1.4E+04	1.1E-01
100-D-31:7_Shallow	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	68.00	1.0E+05	6.8E-04	4.5E+04	1.5E-03
100-D-31:7_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	7233.83	4.0E+02	**1.8E+01**	3.8E+04	1.9E-01
100-D-31:7_Shallow	non-Rad	Cobalt	7440-48-4	µg/kg	10431.49	1.3E+04	8.0E-01	1.1E+05	9.4E-02
100-D-31:7_Shallow	non-Rad	Copper	7440-50-8	µg/kg	17912.50	5.0E+04	3.6E-01	1.1E+05	1.7E-01
100-D-31:7_Shallow	non-Rad	Lead	7439-92-1	µg/kg	1793.90	5.0E+04	3.6E-02	3.6E+04	5.0E-02
100-D-31:7_Shallow	non-Rad	Manganese	7439-96-5	µg/kg	335983.30	2.2E+05	**1.5E+00**	5.8E+06	5.8E-02
100-D-31:7_Shallow	non-Rad	Mercury	7439-97-6	µg/kg	92.08	1.0E+02	9.2E-01	1.9E+03	4.9E-02
100-D-31:7_Shallow	non-Rad	Methylene chloride	75-09-2	µg/kg	2.23	No Value	--	1.7E+05	1.4E-05
100-D-31:7_Shallow	non-Rad	Molybdenum	7439-98-7	µg/kg	259.50	2.0E+03	1.3E-01	1.4E+04	1.9E-02
100-D-31:7_Shallow	non-Rad	Nickel	7440-02-0	µg/kg	9656.84	3.0E+04	3.2E-01	3.3E+04	3.0E-01
100-D-31:7_Shallow	non-Rad	Nitrogen in Nitrate	NO3-N	µg/kg	695.83	No Value	--	No Value	--
100-D-31:7_Shallow	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	µg/kg	1458.65	No Value	--	No Value	--
100-D-31:7_Shallow	Rad	Rads SOF	---	pCi/g	--	--	9.1E-06	--	3.9E-05
100-D-31:7_Shallow	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	µg/kg	900.00	2.0E+05	4.5E-03	3.6E+08	2.5E-06
100-D-31:7_Shallow	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	µg/kg	1100.00	No Value	--	No Value	--
100-D-31:7_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	323.65	5.0E+03	6.5E-02	3.6E+04	4.1E-04
100-D-31:7_Shallow	Rad	Uranium-234	13966-29-5	pCi/g	0.11	5.2E+04	2.2E-06	6.4E+03	1.8E-05
100-D-31:7_Shallow	Rad	Uranium-238	U-238	pCi/g	0.11	1.6E+04	6.9E-06	5.2E+03	2.1E-05
100-D-31:7_Shallow	non-Rad	Vanadium	7440-62-2	µg/kg	80979.69	2.0E+03	**4.1E+01**	3.1E+04	**2.6E+00**
100-D-31:7_Shallow	non-Rad	Zinc	7440-66-6	µg/kg	48513.48	5.0E+04	9.7E-01	6.8E+04	7.2E-01
100-D-31:7_Shallow_Focused	non-Rad	Arsenic	7440-38-2	µg/kg	1000.00	1.0E+04	1.0E-01	1.9E+05	5.3E-03
100-D-31:7_Shallow_Focused	non-Rad	Barium	7440-39-3	µg/kg	75300.00	3.3E+05	2.3E-01	1.3E+06	5.7E-02
100-D-31:7_Shallow_Focused	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	63.00	1.0E+05	6.3E-04	4.5E+04	1.4E-03
100-D-31:7_Shallow_Focused	non-Rad	Boron	7440-42-8	µg/kg	1500.00	5.0E+02	**3.0E+00**	1.3E+05	1.1E-02
100-D-31:7_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	5900.00	4.0E+02	**1.5E+01**	3.8E+04	1.6E-01
100-D-31:7_Shallow_Focused	non-Rad	Cobalt	7440-48-4	µg/kg	10600.00	1.3E+04	8.2E-01	1.1E+05	9.5E-02
100-D-31:7_Shallow_Focused	non-Rad	Copper	7440-50-8	µg/kg	17900.00	5.0E+04	3.6E-01	1.1E+05	1.7E-01
100-D-31:7_Shallow_Focused	non-Rad	Lead	7439-92-1	µg/kg	1800.00	5.0E+04	3.6E-02	3.6E+04	5.1E-02
100-D-31:7_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	340000.00	2.2E+05	**1.6E+00**	5.8E+06	5.9E-02
100-D-31:7_Shallow_Focused	non-Rad	Molybdenum	7439-98-7	µg/kg	230.00	2.0E+03	1.2E-01	1.4E+04	1.7E-02
100-D-31:7_Shallow_Focused	non-Rad	Nickel	7440-02-0	µg/kg	10400.00	3.0E+04	3.5E-01	3.3E+04	3.2E-01
100-D-31:7_Shallow_Focused	non-Rad	Nitrogen in Nitrate	NO3-N	µg/kg	700.00	No Value	--	No Value	--
100-D-31:7_Shallow_Focused	Rad	Rads SOF	---	pCi/g	--	--	1.1E-05	--	5.0E-05
100-D-31:7_Shallow_Focused	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	363.18	5.0E+03	7.3E-02	3.6E+04	4.6E-04
100-D-31:7_Shallow_Focused	Rad	Uranium-234	13966-29-5	pCi/g	0.17	5.2E+04	3.3E-06	6.4E+03	2.6E-05
100-D-31:7_Shallow_Focused	Rad	Uranium-238	U-238	pCi/g	0.12	1.6E+04	7.8E-06	5.2E+03	2.4E-05
100-D-31:7_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	79500.00	2.0E+03	**4.0E+01**	3.1E+04	**2.6E+00**
100-D-31:7_Shallow_Focused	non-Rad	Zinc	7440-66-6	µg/kg	48100.00	5.0E+04	9.6E-01	6.8E+04	7.1E-01
100-D-31:8_Overburden	non-Rad	Arsenic	7440-38-2	µg/kg	1796.20	1.0E+04	1.8E-01	1.9E+05	9.5E-03
100-D-31:8_Overburden	non-Rad	Barium	7440-39-3	µg/kg	74527.21	3.3E+05	2.3E-01	1.3E+06	5.6E-02
100-D-31:8_Overburden	non-Rad	Benzo(a)pyrene	50-32-8	µg/kg	9.00	1.8E+04	5.0E-04	7.6E+04	1.2E-04
100-D-31:8_Overburden	non-Rad	Benzo(b)fluoranthene	205-99-2	µg/kg	7.00	1.8E+04	3.9E-04	3.9E+04	1.8E-04
100-D-31:8_Overburden	non-Rad	Boron	7440-42-8	µg/kg	1200.00	5.0E+02	**2.4E+00**	1.3E+05	9.0E-03

Table H-7. 100-D Area Ecological Evaluation Based on SSLs for Surface Soils (0 to 15 feet [0 to 4.6m])

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
100-D-31:8_Overburden	non-Rad	Cadmium	7440-43-9	µg/kg	49.00	4.0E+03	1.2E-02	1.6E+03	3.0E-02
100-D-31:8_Overburden	non-Rad	Chromium	7440-47-3	µg/kg	7016.79	4.0E+02	**1.8E+01**	3.8E+04	1.8E-01
100-D-31:8_Overburden	non-Rad	Chrysene	218-01-9	µg/kg	13.00	1.8E+04	7.2E-04	4.5E+04	2.9E-04
100-D-31:8_Overburden	non-Rad	Cobalt	7440-48-4	µg/kg	8458.03	1.3E+04	6.5E-01	1.1E+05	7.6E-02
100-D-31:8_Overburden	non-Rad	Copper	7440-50-8	µg/kg	15323.42	5.0E+04	3.1E-01	1.1E+05	1.4E-01
100-D-31:8_Overburden	non-Rad	Fluoride	16984-48-8	µg/kg	1168.19	No Value	--	2.3E+06	5.1E-04
100-D-31:8_Overburden	non-Rad	Hexavalent Chromium	18540-29-9	µg/kg	332.00	No Value	--	1.3E+06	2.7E-04
100-D-31:8_Overburden	non-Rad	Lead	7439-92-1	µg/kg	3584.36	5.0E+04	7.2E-02	3.6E+04	1.0E-01
100-D-31:8_Overburden	non-Rad	Manganese	7439-96-5	µg/kg	339534.90	2.2E+05	**1.5E+00**	5.8E+06	5.9E-02
100-D-31:8_Overburden	non-Rad	Mercury	7439-97-6	µg/kg	7.76	1.0E+02	7.8E-02	1.9E+03	4.2E-03
100-D-31:8_Overburden	non-Rad	Molybdenum	7439-98-7	µg/kg	480.00	2.0E+03	2.4E-01	1.4E+04	3.4E-02
100-D-31:8_Overburden	non-Rad	Nickel	7440-02-0	µg/kg	10367.78	3.0E+04	3.5E-01	3.3E+04	3.2E-01
100-D-31:8_Overburden	non-Rad	Nitrogen in Nitrate	NO3-N	µg/kg	1022.86	No Value	--	No Value	--
100-D-31:8_Overburden	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	µg/kg	783.33	No Value	--	No Value	--
100-D-31:8_Overburden	Rad	Rads SOF	---	pCi/g	--	--	2.8E-04	--	1.0E-02
100-D-31:8_Overburden	Rad	Total beta radiostrontium	SR-RAD	pCi/g	0.92	3.6E+03	2.6E-04	9.1E+01	1.0E-02
100-D-31:8_Overburden	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	µg/kg	1916.67	No Value	--	No Value	--
100-D-31:8_Overburden	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	838.60	5.0E+03	1.7E-01	3.6E+04	1.1E-03
100-D-31:8_Overburden	Rad	Uranium-234	13966-29-5	pCi/g	0.26	5.2E+04	5.1E-06	6.4E+03	4.1E-05
100-D-31:8_Overburden	Rad	Uranium-238	U-238	pCi/g	0.28	1.6E+04	1.8E-05	5.2E+03	5.5E-05
100-D-31:8_Overburden	non-Rad	Vanadium	7440-62-2	µg/kg	64671.72	2.0E+03	**3.2E+01**	3.1E+04	**2.1E+00**
100-D-31:8_Overburden	non-Rad	Zinc	7440-66-6	µg/kg	44757.56	5.0E+04	9.0E-01	6.8E+04	6.6E-01
100-D-31:8_Shallow	non-Rad	4,4'-DDT (Dichlorodiphenyltrichloroethane)	50-29-3	µg/kg	0.63	No Value	--	8.8E+02	7.1E-04
100-D-31:8_Shallow	non-Rad	Arsenic	7440-38-2	µg/kg	2205.00	1.0E+04	2.2E-01	1.9E+05	1.2E-02
100-D-31:8_Shallow	non-Rad	Barium	7440-39-3	µg/kg	62186.08	3.3E+05	1.9E-01	1.3E+06	4.7E-02
100-D-31:8_Shallow	non-Rad	Benzo(a)anthracene	56-55-3	µg/kg	5.93	1.8E+04	3.3E-04	6.4E+04	9.3E-05
100-D-31:8_Shallow	non-Rad	Benzo(a)pyrene	50-32-8	µg/kg	12.00	1.8E+04	6.7E-04	7.6E+04	1.6E-04
100-D-31:8_Shallow	non-Rad	Benzo(b)fluoranthene	205-99-2	µg/kg	12.00	1.8E+04	6.7E-04	3.9E+04	3.1E-04
100-D-31:8_Shallow	non-Rad	Benzo(k)fluoranthene	207-08-9	µg/kg	6.90	1.8E+04	3.8E-04	3.9E+04	1.8E-04
100-D-31:8_Shallow	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	102.50	1.0E+05	1.0E-03	4.5E+04	2.3E-03
100-D-31:8_Shallow	non-Rad	Boron	7440-42-8	µg/kg	940.00	5.0E+02	**1.9E+00**	1.3E+05	7.1E-03
100-D-31:8_Shallow	non-Rad	Cadmium	7440-43-9	µg/kg	71.03	4.0E+03	1.8E-02	1.6E+03	4.4E-02
100-D-31:8_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	5289.91	4.0E+02	**1.3E+01**	3.8E+04	1.4E-01
100-D-31:8_Shallow	non-Rad	Chrysene	218-01-9	µg/kg	9.23	1.8E+04	5.1E-04	4.5E+04	2.1E-04
100-D-31:8_Shallow	non-Rad	Cobalt	7440-48-4	µg/kg	8016.46	1.3E+04	6.2E-01	1.1E+05	7.2E-02
100-D-31:8_Shallow	non-Rad	Copper	7440-50-8	µg/kg	14311.20	5.0E+04	2.9E-01	1.1E+05	1.3E-01
100-D-31:8_Shallow	non-Rad	Fluoranthene	206-44-0	µg/kg	17.00	1.8E+04	9.4E-04	8.4E+05	2.0E-05
100-D-31:8_Shallow	non-Rad	Fluoride	16984-48-8	µg/kg	1850.00	No Value	--	2.3E+06	8.1E-04
100-D-31:8_Shallow	non-Rad	Lead	7439-92-1	µg/kg	3024.04	5.0E+04	6.1E-02	3.6E+04	8.5E-02
100-D-31:8_Shallow	non-Rad	Manganese	7439-96-5	µg/kg	312190.15	2.2E+05	**1.4E+00**	5.8E+06	5.4E-02
100-D-31:8_Shallow	non-Rad	Mercury	7439-97-6	µg/kg	9.59	1.0E+02	9.6E-02	1.9E+03	5.1E-03
100-D-31:8_Shallow	non-Rad	Molybdenum	7439-98-7	µg/kg	630.00	2.0E+03	3.2E-01	1.4E+04	4.5E-02
100-D-31:8_Shallow	non-Rad	Nickel	7440-02-0	µg/kg	8942.77	3.0E+04	3.0E-01	3.3E+04	2.7E-01
100-D-31:8_Shallow	non-Rad	Nitrogen in Nitrate	NO3-N	µg/kg	563.23	No Value	--	No Value	--
100-D-31:8_Shallow	non-Rad	Pyrene	129-00-0	µg/kg	27.00	1.8E+04	1.5E-03	6.0E+05	4.5E-05
100-D-31:8_Shallow	Rad	Rads SOF	---	pCi/g	--	--	1.6E-05	--	6.7E-05

Table H-7. 100-D Area Ecological Evaluation Based on SSLs for Surface Soils (0 to 15 feet [0 to 4.6m])

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
100-D-31:8_Shallow	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	µg/kg	1700.00	2.0E+05	8.5E-03	3.6E+08	4.8E-06
100-D-31:8_Shallow	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	µg/kg	2100.00	No Value	--	No Value	--
100-D-31:8_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	515.99	5.0E+03	1.0E-01	3.6E+04	6.6E-04
100-D-31:8_Shallow	Rad	Uranium-234	13966-29-5	pCi/g	0.19	5.2E+04	3.6E-06	6.4E+03	2.9E-05
100-D-31:8_Shallow	Rad	Uranium-238	U-238	pCi/g	0.19	1.6E+04	1.2E-05	5.2E+03	3.7E-05
100-D-31:8_Shallow	non-Rad	Vanadium	7440-62-2	µg/kg	48087.29	2.0E+03	**2.4E+01**	3.1E+04	**1.5E+00**
100-D-31:8_Shallow	non-Rad	Zinc	7440-66-6	µg/kg	38019.14	5.0E+04	7.6E-01	6.8E+04	5.6E-01
100-D-31:8_Shallow_Focused_1	non-Rad	Antimony	7440-36-0	µg/kg	446.00	5.0E+03	8.9E-02	6.0E+03	7.5E-02
100-D-31:8_Shallow_Focused_1	non-Rad	Arsenic	7440-38-2	µg/kg	1890.00	1.0E+04	1.9E-01	1.9E+05	1.0E-02
100-D-31:8_Shallow_Focused_1	non-Rad	Barium	7440-39-3	µg/kg	70500.00	3.3E+05	2.1E-01	1.3E+06	5.3E-02
100-D-31:8_Shallow_Focused_1	non-Rad	Beryllium	7440-41-7	µg/kg	169.00	1.0E+04	1.7E-02	1.4E+04	1.2E-02
100-D-31:8_Shallow_Focused_1	non-Rad	Cadmium	7440-43-9	µg/kg	65.00	4.0E+03	1.6E-02	1.6E+03	4.0E-02
100-D-31:8_Shallow_Focused_1	non-Rad	Chromium	7440-47-3	µg/kg	6790.00	4.0E+02	**1.7E+01**	3.8E+04	1.8E-01
100-D-31:8_Shallow_Focused_1	non-Rad	Cobalt	7440-48-4	µg/kg	9000.00	1.3E+04	6.9E-01	1.1E+05	8.1E-02
100-D-31:8_Shallow_Focused_1	non-Rad	Copper	7440-50-8	µg/kg	16200.00	5.0E+04	3.2E-01	1.1E+05	1.5E-01
100-D-31:8_Shallow_Focused_1	non-Rad	Hexavalent Chromium	18540-29-9	µg/kg	190.00	No Value	--	1.3E+06	1.5E-04
100-D-31:8_Shallow_Focused_1	non-Rad	Isophorone	78-59-1	µg/kg	77.10	No Value	--	No Value	--
100-D-31:8_Shallow_Focused_1	non-Rad	Lead	7439-92-1	µg/kg	2510.00	5.0E+04	5.0E-02	3.6E+04	7.1E-02
100-D-31:8_Shallow_Focused_1	non-Rad	Manganese	7439-96-5	µg/kg	334000.00	2.2E+05	**1.5E+00**	5.8E+06	5.8E-02
100-D-31:8_Shallow_Focused_1	non-Rad	Mercury	7439-97-6	µg/kg	26.00	1.0E+02	2.6E-01	1.9E+03	1.4E-02
100-D-31:8_Shallow_Focused_1	non-Rad	Molybdenum	7439-98-7	µg/kg	502.00	2.0E+03	2.5E-01	1.4E+04	3.6E-02
100-D-31:8_Shallow_Focused_1	non-Rad	Nickel	7440-02-0	µg/kg	8890.00	3.0E+04	3.0E-01	3.3E+04	2.7E-01
100-D-31:8_Shallow_Focused_1	non-Rad	Nitrate	14797-55-8	µg/kg	9400.00	No Value	--	3.4E+08	2.8E-05
100-D-31:8_Shallow_Focused_1	non-Rad	Silver	7440-22-4	µg/kg	147.00	2.0E+03	7.4E-02	5.0E+04	3.0E-03
100-D-31:8_Shallow_Focused_1	non-Rad	Vanadium	7440-62-2	µg/kg	94900.00	2.0E+03	**4.8E+01**	3.1E+04	**3.1E+00**
100-D-31:8_Shallow_Focused_1	non-Rad	Zinc	7440-66-6	µg/kg	51800.00	5.0E+04	**1.0E+00**	6.8E+04	7.6E-01
100-D-31:8_Shallow_Focused_2	non-Rad	Arsenic	7440-38-2	µg/kg	5900.00	1.0E+04	5.9E-01	1.9E+05	3.1E-02
100-D-31:8_Shallow_Focused_2	non-Rad	Barium	7440-39-3	µg/kg	1570000.00	3.3E+05	**4.8E+00**	1.3E+06	**1.2E+00**
100-D-31:8_Shallow_Focused_2	non-Rad	Beryllium	7440-41-7	µg/kg	1300.00	1.0E+04	1.3E-01	1.4E+04	9.3E-02
100-D-31:8_Shallow_Focused_2	non-Rad	Boron	7440-42-8	µg/kg	169000.00	5.0E+02	**3.4E+02**	1.3E+05	**1.3E+00**
100-D-31:8_Shallow_Focused_2	non-Rad	Cadmium	7440-43-9	µg/kg	430.00	4.0E+03	1.1E-01	1.6E+03	2.6E-01
100-D-31:8_Shallow_Focused_2	non-Rad	Chromium	7440-47-3	µg/kg	13400.00	4.0E+02	**3.4E+01**	3.8E+04	3.5E-01
100-D-31:8_Shallow_Focused_2	non-Rad	Cobalt	7440-48-4	µg/kg	9900.00	1.3E+04	7.6E-01	1.1E+05	8.9E-02
100-D-31:8_Shallow_Focused_2	non-Rad	Copper	7440-50-8	µg/kg	42400.00	5.0E+04	8.5E-01	1.1E+05	4.0E-01
100-D-31:8_Shallow_Focused_2	non-Rad	Lead	7439-92-1	µg/kg	24200.00	5.0E+04	4.8E-01	3.6E+04	6.8E-01
100-D-31:8_Shallow_Focused_2	non-Rad	Manganese	7439-96-5	µg/kg	368000.00	2.2E+05	**1.7E+00**	5.8E+06	6.4E-02
100-D-31:8_Shallow_Focused_2	non-Rad	Mercury	7439-97-6	µg/kg	120.00	1.0E+02	**1.2E+00**	1.9E+03	6.4E-02
100-D-31:8_Shallow_Focused_2	non-Rad	Molybdenum	7439-98-7	µg/kg	2300.00	2.0E+03	**1.2E+00**	1.4E+04	1.7E-01
100-D-31:8_Shallow_Focused_2	non-Rad	Nickel	7440-02-0	µg/kg	19700.00	3.0E+04	6.6E-01	3.3E+04	6.1E-01
100-D-31:8_Shallow_Focused_2	non-Rad	Vanadium	7440-62-2	µg/kg	67200.00	2.0E+03	**3.4E+01**	3.1E+04	**2.2E+00**
100-D-31:8_Shallow_Focused_2	non-Rad	Zinc	7440-66-6	µg/kg	83000.00	5.0E+04	**1.7E+00**	6.8E+04	**1.2E+00**
100-D-31:9_Overburden	non-Rad	4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	µg/kg	31.00	No Value	--	4.0E+02	7.8E-02
100-D-31:9_Overburden	non-Rad	4,4'-DDT (Dichlorodiphenyltrichloroethane)	50-29-3	µg/kg	12.00	No Value	--	8.8E+02	1.4E-02

Table H-7. 100-D Area Ecological Evaluation Based on SSLs for Surface Soils (0 to 15 feet [0 to 4.6m])

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
100-D-31:9_Overburden	non-Rad	Arsenic	7440-38-2	µg/kg	1175.26	1.0E+04	1.2E-01	1.9E+05	6.2E-03
100-D-31:9_Overburden	non-Rad	Barium	7440-39-3	µg/kg	58675.56	3.3E+05	1.8E-01	1.3E+06	4.4E-02
100-D-31:9_Overburden	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	87.05	1.0E+05	8.7E-04	4.5E+04	1.9E-03
100-D-31:9_Overburden	non-Rad	Cadmium	7440-43-9	µg/kg	73.70	4.0E+03	1.8E-02	1.6E+03	4.5E-02
100-D-31:9_Overburden	non-Rad	Chromium	7440-47-3	µg/kg	5328.36	4.0E+02	**1.3E+01**	3.8E+04	1.4E-01
100-D-31:9_Overburden	non-Rad	Cobalt	7440-48-4	µg/kg	8066.03	1.3E+04	6.2E-01	1.1E+05	7.2E-02
100-D-31:9_Overburden	non-Rad	Copper	7440-50-8	µg/kg	13689.45	5.0E+04	2.7E-01	1.1E+05	1.3E-01
100-D-31:9_Overburden	non-Rad	Fluoride	16984-48-8	µg/kg	900.00	No Value	--	2.3E+06	4.0E-04
100-D-31:9_Overburden	non-Rad	Lead	7439-92-1	µg/kg	3028.58	5.0E+04	6.1E-02	3.6E+04	8.5E-02
100-D-31:9_Overburden	non-Rad	Manganese	7439-96-5	µg/kg	292130.13	2.2E+05	**1.3E+00**	5.8E+06	5.0E-02
100-D-31:9_Overburden	non-Rad	Mercury	7439-97-6	µg/kg	7.55	1.0E+02	7.6E-02	1.9E+03	4.0E-03
100-D-31:9_Overburden	non-Rad	Molybdenum	7439-98-7	µg/kg	360.00	2.0E+03	1.8E-01	1.4E+04	2.6E-02
100-D-31:9_Overburden	non-Rad	Nickel	7440-02-0	µg/kg	9187.30	3.0E+04	3.1E-01	3.3E+04	2.8E-01
100-D-31:9_Overburden	non-Rad	Nitrogen in Nitrate	NO3-N	µg/kg	652.35	No Value	--	No Value	--
100-D-31:9_Overburden	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	µg/kg	1300.00	No Value	--	No Value	--
100-D-31:9_Overburden	non-Rad	Phenol	108-95-2	µg/kg	24.00	3.0E+04	8.0E-04	1.5E+06	1.6E-05
100-D-31:9_Overburden	Rad	Rads SOF	---	pCi/g	--	--	2.3E-05	--	9.3E-05
100-D-31:9_Overburden	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	µg/kg	2800.00	No Value	--	No Value	--
100-D-31:9_Overburden	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	772.54	5.0E+03	1.6E-01	3.6E+04	9.8E-04
100-D-31:9_Overburden	Rad	Uranium-234	13966-29-5	pCi/g	0.23	5.2E+04	4.5E-06	6.4E+03	3.6E-05
100-D-31:9_Overburden	Rad	Uranium-238	U-238	pCi/g	0.29	1.6E+04	1.8E-05	5.2E+03	5.6E-05
100-D-31:9_Overburden	non-Rad	Vanadium	7440-62-2	µg/kg	52679.79	2.0E+03	**2.6E+01**	3.1E+04	**1.7E+00**
100-D-31:9_Overburden	non-Rad	Zinc	7440-66-6	µg/kg	39154.91	5.0E+04	7.8E-01	6.8E+04	5.8E-01
100-D-31:9_Shallow	non-Rad	Arsenic	7440-38-2	µg/kg	2517.36	1.0E+04	2.5E-01	1.9E+05	1.3E-02
100-D-31:9_Shallow	non-Rad	Barium	7440-39-3	µg/kg	61242.52	3.3E+05	1.9E-01	1.3E+06	4.6E-02
100-D-31:9_Shallow	non-Rad	Benzo(a)anthracene	56-55-3	µg/kg	47.00	1.8E+04	2.6E-03	6.4E+04	7.3E-04
100-D-31:9_Shallow	non-Rad	Benzo(a)pyrene	50-32-8	µg/kg	14.29	1.8E+04	7.9E-04	7.6E+04	1.9E-04
100-D-31:9_Shallow	non-Rad	Benzo(b)fluoranthene	205-99-2	µg/kg	28.00	1.8E+04	1.6E-03	3.9E+04	7.1E-04
100-D-31:9_Shallow	non-Rad	Benzo(k)fluoranthene	207-08-9	µg/kg	11.00	1.8E+04	6.1E-04	3.9E+04	2.8E-04
100-D-31:9_Shallow	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	114.17	1.0E+05	1.1E-03	4.5E+04	2.5E-03
100-D-31:9_Shallow	non-Rad	Boron	7440-42-8	µg/kg	1100.00	5.0E+02	**2.2E+00**	1.3E+05	8.3E-03
100-D-31:9_Shallow	non-Rad	Cadmium	7440-43-9	µg/kg	52.68	4.0E+03	1.3E-02	1.6E+03	3.2E-02
100-D-31:9_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	5132.29	4.0E+02	**1.3E+01**	3.8E+04	1.3E-01
100-D-31:9_Shallow	non-Rad	Chrysene	218-01-9	µg/kg	18.58	1.8E+04	1.0E-03	4.5E+04	4.2E-04
100-D-31:9_Shallow	non-Rad	Cobalt	7440-48-4	µg/kg	8665.90	1.3E+04	6.7E-01	1.1E+05	7.8E-02
100-D-31:9_Shallow	non-Rad	Copper	7440-50-8	µg/kg	14871.48	5.0E+04	3.0E-01	1.1E+05	1.4E-01
100-D-31:9_Shallow	non-Rad	Hexavalent Chromium	18540-29-9	µg/kg	222.00	No Value	--	1.3E+06	1.8E-04
100-D-31:9_Shallow	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	12.00	1.8E+04	6.7E-04	3.6E+04	3.4E-04
100-D-31:9_Shallow	non-Rad	Lead	7439-92-1	µg/kg	2853.37	5.0E+04	5.7E-02	3.6E+04	8.0E-02
100-D-31:9_Shallow	non-Rad	Manganese	7439-96-5	µg/kg	318748.42	2.2E+05	**1.5E+00**	5.8E+06	5.5E-02
100-D-31:9_Shallow	non-Rad	Mercury	7439-97-6	µg/kg	6.64	1.0E+02	6.6E-02	1.9E+03	3.6E-03
100-D-31:9_Shallow	non-Rad	Molybdenum	7439-98-7	µg/kg	260.00	2.0E+03	1.3E-01	1.4E+04	1.9E-02
100-D-31:9_Shallow	non-Rad	Nickel	7440-02-0	µg/kg	8677.69	3.0E+04	2.9E-01	3.3E+04	2.7E-01
100-D-31:9_Shallow	non-Rad	Nitrogen in Nitrate	NO3-N	µg/kg	607.34	No Value	--	No Value	--
100-D-31:9_Shallow	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	µg/kg	690.00	No Value	--	No Value	--
100-D-31:9_Shallow	non-Rad	Pyrene	129-00-0	µg/kg	70.00	1.8E+04	3.9E-03	6.0E+05	1.2E-04
100-D-31:9_Shallow	Rad	Rads SOF	---	pCi/g	--	--	1.9E-05	--	7.5E-05

Table H-7. 100-D Area Ecological Evaluation Based on SSLs for Surface Soils (0 to 15 feet [0 to 4.6m])

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
100-D-31:9_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	734.70	5.0E+03	1.5E-01	3.6E+04	9.4E-04
100-D-31:9_Shallow	Rad	Uranium-234	13966-29-5	pCi/g	0.17	5.2E+04	3.3E-06	6.4E+03	2.7E-05
100-D-31:9_Shallow	Rad	Uranium-238	U-238	pCi/g	0.25	1.6E+04	1.6E-05	5.2E+03	4.8E-05
100-D-31:9_Shallow	non-Rad	Vanadium	7440-62-2	µg/kg	57014.21	2.0E+03	**2.9E+01**	3.1E+04	**1.8E+00**
100-D-31:9_Shallow	non-Rad	Zinc	7440-66-6	µg/kg	40433.11	5.0E+04	8.1E-01	6.8E+04	6.0E-01
100-D-32_Overburden	non-Rad	Antimony	7440-36-0	µg/kg	833.16	5.0E+03	1.7E-01	6.0E+03	1.4E-01
100-D-32_Overburden	non-Rad	Arsenic	7440-38-2	µg/kg	3245.08	1.0E+04	3.3E-01	1.9E+05	1.7E-02
100-D-32_Overburden	non-Rad	Barium	7440-39-3	µg/kg	74480.26	3.3E+05	2.3E-01	1.3E+06	5.6E-02
100-D-32_Overburden	non-Rad	Beryllium	7440-41-7	µg/kg	224.69	1.0E+04	2.3E-02	1.4E+04	1.6E-02
100-D-32_Overburden	non-Rad	Boron	7440-42-8	µg/kg	1234.46	5.0E+02	**2.5E+00**	1.3E+05	9.3E-03
100-D-32_Overburden	non-Rad	Cadmium	7440-43-9	µg/kg	200.00	4.0E+03	5.0E-02	1.6E+03	1.2E-01
100-D-32_Overburden	non-Rad	Chromium	7440-47-3	µg/kg	11852.11	4.0E+02	**3.0E+01**	3.8E+04	3.1E-01
100-D-32_Overburden	non-Rad	Cobalt	7440-48-4	µg/kg	8060.66	1.3E+04	6.2E-01	1.1E+05	7.2E-02
100-D-32_Overburden	non-Rad	Copper	7440-50-8	µg/kg	18182.68	5.0E+04	3.6E-01	1.1E+05	1.7E-01
100-D-32_Overburden	non-Rad	Lead	7439-92-1	µg/kg	3835.98	5.0E+04	7.7E-02	3.6E+04	1.1E-01
100-D-32_Overburden	non-Rad	Manganese	7439-96-5	µg/kg	369294.44	2.2E+05	**1.7E+00**	5.8E+06	6.4E-02
100-D-32_Overburden	non-Rad	Molybdenum	7439-98-7	µg/kg	549.28	2.0E+03	2.8E-01	1.4E+04	3.9E-02
100-D-32_Overburden	non-Rad	Nickel	7440-02-0	µg/kg	12365.20	3.0E+04	4.1E-01	3.3E+04	3.8E-01
100-D-32_Overburden	Rad	Rads SOF	---	pCi/g	--	--	5.1E-05	--	2.2E-04
100-D-32_Overburden	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	1762.14	5.0E+03	3.5E-01	3.6E+04	2.2E-03
100-D-32_Overburden	Rad	Uranium-233/234	U-233/234	pCi/g	0.61	5.2E+04	1.2E-05	6.4E+03	9.6E-05
100-D-32_Overburden	Rad	Uranium-235	15117-96-1	pCi/g	0.04	2.7E+04	1.6E-06	4.4E+03	9.9E-06
100-D-32_Overburden	Rad	Uranium-238	U-238	pCi/g	0.59	1.6E+04	3.8E-05	5.2E+03	1.1E-04
100-D-32_Overburden	non-Rad	Vanadium	7440-62-2	µg/kg	76983.48	2.0E+03	**3.9E+01**	3.1E+04	**2.5E+00**
100-D-32_Overburden	non-Rad	Zinc	7440-66-6	µg/kg	51820.94	5.0E+04	**1.0E+00**	6.8E+04	7.6E-01
100-D-32_Shallow	non-Rad	Antimony	7440-36-0	µg/kg	825.86	5.0E+03	1.7E-01	6.0E+03	1.4E-01
100-D-32_Shallow	non-Rad	Arsenic	7440-38-2	µg/kg	2499.22	1.0E+04	2.5E-01	1.9E+05	1.3E-02
100-D-32_Shallow	non-Rad	Barium	7440-39-3	µg/kg	68886.90	3.3E+05	2.1E-01	1.3E+06	5.2E-02
100-D-32_Shallow	non-Rad	Beryllium	7440-41-7	µg/kg	694.13	1.0E+04	6.9E-02	1.4E+04	5.0E-02
100-D-32_Shallow	non-Rad	Boron	7440-42-8	µg/kg	1504.98	5.0E+02	**3.0E+00**	1.3E+05	1.1E-02
100-D-32_Shallow	non-Rad	Cadmium	7440-43-9	µg/kg	200.00	4.0E+03	5.0E-02	1.6E+03	1.2E-01
100-D-32_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.10	2.2E+03	4.7E-05	9.2E+02	1.1E-04
100-D-32_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	10447.38	4.0E+02	**2.6E+01**	3.8E+04	2.7E-01
100-D-32_Shallow	non-Rad	Cobalt	7440-48-4	µg/kg	7969.52	1.3E+04	6.1E-01	1.1E+05	7.2E-02
100-D-32_Shallow	non-Rad	Copper	7440-50-8	µg/kg	14996.65	5.0E+04	3.0E-01	1.1E+05	1.4E-01
100-D-32_Shallow	non-Rad	Lead	7439-92-1	µg/kg	5773.87	5.0E+04	1.2E-01	3.6E+04	1.6E-01
100-D-32_Shallow	non-Rad	Manganese	7439-96-5	µg/kg	356899.42	2.2E+05	**1.6E+00**	5.8E+06	6.2E-02
100-D-32_Shallow	non-Rad	Molybdenum	7439-98-7	µg/kg	568.17	2.0E+03	2.8E-01	1.4E+04	4.1E-02
100-D-32_Shallow	non-Rad	Nickel	7440-02-0	µg/kg	12032.80	3.0E+04	4.0E-01	3.3E+04	3.7E-01
100-D-32_Shallow	Rad	Nickel-63	13981-37-8	pCi/g	3.95	No Value	--	No Value	--
100-D-32_Shallow	Rad	Rads SOF	---	pCi/g	--	--	9.1E-05	--	3.1E-04
100-D-32_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	1465.95	5.0E+03	2.9E-01	3.6E+04	1.9E-03
100-D-32_Shallow	Rad	Uranium-233/234	U-233/234	pCi/g	0.50	5.2E+04	9.7E-06	6.4E+03	7.8E-05
100-D-32_Shallow	Rad	Uranium-234	13966-29-5	pCi/g	0.14	5.2E+04	2.6E-06	6.4E+03	2.1E-05
100-D-32_Shallow	Rad	Uranium-238	U-238	pCi/g	0.49	1.6E+04	3.1E-05	5.2E+03	9.6E-05
100-D-32_Shallow	non-Rad	Vanadium	7440-62-2	µg/kg	76249.02	2.0E+03	**3.8E+01**	3.1E+04	**2.5E+00**
100-D-32_Shallow	non-Rad	Zinc	7440-66-6	µg/kg	62122.52	5.0E+04	**1.2E+00**	6.8E+04	9.2E-01
100-D-4_Overburden	Rad	Cesium-137	10045-97-3	pCi/g	0.13	2.2E+03	5.8E-05	9.2E+02	1.4E-04

Table H-7. 100-D Area Ecological Evaluation Based on SSLs for Surface Soils (0 to 15 feet [0 to 4.6m])

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
100-D-4_Overburden	Rad	Rads SOF	---	pCi/g	--	--	1.3E-04	--	3.5E-04
100-D-4_Overburden	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	3274.34	5.0E+03	6.6E-01	3.6E+04	4.2E-03
100-D-4_Overburden	Rad	Uranium-238	U-238	pCi/g	1.10	1.6E+04	7.0E-05	5.2E+03	2.1E-04
100-D-4_Shallow	non-Rad	Aroclor HI	---	µg/kg	--	--	4.8E-03	--	1.3E-01
100-D-4_Shallow	non-Rad	Aroclor-1254	11097-69-1	µg/kg	71.00	4.0E+04	1.8E-03	1.5E+03	4.8E-02
100-D-4_Shallow	non-Rad	Aroclor-1260	11096-82-5	µg/kg	120.00	4.0E+04	3.0E-03	1.5E+03	8.1E-02
100-D-4_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.12	2.2E+03	5.4E-05	9.2E+02	1.3E-04
100-D-4_Shallow	Rad	Europium-152	14683-23-9	pCi/g	0.28	1.5E+04	1.9E-05	1.7E+03	1.6E-04
100-D-4_Shallow	non-Rad	Hexavalent Chromium	18540-29-9	µg/kg	199.00	No Value	--	1.3E+06	1.6E-04
100-D-4_Shallow	Rad	Rads SOF	---	pCi/g	--	--	1.5E-04	--	1.8E-03
100-D-4_Shallow	Rad	Total beta radiostrontium	SR-RAD	pCi/g	0.13	3.6E+03	3.5E-05	9.1E+01	1.4E-03
100-D-4_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	1830.65	5.0E+03	3.7E-01	3.6E+04	2.3E-03
100-D-4_Shallow	Rad	Uranium-238	U-238	pCi/g	0.62	1.6E+04	3.9E-05	5.2E+03	1.2E-04
100-D-42, 100-D-43, 100-D-45_Overburden	non-Rad	Antimony	7440-36-0	µg/kg	393.33	5.0E+03	7.9E-02	6.0E+03	6.6E-02
100-D-42, 100-D-43, 100-D-45_Overburden	non-Rad	Arsenic	7440-38-2	µg/kg	2339.52	1.0E+04	2.3E-01	1.9E+05	1.2E-02
100-D-42, 100-D-43, 100-D-45_Overburden	non-Rad	Barium	7440-39-3	µg/kg	61073.64	3.3E+05	1.9E-01	1.3E+06	4.6E-02
100-D-42, 100-D-43, 100-D-45_Overburden	non-Rad	Beryllium	7440-41-7	µg/kg	232.52	1.0E+04	2.3E-02	1.4E+04	1.7E-02
100-D-42, 100-D-43, 100-D-45_Overburden	non-Rad	Boron	7440-42-8	µg/kg	928.81	5.0E+02	**1.9E+00**	1.3E+05	7.0E-03
100-D-42, 100-D-43, 100-D-45_Overburden	non-Rad	Cadmium	7440-43-9	µg/kg	100.81	4.0E+03	2.5E-02	1.6E+03	6.2E-02
100-D-42, 100-D-43, 100-D-45_Overburden	non-Rad	Chromium	7440-47-3	µg/kg	9297.31	4.0E+02	**2.3E+01**	3.8E+04	2.4E-01
100-D-42, 100-D-43, 100-D-45_Overburden	non-Rad	Cobalt	7440-48-4	µg/kg	8358.54	1.3E+04	6.4E-01	1.1E+05	7.5E-02
100-D-42, 100-D-43, 100-D-45_Overburden	non-Rad	Copper	7440-50-8	µg/kg	26640.94	5.0E+04	5.3E-01	1.1E+05	2.5E-01
100-D-42, 100-D-43, 100-D-45_Overburden	non-Rad	Lead	7439-92-1	µg/kg	3752.30	5.0E+04	7.5E-02	3.6E+04	1.1E-01
100-D-42, 100-D-43, 100-D-45_Overburden	non-Rad	Manganese	7439-96-5	µg/kg	316433.17	2.2E+05	**1.4E+00**	5.8E+06	5.5E-02
100-D-42, 100-D-43, 100-D-45_Overburden	non-Rad	Mercury	7439-97-6	µg/kg	20.00	1.0E+02	2.0E-01	1.9E+03	1.1E-02
100-D-42, 100-D-43, 100-D-45_Overburden	non-Rad	Molybdenum	7439-98-7	µg/kg	512.61	2.0E+03	2.6E-01	1.4E+04	3.7E-02
100-D-42, 100-D-43, 100-D-45_Overburden	non-Rad	Nickel	7440-02-0	µg/kg	10120.01	3.0E+04	3.4E-01	3.3E+04	3.1E-01
100-D-42, 100-D-43, 100-D-45_Overburden	non-Rad	Selenium	7782-49-2	µg/kg	700.00	5.2E+02	**1.4E+00**	1.9E+03	3.7E-01
100-D-42, 100-D-43, 100-D-45_Overburden	non-Rad	Vanadium	7440-62-2	µg/kg	63875.27	2.0E+03	**3.2E+01**	3.1E+04	**2.1E+00**
100-D-42, 100-D-43, 100-D-45_Overburden	non-Rad	Zinc	7440-66-6	µg/kg	43856.28	5.0E+04	8.8E-01	6.8E+04	6.5E-01
100-D-42, 100-D-43, 100-D-45_Shallow	non-Rad	Antimony	7440-36-0	µg/kg	455.98	5.0E+03	9.1E-02	6.0E+03	7.6E-02
100-D-42, 100-D-43, 100-D-45_Shallow	non-Rad	Arsenic	7440-38-2	µg/kg	1739.90	1.0E+04	1.7E-01	1.9E+05	9.2E-03
100-D-42, 100-D-43, 100-D-45_Shallow	non-Rad	Barium	7440-39-3	µg/kg	60900.36	3.3E+05	1.9E-01	1.3E+06	4.6E-02
100-D-42, 100-D-43, 100-D-45_Shallow	non-Rad	Beryllium	7440-41-7	µg/kg	241.80	1.0E+04	2.4E-02	1.4E+04	1.7E-02
100-D-42, 100-D-43, 100-D-45_Shallow	non-Rad	Boron	7440-42-8	µg/kg	1180.83	5.0E+02	**2.4E+00**	1.3E+05	8.9E-03
100-D-42, 100-D-43, 100-D-45_Shallow	non-Rad	Cadmium	7440-43-9	µg/kg	90.83	4.0E+03	2.3E-02	1.6E+03	5.6E-02
100-D-42, 100-D-43, 100-D-45_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.16	2.2E+03	7.2E-05	9.2E+02	1.7E-04
100-D-42, 100-D-43, 100-D-45_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	7962.81	4.0E+02	**2.0E+01**	3.8E+04	2.1E-01
100-D-42, 100-D-43, 100-D-45_Shallow	non-Rad	Cobalt	7440-48-4	µg/kg	8681.98	1.3E+04	6.7E-01	1.1E+05	7.8E-02
100-D-42, 100-D-43, 100-D-45_Shallow	Rad	Cobalt-60	10198-40-0	pCi/g	0.06	6.1E+03	1.0E-05	8.1E+02	7.7E-05
100-D-42, 100-D-43, 100-D-45_Shallow	non-Rad	Copper	7440-50-8	µg/kg	90383.94	5.0E+04	**1.8E+00**	1.1E+05	8.4E-01
100-D-42, 100-D-43, 100-D-45_Shallow	non-Rad	Lead	7439-92-1	µg/kg	4744.91	5.0E+04	9.5E-02	3.6E+04	1.3E-01
100-D-42, 100-D-43, 100-D-45_Shallow	non-Rad	Manganese	7439-96-5	µg/kg	313772.55	2.2E+05	**1.4E+00**	5.8E+06	5.4E-02
100-D-42, 100-D-43, 100-D-45_Shallow	non-Rad	Mercury	7439-97-6	µg/kg	13.90	1.0E+02	1.4E-01	1.9E+03	7.5E-03
100-D-42, 100-D-43, 100-D-45_Shallow	non-Rad	Molybdenum	7439-98-7	µg/kg	520.43	2.0E+03	2.6E-01	1.4E+04	3.7E-02
100-D-42, 100-D-43, 100-D-45_Shallow	non-Rad	Nickel	7440-02-0	µg/kg	9515.61	3.0E+04	3.2E-01	3.3E+04	2.9E-01
100-D-42, 100-D-43, 100-D-45_Shallow	Rad	Rads SOF	---	pCi/g	--	--	8.2E-05	--	2.5E-04
100-D-42, 100-D-43, 100-D-45_Shallow	non-Rad	Vanadium	7440-62-2	µg/kg	69326.33	2.0E+03	**3.5E+01**	3.1E+04	**2.2E+00**

Table H-7. 100-D Area Ecological Evaluation Based on SSLs for Surface Soils (0 to 15 feet [0 to 4.6m])

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
100-D-42, 100-D-43, 100-D-45_Shallow	non-Rad	Zinc	7440-66-6	µg/kg	59192.25	5.0E+04	**1.2E+00**	6.8E+04	8.7E-01
100-D-42, 100-D-43, 100-D-45_Shallow_Focused	non-Rad	Arsenic	7440-38-2	µg/kg	2000.00	1.0E+04	2.0E-01	1.9E+05	1.1E-02
100-D-42, 100-D-43, 100-D-45_Shallow_Focused	non-Rad	Barium	7440-39-3	µg/kg	59000.00	3.3E+05	1.8E-01	1.3E+06	4.5E-02
100-D-42, 100-D-43, 100-D-45_Shallow_Focused	non-Rad	Beryllium	7440-41-7	µg/kg	100.00	1.0E+04	1.0E-02	1.4E+04	7.2E-03
100-D-42, 100-D-43, 100-D-45_Shallow_Focused	non-Rad	Boron	7440-42-8	µg/kg	660.00	5.0E+02	**1.3E+00**	1.3E+05	5.0E-03
100-D-42, 100-D-43, 100-D-45_Shallow_Focused	non-Rad	Cadmium	7440-43-9	µg/kg	160.00	4.0E+03	4.0E-02	1.6E+03	9.8E-02
100-D-42, 100-D-43, 100-D-45_Shallow_Focused	Rad	Cesium-137	10045-97-3	pCi/g	0.64	2.2E+03	2.9E-04	9.2E+02	7.0E-04
100-D-42, 100-D-43, 100-D-45_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	7800.00	4.0E+02	**2.0E+01**	3.8E+04	2.0E-01
100-D-42, 100-D-43, 100-D-45_Shallow_Focused	non-Rad	Cobalt	7440-48-4	µg/kg	9700.00	1.3E+04	7.5E-01	1.1E+05	8.7E-02
100-D-42, 100-D-43, 100-D-45_Shallow_Focused	Rad	Cobalt-60	10198-40-0	pCi/g	1.20	6.1E+03	2.0E-04	8.1E+02	1.5E-03
100-D-42, 100-D-43, 100-D-45_Shallow_Focused	non-Rad	Copper	7440-50-8	µg/kg	15500.00	5.0E+04	3.1E-01	1.1E+05	1.5E-01
100-D-42, 100-D-43, 100-D-45_Shallow_Focused	non-Rad	Fluorene	86-73-7	µg/kg	1.90	2.9E+04	6.6E-05	1.8E+05	1.1E-05
100-D-42, 100-D-43, 100-D-45_Shallow_Focused	non-Rad	Lead	7439-92-1	µg/kg	3200.00	5.0E+04	6.4E-02	3.6E+04	9.0E-02
100-D-42, 100-D-43, 100-D-45_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	335000.00	2.2E+05	**1.5E+00**	5.8E+06	5.8E-02
100-D-42, 100-D-43, 100-D-45_Shallow_Focused	non-Rad	Methylene chloride	75-09-2	µg/kg	10.00	No Value	--	1.7E+05	6.0E-05
100-D-42, 100-D-43, 100-D-45_Shallow_Focused	non-Rad	Molybdenum	7439-98-7	µg/kg	530.00	2.0E+03	2.7E-01	1.4E+04	3.8E-02
100-D-42, 100-D-43, 100-D-45_Shallow_Focused	non-Rad	Nickel	7440-02-0	µg/kg	9200.00	3.0E+04	3.1E-01	3.3E+04	2.8E-01
100-D-42, 100-D-43, 100-D-45_Shallow_Focused	Rad	Nickel-63	13981-37-8	pCi/g	464.00	No Value	--	No Value	--
100-D-42, 100-D-43, 100-D-45_Shallow_Focused	Rad	Rads SOF	---	pCi/g	--	--	4.9E-04	--	2.2E-03
100-D-42, 100-D-43, 100-D-45_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	77900.00	2.0E+03	**3.9E+01**	3.1E+04	**2.5E+00**
100-D-42, 100-D-43, 100-D-45_Shallow_Focused	non-Rad	Zinc	7440-66-6	µg/kg	55000.00	5.0E+04	**1.1E+00**	6.8E+04	8.1E-01
100-D-47_Overburden	non-Rad	Antimony	7440-36-0	µg/kg	789.43	5.0E+03	1.6E-01	6.0E+03	1.3E-01
100-D-47_Overburden	non-Rad	Arsenic	7440-38-2	µg/kg	3159.03	1.0E+04	3.2E-01	1.9E+05	1.7E-02
100-D-47_Overburden	non-Rad	Barium	7440-39-3	µg/kg	74846.78	3.3E+05	2.3E-01	1.3E+06	5.7E-02
100-D-47_Overburden	non-Rad	Beryllium	7440-41-7	µg/kg	224.69	1.0E+04	2.3E-02	1.4E+04	1.6E-02
100-D-47_Overburden	non-Rad	Boron	7440-42-8	µg/kg	1497.15	5.0E+02	**3.0E+00**	1.3E+05	1.1E-02
100-D-47_Overburden	non-Rad	Cadmium	7440-43-9	µg/kg	200.00	4.0E+03	5.0E-02	1.6E+03	1.2E-01
100-D-47_Overburden	non-Rad	Chromium	7440-47-3	µg/kg	11948.32	4.0E+02	**3.0E+01**	3.8E+04	3.1E-01
100-D-47_Overburden	non-Rad	Cobalt	7440-48-4	µg/kg	7294.77	1.3E+04	5.6E-01	1.1E+05	6.5E-02
100-D-47_Overburden	non-Rad	Copper	7440-50-8	µg/kg	15503.75	5.0E+04	3.1E-01	1.1E+05	1.5E-01
100-D-47_Overburden	non-Rad	Lead	7439-92-1	µg/kg	4065.48	5.0E+04	8.1E-02	3.6E+04	1.1E-01
100-D-47_Overburden	non-Rad	Manganese	7439-96-5	µg/kg	342771.41	2.2E+05	**1.6E+00**	5.8E+06	5.9E-02
100-D-47_Overburden	non-Rad	Mercury	7439-97-6	µg/kg	10.97	1.0E+02	1.1E-01	1.9E+03	5.9E-03
100-D-47_Overburden	non-Rad	Molybdenum	7439-98-7	µg/kg	492.19	2.0E+03	2.5E-01	1.4E+04	3.5E-02
100-D-47_Overburden	non-Rad	Nickel	7440-02-0	µg/kg	12406.03	3.0E+04	4.1E-01	3.3E+04	3.8E-01
100-D-47_Overburden	Rad	Rads SOF	---	pCi/g	--	--	6.1E-04	--	2.2E-02
100-D-47_Overburden	Rad	Total beta radiostrontium	SR-RAD	pCi/g	2.02	3.6E+03	5.6E-04	9.1E+01	2.2E-02
100-D-47_Overburden	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	1713.09	5.0E+03	3.4E-01	3.6E+04	2.2E-03
100-D-47_Overburden	Rad	Uranium-233/234	U-233/234	pCi/g	0.64	5.2E+04	1.2E-05	6.4E+03	1.0E-04
100-D-47_Overburden	Rad	Uranium-235	15117-96-1	pCi/g	0.05	2.7E+04	2.0E-06	4.4E+03	1.3E-05
100-D-47_Overburden	Rad	Uranium-238	U-238	pCi/g	0.57	1.6E+04	3.7E-05	5.2E+03	1.1E-04
100-D-47_Overburden	non-Rad	Vanadium	7440-62-2	µg/kg	68751.63	2.0E+03	**3.4E+01**	3.1E+04	**2.2E+00**
100-D-47_Overburden	non-Rad	Zinc	7440-66-6	µg/kg	45247.78	5.0E+04	9.1E-01	6.8E+04	6.7E-01
100-D-47_Shallow	non-Rad	Arsenic	7440-38-2	µg/kg	3157.07	1.0E+04	3.2E-01	1.9E+05	1.7E-02
100-D-47_Shallow	non-Rad	Barium	7440-39-3	µg/kg	74541.72	3.3E+05	2.3E-01	1.3E+06	5.6E-02
100-D-47_Shallow	non-Rad	Beryllium	7440-41-7	µg/kg	509.65	1.0E+04	5.1E-02	1.4E+04	3.7E-02
100-D-47_Shallow	non-Rad	Boron	7440-42-8	µg/kg	1317.42	5.0E+02	**2.6E+00**	1.3E+05	9.9E-03
100-D-47_Shallow	non-Rad	Cadmium	7440-43-9	µg/kg	224.69	4.0E+03	5.6E-02	1.6E+03	1.4E-01

Table H-7. 100-D Area Ecological Evaluation Based on SSLs for Surface Soils (0 to 15 feet [0 to 4.6m])

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
100-D-47_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.09	2.2E+03	4.1E-05	9.2E+02	9.7E-05
100-D-47_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	11827.84	4.0E+02	**3.0E+01**	3.8E+04	3.1E-01
100-D-47_Shallow	non-Rad	Cobalt	7440-48-4	µg/kg	7982.17	1.3E+04	6.1E-01	1.1E+05	7.2E-02
100-D-47_Shallow	Rad	Cobalt-60	10198-40-0	pCi/g	0.60	6.1E+03	9.9E-05	8.1E+02	7.5E-04
100-D-47_Shallow	non-Rad	Copper	7440-50-8	µg/kg	15445.26	5.0E+04	3.1E-01	1.1E+05	1.4E-01
100-D-47_Shallow	Rad	Europium-152	14683-23-9	pCi/g	0.18	1.5E+04	1.2E-05	1.7E+03	1.0E-04
100-D-47_Shallow	non-Rad	Lead	7439-92-1	µg/kg	4017.70	5.0E+04	8.0E-02	3.6E+04	1.1E-01
100-D-47_Shallow	non-Rad	Manganese	7439-96-5	µg/kg	338839.37	2.2E+05	**1.5E+00**	5.8E+06	5.8E-02
100-D-47_Shallow	non-Rad	Molybdenum	7439-98-7	µg/kg	500.83	2.0E+03	2.5E-01	1.4E+04	3.6E-02
100-D-47_Shallow	non-Rad	Nickel	7440-02-0	µg/kg	11350.52	3.0E+04	3.8E-01	3.3E+04	3.5E-01
100-D-47_Shallow	Rad	Nickel-63	13981-37-8	pCi/g	7.19	No Value	--	No Value	--
100-D-47_Shallow	Rad	Rads SOF	---	pCi/g	--	--	4.6E-04	--	1.1E-02
100-D-47_Shallow	Rad	Total beta radiostrontium	SR-RAD	pCi/g	0.93	3.6E+03	2.6E-04	9.1E+01	1.0E-02
100-D-47_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	1694.36	5.0E+03	3.4E-01	3.6E+04	2.2E-03
100-D-47_Shallow	Rad	Uranium-233/234	U-233/234	pCi/g	0.61	5.2E+04	1.2E-05	6.4E+03	9.5E-05
100-D-47_Shallow	Rad	Uranium-235	15117-96-1	pCi/g	0.04	2.7E+04	1.4E-06	4.4E+03	8.9E-06
100-D-47_Shallow	Rad	Uranium-238	U-238	pCi/g	0.57	1.6E+04	3.6E-05	5.2E+03	1.1E-04
100-D-47_Shallow	non-Rad	Vanadium	7440-62-2	µg/kg	70090.43	2.0E+03	**3.5E+01**	3.1E+04	**2.3E+00**
100-D-47_Shallow	non-Rad	Zinc	7440-66-6	µg/kg	49435.43	5.0E+04	9.9E-01	6.8E+04	7.3E-01
100-D-47_Shallow_Focused	non-Rad	Antimony	7440-36-0	µg/kg	700.00	5.0E+03	1.4E-01	6.0E+03	1.2E-01
100-D-47_Shallow_Focused	non-Rad	Arsenic	7440-38-2	µg/kg	3300.00	1.0E+04	3.3E-01	1.9E+05	1.7E-02
100-D-47_Shallow_Focused	non-Rad	Barium	7440-39-3	µg/kg	69600.00	3.3E+05	2.1E-01	1.3E+06	5.3E-02
100-D-47_Shallow_Focused	non-Rad	Beryllium	7440-41-7	µg/kg	300.00	1.0E+04	3.0E-02	1.4E+04	2.2E-02
100-D-47_Shallow_Focused	non-Rad	Boron	7440-42-8	µg/kg	1700.00	5.0E+02	**3.4E+00**	1.3E+05	1.3E-02
100-D-47_Shallow_Focused	non-Rad	Cadmium	7440-43-9	µg/kg	200.00	4.0E+03	5.0E-02	1.6E+03	1.2E-01
100-D-47_Shallow_Focused	Rad	Cesium-137	10045-97-3	pCi/g	0.69	2.2E+03	3.1E-04	9.2E+02	7.4E-04
100-D-47_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	11300.00	4.0E+02	**2.8E+01**	3.8E+04	3.0E-01
100-D-47_Shallow_Focused	non-Rad	Cobalt	7440-48-4	µg/kg	8500.00	1.3E+04	6.5E-01	1.1E+05	7.6E-02
100-D-47_Shallow_Focused	Rad	Cobalt-60	10198-40-0	pCi/g	0.13	6.1E+03	2.2E-05	8.1E+02	1.6E-04
100-D-47_Shallow_Focused	non-Rad	Copper	7440-50-8	µg/kg	14100.00	5.0E+04	2.8E-01	1.1E+05	1.3E-01
100-D-47_Shallow_Focused	Rad	Europium-152	14683-23-9	pCi/g	1.52	1.5E+04	1.0E-04	1.7E+03	8.7E-04
100-D-47_Shallow_Focused	non-Rad	Hexavalent Chromium	18540-29-9	µg/kg	320.00	No Value	--	1.3E+06	2.6E-04
100-D-47_Shallow_Focused	non-Rad	Lead	7439-92-1	µg/kg	5100.00	5.0E+04	1.0E-01	3.6E+04	1.4E-01
100-D-47_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	360000.00	2.2E+05	**1.6E+00**	5.8E+06	6.2E-02
100-D-47_Shallow_Focused	non-Rad	Molybdenum	7439-98-7	µg/kg	500.00	2.0E+03	2.5E-01	1.4E+04	3.6E-02
100-D-47_Shallow_Focused	non-Rad	Nickel	7440-02-0	µg/kg	11300.00	3.0E+04	3.8E-01	3.3E+04	3.5E-01
100-D-47_Shallow_Focused	Rad	Nickel-63	13981-37-8	pCi/g	36.20	No Value	--	No Value	--
100-D-47_Shallow_Focused	Rad	Rads SOF	---	pCi/g	--	--	8.1E-04	--	1.5E-02
100-D-47_Shallow_Focused	Rad	Total beta radiostrontium	SR-RAD	pCi/g	1.18	3.6E+03	3.3E-04	9.1E+01	1.3E-02
100-D-47_Shallow_Focused	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	1550.91	5.0E+03	3.1E-01	3.6E+04	2.0E-03
100-D-47_Shallow_Focused	Rad	Uranium-233/234	U-233/234	pCi/g	0.54	5.2E+04	1.1E-05	6.4E+03	8.5E-05
100-D-47_Shallow_Focused	Rad	Uranium-238	U-238	pCi/g	0.52	1.6E+04	3.3E-05	5.2E+03	1.0E-04
100-D-47_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	85700.00	2.0E+03	**4.3E+01**	3.1E+04	**2.8E+00**
100-D-47_Shallow_Focused	non-Rad	Zinc	7440-66-6	µg/kg	55300.00	5.0E+04	**1.1E+00**	6.8E+04	8.2E-01
100-D-48:1_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.27	2.2E+03	1.2E-04	9.2E+02	2.9E-04
100-D-48:1_Shallow	Rad	Europium-152	14683-23-9	pCi/g	0.31	1.5E+04	2.1E-05	1.7E+03	1.8E-04
100-D-48:1_Shallow	non-Rad	Hexavalent Chromium	18540-29-9	µg/kg	643.00	No Value	--	1.3E+06	5.2E-04
100-D-48:1_Shallow	Rad	Rads SOF	---	pCi/g	--	--	2.3E-04	--	2.8E-03

Table H-7. 100-D Area Ecological Evaluation Based on SSLs for Surface Soils (0 to 15 feet [0 to 4.6m])

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
100-D-48:1_Shallow	Rad	Total beta radiostrontium	SR-RAD	pCi/g	0.20	3.6E+03	5.5E-05	9.1E+01	2.2E-03
100-D-48:1_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	1223.06	5.0E+03	2.5E-01	3.6E+04	1.6E-03
100-D-48:1_Shallow	Rad	Uranium-233/234	U-233/234	pCi/g	0.50	5.2E+04	9.6E-06	6.4E+03	7.8E-05
100-D-48:1_Shallow	Rad	Uranium-238	U-238	pCi/g	0.41	1.6E+04	2.6E-05	5.2E+03	8.0E-05
100-D-48:2_Overburden	Rad	Cesium-137	10045-97-3	pCi/g	0.09	2.2E+03	4.1E-05	9.2E+02	9.9E-05
100-D-48:2_Overburden	Rad	Cobalt-60	10198-40-0	pCi/g	0.06	6.1E+03	9.0E-06	8.1E+02	6.8E-05
100-D-48:2_Overburden	Rad	Europium-152	14683-23-9	pCi/g	0.11	1.5E+04	7.8E-06	1.7E+03	6.6E-05
100-D-48:2_Overburden	non-Rad	Hexavalent Chromium	18540-29-9	µg/kg	608.28	No Value	--	1.3E+06	4.9E-04
100-D-48:2_Overburden	Rad	Plutonium-239/240	PU-239/240	pCi/g	0.03	1.3E+04	2.0E-06	6.3E+03	4.0E-06
100-D-48:2_Overburden	Rad	Rads SOF	---	pCi/g	--	--	1.0E-04	--	4.1E-04
100-D-48:2_Overburden	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	1414.70	5.0E+03	2.8E-01	3.6E+04	1.8E-03
100-D-48:2_Overburden	Rad	Uranium-233/234	U-233/234	pCi/g	0.48	5.2E+04	9.3E-06	6.4E+03	7.5E-05
100-D-48:2_Overburden	Rad	Uranium-235	15117-96-1	pCi/g	0.03	2.7E+04	1.3E-06	4.4E+03	8.0E-06
100-D-48:2_Overburden	Rad	Uranium-238	U-238	pCi/g	0.48	1.6E+04	3.0E-05	5.2E+03	9.2E-05
100-D-48:2_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.89	2.2E+03	4.0E-04	9.2E+02	9.6E-04
100-D-48:2_Shallow	Rad	Cobalt-60	10198-40-0	pCi/g	0.10	6.1E+03	1.6E-05	8.1E+02	1.2E-04
100-D-48:2_Shallow	Rad	Europium-152	14683-23-9	pCi/g	0.56	1.5E+04	3.8E-05	1.7E+03	3.2E-04
100-D-48:2_Shallow	Rad	Europium-154	15585-10-1	pCi/g	0.20	1.3E+04	1.6E-05	1.6E+03	1.2E-04
100-D-48:2_Shallow	Rad	Plutonium-239/240	PU-239/240	pCi/g	0.05	1.3E+04	3.6E-06	6.3E+03	7.3E-06
100-D-48:2_Shallow	Rad	Rads SOF	---	pCi/g	--	--	5.7E-04	--	3.6E-03
100-D-48:2_Shallow	Rad	Total beta radiostrontium	SR-RAD	pCi/g	0.18	3.6E+03	4.9E-05	9.1E+01	1.9E-03
100-D-48:2_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	1496.12	5.0E+03	3.0E-01	3.6E+04	1.9E-03
100-D-48:2_Shallow	Rad	Uranium-233/234	U-233/234	pCi/g	0.51	5.2E+04	9.8E-06	6.4E+03	8.0E-05
100-D-48:2_Shallow	Rad	Uranium-235	15117-96-1	pCi/g	0.03	2.7E+04	1.1E-06	4.4E+03	6.9E-06
100-D-48:2_Shallow	Rad	Uranium-238	U-238	pCi/g	0.50	1.6E+04	3.2E-05	5.2E+03	9.8E-05
100-D-48:3_Overburden	Rad	Americium-241	14596-10-2	pCi/g	0.05	2.2E+04	2.4E-06	4.8E+03	1.1E-05
100-D-48:3_Overburden	Rad	Cesium-137	10045-97-3	pCi/g	0.21	2.2E+03	9.4E-05	9.2E+02	2.2E-04
100-D-48:3_Overburden	Rad	Cobalt-60	10198-40-0	pCi/g	0.04	6.1E+03	6.5E-06	8.1E+02	5.0E-05
100-D-48:3_Overburden	Rad	Europium-152	14683-23-9	pCi/g	0.25	1.5E+04	1.7E-05	1.7E+03	1.4E-04
100-D-48:3_Overburden	Rad	Plutonium-238	13981-16-3	pCi/g	0.37	1.8E+04	2.1E-05	6.0E+03	6.2E-05
100-D-48:3_Overburden	Rad	Plutonium-239/240	PU-239/240	pCi/g	2.43	1.3E+04	1.9E-04	6.3E+03	3.9E-04
100-D-48:3_Overburden	Rad	Rads SOF	---	pCi/g	--	--	3.7E-04	--	1.0E-03
100-D-48:3_Overburden	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	1278.04	5.0E+03	2.6E-01	3.6E+04	1.6E-03
100-D-48:3_Overburden	Rad	Uranium-233/234	U-233/234	pCi/g	0.47	5.2E+04	9.1E-06	6.4E+03	7.4E-05
100-D-48:3_Overburden	Rad	Uranium-238	U-238	pCi/g	0.43	1.6E+04	2.7E-05	5.2E+03	8.3E-05
100-D-48:3_Shallow	Rad	Americium-241	14596-10-2	pCi/g	0.05	2.2E+04	2.5E-06	4.8E+03	1.1E-05
100-D-48:3_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.78	2.2E+03	3.6E-04	9.2E+02	8.5E-04
100-D-48:3_Shallow	Rad	Europium-152	14683-23-9	pCi/g	0.13	1.5E+04	9.1E-06	1.7E+03	7.7E-05
100-D-48:3_Shallow	non-Rad	Hexavalent Chromium	18540-29-9	µg/kg	802.00	No Value	--	1.3E+06	6.4E-04
100-D-48:3_Shallow	Rad	Plutonium-239/240	PU-239/240	pCi/g	0.06	1.3E+04	4.8E-06	6.3E+03	9.8E-06
100-D-48:3_Shallow	Rad	Rads SOF	---	pCi/g	--	--	1.2E-03	--	3.1E-02
100-D-48:3_Shallow	Rad	Total beta radiostrontium	SR-RAD	pCi/g	2.70	3.6E+03	7.5E-04	9.1E+01	3.0E-02
100-D-48:3_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	1498.80	5.0E+03	3.0E-01	3.6E+04	1.9E-03
100-D-48:3_Shallow	Rad	Uranium-233/234	U-233/234	pCi/g	0.51	5.2E+04	9.9E-06	6.4E+03	8.0E-05
100-D-48:3_Shallow	Rad	Uranium-238	U-238	pCi/g	0.50	1.6E+04	3.2E-05	5.2E+03	9.8E-05
100-D-48:4_Shallow	Rad	Americium-241	14596-10-2	pCi/g	0.03	2.2E+04	1.4E-06	4.8E+03	6.0E-06
100-D-48:4_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.44	2.2E+03	2.0E-04	9.2E+02	4.7E-04
100-D-48:4_Shallow	Rad	Cobalt-60	10198-40-0	pCi/g	0.04	6.1E+03	7.0E-06	8.1E+02	5.3E-05

Table H-7. 100-D Area Ecological Evaluation Based on SSLs for Surface Soils (0 to 15 feet [0 to 4.6m])

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
100-D-48:4_Shallow	Rad	Europium-152	14683-23-9	pCi/g	0.28	1.5E+04	1.9E-05	1.7E+03	1.6E-04
100-D-48:4_Shallow	non-Rad	Hexavalent Chromium	18540-29-9	µg/kg	1900.00	No Value	--	1.3E+06	1.5E-03
100-D-48:4_Shallow	Rad	Plutonium-239/240	PU-239/240	pCi/g	0.03	1.3E+04	2.2E-06	6.3E+03	4.4E-06
100-D-48:4_Shallow	Rad	Rads SOF	---	pCi/g	--	--	3.9E-04	--	5.7E-03
100-D-48:4_Shallow	Rad	Total beta radiostrontium	SR-RAD	pCi/g	0.44	3.6E+03	1.2E-04	9.1E+01	4.9E-03
100-D-48:4_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	1596.20	5.0E+03	3.2E-01	3.6E+04	2.0E-03
100-D-48:4_Shallow	Rad	Uranium-233/234	U-233/234	pCi/g	0.49	5.2E+04	9.5E-06	6.4E+03	7.7E-05
100-D-48:4_Shallow	Rad	Uranium-238	U-238	pCi/g	0.54	1.6E+04	3.4E-05	5.2E+03	1.0E-04
100-D-49:2_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.20	2.2E+03	9.0E-05	9.2E+02	2.1E-04
100-D-49:2_Shallow	Rad	Europium-152	14683-23-9	pCi/g	0.24	1.5E+04	1.7E-05	1.7E+03	1.4E-04
100-D-49:2_Shallow	Rad	Rads SOF	---	pCi/g	--	--	1.4E-04	--	5.1E-04
100-D-49:2_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	1062.81	5.0E+03	2.1E-01	3.6E+04	1.4E-03
100-D-49:2_Shallow	Rad	Uranium-233/234	U-233/234	pCi/g	0.43	5.2E+04	8.3E-06	6.4E+03	6.7E-05
100-D-49:2_Shallow	Rad	Uranium-235	15117-96-1	pCi/g	0.09	2.7E+04	3.3E-06	4.4E+03	2.0E-05
100-D-49:2_Shallow	Rad	Uranium-238	U-238	pCi/g	0.36	1.6E+04	2.3E-05	5.2E+03	6.9E-05
100-D-49:3_Shallow_Focused	Rad	Rads SOF	---	pCi/g	--	--	4.8E-05	--	2.0E-04
100-D-49:3_Shallow_Focused	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	1762.27	5.0E+03	3.5E-01	3.6E+04	2.2E-03
100-D-49:3_Shallow_Focused	Rad	Uranium-233/234	U-233/234	pCi/g	0.52	5.2E+04	1.0E-05	6.4E+03	8.2E-05
100-D-49:3_Shallow_Focused	Rad	Uranium-238	U-238	pCi/g	0.59	1.6E+04	3.8E-05	5.2E+03	1.2E-04
100-D-49:4_Shallow	non-Rad	Aroclor-1254	11097-69-1	µg/kg	170.00	4.0E+04	4.3E-03	1.5E+03	1.2E-01
100-D-49:4_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.45	2.2E+03	2.1E-04	9.2E+02	4.9E-04
100-D-49:4_Shallow	Rad	Cobalt-60	10198-40-0	pCi/g	0.06	6.1E+03	9.4E-06	8.1E+02	7.2E-05
100-D-49:4_Shallow	Rad	Europium-152	14683-23-9	pCi/g	1.47	1.5E+04	1.0E-04	1.7E+03	8.5E-04
100-D-49:4_Shallow	Rad	Europium-154	15585-10-1	pCi/g	0.20	1.3E+04	1.6E-05	1.6E+03	1.3E-04
100-D-49:4_Shallow	non-Rad	Lead	7439-92-1	µg/kg	21359.33	5.0E+04	4.3E-01	3.6E+04	6.0E-01
100-D-49:4_Shallow	non-Rad	Mercury	7439-97-6	µg/kg	33.00	1.0E+02	3.3E-01	1.9E+03	1.8E-02
100-D-49:4_Shallow	Rad	Plutonium-239/240	PU-239/240	pCi/g	0.07	1.3E+04	5.4E-06	6.3E+03	1.1E-05
100-D-49:4_Shallow	Rad	Rads SOF	---	pCi/g	--	--	3.8E-04	--	1.7E-03
100-D-49:4_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	1458.29	5.0E+03	2.9E-01	3.6E+04	1.9E-03
100-D-49:4_Shallow	Rad	Uranium-233/234	U-233/234	pCi/g	0.48	5.2E+04	9.4E-06	6.4E+03	7.6E-05
100-D-49:4_Shallow	Rad	Uranium-235	15117-96-1	pCi/g	0.05	2.7E+04	2.0E-06	4.4E+03	1.2E-05
100-D-49:4_Shallow	Rad	Uranium-238	U-238	pCi/g	0.49	1.6E+04	3.1E-05	5.2E+03	9.5E-05
100-D-50:5_Shallow_Focused	non-Rad	Arsenic	7440-38-2	µg/kg	2500.00	1.0E+04	2.5E-01	1.9E+05	1.3E-02
100-D-50:5_Shallow_Focused	non-Rad	Barium	7440-39-3	µg/kg	69600.00	3.3E+05	2.1E-01	1.3E+06	5.3E-02
100-D-50:5_Shallow_Focused	non-Rad	Beryllium	7440-41-7	µg/kg	419.00	1.0E+04	4.2E-02	1.4E+04	3.0E-02
100-D-50:5_Shallow_Focused	non-Rad	Boron	7440-42-8	µg/kg	811.00	5.0E+02	**1.6E+00**	1.3E+05	6.1E-03
100-D-50:5_Shallow_Focused	non-Rad	Cadmium	7440-43-9	µg/kg	88.00	4.0E+03	2.2E-02	1.6E+03	5.4E-02
100-D-50:5_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	7400.00	4.0E+02	**1.9E+01**	3.8E+04	1.9E-01
100-D-50:5_Shallow_Focused	non-Rad	Cobalt	7440-48-4	µg/kg	6400.00	1.3E+04	4.9E-01	1.1E+05	5.7E-02
100-D-50:5_Shallow_Focused	non-Rad	Copper	7440-50-8	µg/kg	14500.00	5.0E+04	2.9E-01	1.1E+05	1.4E-01
100-D-50:5_Shallow_Focused	non-Rad	Lead	7439-92-1	µg/kg	3500.00	5.0E+04	7.0E-02	3.6E+04	9.8E-02
100-D-50:5_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	271000.00	2.2E+05	**1.2E+00**	5.8E+06	4.7E-02
100-D-50:5_Shallow_Focused	non-Rad	Molybdenum	7439-98-7	µg/kg	243.00	2.0E+03	1.2E-01	1.4E+04	1.7E-02
100-D-50:5_Shallow_Focused	non-Rad	Nickel	7440-02-0	µg/kg	9200.00	3.0E+04	3.1E-01	3.3E+04	2.8E-01
100-D-50:5_Shallow_Focused	non-Rad	Uranium	7440-61-1	µg/kg	1.54	5.0E+03	3.1E-04	3.6E+04	2.0E-06
100-D-50:5_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	34900.00	2.0E+03	**1.8E+01**	3.1E+04	**1.1E+00**
100-D-50:5_Shallow_Focused	non-Rad	Zinc	7440-66-6	µg/kg	32900.00	5.0E+04	6.6E-01	6.8E+04	4.9E-01
100-D-52_Shallow	non-Rad	Barium	7440-39-3	µg/kg	68900.00	3.3E+05	2.1E-01	1.3E+06	5.2E-02

Table H-7. 100-D Area Ecological Evaluation Based on SSLs for Surface Soils (0 to 15 feet [0 to 4.6m])

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
100-D-52_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.07	2.2E+03	2.9E-05	9.2E+02	7.0E-05
100-D-52_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	7400.00	4.0E+02	**1.9E+01**	3.8E+04	1.9E-01
100-D-52_Shallow	Rad	Europium-152	14683-23-9	pCi/g	0.36	1.5E+04	2.5E-05	1.7E+03	2.1E-04
100-D-52_Shallow	non-Rad	Lead	7439-92-1	µg/kg	4300.00	5.0E+04	8.6E-02	3.6E+04	1.2E-01
100-D-52_Shallow	Rad	Rads SOF	---	pCi/g	--	--	9.9E-05	--	4.7E-04
100-D-52_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	1646.18	5.0E+03	3.3E-01	3.6E+04	2.1E-03
100-D-52_Shallow	Rad	Uranium-233/234	U-233/234	pCi/g	0.51	5.2E+04	9.8E-06	6.4E+03	7.9E-05
100-D-52_Shallow	Rad	Uranium-238	U-238	pCi/g	0.55	1.6E+04	3.5E-05	5.2E+03	1.1E-04
100-D-56:1_Overburden	non-Rad	Antimony	7440-36-0	µg/kg	1200.00	5.0E+03	2.4E-01	6.0E+03	2.0E-01
100-D-56:1_Overburden	non-Rad	Arsenic	7440-38-2	µg/kg	3522.12	1.0E+04	3.5E-01	1.9E+05	1.9E-02
100-D-56:1_Overburden	non-Rad	Barium	7440-39-3	µg/kg	70319.15	3.3E+05	2.1E-01	1.3E+06	5.3E-02
100-D-56:1_Overburden	non-Rad	Beryllium	7440-41-7	µg/kg	570.08	1.0E+04	5.7E-02	1.4E+04	4.1E-02
100-D-56:1_Overburden	non-Rad	Boron	7440-42-8	µg/kg	5633.33	5.0E+02	**1.1E+01**	1.3E+05	4.2E-02
100-D-56:1_Overburden	non-Rad	Cadmium	7440-43-9	µg/kg	189.44	4.0E+03	4.7E-02	1.6E+03	1.2E-01
100-D-56:1_Overburden	non-Rad	Chromium	7440-47-3	µg/kg	10203.88	4.0E+02	**2.6E+01**	3.8E+04	2.7E-01
100-D-56:1_Overburden	non-Rad	Cobalt	7440-48-4	µg/kg	8319.76	1.3E+04	6.4E-01	1.1E+05	7.5E-02
100-D-56:1_Overburden	non-Rad	Copper	7440-50-8	µg/kg	16173.77	5.0E+04	3.2E-01	1.1E+05	1.5E-01
100-D-56:1_Overburden	non-Rad	Fluoride	16984-48-8	µg/kg	3300.00	No Value	--	2.3E+06	1.5E-03
100-D-56:1_Overburden	non-Rad	Hexavalent Chromium	18540-29-9	µg/kg	271.11	No Value	--	1.3E+06	2.2E-04
100-D-56:1_Overburden	non-Rad	Lead	7439-92-1	µg/kg	9648.89	5.0E+04	1.9E-01	3.6E+04	2.7E-01
100-D-56:1_Overburden	non-Rad	Manganese	7439-96-5	µg/kg	327758.02	2.2E+05	**1.5E+00**	5.8E+06	5.7E-02
100-D-56:1_Overburden	non-Rad	Mercury	7439-97-6	µg/kg	74.99	1.0E+02	7.5E-01	1.9E+03	4.0E-02
100-D-56:1_Overburden	non-Rad	Molybdenum	7439-98-7	µg/kg	950.00	2.0E+03	4.8E-01	1.4E+04	6.8E-02
100-D-56:1_Overburden	non-Rad	Nickel	7440-02-0	µg/kg	11052.70	3.0E+04	3.7E-01	3.3E+04	3.4E-01
100-D-56:1_Overburden	non-Rad	Nitrate	14797-55-8	µg/kg	22647.78	No Value	--	3.4E+08	6.7E-05
100-D-56:1_Overburden	non-Rad	Nitrite	14797-65-0	µg/kg	4080.00	No Value	--	3.4E+08	1.2E-05
100-D-56:1_Overburden	non-Rad	Selenium	7782-49-2	µg/kg	2100.00	5.2E+02	**4.0E+00**	1.9E+03	**1.1E+00**
100-D-56:1_Overburden	non-Rad	Vanadium	7440-62-2	µg/kg	58592.60	2.0E+03	**2.9E+01**	3.1E+04	**1.9E+00**
100-D-56:1_Overburden	non-Rad	Zinc	7440-66-6	µg/kg	66961.73	5.0E+04	**1.3E+00**	6.8E+04	9.9E-01
100-D-56:1_Shallow	non-Rad	Antimony	7440-36-0	µg/kg	1100.00	5.0E+03	2.2E-01	6.0E+03	1.8E-01
100-D-56:1_Shallow	non-Rad	Arsenic	7440-38-2	µg/kg	2560.10	1.0E+04	2.6E-01	1.9E+05	1.4E-02
100-D-56:1_Shallow	non-Rad	Barium	7440-39-3	µg/kg	59734.18	3.3E+05	1.8E-01	1.3E+06	4.5E-02
100-D-56:1_Shallow	non-Rad	Beryllium	7440-41-7	µg/kg	496.46	1.0E+04	5.0E-02	1.4E+04	3.6E-02
100-D-56:1_Shallow	non-Rad	Boron	7440-42-8	µg/kg	1600.00	5.0E+02	**3.2E+00**	1.3E+05	1.2E-02
100-D-56:1_Shallow	non-Rad	Cadmium	7440-43-9	µg/kg	195.00	4.0E+03	4.9E-02	1.6E+03	1.2E-01
100-D-56:1_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	10457.30	4.0E+02	**2.6E+01**	3.8E+04	2.7E-01
100-D-56:1_Shallow	non-Rad	Cobalt	7440-48-4	µg/kg	7299.87	1.3E+04	5.6E-01	1.1E+05	6.6E-02
100-D-56:1_Shallow	non-Rad	Copper	7440-50-8	µg/kg	14186.47	5.0E+04	2.8E-01	1.1E+05	1.3E-01
100-D-56:1_Shallow	non-Rad	Hexavalent Chromium	18540-29-9	µg/kg	280.00	No Value	--	1.3E+06	2.3E-04
100-D-56:1_Shallow	non-Rad	Lead	7439-92-1	µg/kg	4079.85	5.0E+04	8.2E-02	3.6E+04	1.2E-01
100-D-56:1_Shallow	non-Rad	Manganese	7439-96-5	µg/kg	290500.54	2.2E+05	**1.3E+00**	5.8E+06	5.0E-02
100-D-56:1_Shallow	non-Rad	Mercury	7439-97-6	µg/kg	20.00	1.0E+02	2.0E-01	1.9E+03	1.1E-02
100-D-56:1_Shallow	non-Rad	Nickel	7440-02-0	µg/kg	10800.06	3.0E+04	3.6E-01	3.3E+04	3.3E-01
100-D-56:1_Shallow	non-Rad	Nitrate	14797-55-8	µg/kg	29400.00	No Value	--	3.4E+08	8.6E-05
100-D-56:1_Shallow	non-Rad	Selenium	7782-49-2	µg/kg	1700.00	5.2E+02	**3.3E+00**	1.9E+03	9.0E-01
100-D-56:1_Shallow	non-Rad	Vanadium	7440-62-2	µg/kg	49162.02	2.0E+03	**2.5E+01**	3.1E+04	**1.6E+00**
100-D-56:1_Shallow	non-Rad	Zinc	7440-66-6	µg/kg	52499.42	5.0E+04	**1.1E+00**	6.8E+04	7.7E-01
100-D-56:1_Shallow_Focused	non-Rad	Antimony	7440-36-0	µg/kg	1000.00	5.0E+03	2.0E-01	6.0E+03	1.7E-01

Table H-7. 100-D Area Ecological Evaluation Based on SSLs for Surface Soils (0 to 15 feet [0 to 4.6m])

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
100-D-56:1_Shallow_Focused	non-Rad	Arsenic	7440-38-2	µg/kg	3200.00	1.0E+04	3.2E-01	1.9E+05	1.7E-02
100-D-56:1_Shallow_Focused	non-Rad	Barium	7440-39-3	µg/kg	60900.00	3.3E+05	1.9E-01	1.3E+06	4.6E-02
100-D-56:1_Shallow_Focused	non-Rad	Beryllium	7440-41-7	µg/kg	550.00	1.0E+04	5.5E-02	1.4E+04	3.9E-02
100-D-56:1_Shallow_Focused	non-Rad	Boron	7440-42-8	µg/kg	1800.00	5.0E+02	**3.6E+00**	1.3E+05	1.4E-02
100-D-56:1_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	11800.00	4.0E+02	**3.0E+01**	3.8E+04	3.1E-01
100-D-56:1_Shallow_Focused	non-Rad	Cobalt	7440-48-4	µg/kg	7600.00	1.3E+04	5.9E-01	1.1E+05	6.8E-02
100-D-56:1_Shallow_Focused	non-Rad	Copper	7440-50-8	µg/kg	14600.00	5.0E+04	2.9E-01	1.1E+05	1.4E-01
100-D-56:1_Shallow_Focused	non-Rad	Hexavalent Chromium	18540-29-9	µg/kg	280.00	No Value	--	1.3E+06	2.3E-04
100-D-56:1_Shallow_Focused	non-Rad	Lead	7439-92-1	µg/kg	5000.00	5.0E+04	1.0E-01	3.6E+04	1.4E-01
100-D-56:1_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	339000.00	2.2E+05	**1.5E+00**	5.8E+06	5.9E-02
100-D-56:1_Shallow_Focused	non-Rad	Mercury	7439-97-6	µg/kg	10.00	1.0E+02	1.0E-01	1.9E+03	5.4E-03
100-D-56:1_Shallow_Focused	non-Rad	Nickel	7440-02-0	µg/kg	13100.00	3.0E+04	4.4E-01	3.3E+04	4.0E-01
100-D-56:1_Shallow_Focused	non-Rad	Nitrate	14797-55-8	µg/kg	8830.00	No Value	--	3.4E+08	2.6E-05
100-D-56:1_Shallow_Focused	non-Rad	Silver	7440-22-4	µg/kg	240.00	2.0E+03	1.2E-01	5.0E+04	4.8E-03
100-D-56:1_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	51100.00	2.0E+03	**2.6E+01**	3.1E+04	**1.6E+00**
100-D-56:1_Shallow_Focused	non-Rad	Zinc	7440-66-6	µg/kg	45900.00	5.0E+04	9.2E-01	6.8E+04	6.8E-01
100-D-56:2_Overburden_4	non-Rad	Antimony	7440-36-0	µg/kg	500.00	5.0E+03	1.0E-01	6.0E+03	8.4E-02
100-D-56:2_Overburden_4	non-Rad	Arsenic	7440-38-2	µg/kg	3421.32	1.0E+04	3.4E-01	1.9E+05	1.8E-02
100-D-56:2_Overburden_4	non-Rad	Barium	7440-39-3	µg/kg	71232.28	3.3E+05	2.2E-01	1.3E+06	5.4E-02
100-D-56:2_Overburden_4	non-Rad	Beryllium	7440-41-7	µg/kg	983.57	1.0E+04	9.8E-02	1.4E+04	7.1E-02
100-D-56:2_Overburden_4	non-Rad	Boron	7440-42-8	µg/kg	1250.00	5.0E+02	**2.5E+00**	1.3E+05	9.4E-03
100-D-56:2_Overburden_4	non-Rad	Cadmium	7440-43-9	µg/kg	120.90	4.0E+03	3.0E-02	1.6E+03	7.4E-02
100-D-56:2_Overburden_4	non-Rad	Chromium	7440-47-3	µg/kg	17678.19	4.0E+02	**4.4E+01**	3.8E+04	4.6E-01
100-D-56:2_Overburden_4	non-Rad	Cobalt	7440-48-4	µg/kg	7597.27	1.3E+04	5.8E-01	1.1E+05	6.8E-02
100-D-56:2_Overburden_4	non-Rad	Copper	7440-50-8	µg/kg	15676.47	5.0E+04	3.1E-01	1.1E+05	1.5E-01
100-D-56:2_Overburden_4	non-Rad	Fluoride	16984-48-8	µg/kg	1700.00	No Value	--	2.3E+06	7.5E-04
100-D-56:2_Overburden_4	non-Rad	Hexavalent Chromium	18540-29-9	µg/kg	371.03	No Value	--	1.3E+06	3.0E-04
100-D-56:2_Overburden_4	non-Rad	Lead	7439-92-1	µg/kg	4232.24	5.0E+04	8.5E-02	3.6E+04	1.2E-01
100-D-56:2_Overburden_4	non-Rad	Manganese	7439-96-5	µg/kg	311403.93	2.2E+05	**1.4E+00**	5.8E+06	5.4E-02
100-D-56:2_Overburden_4	non-Rad	Mercury	7439-97-6	µg/kg	11.05	1.0E+02	1.1E-01	1.9E+03	5.9E-03
100-D-56:2_Overburden_4	non-Rad	Molybdenum	7439-98-7	µg/kg	350.00	2.0E+03	1.8E-01	1.4E+04	2.5E-02
100-D-56:2_Overburden_4	non-Rad	Nickel	7440-02-0	µg/kg	11137.89	3.0E+04	3.7E-01	3.3E+04	3.4E-01
100-D-56:2_Overburden_4	non-Rad	Nitrogen in Nitrate	NO3-N	µg/kg	1187.66	No Value	--	No Value	--
100-D-56:2_Overburden_4	non-Rad	Nitrogen in Nitrite	NO2-N	µg/kg	638.13	No Value	--	No Value	--
100-D-56:2_Overburden_4	non-Rad	Vanadium	7440-62-2	µg/kg	56979.85	2.0E+03	**2.9E+01**	3.1E+04	**1.8E+00**
100-D-56:2_Overburden_4	non-Rad	Zinc	7440-66-6	µg/kg	56993.18	5.0E+04	**1.1E+00**	6.8E+04	8.4E-01
100-D-56:2_Overburden_5	non-Rad	Arsenic	7440-38-2	µg/kg	2947.33	1.0E+04	3.0E-01	1.9E+05	1.6E-02
100-D-56:2_Overburden_5	non-Rad	Barium	7440-39-3	µg/kg	67670.45	3.3E+05	2.1E-01	1.3E+06	5.1E-02
100-D-56:2_Overburden_5	non-Rad	Beryllium	7440-41-7	µg/kg	1271.02	1.0E+04	1.3E-01	1.4E+04	9.1E-02
100-D-56:2_Overburden_5	non-Rad	Boron	7440-42-8	µg/kg	1407.32	5.0E+02	**2.8E+00**	1.3E+05	1.1E-02
100-D-56:2_Overburden_5	non-Rad	Cadmium	7440-43-9	µg/kg	86.00	4.0E+03	2.2E-02	1.6E+03	5.3E-02
100-D-56:2_Overburden_5	non-Rad	Chromium	7440-47-3	µg/kg	16179.15	4.0E+02	**4.0E+01**	3.8E+04	4.2E-01
100-D-56:2_Overburden_5	non-Rad	Cobalt	7440-48-4	µg/kg	7546.61	1.3E+04	5.8E-01	1.1E+05	6.8E-02
100-D-56:2_Overburden_5	non-Rad	Copper	7440-50-8	µg/kg	15393.07	5.0E+04	3.1E-01	1.1E+05	1.4E-01
100-D-56:2_Overburden_5	non-Rad	Fluoride	16984-48-8	µg/kg	1091.32	No Value	--	2.3E+06	4.8E-04
100-D-56:2_Overburden_5	non-Rad	Hexavalent Chromium	18540-29-9	µg/kg	223.05	No Value	--	1.3E+06	1.8E-04
100-D-56:2_Overburden_5	non-Rad	Lead	7439-92-1	µg/kg	4437.58	5.0E+04	8.9E-02	3.6E+04	1.3E-01
100-D-56:2_Overburden_5	non-Rad	Manganese	7439-96-5	µg/kg	306865.52	2.2E+05	**1.4E+00**	5.8E+06	5.3E-02

Table H-7. 100-D Area Ecological Evaluation Based on SSLs for Surface Soils (0 to 15 feet [0 to 4.6m])

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
100-D-56:2_Overburden_5	non-Rad	Mercury	7439-97-6	µg/kg	20.85	1.0E+02	2.1E-01	1.9E+03	1.1E-02
100-D-56:2_Overburden_5	non-Rad	Nickel	7440-02-0	µg/kg	10691.80	3.0E+04	3.6E-01	3.3E+04	3.3E-01
100-D-56:2_Overburden_5	non-Rad	Nitrogen in Nitrate	NO3-N	µg/kg	1534.78	No Value	--	No Value	--
100-D-56:2_Overburden_5	non-Rad	Nitrogen in Nitrite	NO2-N	µg/kg	492.00	No Value	--	No Value	--
100-D-56:2_Overburden_5	non-Rad	Vanadium	7440-62-2	µg/kg	52528.41	2.0E+03	**2.6E+01**	3.1E+04	**1.7E+00**
100-D-56:2_Overburden_5	non-Rad	Zinc	7440-66-6	µg/kg	41329.74	5.0E+04	8.3E-01	6.8E+04	6.1E-01
100-D-56:2_Overburden_Focused_1	non-Rad	Hexavalent Chromium	18540-29-9	µg/kg	493.00	No Value	--	1.3E+06	4.0E-04
100-D-56:2_Overburden_Focused_2	non-Rad	Arsenic	7440-38-2	µg/kg	4000.00	1.0E+04	4.0E-01	1.9E+05	2.1E-02
100-D-56:2_Overburden_Focused_2	non-Rad	Barium	7440-39-3	µg/kg	65000.00	3.3E+05	2.0E-01	1.3E+06	4.9E-02
100-D-56:2_Overburden_Focused_2	non-Rad	Beryllium	7440-41-7	µg/kg	1400.00	1.0E+04	1.4E-01	1.4E+04	1.0E-01
100-D-56:2_Overburden_Focused_2	non-Rad	Chromium	7440-47-3	µg/kg	11000.00	4.0E+02	**2.8E+01**	3.8E+04	2.9E-01
100-D-56:2_Overburden_Focused_2	non-Rad	Cobalt	7440-48-4	µg/kg	8300.00	1.3E+04	6.4E-01	1.1E+05	7.4E-02
100-D-56:2_Overburden_Focused_2	non-Rad	Copper	7440-50-8	µg/kg	16000.00	5.0E+04	3.2E-01	1.1E+05	1.5E-01
100-D-56:2_Overburden_Focused_2	non-Rad	Fluoride	16984-48-8	µg/kg	3400.00	No Value	--	2.3E+06	1.5E-03
100-D-56:2_Overburden_Focused_2	non-Rad	Lead	7439-92-1	µg/kg	4200.00	5.0E+04	8.4E-02	3.6E+04	1.2E-01
100-D-56:2_Overburden_Focused_2	non-Rad	Manganese	7439-96-5	µg/kg	310000.00	2.2E+05	**1.4E+00**	5.8E+06	5.4E-02
100-D-56:2_Overburden_Focused_2	non-Rad	Molybdenum	7439-98-7	µg/kg	280.00	2.0E+03	1.4E-01	1.4E+04	2.0E-02
100-D-56:2_Overburden_Focused_2	non-Rad	Nickel	7440-02-0	µg/kg	11000.00	3.0E+04	3.7E-01	3.3E+04	3.4E-01
100-D-56:2_Overburden_Focused_2	non-Rad	Nitrogen in Nitrate	NO3-N	µg/kg	1300.00	No Value	--	No Value	--
100-D-56:2_Overburden_Focused_2	non-Rad	Vanadium	7440-62-2	µg/kg	60000.00	2.0E+03	**3.0E+01**	3.1E+04	**1.9E+00**
100-D-56:2_Overburden_Focused_2	non-Rad	Zinc	7440-66-6	µg/kg	42000.00	5.0E+04	8.4E-01	6.8E+04	6.2E-01
100-D-56:2_Shallow_1	non-Rad	Antimony	7440-36-0	µg/kg	420.00	5.0E+03	8.4E-02	6.0E+03	7.0E-02
100-D-56:2_Shallow_1	non-Rad	Arsenic	7440-38-2	µg/kg	3208.05	1.0E+04	3.2E-01	1.9E+05	1.7E-02
100-D-56:2_Shallow_1	non-Rad	Barium	7440-39-3	µg/kg	62220.23	3.3E+05	1.9E-01	1.3E+06	4.7E-02
100-D-56:2_Shallow_1	non-Rad	Beryllium	7440-41-7	µg/kg	405.03	1.0E+04	4.1E-02	1.4E+04	2.9E-02
100-D-56:2_Shallow_1	non-Rad	Boron	7440-42-8	µg/kg	1525.00	5.0E+02	**3.1E+00**	1.3E+05	1.2E-02
100-D-56:2_Shallow_1	non-Rad	Cadmium	7440-43-9	µg/kg	65.15	4.0E+03	1.6E-02	1.6E+03	4.0E-02
100-D-56:2_Shallow_1	non-Rad	Chromium	7440-47-3	µg/kg	10823.55	4.0E+02	**2.7E+01**	3.8E+04	2.8E-01
100-D-56:2_Shallow_1	non-Rad	Cobalt	7440-48-4	µg/kg	7635.70	1.3E+04	5.9E-01	1.1E+05	6.9E-02
100-D-56:2_Shallow_1	non-Rad	Copper	7440-50-8	µg/kg	14188.29	5.0E+04	2.8E-01	1.1E+05	1.3E-01
100-D-56:2_Shallow_1	non-Rad	Fluoride	16984-48-8	µg/kg	1750.00	No Value	--	2.3E+06	7.7E-04
100-D-56:2_Shallow_1	non-Rad	Hexavalent Chromium	18540-29-9	µg/kg	244.00	No Value	--	1.3E+06	2.0E-04
100-D-56:2_Shallow_1	non-Rad	Lead	7439-92-1	µg/kg	3871.86	5.0E+04	7.7E-02	3.6E+04	1.1E-01
100-D-56:2_Shallow_1	non-Rad	Manganese	7439-96-5	µg/kg	306134.30	2.2E+05	**1.4E+00**	5.8E+06	5.3E-02
100-D-56:2_Shallow_1	non-Rad	Mercury	7439-97-6	µg/kg	9.66	1.0E+02	9.7E-02	1.9E+03	5.2E-03
100-D-56:2_Shallow_1	non-Rad	Nickel	7440-02-0	µg/kg	10387.84	3.0E+04	3.5E-01	3.3E+04	3.2E-01
100-D-56:2_Shallow_1	non-Rad	Nitrogen in Nitrate	NO3-N	µg/kg	902.50	No Value	--	No Value	--
100-D-56:2_Shallow_1	non-Rad	Nitrogen in Nitrite	NO2-N	µg/kg	513.33	No Value	--	No Value	--
100-D-56:2_Shallow_1	non-Rad	Vanadium	7440-62-2	µg/kg	56965.62	2.0E+03	**2.9E+01**	3.1E+04	**1.8E+00**
100-D-56:2_Shallow_1	non-Rad	Zinc	7440-66-6	µg/kg	41374.73	5.0E+04	8.3E-01	6.8E+04	6.1E-01
100-D-56:2_Shallow_2	non-Rad	Arsenic	7440-38-2	µg/kg	3810.27	1.0E+04	3.8E-01	1.9E+05	2.0E-02
100-D-56:2_Shallow_2	non-Rad	Barium	7440-39-3	µg/kg	59233.58	3.3E+05	1.8E-01	1.3E+06	4.5E-02
100-D-56:2_Shallow_2	non-Rad	Beryllium	7440-41-7	µg/kg	327.96	1.0E+04	3.3E-02	1.4E+04	2.4E-02
100-D-56:2_Shallow_2	non-Rad	Boron	7440-42-8	µg/kg	1100.00	5.0E+02	**2.2E+00**	1.3E+05	8.3E-03
100-D-56:2_Shallow_2	non-Rad	Cadmium	7440-43-9	µg/kg	84.25	4.0E+03	2.1E-02	1.6E+03	5.2E-02
100-D-56:2_Shallow_2	non-Rad	Chromium	7440-47-3	µg/kg	12515.18	4.0E+02	**3.1E+01**	3.8E+04	3.3E-01
100-D-56:2_Shallow_2	non-Rad	Cobalt	7440-48-4	µg/kg	6535.77	1.3E+04	5.0E-01	1.1E+05	5.9E-02
100-D-56:2_Shallow_2	non-Rad	Copper	7440-50-8	µg/kg	13634.90	5.0E+04	2.7E-01	1.1E+05	1.3E-01

Table H-7. 100-D Area Ecological Evaluation Based on SSLs for Surface Soils (0 to 15 feet [0 to 4.6m])

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
100-D-56:2_Shallow_2	non-Rad	Fluoride	16984-48-8	µg/kg	1708.33	No Value	--	2.3E+06	7.5E-04
100-D-56:2_Shallow_2	non-Rad	Lead	7439-92-1	µg/kg	3413.81	5.0E+04	6.8E-02	3.6E+04	9.6E-02
100-D-56:2_Shallow_2	non-Rad	Manganese	7439-96-5	µg/kg	281886.96	2.2E+05	**1.3E+00**	5.8E+06	4.9E-02
100-D-56:2_Shallow_2	non-Rad	Mercury	7439-97-6	µg/kg	9.03	1.0E+02	9.0E-02	1.9E+03	4.8E-03
100-D-56:2_Shallow_2	non-Rad	Nickel	7440-02-0	µg/kg	11048.17	3.0E+04	3.7E-01	3.3E+04	3.4E-01
100-D-56:2_Shallow_2	non-Rad	Nitrogen in Nitrate	NO3-N	µg/kg	3477.95	No Value	--	No Value	--
100-D-56:2_Shallow_2	non-Rad	Vanadium	7440-62-2	µg/kg	45416.40	2.0E+03	**2.3E+01**	3.1E+04	**1.5E+00**
100-D-56:2_Shallow_2	non-Rad	Zinc	7440-66-6	µg/kg	36898.95	5.0E+04	7.4E-01	6.8E+04	5.4E-01
100-D-56:2_Shallow_3	non-Rad	Arsenic	7440-38-2	µg/kg	3169.91	1.0E+04	3.2E-01	1.9E+05	1.7E-02
100-D-56:2_Shallow_3	non-Rad	Barium	7440-39-3	µg/kg	67570.35	3.3E+05	2.1E-01	1.3E+06	5.1E-02
100-D-56:2_Shallow_3	non-Rad	Beryllium	7440-41-7	µg/kg	1164.28	1.0E+04	1.2E-01	1.4E+04	8.4E-02
100-D-56:2_Shallow_3	non-Rad	Boron	7440-42-8	µg/kg	1605.37	5.0E+02	**3.2E+00**	1.3E+05	1.2E-02
100-D-56:2_Shallow_3	non-Rad	Cadmium	7440-43-9	µg/kg	96.00	4.0E+03	2.4E-02	1.6E+03	5.9E-02
100-D-56:2_Shallow_3	non-Rad	Chromium	7440-47-3	µg/kg	9261.03	4.0E+02	**2.3E+01**	3.8E+04	2.4E-01
100-D-56:2_Shallow_3	non-Rad	Cobalt	7440-48-4	µg/kg	8172.59	1.3E+04	6.3E-01	1.1E+05	7.3E-02
100-D-56:2_Shallow_3	non-Rad	Copper	7440-50-8	µg/kg	15430.61	5.0E+04	3.1E-01	1.1E+05	1.4E-01
100-D-56:2_Shallow_3	non-Rad	Fluoride	16984-48-8	µg/kg	1430.77	No Value	--	2.3E+06	6.3E-04
100-D-56:2_Shallow_3	non-Rad	Hexavalent Chromium	18540-29-9	µg/kg	659.00	No Value	--	1.3E+06	5.3E-04
100-D-56:2_Shallow_3	non-Rad	Lead	7439-92-1	µg/kg	5446.08	5.0E+04	1.1E-01	3.6E+04	1.5E-01
100-D-56:2_Shallow_3	non-Rad	Manganese	7439-96-5	µg/kg	322267.04	2.2E+05	**1.5E+00**	5.8E+06	5.6E-02
100-D-56:2_Shallow_3	non-Rad	Mercury	7439-97-6	µg/kg	11.13	1.0E+02	1.1E-01	1.9E+03	6.0E-03
100-D-56:2_Shallow_3	non-Rad	Nickel	7440-02-0	µg/kg	10049.38	3.0E+04	3.4E-01	3.3E+04	3.1E-01
100-D-56:2_Shallow_3	non-Rad	Nitrogen in Nitrate	NO3-N	µg/kg	1431.33	No Value	--	No Value	--
100-D-56:2_Shallow_3	non-Rad	Nitrogen in Nitrite	NO2-N	µg/kg	674.62	No Value	--	No Value	--
100-D-56:2_Shallow_3	non-Rad	Vanadium	7440-62-2	µg/kg	64761.58	2.0E+03	**3.2E+01**	3.1E+04	**2.1E+00**
100-D-56:2_Shallow_3	non-Rad	Zinc	7440-66-6	µg/kg	46651.48	5.0E+04	9.3E-01	6.8E+04	6.9E-01
100-D-56:2_Shallow_Focused	non-Rad	Antimony	7440-36-0	µg/kg	390.00	5.0E+03	7.8E-02	6.0E+03	6.5E-02
100-D-56:2_Shallow_Focused	non-Rad	Arsenic	7440-38-2	µg/kg	3200.00	1.0E+04	3.2E-01	1.9E+05	1.7E-02
100-D-56:2_Shallow_Focused	non-Rad	Barium	7440-39-3	µg/kg	70500.00	3.3E+05	2.1E-01	1.3E+06	5.3E-02
100-D-56:2_Shallow_Focused	non-Rad	Beryllium	7440-41-7	µg/kg	140.00	1.0E+04	1.4E-02	1.4E+04	1.0E-02
100-D-56:2_Shallow_Focused	non-Rad	Boron	7440-42-8	µg/kg	1000.00	5.0E+02	**2.0E+00**	1.3E+05	7.5E-03
100-D-56:2_Shallow_Focused	non-Rad	Cadmium	7440-43-9	µg/kg	93.00	4.0E+03	2.3E-02	1.6E+03	5.7E-02
100-D-56:2_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	29300.00	4.0E+02	**7.3E+01**	3.8E+04	7.7E-01
100-D-56:2_Shallow_Focused	non-Rad	Cobalt	7440-48-4	µg/kg	8300.00	1.3E+04	6.4E-01	1.1E+05	7.4E-02
100-D-56:2_Shallow_Focused	non-Rad	Copper	7440-50-8	µg/kg	14800.00	5.0E+04	3.0E-01	1.1E+05	1.4E-01
100-D-56:2_Shallow_Focused	non-Rad	Hexavalent Chromium	18540-29-9	µg/kg	662.00	No Value	--	1.3E+06	5.3E-04
100-D-56:2_Shallow_Focused	non-Rad	Lead	7439-92-1	µg/kg	2700.00	5.0E+04	5.4E-02	3.6E+04	7.6E-02
100-D-56:2_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	300000.00	2.2E+05	**1.4E+00**	5.8E+06	5.2E-02
100-D-56:2_Shallow_Focused	non-Rad	Mercury	7439-97-6	µg/kg	7.90	1.0E+02	7.9E-02	1.9E+03	4.2E-03
100-D-56:2_Shallow_Focused	non-Rad	Molybdenum	7439-98-7	µg/kg	300.00	2.0E+03	1.5E-01	1.4E+04	2.2E-02
100-D-56:2_Shallow_Focused	non-Rad	Nickel	7440-02-0	µg/kg	10600.00	3.0E+04	3.5E-01	3.3E+04	3.3E-01
100-D-56:2_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	57900.00	2.0E+03	**2.9E+01**	3.1E+04	**1.9E+00**
100-D-56:2_Shallow_Focused	non-Rad	Zinc	7440-66-6	µg/kg	39400.00	5.0E+04	7.9E-01	6.8E+04	5.8E-01
100-D-56:2_Staging pile area footprint_focused	non-Rad	Arsenic	7440-38-2	µg/kg	3600.00	1.0E+04	3.6E-01	1.9E+05	1.9E-02
100-D-56:2_Staging pile area footprint_focused	non-Rad	Barium	7440-39-3	µg/kg	79000.00	3.3E+05	2.4E-01	1.3E+06	6.0E-02
100-D-56:2_Staging pile area footprint_focused	non-Rad	Benzo(a)pyrene	50-32-8	µg/kg	84.00	1.8E+04	4.7E-03	7.6E+04	1.1E-03
100-D-56:2_Staging pile area footprint_focused	non-Rad	Benzo(b)fluoranthene	205-99-2	µg/kg	100.00	1.8E+04	5.6E-03	3.9E+04	2.6E-03
100-D-56:2_Staging pile area footprint_focused	non-Rad	Beryllium	7440-41-7	µg/kg	490.00	1.0E+04	4.9E-02	1.4E+04	3.5E-02

Table H-7. 100-D Area Ecological Evaluation Based on SSLs for Surface Soils (0 to 15 feet [0 to 4.6m])

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
100-D-56:2_Staging pile area footprint_focused	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	82.00	1.0E+05	8.2E-04	4.5E+04	1.8E-03
100-D-56:2_Staging pile area footprint_focused	non-Rad	Boron	7440-42-8	µg/kg	1500.00	5.0E+02	**3.0E+00**	1.3E+05	1.1E-02
100-D-56:2_Staging pile area footprint_focused	non-Rad	Cadmium	7440-43-9	µg/kg	88.00	4.0E+03	2.2E-02	1.6E+03	5.4E-02
100-D-56:2_Staging pile area footprint_focused	non-Rad	Chromium	7440-47-3	µg/kg	11000.00	4.0E+02	**2.8E+01**	3.8E+04	2.9E-01
100-D-56:2_Staging pile area footprint_focused	non-Rad	Chrysene	218-01-9	µg/kg	29.00	1.8E+04	1.6E-03	4.5E+04	6.5E-04
100-D-56:2_Staging pile area footprint_focused	non-Rad	Cobalt	7440-48-4	µg/kg	7500.00	1.3E+04	5.8E-01	1.1E+05	6.7E-02
100-D-56:2_Staging pile area footprint_focused	non-Rad	Copper	7440-50-8	µg/kg	15000.00	5.0E+04	3.0E-01	1.1E+05	1.4E-01
100-D-56:2_Staging pile area footprint_focused	non-Rad	Lead	7439-92-1	µg/kg	4400.00	5.0E+04	8.8E-02	3.6E+04	1.2E-01
100-D-56:2_Staging pile area footprint_focused	non-Rad	Manganese	7439-96-5	µg/kg	350000.00	2.2E+05	**1.6E+00**	5.8E+06	6.0E-02
100-D-56:2_Staging pile area footprint_focused	non-Rad	Mercury	7439-97-6	µg/kg	9.70	1.0E+02	9.7E-02	1.9E+03	5.2E-03
100-D-56:2_Staging pile area footprint_focused	non-Rad	Nickel	7440-02-0	µg/kg	11000.00	3.0E+04	3.7E-01	3.3E+04	3.4E-01
100-D-56:2_Staging pile area footprint_focused	non-Rad	Nitrogen in Nitrate	NO3-N	µg/kg	590.00	No Value	--	No Value	--
100-D-56:2_Staging pile area footprint_focused	non-Rad	Pyrene	129-00-0	µg/kg	15.00	1.8E+04	8.3E-04	6.0E+05	2.5E-05
100-D-56:2_Staging pile area footprint_focused	non-Rad	Vanadium	7440-62-2	µg/kg	55000.00	2.0E+03	**2.8E+01**	3.1E+04	**1.8E+00**
100-D-56:2_Staging pile area footprint_focused	non-Rad	Zinc	7440-66-6	µg/kg	44000.00	5.0E+04	8.8E-01	6.8E+04	6.5E-01
100-D-61_Shallow	non-Rad	4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	µg/kg	1.30	No Value	--	4.0E+02	3.3E-03
100-D-61_Shallow	non-Rad	Anthracene	120-12-7	µg/kg	5.20	2.9E+04	1.8E-04	6.8E+05	7.7E-06
100-D-61_Shallow	non-Rad	Antimony	7440-36-0	µg/kg	491.30	5.0E+03	9.8E-02	6.0E+03	8.2E-02
100-D-61_Shallow	non-Rad	Arsenic	7440-38-2	µg/kg	3005.75	1.0E+04	3.0E-01	1.9E+05	1.6E-02
100-D-61_Shallow	non-Rad	Barium	7440-39-3	µg/kg	158794.05	3.3E+05	4.8E-01	1.3E+06	1.2E-01
100-D-61_Shallow	non-Rad	Benzo(a)anthracene	56-55-3	µg/kg	16.00	1.8E+04	8.9E-04	6.4E+04	2.5E-04
100-D-61_Shallow	non-Rad	Benzo(a)pyrene	50-32-8	µg/kg	3.47	1.8E+04	1.9E-04	7.6E+04	4.5E-05
100-D-61_Shallow	non-Rad	Benzo(b)fluoranthene	205-99-2	µg/kg	5.54	1.8E+04	3.1E-04	3.9E+04	1.4E-04
100-D-61_Shallow	non-Rad	Benzo(k)fluoranthene	207-08-9	µg/kg	3.61	1.8E+04	2.0E-04	3.9E+04	9.2E-05
100-D-61_Shallow	non-Rad	Beryllium	7440-41-7	µg/kg	864.59	1.0E+04	8.7E-02	1.4E+04	6.2E-02
100-D-61_Shallow	non-Rad	Boron	7440-42-8	µg/kg	11172.22	5.0E+02	**2.2E+01**	1.3E+05	8.4E-02
100-D-61_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	9565.38	4.0E+02	**2.4E+01**	3.8E+04	2.5E-01
100-D-61_Shallow	non-Rad	Chrysene	218-01-9	µg/kg	14.56	1.8E+04	8.1E-04	4.5E+04	3.3E-04
100-D-61_Shallow	non-Rad	Cobalt	7440-48-4	µg/kg	9407.06	1.3E+04	7.2E-01	1.1E+05	8.4E-02
100-D-61_Shallow	non-Rad	Copper	7440-50-8	µg/kg	17830.90	5.0E+04	3.6E-01	1.1E+05	1.7E-01
100-D-61_Shallow	non-Rad	Dibenz[a,h]anthracene	53-70-3	µg/kg	1.50	1.8E+04	8.3E-05	4.4E+04	3.4E-05
100-D-61_Shallow	non-Rad	Fluoranthene	206-44-0	µg/kg	24.36	1.8E+04	1.4E-03	8.4E+05	2.9E-05
100-D-61_Shallow	non-Rad	Fluorene	86-73-7	µg/kg	2.60	2.9E+04	9.0E-05	1.8E+05	1.5E-05
100-D-61_Shallow	non-Rad	Hexavalent Chromium	18540-29-9	µg/kg	169.00	No Value	--	1.3E+06	1.4E-04
100-D-61_Shallow	non-Rad	Lead	7439-92-1	µg/kg	4458.90	5.0E+04	8.9E-02	3.6E+04	1.3E-01
100-D-61_Shallow	non-Rad	Manganese	7439-96-5	µg/kg	347566.52	2.2E+05	**1.6E+00**	5.8E+06	6.0E-02
100-D-61_Shallow	non-Rad	Mercury	7439-97-6	µg/kg	12.98	1.0E+02	1.3E-01	1.9E+03	7.0E-03
100-D-61_Shallow	non-Rad	Molybdenum	7439-98-7	µg/kg	516.35	2.0E+03	2.6E-01	1.4E+04	3.7E-02
100-D-61_Shallow	non-Rad	Nickel	7440-02-0	µg/kg	12719.96	3.0E+04	4.2E-01	3.3E+04	3.9E-01
100-D-61_Shallow	non-Rad	Pyrene	129-00-0	µg/kg	43.00	1.8E+04	2.4E-03	6.0E+05	7.2E-05
100-D-61_Shallow	non-Rad	Selenium	7782-49-2	µg/kg	1040.28	5.2E+02	**2.0E+00**	1.9E+03	5.5E-01
100-D-61_Shallow	non-Rad	Total petroleum hydrocarbons - motor oil (high boiling)	TPH/OILH	µg/kg	11436.36	No Value	--	No Value	--
100-D-61_Shallow	non-Rad	Vanadium	7440-62-2	µg/kg	63681.59	2.0E+03	**3.2E+01**	3.1E+04	**2.1E+00**
100-D-61_Shallow	non-Rad	Zinc	7440-66-6	µg/kg	45816.33	5.0E+04	9.2E-01	6.8E+04	6.8E-01
100-D-7_Shallow_1	non-Rad	2-Butanone	78-93-3	µg/kg	1.66	No Value	--	3.1E+06	5.3E-07

Table H-7. 100-D Area Ecological Evaluation Based on SSLs for Surface Soils (0 to 15 feet [0 to 4.6m])

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
100-D-7_Shallow_1	non-Rad	4,4'-DDT (Dichlorodiphenyltrichloroethane)	50-29-3	µg/kg	0.86	No Value	--	8.8E+02	9.8E-04
100-D-7_Shallow_1	non-Rad	Acetone	67-64-1	µg/kg	15.06	No Value	--	No Value	--
100-D-7_Shallow_1	non-Rad	Alpha-BHC	319-84-6	µg/kg	5.00	No Value	--	No Value	--
100-D-7_Shallow_1	non-Rad	Arsenic	7440-38-2	µg/kg	1523.96	1.0E+04	1.5E-01	1.9E+05	8.0E-03
100-D-7_Shallow_1	non-Rad	Barium	7440-39-3	µg/kg	59795.15	3.3E+05	1.8E-01	1.3E+06	4.5E-02
100-D-7_Shallow_1	non-Rad	Benzo(b)fluoranthene	205-99-2	µg/kg	30.00	1.8E+04	1.7E-03	3.9E+04	7.7E-04
100-D-7_Shallow_1	non-Rad	Beryllium	7440-41-7	µg/kg	126.11	1.0E+04	1.3E-02	1.4E+04	9.0E-03
100-D-7_Shallow_1	non-Rad	Boron	7440-42-8	µg/kg	1900.00	5.0E+02	**3.8E+00**	1.3E+05	1.4E-02
100-D-7_Shallow_1	non-Rad	Cadmium	7440-43-9	µg/kg	45.67	4.0E+03	1.1E-02	1.6E+03	2.8E-02
100-D-7_Shallow_1	non-Rad	Chromium	7440-47-3	µg/kg	7035.44	4.0E+02	**1.8E+01**	3.8E+04	1.8E-01
100-D-7_Shallow_1	non-Rad	Cobalt	7440-48-4	µg/kg	7813.88	1.3E+04	6.0E-01	1.1E+05	7.0E-02
100-D-7_Shallow_1	non-Rad	Copper	7440-50-8	µg/kg	11689.24	5.0E+04	2.3E-01	1.1E+05	1.1E-01
100-D-7_Shallow_1	non-Rad	Dibenz[a,h]anthracene	53-70-3	µg/kg	130.00	1.8E+04	7.2E-03	4.4E+04	3.0E-03
100-D-7_Shallow_1	non-Rad	Diethylphthalate	84-66-2	µg/kg	68.00	1.0E+05	6.8E-04	No Value	--
100-D-7_Shallow_1	non-Rad	Endosulfan II	33213-65-9	µg/kg	0.52	No Value	--	7.1E+02	7.3E-04
100-D-7_Shallow_1	non-Rad	Gamma-BHC (Lindane)	58-89-9	µg/kg	0.75	No Value	--	No Value	--
100-D-7_Shallow_1	non-Rad	Hexavalent Chromium	18540-29-9	µg/kg	184.00	No Value	--	1.3E+06	1.5E-04
100-D-7_Shallow_1	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	29.00	1.8E+04	1.6E-03	3.6E+04	8.1E-04
100-D-7_Shallow_1	non-Rad	Lead	7439-92-1	µg/kg	3490.49	5.0E+04	7.0E-02	3.6E+04	9.8E-02
100-D-7_Shallow_1	non-Rad	Manganese	7439-96-5	µg/kg	290471.85	2.2E+05	**1.3E+00**	5.8E+06	5.0E-02
100-D-7_Shallow_1	non-Rad	Mercury	7439-97-6	µg/kg	6.50	1.0E+02	6.5E-02	1.9E+03	3.5E-03
100-D-7_Shallow_1	non-Rad	Methylene chloride	75-09-2	µg/kg	10.00	No Value	--	1.7E+05	6.0E-05
100-D-7_Shallow_1	non-Rad	Molybdenum	7439-98-7	µg/kg	381.67	2.0E+03	1.9E-01	1.4E+04	2.7E-02
100-D-7_Shallow_1	non-Rad	Nickel	7440-02-0	µg/kg	9120.39	3.0E+04	3.0E-01	3.3E+04	2.8E-01
100-D-7_Shallow_1	non-Rad	Selenium	7782-49-2	µg/kg	834.30	5.2E+02	**1.6E+00**	1.9E+03	4.4E-01
100-D-7_Shallow_1	non-Rad	Toluene	108-88-3	µg/kg	0.91	2.0E+05	4.6E-06	5.2E+06	1.8E-07
100-D-7_Shallow_1	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	µg/kg	1385.79	2.0E+05	6.9E-03	3.6E+08	3.9E-06
100-D-7_Shallow_1	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	µg/kg	1725.00	No Value	--	No Value	--
100-D-7_Shallow_1	non-Rad	Vanadium	7440-62-2	µg/kg	70959.78	2.0E+03	**3.6E+01**	3.1E+04	**2.3E+00**
100-D-7_Shallow_1	non-Rad	Zinc	7440-66-6	µg/kg	43436.78	5.0E+04	8.7E-01	6.8E+04	6.4E-01
100-D-7_Shallow_2	non-Rad	4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	µg/kg	0.55	No Value	--	4.0E+02	1.4E-03
100-D-7_Shallow_2	non-Rad	4,4'-DDT (Dichlorodiphenyltrichloroethane)	50-29-3	µg/kg	0.88	No Value	--	8.8E+02	9.9E-04
100-D-7_Shallow_2	non-Rad	Acetone	67-64-1	µg/kg	10.01	No Value	--	No Value	--
100-D-7_Shallow_2	non-Rad	Alpha-BHC	319-84-6	µg/kg	0.22	No Value	--	No Value	--
100-D-7_Shallow_2	non-Rad	Arsenic	7440-38-2	µg/kg	2073.26	1.0E+04	2.1E-01	1.9E+05	1.1E-02
100-D-7_Shallow_2	non-Rad	Barium	7440-39-3	µg/kg	81722.60	3.3E+05	2.5E-01	1.3E+06	6.2E-02
100-D-7_Shallow_2	non-Rad	Beryllium	7440-41-7	µg/kg	142.48	1.0E+04	1.4E-02	1.4E+04	1.0E-02
100-D-7_Shallow_2	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	90.00	1.0E+05	9.0E-04	4.5E+04	2.0E-03
100-D-7_Shallow_2	non-Rad	Boron	7440-42-8	µg/kg	1533.00	5.0E+02	**3.1E+00**	1.3E+05	1.2E-02
100-D-7_Shallow_2	non-Rad	Cadmium	7440-43-9	µg/kg	84.98	4.0E+03	2.1E-02	1.6E+03	5.2E-02
100-D-7_Shallow_2	non-Rad	Chromium	7440-47-3	µg/kg	9024.18	4.0E+02	**2.3E+01**	3.8E+04	2.4E-01
100-D-7_Shallow_2	non-Rad	Cobalt	7440-48-4	µg/kg	8014.68	1.3E+04	6.2E-01	1.1E+05	7.2E-02

Table H-7. 100-D Area Ecological Evaluation Based on SSLs for Surface Soils (0 to 15 feet [0 to 4.6m])

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
100-D-7_Shallow_2	non-Rad	Copper	7440-50-8	µg/kg	11765.70	5.0E+04	2.4E-01	1.1E+05	1.1E-01
100-D-7_Shallow_2	non-Rad	Endosulfan II	33213-65-9	µg/kg	0.59	No Value	--	7.1E+02	8.3E-04
100-D-7_Shallow_2	non-Rad	Gamma-BHC (Lindane)	58-89-9	µg/kg	0.85	No Value	--	No Value	--
100-D-7_Shallow_2	non-Rad	Hexavalent Chromium	18540-29-9	µg/kg	236.15	No Value	--	1.3E+06	1.9E-04
100-D-7_Shallow_2	non-Rad	Lead	7439-92-1	µg/kg	4002.96	5.0E+04	8.0E-02	3.6E+04	1.1E-01
100-D-7_Shallow_2	non-Rad	Manganese	7439-96-5	µg/kg	343655.19	2.2E+05	**1.6E+00**	5.8E+06	5.9E-02
100-D-7_Shallow_2	non-Rad	Mercury	7439-97-6	µg/kg	12.33	1.0E+02	1.2E-01	1.9E+03	6.6E-03
100-D-7_Shallow_2	non-Rad	Methylene chloride	75-09-2	µg/kg	2.22	No Value	--	1.7E+05	1.3E-05
100-D-7_Shallow_2	non-Rad	Molybdenum	7439-98-7	µg/kg	352.86	2.0E+03	1.8E-01	1.4E+04	2.5E-02
100-D-7_Shallow_2	non-Rad	Nickel	7440-02-0	µg/kg	9972.82	3.0E+04	3.3E-01	3.3E+04	3.1E-01
100-D-7_Shallow_2	non-Rad	Silver	7440-22-4	µg/kg	410.00	2.0E+03	2.1E-01	5.0E+04	8.3E-03
100-D-7_Shallow_2	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	µg/kg	1700.00	No Value	--	No Value	--
100-D-7_Shallow_2	non-Rad	Vanadium	7440-62-2	µg/kg	63912.59	2.0E+03	**3.2E+01**	3.1E+04	**2.1E+00**
100-D-7_Shallow_2	non-Rad	Zinc	7440-66-6	µg/kg	46278.71	5.0E+04	9.3E-01	6.8E+04	6.8E-01
100-D-7_Shallow_Focused	non-Rad	Acetone	67-64-1	µg/kg	6.30	No Value	--	No Value	--
100-D-7_Shallow_Focused	non-Rad	Alpha-BHC	319-84-6	µg/kg	5.00	No Value	--	No Value	--
100-D-7_Shallow_Focused	non-Rad	Arsenic	7440-38-2	µg/kg	1900.00	1.0E+04	1.9E-01	1.9E+05	1.0E-02
100-D-7_Shallow_Focused	non-Rad	Barium	7440-39-3	µg/kg	69300.00	3.3E+05	2.1E-01	1.3E+06	5.2E-02
100-D-7_Shallow_Focused	non-Rad	Beryllium	7440-41-7	µg/kg	180.00	1.0E+04	1.8E-02	1.4E+04	1.3E-02
100-D-7_Shallow_Focused	non-Rad	Boron	7440-42-8	µg/kg	1200.00	5.0E+02	**2.4E+00**	1.3E+05	9.0E-03
100-D-7_Shallow_Focused	non-Rad	Cadmium	7440-43-9	µg/kg	63.00	4.0E+03	1.6E-02	1.6E+03	3.9E-02
100-D-7_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	9000.00	4.0E+02	**2.3E+01**	3.8E+04	2.4E-01
100-D-7_Shallow_Focused	non-Rad	Cobalt	7440-48-4	µg/kg	7600.00	1.3E+04	5.9E-01	1.1E+05	6.8E-02
100-D-7_Shallow_Focused	non-Rad	Copper	7440-50-8	µg/kg	14400.00	5.0E+04	2.9E-01	1.1E+05	1.3E-01
100-D-7_Shallow_Focused	non-Rad	Lead	7439-92-1	µg/kg	3300.00	5.0E+04	6.6E-02	3.6E+04	9.3E-02
100-D-7_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	303000.00	2.2E+05	**1.4E+00**	5.8E+06	5.2E-02
100-D-7_Shallow_Focused	non-Rad	Mercury	7439-97-6	µg/kg	8.80	1.0E+02	8.8E-02	1.9E+03	4.7E-03
100-D-7_Shallow_Focused	non-Rad	Methylene chloride	75-09-2	µg/kg	10.00	No Value	--	1.7E+05	6.0E-05
100-D-7_Shallow_Focused	non-Rad	Nickel	7440-02-0	µg/kg	11600.00	3.0E+04	3.9E-01	3.3E+04	3.6E-01
100-D-7_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	63200.00	2.0E+03	**3.2E+01**	3.1E+04	**2.0E+00**
100-D-7_Shallow_Focused	non-Rad	Zinc	7440-66-6	µg/kg	42000.00	5.0E+04	8.4E-01	6.8E+04	6.2E-01
100-D-7_Staging pile area footprint	non-Rad	4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	µg/kg	0.82	No Value	--	4.0E+02	2.1E-03
100-D-7_Staging pile area footprint	non-Rad	4,4'-DDT (Dichlorodiphenyltrichloroethane)	50-29-3	µg/kg	2.60	No Value	--	8.8E+02	3.0E-03
100-D-7_Staging pile area footprint	non-Rad	Acetone	67-64-1	µg/kg	6.18	No Value	--	No Value	--
100-D-7_Staging pile area footprint	non-Rad	Aroclor HI	---	µg/kg	--	--	3.9E-03	--	3.5E-01
100-D-7_Staging pile area footprint	non-Rad	Aroclor-1248	12672-29-6	µg/kg	100.00	4.0E+04	2.5E-03	3.3E+02	3.1E-01
100-D-7_Staging pile area footprint	non-Rad	Aroclor-1254	11097-69-1	µg/kg	7.93	4.0E+04	2.0E-04	1.5E+03	5.4E-03
100-D-7_Staging pile area footprint	non-Rad	Aroclor-1260	11096-82-5	µg/kg	49.17	4.0E+04	1.2E-03	1.5E+03	3.3E-02
100-D-7_Staging pile area footprint	non-Rad	Arsenic	7440-38-2	µg/kg	1624.59	1.0E+04	1.6E-01	1.9E+05	8.6E-03
100-D-7_Staging pile area footprint	non-Rad	Barium	7440-39-3	µg/kg	72000.00	3.3E+05	2.2E-01	1.3E+06	5.4E-02
100-D-7_Staging pile area footprint	non-Rad	Beryllium	7440-41-7	µg/kg	154.83	1.0E+04	1.6E-02	1.4E+04	1.1E-02
100-D-7_Staging pile area footprint	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	1100.00	1.0E+05	1.1E-02	4.5E+04	2.4E-02
100-D-7_Staging pile area footprint	non-Rad	Boron	7440-42-8	µg/kg	1719.17	5.0E+02	**3.4E+00**	1.3E+05	1.3E-02
100-D-7_Staging pile area footprint	non-Rad	Cadmium	7440-43-9	µg/kg	102.58	4.0E+03	2.6E-02	1.6E+03	6.3E-02

Table H-7. 100-D Area Ecological Evaluation Based on SSLs for Surface Soils (0 to 15 feet [0 to 4.6m])

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
100-D-7_Staging pile area footprint	Rad	Cesium-137	10045-97-3	pCi/g	0.06	2.2E+03	2.5E-05	9.2E+02	6.0E-05
100-D-7_Staging pile area footprint	non-Rad	Chromium	7440-47-3	µg/kg	8442.94	4.0E+02	**2.1E+01**	3.8E+04	2.2E-01
100-D-7_Staging pile area footprint	non-Rad	Cobalt	7440-48-4	µg/kg	6081.01	1.3E+04	4.7E-01	1.1E+05	5.5E-02
100-D-7_Staging pile area footprint	non-Rad	Copper	7440-50-8	µg/kg	16451.16	5.0E+04	3.3E-01	1.1E+05	1.5E-01
100-D-7_Staging pile area footprint	non-Rad	Diethylphthalate	84-66-2	µg/kg	451.50	1.0E+05	4.5E-03	No Value	--
100-D-7_Staging pile area footprint	non-Rad	Hexavalent Chromium	18540-29-9	µg/kg	285.00	No Value	--	1.3E+06	2.3E-04
100-D-7_Staging pile area footprint	non-Rad	Lead	7439-92-1	µg/kg	5630.31	5.0E+04	1.1E-01	3.6E+04	1.6E-01
100-D-7_Staging pile area footprint	non-Rad	Manganese	7439-96-5	µg/kg	279738.99	2.2E+05	**1.3E+00**	5.8E+06	4.8E-02
100-D-7_Staging pile area footprint	non-Rad	Mercury	7439-97-6	µg/kg	303.55	1.0E+02	**3.0E+00**	1.9E+03	1.6E-01
100-D-7_Staging pile area footprint	non-Rad	Methylene chloride	75-09-2	µg/kg	1.66	No Value	--	1.7E+05	1.0E-05
100-D-7_Staging pile area footprint	non-Rad	Molybdenum	7439-98-7	µg/kg	340.00	2.0E+03	1.7E-01	1.4E+04	2.4E-02
100-D-7_Staging pile area footprint	non-Rad	Nickel	7440-02-0	µg/kg	9889.07	3.0E+04	3.3E-01	3.3E+04	3.0E-01
100-D-7_Staging pile area footprint	non-Rad	Silver	7440-22-4	µg/kg	710.00	2.0E+03	3.6E-01	5.0E+04	1.4E-02
100-D-7_Staging pile area footprint	non-Rad	Toluene	108-88-3	µg/kg	0.72	2.0E+05	3.6E-06	5.2E+06	1.4E-07
100-D-7_Staging pile area footprint	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	µg/kg	2151.67	2.0E+05	1.1E-02	3.6E+08	6.0E-06
100-D-7_Staging pile area footprint	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	µg/kg	4698.76	No Value	--	No Value	--
100-D-7_Staging pile area footprint	non-Rad	Vanadium	7440-62-2	µg/kg	34101.75	2.0E+03	**1.7E+01**	3.1E+04	**1.1E+00**
100-D-7_Staging pile area footprint	non-Rad	Xylenes (total)	1330-20-7	µg/kg	1.02	No Value	--	8.3E+05	1.2E-06
100-D-7_Staging pile area footprint	non-Rad	Zinc	7440-66-6	µg/kg	40486.36	5.0E+04	8.1E-01	6.8E+04	6.0E-01
100-D-70_Shallow_Focused	non-Rad	Arsenic	7440-38-2	µg/kg	1800.00	1.0E+04	1.8E-01	1.9E+05	9.5E-03
100-D-70_Shallow_Focused	non-Rad	Barium	7440-39-3	µg/kg	99000.00	3.3E+05	3.0E-01	1.3E+06	7.5E-02
100-D-70_Shallow_Focused	non-Rad	Beryllium	7440-41-7	µg/kg	250.00	1.0E+04	2.5E-02	1.4E+04	1.8E-02
100-D-70_Shallow_Focused	non-Rad	Cadmium	7440-43-9	µg/kg	130.00	4.0E+03	3.3E-02	1.6E+03	8.0E-02
100-D-70_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	11800.00	4.0E+02	**3.0E+01**	3.8E+04	3.1E-01
100-D-70_Shallow_Focused	non-Rad	Cobalt	7440-48-4	µg/kg	8500.00	1.3E+04	6.5E-01	1.1E+05	7.6E-02
100-D-70_Shallow_Focused	non-Rad	Copper	7440-50-8	µg/kg	73900.00	5.0E+04	**1.5E+00**	1.1E+05	6.9E-01
100-D-70_Shallow_Focused	non-Rad	Lead	7439-92-1	µg/kg	7300.00	5.0E+04	1.5E-01	3.6E+04	2.1E-01
100-D-70_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	340000.00	2.2E+05	**1.6E+00**	5.8E+06	5.9E-02
100-D-70_Shallow_Focused	non-Rad	Methylene chloride	75-09-2	µg/kg	3.70	No Value	--	1.7E+05	2.2E-05
100-D-70_Shallow_Focused	non-Rad	Molybdenum	7439-98-7	µg/kg	390.00	2.0E+03	2.0E-01	1.4E+04	2.8E-02
100-D-70_Shallow_Focused	non-Rad	Nickel	7440-02-0	µg/kg	14000.00	3.0E+04	4.7E-01	3.3E+04	4.3E-01
100-D-70_Shallow_Focused	non-Rad	Nitrogen in Nitrate	NO3-N	µg/kg	2200.00	No Value	--	No Value	--
100-D-70_Shallow_Focused	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	µg/kg	2000.00	2.0E+05	1.0E-02	3.6E+08	5.6E-06
100-D-70_Shallow_Focused	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	µg/kg	4400.00	No Value	--	No Value	--
100-D-70_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	61100.00	2.0E+03	**3.1E+01**	3.1E+04	**2.0E+00**
100-D-70_Shallow_Focused	non-Rad	Zinc	7440-66-6	µg/kg	78800.00	5.0E+04	**1.6E+00**	6.8E+04	**1.2E+00**
100-D-74_Shallow_Focused	non-Rad	Anthracene	120-12-7	µg/kg	10.00	2.9E+04	3.5E-04	6.8E+05	1.5E-05
100-D-74_Shallow_Focused	non-Rad	Arsenic	7440-38-2	µg/kg	1500.00	1.0E+04	1.5E-01	1.9E+05	7.9E-03
100-D-74_Shallow_Focused	non-Rad	Barium	7440-39-3	µg/kg	54300.00	3.3E+05	1.7E-01	1.3E+06	4.1E-02
100-D-74_Shallow_Focused	non-Rad	Benzo(a)pyrene	50-32-8	µg/kg	11.00	1.8E+04	6.1E-04	7.6E+04	1.4E-04
100-D-74_Shallow_Focused	non-Rad	Benzo(b)fluoranthene	205-99-2	µg/kg	11.00	1.8E+04	6.1E-04	3.9E+04	2.8E-04
100-D-74_Shallow_Focused	non-Rad	Benzo(k)fluoranthene	207-08-9	µg/kg	8.90	1.8E+04	4.9E-04	3.9E+04	2.3E-04
100-D-74_Shallow_Focused	non-Rad	Beryllium	7440-41-7	µg/kg	120.00	1.0E+04	1.2E-02	1.4E+04	8.6E-03
100-D-74_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	6400.00	4.0E+02	**1.6E+01**	3.8E+04	1.7E-01

Table H-7. 100-D Area Ecological Evaluation Based on SSLs for Surface Soils (0 to 15 feet [0 to 4.6m])

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
100-D-74_Shallow_Focused	non-Rad	Chrysene	218-01-9	µg/kg	16.00	1.8E+04	8.9E-04	4.5E+04	3.6E-04
100-D-74_Shallow_Focused	non-Rad	Cobalt	7440-48-4	µg/kg	8300.00	1.3E+04	6.4E-01	1.1E+05	7.4E-02
100-D-74_Shallow_Focused	non-Rad	Copper	7440-50-8	µg/kg	13400.00	5.0E+04	2.7E-01	1.1E+05	1.3E-01
100-D-74_Shallow_Focused	non-Rad	Lead	7439-92-1	µg/kg	2300.00	5.0E+04	4.6E-02	3.6E+04	6.5E-02
100-D-74_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	278000.00	2.2E+05	**1.3E+00**	5.8E+06	4.8E-02
100-D-74_Shallow_Focused	non-Rad	Mercury	7439-97-6	µg/kg	17.00	1.0E+02	1.7E-01	1.9E+03	9.1E-03
100-D-74_Shallow_Focused	non-Rad	Molybdenum	7439-98-7	µg/kg	320.00	2.0E+03	1.6E-01	1.4E+04	2.3E-02
100-D-74_Shallow_Focused	non-Rad	Nickel	7440-02-0	µg/kg	9500.00	3.0E+04	3.2E-01	3.3E+04	2.9E-01
100-D-74_Shallow_Focused	non-Rad	Pyrene	129-00-0	µg/kg	40.00	1.8E+04	2.2E-03	6.0E+05	6.7E-05
100-D-74_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	57600.00	2.0E+03	**2.9E+01**	3.1E+04	**1.9E+00**
100-D-74_Shallow_Focused	non-Rad	Zinc	7440-66-6	µg/kg	40900.00	5.0E+04	8.2E-01	6.8E+04	6.0E-01
100-D-75:3_Shallow_Focused	non-Rad	Arsenic	7440-38-2	µg/kg	2000.00	1.0E+04	2.0E-01	1.9E+05	1.1E-02
100-D-75:3_Shallow_Focused	non-Rad	Barium	7440-39-3	µg/kg	60500.00	3.3E+05	1.8E-01	1.3E+06	4.6E-02
100-D-75:3_Shallow_Focused	non-Rad	Cadmium	7440-43-9	µg/kg	76.00	4.0E+03	1.9E-02	1.6E+03	4.7E-02
100-D-75:3_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	5900.00	4.0E+02	**1.5E+01**	3.8E+04	1.6E-01
100-D-75:3_Shallow_Focused	non-Rad	Cobalt	7440-48-4	µg/kg	8700.00	1.3E+04	6.7E-01	1.1E+05	7.8E-02
100-D-75:3_Shallow_Focused	non-Rad	Copper	7440-50-8	µg/kg	18000.00	5.0E+04	3.6E-01	1.1E+05	1.7E-01
100-D-75:3_Shallow_Focused	non-Rad	Lead	7439-92-1	µg/kg	5000.00	5.0E+04	1.0E-01	3.6E+04	1.4E-01
100-D-75:3_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	297000.00	2.2E+05	**1.4E+00**	5.8E+06	5.1E-02
100-D-75:3_Shallow_Focused	non-Rad	Mercury	7439-97-6	µg/kg	17.00	1.0E+02	1.7E-01	1.9E+03	9.1E-03
100-D-75:3_Shallow_Focused	non-Rad	Molybdenum	7439-98-7	µg/kg	350.00	2.0E+03	1.8E-01	1.4E+04	2.5E-02
100-D-75:3_Shallow_Focused	non-Rad	Nickel	7440-02-0	µg/kg	11100.00	3.0E+04	3.7E-01	3.3E+04	3.4E-01
100-D-75:3_Shallow_Focused	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	µg/kg	2400.00	No Value	--	No Value	--
100-D-75:3_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	52700.00	2.0E+03	**2.6E+01**	3.1E+04	**1.7E+00**
100-D-75:3_Shallow_Focused	non-Rad	Zinc	7440-66-6	µg/kg	39600.00	5.0E+04	7.9E-01	6.8E+04	5.8E-01
100-D-80:1_Shallow_Focused	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	µg/kg	1300.00	2.0E+05	6.5E-03	3.6E+08	3.7E-06
100-D-80:1_Shallow_Focused	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	µg/kg	4600.00	No Value	--	No Value	--
100-D-82_Shallow_Focused	non-Rad	Aroclor-1260	11096-82-5	µg/kg	3.50	4.0E+04	8.8E-05	1.5E+03	2.4E-03
100-D-82_Shallow_Focused	non-Rad	Arsenic	7440-38-2	µg/kg	1900.00	1.0E+04	1.9E-01	1.9E+05	1.0E-02
100-D-82_Shallow_Focused	non-Rad	Barium	7440-39-3	µg/kg	27800.00	3.3E+05	8.4E-02	1.3E+06	2.1E-02
100-D-82_Shallow_Focused	non-Rad	Beryllium	7440-41-7	µg/kg	93.00	1.0E+04	9.3E-03	1.4E+04	6.7E-03
100-D-82_Shallow_Focused	non-Rad	Cadmium	7440-43-9	µg/kg	49.00	4.0E+03	1.2E-02	1.6E+03	3.0E-02
100-D-82_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	8300.00	4.0E+02	**2.1E+01**	3.8E+04	2.2E-01
100-D-82_Shallow_Focused	non-Rad	Cobalt	7440-48-4	µg/kg	5400.00	1.3E+04	4.2E-01	1.1E+05	4.8E-02
100-D-82_Shallow_Focused	non-Rad	Copper	7440-50-8	µg/kg	8700.00	5.0E+04	1.7E-01	1.1E+05	8.1E-02
100-D-82_Shallow_Focused	non-Rad	Lead	7439-92-1	µg/kg	134000.00	5.0E+04	**2.7E+00**	3.6E+04	**3.8E+00**
100-D-82_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	164000.00	2.2E+05	7.5E-01	5.8E+06	2.8E-02
100-D-82_Shallow_Focused	non-Rad	Molybdenum	7439-98-7	µg/kg	290.00	2.0E+03	1.5E-01	1.4E+04	2.1E-02
100-D-82_Shallow_Focused	non-Rad	Nickel	7440-02-0	µg/kg	6900.00	3.0E+04	2.3E-01	3.3E+04	2.1E-01
100-D-82_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	17800.00	2.0E+03	**8.9E+00**	3.1E+04	5.7E-01
100-D-82_Shallow_Focused	non-Rad	Zinc	7440-66-6	µg/kg	37500.00	5.0E+04	7.5E-01	6.8E+04	5.5E-01
100-D-83:4_Shallow_Focused	non-Rad	Antimony	7440-36-0	µg/kg	550.00	5.0E+03	1.1E-01	6.0E+03	9.2E-02
100-D-83:4_Shallow_Focused	non-Rad	Arsenic	7440-38-2	µg/kg	4800.00	1.0E+04	4.8E-01	1.9E+05	2.5E-02
100-D-83:4_Shallow_Focused	non-Rad	Barium	7440-39-3	µg/kg	62400.00	3.3E+05	1.9E-01	1.3E+06	4.7E-02
100-D-83:4_Shallow_Focused	non-Rad	Beryllium	7440-41-7	µg/kg	120.00	1.0E+04	1.2E-02	1.4E+04	8.6E-03

Table H-7. 100-D Area Ecological Evaluation Based on SSLs for Surface Soils (0 to 15 feet [0 to 4.6m])

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
100-D-83:4_Shallow_Focused	non-Rad	Cadmium	7440-43-9	µg/kg	52.00	4.0E+03	1.3E-02	1.6E+03	3.2E-02
100-D-83:4_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	7800.00	4.0E+02	**2.0E+01**	3.8E+04	2.0E-01
100-D-83:4_Shallow_Focused	non-Rad	Cobalt	7440-48-4	µg/kg	8200.00	1.3E+04	6.3E-01	1.1E+05	7.4E-02
100-D-83:4_Shallow_Focused	non-Rad	Copper	7440-50-8	µg/kg	18400.00	5.0E+04	3.7E-01	1.1E+05	1.7E-01
100-D-83:4_Shallow_Focused	non-Rad	Fluoride	16984-48-8	µg/kg	1000.00	No Value	--	2.3E+06	4.4E-04
100-D-83:4_Shallow_Focused	non-Rad	Hexavalent Chromium	18540-29-9	µg/kg	172.00	No Value	--	1.3E+06	1.4E-04
100-D-83:4_Shallow_Focused	non-Rad	Lead	7439-92-1	µg/kg	8600.00	5.0E+04	1.7E-01	3.6E+04	2.4E-01
100-D-83:4_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	284000.00	2.2E+05	**1.3E+00**	5.8E+06	4.9E-02
100-D-83:4_Shallow_Focused	non-Rad	Mercury	7439-97-6	µg/kg	950.00	1.0E+02	**9.5E+00**	1.9E+03	5.1E-01
100-D-83:4_Shallow_Focused	non-Rad	Molybdenum	7439-98-7	µg/kg	440.00	2.0E+03	2.2E-01	1.4E+04	3.2E-02
100-D-83:4_Shallow_Focused	non-Rad	Nickel	7440-02-0	µg/kg	10900.00	3.0E+04	3.6E-01	3.3E+04	3.4E-01
100-D-83:4_Shallow_Focused	non-Rad	Nitrogen in Nitrate	NO3-N	µg/kg	1600.00	No Value	--	No Value	--
100-D-83:4_Shallow_Focused	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	µg/kg	2500.00	No Value	--	No Value	--
100-D-83:4_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	76100.00	2.0E+03	**3.8E+01**	3.1E+04	**2.4E+00**
100-D-83:4_Shallow_Focused	non-Rad	Zinc	7440-66-6	µg/kg	49100.00	5.0E+04	9.8E-01	6.8E+04	7.2E-01
100-D-84:1_Shallow_Focused	non-Rad	Arsenic	7440-38-2	µg/kg	2500.00	1.0E+04	2.5E-01	1.9E+05	1.3E-02
100-D-84:1_Shallow_Focused	non-Rad	Barium	7440-39-3	µg/kg	74700.00	3.3E+05	2.3E-01	1.3E+06	5.7E-02
100-D-84:1_Shallow_Focused	non-Rad	Benzo(a)anthracene	56-55-3	µg/kg	4.40	1.8E+04	2.4E-04	6.4E+04	6.9E-05
100-D-84:1_Shallow_Focused	non-Rad	Beryllium	7440-41-7	µg/kg	300.00	1.0E+04	3.0E-02	1.4E+04	2.2E-02
100-D-84:1_Shallow_Focused	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	79.00	1.0E+05	7.9E-04	4.5E+04	1.7E-03
100-D-84:1_Shallow_Focused	non-Rad	Boron	7440-42-8	µg/kg	1500.00	5.0E+02	**3.0E+00**	1.3E+05	1.1E-02
100-D-84:1_Shallow_Focused	non-Rad	Cadmium	7440-43-9	µg/kg	43.00	4.0E+03	1.1E-02	1.6E+03	2.6E-02
100-D-84:1_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	11900.00	4.0E+02	**3.0E+01**	3.8E+04	3.1E-01
100-D-84:1_Shallow_Focused	non-Rad	Cobalt	7440-48-4	µg/kg	11800.00	1.3E+04	9.1E-01	1.1E+05	1.1E-01
100-D-84:1_Shallow_Focused	non-Rad	Copper	7440-50-8	µg/kg	15200.00	5.0E+04	3.0E-01	1.1E+05	1.4E-01
100-D-84:1_Shallow_Focused	non-Rad	Diethylphthalate	84-66-2	µg/kg	72.00	1.0E+05	7.2E-04	No Value	--
100-D-84:1_Shallow_Focused	non-Rad	Fluoride	16984-48-8	µg/kg	1100.00	No Value	--	2.3E+06	4.8E-04
100-D-84:1_Shallow_Focused	non-Rad	Lead	7439-92-1	µg/kg	4400.00	5.0E+04	8.8E-02	3.6E+04	1.2E-01
100-D-84:1_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	343000.00	2.2E+05	**1.6E+00**	5.8E+06	5.9E-02
100-D-84:1_Shallow_Focused	non-Rad	Mercury	7439-97-6	µg/kg	120.00	1.0E+02	**1.2E+00**	1.9E+03	6.4E-02
100-D-84:1_Shallow_Focused	non-Rad	Molybdenum	7439-98-7	µg/kg	390.00	2.0E+03	2.0E-01	1.4E+04	2.8E-02
100-D-84:1_Shallow_Focused	non-Rad	Nickel	7440-02-0	µg/kg	11800.00	3.0E+04	3.9E-01	3.3E+04	3.6E-01
100-D-84:1_Shallow_Focused	non-Rad	Nitrogen in Nitrate	NO3-N	µg/kg	9400.00	No Value	--	No Value	--
100-D-84:1_Shallow_Focused	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	µg/kg	10200.00	No Value	--	No Value	--
100-D-84:1_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	94400.00	2.0E+03	**4.7E+01**	3.1E+04	**3.0E+00**
100-D-84:1_Shallow_Focused	non-Rad	Zinc	7440-66-6	µg/kg	52500.00	5.0E+04	**1.1E+00**	6.8E+04	7.7E-01
100-D-85:1_Shallow_Focused	non-Rad	Arsenic	7440-38-2	µg/kg	1100.00	1.0E+04	1.1E-01	1.9E+05	5.8E-03
100-D-85:1_Shallow_Focused	non-Rad	Barium	7440-39-3	µg/kg	53900.00	3.3E+05	1.6E-01	1.3E+06	4.1E-02
100-D-85:1_Shallow_Focused	non-Rad	Beryllium	7440-41-7	µg/kg	88.00	1.0E+04	8.8E-03	1.4E+04	6.3E-03
100-D-85:1_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	5400.00	4.0E+02	**1.4E+01**	3.8E+04	1.4E-01
100-D-85:1_Shallow_Focused	non-Rad	Cobalt	7440-48-4	µg/kg	7600.00	1.3E+04	5.9E-01	1.1E+05	6.8E-02
100-D-85:1_Shallow_Focused	non-Rad	Copper	7440-50-8	µg/kg	11600.00	5.0E+04	2.3E-01	1.1E+05	1.1E-01
100-D-85:1_Shallow_Focused	non-Rad	Lead	7439-92-1	µg/kg	1800.00	5.0E+04	3.6E-02	3.6E+04	5.1E-02
100-D-85:1_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	278000.00	2.2E+05	**1.3E+00**	5.8E+06	4.8E-02
100-D-85:1_Shallow_Focused	non-Rad	Molybdenum	7439-98-7	µg/kg	390.00	2.0E+03	2.0E-01	1.4E+04	2.8E-02
100-D-85:1_Shallow_Focused	non-Rad	Nickel	7440-02-0	µg/kg	9500.00	3.0E+04	3.2E-01	3.3E+04	2.9E-01
100-D-85:1_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	57900.00	2.0E+03	**2.9E+01**	3.1E+04	**1.9E+00**
100-D-85:1_Shallow_Focused	non-Rad	Zinc	7440-66-6	µg/kg	40100.00	5.0E+04	8.0E-01	6.8E+04	5.9E-01

Table H-7. 100-D Area Ecological Evaluation Based on SSLs for Surface Soils (0 to 15 feet [0 to 4.6m])

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
100-D-87_Shallow_Focused	non-Rad	Antimony	7440-36-0	µg/kg	480.00	5.0E+03	9.6E-02	6.0E+03	8.0E-02
100-D-87_Shallow_Focused	non-Rad	Arsenic	7440-38-2	µg/kg	7000.00	1.0E+04	7.0E-01	1.9E+05	3.7E-02
100-D-87_Shallow_Focused	non-Rad	Barium	7440-39-3	µg/kg	89200.00	3.3E+05	2.7E-01	1.3E+06	6.7E-02
100-D-87_Shallow_Focused	non-Rad	Benzo(a)anthracene	56-55-3	µg/kg	45.00	1.8E+04	2.5E-03	6.4E+04	7.0E-04
100-D-87_Shallow_Focused	non-Rad	Benzo(a)pyrene	50-32-8	µg/kg	55.00	1.8E+04	3.1E-03	7.6E+04	7.2E-04
100-D-87_Shallow_Focused	non-Rad	Benzo(b)fluoranthene	205-99-2	µg/kg	120.00	1.8E+04	6.7E-03	3.9E+04	3.1E-03
100-D-87_Shallow_Focused	non-Rad	Beryllium	7440-41-7	µg/kg	180.00	1.0E+04	1.8E-02	1.4E+04	1.3E-02
100-D-87_Shallow_Focused	non-Rad	Boron	7440-42-8	µg/kg	2400.00	5.0E+02	**4.8E+00**	1.3E+05	1.8E-02
100-D-87_Shallow_Focused	non-Rad	Cadmium	7440-43-9	µg/kg	450.00	4.0E+03	1.1E-01	1.6E+03	2.8E-01
100-D-87_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	9300.00	4.0E+02	**2.3E+01**	3.8E+04	2.4E-01
100-D-87_Shallow_Focused	non-Rad	Chrysene	218-01-9	µg/kg	64.00	1.8E+04	3.6E-03	4.5E+04	1.4E-03
100-D-87_Shallow_Focused	non-Rad	Cobalt	7440-48-4	µg/kg	7600.00	1.3E+04	5.9E-01	1.1E+05	6.8E-02
100-D-87_Shallow_Focused	non-Rad	Copper	7440-50-8	µg/kg	16800.00	5.0E+04	3.4E-01	1.1E+05	1.6E-01
100-D-87_Shallow_Focused	non-Rad	Fluoranthene	206-44-0	µg/kg	41.00	1.8E+04	2.3E-03	8.4E+05	4.9E-05
100-D-87_Shallow_Focused	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	36.00	1.8E+04	2.0E-03	3.6E+04	1.0E-03
100-D-87_Shallow_Focused	non-Rad	Lead	7439-92-1	µg/kg	19300.00	5.0E+04	3.9E-01	3.6E+04	5.4E-01
100-D-87_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	304000.00	2.2E+05	**1.4E+00**	5.8E+06	5.2E-02
100-D-87_Shallow_Focused	non-Rad	Mercury	7439-97-6	µg/kg	16.00	1.0E+02	1.6E-01	1.9E+03	8.6E-03
100-D-87_Shallow_Focused	non-Rad	Molybdenum	7439-98-7	µg/kg	380.00	2.0E+03	1.9E-01	1.4E+04	2.7E-02
100-D-87_Shallow_Focused	non-Rad	Nickel	7440-02-0	µg/kg	11800.00	3.0E+04	3.9E-01	3.3E+04	3.6E-01
100-D-87_Shallow_Focused	non-Rad	Pyrene	129-00-0	µg/kg	55.00	1.8E+04	3.1E-03	6.0E+05	9.2E-05
100-D-87_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	48000.00	2.0E+03	**2.4E+01**	3.1E+04	**1.5E+00**
100-D-87_Shallow_Focused	non-Rad	Zinc	7440-66-6	µg/kg	83600.00	5.0E+04	**1.7E+00**	6.8E+04	**1.2E+00**
100-D-88_Shallow_Focused	non-Rad	Antimony	7440-36-0	µg/kg	510.00	5.0E+03	1.0E-01	6.0E+03	8.5E-02
100-D-88_Shallow_Focused	non-Rad	Aroclor-1260	11096-82-5	µg/kg	2.90	4.0E+04	7.3E-05	1.5E+03	2.0E-03
100-D-88_Shallow_Focused	non-Rad	Arsenic	7440-38-2	µg/kg	2100.00	1.0E+04	2.1E-01	1.9E+05	1.1E-02
100-D-88_Shallow_Focused	non-Rad	Barium	7440-39-3	µg/kg	105000.00	3.3E+05	3.2E-01	1.3E+06	7.9E-02
100-D-88_Shallow_Focused	non-Rad	Beryllium	7440-41-7	µg/kg	270.00	1.0E+04	2.7E-02	1.4E+04	1.9E-02
100-D-88_Shallow_Focused	non-Rad	Boron	7440-42-8	µg/kg	930.00	5.0E+02	**1.9E+00**	1.3E+05	7.0E-03
100-D-88_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	10400.00	4.0E+02	**2.6E+01**	3.8E+04	2.7E-01
100-D-88_Shallow_Focused	non-Rad	Cobalt	7440-48-4	µg/kg	11500.00	1.3E+04	8.9E-01	1.1E+05	1.0E-01
100-D-88_Shallow_Focused	non-Rad	Copper	7440-50-8	µg/kg	29200.00	5.0E+04	5.8E-01	1.1E+05	2.7E-01
100-D-88_Shallow_Focused	non-Rad	Fluoride	16984-48-8	µg/kg	1900.00	No Value	--	2.3E+06	8.3E-04
100-D-88_Shallow_Focused	non-Rad	Hexavalent Chromium	18540-29-9	µg/kg	300.00	No Value	--	1.3E+06	2.4E-04
100-D-88_Shallow_Focused	non-Rad	Lead	7439-92-1	µg/kg	4400.00	5.0E+04	8.8E-02	3.6E+04	1.2E-01
100-D-88_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	384000.00	2.2E+05	**1.8E+00**	5.8E+06	6.6E-02
100-D-88_Shallow_Focused	non-Rad	Mercury	7439-97-6	µg/kg	12.00	1.0E+02	1.2E-01	1.9E+03	6.4E-03
100-D-88_Shallow_Focused	non-Rad	Methylene chloride	75-09-2	µg/kg	1.90	No Value	--	1.7E+05	1.2E-05
100-D-88_Shallow_Focused	non-Rad	Molybdenum	7439-98-7	µg/kg	300.00	2.0E+03	1.5E-01	1.4E+04	2.2E-02
100-D-88_Shallow_Focused	non-Rad	Nickel	7440-02-0	µg/kg	10400.00	3.0E+04	3.5E-01	3.3E+04	3.2E-01
100-D-88_Shallow_Focused	non-Rad	Nitrogen in Nitrate	NO3-N	µg/kg	1900.00	No Value	--	No Value	--
100-D-88_Shallow_Focused	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	µg/kg	2800.00	No Value	--	No Value	--
100-D-88_Shallow_Focused	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	µg/kg	6300.00	2.0E+05	3.2E-02	3.6E+08	1.8E-05
100-D-88_Shallow_Focused	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	µg/kg	15000.00	No Value	--	No Value	--
100-D-88_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	104000.00	2.0E+03	**5.2E+01**	3.1E+04	**3.3E+00**
100-D-88_Shallow_Focused	non-Rad	Zinc	7440-66-6	µg/kg	63900.00	5.0E+04	**1.3E+00**	6.8E+04	9.4E-01

Table H-7. 100-D Area Ecological Evaluation Based on SSLs for Surface Soils (0 to 15 feet [0 to 4.6m])

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
100-D-9_Shallow_Focused	non-Rad	Acetone	67-64-1	µg/kg	7.00	No Value	--	No Value	--
100-D-9_Shallow_Focused	non-Rad	Arsenic	7440-38-2	µg/kg	1200.00	1.0E+04	1.2E-01	1.9E+05	6.3E-03
100-D-9_Shallow_Focused	non-Rad	Barium	7440-39-3	µg/kg	63800.00	3.3E+05	1.9E-01	1.3E+06	4.8E-02
100-D-9_Shallow_Focused	non-Rad	Beryllium	7440-41-7	µg/kg	470.00	1.0E+04	4.7E-02	1.4E+04	3.4E-02
100-D-9_Shallow_Focused	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	29.00	1.0E+05	2.9E-04	4.5E+04	6.4E-04
100-D-9_Shallow_Focused	non-Rad	Boron	7440-42-8	µg/kg	820.00	5.0E+02	**1.6E+00**	1.3E+05	6.2E-03
100-D-9_Shallow_Focused	non-Rad	Cadmium	7440-43-9	µg/kg	170.00	4.0E+03	4.3E-02	1.6E+03	1.0E-01
100-D-9_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	3500.00	4.0E+02	**8.8E+00**	3.8E+04	9.2E-02
100-D-9_Shallow_Focused	non-Rad	Cobalt	7440-48-4	µg/kg	8600.00	1.3E+04	6.6E-01	1.1E+05	7.7E-02
100-D-9_Shallow_Focused	non-Rad	Copper	7440-50-8	µg/kg	14300.00	5.0E+04	2.9E-01	1.1E+05	1.3E-01
100-D-9_Shallow_Focused	non-Rad	Di-n-butylphthalate	84-74-2	µg/kg	25.00	No Value	--	No Value	--
100-D-9_Shallow_Focused	non-Rad	Lead	7439-92-1	µg/kg	2000.00	5.0E+04	4.0E-02	3.6E+04	5.6E-02
100-D-9_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	299000.00	2.2E+05	**1.4E+00**	5.8E+06	5.2E-02
100-D-9_Shallow_Focused	non-Rad	Methylene chloride	75-09-2	µg/kg	8.00	No Value	--	1.7E+05	4.8E-05
100-D-9_Shallow_Focused	non-Rad	Molybdenum	7439-98-7	µg/kg	450.00	2.0E+03	2.3E-01	1.4E+04	3.2E-02
100-D-9_Shallow_Focused	non-Rad	Nickel	7440-02-0	µg/kg	9100.00	3.0E+04	3.0E-01	3.3E+04	2.8E-01
100-D-9_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	67300.00	2.0E+03	**3.4E+01**	3.1E+04	**2.2E+00**
100-D-9_Shallow_Focused	non-Rad	Zinc	7440-66-6	µg/kg	43100.00	5.0E+04	8.6E-01	6.8E+04	6.4E-01
100-D-94_Shallow_Focused	non-Rad	Antimony	7440-36-0	µg/kg	450.00	5.0E+03	9.0E-02	6.0E+03	7.5E-02
100-D-94_Shallow_Focused	non-Rad	Arsenic	7440-38-2	µg/kg	2100.00	1.0E+04	2.1E-01	1.9E+05	1.1E-02
100-D-94_Shallow_Focused	non-Rad	Barium	7440-39-3	µg/kg	59800.00	3.3E+05	1.8E-01	1.3E+06	4.5E-02
100-D-94_Shallow_Focused	non-Rad	Beryllium	7440-41-7	µg/kg	200.00	1.0E+04	2.0E-02	1.4E+04	1.4E-02
100-D-94_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	9000.00	4.0E+02	**2.3E+01**	3.8E+04	2.4E-01
100-D-94_Shallow_Focused	non-Rad	Cobalt	7440-48-4	µg/kg	6300.00	1.3E+04	4.9E-01	1.1E+05	5.7E-02
100-D-94_Shallow_Focused	non-Rad	Copper	7440-50-8	µg/kg	12000.00	5.0E+04	2.4E-01	1.1E+05	1.1E-01
100-D-94_Shallow_Focused	non-Rad	Fluoride	16984-48-8	µg/kg	1100.00	No Value	--	2.3E+06	4.8E-04
100-D-94_Shallow_Focused	non-Rad	Lead	7439-92-1	µg/kg	24700.00	5.0E+04	4.9E-01	3.6E+04	6.9E-01
100-D-94_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	275000.00	2.2E+05	**1.3E+00**	5.8E+06	4.7E-02
100-D-94_Shallow_Focused	non-Rad	Mercury	7439-97-6	µg/kg	580.00	1.0E+02	**5.8E+00**	1.9E+03	3.1E-01
100-D-94_Shallow_Focused	non-Rad	Nickel	7440-02-0	µg/kg	10000.00	3.0E+04	3.3E-01	3.3E+04	3.1E-01
100-D-94_Shallow_Focused	non-Rad	Nitrogen in Nitrate	NO3-N	µg/kg	1800.00	No Value	--	No Value	--
100-D-94_Shallow_Focused	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	µg/kg	2700.00	No Value	--	No Value	--
100-D-94_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	40200.00	2.0E+03	**2.0E+01**	3.1E+04	**1.3E+00**
100-D-94_Shallow_Focused	non-Rad	Zinc	7440-66-6	µg/kg	38700.00	5.0E+04	7.7E-01	6.8E+04	5.7E-01
116-D-10_Shallow	non-Rad	Antimony	7440-36-0	µg/kg	462.51	5.0E+03	9.3E-02	6.0E+03	7.7E-02
116-D-10_Shallow	non-Rad	Arsenic	7440-38-2	µg/kg	2666.20	1.0E+04	2.7E-01	1.9E+05	1.4E-02
116-D-10_Shallow	non-Rad	Barium	7440-39-3	µg/kg	69640.26	3.3E+05	2.1E-01	1.3E+06	5.3E-02
116-D-10_Shallow	non-Rad	Beryllium	7440-41-7	µg/kg	227.15	1.0E+04	2.3E-02	1.4E+04	1.6E-02
116-D-10_Shallow	non-Rad	Boron	7440-42-8	µg/kg	1220.33	5.0E+02	**2.4E+00**	1.3E+05	9.2E-03
116-D-10_Shallow	non-Rad	Cadmium	7440-43-9	µg/kg	109.00	4.0E+03	2.7E-02	1.6E+03	6.7E-02
116-D-10_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.09	2.2E+03	4.1E-05	9.2E+02	9.9E-05
116-D-10_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	9277.84	4.0E+02	**2.3E+01**	3.8E+04	2.4E-01
116-D-10_Shallow	non-Rad	Cobalt	7440-48-4	µg/kg	8369.05	1.3E+04	6.4E-01	1.1E+05	7.5E-02
116-D-10_Shallow	non-Rad	Copper	7440-50-8	µg/kg	15217.70	5.0E+04	3.0E-01	1.1E+05	1.4E-01
116-D-10_Shallow	non-Rad	Hexavalent Chromium	18540-29-9	µg/kg	213.33	No Value	--	1.3E+06	1.7E-04
116-D-10_Shallow	non-Rad	Lead	7439-92-1	µg/kg	3464.68	5.0E+04	6.9E-02	3.6E+04	9.7E-02
116-D-10_Shallow	non-Rad	Manganese	7439-96-5	µg/kg	320612.46	2.2E+05	**1.5E+00**	5.8E+06	5.5E-02
116-D-10_Shallow	non-Rad	Molybdenum	7439-98-7	µg/kg	383.00	2.0E+03	1.9E-01	1.4E+04	2.7E-02

Table H-7. 100-D Area Ecological Evaluation Based on SSLs for Surface Soils (0 to 15 feet [0 to 4.6m])

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
116-D-10_Shallow	non-Rad	Nickel	7440-02-0	µg/kg	10913.61	3.0E+04	3.6E-01	3.3E+04	3.4E-01
116-D-10_Shallow	Rad	Rads SOF	---	pCi/g	--	--	8.3E-05	--	2.8E-04
116-D-10_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	1491.48	5.0E+03	3.0E-01	3.6E+04	1.9E-03
116-D-10_Shallow	Rad	Uranium-233/234	U-233/234	pCi/g	0.52	5.2E+04	1.0E-05	6.4E+03	8.1E-05
116-D-10_Shallow	Rad	Uranium-238	U-238	pCi/g	0.50	1.6E+04	3.2E-05	5.2E+03	9.7E-05
116-D-10_Shallow	non-Rad	Vanadium	7440-62-2	µg/kg	67123.02	2.0E+03	**3.4E+01**	3.1E+04	**2.2E+00**
116-D-10_Shallow	non-Rad	Zinc	7440-66-6	µg/kg	44463.64	5.0E+04	8.9E-01	6.8E+04	6.6E-01
116-D-10_Staging Pile Area	non-Rad	Antimony	7440-36-0	µg/kg	484.00	5.0E+03	9.7E-02	6.0E+03	8.1E-02
116-D-10_Staging Pile Area	non-Rad	Arsenic	7440-38-2	µg/kg	2037.20	1.0E+04	2.0E-01	1.9E+05	1.1E-02
116-D-10_Staging Pile Area	non-Rad	Barium	7440-39-3	µg/kg	60779.68	3.3E+05	1.8E-01	1.3E+06	4.6E-02
116-D-10_Staging Pile Area	non-Rad	Beryllium	7440-41-7	µg/kg	170.74	1.0E+04	1.7E-02	1.4E+04	1.2E-02
116-D-10_Staging Pile Area	non-Rad	Boron	7440-42-8	µg/kg	856.19	5.0E+02	**1.7E+00**	1.3E+05	6.4E-03
116-D-10_Staging Pile Area	non-Rad	Cadmium	7440-43-9	µg/kg	98.54	4.0E+03	2.5E-02	1.6E+03	6.1E-02
116-D-10_Staging Pile Area	Rad	Cesium-137	10045-97-3	pCi/g	0.08	2.2E+03	3.6E-05	9.2E+02	8.6E-05
116-D-10_Staging Pile Area	non-Rad	Chromium	7440-47-3	µg/kg	5983.06	4.0E+02	**1.5E+01**	3.8E+04	1.6E-01
116-D-10_Staging Pile Area	non-Rad	Cobalt	7440-48-4	µg/kg	8902.14	1.3E+04	6.9E-01	1.1E+05	8.0E-02
116-D-10_Staging Pile Area	non-Rad	Copper	7440-50-8	µg/kg	13930.06	5.0E+04	2.8E-01	1.1E+05	1.3E-01
116-D-10_Staging Pile Area	non-Rad	Hexavalent Chromium	18540-29-9	µg/kg	168.40	No Value	--	1.3E+06	1.4E-04
116-D-10_Staging Pile Area	non-Rad	Lead	7439-92-1	µg/kg	2893.78	5.0E+04	5.8E-02	3.6E+04	8.1E-02
116-D-10_Staging Pile Area	non-Rad	Manganese	7439-96-5	µg/kg	318855.58	2.2E+05	**1.5E+00**	5.8E+06	5.5E-02
116-D-10_Staging Pile Area	non-Rad	Mercury	7439-97-6	µg/kg	15.00	1.0E+02	1.5E-01	1.9E+03	8.0E-03
116-D-10_Staging Pile Area	non-Rad	Molybdenum	7439-98-7	µg/kg	414.22	2.0E+03	2.1E-01	1.4E+04	3.0E-02
116-D-10_Staging Pile Area	non-Rad	Nickel	7440-02-0	µg/kg	8845.24	3.0E+04	3.0E-01	3.3E+04	2.7E-01
116-D-10_Staging Pile Area	Rad	Rads SOF	---	pCi/g	--	--	3.3E-04	--	1.0E-02
116-D-10_Staging Pile Area	non-Rad	Silver	7440-22-4	µg/kg	179.92	2.0E+03	9.0E-02	5.0E+04	3.6E-03
116-D-10_Staging Pile Area	Rad	Total beta radiostrontium	SR-RAD	pCi/g	0.89	3.6E+03	2.5E-04	9.1E+01	9.8E-03
116-D-10_Staging Pile Area	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	1546.80	5.0E+03	3.1E-01	3.6E+04	2.0E-03
116-D-10_Staging Pile Area	Rad	Uranium-233/234	U-233/234	pCi/g	0.55	5.2E+04	1.1E-05	6.4E+03	8.6E-05
116-D-10_Staging Pile Area	Rad	Uranium-238	U-238	pCi/g	0.52	1.6E+04	3.3E-05	5.2E+03	1.0E-04
116-D-10_Staging Pile Area	non-Rad	Vanadium	7440-62-2	µg/kg	76277.70	2.0E+03	**3.8E+01**	3.1E+04	**2.5E+00**
116-D-10_Staging Pile Area	non-Rad	Zinc	7440-66-6	µg/kg	45859.10	5.0E+04	9.2E-01	6.8E+04	6.8E-01
116-D-1A_Shallow	Rad	Americium-241	14596-10-2	pCi/g	0.15	2.2E+04	7.0E-06	4.8E+03	3.1E-05
116-D-1A_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.76	2.2E+03	3.5E-04	9.2E+02	8.3E-04
116-D-1A_Shallow	Rad	Europium-152	14683-23-9	pCi/g	0.33	1.5E+04	2.3E-05	1.7E+03	1.9E-04
116-D-1A_Shallow	non-Rad	Hexavalent Chromium	18540-29-9	µg/kg	611.00	No Value	--	1.3E+06	4.9E-04
116-D-1A_Shallow	Rad	Rads SOF	---	pCi/g	--	--	5.0E-04	--	4.7E-03
116-D-1A_Shallow	Rad	Total beta radiostrontium	SR-RAD	pCi/g	0.32	3.6E+03	8.8E-05	9.1E+01	3.5E-03
116-D-1A_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	1450.82	5.0E+03	2.9E-01	3.6E+04	1.9E-03
116-D-1A_Shallow	Rad	Uranium-233/234	U-233/234	pCi/g	0.48	5.2E+04	9.4E-06	6.4E+03	7.6E-05
116-D-1A_Shallow	Rad	Uranium-238	U-238	pCi/g	0.49	1.6E+04	3.1E-05	5.2E+03	9.5E-05
116-D-2_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.07	2.2E+03	3.1E-05	9.2E+02	7.4E-05
116-D-2_Shallow	Rad	Rads SOF	---	pCi/g	--	--	7.3E-05	--	2.6E-04
116-D-2_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	1422.85	5.0E+03	2.9E-01	3.6E+04	1.8E-03
116-D-2_Shallow	Rad	Uranium-233/234	U-233/234	pCi/g	0.55	5.2E+04	1.1E-05	6.4E+03	8.7E-05
116-D-2_Shallow	Rad	Uranium-235	15117-96-1	pCi/g	0.03	2.7E+04	1.2E-06	4.4E+03	7.3E-06
116-D-2_Shallow	Rad	Uranium-238	U-238	pCi/g	0.47	1.6E+04	3.0E-05	5.2E+03	9.2E-05
116-D-4_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.05	2.2E+03	2.3E-05	9.2E+02	5.4E-05
116-D-4_Shallow	Rad	Rads SOF	---	pCi/g	--	--	6.1E-05	--	2.2E-04

Table H-7. 100-D Area Ecological Evaluation Based on SSLs for Surface Soils (0 to 15 feet [0 to 4.6m])

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
116-D-4_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	1268.19	5.0E+03	2.5E-01	3.6E+04	1.6E-03
116-D-4_Shallow	Rad	Uranium-233/234	U-233/234	pCi/g	0.48	5.2E+04	9.3E-06	6.4E+03	7.5E-05
116-D-4_Shallow	Rad	Uranium-235	15117-96-1	pCi/g	0.06	2.7E+04	2.2E-06	4.4E+03	1.4E-05
116-D-4_Shallow	Rad	Uranium-238	U-238	pCi/g	0.42	1.6E+04	2.7E-05	5.2E+03	8.1E-05
116-D-5_Overburden	non-Rad	Anthracene	120-12-7	µg/kg	12.20	2.9E+04	4.2E-04	6.8E+05	1.8E-05
116-D-5_Overburden	non-Rad	Arsenic	7440-38-2	µg/kg	2147.44	1.0E+04	2.2E-01	1.9E+05	1.1E-02
116-D-5_Overburden	non-Rad	Barium	7440-39-3	µg/kg	58353.89	3.3E+05	1.8E-01	1.3E+06	4.4E-02
116-D-5_Overburden	non-Rad	Benzo(a)anthracene	56-55-3	µg/kg	47.26	1.8E+04	2.6E-03	6.4E+04	7.4E-04
116-D-5_Overburden	non-Rad	Benzo(a)pyrene	50-32-8	µg/kg	37.06	1.8E+04	2.1E-03	7.6E+04	4.9E-04
116-D-5_Overburden	non-Rad	Benzo(b)fluoranthene	205-99-2	µg/kg	54.52	1.8E+04	3.0E-03	3.9E+04	1.4E-03
116-D-5_Overburden	non-Rad	Benzo(k)fluoranthene	207-08-9	µg/kg	16.76	1.8E+04	9.3E-04	3.9E+04	4.3E-04
116-D-5_Overburden	non-Rad	Beryllium	7440-41-7	µg/kg	177.06	1.0E+04	1.8E-02	1.4E+04	1.3E-02
116-D-5_Overburden	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	854.00	1.0E+05	8.5E-03	4.5E+04	1.9E-02
116-D-5_Overburden	non-Rad	Boron	7440-42-8	µg/kg	850.21	5.0E+02	**1.7E+00**	1.3E+05	6.4E-03
116-D-5_Overburden	non-Rad	Cadmium	7440-43-9	µg/kg	62.17	4.0E+03	1.6E-02	1.6E+03	3.8E-02
116-D-5_Overburden	Rad	Cesium-137	10045-97-3	pCi/g	0.12	2.2E+03	5.3E-05	9.2E+02	1.3E-04
116-D-5_Overburden	non-Rad	Chromium	7440-47-3	µg/kg	6881.24	4.0E+02	**1.7E+01**	3.8E+04	1.8E-01
116-D-5_Overburden	non-Rad	Chrysene	218-01-9	µg/kg	33.07	1.8E+04	1.8E-03	4.5E+04	7.4E-04
116-D-5_Overburden	non-Rad	Cobalt	7440-48-4	µg/kg	7545.75	1.3E+04	5.8E-01	1.1E+05	6.8E-02
116-D-5_Overburden	non-Rad	Copper	7440-50-8	µg/kg	15050.23	5.0E+04	3.0E-01	1.1E+05	1.4E-01
116-D-5_Overburden	non-Rad	Dibenz[a,h]anthracene	53-70-3	µg/kg	3.54	1.8E+04	2.0E-04	4.4E+04	8.0E-05
116-D-5_Overburden	Rad	Europium-152	14683-23-9	pCi/g	0.10	1.5E+04	6.8E-06	1.7E+03	5.8E-05
116-D-5_Overburden	non-Rad	Fluoranthene	206-44-0	µg/kg	130.76	1.8E+04	7.3E-03	8.4E+05	1.6E-04
116-D-5_Overburden	non-Rad	Heptachlor epoxide	1024-57-3	µg/kg	1.46	No Value	--	No Value	--
116-D-5_Overburden	non-Rad	Hexavalent Chromium	18540-29-9	µg/kg	151.14	No Value	--	1.3E+06	1.2E-04
116-D-5_Overburden	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	14.70	1.8E+04	8.2E-04	3.6E+04	4.1E-04
116-D-5_Overburden	non-Rad	Lead	7439-92-1	µg/kg	2606.30	5.0E+04	5.2E-02	3.6E+04	7.3E-02
116-D-5_Overburden	non-Rad	Manganese	7439-96-5	µg/kg	284702.08	2.2E+05	**1.3E+00**	5.8E+06	4.9E-02
116-D-5_Overburden	non-Rad	Mercury	7439-97-6	µg/kg	16.14	1.0E+02	1.6E-01	1.9E+03	8.7E-03
116-D-5_Overburden	non-Rad	Molybdenum	7439-98-7	µg/kg	305.09	2.0E+03	1.5E-01	1.4E+04	2.2E-02
116-D-5_Overburden	non-Rad	Nickel	7440-02-0	µg/kg	8734.12	3.0E+04	2.9E-01	3.3E+04	2.7E-01
116-D-5_Overburden	Rad	Nickel-63	13981-37-8	pCi/g	2.84	No Value	--	No Value	--
116-D-5_Overburden	non-Rad	Nitrate	14797-55-8	µg/kg	29336.88	No Value	--	3.4E+08	8.6E-05
116-D-5_Overburden	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	µg/kg	3756.57	No Value	--	No Value	--
116-D-5_Overburden	non-Rad	Pyrene	129-00-0	µg/kg	79.01	1.8E+04	4.4E-03	6.0E+05	1.3E-04
116-D-5_Overburden	Rad	Rads SOF	---	pCi/g	--	--	1.2E-04	--	4.2E-04
116-D-5_Overburden	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	2105.61	5.0E+03	4.2E-01	3.6E+04	2.7E-03
116-D-5_Overburden	Rad	Uranium-233/234	U-233/234	pCi/g	0.60	5.2E+04	1.2E-05	6.4E+03	9.4E-05
116-D-5_Overburden	Rad	Uranium-238	U-238	pCi/g	0.71	1.6E+04	4.5E-05	5.2E+03	1.4E-04
116-D-5_Overburden	non-Rad	Vanadium	7440-62-2	µg/kg	56600.64	2.0E+03	**2.8E+01**	3.1E+04	**1.8E+00**
116-D-5_Overburden	non-Rad	Zinc	7440-66-6	µg/kg	43706.19	5.0E+04	8.7E-01	6.8E+04	6.5E-01
116-D-5_Shallow	non-Rad	Arsenic	7440-38-2	µg/kg	2876.83	1.0E+04	2.9E-01	1.9E+05	1.5E-02
116-D-5_Shallow	non-Rad	Barium	7440-39-3	µg/kg	63089.03	3.3E+05	1.9E-01	1.3E+06	4.8E-02
116-D-5_Shallow	non-Rad	Benzo(a)anthracene	56-55-3	µg/kg	10.38	1.8E+04	5.8E-04	6.4E+04	1.6E-04
116-D-5_Shallow	non-Rad	Benzo(a)pyrene	50-32-8	µg/kg	8.40	1.8E+04	4.7E-04	7.6E+04	1.1E-04
116-D-5_Shallow	non-Rad	Benzo(b)fluoranthene	205-99-2	µg/kg	14.12	1.8E+04	7.8E-04	3.9E+04	3.6E-04
116-D-5_Shallow	non-Rad	Benzo(k)fluoranthene	207-08-9	µg/kg	5.01	1.8E+04	2.8E-04	3.9E+04	1.3E-04
116-D-5_Shallow	non-Rad	Beryllium	7440-41-7	µg/kg	212.16	1.0E+04	2.1E-02	1.4E+04	1.5E-02

Table H-7. 100-D Area Ecological Evaluation Based on SSLs for Surface Soils (0 to 15 feet [0 to 4.6m])

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
116-D-5_Shallow	non-Rad	Boron	7440-42-8	µg/kg	1133.55	5.0E+02	**2.3E+00**	1.3E+05	8.5E-03
116-D-5_Shallow	non-Rad	Cadmium	7440-43-9	µg/kg	67.06	4.0E+03	1.7E-02	1.6E+03	4.1E-02
116-D-5_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.43	2.2E+03	1.9E-04	9.2E+02	4.6E-04
116-D-5_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	11364.62	4.0E+02	**2.8E+01**	3.8E+04	3.0E-01
116-D-5_Shallow	non-Rad	Chrysene	218-01-9	µg/kg	12.80	1.8E+04	7.1E-04	4.5E+04	2.9E-04
116-D-5_Shallow	non-Rad	Cobalt	7440-48-4	µg/kg	8904.84	1.3E+04	6.9E-01	1.1E+05	8.0E-02
116-D-5_Shallow	non-Rad	Copper	7440-50-8	µg/kg	17071.22	5.0E+04	3.4E-01	1.1E+05	1.6E-01
116-D-5_Shallow	Rad	Europium-152	14683-23-9	pCi/g	1.04	1.5E+04	7.1E-05	1.7E+03	6.0E-04
116-D-5_Shallow	non-Rad	Fluoranthene	206-44-0	µg/kg	12.76	1.8E+04	7.1E-04	8.4E+05	1.5E-05
116-D-5_Shallow	non-Rad	Fluoride	16984-48-8	µg/kg	480.31	No Value	--	2.3E+06	2.1E-04
116-D-5_Shallow	non-Rad	Hexavalent Chromium	18540-29-9	µg/kg	185.15	No Value	--	1.3E+06	1.5E-04
116-D-5_Shallow	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	5.91	1.8E+04	3.3E-04	3.6E+04	1.7E-04
116-D-5_Shallow	non-Rad	Lead	7439-92-1	µg/kg	3774.62	5.0E+04	7.6E-02	3.6E+04	1.1E-01
116-D-5_Shallow	non-Rad	Manganese	7439-96-5	µg/kg	324765.98	2.2E+05	**1.5E+00**	5.8E+06	5.6E-02
116-D-5_Shallow	non-Rad	Mercury	7439-97-6	µg/kg	65.00	1.0E+02	6.5E-01	1.9E+03	3.5E-02
116-D-5_Shallow	non-Rad	Molybdenum	7439-98-7	µg/kg	314.29	2.0E+03	1.6E-01	1.4E+04	2.3E-02
116-D-5_Shallow	non-Rad	Nickel	7440-02-0	µg/kg	12276.55	3.0E+04	4.1E-01	3.3E+04	3.8E-01
116-D-5_Shallow	Rad	Nickel-63	13981-37-8	pCi/g	7.49	No Value	--	No Value	--
116-D-5_Shallow	non-Rad	Nitrate	14797-55-8	µg/kg	9325.00	No Value	--	3.4E+08	2.7E-05
116-D-5_Shallow	non-Rad	Nitrite	14797-65-0	µg/kg	91100.00	No Value	--	3.4E+08	2.7E-04
116-D-5_Shallow	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	µg/kg	2478.59	No Value	--	No Value	--
116-D-5_Shallow	Rad	Plutonium-239/240	PU-239/240	pCi/g	0.05	1.3E+04	3.5E-06	6.3E+03	7.2E-06
116-D-5_Shallow	non-Rad	Pyrene	129-00-0	µg/kg	13.90	1.8E+04	7.7E-04	6.0E+05	2.3E-05
116-D-5_Shallow	Rad	Rads SOF	---	pCi/g	--	--	3.2E-04	--	1.3E-03
116-D-5_Shallow	non-Rad	Silver	7440-22-4	µg/kg	1300.00	2.0E+03	6.5E-01	5.0E+04	2.6E-02
116-D-5_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	1934.91	5.0E+03	3.9E-01	3.6E+04	2.5E-03
116-D-5_Shallow	Rad	Uranium-233/234	U-233/234	pCi/g	0.65	5.2E+04	1.3E-05	6.4E+03	1.0E-04
116-D-5_Shallow	Rad	Uranium-238	U-238	pCi/g	0.65	1.6E+04	4.1E-05	5.2E+03	1.3E-04
116-D-5_Shallow	non-Rad	Vanadium	7440-62-2	µg/kg	62589.23	2.0E+03	**3.1E+01**	3.1E+04	**2.0E+00**
116-D-5_Shallow	non-Rad	Zinc	7440-66-6	µg/kg	51203.59	5.0E+04	**1.0E+00**	6.8E+04	7.6E-01
116-D-5_Staging pile area footprint	non-Rad	4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	µg/kg	6.57	No Value	--	4.0E+02	1.6E-02
116-D-5_Staging pile area footprint	non-Rad	Antimony	7440-36-0	µg/kg	239.00	5.0E+03	4.8E-02	6.0E+03	4.0E-02
116-D-5_Staging pile area footprint	non-Rad	Arsenic	7440-38-2	µg/kg	2371.05	1.0E+04	2.4E-01	1.9E+05	1.3E-02
116-D-5_Staging pile area footprint	non-Rad	Barium	7440-39-3	µg/kg	61780.60	3.3E+05	1.9E-01	1.3E+06	4.7E-02
116-D-5_Staging pile area footprint	non-Rad	Benzo(a)anthracene	56-55-3	µg/kg	4.04	1.8E+04	2.2E-04	6.4E+04	6.3E-05
116-D-5_Staging pile area footprint	non-Rad	Benzo(a)pyrene	50-32-8	µg/kg	3.18	1.8E+04	1.8E-04	7.6E+04	4.2E-05
116-D-5_Staging pile area footprint	non-Rad	Benzo(b)fluoranthene	205-99-2	µg/kg	4.96	1.8E+04	2.8E-04	3.9E+04	1.3E-04
116-D-5_Staging pile area footprint	non-Rad	Benzo(k)fluoranthene	207-08-9	µg/kg	2.26	1.8E+04	1.3E-04	3.9E+04	5.8E-05
116-D-5_Staging pile area footprint	non-Rad	Beryllium	7440-41-7	µg/kg	185.24	1.0E+04	1.9E-02	1.4E+04	1.3E-02
116-D-5_Staging pile area footprint	non-Rad	beta-1,2,3,4,5,6-Hexachlorocyclohexane (beta-BHC)	319-85-7	µg/kg	1.51	No Value	--	4.1E+03	3.7E-04
116-D-5_Staging pile area footprint	non-Rad	Boron	7440-42-8	µg/kg	1067.07	5.0E+02	**2.1E+00**	1.3E+05	8.0E-03
116-D-5_Staging pile area footprint	non-Rad	Cadmium	7440-43-9	µg/kg	58.74	4.0E+03	1.5E-02	1.6E+03	3.6E-02
116-D-5_Staging pile area footprint	non-Rad	Chromium	7440-47-3	µg/kg	8013.60	4.0E+02	**2.0E+01**	3.8E+04	2.1E-01
116-D-5_Staging pile area footprint	non-Rad	Chrysene	218-01-9	µg/kg	12.08	1.8E+04	6.7E-04	4.5E+04	2.7E-04

Table H-7. 100-D Area Ecological Evaluation Based on SSLs for Surface Soils (0 to 15 feet [0 to 4.6m])

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
116-D-5_Staging pile area footprint	non-Rad	Cobalt	7440-48-4	µg/kg	7289.47	1.3E+04	5.6E-01	1.1E+05	6.5E-02
116-D-5_Staging pile area footprint	non-Rad	Copper	7440-50-8	µg/kg	14234.06	5.0E+04	2.9E-01	1.1E+05	1.3E-01
116-D-5_Staging pile area footprint	non-Rad	Dibenz[a,h]anthracene	53-70-3	µg/kg	1.39	1.8E+04	7.7E-05	4.4E+04	3.2E-05
116-D-5_Staging pile area footprint	non-Rad	Fluoranthene	206-44-0	µg/kg	8.84	1.8E+04	4.9E-04	8.4E+05	1.1E-05
116-D-5_Staging pile area footprint	non-Rad	Fluoride	16984-48-8	µg/kg	300.00	No Value	--	2.3E+06	1.3E-04
116-D-5_Staging pile area footprint	non-Rad	Hexavalent Chromium	18540-29-9	µg/kg	148.81	No Value	--	1.3E+06	1.2E-04
116-D-5_Staging pile area footprint	non-Rad	Lead	7439-92-1	µg/kg	3269.41	5.0E+04	6.5E-02	3.6E+04	9.2E-02
116-D-5_Staging pile area footprint	non-Rad	Manganese	7439-96-5	µg/kg	276906.30	2.2E+05	**1.3E+00**	5.8E+06	4.8E-02
116-D-5_Staging pile area footprint	non-Rad	Methoxychlor	72-43-5	µg/kg	19.60	No Value	--	2.2E+04	9.0E-04
116-D-5_Staging pile area footprint	non-Rad	Molybdenum	7439-98-7	µg/kg	281.35	2.0E+03	1.4E-01	1.4E+04	2.0E-02
116-D-5_Staging pile area footprint	non-Rad	Nickel	7440-02-0	µg/kg	10056.51	3.0E+04	3.4E-01	3.3E+04	3.1E-01
116-D-5_Staging pile area footprint	non-Rad	Nitrate	14797-55-8	µg/kg	13893.47	No Value	--	3.4E+08	4.1E-05
116-D-5_Staging pile area footprint	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	µg/kg	2627.14	No Value	--	No Value	--
116-D-5_Staging pile area footprint	non-Rad	Pyrene	129-00-0	µg/kg	6.23	1.8E+04	3.5E-04	6.0E+05	1.0E-05
116-D-5_Staging pile area footprint	Rad	Rads SOF	---	pCi/g	--	--	4.9E-05	--	2.1E-04
116-D-5_Staging pile area footprint	non-Rad	Silver	7440-22-4	µg/kg	228.00	2.0E+03	1.1E-01	5.0E+04	4.6E-03
116-D-5_Staging pile area footprint	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	1770.27	5.0E+03	3.5E-01	3.6E+04	2.3E-03
116-D-5_Staging pile area footprint	Rad	Uranium-233/234	U-233/234	pCi/g	0.59	5.2E+04	1.1E-05	6.4E+03	9.2E-05
116-D-5_Staging pile area footprint	Rad	Uranium-238	U-238	pCi/g	0.59	1.6E+04	3.8E-05	5.2E+03	1.2E-04
116-D-5_Staging pile area footprint	non-Rad	Vanadium	7440-62-2	µg/kg	52464.38	2.0E+03	**2.6E+01**	3.1E+04	**1.7E+00**
116-D-5_Staging pile area footprint	non-Rad	Zinc	7440-66-6	µg/kg	41996.00	5.0E+04	8.4E-01	6.8E+04	6.2E-01
116-D-7_Shallow	Rad	Americium-241	14596-10-2	pCi/g	0.01	2.2E+04	6.5E-07	4.8E+03	2.9E-06
116-D-7_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.20	2.2E+03	8.8E-05	9.2E+02	2.1E-04
116-D-7_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	8241.36	4.0E+02	**2.1E+01**	3.8E+04	2.2E-01
116-D-7_Shallow	Rad	Cobalt-60	10198-40-0	pCi/g	0.05	6.1E+03	8.2E-06	8.1E+02	6.2E-05
116-D-7_Shallow	Rad	Europium-152	14683-23-9	pCi/g	0.37	1.5E+04	2.5E-05	1.7E+03	2.1E-04
116-D-7_Shallow	Rad	Europium-154	15585-10-1	pCi/g	0.05	1.3E+04	3.8E-06	1.6E+03	2.9E-05
116-D-7_Shallow	non-Rad	Hexavalent Chromium	18540-29-9	µg/kg	1126.30	No Value	--	1.3E+06	9.0E-04
116-D-7_Shallow	non-Rad	Lead	7439-92-1	µg/kg	3655.42	5.0E+04	7.3E-02	3.6E+04	1.0E-01
116-D-7_Shallow	Rad	Nickel-63	13981-37-8	pCi/g	7.80	No Value	--	No Value	--
116-D-7_Shallow	Rad	Rads SOF	---	pCi/g	--	--	1.7E-04	--	7.0E-04
116-D-7_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	1474.30	5.0E+03	3.0E-01	3.6E+04	1.9E-03
116-D-7_Shallow	Rad	Uranium-233/234	U-233/234	pCi/g	0.48	5.2E+04	9.2E-06	6.4E+03	7.5E-05
116-D-7_Shallow	Rad	Uranium-235	15117-96-1	pCi/g	0.04	2.7E+04	1.5E-06	4.4E+03	9.1E-06
116-D-7_Shallow	Rad	Uranium-238	U-238	pCi/g	0.49	1.6E+04	3.1E-05	5.2E+03	9.5E-05
116-D-8_Shallow	non-Rad	Acetone	67-64-1	µg/kg	7.27	No Value	--	No Value	--
116-D-8_Shallow	non-Rad	Anthracene	120-12-7	µg/kg	21.00	2.9E+04	7.2E-04	6.8E+05	3.1E-05
116-D-8_Shallow	non-Rad	Antimony	7440-36-0	µg/kg	385.18	5.0E+03	7.7E-02	6.0E+03	6.4E-02
116-D-8_Shallow	non-Rad	Aroclor-1260	11096-82-5	µg/kg	26.78	4.0E+04	6.7E-04	1.5E+03	1.8E-02
116-D-8_Shallow	non-Rad	Arsenic	7440-38-2	µg/kg	2905.92	1.0E+04	2.9E-01	1.9E+05	1.5E-02
116-D-8_Shallow	non-Rad	Barium	7440-39-3	µg/kg	71253.22	3.3E+05	2.2E-01	1.3E+06	5.4E-02
116-D-8_Shallow	non-Rad	Benzo(a)anthracene	56-55-3	µg/kg	31.00	1.8E+04	1.7E-03	6.4E+04	4.8E-04
116-D-8_Shallow	non-Rad	Benzo(a)pyrene	50-32-8	µg/kg	30.00	1.8E+04	1.7E-03	7.6E+04	3.9E-04
116-D-8_Shallow	non-Rad	Benzo(b)fluoranthene	205-99-2	µg/kg	49.00	1.8E+04	2.7E-03	3.9E+04	1.3E-03
116-D-8_Shallow	non-Rad	Beryllium	7440-41-7	µg/kg	475.31	1.0E+04	4.8E-02	1.4E+04	3.4E-02
116-D-8_Shallow	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	200.00	1.0E+05	2.0E-03	4.5E+04	4.4E-03
116-D-8_Shallow	non-Rad	Boron	7440-42-8	µg/kg	1416.67	5.0E+02	**2.8E+00**	1.3E+05	1.1E-02
116-D-8_Shallow	non-Rad	Cadmium	7440-43-9	µg/kg	61.17	4.0E+03	1.5E-02	1.6E+03	3.8E-02

Table H-7. 100-D Area Ecological Evaluation Based on SSLs for Surface Soils (0 to 15 feet [0 to 4.6m])

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
116-D-8_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	2.67	2.2E+03	1.2E-03	9.2E+02	2.9E-03
116-D-8_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	10654.30	4.0E+02	**2.7E+01**	3.8E+04	2.8E-01
116-D-8_Shallow	non-Rad	Chrysene	218-01-9	µg/kg	660.00	1.8E+04	3.7E-02	4.5E+04	1.5E-02
116-D-8_Shallow	non-Rad	Cobalt	7440-48-4	µg/kg	7731.79	1.3E+04	6.0E-01	1.1E+05	6.9E-02
116-D-8_Shallow	non-Rad	Copper	7440-50-8	µg/kg	13183.02	5.0E+04	2.6E-01	1.1E+05	1.2E-01
116-D-8_Shallow	non-Rad	Fluoranthene	206-44-0	µg/kg	56.00	1.8E+04	3.1E-03	8.4E+05	6.7E-05
116-D-8_Shallow	non-Rad	Fluoride	16984-48-8	µg/kg	2047.69	No Value	--	2.3E+06	9.0E-04
116-D-8_Shallow	non-Rad	Lead	7439-92-1	µg/kg	41187.93	5.0E+04	8.2E-01	3.6E+04	**1.2E+00**
116-D-8_Shallow	non-Rad	Manganese	7439-96-5	µg/kg	304542.21	2.2E+05	**1.4E+00**	5.8E+06	5.3E-02
116-D-8_Shallow	non-Rad	Mercury	7439-97-6	µg/kg	22.92	1.0E+02	2.3E-01	1.9E+03	1.2E-02
116-D-8_Shallow	non-Rad	Methylene chloride	75-09-2	µg/kg	10.00	No Value	--	1.7E+05	6.0E-05
116-D-8_Shallow	non-Rad	Nickel	7440-02-0	µg/kg	11657.11	3.0E+04	3.9E-01	3.3E+04	3.6E-01
116-D-8_Shallow	non-Rad	Nitrogen in Nitrate	NO3-N	µg/kg	2208.09	No Value	--	No Value	--
116-D-8_Shallow	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	µg/kg	1942.52	No Value	--	No Value	--
116-D-8_Shallow	non-Rad	Pyrene	129-00-0	µg/kg	24.02	1.8E+04	1.3E-03	6.0E+05	4.0E-05
116-D-8_Shallow	Rad	Rads SOF	---	pCi/g	--	--	1.3E-03	--	7.3E-03
116-D-8_Shallow	Rad	Total beta radiostrontium	SR-RAD	pCi/g	0.39	3.6E+03	1.1E-04	9.1E+01	4.3E-03
116-D-8_Shallow	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	µg/kg	11472.51	2.0E+05	5.7E-02	3.6E+08	3.2E-05
116-D-8_Shallow	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	µg/kg	23750.46	No Value	--	No Value	--
116-D-8_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	435.98	5.0E+03	8.7E-02	3.6E+04	5.6E-04
116-D-8_Shallow	Rad	Uranium-234	13966-29-5	pCi/g	0.15	5.2E+04	2.9E-06	6.4E+03	2.3E-05
116-D-8_Shallow	Rad	Uranium-238	U-238	pCi/g	0.15	1.6E+04	9.3E-06	5.2E+03	2.8E-05
116-D-8_Shallow	non-Rad	Vanadium	7440-62-2	µg/kg	53268.05	2.0E+03	**2.7E+01**	3.1E+04	**1.7E+00**
116-D-8_Shallow	non-Rad	Zinc	7440-66-6	µg/kg	46326.48	5.0E+04	9.3E-01	6.8E+04	6.8E-01
116-D-8_Shallow_Focused_1	non-Rad	Aroclor-1260	11096-82-5	µg/kg	2.60	4.0E+04	6.5E-05	1.5E+03	1.8E-03
116-D-8_Shallow_Focused_1	non-Rad	Arsenic	7440-38-2	µg/kg	1800.00	1.0E+04	1.8E-01	1.9E+05	9.5E-03
116-D-8_Shallow_Focused_1	non-Rad	Barium	7440-39-3	µg/kg	47900.00	3.3E+05	1.5E-01	1.3E+06	3.6E-02
116-D-8_Shallow_Focused_1	non-Rad	Beryllium	7440-41-7	µg/kg	120.00	1.0E+04	1.2E-02	1.4E+04	8.6E-03
116-D-8_Shallow_Focused_1	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	130.00	1.0E+05	1.3E-03	4.5E+04	2.9E-03
116-D-8_Shallow_Focused_1	non-Rad	Cadmium	7440-43-9	µg/kg	41.00	4.0E+03	1.0E-02	1.6E+03	2.5E-02
116-D-8_Shallow_Focused_1	Rad	Cesium-137	10045-97-3	pCi/g	0.50	2.2E+03	2.3E-04	9.2E+02	5.5E-04
116-D-8_Shallow_Focused_1	non-Rad	Chromium	7440-47-3	µg/kg	5600.00	4.0E+02	**1.4E+01**	3.8E+04	1.5E-01
116-D-8_Shallow_Focused_1	non-Rad	Cobalt	7440-48-4	µg/kg	6200.00	1.3E+04	4.8E-01	1.1E+05	5.6E-02
116-D-8_Shallow_Focused_1	non-Rad	Copper	7440-50-8	µg/kg	12800.00	5.0E+04	2.6E-01	1.1E+05	1.2E-01
116-D-8_Shallow_Focused_1	non-Rad	Lead	7439-92-1	µg/kg	35000.00	5.0E+04	7.0E-01	3.6E+04	9.8E-01
116-D-8_Shallow_Focused_1	non-Rad	Manganese	7439-96-5	µg/kg	232000.00	2.2E+05	**1.1E+00**	5.8E+06	4.0E-02
116-D-8_Shallow_Focused_1	non-Rad	Nickel	7440-02-0	µg/kg	9700.00	3.0E+04	3.2E-01	3.3E+04	3.0E-01
116-D-8_Shallow_Focused_1	non-Rad	Vanadium	7440-62-2	µg/kg	22100.00	2.0E+03	**1.1E+01**	3.1E+04	7.1E-01
116-D-8_Shallow_Focused_1	non-Rad	Zinc	7440-66-6	µg/kg	26900.00	5.0E+04	5.4E-01	6.8E+04	4.0E-01
116-D-8_Shallow_Focused_2	non-Rad	Antimony	7440-36-0	µg/kg	490.00	5.0E+03	9.8E-02	6.0E+03	8.2E-02
116-D-8_Shallow_Focused_2	non-Rad	Aroclor HI	---	µg/kg	--	--	6.9E-03	--	1.9E-01
116-D-8_Shallow_Focused_2	non-Rad	Aroclor-1254	11097-69-1	µg/kg	96.00	4.0E+04	2.4E-03	1.5E+03	6.5E-02
116-D-8_Shallow_Focused_2	non-Rad	Aroclor-1260	11096-82-5	µg/kg	180.00	4.0E+04	4.5E-03	1.5E+03	1.2E-01
116-D-8_Shallow_Focused_2	non-Rad	Arsenic	7440-38-2	µg/kg	2700.00	1.0E+04	2.7E-01	1.9E+05	1.4E-02
116-D-8_Shallow_Focused_2	non-Rad	Barium	7440-39-3	µg/kg	77900.00	3.3E+05	2.4E-01	1.3E+06	5.9E-02
116-D-8_Shallow_Focused_2	non-Rad	Benzo(a)anthracene	56-55-3	µg/kg	29.00	1.8E+04	1.6E-03	6.4E+04	4.5E-04

Table H-7. 100-D Area Ecological Evaluation Based on SSLs for Surface Soils (0 to 15 feet [0 to 4.6m])

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
116-D-8_Shallow_Focused_2	non-Rad	Benzo(a)pyrene	50-32-8	µg/kg	27.00	1.8E+04	1.5E-03	7.6E+04	3.5E-04
116-D-8_Shallow_Focused_2	non-Rad	Benzo(b)fluoranthene	205-99-2	µg/kg	53.00	1.8E+04	2.9E-03	3.9E+04	1.4E-03
116-D-8_Shallow_Focused_2	non-Rad	Beryllium	7440-41-7	µg/kg	120.00	1.0E+04	1.2E-02	1.4E+04	8.6E-03
116-D-8_Shallow_Focused_2	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	92.00	1.0E+05	9.2E-04	4.5E+04	2.0E-03
116-D-8_Shallow_Focused_2	non-Rad	Boron	7440-42-8	µg/kg	2700.00	5.0E+02	**5.4E+00**	1.3E+05	2.0E-02
116-D-8_Shallow_Focused_2	non-Rad	Cadmium	7440-43-9	µg/kg	170.00	4.0E+03	4.3E-02	1.6E+03	1.0E-01
116-D-8_Shallow_Focused_2	Rad	Cesium-137	10045-97-3	pCi/g	7.63	2.2E+03	3.5E-03	9.2E+02	8.3E-03
116-D-8_Shallow_Focused_2	non-Rad	Chromium	7440-47-3	µg/kg	10100.00	4.0E+02	**2.5E+01**	3.8E+04	2.7E-01
116-D-8_Shallow_Focused_2	non-Rad	Chrysene	218-01-9	µg/kg	45.00	1.8E+04	2.5E-03	4.5E+04	1.0E-03
116-D-8_Shallow_Focused_2	non-Rad	Cobalt	7440-48-4	µg/kg	8000.00	1.3E+04	6.2E-01	1.1E+05	7.2E-02
116-D-8_Shallow_Focused_2	non-Rad	Copper	7440-50-8	µg/kg	15300.00	5.0E+04	3.1E-01	1.1E+05	1.4E-01
116-D-8_Shallow_Focused_2	non-Rad	Fluoranthene	206-44-0	µg/kg	52.00	1.8E+04	2.9E-03	8.4E+05	6.2E-05
116-D-8_Shallow_Focused_2	non-Rad	Hexavalent Chromium	18540-29-9	µg/kg	154.00	No Value	--	1.3E+06	1.2E-04
116-D-8_Shallow_Focused_2	non-Rad	Lead	7439-92-1	µg/kg	10800.00	5.0E+04	2.2E-01	3.6E+04	3.0E-01
116-D-8_Shallow_Focused_2	non-Rad	Manganese	7439-96-5	µg/kg	301000.00	2.2E+05	**1.4E+00**	5.8E+06	5.2E-02
116-D-8_Shallow_Focused_2	non-Rad	Mercury	7439-97-6	µg/kg	29.00	1.0E+02	2.9E-01	1.9E+03	1.6E-02
116-D-8_Shallow_Focused_2	non-Rad	Methylene chloride	75-09-2	µg/kg	2.40	No Value	--	1.7E+05	1.5E-05
116-D-8_Shallow_Focused_2	non-Rad	Molybdenum	7439-98-7	µg/kg	370.00	2.0E+03	1.9E-01	1.4E+04	2.7E-02
116-D-8_Shallow_Focused_2	non-Rad	Nickel	7440-02-0	µg/kg	9900.00	3.0E+04	3.3E-01	3.3E+04	3.0E-01
116-D-8_Shallow_Focused_2	non-Rad	Nitrogen in Nitrate	NO3-N	µg/kg	5000.00	No Value	--	No Value	--
116-D-8_Shallow_Focused_2	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	µg/kg	5300.00	No Value	--	No Value	--
116-D-8_Shallow_Focused_2	non-Rad	Pyrene	129-00-0	µg/kg	53.00	1.8E+04	2.9E-03	6.0E+05	8.8E-05
116-D-8_Shallow_Focused_2	Rad	Rads SOF	---	pCi/g	--	--	3.5E-03	--	8.3E-03
116-D-8_Shallow_Focused_2	non-Rad	Selenium	7782-49-2	µg/kg	1200.00	5.2E+02	**2.3E+00**	1.9E+03	6.3E-01
116-D-8_Shallow_Focused_2	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	µg/kg	17000.00	2.0E+05	8.5E-02	3.6E+08	4.8E-05
116-D-8_Shallow_Focused_2	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	µg/kg	46000.00	No Value	--	No Value	--
116-D-8_Shallow_Focused_2	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	765.03	5.0E+03	1.5E-01	3.6E+04	9.7E-04
116-D-8_Shallow_Focused_2	Rad	Uranium-234	13966-29-5	pCi/g	0.20	5.2E+04	3.8E-06	6.4E+03	3.1E-05
116-D-8_Shallow_Focused_2	Rad	Uranium-238	U-238	pCi/g	0.26	1.6E+04	1.6E-05	5.2E+03	5.0E-05
116-D-8_Shallow_Focused_2	non-Rad	Vanadium	7440-62-2	µg/kg	58700.00	2.0E+03	**2.9E+01**	3.1E+04	**1.9E+00**
116-D-8_Shallow_Focused_2	non-Rad	Zinc	7440-66-6	µg/kg	55200.00	5.0E+04	**1.1E+00**	6.8E+04	8.1E-01
116-D-9_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.06	2.2E+03	2.5E-05	9.2E+02	6.0E-05
116-D-9_Shallow	Rad	Rads SOF	---	pCi/g	--	--	2.3E-04	--	6.4E-03
116-D-9_Shallow	Rad	Total beta radiostrontium	SR-RAD	pCi/g	0.56	3.6E+03	1.6E-04	9.1E+01	6.1E-03
116-D-9_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	1647.75	5.0E+03	3.3E-01	3.6E+04	2.1E-03
116-D-9_Shallow	Rad	Uranium-233/234	U-233/234	pCi/g	0.50	5.2E+04	9.6E-06	6.4E+03	7.8E-05
116-D-9_Shallow	Rad	Uranium-235	15117-96-1	pCi/g	0.05	2.7E+04	1.9E-06	4.4E+03	1.2E-05
116-D-9_Shallow	Rad	Uranium-238	U-238	pCi/g	0.55	1.6E+04	3.5E-05	5.2E+03	1.1E-04
116-DR-1,2_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.68	2.2E+03	3.1E-04	9.2E+02	7.4E-04
116-DR-1,2_Shallow	Rad	Cobalt-60	10198-40-0	pCi/g	0.05	6.1E+03	8.0E-06	8.1E+02	6.1E-05
116-DR-1,2_Shallow	Rad	Europium-152	14683-23-9	pCi/g	0.18	1.5E+04	1.2E-05	1.7E+03	1.0E-04
116-DR-1,2_Shallow	Rad	Plutonium-238	13981-16-3	pCi/g	0.03	1.8E+04	1.7E-06	6.0E+03	4.9E-06
116-DR-1,2_Shallow	Rad	Rads SOF	---	pCi/g	--	--	3.7E-04	--	1.1E-03
116-DR-1,2_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	1431.51	5.0E+03	2.9E-01	3.6E+04	1.8E-03
116-DR-1,2_Shallow	Rad	Uranium-233/234	U-233/234	pCi/g	0.47	5.2E+04	9.1E-06	6.4E+03	7.3E-05
116-DR-1,2_Shallow	Rad	Uranium-235	15117-96-1	pCi/g	0.03	2.7E+04	9.7E-07	4.4E+03	6.1E-06

Table H-7. 100-D Area Ecological Evaluation Based on SSLs for Surface Soils (0 to 15 feet [0 to 4.6m])

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
116-DR-1,2_Shallow	Rad	Uranium-238	U-238	pCi/g	0.48	1.6E+04	3.1E-05	5.2E+03	9.3E-05
116-DR-10_Overburden	non-Rad	Aroclor-1260	11096-82-5	µg/kg	5.96	4.0E+04	1.5E-04	1.5E+03	4.0E-03
116-DR-10_Overburden	non-Rad	Arsenic	7440-38-2	µg/kg	2957.69	1.0E+04	3.0E-01	1.9E+05	1.6E-02
116-DR-10_Overburden	non-Rad	Barium	7440-39-3	µg/kg	66524.05	3.3E+05	2.0E-01	1.3E+06	5.0E-02
116-DR-10_Overburden	non-Rad	Beryllium	7440-41-7	µg/kg	190.45	1.0E+04	1.9E-02	1.4E+04	1.4E-02
116-DR-10_Overburden	non-Rad	Boron	7440-42-8	µg/kg	1049.30	5.0E+02	**2.1E+00**	1.3E+05	7.9E-03
116-DR-10_Overburden	non-Rad	Cadmium	7440-43-9	µg/kg	87.58	4.0E+03	2.2E-02	1.6E+03	5.4E-02
116-DR-10_Overburden	non-Rad	Chromium	7440-47-3	µg/kg	10292.28	4.0E+02	**2.6E+01**	3.8E+04	2.7E-01
116-DR-10_Overburden	non-Rad	Cobalt	7440-48-4	µg/kg	6708.24	1.3E+04	5.2E-01	1.1E+05	6.0E-02
116-DR-10_Overburden	non-Rad	Copper	7440-50-8	µg/kg	13263.24	5.0E+04	2.7E-01	1.1E+05	1.2E-01
116-DR-10_Overburden	non-Rad	Lead	7439-92-1	µg/kg	7025.68	5.0E+04	1.4E-01	3.6E+04	2.0E-01
116-DR-10_Overburden	non-Rad	Manganese	7439-96-5	µg/kg	288834.10	2.2E+05	**1.3E+00**	5.8E+06	5.0E-02
116-DR-10_Overburden	non-Rad	Mercury	7439-97-6	µg/kg	35.43	1.0E+02	3.5E-01	1.9E+03	1.9E-02
116-DR-10_Overburden	non-Rad	Molybdenum	7439-98-7	µg/kg	307.19	2.0E+03	1.5E-01	1.4E+04	2.2E-02
116-DR-10_Overburden	non-Rad	Nickel	7440-02-0	µg/kg	9733.81	3.0E+04	3.2E-01	3.3E+04	3.0E-01
116-DR-10_Overburden	Rad	Rads SOF	---	pCi/g	--	--	5.1E-05	--	2.1E-04
116-DR-10_Overburden	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	1831.41	5.0E+03	3.7E-01	3.6E+04	2.3E-03
116-DR-10_Overburden	Rad	Uranium-233/234	U-233/234	pCi/g	0.59	5.2E+04	1.2E-05	6.4E+03	9.3E-05
116-DR-10_Overburden	Rad	Uranium-238	U-238	pCi/g	0.62	1.6E+04	3.9E-05	5.2E+03	1.2E-04
116-DR-10_Overburden	non-Rad	Vanadium	7440-62-2	µg/kg	51135.72	2.0E+03	**2.6E+01**	3.1E+04	**1.6E+00**
116-DR-10_Overburden	non-Rad	Zinc	7440-66-6	µg/kg	38620.93	5.0E+04	7.7E-01	6.8E+04	5.7E-01
116-DR-10_Shallow	non-Rad	Aroclor-1260	11096-82-5	µg/kg	8.54	4.0E+04	2.1E-04	1.5E+03	5.8E-03
116-DR-10_Shallow	non-Rad	Arsenic	7440-38-2	µg/kg	3821.38	1.0E+04	3.8E-01	1.9E+05	2.0E-02
116-DR-10_Shallow	non-Rad	Barium	7440-39-3	µg/kg	57993.20	3.3E+05	1.8E-01	1.3E+06	4.4E-02
116-DR-10_Shallow	non-Rad	Beryllium	7440-41-7	µg/kg	181.74	1.0E+04	1.8E-02	1.4E+04	1.3E-02
116-DR-10_Shallow	non-Rad	Boron	7440-42-8	µg/kg	1034.69	5.0E+02	**2.1E+00**	1.3E+05	7.8E-03
116-DR-10_Shallow	non-Rad	Cadmium	7440-43-9	µg/kg	101.17	4.0E+03	2.5E-02	1.6E+03	6.2E-02
116-DR-10_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.42	2.2E+03	1.9E-04	9.2E+02	4.6E-04
116-DR-10_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	11445.37	4.0E+02	**2.9E+01**	3.8E+04	3.0E-01
116-DR-10_Shallow	non-Rad	Cobalt	7440-48-4	µg/kg	7100.93	1.3E+04	5.5E-01	1.1E+05	6.4E-02
116-DR-10_Shallow	non-Rad	Copper	7440-50-8	µg/kg	14969.58	5.0E+04	3.0E-01	1.1E+05	1.4E-01
116-DR-10_Shallow	Rad	Europium-152	14683-23-9	pCi/g	0.16	1.5E+04	1.1E-05	1.7E+03	9.0E-05
116-DR-10_Shallow	non-Rad	Hexavalent Chromium	18540-29-9	µg/kg	100.00	No Value	--	1.3E+06	8.0E-05
116-DR-10_Shallow	non-Rad	Lead	7439-92-1	µg/kg	3280.81	5.0E+04	6.6E-02	3.6E+04	9.2E-02
116-DR-10_Shallow	non-Rad	Manganese	7439-96-5	µg/kg	279316.53	2.2E+05	**1.3E+00**	5.8E+06	4.8E-02
116-DR-10_Shallow	non-Rad	Mercury	7439-97-6	µg/kg	21.90	1.0E+02	2.2E-01	1.9E+03	1.2E-02
116-DR-10_Shallow	non-Rad	Molybdenum	7439-98-7	µg/kg	331.70	2.0E+03	1.7E-01	1.4E+04	2.4E-02
116-DR-10_Shallow	non-Rad	Nickel	7440-02-0	µg/kg	10308.09	3.0E+04	3.4E-01	3.3E+04	3.2E-01
116-DR-10_Shallow	Rad	Plutonium-239/240	PU-239/240	pCi/g	0.04	1.3E+04	3.4E-06	6.3E+03	6.9E-06
116-DR-10_Shallow	Rad	Rads SOF	---	pCi/g	--	--	2.6E-04	--	7.8E-04
116-DR-10_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	1926.29	5.0E+03	3.9E-01	3.6E+04	2.5E-03
116-DR-10_Shallow	Rad	Uranium-233/234	U-233/234	pCi/g	0.61	5.2E+04	1.2E-05	6.4E+03	9.6E-05
116-DR-10_Shallow	Rad	Uranium-238	U-238	pCi/g	0.65	1.6E+04	4.1E-05	5.2E+03	1.3E-04
116-DR-10_Shallow	non-Rad	Vanadium	7440-62-2	µg/kg	50456.41	2.0E+03	**2.5E+01**	3.1E+04	**1.6E+00**
116-DR-10_Shallow	non-Rad	Zinc	7440-66-6	µg/kg	38543.44	5.0E+04	7.7E-01	6.8E+04	5.7E-01
116-DR-10_Shallow_Focused	non-Rad	Arsenic	7440-38-2	µg/kg	1790.00	1.0E+04	1.8E-01	1.9E+05	9.5E-03
116-DR-10_Shallow_Focused	non-Rad	Barium	7440-39-3	µg/kg	41600.00	3.3E+05	1.3E-01	1.3E+06	3.1E-02
116-DR-10_Shallow_Focused	non-Rad	Beryllium	7440-41-7	µg/kg	161.00	1.0E+04	1.6E-02	1.4E+04	1.2E-02

Table H-7. 100-D Area Ecological Evaluation Based on SSLs for Surface Soils (0 to 15 feet [0 to 4.6m])

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
116-DR-10_Shallow_Focused	non-Rad	Boron	7440-42-8	µg/kg	598.00	5.0E+02	**1.2E+00**	1.3E+05	4.5E-03
116-DR-10_Shallow_Focused	non-Rad	Cadmium	7440-43-9	µg/kg	143.00	4.0E+03	3.6E-02	1.6E+03	8.8E-02
116-DR-10_Shallow_Focused	Rad	Cesium-137	10045-97-3	pCi/g	0.65	2.2E+03	2.9E-04	9.2E+02	7.0E-04
116-DR-10_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	6650.00	4.0E+02	**1.7E+01**	3.8E+04	1.7E-01
116-DR-10_Shallow_Focused	non-Rad	Cobalt	7440-48-4	µg/kg	8370.00	1.3E+04	6.4E-01	1.1E+05	7.5E-02
116-DR-10_Shallow_Focused	non-Rad	Copper	7440-50-8	µg/kg	15000.00	5.0E+04	3.0E-01	1.1E+05	1.4E-01
116-DR-10_Shallow_Focused	Rad	Europium-152	14683-23-9	pCi/g	0.58	1.5E+04	3.9E-05	1.7E+03	3.3E-04
116-DR-10_Shallow_Focused	non-Rad	Hexavalent Chromium	18540-29-9	µg/kg	240.00	No Value	--	1.3E+06	1.9E-04
116-DR-10_Shallow_Focused	non-Rad	Lead	7439-92-1	µg/kg	2750.00	5.0E+04	5.5E-02	3.6E+04	7.7E-02
116-DR-10_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	310000.00	2.2E+05	**1.4E+00**	5.8E+06	5.4E-02
116-DR-10_Shallow_Focused	non-Rad	Mercury	7439-97-6	µg/kg	13.00	1.0E+02	1.3E-01	1.9E+03	7.0E-03
116-DR-10_Shallow_Focused	non-Rad	Molybdenum	7439-98-7	µg/kg	497.00	2.0E+03	2.5E-01	1.4E+04	3.6E-02
116-DR-10_Shallow_Focused	non-Rad	Nickel	7440-02-0	µg/kg	8630.00	3.0E+04	2.9E-01	3.3E+04	2.7E-01
116-DR-10_Shallow_Focused	Rad	Plutonium-239/240	PU-239/240	pCi/g	0.20	1.3E+04	1.6E-05	6.3E+03	3.2E-05
116-DR-10_Shallow_Focused	Rad	Rads SOF	---	pCi/g	--	--	3.8E-04	--	1.2E-03
116-DR-10_Shallow_Focused	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	1163.96	5.0E+03	2.3E-01	3.6E+04	1.5E-03
116-DR-10_Shallow_Focused	Rad	Uranium-233/234	U-233/234	pCi/g	0.60	5.2E+04	1.2E-05	6.4E+03	9.3E-05
116-DR-10_Shallow_Focused	Rad	Uranium-238	U-238	pCi/g	0.39	1.6E+04	2.5E-05	5.2E+03	7.6E-05
116-DR-10_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	73400.00	2.0E+03	**3.7E+01**	3.1E+04	**2.4E+00**
116-DR-10_Shallow_Focused	non-Rad	Zinc	7440-66-6	µg/kg	46500.00	5.0E+04	9.3E-01	6.8E+04	6.9E-01
116-DR-4_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.06	2.2E+03	2.8E-05	9.2E+02	6.6E-05
116-DR-4_Shallow	Rad	Rads SOF	---	pCi/g	--	--	7.2E-05	--	2.6E-04
116-DR-4_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	1476.53	5.0E+03	3.0E-01	3.6E+04	1.9E-03
116-DR-4_Shallow	Rad	Uranium-233/234	U-233/234	pCi/g	0.65	5.2E+04	1.3E-05	6.4E+03	1.0E-04
116-DR-4_Shallow	Rad	Uranium-238	U-238	pCi/g	0.50	1.6E+04	3.2E-05	5.2E+03	9.6E-05
116-DR-5_Overburden	non-Rad	Arsenic	7440-38-2	µg/kg	2616.16	1.0E+04	2.6E-01	1.9E+05	1.4E-02
116-DR-5_Overburden	non-Rad	Barium	7440-39-3	µg/kg	72420.15	3.3E+05	2.2E-01	1.3E+06	5.5E-02
116-DR-5_Overburden	non-Rad	Benzo(a)anthracene	56-55-3	µg/kg	73.84	1.8E+04	4.1E-03	6.4E+04	1.2E-03
116-DR-5_Overburden	non-Rad	Benzo(a)pyrene	50-32-8	µg/kg	57.50	1.8E+04	3.2E-03	7.6E+04	7.5E-04
116-DR-5_Overburden	non-Rad	Benzo(b)fluoranthene	205-99-2	µg/kg	102.26	1.8E+04	5.7E-03	3.9E+04	2.6E-03
116-DR-5_Overburden	non-Rad	Beryllium	7440-41-7	µg/kg	119.57	1.0E+04	1.2E-02	1.4E+04	8.6E-03
116-DR-5_Overburden	non-Rad	Boron	7440-42-8	µg/kg	1141.67	5.0E+02	**2.3E+00**	1.3E+05	8.6E-03
116-DR-5_Overburden	Rad	Cesium-137	10045-97-3	pCi/g	0.25	2.2E+03	1.1E-04	9.2E+02	2.7E-04
116-DR-5_Overburden	non-Rad	Chromium	7440-47-3	µg/kg	11533.54	4.0E+02	**2.9E+01**	3.8E+04	3.0E-01
116-DR-5_Overburden	non-Rad	Chrysene	218-01-9	µg/kg	91.69	1.8E+04	5.1E-03	4.5E+04	2.1E-03
116-DR-5_Overburden	non-Rad	Cobalt	7440-48-4	µg/kg	9716.46	1.3E+04	7.5E-01	1.1E+05	8.7E-02
116-DR-5_Overburden	Rad	Cobalt-60	10198-40-0	pCi/g	0.20	6.1E+03	3.2E-05	8.1E+02	2.5E-04
116-DR-5_Overburden	non-Rad	Copper	7440-50-8	µg/kg	21451.46	5.0E+04	4.3E-01	1.1E+05	2.0E-01
116-DR-5_Overburden	Rad	Europium-152	14683-23-9	pCi/g	0.80	1.5E+04	5.5E-05	1.7E+03	4.6E-04
116-DR-5_Overburden	non-Rad	Fluoranthene	206-44-0	µg/kg	85.33	1.8E+04	4.7E-03	8.4E+05	1.0E-04
116-DR-5_Overburden	non-Rad	Hexavalent Chromium	18540-29-9	µg/kg	257.58	No Value	--	1.3E+06	2.1E-04
116-DR-5_Overburden	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	45.00	1.8E+04	2.5E-03	3.6E+04	1.3E-03
116-DR-5_Overburden	non-Rad	Lead	7439-92-1	µg/kg	4039.27	5.0E+04	8.1E-02	3.6E+04	1.1E-01
116-DR-5_Overburden	non-Rad	Manganese	7439-96-5	µg/kg	336162.74	2.2E+05	**1.5E+00**	5.8E+06	5.8E-02
116-DR-5_Overburden	non-Rad	Mercury	7439-97-6	µg/kg	50.92	1.0E+02	5.1E-01	1.9E+03	2.7E-02
116-DR-5_Overburden	non-Rad	Nickel	7440-02-0	µg/kg	11347.80	3.0E+04	3.8E-01	3.3E+04	3.5E-01
116-DR-5_Overburden	Rad	Nickel-63	13981-37-8	pCi/g	29.40	No Value	--	No Value	--
116-DR-5_Overburden	Rad	Plutonium-239/240	PU-239/240	pCi/g	0.11	1.3E+04	8.6E-06	6.3E+03	1.7E-05

Table H-7. 100-D Area Ecological Evaluation Based on SSLs for Surface Soils (0 to 15 feet [0 to 4.6m])

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
116-DR-5_Overburden	non-Rad	Pyrene	129-00-0	µg/kg	87.31	1.8E+04	4.9E-03	6.0E+05	1.5E-04
116-DR-5_Overburden	Rad	Rads SOF	---	pCi/g	--	--	3.3E-04	--	3.8E-03
116-DR-5_Overburden	Rad	Total beta radiostrontium	SR-RAD	pCi/g	0.19	3.6E+03	5.2E-05	9.1E+01	2.0E-03
116-DR-5_Overburden	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	2212.64	5.0E+03	4.4E-01	3.6E+04	2.8E-03
116-DR-5_Overburden	Rad	Tritium	10028-17-8	pCi/g	0.20	1.7E+06	1.2E-07	4.2E+02	4.7E-04
116-DR-5_Overburden	Rad	Uranium-234	13966-29-5	pCi/g	0.77	5.2E+04	1.5E-05	6.4E+03	1.2E-04
116-DR-5_Overburden	Rad	Uranium-235	15117-96-1	pCi/g	0.06	2.7E+04	2.3E-06	4.4E+03	1.4E-05
116-DR-5_Overburden	Rad	Uranium-238	U-238	pCi/g	0.74	1.6E+04	4.7E-05	5.2E+03	1.4E-04
116-DR-5_Overburden	non-Rad	Vanadium	7440-62-2	µg/kg	59625.36	2.0E+03	**3.0E+01**	3.1E+04	**1.9E+00**
116-DR-5_Overburden	non-Rad	Zinc	7440-66-6	µg/kg	76416.54	5.0E+04	**1.5E+00**	6.8E+04	**1.1E+00**
116-DR-5_Shallow	non-Rad	Arsenic	7440-38-2	µg/kg	2550.95	1.0E+04	2.6E-01	1.9E+05	1.4E-02
116-DR-5_Shallow	non-Rad	Barium	7440-39-3	µg/kg	70791.64	3.3E+05	2.2E-01	1.3E+06	5.4E-02
116-DR-5_Shallow	non-Rad	Benzo(a)anthracene	56-55-3	µg/kg	146.42	1.8E+04	8.1E-03	6.4E+04	2.3E-03
116-DR-5_Shallow	non-Rad	Benzo(a)pyrene	50-32-8	µg/kg	57.69	1.8E+04	3.2E-03	7.6E+04	7.6E-04
116-DR-5_Shallow	non-Rad	Benzo(b)fluoranthene	205-99-2	µg/kg	177.58	1.8E+04	9.9E-03	3.9E+04	4.5E-03
116-DR-5_Shallow	non-Rad	Beryllium	7440-41-7	µg/kg	246.44	1.0E+04	2.5E-02	1.4E+04	1.8E-02
116-DR-5_Shallow	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	66.58	1.0E+05	6.7E-04	4.5E+04	1.5E-03
116-DR-5_Shallow	non-Rad	Boron	7440-42-8	µg/kg	1500.00	5.0E+02	**3.0E+00**	1.3E+05	1.1E-02
116-DR-5_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.96	2.2E+03	4.4E-04	9.2E+02	1.0E-03
116-DR-5_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	25435.76	4.0E+02	**6.4E+01**	3.8E+04	6.7E-01
116-DR-5_Shallow	non-Rad	Chrysene	218-01-9	µg/kg	169.40	1.8E+04	9.4E-03	4.5E+04	3.8E-03
116-DR-5_Shallow	non-Rad	Cobalt	7440-48-4	µg/kg	8532.91	1.3E+04	6.6E-01	1.1E+05	7.7E-02
116-DR-5_Shallow	Rad	Cobalt-60	10198-40-0	pCi/g	0.12	6.1E+03	2.0E-05	8.1E+02	1.5E-04
116-DR-5_Shallow	non-Rad	Copper	7440-50-8	µg/kg	21728.20	5.0E+04	4.4E-01	1.1E+05	2.0E-01
116-DR-5_Shallow	Rad	Europium-152	14683-23-9	pCi/g	2.52	1.5E+04	1.7E-04	1.7E+03	1.5E-03
116-DR-5_Shallow	non-Rad	Fluoranthene	206-44-0	µg/kg	250.26	1.8E+04	1.4E-02	8.4E+05	3.0E-04
116-DR-5_Shallow	non-Rad	Hexavalent Chromium	18540-29-9	µg/kg	554.33	No Value	--	1.3E+06	4.5E-04
116-DR-5_Shallow	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	38.38	1.8E+04	2.1E-03	3.6E+04	1.1E-03
116-DR-5_Shallow	non-Rad	Lead	7439-92-1	µg/kg	3907.11	5.0E+04	7.8E-02	3.6E+04	1.1E-01
116-DR-5_Shallow	non-Rad	Manganese	7439-96-5	µg/kg	309849.08	2.2E+05	**1.4E+00**	5.8E+06	5.3E-02
116-DR-5_Shallow	non-Rad	Mercury	7439-97-6	µg/kg	47.71	1.0E+02	4.8E-01	1.9E+03	2.6E-02
116-DR-5_Shallow	non-Rad	Molybdenum	7439-98-7	µg/kg	540.00	2.0E+03	2.7E-01	1.4E+04	3.9E-02
116-DR-5_Shallow	non-Rad	Nickel	7440-02-0	µg/kg	12850.36	3.0E+04	4.3E-01	3.3E+04	3.9E-01
116-DR-5_Shallow	Rad	Nickel-63	13981-37-8	pCi/g	29.70	No Value	--	No Value	--
116-DR-5_Shallow	Rad	Plutonium-239/240	PU-239/240	pCi/g	0.12	1.3E+04	9.1E-06	6.3E+03	1.8E-05
116-DR-5_Shallow	non-Rad	Pyrene	129-00-0	µg/kg	237.17	1.8E+04	1.3E-02	6.0E+05	4.0E-04
116-DR-5_Shallow	Rad	Rads SOF	---	pCi/g	--	--	8.2E-04	--	7.1E-03
116-DR-5_Shallow	Rad	Total beta radiostrontium	SR-RAD	pCi/g	0.32	3.6E+03	8.8E-05	9.1E+01	3.5E-03
116-DR-5_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	2812.47	5.0E+03	5.6E-01	3.6E+04	3.6E-03
116-DR-5_Shallow	Rad	Tritium	10028-17-8	pCi/g	0.20	1.7E+06	1.2E-07	4.2E+02	4.8E-04
116-DR-5_Shallow	Rad	Uranium-234	13966-29-5	pCi/g	1.03	5.2E+04	2.0E-05	6.4E+03	1.6E-04
116-DR-5_Shallow	Rad	Uranium-235	15117-96-1	pCi/g	0.42	2.7E+04	1.5E-05	4.4E+03	9.7E-05
116-DR-5_Shallow	Rad	Uranium-238	U-238	pCi/g	0.93	1.6E+04	5.9E-05	5.2E+03	1.8E-04
116-DR-5_Shallow	non-Rad	Vanadium	7440-62-2	µg/kg	55591.16	2.0E+03	**2.8E+01**	3.1E+04	**1.8E+00**
116-DR-5_Shallow	non-Rad	Zinc	7440-66-6	µg/kg	45491.76	5.0E+04	9.1E-01	6.8E+04	6.7E-01
116-DR-5_Shallow_Focused	non-Rad	Arsenic	7440-38-2	µg/kg	3100.00	1.0E+04	3.1E-01	1.9E+05	1.6E-02
116-DR-5_Shallow_Focused	non-Rad	Barium	7440-39-3	µg/kg	70300.00	3.3E+05	2.1E-01	1.3E+06	5.3E-02
116-DR-5_Shallow_Focused	non-Rad	Benzo(a)anthracene	56-55-3	µg/kg	56.00	1.8E+04	3.1E-03	6.4E+04	8.8E-04

Table H-7. 100-D Area Ecological Evaluation Based on SSLs for Surface Soils (0 to 15 feet [0 to 4.6m])

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
116-DR-5_Shallow_Focused	non-Rad	Benzo(b)fluoranthene	205-99-2	µg/kg	70.00	1.8E+04	3.9E-03	3.9E+04	1.8E-03
116-DR-5_Shallow_Focused	non-Rad	Beryllium	7440-41-7	µg/kg	200.00	1.0E+04	2.0E-02	1.4E+04	1.4E-02
116-DR-5_Shallow_Focused	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	71.00	1.0E+05	7.1E-04	4.5E+04	1.6E-03
116-DR-5_Shallow_Focused	non-Rad	Boron	7440-42-8	µg/kg	1400.00	5.0E+02	**2.8E+00**	1.3E+05	1.1E-02
116-DR-5_Shallow_Focused	Rad	Cesium-137	10045-97-3	pCi/g	0.95	2.2E+03	4.3E-04	9.2E+02	1.0E-03
116-DR-5_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	16600.00	4.0E+02	**4.2E+01**	3.8E+04	4.4E-01
116-DR-5_Shallow_Focused	non-Rad	Chrysene	218-01-9	µg/kg	62.00	1.8E+04	3.4E-03	4.5E+04	1.4E-03
116-DR-5_Shallow_Focused	non-Rad	Cobalt	7440-48-4	µg/kg	9700.00	1.3E+04	7.5E-01	1.1E+05	8.7E-02
116-DR-5_Shallow_Focused	non-Rad	Copper	7440-50-8	µg/kg	26100.00	5.0E+04	5.2E-01	1.1E+05	2.4E-01
116-DR-5_Shallow_Focused	Rad	Europium-152	14683-23-9	pCi/g	0.53	1.5E+04	3.6E-05	1.7E+03	3.1E-04
116-DR-5_Shallow_Focused	non-Rad	Fluoranthene	206-44-0	µg/kg	94.00	1.8E+04	5.2E-03	8.4E+05	1.1E-04
116-DR-5_Shallow_Focused	non-Rad	Hexavalent Chromium	18540-29-9	µg/kg	361.00	No Value	--	1.3E+06	2.9E-04
116-DR-5_Shallow_Focused	non-Rad	Lead	7439-92-1	µg/kg	4500.00	5.0E+04	9.0E-02	3.6E+04	1.3E-01
116-DR-5_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	325000.00	2.2E+05	**1.5E+00**	5.8E+06	5.6E-02
116-DR-5_Shallow_Focused	non-Rad	Mercury	7439-97-6	µg/kg	45.00	1.0E+02	4.5E-01	1.9E+03	2.4E-02
116-DR-5_Shallow_Focused	non-Rad	Nickel	7440-02-0	µg/kg	15900.00	3.0E+04	5.3E-01	3.3E+04	4.9E-01
116-DR-5_Shallow_Focused	Rad	Nickel-63	13981-37-8	pCi/g	7.13	No Value	--	No Value	--
116-DR-5_Shallow_Focused	non-Rad	Pyrene	129-00-0	µg/kg	100.00	1.8E+04	5.6E-03	6.0E+05	1.7E-04
116-DR-5_Shallow_Focused	Rad	Rads SOF	---	pCi/g	--	--	5.3E-04	--	2.3E-03
116-DR-5_Shallow_Focused	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	2274.32	5.0E+03	4.6E-01	3.6E+04	2.9E-03
116-DR-5_Shallow_Focused	Rad	Tritium	10028-17-8	pCi/g	0.30	1.7E+06	1.8E-07	4.2E+02	7.1E-04
116-DR-5_Shallow_Focused	Rad	Uranium-234	13966-29-5	pCi/g	0.89	5.2E+04	1.7E-05	6.4E+03	1.4E-04
116-DR-5_Shallow_Focused	Rad	Uranium-238	U-238	pCi/g	0.76	1.6E+04	4.9E-05	5.2E+03	1.5E-04
116-DR-5_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	56300.00	2.0E+03	**2.8E+01**	3.1E+04	**1.8E+00**
116-DR-5_Shallow_Focused	non-Rad	Zinc	7440-66-6	µg/kg	49400.00	5.0E+04	9.9E-01	6.8E+04	7.3E-01
116-DR-5_Staging Pile Area	non-Rad	Arsenic	7440-38-2	µg/kg	2837.01	1.0E+04	2.8E-01	1.9E+05	1.5E-02
116-DR-5_Staging Pile Area	non-Rad	Barium	7440-39-3	µg/kg	58874.10	3.3E+05	1.8E-01	1.3E+06	4.5E-02
116-DR-5_Staging Pile Area	non-Rad	Beryllium	7440-41-7	µg/kg	109.75	1.0E+04	1.1E-02	1.4E+04	7.9E-03
116-DR-5_Staging Pile Area	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	62.33	1.0E+05	6.2E-04	4.5E+04	1.4E-03
116-DR-5_Staging Pile Area	Rad	Cesium-137	10045-97-3	pCi/g	0.14	2.2E+03	6.2E-05	9.2E+02	1.5E-04
116-DR-5_Staging Pile Area	non-Rad	Chromium	7440-47-3	µg/kg	11196.52	4.0E+02	**2.8E+01**	3.8E+04	2.9E-01
116-DR-5_Staging Pile Area	non-Rad	Cobalt	7440-48-4	µg/kg	7807.95	1.3E+04	6.0E-01	1.1E+05	7.0E-02
116-DR-5_Staging Pile Area	non-Rad	Copper	7440-50-8	µg/kg	17612.44	5.0E+04	3.5E-01	1.1E+05	1.6E-01
116-DR-5_Staging Pile Area	non-Rad	Hexavalent Chromium	18540-29-9	µg/kg	427.27	No Value	--	1.3E+06	3.4E-04
116-DR-5_Staging Pile Area	non-Rad	Lead	7439-92-1	µg/kg	2929.47	5.0E+04	5.9E-02	3.6E+04	8.2E-02
116-DR-5_Staging Pile Area	non-Rad	Manganese	7439-96-5	µg/kg	292940.12	2.2E+05	**1.3E+00**	5.8E+06	5.1E-02
116-DR-5_Staging Pile Area	non-Rad	Mercury	7439-97-6	µg/kg	24.08	1.0E+02	2.4E-01	1.9E+03	1.3E-02
116-DR-5_Staging Pile Area	non-Rad	Nickel	7440-02-0	µg/kg	11700.08	3.0E+04	3.9E-01	3.3E+04	3.6E-01
116-DR-5_Staging Pile Area	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	2094.56	5.0E+03	4.2E-01	3.6E+04	2.7E-03
116-DR-5_Staging Pile Area	Rad	Tritium	10028-17-8	pCi/g	0.20	1.7E+06	1.2E-07	4.2E+02	4.7E-04
116-DR-5_Staging Pile Area	Rad	Uranium-234	13966-29-5	pCi/g	0.72	5.2E+04	1.4E-05	6.4E+03	1.1E-04
116-DR-5_Staging Pile Area	Rad	Uranium-235	15117-96-1	pCi/g	0.11	2.7E+04	3.9E-06	4.4E+03	2.4E-05
116-DR-5_Staging Pile Area	Rad	Uranium-238	U-238	pCi/g	0.70	1.6E+04	4.4E-05	5.2E+03	1.4E-04
116-DR-5_Staging Pile Area	non-Rad	Vanadium	7440-62-2	µg/kg	51249.90	2.0E+03	**2.6E+01**	3.1E+04	**1.7E+00**
116-DR-5_Staging Pile Area	non-Rad	Zinc	7440-66-6	µg/kg	39187.18	5.0E+04	7.8E-01	6.8E+04	5.8E-01
116-DR-6_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.09	2.2E+03	4.1E-05	9.2E+02	9.9E-05
116-DR-6_Shallow	Rad	Europium-152	14683-23-9	pCi/g	0.48	1.5E+04	3.3E-05	1.7E+03	2.8E-04
116-DR-6_Shallow	Rad	Rads SOF	---	pCi/g	--	--	2.4E-04	--	5.2E-03

Table H-7. 100-D Area Ecological Evaluation Based on SSLs for Surface Soils (0 to 15 feet [0 to 4.6m])

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
116-DR-6_Shallow	Rad	Total beta radiostrontium	SR-RAD	pCi/g	0.43	3.6E+03	1.2E-04	9.1E+01	4.7E-03
116-DR-6_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	1416.97	5.0E+03	2.8E-01	3.6E+04	1.8E-03
116-DR-6_Shallow	Rad	Uranium-233/234	U-233/234	pCi/g	0.62	5.2E+04	1.2E-05	6.4E+03	9.7E-05
116-DR-6_Shallow	Rad	Uranium-238	U-238	pCi/g	0.48	1.6E+04	3.0E-05	5.2E+03	9.2E-05
116-DR-7_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.07	2.2E+03	3.3E-05	9.2E+02	7.9E-05
116-DR-7_Shallow	Rad	Europium-152	14683-23-9	pCi/g	0.22	1.5E+04	1.5E-05	1.7E+03	1.3E-04
116-DR-7_Shallow	Rad	Rads SOF	---	pCi/g	--	--	9.8E-05	--	4.4E-04
116-DR-7_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	1586.12	5.0E+03	3.2E-01	3.6E+04	2.0E-03
116-DR-7_Shallow	Rad	Uranium-233/234	U-233/234	pCi/g	0.70	5.2E+04	1.4E-05	6.4E+03	1.1E-04
116-DR-7_Shallow	Rad	Uranium-235	15117-96-1	pCi/g	0.12	2.7E+04	4.4E-06	4.4E+03	2.8E-05
116-DR-7_Shallow	Rad	Uranium-238	U-238	pCi/g	0.51	1.6E+04	3.3E-05	5.2E+03	1.0E-04
116-DR-8_Overburden_2	non-Rad	Acetone	67-64-1	µg/kg	26.35	No Value	--	No Value	--
116-DR-8_Overburden_2	non-Rad	Antimony	7440-36-0	µg/kg	535.39	5.0E+03	1.1E-01	6.0E+03	9.0E-02
116-DR-8_Overburden_2	non-Rad	Arsenic	7440-38-2	µg/kg	2248.01	1.0E+04	2.3E-01	1.9E+05	1.2E-02
116-DR-8_Overburden_2	non-Rad	Barium	7440-39-3	µg/kg	51820.81	3.3E+05	1.6E-01	1.3E+06	3.9E-02
116-DR-8_Overburden_2	non-Rad	Benzo(a)anthracene	56-55-3	µg/kg	77.00	1.8E+04	4.3E-03	6.4E+04	1.2E-03
116-DR-8_Overburden_2	non-Rad	Benzo(a)pyrene	50-32-8	µg/kg	46.00	1.8E+04	2.6E-03	7.6E+04	6.0E-04
116-DR-8_Overburden_2	non-Rad	Benzo(b)fluoranthene	205-99-2	µg/kg	95.00	1.8E+04	5.3E-03	3.9E+04	2.4E-03
116-DR-8_Overburden_2	non-Rad	Beryllium	7440-41-7	µg/kg	555.01	1.0E+04	5.6E-02	1.4E+04	4.0E-02
116-DR-8_Overburden_2	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	347.35	1.0E+05	3.5E-03	4.5E+04	7.7E-03
116-DR-8_Overburden_2	non-Rad	Chromium	7440-47-3	µg/kg	7333.96	4.0E+02	**1.8E+01**	3.8E+04	1.9E-01
116-DR-8_Overburden_2	non-Rad	Chrysene	218-01-9	µg/kg	110.00	1.8E+04	6.1E-03	4.5E+04	2.5E-03
116-DR-8_Overburden_2	non-Rad	Cobalt	7440-48-4	µg/kg	8689.13	1.3E+04	6.7E-01	1.1E+05	7.8E-02
116-DR-8_Overburden_2	non-Rad	Copper	7440-50-8	µg/kg	13744.53	5.0E+04	2.8E-01	1.1E+05	1.3E-01
116-DR-8_Overburden_2	non-Rad	Fluoranthene	206-44-0	µg/kg	180.00	1.8E+04	1.0E-02	8.4E+05	2.2E-04
116-DR-8_Overburden_2	non-Rad	Hexavalent Chromium	18540-29-9	µg/kg	175.00	No Value	--	1.3E+06	1.4E-04
116-DR-8_Overburden_2	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	22.00	1.8E+04	1.2E-03	3.6E+04	6.2E-04
116-DR-8_Overburden_2	non-Rad	Lead	7439-92-1	µg/kg	3831.13	5.0E+04	7.7E-02	3.6E+04	1.1E-01
116-DR-8_Overburden_2	non-Rad	Lithium	7439-93-2	µg/kg	6085.70	2.0E+03	**3.0E+00**	5.2E+05	1.2E-02
116-DR-8_Overburden_2	non-Rad	Manganese	7439-96-5	µg/kg	323772.69	2.2E+05	**1.5E+00**	5.8E+06	5.6E-02
116-DR-8_Overburden_2	non-Rad	Methylene chloride	75-09-2	µg/kg	1.79	No Value	--	1.7E+05	1.1E-05
116-DR-8_Overburden_2	non-Rad	Nickel	7440-02-0	µg/kg	11375.52	3.0E+04	3.8E-01	3.3E+04	3.5E-01
116-DR-8_Overburden_2	Rad	Plutonium-238	13981-16-3	pCi/g	0.09	1.8E+04	5.2E-06	6.0E+03	1.5E-05
116-DR-8_Overburden_2	non-Rad	Pyrene	129-00-0	µg/kg	120.00	1.8E+04	6.7E-03	6.0E+05	2.0E-04
116-DR-8_Overburden_2	Rad	Rads SOF	---	pCi/g	--	--	8.7E-05	--	2.4E-03
116-DR-8_Overburden_2	Rad	Total beta radiostrontium	SR-RAD	pCi/g	0.20	3.6E+03	5.7E-05	9.1E+01	2.2E-03
116-DR-8_Overburden_2	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	897.97	5.0E+03	1.8E-01	3.6E+04	1.1E-03
116-DR-8_Overburden_2	Rad	Uranium-234	13966-29-5	pCi/g	0.28	5.2E+04	5.4E-06	6.4E+03	4.3E-05
116-DR-8_Overburden_2	Rad	Uranium-238	U-238	pCi/g	0.30	1.6E+04	1.9E-05	5.2E+03	5.9E-05
116-DR-8_Overburden_2	non-Rad	Vanadium	7440-62-2	µg/kg	65299.38	2.0E+03	**3.3E+01**	3.1E+04	**2.1E+00**
116-DR-8_Overburden_2	non-Rad	Zinc	7440-66-6	µg/kg	47916.53	5.0E+04	9.6E-01	6.8E+04	7.1E-01
116-DR-8_Overburden_3	non-Rad	Acetone	67-64-1	µg/kg	8.61	No Value	--	No Value	--
116-DR-8_Overburden_3	non-Rad	Antimony	7440-36-0	µg/kg	746.88	5.0E+03	1.5E-01	6.0E+03	1.3E-01
116-DR-8_Overburden_3	non-Rad	Arsenic	7440-38-2	µg/kg	2507.26	1.0E+04	2.5E-01	1.9E+05	1.3E-02
116-DR-8_Overburden_3	non-Rad	Barium	7440-39-3	µg/kg	63743.61	3.3E+05	1.9E-01	1.3E+06	4.8E-02
116-DR-8_Overburden_3	non-Rad	Beryllium	7440-41-7	µg/kg	1958.04	1.0E+04	2.0E-01	1.4E+04	1.4E-01
116-DR-8_Overburden_3	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	133.17	1.0E+05	1.3E-03	4.5E+04	2.9E-03
116-DR-8_Overburden_3	non-Rad	Boron	7440-42-8	µg/kg	1274.16	5.0E+02	**2.6E+00**	1.3E+05	9.6E-03

Table H-7. 100-D Area Ecological Evaluation Based on SSLs for Surface Soils (0 to 15 feet [0 to 4.6m])

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
116-DR-8_Overburden_3	non-Rad	Cadmium	7440-43-9	µg/kg	78.00	4.0E+03	2.0E-02	1.6E+03	4.8E-02
116-DR-8_Overburden_3	Rad	Cesium-137	10045-97-3	pCi/g	0.11	2.2E+03	4.8E-05	9.2E+02	1.2E-04
116-DR-8_Overburden_3	non-Rad	Chromium	7440-47-3	µg/kg	9365.24	4.0E+02	**2.3E+01**	3.8E+04	2.5E-01
116-DR-8_Overburden_3	non-Rad	Chrysene	218-01-9	µg/kg	30.00	1.8E+04	1.7E-03	4.5E+04	6.7E-04
116-DR-8_Overburden_3	non-Rad	Cobalt	7440-48-4	µg/kg	9279.21	1.3E+04	7.1E-01	1.1E+05	8.3E-02
116-DR-8_Overburden_3	non-Rad	Copper	7440-50-8	µg/kg	13020.55	5.0E+04	2.6E-01	1.1E+05	1.2E-01
116-DR-8_Overburden_3	non-Rad	Lead	7439-92-1	µg/kg	4812.64	5.0E+04	9.6E-02	3.6E+04	1.4E-01
116-DR-8_Overburden_3	non-Rad	Lithium	7439-93-2	µg/kg	27769.76	2.0E+03	**1.4E+01**	5.2E+05	5.4E-02
116-DR-8_Overburden_3	non-Rad	Manganese	7439-96-5	µg/kg	348288.64	2.2E+05	**1.6E+00**	5.8E+06	6.0E-02
116-DR-8_Overburden_3	non-Rad	Methylene chloride	75-09-2	µg/kg	3.35	No Value	--	1.7E+05	2.0E-05
116-DR-8_Overburden_3	non-Rad	Molybdenum	7439-98-7	µg/kg	370.00	2.0E+03	1.9E-01	1.4E+04	2.7E-02
116-DR-8_Overburden_3	non-Rad	Nickel	7440-02-0	µg/kg	11807.05	3.0E+04	3.9E-01	3.3E+04	3.6E-01
116-DR-8_Overburden_3	non-Rad	Pyrene	129-00-0	µg/kg	16.63	1.8E+04	9.2E-04	6.0E+05	2.8E-05
116-DR-8_Overburden_3	Rad	Rads SOF	---	pCi/g	--	--	1.3E-04	--	2.9E-03
116-DR-8_Overburden_3	non-Rad	Silver	7440-22-4	µg/kg	2200.00	2.0E+03	**1.1E+00**	5.0E+04	4.4E-02
116-DR-8_Overburden_3	Rad	Total beta radiostrontium	SR-RAD	pCi/g	0.25	3.6E+03	6.9E-05	9.1E+01	2.7E-03
116-DR-8_Overburden_3	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	478.06	5.0E+03	9.6E-02	3.6E+04	6.1E-04
116-DR-8_Overburden_3	Rad	Uranium-234	13966-29-5	pCi/g	0.15	5.2E+04	2.9E-06	6.4E+03	2.3E-05
116-DR-8_Overburden_3	Rad	Uranium-238	U-238	pCi/g	0.16	1.6E+04	1.0E-05	5.2E+03	3.1E-05
116-DR-8_Overburden_3	non-Rad	Vanadium	7440-62-2	µg/kg	70346.37	2.0E+03	**3.5E+01**	3.1E+04	**2.3E+00**
116-DR-8_Overburden_3	non-Rad	Zinc	7440-66-6	µg/kg	72845.69	5.0E+04	**1.5E+00**	6.8E+04	**1.1E+00**
116-DR-8_Shallow	non-Rad	1,2-Dichlorobenzene	95-50-1	µg/kg	26.00	No Value	--	1.6E+05	1.6E-04
116-DR-8_Shallow	non-Rad	2,4,5-Trichlorophenol	95-95-4	µg/kg	10.00	No Value	--	No Value	--
116-DR-8_Shallow	non-Rad	2,4-Dichlorophenol	120-83-2	µg/kg	11.00	No Value	--	No Value	--
116-DR-8_Shallow	non-Rad	2-Chloronaphthalene	91-58-7	µg/kg	11.00	No Value	--	No Value	--
116-DR-8_Shallow	non-Rad	Acenaphthene	83-32-9	µg/kg	12.00	2.0E+04	6.0E-04	1.1E+06	1.1E-05
116-DR-8_Shallow	non-Rad	Acetone	67-64-1	µg/kg	19.04	No Value	--	No Value	--
116-DR-8_Shallow	non-Rad	Antimony	7440-36-0	µg/kg	530.83	5.0E+03	1.1E-01	6.0E+03	8.9E-02
116-DR-8_Shallow	non-Rad	Arsenic	7440-38-2	µg/kg	2451.77	1.0E+04	2.5E-01	1.9E+05	1.3E-02
116-DR-8_Shallow	non-Rad	Barium	7440-39-3	µg/kg	65315.31	3.3E+05	2.0E-01	1.3E+06	4.9E-02
116-DR-8_Shallow	non-Rad	Benzo(a)anthracene	56-55-3	µg/kg	42.00	1.8E+04	2.3E-03	6.4E+04	6.6E-04
116-DR-8_Shallow	non-Rad	Benzo(a)pyrene	50-32-8	µg/kg	28.00	1.8E+04	1.6E-03	7.6E+04	3.7E-04
116-DR-8_Shallow	non-Rad	Benzo(b)fluoranthene	205-99-2	µg/kg	32.33	1.8E+04	1.8E-03	3.9E+04	8.2E-04
116-DR-8_Shallow	non-Rad	Beryllium	7440-41-7	µg/kg	1024.13	1.0E+04	1.0E-01	1.4E+04	7.3E-02
116-DR-8_Shallow	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	210.00	1.0E+05	2.1E-03	4.5E+04	4.6E-03
116-DR-8_Shallow	non-Rad	Boron	7440-42-8	µg/kg	1783.33	5.0E+02	**3.6E+00**	1.3E+05	1.3E-02
116-DR-8_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.15	2.2E+03	6.7E-05	9.2E+02	1.6E-04
116-DR-8_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	8234.63	4.0E+02	**2.1E+01**	3.8E+04	2.2E-01
116-DR-8_Shallow	non-Rad	Chrysene	218-01-9	µg/kg	33.17	1.8E+04	1.8E-03	4.5E+04	7.5E-04
116-DR-8_Shallow	non-Rad	Cobalt	7440-48-4	µg/kg	8776.03	1.3E+04	6.8E-01	1.1E+05	7.9E-02
116-DR-8_Shallow	non-Rad	Copper	7440-50-8	µg/kg	13953.40	5.0E+04	2.8E-01	1.1E+05	1.3E-01
116-DR-8_Shallow	non-Rad	Dibenz[a,h]anthracene	53-70-3	µg/kg	25.00	1.8E+04	1.4E-03	4.4E+04	5.7E-04
116-DR-8_Shallow	non-Rad	Hexavalent Chromium	18540-29-9	µg/kg	192.00	No Value	--	1.3E+06	1.5E-04
116-DR-8_Shallow	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	22.00	1.8E+04	1.2E-03	3.6E+04	6.2E-04
116-DR-8_Shallow	non-Rad	Lead	7439-92-1	µg/kg	4208.13	5.0E+04	8.4E-02	3.6E+04	1.2E-01
116-DR-8_Shallow	non-Rad	Lithium	7439-93-2	µg/kg	70443.73	2.0E+03	**3.5E+01**	5.2E+05	1.4E-01
116-DR-8_Shallow	non-Rad	Manganese	7439-96-5	µg/kg	305029.34	2.2E+05	**1.4E+00**	5.8E+06	5.3E-02
116-DR-8_Shallow	non-Rad	Mercury	7439-97-6	µg/kg	9.50	1.0E+02	9.5E-02	1.9E+03	5.1E-03

Table H-7. 100-D Area Ecological Evaluation Based on SSLs for Surface Soils (0 to 15 feet [0 to 4.6m])

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
116-DR-8_Shallow	non-Rad	Methylene chloride	75-09-2	µg/kg	1.89	No Value	--	1.7E+05	1.1E-05
116-DR-8_Shallow	non-Rad	Molybdenum	7439-98-7	µg/kg	640.00	2.0E+03	3.2E-01	1.4E+04	4.6E-02
116-DR-8_Shallow	non-Rad	Nickel	7440-02-0	µg/kg	11726.73	3.0E+04	3.9E-01	3.3E+04	3.6E-01
116-DR-8_Shallow	non-Rad	Pyrene	129-00-0	µg/kg	18.57	1.8E+04	1.0E-03	6.0E+05	3.1E-05
116-DR-8_Shallow	Rad	Rads SOF	---	pCi/g	--	--	1.7E-04	--	3.7E-03
116-DR-8_Shallow	non-Rad	Toluene	108-88-3	µg/kg	1.10	2.0E+05	5.5E-06	5.2E+06	2.1E-07
116-DR-8_Shallow	Rad	Total beta radiostrontium	SR-RAD	pCi/g	0.32	3.6E+03	8.9E-05	9.1E+01	3.5E-03
116-DR-8_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	585.37	5.0E+03	1.2E-01	3.6E+04	7.5E-04
116-DR-8_Shallow	Rad	Uranium-234	13966-29-5	pCi/g	0.18	5.2E+04	3.4E-06	6.4E+03	2.8E-05
116-DR-8_Shallow	Rad	Uranium-238	U-238	pCi/g	0.20	1.6E+04	1.3E-05	5.2E+03	3.8E-05
116-DR-8_Shallow	non-Rad	Vanadium	7440-62-2	µg/kg	64428.87	2.0E+03	**3.2E+01**	3.1E+04	**2.1E+00**
116-DR-8_Shallow	non-Rad	Zinc	7440-66-6	µg/kg	50213.41	5.0E+04	**1.0E+00**	6.8E+04	7.4E-01
116-DR-9_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	10.00	2.2E+03	4.5E-03	9.2E+02	1.1E-02
116-DR-9_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	16093.18	4.0E+02	**4.0E+01**	3.8E+04	4.2E-01
116-DR-9_Shallow	Rad	Cobalt-60	10198-40-0	pCi/g	0.04	6.1E+03	7.2E-06	8.1E+02	5.5E-05
116-DR-9_Shallow	Rad	Europium-152	14683-23-9	pCi/g	0.43	1.5E+04	3.0E-05	1.7E+03	2.5E-04
116-DR-9_Shallow	Rad	Europium-154	15585-10-1	pCi/g	0.07	1.3E+04	5.7E-06	1.6E+03	4.4E-05
116-DR-9_Shallow	non-Rad	Hexavalent Chromium	18540-29-9	µg/kg	1900.00	No Value	--	1.3E+06	1.5E-03
116-DR-9_Shallow	non-Rad	Lead	7439-92-1	µg/kg	2837.68	5.0E+04	5.7E-02	3.6E+04	8.0E-02
116-DR-9_Shallow	Rad	Nickel-63	13981-37-8	pCi/g	4.99	No Value	--	No Value	--
116-DR-9_Shallow	Rad	Plutonium-238	13981-16-3	pCi/g	0.36	1.8E+04	2.1E-05	6.0E+03	6.0E-05
116-DR-9_Shallow	Rad	Plutonium-239/240	PU-239/240	pCi/g	0.72	1.3E+04	5.7E-05	6.3E+03	1.2E-04
116-DR-9_Shallow	Rad	Rads SOF	---	pCi/g	--	--	4.7E-03	--	1.4E-02
116-DR-9_Shallow	Rad	Total beta radiostrontium	SR-RAD	pCi/g	0.26	3.6E+03	7.3E-05	9.1E+01	2.9E-03
118-D-1_Overburden	non-Rad	Arsenic	7440-38-2	µg/kg	3014.03	1.0E+04	3.0E-01	1.9E+05	1.6E-02
118-D-1_Overburden	non-Rad	Barium	7440-39-3	µg/kg	69917.66	3.3E+05	2.1E-01	1.3E+06	5.3E-02
118-D-1_Overburden	non-Rad	Benzo(b)fluoranthene	205-99-2	µg/kg	120.00	1.8E+04	6.7E-03	3.9E+04	3.1E-03
118-D-1_Overburden	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	245.00	1.0E+05	2.5E-03	4.5E+04	5.4E-03
118-D-1_Overburden	non-Rad	Boron	7440-42-8	µg/kg	1233.33	5.0E+02	**2.5E+00**	1.3E+05	9.3E-03
118-D-1_Overburden	non-Rad	Butylbenzylphthalate	85-68-7	µg/kg	110.00	No Value	--	No Value	--
118-D-1_Overburden	non-Rad	Cadmium	7440-43-9	µg/kg	65.25	4.0E+03	1.6E-02	1.6E+03	4.0E-02
118-D-1_Overburden	Rad	Cesium-137	10045-97-3	pCi/g	0.08	2.2E+03	3.6E-05	9.2E+02	8.7E-05
118-D-1_Overburden	non-Rad	Chromium	7440-47-3	µg/kg	10001.44	4.0E+02	**2.5E+01**	3.8E+04	2.6E-01
118-D-1_Overburden	non-Rad	Cobalt	7440-48-4	µg/kg	7317.87	1.3E+04	5.6E-01	1.1E+05	6.6E-02
118-D-1_Overburden	non-Rad	Copper	7440-50-8	µg/kg	15106.95	5.0E+04	3.0E-01	1.1E+05	1.4E-01
118-D-1_Overburden	non-Rad	Hexavalent Chromium	18540-29-9	µg/kg	396.89	No Value	--	1.3E+06	3.2E-04
118-D-1_Overburden	non-Rad	Lead	7439-92-1	µg/kg	3919.29	5.0E+04	7.8E-02	3.6E+04	1.1E-01
118-D-1_Overburden	non-Rad	Manganese	7439-96-5	µg/kg	306161.06	2.2E+05	**1.4E+00**	5.8E+06	5.3E-02
118-D-1_Overburden	non-Rad	Mercury	7439-97-6	µg/kg	7.30	1.0E+02	7.3E-02	1.9E+03	3.9E-03
118-D-1_Overburden	non-Rad	Molybdenum	7439-98-7	µg/kg	760.00	2.0E+03	3.8E-01	1.4E+04	5.4E-02
118-D-1_Overburden	non-Rad	Nickel	7440-02-0	µg/kg	11640.00	3.0E+04	3.9E-01	3.3E+04	3.6E-01
118-D-1_Overburden	Rad	Rads SOF	---	pCi/g	--	--	9.8E-05	--	4.5E-04
118-D-1_Overburden	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	µg/kg	870.00	2.0E+05	4.4E-03	3.6E+08	2.4E-06
118-D-1_Overburden	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	µg/kg	1300.00	No Value	--	No Value	--
118-D-1_Overburden	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	2196.61	5.0E+03	4.4E-01	3.6E+04	2.8E-03
118-D-1_Overburden	Rad	Tritium	10028-17-8	pCi/g	0.04	1.7E+06	2.4E-08	4.2E+02	9.8E-05

Table H-7. 100-D Area Ecological Evaluation Based on SSLs for Surface Soils (0 to 15 feet [0 to 4.6m])

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
118-D-1_Overburden	Rad	Uranium-234	13966-29-5	pCi/g	0.75	5.2E+04	1.5E-05	6.4E+03	1.2E-04
118-D-1_Overburden	Rad	Uranium-238	U-238	pCi/g	0.74	1.6E+04	4.7E-05	5.2E+03	1.4E-04
118-D-1_Overburden	non-Rad	Vanadium	7440-62-2	µg/kg	50373.42	2.0E+03	**2.5E+01**	3.1E+04	**1.6E+00**
118-D-1_Overburden	non-Rad	Zinc	7440-66-6	µg/kg	38461.04	5.0E+04	7.7E-01	6.8E+04	5.7E-01
118-D-1_Shallow_1	non-Rad	Arsenic	7440-38-2	µg/kg	2631.97	1.0E+04	2.6E-01	1.9E+05	1.4E-02
118-D-1_Shallow_1	non-Rad	Barium	7440-39-3	µg/kg	60014.79	3.3E+05	1.8E-01	1.3E+06	4.5E-02
118-D-1_Shallow_1	non-Rad	Beryllium	7440-41-7	µg/kg	229.94	1.0E+04	2.3E-02	1.4E+04	1.7E-02
118-D-1_Shallow_1	non-Rad	Boron	7440-42-8	µg/kg	1700.00	5.0E+02	**3.4E+00**	1.3E+05	1.3E-02
118-D-1_Shallow_1	non-Rad	Cadmium	7440-43-9	µg/kg	44.18	4.0E+03	1.1E-02	1.6E+03	2.7E-02
118-D-1_Shallow_1	Rad	Cesium-137	10045-97-3	pCi/g	0.04	2.2E+03	1.8E-05	9.2E+02	4.2E-05
118-D-1_Shallow_1	non-Rad	Chromium	7440-47-3	µg/kg	9458.16	4.0E+02	**2.4E+01**	3.8E+04	2.5E-01
118-D-1_Shallow_1	non-Rad	Cobalt	7440-48-4	µg/kg	7736.27	1.3E+04	6.0E-01	1.1E+05	6.9E-02
118-D-1_Shallow_1	non-Rad	Copper	7440-50-8	µg/kg	16751.88	5.0E+04	3.4E-01	1.1E+05	1.6E-01
118-D-1_Shallow_1	non-Rad	Hexavalent Chromium	18540-29-9	µg/kg	175.00	No Value	--	1.3E+06	1.4E-04
118-D-1_Shallow_1	non-Rad	Lead	7439-92-1	µg/kg	3664.34	5.0E+04	7.3E-02	3.6E+04	1.0E-01
118-D-1_Shallow_1	non-Rad	Manganese	7439-96-5	µg/kg	288049.45	2.2E+05	**1.3E+00**	5.8E+06	5.0E-02
118-D-1_Shallow_1	non-Rad	Mercury	7439-97-6	µg/kg	16.75	1.0E+02	1.7E-01	1.9E+03	9.0E-03
118-D-1_Shallow_1	non-Rad	Molybdenum	7439-98-7	µg/kg	320.00	2.0E+03	1.6E-01	1.4E+04	2.3E-02
118-D-1_Shallow_1	non-Rad	Nickel	7440-02-0	µg/kg	12503.78	3.0E+04	4.2E-01	3.3E+04	3.8E-01
118-D-1_Shallow_1	Rad	Rads SOF	---	pCi/g	--	--	1.3E-04	--	2.3E-03
118-D-1_Shallow_1	Rad	Technetium-99	14133-76-7	pCi/g	1.07	2.2E+04	4.9E-05	5.4E+03	2.0E-04
118-D-1_Shallow_1	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	µg/kg	2470.83	2.0E+05	1.2E-02	3.6E+08	6.9E-06
118-D-1_Shallow_1	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	µg/kg	5641.67	No Value	--	No Value	--
118-D-1_Shallow_1	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	2394.86	5.0E+03	4.8E-01	3.6E+04	3.1E-03
118-D-1_Shallow_1	Rad	Tritium	10028-17-8	pCi/g	0.73	1.7E+06	4.3E-07	4.2E+02	1.7E-03
118-D-1_Shallow_1	Rad	Uranium-234	13966-29-5	pCi/g	0.80	5.2E+04	1.6E-05	6.4E+03	1.3E-04
118-D-1_Shallow_1	Rad	Uranium-238	U-238	pCi/g	0.80	1.6E+04	5.1E-05	5.2E+03	1.6E-04
118-D-1_Shallow_1	non-Rad	Vanadium	7440-62-2	µg/kg	59297.77	2.0E+03	**3.0E+01**	3.1E+04	**1.9E+00**
118-D-1_Shallow_1	non-Rad	Zinc	7440-66-6	µg/kg	41623.64	5.0E+04	8.3E-01	6.8E+04	6.1E-01
118-D-1_Shallow_5	non-Rad	Arsenic	7440-38-2	µg/kg	3466.75	1.0E+04	3.5E-01	1.9E+05	1.8E-02
118-D-1_Shallow_5	non-Rad	Barium	7440-39-3	µg/kg	71721.20	3.3E+05	2.2E-01	1.3E+06	5.4E-02
118-D-1_Shallow_5	non-Rad	Beryllium	7440-41-7	µg/kg	141.43	1.0E+04	1.4E-02	1.4E+04	1.0E-02
118-D-1_Shallow_5	non-Rad	Boron	7440-42-8	µg/kg	1206.77	5.0E+02	**2.4E+00**	1.3E+05	9.1E-03
118-D-1_Shallow_5	non-Rad	Cadmium	7440-43-9	µg/kg	71.87	4.0E+03	1.8E-02	1.6E+03	4.4E-02
118-D-1_Shallow_5	Rad	Cesium-137	10045-97-3	pCi/g	0.06	2.2E+03	2.7E-05	9.2E+02	6.4E-05
118-D-1_Shallow_5	non-Rad	Chromium	7440-47-3	µg/kg	10857.13	4.0E+02	**2.7E+01**	3.8E+04	2.8E-01
118-D-1_Shallow_5	non-Rad	Cobalt	7440-48-4	µg/kg	8553.99	1.3E+04	6.6E-01	1.1E+05	7.7E-02
118-D-1_Shallow_5	non-Rad	Copper	7440-50-8	µg/kg	16263.31	5.0E+04	3.3E-01	1.1E+05	1.5E-01
118-D-1_Shallow_5	non-Rad	Lead	7439-92-1	µg/kg	4866.44	5.0E+04	9.7E-02	3.6E+04	1.4E-01
118-D-1_Shallow_5	non-Rad	Manganese	7439-96-5	µg/kg	319582.04	2.2E+05	**1.5E+00**	5.8E+06	5.5E-02
118-D-1_Shallow_5	non-Rad	Mercury	7439-97-6	µg/kg	13.30	1.0E+02	1.3E-01	1.9E+03	7.1E-03
118-D-1_Shallow_5	non-Rad	Nickel	7440-02-0	µg/kg	13106.18	3.0E+04	4.4E-01	3.3E+04	4.0E-01
118-D-1_Shallow_5	Rad	Rads SOF	---	pCi/g	--	--	4.3E-05	--	2.1E-04
118-D-1_Shallow_5	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	µg/kg	8382.00	2.0E+05	4.2E-02	3.6E+08	2.4E-05

Table H-7. 100-D Area Ecological Evaluation Based on SSLs for Surface Soils (0 to 15 feet [0 to 4.6m])

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
118-D-1_Shallow_5	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	µg/kg	13055.82	No Value	--	No Value	--
118-D-1_Shallow_5	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	729.32	5.0E+03	1.5E-01	3.6E+04	9.3E-04
118-D-1_Shallow_5	Rad	Tritium	10028-17-8	pCi/g	0.03	1.7E+06	1.8E-08	4.2E+02	7.2E-05
118-D-1_Shallow_5	Rad	Uranium-234	13966-29-5	pCi/g	0.20	5.2E+04	4.0E-06	6.4E+03	3.2E-05
118-D-1_Shallow_5	Rad	Uranium-238	U-238	pCi/g	0.19	1.6E+04	1.2E-05	5.2E+03	3.7E-05
118-D-1_Shallow_5	non-Rad	Vanadium	7440-62-2	µg/kg	55100.25	2.0E+03	**2.8E+01**	3.1E+04	**1.8E+00**
118-D-1_Shallow_5	non-Rad	Zinc	7440-66-6	µg/kg	42151.45	5.0E+04	8.4E-01	6.8E+04	6.2E-01
118-D-1_Shallow_Focused	non-Rad	Arsenic	7440-38-2	µg/kg	3600.00	1.0E+04	3.6E-01	1.9E+05	1.9E-02
118-D-1_Shallow_Focused	non-Rad	Barium	7440-39-3	µg/kg	64100.00	3.3E+05	1.9E-01	1.3E+06	4.9E-02
118-D-1_Shallow_Focused	non-Rad	Beryllium	7440-41-7	µg/kg	240.00	1.0E+04	2.4E-02	1.4E+04	1.7E-02
118-D-1_Shallow_Focused	non-Rad	Boron	7440-42-8	µg/kg	1000.00	5.0E+02	**2.0E+00**	1.3E+05	7.5E-03
118-D-1_Shallow_Focused	non-Rad	Cadmium	7440-43-9	µg/kg	89.00	4.0E+03	2.2E-02	1.6E+03	5.5E-02
118-D-1_Shallow_Focused	Rad	Cesium-137	10045-97-3	pCi/g	0.26	2.2E+03	1.2E-04	9.2E+02	2.8E-04
118-D-1_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	11700.00	4.0E+02	**2.9E+01**	3.8E+04	3.1E-01
118-D-1_Shallow_Focused	non-Rad	Cobalt	7440-48-4	µg/kg	8300.00	1.3E+04	6.4E-01	1.1E+05	7.4E-02
118-D-1_Shallow_Focused	non-Rad	Copper	7440-50-8	µg/kg	14200.00	5.0E+04	2.8E-01	1.1E+05	1.3E-01
118-D-1_Shallow_Focused	non-Rad	Hexavalent Chromium	18540-29-9	µg/kg	261.00	No Value	--	1.3E+06	2.1E-04
118-D-1_Shallow_Focused	non-Rad	Lead	7439-92-1	µg/kg	4400.00	5.0E+04	8.8E-02	3.6E+04	1.2E-01
118-D-1_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	293000.00	2.2E+05	**1.3E+00**	5.8E+06	5.1E-02
118-D-1_Shallow_Focused	non-Rad	Mercury	7439-97-6	µg/kg	11.00	1.0E+02	1.1E-01	1.9E+03	5.9E-03
118-D-1_Shallow_Focused	non-Rad	Nickel	7440-02-0	µg/kg	11200.00	3.0E+04	3.7E-01	3.3E+04	3.4E-01
118-D-1_Shallow_Focused	Rad	Rads SOF	---	pCi/g	--	--	3.0E-04	--	2.6E-03
118-D-1_Shallow_Focused	Rad	Total beta radiostrontium	SR-RAD	pCi/g	0.14	3.6E+03	4.0E-05	9.1E+01	1.6E-03
118-D-1_Shallow_Focused	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	µg/kg	1700.00	2.0E+05	8.5E-03	3.6E+08	4.8E-06
118-D-1_Shallow_Focused	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	µg/kg	3000.00	No Value	--	No Value	--
118-D-1_Shallow_Focused	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	5090.35	5.0E+03	**1.0E+00**	3.6E+04	6.5E-03
118-D-1_Shallow_Focused	Rad	Tritium	10028-17-8	pCi/g	0.05	1.7E+06	3.0E-08	4.2E+02	1.2E-04
118-D-1_Shallow_Focused	Rad	Uranium-234	13966-29-5	pCi/g	1.54	5.2E+04	3.0E-05	6.4E+03	2.4E-04
118-D-1_Shallow_Focused	Rad	Uranium-238	U-238	pCi/g	1.71	1.6E+04	1.1E-04	5.2E+03	3.3E-04
118-D-1_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	62500.00	2.0E+03	**3.1E+01**	3.1E+04	**2.0E+00**
118-D-1_Shallow_Focused	non-Rad	Zinc	7440-66-6	µg/kg	39700.00	5.0E+04	7.9E-01	6.8E+04	5.9E-01
118-D-1_Staging Pile Area Footprint	non-Rad	Arsenic	7440-38-2	µg/kg	2695.17	1.0E+04	2.7E-01	1.9E+05	1.4E-02
118-D-1_Staging Pile Area Footprint	non-Rad	Barium	7440-39-3	µg/kg	75217.40	3.3E+05	2.3E-01	1.3E+06	5.7E-02
118-D-1_Staging Pile Area Footprint	non-Rad	Beryllium	7440-41-7	µg/kg	193.22	1.0E+04	1.9E-02	1.4E+04	1.4E-02
118-D-1_Staging Pile Area Footprint	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	68.00	1.0E+05	6.8E-04	4.5E+04	1.5E-03
118-D-1_Staging Pile Area Footprint	non-Rad	Boron	7440-42-8	µg/kg	1316.67	5.0E+02	**2.6E+00**	1.3E+05	9.9E-03
118-D-1_Staging Pile Area Footprint	Rad	Carbon-14	14762-75-5	pCi/g	0.37	6.1E+04	6.1E-06	3.2E+01	1.2E-02
118-D-1_Staging Pile Area Footprint	non-Rad	Chromium	7440-47-3	µg/kg	10489.69	4.0E+02	**2.6E+01**	3.8E+04	2.8E-01
118-D-1_Staging Pile Area Footprint	non-Rad	Cobalt	7440-48-4	µg/kg	7233.46	1.3E+04	5.6E-01	1.1E+05	6.5E-02
118-D-1_Staging Pile Area Footprint	non-Rad	Copper	7440-50-8	µg/kg	19108.66	5.0E+04	3.8E-01	1.1E+05	1.8E-01
118-D-1_Staging Pile Area Footprint	non-Rad	Lead	7439-92-1	µg/kg	3614.32	5.0E+04	7.2E-02	3.6E+04	1.0E-01
118-D-1_Staging Pile Area Footprint	non-Rad	Manganese	7439-96-5	µg/kg	284457.99	2.2E+05	**1.3E+00**	5.8E+06	4.9E-02
118-D-1_Staging Pile Area Footprint	non-Rad	Mercury	7439-97-6	µg/kg	5.97	1.0E+02	6.0E-02	1.9E+03	3.2E-03
118-D-1_Staging Pile Area Footprint	non-Rad	Molybdenum	7439-98-7	µg/kg	310.00	2.0E+03	1.6E-01	1.4E+04	2.2E-02
118-D-1_Staging Pile Area Footprint	non-Rad	Nickel	7440-02-0	µg/kg	12366.19	3.0E+04	4.1E-01	3.3E+04	3.8E-01

Table H-7. 100-D Area Ecological Evaluation Based on SSLs for Surface Soils (0 to 15 feet [0 to 4.6m])

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
118-D-1_Staging Pile Area Footprint	Rad	Rads SOF	---	pCi/g	--	--	7.2E-05	--	1.5E-02
118-D-1_Staging Pile Area Footprint	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	µg/kg	1800.00	2.0E+05	9.0E-03	3.6E+08	5.1E-06
118-D-1_Staging Pile Area Footprint	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	µg/kg	3400.00	No Value	--	No Value	--
118-D-1_Staging Pile Area Footprint	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	2319.65	5.0E+03	4.6E-01	3.6E+04	3.0E-03
118-D-1_Staging Pile Area Footprint	Rad	Tritium	10028-17-8	pCi/g	1.34	1.7E+06	8.0E-07	4.2E+02	3.2E-03
118-D-1_Staging Pile Area Footprint	Rad	Uranium-234	13966-29-5	pCi/g	0.78	5.2E+04	1.5E-05	6.4E+03	1.2E-04
118-D-1_Staging Pile Area Footprint	Rad	Uranium-238	U-238	pCi/g	0.78	1.6E+04	5.0E-05	5.2E+03	1.5E-04
118-D-1_Staging Pile Area Footprint	non-Rad	Vanadium	7440-62-2	µg/kg	54073.22	2.0E+03	**2.7E+01**	3.1E+04	**1.7E+00**
118-D-1_Staging Pile Area Footprint	non-Rad	Zinc	7440-66-6	µg/kg	38513.06	5.0E+04	7.7E-01	6.8E+04	5.7E-01
118-D-4_Overburden	non-Rad	Arsenic	7440-38-2	µg/kg	3133.16	1.0E+04	3.1E-01	1.9E+05	1.7E-02
118-D-4_Overburden	non-Rad	Barium	7440-39-3	µg/kg	75116.38	3.3E+05	2.3E-01	1.3E+06	5.7E-02
118-D-4_Overburden	non-Rad	Beryllium	7440-41-7	µg/kg	277.07	1.0E+04	2.8E-02	1.4E+04	2.0E-02
118-D-4_Overburden	non-Rad	Boron	7440-42-8	µg/kg	1546.43	5.0E+02	**3.1E+00**	1.3E+05	1.2E-02
118-D-4_Overburden	non-Rad	Cadmium	7440-43-9	µg/kg	200.00	4.0E+03	5.0E-02	1.6E+03	1.2E-01
118-D-4_Overburden	Rad	Cesium-137	10045-97-3	pCi/g	0.03	2.2E+03	1.5E-05	9.2E+02	3.6E-05
118-D-4_Overburden	non-Rad	Chromium	7440-47-3	µg/kg	12931.08	4.0E+02	**3.2E+01**	3.8E+04	3.4E-01
118-D-4_Overburden	non-Rad	Cobalt	7440-48-4	µg/kg	7559.92	1.3E+04	5.8E-01	1.1E+05	6.8E-02
118-D-4_Overburden	non-Rad	Copper	7440-50-8	µg/kg	14932.04	5.0E+04	3.0E-01	1.1E+05	1.4E-01
118-D-4_Overburden	non-Rad	Lead	7439-92-1	µg/kg	3760.27	5.0E+04	7.5E-02	3.6E+04	1.1E-01
118-D-4_Overburden	non-Rad	Manganese	7439-96-5	µg/kg	352925.00	2.2E+05	**1.6E+00**	5.8E+06	6.1E-02
118-D-4_Overburden	non-Rad	Mercury	7439-97-6	µg/kg	39.90	1.0E+02	4.0E-01	1.9E+03	2.1E-02
118-D-4_Overburden	non-Rad	Molybdenum	7439-98-7	µg/kg	500.00	2.0E+03	2.5E-01	1.4E+04	3.6E-02
118-D-4_Overburden	non-Rad	Nickel	7440-02-0	µg/kg	13143.88	3.0E+04	4.4E-01	3.3E+04	4.0E-01
118-D-4_Overburden	Rad	Rads SOF	---	pCi/g	--	--	6.8E-05	--	2.7E-04
118-D-4_Overburden	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	1797.04	5.0E+03	3.6E-01	3.6E+04	2.3E-03
118-D-4_Overburden	Rad	Uranium-233/234	U-233/234	pCi/g	0.72	5.2E+04	1.4E-05	6.4E+03	1.1E-04
118-D-4_Overburden	Rad	Uranium-238	U-238	pCi/g	0.60	1.6E+04	3.9E-05	5.2E+03	1.2E-04
118-D-4_Overburden	non-Rad	Vanadium	7440-62-2	µg/kg	66685.58	2.0E+03	**3.3E+01**	3.1E+04	**2.1E+00**
118-D-4_Overburden	non-Rad	Zinc	7440-66-6	µg/kg	47811.42	5.0E+04	9.6E-01	6.8E+04	7.1E-01
118-D-4_Shallow	non-Rad	Antimony	7440-36-0	µg/kg	2400.00	5.0E+03	4.8E-01	6.0E+03	4.0E-01
118-D-4_Shallow	non-Rad	Arsenic	7440-38-2	µg/kg	2983.07	1.0E+04	3.0E-01	1.9E+05	1.6E-02
118-D-4_Shallow	non-Rad	Barium	7440-39-3	µg/kg	70991.07	3.3E+05	2.2E-01	1.3E+06	5.4E-02
118-D-4_Shallow	non-Rad	Beryllium	7440-41-7	µg/kg	231.26	1.0E+04	2.3E-02	1.4E+04	1.7E-02
118-D-4_Shallow	non-Rad	Boron	7440-42-8	µg/kg	1189.27	5.0E+02	**2.4E+00**	1.3E+05	9.0E-03
118-D-4_Shallow	non-Rad	Cadmium	7440-43-9	µg/kg	397.50	4.0E+03	9.9E-02	1.6E+03	2.4E-01
118-D-4_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.38	2.2E+03	1.7E-04	9.2E+02	4.1E-04
118-D-4_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	12376.73	4.0E+02	**3.1E+01**	3.8E+04	3.2E-01
118-D-4_Shallow	non-Rad	Cobalt	7440-48-4	µg/kg	8104.34	1.3E+04	6.2E-01	1.1E+05	7.3E-02
118-D-4_Shallow	non-Rad	Copper	7440-50-8	µg/kg	15591.72	5.0E+04	3.1E-01	1.1E+05	1.5E-01
118-D-4_Shallow	Rad	Europium-152	14683-23-9	pCi/g	0.33	1.5E+04	2.2E-05	1.7E+03	1.9E-04
118-D-4_Shallow	non-Rad	Lead	7439-92-1	µg/kg	7908.12	5.0E+04	1.6E-01	3.6E+04	2.2E-01
118-D-4_Shallow	non-Rad	Manganese	7439-96-5	µg/kg	342787.71	2.2E+05	**1.6E+00**	5.8E+06	5.9E-02
118-D-4_Shallow	non-Rad	Mercury	7439-97-6	µg/kg	65.55	1.0E+02	6.6E-01	1.9E+03	3.5E-02
118-D-4_Shallow	non-Rad	Molybdenum	7439-98-7	µg/kg	582.11	2.0E+03	2.9E-01	1.4E+04	4.2E-02
118-D-4_Shallow	non-Rad	Nickel	7440-02-0	µg/kg	12565.50	3.0E+04	4.2E-01	3.3E+04	3.9E-01
118-D-4_Shallow	Rad	Nickel-63	13981-37-8	pCi/g	4.01	No Value	--	No Value	--

Table H-7. 100-D Area Ecological Evaluation Based on SSLs for Surface Soils (0 to 15 feet [0 to 4.6m])

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
118-D-4_Shallow	Rad	Plutonium-239/240	PU-239/240	pCi/g	0.31	1.3E+04	2.5E-05	6.3E+03	5.0E-05
118-D-4_Shallow	Rad	Rads SOF	---	pCi/g	--	--	7.8E-04	--	2.1E-02
118-D-4_Shallow	Rad	Total beta radiostrontium	SR-RAD	pCi/g	1.81	3.6E+03	5.1E-04	9.1E+01	2.0E-02
118-D-4_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	2041.63	5.0E+03	4.1E-01	3.6E+04	2.6E-03
118-D-4_Shallow	Rad	Uranium-233/234	U-233/234	pCi/g	0.58	5.2E+04	1.1E-05	6.4E+03	9.1E-05
118-D-4_Shallow	Rad	Uranium-238	U-238	pCi/g	0.69	1.6E+04	4.4E-05	5.2E+03	1.3E-04
118-D-4_Shallow	non-Rad	Vanadium	7440-62-2	µg/kg	80969.41	2.0E+03	**4.1E+01**	3.1E+04	**2.6E+00**
118-D-4_Shallow	non-Rad	Zinc	7440-66-6	µg/kg	59118.37	5.0E+04	**1.2E+00**	6.8E+04	8.7E-01
118-D-4_Shallow_Focused	non-Rad	Antimony	7440-36-0	µg/kg	900.00	5.0E+03	1.8E-01	6.0E+03	1.5E-01
118-D-4_Shallow_Focused	non-Rad	Arsenic	7440-38-2	µg/kg	3300.00	1.0E+04	3.3E-01	1.9E+05	1.7E-02
118-D-4_Shallow_Focused	non-Rad	Barium	7440-39-3	µg/kg	77300.00	3.3E+05	2.3E-01	1.3E+06	5.8E-02
118-D-4_Shallow_Focused	non-Rad	Beryllium	7440-41-7	µg/kg	200.00	1.0E+04	2.0E-02	1.4E+04	1.4E-02
118-D-4_Shallow_Focused	non-Rad	Boron	7440-42-8	µg/kg	1300.00	5.0E+02	**2.6E+00**	1.3E+05	9.8E-03
118-D-4_Shallow_Focused	non-Rad	Cadmium	7440-43-9	µg/kg	4660.00	4.0E+03	**1.2E+00**	1.6E+03	**2.9E+00**
118-D-4_Shallow_Focused	Rad	Cesium-137	10045-97-3	pCi/g	0.15	2.2E+03	6.8E-05	9.2E+02	1.6E-04
118-D-4_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	48100.00	4.0E+02	**1.2E+02**	3.8E+04	**1.3E+00**
118-D-4_Shallow_Focused	non-Rad	Cobalt	7440-48-4	µg/kg	11000.00	1.3E+04	8.5E-01	1.1E+05	9.9E-02
118-D-4_Shallow_Focused	non-Rad	Copper	7440-50-8	µg/kg	15500.00	5.0E+04	3.1E-01	1.1E+05	1.5E-01
118-D-4_Shallow_Focused	Rad	Europium-152	14683-23-9	pCi/g	0.45	1.5E+04	3.1E-05	1.7E+03	2.6E-04
118-D-4_Shallow_Focused	non-Rad	Hexavalent Chromium	18540-29-9	µg/kg	170.00	No Value	--	1.3E+06	1.4E-04
118-D-4_Shallow_Focused	non-Rad	Lead	7439-92-1	µg/kg	3700.00	5.0E+04	7.4E-02	3.6E+04	1.0E-01
118-D-4_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	399000.00	2.2E+05	**1.8E+00**	5.8E+06	6.9E-02
118-D-4_Shallow_Focused	non-Rad	Mercury	7439-97-6	µg/kg	58.30	1.0E+02	5.8E-01	1.9E+03	3.1E-02
118-D-4_Shallow_Focused	non-Rad	Molybdenum	7439-98-7	µg/kg	500.00	2.0E+03	2.5E-01	1.4E+04	3.6E-02
118-D-4_Shallow_Focused	non-Rad	Nickel	7440-02-0	µg/kg	27300.00	3.0E+04	9.1E-01	3.3E+04	8.4E-01
118-D-4_Shallow_Focused	Rad	Rads SOF	---	pCi/g	--	--	1.6E-04	--	6.4E-04
118-D-4_Shallow_Focused	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	µg/kg	5460.00	2.0E+05	2.7E-02	3.6E+08	1.5E-05
118-D-4_Shallow_Focused	non-Rad	Total petroleum hydrocarbons - motor oil (high boiling)	TPH/OILH	µg/kg	10500.00	No Value	--	No Value	--
118-D-4_Shallow_Focused	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	2220.67	5.0E+03	4.4E-01	3.6E+04	2.8E-03
118-D-4_Shallow_Focused	Rad	Uranium-233/234	U-233/234	pCi/g	0.50	5.2E+04	9.6E-06	6.4E+03	7.8E-05
118-D-4_Shallow_Focused	Rad	Uranium-238	U-238	pCi/g	0.75	1.6E+04	4.8E-05	5.2E+03	1.5E-04
118-D-4_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	92400.00	2.0E+03	**4.6E+01**	3.1E+04	**3.0E+00**
118-D-4_Shallow_Focused	non-Rad	Zinc	7440-66-6	µg/kg	59600.00	5.0E+04	**1.2E+00**	6.8E+04	8.8E-01
118-D-5_Overburden	non-Rad	Antimony	7440-36-0	µg/kg	561.67	5.0E+03	1.1E-01	6.0E+03	9.4E-02
118-D-5_Overburden	non-Rad	Arsenic	7440-38-2	µg/kg	2763.16	1.0E+04	2.8E-01	1.9E+05	1.5E-02
118-D-5_Overburden	non-Rad	Barium	7440-39-3	µg/kg	56467.72	3.3E+05	1.7E-01	1.3E+06	4.3E-02
118-D-5_Overburden	non-Rad	Beryllium	7440-41-7	µg/kg	654.69	1.0E+04	6.6E-02	1.4E+04	4.7E-02
118-D-5_Overburden	non-Rad	Cadmium	7440-43-9	µg/kg	76.50	4.0E+03	1.9E-02	1.6E+03	4.7E-02
118-D-5_Overburden	non-Rad	Chromium	7440-47-3	µg/kg	8598.22	4.0E+02	**2.2E+01**	3.8E+04	2.3E-01
118-D-5_Overburden	non-Rad	Cobalt	7440-48-4	µg/kg	9244.60	1.3E+04	7.1E-01	1.1E+05	8.3E-02
118-D-5_Overburden	non-Rad	Copper	7440-50-8	µg/kg	12492.80	5.0E+04	2.5E-01	1.1E+05	1.2E-01
118-D-5_Overburden	non-Rad	Hexavalent Chromium	18540-29-9	µg/kg	217.52	No Value	--	1.3E+06	1.8E-04
118-D-5_Overburden	non-Rad	Lead	7439-92-1	µg/kg	3715.87	5.0E+04	7.4E-02	3.6E+04	1.0E-01
118-D-5_Overburden	non-Rad	Manganese	7439-96-5	µg/kg	275203.75	2.2E+05	**1.3E+00**	5.8E+06	4.8E-02
118-D-5_Overburden	non-Rad	Mercury	7439-97-6	µg/kg	40.71	1.0E+02	4.1E-01	1.9E+03	2.2E-02
118-D-5_Overburden	non-Rad	Molybdenum	7439-98-7	µg/kg	370.00	2.0E+03	1.9E-01	1.4E+04	2.7E-02

Table H-7. 100-D Area Ecological Evaluation Based on SSLs for Surface Soils (0 to 15 feet [0 to 4.6m])

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
118-D-5_Overburden	non-Rad	Nickel	7440-02-0	µg/kg	12132.11	3.0E+04	4.0E-01	3.3E+04	3.7E-01
118-D-5_Overburden	Rad	Total beta radiostrontium	SR-RAD	pCi/g	0.20	3.6E+03	5.6E-05	9.1E+01	2.2E-03
118-D-5_Overburden	non-Rad	Vanadium	7440-62-2	µg/kg	50941.12	2.0E+03	**2.6E+01**	3.1E+04	**1.6E+00**
118-D-5_Overburden	non-Rad	Zinc	7440-66-6	µg/kg	40220.41	5.0E+04	8.0E-01	6.8E+04	5.9E-01
118-D-5_Shallow	non-Rad	Antimony	7440-36-0	µg/kg	441.67	5.0E+03	8.8E-02	6.0E+03	7.4E-02
118-D-5_Shallow	non-Rad	Arsenic	7440-38-2	µg/kg	2659.68	1.0E+04	2.7E-01	1.9E+05	1.4E-02
118-D-5_Shallow	non-Rad	Barium	7440-39-3	µg/kg	60857.61	3.3E+05	1.8E-01	1.3E+06	4.6E-02
118-D-5_Shallow	non-Rad	Beryllium	7440-41-7	µg/kg	672.44	1.0E+04	6.7E-02	1.4E+04	4.8E-02
118-D-5_Shallow	non-Rad	Boron	7440-42-8	µg/kg	1500.00	5.0E+02	**3.0E+00**	1.3E+05	1.1E-02
118-D-5_Shallow	non-Rad	Cadmium	7440-43-9	µg/kg	75.91	4.0E+03	1.9E-02	1.6E+03	4.7E-02
118-D-5_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	8937.43	4.0E+02	**2.2E+01**	3.8E+04	2.3E-01
118-D-5_Shallow	non-Rad	Cobalt	7440-48-4	µg/kg	9627.72	1.3E+04	7.4E-01	1.1E+05	8.6E-02
118-D-5_Shallow	non-Rad	Copper	7440-50-8	µg/kg	12558.15	5.0E+04	2.5E-01	1.1E+05	1.2E-01
118-D-5_Shallow	non-Rad	Hexavalent Chromium	18540-29-9	µg/kg	235.00	No Value	--	1.3E+06	1.9E-04
118-D-5_Shallow	non-Rad	Lead	7439-92-1	µg/kg	3611.14	5.0E+04	7.2E-02	3.6E+04	1.0E-01
118-D-5_Shallow	non-Rad	Manganese	7439-96-5	µg/kg	281366.66	2.2E+05	**1.3E+00**	5.8E+06	4.9E-02
118-D-5_Shallow	non-Rad	Mercury	7439-97-6	µg/kg	7.58	1.0E+02	7.6E-02	1.9E+03	4.1E-03
118-D-5_Shallow	non-Rad	Molybdenum	7439-98-7	µg/kg	950.00	2.0E+03	4.8E-01	1.4E+04	6.8E-02
118-D-5_Shallow	non-Rad	Nickel	7440-02-0	µg/kg	10849.89	3.0E+04	3.6E-01	3.3E+04	3.3E-01
118-D-5_Shallow	Rad	Nickel-63	13981-37-8	pCi/g	20.20	No Value	--	No Value	--
118-D-5_Shallow	Rad	Rads SOF	---	pCi/g	--	--	7.1E-05	--	2.8E-03
118-D-5_Shallow	Rad	Total beta radiostrontium	SR-RAD	pCi/g	0.25	3.6E+03	7.1E-05	9.1E+01	2.8E-03
118-D-5_Shallow	non-Rad	Vanadium	7440-62-2	µg/kg	54073.43	2.0E+03	**2.7E+01**	3.1E+04	**1.7E+00**
118-D-5_Shallow	non-Rad	Zinc	7440-66-6	µg/kg	41880.93	5.0E+04	8.4E-01	6.8E+04	6.2E-01
118-D-5_Shallow_Focused	non-Rad	Antimony	7440-36-0	µg/kg	440.00	5.0E+03	8.8E-02	6.0E+03	7.4E-02
118-D-5_Shallow_Focused	non-Rad	Arsenic	7440-38-2	µg/kg	2500.00	1.0E+04	2.5E-01	1.9E+05	1.3E-02
118-D-5_Shallow_Focused	non-Rad	Barium	7440-39-3	µg/kg	53000.00	3.3E+05	1.6E-01	1.3E+06	4.0E-02
118-D-5_Shallow_Focused	non-Rad	Beryllium	7440-41-7	µg/kg	930.00	1.0E+04	9.3E-02	1.4E+04	6.7E-02
118-D-5_Shallow_Focused	non-Rad	Cadmium	7440-43-9	µg/kg	54.00	4.0E+03	1.4E-02	1.6E+03	3.3E-02
118-D-5_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	8500.00	4.0E+02	**2.1E+01**	3.8E+04	2.2E-01
118-D-5_Shallow_Focused	non-Rad	Cobalt	7440-48-4	µg/kg	9800.00	1.3E+04	7.5E-01	1.1E+05	8.8E-02
118-D-5_Shallow_Focused	Rad	Cobalt-60	10198-40-0	pCi/g	1.10	6.1E+03	1.8E-04	8.1E+02	1.4E-03
118-D-5_Shallow_Focused	non-Rad	Copper	7440-50-8	µg/kg	13000.00	5.0E+04	2.6E-01	1.1E+05	1.2E-01
118-D-5_Shallow_Focused	non-Rad	Lead	7439-92-1	µg/kg	3400.00	5.0E+04	6.8E-02	3.6E+04	9.6E-02
118-D-5_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	290000.00	2.2E+05	**1.3E+00**	5.8E+06	5.0E-02
118-D-5_Shallow_Focused	non-Rad	Mercury	7439-97-6	µg/kg	6.10	1.0E+02	6.1E-02	1.9E+03	3.3E-03
118-D-5_Shallow_Focused	non-Rad	Molybdenum	7439-98-7	µg/kg	320.00	2.0E+03	1.6E-01	1.4E+04	2.3E-02
118-D-5_Shallow_Focused	non-Rad	Nickel	7440-02-0	µg/kg	10000.00	3.0E+04	3.3E-01	3.3E+04	3.1E-01
118-D-5_Shallow_Focused	Rad	Nickel-63	13981-37-8	pCi/g	113.00	No Value	--	No Value	--
118-D-5_Shallow_Focused	Rad	Rads SOF	---	pCi/g	--	--	1.8E-04	--	1.7E-03
118-D-5_Shallow_Focused	Rad	Tritium	10028-17-8	pCi/g	0.15	1.7E+06	8.9E-08	4.2E+02	3.6E-04
118-D-5_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	62000.00	2.0E+03	**3.1E+01**	3.1E+04	**2.0E+00**
118-D-5_Shallow_Focused	non-Rad	Zinc	7440-66-6	µg/kg	43000.00	5.0E+04	8.6E-01	6.8E+04	6.3E-01
118-D-6:4_Shallow_1	non-Rad	Aroclor HI	---	µg/kg	--	--	4.1E-04	--	1.1E-02
118-D-6:4_Shallow_1	non-Rad	Aroclor-1254	11097-69-1	µg/kg	8.30	4.0E+04	2.1E-04	1.5E+03	5.6E-03
118-D-6:4_Shallow_1	non-Rad	Aroclor-1260	11096-82-5	µg/kg	7.93	4.0E+04	2.0E-04	1.5E+03	5.4E-03
118-D-6:4_Shallow_1	non-Rad	Arsenic	7440-38-2	µg/kg	2090.60	1.0E+04	2.1E-01	1.9E+05	1.1E-02
118-D-6:4_Shallow_1	non-Rad	Barium	7440-39-3	µg/kg	62433.80	3.3E+05	1.9E-01	1.3E+06	4.7E-02

Table H-7. 100-D Area Ecological Evaluation Based on SSLs for Surface Soils (0 to 15 feet [0 to 4.6m])

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
118-D-6:4_Shallow_1	non-Rad	Beryllium	7440-41-7	µg/kg	246.81	1.0E+04	2.5E-02	1.4E+04	1.8E-02
118-D-6:4_Shallow_1	non-Rad	Boron	7440-42-8	µg/kg	1800.00	5.0E+02	**3.6E+00**	1.3E+05	1.4E-02
118-D-6:4_Shallow_1	non-Rad	Cadmium	7440-43-9	µg/kg	95.25	4.0E+03	2.4E-02	1.6E+03	5.8E-02
118-D-6:4_Shallow_1	Rad	Cesium-137	10045-97-3	pCi/g	0.07	2.2E+03	3.2E-05	9.2E+02	7.7E-05
118-D-6:4_Shallow_1	non-Rad	Chromium	7440-47-3	µg/kg	7250.55	4.0E+02	**1.8E+01**	3.8E+04	1.9E-01
118-D-6:4_Shallow_1	non-Rad	Cobalt	7440-48-4	µg/kg	9140.15	1.3E+04	7.0E-01	1.1E+05	8.2E-02
118-D-6:4_Shallow_1	non-Rad	Copper	7440-50-8	µg/kg	15161.87	5.0E+04	3.0E-01	1.1E+05	1.4E-01
118-D-6:4_Shallow_1	non-Rad	Hexavalent Chromium	18540-29-9	µg/kg	402.83	No Value	--	1.3E+06	3.2E-04
118-D-6:4_Shallow_1	non-Rad	Lead	7439-92-1	µg/kg	13267.19	5.0E+04	2.7E-01	3.6E+04	3.7E-01
118-D-6:4_Shallow_1	non-Rad	Manganese	7439-96-5	µg/kg	323193.18	2.2E+05	**1.5E+00**	5.8E+06	5.6E-02
118-D-6:4_Shallow_1	non-Rad	Mercury	7439-97-6	µg/kg	30.53	1.0E+02	3.1E-01	1.9E+03	1.6E-02
118-D-6:4_Shallow_1	non-Rad	Molybdenum	7439-98-7	µg/kg	311.65	2.0E+03	1.6E-01	1.4E+04	2.2E-02
118-D-6:4_Shallow_1	non-Rad	Nickel	7440-02-0	µg/kg	10530.77	3.0E+04	3.5E-01	3.3E+04	3.2E-01
118-D-6:4_Shallow_1	Rad	Rads SOF	---	pCi/g	--	--	8.7E-05	--	3.9E-04
118-D-6:4_Shallow_1	non-Rad	Silver	7440-22-4	µg/kg	630.00	2.0E+03	3.2E-01	5.0E+04	1.3E-02
118-D-6:4_Shallow_1	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	1982.28	5.0E+03	4.0E-01	3.6E+04	2.5E-03
118-D-6:4_Shallow_1	Rad	Tritium	10028-17-8	pCi/g	0.03	1.7E+06	2.0E-08	4.2E+02	8.0E-05
118-D-6:4_Shallow_1	Rad	Uranium-234	13966-29-5	pCi/g	0.66	5.2E+04	1.3E-05	6.4E+03	1.0E-04
118-D-6:4_Shallow_1	Rad	Uranium-238	U-238	pCi/g	0.67	1.6E+04	4.2E-05	5.2E+03	1.3E-04
118-D-6:4_Shallow_1	non-Rad	Vanadium	7440-62-2	µg/kg	77926.90	2.0E+03	**3.9E+01**	3.1E+04	**2.5E+00**
118-D-6:4_Shallow_1	non-Rad	Zinc	7440-66-6	µg/kg	49761.59	5.0E+04	1.0E+00	6.8E+04	7.3E-01
118-D-6:4_Shallow_2	non-Rad	Aroclor HI	---	µg/kg	--	--	7.0E-04	--	1.9E-02
118-D-6:4_Shallow_2	non-Rad	Aroclor-1254	11097-69-1	µg/kg	21.25	4.0E+04	5.3E-04	1.5E+03	1.4E-02
118-D-6:4_Shallow_2	non-Rad	Aroclor-1260	11096-82-5	µg/kg	6.80	4.0E+04	1.7E-04	1.5E+03	4.6E-03
118-D-6:4_Shallow_2	non-Rad	Arsenic	7440-38-2	µg/kg	3057.13	1.0E+04	3.1E-01	1.9E+05	1.6E-02
118-D-6:4_Shallow_2	non-Rad	Barium	7440-39-3	µg/kg	67361.92	3.3E+05	2.0E-01	1.3E+06	5.1E-02
118-D-6:4_Shallow_2	non-Rad	Beryllium	7440-41-7	µg/kg	273.62	1.0E+04	2.7E-02	1.4E+04	2.0E-02
118-D-6:4_Shallow_2	non-Rad	Cadmium	7440-43-9	µg/kg	62.05	4.0E+03	1.6E-02	1.6E+03	3.8E-02
118-D-6:4_Shallow_2	Rad	Cesium-137	10045-97-3	pCi/g	2.87	2.2E+03	1.3E-03	9.2E+02	3.1E-03
118-D-6:4_Shallow_2	non-Rad	Chromium	7440-47-3	µg/kg	10049.85	4.0E+02	**2.5E+01**	3.8E+04	2.6E-01
118-D-6:4_Shallow_2	non-Rad	Cobalt	7440-48-4	µg/kg	8093.21	1.3E+04	6.2E-01	1.1E+05	7.3E-02
118-D-6:4_Shallow_2	non-Rad	Copper	7440-50-8	µg/kg	21766.08	5.0E+04	4.4E-01	1.1E+05	2.0E-01
118-D-6:4_Shallow_2	Rad	Europium-152	14683-23-9	pCi/g	1.41	1.5E+04	9.6E-05	1.7E+03	8.1E-04
118-D-6:4_Shallow_2	non-Rad	Hexavalent Chromium	18540-29-9	µg/kg	558.72	No Value	--	1.3E+06	4.5E-04
118-D-6:4_Shallow_2	non-Rad	Lead	7439-92-1	µg/kg	5072.26	5.0E+04	1.0E-01	3.6E+04	1.4E-01
118-D-6:4_Shallow_2	non-Rad	Manganese	7439-96-5	µg/kg	328312.15	2.2E+05	**1.5E+00**	5.8E+06	5.7E-02
118-D-6:4_Shallow_2	non-Rad	Mercury	7439-97-6	µg/kg	1200.00	1.0E+02	**1.2E+01**	1.9E+03	6.4E-01
118-D-6:4_Shallow_2	non-Rad	Molybdenum	7439-98-7	µg/kg	285.00	2.0E+03	1.4E-01	1.4E+04	2.0E-02
118-D-6:4_Shallow_2	non-Rad	Nickel	7440-02-0	µg/kg	10571.39	3.0E+04	3.5E-01	3.3E+04	3.2E-01
118-D-6:4_Shallow_2	Rad	Plutonium-239/240	PU-239/240	pCi/g	0.21	1.3E+04	1.7E-05	6.3E+03	3.3E-05
118-D-6:4_Shallow_2	Rad	Rads SOF	---	pCi/g	--	--	1.6E-03	--	8.5E-03
118-D-6:4_Shallow_2	Rad	Total beta radiostrontium	SR-RAD	pCi/g	0.36	3.6E+03	1.0E-04	9.1E+01	4.0E-03
118-D-6:4_Shallow_2	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	3344.45	5.0E+03	6.7E-01	3.6E+04	4.3E-03
118-D-6:4_Shallow_2	Rad	Tritium	10028-17-8	pCi/g	0.07	1.7E+06	4.4E-08	4.2E+02	1.7E-04
118-D-6:4_Shallow_2	Rad	Uranium-234	13966-29-5	pCi/g	0.93	5.2E+04	1.8E-05	6.4E+03	1.5E-04
118-D-6:4_Shallow_2	Rad	Uranium-238	U-238	pCi/g	1.12	1.6E+04	7.2E-05	5.2E+03	2.2E-04
118-D-6:4_Shallow_2	non-Rad	Vanadium	7440-62-2	µg/kg	68233.01	2.0E+03	**3.4E+01**	3.1E+04	**2.2E+00**
118-D-6:4_Shallow_2	non-Rad	Zinc	7440-66-6	µg/kg	46961.39	5.0E+04	9.4E-01	6.8E+04	6.9E-01

Table H-7. 100-D Area Ecological Evaluation Based on SSLs for Surface Soils (0 to 15 feet [0 to 4.6m])

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
118-DR-1_Shallow	non-Rad	Arsenic	7440-38-2	µg/kg	2229.55	1.0E+04	2.2E-01	1.9E+05	1.2E-02
118-DR-1_Shallow	non-Rad	Barium	7440-39-3	µg/kg	56290.56	3.3E+05	1.7E-01	1.3E+06	4.3E-02
118-DR-1_Shallow	non-Rad	Beryllium	7440-41-7	µg/kg	1045.32	1.0E+04	1.1E-01	1.4E+04	7.5E-02
118-DR-1_Shallow	non-Rad	Boron	7440-42-8	µg/kg	1226.32	5.0E+02	**2.5E+00**	1.3E+05	9.2E-03
118-DR-1_Shallow	non-Rad	Cadmium	7440-43-9	µg/kg	57.80	4.0E+03	1.4E-02	1.6E+03	3.6E-02
118-DR-1_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.11	2.2E+03	5.0E-05	9.2E+02	1.2E-04
118-DR-1_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	7079.76	4.0E+02	**1.8E+01**	3.8E+04	1.9E-01
118-DR-1_Shallow	non-Rad	Cobalt	7440-48-4	µg/kg	8719.78	1.3E+04	6.7E-01	1.1E+05	7.8E-02
118-DR-1_Shallow	Rad	Cobalt-60	10198-40-0	pCi/g	0.77	6.1E+03	1.3E-04	8.1E+02	9.6E-04
118-DR-1_Shallow	non-Rad	Copper	7440-50-8	µg/kg	13464.20	5.0E+04	2.7E-01	1.1E+05	1.3E-01
118-DR-1_Shallow	non-Rad	Hexavalent Chromium	18540-29-9	µg/kg	248.38	No Value	--	1.3E+06	2.0E-04
118-DR-1_Shallow	non-Rad	Lead	7439-92-1	µg/kg	4013.91	5.0E+04	8.0E-02	3.6E+04	1.1E-01
118-DR-1_Shallow	non-Rad	Manganese	7439-96-5	µg/kg	284561.10	2.2E+05	**1.3E+00**	5.8E+06	4.9E-02
118-DR-1_Shallow	non-Rad	Mercury	7439-97-6	µg/kg	7.18	1.0E+02	7.2E-02	1.9E+03	3.8E-03
118-DR-1_Shallow	non-Rad	Nickel	7440-02-0	µg/kg	9930.00	3.0E+04	3.3E-01	3.3E+04	3.1E-01
118-DR-1_Shallow	Rad	Nickel-63	13981-37-8	pCi/g	123.96	No Value	--	No Value	--
118-DR-1_Shallow	Rad	Rads SOF	---	pCi/g	--	--	1.8E-04	--	1.1E-03
118-DR-1_Shallow	non-Rad	Vanadium	7440-62-2	µg/kg	54963.66	2.0E+03	**2.8E+01**	3.1E+04	**1.8E+00**
118-DR-1_Shallow	non-Rad	Zinc	7440-66-6	µg/kg	41443.60	5.0E+04	8.3E-01	6.8E+04	6.1E-01
118-DR-1_Shallow_Focused	non-Rad	Antimony	7440-36-0	µg/kg	1500.00	5.0E+03	3.0E-01	6.0E+03	2.5E-01
118-DR-1_Shallow_Focused	non-Rad	Arsenic	7440-38-2	µg/kg	2800.00	1.0E+04	2.8E-01	1.9E+05	1.5E-02
118-DR-1_Shallow_Focused	non-Rad	Barium	7440-39-3	µg/kg	62000.00	3.3E+05	1.9E-01	1.3E+06	4.7E-02
118-DR-1_Shallow_Focused	non-Rad	Benzo(b)fluoranthene	205-99-2	µg/kg	4.40	1.8E+04	2.4E-04	3.9E+04	1.1E-04
118-DR-1_Shallow_Focused	non-Rad	Beryllium	7440-41-7	µg/kg	480.00	1.0E+04	4.8E-02	1.4E+04	3.4E-02
118-DR-1_Shallow_Focused	non-Rad	Boron	7440-42-8	µg/kg	1100.00	5.0E+02	**2.2E+00**	1.3E+05	8.3E-03
118-DR-1_Shallow_Focused	non-Rad	Cadmium	7440-43-9	µg/kg	79.00	4.0E+03	2.0E-02	1.6E+03	4.9E-02
118-DR-1_Shallow_Focused	Rad	Cesium-137	10045-97-3	pCi/g	0.05	2.2E+03	2.2E-05	9.2E+02	5.4E-05
118-DR-1_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	7300.00	4.0E+02	**1.8E+01**	3.8E+04	1.9E-01
118-DR-1_Shallow_Focused	non-Rad	Cobalt	7440-48-4	µg/kg	7600.00	1.3E+04	5.9E-01	1.1E+05	6.8E-02
118-DR-1_Shallow_Focused	non-Rad	Copper	7440-50-8	µg/kg	14000.00	5.0E+04	2.8E-01	1.1E+05	1.3E-01
118-DR-1_Shallow_Focused	non-Rad	Heptachlor epoxide	1024-57-3	µg/kg	0.49	No Value	--	No Value	--
118-DR-1_Shallow_Focused	non-Rad	Lead	7439-92-1	µg/kg	3700.00	5.0E+04	7.4E-02	3.6E+04	1.0E-01
118-DR-1_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	290000.00	2.2E+05	**1.3E+00**	5.8E+06	5.0E-02
118-DR-1_Shallow_Focused	non-Rad	Mercury	7439-97-6	µg/kg	6.40	1.0E+02	6.4E-02	1.9E+03	3.4E-03
118-DR-1_Shallow_Focused	non-Rad	Nickel	7440-02-0	µg/kg	9200.00	3.0E+04	3.1E-01	3.3E+04	2.8E-01
118-DR-1_Shallow_Focused	Rad	Nickel-63	13981-37-8	pCi/g	9.70	No Value	--	No Value	--
118-DR-1_Shallow_Focused	Rad	Rads SOF	---	pCi/g	--	--	2.2E-05	--	5.4E-05
118-DR-1_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	54000.00	2.0E+03	**2.7E+01**	3.1E+04	**1.7E+00**
118-DR-1_Shallow_Focused	non-Rad	Zinc	7440-66-6	µg/kg	40000.00	5.0E+04	8.0E-01	6.8E+04	5.9E-01
118-DR-2:2_Shallow	non-Rad	Aroclor-1260	11096-82-5	µg/kg	33.68	4.0E+04	8.4E-04	1.5E+03	2.3E-02
118-DR-2:2_Shallow	non-Rad	Arsenic	7440-38-2	µg/kg	3200.00	1.0E+04	3.2E-01	1.9E+05	1.7E-02
118-DR-2:2_Shallow	non-Rad	Barium	7440-39-3	µg/kg	67900.00	3.3E+05	2.1E-01	1.3E+06	5.1E-02
118-DR-2:2_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.51	2.2E+03	2.3E-04	9.2E+02	5.5E-04
118-DR-2:2_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	11700.00	4.0E+02	**2.9E+01**	3.8E+04	3.1E-01
118-DR-2:2_Shallow	Rad	Cobalt-60	10198-40-0	pCi/g	0.12	6.1E+03	2.0E-05	8.1E+02	1.5E-04
118-DR-2:2_Shallow	Rad	Europium-152	14683-23-9	pCi/g	0.45	1.5E+04	3.1E-05	1.7E+03	2.6E-04
118-DR-2:2_Shallow	non-Rad	Hexavalent Chromium	18540-29-9	µg/kg	699.38	No Value	--	1.3E+06	5.6E-04
118-DR-2:2_Shallow	non-Rad	Lead	7439-92-1	µg/kg	10111.59	5.0E+04	2.0E-01	3.6E+04	2.8E-01

Table H-7. 100-D Area Ecological Evaluation Based on SSLs for Surface Soils (0 to 15 feet [0 to 4.6m])

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
118-DR-2:2_Shallow	non-Rad	Mercury	7439-97-6	µg/kg	164.29	1.0E+02	**1.6E+00**	1.9E+03	8.8E-02
118-DR-2:2_Shallow	Rad	Nickel-63	13981-37-8	pCi/g	4.75	No Value	--	No Value	--
118-DR-2:2_Shallow	Rad	Plutonium-239/240	PU-239/240	pCi/g	0.18	1.3E+04	1.4E-05	6.3E+03	2.9E-05
118-DR-2:2_Shallow	Rad	Rads SOF	---	pCi/g	--	--	6.9E-04	--	1.1E-02
118-DR-2:2_Shallow	Rad	Technetium-99	14133-76-7	pCi/g	2.42	2.2E+04	1.1E-04	5.4E+03	4.5E-04
118-DR-2:2_Shallow	Rad	Total beta radiostrontium	SR-RAD	pCi/g	0.88	3.6E+03	2.5E-04	9.1E+01	9.7E-03
118-DR-2:2_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	1474.43	5.0E+03	3.0E-01	3.6E+04	1.9E-03
118-DR-2:2_Shallow	Rad	Uranium-233/234	U-233/234	pCi/g	0.43	5.2E+04	8.3E-06	6.4E+03	6.7E-05
118-DR-2:2_Shallow	Rad	Uranium-238	U-238	pCi/g	0.50	1.6E+04	3.2E-05	5.2E+03	9.7E-05
120-D-2_Shallow	non-Rad	Antimony	7440-36-0	µg/kg	720.00	5.0E+03	1.4E-01	6.0E+03	1.2E-01
120-D-2_Shallow	non-Rad	Arsenic	7440-38-2	µg/kg	2309.93	1.0E+04	2.3E-01	1.9E+05	1.2E-02
120-D-2_Shallow	non-Rad	Barium	7440-39-3	µg/kg	73264.95	3.3E+05	2.2E-01	1.3E+06	5.5E-02
120-D-2_Shallow	non-Rad	Beryllium	7440-41-7	µg/kg	251.11	1.0E+04	2.5E-02	1.4E+04	1.8E-02
120-D-2_Shallow	non-Rad	Boron	7440-42-8	µg/kg	2703.52	5.0E+02	**5.4E+00**	1.3E+05	2.0E-02
120-D-2_Shallow	non-Rad	Cadmium	7440-43-9	µg/kg	117.00	4.0E+03	2.9E-02	1.6E+03	7.2E-02
120-D-2_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	7074.86	4.0E+02	**1.8E+01**	3.8E+04	1.9E-01
120-D-2_Shallow	non-Rad	Cobalt	7440-48-4	µg/kg	9385.49	1.3E+04	7.2E-01	1.1E+05	8.4E-02
120-D-2_Shallow	non-Rad	Copper	7440-50-8	µg/kg	15512.36	5.0E+04	3.1E-01	1.1E+05	1.5E-01
120-D-2_Shallow	non-Rad	Hexavalent Chromium	18540-29-9	µg/kg	220.00	No Value	--	1.3E+06	1.8E-04
120-D-2_Shallow	non-Rad	Lead	7439-92-1	µg/kg	6162.19	5.0E+04	1.2E-01	3.6E+04	1.7E-01
120-D-2_Shallow	non-Rad	Manganese	7439-96-5	µg/kg	339487.60	2.2E+05	**1.5E+00**	5.8E+06	5.9E-02
120-D-2_Shallow	non-Rad	Mercury	7439-97-6	µg/kg	111.00	1.0E+02	**1.1E+00**	1.9E+03	6.0E-02
120-D-2_Shallow	non-Rad	Molybdenum	7439-98-7	µg/kg	604.50	2.0E+03	3.0E-01	1.4E+04	4.3E-02
120-D-2_Shallow	non-Rad	Nickel	7440-02-0	µg/kg	9825.68	3.0E+04	3.3E-01	3.3E+04	3.0E-01
120-D-2_Shallow	non-Rad	Nitrate	14797-55-8	µg/kg	9910.00	No Value	--	3.4E+08	2.9E-05
120-D-2_Shallow	non-Rad	Nitrogen in Nitrate	NO3-N	µg/kg	554.00	No Value	--	No Value	--
120-D-2_Shallow	non-Rad	Vanadium	7440-62-2	µg/kg	77181.49	2.0E+03	**3.9E+01**	3.1E+04	**2.5E+00**
120-D-2_Shallow	non-Rad	Zinc	7440-66-6	µg/kg	52904.30	5.0E+04	**1.1E+00**	6.8E+04	7.8E-01
120-D-2_Shallow_Focused	non-Rad	Arsenic	7440-38-2	µg/kg	1300.00	1.0E+04	1.3E-01	1.9E+05	6.9E-03
120-D-2_Shallow_Focused	non-Rad	Barium	7440-39-3	µg/kg	61900.00	3.3E+05	1.9E-01	1.3E+06	4.7E-02
120-D-2_Shallow_Focused	non-Rad	Beryllium	7440-41-7	µg/kg	310.00	1.0E+04	3.1E-02	1.4E+04	2.2E-02
120-D-2_Shallow_Focused	non-Rad	Boron	7440-42-8	µg/kg	1000.00	5.0E+02	**2.0E+00**	1.3E+05	7.5E-03
120-D-2_Shallow_Focused	non-Rad	Cadmium	7440-43-9	µg/kg	160.00	4.0E+03	4.0E-02	1.6E+03	9.8E-02
120-D-2_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	4500.00	4.0E+02	**1.1E+01**	3.8E+04	1.2E-01
120-D-2_Shallow_Focused	non-Rad	Cobalt	7440-48-4	µg/kg	9300.00	1.3E+04	7.2E-01	1.1E+05	8.3E-02
120-D-2_Shallow_Focused	non-Rad	Copper	7440-50-8	µg/kg	14200.00	5.0E+04	2.8E-01	1.1E+05	1.3E-01
120-D-2_Shallow_Focused	non-Rad	Lead	7439-92-1	µg/kg	1700.00	5.0E+04	3.4E-02	3.6E+04	4.8E-02
120-D-2_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	316000.00	2.2E+05	**1.4E+00**	5.8E+06	5.5E-02
120-D-2_Shallow_Focused	non-Rad	Molybdenum	7439-98-7	µg/kg	560.00	2.0E+03	2.8E-01	1.4E+04	4.0E-02
120-D-2_Shallow_Focused	non-Rad	Nickel	7440-02-0	µg/kg	9800.00	3.0E+04	3.3E-01	3.3E+04	3.0E-01
120-D-2_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	80200.00	2.0E+03	**4.0E+01**	3.1E+04	**2.6E+00**
120-D-2_Shallow_Focused	non-Rad	Zinc	7440-66-6	µg/kg	48800.00	5.0E+04	9.8E-01	6.8E+04	7.2E-01
122-DR-1:2_Shallow	non-Rad	Arsenic	7440-38-2	µg/kg	3100.00	1.0E+04	3.1E-01	1.9E+05	1.6E-02
122-DR-1:2_Shallow	non-Rad	Barium	7440-39-3	µg/kg	66900.00	3.3E+05	2.0E-01	1.3E+06	5.1E-02
122-DR-1:2_Shallow	non-Rad	Benzo(a)anthracene	56-55-3	µg/kg	66.00	1.8E+04	3.7E-03	6.4E+04	1.0E-03
122-DR-1:2_Shallow	non-Rad	Benzo(a)pyrene	50-32-8	µg/kg	30.00	1.8E+04	1.7E-03	7.6E+04	3.9E-04
122-DR-1:2_Shallow	non-Rad	Benzo(b)fluoranthene	205-99-2	µg/kg	36.00	1.8E+04	2.0E-03	3.9E+04	9.2E-04
122-DR-1:2_Shallow	non-Rad	Benzo(k)fluoranthene	207-08-9	µg/kg	25.00	1.8E+04	1.4E-03	3.9E+04	6.4E-04

Table H-7. 100-D Area Ecological Evaluation Based on SSLs for Surface Soils (0 to 15 feet [0 to 4.6m])

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
122-DR-1:2_Shallow	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	130.00	1.0E+05	1.3E-03	4.5E+04	2.9E-03
122-DR-1:2_Shallow	non-Rad	Cadmium	7440-43-9	µg/kg	190.00	4.0E+03	4.8E-02	1.6E+03	1.2E-01
122-DR-1:2_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.06	2.2E+03	2.9E-05	9.2E+02	6.8E-05
122-DR-1:2_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	11900.00	4.0E+02	**3.0E+01**	3.8E+04	3.1E-01
122-DR-1:2_Shallow	non-Rad	Chrysene	218-01-9	µg/kg	55.00	1.8E+04	3.1E-03	4.5E+04	1.2E-03
122-DR-1:2_Shallow	non-Rad	Di-n-butylphthalate	84-74-2	µg/kg	19.00	No Value	--	No Value	--
122-DR-1:2_Shallow	non-Rad	Fluoranthene	206-44-0	µg/kg	110.00	1.8E+04	6.1E-03	8.4E+05	1.3E-04
122-DR-1:2_Shallow	non-Rad	Lead	7439-92-1	µg/kg	7400.00	5.0E+04	1.5E-01	3.6E+04	2.1E-01
122-DR-1:2_Shallow	non-Rad	Lithium	7439-93-2	µg/kg	12500.00	2.0E+03	**6.3E+00**	5.2E+05	2.4E-02
122-DR-1:2_Shallow	non-Rad	Pyrene	129-00-0	µg/kg	100.00	1.8E+04	5.6E-03	6.0E+05	1.7E-04
122-DR-1:2_Shallow	Rad	Rads SOF	---	pCi/g	--	--	8.3E-05	--	3.0E-04
122-DR-1:2_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	1940.87	5.0E+03	3.9E-01	3.6E+04	2.5E-03
122-DR-1:2_Shallow	Rad	Uranium-233/234	U-233/234	pCi/g	0.66	5.2E+04	1.3E-05	6.4E+03	1.0E-04
122-DR-1:2_Shallow	Rad	Uranium-238	U-238	pCi/g	0.65	1.6E+04	4.2E-05	5.2E+03	1.3E-04
126-D-2_Overburden	non-Rad	4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	µg/kg	1.19	No Value	--	4.0E+02	3.0E-03
126-D-2_Overburden	non-Rad	4,4'-DDT (Dichlorodiphenyltrichloroethane)	50-29-3	µg/kg	0.86	No Value	--	8.8E+02	9.8E-04
126-D-2_Overburden	non-Rad	Antimony	7440-36-0	µg/kg	832.54	5.0E+03	1.7E-01	6.0E+03	1.4E-01
126-D-2_Overburden	non-Rad	Arsenic	7440-38-2	µg/kg	2644.07	1.0E+04	2.6E-01	1.9E+05	1.4E-02
126-D-2_Overburden	non-Rad	Barium	7440-39-3	µg/kg	81680.38	3.3E+05	2.5E-01	1.3E+06	6.2E-02
126-D-2_Overburden	non-Rad	Benzo(a)anthracene	56-55-3	µg/kg	8.84	1.8E+04	4.9E-04	6.4E+04	1.4E-04
126-D-2_Overburden	non-Rad	Benzo(a)pyrene	50-32-8	µg/kg	8.40	1.8E+04	4.7E-04	7.6E+04	1.1E-04
126-D-2_Overburden	non-Rad	Benzo(b)fluoranthene	205-99-2	µg/kg	10.00	1.8E+04	5.6E-04	3.9E+04	2.6E-04
126-D-2_Overburden	non-Rad	Benzo(k)fluoranthene	207-08-9	µg/kg	5.99	1.8E+04	3.3E-04	3.9E+04	1.5E-04
126-D-2_Overburden	non-Rad	Beryllium	7440-41-7	µg/kg	801.98	1.0E+04	8.0E-02	1.4E+04	5.8E-02
126-D-2_Overburden	non-Rad	Boron	7440-42-8	µg/kg	2076.84	5.0E+02	**4.2E+00**	1.3E+05	1.6E-02
126-D-2_Overburden	non-Rad	Chromium	7440-47-3	µg/kg	7899.47	4.0E+02	**2.0E+01**	3.8E+04	2.1E-01
126-D-2_Overburden	non-Rad	Chrysene	218-01-9	µg/kg	15.50	1.8E+04	8.6E-04	4.5E+04	3.5E-04
126-D-2_Overburden	non-Rad	Cobalt	7440-48-4	µg/kg	8810.43	1.3E+04	6.8E-01	1.1E+05	7.9E-02
126-D-2_Overburden	non-Rad	Copper	7440-50-8	µg/kg	12859.52	5.0E+04	2.6E-01	1.1E+05	1.2E-01
126-D-2_Overburden	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	16.00	1.8E+04	8.9E-04	3.6E+04	4.5E-04
126-D-2_Overburden	non-Rad	Lead	7439-92-1	µg/kg	3586.22	5.0E+04	7.2E-02	3.6E+04	1.0E-01
126-D-2_Overburden	non-Rad	Manganese	7439-96-5	µg/kg	313316.19	2.2E+05	**1.4E+00**	5.8E+06	5.4E-02
126-D-2_Overburden	non-Rad	Mercury	7439-97-6	µg/kg	9.36	1.0E+02	9.4E-02	1.9E+03	5.0E-03
126-D-2_Overburden	non-Rad	Molybdenum	7439-98-7	µg/kg	334.01	2.0E+03	1.7E-01	1.4E+04	2.4E-02
126-D-2_Overburden	non-Rad	Nickel	7440-02-0	µg/kg	10525.32	3.0E+04	3.5E-01	3.3E+04	3.2E-01
126-D-2_Overburden	non-Rad	Pyrene	129-00-0	µg/kg	27.00	1.8E+04	1.5E-03	6.0E+05	4.5E-05
126-D-2_Overburden	non-Rad	Vanadium	7440-62-2	µg/kg	61719.90	2.0E+03	**3.1E+01**	3.1E+04	**2.0E+00**
126-D-2_Overburden	non-Rad	Zinc	7440-66-6	µg/kg	41994.36	5.0E+04	8.4E-01	6.8E+04	6.2E-01
126-D-2_Shallow	non-Rad	4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	µg/kg	7.24	No Value	--	4.0E+02	1.8E-02
126-D-2_Shallow	non-Rad	4,4'-DDT (Dichlorodiphenyltrichloroethane)	50-29-3	µg/kg	94.63	No Value	--	8.8E+02	1.1E-01
126-D-2_Shallow	non-Rad	Alpha-Chlordane	5103-71-9	µg/kg	0.57	1.0E+03	5.7E-04	5.0E+04	1.1E-05
126-D-2_Shallow	non-Rad	Anthracene	120-12-7	µg/kg	13.00	2.9E+04	4.5E-04	6.8E+05	1.9E-05

Table H-7. 100-D Area Ecological Evaluation Based on SSLs for Surface Soils (0 to 15 feet [0 to 4.6m])

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
126-D-2_Shallow	non-Rad	Antimony	7440-36-0	µg/kg	577.00	5.0E+03	1.2E-01	6.0E+03	9.6E-02
126-D-2_Shallow	non-Rad	Aroclor-1260	11096-82-5	µg/kg	5.31	4.0E+04	1.3E-04	1.5E+03	3.6E-03
126-D-2_Shallow	non-Rad	Arsenic	7440-38-2	µg/kg	2825.66	1.0E+04	2.8E-01	1.9E+05	1.5E-02
126-D-2_Shallow	non-Rad	Barium	7440-39-3	µg/kg	86325.06	3.3E+05	2.6E-01	1.3E+06	6.5E-02
126-D-2_Shallow	non-Rad	Benzo(a)anthracene	56-55-3	µg/kg	14.43	1.8E+04	8.0E-04	6.4E+04	2.3E-04
126-D-2_Shallow	non-Rad	Benzo(a)pyrene	50-32-8	µg/kg	23.77	1.8E+04	1.3E-03	7.6E+04	3.1E-04
126-D-2_Shallow	non-Rad	Benzo(b)fluoranthene	205-99-2	µg/kg	22.64	1.8E+04	1.3E-03	3.9E+04	5.8E-04
126-D-2_Shallow	non-Rad	Benzo(k)fluoranthene	207-08-9	µg/kg	13.08	1.8E+04	7.3E-04	3.9E+04	3.3E-04
126-D-2_Shallow	non-Rad	Beryllium	7440-41-7	µg/kg	761.14	1.0E+04	7.6E-02	1.4E+04	5.5E-02
126-D-2_Shallow	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	187.92	1.0E+05	1.9E-03	4.5E+04	4.1E-03
126-D-2_Shallow	non-Rad	Boron	7440-42-8	µg/kg	3041.80	5.0E+02	**6.1E+00**	1.3E+05	2.3E-02
126-D-2_Shallow	non-Rad	Cadmium	7440-43-9	µg/kg	43.00	4.0E+03	1.1E-02	1.6E+03	2.6E-02
126-D-2_Shallow	non-Rad	Chlordane	57-74-9	µg/kg	0.45	1.0E+03	4.5E-04	5.0E+04	9.0E-06
126-D-2_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	7871.98	4.0E+02	**2.0E+01**	3.8E+04	2.1E-01
126-D-2_Shallow	non-Rad	Chrysene	218-01-9	µg/kg	37.50	1.8E+04	2.1E-03	4.5E+04	8.4E-04
126-D-2_Shallow	non-Rad	Cobalt	7440-48-4	µg/kg	10752.21	1.3E+04	8.3E-01	1.1E+05	9.6E-02
126-D-2_Shallow	non-Rad	Copper	7440-50-8	µg/kg	14151.14	5.0E+04	2.8E-01	1.1E+05	1.3E-01
126-D-2_Shallow	non-Rad	Dibenz[a,h]anthracene	53-70-3	µg/kg	26.00	1.8E+04	1.4E-03	4.4E+04	5.9E-04
126-D-2_Shallow	non-Rad	Dieldrin	60-57-1	µg/kg	0.42	No Value	--	2.1E+01	2.0E-02
126-D-2_Shallow	non-Rad	Fluoranthene	206-44-0	µg/kg	58.00	1.8E+04	3.2E-03	8.4E+05	6.9E-05
126-D-2_Shallow	non-Rad	Heptachlor epoxide	1024-57-3	µg/kg	7.80	No Value	--	No Value	--
126-D-2_Shallow	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	5.96	1.8E+04	3.3E-04	3.6E+04	1.7E-04
126-D-2_Shallow	non-Rad	Lead	7439-92-1	µg/kg	4228.63	5.0E+04	8.5E-02	3.6E+04	1.2E-01
126-D-2_Shallow	non-Rad	Manganese	7439-96-5	µg/kg	354940.21	2.2E+05	**1.6E+00**	5.8E+06	6.1E-02
126-D-2_Shallow	non-Rad	Mercury	7439-97-6	µg/kg	16.50	1.0E+02	1.7E-01	1.9E+03	8.8E-03
126-D-2_Shallow	non-Rad	Molybdenum	7439-98-7	µg/kg	316.67	2.0E+03	1.6E-01	1.4E+04	2.3E-02
126-D-2_Shallow	non-Rad	Naphthalene	91-20-3	µg/kg	14.00	2.9E+04	4.8E-04	1.0E+05	1.4E-04
126-D-2_Shallow	non-Rad	Nickel	7440-02-0	µg/kg	11612.94	3.0E+04	3.9E-01	3.3E+04	3.6E-01
126-D-2_Shallow	non-Rad	Pyrene	129-00-0	µg/kg	37.17	1.8E+04	2.1E-03	6.0E+05	6.2E-05
126-D-2_Shallow	non-Rad	Vanadium	7440-62-2	µg/kg	78289.46	2.0E+03	**3.9E+01**	3.1E+04	**2.5E+00**
126-D-2_Shallow	non-Rad	Zinc	7440-66-6	µg/kg	52411.77	5.0E+04	**1.1E+00**	6.8E+04	7.7E-01
126-D-2_Shallow_Focused	non-Rad	2-Methylnaphthalene	91-57-6	µg/kg	91.50	2.9E+04	3.2E-03	6.0E+03	1.5E-02
126-D-2_Shallow_Focused	non-Rad	4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	µg/kg	2.90	No Value	--	4.0E+02	7.3E-03
126-D-2_Shallow_Focused	non-Rad	4,4'-DDT (Dichlorodiphenyltrichloroethane)	50-29-3	µg/kg	75.00	No Value	--	8.8E+02	8.5E-02
126-D-2_Shallow_Focused	non-Rad	Acenaphthene	83-32-9	µg/kg	240.00	2.0E+04	1.2E-02	1.1E+06	2.2E-04
126-D-2_Shallow_Focused	non-Rad	Anthracene	120-12-7	µg/kg	9.24	2.9E+04	3.2E-04	6.8E+05	1.4E-05
126-D-2_Shallow_Focused	non-Rad	Antimony	7440-36-0	µg/kg	620.00	5.0E+03	1.2E-01	6.0E+03	1.0E-01
126-D-2_Shallow_Focused	non-Rad	Aroclor-1260	11096-82-5	µg/kg	8.00	4.0E+04	2.0E-04	1.5E+03	5.4E-03
126-D-2_Shallow_Focused	non-Rad	Arsenic	7440-38-2	µg/kg	3000.00	1.0E+04	3.0E-01	1.9E+05	1.6E-02
126-D-2_Shallow_Focused	non-Rad	Barium	7440-39-3	µg/kg	120000.00	3.3E+05	3.6E-01	1.3E+06	9.1E-02
126-D-2_Shallow_Focused	non-Rad	Benzo(a)anthracene	56-55-3	µg/kg	35.10	1.8E+04	2.0E-03	6.4E+04	5.5E-04
126-D-2_Shallow_Focused	non-Rad	Benzo(a)pyrene	50-32-8	µg/kg	35.10	1.8E+04	2.0E-03	7.6E+04	4.6E-04
126-D-2_Shallow_Focused	non-Rad	Benzo(b)fluoranthene	205-99-2	µg/kg	24.10	1.8E+04	1.3E-03	3.9E+04	6.1E-04
126-D-2_Shallow_Focused	non-Rad	Benzo(k)fluoranthene	207-08-9	µg/kg	16.10	1.8E+04	8.9E-04	3.9E+04	4.1E-04
126-D-2_Shallow_Focused	non-Rad	Beryllium	7440-41-7	µg/kg	630.00	1.0E+04	6.3E-02	1.4E+04	4.5E-02

Table H-7. 100-D Area Ecological Evaluation Based on SSLs for Surface Soils (0 to 15 feet [0 to 4.6m])

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
126-D-2_Shallow_Focused	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	1280.00	1.0E+05	1.3E-02	4.5E+04	2.8E-02
126-D-2_Shallow_Focused	non-Rad	Boron	7440-42-8	µg/kg	7900.00	5.0E+02	**1.6E+01**	1.3E+05	5.9E-02
126-D-2_Shallow_Focused	non-Rad	Chlordane	57-74-9	µg/kg	0.31	1.0E+03	3.1E-04	5.0E+04	6.2E-06
126-D-2_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	7800.00	4.0E+02	**2.0E+01**	3.8E+04	2.0E-01
126-D-2_Shallow_Focused	non-Rad	Chrysene	218-01-9	µg/kg	22.70	1.8E+04	1.3E-03	4.5E+04	5.1E-04
126-D-2_Shallow_Focused	non-Rad	Cobalt	7440-48-4	µg/kg	9700.00	1.3E+04	7.5E-01	1.1E+05	8.7E-02
126-D-2_Shallow_Focused	non-Rad	Copper	7440-50-8	µg/kg	14000.00	5.0E+04	2.8E-01	1.1E+05	1.3E-01
126-D-2_Shallow_Focused	non-Rad	Endosulfan II	33213-65-9	µg/kg	0.39	No Value	--	7.1E+02	5.5E-04
126-D-2_Shallow_Focused	non-Rad	Fluoranthene	206-44-0	µg/kg	221.00	1.8E+04	1.2E-02	8.4E+05	2.6E-04
126-D-2_Shallow_Focused	non-Rad	Fluorene	86-73-7	µg/kg	63.20	2.9E+04	2.2E-03	1.8E+05	3.6E-04
126-D-2_Shallow_Focused	non-Rad	Heptachlor epoxide	1024-57-3	µg/kg	5.80	No Value	--	No Value	--
126-D-2_Shallow_Focused	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	13.00	1.8E+04	7.2E-04	3.6E+04	3.6E-04
126-D-2_Shallow_Focused	non-Rad	Lead	7439-92-1	µg/kg	72000.00	5.0E+04	**1.4E+00**	3.6E+04	**2.0E+00**
126-D-2_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	360000.00	2.2E+05	**1.6E+00**	5.8E+06	6.2E-02
126-D-2_Shallow_Focused	non-Rad	Mercury	7439-97-6	µg/kg	23.00	1.0E+02	2.3E-01	1.9E+03	1.2E-02
126-D-2_Shallow_Focused	non-Rad	Methoxychlor	72-43-5	µg/kg	0.86	No Value	--	2.2E+04	3.9E-05
126-D-2_Shallow_Focused	non-Rad	Molybdenum	7439-98-7	µg/kg	330.00	2.0E+03	1.7E-01	1.4E+04	2.4E-02
126-D-2_Shallow_Focused	non-Rad	Naphthalene	91-20-3	µg/kg	105.00	2.9E+04	3.6E-03	1.0E+05	1.1E-03
126-D-2_Shallow_Focused	non-Rad	Nickel	7440-02-0	µg/kg	12000.00	3.0E+04	4.0E-01	3.3E+04	3.7E-01
126-D-2_Shallow_Focused	non-Rad	Pyrene	129-00-0	µg/kg	63.80	1.8E+04	3.5E-03	6.0E+05	1.1E-04
126-D-2_Shallow_Focused	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	µg/kg	69000.00	2.0E+05	3.5E-01	3.6E+08	1.9E-04
126-D-2_Shallow_Focused	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	µg/kg	160000.00	No Value	--	No Value	--
126-D-2_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	76000.00	2.0E+03	**3.8E+01**	3.1E+04	**2.4E+00**
126-D-2_Shallow_Focused	non-Rad	Zinc	7440-66-6	µg/kg	50000.00	5.0E+04	**1.0E+00**	6.8E+04	7.4E-01
128-D-2_Shallow_1	non-Rad	4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	µg/kg	0.51	No Value	--	4.0E+02	1.3E-03
128-D-2_Shallow_1	non-Rad	Acetone	67-64-1	µg/kg	9.20	No Value	--	No Value	--
128-D-2_Shallow_1	non-Rad	Aroclor-1260	11096-82-5	µg/kg	36.00	4.0E+04	9.0E-04	1.5E+03	2.4E-02
128-D-2_Shallow_1	non-Rad	Arsenic	7440-38-2	µg/kg	2903.72	1.0E+04	2.9E-01	1.9E+05	1.5E-02
128-D-2_Shallow_1	non-Rad	Barium	7440-39-3	µg/kg	82982.67	3.3E+05	2.5E-01	1.3E+06	6.3E-02
128-D-2_Shallow_1	non-Rad	Benzo(a)pyrene	50-32-8	µg/kg	77.00	1.8E+04	4.3E-03	7.6E+04	1.0E-03
128-D-2_Shallow_1	non-Rad	Benzo(b)fluoranthene	205-99-2	µg/kg	32.00	1.8E+04	1.8E-03	3.9E+04	8.2E-04
128-D-2_Shallow_1	non-Rad	Beryllium	7440-41-7	µg/kg	204.90	1.0E+04	2.1E-02	1.4E+04	1.5E-02
128-D-2_Shallow_1	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	81.00	1.0E+05	8.1E-04	4.5E+04	1.8E-03
128-D-2_Shallow_1	non-Rad	Boron	7440-42-8	µg/kg	1816.67	5.0E+02	**3.6E+00**	1.3E+05	1.4E-02
128-D-2_Shallow_1	non-Rad	Cadmium	7440-43-9	µg/kg	58.72	4.0E+03	1.5E-02	1.6E+03	3.6E-02
128-D-2_Shallow_1	Rad	Cesium-137	10045-97-3	pCi/g	0.24	2.2E+03	1.1E-04	9.2E+02	2.6E-04
128-D-2_Shallow_1	non-Rad	Chloroform	67-66-3	µg/kg	0.87	No Value	--	1.7E+05	5.3E-06
128-D-2_Shallow_1	non-Rad	Chromium	7440-47-3	µg/kg	11002.62	4.0E+02	**2.8E+01**	3.8E+04	2.9E-01
128-D-2_Shallow_1	non-Rad	Cobalt	7440-48-4	µg/kg	7524.56	1.3E+04	5.8E-01	1.1E+05	6.8E-02
128-D-2_Shallow_1	non-Rad	Copper	7440-50-8	µg/kg	15093.98	5.0E+04	3.0E-01	1.1E+05	1.4E-01
128-D-2_Shallow_1	non-Rad	Diethylphthalate	84-66-2	µg/kg	400.00	1.0E+05	4.0E-03	No Value	--
128-D-2_Shallow_1	non-Rad	Ethylbenzene	100-41-4	µg/kg	0.64	No Value	--	1.0E+06	6.2E-07
128-D-2_Shallow_1	non-Rad	Lead	7439-92-1	µg/kg	4792.74	5.0E+04	9.6E-02	3.6E+04	1.4E-01
128-D-2_Shallow_1	non-Rad	Manganese	7439-96-5	µg/kg	341770.49	2.2E+05	**1.6E+00**	5.8E+06	5.9E-02

Table H-7. 100-D Area Ecological Evaluation Based on SSLs for Surface Soils (0 to 15 feet [0 to 4.6m])

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
128-D-2_Shallow_1	non-Rad	Mercury	7439-97-6	µg/kg	40.99	1.0E+02	4.1E-01	1.9E+03	2.2E-02
128-D-2_Shallow_1	non-Rad	Methylene chloride	75-09-2	µg/kg	2.07	No Value	--	1.7E+05	1.3E-05
128-D-2_Shallow_1	non-Rad	Molybdenum	7439-98-7	µg/kg	310.00	2.0E+03	1.6E-01	1.4E+04	2.2E-02
128-D-2_Shallow_1	non-Rad	Nickel	7440-02-0	µg/kg	11886.66	3.0E+04	4.0E-01	3.3E+04	3.7E-01
128-D-2_Shallow_1	non-Rad	Selenium	7782-49-2	µg/kg	1100.00	5.2E+02	**2.1E+00**	1.9E+03	5.8E-01
128-D-2_Shallow_1	non-Rad	Toluene	108-88-3	µg/kg	1.40	2.0E+05	7.0E-06	5.2E+06	2.7E-07
128-D-2_Shallow_1	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	µg/kg	19690.98	2.0E+05	9.9E-02	3.6E+08	5.5E-05
128-D-2_Shallow_1	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	µg/kg	16599.28	No Value	--	No Value	--
128-D-2_Shallow_1	non-Rad	Vanadium	7440-62-2	µg/kg	53369.39	2.0E+03	**2.7E+01**	3.1E+04	**1.7E+00**
128-D-2_Shallow_1	non-Rad	Xylenes (total)	1330-20-7	µg/kg	2.70	No Value	--	8.3E+05	3.3E-06
128-D-2_Shallow_1	non-Rad	Zinc	7440-66-6	µg/kg	45366.03	5.0E+04	9.1E-01	6.8E+04	6.7E-01
128-D-2_Shallow_2	non-Rad	Acetone	67-64-1	µg/kg	10.00	No Value	--	No Value	--
128-D-2_Shallow_2	non-Rad	Arsenic	7440-38-2	µg/kg	2317.95	1.0E+04	2.3E-01	1.9E+05	1.2E-02
128-D-2_Shallow_2	non-Rad	Barium	7440-39-3	µg/kg	62230.51	3.3E+05	1.9E-01	1.3E+06	4.7E-02
128-D-2_Shallow_2	non-Rad	Beryllium	7440-41-7	µg/kg	146.82	1.0E+04	1.5E-02	1.4E+04	1.1E-02
128-D-2_Shallow_2	non-Rad	Boron	7440-42-8	µg/kg	1200.00	5.0E+02	**2.4E+00**	1.3E+05	9.0E-03
128-D-2_Shallow_2	non-Rad	Cadmium	7440-43-9	µg/kg	131.58	4.0E+03	3.3E-02	1.6E+03	8.1E-02
128-D-2_Shallow_2	non-Rad	Chromium	7440-47-3	µg/kg	11152.90	4.0E+02	**2.8E+01**	3.8E+04	2.9E-01
128-D-2_Shallow_2	non-Rad	Cobalt	7440-48-4	µg/kg	6447.47	1.3E+04	5.0E-01	1.1E+05	5.8E-02
128-D-2_Shallow_2	non-Rad	Copper	7440-50-8	µg/kg	13948.99	5.0E+04	2.8E-01	1.1E+05	1.3E-01
128-D-2_Shallow_2	non-Rad	Hexavalent Chromium	18540-29-9	µg/kg	154.00	No Value	--	1.3E+06	1.2E-04
128-D-2_Shallow_2	non-Rad	Lead	7439-92-1	µg/kg	3493.91	5.0E+04	7.0E-02	3.6E+04	9.8E-02
128-D-2_Shallow_2	non-Rad	Manganese	7439-96-5	µg/kg	277702.30	2.2E+05	**1.3E+00**	5.8E+06	4.8E-02
128-D-2_Shallow_2	non-Rad	Mercury	7439-97-6	µg/kg	18.48	1.0E+02	1.9E-01	1.9E+03	9.9E-03
128-D-2_Shallow_2	non-Rad	Methylene chloride	75-09-2	µg/kg	10.00	No Value	--	1.7E+05	6.0E-05
128-D-2_Shallow_2	non-Rad	Molybdenum	7439-98-7	µg/kg	262.80	2.0E+03	1.3E-01	1.4E+04	1.9E-02
128-D-2_Shallow_2	non-Rad	Nickel	7440-02-0	µg/kg	10946.64	3.0E+04	3.7E-01	3.3E+04	3.4E-01
128-D-2_Shallow_2	non-Rad	Silver	7440-22-4	µg/kg	190.00	2.0E+03	9.5E-02	5.0E+04	3.8E-03
128-D-2_Shallow_2	Rad	Total beta radiostrontium	SR-RAD	pCi/g	0.24	3.6E+03	6.8E-05	9.1E+01	2.7E-03
128-D-2_Shallow_2	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	µg/kg	1500.00	2.0E+05	7.5E-03	3.6E+08	4.2E-06
128-D-2_Shallow_2	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	µg/kg	3300.00	No Value	--	No Value	--
128-D-2_Shallow_2	non-Rad	Vanadium	7440-62-2	µg/kg	50094.91	2.0E+03	**2.5E+01**	3.1E+04	**1.6E+00**
128-D-2_Shallow_2	non-Rad	Zinc	7440-66-6	µg/kg	36764.90	5.0E+04	7.4E-01	6.8E+04	5.4E-01
130-D-1_Shallow	non-Rad	1,1-Dichloroethene	75-35-4	µg/kg	0.88	No Value	--	1.7E+05	5.4E-06
130-D-1_Shallow	non-Rad	Acenaphthene	83-32-9	µg/kg	18.00	2.0E+04	9.0E-04	1.1E+06	1.6E-05
130-D-1_Shallow	non-Rad	Acetone	67-64-1	µg/kg	13.00	No Value	--	No Value	--
130-D-1_Shallow	non-Rad	Aroclor-1260	11096-82-5	µg/kg	24.00	4.0E+04	6.0E-04	1.5E+03	1.6E-02
130-D-1_Shallow	non-Rad	Arsenic	7440-38-2	µg/kg	2031.28	1.0E+04	2.0E-01	1.9E+05	1.1E-02
130-D-1_Shallow	non-Rad	Barium	7440-39-3	µg/kg	72121.16	3.3E+05	2.2E-01	1.3E+06	5.5E-02
130-D-1_Shallow	non-Rad	Benzo(a)anthracene	56-55-3	µg/kg	3.70	1.8E+04	2.1E-04	6.4E+04	5.8E-05
130-D-1_Shallow	non-Rad	Benzo(a)pyrene	50-32-8	µg/kg	16.36	1.8E+04	9.1E-04	7.6E+04	2.1E-04
130-D-1_Shallow	non-Rad	Benzo(b)fluoranthene	205-99-2	µg/kg	69.00	1.8E+04	3.8E-03	3.9E+04	1.8E-03
130-D-1_Shallow	non-Rad	Benzo(k)fluoranthene	207-08-9	µg/kg	25.00	1.8E+04	1.4E-03	3.9E+04	6.4E-04
130-D-1_Shallow	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	51.00	1.0E+05	5.1E-04	4.5E+04	1.1E-03

Table H-7. 100-D Area Ecological Evaluation Based on SSLs for Surface Soils (0 to 15 feet [0 to 4.6m])

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
130-D-1_Shallow	non-Rad	Boron	7440-42-8	µg/kg	1641.67	5.0E+02	**3.3E+00**	1.3E+05	1.2E-02
130-D-1_Shallow	non-Rad	Cadmium	7440-43-9	µg/kg	80.67	4.0E+03	2.0E-02	1.6E+03	5.0E-02
130-D-1_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	7451.90	4.0E+02	**1.9E+01**	3.8E+04	2.0E-01
130-D-1_Shallow	non-Rad	Chrysene	218-01-9	µg/kg	43.00	1.8E+04	2.4E-03	4.5E+04	9.7E-04
130-D-1_Shallow	non-Rad	Cobalt	7440-48-4	µg/kg	8788.87	1.3E+04	6.8E-01	1.1E+05	7.9E-02
130-D-1_Shallow	non-Rad	Copper	7440-50-8	µg/kg	15835.10	5.0E+04	3.2E-01	1.1E+05	1.5E-01
130-D-1_Shallow	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	63.00	1.8E+04	3.5E-03	3.6E+04	1.8E-03
130-D-1_Shallow	non-Rad	Lead	7439-92-1	µg/kg	10060.24	5.0E+04	2.0E-01	3.6E+04	2.8E-01
130-D-1_Shallow	non-Rad	Manganese	7439-96-5	µg/kg	306040.84	2.2E+05	**1.4E+00**	5.8E+06	5.3E-02
130-D-1_Shallow	non-Rad	Mercury	7439-97-6	µg/kg	11.06	1.0E+02	1.1E-01	1.9E+03	5.9E-03
130-D-1_Shallow	non-Rad	Methylene chloride	75-09-2	µg/kg	1.88	No Value	--	1.7E+05	1.1E-05
130-D-1_Shallow	non-Rad	Molybdenum	7439-98-7	µg/kg	273.11	2.0E+03	1.4E-01	1.4E+04	2.0E-02
130-D-1_Shallow	non-Rad	Nickel	7440-02-0	µg/kg	9743.55	3.0E+04	3.3E-01	3.3E+04	3.0E-01
130-D-1_Shallow	non-Rad	Pyrene	129-00-0	µg/kg	56.00	1.8E+04	3.1E-03	6.0E+05	9.3E-05
130-D-1_Shallow	non-Rad	Toluene	108-88-3	µg/kg	2.71	2.0E+05	1.4E-05	5.2E+06	5.2E-07
130-D-1_Shallow	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	µg/kg	3333.33	2.0E+05	1.7E-02	3.6E+08	9.4E-06
130-D-1_Shallow	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	µg/kg	9897.83	No Value	--	No Value	--
130-D-1_Shallow	non-Rad	Vanadium	7440-62-2	µg/kg	51858.52	2.0E+03	**2.6E+01**	3.1E+04	**1.7E+00**
130-D-1_Shallow	non-Rad	Zinc	7440-66-6	µg/kg	52217.52	5.0E+04	**1.0E+00**	6.8E+04	7.7E-01
130-D-1_Shallow_Focused	non-Rad	1,1-Dichloroethene	75-35-4	µg/kg	2.90	No Value	--	1.7E+05	1.8E-05
130-D-1_Shallow_Focused	non-Rad	Arsenic	7440-38-2	µg/kg	1600.00	1.0E+04	1.6E-01	1.9E+05	8.4E-03
130-D-1_Shallow_Focused	non-Rad	Barium	7440-39-3	µg/kg	59600.00	3.3E+05	1.8E-01	1.3E+06	4.5E-02
130-D-1_Shallow_Focused	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	130.00	1.0E+05	1.3E-03	4.5E+04	2.9E-03
130-D-1_Shallow_Focused	non-Rad	Boron	7440-42-8	µg/kg	1400.00	5.0E+02	**2.8E+00**	1.3E+05	1.1E-02
130-D-1_Shallow_Focused	non-Rad	Cadmium	7440-43-9	µg/kg	73.00	4.0E+03	1.8E-02	1.6E+03	4.5E-02
130-D-1_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	5200.00	4.0E+02	**1.3E+01**	3.8E+04	1.4E-01
130-D-1_Shallow_Focused	non-Rad	Cobalt	7440-48-4	µg/kg	11400.00	1.3E+04	8.8E-01	1.1E+05	1.0E-01
130-D-1_Shallow_Focused	non-Rad	Copper	7440-50-8	µg/kg	14800.00	5.0E+04	3.0E-01	1.1E+05	1.4E-01
130-D-1_Shallow_Focused	non-Rad	Lead	7439-92-1	µg/kg	3200.00	5.0E+04	6.4E-02	3.6E+04	9.0E-02
130-D-1_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	305000.00	2.2E+05	**1.4E+00**	5.8E+06	5.3E-02
130-D-1_Shallow_Focused	non-Rad	Methylene chloride	75-09-2	µg/kg	3.20	No Value	--	1.7E+05	1.9E-05
130-D-1_Shallow_Focused	non-Rad	Molybdenum	7439-98-7	µg/kg	280.00	2.0E+03	1.4E-01	1.4E+04	2.0E-02
130-D-1_Shallow_Focused	non-Rad	Nickel	7440-02-0	µg/kg	9100.00	3.0E+04	3.0E-01	3.3E+04	2.8E-01
130-D-1_Shallow_Focused	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	µg/kg	64000.00	2.0E+05	3.2E-01	3.6E+08	1.8E-04
130-D-1_Shallow_Focused	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	µg/kg	110000.00	No Value	--	No Value	--
130-D-1_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	82200.00	2.0E+03	**4.1E+01**	3.1E+04	**2.6E+00**
130-D-1_Shallow_Focused	non-Rad	Zinc	7440-66-6	µg/kg	43900.00	5.0E+04	8.8E-01	6.8E+04	6.5E-01
130-D-1_Staging Pile Area Footprint	non-Rad	1,1-Dichloroethene	75-35-4	µg/kg	1.96	No Value	--	1.7E+05	1.2E-05
130-D-1_Staging Pile Area Footprint	non-Rad	Aroclor-1260	11096-82-5	µg/kg	14.00	4.0E+04	3.5E-04	1.5E+03	9.5E-03
130-D-1_Staging Pile Area Footprint	non-Rad	Arsenic	7440-38-2	µg/kg	2871.12	1.0E+04	2.9E-01	1.9E+05	1.5E-02
130-D-1_Staging Pile Area Footprint	non-Rad	Barium	7440-39-3	µg/kg	102564.94	3.3E+05	3.1E-01	1.3E+06	7.8E-02
130-D-1_Staging Pile Area Footprint	non-Rad	Benzo(b)fluoranthene	205-99-2	µg/kg	11.00	1.8E+04	6.1E-04	3.9E+04	2.8E-04
130-D-1_Staging Pile Area Footprint	non-Rad	Beryllium	7440-41-7	µg/kg	142.50	1.0E+04	1.4E-02	1.4E+04	1.0E-02
130-D-1_Staging Pile Area Footprint	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	1900.00	1.0E+05	1.9E-02	4.5E+04	4.2E-02

Table H-7. 100-D Area Ecological Evaluation Based on SSLs for Surface Soils (0 to 15 feet [0 to 4.6m])

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
130-D-1_Staging Pile Area Footprint	non-Rad	Boron	7440-42-8	µg/kg	2147.50	5.0E+02	**4.3E+00**	1.3E+05	1.6E-02
130-D-1_Staging Pile Area Footprint	non-Rad	Cadmium	7440-43-9	µg/kg	127.67	4.0E+03	3.2E-02	1.6E+03	7.8E-02
130-D-1_Staging Pile Area Footprint	non-Rad	Chromium	7440-47-3	µg/kg	13221.84	4.0E+02	**3.3E+01**	3.8E+04	3.5E-01
130-D-1_Staging Pile Area Footprint	non-Rad	Chrysene	218-01-9	µg/kg	29.00	1.8E+04	1.6E-03	4.5E+04	6.5E-04
130-D-1_Staging Pile Area Footprint	non-Rad	Cobalt	7440-48-4	µg/kg	8623.51	1.3E+04	6.6E-01	1.1E+05	7.7E-02
130-D-1_Staging Pile Area Footprint	non-Rad	Copper	7440-50-8	µg/kg	18874.02	5.0E+04	3.8E-01	1.1E+05	1.8E-01
130-D-1_Staging Pile Area Footprint	non-Rad	Diethylphthalate	84-66-2	µg/kg	45.00	1.0E+05	4.5E-04	No Value	--
130-D-1_Staging Pile Area Footprint	non-Rad	Lead	7439-92-1	µg/kg	7527.32	5.0E+04	1.5E-01	3.6E+04	2.1E-01
130-D-1_Staging Pile Area Footprint	non-Rad	Manganese	7439-96-5	µg/kg	379422.46	2.2E+05	**1.7E+00**	5.8E+06	6.5E-02
130-D-1_Staging Pile Area Footprint	non-Rad	Mercury	7439-97-6	µg/kg	10.12	1.0E+02	1.0E-01	1.9E+03	5.4E-03
130-D-1_Staging Pile Area Footprint	non-Rad	Methylene chloride	75-09-2	µg/kg	1.76	No Value	--	1.7E+05	1.1E-05
130-D-1_Staging Pile Area Footprint	non-Rad	Molybdenum	7439-98-7	µg/kg	300.00	2.0E+03	1.5E-01	1.4E+04	2.2E-02
130-D-1_Staging Pile Area Footprint	non-Rad	Nickel	7440-02-0	µg/kg	14522.16	3.0E+04	4.8E-01	3.3E+04	4.5E-01
130-D-1_Staging Pile Area Footprint	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	µg/kg	3161.82	2.0E+05	1.6E-02	3.6E+08	8.9E-06
130-D-1_Staging Pile Area Footprint	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	µg/kg	18492.44	No Value	--	No Value	--
130-D-1_Staging Pile Area Footprint	non-Rad	Vanadium	7440-62-2	µg/kg	43838.86	2.0E+03	**2.2E+01**	3.1E+04	**1.4E+00**
130-D-1_Staging Pile Area Footprint	non-Rad	Zinc	7440-66-6	µg/kg	45472.79	5.0E+04	9.1E-01	6.8E+04	6.7E-01
132-D-1_Shallow	non-Rad	Aroclor HI	---	µg/kg	--	--	5.9E-03	--	1.6E-01
132-D-1_Shallow	non-Rad	Aroclor-1254	11097-69-1	µg/kg	6.30	4.0E+04	1.6E-04	1.5E+03	4.3E-03
132-D-1_Shallow	non-Rad	Aroclor-1260	11096-82-5	µg/kg	230.00	4.0E+04	5.8E-03	1.5E+03	1.6E-01
132-D-1_Shallow	non-Rad	Arsenic	7440-38-2	µg/kg	1758.33	1.0E+04	1.8E-01	1.9E+05	9.3E-03
132-D-1_Shallow	non-Rad	Barium	7440-39-3	µg/kg	63595.37	3.3E+05	1.9E-01	1.3E+06	4.8E-02
132-D-1_Shallow	non-Rad	Benzo(b)fluoranthene	205-99-2	µg/kg	4.00	1.8E+04	2.2E-04	3.9E+04	1.0E-04
132-D-1_Shallow	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	660.00	1.0E+05	6.6E-03	4.5E+04	1.5E-02
132-D-1_Shallow	non-Rad	Boron	7440-42-8	µg/kg	1150.00	5.0E+02	**2.3E+00**	1.3E+05	8.7E-03
132-D-1_Shallow	non-Rad	Cadmium	7440-43-9	µg/kg	61.83	4.0E+03	1.6E-02	1.6E+03	3.8E-02
132-D-1_Shallow	Rad	Carbon-14	14762-75-5	pCi/g	1.19	6.1E+04	2.0E-05	3.2E+01	3.8E-02
132-D-1_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.14	2.2E+03	6.2E-05	9.2E+02	1.5E-04
132-D-1_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	6667.21	4.0E+02	**1.7E+01**	3.8E+04	1.8E-01
132-D-1_Shallow	non-Rad	Chrysene	218-01-9	µg/kg	4.90	1.8E+04	2.7E-04	4.5E+04	1.1E-04
132-D-1_Shallow	non-Rad	Cobalt	7440-48-4	µg/kg	10535.47	1.3E+04	8.1E-01	1.1E+05	9.5E-02
132-D-1_Shallow	non-Rad	Copper	7440-50-8	µg/kg	16707.41	5.0E+04	3.3E-01	1.1E+05	1.6E-01
132-D-1_Shallow	non-Rad	Hexavalent Chromium	18540-29-9	µg/kg	164.00	No Value	--	1.3E+06	1.3E-04
132-D-1_Shallow	non-Rad	Lead	7439-92-1	µg/kg	5177.23	5.0E+04	1.0E-01	3.6E+04	1.5E-01
132-D-1_Shallow	non-Rad	Manganese	7439-96-5	µg/kg	314188.39	2.2E+05	**1.4E+00**	5.8E+06	5.4E-02
132-D-1_Shallow	non-Rad	Mercury	7439-97-6	µg/kg	1000.00	1.0E+02	**1.0E+01**	1.9E+03	5.4E-01
132-D-1_Shallow	non-Rad	Molybdenum	7439-98-7	µg/kg	580.00	2.0E+03	2.9E-01	1.4E+04	4.2E-02
132-D-1_Shallow	non-Rad	Nickel	7440-02-0	µg/kg	9450.72	3.0E+04	3.2E-01	3.3E+04	2.9E-01
132-D-1_Shallow	Rad	Rads SOF	---	pCi/g	--	--	1.0E-04	--	4.0E-02
132-D-1_Shallow	non-Rad	Selenium	7782-49-2	µg/kg	860.00	5.2E+02	**1.7E+00**	1.9E+03	4.5E-01
132-D-1_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	1092.49	5.0E+03	2.2E-01	3.6E+04	1.4E-03
132-D-1_Shallow	Rad	Tritium	10028-17-8	pCi/g	0.84	1.7E+06	5.0E-07	4.2E+02	2.0E-03
132-D-1_Shallow	Rad	Uranium-234	13966-29-5	pCi/g	0.23	5.2E+04	4.4E-06	6.4E+03	3.6E-05
132-D-1_Shallow	Rad	Uranium-238	U-238	pCi/g	0.22	1.6E+04	1.4E-05	5.2E+03	4.3E-05
132-D-1_Shallow	non-Rad	Vanadium	7440-62-2	µg/kg	69877.02	2.0E+03	**3.5E+01**	3.1E+04	**2.2E+00**
132-D-1_Shallow	non-Rad	Zinc	7440-66-6	µg/kg	48502.16	5.0E+04	9.7E-01	6.8E+04	7.2E-01

Table H-7. 100-D Area Ecological Evaluation Based on SSLs for Surface Soils (0 to 15 feet [0 to 4.6m])

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
132-D-1_Staging Pile Area Footprint	non-Rad	Anthracene	120-12-7	µg/kg	39.08	2.9E+04	1.4E-03	6.8E+05	5.8E-05
132-D-1_Staging Pile Area Footprint	non-Rad	Aroclor HI	---	µg/kg	--	--	1.6E-03	--	1.3E-01
132-D-1_Staging Pile Area Footprint	non-Rad	Aroclor-1248	12672-29-6	µg/kg	35.00	4.0E+04	8.8E-04	3.3E+02	1.1E-01
132-D-1_Staging Pile Area Footprint	non-Rad	Aroclor-1254	11097-69-1	µg/kg	10.00	4.0E+04	2.5E-04	1.5E+03	6.8E-03
132-D-1_Staging Pile Area Footprint	non-Rad	Aroclor-1260	11096-82-5	µg/kg	18.00	4.0E+04	4.5E-04	1.5E+03	1.2E-02
132-D-1_Staging Pile Area Footprint	non-Rad	Arsenic	7440-38-2	µg/kg	3513.12	1.0E+04	3.5E-01	1.9E+05	1.9E-02
132-D-1_Staging Pile Area Footprint	non-Rad	Barium	7440-39-3	µg/kg	65825.44	3.3E+05	2.0E-01	1.3E+06	5.0E-02
132-D-1_Staging Pile Area Footprint	non-Rad	Benzo(a)anthracene	56-55-3	µg/kg	224.96	1.8E+04	1.3E-02	6.4E+04	3.5E-03
132-D-1_Staging Pile Area Footprint	non-Rad	Benzo(a)pyrene	50-32-8	µg/kg	174.16	1.8E+04	9.7E-03	7.6E+04	2.3E-03
132-D-1_Staging Pile Area Footprint	non-Rad	Benzo(b)fluoranthene	205-99-2	µg/kg	160.78	1.8E+04	8.9E-03	3.9E+04	4.1E-03
132-D-1_Staging Pile Area Footprint	non-Rad	Benzo(k)fluoranthene	207-08-9	µg/kg	59.42	1.8E+04	3.3E-03	3.9E+04	1.5E-03
132-D-1_Staging Pile Area Footprint	non-Rad	Beryllium	7440-41-7	µg/kg	48.50	1.0E+04	4.9E-03	1.4E+04	3.5E-03
132-D-1_Staging Pile Area Footprint	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	82.13	1.0E+05	8.2E-04	4.5E+04	1.8E-03
132-D-1_Staging Pile Area Footprint	non-Rad	Boron	7440-42-8	µg/kg	1225.00	5.0E+02	**2.5E+00**	1.3E+05	9.2E-03
132-D-1_Staging Pile Area Footprint	non-Rad	Cadmium	7440-43-9	µg/kg	90.96	4.0E+03	2.3E-02	1.6E+03	5.6E-02
132-D-1_Staging Pile Area Footprint	Rad	Cesium-137	10045-97-3	pCi/g	0.59	2.2E+03	2.7E-04	9.2E+02	6.4E-04
132-D-1_Staging Pile Area Footprint	non-Rad	Chromium	7440-47-3	µg/kg	8495.66	4.0E+02	**2.1E+01**	3.8E+04	2.2E-01
132-D-1_Staging Pile Area Footprint	non-Rad	Chrysene	218-01-9	µg/kg	193.13	1.8E+04	1.1E-02	4.5E+04	4.3E-03
132-D-1_Staging Pile Area Footprint	non-Rad	Cobalt	7440-48-4	µg/kg	9153.78	1.3E+04	7.0E-01	1.1E+05	8.2E-02
132-D-1_Staging Pile Area Footprint	non-Rad	Copper	7440-50-8	µg/kg	16081.49	5.0E+04	3.2E-01	1.1E+05	1.5E-01
132-D-1_Staging Pile Area Footprint	non-Rad	Dibenz[a,h]anthracene	53-70-3	µg/kg	54.00	1.8E+04	3.0E-03	4.4E+04	1.2E-03
132-D-1_Staging Pile Area Footprint	non-Rad	Diethylphthalate	84-66-2	µg/kg	44.46	1.0E+05	4.5E-04	No Value	--
132-D-1_Staging Pile Area Footprint	non-Rad	Fluoranthene	206-44-0	µg/kg	402.25	1.8E+04	2.2E-02	8.4E+05	4.8E-04
132-D-1_Staging Pile Area Footprint	non-Rad	Fluorene	86-73-7	µg/kg	68.00	2.9E+04	2.3E-03	1.8E+05	3.9E-04
132-D-1_Staging Pile Area Footprint	non-Rad	Hexavalent Chromium	18540-29-9	µg/kg	185.29	No Value	--	1.3E+06	1.5E-04
132-D-1_Staging Pile Area Footprint	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	78.75	1.8E+04	4.4E-03	3.6E+04	2.2E-03
132-D-1_Staging Pile Area Footprint	non-Rad	Lead	7439-92-1	µg/kg	6740.08	5.0E+04	1.4E-01	3.6E+04	1.9E-01
132-D-1_Staging Pile Area Footprint	non-Rad	Manganese	7439-96-5	µg/kg	299872.83	2.2E+05	**1.4E+00**	5.8E+06	5.2E-02
132-D-1_Staging Pile Area Footprint	non-Rad	Mercury	7439-97-6	µg/kg	680.47	1.0E+02	**6.8E+00**	1.9E+03	3.7E-01
132-D-1_Staging Pile Area Footprint	non-Rad	Molybdenum	7439-98-7	µg/kg	240.00	2.0E+03	1.2E-01	1.4E+04	1.7E-02
132-D-1_Staging Pile Area Footprint	non-Rad	Nickel	7440-02-0	µg/kg	10760.98	3.0E+04	3.6E-01	3.3E+04	3.3E-01
132-D-1_Staging Pile Area Footprint	non-Rad	Pyrene	129-00-0	µg/kg	438.83	1.8E+04	2.4E-02	6.0E+05	7.3E-04
132-D-1_Staging Pile Area Footprint	Rad	Rads SOF	---	pCi/g	--	--	2.8E-04	--	8.7E-04
132-D-1_Staging Pile Area Footprint	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	480.50	5.0E+03	9.6E-02	3.6E+04	6.1E-04
132-D-1_Staging Pile Area Footprint	Rad	Tritium	10028-17-8	pCi/g	0.06	1.7E+06	3.9E-08	4.2E+02	1.6E-04
132-D-1_Staging Pile Area Footprint	Rad	Uranium-234	13966-29-5	pCi/g	0.21	5.2E+04	4.1E-06	6.4E+03	3.4E-05
132-D-1_Staging Pile Area Footprint	Rad	Uranium-238	U-238	pCi/g	0.19	1.6E+04	1.2E-05	5.2E+03	3.7E-05
132-D-1_Staging Pile Area Footprint	non-Rad	Vanadium	7440-62-2	µg/kg	57749.03	2.0E+03	**2.9E+01**	3.1E+04	**1.9E+00**
132-D-1_Staging Pile Area Footprint	non-Rad	Zinc	7440-66-6	µg/kg	48544.42	5.0E+04	9.7E-01	6.8E+04	7.2E-01
1607-D1_Shallow_1	non-Rad	Arsenic	7440-38-2	µg/kg	3395.55	1.0E+04	3.4E-01	1.9E+05	1.8E-02
1607-D1_Shallow_1	non-Rad	Barium	7440-39-3	µg/kg	64670.96	3.3E+05	2.0E-01	1.3E+06	4.9E-02
1607-D1_Shallow_1	non-Rad	Beryllium	7440-41-7	µg/kg	228.46	1.0E+04	2.3E-02	1.4E+04	1.6E-02
1607-D1_Shallow_1	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	90.42	1.0E+05	9.0E-04	4.5E+04	2.0E-03
1607-D1_Shallow_1	non-Rad	Boron	7440-42-8	µg/kg	1325.00	5.0E+02	**2.7E+00**	1.3E+05	1.0E-02
1607-D1_Shallow_1	non-Rad	Cadmium	7440-43-9	µg/kg	78.67	4.0E+03	2.0E-02	1.6E+03	4.8E-02
1607-D1_Shallow_1	non-Rad	Chromium	7440-47-3	µg/kg	12828.08	4.0E+02	**3.2E+01**	3.8E+04	3.4E-01
1607-D1_Shallow_1	non-Rad	Cobalt	7440-48-4	µg/kg	5716.56	1.3E+04	4.4E-01	1.1E+05	5.1E-02
1607-D1_Shallow_1	non-Rad	Copper	7440-50-8	µg/kg	12880.98	5.0E+04	2.6E-01	1.1E+05	1.2E-01

Table H-7. 100-D Area Ecological Evaluation Based on SSLs for Surface Soils (0 to 15 feet [0 to 4.6m])

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
1607-D1_Shallow_1	non-Rad	Lead	7439-92-1	µg/kg	4019.95	5.0E+04	8.0E-02	3.6E+04	1.1E-01
1607-D1_Shallow_1	non-Rad	Manganese	7439-96-5	µg/kg	273291.00	2.2E+05	**1.2E+00**	5.8E+06	4.7E-02
1607-D1_Shallow_1	non-Rad	Mercury	7439-97-6	µg/kg	6.72	1.0E+02	6.7E-02	1.9E+03	3.6E-03
1607-D1_Shallow_1	non-Rad	Nickel	7440-02-0	µg/kg	11264.30	3.0E+04	3.8E-01	3.3E+04	3.5E-01
1607-D1_Shallow_1	non-Rad	Nitrogen in Nitrate	NO3-N	µg/kg	1366.67	No Value	--	No Value	--
1607-D1_Shallow_1	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	µg/kg	1650.00	No Value	--	No Value	--
1607-D1_Shallow_1	non-Rad	Vanadium	7440-62-2	µg/kg	38625.09	2.0E+03	**1.9E+01**	3.1E+04	**1.2E+00**
1607-D1_Shallow_1	non-Rad	Zinc	7440-66-6	µg/kg	35700.20	5.0E+04	7.1E-01	6.8E+04	5.3E-01
1607-D1_Shallow_2	non-Rad	Arsenic	7440-38-2	µg/kg	3837.29	1.0E+04	3.8E-01	1.9E+05	2.0E-02
1607-D1_Shallow_2	non-Rad	Barium	7440-39-3	µg/kg	67938.39	3.3E+05	2.1E-01	1.3E+06	5.1E-02
1607-D1_Shallow_2	non-Rad	Beryllium	7440-41-7	µg/kg	245.31	1.0E+04	2.5E-02	1.4E+04	1.8E-02
1607-D1_Shallow_2	non-Rad	Boron	7440-42-8	µg/kg	1248.02	5.0E+02	**2.5E+00**	1.3E+05	9.4E-03
1607-D1_Shallow_2	non-Rad	Cadmium	7440-43-9	µg/kg	78.24	4.0E+03	2.0E-02	1.6E+03	4.8E-02
1607-D1_Shallow_2	non-Rad	Chromium	7440-47-3	µg/kg	13336.25	4.0E+02	**3.3E+01**	3.8E+04	3.5E-01
1607-D1_Shallow_2	non-Rad	Cobalt	7440-48-4	µg/kg	5678.74	1.3E+04	4.4E-01	1.1E+05	5.1E-02
1607-D1_Shallow_2	non-Rad	Copper	7440-50-8	µg/kg	13122.98	5.0E+04	2.6E-01	1.1E+05	1.2E-01
1607-D1_Shallow_2	non-Rad	Fluoride	16984-48-8	µg/kg	990.00	No Value	--	2.3E+06	4.3E-04
1607-D1_Shallow_2	non-Rad	Lead	7439-92-1	µg/kg	4185.70	5.0E+04	8.4E-02	3.6E+04	1.2E-01
1607-D1_Shallow_2	non-Rad	Manganese	7439-96-5	µg/kg	282970.51	2.2E+05	**1.3E+00**	5.8E+06	4.9E-02
1607-D1_Shallow_2	non-Rad	Mercury	7439-97-6	µg/kg	8.01	1.0E+02	8.0E-02	1.9E+03	4.3E-03
1607-D1_Shallow_2	non-Rad	Nickel	7440-02-0	µg/kg	11792.08	3.0E+04	3.9E-01	3.3E+04	3.6E-01
1607-D1_Shallow_2	non-Rad	Nitrogen in Nitrate	NO3-N	µg/kg	940.31	No Value	--	No Value	--
1607-D1_Shallow_2	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	µg/kg	1444.17	No Value	--	No Value	--
1607-D1_Shallow_2	non-Rad	Vanadium	7440-62-2	µg/kg	37046.30	2.0E+03	**1.9E+01**	3.1E+04	**1.2E+00**
1607-D1_Shallow_2	non-Rad	Zinc	7440-66-6	µg/kg	35076.82	5.0E+04	7.0E-01	6.8E+04	5.2E-01
1607-D1_Shallow_Focused	non-Rad	Arsenic	7440-38-2	µg/kg	3400.00	1.0E+04	3.4E-01	1.9E+05	1.8E-02
1607-D1_Shallow_Focused	non-Rad	Barium	7440-39-3	µg/kg	84000.00	3.3E+05	2.6E-01	1.3E+06	6.4E-02
1607-D1_Shallow_Focused	non-Rad	Beryllium	7440-41-7	µg/kg	240.00	1.0E+04	2.4E-02	1.4E+04	1.7E-02
1607-D1_Shallow_Focused	non-Rad	Boron	7440-42-8	µg/kg	1400.00	5.0E+02	**2.8E+00**	1.3E+05	1.1E-02
1607-D1_Shallow_Focused	non-Rad	Cadmium	7440-43-9	µg/kg	86.00	4.0E+03	2.2E-02	1.6E+03	5.3E-02
1607-D1_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	12400.00	4.0E+02	**3.1E+01**	3.8E+04	3.3E-01
1607-D1_Shallow_Focused	non-Rad	Cobalt	7440-48-4	µg/kg	5400.00	1.3E+04	4.2E-01	1.1E+05	4.8E-02
1607-D1_Shallow_Focused	non-Rad	Copper	7440-50-8	µg/kg	12300.00	5.0E+04	2.5E-01	1.1E+05	1.2E-01
1607-D1_Shallow_Focused	non-Rad	Lead	7439-92-1	µg/kg	4000.00	5.0E+04	8.0E-02	3.6E+04	1.1E-01
1607-D1_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	273000.00	2.2E+05	**1.2E+00**	5.8E+06	4.7E-02
1607-D1_Shallow_Focused	non-Rad	Mercury	7439-97-6	µg/kg	18.00	1.0E+02	1.8E-01	1.9E+03	9.6E-03
1607-D1_Shallow_Focused	non-Rad	Nickel	7440-02-0	µg/kg	10900.00	3.0E+04	3.6E-01	3.3E+04	3.4E-01
1607-D1_Shallow_Focused	non-Rad	Nitrogen in Nitrate	NO3-N	µg/kg	4500.00	No Value	--	No Value	--
1607-D1_Shallow_Focused	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	µg/kg	2600.00	No Value	--	No Value	--
1607-D1_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	34500.00	2.0E+03	**1.7E+01**	3.1E+04	**1.1E+00**
1607-D1_Shallow_Focused	non-Rad	Zinc	7440-66-6	µg/kg	34200.00	5.0E+04	6.8E-01	6.8E+04	5.0E-01
1607-D1_Staging Pile Area Footprint	non-Rad	Aroclor-1260	11096-82-5	µg/kg	2.90	4.0E+04	7.3E-05	1.5E+03	2.0E-03
1607-D1_Staging Pile Area Footprint	non-Rad	Arsenic	7440-38-2	µg/kg	3159.03	1.0E+04	3.2E-01	1.9E+05	1.7E-02
1607-D1_Staging Pile Area Footprint	non-Rad	Barium	7440-39-3	µg/kg	61877.75	3.3E+05	1.9E-01	1.3E+06	4.7E-02
1607-D1_Staging Pile Area Footprint	non-Rad	Beryllium	7440-41-7	µg/kg	223.94	1.0E+04	2.2E-02	1.4E+04	1.6E-02
1607-D1_Staging Pile Area Footprint	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	660.00	1.0E+05	6.6E-03	4.5E+04	1.5E-02
1607-D1_Staging Pile Area Footprint	non-Rad	Cadmium	7440-43-9	µg/kg	77.24	4.0E+03	1.9E-02	1.6E+03	4.7E-02
1607-D1_Staging Pile Area Footprint	non-Rad	Chromium	7440-47-3	µg/kg	11970.87	4.0E+02	**3.0E+01**	3.8E+04	3.1E-01

Table H-7. 100-D Area Ecological Evaluation Based on SSLs for Surface Soils (0 to 15 feet [0 to 4.6m])

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
1607-D1_Staging Pile Area Footprint	non-Rad	Cobalt	7440-48-4	µg/kg	6118.68	1.3E+04	4.7E-01	1.1E+05	5.5E-02
1607-D1_Staging Pile Area Footprint	non-Rad	Copper	7440-50-8	µg/kg	13304.06	5.0E+04	2.7E-01	1.1E+05	1.2E-01
1607-D1_Staging Pile Area Footprint	non-Rad	Lead	7439-92-1	µg/kg	4178.58	5.0E+04	8.4E-02	3.6E+04	1.2E-01
1607-D1_Staging Pile Area Footprint	non-Rad	Manganese	7439-96-5	µg/kg	268017.75	2.2E+05	**1.2E+00**	5.8E+06	4.6E-02
1607-D1_Staging Pile Area Footprint	non-Rad	Mercury	7439-97-6	µg/kg	15.00	1.0E+02	1.5E-01	1.9E+03	8.0E-03
1607-D1_Staging Pile Area Footprint	non-Rad	Molybdenum	7439-98-7	µg/kg	260.00	2.0E+03	1.3E-01	1.4E+04	1.9E-02
1607-D1_Staging Pile Area Footprint	non-Rad	Nickel	7440-02-0	µg/kg	11512.21	3.0E+04	3.8E-01	3.3E+04	3.5E-01
1607-D1_Staging Pile Area Footprint	non-Rad	Nitrogen in Nitrate	NO3-N	µg/kg	4900.00	No Value	--	No Value	--
1607-D1_Staging Pile Area Footprint	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	µg/kg	3225.55	No Value	--	No Value	--
1607-D1_Staging Pile Area Footprint	non-Rad	Vanadium	7440-62-2	µg/kg	39209.61	2.0E+03	**2.0E+01**	3.1E+04	**1.3E+00**
1607-D1_Staging Pile Area Footprint	non-Rad	Zinc	7440-66-6	µg/kg	34383.13	5.0E+04	6.9E-01	6.8E+04	5.1E-01
1607-D2-1_Shallow	Rad	Americium-241	14596-10-2	pCi/g	0.05	2.2E+04	2.3E-06	4.8E+03	1.0E-05
1607-D2-1_Shallow	non-Rad	Arsenic	7440-38-2	µg/kg	1100.00	1.0E+04	1.1E-01	1.9E+05	5.8E-03
1607-D2-1_Shallow	non-Rad	Barium	7440-39-3	µg/kg	62400.00	3.3E+05	1.9E-01	1.3E+06	4.7E-02
1607-D2-1_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	5900.00	4.0E+02	**1.5E+01**	3.8E+04	1.6E-01
1607-D2-1_Shallow	non-Rad	Lead	7439-92-1	µg/kg	1900.00	5.0E+04	3.8E-02	3.6E+04	5.3E-02
1607-D2-1_Shallow	Rad	Plutonium-238	13981-16-3	pCi/g	0.03	1.8E+04	1.6E-06	6.0E+03	4.6E-06
1607-D2-1_Shallow	Rad	Plutonium-239/240	PU-239/240	pCi/g	0.38	1.3E+04	3.0E-05	6.3E+03	6.0E-05
1607-D2-1_Shallow	Rad	Rads SOF	---	pCi/g	--	--	9.6E-05	--	3.4E-04
1607-D2-1_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	2268.33	5.0E+03	4.5E-01	3.6E+04	2.9E-03
1607-D2-1_Shallow	Rad	Uranium-234	13966-29-5	pCi/g	0.67	5.2E+04	1.3E-05	6.4E+03	1.1E-04
1607-D2-1_Shallow	Rad	Uranium-235	15117-96-1	pCi/g	0.05	2.7E+04	1.7E-06	4.4E+03	1.1E-05
1607-D2-1_Shallow	Rad	Uranium-238	U-238	pCi/g	0.76	1.6E+04	4.9E-05	5.2E+03	1.5E-04
1607-D2-2_Shallow	non-Rad	Antimony	7440-36-0	µg/kg	1210.76	5.0E+03	2.4E-01	6.0E+03	2.0E-01
1607-D2-2_Shallow	non-Rad	Aroclor HI	---	µg/kg	--	--	1.5E-02	--	4.1E-01
1607-D2-2_Shallow	non-Rad	Aroclor-1254	11097-69-1	µg/kg	447.00	4.0E+04	1.1E-02	1.5E+03	3.0E-01
1607-D2-2_Shallow	non-Rad	Aroclor-1260	11096-82-5	µg/kg	156.88	4.0E+04	3.9E-03	1.5E+03	1.1E-01
1607-D2-2_Shallow	non-Rad	Arsenic	7440-38-2	µg/kg	3481.29	1.0E+04	3.5E-01	1.9E+05	1.8E-02
1607-D2-2_Shallow	non-Rad	Barium	7440-39-3	µg/kg	249126.32	3.3E+05	7.6E-01	1.3E+06	1.9E-01
1607-D2-2_Shallow	non-Rad	Beryllium	7440-41-7	µg/kg	342.99	1.0E+04	3.4E-02	1.4E+04	2.5E-02
1607-D2-2_Shallow	non-Rad	Boron	7440-42-8	µg/kg	1842.45	5.0E+02	**3.7E+00**	1.3E+05	1.4E-02
1607-D2-2_Shallow	non-Rad	Cadmium	7440-43-9	µg/kg	377.83	4.0E+03	9.5E-02	1.6E+03	2.3E-01
1607-D2-2_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.35	2.2E+03	1.6E-04	9.2E+02	3.8E-04
1607-D2-2_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	19771.25	4.0E+02	**4.9E+01**	3.8E+04	5.2E-01
1607-D2-2_Shallow	non-Rad	Cobalt	7440-48-4	µg/kg	7840.28	1.3E+04	6.0E-01	1.1E+05	7.0E-02
1607-D2-2_Shallow	non-Rad	Copper	7440-50-8	µg/kg	25776.95	5.0E+04	5.2E-01	1.1E+05	2.4E-01
1607-D2-2_Shallow	non-Rad	Fluoride	16984-48-8	µg/kg	1700.00	No Value	--	2.3E+06	7.5E-04
1607-D2-2_Shallow	non-Rad	Hexavalent Chromium	18540-29-9	µg/kg	300.00	No Value	--	1.3E+06	2.4E-04
1607-D2-2_Shallow	non-Rad	Lead	7439-92-1	µg/kg	8699.09	5.0E+04	1.7E-01	3.6E+04	2.4E-01
1607-D2-2_Shallow	non-Rad	Manganese	7439-96-5	µg/kg	344088.69	2.2E+05	**1.6E+00**	5.8E+06	5.9E-02
1607-D2-2_Shallow	non-Rad	Mercury	7439-97-6	µg/kg	483.64	1.0E+02	**4.8E+00**	1.9E+03	2.6E-01
1607-D2-2_Shallow	non-Rad	Molybdenum	7439-98-7	µg/kg	643.48	2.0E+03	3.2E-01	1.4E+04	4.6E-02
1607-D2-2_Shallow	non-Rad	Nickel	7440-02-0	µg/kg	13308.77	3.0E+04	4.4E-01	3.3E+04	4.1E-01
1607-D2-2_Shallow	non-Rad	Nitrate	14797-55-8	µg/kg	204415.36	No Value	--	3.4E+08	6.0E-04
1607-D2-2_Shallow	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	µg/kg	55960.48	No Value	--	No Value	--
1607-D2-2_Shallow	Rad	Rads SOF	---	pCi/g	--	--	2.4E-04	--	7.0E-04
1607-D2-2_Shallow	non-Rad	Silver	7440-22-4	µg/kg	11800.00	2.0E+03	**5.9E+00**	5.0E+04	2.4E-01
1607-D2-2_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	2789.45	5.0E+03	5.6E-01	3.6E+04	3.6E-03

Table H-7. 100-D Area Ecological Evaluation Based on SSLs for Surface Soils (0 to 15 feet [0 to 4.6m])

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
1607-D2-2_Shallow	Rad	Uranium-233/234	U-233/234	pCi/g	0.86	5.2E+04	1.7E-05	6.4E+03	1.3E-04
1607-D2-2_Shallow	Rad	Uranium-238	U-238	pCi/g	0.94	1.6E+04	6.0E-05	5.2E+03	1.8E-04
1607-D2-2_Shallow	non-Rad	Vanadium	7440-62-2	µg/kg	68019.95	2.0E+03	**3.4E+01**	3.1E+04	**2.2E+00**
1607-D2-2_Shallow	non-Rad	Zinc	7440-66-6	µg/kg	91971.22	5.0E+04	**1.8E+00**	6.8E+04	**1.4E+00**
1607-D2-3_Overburden	non-Rad	Barium	7440-39-3	µg/kg	55844.66	3.3E+05	1.7E-01	1.3E+06	4.2E-02
1607-D2-3_Overburden	Rad	Cesium-137	10045-97-3	pCi/g	0.17	2.2E+03	7.8E-05	9.2E+02	1.9E-04
1607-D2-3_Overburden	non-Rad	Chromium	7440-47-3	µg/kg	6597.11	4.0E+02	**1.7E+01**	3.8E+04	1.7E-01
1607-D2-3_Overburden	Rad	Cobalt-60	10198-40-0	pCi/g	0.08	6.1E+03	1.2E-05	8.1E+02	9.3E-05
1607-D2-3_Overburden	Rad	Europium-152	14683-23-9	pCi/g	0.60	1.5E+04	4.1E-05	1.7E+03	3.5E-04
1607-D2-3_Overburden	non-Rad	Lead	7439-92-1	µg/kg	5699.84	5.0E+04	1.1E-01	3.6E+04	1.6E-01
1607-D2-3_Overburden	Rad	Rads SOF	---	pCi/g	--	--	1.3E-04	--	6.2E-04
1607-D2-3_Shallow	non-Rad	Barium	7440-39-3	µg/kg	88075.13	3.3E+05	2.7E-01	1.3E+06	6.7E-02
1607-D2-3_Shallow	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	25.00	1.0E+05	2.5E-04	4.5E+04	5.5E-04
1607-D2-3_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.05	2.2E+03	2.3E-05	9.2E+02	5.5E-05
1607-D2-3_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	9575.55	4.0E+02	**2.4E+01**	3.8E+04	2.5E-01
1607-D2-3_Shallow	Rad	Europium-152	14683-23-9	pCi/g	0.22	1.5E+04	1.5E-05	1.7E+03	1.3E-04
1607-D2-3_Shallow	non-Rad	Lead	7439-92-1	µg/kg	4939.08	5.0E+04	9.9E-02	3.6E+04	1.4E-01
1607-D2-3_Shallow	non-Rad	Mercury	7439-97-6	µg/kg	31.42	1.0E+02	3.1E-01	1.9E+03	1.7E-02
1607-D2-3_Shallow	Rad	Rads SOF	---	pCi/g	--	--	3.8E-05	--	1.8E-04
1607-D2-4_Shallow	non-Rad	Barium	7440-39-3	µg/kg	60300.00	3.3E+05	1.8E-01	1.3E+06	4.6E-02
1607-D2-4_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	6100.00	4.0E+02	**1.5E+01**	3.8E+04	1.6E-01
1607-D2-4_Shallow	Rad	Europium-152	14683-23-9	pCi/g	0.04	1.5E+04	2.5E-06	1.7E+03	2.1E-05
1607-D2-4_Shallow	non-Rad	Lead	7439-92-1	µg/kg	4000.00	5.0E+04	8.0E-02	3.6E+04	1.1E-01
1607-D2-4_Shallow	Rad	Rads SOF	---	pCi/g	--	--	4.2E-05	--	1.9E-04
1607-D2-4_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	1339.59	5.0E+03	2.7E-01	3.6E+04	1.7E-03
1607-D2-4_Shallow	Rad	Uranium-233/234	U-233/234	pCi/g	0.53	5.2E+04	1.0E-05	6.4E+03	8.3E-05
1607-D2-4_Shallow	Rad	Uranium-238	U-238	pCi/g	0.45	1.6E+04	2.9E-05	5.2E+03	8.7E-05
1607-D4_Shallow_Focused	non-Rad	Arsenic	7440-38-2	µg/kg	1500.00	1.0E+04	1.5E-01	1.9E+05	7.9E-03
1607-D4_Shallow_Focused	non-Rad	Barium	7440-39-3	µg/kg	41900.00	3.3E+05	1.3E-01	1.3E+06	3.2E-02
1607-D4_Shallow_Focused	non-Rad	Beryllium	7440-41-7	µg/kg	900.00	1.0E+04	9.0E-02	1.4E+04	6.5E-02
1607-D4_Shallow_Focused	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	100.00	1.0E+05	1.0E-03	4.5E+04	2.2E-03
1607-D4_Shallow_Focused	non-Rad	Boron	7440-42-8	µg/kg	1100.00	5.0E+02	**2.2E+00**	1.3E+05	8.3E-03
1607-D4_Shallow_Focused	non-Rad	Cadmium	7440-43-9	µg/kg	350.00	4.0E+03	8.8E-02	1.6E+03	2.2E-01
1607-D4_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	3500.00	4.0E+02	**8.8E+00**	3.8E+04	9.2E-02
1607-D4_Shallow_Focused	non-Rad	Cobalt	7440-48-4	µg/kg	7400.00	1.3E+04	5.7E-01	1.1E+05	6.6E-02
1607-D4_Shallow_Focused	non-Rad	Copper	7440-50-8	µg/kg	14700.00	5.0E+04	2.9E-01	1.1E+05	1.4E-01
1607-D4_Shallow_Focused	non-Rad	Di-n-butylphthalate	84-74-2	µg/kg	60.00	No Value	--	No Value	--
1607-D4_Shallow_Focused	non-Rad	Lead	7439-92-1	µg/kg	2600.00	5.0E+04	5.2E-02	3.6E+04	7.3E-02
1607-D4_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	269000.00	2.2E+05	**1.2E+00**	5.8E+06	4.6E-02
1607-D4_Shallow_Focused	non-Rad	Molybdenum	7439-98-7	µg/kg	280.00	2.0E+03	1.4E-01	1.4E+04	2.0E-02
1607-D4_Shallow_Focused	non-Rad	Nickel	7440-02-0	µg/kg	8100.00	3.0E+04	2.7E-01	3.3E+04	2.5E-01
1607-D4_Shallow_Focused	non-Rad	Nitrate	14797-55-8	µg/kg	2460.00	No Value	--	3.4E+08	7.2E-06
1607-D4_Shallow_Focused	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	µg/kg	715.00	No Value	--	No Value	--
1607-D4_Shallow_Focused	non-Rad	Uranium	7440-61-1	µg/kg	1.58	5.0E+03	3.2E-04	3.6E+04	2.0E-06
1607-D4_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	54500.00	2.0E+03	**2.7E+01**	3.1E+04	**1.8E+00**
1607-D4_Shallow_Focused	non-Rad	Zinc	7440-66-6	µg/kg	38100.00	5.0E+04	7.6E-01	6.8E+04	5.6E-01
1607-D5_Shallow	non-Rad	2,4-Dinitrophenol	51-28-5	µg/kg	370.00	No Value	--	No Value	--
1607-D5_Shallow	non-Rad	2-Methylnaphthalene	91-57-6	µg/kg	34.00	2.9E+04	1.2E-03	6.0E+03	5.7E-03

Table H-7. 100-D Area Ecological Evaluation Based on SSLs for Surface Soils (0 to 15 feet [0 to 4.6m])

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
1607-D5_Shallow	non-Rad	4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	µg/kg	28.97	No Value	--	4.0E+02	7.3E-02
1607-D5_Shallow	non-Rad	4,4'-DDT (Dichlorodiphenyltrichloroethane)	50-29-3	µg/kg	4.03	No Value	--	8.8E+02	4.6E-03
1607-D5_Shallow	non-Rad	Alpha-Chlordane	5103-71-9	µg/kg	0.80	1.0E+03	8.0E-04	5.0E+04	1.6E-05
1607-D5_Shallow	non-Rad	Anthracene	120-12-7	µg/kg	163.43	2.9E+04	5.6E-03	6.8E+05	2.4E-04
1607-D5_Shallow	non-Rad	Aroclor-1254	11097-69-1	µg/kg	12.00	4.0E+04	3.0E-04	1.5E+03	8.1E-03
1607-D5_Shallow	non-Rad	Arsenic	7440-38-2	µg/kg	3557.62	1.0E+04	3.6E-01	1.9E+05	1.9E-02
1607-D5_Shallow	non-Rad	Barium	7440-39-3	µg/kg	775391.03	3.3E+05	**2.4E+00**	1.3E+06	5.9E-01
1607-D5_Shallow	non-Rad	Benzo(a)anthracene	56-55-3	µg/kg	1962.44	1.8E+04	1.1E-01	6.4E+04	3.1E-02
1607-D5_Shallow	non-Rad	Benzo(a)pyrene	50-32-8	µg/kg	405.24	1.8E+04	2.3E-02	7.6E+04	5.3E-03
1607-D5_Shallow	non-Rad	Benzo(b)fluoranthene	205-99-2	µg/kg	449.10	1.8E+04	2.5E-02	3.9E+04	1.1E-02
1607-D5_Shallow	non-Rad	Benzo(k)fluoranthene	207-08-9	µg/kg	252.61	1.8E+04	1.4E-02	3.9E+04	6.4E-03
1607-D5_Shallow	non-Rad	Beryllium	7440-41-7	µg/kg	492.50	1.0E+04	4.9E-02	1.4E+04	3.5E-02
1607-D5_Shallow	non-Rad	Boron	7440-42-8	µg/kg	69503.46	5.0E+02	**1.4E+02**	1.3E+05	5.2E-01
1607-D5_Shallow	non-Rad	Cadmium	7440-43-9	µg/kg	96.88	4.0E+03	2.4E-02	1.6E+03	5.9E-02
1607-D5_Shallow	non-Rad	Carbazole	86-74-8	µg/kg	48.00	No Value	--	No Value	--
1607-D5_Shallow	non-Rad	Chlordane	57-74-9	µg/kg	1.20	1.0E+03	1.2E-03	5.0E+04	2.4E-05
1607-D5_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	9673.41	4.0E+02	**2.4E+01**	3.8E+04	2.5E-01
1607-D5_Shallow	non-Rad	Chrysene	218-01-9	µg/kg	778.88	1.8E+04	4.3E-02	4.5E+04	1.8E-02
1607-D5_Shallow	non-Rad	Cobalt	7440-48-4	µg/kg	10198.40	1.3E+04	7.8E-01	1.1E+05	9.2E-02
1607-D5_Shallow	non-Rad	Copper	7440-50-8	µg/kg	31565.34	5.0E+04	6.3E-01	1.1E+05	3.0E-01
1607-D5_Shallow	non-Rad	Dibenz[a,h]anthracene	53-70-3	µg/kg	99.00	1.8E+04	5.5E-03	4.4E+04	2.2E-03
1607-D5_Shallow	non-Rad	Fluoranthene	206-44-0	µg/kg	1925.24	1.8E+04	1.1E-01	8.4E+05	2.3E-03
1607-D5_Shallow	non-Rad	Fluorene	86-73-7	µg/kg	125.45	2.9E+04	4.3E-03	1.8E+05	7.2E-04
1607-D5_Shallow	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	159.75	1.8E+04	8.9E-03	3.6E+04	4.5E-03
1607-D5_Shallow	non-Rad	Lead	7439-92-1	µg/kg	106537.32	5.0E+04	**2.1E+00**	3.6E+04	**3.0E+00**
1607-D5_Shallow	non-Rad	Manganese	7439-96-5	µg/kg	330505.14	2.2E+05	**1.5E+00**	5.8E+06	5.7E-02
1607-D5_Shallow	non-Rad	Mercury	7439-97-6	µg/kg	24.68	1.0E+02	2.5E-01	1.9E+03	1.3E-02
1607-D5_Shallow	non-Rad	Molybdenum	7439-98-7	µg/kg	1201.29	2.0E+03	6.0E-01	1.4E+04	8.6E-02
1607-D5_Shallow	non-Rad	Nickel	7440-02-0	µg/kg	14373.30	3.0E+04	4.8E-01	3.3E+04	4.4E-01
1607-D5_Shallow	non-Rad	Nitrogen in Nitrate	NO3-N	µg/kg	3855.38	No Value	--	No Value	--
1607-D5_Shallow	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	µg/kg	5527.79	No Value	--	No Value	--
1607-D5_Shallow	non-Rad	Pyrene	129-00-0	µg/kg	2647.18	1.8E+04	1.5E-01	6.0E+05	4.4E-03
1607-D5_Shallow	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	µg/kg	21904.15	2.0E+05	1.1E-01	3.6E+08	6.2E-05
1607-D5_Shallow	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	µg/kg	37993.60	No Value	--	No Value	--
1607-D5_Shallow	non-Rad	Vanadium	7440-62-2	µg/kg	71779.09	2.0E+03	**3.6E+01**	3.1E+04	**2.3E+00**
1607-D5_Shallow	non-Rad	Zinc	7440-66-6	µg/kg	44033.09	5.0E+04	8.8E-01	6.8E+04	6.5E-01
600-30_Shallow_1	non-Rad	Arsenic	7440-38-2	µg/kg	3262.82	1.0E+04	3.3E-01	1.9E+05	1.7E-02
600-30_Shallow_1	non-Rad	Barium	7440-39-3	µg/kg	89130.20	3.3E+05	2.7E-01	1.3E+06	6.7E-02
600-30_Shallow_1	non-Rad	Beryllium	7440-41-7	µg/kg	292.00	1.0E+04	2.9E-02	1.4E+04	2.1E-02
600-30_Shallow_1	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	408.00	1.0E+05	4.1E-03	4.5E+04	9.0E-03
600-30_Shallow_1	non-Rad	Boron	7440-42-8	µg/kg	2431.23	5.0E+02	**4.9E+00**	1.3E+05	1.8E-02
600-30_Shallow_1	non-Rad	Cadmium	7440-43-9	µg/kg	109.21	4.0E+03	2.7E-02	1.6E+03	6.7E-02
600-30_Shallow_1	non-Rad	Chromium	7440-47-3	µg/kg	11154.36	4.0E+02	**2.8E+01**	3.8E+04	2.9E-01

Table H-7. 100-D Area Ecological Evaluation Based on SSLs for Surface Soils (0 to 15 feet [0 to 4.6m])

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
600-30_Shallow_1	non-Rad	Cobalt	7440-48-4	µg/kg	7886.78	1.3E+04	6.1E-01	1.1E+05	7.1E-02
600-30_Shallow_1	non-Rad	Copper	7440-50-8	µg/kg	15226.22	5.0E+04	3.1E-01	1.1E+05	1.4E-01
600-30_Shallow_1	non-Rad	Hexavalent Chromium	18540-29-9	µg/kg	230.00	No Value	--	1.3E+06	1.9E-04
600-30_Shallow_1	non-Rad	Lead	7439-92-1	µg/kg	4710.74	5.0E+04	9.4E-02	3.6E+04	1.3E-01
600-30_Shallow_1	non-Rad	Manganese	7439-96-5	µg/kg	360368.66	2.2E+05	**1.6E+00**	5.8E+06	6.2E-02
600-30_Shallow_1	non-Rad	Molybdenum	7439-98-7	µg/kg	385.54	2.0E+03	1.9E-01	1.4E+04	2.8E-02
600-30_Shallow_1	non-Rad	Nickel	7440-02-0	µg/kg	11429.07	3.0E+04	3.8E-01	3.3E+04	3.5E-01
600-30_Shallow_1	non-Rad	Total petroleum hydrocarbons - motor oil (high boiling)	TPH/OILH	µg/kg	6410.00	No Value	--	No Value	--
600-30_Shallow_1	non-Rad	Vanadium	7440-62-2	µg/kg	49219.04	2.0E+03	**2.5E+01**	3.1E+04	**1.6E+00**
600-30_Shallow_1	non-Rad	Zinc	7440-66-6	µg/kg	43816.48	5.0E+04	8.8E-01	6.8E+04	6.5E-01
600-30_Shallow_2	non-Rad	Arsenic	7440-38-2	µg/kg	3242.49	1.0E+04	3.2E-01	1.9E+05	1.7E-02
600-30_Shallow_2	non-Rad	Barium	7440-39-3	µg/kg	85372.92	3.3E+05	2.6E-01	1.3E+06	6.5E-02
600-30_Shallow_2	non-Rad	Beryllium	7440-41-7	µg/kg	105.42	1.0E+04	1.1E-02	1.4E+04	7.6E-03
600-30_Shallow_2	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	101.44	1.0E+05	1.0E-03	4.5E+04	2.2E-03
600-30_Shallow_2	non-Rad	Boron	7440-42-8	µg/kg	1525.00	5.0E+02	**3.1E+00**	1.3E+05	1.2E-02
600-30_Shallow_2	non-Rad	Cadmium	7440-43-9	µg/kg	103.50	4.0E+03	2.6E-02	1.6E+03	6.4E-02
600-30_Shallow_2	non-Rad	Chromium	7440-47-3	µg/kg	12014.44	4.0E+02	**3.0E+01**	3.8E+04	3.2E-01
600-30_Shallow_2	non-Rad	Cobalt	7440-48-4	µg/kg	9144.63	1.3E+04	7.0E-01	1.1E+05	8.2E-02
600-30_Shallow_2	non-Rad	Copper	7440-50-8	µg/kg	17329.66	5.0E+04	3.5E-01	1.1E+05	1.6E-01
600-30_Shallow_2	non-Rad	Hexavalent Chromium	18540-29-9	µg/kg	293.83	No Value	--	1.3E+06	2.4E-04
600-30_Shallow_2	non-Rad	Lead	7439-92-1	µg/kg	4021.37	5.0E+04	8.0E-02	3.6E+04	1.1E-01
600-30_Shallow_2	non-Rad	Manganese	7439-96-5	µg/kg	351747.95	2.2E+05	**1.6E+00**	5.8E+06	6.1E-02
600-30_Shallow_2	non-Rad	Mercury	7439-97-6	µg/kg	6.53	1.0E+02	6.5E-02	1.9E+03	3.5E-03
600-30_Shallow_2	non-Rad	Molybdenum	7439-98-7	µg/kg	390.00	2.0E+03	2.0E-01	1.4E+04	2.8E-02
600-30_Shallow_2	non-Rad	Nickel	7440-02-0	µg/kg	12530.35	3.0E+04	4.2E-01	3.3E+04	3.9E-01
600-30_Shallow_2	non-Rad	Silver	7440-22-4	µg/kg	170.00	2.0E+03	8.5E-02	5.0E+04	3.4E-03
600-30_Shallow_2	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	µg/kg	820.00	2.0E+05	4.1E-03	3.6E+08	2.3E-06
600-30_Shallow_2	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	µg/kg	1274.59	No Value	--	No Value	--
600-30_Shallow_2	non-Rad	Vanadium	7440-62-2	µg/kg	57064.36	2.0E+03	**2.9E+01**	3.1E+04	**1.8E+00**
600-30_Shallow_2	non-Rad	Zinc	7440-66-6	µg/kg	43113.68	5.0E+04	8.6E-01	6.8E+04	6.4E-01
600-30_Shallow_3	non-Rad	Antimony	7440-36-0	µg/kg	430.00	5.0E+03	8.6E-02	6.0E+03	7.2E-02
600-30_Shallow_3	non-Rad	Arsenic	7440-38-2	µg/kg	2866.27	1.0E+04	2.9E-01	1.9E+05	1.5E-02
600-30_Shallow_3	non-Rad	Barium	7440-39-3	µg/kg	64907.11	3.3E+05	2.0E-01	1.3E+06	4.9E-02
600-30_Shallow_3	non-Rad	Beryllium	7440-41-7	µg/kg	66.00	1.0E+04	6.6E-03	1.4E+04	4.7E-03
600-30_Shallow_3	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	87.00	1.0E+05	8.7E-04	4.5E+04	1.9E-03
600-30_Shallow_3	non-Rad	Boron	7440-42-8	µg/kg	1700.00	5.0E+02	**3.4E+00**	1.3E+05	1.3E-02
600-30_Shallow_3	non-Rad	Cadmium	7440-43-9	µg/kg	66.64	4.0E+03	1.7E-02	1.6E+03	4.1E-02
600-30_Shallow_3	non-Rad	Chromium	7440-47-3	µg/kg	7707.76	4.0E+02	**1.9E+01**	3.8E+04	2.0E-01
600-30_Shallow_3	non-Rad	Cobalt	7440-48-4	µg/kg	10659.63	1.3E+04	8.2E-01	1.1E+05	9.6E-02
600-30_Shallow_3	non-Rad	Copper	7440-50-8	µg/kg	18098.80	5.0E+04	3.6E-01	1.1E+05	1.7E-01
600-30_Shallow_3	non-Rad	Hexavalent Chromium	18540-29-9	µg/kg	210.00	No Value	--	1.3E+06	1.7E-04
600-30_Shallow_3	non-Rad	Lead	7439-92-1	µg/kg	7862.04	5.0E+04	1.6E-01	3.6E+04	2.2E-01
600-30_Shallow_3	non-Rad	Manganese	7439-96-5	µg/kg	346687.92	2.2E+05	**1.6E+00**	5.8E+06	6.0E-02
600-30_Shallow_3	non-Rad	Mercury	7439-97-6	µg/kg	6.39	1.0E+02	6.4E-02	1.9E+03	3.4E-03
600-30_Shallow_3	non-Rad	Molybdenum	7439-98-7	µg/kg	243.20	2.0E+03	1.2E-01	1.4E+04	1.7E-02

Table H-7. 100-D Area Ecological Evaluation Based on SSLs for Surface Soils (0 to 15 feet [0 to 4.6m])

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
600-30_Shallow_3	non-Rad	Nickel	7440-02-0	µg/kg	12270.43	3.0E+04	4.1E-01	3.3E+04	3.8E-01
600-30_Shallow_3	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	µg/kg	1642.99	2.0E+05	8.2E-03	3.6E+08	4.6E-06
600-30_Shallow_3	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	µg/kg	8600.00	No Value	--	No Value	--
600-30_Shallow_3	non-Rad	Vanadium	7440-62-2	µg/kg	67222.19	2.0E+03	**3.4E+01**	3.1E+04	**2.2E+00**
600-30_Shallow_3	non-Rad	Zinc	7440-66-6	µg/kg	43856.11	5.0E+04	8.8E-01	6.8E+04	6.5E-01
600-30_Shallow_Focused	non-Rad	Aldrin	309-00-2	µg/kg	1.67	No Value	--	1.7E+02	1.0E-02
600-30_Shallow_Focused	non-Rad	Antimony	7440-36-0	µg/kg	349.00	5.0E+03	7.0E-02	6.0E+03	5.8E-02
600-30_Shallow_Focused	non-Rad	Arsenic	7440-38-2	µg/kg	3590.00	1.0E+04	3.6E-01	1.9E+05	1.9E-02
600-30_Shallow_Focused	non-Rad	Barium	7440-39-3	µg/kg	99100.00	3.3E+05	3.0E-01	1.3E+06	7.5E-02
600-30_Shallow_Focused	non-Rad	Beryllium	7440-41-7	µg/kg	319.00	1.0E+04	3.2E-02	1.4E+04	2.3E-02
600-30_Shallow_Focused	non-Rad	Boron	7440-42-8	µg/kg	2460.00	5.0E+02	**4.9E+00**	1.3E+05	1.9E-02
600-30_Shallow_Focused	non-Rad	Cadmium	7440-43-9	µg/kg	134.00	4.0E+03	3.4E-02	1.6E+03	8.2E-02
600-30_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	11800.00	4.0E+02	**3.0E+01**	3.8E+04	3.1E-01
600-30_Shallow_Focused	non-Rad	Cobalt	7440-48-4	µg/kg	10300.00	1.3E+04	7.9E-01	1.1E+05	9.2E-02
600-30_Shallow_Focused	non-Rad	Copper	7440-50-8	µg/kg	18300.00	5.0E+04	3.7E-01	1.1E+05	1.7E-01
600-30_Shallow_Focused	non-Rad	Hexavalent Chromium	18540-29-9	µg/kg	270.00	No Value	--	1.3E+06	2.2E-04
600-30_Shallow_Focused	non-Rad	Lead	7439-92-1	µg/kg	10800.00	5.0E+04	2.2E-01	3.6E+04	3.0E-01
600-30_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	382000.00	2.2E+05	**1.7E+00**	5.8E+06	6.6E-02
600-30_Shallow_Focused	non-Rad	Molybdenum	7439-98-7	µg/kg	396.00	2.0E+03	2.0E-01	1.4E+04	2.8E-02
600-30_Shallow_Focused	non-Rad	Nickel	7440-02-0	µg/kg	12700.00	3.0E+04	4.2E-01	3.3E+04	3.9E-01
600-30_Shallow_Focused	non-Rad	Total petroleum hydrocarbons - motor oil (high boiling)	TPH/OILH	µg/kg	52500.00	No Value	--	No Value	--
600-30_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	62200.00	2.0E+03	**3.1E+01**	3.1E+04	**2.0E+00**
600-30_Shallow_Focused	non-Rad	Zinc	7440-66-6	µg/kg	46600.00	5.0E+04	9.3E-01	6.8E+04	6.9E-01
628-3_Shallow	non-Rad	Acenaphthene	83-32-9	µg/kg	17.80	2.0E+04	8.9E-04	1.1E+06	1.6E-05
628-3_Shallow	non-Rad	Aldrin	309-00-2	µg/kg	1.46	No Value	--	1.7E+02	8.9E-03
628-3_Shallow	non-Rad	Antimony	7440-36-0	µg/kg	3150.00	5.0E+03	6.3E-01	6.0E+03	5.3E-01
628-3_Shallow	non-Rad	Arsenic	7440-38-2	µg/kg	2520.94	1.0E+04	2.5E-01	1.9E+05	1.3E-02
628-3_Shallow	non-Rad	Barium	7440-39-3	µg/kg	57199.27	3.3E+05	1.7E-01	1.3E+06	4.3E-02
628-3_Shallow	non-Rad	Benzo(a)anthracene	56-55-3	µg/kg	3.99	1.8E+04	2.2E-04	6.4E+04	6.2E-05
628-3_Shallow	non-Rad	Benzo(a)pyrene	50-32-8	µg/kg	3.70	1.8E+04	2.1E-04	7.6E+04	4.8E-05
628-3_Shallow	non-Rad	Benzo(b)fluoranthene	205-99-2	µg/kg	3.26	1.8E+04	1.8E-04	3.9E+04	8.3E-05
628-3_Shallow	non-Rad	Benzo(k)fluoranthene	207-08-9	µg/kg	2.10	1.8E+04	1.2E-04	3.9E+04	5.4E-05
628-3_Shallow	non-Rad	Beryllium	7440-41-7	µg/kg	192.83	1.0E+04	1.9E-02	1.4E+04	1.4E-02
628-3_Shallow	non-Rad	Boron	7440-42-8	µg/kg	1771.13	5.0E+02	**3.5E+00**	1.3E+05	1.3E-02
628-3_Shallow	non-Rad	Cadmium	7440-43-9	µg/kg	136.28	4.0E+03	3.4E-02	1.6E+03	8.4E-02
628-3_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	11406.05	4.0E+02	**2.9E+01**	3.8E+04	3.0E-01
628-3_Shallow	non-Rad	Chrysene	218-01-9	µg/kg	8.45	1.8E+04	4.7E-04	4.5E+04	1.9E-04
628-3_Shallow	non-Rad	Cobalt	7440-48-4	µg/kg	6637.47	1.3E+04	5.1E-01	1.1E+05	6.0E-02
628-3_Shallow	non-Rad	Copper	7440-50-8	µg/kg	15747.44	5.0E+04	3.2E-01	1.1E+05	1.5E-01
628-3_Shallow	non-Rad	Fluoranthene	206-44-0	µg/kg	31.05	1.8E+04	1.7E-03	8.4E+05	3.7E-05
628-3_Shallow	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	5.61	1.8E+04	3.1E-04	3.6E+04	1.6E-04
628-3_Shallow	non-Rad	Lead	7439-92-1	µg/kg	15972.33	5.0E+04	3.2E-01	3.6E+04	4.5E-01
628-3_Shallow	non-Rad	Manganese	7439-96-5	µg/kg	284235.20	2.2E+05	**1.3E+00**	5.8E+06	4.9E-02
628-3_Shallow	non-Rad	Mercury	7439-97-6	µg/kg	164.87	1.0E+02	**1.7E+00**	1.9E+03	8.8E-02
628-3_Shallow	non-Rad	Molybdenum	7439-98-7	µg/kg	372.24	2.0E+03	1.9E-01	1.4E+04	2.7E-02

Table H-7. 100-D Area Ecological Evaluation Based on SSLs for Surface Soils (0 to 15 feet [0 to 4.6m])

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
628-3_Shallow	non-Rad	Nickel	7440-02-0	µg/kg	9673.67	3.0E+04	3.2E-01	3.3E+04	3.0E-01
628-3_Shallow	non-Rad	Pyrene	129-00-0	µg/kg	3.60	1.8E+04	2.0E-04	6.0E+05	6.0E-06
628-3_Shallow	non-Rad	Total petroleum hydrocarbons - motor oil (high boiling)	TPH/OILH	µg/kg	9961.25	No Value	--	No Value	--
628-3_Shallow	non-Rad	Vanadium	7440-62-2	µg/kg	53113.09	2.0E+03	**2.7E+01**	3.1E+04	**1.7E+00**
628-3_Shallow	non-Rad	Zinc	7440-66-6	µg/kg	43720.56	5.0E+04	8.7E-01	6.8E+04	6.5E-01
628-3_Staging Pile Area_2	non-Rad	4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	µg/kg	2.39	No Value	--	4.0E+02	6.0E-03
628-3_Staging Pile Area_2	non-Rad	Acenaphthene	83-32-9	µg/kg	1.35	2.0E+04	6.8E-05	1.1E+06	1.2E-06
628-3_Staging Pile Area_2	non-Rad	Anthracene	120-12-7	µg/kg	8.59	2.9E+04	3.0E-04	6.8E+05	1.3E-05
628-3_Staging Pile Area_2	non-Rad	Aroclor HI	---	µg/kg	--	--	5.6E-04	--	1.5E-02
628-3_Staging Pile Area_2	non-Rad	Aroclor-1254	11097-69-1	µg/kg	13.35	4.0E+04	3.3E-04	1.5E+03	9.1E-03
628-3_Staging Pile Area_2	non-Rad	Aroclor-1260	11096-82-5	µg/kg	9.13	4.0E+04	2.3E-04	1.5E+03	6.2E-03
628-3_Staging Pile Area_2	non-Rad	Arsenic	7440-38-2	µg/kg	2870.42	1.0E+04	2.9E-01	1.9E+05	1.5E-02
628-3_Staging Pile Area_2	non-Rad	Barium	7440-39-3	µg/kg	78503.09	3.3E+05	2.4E-01	1.3E+06	5.9E-02
628-3_Staging Pile Area_2	non-Rad	Benzo(a)anthracene	56-55-3	µg/kg	6.85	1.8E+04	3.8E-04	6.4E+04	1.1E-04
628-3_Staging Pile Area_2	non-Rad	Benzo(a)pyrene	50-32-8	µg/kg	6.51	1.8E+04	3.6E-04	7.6E+04	8.5E-05
628-3_Staging Pile Area_2	non-Rad	Benzo(b)fluoranthene	205-99-2	µg/kg	9.35	1.8E+04	5.2E-04	3.9E+04	2.4E-04
628-3_Staging Pile Area_2	non-Rad	Benzo(k)fluoranthene	207-08-9	µg/kg	3.94	1.8E+04	2.2E-04	3.9E+04	1.0E-04
628-3_Staging Pile Area_2	non-Rad	Beryllium	7440-41-7	µg/kg	254.75	1.0E+04	2.6E-02	1.4E+04	1.8E-02
628-3_Staging Pile Area_2	non-Rad	Boron	7440-42-8	µg/kg	2111.79	5.0E+02	**4.2E+00**	1.3E+05	1.6E-02
628-3_Staging Pile Area_2	non-Rad	Cadmium	7440-43-9	µg/kg	162.74	4.0E+03	4.1E-02	1.6E+03	1.0E-01
628-3_Staging Pile Area_2	non-Rad	Chromium	7440-47-3	µg/kg	12445.07	4.0E+02	**3.1E+01**	3.8E+04	3.3E-01
628-3_Staging Pile Area_2	non-Rad	Chrysene	218-01-9	µg/kg	6.73	1.8E+04	3.7E-04	4.5E+04	1.5E-04
628-3_Staging Pile Area_2	non-Rad	Cobalt	7440-48-4	µg/kg	7062.43	1.3E+04	5.4E-01	1.1E+05	6.3E-02
628-3_Staging Pile Area_2	non-Rad	Copper	7440-50-8	µg/kg	15225.75	5.0E+04	3.1E-01	1.1E+05	1.4E-01
628-3_Staging Pile Area_2	non-Rad	Dibenz[a,h]anthracene	53-70-3	µg/kg	3.04	1.8E+04	1.7E-04	4.4E+04	6.9E-05
628-3_Staging Pile Area_2	non-Rad	Fluoranthene	206-44-0	µg/kg	35.00	1.8E+04	1.9E-03	8.4E+05	4.2E-05
628-3_Staging Pile Area_2	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	15.20	1.8E+04	8.4E-04	3.6E+04	4.3E-04
628-3_Staging Pile Area_2	non-Rad	Lead	7439-92-1	µg/kg	7649.73	5.0E+04	1.5E-01	3.6E+04	2.2E-01
628-3_Staging Pile Area_2	non-Rad	Manganese	7439-96-5	µg/kg	323863.19	2.2E+05	**1.5E+00**	5.8E+06	5.6E-02
628-3_Staging Pile Area_2	non-Rad	Mercury	7439-97-6	µg/kg	113.28	1.0E+02	**1.1E+00**	1.9E+03	6.1E-02
628-3_Staging Pile Area_2	non-Rad	Molybdenum	7439-98-7	µg/kg	420.65	2.0E+03	2.1E-01	1.4E+04	3.0E-02
628-3_Staging Pile Area_2	non-Rad	Nickel	7440-02-0	µg/kg	10260.51	3.0E+04	3.4E-01	3.3E+04	3.2E-01
628-3_Staging Pile Area_2	non-Rad	Pyrene	129-00-0	µg/kg	10.61	1.8E+04	5.9E-04	6.0E+05	1.8E-05
628-3_Staging Pile Area_2	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	µg/kg	1200.00	2.0E+05	6.0E-03	3.6E+08	3.4E-06
628-3_Staging Pile Area_2	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	µg/kg	2900.00	No Value	--	No Value	--
628-3_Staging Pile Area_2	non-Rad	Total petroleum hydrocarbons - motor oil (high boiling)	TPH/OILH	µg/kg	10486.26	No Value	--	No Value	--
628-3_Staging Pile Area_2	non-Rad	Vanadium	7440-62-2	µg/kg	55453.84	2.0E+03	**2.8E+01**	3.1E+04	**1.8E+00**
628-3_Staging Pile Area_2	non-Rad	Zinc	7440-66-6	µg/kg	48319.43	5.0E+04	9.7E-01	6.8E+04	7.1E-01
628-3_Staging Pile Area_3	non-Rad	Aroclor HI	---	µg/kg	--	--	4.4E-04	--	1.2E-02
628-3_Staging Pile Area_3	non-Rad	Aroclor-1254	11097-69-1	µg/kg	8.35	4.0E+04	2.1E-04	1.5E+03	5.7E-03
628-3_Staging Pile Area_3	non-Rad	Aroclor-1260	11096-82-5	µg/kg	9.41	4.0E+04	2.4E-04	1.5E+03	6.4E-03
628-3_Staging Pile Area_3	non-Rad	Arsenic	7440-38-2	µg/kg	2494.14	1.0E+04	2.5E-01	1.9E+05	1.3E-02

Table H-7. 100-D Area Ecological Evaluation Based on SSLs for Surface Soils (0 to 15 feet [0 to 4.6m])

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
628-3_Staging Pile Area_3	non-Rad	Barium	7440-39-3	µg/kg	74013.74	3.3E+05	2.2E-01	1.3E+06	5.6E-02
628-3_Staging Pile Area_3	non-Rad	Benzo(a)anthracene	56-55-3	µg/kg	1.78	1.8E+04	9.9E-05	6.4E+04	2.8E-05
628-3_Staging Pile Area_3	non-Rad	Benzo(a)pyrene	50-32-8	µg/kg	1.60	1.8E+04	8.9E-05	7.6E+04	2.1E-05
628-3_Staging Pile Area_3	non-Rad	Benzo(b)fluoranthene	205-99-2	µg/kg	2.42	1.8E+04	1.3E-04	3.9E+04	6.2E-05
628-3_Staging Pile Area_3	non-Rad	Benzo(k)fluoranthene	207-08-9	µg/kg	1.25	1.8E+04	7.0E-05	3.9E+04	3.2E-05
628-3_Staging Pile Area_3	non-Rad	Beryllium	7440-41-7	µg/kg	233.81	1.0E+04	2.3E-02	1.4E+04	1.7E-02
628-3_Staging Pile Area_3	non-Rad	Boron	7440-42-8	µg/kg	2240.68	5.0E+02	**4.5E+00**	1.3E+05	1.7E-02
628-3_Staging Pile Area_3	non-Rad	Cadmium	7440-43-9	µg/kg	166.03	4.0E+03	4.2E-02	1.6E+03	1.0E-01
628-3_Staging Pile Area_3	non-Rad	Chromium	7440-47-3	µg/kg	41154.50	4.0E+02	**1.0E+02**	3.8E+04	**1.1E+00**
628-3_Staging Pile Area_3	non-Rad	Chrysene	218-01-9	µg/kg	1.91	1.8E+04	1.1E-04	4.5E+04	4.3E-05
628-3_Staging Pile Area_3	non-Rad	Cobalt	7440-48-4	µg/kg	7462.86	1.3E+04	5.7E-01	1.1E+05	6.7E-02
628-3_Staging Pile Area_3	non-Rad	Copper	7440-50-8	µg/kg	18416.57	5.0E+04	3.7E-01	1.1E+05	1.7E-01
628-3_Staging Pile Area_3	non-Rad	Fluoranthene	206-44-0	µg/kg	85.24	1.8E+04	4.7E-03	8.4E+05	1.0E-04
628-3_Staging Pile Area_3	non-Rad	Lead	7439-92-1	µg/kg	13526.28	5.0E+04	2.7E-01	3.6E+04	3.8E-01
628-3_Staging Pile Area_3	non-Rad	Manganese	7439-96-5	µg/kg	328755.36	2.2E+05	**1.5E+00**	5.8E+06	5.7E-02
628-3_Staging Pile Area_3	non-Rad	Mercury	7439-97-6	µg/kg	29.69	1.0E+02	3.0E-01	1.9E+03	1.6E-02
628-3_Staging Pile Area_3	non-Rad	Molybdenum	7439-98-7	µg/kg	473.64	2.0E+03	2.4E-01	1.4E+04	3.4E-02
628-3_Staging Pile Area_3	non-Rad	Nickel	7440-02-0	µg/kg	9872.32	3.0E+04	3.3E-01	3.3E+04	3.0E-01
628-3_Staging Pile Area_3	non-Rad	Pyrene	129-00-0	µg/kg	2.95	1.8E+04	1.6E-04	6.0E+05	4.9E-06
628-3_Staging Pile Area_3	non-Rad	Total petroleum hydrocarbons - motor oil (high boiling)	TPH/OILH	µg/kg	13203.23	No Value	--	No Value	--
628-3_Staging Pile Area_3	non-Rad	Vanadium	7440-62-2	µg/kg	58456.17	2.0E+03	**2.9E+01**	3.1E+04	**1.9E+00**
628-3_Staging Pile Area_3	non-Rad	Zinc	7440-66-6	µg/kg	54972.41	5.0E+04	**1.1E+00**	6.8E+04	8.1E-01
628-3_Staging Pile Area_Focused	non-Rad	4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	µg/kg	1.50	No Value	--	4.0E+02	3.8E-03
628-3_Staging Pile Area_Focused	non-Rad	Arsenic	7440-38-2	µg/kg	2800.00	1.0E+04	2.8E-01	1.9E+05	1.5E-02
628-3_Staging Pile Area_Focused	non-Rad	Barium	7440-39-3	µg/kg	109000.00	3.3E+05	3.3E-01	1.3E+06	8.2E-02
628-3_Staging Pile Area_Focused	non-Rad	Benzo(a)anthracene	56-55-3	µg/kg	1.43	1.8E+04	7.9E-05	6.4E+04	2.2E-05
628-3_Staging Pile Area_Focused	non-Rad	Benzo(a)pyrene	50-32-8	µg/kg	1.80	1.8E+04	1.0E-04	7.6E+04	2.4E-05
628-3_Staging Pile Area_Focused	non-Rad	Benzo(b)fluoranthene	205-99-2	µg/kg	4.25	1.8E+04	2.4E-04	3.9E+04	1.1E-04
628-3_Staging Pile Area_Focused	non-Rad	Benzo(k)fluoranthene	207-08-9	µg/kg	1.32	1.8E+04	7.3E-05	3.9E+04	3.4E-05
628-3_Staging Pile Area_Focused	non-Rad	Beryllium	7440-41-7	µg/kg	298.00	1.0E+04	3.0E-02	1.4E+04	2.1E-02
628-3_Staging Pile Area_Focused	non-Rad	Boron	7440-42-8	µg/kg	3500.00	5.0E+02	**7.0E+00**	1.3E+05	2.6E-02
628-3_Staging Pile Area_Focused	non-Rad	Cadmium	7440-43-9	µg/kg	189.00	4.0E+03	4.7E-02	1.6E+03	1.2E-01
628-3_Staging Pile Area_Focused	non-Rad	Chromium	7440-47-3	µg/kg	12000.00	4.0E+02	**3.0E+01**	3.8E+04	3.1E-01
628-3_Staging Pile Area_Focused	non-Rad	Chrysene	218-01-9	µg/kg	3.40	1.8E+04	1.9E-04	4.5E+04	7.6E-05
628-3_Staging Pile Area_Focused	non-Rad	Cobalt	7440-48-4	µg/kg	7420.00	1.3E+04	5.7E-01	1.1E+05	6.7E-02
628-3_Staging Pile Area_Focused	non-Rad	Copper	7440-50-8	µg/kg	19700.00	5.0E+04	3.9E-01	1.1E+05	1.8E-01
628-3_Staging Pile Area_Focused	non-Rad	Fluoranthene	206-44-0	µg/kg	26.10	1.8E+04	1.5E-03	8.4E+05	3.1E-05
628-3_Staging Pile Area_Focused	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	2.93	1.8E+04	1.6E-04	3.6E+04	8.2E-05
628-3_Staging Pile Area_Focused	non-Rad	Lead	7439-92-1	µg/kg	7500.00	5.0E+04	1.5E-01	3.6E+04	2.1E-01
628-3_Staging Pile Area_Focused	non-Rad	Manganese	7439-96-5	µg/kg	363000.00	2.2E+05	**1.7E+00**	5.8E+06	6.3E-02
628-3_Staging Pile Area_Focused	non-Rad	Molybdenum	7439-98-7	µg/kg	353.00	2.0E+03	1.8E-01	1.4E+04	2.5E-02
628-3_Staging Pile Area_Focused	non-Rad	Nickel	7440-02-0	µg/kg	10600.00	3.0E+04	3.5E-01	3.3E+04	3.3E-01
628-3_Staging Pile Area_Focused	non-Rad	Pyrene	129-00-0	µg/kg	4.51	1.8E+04	2.5E-04	6.0E+05	7.5E-06
628-3_Staging Pile Area_Focused	non-Rad	Total petroleum hydrocarbons - motor oil (high boiling)	TPH/OILH	µg/kg	20300.00	No Value	--	No Value	--

Table H-7. 100-D Area Ecological Evaluation Based on SSLs for Surface Soils (0 to 15 feet [0 to 4.6m])

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
628-3_Staging Pile Area_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	52400.00	2.0E+03	**2.6E+01**	3.1E+04	**1.7E+00**
628-3_Staging Pile Area_Focused	non-Rad	Zinc	7440-66-6	µg/kg	49400.00	5.0E+04	9.9E-01	6.8E+04	7.3E-01
UPR-100-D-5_Overburden	non-Rad	Antimony	7440-36-0	µg/kg	484.87	5.0E+03	9.7E-02	6.0E+03	8.1E-02
UPR-100-D-5_Overburden	non-Rad	Aroclor-1260	11096-82-5	µg/kg	4.34	4.0E+04	1.1E-04	1.5E+03	2.9E-03
UPR-100-D-5_Overburden	non-Rad	Arsenic	7440-38-2	µg/kg	2639.67	1.0E+04	2.6E-01	1.9E+05	1.4E-02
UPR-100-D-5_Overburden	non-Rad	Barium	7440-39-3	µg/kg	78784.51	3.3E+05	2.4E-01	1.3E+06	6.0E-02
UPR-100-D-5_Overburden	non-Rad	Beryllium	7440-41-7	µg/kg	177.62	1.0E+04	1.8E-02	1.4E+04	1.3E-02
UPR-100-D-5_Overburden	non-Rad	Boron	7440-42-8	µg/kg	1084.82	5.0E+02	**2.2E+00**	1.3E+05	8.2E-03
UPR-100-D-5_Overburden	Rad	Cesium-137	10045-97-3	pCi/g	0.07	2.2E+03	3.0E-05	9.2E+02	7.1E-05
UPR-100-D-5_Overburden	non-Rad	Chromium	7440-47-3	µg/kg	6103.38	4.0E+02	**1.5E+01**	3.8E+04	1.6E-01
UPR-100-D-5_Overburden	non-Rad	Cobalt	7440-48-4	µg/kg	8238.04	1.3E+04	6.3E-01	1.1E+05	7.4E-02
UPR-100-D-5_Overburden	non-Rad	Copper	7440-50-8	µg/kg	13771.45	5.0E+04	2.8E-01	1.1E+05	1.3E-01
UPR-100-D-5_Overburden	non-Rad	Hexavalent Chromium	18540-29-9	µg/kg	164.72	No Value	--	1.3E+06	1.3E-04
UPR-100-D-5_Overburden	non-Rad	Lead	7439-92-1	µg/kg	2642.90	5.0E+04	5.3E-02	3.6E+04	7.4E-02
UPR-100-D-5_Overburden	non-Rad	Manganese	7439-96-5	µg/kg	397996.65	2.2E+05	**1.8E+00**	5.8E+06	6.9E-02
UPR-100-D-5_Overburden	non-Rad	Molybdenum	7439-98-7	µg/kg	389.39	2.0E+03	2.0E-01	1.4E+04	2.8E-02
UPR-100-D-5_Overburden	non-Rad	Nickel	7440-02-0	µg/kg	8771.88	3.0E+04	2.9E-01	3.3E+04	2.7E-01
UPR-100-D-5_Overburden	Rad	Rads SOF	---	pCi/g	--	--	2.3E-04	--	6.1E-03
UPR-100-D-5_Overburden	non-Rad	Selenium	7782-49-2	µg/kg	236.00	5.2E+02	4.5E-01	1.9E+03	1.2E-01
UPR-100-D-5_Overburden	non-Rad	Silver	7440-22-4	µg/kg	189.51	2.0E+03	9.5E-02	5.0E+04	3.8E-03
UPR-100-D-5_Overburden	Rad	Total beta radiostrontium	SR-RAD	pCi/g	0.53	3.6E+03	1.5E-04	9.1E+01	5.9E-03
UPR-100-D-5_Overburden	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	1866.27	5.0E+03	3.7E-01	3.6E+04	2.4E-03
UPR-100-D-5_Overburden	Rad	Uranium-233/234	U-233/234	pCi/g	0.54	5.2E+04	1.1E-05	6.4E+03	8.5E-05
UPR-100-D-5_Overburden	Rad	Uranium-235	15117-96-1	pCi/g	0.04	2.7E+04	1.4E-06	4.4E+03	9.0E-06
UPR-100-D-5_Overburden	Rad	Uranium-238	U-238	pCi/g	0.54	1.6E+04	3.5E-05	5.2E+03	1.1E-04
UPR-100-D-5_Overburden	non-Rad	Vanadium	7440-62-2	µg/kg	66616.30	2.0E+03	**3.3E+01**	3.1E+04	**2.1E+00**
UPR-100-D-5_Overburden	non-Rad	Zinc	7440-66-6	µg/kg	44265.49	5.0E+04	8.9E-01	6.8E+04	6.5E-01
UPR-100-D-5_Shallow	non-Rad	Antimony	7440-36-0	µg/kg	369.69	5.0E+03	7.4E-02	6.0E+03	6.2E-02
UPR-100-D-5_Shallow	non-Rad	Arsenic	7440-38-2	µg/kg	2611.78	1.0E+04	2.6E-01	1.9E+05	1.4E-02
UPR-100-D-5_Shallow	non-Rad	Barium	7440-39-3	µg/kg	64474.04	3.3E+05	2.0E-01	1.3E+06	4.9E-02
UPR-100-D-5_Shallow	non-Rad	Beryllium	7440-41-7	µg/kg	194.36	1.0E+04	1.9E-02	1.4E+04	1.4E-02
UPR-100-D-5_Shallow	non-Rad	Boron	7440-42-8	µg/kg	2067.10	5.0E+02	**4.1E+00**	1.3E+05	1.6E-02
UPR-100-D-5_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.07	2.2E+03	3.4E-05	9.2E+02	8.0E-05
UPR-100-D-5_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	8860.71	4.0E+02	**2.2E+01**	3.8E+04	2.3E-01
UPR-100-D-5_Shallow	non-Rad	Cobalt	7440-48-4	µg/kg	8228.56	1.3E+04	6.3E-01	1.1E+05	7.4E-02
UPR-100-D-5_Shallow	non-Rad	Copper	7440-50-8	µg/kg	15438.55	5.0E+04	3.1E-01	1.1E+05	1.4E-01
UPR-100-D-5_Shallow	non-Rad	Hexavalent Chromium	18540-29-9	µg/kg	170.00	No Value	--	1.3E+06	1.4E-04
UPR-100-D-5_Shallow	non-Rad	Lead	7439-92-1	µg/kg	2747.68	5.0E+04	5.5E-02	3.6E+04	7.7E-02
UPR-100-D-5_Shallow	non-Rad	Manganese	7439-96-5	µg/kg	305219.78	2.2E+05	**1.4E+00**	5.8E+06	5.3E-02
UPR-100-D-5_Shallow	non-Rad	Molybdenum	7439-98-7	µg/kg	332.16	2.0E+03	1.7E-01	1.4E+04	2.4E-02
UPR-100-D-5_Shallow	non-Rad	Nickel	7440-02-0	µg/kg	10157.82	3.0E+04	3.4E-01	3.3E+04	3.1E-01
UPR-100-D-5_Shallow	Rad	Rads SOF	---	pCi/g	--	--	7.7E-05	--	2.6E-04
UPR-100-D-5_Shallow	non-Rad	Silver	7440-22-4	µg/kg	170.00	2.0E+03	8.5E-02	5.0E+04	3.4E-03
UPR-100-D-5_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	1579.09	5.0E+03	3.2E-01	3.6E+04	2.0E-03
UPR-100-D-5_Shallow	Rad	Uranium-233/234	U-233/234	pCi/g	0.49	5.2E+04	9.5E-06	6.4E+03	7.7E-05
UPR-100-D-5_Shallow	Rad	Uranium-238	U-238	pCi/g	0.53	1.6E+04	3.4E-05	5.2E+03	1.0E-04
UPR-100-D-5_Shallow	non-Rad	Vanadium	7440-62-2	µg/kg	65392.63	2.0E+03	**3.3E+01**	3.1E+04	**2.1E+00**
UPR-100-D-5_Shallow	non-Rad	Zinc	7440-66-6	µg/kg	44676.50	5.0E+04	8.9E-01	6.8E+04	6.6E-01

Table H-7. 100-D Area Ecological Evaluation Based on SSLs for Surface Soils (0 to 15 feet [0 to 4.6m])

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
UPR-100-D-5_Shallow_Focused	non-Rad	Arsenic	7440-38-2	µg/kg	2110.00	1.0E+04	2.1E-01	1.9E+05	1.1E-02
UPR-100-D-5_Shallow_Focused	non-Rad	Barium	7440-39-3	µg/kg	50200.00	3.3E+05	1.5E-01	1.3E+06	3.8E-02
UPR-100-D-5_Shallow_Focused	non-Rad	Beryllium	7440-41-7	µg/kg	146.00	1.0E+04	1.5E-02	1.4E+04	1.1E-02
UPR-100-D-5_Shallow_Focused	non-Rad	Boron	7440-42-8	µg/kg	744.00	5.0E+02	**1.5E+00**	1.3E+05	5.6E-03
UPR-100-D-5_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	5560.00	4.0E+02	**1.4E+01**	3.8E+04	1.5E-01
UPR-100-D-5_Shallow_Focused	non-Rad	Cobalt	7440-48-4	µg/kg	7240.00	1.3E+04	5.6E-01	1.1E+05	6.5E-02
UPR-100-D-5_Shallow_Focused	non-Rad	Copper	7440-50-8	µg/kg	12800.00	5.0E+04	2.6E-01	1.1E+05	1.2E-01
UPR-100-D-5_Shallow_Focused	non-Rad	Lead	7439-92-1	µg/kg	2200.00	5.0E+04	4.4E-02	3.6E+04	6.2E-02
UPR-100-D-5_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	254000.00	2.2E+05	**1.2E+00**	5.8E+06	4.4E-02
UPR-100-D-5_Shallow_Focused	non-Rad	Molybdenum	7439-98-7	µg/kg	330.00	2.0E+03	1.7E-01	1.4E+04	2.4E-02
UPR-100-D-5_Shallow_Focused	non-Rad	Nickel	7440-02-0	µg/kg	12000.00	3.0E+04	4.0E-01	3.3E+04	3.7E-01
UPR-100-D-5_Shallow_Focused	Rad	Rads SOF	---	pCi/g	--	--	3.3E-05	--	1.5E-04
UPR-100-D-5_Shallow_Focused	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	1151.04	5.0E+03	2.3E-01	3.6E+04	1.5E-03
UPR-100-D-5_Shallow_Focused	Rad	Uranium-233/234	U-233/234	pCi/g	0.41	5.2E+04	8.0E-06	6.4E+03	6.5E-05
UPR-100-D-5_Shallow_Focused	Rad	Uranium-235	15117-96-1	pCi/g	0.03	2.7E+04	1.1E-06	4.4E+03	6.9E-06
UPR-100-D-5_Shallow_Focused	Rad	Uranium-238	U-238	pCi/g	0.38	1.6E+04	2.4E-05	5.2E+03	7.4E-05
UPR-100-D-5_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	60100.00	2.0E+03	**3.0E+01**	3.1E+04	**1.9E+00**
UPR-100-D-5_Shallow_Focused	non-Rad	Zinc	7440-66-6	µg/kg	40600.00	5.0E+04	8.1E-01	6.8E+04	6.0E-01

Notes:

1 Plant/Invertebrate SSLs are the lowest NOAEL based values found in *Tier 1 Risk-Based Soil Concentrations Protective of Ecological Receptors at the Hanford Site* [CHPRC-00784] located in Appendix H of *Remedial Investigation/Feasibility Study for the 100-KR-1, 100-KR, and 100-KR-4 Operable Units* (DOE/RL-2010-97).

2 Avian/mammal SSLs are the lowest NOAEL based values found in *Tier 1 Risk-Based Soil Concentrations Protective of Ecological Receptors at the Hanford Site* [CHPRC-00784] located in Appendix H of *Remedial Investigation/Feasibility Study for the 100-KR-1, 100-KR, and 100-KR-4 Operable Units* (DOE/RL-2010-97).

All data represent detected concentrations of the chemicals.

Hazard Quotients greater than one are in bold font and highlighted yellow.

Uranium 234 SSLs were used as surrogates for Uranium 233/234.

pCi/g = pico Curie per gram

SSL = Soil screening level

µg/kg = Microgram per kilogram

Table H-8. Comparison of 100-H OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/ Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
100-H-17_Shallow	non-Rad	Arsenic	7440-38-2	ug/kg	3395.28	1.0E+04	3.4E-01	1.9E+05	1.8E-02
100-H-17_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.26	2.2E+03	1.2E-04	9.2E+02	2.8E-04
100-H-17_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	11014.57	4.0E+02	**2.8E+01**	3.8E+04	2.9E-01
100-H-17_Shallow	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	471.00	No Value	--	1.3E+06	3.8E-04
100-H-17_Shallow	non-Rad	Lead	7439-92-1	ug/kg	6488.78	5.0E+04	1.3E-01	3.6E+04	1.8E-01
100-H-17_Shallow	Rad	Rads SOF	---	pCi/g	--	--	3.1E-04	--	6.0E-03
100-H-17_Shallow	Rad	Total beta radiostrontium	SR-RAD	pCi/g	0.50	3.6E+03	1.4E-04	9.1E+01	5.5E-03
100-H-17_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	1853.20	5.0E+03	3.7E-01	3.6E+04	2.4E-03
100-H-17_Shallow	Rad	Uranium-233/234	U-233/234	pCi/g	0.60	5.2E+04	1.2E-05	6.4E+03	9.4E-05
100-H-17_Shallow	Rad	Uranium-238	U-238	pCi/g	0.62	1.6E+04	4.0E-05	5.2E+03	1.2E-04
100-H-21_Overburden	non-Rad	Arsenic	7440-38-2	ug/kg	11453.00	1.0E+04	**1.2E+00**	1.9E+05	6.0E-02
100-H-21_Overburden	Rad	Cesium-137	10045-97-3	pCi/g	0.12	2.2E+03	5.4E-05	9.2E+02	1.3E-04
100-H-21_Overburden	non-Rad	Chromium	7440-47-3	ug/kg	14234.22	4.0E+02	**3.6E+01**	3.8E+04	3.7E-01
100-H-21_Overburden	Rad	Europium-152	14683-23-9	pCi/g	0.28	1.5E+04	1.9E-05	1.7E+03	1.6E-04
100-H-21_Overburden	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	813.00	No Value	--	1.3E+06	6.5E-04
100-H-21_Overburden	non-Rad	Lead	7439-92-1	ug/kg	36425.51	5.0E+04	7.3E-01	3.6E+04	**1.0E+00**
100-H-21_Overburden	non-Rad	Mercury	7439-97-6	ug/kg	40.00	1.0E+02	4.0E-01	1.9E+03	2.1E-02
100-H-21_Overburden	Rad	Plutonium-239/240	PU-239/240	pCi/g	0.05	1.3E+04	3.5E-06	6.3E+03	7.2E-06
100-H-21_Overburden	Rad	Rads SOF	---	pCi/g	--	--	1.2E-04	--	4.7E-04
100-H-21_Overburden	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	1342.50	5.0E+03	2.7E-01	3.6E+04	1.7E-03
100-H-21_Overburden	Rad	Uranium-233/234	U-233/234	pCi/g	0.47	5.2E+04	9.0E-06	6.4E+03	7.3E-05
100-H-21_Overburden	Rad	Uranium-235	15117-96-1	pCi/g	0.05	2.7E+04	1.9E-06	4.4E+03	1.2E-05
100-H-21_Overburden	Rad	Uranium-238	U-238	pCi/g	0.45	1.6E+04	2.9E-05	5.2E+03	8.7E-05
100-H-21_Shallow	non-Rad	Arsenic	7440-38-2	ug/kg	13300.72	1.0E+04	**1.3E+00**	1.9E+05	7.0E-02
100-H-21_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.24	2.2E+03	1.1E-04	9.2E+02	2.6E-04
100-H-21_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	14826.24	4.0E+02	**3.7E+01**	3.8E+04	3.9E-01
100-H-21_Shallow	Rad	Europium-152	14683-23-9	pCi/g	0.28	1.5E+04	1.9E-05	1.7E+03	1.6E-04
100-H-21_Shallow	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	487.38	No Value	--	1.3E+06	3.9E-04
100-H-21_Shallow	non-Rad	Lead	7439-92-1	ug/kg	40131.71	5.0E+04	8.0E-01	3.6E+04	**1.1E+00**
100-H-21_Shallow	Rad	Plutonium-238	13981-16-3	pCi/g	0.07	1.8E+04	4.1E-06	6.0E+03	1.2E-05
100-H-21_Shallow	Rad	Plutonium-239/240	PU-239/240	pCi/g	0.08	1.3E+04	5.9E-06	6.3E+03	1.2E-05
100-H-21_Shallow	Rad	Rads SOF	---	pCi/g	--	--	2.1E-04	--	7.4E-04
100-H-21_Shallow	Rad	Technetium-99	14133-76-7	pCi/g	0.63	2.2E+04	2.9E-05	5.4E+03	1.2E-04
100-H-21_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	1472.59	5.0E+03	3.0E-01	3.6E+04	1.9E-03
100-H-21_Shallow	Rad	Uranium-233/234	U-233/234	pCi/g	0.54	5.2E+04	1.1E-05	6.4E+03	8.6E-05
100-H-21_Shallow	Rad	Uranium-238	U-238	pCi/g	0.49	1.6E+04	3.2E-05	5.2E+03	9.6E-05
100-H-24_Shallow	non-Rad	Aroclor-1260	11096-82-5	ug/kg	68.64	4.0E+04	1.7E-03	1.5E+03	4.7E-02
100-H-24_Shallow	non-Rad	Arsenic	7440-38-2	ug/kg	4163.86	1.0E+04	4.2E-01	1.9E+05	2.2E-02
100-H-28:1_Shallow_Focused	non-Rad	Acenaphthene	83-32-9	ug/kg	22.00	2.0E+04	1.1E-03	1.1E+06	2.0E-05
100-H-28:1_Shallow_Focused	non-Rad	Arsenic	7440-38-2	ug/kg	3300.00	1.0E+04	3.3E-01	1.9E+05	1.7E-02
100-H-28:1_Shallow_Focused	non-Rad	Barium	7440-39-3	ug/kg	540000.00	3.3E+05	**1.6E+00**	1.3E+06	4.1E-01
100-H-28:1_Shallow_Focused	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	3.70	1.8E+04	2.1E-04	6.4E+04	5.8E-05
100-H-28:1_Shallow_Focused	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	4.20	1.8E+04	2.3E-04	7.6E+04	5.5E-05
100-H-28:1_Shallow_Focused	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	58.00	1.8E+04	3.2E-03	3.9E+04	1.5E-03
100-H-28:1_Shallow_Focused	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	2.40	1.8E+04	1.3E-04	3.9E+04	6.1E-05
100-H-28:1_Shallow_Focused	non-Rad	Beryllium	7440-41-7	ug/kg	530.00	1.0E+04	5.3E-02	1.4E+04	3.8E-02
100-H-28:1_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	66400.00	5.0E+02	**1.3E+02**	1.3E+05	5.0E-01
100-H-28:1_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	15000.00	4.0E+02	**3.8E+01**	3.8E+04	3.9E-01

Table H-8. Comparison of 100-H OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/ Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
100-H-28:1_Shallow_Focused	non-Rad	Chrysene	218-01-9	ug/kg	4.30	1.8E+04	2.4E-04	4.5E+04	9.7E-05
100-H-28:1_Shallow_Focused	non-Rad	Cobalt	7440-48-4	ug/kg	8000.00	1.3E+04	6.2E-01	1.1E+05	7.2E-02
100-H-28:1_Shallow_Focused	non-Rad	Copper	7440-50-8	ug/kg	22700.00	5.0E+04	4.5E-01	1.1E+05	2.1E-01
100-H-28:1_Shallow_Focused	non-Rad	Dibenz[a,h]anthracene	53-70-3	ug/kg	2.20	1.8E+04	1.2E-04	4.4E+04	5.0E-05
100-H-28:1_Shallow_Focused	non-Rad	Fluoranthene	206-44-0	ug/kg	7.20	1.8E+04	4.0E-04	8.4E+05	8.6E-06
100-H-28:1_Shallow_Focused	non-Rad	Fluorene	86-73-7	ug/kg	6.90	2.9E+04	2.4E-04	1.8E+05	3.9E-05
100-H-28:1_Shallow_Focused	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	34.00	1.8E+04	1.9E-03	3.6E+04	9.5E-04
100-H-28:1_Shallow_Focused	non-Rad	Lead	7439-92-1	ug/kg	5700.00	5.0E+04	1.1E-01	3.6E+04	1.6E-01
100-H-28:1_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	340000.00	2.2E+05	**1.6E+00**	5.8E+06	5.9E-02
100-H-28:1_Shallow_Focused	non-Rad	Mercury	7439-97-6	ug/kg	30.00	1.0E+02	3.0E-01	1.9E+03	1.6E-02
100-H-28:1_Shallow_Focused	non-Rad	Molybdenum	7439-98-7	ug/kg	1100.00	2.0E+03	5.5E-01	1.4E+04	7.9E-02
100-H-28:1_Shallow_Focused	non-Rad	Naphthalene	91-20-3	ug/kg	23.00	2.9E+04	7.9E-04	1.0E+05	2.3E-04
100-H-28:1_Shallow_Focused	non-Rad	Nickel	7440-02-0	ug/kg	17200.00	3.0E+04	5.7E-01	3.3E+04	5.3E-01
100-H-28:1_Shallow_Focused	non-Rad	Pyrene	129-00-0	ug/kg	8.30	1.8E+04	4.6E-04	6.0E+05	1.4E-05
100-H-28:1_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	52700.00	2.0E+03	**2.6E+01**	3.1E+04	**1.7E+00**
100-H-28:1_Shallow_Focused	non-Rad	Zinc	7440-66-6	ug/kg	45200.00	5.0E+04	9.0E-01	6.8E+04	6.7E-01
100-H-28:6_Shallow_Focused	non-Rad	Antimony	7440-36-0	ug/kg	200.00	5.0E+03	4.0E-02	6.0E+03	3.3E-02
100-H-28:6_Shallow_Focused	non-Rad	Arsenic	7440-38-2	ug/kg	7300.00	1.0E+04	7.3E-01	1.9E+05	3.9E-02
100-H-28:6_Shallow_Focused	non-Rad	Barium	7440-39-3	ug/kg	75800.00	3.3E+05	2.3E-01	1.3E+06	5.7E-02
100-H-28:6_Shallow_Focused	non-Rad	Beryllium	7440-41-7	ug/kg	250.00	1.0E+04	2.5E-02	1.4E+04	1.8E-02
100-H-28:6_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	2300.00	5.0E+02	**4.6E+00**	1.3E+05	1.7E-02
100-H-28:6_Shallow_Focused	non-Rad	Cadmium	7440-43-9	ug/kg	200.00	4.0E+03	5.0E-02	1.6E+03	1.2E-01
100-H-28:6_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	16800.00	4.0E+02	**4.2E+01**	3.8E+04	4.4E-01
100-H-28:6_Shallow_Focused	non-Rad	Cobalt	7440-48-4	ug/kg	7100.00	1.3E+04	5.5E-01	1.1E+05	6.4E-02
100-H-28:6_Shallow_Focused	non-Rad	Copper	7440-50-8	ug/kg	15000.00	5.0E+04	3.0E-01	1.1E+05	1.4E-01
100-H-28:6_Shallow_Focused	non-Rad	Lead	7439-92-1	ug/kg	31400.00	5.0E+04	6.3E-01	3.6E+04	8.8E-01
100-H-28:6_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	287000.00	2.2E+05	**1.3E+00**	5.8E+06	5.0E-02
100-H-28:6_Shallow_Focused	non-Rad	Mercury	7439-97-6	ug/kg	10.00	1.0E+02	1.0E-01	1.9E+03	5.4E-03
100-H-28:6_Shallow_Focused	non-Rad	Molybdenum	7439-98-7	ug/kg	430.00	2.0E+03	2.2E-01	1.4E+04	3.1E-02
100-H-28:6_Shallow_Focused	non-Rad	Nickel	7440-02-0	ug/kg	15400.00	3.0E+04	5.1E-01	3.3E+04	4.7E-01
100-H-28:6_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	45200.00	2.0E+03	**2.3E+01**	3.1E+04	**1.5E+00**
100-H-28:6_Shallow_Focused	non-Rad	Zinc	7440-66-6	ug/kg	49300.00	5.0E+04	9.9E-01	6.8E+04	7.3E-01
100-H-3_Shallow	non-Rad	Aroclor-1254	11097-69-1	ug/kg	7.96	4.0E+04	2.0E-04	1.5E+03	5.4E-03
100-H-3_Shallow	non-Rad	Aroclor-1260	11096-82-5	ug/kg	13.42	4.0E+04	3.4E-04	1.5E+03	9.1E-03
100-H-3_Shallow	non-Rad	Aroclors HI	---	ug/kg	--	--	5.3E-04	--	1.5E-02
100-H-3_Shallow	non-Rad	Arsenic	7440-38-2	ug/kg	14689.20	1.0E+04	**1.5E+00**	1.9E+05	7.8E-02
100-H-3_Shallow	non-Rad	Barium	7440-39-3	ug/kg	87046.76	3.3E+05	2.6E-01	1.3E+06	6.6E-02
100-H-3_Shallow	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	69.60	1.8E+04	3.9E-03	6.4E+04	1.1E-03
100-H-3_Shallow	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	70.80	1.8E+04	3.9E-03	7.6E+04	9.3E-04
100-H-3_Shallow	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	60.80	1.8E+04	3.4E-03	3.9E+04	1.6E-03
100-H-3_Shallow	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	63.00	1.8E+04	3.5E-03	3.9E+04	1.6E-03
100-H-3_Shallow	non-Rad	Beryllium	7440-41-7	ug/kg	342.34	1.0E+04	3.4E-02	1.4E+04	2.5E-02
100-H-3_Shallow	non-Rad	beta-1,2,3,4,5,6-Hexachlorocyclohexane (beta-BHC)	319-85-7	ug/kg	2.53	No Value	--	4.1E+03	6.2E-04
100-H-3_Shallow	non-Rad	Boron	7440-42-8	ug/kg	4683.82	5.0E+02	**9.4E+00**	1.3E+05	3.5E-02
100-H-3_Shallow	non-Rad	Cadmium	7440-43-9	ug/kg	241.53	4.0E+03	6.0E-02	1.6E+03	1.5E-01
100-H-3_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	17524.68	4.0E+02	**4.4E+01**	3.8E+04	4.6E-01
100-H-3_Shallow	non-Rad	Chrysene	218-01-9	ug/kg	85.10	1.8E+04	4.7E-03	4.5E+04	1.9E-03

Table H-8. Comparison of 100-H OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/ Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
100-H-3_Shallow	non-Rad	Cobalt	7440-48-4	ug/kg	6489.07	1.3E+04	5.0E-01	1.1E+05	5.8E-02
100-H-3_Shallow	non-Rad	Copper	7440-50-8	ug/kg	15046.40	5.0E+04	3.0E-01	1.1E+05	1.4E-01
100-H-3_Shallow	non-Rad	Dieldrin	60-57-1	ug/kg	4.92	No Value	--	2.1E+01	2.4E-01
100-H-3_Shallow	non-Rad	Fluoranthene	206-44-0	ug/kg	138.00	1.8E+04	7.7E-03	8.4E+05	1.6E-04
100-H-3_Shallow	non-Rad	Lead	7439-92-1	ug/kg	47556.52	5.0E+04	9.5E-01	3.6E+04	**1.3E+00**
100-H-3_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	305798.76	2.2E+05	**1.4E+00**	5.8E+06	5.3E-02
100-H-3_Shallow	non-Rad	Mercury	7439-97-6	ug/kg	257.17	1.0E+02	**2.6E+00**	1.9E+03	1.4E-01
100-H-3_Shallow	non-Rad	Molybdenum	7439-98-7	ug/kg	453.28	2.0E+03	2.3E-01	1.4E+04	3.3E-02
100-H-3_Shallow	non-Rad	Nickel	7440-02-0	ug/kg	14735.96	3.0E+04	4.9E-01	3.3E+04	4.5E-01
100-H-3_Shallow	non-Rad	Pyrene	129-00-0	ug/kg	143.00	1.8E+04	7.9E-03	6.0E+05	2.4E-04
100-H-3_Shallow	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	ug/kg	164000.00	2.0E+05	8.2E-01	3.6E+08	4.6E-04
100-H-3_Shallow	non-Rad	Total petroleum hydrocarbons - motor oil (high boiling)	TPH/OILH	ug/kg	97682.24	No Value	--	No Value	--
100-H-3_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	48985.36	2.0E+03	**2.5E+01**	3.1E+04	**1.6E+00**
100-H-3_Shallow	non-Rad	Zinc	7440-66-6	ug/kg	48349.31	5.0E+04	9.7E-01	6.8E+04	7.1E-01
100-H-35_Shallow_Focused_1	non-Rad	Arsenic	7440-38-2	ug/kg	5000.00	1.0E+04	5.0E-01	1.9E+05	2.6E-02
100-H-35_Shallow_Focused_1	non-Rad	Barium	7440-39-3	ug/kg	99000.00	3.3E+05	3.0E-01	1.3E+06	7.5E-02
100-H-35_Shallow_Focused_1	non-Rad	Beryllium	7440-41-7	ug/kg	371.00	1.0E+04	3.7E-02	1.4E+04	2.7E-02
100-H-35_Shallow_Focused_1	non-Rad	Boron	7440-42-8	ug/kg	2630.00	5.0E+02	**5.3E+00**	1.3E+05	2.0E-02
100-H-35_Shallow_Focused_1	non-Rad	Cadmium	7440-43-9	ug/kg	172.00	4.0E+03	4.3E-02	1.6E+03	1.1E-01
100-H-35_Shallow_Focused_1	non-Rad	Chromium	7440-47-3	ug/kg	20700.00	4.0E+02	**5.2E+01**	3.8E+04	5.4E-01
100-H-35_Shallow_Focused_1	non-Rad	Cobalt	7440-48-4	ug/kg	6590.00	1.3E+04	5.1E-01	1.1E+05	5.9E-02
100-H-35_Shallow_Focused_1	non-Rad	Copper	7440-50-8	ug/kg	15100.00	5.0E+04	3.0E-01	1.1E+05	1.4E-01
100-H-35_Shallow_Focused_1	non-Rad	Lead	7439-92-1	ug/kg	5880.00	5.0E+04	1.2E-01	3.6E+04	1.7E-01
100-H-35_Shallow_Focused_1	non-Rad	Manganese	7439-96-5	ug/kg	322000.00	2.2E+05	**1.5E+00**	5.8E+06	5.6E-02
100-H-35_Shallow_Focused_1	non-Rad	Molybdenum	7439-98-7	ug/kg	328.00	2.0E+03	1.6E-01	1.4E+04	2.4E-02
100-H-35_Shallow_Focused_1	non-Rad	Nickel	7440-02-0	ug/kg	17100.00	3.0E+04	5.7E-01	3.3E+04	5.3E-01
100-H-35_Shallow_Focused_1	non-Rad	Vanadium	7440-62-2	ug/kg	43600.00	2.0E+03	**2.2E+01**	3.1E+04	**1.4E+00**
100-H-35_Shallow_Focused_1	non-Rad	Zinc	7440-66-6	ug/kg	47400.00	5.0E+04	9.5E-01	6.8E+04	7.0E-01
100-H-35_Shallow_Focused_2	non-Rad	Arsenic	7440-38-2	ug/kg	4720.00	1.0E+04	4.7E-01	1.9E+05	2.5E-02
100-H-35_Shallow_Focused_2	non-Rad	Barium	7440-39-3	ug/kg	86300.00	3.3E+05	2.6E-01	1.3E+06	6.5E-02
100-H-35_Shallow_Focused_2	non-Rad	Beryllium	7440-41-7	ug/kg	330.00	1.0E+04	3.3E-02	1.4E+04	2.4E-02
100-H-35_Shallow_Focused_2	non-Rad	Boron	7440-42-8	ug/kg	1930.00	5.0E+02	**3.9E+00**	1.3E+05	1.5E-02
100-H-35_Shallow_Focused_2	non-Rad	Cadmium	7440-43-9	ug/kg	114.00	4.0E+03	2.9E-02	1.6E+03	7.0E-02
100-H-35_Shallow_Focused_2	non-Rad	Chromium	7440-47-3	ug/kg	20900.00	4.0E+02	**5.2E+01**	3.8E+04	5.5E-01
100-H-35_Shallow_Focused_2	non-Rad	Cobalt	7440-48-4	ug/kg	7100.00	1.3E+04	5.5E-01	1.1E+05	6.4E-02
100-H-35_Shallow_Focused_2	non-Rad	Copper	7440-50-8	ug/kg	15300.00	5.0E+04	3.1E-01	1.1E+05	1.4E-01
100-H-35_Shallow_Focused_2	non-Rad	Lead	7439-92-1	ug/kg	10500.00	5.0E+04	2.1E-01	3.6E+04	3.0E-01
100-H-35_Shallow_Focused_2	non-Rad	Manganese	7439-96-5	ug/kg	309000.00	2.2E+05	**1.4E+00**	5.8E+06	5.3E-02
100-H-35_Shallow_Focused_2	non-Rad	Mercury	7439-97-6	ug/kg	102.00	1.0E+02	**1.0E+00**	1.9E+03	5.5E-02
100-H-35_Shallow_Focused_2	non-Rad	Molybdenum	7439-98-7	ug/kg	428.00	2.0E+03	2.1E-01	1.4E+04	3.1E-02
100-H-35_Shallow_Focused_2	non-Rad	Nickel	7440-02-0	ug/kg	18600.00	3.0E+04	6.2E-01	3.3E+04	5.7E-01
100-H-35_Shallow_Focused_2	Rad	Rads SOF	---	pCi/g	--	--	5.6E-05	--	2.5E-04
100-H-35_Shallow_Focused_2	non-Rad	Uranium	7440-61-1	ug/kg	1280.00	5.0E+03	2.6E-01	3.6E+04	1.6E-03
100-H-35_Shallow_Focused_2	Rad	Uranium-233/234	U-233/234	pCi/g	0.76	5.2E+04	1.5E-05	6.4E+03	1.2E-04
100-H-35_Shallow_Focused_2	Rad	Uranium-235	15117-96-1	pCi/g	0.06	2.7E+04	2.1E-06	4.4E+03	1.3E-05
100-H-35_Shallow_Focused_2	Rad	Uranium-238	U-238	pCi/g	0.61	1.6E+04	3.9E-05	5.2E+03	1.2E-04

Table H-8. Comparison of 100-H OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/ Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
100-H-35_Shallow_Focused_2	non-Rad	Vanadium	7440-62-2	ug/kg	41600.00	2.0E+03	**2.1E+01**	3.1E+04	**1.3E+00**
100-H-35_Shallow_Focused_2	non-Rad	Zinc	7440-66-6	ug/kg	48000.00	5.0E+04	9.6E-01	6.8E+04	7.1E-01
100-H-35_Shallow_Focused_3	non-Rad	Arsenic	7440-38-2	ug/kg	18500.00	1.0E+04	**1.9E+00**	1.9E+05	9.8E-02
100-H-35_Shallow_Focused_3	non-Rad	Barium	7440-39-3	ug/kg	62600.00	3.3E+05	1.9E-01	1.3E+06	4.7E-02
100-H-35_Shallow_Focused_3	non-Rad	Beryllium	7440-41-7	ug/kg	200.00	1.0E+04	2.0E-02	1.4E+04	1.4E-02
100-H-35_Shallow_Focused_3	non-Rad	Boron	7440-42-8	ug/kg	1100.00	5.0E+02	**2.2E+00**	1.3E+05	8.3E-03
100-H-35_Shallow_Focused_3	non-Rad	Cadmium	7440-43-9	ug/kg	154.00	4.0E+03	3.9E-02	1.6E+03	9.5E-02
100-H-35_Shallow_Focused_3	non-Rad	Chromium	7440-47-3	ug/kg	14800.00	4.0E+02	**3.7E+01**	3.8E+04	3.9E-01
100-H-35_Shallow_Focused_3	non-Rad	Cobalt	7440-48-4	ug/kg	5400.00	1.3E+04	4.2E-01	1.1E+05	4.8E-02
100-H-35_Shallow_Focused_3	non-Rad	Copper	7440-50-8	ug/kg	13400.00	5.0E+04	2.7E-01	1.1E+05	1.3E-01
100-H-35_Shallow_Focused_3	non-Rad	Lead	7439-92-1	ug/kg	25200.00	5.0E+04	5.0E-01	3.6E+04	7.1E-01
100-H-35_Shallow_Focused_3	non-Rad	Manganese	7439-96-5	ug/kg	253000.00	2.2E+05	**1.2E+00**	5.8E+06	4.4E-02
100-H-35_Shallow_Focused_3	non-Rad	Molybdenum	7439-98-7	ug/kg	323.00	2.0E+03	1.6E-01	1.4E+04	2.3E-02
100-H-35_Shallow_Focused_3	non-Rad	Nickel	7440-02-0	ug/kg	13700.00	3.0E+04	4.6E-01	3.3E+04	4.2E-01
100-H-35_Shallow_Focused_3	non-Rad	Vanadium	7440-62-2	ug/kg	43500.00	2.0E+03	**2.2E+01**	3.1E+04	**1.4E+00**
100-H-35_Shallow_Focused_3	non-Rad	Zinc	7440-66-6	ug/kg	94200.00	5.0E+04	**1.9E+00**	6.8E+04	**1.4E+00**
100-H-37_Shallow_Focused	non-Rad	Arsenic	7440-38-2	ug/kg	13000.00	1.0E+04	**1.3E+00**	1.9E+05	6.9E-02
100-H-37_Shallow_Focused	non-Rad	Barium	7440-39-3	ug/kg	71000.00	3.3E+05	2.2E-01	1.3E+06	5.4E-02
100-H-37_Shallow_Focused	non-Rad	Beryllium	7440-41-7	ug/kg	970.00	1.0E+04	9.7E-02	1.4E+04	7.0E-02
100-H-37_Shallow_Focused	non-Rad	Cadmium	7440-43-9	ug/kg	82.00	4.0E+03	2.1E-02	1.6E+03	5.0E-02
100-H-37_Shallow_Focused	Rad	Cesium-137	10045-97-3	pCi/g	0.02	2.2E+03	7.9E-06	9.2E+02	1.9E-05
100-H-37_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	11000.00	4.0E+02	**2.8E+01**	3.8E+04	2.9E-01
100-H-37_Shallow_Focused	non-Rad	Cobalt	7440-48-4	ug/kg	7100.00	1.3E+04	5.5E-01	1.1E+05	6.4E-02
100-H-37_Shallow_Focused	non-Rad	Copper	7440-50-8	ug/kg	16000.00	5.0E+04	3.2E-01	1.1E+05	1.5E-01
100-H-37_Shallow_Focused	non-Rad	Lead	7439-92-1	ug/kg	54000.00	5.0E+04	**1.1E+00**	3.6E+04	**1.5E+00**
100-H-37_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	290000.00	2.2E+05	**1.3E+00**	5.8E+06	5.0E-02
100-H-37_Shallow_Focused	non-Rad	Mercury	7439-97-6	ug/kg	19.00	1.0E+02	1.9E-01	1.9E+03	1.0E-02
100-H-37_Shallow_Focused	non-Rad	Molybdenum	7439-98-7	ug/kg	1200.00	2.0E+03	6.0E-01	1.4E+04	8.6E-02
100-H-37_Shallow_Focused	non-Rad	Nickel	7440-02-0	ug/kg	12000.00	3.0E+04	4.0E-01	3.3E+04	3.7E-01
100-H-37_Shallow_Focused	Rad	Rads SOF	---	pCi/g	--	--	8.6E-05	--	2.7E-04
100-H-37_Shallow_Focused	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	3423.17	5.0E+03	6.9E-01	3.6E+04	4.4E-03
100-H-37_Shallow_Focused	Rad	Uranium-235	15117-96-1	pCi/g	0.14	2.7E+04	5.1E-06	4.4E+03	3.2E-05
100-H-37_Shallow_Focused	Rad	Uranium-238	U-238	pCi/g	1.15	1.6E+04	7.3E-05	5.2E+03	2.2E-04
100-H-37_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	43000.00	2.0E+03	**2.2E+01**	3.1E+04	**1.4E+00**
100-H-37_Shallow_Focused	non-Rad	Zinc	7440-66-6	ug/kg	46000.00	5.0E+04	9.2E-01	6.8E+04	6.8E-01
100-H-4_Shallow	non-Rad	4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	ug/kg	2.95	No Value	--	4.0E+02	7.4E-03
100-H-4_Shallow	non-Rad	4,4'-DDT (Dichlorodiphenyltrichloroethane)	50-29-3	ug/kg	1.56	No Value	--	8.8E+02	1.8E-03
100-H-4_Shallow	non-Rad	Acenaphthene	83-32-9	ug/kg	10.90	2.0E+04	5.5E-04	1.1E+06	1.0E-05
100-H-4_Shallow	non-Rad	Alpha-Chlordane	5103-71-9	ug/kg	3.02	1.0E+03	3.0E-03	5.0E+04	6.0E-05
100-H-4_Shallow	non-Rad	Aroclor-1254	11097-69-1	ug/kg	27.77	4.0E+04	6.9E-04	1.5E+03	1.9E-02
100-H-4_Shallow	non-Rad	Aroclor-1260	11096-82-5	ug/kg	12.85	4.0E+04	3.2E-04	1.5E+03	8.7E-03
100-H-4_Shallow	non-Rad	Aroclors HI	---	ug/kg	--	--	1.0E-03	--	2.8E-02
100-H-4_Shallow	non-Rad	Arsenic	7440-38-2	ug/kg	6985.48	1.0E+04	7.0E-01	1.9E+05	3.7E-02
100-H-4_Shallow	non-Rad	Barium	7440-39-3	ug/kg	56371.42	3.3E+05	1.7E-01	1.3E+06	4.3E-02
100-H-4_Shallow	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	4.15	1.8E+04	2.3E-04	6.4E+04	6.5E-05
100-H-4_Shallow	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	4.32	1.8E+04	2.4E-04	7.6E+04	5.7E-05

Table H-8. Comparison of 100-H OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/ Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
100-H-4_Shallow	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	4.45	1.8E+04	2.5E-04	3.9E+04	1.1E-04
100-H-4_Shallow	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	2.30	1.8E+04	1.3E-04	3.9E+04	5.9E-05
100-H-4_Shallow	non-Rad	Beryllium	7440-41-7	ug/kg	251.02	1.0E+04	2.5E-02	1.4E+04	1.8E-02
100-H-4_Shallow	non-Rad	Boron	7440-42-8	ug/kg	3026.47	5.0E+02	**6.1E+00**	1.3E+05	2.3E-02
100-H-4_Shallow	non-Rad	Cadmium	7440-43-9	ug/kg	125.04	4.0E+03	3.1E-02	1.6E+03	7.7E-02
100-H-4_Shallow	non-Rad	Chlordane	57-74-9	ug/kg	1.43	1.0E+03	1.4E-03	5.0E+04	2.8E-05
100-H-4_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	11056.95	4.0E+02	**2.8E+01**	3.8E+04	2.9E-01
100-H-4_Shallow	non-Rad	Chrysene	218-01-9	ug/kg	4.79	1.8E+04	2.7E-04	4.5E+04	1.1E-04
100-H-4_Shallow	non-Rad	Cobalt	7440-48-4	ug/kg	5638.75	1.3E+04	4.3E-01	1.1E+05	5.1E-02
100-H-4_Shallow	non-Rad	Copper	7440-50-8	ug/kg	15398.36	5.0E+04	3.1E-01	1.1E+05	1.4E-01
100-H-4_Shallow	non-Rad	Fluoranthene	206-44-0	ug/kg	8.72	1.8E+04	4.9E-04	8.4E+05	1.0E-05
100-H-4_Shallow	non-Rad	Fluorene	86-73-7	ug/kg	2.99	2.9E+04	1.0E-04	1.8E+05	1.7E-05
100-H-4_Shallow	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	31.10	1.8E+04	1.7E-03	3.6E+04	8.7E-04
100-H-4_Shallow	non-Rad	Lead	7439-92-1	ug/kg	27406.46	5.0E+04	5.5E-01	3.6E+04	7.7E-01
100-H-4_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	263323.72	2.2E+05	**1.2E+00**	5.8E+06	4.5E-02
100-H-4_Shallow	non-Rad	Mercury	7439-97-6	ug/kg	408.00	1.0E+02	**4.1E+00**	1.9E+03	2.2E-01
100-H-4_Shallow	non-Rad	Methylene chloride	75-09-2	ug/kg	5.74	No Value	--	1.7E+05	3.5E-05
100-H-4_Shallow	non-Rad	Molybdenum	7439-98-7	ug/kg	466.35	2.0E+03	2.3E-01	1.4E+04	3.3E-02
100-H-4_Shallow	non-Rad	Nickel	7440-02-0	ug/kg	10166.38	3.0E+04	3.4E-01	3.3E+04	3.1E-01
100-H-4_Shallow	Rad	Nickel-63	13981-37-8	pCi/g	7.74	No Value	--	No Value	--
100-H-4_Shallow	non-Rad	Pyrene	129-00-0	ug/kg	6.75	1.8E+04	3.8E-04	6.0E+05	1.1E-05
100-H-4_Shallow	Rad	Rads SOF	---	pCi/g	--	--	7.8E-05	--	3.5E-04
100-H-4_Shallow	non-Rad	Selenium	7782-49-2	ug/kg	391.00	5.2E+02	7.5E-01	1.9E+03	2.1E-01
100-H-4_Shallow	non-Rad	Total petroleum hydrocarbons - motor oil (high boiling)	TPH/OILH	ug/kg	30792.17	No Value	--	No Value	--
100-H-4_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	2620.17	5.0E+03	5.2E-01	3.6E+04	3.3E-03
100-H-4_Shallow	Rad	Uranium-233/234	U-233/234	pCi/g	1.12	5.2E+04	2.2E-05	6.4E+03	1.8E-04
100-H-4_Shallow	Rad	Uranium-238	U-238	pCi/g	0.88	1.6E+04	5.6E-05	5.2E+03	1.7E-04
100-H-4_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	50477.34	2.0E+03	**2.5E+01**	3.1E+04	**1.6E+00**
100-H-4_Shallow	non-Rad	Zinc	7440-66-6	ug/kg	36148.57	5.0E+04	7.2E-01	6.8E+04	5.3E-01
100-H-4_Shallow_Focused	non-Rad	4,4'-DDT (Dichlorodiphenyltrichloroethane)	50-29-3	ug/kg	2.10	No Value	--	8.8E+02	2.4E-03
100-H-4_Shallow_Focused	non-Rad	Acenaphthene	83-32-9	ug/kg	51.10	2.0E+04	2.6E-03	1.1E+06	4.7E-05
100-H-4_Shallow_Focused	non-Rad	Antimony	7440-36-0	ug/kg	420.00	5.0E+03	8.4E-02	6.0E+03	7.0E-02
100-H-4_Shallow_Focused	non-Rad	Aroclor-1254	11097-69-1	ug/kg	13.80	4.0E+04	3.5E-04	1.5E+03	9.4E-03
100-H-4_Shallow_Focused	non-Rad	Aroclor-1260	11096-82-5	ug/kg	73.00	4.0E+04	1.8E-03	1.5E+03	5.0E-02
100-H-4_Shallow_Focused	non-Rad	Aroclors HI	---	ug/kg	--	--	2.2E-03	--	5.9E-02
100-H-4_Shallow_Focused	non-Rad	Arsenic	7440-38-2	ug/kg	8800.00	1.0E+04	8.8E-01	1.9E+05	4.6E-02
100-H-4_Shallow_Focused	non-Rad	Barium	7440-39-3	ug/kg	163000.00	3.3E+05	4.9E-01	1.3E+06	1.2E-01
100-H-4_Shallow_Focused	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	74.60	1.8E+04	4.1E-03	6.4E+04	1.2E-03
100-H-4_Shallow_Focused	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	52.90	1.8E+04	2.9E-03	7.6E+04	6.9E-04
100-H-4_Shallow_Focused	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	44.10	1.8E+04	2.5E-03	3.9E+04	1.1E-03
100-H-4_Shallow_Focused	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	33.00	1.8E+04	1.8E-03	3.9E+04	8.4E-04
100-H-4_Shallow_Focused	non-Rad	Beryllium	7440-41-7	ug/kg	310.00	1.0E+04	3.1E-02	1.4E+04	2.2E-02
100-H-4_Shallow_Focused	non-Rad	beta-1,2,3,4,5,6-Hexachlorocyclohexane (beta-BHC)	319-85-7	ug/kg	2.40	No Value	--	4.1E+03	5.9E-04
100-H-4_Shallow_Focused	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	ug/kg	27.00	1.0E+05	2.7E-04	4.5E+04	5.9E-04
100-H-4_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	19400.00	5.0E+02	**3.9E+01**	1.3E+05	1.5E-01

Table H-8. Comparison of 100-H OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/ Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
100-H-4_Shallow_Focused	non-Rad	Cadmium	7440-43-9	ug/kg	260.00	4.0E+03	6.5E-02	1.6E+03	1.6E-01
100-H-4_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	17500.00	4.0E+02	**4.4E+01**	3.8E+04	4.6E-01
100-H-4_Shallow_Focused	non-Rad	Chrysene	218-01-9	ug/kg	41.00	1.8E+04	2.3E-03	4.5E+04	9.2E-04
100-H-4_Shallow_Focused	non-Rad	Cobalt	7440-48-4	ug/kg	7900.00	1.3E+04	6.1E-01	1.1E+05	7.1E-02
100-H-4_Shallow_Focused	non-Rad	Copper	7440-50-8	ug/kg	25300.00	5.0E+04	5.1E-01	1.1E+05	2.4E-01
100-H-4_Shallow_Focused	non-Rad	Dibenz[a,h]anthracene	53-70-3	ug/kg	6.62	1.8E+04	3.7E-04	4.4E+04	1.5E-04
100-H-4_Shallow_Focused	non-Rad	Di-n-butylphthalate	84-74-2	ug/kg	17.00	No Value	--	No Value	--
100-H-4_Shallow_Focused	non-Rad	Fluoranthene	206-44-0	ug/kg	49.00	1.8E+04	2.7E-03	8.4E+05	5.8E-05
100-H-4_Shallow_Focused	non-Rad	Fluorene	86-73-7	ug/kg	4.18	2.9E+04	1.4E-04	1.8E+05	2.4E-05
100-H-4_Shallow_Focused	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	20.00	1.8E+04	1.1E-03	3.6E+04	5.6E-04
100-H-4_Shallow_Focused	non-Rad	Lead	7439-92-1	ug/kg	27400.00	5.0E+04	5.5E-01	3.6E+04	7.7E-01
100-H-4_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	364000.00	2.2E+05	**1.7E+00**	5.8E+06	6.3E-02
100-H-4_Shallow_Focused	non-Rad	Mercury	7439-97-6	ug/kg	20.00	1.0E+02	2.0E-01	1.9E+03	1.1E-02
100-H-4_Shallow_Focused	non-Rad	Methoxychlor	72-43-5	ug/kg	1.90	No Value	--	2.2E+04	8.7E-05
100-H-4_Shallow_Focused	non-Rad	Methylene chloride	75-09-2	ug/kg	14.00	No Value	--	1.7E+05	8.5E-05
100-H-4_Shallow_Focused	non-Rad	Molybdenum	7439-98-7	ug/kg	730.00	2.0E+03	3.7E-01	1.4E+04	5.2E-02
100-H-4_Shallow_Focused	non-Rad	Nickel	7440-02-0	ug/kg	15200.00	3.0E+04	5.1E-01	3.3E+04	4.7E-01
100-H-4_Shallow_Focused	non-Rad	Pyrene	129-00-0	ug/kg	46.00	1.8E+04	2.6E-03	6.0E+05	7.7E-05
100-H-4_Shallow_Focused	Rad	Rads SOF	---	pCi/g	--	--	1.1E-04	--	4.9E-04
100-H-4_Shallow_Focused	non-Rad	Selenium	7782-49-2	ug/kg	410.00	5.2E+02	7.9E-01	1.9E+03	2.2E-01
100-H-4_Shallow_Focused	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	ug/kg	2300.00	2.0E+05	1.2E-02	3.6E+08	6.5E-06
100-H-4_Shallow_Focused	non-Rad	Total petroleum hydrocarbons - motor oil (high boiling)	TPH/OILH	ug/kg	188000.00	No Value	--	No Value	--
100-H-4_Shallow_Focused	non-Rad	Uranium	7440-61-1	ug/kg	10100.00	5.0E+03	**2.0E+00**	3.6E+04	1.3E-02
100-H-4_Shallow_Focused	Rad	Uranium-233/234	U-233/234	pCi/g	1.46	5.2E+04	2.8E-05	6.4E+03	2.3E-04
100-H-4_Shallow_Focused	Rad	Uranium-238	U-238	pCi/g	1.34	1.6E+04	8.5E-05	5.2E+03	2.6E-04
100-H-4_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	51500.00	2.0E+03	**2.6E+01**	3.1E+04	**1.7E+00**
100-H-4_Shallow_Focused	non-Rad	Zinc	7440-66-6	ug/kg	62500.00	5.0E+04	**1.3E+00**	6.8E+04	9.2E-01
100-H-40_Shallow_Focused	non-Rad	Antimony	7440-36-0	ug/kg	2160.00	5.0E+03	4.3E-01	6.0E+03	3.6E-01
100-H-40_Shallow_Focused	non-Rad	Arsenic	7440-38-2	ug/kg	7830.00	1.0E+04	7.8E-01	1.9E+05	4.1E-02
100-H-40_Shallow_Focused	non-Rad	Barium	7440-39-3	ug/kg	68600.00	3.3E+05	2.1E-01	1.3E+06	5.2E-02
100-H-40_Shallow_Focused	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	19.10	1.8E+04	1.1E-03	6.4E+04	3.0E-04
100-H-40_Shallow_Focused	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	28.50	1.8E+04	1.6E-03	7.6E+04	3.7E-04
100-H-40_Shallow_Focused	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	133.00	1.8E+04	7.4E-03	3.9E+04	3.4E-03
100-H-40_Shallow_Focused	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	1.82	1.8E+04	1.0E-04	3.9E+04	4.6E-05
100-H-40_Shallow_Focused	non-Rad	Beryllium	7440-41-7	ug/kg	225.00	1.0E+04	2.3E-02	1.4E+04	1.6E-02
100-H-40_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	2840.00	5.0E+02	**5.7E+00**	1.3E+05	2.1E-02
100-H-40_Shallow_Focused	non-Rad	Cadmium	7440-43-9	ug/kg	469.00	4.0E+03	1.2E-01	1.6E+03	2.9E-01
100-H-40_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	11900.00	4.0E+02	**3.0E+01**	3.8E+04	3.1E-01
100-H-40_Shallow_Focused	non-Rad	Chrysene	218-01-9	ug/kg	44.40	1.8E+04	2.5E-03	4.5E+04	1.0E-03
100-H-40_Shallow_Focused	non-Rad	Cobalt	7440-48-4	ug/kg	6590.00	1.3E+04	5.1E-01	1.1E+05	5.9E-02
100-H-40_Shallow_Focused	non-Rad	Copper	7440-50-8	ug/kg	25700.00	5.0E+04	5.1E-01	1.1E+05	2.4E-01
100-H-40_Shallow_Focused	non-Rad	Dibenz[a,h]anthracene	53-70-3	ug/kg	4.06	1.8E+04	2.3E-04	4.4E+04	9.2E-05
100-H-40_Shallow_Focused	non-Rad	Fluoranthene	206-44-0	ug/kg	13.10	1.8E+04	7.3E-04	8.4E+05	1.6E-05
100-H-40_Shallow_Focused	non-Rad	Fluorene	86-73-7	ug/kg	854.00	2.9E+04	2.9E-02	1.8E+05	4.9E-03
100-H-40_Shallow_Focused	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	31.30	1.8E+04	1.7E-03	3.6E+04	8.8E-04
100-H-40_Shallow_Focused	non-Rad	Lead	7439-92-1	ug/kg	24400.00	5.0E+04	4.9E-01	3.6E+04	6.9E-01

Table H-8. Comparison of 100-H OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/ Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
100-H-40_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	325000.00	2.2E+05	**1.5E+00**	5.8E+06	5.6E-02
100-H-40_Shallow_Focused	non-Rad	Mercury	7439-97-6	ug/kg	80.00	1.0E+02	8.0E-01	1.9E+03	4.3E-02
100-H-40_Shallow_Focused	non-Rad	Molybdenum	7439-98-7	ug/kg	961.00	2.0E+03	4.8E-01	1.4E+04	6.9E-02
100-H-40_Shallow_Focused	non-Rad	Nickel	7440-02-0	ug/kg	13400.00	3.0E+04	4.5E-01	3.3E+04	4.1E-01
100-H-40_Shallow_Focused	non-Rad	Pyrene	129-00-0	ug/kg	24.40	1.8E+04	1.4E-03	6.0E+05	4.1E-05
100-H-40_Shallow_Focused	non-Rad	Total petroleum hydrocarbons - motor oil (high boiling)	TPH/OILH	ug/kg	170000.00	No Value	--	No Value	--
100-H-40_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	45300.00	2.0E+03	**2.3E+01**	3.1E+04	**1.5E+00**
100-H-40_Shallow_Focused	non-Rad	Zinc	7440-66-6	ug/kg	83400.00	5.0E+04	**1.7E+00**	6.8E+04	**1.2E+00**
100-H-41_Shallow_Focused	non-Rad	2-Methylnaphthalene	91-57-6	ug/kg	501.00	2.9E+04	1.7E-02	6.0E+03	8.3E-02
100-H-41_Shallow_Focused	non-Rad	Acenaphthene	83-32-9	ug/kg	344.00	2.0E+04	1.7E-02	1.1E+06	3.1E-04
100-H-41_Shallow_Focused	non-Rad	Anthracene	120-12-7	ug/kg	341.00	2.9E+04	1.2E-02	6.8E+05	5.0E-04
100-H-41_Shallow_Focused	non-Rad	Arsenic	7440-38-2	ug/kg	8020.00	1.0E+04	8.0E-01	1.9E+05	4.2E-02
100-H-41_Shallow_Focused	non-Rad	Barium	7440-39-3	ug/kg	86200.00	3.3E+05	2.6E-01	1.3E+06	6.5E-02
100-H-41_Shallow_Focused	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	1110.00	1.8E+04	6.2E-02	6.4E+04	1.7E-02
100-H-41_Shallow_Focused	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	971.00	1.8E+04	5.4E-02	7.6E+04	1.3E-02
100-H-41_Shallow_Focused	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	1270.00	1.8E+04	7.1E-02	3.9E+04	3.2E-02
100-H-41_Shallow_Focused	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	396.00	1.8E+04	2.2E-02	3.9E+04	1.0E-02
100-H-41_Shallow_Focused	non-Rad	Beryllium	7440-41-7	ug/kg	298.00	1.0E+04	3.0E-02	1.4E+04	2.1E-02
100-H-41_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	1110.00	5.0E+02	**2.2E+00**	1.3E+05	8.4E-03
100-H-41_Shallow_Focused	non-Rad	Cadmium	7440-43-9	ug/kg	88.00	4.0E+03	2.2E-02	1.6E+03	5.4E-02
100-H-41_Shallow_Focused	non-Rad	Carbazole	86-74-8	ug/kg	3740.00	No Value	--	No Value	--
100-H-41_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	18500.00	4.0E+02	**4.6E+01**	3.8E+04	4.9E-01
100-H-41_Shallow_Focused	non-Rad	Chrysene	218-01-9	ug/kg	854.00	1.8E+04	4.7E-02	4.5E+04	1.9E-02
100-H-41_Shallow_Focused	non-Rad	Cobalt	7440-48-4	ug/kg	6070.00	1.3E+04	4.7E-01	1.1E+05	5.4E-02
100-H-41_Shallow_Focused	non-Rad	Copper	7440-50-8	ug/kg	14200.00	5.0E+04	2.8E-01	1.1E+05	1.3E-01
100-H-41_Shallow_Focused	non-Rad	Dibenz[a,h]anthracene	53-70-3	ug/kg	123.00	1.8E+04	6.8E-03	4.4E+04	2.8E-03
100-H-41_Shallow_Focused	non-Rad	Dibenzofuran	132-64-9	ug/kg	1630.00	No Value	--	No Value	--
100-H-41_Shallow_Focused	non-Rad	Fluoranthene	206-44-0	ug/kg	2310.00	1.8E+04	1.3E-01	8.4E+05	2.8E-03
100-H-41_Shallow_Focused	non-Rad	Fluorene	86-73-7	ug/kg	200.00	2.9E+04	6.9E-03	1.8E+05	1.1E-03
100-H-41_Shallow_Focused	non-Rad	Fluoride	16984-48-8	ug/kg	500.00	No Value	--	2.3E+06	2.2E-04
100-H-41_Shallow_Focused	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	200.00	No Value	--	1.3E+06	1.6E-04
100-H-41_Shallow_Focused	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	593.00	1.8E+04	3.3E-02	3.6E+04	1.7E-02
100-H-41_Shallow_Focused	non-Rad	Lead	7439-92-1	ug/kg	7690.00	5.0E+04	1.5E-01	3.6E+04	2.2E-01
100-H-41_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	281000.00	2.2E+05	**1.3E+00**	5.8E+06	4.9E-02
100-H-41_Shallow_Focused	non-Rad	Molybdenum	7439-98-7	ug/kg	237.00	2.0E+03	1.2E-01	1.4E+04	1.7E-02
100-H-41_Shallow_Focused	non-Rad	Naphthalene	91-20-3	ug/kg	622.00	2.9E+04	2.1E-02	1.0E+05	6.2E-03
100-H-41_Shallow_Focused	non-Rad	Nickel	7440-02-0	ug/kg	15300.00	3.0E+04	5.1E-01	3.3E+04	4.7E-01
100-H-41_Shallow_Focused	non-Rad	Pyrene	129-00-0	ug/kg	1530.00	1.8E+04	8.5E-02	6.0E+05	2.6E-03
100-H-41_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	40900.00	2.0E+03	**2.1E+01**	3.1E+04	**1.3E+00**
100-H-41_Shallow_Focused	non-Rad	Zinc	7440-66-6	ug/kg	46500.00	5.0E+04	9.3E-01	6.8E+04	6.9E-01
100-H-45_Shallow_Focused	non-Rad	Antimony	7440-36-0	ug/kg	288.00	5.0E+03	5.8E-02	6.0E+03	4.8E-02
100-H-45_Shallow_Focused	non-Rad	Arsenic	7440-38-2	ug/kg	1430.00	1.0E+04	1.4E-01	1.9E+05	7.6E-03
100-H-45_Shallow_Focused	non-Rad	Barium	7440-39-3	ug/kg	32900.00	3.3E+05	1.0E-01	1.3E+06	2.5E-02
100-H-45_Shallow_Focused	non-Rad	Beryllium	7440-41-7	ug/kg	129.00	1.0E+04	1.3E-02	1.4E+04	9.3E-03
100-H-45_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	584.00	5.0E+02	**1.2E+00**	1.3E+05	4.4E-03
100-H-45_Shallow_Focused	non-Rad	Cadmium	7440-43-9	ug/kg	54.00	4.0E+03	1.4E-02	1.6E+03	3.3E-02
100-H-45_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	9910.00	4.0E+02	**2.5E+01**	3.8E+04	2.6E-01

Table H-8. Comparison of 100-H OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/ Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
100-H-45_Shallow_Focused	non-Rad	Cobalt	7440-48-4	ug/kg	4180.00	1.3E+04	3.2E-01	1.1E+05	3.8E-02
100-H-45_Shallow_Focused	non-Rad	Copper	7440-50-8	ug/kg	10500.00	5.0E+04	2.1E-01	1.1E+05	9.8E-02
100-H-45_Shallow_Focused	non-Rad	Lead	7439-92-1	ug/kg	1870.00	5.0E+04	3.7E-02	3.6E+04	5.3E-02
100-H-45_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	227000.00	2.2E+05	**1.0E+00**	5.8E+06	3.9E-02
100-H-45_Shallow_Focused	non-Rad	Molybdenum	7439-98-7	ug/kg	262.00	2.0E+03	1.3E-01	1.4E+04	1.9E-02
100-H-45_Shallow_Focused	non-Rad	Nickel	7440-02-0	ug/kg	7780.00	3.0E+04	2.6E-01	3.3E+04	2.4E-01
100-H-45_Shallow_Focused	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	ug/kg	1080.00	2.0E+05	5.4E-03	3.6E+08	3.0E-06
100-H-45_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	42600.00	2.0E+03	**2.1E+01**	3.1E+04	**1.4E+00**
100-H-45_Shallow_Focused	non-Rad	Zinc	7440-66-6	ug/kg	28200.00	5.0E+04	5.6E-01	6.8E+04	4.2E-01
100-H-49:2_Shallow_Focused	non-Rad	4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	ug/kg	5.21	No Value	--	4.0E+02	1.3E-02
100-H-49:2_Shallow_Focused	non-Rad	4,4'-DDT (Dichlorodiphenyltrichloroethane)	50-29-3	ug/kg	2.45	No Value	--	8.8E+02	2.8E-03
100-H-49:2_Shallow_Focused	non-Rad	Acenaphthene	83-32-9	ug/kg	213.00	2.0E+04	1.1E-02	1.1E+06	1.9E-04
100-H-49:2_Shallow_Focused	non-Rad	Anthracene	120-12-7	ug/kg	13.30	2.9E+04	4.6E-04	6.8E+05	2.0E-05
100-H-49:2_Shallow_Focused	non-Rad	Antimony	7440-36-0	ug/kg	332.00	5.0E+03	6.6E-02	6.0E+03	5.6E-02
100-H-49:2_Shallow_Focused	non-Rad	Aroclor-1254	11097-69-1	ug/kg	51.60	4.0E+04	1.3E-03	1.5E+03	3.5E-02
100-H-49:2_Shallow_Focused	non-Rad	Aroclor-1260	11096-82-5	ug/kg	47.50	4.0E+04	1.2E-03	1.5E+03	3.2E-02
100-H-49:2_Shallow_Focused	non-Rad	Aroclors HI	---	ug/kg	--	--	2.5E-03	--	6.7E-02
100-H-49:2_Shallow_Focused	non-Rad	Arsenic	7440-38-2	ug/kg	8910.00	1.0E+04	8.9E-01	1.9E+05	4.7E-02
100-H-49:2_Shallow_Focused	non-Rad	Barium	7440-39-3	ug/kg	175000.00	3.3E+05	5.3E-01	1.3E+06	1.3E-01
100-H-49:2_Shallow_Focused	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	19.90	1.8E+04	1.1E-03	6.4E+04	3.1E-04
100-H-49:2_Shallow_Focused	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	33.70	1.8E+04	1.9E-03	7.6E+04	4.4E-04
100-H-49:2_Shallow_Focused	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	87.80	1.8E+04	4.9E-03	3.9E+04	2.2E-03
100-H-49:2_Shallow_Focused	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	16.70	1.8E+04	9.3E-04	3.9E+04	4.3E-04
100-H-49:2_Shallow_Focused	non-Rad	Beryllium	7440-41-7	ug/kg	337.00	1.0E+04	3.4E-02	1.4E+04	2.4E-02
100-H-49:2_Shallow_Focused	non-Rad	beta-1,2,3,4,5,6-Hexachlorocyclohexane (beta-BHC)	319-85-7	ug/kg	3.06	No Value	--	4.1E+03	7.5E-04
100-H-49:2_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	5660.00	5.0E+02	**1.1E+01**	1.3E+05	4.3E-02
100-H-49:2_Shallow_Focused	non-Rad	Cadmium	7440-43-9	ug/kg	255.00	4.0E+03	6.4E-02	1.6E+03	1.6E-01
100-H-49:2_Shallow_Focused	Rad	Carbon-14	14762-75-5	pCi/g	1.58	6.1E+04	2.6E-05	3.2E+01	5.0E-02
100-H-49:2_Shallow_Focused	Rad	Cesium-137	10045-97-3	pCi/g	0.12	2.2E+03	5.5E-05	9.2E+02	1.3E-04
100-H-49:2_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	18800.00	4.0E+02	**4.7E+01**	3.8E+04	4.9E-01
100-H-49:2_Shallow_Focused	non-Rad	Chrysene	218-01-9	ug/kg	316.00	1.8E+04	1.8E-02	4.5E+04	7.1E-03
100-H-49:2_Shallow_Focused	non-Rad	Cobalt	7440-48-4	ug/kg	6820.00	1.3E+04	5.3E-01	1.1E+05	6.1E-02
100-H-49:2_Shallow_Focused	non-Rad	Copper	7440-50-8	ug/kg	27200.00	5.0E+04	5.4E-01	1.1E+05	2.5E-01
100-H-49:2_Shallow_Focused	non-Rad	Dibenz[a,h]anthracene	53-70-3	ug/kg	23.90	1.8E+04	1.3E-03	4.4E+04	5.4E-04
100-H-49:2_Shallow_Focused	non-Rad	Fluoranthene	206-44-0	ug/kg	248.00	1.8E+04	1.4E-02	8.4E+05	3.0E-04
100-H-49:2_Shallow_Focused	non-Rad	Fluorene	86-73-7	ug/kg	89.00	2.9E+04	3.1E-03	1.8E+05	5.1E-04
100-H-49:2_Shallow_Focused	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	51.40	1.8E+04	2.9E-03	3.6E+04	1.4E-03
100-H-49:2_Shallow_Focused	non-Rad	Lead	7439-92-1	ug/kg	46200.00	5.0E+04	9.2E-01	3.6E+04	**1.3E+00**
100-H-49:2_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	291000.00	2.2E+05	**1.3E+00**	5.8E+06	5.0E-02
100-H-49:2_Shallow_Focused	non-Rad	Mercury	7439-97-6	ug/kg	13.00	1.0E+02	1.3E-01	1.9E+03	7.0E-03
100-H-49:2_Shallow_Focused	non-Rad	Methoxychlor	72-43-5	ug/kg	1.55	No Value	--	2.2E+04	7.1E-05
100-H-49:2_Shallow_Focused	non-Rad	Methylene chloride	75-09-2	ug/kg	10.00	No Value	--	1.7E+05	6.0E-05
100-H-49:2_Shallow_Focused	non-Rad	Molybdenum	7439-98-7	ug/kg	489.00	2.0E+03	2.5E-01	1.4E+04	3.5E-02
100-H-49:2_Shallow_Focused	non-Rad	Naphthalene	91-20-3	ug/kg	115.00	2.9E+04	4.0E-03	1.0E+05	1.2E-03

Table H-8. Comparison of 100-H OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/ Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
100-H-49:2_Shallow_Focused	non-Rad	Nickel	7440-02-0	ug/kg	16600.00	3.0E+04	5.5E-01	3.3E+04	5.1E-01
100-H-49:2_Shallow_Focused	non-Rad	Nitrate	14797-55-8	ug/kg	4400.00	No Value	--	3.4E+08	1.3E-05
100-H-49:2_Shallow_Focused	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	ug/kg	1360.00	No Value	--	No Value	--
100-H-49:2_Shallow_Focused	non-Rad	Pyrene	129-00-0	ug/kg	40.60	1.8E+04	2.3E-03	6.0E+05	6.8E-05
100-H-49:2_Shallow_Focused	Rad	Rads SOF	---	pCi/g	--	--	8.1E-05	--	5.0E-02
100-H-49:2_Shallow_Focused	non-Rad	Silver	7440-22-4	ug/kg	547.00	2.0E+03	2.7E-01	5.0E+04	1.1E-02
100-H-49:2_Shallow_Focused	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	ug/kg	63800.00	2.0E+05	3.2E-01	3.6E+08	1.8E-04
100-H-49:2_Shallow_Focused	non-Rad	Total petroleum hydrocarbons - motor oil (high boiling)	TPH/OILH	ug/kg	121000.00	No Value	--	No Value	--
100-H-49:2_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	48900.00	2.0E+03	**2.5E+01**	3.1E+04	**1.6E+00**
100-H-49:2_Shallow_Focused	non-Rad	Zinc	7440-66-6	ug/kg	96700.00	5.0E+04	**1.9E+00**	6.8E+04	**1.4E+00**
100-H-5_Shallow	non-Rad	Arsenic	7440-38-2	ug/kg	4585.86	1.0E+04	4.6E-01	1.9E+05	2.4E-02
100-H-5_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.07	2.2E+03	3.3E-05	9.2E+02	7.8E-05
100-H-5_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	11198.92	4.0E+02	**2.8E+01**	3.8E+04	2.9E-01
100-H-5_Shallow	non-Rad	Lead	7439-92-1	ug/kg	12870.65	5.0E+04	2.6E-01	3.6E+04	3.6E-01
100-H-5_Shallow	non-Rad	Mercury	7439-97-6	ug/kg	72.00	1.0E+02	7.2E-01	1.9E+03	3.9E-02
100-H-5_Shallow	Rad	Rads SOF	---	pCi/g	--	--	9.1E-05	--	3.4E-04
100-H-5_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	1868.60	5.0E+03	3.7E-01	3.6E+04	2.4E-03
100-H-5_Shallow	Rad	Uranium-233/234	U-233/234	pCi/g	0.63	5.2E+04	1.2E-05	6.4E+03	9.9E-05
100-H-5_Shallow	Rad	Uranium-235	15117-96-1	pCi/g	0.18	2.7E+04	6.7E-06	4.4E+03	4.2E-05
100-H-5_Shallow	Rad	Uranium-238	U-238	pCi/g	0.62	1.6E+04	4.0E-05	5.2E+03	1.2E-04
100-H-50_Shallow_Focused	non-Rad	Arsenic	7440-38-2	ug/kg	4860.00	1.0E+04	4.9E-01	1.9E+05	2.6E-02
100-H-50_Shallow_Focused	non-Rad	Barium	7440-39-3	ug/kg	62000.00	3.3E+05	1.9E-01	1.3E+06	4.7E-02
100-H-50_Shallow_Focused	non-Rad	Beryllium	7440-41-7	ug/kg	272.00	1.0E+04	2.7E-02	1.4E+04	2.0E-02
100-H-50_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	2420.00	5.0E+02	**4.8E+00**	1.3E+05	1.8E-02
100-H-50_Shallow_Focused	non-Rad	Cadmium	7440-43-9	ug/kg	140.00	4.0E+03	3.5E-02	1.6E+03	8.6E-02
100-H-50_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	15100.00	4.0E+02	**3.8E+01**	3.8E+04	4.0E-01
100-H-50_Shallow_Focused	non-Rad	Cobalt	7440-48-4	ug/kg	6130.00	1.3E+04	4.7E-01	1.1E+05	5.5E-02
100-H-50_Shallow_Focused	non-Rad	Copper	7440-50-8	ug/kg	13700.00	5.0E+04	2.7E-01	1.1E+05	1.3E-01
100-H-50_Shallow_Focused	non-Rad	Lead	7439-92-1	ug/kg	12600.00	5.0E+04	2.5E-01	3.6E+04	3.5E-01
100-H-50_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	284000.00	2.2E+05	**1.3E+00**	5.8E+06	4.9E-02
100-H-50_Shallow_Focused	non-Rad	Mercury	7439-97-6	ug/kg	34.00	1.0E+02	3.4E-01	1.9E+03	1.8E-02
100-H-50_Shallow_Focused	non-Rad	Molybdenum	7439-98-7	ug/kg	361.00	2.0E+03	1.8E-01	1.4E+04	2.6E-02
100-H-50_Shallow_Focused	non-Rad	Nickel	7440-02-0	ug/kg	13600.00	3.0E+04	4.5E-01	3.3E+04	4.2E-01
100-H-50_Shallow_Focused	non-Rad	Selenium	7782-49-2	ug/kg	257.00	5.2E+02	4.9E-01	1.9E+03	1.4E-01
100-H-50_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	53200.00	2.0E+03	**2.7E+01**	3.1E+04	**1.7E+00**
100-H-50_Shallow_Focused	non-Rad	Zinc	7440-66-6	ug/kg	45100.00	5.0E+04	9.0E-01	6.8E+04	6.7E-01
100-H-51:4_Shallow_Focused	non-Rad	Acenaphthene	83-32-9	ug/kg	2.74	2.0E+04	1.4E-04	1.1E+06	2.5E-06
100-H-51:4_Shallow_Focused	non-Rad	Arsenic	7440-38-2	ug/kg	5940.00	1.0E+04	5.9E-01	1.9E+05	3.1E-02
100-H-51:4_Shallow_Focused	non-Rad	Barium	7440-39-3	ug/kg	112000.00	3.3E+05	3.4E-01	1.3E+06	8.5E-02
100-H-51:4_Shallow_Focused	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	1.88	1.8E+04	1.0E-04	6.4E+04	2.9E-05
100-H-51:4_Shallow_Focused	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	4.90	1.8E+04	2.7E-04	7.6E+04	6.4E-05
100-H-51:4_Shallow_Focused	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	5.70	1.8E+04	3.2E-04	3.9E+04	1.5E-04
100-H-51:4_Shallow_Focused	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	2.19	1.8E+04	1.2E-04	3.9E+04	5.6E-05
100-H-51:4_Shallow_Focused	non-Rad	Beryllium	7440-41-7	ug/kg	345.00	1.0E+04	3.5E-02	1.4E+04	2.5E-02
100-H-51:4_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	1650.00	5.0E+02	**3.3E+00**	1.3E+05	1.2E-02
100-H-51:4_Shallow_Focused	non-Rad	Cadmium	7440-43-9	ug/kg	810.00	4.0E+03	2.0E-01	1.6E+03	5.0E-01

Table H-8. Comparison of 100-H OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/ Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
100-H-51:4_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	13500.00	4.0E+02	**3.4E+01**	3.8E+04	3.5E-01
100-H-51:4_Shallow_Focused	non-Rad	Chrysene	218-01-9	ug/kg	1.04	1.8E+04	5.8E-05	4.5E+04	2.3E-05
100-H-51:4_Shallow_Focused	non-Rad	Cobalt	7440-48-4	ug/kg	7450.00	1.3E+04	5.7E-01	1.1E+05	6.7E-02
100-H-51:4_Shallow_Focused	non-Rad	Copper	7440-50-8	ug/kg	14700.00	5.0E+04	2.9E-01	1.1E+05	1.4E-01
100-H-51:4_Shallow_Focused	non-Rad	Fluoranthene	206-44-0	ug/kg	1.28	1.8E+04	7.1E-05	8.4E+05	1.5E-06
100-H-51:4_Shallow_Focused	non-Rad	Lead	7439-92-1	ug/kg	6470.00	5.0E+04	1.3E-01	3.6E+04	1.8E-01
100-H-51:4_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	504000.00	2.2E+05	**2.3E+00**	5.8E+06	8.7E-02
100-H-51:4_Shallow_Focused	non-Rad	Mercury	7439-97-6	ug/kg	45.00	1.0E+02	4.5E-01	1.9E+03	2.4E-02
100-H-51:4_Shallow_Focused	non-Rad	Molybdenum	7439-98-7	ug/kg	401.00	2.0E+03	2.0E-01	1.4E+04	2.9E-02
100-H-51:4_Shallow_Focused	non-Rad	Nickel	7440-02-0	ug/kg	12600.00	3.0E+04	4.2E-01	3.3E+04	3.9E-01
100-H-51:4_Shallow_Focused	non-Rad	Selenium	7782-49-2	ug/kg	276.00	5.2E+02	5.3E-01	1.9E+03	1.5E-01
100-H-51:4_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	46300.00	2.0E+03	**2.3E+01**	3.1E+04	**1.5E+00**
100-H-51:4_Shallow_Focused	non-Rad	Zinc	7440-66-6	ug/kg	79100.00	5.0E+04	**1.6E+00**	6.8E+04	**1.2E+00**
100-H-51:5_Shallow_Focused	non-Rad	Acenaphthene	83-32-9	ug/kg	36.90	2.0E+04	1.9E-03	1.1E+06	3.4E-05
100-H-51:5_Shallow_Focused	non-Rad	Anthracene	120-12-7	ug/kg	0.92	2.9E+04	3.2E-05	6.8E+05	1.4E-06
100-H-51:5_Shallow_Focused	non-Rad	Arsenic	7440-38-2	ug/kg	3470.00	1.0E+04	3.5E-01	1.9E+05	1.8E-02
100-H-51:5_Shallow_Focused	non-Rad	Barium	7440-39-3	ug/kg	199000.00	3.3E+05	6.0E-01	1.3E+06	1.5E-01
100-H-51:5_Shallow_Focused	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	2.97	1.8E+04	1.7E-04	6.4E+04	4.6E-05
100-H-51:5_Shallow_Focused	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	6.47	1.8E+04	3.6E-04	7.6E+04	8.5E-05
100-H-51:5_Shallow_Focused	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	6.81	1.8E+04	3.8E-04	3.9E+04	1.7E-04
100-H-51:5_Shallow_Focused	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	3.99	1.8E+04	2.2E-04	3.9E+04	1.0E-04
100-H-51:5_Shallow_Focused	non-Rad	Beryllium	7440-41-7	ug/kg	383.00	1.0E+04	3.8E-02	1.4E+04	2.8E-02
100-H-51:5_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	26300.00	5.0E+02	**5.3E+01**	1.3E+05	2.0E-01
100-H-51:5_Shallow_Focused	non-Rad	Cadmium	7440-43-9	ug/kg	133.00	4.0E+03	3.3E-02	1.6E+03	8.2E-02
100-H-51:5_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	11400.00	4.0E+02	**2.9E+01**	3.8E+04	3.0E-01
100-H-51:5_Shallow_Focused	non-Rad	Chrysene	218-01-9	ug/kg	15.50	1.8E+04	8.6E-04	4.5E+04	3.5E-04
100-H-51:5_Shallow_Focused	non-Rad	Cobalt	7440-48-4	ug/kg	5800.00	1.3E+04	4.5E-01	1.1E+05	5.2E-02
100-H-51:5_Shallow_Focused	non-Rad	Copper	7440-50-8	ug/kg	13000.00	5.0E+04	2.6E-01	1.1E+05	1.2E-01
100-H-51:5_Shallow_Focused	non-Rad	Dibenz[a,h]anthracene	53-70-3	ug/kg	3.87	1.8E+04	2.2E-04	4.4E+04	8.8E-05
100-H-51:5_Shallow_Focused	non-Rad	Fluoranthene	206-44-0	ug/kg	9.16	1.8E+04	5.1E-04	8.4E+05	1.1E-05
100-H-51:5_Shallow_Focused	non-Rad	Fluorene	86-73-7	ug/kg	10.30	2.9E+04	3.6E-04	1.8E+05	5.9E-05
100-H-51:5_Shallow_Focused	non-Rad	Lead	7439-92-1	ug/kg	6250.00	5.0E+04	1.3E-01	3.6E+04	1.8E-01
100-H-51:5_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	290000.00	2.2E+05	**1.3E+00**	5.8E+06	5.0E-02
100-H-51:5_Shallow_Focused	non-Rad	Molybdenum	7439-98-7	ug/kg	440.00	2.0E+03	2.2E-01	1.4E+04	3.2E-02
100-H-51:5_Shallow_Focused	non-Rad	Naphthalene	91-20-3	ug/kg	15.90	2.9E+04	5.5E-04	1.0E+05	1.6E-04
100-H-51:5_Shallow_Focused	non-Rad	Nickel	7440-02-0	ug/kg	10700.00	3.0E+04	3.6E-01	3.3E+04	3.3E-01
100-H-51:5_Shallow_Focused	non-Rad	Pyrene	129-00-0	ug/kg	5.74	1.8E+04	3.2E-04	6.0E+05	9.6E-06
100-H-51:5_Shallow_Focused	non-Rad	Selenium	7782-49-2	ug/kg	221.00	5.2E+02	4.3E-01	1.9E+03	1.2E-01
100-H-51:5_Shallow_Focused	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	ug/kg	19900.00	2.0E+05	1.0E-01	3.6E+08	5.6E-05
100-H-51:5_Shallow_Focused	non-Rad	Total petroleum hydrocarbons - motor oil (high boiling)	TPH/OILH	ug/kg	47700.00	No Value	--	No Value	--
100-H-51:5_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	38600.00	2.0E+03	**1.9E+01**	3.1E+04	**1.2E+00**
100-H-51:5_Shallow_Focused	non-Rad	Zinc	7440-66-6	ug/kg	36300.00	5.0E+04	7.3E-01	6.8E+04	5.4E-01
100-H-53_Shallow_Focused	non-Rad	Acenaphthene	83-32-9	ug/kg	7.37	2.0E+04	3.7E-04	1.1E+06	6.7E-06
100-H-53_Shallow_Focused	non-Rad	Arsenic	7440-38-2	ug/kg	5580.00	1.0E+04	5.6E-01	1.9E+05	2.9E-02
100-H-53_Shallow_Focused	non-Rad	Barium	7440-39-3	ug/kg	52300.00	3.3E+05	1.6E-01	1.3E+06	4.0E-02
100-H-53_Shallow_Focused	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	61.20	1.8E+04	3.4E-03	6.4E+04	9.6E-04

Table H-8. Comparison of 100-H OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/ Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
100-H-53_Shallow_Focused	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	8.51	1.8E+04	4.7E-04	7.6E+04	1.1E-04
100-H-53_Shallow_Focused	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	7.75	1.8E+04	4.3E-04	3.9E+04	2.0E-04
100-H-53_Shallow_Focused	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	3.34	1.8E+04	1.9E-04	3.9E+04	8.5E-05
100-H-53_Shallow_Focused	non-Rad	Beryllium	7440-41-7	ug/kg	231.00	1.0E+04	2.3E-02	1.4E+04	1.7E-02
100-H-53_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	1310.00	5.0E+02	**2.6E+00**	1.3E+05	9.9E-03
100-H-53_Shallow_Focused	non-Rad	Cadmium	7440-43-9	ug/kg	397.00	4.0E+03	9.9E-02	1.6E+03	2.4E-01
100-H-53_Shallow_Focused	Rad	Cesium-137	10045-97-3	pCi/g	0.15	2.2E+03	6.9E-05	9.2E+02	1.7E-04
100-H-53_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	15900.00	4.0E+02	**4.0E+01**	3.8E+04	4.2E-01
100-H-53_Shallow_Focused	non-Rad	Chrysene	218-01-9	ug/kg	22.00	1.8E+04	1.2E-03	4.5E+04	4.9E-04
100-H-53_Shallow_Focused	non-Rad	Cobalt	7440-48-4	ug/kg	10500.00	1.3E+04	8.1E-01	1.1E+05	9.4E-02
100-H-53_Shallow_Focused	non-Rad	Copper	7440-50-8	ug/kg	15800.00	5.0E+04	3.2E-01	1.1E+05	1.5E-01
100-H-53_Shallow_Focused	non-Rad	Dibenz[a,h]anthracene	53-70-3	ug/kg	1.14	1.8E+04	6.3E-05	4.4E+04	2.6E-05
100-H-53_Shallow_Focused	non-Rad	Fluoranthene	206-44-0	ug/kg	81.90	1.8E+04	4.6E-03	8.4E+05	9.8E-05
100-H-53_Shallow_Focused	non-Rad	Fluorene	86-73-7	ug/kg	1.79	2.9E+04	6.2E-05	1.8E+05	1.0E-05
100-H-53_Shallow_Focused	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	1520.00	No Value	--	1.3E+06	1.2E-03
100-H-53_Shallow_Focused	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	23.70	1.8E+04	1.3E-03	3.6E+04	6.6E-04
100-H-53_Shallow_Focused	non-Rad	Lead	7439-92-1	ug/kg	35900.00	5.0E+04	7.2E-01	3.6E+04	**1.0E+00**
100-H-53_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	300000.00	2.2E+05	**1.4E+00**	5.8E+06	5.2E-02
100-H-53_Shallow_Focused	non-Rad	Molybdenum	7439-98-7	ug/kg	3840.00	2.0E+03	**1.9E+00**	1.4E+04	2.8E-01
100-H-53_Shallow_Focused	non-Rad	Naphthalene	91-20-3	ug/kg	6.63	2.9E+04	2.3E-04	1.0E+05	6.6E-05
100-H-53_Shallow_Focused	non-Rad	Nickel	7440-02-0	ug/kg	13200.00	3.0E+04	4.4E-01	3.3E+04	4.1E-01
100-H-53_Shallow_Focused	non-Rad	Pyrene	129-00-0	ug/kg	41.60	1.8E+04	2.3E-03	6.0E+05	6.9E-05
100-H-53_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	35100.00	2.0E+03	**1.8E+01**	3.1E+04	**1.1E+00**
100-H-53_Shallow_Focused	non-Rad	Zinc	7440-66-6	ug/kg	79900.00	5.0E+04	**1.6E+00**	6.8E+04	**1.2E+00**
100-H-7_Shallow_Focused	non-Rad	Antimony	7440-36-0	ug/kg	470.00	5.0E+03	9.4E-02	6.0E+03	7.9E-02
100-H-7_Shallow_Focused	non-Rad	Arsenic	7440-38-2	ug/kg	2600.00	1.0E+04	2.6E-01	1.9E+05	1.4E-02
100-H-7_Shallow_Focused	non-Rad	Barium	7440-39-3	ug/kg	47200.00	3.3E+05	1.4E-01	1.3E+06	3.6E-02
100-H-7_Shallow_Focused	non-Rad	Beryllium	7440-41-7	ug/kg	330.00	1.0E+04	3.3E-02	1.4E+04	2.4E-02
100-H-7_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	930.00	5.0E+02	**1.9E+00**	1.3E+05	7.0E-03
100-H-7_Shallow_Focused	non-Rad	Cadmium	7440-43-9	ug/kg	110.00	4.0E+03	2.8E-02	1.6E+03	6.8E-02
100-H-7_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	9700.00	4.0E+02	**2.4E+01**	3.8E+04	2.5E-01
100-H-7_Shallow_Focused	non-Rad	Cobalt	7440-48-4	ug/kg	6800.00	1.3E+04	5.2E-01	1.1E+05	6.1E-02
100-H-7_Shallow_Focused	non-Rad	Copper	7440-50-8	ug/kg	15100.00	5.0E+04	3.0E-01	1.1E+05	1.4E-01
100-H-7_Shallow_Focused	non-Rad	Lead	7439-92-1	ug/kg	8900.00	5.0E+04	1.8E-01	3.6E+04	2.5E-01
100-H-7_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	264000.00	2.2E+05	**1.2E+00**	5.8E+06	4.6E-02
100-H-7_Shallow_Focused	non-Rad	Molybdenum	7439-98-7	ug/kg	620.00	2.0E+03	3.1E-01	1.4E+04	4.4E-02
100-H-7_Shallow_Focused	non-Rad	Nickel	7440-02-0	ug/kg	9900.00	3.0E+04	3.3E-01	3.3E+04	3.0E-01
100-H-7_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	57100.00	2.0E+03	**2.9E+01**	3.1E+04	**1.8E+00**
100-H-7_Shallow_Focused	non-Rad	Zinc	7440-66-6	ug/kg	39200.00	5.0E+04	7.8E-01	6.8E+04	5.8E-01
100-H-8_Shallow_Focused	non-Rad	Antimony	7440-36-0	ug/kg	520.00	5.0E+03	1.0E-01	6.0E+03	8.7E-02
100-H-8_Shallow_Focused	non-Rad	Arsenic	7440-38-2	ug/kg	7300.00	1.0E+04	7.3E-01	1.9E+05	3.9E-02
100-H-8_Shallow_Focused	non-Rad	Barium	7440-39-3	ug/kg	68100.00	3.3E+05	2.1E-01	1.3E+06	5.2E-02
100-H-8_Shallow_Focused	non-Rad	Beryllium	7440-41-7	ug/kg	440.00	1.0E+04	4.4E-02	1.4E+04	3.2E-02
100-H-8_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	1200.00	5.0E+02	**2.4E+00**	1.3E+05	9.0E-03
100-H-8_Shallow_Focused	non-Rad	Cadmium	7440-43-9	ug/kg	340.00	4.0E+03	8.5E-02	1.6E+03	2.1E-01
100-H-8_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	13500.00	4.0E+02	**3.4E+01**	3.8E+04	3.5E-01
100-H-8_Shallow_Focused	non-Rad	Cobalt	7440-48-4	ug/kg	8300.00	1.3E+04	6.4E-01	1.1E+05	7.4E-02
100-H-8_Shallow_Focused	non-Rad	Copper	7440-50-8	ug/kg	23400.00	5.0E+04	4.7E-01	1.1E+05	2.2E-01

Table H-8. Comparison of 100-H OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/ Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
100-H-8_Shallow_Focused	non-Rad	Lead	7439-92-1	ug/kg	46800.00	5.0E+04	9.4E-01	3.6E+04	**1.3E+00**
100-H-8_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	340000.00	2.2E+05	**1.6E+00**	5.8E+06	5.9E-02
100-H-8_Shallow_Focused	non-Rad	Mercury	7439-97-6	ug/kg	310.00	1.0E+02	**3.1E+00**	1.9E+03	1.7E-01
100-H-8_Shallow_Focused	non-Rad	Molybdenum	7439-98-7	ug/kg	930.00	2.0E+03	4.7E-01	1.4E+04	6.7E-02
100-H-8_Shallow_Focused	non-Rad	Nickel	7440-02-0	ug/kg	15200.00	3.0E+04	5.1E-01	3.3E+04	4.7E-01
100-H-8_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	63900.00	2.0E+03	**3.2E+01**	3.1E+04	**2.1E+00**
100-H-8_Shallow_Focused	non-Rad	Zinc	7440-66-6	ug/kg	53500.00	5.0E+04	**1.1E+00**	6.8E+04	7.9E-01
116-H-1_Shallow	non-Rad	Arsenic	7440-38-2	ug/kg	6624.56	1.0E+04	6.6E-01	1.9E+05	3.5E-02
116-H-1_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.42	2.2E+03	1.9E-04	9.2E+02	4.5E-04
116-H-1_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	10151.33	4.0E+02	**2.5E+01**	3.8E+04	2.7E-01
116-H-1_Shallow	Rad	Europium-152	14683-23-9	pCi/g	0.69	1.5E+04	4.7E-05	1.7E+03	4.0E-04
116-H-1_Shallow	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	502.25	No Value	--	1.3E+06	4.0E-04
116-H-1_Shallow	non-Rad	Lead	7439-92-1	ug/kg	12408.06	5.0E+04	2.5E-01	3.6E+04	3.5E-01
116-H-1_Shallow	Rad	Plutonium-238	13981-16-3	pCi/g	0.15	1.8E+04	8.8E-06	6.0E+03	2.6E-05
116-H-1_Shallow	Rad	Plutonium-239/240	PU-239/240	pCi/g	0.07	1.3E+04	5.4E-06	6.3E+03	1.1E-05
116-H-1_Shallow	Rad	Rads SOF	---	pCi/g	--	--	4.6E-04	--	9.0E-03
116-H-1_Shallow	Rad	Total beta radiostrontium	SR-RAD	pCi/g	0.74	3.6E+03	2.1E-04	9.1E+01	8.1E-03
116-H-3_Shallow	non-Rad	Arsenic	7440-38-2	ug/kg	8300.00	1.0E+04	8.3E-01	1.9E+05	4.4E-02
116-H-3_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.05	2.2E+03	2.4E-05	9.2E+02	5.7E-05
116-H-3_Shallow	Rad	Cobalt-60	10198-40-0	pCi/g	0.06	6.1E+03	9.0E-06	8.1E+02	6.8E-05
116-H-3_Shallow	Rad	Europium-152	14683-23-9	pCi/g	0.66	1.5E+04	4.5E-05	1.7E+03	3.8E-04
116-H-3_Shallow	Rad	Rads SOF	---	pCi/g	--	--	7.8E-05	--	5.0E-04
116-H-5_Overburden	non-Rad	4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	ug/kg	0.45	No Value	--	4.0E+02	1.1E-03
116-H-5_Overburden	non-Rad	Acenaphthene	83-32-9	ug/kg	21.90	2.0E+04	1.1E-03	1.1E+06	2.0E-05
116-H-5_Overburden	non-Rad	Anthracene	120-12-7	ug/kg	36.15	2.9E+04	1.3E-03	6.8E+05	5.3E-05
116-H-5_Overburden	non-Rad	Antimony	7440-36-0	ug/kg	406.31	5.0E+03	8.1E-02	6.0E+03	6.8E-02
116-H-5_Overburden	non-Rad	Arsenic	7440-38-2	ug/kg	5801.00	1.0E+04	5.8E-01	1.9E+05	3.1E-02
116-H-5_Overburden	non-Rad	Barium	7440-39-3	ug/kg	53733.94	3.3E+05	1.6E-01	1.3E+06	4.1E-02
116-H-5_Overburden	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	46.70	1.8E+04	2.6E-03	6.4E+04	7.3E-04
116-H-5_Overburden	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	50.89	1.8E+04	2.8E-03	7.6E+04	6.7E-04
116-H-5_Overburden	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	51.81	1.8E+04	2.9E-03	3.9E+04	1.3E-03
116-H-5_Overburden	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	23.96	1.8E+04	1.3E-03	3.9E+04	6.1E-04
116-H-5_Overburden	non-Rad	Beryllium	7440-41-7	ug/kg	173.38	1.0E+04	1.7E-02	1.4E+04	1.2E-02
116-H-5_Overburden	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	ug/kg	120.00	1.0E+05	1.2E-03	4.5E+04	2.6E-03
116-H-5_Overburden	non-Rad	Boron	7440-42-8	ug/kg	1458.32	5.0E+02	**2.9E+00**	1.3E+05	1.1E-02
116-H-5_Overburden	non-Rad	Cadmium	7440-43-9	ug/kg	68.48	4.0E+03	1.7E-02	1.6E+03	4.2E-02
116-H-5_Overburden	Rad	Carbon-14	14762-75-5	pCi/g	1.32	6.1E+04	2.2E-05	3.2E+01	4.2E-02
116-H-5_Overburden	non-Rad	Chromium	7440-47-3	ug/kg	11538.23	4.0E+02	**2.9E+01**	3.8E+04	3.0E-01
116-H-5_Overburden	non-Rad	Chrysene	218-01-9	ug/kg	69.48	1.8E+04	3.9E-03	4.5E+04	1.6E-03
116-H-5_Overburden	non-Rad	Cobalt	7440-48-4	ug/kg	5585.93	1.3E+04	4.3E-01	1.1E+05	5.0E-02
116-H-5_Overburden	non-Rad	Copper	7440-50-8	ug/kg	13591.24	5.0E+04	2.7E-01	1.1E+05	1.3E-01
116-H-5_Overburden	non-Rad	Dibenz[a,h]anthracene	53-70-3	ug/kg	6.40	1.8E+04	3.6E-04	4.4E+04	1.5E-04
116-H-5_Overburden	non-Rad	Fluoranthene	206-44-0	ug/kg	130.18	1.8E+04	7.2E-03	8.4E+05	1.6E-04
116-H-5_Overburden	non-Rad	Fluorene	86-73-7	ug/kg	7.59	2.9E+04	2.6E-04	1.8E+05	4.3E-05
116-H-5_Overburden	non-Rad	Fluoride	16984-48-8	ug/kg	799.05	No Value	--	2.3E+06	3.5E-04
116-H-5_Overburden	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	165.33	No Value	--	1.3E+06	1.3E-04
116-H-5_Overburden	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	33.79	1.8E+04	1.9E-03	3.6E+04	9.5E-04

Table H-8. Comparison of 100-H OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/ Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
116-H-5_Overburden	non-Rad	Lead	7439-92-1	ug/kg	16326.22	5.0E+04	3.3E-01	3.6E+04	4.6E-01
116-H-5_Overburden	non-Rad	Manganese	7439-96-5	ug/kg	258052.97	2.2E+05	**1.2E+00**	5.8E+06	4.5E-02
116-H-5_Overburden	non-Rad	Molybdenum	7439-98-7	ug/kg	275.47	2.0E+03	1.4E-01	1.4E+04	2.0E-02
116-H-5_Overburden	non-Rad	Naphthalene	91-20-3	ug/kg	25.10	2.9E+04	8.7E-04	1.0E+05	2.5E-04
116-H-5_Overburden	non-Rad	Nickel	7440-02-0	ug/kg	10807.75	3.0E+04	3.6E-01	3.3E+04	3.3E-01
116-H-5_Overburden	non-Rad	Nitrate	14797-55-8	ug/kg	9911.10	No Value	--	3.4E+08	2.9E-05
116-H-5_Overburden	non-Rad	Nitrogen in Nitrate	NO3-N	ug/kg	960.00	No Value	--	No Value	--
116-H-5_Overburden	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	ug/kg	2151.49	No Value	--	No Value	--
116-H-5_Overburden	Rad	Plutonium-238	13981-16-3	pCi/g	1.43	1.8E+04	8.2E-05	6.0E+03	2.4E-04
116-H-5_Overburden	non-Rad	Pyrene	129-00-0	ug/kg	100.44	1.8E+04	5.6E-03	6.0E+05	1.7E-04
116-H-5_Overburden	Rad	Rads SOF	---	pCi/g	--	--	1.5E-04	--	4.9E-02
116-H-5_Overburden	non-Rad	Silver	7440-22-4	ug/kg	156.00	2.0E+03	7.8E-02	5.0E+04	3.1E-03
116-H-5_Overburden	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	ug/kg	3200.00	2.0E+05	1.6E-02	3.6E+08	9.0E-06
116-H-5_Overburden	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	ug/kg	6500.00	No Value	--	No Value	--
116-H-5_Overburden	non-Rad	Total petroleum hydrocarbons - motor oil (high boiling)	TPH/OILH	ug/kg	9996.43	No Value	--	No Value	--
116-H-5_Overburden	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	1676.96	5.0E+03	3.4E-01	3.6E+04	2.1E-03
116-H-5_Overburden	Rad	Tritium	10028-17-8	pCi/g	3.03	1.7E+06	1.8E-06	4.2E+02	7.2E-03
116-H-5_Overburden	Rad	Uranium-233/234	U-233/234	pCi/g	0.61	5.2E+04	1.2E-05	6.4E+03	9.6E-05
116-H-5_Overburden	Rad	Uranium-238	U-238	pCi/g	0.56	1.6E+04	3.6E-05	5.2E+03	1.1E-04
116-H-5_Overburden	non-Rad	Vanadium	7440-62-2	ug/kg	44444.44	2.0E+03	**2.2E+01**	3.1E+04	**1.4E+00**
116-H-5_Overburden	non-Rad	Zinc	7440-66-6	ug/kg	43379.43	5.0E+04	8.7E-01	6.8E+04	6.4E-01
116-H-5_Shallow	non-Rad	4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	ug/kg	0.45	No Value	--	4.0E+02	1.1E-03
116-H-5_Shallow	non-Rad	Acenaphthene	83-32-9	ug/kg	2.79	2.0E+04	1.4E-04	1.1E+06	2.6E-06
116-H-5_Shallow	non-Rad	Anthracene	120-12-7	ug/kg	3.74	2.9E+04	1.3E-04	6.8E+05	5.5E-06
116-H-5_Shallow	non-Rad	Antimony	7440-36-0	ug/kg	378.00	5.0E+03	7.6E-02	6.0E+03	6.3E-02
116-H-5_Shallow	non-Rad	Aroclor-1260	11096-82-5	ug/kg	3.85	4.0E+04	9.6E-05	1.5E+03	2.6E-03
116-H-5_Shallow	non-Rad	Arsenic	7440-38-2	ug/kg	5404.82	1.0E+04	5.4E-01	1.9E+05	2.9E-02
116-H-5_Shallow	non-Rad	Barium	7440-39-3	ug/kg	61356.71	3.3E+05	1.9E-01	1.3E+06	4.6E-02
116-H-5_Shallow	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	11.25	1.8E+04	6.3E-04	6.4E+04	1.8E-04
116-H-5_Shallow	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	10.67	1.8E+04	5.9E-04	7.6E+04	1.4E-04
116-H-5_Shallow	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	14.01	1.8E+04	7.8E-04	3.9E+04	3.6E-04
116-H-5_Shallow	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	5.80	1.8E+04	3.2E-04	3.9E+04	1.5E-04
116-H-5_Shallow	non-Rad	Beryllium	7440-41-7	ug/kg	201.75	1.0E+04	2.0E-02	1.4E+04	1.5E-02
116-H-5_Shallow	non-Rad	Boron	7440-42-8	ug/kg	2169.41	5.0E+02	**4.3E+00**	1.3E+05	1.6E-02
116-H-5_Shallow	non-Rad	Cadmium	7440-43-9	ug/kg	80.30	4.0E+03	2.0E-02	1.6E+03	4.9E-02
116-H-5_Shallow	Rad	Carbon-14	14762-75-5	pCi/g	1.01	6.1E+04	1.7E-05	3.2E+01	3.2E-02
116-H-5_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	13830.59	4.0E+02	**3.5E+01**	3.8E+04	3.6E-01
116-H-5_Shallow	non-Rad	Chrysene	218-01-9	ug/kg	10.85	1.8E+04	6.0E-04	4.5E+04	2.4E-04
116-H-5_Shallow	non-Rad	Cobalt	7440-48-4	ug/kg	6335.17	1.3E+04	4.9E-01	1.1E+05	5.7E-02
116-H-5_Shallow	non-Rad	Copper	7440-50-8	ug/kg	14501.96	5.0E+04	2.9E-01	1.1E+05	1.4E-01
116-H-5_Shallow	non-Rad	Dibenz[a,h]anthracene	53-70-3	ug/kg	2.58	1.8E+04	1.4E-04	4.4E+04	5.9E-05
116-H-5_Shallow	non-Rad	Fluoranthene	206-44-0	ug/kg	27.41	1.8E+04	1.5E-03	8.4E+05	3.3E-05
116-H-5_Shallow	non-Rad	Fluorene	86-73-7	ug/kg	1.57	2.9E+04	5.4E-05	1.8E+05	9.0E-06
116-H-5_Shallow	non-Rad	Fluoride	16984-48-8	ug/kg	903.44	No Value	--	2.3E+06	4.0E-04

Table H-8. Comparison of 100-H OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/ Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
116-H-5_Shallow	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	60.00	No Value	--	1.3E+06	4.8E-05
116-H-5_Shallow	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	9.87	1.8E+04	5.5E-04	3.6E+04	2.8E-04
116-H-5_Shallow	non-Rad	Lead	7439-92-1	ug/kg	14110.09	5.0E+04	2.8E-01	3.6E+04	4.0E-01
116-H-5_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	270919.36	2.2E+05	**1.2E+00**	5.8E+06	4.7E-02
116-H-5_Shallow	non-Rad	Mercury	7439-97-6	ug/kg	18.33	1.0E+02	1.8E-01	1.9E+03	9.8E-03
116-H-5_Shallow	non-Rad	Molybdenum	7439-98-7	ug/kg	279.50	2.0E+03	1.4E-01	1.4E+04	2.0E-02
116-H-5_Shallow	non-Rad	Naphthalene	91-20-3	ug/kg	15.00	2.9E+04	5.2E-04	1.0E+05	1.5E-04
116-H-5_Shallow	non-Rad	Nickel	7440-02-0	ug/kg	11833.65	3.0E+04	3.9E-01	3.3E+04	3.6E-01
116-H-5_Shallow	Rad	Nickel-63	13981-37-8	pCi/g	18.50	No Value	--	No Value	--
116-H-5_Shallow	non-Rad	Nitrate	14797-55-8	ug/kg	8424.46	No Value	--	3.4E+08	2.5E-05
116-H-5_Shallow	non-Rad	Nitrogen in Nitrate	NO3-N	ug/kg	1100.00	No Value	--	No Value	--
116-H-5_Shallow	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	ug/kg	1266.24	No Value	--	No Value	--
116-H-5_Shallow	non-Rad	Pyrene	129-00-0	ug/kg	25.57	1.8E+04	1.4E-03	6.0E+05	4.3E-05
116-H-5_Shallow	Rad	Rads SOF	---	pCi/g	--	--	7.5E-04	--	6.8E-02
116-H-5_Shallow	Rad	Total beta radiostrontium	SR-RAD	pCi/g	2.40	3.6E+03	6.7E-04	9.1E+01	2.6E-02
116-H-5_Shallow	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	ug/kg	2600.00	2.0E+05	1.3E-02	3.6E+08	7.3E-06
116-H-5_Shallow	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	ug/kg	8100.00	No Value	--	No Value	--
116-H-5_Shallow	non-Rad	Total petroleum hydrocarbons - motor oil (high boiling)	TPH/OILH	ug/kg	14313.75	No Value	--	No Value	--
116-H-5_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	1966.40	5.0E+03	3.9E-01	3.6E+04	2.5E-03
116-H-5_Shallow	Rad	Tritium	10028-17-8	pCi/g	4.06	1.7E+06	2.4E-06	4.2E+02	9.7E-03
116-H-5_Shallow	Rad	Uranium-233/234	U-233/234	pCi/g	0.72	5.2E+04	1.4E-05	6.4E+03	1.1E-04
116-H-5_Shallow	Rad	Uranium-234	13966-29-5	pCi/g	0.20	5.2E+04	3.8E-06	6.4E+03	3.1E-05
116-H-5_Shallow	Rad	Uranium-238	U-238	pCi/g	0.66	1.6E+04	4.2E-05	5.2E+03	1.3E-04
116-H-5_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	48734.50	2.0E+03	**2.4E+01**	3.1E+04	**1.6E+00**
116-H-5_Shallow	non-Rad	Zinc	7440-66-6	ug/kg	48292.25	5.0E+04	9.7E-01	6.8E+04	7.1E-01
116-H-5_Staging Pile Area Footprint	non-Rad	4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	ug/kg	11.36	No Value	--	4.0E+02	2.8E-02
116-H-5_Staging Pile Area Footprint	non-Rad	4,4'-DDT (Dichlorodiphenyltrichloroethane)	50-29-3	ug/kg	5.30	No Value	--	8.8E+02	6.0E-03
116-H-5_Staging Pile Area Footprint	non-Rad	Anthracene	120-12-7	ug/kg	87.00	2.9E+04	3.0E-03	6.8E+05	1.3E-04
116-H-5_Staging Pile Area Footprint	non-Rad	Aroclor-1254	11097-69-1	ug/kg	15.00	4.0E+04	3.8E-04	1.5E+03	1.0E-02
116-H-5_Staging Pile Area Footprint	non-Rad	Aroclor-1260	11096-82-5	ug/kg	10.00	4.0E+04	2.5E-04	1.5E+03	6.8E-03
116-H-5_Staging Pile Area Footprint	non-Rad	Aroclors HI	---	ug/kg	--	--	6.3E-04	--	1.7E-02
116-H-5_Staging Pile Area Footprint	non-Rad	Arsenic	7440-38-2	ug/kg	10279.99	1.0E+04	**1.0E+00**	1.9E+05	5.4E-02
116-H-5_Staging Pile Area Footprint	non-Rad	Barium	7440-39-3	ug/kg	75286.97	3.3E+05	2.3E-01	1.3E+06	5.7E-02
116-H-5_Staging Pile Area Footprint	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	76.33	1.8E+04	4.2E-03	6.4E+04	1.2E-03
116-H-5_Staging Pile Area Footprint	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	59.08	1.8E+04	3.3E-03	7.6E+04	7.7E-04

Table H-8. Comparison of 100-H OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/ Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
116-H-5_Staging Pile Area Footprint	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	63.92	1.8E+04	3.6E-03	3.9E+04	1.6E-03
116-H-5_Staging Pile Area Footprint	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	28.94	1.8E+04	1.6E-03	3.9E+04	7.4E-04
116-H-5_Staging Pile Area Footprint	non-Rad	Beryllium	7440-41-7	ug/kg	141.84	1.0E+04	1.4E-02	1.4E+04	1.0E-02
116-H-5_Staging Pile Area Footprint	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	ug/kg	121.77	1.0E+05	1.2E-03	4.5E+04	2.7E-03
116-H-5_Staging Pile Area Footprint	non-Rad	Boron	7440-42-8	ug/kg	2700.00	5.0E+02	**5.4E+00**	1.3E+05	2.0E-02
116-H-5_Staging Pile Area Footprint	non-Rad	Cadmium	7440-43-9	ug/kg	111.86	4.0E+03	2.8E-02	1.6E+03	6.9E-02
116-H-5_Staging Pile Area Footprint	Rad	Cesium-137	10045-97-3	pCi/g	0.07	2.2E+03	3.1E-05	9.2E+02	7.4E-05
116-H-5_Staging Pile Area Footprint	non-Rad	Chromium	7440-47-3	ug/kg	10981.15	4.0E+02	**2.8E+01**	3.8E+04	2.9E-01
116-H-5_Staging Pile Area Footprint	non-Rad	Chrysene	218-01-9	ug/kg	58.58	1.8E+04	3.3E-03	4.5E+04	1.3E-03
116-H-5_Staging Pile Area Footprint	non-Rad	Cobalt	7440-48-4	ug/kg	6773.64	1.3E+04	5.2E-01	1.1E+05	6.1E-02
116-H-5_Staging Pile Area Footprint	non-Rad	Copper	7440-50-8	ug/kg	14733.27	5.0E+04	3.0E-01	1.1E+05	1.4E-01
116-H-5_Staging Pile Area Footprint	non-Rad	Dibenz[a,h]anthracene	53-70-3	ug/kg	26.00	1.8E+04	1.4E-03	4.4E+04	5.9E-04
116-H-5_Staging Pile Area Footprint	non-Rad	Fluoranthene	206-44-0	ug/kg	400.00	1.8E+04	2.2E-02	8.4E+05	4.8E-04
116-H-5_Staging Pile Area Footprint	non-Rad	Fluorene	86-73-7	ug/kg	57.00	2.9E+04	2.0E-03	1.8E+05	3.3E-04
116-H-5_Staging Pile Area Footprint	non-Rad	Fluoride	16984-48-8	ug/kg	1165.83	No Value	--	2.3E+06	5.1E-04
116-H-5_Staging Pile Area Footprint	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	42.08	1.8E+04	2.3E-03	3.6E+04	1.2E-03
116-H-5_Staging Pile Area Footprint	non-Rad	Lead	7439-92-1	ug/kg	45682.12	5.0E+04	9.1E-01	3.6E+04	**1.3E+00**
116-H-5_Staging Pile Area Footprint	non-Rad	Manganese	7439-96-5	ug/kg	280936.49	2.2E+05	**1.3E+00**	5.8E+06	4.9E-02
116-H-5_Staging Pile Area Footprint	non-Rad	Mercury	7439-97-6	ug/kg	11.58	1.0E+02	1.2E-01	1.9E+03	6.2E-03
116-H-5_Staging Pile Area Footprint	non-Rad	Molybdenum	7439-98-7	ug/kg	330.00	2.0E+03	1.7E-01	1.4E+04	2.4E-02
116-H-5_Staging Pile Area Footprint	non-Rad	Nickel	7440-02-0	ug/kg	10771.49	3.0E+04	3.6E-01	3.3E+04	3.3E-01
116-H-5_Staging Pile Area Footprint	non-Rad	Nitrogen in Nitrate	NO3-N	ug/kg	44800.00	No Value	--	No Value	--
116-H-5_Staging Pile Area Footprint	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	ug/kg	50900.00	No Value	--	No Value	--
116-H-5_Staging Pile Area Footprint	non-Rad	Pyrene	129-00-0	ug/kg	136.58	1.8E+04	7.6E-03	6.0E+05	2.3E-04

Table H-8. Comparison of 100-H OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/ Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
116-H-5_Staging Pile Area Footprint	Rad	Rads SOF	---	pCi/g	--	--	8.5E-05	--	3.0E-04
116-H-5_Staging Pile Area Footprint	Rad	Technetium-99	14133-76-7	pCi/g	0.81	2.2E+04	3.7E-05	5.4E+03	1.5E-04
116-H-5_Staging Pile Area Footprint	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	ug/kg	7400.00	2.0E+05	3.7E-02	3.6E+08	2.1E-05
116-H-5_Staging Pile Area Footprint	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	ug/kg	20866.67	No Value	--	No Value	--
116-H-5_Staging Pile Area Footprint	non-Rad	Total petroleum hydrocarbons - motor oil (high boiling)	TPH/OILH	ug/kg	97039.20	No Value	--	No Value	--
116-H-5_Staging Pile Area Footprint	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	702.51	5.0E+03	1.4E-01	3.6E+04	8.9E-04
116-H-5_Staging Pile Area Footprint	Rad	Uranium-234	13966-29-5	pCi/g	0.23	5.2E+04	4.5E-06	6.4E+03	3.6E-05
116-H-5_Staging Pile Area Footprint	Rad	Uranium-238	U-238	pCi/g	0.20	1.6E+04	1.3E-05	5.2E+03	3.8E-05
116-H-5_Staging Pile Area Footprint	non-Rad	Vanadium	7440-62-2	ug/kg	47751.55	2.0E+03	**2.4E+01**	3.1E+04	**1.5E+00**
116-H-5_Staging Pile Area Footprint	non-Rad	Zinc	7440-66-6	ug/kg	40270.91	5.0E+04	8.1E-01	6.8E+04	5.9E-01
116-H-7_Overburden	non-Rad	Aroclor-1260	11096-82-5	ug/kg	77.13	4.0E+04	1.9E-03	1.5E+03	5.2E-02
116-H-7_Overburden	non-Rad	Arsenic	7440-38-2	ug/kg	4172.15	1.0E+04	4.2E-01	1.9E+05	2.2E-02
116-H-7_Overburden	Rad	Cesium-137	10045-97-3	pCi/g	0.10	2.2E+03	4.7E-05	9.2E+02	1.1E-04
116-H-7_Overburden	non-Rad	Chromium	7440-47-3	ug/kg	11041.55	4.0E+02	**2.8E+01**	3.8E+04	2.9E-01
116-H-7_Overburden	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	590.00	No Value	--	1.3E+06	4.7E-04
116-H-7_Overburden	non-Rad	Lead	7439-92-1	ug/kg	9805.63	5.0E+04	2.0E-01	3.6E+04	2.8E-01
116-H-7_Overburden	Rad	Rads SOF	---	pCi/g	--	--	8.9E-05	--	2.9E-04
116-H-7_Overburden	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	1551.30	5.0E+03	3.1E-01	3.6E+04	2.0E-03
116-H-7_Overburden	Rad	Uranium-233/234	U-233/234	pCi/g	0.45	5.2E+04	8.8E-06	6.4E+03	7.1E-05
116-H-7_Overburden	Rad	Uranium-238	U-238	pCi/g	0.52	1.6E+04	3.3E-05	5.2E+03	1.0E-04
116-H-7_Shallow	non-Rad	Aroclor-1260	11096-82-5	ug/kg	660.00	4.0E+04	1.7E-02	1.5E+03	4.5E-01
116-H-7_Shallow	non-Rad	Arsenic	7440-38-2	ug/kg	5539.56	1.0E+04	5.5E-01	1.9E+05	2.9E-02
116-H-7_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.12	2.2E+03	5.6E-05	9.2E+02	1.3E-04
116-H-7_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	19655.57	4.0E+02	**4.9E+01**	3.8E+04	5.2E-01
116-H-7_Shallow	Rad	Europium-152	14683-23-9	pCi/g	0.68	1.5E+04	4.6E-05	1.7E+03	3.9E-04
116-H-7_Shallow	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	957.83	No Value	--	1.3E+06	7.7E-04
116-H-7_Shallow	non-Rad	Lead	7439-92-1	ug/kg	20249.37	5.0E+04	4.1E-01	3.6E+04	5.7E-01
116-H-7_Shallow	Rad	Rads SOF	---	pCi/g	--	--	1.5E-04	--	7.1E-04
116-H-7_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	1583.40	5.0E+03	3.2E-01	3.6E+04	2.0E-03
116-H-7_Shallow	Rad	Uranium-233/234	U-233/234	pCi/g	0.54	5.2E+04	1.0E-05	6.4E+03	8.4E-05
116-H-7_Shallow	Rad	Uranium-238	U-238	pCi/g	0.53	1.6E+04	3.4E-05	5.2E+03	1.0E-04
116-H-9_Shallow	non-Rad	Antimony	7440-36-0	ug/kg	434.58	5.0E+03	8.7E-02	6.0E+03	7.3E-02
116-H-9_Shallow	non-Rad	Aroclor-1254	11097-69-1	ug/kg	23.10	4.0E+04	5.8E-04	1.5E+03	1.6E-02
116-H-9_Shallow	non-Rad	Aroclor-1260	11096-82-5	ug/kg	9.56	4.0E+04	2.4E-04	1.5E+03	6.5E-03
116-H-9_Shallow	non-Rad	Aroclors HI	---	ug/kg	--	--	8.2E-04	--	2.2E-02
116-H-9_Shallow	non-Rad	Arsenic	7440-38-2	ug/kg	3604.80	1.0E+04	3.6E-01	1.9E+05	1.9E-02
116-H-9_Shallow	non-Rad	Barium	7440-39-3	ug/kg	68597.27	3.3E+05	2.1E-01	1.3E+06	5.2E-02
116-H-9_Shallow	non-Rad	Beryllium	7440-41-7	ug/kg	271.68	1.0E+04	2.7E-02	1.4E+04	2.0E-02

Table H-8. Comparison of 100-H OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/ Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
116-H-9_Shallow	non-Rad	Boron	7440-42-8	ug/kg	1253.20	5.0E+02	**2.5E+00**	1.3E+05	9.4E-03
116-H-9_Shallow	non-Rad	Cadmium	7440-43-9	ug/kg	100.37	4.0E+03	2.5E-02	1.6E+03	6.2E-02
116-H-9_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	11945.09	4.0E+02	**3.0E+01**	3.8E+04	3.1E-01
116-H-9_Shallow	non-Rad	Cobalt	7440-48-4	ug/kg	6313.35	1.3E+04	4.9E-01	1.1E+05	5.7E-02
116-H-9_Shallow	non-Rad	Copper	7440-50-8	ug/kg	13903.72	5.0E+04	2.8E-01	1.1E+05	1.3E-01
116-H-9_Shallow	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	262.18	No Value	--	1.3E+06	2.1E-04
116-H-9_Shallow	non-Rad	Lead	7439-92-1	ug/kg	6608.55	5.0E+04	1.3E-01	3.6E+04	1.9E-01
116-H-9_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	286352.06	2.2E+05	**1.3E+00**	5.8E+06	4.9E-02
116-H-9_Shallow	non-Rad	Mercury	7439-97-6	ug/kg	14.95	1.0E+02	1.5E-01	1.9E+03	8.0E-03
116-H-9_Shallow	non-Rad	Molybdenum	7439-98-7	ug/kg	242.93	2.0E+03	1.2E-01	1.4E+04	1.7E-02
116-H-9_Shallow	non-Rad	Nickel	7440-02-0	ug/kg	10510.05	3.0E+04	3.5E-01	3.3E+04	3.2E-01
116-H-9_Shallow	Rad	Plutonium-238	13981-16-3	pCi/g	0.03	1.8E+04	1.5E-06	6.0E+03	4.5E-06
116-H-9_Shallow	Rad	Rads SOF	---	pCi/g	--	--	5.9E-05	--	2.4E-04
116-H-9_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	2072.12	5.0E+03	4.1E-01	3.6E+04	2.6E-03
116-H-9_Shallow	Rad	Uranium-233/234	U-233/234	pCi/g	0.67	5.2E+04	1.3E-05	6.4E+03	1.1E-04
116-H-9_Shallow	Rad	Uranium-238	U-238	pCi/g	0.70	1.6E+04	4.4E-05	5.2E+03	1.4E-04
116-H-9_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	42911.37	2.0E+03	**2.2E+01**	3.1E+04	**1.4E+00**
116-H-9_Shallow	non-Rad	Zinc	7440-66-6	ug/kg	37066.70	5.0E+04	7.4E-01	6.8E+04	5.5E-01
118-H-1:1_Overburden	non-Rad	Acenaphthene	83-32-9	ug/kg	74.59	2.0E+04	3.7E-03	1.1E+06	6.8E-05
118-H-1:1_Overburden	non-Rad	Anthracene	120-12-7	ug/kg	8.24	2.9E+04	2.8E-04	6.8E+05	1.2E-05
118-H-1:1_Overburden	non-Rad	Antimony	7440-36-0	ug/kg	489.24	5.0E+03	9.8E-02	6.0E+03	8.2E-02
118-H-1:1_Overburden	non-Rad	Aroclor-1254	11097-69-1	ug/kg	8.46	4.0E+04	2.1E-04	1.5E+03	5.7E-03
118-H-1:1_Overburden	non-Rad	Aroclor-1260	11096-82-5	ug/kg	10.40	4.0E+04	2.6E-04	1.5E+03	7.1E-03
118-H-1:1_Overburden	non-Rad	Aroclors HI	---	ug/kg	--	--	4.7E-04	--	1.3E-02
118-H-1:1_Overburden	non-Rad	Arsenic	7440-38-2	ug/kg	5698.26	1.0E+04	5.7E-01	1.9E+05	3.0E-02
118-H-1:1_Overburden	non-Rad	Barium	7440-39-3	ug/kg	101321.95	3.3E+05	3.1E-01	1.3E+06	7.7E-02
118-H-1:1_Overburden	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	34.47	1.8E+04	1.9E-03	6.4E+04	5.4E-04
118-H-1:1_Overburden	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	57.40	1.8E+04	3.2E-03	7.6E+04	7.5E-04
118-H-1:1_Overburden	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	32.65	1.8E+04	1.8E-03	3.9E+04	8.3E-04
118-H-1:1_Overburden	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	19.33	1.8E+04	1.1E-03	3.9E+04	4.9E-04
118-H-1:1_Overburden	non-Rad	Beryllium	7440-41-7	ug/kg	288.09	1.0E+04	2.9E-02	1.4E+04	2.1E-02
118-H-1:1_Overburden	non-Rad	Boron	7440-42-8	ug/kg	10531.96	5.0E+02	**2.1E+01**	1.3E+05	7.9E-02
118-H-1:1_Overburden	non-Rad	Cadmium	7440-43-9	ug/kg	75.98	4.0E+03	1.9E-02	1.6E+03	4.7E-02
118-H-1:1_Overburden	Rad	Carbon-14	14762-75-5	pCi/g	1.39	6.1E+04	2.3E-05	3.2E+01	4.4E-02
118-H-1:1_Overburden	Rad	Cesium-137	10045-97-3	pCi/g	0.06	2.2E+03	2.8E-05	9.2E+02	6.6E-05
118-H-1:1_Overburden	non-Rad	Chromium	7440-47-3	ug/kg	13618.49	4.0E+02	**3.4E+01**	3.8E+04	3.6E-01
118-H-1:1_Overburden	non-Rad	Chrysene	218-01-9	ug/kg	50.83	1.8E+04	2.8E-03	4.5E+04	1.1E-03
118-H-1:1_Overburden	non-Rad	Cobalt	7440-48-4	ug/kg	7752.12	1.3E+04	6.0E-01	1.1E+05	7.0E-02
118-H-1:1_Overburden	non-Rad	Copper	7440-50-8	ug/kg	16317.06	5.0E+04	3.3E-01	1.1E+05	1.5E-01
118-H-1:1_Overburden	non-Rad	Dibenz[a,h]anthracene	53-70-3	ug/kg	4.57	1.8E+04	2.5E-04	4.4E+04	1.0E-04
118-H-1:1_Overburden	non-Rad	Fluoranthene	206-44-0	ug/kg	133.60	1.8E+04	7.4E-03	8.4E+05	1.6E-04
118-H-1:1_Overburden	non-Rad	Fluorene	86-73-7	ug/kg	6.78	2.9E+04	2.3E-04	1.8E+05	3.9E-05
118-H-1:1_Overburden	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	79.23	1.8E+04	4.4E-03	3.6E+04	2.2E-03
118-H-1:1_Overburden	non-Rad	Lead	7439-92-1	ug/kg	17746.14	5.0E+04	3.6E-01	3.6E+04	5.0E-01
118-H-1:1_Overburden	non-Rad	Manganese	7439-96-5	ug/kg	344386.72	2.2E+05	**1.6E+00**	5.8E+06	5.9E-02
118-H-1:1_Overburden	non-Rad	Mercury	7439-97-6	ug/kg	11.00	1.0E+02	1.1E-01	1.9E+03	5.9E-03
118-H-1:1_Overburden	non-Rad	Molybdenum	7439-98-7	ug/kg	365.73	2.0E+03	1.8E-01	1.4E+04	2.6E-02
118-H-1:1_Overburden	non-Rad	Naphthalene	91-20-3	ug/kg	13.25	2.9E+04	4.6E-04	1.0E+05	1.3E-04

Table H-8. Comparison of 100-H OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/ Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
118-H-1:1_Overburden	non-Rad	Nickel	7440-02-0	ug/kg	13288.91	3.0E+04	4.4E-01	3.3E+04	4.1E-01
118-H-1:1_Overburden	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	ug/kg	4752.82	No Value	--	No Value	--
118-H-1:1_Overburden	non-Rad	Pyrene	129-00-0	ug/kg	117.07	1.8E+04	6.5E-03	6.0E+05	2.0E-04
118-H-1:1_Overburden	Rad	Rads SOF	---	pCi/g	--	--	5.0E-05	--	4.4E-02
118-H-1:1_Overburden	non-Rad	Selenium	7782-49-2	ug/kg	326.00	5.2E+02	6.3E-01	1.9E+03	1.7E-01
118-H-1:1_Overburden	non-Rad	Silver	7440-22-4	ug/kg	224.01	2.0E+03	1.1E-01	5.0E+04	4.5E-03
118-H-1:1_Overburden	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	ug/kg	8992.09	2.0E+05	4.5E-02	3.6E+08	2.5E-05
118-H-1:1_Overburden	non-Rad	Total petroleum hydrocarbons - motor oil (high boiling)	TPH/OILH	ug/kg	15814.43	No Value	--	No Value	--
118-H-1:1_Overburden	non-Rad	Vanadium	7440-62-2	ug/kg	58280.61	2.0E+03	**2.9E+01**	3.1E+04	**1.9E+00**
118-H-1:1_Overburden	non-Rad	Zinc	7440-66-6	ug/kg	44523.15	5.0E+04	8.9E-01	6.8E+04	6.6E-01
118-H-1:1_Shallow_1	non-Rad	Acenaphthene	83-32-9	ug/kg	2.51	2.0E+04	1.3E-04	1.1E+06	2.3E-06
118-H-1:1_Shallow_1	non-Rad	Anthracene	120-12-7	ug/kg	3.59	2.9E+04	1.2E-04	6.8E+05	5.3E-06
118-H-1:1_Shallow_1	non-Rad	Arsenic	7440-38-2	ug/kg	3458.79	1.0E+04	3.5E-01	1.9E+05	1.8E-02
118-H-1:1_Shallow_1	non-Rad	Barium	7440-39-3	ug/kg	49873.39	3.3E+05	1.5E-01	1.3E+06	3.8E-02
118-H-1:1_Shallow_1	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	11.35	1.8E+04	6.3E-04	6.4E+04	1.8E-04
118-H-1:1_Shallow_1	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	9.80	1.8E+04	5.5E-04	7.6E+04	1.3E-04
118-H-1:1_Shallow_1	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	8.34	1.8E+04	4.6E-04	3.9E+04	2.1E-04
118-H-1:1_Shallow_1	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	5.14	1.8E+04	2.9E-04	3.9E+04	1.3E-04
118-H-1:1_Shallow_1	non-Rad	Beryllium	7440-41-7	ug/kg	180.63	1.0E+04	1.8E-02	1.4E+04	1.3E-02
118-H-1:1_Shallow_1	non-Rad	Boron	7440-42-8	ug/kg	1455.59	5.0E+02	**2.9E+00**	1.3E+05	1.1E-02
118-H-1:1_Shallow_1	non-Rad	Cadmium	7440-43-9	ug/kg	49.68	4.0E+03	1.2E-02	1.6E+03	3.1E-02
118-H-1:1_Shallow_1	Rad	Carbon-14	14762-75-5	pCi/g	1.90	6.1E+04	3.1E-05	3.2E+01	6.0E-02
118-H-1:1_Shallow_1	Rad	Cesium-137	10045-97-3	pCi/g	0.17	2.2E+03	7.9E-05	9.2E+02	1.9E-04
118-H-1:1_Shallow_1	non-Rad	Chromium	7440-47-3	ug/kg	10810.19	4.0E+02	**2.7E+01**	3.8E+04	2.8E-01
118-H-1:1_Shallow_1	non-Rad	Chrysene	218-01-9	ug/kg	10.56	1.8E+04	5.9E-04	4.5E+04	2.4E-04
118-H-1:1_Shallow_1	non-Rad	Cobalt	7440-48-4	ug/kg	5629.77	1.3E+04	4.3E-01	1.1E+05	5.1E-02
118-H-1:1_Shallow_1	Rad	Cobalt-60	10198-40-0	pCi/g	0.19	6.1E+03	3.1E-05	8.1E+02	2.4E-04
118-H-1:1_Shallow_1	non-Rad	Copper	7440-50-8	ug/kg	12892.64	5.0E+04	2.6E-01	1.1E+05	1.2E-01
118-H-1:1_Shallow_1	non-Rad	Dibenz[a,h]anthracene	53-70-3	ug/kg	3.41	1.8E+04	1.9E-04	4.4E+04	7.7E-05
118-H-1:1_Shallow_1	Rad	Europium-152	14683-23-9	pCi/g	0.21	1.5E+04	1.4E-05	1.7E+03	1.2E-04
118-H-1:1_Shallow_1	non-Rad	Fluoranthene	206-44-0	ug/kg	17.29	1.8E+04	9.6E-04	8.4E+05	2.1E-05
118-H-1:1_Shallow_1	non-Rad	Fluorene	86-73-7	ug/kg	1.51	2.9E+04	5.2E-05	1.8E+05	8.6E-06
118-H-1:1_Shallow_1	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	9.50	1.8E+04	5.3E-04	3.6E+04	2.7E-04
118-H-1:1_Shallow_1	non-Rad	Lead	7439-92-1	ug/kg	6608.57	5.0E+04	1.3E-01	3.6E+04	1.9E-01
118-H-1:1_Shallow_1	non-Rad	Manganese	7439-96-5	ug/kg	252370.41	2.2E+05	**1.2E+00**	5.8E+06	4.4E-02
118-H-1:1_Shallow_1	non-Rad	Mercury	7439-97-6	ug/kg	18.00	1.0E+02	1.8E-01	1.9E+03	9.6E-03
118-H-1:1_Shallow_1	non-Rad	Molybdenum	7439-98-7	ug/kg	249.32	2.0E+03	1.3E-01	1.4E+04	1.8E-02
118-H-1:1_Shallow_1	non-Rad	Naphthalene	91-20-3	ug/kg	3.34	2.9E+04	1.2E-04	1.0E+05	3.3E-05
118-H-1:1_Shallow_1	non-Rad	Nickel	7440-02-0	ug/kg	10583.15	3.0E+04	3.5E-01	3.3E+04	3.3E-01
118-H-1:1_Shallow_1	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	ug/kg	5340.46	No Value	--	No Value	--
118-H-1:1_Shallow_1	Rad	Plutonium-239/240	PU-239/240	pCi/g	2.83	1.3E+04	2.2E-04	6.3E+03	4.5E-04
118-H-1:1_Shallow_1	non-Rad	Pyrene	129-00-0	ug/kg	36.15	1.8E+04	2.0E-03	6.0E+05	6.0E-05
118-H-1:1_Shallow_1	Rad	Rads SOF	---	pCi/g	--	--	7.9E-04	--	8.5E-02
118-H-1:1_Shallow_1	non-Rad	Selenium	7782-49-2	ug/kg	1000.00	5.2E+02	**1.9E+00**	1.9E+03	5.3E-01
118-H-1:1_Shallow_1	Rad	Total beta radiostrontium	SR-RAD	pCi/g	1.47	3.6E+03	4.1E-04	9.1E+01	1.6E-02

Table H-8. Comparison of 100-H OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/ Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
118-H-1:1_Shallow_1	non-Rad	Total petroleum hydrocarbons - motor oil (high boiling)	TPH/OILH	ug/kg	8315.18	No Value	--	No Value	--
118-H-1:1_Shallow_1	Rad	Tritium	10028-17-8	pCi/g	3.40	1.7E+06	2.0E-06	4.2E+02	8.1E-03
118-H-1:1_Shallow_1	non-Rad	Vanadium	7440-62-2	ug/kg	43653.09	2.0E+03	**2.2E+01**	3.1E+04	**1.4E+00**
118-H-1:1_Shallow_1	non-Rad	Zinc	7440-66-6	ug/kg	33576.96	5.0E+04	6.7E-01	6.8E+04	5.0E-01
118-H-1:1_Shallow_2	non-Rad	Acenaphthene	83-32-9	ug/kg	1.84	2.0E+04	9.2E-05	1.1E+06	1.7E-06
118-H-1:1_Shallow_2	non-Rad	Anthracene	120-12-7	ug/kg	3.03	2.9E+04	1.0E-04	6.8E+05	4.5E-06
118-H-1:1_Shallow_2	non-Rad	Antimony	7440-36-0	ug/kg	257.00	5.0E+03	5.1E-02	6.0E+03	4.3E-02
118-H-1:1_Shallow_2	non-Rad	Aroclor-1254	11097-69-1	ug/kg	5.05	4.0E+04	1.3E-04	1.5E+03	3.4E-03
118-H-1:1_Shallow_2	non-Rad	Aroclor-1260	11096-82-5	ug/kg	3.65	4.0E+04	9.1E-05	1.5E+03	2.5E-03
118-H-1:1_Shallow_2	non-Rad	Aroclors HI	---	ug/kg	--	--	2.2E-04	--	5.9E-03
118-H-1:1_Shallow_2	non-Rad	Arsenic	7440-38-2	ug/kg	2886.58	1.0E+04	2.9E-01	1.9E+05	1.5E-02
118-H-1:1_Shallow_2	non-Rad	Barium	7440-39-3	ug/kg	51004.14	3.3E+05	1.6E-01	1.3E+06	3.9E-02
118-H-1:1_Shallow_2	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	9.08	1.8E+04	5.0E-04	6.4E+04	1.4E-04
118-H-1:1_Shallow_2	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	3.31	1.8E+04	1.8E-04	7.6E+04	4.3E-05
118-H-1:1_Shallow_2	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	7.66	1.8E+04	4.3E-04	3.9E+04	2.0E-04
118-H-1:1_Shallow_2	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	4.31	1.8E+04	2.4E-04	3.9E+04	1.1E-04
118-H-1:1_Shallow_2	non-Rad	Beryllium	7440-41-7	ug/kg	181.97	1.0E+04	1.8E-02	1.4E+04	1.3E-02
118-H-1:1_Shallow_2	non-Rad	Boron	7440-42-8	ug/kg	1762.72	5.0E+02	**3.5E+00**	1.3E+05	1.3E-02
118-H-1:1_Shallow_2	non-Rad	Cadmium	7440-43-9	ug/kg	113.94	4.0E+03	2.9E-02	1.6E+03	7.0E-02
118-H-1:1_Shallow_2	Rad	Carbon-14	14762-75-5	pCi/g	1.85	6.1E+04	3.1E-05	3.2E+01	5.9E-02
118-H-1:1_Shallow_2	Rad	Cesium-137	10045-97-3	pCi/g	0.52	2.2E+03	2.4E-04	9.2E+02	5.6E-04
118-H-1:1_Shallow_2	non-Rad	Chromium	7440-47-3	ug/kg	12051.27	4.0E+02	**3.0E+01**	3.8E+04	3.2E-01
118-H-1:1_Shallow_2	non-Rad	Chrysene	218-01-9	ug/kg	3.72	1.8E+04	2.1E-04	4.5E+04	8.4E-05
118-H-1:1_Shallow_2	non-Rad	Cobalt	7440-48-4	ug/kg	5565.84	1.3E+04	4.3E-01	1.1E+05	5.0E-02
118-H-1:1_Shallow_2	Rad	Cobalt-60	10198-40-0	pCi/g	0.11	6.1E+03	1.8E-05	8.1E+02	1.4E-04
118-H-1:1_Shallow_2	non-Rad	Copper	7440-50-8	ug/kg	14352.55	5.0E+04	2.9E-01	1.1E+05	1.3E-01
118-H-1:1_Shallow_2	non-Rad	Dibenz[a,h]anthracene	53-70-3	ug/kg	1.45	1.8E+04	8.1E-05	4.4E+04	3.3E-05
118-H-1:1_Shallow_2	Rad	Europium-152	14683-23-9	pCi/g	0.26	1.5E+04	1.8E-05	1.7E+03	1.5E-04
118-H-1:1_Shallow_2	non-Rad	Fluoranthene	206-44-0	ug/kg	21.17	1.8E+04	1.2E-03	8.4E+05	2.5E-05
118-H-1:1_Shallow_2	non-Rad	Fluorene	86-73-7	ug/kg	1.50	2.9E+04	5.2E-05	1.8E+05	8.6E-06
118-H-1:1_Shallow_2	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	3.92	1.8E+04	2.2E-04	3.6E+04	1.1E-04
118-H-1:1_Shallow_2	non-Rad	Lead	7439-92-1	ug/kg	3640.63	5.0E+04	7.3E-02	3.6E+04	1.0E-01
118-H-1:1_Shallow_2	non-Rad	Manganese	7439-96-5	ug/kg	254152.72	2.2E+05	**1.2E+00**	5.8E+06	4.4E-02
118-H-1:1_Shallow_2	non-Rad	Mercury	7439-97-6	ug/kg	57.00	1.0E+02	5.7E-01	1.9E+03	3.1E-02
118-H-1:1_Shallow_2	non-Rad	Molybdenum	7439-98-7	ug/kg	236.97	2.0E+03	1.2E-01	1.4E+04	1.7E-02
118-H-1:1_Shallow_2	non-Rad	Nickel	7440-02-0	ug/kg	11936.61	3.0E+04	4.0E-01	3.3E+04	3.7E-01
118-H-1:1_Shallow_2	Rad	Nickel-63	13981-37-8	pCi/g	8.62	No Value	--	No Value	--
118-H-1:1_Shallow_2	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	ug/kg	1950.41	No Value	--	No Value	--
118-H-1:1_Shallow_2	non-Rad	Pyrene	129-00-0	ug/kg	9.25	1.8E+04	5.1E-04	6.0E+05	1.5E-05
118-H-1:1_Shallow_2	Rad	Rads SOF	---	pCi/g	--	--	9.6E-04	--	9.4E-02
118-H-1:1_Shallow_2	Rad	Total beta radiostrontium	SR-RAD	pCi/g	2.33	3.6E+03	6.5E-04	9.1E+01	2.6E-02
118-H-1:1_Shallow_2	non-Rad	Total petroleum hydrocarbons - motor oil (high boiling)	TPH/OILH	ug/kg	3880.00	No Value	--	No Value	--
118-H-1:1_Shallow_2	Rad	Tritium	10028-17-8	pCi/g	4.01	1.7E+06	2.4E-06	4.2E+02	9.6E-03
118-H-1:1_Shallow_2	non-Rad	Vanadium	7440-62-2	ug/kg	45883.03	2.0E+03	**2.3E+01**	3.1E+04	**1.5E+00**
118-H-1:1_Shallow_2	non-Rad	Zinc	7440-66-6	ug/kg	34227.05	5.0E+04	6.9E-01	6.8E+04	5.1E-01
118-H-1:1_Shallow_Focused	non-Rad	Acenaphthene	83-32-9	ug/kg	6.92	2.0E+04	3.5E-04	1.1E+06	6.3E-06

Table H-8. Comparison of 100-H OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/ Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
118-H-1:1_Shallow_Focused	non-Rad	Antimony	7440-36-0	ug/kg	226.00	5.0E+03	4.5E-02	6.0E+03	3.8E-02
118-H-1:1_Shallow_Focused	non-Rad	Aroclor-1254	11097-69-1	ug/kg	28.50	4.0E+04	7.1E-04	1.5E+03	1.9E-02
118-H-1:1_Shallow_Focused	non-Rad	Aroclor-1260	11096-82-5	ug/kg	28.30	4.0E+04	7.1E-04	1.5E+03	1.9E-02
118-H-1:1_Shallow_Focused	non-Rad	Aroclors HI	---	ug/kg	--	--	1.4E-03	--	3.9E-02
118-H-1:1_Shallow_Focused	non-Rad	Arsenic	7440-38-2	ug/kg	4110.00	1.0E+04	4.1E-01	1.9E+05	2.2E-02
118-H-1:1_Shallow_Focused	non-Rad	Barium	7440-39-3	ug/kg	98300.00	3.3E+05	3.0E-01	1.3E+06	7.4E-02
118-H-1:1_Shallow_Focused	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	4.52	1.8E+04	2.5E-04	6.4E+04	7.1E-05
118-H-1:1_Shallow_Focused	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	5.34	1.8E+04	3.0E-04	7.6E+04	7.0E-05
118-H-1:1_Shallow_Focused	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	9.74	1.8E+04	5.4E-04	3.9E+04	2.5E-04
118-H-1:1_Shallow_Focused	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	2.43	1.8E+04	1.4E-04	3.9E+04	6.2E-05
118-H-1:1_Shallow_Focused	non-Rad	Beryllium	7440-41-7	ug/kg	206.00	1.0E+04	2.1E-02	1.4E+04	1.5E-02
118-H-1:1_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	4160.00	5.0E+02	**8.3E+00**	1.3E+05	3.1E-02
118-H-1:1_Shallow_Focused	non-Rad	Cadmium	7440-43-9	ug/kg	306.00	4.0E+03	7.7E-02	1.6E+03	1.9E-01
118-H-1:1_Shallow_Focused	Rad	Carbon-14	14762-75-5	pCi/g	2.12	6.1E+04	3.5E-05	3.2E+01	6.7E-02
118-H-1:1_Shallow_Focused	Rad	Cesium-137	10045-97-3	pCi/g	1.02	2.2E+03	4.6E-04	9.2E+02	1.1E-03
118-H-1:1_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	22000.00	4.0E+02	**5.5E+01**	3.8E+04	5.8E-01
118-H-1:1_Shallow_Focused	non-Rad	Chrysene	218-01-9	ug/kg	25.40	1.8E+04	1.4E-03	4.5E+04	5.7E-04
118-H-1:1_Shallow_Focused	non-Rad	Cobalt	7440-48-4	ug/kg	7740.00	1.3E+04	6.0E-01	1.1E+05	6.9E-02
118-H-1:1_Shallow_Focused	Rad	Cobalt-60	10198-40-0	pCi/g	0.06	6.1E+03	1.0E-05	8.1E+02	7.7E-05
118-H-1:1_Shallow_Focused	non-Rad	Copper	7440-50-8	ug/kg	18700.00	5.0E+04	3.7E-01	1.1E+05	1.8E-01
118-H-1:1_Shallow_Focused	non-Rad	Dibenz[a,h]anthracene	53-70-3	ug/kg	0.89	1.8E+04	4.9E-05	4.4E+04	2.0E-05
118-H-1:1_Shallow_Focused	Rad	Europium-152	14683-23-9	pCi/g	0.30	1.5E+04	2.1E-05	1.7E+03	1.7E-04
118-H-1:1_Shallow_Focused	non-Rad	Fluoranthene	206-44-0	ug/kg	17.30	1.8E+04	9.6E-04	8.4E+05	2.1E-05
118-H-1:1_Shallow_Focused	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	15.20	1.8E+04	8.4E-04	3.6E+04	4.3E-04
118-H-1:1_Shallow_Focused	non-Rad	Lead	7439-92-1	ug/kg	10900.00	5.0E+04	2.2E-01	3.6E+04	3.1E-01
118-H-1:1_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	295000.00	2.2E+05	**1.3E+00**	5.8E+06	5.1E-02
118-H-1:1_Shallow_Focused	non-Rad	Mercury	7439-97-6	ug/kg	202.00	1.0E+02	**2.0E+00**	1.9E+03	1.1E-01
118-H-1:1_Shallow_Focused	non-Rad	Molybdenum	7439-98-7	ug/kg	341.00	2.0E+03	1.7E-01	1.4E+04	2.4E-02
118-H-1:1_Shallow_Focused	non-Rad	Naphthalene	91-20-3	ug/kg	8.24	2.9E+04	2.8E-04	1.0E+05	8.2E-05
118-H-1:1_Shallow_Focused	non-Rad	Nickel	7440-02-0	ug/kg	12600.00	3.0E+04	4.2E-01	3.3E+04	3.9E-01
118-H-1:1_Shallow_Focused	Rad	Nickel-63	13981-37-8	pCi/g	10.80	No Value	--	No Value	--
118-H-1:1_Shallow_Focused	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	ug/kg	3480.00	No Value	--	No Value	--
118-H-1:1_Shallow_Focused	Rad	Plutonium-239/240	PU-239/240	pCi/g	0.35	1.3E+04	2.8E-05	6.3E+03	5.6E-05
118-H-1:1_Shallow_Focused	non-Rad	Pyrene	129-00-0	ug/kg	11.40	1.8E+04	6.3E-04	6.0E+05	1.9E-05
118-H-1:1_Shallow_Focused	Rad	Rads SOF	---	pCi/g	--	--	9.5E-04	--	1.0E-01
118-H-1:1_Shallow_Focused	Rad	Total beta radiostrontium	SR-RAD	pCi/g	1.41	3.6E+03	3.9E-04	9.1E+01	1.6E-02
118-H-1:1_Shallow_Focused	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	ug/kg	17500.00	2.0E+05	8.8E-02	3.6E+08	4.9E-05
118-H-1:1_Shallow_Focused	non-Rad	Total petroleum hydrocarbons - motor oil (high boiling)	TPH/OILH	ug/kg	30300.00	No Value	--	No Value	--
118-H-1:1_Shallow_Focused	Rad	Tritium	10028-17-8	pCi/g	8.69	1.7E+06	5.2E-06	4.2E+02	2.1E-02
118-H-1:1_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	44900.00	2.0E+03	**2.3E+01**	3.1E+04	**1.4E+00**
118-H-1:1_Shallow_Focused	non-Rad	Zinc	7440-66-6	ug/kg	40700.00	5.0E+04	8.1E-01	6.8E+04	6.0E-01
118-H-1:1_Staging Pile Area Footprint	non-Rad	Acenaphthene	83-32-9	ug/kg	5.34	2.0E+04	2.7E-04	1.1E+06	4.9E-06
118-H-1:1_Staging Pile Area Footprint	non-Rad	Arsenic	7440-38-2	ug/kg	3372.02	1.0E+04	3.4E-01	1.9E+05	1.8E-02

Table H-8. Comparison of 100-H OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/ Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
118-H-1:1_Staging Pile Area Footprint	non-Rad	Barium	7440-39-3	ug/kg	47506.19	3.3E+05	1.4E-01	1.3E+06	3.6E-02
118-H-1:1_Staging Pile Area Footprint	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	1.55	1.8E+04	8.6E-05	6.4E+04	2.4E-05
118-H-1:1_Staging Pile Area Footprint	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	1.94	1.8E+04	1.1E-04	7.6E+04	2.5E-05
118-H-1:1_Staging Pile Area Footprint	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	2.21	1.8E+04	1.2E-04	3.9E+04	5.6E-05
118-H-1:1_Staging Pile Area Footprint	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	1.30	1.8E+04	7.2E-05	3.9E+04	3.3E-05
118-H-1:1_Staging Pile Area Footprint	non-Rad	Beryllium	7440-41-7	ug/kg	182.29	1.0E+04	1.8E-02	1.4E+04	1.3E-02
118-H-1:1_Staging Pile Area Footprint	non-Rad	Boron	7440-42-8	ug/kg	1216.93	5.0E+02	**2.4E+00**	1.3E+05	9.2E-03
118-H-1:1_Staging Pile Area Footprint	non-Rad	Cadmium	7440-43-9	ug/kg	87.44	4.0E+03	2.2E-02	1.6E+03	5.4E-02
118-H-1:1_Staging Pile Area Footprint	Rad	Carbon-14	14762-75-5	pCi/g	1.13	6.1E+04	1.9E-05	3.2E+01	3.6E-02
118-H-1:1_Staging Pile Area Footprint	Rad	Cesium-137	10045-97-3	pCi/g	0.69	2.2E+03	3.1E-04	9.2E+02	7.5E-04
118-H-1:1_Staging Pile Area Footprint	non-Rad	Chromium	7440-47-3	ug/kg	12038.80	4.0E+02	**3.0E+01**	3.8E+04	3.2E-01
118-H-1:1_Staging Pile Area Footprint	non-Rad	Chrysene	218-01-9	ug/kg	2.08	1.8E+04	1.2E-04	4.5E+04	4.7E-05
118-H-1:1_Staging Pile Area Footprint	non-Rad	Cobalt	7440-48-4	ug/kg	5254.84	1.3E+04	4.0E-01	1.1E+05	4.7E-02
118-H-1:1_Staging Pile Area Footprint	Rad	Cobalt-60	10198-40-0	pCi/g	0.13	6.1E+03	2.0E-05	8.1E+02	1.6E-04
118-H-1:1_Staging Pile Area Footprint	non-Rad	Copper	7440-50-8	ug/kg	13136.08	5.0E+04	2.6E-01	1.1E+05	1.2E-01
118-H-1:1_Staging Pile Area Footprint	Rad	Europium-152	14683-23-9	pCi/g	0.19	1.5E+04	1.3E-05	1.7E+03	1.1E-04
118-H-1:1_Staging Pile Area Footprint	non-Rad	Fluoranthene	206-44-0	ug/kg	3.79	1.8E+04	2.1E-04	8.4E+05	4.5E-06
118-H-1:1_Staging Pile Area Footprint	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	1.79	1.8E+04	9.9E-05	3.6E+04	5.0E-05
118-H-1:1_Staging Pile Area Footprint	non-Rad	Lead	7439-92-1	ug/kg	5801.53	5.0E+04	1.2E-01	3.6E+04	1.6E-01
118-H-1:1_Staging Pile Area Footprint	non-Rad	Manganese	7439-96-5	ug/kg	254282.63	2.2E+05	**1.2E+00**	5.8E+06	4.4E-02
118-H-1:1_Staging Pile Area Footprint	non-Rad	Mercury	7439-97-6	ug/kg	32.00	1.0E+02	3.2E-01	1.9E+03	1.7E-02
118-H-1:1_Staging Pile Area Footprint	non-Rad	Molybdenum	7439-98-7	ug/kg	222.88	2.0E+03	1.1E-01	1.4E+04	1.6E-02
118-H-1:1_Staging Pile Area Footprint	non-Rad	Nickel	7440-02-0	ug/kg	10780.49	3.0E+04	3.6E-01	3.3E+04	3.3E-01
118-H-1:1_Staging Pile Area Footprint	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	ug/kg	4861.08	No Value	--	No Value	--

Table H-8. Comparison of 100-H OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/ Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
118-H-1:1_Staging Pile Area Footprint	non-Rad	Pyrene	129-00-0	ug/kg	5.72	1.8E+04	3.2E-04	6.0E+05	9.5E-06
118-H-1:1_Staging Pile Area Footprint	Rad	Rads SOF	---	pCi/g	--	--	5.0E-04	--	4.9E-02
118-H-1:1_Staging Pile Area Footprint	non-Rad	Silver	7440-22-4	ug/kg	131.00	2.0E+03	6.6E-02	5.0E+04	2.6E-03
118-H-1:1_Staging Pile Area Footprint	Rad	Total beta radiostrontium	SR-RAD	pCi/g	0.49	3.6E+03	1.4E-04	9.1E+01	5.4E-03
118-H-1:1_Staging Pile Area Footprint	non-Rad	Total petroleum hydrocarbons - motor oil (high boiling)	TPH/OILH	ug/kg	7616.67	No Value	--	No Value	--
118-H-1:1_Staging Pile Area Footprint	Rad	Tritium	10028-17-8	pCi/g	2.68	1.7E+06	1.6E-06	4.2E+02	6.4E-03
118-H-1:1_Staging Pile Area Footprint	non-Rad	Vanadium	7440-62-2	ug/kg	42420.39	2.0E+03	**2.1E+01**	3.1E+04	**1.4E+00**
118-H-1:1_Staging Pile Area Footprint	non-Rad	Zinc	7440-66-6	ug/kg	32171.81	5.0E+04	6.4E-01	6.8E+04	4.8E-01
118-H-1:2_Shallow	non-Rad	Anthracene	120-12-7	ug/kg	12.00	2.9E+04	4.1E-04	6.8E+05	1.8E-05
118-H-1:2_Shallow	non-Rad	Arsenic	7440-38-2	ug/kg	4300.63	1.0E+04	4.3E-01	1.9E+05	2.3E-02
118-H-1:2_Shallow	non-Rad	Barium	7440-39-3	ug/kg	88725.08	3.3E+05	2.7E-01	1.3E+06	6.7E-02
118-H-1:2_Shallow	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	27.74	1.8E+04	1.5E-03	6.4E+04	4.3E-04
118-H-1:2_Shallow	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	33.39	1.8E+04	1.9E-03	7.6E+04	4.4E-04
118-H-1:2_Shallow	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	24.49	1.8E+04	1.4E-03	3.9E+04	6.2E-04
118-H-1:2_Shallow	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	40.00	1.8E+04	2.2E-03	3.9E+04	1.0E-03
118-H-1:2_Shallow	non-Rad	Beryllium	7440-41-7	ug/kg	206.67	1.0E+04	2.1E-02	1.4E+04	1.5E-02
118-H-1:2_Shallow	non-Rad	Boron	7440-42-8	ug/kg	2322.98	5.0E+02	**4.7E+00**	1.3E+05	1.8E-02
118-H-1:2_Shallow	non-Rad	Cadmium	7440-43-9	ug/kg	135.74	4.0E+03	3.4E-02	1.6E+03	8.3E-02
118-H-1:2_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	12971.25	4.0E+02	**3.2E+01**	3.8E+04	3.4E-01
118-H-1:2_Shallow	non-Rad	Chrysene	218-01-9	ug/kg	32.78	1.8E+04	1.8E-03	4.5E+04	7.4E-04
118-H-1:2_Shallow	non-Rad	Cobalt	7440-48-4	ug/kg	8234.08	1.3E+04	6.3E-01	1.1E+05	7.4E-02
118-H-1:2_Shallow	non-Rad	Copper	7440-50-8	ug/kg	17149.39	5.0E+04	3.4E-01	1.1E+05	1.6E-01
118-H-1:2_Shallow	non-Rad	Fluoranthene	206-44-0	ug/kg	75.66	1.8E+04	4.2E-03	8.4E+05	9.0E-05
118-H-1:2_Shallow	non-Rad	Fluorene	86-73-7	ug/kg	7.30	2.9E+04	2.5E-04	1.8E+05	4.2E-05
118-H-1:2_Shallow	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	544.06	No Value	--	1.3E+06	4.4E-04
118-H-1:2_Shallow	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	68.00	1.8E+04	3.8E-03	3.6E+04	1.9E-03
118-H-1:2_Shallow	non-Rad	Lead	7439-92-1	ug/kg	10968.03	5.0E+04	2.2E-01	3.6E+04	3.1E-01
118-H-1:2_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	340196.02	2.2E+05	**1.6E+00**	5.8E+06	5.9E-02
118-H-1:2_Shallow	non-Rad	Mercury	7439-97-6	ug/kg	10.00	1.0E+02	1.0E-01	1.9E+03	5.4E-03
118-H-1:2_Shallow	non-Rad	Molybdenum	7439-98-7	ug/kg	300.04	2.0E+03	1.5E-01	1.4E+04	2.2E-02
118-H-1:2_Shallow	non-Rad	Nickel	7440-02-0	ug/kg	13022.42	3.0E+04	4.3E-01	3.3E+04	4.0E-01
118-H-1:2_Shallow	non-Rad	Pyrene	129-00-0	ug/kg	83.64	1.8E+04	4.7E-03	6.0E+05	1.4E-04
118-H-1:2_Shallow	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	ug/kg	7600.00	2.0E+05	3.8E-02	3.6E+08	2.1E-05
118-H-1:2_Shallow	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	ug/kg	4041.67	No Value	--	No Value	--
118-H-1:2_Shallow	Rad	Tritium	10028-17-8	pCi/g	0.06	1.7E+06	3.8E-08	4.2E+02	1.5E-04
118-H-1:2_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	44407.29	2.0E+03	**2.2E+01**	3.1E+04	**1.4E+00**
118-H-1:2_Shallow	non-Rad	Zinc	7440-66-6	ug/kg	43742.82	5.0E+04	8.8E-01	6.8E+04	6.5E-01
118-H-1:2_Shallow_Focused	non-Rad	Anthracene	120-12-7	ug/kg	7.60	2.9E+04	2.6E-04	6.8E+05	1.1E-05

Table H-8. Comparison of 100-H OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/ Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
118-H-1:2_Shallow_Focused	non-Rad	Arsenic	7440-38-2	ug/kg	3700.00	1.0E+04	3.7E-01	1.9E+05	2.0E-02
118-H-1:2_Shallow_Focused	non-Rad	Barium	7440-39-3	ug/kg	53700.00	3.3E+05	1.6E-01	1.3E+06	4.1E-02
118-H-1:2_Shallow_Focused	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	43.00	1.8E+04	2.4E-03	6.4E+04	6.7E-04
118-H-1:2_Shallow_Focused	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	33.00	1.8E+04	1.8E-03	7.6E+04	4.3E-04
118-H-1:2_Shallow_Focused	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	35.00	1.8E+04	1.9E-03	3.9E+04	8.9E-04
118-H-1:2_Shallow_Focused	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	16.00	1.8E+04	8.9E-04	3.9E+04	4.1E-04
118-H-1:2_Shallow_Focused	non-Rad	Beryllium	7440-41-7	ug/kg	110.00	1.0E+04	1.1E-02	1.4E+04	7.9E-03
118-H-1:2_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	1300.00	5.0E+02	**2.6E+00**	1.3E+05	9.8E-03
118-H-1:2_Shallow_Focused	non-Rad	Cadmium	7440-43-9	ug/kg	120.00	4.0E+03	3.0E-02	1.6E+03	7.4E-02
118-H-1:2_Shallow_Focused	Rad	Carbon-14	14762-75-5	pCi/g	0.81	6.1E+04	1.3E-05	3.2E+01	2.6E-02
118-H-1:2_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	12000.00	4.0E+02	**3.0E+01**	3.8E+04	3.1E-01
118-H-1:2_Shallow_Focused	non-Rad	Chrysene	218-01-9	ug/kg	35.00	1.8E+04	1.9E-03	4.5E+04	7.9E-04
118-H-1:2_Shallow_Focused	non-Rad	Cobalt	7440-48-4	ug/kg	6600.00	1.3E+04	5.1E-01	1.1E+05	5.9E-02
118-H-1:2_Shallow_Focused	non-Rad	Copper	7440-50-8	ug/kg	15100.00	5.0E+04	3.0E-01	1.1E+05	1.4E-01
118-H-1:2_Shallow_Focused	non-Rad	Fluoranthene	206-44-0	ug/kg	83.00	1.8E+04	4.6E-03	8.4E+05	9.9E-05
118-H-1:2_Shallow_Focused	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	369.00	No Value	--	1.3E+06	3.0E-04
118-H-1:2_Shallow_Focused	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	26.00	1.8E+04	1.4E-03	3.6E+04	7.3E-04
118-H-1:2_Shallow_Focused	non-Rad	Lead	7439-92-1	ug/kg	11700.00	5.0E+04	2.3E-01	3.6E+04	3.3E-01
118-H-1:2_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	273000.00	2.2E+05	**1.2E+00**	5.8E+06	4.7E-02
118-H-1:2_Shallow_Focused	non-Rad	Nickel	7440-02-0	ug/kg	12200.00	3.0E+04	4.1E-01	3.3E+04	3.7E-01
118-H-1:2_Shallow_Focused	non-Rad	Pyrene	129-00-0	ug/kg	52.00	1.8E+04	2.9E-03	6.0E+05	8.7E-05
118-H-1:2_Shallow_Focused	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	ug/kg	2400.00	2.0E+05	1.2E-02	3.6E+08	6.7E-06
118-H-1:2_Shallow_Focused	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	ug/kg	4100.00	No Value	--	No Value	--
118-H-1:2_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	37100.00	2.0E+03	**1.9E+01**	3.1E+04	**1.2E+00**
118-H-1:2_Shallow_Focused	non-Rad	Zinc	7440-66-6	ug/kg	36800.00	5.0E+04	7.4E-01	6.8E+04	5.4E-01
118-H-2_Shallow	non-Rad	Arsenic	7440-38-2	ug/kg	5040.99	1.0E+04	5.0E-01	1.9E+05	2.7E-02
118-H-2_Shallow	non-Rad	Barium	7440-39-3	ug/kg	64446.55	3.3E+05	2.0E-01	1.3E+06	4.9E-02
118-H-2_Shallow	non-Rad	Beryllium	7440-41-7	ug/kg	223.81	1.0E+04	2.2E-02	1.4E+04	1.6E-02
118-H-2_Shallow	non-Rad	Boron	7440-42-8	ug/kg	1364.91	5.0E+02	**2.7E+00**	1.3E+05	1.0E-02
118-H-2_Shallow	non-Rad	Cadmium	7440-43-9	ug/kg	85.62	4.0E+03	2.1E-02	1.6E+03	5.3E-02
118-H-2_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.30	2.2E+03	1.3E-04	9.2E+02	3.2E-04
118-H-2_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	10049.37	4.0E+02	**2.5E+01**	3.8E+04	2.6E-01
118-H-2_Shallow	non-Rad	Cobalt	7440-48-4	ug/kg	5814.02	1.3E+04	4.5E-01	1.1E+05	5.2E-02
118-H-2_Shallow	Rad	Cobalt-60	10198-40-0	pCi/g	0.21	6.1E+03	3.5E-05	8.1E+02	2.7E-04
118-H-2_Shallow	non-Rad	Copper	7440-50-8	ug/kg	13953.88	5.0E+04	2.8E-01	1.1E+05	1.3E-01
118-H-2_Shallow	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	170.55	No Value	--	1.3E+06	1.4E-04
118-H-2_Shallow	non-Rad	Lead	7439-92-1	ug/kg	15480.88	5.0E+04	3.1E-01	3.6E+04	4.4E-01
118-H-2_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	266309.48	2.2E+05	**1.2E+00**	5.8E+06	4.6E-02
118-H-2_Shallow	non-Rad	Mercury	7439-97-6	ug/kg	13.54	1.0E+02	1.4E-01	1.9E+03	7.3E-03
118-H-2_Shallow	non-Rad	Molybdenum	7439-98-7	ug/kg	308.96	2.0E+03	1.5E-01	1.4E+04	2.2E-02
118-H-2_Shallow	non-Rad	Nickel	7440-02-0	ug/kg	11618.77	3.0E+04	3.9E-01	3.3E+04	3.6E-01
118-H-2_Shallow	Rad	Nickel-63	13981-37-8	pCi/g	13.40	No Value	--	No Value	--
118-H-2_Shallow	Rad	Rads SOF	---	pCi/g	--	--	2.2E-04	--	7.8E-04
118-H-2_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	1688.56	5.0E+03	3.4E-01	3.6E+04	2.2E-03
118-H-2_Shallow	Rad	Uranium-233/234	U-233/234	pCi/g	0.52	5.2E+04	1.0E-05	6.4E+03	8.1E-05
118-H-2_Shallow	Rad	Uranium-235	15117-96-1	pCi/g	0.03	2.7E+04	1.2E-06	4.4E+03	7.3E-06

Table H-8. Comparison of 100-H OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/ Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
118-H-2_Shallow	Rad	Uranium-238	U-238	pCi/g	0.57	1.6E+04	3.6E-05	5.2E+03	1.1E-04
118-H-2_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	41612.93	2.0E+03	**2.1E+01**	3.1E+04	**1.3E+00**
118-H-2_Shallow	non-Rad	Zinc	7440-66-6	ug/kg	34223.99	5.0E+04	6.8E-01	6.8E+04	5.1E-01
118-H-3_Shallow_1	non-Rad	Antimony	7440-36-0	ug/kg	742.50	5.0E+03	1.5E-01	6.0E+03	1.2E-01
118-H-3_Shallow_1	non-Rad	Aroclor-1260	11096-82-5	ug/kg	55.25	4.0E+04	1.4E-03	1.5E+03	3.8E-02
118-H-3_Shallow_1	non-Rad	Arsenic	7440-38-2	ug/kg	15852.07	1.0E+04	**1.6E+00**	1.9E+05	8.4E-02
118-H-3_Shallow_1	non-Rad	Barium	7440-39-3	ug/kg	83791.35	3.3E+05	2.5E-01	1.3E+06	6.3E-02
118-H-3_Shallow_1	non-Rad	Beryllium	7440-41-7	ug/kg	321.46	1.0E+04	3.2E-02	1.4E+04	2.3E-02
118-H-3_Shallow_1	non-Rad	Boron	7440-42-8	ug/kg	3103.83	5.0E+02	**6.2E+00**	1.3E+05	2.3E-02
118-H-3_Shallow_1	non-Rad	Cadmium	7440-43-9	ug/kg	153.41	4.0E+03	3.8E-02	1.6E+03	9.4E-02
118-H-3_Shallow_1	non-Rad	Chromium	7440-47-3	ug/kg	13217.68	4.0E+02	**3.3E+01**	3.8E+04	3.5E-01
118-H-3_Shallow_1	non-Rad	Cobalt	7440-48-4	ug/kg	6931.37	1.3E+04	5.3E-01	1.1E+05	6.2E-02
118-H-3_Shallow_1	non-Rad	Copper	7440-50-8	ug/kg	23535.18	5.0E+04	4.7E-01	1.1E+05	2.2E-01
118-H-3_Shallow_1	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	80.00	No Value	--	1.3E+06	6.4E-05
118-H-3_Shallow_1	non-Rad	Lead	7439-92-1	ug/kg	57642.19	5.0E+04	**1.2E+00**	3.6E+04	**1.6E+00**
118-H-3_Shallow_1	non-Rad	Manganese	7439-96-5	ug/kg	345494.18	2.2E+05	**1.6E+00**	5.8E+06	6.0E-02
118-H-3_Shallow_1	non-Rad	Mercury	7439-97-6	ug/kg	11.00	1.0E+02	1.1E-01	1.9E+03	5.9E-03
118-H-3_Shallow_1	non-Rad	Molybdenum	7439-98-7	ug/kg	1412.27	2.0E+03	7.1E-01	1.4E+04	1.0E-01
118-H-3_Shallow_1	non-Rad	Nickel	7440-02-0	ug/kg	14746.54	3.0E+04	4.9E-01	3.3E+04	4.5E-01
118-H-3_Shallow_1	Rad	Rads SOF	---	pCi/g	--	--	5.5E-05	--	2.4E-04
118-H-3_Shallow_1	non-Rad	Silver	7440-22-4	ug/kg	417.00	2.0E+03	2.1E-01	5.0E+04	8.4E-03
118-H-3_Shallow_1	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	1864.40	5.0E+03	3.7E-01	3.6E+04	2.4E-03
118-H-3_Shallow_1	Rad	Uranium-233/234	U-233/234	pCi/g	0.69	5.2E+04	1.3E-05	6.4E+03	1.1E-04
118-H-3_Shallow_1	Rad	Uranium-235	15117-96-1	pCi/g	0.03	2.7E+04	1.2E-06	4.4E+03	7.6E-06
118-H-3_Shallow_1	Rad	Uranium-238	U-238	pCi/g	0.63	1.6E+04	4.0E-05	5.2E+03	1.2E-04
118-H-3_Shallow_1	non-Rad	Vanadium	7440-62-2	ug/kg	45491.42	2.0E+03	**2.3E+01**	3.1E+04	**1.5E+00**
118-H-3_Shallow_1	non-Rad	Zinc	7440-66-6	ug/kg	132913.41	5.0E+04	**2.7E+00**	6.8E+04	**2.0E+00**
118-H-3_Shallow_2	non-Rad	Aroclor-1260	11096-82-5	ug/kg	9.44	4.0E+04	2.4E-04	1.5E+03	6.4E-03
118-H-3_Shallow_2	non-Rad	Arsenic	7440-38-2	ug/kg	3014.43	1.0E+04	3.0E-01	1.9E+05	1.6E-02
118-H-3_Shallow_2	non-Rad	Barium	7440-39-3	ug/kg	73069.56	3.3E+05	2.2E-01	1.3E+06	5.5E-02
118-H-3_Shallow_2	non-Rad	Beryllium	7440-41-7	ug/kg	261.13	1.0E+04	2.6E-02	1.4E+04	1.9E-02
118-H-3_Shallow_2	non-Rad	Boron	7440-42-8	ug/kg	2578.25	5.0E+02	**5.2E+00**	1.3E+05	1.9E-02
118-H-3_Shallow_2	non-Rad	Cadmium	7440-43-9	ug/kg	96.76	4.0E+03	2.4E-02	1.6E+03	5.9E-02
118-H-3_Shallow_2	non-Rad	Chromium	7440-47-3	ug/kg	11621.69	4.0E+02	**2.9E+01**	3.8E+04	3.1E-01
118-H-3_Shallow_2	non-Rad	Cobalt	7440-48-4	ug/kg	6141.32	1.3E+04	4.7E-01	1.1E+05	5.5E-02
118-H-3_Shallow_2	non-Rad	Copper	7440-50-8	ug/kg	14146.62	5.0E+04	2.8E-01	1.1E+05	1.3E-01
118-H-3_Shallow_2	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	400.00	No Value	--	1.3E+06	3.2E-04
118-H-3_Shallow_2	non-Rad	Lead	7439-92-1	ug/kg	6789.28	5.0E+04	1.4E-01	3.6E+04	1.9E-01
118-H-3_Shallow_2	non-Rad	Manganese	7439-96-5	ug/kg	300387.11	2.2E+05	**1.4E+00**	5.8E+06	5.2E-02
118-H-3_Shallow_2	non-Rad	Mercury	7439-97-6	ug/kg	14.67	1.0E+02	1.5E-01	1.9E+03	7.9E-03
118-H-3_Shallow_2	non-Rad	Molybdenum	7439-98-7	ug/kg	280.15	2.0E+03	1.4E-01	1.4E+04	2.0E-02
118-H-3_Shallow_2	non-Rad	Nickel	7440-02-0	ug/kg	10769.49	3.0E+04	3.6E-01	3.3E+04	3.3E-01
118-H-3_Shallow_2	Rad	Rads SOF	---	pCi/g	--	--	5.3E-05	--	2.2E-04
118-H-3_Shallow_2	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	1910.31	5.0E+03	3.8E-01	3.6E+04	2.4E-03
118-H-3_Shallow_2	Rad	Uranium-233/234	U-233/234	pCi/g	0.61	5.2E+04	1.2E-05	6.4E+03	9.5E-05
118-H-3_Shallow_2	Rad	Uranium-238	U-238	pCi/g	0.64	1.6E+04	4.1E-05	5.2E+03	1.3E-04
118-H-3_Shallow_2	non-Rad	Vanadium	7440-62-2	ug/kg	45328.92	2.0E+03	**2.3E+01**	3.1E+04	**1.5E+00**
118-H-3_Shallow_2	non-Rad	Zinc	7440-66-6	ug/kg	38756.93	5.0E+04	7.8E-01	6.8E+04	5.7E-01

Table H-8. Comparison of 100-H OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/ Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
118-H-3_Shallow_Focused	non-Rad	Arsenic	7440-38-2	ug/kg	4800.00	1.0E+04	4.8E-01	1.9E+05	2.5E-02
118-H-3_Shallow_Focused	non-Rad	Barium	7440-39-3	ug/kg	56700.00	3.3E+05	1.7E-01	1.3E+06	4.3E-02
118-H-3_Shallow_Focused	non-Rad	Beryllium	7440-41-7	ug/kg	211.00	1.0E+04	2.1E-02	1.4E+04	1.5E-02
118-H-3_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	2630.00	5.0E+02	**5.3E+00**	1.3E+05	2.0E-02
118-H-3_Shallow_Focused	non-Rad	Cadmium	7440-43-9	ug/kg	81.00	4.0E+03	2.0E-02	1.6E+03	5.0E-02
118-H-3_Shallow_Focused	Rad	Cesium-137	10045-97-3	pCi/g	0.23	2.2E+03	1.0E-04	9.2E+02	2.5E-04
118-H-3_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	9110.00	4.0E+02	**2.3E+01**	3.8E+04	2.4E-01
118-H-3_Shallow_Focused	non-Rad	Cobalt	7440-48-4	ug/kg	5690.00	1.3E+04	4.4E-01	1.1E+05	5.1E-02
118-H-3_Shallow_Focused	Rad	Cobalt-60	10198-40-0	pCi/g	0.53	6.1E+03	8.6E-05	8.1E+02	6.5E-04
118-H-3_Shallow_Focused	non-Rad	Copper	7440-50-8	ug/kg	15100.00	5.0E+04	3.0E-01	1.1E+05	1.4E-01
118-H-3_Shallow_Focused	non-Rad	Lead	7439-92-1	ug/kg	11600.00	5.0E+04	2.3E-01	3.6E+04	3.3E-01
118-H-3_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	255000.00	2.2E+05	**1.2E+00**	5.8E+06	4.4E-02
118-H-3_Shallow_Focused	non-Rad	Molybdenum	7439-98-7	ug/kg	363.00	2.0E+03	1.8E-01	1.4E+04	2.6E-02
118-H-3_Shallow_Focused	non-Rad	Nickel	7440-02-0	ug/kg	8550.00	3.0E+04	2.9E-01	3.3E+04	2.6E-01
118-H-3_Shallow_Focused	Rad	Nickel-63	13981-37-8	pCi/g	8.76	No Value	--	No Value	--
118-H-3_Shallow_Focused	Rad	Rads SOF	---	pCi/g	--	--	2.7E-04	--	1.3E-03
118-H-3_Shallow_Focused	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	2819.08	5.0E+03	5.6E-01	3.6E+04	3.6E-03
118-H-3_Shallow_Focused	Rad	Uranium-233/234	U-233/234	pCi/g	1.07	5.2E+04	2.1E-05	6.4E+03	1.7E-04
118-H-3_Shallow_Focused	Rad	Uranium-238	U-238	pCi/g	0.95	1.6E+04	6.0E-05	5.2E+03	1.8E-04
118-H-3_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	48300.00	2.0E+03	**2.4E+01**	3.1E+04	**1.6E+00**
118-H-3_Shallow_Focused	non-Rad	Zinc	7440-66-6	ug/kg	36900.00	5.0E+04	7.4E-01	6.8E+04	5.4E-01
118-H-4_Shallow	non-Rad	Arsenic	7440-38-2	ug/kg	3441.53	1.0E+04	3.4E-01	1.9E+05	1.8E-02
118-H-4_Shallow	non-Rad	Barium	7440-39-3	ug/kg	66445.37	3.3E+05	2.0E-01	1.3E+06	5.0E-02
118-H-4_Shallow	non-Rad	Beryllium	7440-41-7	ug/kg	227.53	1.0E+04	2.3E-02	1.4E+04	1.6E-02
118-H-4_Shallow	non-Rad	Boron	7440-42-8	ug/kg	1534.25	5.0E+02	**3.1E+00**	1.3E+05	1.2E-02
118-H-4_Shallow	non-Rad	Cadmium	7440-43-9	ug/kg	132.26	4.0E+03	3.3E-02	1.6E+03	8.1E-02
118-H-4_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	1.07	2.2E+03	4.8E-04	9.2E+02	1.2E-03
118-H-4_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	11714.85	4.0E+02	**2.9E+01**	3.8E+04	3.1E-01
118-H-4_Shallow	non-Rad	Cobalt	7440-48-4	ug/kg	5893.58	1.3E+04	4.5E-01	1.1E+05	5.3E-02
118-H-4_Shallow	Rad	Cobalt-60	10198-40-0	pCi/g	0.10	6.1E+03	1.7E-05	8.1E+02	1.3E-04
118-H-4_Shallow	non-Rad	Copper	7440-50-8	ug/kg	15053.54	5.0E+04	3.0E-01	1.1E+05	1.4E-01
118-H-4_Shallow	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	90.00	No Value	--	1.3E+06	7.2E-05
118-H-4_Shallow	non-Rad	Lead	7439-92-1	ug/kg	9064.98	5.0E+04	1.8E-01	3.6E+04	2.6E-01
118-H-4_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	279088.44	2.2E+05	**1.3E+00**	5.8E+06	4.8E-02
118-H-4_Shallow	non-Rad	Mercury	7439-97-6	ug/kg	22.00	1.0E+02	2.2E-01	1.9E+03	1.2E-02
118-H-4_Shallow	non-Rad	Molybdenum	7439-98-7	ug/kg	437.48	2.0E+03	2.2E-01	1.4E+04	3.1E-02
118-H-4_Shallow	non-Rad	Nickel	7440-02-0	ug/kg	11015.06	3.0E+04	3.7E-01	3.3E+04	3.4E-01
118-H-4_Shallow	Rad	Rads SOF	---	pCi/g	--	--	8.5E-04	--	1.5E-02
118-H-4_Shallow	Rad	Total beta radiostrontium	SR-RAD	pCi/g	1.26	3.6E+03	3.5E-04	9.1E+01	1.4E-02
118-H-4_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	45963.54	2.0E+03	**2.3E+01**	3.1E+04	**1.5E+00**
118-H-4_Shallow	non-Rad	Zinc	7440-66-6	ug/kg	38842.66	5.0E+04	7.8E-01	6.8E+04	5.7E-01
118-H-4_Shallow_Focused	non-Rad	Arsenic	7440-38-2	ug/kg	2100.00	1.0E+04	2.1E-01	1.9E+05	1.1E-02
118-H-4_Shallow_Focused	non-Rad	Barium	7440-39-3	ug/kg	46300.00	3.3E+05	1.4E-01	1.3E+06	3.5E-02
118-H-4_Shallow_Focused	non-Rad	Beryllium	7440-41-7	ug/kg	148.00	1.0E+04	1.5E-02	1.4E+04	1.1E-02
118-H-4_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	1440.00	5.0E+02	**2.9E+00**	1.3E+05	1.1E-02
118-H-4_Shallow_Focused	non-Rad	Cadmium	7440-43-9	ug/kg	113.00	4.0E+03	2.8E-02	1.6E+03	6.9E-02
118-H-4_Shallow_Focused	Rad	Cesium-137	10045-97-3	pCi/g	0.25	2.2E+03	1.2E-04	9.2E+02	2.8E-04
118-H-4_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	9900.00	4.0E+02	**2.5E+01**	3.8E+04	2.6E-01

Table H-8. Comparison of 100-H OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/ Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
118-H-4_Shallow_Focused	non-Rad	Cobalt	7440-48-4	ug/kg	4520.00	1.3E+04	3.5E-01	1.1E+05	4.1E-02
118-H-4_Shallow_Focused	non-Rad	Copper	7440-50-8	ug/kg	12600.00	5.0E+04	2.5E-01	1.1E+05	1.2E-01
118-H-4_Shallow_Focused	non-Rad	Lead	7439-92-1	ug/kg	4330.00	5.0E+04	8.7E-02	3.6E+04	1.2E-01
118-H-4_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	222000.00	2.2E+05	**1.0E+00**	5.8E+06	3.8E-02
118-H-4_Shallow_Focused	non-Rad	Molybdenum	7439-98-7	ug/kg	424.00	2.0E+03	2.1E-01	1.4E+04	3.0E-02
118-H-4_Shallow_Focused	non-Rad	Nickel	7440-02-0	ug/kg	8730.00	3.0E+04	2.9E-01	3.3E+04	2.7E-01
118-H-4_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	39000.00	2.0E+03	**2.0E+01**	3.1E+04	**1.3E+00**
118-H-4_Shallow_Focused	non-Rad	Zinc	7440-66-6	ug/kg	40300.00	5.0E+04	8.1E-01	6.8E+04	5.9E-01
118-H-4_Staging Pile Area	non-Rad	Arsenic	7440-38-2	ug/kg	3912.58	1.0E+04	3.9E-01	1.9E+05	2.1E-02
118-H-4_Staging Pile Area	non-Rad	Barium	7440-39-3	ug/kg	63086.78	3.3E+05	1.9E-01	1.3E+06	4.8E-02
118-H-4_Staging Pile Area	non-Rad	Beryllium	7440-41-7	ug/kg	176.36	1.0E+04	1.8E-02	1.4E+04	1.3E-02
118-H-4_Staging Pile Area	non-Rad	Boron	7440-42-8	ug/kg	2987.38	5.0E+02	**6.0E+00**	1.3E+05	2.3E-02
118-H-4_Staging Pile Area	non-Rad	Cadmium	7440-43-9	ug/kg	169.65	4.0E+03	4.2E-02	1.6E+03	1.0E-01
118-H-4_Staging Pile Area	Rad	Cesium-137	10045-97-3	pCi/g	0.20	2.2E+03	8.9E-05	9.2E+02	2.1E-04
118-H-4_Staging Pile Area	non-Rad	Chromium	7440-47-3	ug/kg	9779.97	4.0E+02	**2.4E+01**	3.8E+04	2.6E-01
118-H-4_Staging Pile Area	non-Rad	Cobalt	7440-48-4	ug/kg	6099.72	1.3E+04	4.7E-01	1.1E+05	5.5E-02
118-H-4_Staging Pile Area	non-Rad	Copper	7440-50-8	ug/kg	14864.35	5.0E+04	3.0E-01	1.1E+05	1.4E-01
118-H-4_Staging Pile Area	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	150.00	No Value	--	1.3E+06	1.2E-04
118-H-4_Staging Pile Area	non-Rad	Lead	7439-92-1	ug/kg	28136.06	5.0E+04	5.6E-01	3.6E+04	7.9E-01
118-H-4_Staging Pile Area	non-Rad	Manganese	7439-96-5	ug/kg	258295.95	2.2E+05	**1.2E+00**	5.8E+06	4.5E-02
118-H-4_Staging Pile Area	non-Rad	Molybdenum	7439-98-7	ug/kg	481.99	2.0E+03	2.4E-01	1.4E+04	3.5E-02
118-H-4_Staging Pile Area	non-Rad	Nickel	7440-02-0	ug/kg	9598.25	3.0E+04	3.2E-01	3.3E+04	3.0E-01
118-H-4_Staging Pile Area	non-Rad	Vanadium	7440-62-2	ug/kg	48115.09	2.0E+03	**2.4E+01**	3.1E+04	**1.6E+00**
118-H-4_Staging Pile Area	non-Rad	Zinc	7440-66-6	ug/kg	72798.99	5.0E+04	**1.5E+00**	6.8E+04	**1.1E+00**
118-H-5_Shallow	non-Rad	Arsenic	7440-38-2	ug/kg	4597.18	1.0E+04	4.6E-01	1.9E+05	2.4E-02
118-H-5_Shallow	non-Rad	Barium	7440-39-3	ug/kg	61387.60	3.3E+05	1.9E-01	1.3E+06	4.6E-02
118-H-5_Shallow	non-Rad	Beryllium	7440-41-7	ug/kg	231.61	1.0E+04	2.3E-02	1.4E+04	1.7E-02
118-H-5_Shallow	non-Rad	Boron	7440-42-8	ug/kg	6246.49	5.0E+02	**1.3E+01**	1.3E+05	4.7E-02
118-H-5_Shallow	non-Rad	Cadmium	7440-43-9	ug/kg	56.63	4.0E+03	1.4E-02	1.6E+03	3.5E-02
118-H-5_Shallow	Rad	Carbon-14	14762-75-5	pCi/g	2.76	6.1E+04	4.6E-05	3.2E+01	8.7E-02
118-H-5_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	10718.18	4.0E+02	**2.7E+01**	3.8E+04	2.8E-01
118-H-5_Shallow	non-Rad	Cobalt	7440-48-4	ug/kg	5764.81	1.3E+04	4.4E-01	1.1E+05	5.2E-02
118-H-5_Shallow	non-Rad	Copper	7440-50-8	ug/kg	14038.16	5.0E+04	2.8E-01	1.1E+05	1.3E-01
118-H-5_Shallow	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	369.17	No Value	--	1.3E+06	3.0E-04
118-H-5_Shallow	non-Rad	Lead	7439-92-1	ug/kg	10128.46	5.0E+04	2.0E-01	3.6E+04	2.9E-01
118-H-5_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	276171.52	2.2E+05	**1.3E+00**	5.8E+06	4.8E-02
118-H-5_Shallow	non-Rad	Molybdenum	7439-98-7	ug/kg	329.08	2.0E+03	1.7E-01	1.4E+04	2.4E-02
118-H-5_Shallow	non-Rad	Nickel	7440-02-0	ug/kg	9969.60	3.0E+04	3.3E-01	3.3E+04	3.1E-01
118-H-5_Shallow	Rad	Rads SOF	---	pCi/g	--	--	2.0E-04	--	9.2E-02
118-H-5_Shallow	Rad	Total beta radiostrontium	SR-RAD	pCi/g	0.36	3.6E+03	1.0E-04	9.1E+01	4.0E-03
118-H-5_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	1870.86	5.0E+03	3.7E-01	3.6E+04	2.4E-03
118-H-5_Shallow	Rad	Uranium-233/234	U-233/234	pCi/g	0.67	5.2E+04	1.3E-05	6.4E+03	1.1E-04
118-H-5_Shallow	Rad	Uranium-238	U-238	pCi/g	0.63	1.6E+04	4.0E-05	5.2E+03	1.2E-04
118-H-5_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	39148.68	2.0E+03	**2.0E+01**	3.1E+04	**1.3E+00**
118-H-5_Shallow	non-Rad	Zinc	7440-66-6	ug/kg	36296.46	5.0E+04	7.3E-01	6.8E+04	5.4E-01
118-H-5_Shallow_Focused	non-Rad	Arsenic	7440-38-2	ug/kg	4490.00	1.0E+04	4.5E-01	1.9E+05	2.4E-02
118-H-5_Shallow_Focused	non-Rad	Barium	7440-39-3	ug/kg	46100.00	3.3E+05	1.4E-01	1.3E+06	3.5E-02
118-H-5_Shallow_Focused	non-Rad	Beryllium	7440-41-7	ug/kg	197.00	1.0E+04	2.0E-02	1.4E+04	1.4E-02

Table H-8. Comparison of 100-H OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/ Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
118-H-5_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	1290.00	5.0E+02	**2.6E+00**	1.3E+05	9.7E-03
118-H-5_Shallow_Focused	non-Rad	Cadmium	7440-43-9	ug/kg	47.00	4.0E+03	1.2E-02	1.6E+03	2.9E-02
118-H-5_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	10500.00	4.0E+02	**2.6E+01**	3.8E+04	2.8E-01
118-H-5_Shallow_Focused	non-Rad	Cobalt	7440-48-4	ug/kg	5490.00	1.3E+04	4.2E-01	1.1E+05	4.9E-02
118-H-5_Shallow_Focused	non-Rad	Copper	7440-50-8	ug/kg	13700.00	5.0E+04	2.7E-01	1.1E+05	1.3E-01
118-H-5_Shallow_Focused	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	280.00	No Value	--	1.3E+06	2.3E-04
118-H-5_Shallow_Focused	non-Rad	Lead	7439-92-1	ug/kg	9240.00	5.0E+04	1.9E-01	3.6E+04	2.6E-01
118-H-5_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	257000.00	2.2E+05	**1.2E+00**	5.8E+06	4.4E-02
118-H-5_Shallow_Focused	non-Rad	Molybdenum	7439-98-7	ug/kg	277.00	2.0E+03	1.4E-01	1.4E+04	2.0E-02
118-H-5_Shallow_Focused	non-Rad	Nickel	7440-02-0	ug/kg	10600.00	3.0E+04	3.5E-01	3.3E+04	3.3E-01
118-H-5_Shallow_Focused	Rad	Rads SOF	---	pCi/g	--	--	6.7E-05	--	3.1E-04
118-H-5_Shallow_Focused	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	2104.69	5.0E+03	4.2E-01	3.6E+04	2.7E-03
118-H-5_Shallow_Focused	Rad	Uranium-233/234	U-233/234	pCi/g	1.12	5.2E+04	2.2E-05	6.4E+03	1.8E-04
118-H-5_Shallow_Focused	Rad	Uranium-238	U-238	pCi/g	0.71	1.6E+04	4.5E-05	5.2E+03	1.4E-04
118-H-5_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	39400.00	2.0E+03	**2.0E+01**	3.1E+04	**1.3E+00**
118-H-5_Shallow_Focused	non-Rad	Zinc	7440-66-6	ug/kg	33900.00	5.0E+04	6.8E-01	6.8E+04	5.0E-01
118-H-6:4_Overburden	non-Rad	Arsenic	7440-38-2	ug/kg	3176.34	1.0E+04	3.2E-01	1.9E+05	1.7E-02
118-H-6:4_Overburden	non-Rad	Barium	7440-39-3	ug/kg	57934.42	3.3E+05	1.8E-01	1.3E+06	4.4E-02
118-H-6:4_Overburden	non-Rad	Beryllium	7440-41-7	ug/kg	166.93	1.0E+04	1.7E-02	1.4E+04	1.2E-02
118-H-6:4_Overburden	non-Rad	Boron	7440-42-8	ug/kg	809.10	5.0E+02	**1.6E+00**	1.3E+05	6.1E-03
118-H-6:4_Overburden	non-Rad	Cadmium	7440-43-9	ug/kg	86.16	4.0E+03	2.2E-02	1.6E+03	5.3E-02
118-H-6:4_Overburden	Rad	Cesium-137	10045-97-3	pCi/g	0.18	2.2E+03	8.1E-05	9.2E+02	1.9E-04
118-H-6:4_Overburden	non-Rad	Chromium	7440-47-3	ug/kg	9709.69	4.0E+02	**2.4E+01**	3.8E+04	2.5E-01
118-H-6:4_Overburden	non-Rad	Cobalt	7440-48-4	ug/kg	6241.58	1.3E+04	4.8E-01	1.1E+05	5.6E-02
118-H-6:4_Overburden	non-Rad	Copper	7440-50-8	ug/kg	13371.14	5.0E+04	2.7E-01	1.1E+05	1.3E-01
118-H-6:4_Overburden	Rad	Europium-152	14683-23-9	pCi/g	0.93	1.5E+04	6.4E-05	1.7E+03	5.4E-04
118-H-6:4_Overburden	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	127.18	No Value	--	1.3E+06	1.0E-04
118-H-6:4_Overburden	non-Rad	Lead	7439-92-1	ug/kg	4138.33	5.0E+04	8.3E-02	3.6E+04	1.2E-01
118-H-6:4_Overburden	non-Rad	Manganese	7439-96-5	ug/kg	265613.49	2.2E+05	**1.2E+00**	5.8E+06	4.6E-02
118-H-6:4_Overburden	non-Rad	Mercury	7439-97-6	ug/kg	23.71	1.0E+02	2.4E-01	1.9E+03	1.3E-02
118-H-6:4_Overburden	non-Rad	Molybdenum	7439-98-7	ug/kg	327.12	2.0E+03	1.6E-01	1.4E+04	2.3E-02
118-H-6:4_Overburden	Rad	Neptunium-237	13994-20-2	pCi/g	0.08	No Value	--	No Value	--
118-H-6:4_Overburden	non-Rad	Nickel	7440-02-0	ug/kg	10985.29	3.0E+04	3.7E-01	3.3E+04	3.4E-01
118-H-6:4_Overburden	Rad	Rads SOF	---	pCi/g	--	--	3.2E-04	--	6.2E-03
118-H-6:4_Overburden	Rad	Total beta radiostrontium	SR-RAD	pCi/g	0.48	3.6E+03	1.3E-04	9.1E+01	5.3E-03
118-H-6:4_Overburden	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	1569.42	5.0E+03	3.1E-01	3.6E+04	2.0E-03
118-H-6:4_Overburden	Rad	Uranium-233/234	U-233/234	pCi/g	0.47	5.2E+04	9.1E-06	6.4E+03	7.4E-05
118-H-6:4_Overburden	Rad	Uranium-238	U-238	pCi/g	0.53	1.6E+04	3.4E-05	5.2E+03	1.0E-04
118-H-6:4_Overburden	non-Rad	Vanadium	7440-62-2	ug/kg	45938.80	2.0E+03	**2.3E+01**	3.1E+04	**1.5E+00**
118-H-6:4_Overburden	non-Rad	Zinc	7440-66-6	ug/kg	38240.03	5.0E+04	7.7E-01	6.8E+04	5.6E-01
118-H-6:4_Shallow	non-Rad	Arsenic	7440-38-2	ug/kg	3849.04	1.0E+04	3.9E-01	1.9E+05	2.0E-02
118-H-6:4_Shallow	non-Rad	Barium	7440-39-3	ug/kg	61215.45	3.3E+05	1.9E-01	1.3E+06	4.6E-02
118-H-6:4_Shallow	non-Rad	Beryllium	7440-41-7	ug/kg	188.48	1.0E+04	1.9E-02	1.4E+04	1.4E-02
118-H-6:4_Shallow	non-Rad	Boron	7440-42-8	ug/kg	632.59	5.0E+02	**1.3E+00**	1.3E+05	4.8E-03
118-H-6:4_Shallow	non-Rad	Cadmium	7440-43-9	ug/kg	99.69	4.0E+03	2.5E-02	1.6E+03	6.1E-02
118-H-6:4_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.12	2.2E+03	5.4E-05	9.2E+02	1.3E-04
118-H-6:4_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	10217.86	4.0E+02	**2.6E+01**	3.8E+04	2.7E-01
118-H-6:4_Shallow	non-Rad	Cobalt	7440-48-4	ug/kg	6710.94	1.3E+04	5.2E-01	1.1E+05	6.0E-02

Table H-8. Comparison of 100-H OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/ Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
118-H-6:4_Shallow	non-Rad	Copper	7440-50-8	ug/kg	19413.54	5.0E+04	3.9E-01	1.1E+05	1.8E-01
118-H-6:4_Shallow	non-Rad	Lead	7439-92-1	ug/kg	8408.95	5.0E+04	1.7E-01	3.6E+04	2.4E-01
118-H-6:4_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	251118.00	2.2E+05	**1.1E+00**	5.8E+06	4.3E-02
118-H-6:4_Shallow	non-Rad	Molybdenum	7439-98-7	ug/kg	442.08	2.0E+03	2.2E-01	1.4E+04	3.2E-02
118-H-6:4_Shallow	non-Rad	Nickel	7440-02-0	ug/kg	11520.59	3.0E+04	3.8E-01	3.3E+04	3.5E-01
118-H-6:4_Shallow	Rad	Rads SOF	---	pCi/g	--	--	1.0E-04	--	3.3E-04
118-H-6:4_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	1652.58	5.0E+03	3.3E-01	3.6E+04	2.1E-03
118-H-6:4_Shallow	Rad	Uranium-233/234	U-233/234	pCi/g	0.57	5.2E+04	1.1E-05	6.4E+03	9.0E-05
118-H-6:4_Shallow	Rad	Uranium-238	U-238	pCi/g	0.56	1.6E+04	3.5E-05	5.2E+03	1.1E-04
118-H-6:4_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	48568.27	2.0E+03	**2.4E+01**	3.1E+04	**1.6E+00**
118-H-6:4_Shallow	non-Rad	Zinc	7440-66-6	ug/kg	40341.84	5.0E+04	8.1E-01	6.8E+04	6.0E-01
118-H-6:5_Shallow_1	non-Rad	Acenaphthene	83-32-9	ug/kg	5.79	2.0E+04	2.9E-04	1.1E+06	5.3E-06
118-H-6:5_Shallow_1	non-Rad	Anthracene	120-12-7	ug/kg	2.84	2.9E+04	9.8E-05	6.8E+05	4.2E-06
118-H-6:5_Shallow_1	non-Rad	Antimony	7440-36-0	ug/kg	663.67	5.0E+03	1.3E-01	6.0E+03	1.1E-01
118-H-6:5_Shallow_1	non-Rad	Aroclor-1254	11097-69-1	ug/kg	10.20	4.0E+04	2.6E-04	1.5E+03	6.9E-03
118-H-6:5_Shallow_1	non-Rad	Aroclor-1260	11096-82-5	ug/kg	5.38	4.0E+04	1.4E-04	1.5E+03	3.7E-03
118-H-6:5_Shallow_1	non-Rad	Aroclors HI	---	ug/kg	--	--	3.9E-04	--	1.1E-02
118-H-6:5_Shallow_1	non-Rad	Arsenic	7440-38-2	ug/kg	39808.79	1.0E+04	**4.0E+00**	1.9E+05	2.1E-01
118-H-6:5_Shallow_1	non-Rad	Barium	7440-39-3	ug/kg	87997.02	3.3E+05	2.7E-01	1.3E+06	6.7E-02
118-H-6:5_Shallow_1	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	23.11	1.8E+04	1.3E-03	6.4E+04	3.6E-04
118-H-6:5_Shallow_1	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	24.13	1.8E+04	1.3E-03	7.6E+04	3.2E-04
118-H-6:5_Shallow_1	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	26.46	1.8E+04	1.5E-03	3.9E+04	6.7E-04
118-H-6:5_Shallow_1	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	12.89	1.8E+04	7.2E-04	3.9E+04	3.3E-04
118-H-6:5_Shallow_1	non-Rad	Beryllium	7440-41-7	ug/kg	318.95	1.0E+04	3.2E-02	1.4E+04	2.3E-02
118-H-6:5_Shallow_1	non-Rad	Boron	7440-42-8	ug/kg	2400.95	5.0E+02	**4.8E+00**	1.3E+05	1.8E-02
118-H-6:5_Shallow_1	non-Rad	Cadmium	7440-43-9	ug/kg	75.14	4.0E+03	1.9E-02	1.6E+03	4.6E-02
118-H-6:5_Shallow_1	Rad	Carbon-14	14762-75-5	pCi/g	7.13	6.1E+04	1.2E-04	3.2E+01	2.3E-01
118-H-6:5_Shallow_1	Rad	Cesium-137	10045-97-3	pCi/g	0.18	2.2E+03	8.0E-05	9.2E+02	1.9E-04
118-H-6:5_Shallow_1	non-Rad	Chromium	7440-47-3	ug/kg	13671.73	4.0E+02	**3.4E+01**	3.8E+04	3.6E-01
118-H-6:5_Shallow_1	non-Rad	Chrysene	218-01-9	ug/kg	19.44	1.8E+04	1.1E-03	4.5E+04	4.4E-04
118-H-6:5_Shallow_1	non-Rad	Cobalt	7440-48-4	ug/kg	7195.04	1.3E+04	5.5E-01	1.1E+05	6.5E-02
118-H-6:5_Shallow_1	non-Rad	Copper	7440-50-8	ug/kg	13953.80	5.0E+04	2.8E-01	1.1E+05	1.3E-01
118-H-6:5_Shallow_1	non-Rad	Dibenz[a,h]anthracene	53-70-3	ug/kg	4.20	1.8E+04	2.3E-04	4.4E+04	9.5E-05
118-H-6:5_Shallow_1	non-Rad	Fluoranthene	206-44-0	ug/kg	77.50	1.8E+04	4.3E-03	8.4E+05	9.2E-05
118-H-6:5_Shallow_1	non-Rad	Fluorene	86-73-7	ug/kg	2.69	2.9E+04	9.3E-05	1.8E+05	1.5E-05
118-H-6:5_Shallow_1	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	80.00	No Value	--	1.3E+06	6.4E-05
118-H-6:5_Shallow_1	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	21.21	1.8E+04	1.2E-03	3.6E+04	6.0E-04
118-H-6:5_Shallow_1	non-Rad	Lead	7439-92-1	ug/kg	171631.51	5.0E+04	**3.4E+00**	3.6E+04	**4.8E+00**
118-H-6:5_Shallow_1	non-Rad	Manganese	7439-96-5	ug/kg	338381.30	2.2E+05	**1.5E+00**	5.8E+06	5.8E-02
118-H-6:5_Shallow_1	non-Rad	Molybdenum	7439-98-7	ug/kg	485.18	2.0E+03	2.4E-01	1.4E+04	3.5E-02
118-H-6:5_Shallow_1	non-Rad	Naphthalene	91-20-3	ug/kg	15.90	2.9E+04	5.5E-04	1.0E+05	1.6E-04
118-H-6:5_Shallow_1	non-Rad	Nickel	7440-02-0	ug/kg	12227.86	3.0E+04	4.1E-01	3.3E+04	3.8E-01
118-H-6:5_Shallow_1	non-Rad	Pyrene	129-00-0	ug/kg	65.52	1.8E+04	3.6E-03	6.0E+05	1.1E-04
118-H-6:5_Shallow_1	Rad	Rads SOF	---	pCi/g	--	--	2.7E-04	--	2.3E-01
118-H-6:5_Shallow_1	Rad	Technetium-99	14133-76-7	pCi/g	0.38	2.2E+04	1.7E-05	5.4E+03	7.1E-05
118-H-6:5_Shallow_1	non-Rad	Total petroleum hydrocarbons - motor oil (high boiling)	TPH/OILH	ug/kg	8425.56	No Value	--	No Value	--
118-H-6:5_Shallow_1	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	1997.69	5.0E+03	4.0E-01	3.6E+04	2.5E-03

Table H-8. Comparison of 100-H OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/ Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
118-H-6:5_Shallow_1	Rad	Uranium-233/234	U-233/234	pCi/g	0.69	5.2E+04	1.3E-05	6.4E+03	1.1E-04
118-H-6:5_Shallow_1	Rad	Uranium-238	U-238	pCi/g	0.67	1.6E+04	4.3E-05	5.2E+03	1.3E-04
118-H-6:5_Shallow_1	non-Rad	Vanadium	7440-62-2	ug/kg	50094.79	2.0E+03	**2.5E+01**	3.1E+04	**1.6E+00**
118-H-6:5_Shallow_1	non-Rad	Zinc	7440-66-6	ug/kg	46712.74	5.0E+04	9.3E-01	6.8E+04	6.9E-01
118-H-6:5_Shallow_2	non-Rad	Acenaphthene	83-32-9	ug/kg	24.47	2.0E+04	1.2E-03	1.1E+06	2.2E-05
118-H-6:5_Shallow_2	non-Rad	Anthracene	120-12-7	ug/kg	9.69	2.9E+04	3.3E-04	6.8E+05	1.4E-05
118-H-6:5_Shallow_2	non-Rad	Antimony	7440-36-0	ug/kg	464.10	5.0E+03	9.3E-02	6.0E+03	7.8E-02
118-H-6:5_Shallow_2	non-Rad	Arsenic	7440-38-2	ug/kg	6823.81	1.0E+04	6.8E-01	1.9E+05	3.6E-02
118-H-6:5_Shallow_2	non-Rad	Barium	7440-39-3	ug/kg	111680.87	3.3E+05	3.4E-01	1.3E+06	8.4E-02
118-H-6:5_Shallow_2	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	98.22	1.8E+04	5.5E-03	6.4E+04	1.5E-03
118-H-6:5_Shallow_2	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	68.52	1.8E+04	3.8E-03	7.6E+04	9.0E-04
118-H-6:5_Shallow_2	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	204.03	1.8E+04	1.1E-02	3.9E+04	5.2E-03
118-H-6:5_Shallow_2	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	62.00	1.8E+04	3.4E-03	3.9E+04	1.6E-03
118-H-6:5_Shallow_2	non-Rad	Beryllium	7440-41-7	ug/kg	238.63	1.0E+04	2.4E-02	1.4E+04	1.7E-02
118-H-6:5_Shallow_2	non-Rad	Boron	7440-42-8	ug/kg	12189.72	5.0E+02	**2.4E+01**	1.3E+05	9.2E-02
118-H-6:5_Shallow_2	non-Rad	Cadmium	7440-43-9	ug/kg	87.84	4.0E+03	2.2E-02	1.6E+03	5.4E-02
118-H-6:5_Shallow_2	Rad	Carbon-14	14762-75-5	pCi/g	1.41	6.1E+04	2.3E-05	3.2E+01	4.5E-02
118-H-6:5_Shallow_2	Rad	Cesium-137	10045-97-3	pCi/g	0.10	2.2E+03	4.5E-05	9.2E+02	1.1E-04
118-H-6:5_Shallow_2	non-Rad	Chromium	7440-47-3	ug/kg	11952.62	4.0E+02	**3.0E+01**	3.8E+04	3.1E-01
118-H-6:5_Shallow_2	non-Rad	Chrysene	218-01-9	ug/kg	120.74	1.8E+04	6.7E-03	4.5E+04	2.7E-03
118-H-6:5_Shallow_2	non-Rad	Cobalt	7440-48-4	ug/kg	6640.95	1.3E+04	5.1E-01	1.1E+05	6.0E-02
118-H-6:5_Shallow_2	non-Rad	Copper	7440-50-8	ug/kg	15896.64	5.0E+04	3.2E-01	1.1E+05	1.5E-01
118-H-6:5_Shallow_2	non-Rad	Dibenz[a,h]anthracene	53-70-3	ug/kg	7.38	1.8E+04	4.1E-04	4.4E+04	1.7E-04
118-H-6:5_Shallow_2	non-Rad	Fluoranthene	206-44-0	ug/kg	707.38	1.8E+04	3.9E-02	8.4E+05	8.4E-04
118-H-6:5_Shallow_2	non-Rad	Fluorene	86-73-7	ug/kg	5.60	2.9E+04	1.9E-04	1.8E+05	3.2E-05
118-H-6:5_Shallow_2	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	60.00	No Value	--	1.3E+06	4.8E-05
118-H-6:5_Shallow_2	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	40.93	1.8E+04	2.3E-03	3.6E+04	1.2E-03
118-H-6:5_Shallow_2	non-Rad	Lead	7439-92-1	ug/kg	13860.92	5.0E+04	2.8E-01	3.6E+04	3.9E-01
118-H-6:5_Shallow_2	non-Rad	Manganese	7439-96-5	ug/kg	310414.97	2.2E+05	**1.4E+00**	5.8E+06	5.4E-02
118-H-6:5_Shallow_2	non-Rad	Mercury	7439-97-6	ug/kg	166.93	1.0E+02	**1.7E+00**	1.9E+03	8.9E-02
118-H-6:5_Shallow_2	non-Rad	Molybdenum	7439-98-7	ug/kg	467.11	2.0E+03	2.3E-01	1.4E+04	3.4E-02
118-H-6:5_Shallow_2	non-Rad	Naphthalene	91-20-3	ug/kg	43.90	2.9E+04	1.5E-03	1.0E+05	4.4E-04
118-H-6:5_Shallow_2	non-Rad	Nickel	7440-02-0	ug/kg	10979.98	3.0E+04	3.7E-01	3.3E+04	3.4E-01
118-H-6:5_Shallow_2	non-Rad	Pyrene	129-00-0	ug/kg	253.52	1.8E+04	1.4E-02	6.0E+05	4.2E-04
118-H-6:5_Shallow_2	Rad	Rads SOF	---	pCi/g	--	--	1.4E-04	--	6.1E-02
118-H-6:5_Shallow_2	Rad	Technetium-99	14133-76-7	pCi/g	0.40	2.2E+04	1.8E-05	5.4E+03	7.5E-05
118-H-6:5_Shallow_2	non-Rad	Total petroleum hydrocarbons - motor oil (high boiling)	TPH/OILH	ug/kg	38883.74	No Value	--	No Value	--
118-H-6:5_Shallow_2	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	1776.54	5.0E+03	3.6E-01	3.6E+04	2.3E-03
118-H-6:5_Shallow_2	Rad	Tritium	10028-17-8	pCi/g	6.74	1.7E+06	4.0E-06	4.2E+02	1.6E-02
118-H-6:5_Shallow_2	Rad	Uranium-233/234	U-233/234	pCi/g	0.60	5.2E+04	1.2E-05	6.4E+03	9.4E-05
118-H-6:5_Shallow_2	Rad	Uranium-238	U-238	pCi/g	0.59	1.6E+04	3.8E-05	5.2E+03	1.2E-04
118-H-6:5_Shallow_2	non-Rad	Vanadium	7440-62-2	ug/kg	53432.38	2.0E+03	**2.7E+01**	3.1E+04	**1.7E+00**
118-H-6:5_Shallow_2	non-Rad	Xylenes (total)	1330-20-7	ug/kg	1.05	No Value	--	8.3E+05	1.3E-06
118-H-6:5_Shallow_2	non-Rad	Zinc	7440-66-6	ug/kg	44926.51	5.0E+04	9.0E-01	6.8E+04	6.6E-01
118-H-6:5_Shallow_3	non-Rad	2-Hexanone	591-78-6	ug/kg	4.69	No Value	--	1.7E+06	2.8E-06
118-H-6:5_Shallow_3	non-Rad	Acenaphthene	83-32-9	ug/kg	2.77	2.0E+04	1.4E-04	1.1E+06	2.5E-06
118-H-6:5_Shallow_3	non-Rad	Anthracene	120-12-7	ug/kg	2.41	2.9E+04	8.3E-05	6.8E+05	3.6E-06

Table H-8. Comparison of 100-H OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/ Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
118-H-6:5_Shallow_3	non-Rad	Antimony	7440-36-0	ug/kg	505.13	5.0E+03	1.0E-01	6.0E+03	8.4E-02
118-H-6:5_Shallow_3	non-Rad	Arsenic	7440-38-2	ug/kg	4521.88	1.0E+04	4.5E-01	1.9E+05	2.4E-02
118-H-6:5_Shallow_3	non-Rad	Barium	7440-39-3	ug/kg	62836.79	3.3E+05	1.9E-01	1.3E+06	4.8E-02
118-H-6:5_Shallow_3	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	5.18	1.8E+04	2.9E-04	6.4E+04	8.1E-05
118-H-6:5_Shallow_3	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	4.68	1.8E+04	2.6E-04	7.6E+04	6.1E-05
118-H-6:5_Shallow_3	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	5.16	1.8E+04	2.9E-04	3.9E+04	1.3E-04
118-H-6:5_Shallow_3	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	2.51	1.8E+04	1.4E-04	3.9E+04	6.4E-05
118-H-6:5_Shallow_3	non-Rad	Beryllium	7440-41-7	ug/kg	210.82	1.0E+04	2.1E-02	1.4E+04	1.5E-02
118-H-6:5_Shallow_3	non-Rad	Boron	7440-42-8	ug/kg	1891.90	5.0E+02	**3.8E+00**	1.3E+05	1.4E-02
118-H-6:5_Shallow_3	non-Rad	Cadmium	7440-43-9	ug/kg	97.00	4.0E+03	2.4E-02	1.6E+03	6.0E-02
118-H-6:5_Shallow_3	Rad	Carbon-14	14762-75-5	pCi/g	0.96	6.1E+04	1.6E-05	3.2E+01	3.1E-02
118-H-6:5_Shallow_3	Rad	Cesium-137	10045-97-3	pCi/g	0.20	2.2E+03	8.8E-05	9.2E+02	2.1E-04
118-H-6:5_Shallow_3	non-Rad	Chromium	7440-47-3	ug/kg	10827.24	4.0E+02	**2.7E+01**	3.8E+04	2.8E-01
118-H-6:5_Shallow_3	non-Rad	Chrysene	218-01-9	ug/kg	3.25	1.8E+04	1.8E-04	4.5E+04	7.3E-05
118-H-6:5_Shallow_3	non-Rad	Cobalt	7440-48-4	ug/kg	6132.13	1.3E+04	4.7E-01	1.1E+05	5.5E-02
118-H-6:5_Shallow_3	non-Rad	Copper	7440-50-8	ug/kg	13820.66	5.0E+04	2.8E-01	1.1E+05	1.3E-01
118-H-6:5_Shallow_3	non-Rad	Dibenz[a,h]anthracene	53-70-3	ug/kg	0.98	1.8E+04	5.4E-05	4.4E+04	2.2E-05
118-H-6:5_Shallow_3	non-Rad	Fluoranthene	206-44-0	ug/kg	9.49	1.8E+04	5.3E-04	8.4E+05	1.1E-05
118-H-6:5_Shallow_3	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	5.88	1.8E+04	3.3E-04	3.6E+04	1.7E-04
118-H-6:5_Shallow_3	non-Rad	Lead	7439-92-1	ug/kg	11232.60	5.0E+04	2.3E-01	3.6E+04	3.2E-01
118-H-6:5_Shallow_3	non-Rad	Manganese	7439-96-5	ug/kg	281265.38	2.2E+05	**1.3E+00**	5.8E+06	4.9E-02
118-H-6:5_Shallow_3	non-Rad	Methylene chloride	75-09-2	ug/kg	3.56	No Value	--	1.7E+05	2.2E-05
118-H-6:5_Shallow_3	non-Rad	Molybdenum	7439-98-7	ug/kg	373.62	2.0E+03	1.9E-01	1.4E+04	2.7E-02
118-H-6:5_Shallow_3	non-Rad	Naphthalene	91-20-3	ug/kg	42.40	2.9E+04	1.5E-03	1.0E+05	4.2E-04
118-H-6:5_Shallow_3	non-Rad	Nickel	7440-02-0	ug/kg	12882.14	3.0E+04	4.3E-01	3.3E+04	4.0E-01
118-H-6:5_Shallow_3	non-Rad	Pyrene	129-00-0	ug/kg	10.39	1.8E+04	5.8E-04	6.0E+05	1.7E-05
118-H-6:5_Shallow_3	Rad	Rads SOF	---	pCi/g	--	--	1.7E-04	--	4.8E-02
118-H-6:5_Shallow_3	non-Rad	Total petroleum hydrocarbons - motor oil (high boiling)	TPH/OILH	ug/kg	14695.00	No Value	--	No Value	--
118-H-6:5_Shallow_3	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	2234.26	5.0E+03	4.5E-01	3.6E+04	2.8E-03
118-H-6:5_Shallow_3	Rad	Tritium	10028-17-8	pCi/g	7.01	1.7E+06	4.2E-06	4.2E+02	1.7E-02
118-H-6:5_Shallow_3	Rad	Uranium-233/234	U-233/234	pCi/g	0.73	5.2E+04	1.4E-05	6.4E+03	1.2E-04
118-H-6:5_Shallow_3	Rad	Uranium-238	U-238	pCi/g	0.75	1.6E+04	4.8E-05	5.2E+03	1.5E-04
118-H-6:5_Shallow_3	non-Rad	Vanadium	7440-62-2	ug/kg	46610.85	2.0E+03	**2.3E+01**	3.1E+04	**1.5E+00**
118-H-6:5_Shallow_3	non-Rad	Zinc	7440-66-6	ug/kg	43699.66	5.0E+04	8.7E-01	6.8E+04	6.5E-01
118-H-6:5_Shallow_Focused	non-Rad	Acenaphthene	83-32-9	ug/kg	8.25	2.0E+04	4.1E-04	1.1E+06	7.5E-06
118-H-6:5_Shallow_Focused	non-Rad	Anthracene	120-12-7	ug/kg	4.89	2.9E+04	1.7E-04	6.8E+05	7.2E-06
118-H-6:5_Shallow_Focused	non-Rad	Antimony	7440-36-0	ug/kg	592.00	5.0E+03	1.2E-01	6.0E+03	9.9E-02
118-H-6:5_Shallow_Focused	non-Rad	Arsenic	7440-38-2	ug/kg	27000.00	1.0E+04	**2.7E+00**	1.9E+05	1.4E-01
118-H-6:5_Shallow_Focused	non-Rad	Barium	7440-39-3	ug/kg	65600.00	3.3E+05	2.0E-01	1.3E+06	5.0E-02
118-H-6:5_Shallow_Focused	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	52.60	1.8E+04	2.9E-03	6.4E+04	8.2E-04
118-H-6:5_Shallow_Focused	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	39.50	1.8E+04	2.2E-03	7.6E+04	5.2E-04
118-H-6:5_Shallow_Focused	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	56.30	1.8E+04	3.1E-03	3.9E+04	1.4E-03
118-H-6:5_Shallow_Focused	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	26.50	1.8E+04	1.5E-03	3.9E+04	6.8E-04
118-H-6:5_Shallow_Focused	non-Rad	Beryllium	7440-41-7	ug/kg	251.00	1.0E+04	2.5E-02	1.4E+04	1.8E-02
118-H-6:5_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	1710.00	5.0E+02	**3.4E+00**	1.3E+05	1.3E-02
118-H-6:5_Shallow_Focused	non-Rad	Cadmium	7440-43-9	ug/kg	103.00	4.0E+03	2.6E-02	1.6E+03	6.3E-02
118-H-6:5_Shallow_Focused	Rad	Carbon-14	14762-75-5	pCi/g	1.20	6.1E+04	2.0E-05	3.2E+01	3.8E-02

Table H-8. Comparison of 100-H OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/ Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
118-H-6:5_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	13000.00	4.0E+02	**3.3E+01**	3.8E+04	3.4E-01
118-H-6:5_Shallow_Focused	non-Rad	Chrysene	218-01-9	ug/kg	47.10	1.8E+04	2.6E-03	4.5E+04	1.1E-03
118-H-6:5_Shallow_Focused	non-Rad	Cobalt	7440-48-4	ug/kg	6700.00	1.3E+04	5.2E-01	1.1E+05	6.0E-02
118-H-6:5_Shallow_Focused	non-Rad	Copper	7440-50-8	ug/kg	34500.00	5.0E+04	6.9E-01	1.1E+05	3.2E-01
118-H-6:5_Shallow_Focused	non-Rad	Dibenz[a,h]anthracene	53-70-3	ug/kg	7.48	1.8E+04	4.2E-04	4.4E+04	1.7E-04
118-H-6:5_Shallow_Focused	non-Rad	Fluoranthene	206-44-0	ug/kg	171.00	1.8E+04	9.5E-03	8.4E+05	2.0E-04
118-H-6:5_Shallow_Focused	non-Rad	Fluorene	86-73-7	ug/kg	3.70	2.9E+04	1.3E-04	1.8E+05	2.1E-05
118-H-6:5_Shallow_Focused	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	30.90	1.8E+04	1.7E-03	3.6E+04	8.7E-04
118-H-6:5_Shallow_Focused	non-Rad	Lead	7439-92-1	ug/kg	114000.00	5.0E+04	**2.3E+00**	3.6E+04	**3.2E+00**
118-H-6:5_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	311000.00	2.2E+05	**1.4E+00**	5.8E+06	5.4E-02
118-H-6:5_Shallow_Focused	non-Rad	Molybdenum	7439-98-7	ug/kg	439.00	2.0E+03	2.2E-01	1.4E+04	3.1E-02
118-H-6:5_Shallow_Focused	non-Rad	Naphthalene	91-20-3	ug/kg	10.10	2.9E+04	3.5E-04	1.0E+05	1.0E-04
118-H-6:5_Shallow_Focused	non-Rad	Nickel	7440-02-0	ug/kg	12600.00	3.0E+04	4.2E-01	3.3E+04	3.9E-01
118-H-6:5_Shallow_Focused	non-Rad	Pyrene	129-00-0	ug/kg	149.00	1.8E+04	8.3E-03	6.0E+05	2.5E-04
118-H-6:5_Shallow_Focused	Rad	Rads SOF	---	pCi/g	--	--	8.4E-05	--	4.8E-02
118-H-6:5_Shallow_Focused	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	ug/kg	12000.00	2.0E+05	6.0E-02	3.6E+08	3.4E-05
118-H-6:5_Shallow_Focused	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	ug/kg	24000.00	No Value	--	No Value	--
118-H-6:5_Shallow_Focused	non-Rad	Total petroleum hydrocarbons - gasoline range	TPHGASOLINE	ug/kg	470.00	No Value	--	No Value	--
118-H-6:5_Shallow_Focused	non-Rad	Total petroleum hydrocarbons - motor oil (high boiling)	TPH/OILH	ug/kg	41600.00	No Value	--	No Value	--
118-H-6:5_Shallow_Focused	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	2054.05	5.0E+03	4.1E-01	3.6E+04	2.6E-03
118-H-6:5_Shallow_Focused	Rad	Tritium	10028-17-8	pCi/g	4.08	1.7E+06	2.4E-06	4.2E+02	9.7E-03
118-H-6:5_Shallow_Focused	Rad	Uranium-233/234	U-233/234	pCi/g	0.93	5.2E+04	1.8E-05	6.4E+03	1.5E-04
118-H-6:5_Shallow_Focused	Rad	Uranium-238	U-238	pCi/g	0.69	1.6E+04	4.4E-05	5.2E+03	1.3E-04
118-H-6:5_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	49400.00	2.0E+03	**2.5E+01**	3.1E+04	**1.6E+00**
118-H-6:5_Shallow_Focused	non-Rad	Zinc	7440-66-6	ug/kg	46400.00	5.0E+04	9.3E-01	6.8E+04	6.8E-01
128-H-1_Overburden	non-Rad	4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	ug/kg	0.29	No Value	--	4.0E+02	7.3E-04
128-H-1_Overburden	non-Rad	Acenaphthene	83-32-9	ug/kg	4.36	2.0E+04	2.2E-04	1.1E+06	4.0E-06
128-H-1_Overburden	non-Rad	Anthracene	120-12-7	ug/kg	3.14	2.9E+04	1.1E-04	6.8E+05	4.6E-06
128-H-1_Overburden	non-Rad	Aroclor-1254	11097-69-1	ug/kg	8.05	4.0E+04	2.0E-04	1.5E+03	5.5E-03
128-H-1_Overburden	non-Rad	Arsenic	7440-38-2	ug/kg	40542.13	1.0E+04	**4.1E+00**	1.9E+05	2.1E-01
128-H-1_Overburden	non-Rad	Barium	7440-39-3	ug/kg	85541.34	3.3E+05	2.6E-01	1.3E+06	6.5E-02
128-H-1_Overburden	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	30.45	1.8E+04	1.7E-03	6.4E+04	4.8E-04
128-H-1_Overburden	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	58.13	1.8E+04	3.2E-03	7.6E+04	7.6E-04
128-H-1_Overburden	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	38.85	1.8E+04	2.2E-03	3.9E+04	9.9E-04
128-H-1_Overburden	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	19.31	1.8E+04	1.1E-03	3.9E+04	4.9E-04
128-H-1_Overburden	non-Rad	Beryllium	7440-41-7	ug/kg	274.22	1.0E+04	2.7E-02	1.4E+04	2.0E-02
128-H-1_Overburden	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	ug/kg	144.00	1.0E+05	1.4E-03	4.5E+04	3.2E-03
128-H-1_Overburden	non-Rad	Boron	7440-42-8	ug/kg	2799.04	5.0E+02	**5.6E+00**	1.3E+05	2.1E-02
128-H-1_Overburden	non-Rad	Cadmium	7440-43-9	ug/kg	176.73	4.0E+03	4.4E-02	1.6E+03	1.1E-01
128-H-1_Overburden	non-Rad	Chromium	7440-47-3	ug/kg	13084.58	4.0E+02	**3.3E+01**	3.8E+04	3.4E-01
128-H-1_Overburden	non-Rad	Chrysene	218-01-9	ug/kg	29.10	1.8E+04	1.6E-03	4.5E+04	6.5E-04
128-H-1_Overburden	non-Rad	Cobalt	7440-48-4	ug/kg	6539.09	1.3E+04	5.0E-01	1.1E+05	5.9E-02
128-H-1_Overburden	non-Rad	Copper	7440-50-8	ug/kg	13457.58	5.0E+04	2.7E-01	1.1E+05	1.3E-01

Table H-8. Comparison of 100-H OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/ Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
128-H-1_Overburden	non-Rad	Dibenz[a,h]anthracene	53-70-3	ug/kg	6.56	1.8E+04	3.7E-04	4.4E+04	1.5E-04
128-H-1_Overburden	non-Rad	Endosulfan I	959-98-8	ug/kg	1.29	No Value	--	7.1E+02	1.8E-03
128-H-1_Overburden	non-Rad	Fluoranthene	206-44-0	ug/kg	98.26	1.8E+04	5.5E-03	8.4E+05	1.2E-04
128-H-1_Overburden	non-Rad	Fluorene	86-73-7	ug/kg	2.62	2.9E+04	9.0E-05	1.8E+05	1.5E-05
128-H-1_Overburden	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	39.43	1.8E+04	2.2E-03	3.6E+04	1.1E-03
128-H-1_Overburden	non-Rad	Lead	7439-92-1	ug/kg	253829.55	5.0E+04	**5.1E+00**	3.6E+04	**7.1E+00**
128-H-1_Overburden	non-Rad	Manganese	7439-96-5	ug/kg	313885.55	2.2E+05	**1.4E+00**	5.8E+06	5.4E-02
128-H-1_Overburden	non-Rad	Mercury	7439-97-6	ug/kg	20.00	1.0E+02	2.0E-01	1.9E+03	1.1E-02
128-H-1_Overburden	non-Rad	Molybdenum	7439-98-7	ug/kg	390.51	2.0E+03	2.0E-01	1.4E+04	2.8E-02
128-H-1_Overburden	non-Rad	Naphthalene	91-20-3	ug/kg	5.48	2.9E+04	1.9E-04	1.0E+05	5.5E-05
128-H-1_Overburden	non-Rad	Nickel	7440-02-0	ug/kg	11022.14	3.0E+04	3.7E-01	3.3E+04	3.4E-01
128-H-1_Overburden	non-Rad	Pyrene	129-00-0	ug/kg	95.26	1.8E+04	5.3E-03	6.0E+05	1.6E-04
128-H-1_Overburden	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	ug/kg	8400.00	2.0E+05	4.2E-02	3.6E+08	2.4E-05
128-H-1_Overburden	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	ug/kg	24000.00	No Value	--	No Value	--
128-H-1_Overburden	non-Rad	Total petroleum hydrocarbons - motor oil (high boiling)	TPH/OILH	ug/kg	39451.05	No Value	--	No Value	--
128-H-1_Overburden	non-Rad	Vanadium	7440-62-2	ug/kg	47043.66	2.0E+03	**2.4E+01**	3.1E+04	**1.5E+00**
128-H-1_Overburden	non-Rad	Zinc	7440-66-6	ug/kg	49388.83	5.0E+04	9.9E-01	6.8E+04	7.3E-01
128-H-1_Shallow_3	non-Rad	4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	ug/kg	2.90	No Value	--	4.0E+02	7.3E-03
128-H-1_Shallow_3	non-Rad	Acenaphthene	83-32-9	ug/kg	26.43	2.0E+04	1.3E-03	1.1E+06	2.4E-05
128-H-1_Shallow_3	non-Rad	Anthracene	120-12-7	ug/kg	3.54	2.9E+04	1.2E-04	6.8E+05	5.2E-06
128-H-1_Shallow_3	non-Rad	Antimony	7440-36-0	ug/kg	239.00	5.0E+03	4.8E-02	6.0E+03	4.0E-02
128-H-1_Shallow_3	non-Rad	Aroclor-1260	11096-82-5	ug/kg	3.40	4.0E+04	8.5E-05	1.5E+03	2.3E-03
128-H-1_Shallow_3	non-Rad	Arsenic	7440-38-2	ug/kg	10641.93	1.0E+04	**1.1E+00**	1.9E+05	5.6E-02
128-H-1_Shallow_3	non-Rad	Barium	7440-39-3	ug/kg	102209.91	3.3E+05	3.1E-01	1.3E+06	7.7E-02
128-H-1_Shallow_3	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	49.87	1.8E+04	2.8E-03	6.4E+04	7.8E-04
128-H-1_Shallow_3	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	59.68	1.8E+04	3.3E-03	7.6E+04	7.8E-04
128-H-1_Shallow_3	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	59.24	1.8E+04	3.3E-03	3.9E+04	1.5E-03
128-H-1_Shallow_3	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	28.67	1.8E+04	1.6E-03	3.9E+04	7.3E-04
128-H-1_Shallow_3	non-Rad	Beryllium	7440-41-7	ug/kg	296.99	1.0E+04	3.0E-02	1.4E+04	2.1E-02
128-H-1_Shallow_3	non-Rad	Boron	7440-42-8	ug/kg	4921.60	5.0E+02	**9.8E+00**	1.3E+05	3.7E-02
128-H-1_Shallow_3	non-Rad	Cadmium	7440-43-9	ug/kg	152.25	4.0E+03	3.8E-02	1.6E+03	9.3E-02
128-H-1_Shallow_3	non-Rad	Chromium	7440-47-3	ug/kg	13633.70	4.0E+02	**3.4E+01**	3.8E+04	3.6E-01
128-H-1_Shallow_3	non-Rad	Chrysene	218-01-9	ug/kg	49.49	1.8E+04	2.8E-03	4.5E+04	1.1E-03
128-H-1_Shallow_3	non-Rad	Cobalt	7440-48-4	ug/kg	6720.49	1.3E+04	5.2E-01	1.1E+05	6.0E-02
128-H-1_Shallow_3	non-Rad	Copper	7440-50-8	ug/kg	14071.18	5.0E+04	2.8E-01	1.1E+05	1.3E-01
128-H-1_Shallow_3	non-Rad	Dibenz[a,h]anthracene	53-70-3	ug/kg	7.60	1.8E+04	4.2E-04	4.4E+04	1.7E-04
128-H-1_Shallow_3	non-Rad	Fluoranthene	206-44-0	ug/kg	153.67	1.8E+04	8.5E-03	8.4E+05	1.8E-04
128-H-1_Shallow_3	non-Rad	Fluorene	86-73-7	ug/kg	4.30	2.9E+04	1.5E-04	1.8E+05	2.5E-05
128-H-1_Shallow_3	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	170.31	No Value	--	1.3E+06	1.4E-04
128-H-1_Shallow_3	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	41.05	1.8E+04	2.3E-03	3.6E+04	1.2E-03
128-H-1_Shallow_3	non-Rad	Lead	7439-92-1	ug/kg	65619.57	5.0E+04	**1.3E+00**	3.6E+04	**1.8E+00**
128-H-1_Shallow_3	non-Rad	Manganese	7439-96-5	ug/kg	298334.49	2.2E+05	**1.4E+00**	5.8E+06	5.2E-02
128-H-1_Shallow_3	non-Rad	Mercury	7439-97-6	ug/kg	30.00	1.0E+02	3.0E-01	1.9E+03	1.6E-02
128-H-1_Shallow_3	non-Rad	Molybdenum	7439-98-7	ug/kg	347.48	2.0E+03	1.7E-01	1.4E+04	2.5E-02

Table H-8. Comparison of 100-H OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/ Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
128-H-1_Shallow_3	non-Rad	Nickel	7440-02-0	ug/kg	12942.13	3.0E+04	4.3E-01	3.3E+04	4.0E-01
128-H-1_Shallow_3	non-Rad	Pyrene	129-00-0	ug/kg	102.06	1.8E+04	5.7E-03	6.0E+05	1.7E-04
128-H-1_Shallow_3	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	ug/kg	8741.67	2.0E+05	4.4E-02	3.6E+08	2.5E-05
128-H-1_Shallow_3	non-Rad	Total petroleum hydrocarbons - motor oil (high boiling)	TPH/OILH	ug/kg	19396.90	No Value	--	No Value	--
128-H-1_Shallow_3	non-Rad	Vanadium	7440-62-2	ug/kg	46141.26	2.0E+03	**2.3E+01**	3.1E+04	**1.5E+00**
128-H-1_Shallow_3	non-Rad	Zinc	7440-66-6	ug/kg	43830.76	5.0E+04	8.8E-01	6.8E+04	6.5E-01
128-H-1_Shallow_4	non-Rad	4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	ug/kg	2.46	No Value	--	4.0E+02	6.2E-03
128-H-1_Shallow_4	non-Rad	Acenaphthene	83-32-9	ug/kg	15.13	2.0E+04	7.6E-04	1.1E+06	1.4E-05
128-H-1_Shallow_4	non-Rad	Anthracene	120-12-7	ug/kg	1.31	2.9E+04	4.5E-05	6.8E+05	1.9E-06
128-H-1_Shallow_4	non-Rad	Aroclor-1254	11097-69-1	ug/kg	9.43	4.0E+04	2.4E-04	1.5E+03	6.4E-03
128-H-1_Shallow_4	non-Rad	Aroclor-1260	11096-82-5	ug/kg	19.20	4.0E+04	4.8E-04	1.5E+03	1.3E-02
128-H-1_Shallow_4	non-Rad	Aroclors HI	---	ug/kg	--	--	7.2E-04	--	1.9E-02
128-H-1_Shallow_4	non-Rad	Arsenic	7440-38-2	ug/kg	5365.50	1.0E+04	5.4E-01	1.9E+05	2.8E-02
128-H-1_Shallow_4	non-Rad	Barium	7440-39-3	ug/kg	95142.01	3.3E+05	2.9E-01	1.3E+06	7.2E-02
128-H-1_Shallow_4	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	9.85	1.8E+04	5.5E-04	6.4E+04	1.5E-04
128-H-1_Shallow_4	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	10.67	1.8E+04	5.9E-04	7.6E+04	1.4E-04
128-H-1_Shallow_4	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	11.37	1.8E+04	6.3E-04	3.9E+04	2.9E-04
128-H-1_Shallow_4	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	4.30	1.8E+04	2.4E-04	3.9E+04	1.1E-04
128-H-1_Shallow_4	non-Rad	Beryllium	7440-41-7	ug/kg	309.16	1.0E+04	3.1E-02	1.4E+04	2.2E-02
128-H-1_Shallow_4	non-Rad	Boron	7440-42-8	ug/kg	4462.05	5.0E+02	**8.9E+00**	1.3E+05	3.4E-02
128-H-1_Shallow_4	non-Rad	Cadmium	7440-43-9	ug/kg	163.10	4.0E+03	4.1E-02	1.6E+03	1.0E-01
128-H-1_Shallow_4	non-Rad	Chromium	7440-47-3	ug/kg	14369.30	4.0E+02	**3.6E+01**	3.8E+04	3.8E-01
128-H-1_Shallow_4	non-Rad	Chrysene	218-01-9	ug/kg	10.80	1.8E+04	6.0E-04	4.5E+04	2.4E-04
128-H-1_Shallow_4	non-Rad	Cobalt	7440-48-4	ug/kg	6783.08	1.3E+04	5.2E-01	1.1E+05	6.1E-02
128-H-1_Shallow_4	non-Rad	Copper	7440-50-8	ug/kg	13864.83	5.0E+04	2.8E-01	1.1E+05	1.3E-01
128-H-1_Shallow_4	non-Rad	Dibenz[a,h]anthracene	53-70-3	ug/kg	2.59	1.8E+04	1.4E-04	4.4E+04	5.9E-05
128-H-1_Shallow_4	non-Rad	Fluoranthene	206-44-0	ug/kg	27.78	1.8E+04	1.5E-03	8.4E+05	3.3E-05
128-H-1_Shallow_4	non-Rad	Fluorene	86-73-7	ug/kg	4.27	2.9E+04	1.5E-04	1.8E+05	2.4E-05
128-H-1_Shallow_4	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	156.13	No Value	--	1.3E+06	1.3E-04
128-H-1_Shallow_4	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	5.34	1.8E+04	3.0E-04	3.6E+04	1.5E-04
128-H-1_Shallow_4	non-Rad	Lead	7439-92-1	ug/kg	44535.62	5.0E+04	8.9E-01	3.6E+04	**1.3E+00**
128-H-1_Shallow_4	non-Rad	Manganese	7439-96-5	ug/kg	319233.94	2.2E+05	**1.5E+00**	5.8E+06	5.5E-02
128-H-1_Shallow_4	non-Rad	Mercury	7439-97-6	ug/kg	1021.50	1.0E+02	**1.0E+01**	1.9E+03	5.5E-01
128-H-1_Shallow_4	non-Rad	Molybdenum	7439-98-7	ug/kg	414.39	2.0E+03	2.1E-01	1.4E+04	3.0E-02
128-H-1_Shallow_4	non-Rad	Naphthalene	91-20-3	ug/kg	6.57	2.9E+04	2.3E-04	1.0E+05	6.6E-05
128-H-1_Shallow_4	non-Rad	Nickel	7440-02-0	ug/kg	11655.35	3.0E+04	3.9E-01	3.3E+04	3.6E-01
128-H-1_Shallow_4	non-Rad	Pyrene	129-00-0	ug/kg	18.06	1.8E+04	1.0E-03	6.0E+05	3.0E-05
128-H-1_Shallow_4	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	ug/kg	10081.67	2.0E+05	5.0E-02	3.6E+08	2.8E-05
128-H-1_Shallow_4	non-Rad	Total petroleum hydrocarbons - motor oil (high boiling)	TPH/OILH	ug/kg	48269.73	No Value	--	No Value	--
128-H-1_Shallow_4	non-Rad	Vanadium	7440-62-2	ug/kg	51296.70	2.0E+03	**2.6E+01**	3.1E+04	**1.7E+00**
128-H-1_Shallow_4	non-Rad	Zinc	7440-66-6	ug/kg	40798.15	5.0E+04	8.2E-01	6.8E+04	6.0E-01
128-H-1_Shallow_5	non-Rad	Arsenic	7440-38-2	ug/kg	3784.74	1.0E+04	3.8E-01	1.9E+05	2.0E-02
128-H-1_Shallow_5	non-Rad	Barium	7440-39-3	ug/kg	66201.09	3.3E+05	2.0E-01	1.3E+06	5.0E-02

Table H-8. Comparison of 100-H OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/ Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
128-H-1_Shallow_5	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	12.00	1.8E+04	6.7E-04	6.4E+04	1.9E-04
128-H-1_Shallow_5	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	13.00	1.8E+04	7.2E-04	3.9E+04	3.3E-04
128-H-1_Shallow_5	non-Rad	Beryllium	7440-41-7	ug/kg	121.67	1.0E+04	1.2E-02	1.4E+04	8.7E-03
128-H-1_Shallow_5	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	ug/kg	74.50	1.0E+05	7.5E-04	4.5E+04	1.6E-03
128-H-1_Shallow_5	non-Rad	Boron	7440-42-8	ug/kg	1533.57	5.0E+02	**3.1E+00**	1.3E+05	1.2E-02
128-H-1_Shallow_5	non-Rad	Cadmium	7440-43-9	ug/kg	73.55	4.0E+03	1.8E-02	1.6E+03	4.5E-02
128-H-1_Shallow_5	non-Rad	Chromium	7440-47-3	ug/kg	12741.39	4.0E+02	**3.2E+01**	3.8E+04	3.3E-01
128-H-1_Shallow_5	non-Rad	Chrysene	218-01-9	ug/kg	15.00	1.8E+04	8.3E-04	4.5E+04	3.4E-04
128-H-1_Shallow_5	non-Rad	Cobalt	7440-48-4	ug/kg	6507.65	1.3E+04	5.0E-01	1.1E+05	5.8E-02
128-H-1_Shallow_5	non-Rad	Copper	7440-50-8	ug/kg	16559.35	5.0E+04	3.3E-01	1.1E+05	1.6E-01
128-H-1_Shallow_5	non-Rad	Fluoranthene	206-44-0	ug/kg	23.00	1.8E+04	1.3E-03	8.4E+05	2.7E-05
128-H-1_Shallow_5	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	917.00	No Value	--	1.3E+06	7.4E-04
128-H-1_Shallow_5	non-Rad	Lead	7439-92-1	ug/kg	6674.17	5.0E+04	1.3E-01	3.6E+04	1.9E-01
128-H-1_Shallow_5	non-Rad	Manganese	7439-96-5	ug/kg	270578.10	2.2E+05	**1.2E+00**	5.8E+06	4.7E-02
128-H-1_Shallow_5	non-Rad	Mercury	7439-97-6	ug/kg	23.16	1.0E+02	2.3E-01	1.9E+03	1.2E-02
128-H-1_Shallow_5	non-Rad	Molybdenum	7439-98-7	ug/kg	490.00	2.0E+03	2.5E-01	1.4E+04	3.5E-02
128-H-1_Shallow_5	non-Rad	Nickel	7440-02-0	ug/kg	11527.11	3.0E+04	3.8E-01	3.3E+04	3.5E-01
128-H-1_Shallow_5	non-Rad	Pyrene	129-00-0	ug/kg	30.00	1.8E+04	1.7E-03	6.0E+05	5.0E-05
128-H-1_Shallow_5	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	ug/kg	160000.00	2.0E+05	8.0E-01	3.6E+08	4.5E-04
128-H-1_Shallow_5	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	ug/kg	357773.33	No Value	--	No Value	--
128-H-1_Shallow_5	non-Rad	Vanadium	7440-62-2	ug/kg	40806.84	2.0E+03	**2.0E+01**	3.1E+04	**1.3E+00**
128-H-1_Shallow_5	non-Rad	Zinc	7440-66-6	ug/kg	36178.04	5.0E+04	7.2E-01	6.8E+04	5.3E-01
128-H-1_Staging pile area footprint_2	non-Rad	Acenaphthene	83-32-9	ug/kg	47.65	2.0E+04	2.4E-03	1.1E+06	4.4E-05
128-H-1_Staging pile area footprint_2	non-Rad	Anthracene	120-12-7	ug/kg	2.44	2.9E+04	8.4E-05	6.8E+05	3.6E-06
128-H-1_Staging pile area footprint_2	non-Rad	Aroclor-1254	11097-69-1	ug/kg	8.75	4.0E+04	2.2E-04	1.5E+03	5.9E-03
128-H-1_Staging pile area footprint_2	non-Rad	Aroclor-1260	11096-82-5	ug/kg	3.73	4.0E+04	9.3E-05	1.5E+03	2.5E-03
128-H-1_Staging pile area footprint_2	non-Rad	Aroclors HI	---	ug/kg	--	--	3.1E-04	--	8.5E-03
128-H-1_Staging pile area footprint_2	non-Rad	Arsenic	7440-38-2	ug/kg	54141.64	1.0E+04	**5.4E+00**	1.9E+05	2.9E-01
128-H-1_Staging pile area footprint_2	non-Rad	Barium	7440-39-3	ug/kg	88760.06	3.3E+05	2.7E-01	1.3E+06	6.7E-02
128-H-1_Staging pile area footprint_2	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	12.40	1.8E+04	6.9E-04	6.4E+04	1.9E-04
128-H-1_Staging pile area footprint_2	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	16.52	1.8E+04	9.2E-04	7.6E+04	2.2E-04
128-H-1_Staging pile area footprint_2	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	14.12	1.8E+04	7.8E-04	3.9E+04	3.6E-04
128-H-1_Staging pile area footprint_2	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	6.37	1.8E+04	3.5E-04	3.9E+04	1.6E-04
128-H-1_Staging pile area footprint_2	non-Rad	Beryllium	7440-41-7	ug/kg	338.49	1.0E+04	3.4E-02	1.4E+04	2.4E-02

Table H-8. Comparison of 100-H OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/ Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
128-H-1_Staging pile area footprint_2	non-Rad	Boron	7440-42-8	ug/kg	3306.34	5.0E+02	**6.6E+00**	1.3E+05	2.5E-02
128-H-1_Staging pile area footprint_2	non-Rad	Cadmium	7440-43-9	ug/kg	148.04	4.0E+03	3.7E-02	1.6E+03	9.1E-02
128-H-1_Staging pile area footprint_2	non-Rad	Chromium	7440-47-3	ug/kg	15219.65	4.0E+02	**3.8E+01**	3.8E+04	4.0E-01
128-H-1_Staging pile area footprint_2	non-Rad	Chrysene	218-01-9	ug/kg	10.43	1.8E+04	5.8E-04	4.5E+04	2.3E-04
128-H-1_Staging pile area footprint_2	non-Rad	Cobalt	7440-48-4	ug/kg	6809.88	1.3E+04	5.2E-01	1.1E+05	6.1E-02
128-H-1_Staging pile area footprint_2	non-Rad	Copper	7440-50-8	ug/kg	13201.63	5.0E+04	2.6E-01	1.1E+05	1.2E-01
128-H-1_Staging pile area footprint_2	non-Rad	Dibenz[a,h]anthracene	53-70-3	ug/kg	2.60	1.8E+04	1.5E-04	4.4E+04	5.9E-05
128-H-1_Staging pile area footprint_2	non-Rad	Fluoranthene	206-44-0	ug/kg	56.27	1.8E+04	3.1E-03	8.4E+05	6.7E-05
128-H-1_Staging pile area footprint_2	non-Rad	Fluorene	86-73-7	ug/kg	11.80	2.9E+04	4.1E-04	1.8E+05	6.7E-05
128-H-1_Staging pile area footprint_2	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	12.76	1.8E+04	7.1E-04	3.6E+04	3.6E-04
128-H-1_Staging pile area footprint_2	non-Rad	Lead	7439-92-1	ug/kg	124843.14	5.0E+04	**2.5E+00**	3.6E+04	**3.5E+00**
128-H-1_Staging pile area footprint_2	non-Rad	Manganese	7439-96-5	ug/kg	339767.58	2.2E+05	**1.5E+00**	5.8E+06	5.9E-02
128-H-1_Staging pile area footprint_2	non-Rad	Mercury	7439-97-6	ug/kg	66.52	1.0E+02	6.7E-01	1.9E+03	3.6E-02
128-H-1_Staging pile area footprint_2	non-Rad	Molybdenum	7439-98-7	ug/kg	276.33	2.0E+03	1.4E-01	1.4E+04	2.0E-02
128-H-1_Staging pile area footprint_2	non-Rad	Nickel	7440-02-0	ug/kg	12076.37	3.0E+04	4.0E-01	3.3E+04	3.7E-01
128-H-1_Staging pile area footprint_2	non-Rad	Pyrene	129-00-0	ug/kg	33.15	1.8E+04	1.8E-03	6.0E+05	5.5E-05
128-H-1_Staging pile area footprint_2	non-Rad	Total petroleum hydrocarbons - motor oil (high boiling)	TPH/OILH	ug/kg	23047.04	No Value	--	No Value	--
128-H-1_Staging pile area footprint_2	non-Rad	Vanadium	7440-62-2	ug/kg	46690.43	2.0E+03	**2.3E+01**	3.1E+04	**1.5E+00**
128-H-1_Staging pile area footprint_2	non-Rad	Zinc	7440-66-6	ug/kg	43441.32	5.0E+04	8.7E-01	6.8E+04	6.4E-01
128-H-1_Staging pile area footprint_6	non-Rad	Arsenic	7440-38-2	ug/kg	3729.94	1.0E+04	3.7E-01	1.9E+05	2.0E-02
128-H-1_Staging pile area footprint_6	non-Rad	Barium	7440-39-3	ug/kg	89945.54	3.3E+05	2.7E-01	1.3E+06	6.8E-02
128-H-1_Staging pile area footprint_6	non-Rad	Beryllium	7440-41-7	ug/kg	272.32	1.0E+04	2.7E-02	1.4E+04	2.0E-02
128-H-1_Staging pile area footprint_6	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	ug/kg	74.00	1.0E+05	7.4E-04	4.5E+04	1.6E-03
128-H-1_Staging pile area footprint_6	non-Rad	Boron	7440-42-8	ug/kg	1747.13	5.0E+02	**3.5E+00**	1.3E+05	1.3E-02

Table H-8. Comparison of 100-H OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/ Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
128-H-1_Staging pile area footprint_6	non-Rad	Cadmium	7440-43-9	ug/kg	91.28	4.0E+03	2.3E-02	1.6E+03	5.6E-02
128-H-1_Staging pile area footprint_6	non-Rad	Chromium	7440-47-3	ug/kg	14174.47	4.0E+02	**3.5E+01**	3.8E+04	3.7E-01
128-H-1_Staging pile area footprint_6	non-Rad	Cobalt	7440-48-4	ug/kg	7325.90	1.3E+04	5.6E-01	1.1E+05	6.6E-02
128-H-1_Staging pile area footprint_6	non-Rad	Copper	7440-50-8	ug/kg	14850.50	5.0E+04	3.0E-01	1.1E+05	1.4E-01
128-H-1_Staging pile area footprint_6	non-Rad	Diethylphthalate	84-66-2	ug/kg	35.00	1.0E+05	3.5E-04	No Value	--
128-H-1_Staging pile area footprint_6	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	232.53	No Value	--	1.3E+06	1.9E-04
128-H-1_Staging pile area footprint_6	non-Rad	Lead	7439-92-1	ug/kg	5851.80	5.0E+04	1.2E-01	3.6E+04	1.6E-01
128-H-1_Staging pile area footprint_6	non-Rad	Manganese	7439-96-5	ug/kg	333856.82	2.2E+05	**1.5E+00**	5.8E+06	5.8E-02
128-H-1_Staging pile area footprint_6	non-Rad	Mercury	7439-97-6	ug/kg	7.45	1.0E+02	7.5E-02	1.9E+03	4.0E-03
128-H-1_Staging pile area footprint_6	non-Rad	Nickel	7440-02-0	ug/kg	13383.79	3.0E+04	4.5E-01	3.3E+04	4.1E-01
128-H-1_Staging pile area footprint_6	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	ug/kg	8700.00	2.0E+05	4.4E-02	3.6E+08	2.4E-05
128-H-1_Staging pile area footprint_6	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	ug/kg	23493.75	No Value	--	No Value	--
128-H-1_Staging pile area footprint_6	non-Rad	Vanadium	7440-62-2	ug/kg	40714.80	2.0E+03	**2.0E+01**	3.1E+04	**1.3E+00**
128-H-1_Staging pile area footprint_6	non-Rad	Zinc	7440-66-6	ug/kg	40935.07	5.0E+04	8.2E-01	6.8E+04	6.0E-01
128-H-2_Shallow_Focused	non-Rad	Arsenic	7440-38-2	ug/kg	3500.00	1.0E+04	3.5E-01	1.9E+05	1.9E-02
128-H-2_Shallow_Focused	non-Rad	Barium	7440-39-3	ug/kg	82600.00	3.3E+05	2.5E-01	1.3E+06	6.2E-02
128-H-2_Shallow_Focused	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	ug/kg	130.00	1.0E+05	1.3E-03	4.5E+04	2.9E-03
128-H-2_Shallow_Focused	non-Rad	Butylbenzylphthalate	85-68-7	ug/kg	22.00	No Value	--	No Value	--
128-H-2_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	13800.00	4.0E+02	**3.5E+01**	3.8E+04	3.6E-01
128-H-2_Shallow_Focused	non-Rad	Copper	7440-50-8	ug/kg	16300.00	5.0E+04	3.3E-01	1.1E+05	1.5E-01
128-H-2_Shallow_Focused	non-Rad	Di-n-butylphthalate	84-74-2	ug/kg	36.00	No Value	--	No Value	--
128-H-2_Shallow_Focused	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	220.00	No Value	--	1.3E+06	1.8E-04
128-H-2_Shallow_Focused	non-Rad	Lead	7439-92-1	ug/kg	4900.00	5.0E+04	9.8E-02	3.6E+04	1.4E-01
128-H-2_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	329000.00	2.2E+05	**1.5E+00**	5.8E+06	5.7E-02
128-H-2_Shallow_Focused	non-Rad	Methylene chloride	75-09-2	ug/kg	4.00	No Value	--	1.7E+05	2.4E-05
128-H-2_Shallow_Focused	non-Rad	Nickel	7440-02-0	ug/kg	13100.00	3.0E+04	4.4E-01	3.3E+04	4.0E-01
128-H-2_Shallow_Focused	non-Rad	Selenium	7782-49-2	ug/kg	1200.00	5.2E+02	**2.3E+00**	1.9E+03	6.3E-01
128-H-2_Shallow_Focused	non-Rad	Total petroleum hydrocarbons - motor oil (high boiling)	TPH/OILH	ug/kg	4100.00	No Value	--	No Value	--
128-H-2_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	58500.00	2.0E+03	**2.9E+01**	3.1E+04	**1.9E+00**
128-H-2_Shallow_Focused	non-Rad	Zinc	7440-66-6	ug/kg	42000.00	5.0E+04	8.4E-01	6.8E+04	6.2E-01
128-H-3_Shallow_Focused	non-Rad	4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	ug/kg	1.70	No Value	--	4.0E+02	4.3E-03
128-H-3_Shallow_Focused	non-Rad	Arsenic	7440-38-2	ug/kg	11000.00	1.0E+04	**1.1E+00**	1.9E+05	5.8E-02

Table H-8. Comparison of 100-H OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/ Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
128-H-3_Shallow_Focused	non-Rad	Barium	7440-39-3	ug/kg	81800.00	3.3E+05	2.5E-01	1.3E+06	6.2E-02
128-H-3_Shallow_Focused	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	18.00	1.8E+04	1.0E-03	6.4E+04	2.8E-04
128-H-3_Shallow_Focused	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	37.00	1.8E+04	2.1E-03	7.6E+04	4.8E-04
128-H-3_Shallow_Focused	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	28.00	1.8E+04	1.6E-03	3.9E+04	7.1E-04
128-H-3_Shallow_Focused	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	27.00	1.8E+04	1.5E-03	3.9E+04	6.9E-04
128-H-3_Shallow_Focused	non-Rad	Beryllium	7440-41-7	ug/kg	360.00	1.0E+04	3.6E-02	1.4E+04	2.6E-02
128-H-3_Shallow_Focused	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	ug/kg	160.00	1.0E+05	1.6E-03	4.5E+04	3.5E-03
128-H-3_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	3700.00	5.0E+02	**7.4E+00**	1.3E+05	2.8E-02
128-H-3_Shallow_Focused	non-Rad	Butylbenzylphthalate	85-68-7	ug/kg	28.00	No Value	--	No Value	--
128-H-3_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	16900.00	4.0E+02	**4.2E+01**	3.8E+04	4.4E-01
128-H-3_Shallow_Focused	non-Rad	Chrysene	218-01-9	ug/kg	20.00	1.8E+04	1.1E-03	4.5E+04	4.5E-04
128-H-3_Shallow_Focused	non-Rad	Cobalt	7440-48-4	ug/kg	8400.00	1.3E+04	6.5E-01	1.1E+05	7.5E-02
128-H-3_Shallow_Focused	non-Rad	Copper	7440-50-8	ug/kg	19800.00	5.0E+04	4.0E-01	1.1E+05	1.9E-01
128-H-3_Shallow_Focused	non-Rad	Di-n-butylphthalate	84-74-2	ug/kg	120.00	No Value	--	No Value	--
128-H-3_Shallow_Focused	non-Rad	Fluoranthene	206-44-0	ug/kg	24.00	1.8E+04	1.3E-03	8.4E+05	2.9E-05
128-H-3_Shallow_Focused	non-Rad	Lead	7439-92-1	ug/kg	94100.00	5.0E+04	**1.9E+00**	3.6E+04	**2.6E+00**
128-H-3_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	360000.00	2.2E+05	**1.6E+00**	5.8E+06	6.2E-02
128-H-3_Shallow_Focused	non-Rad	Mercury	7439-97-6	ug/kg	40.00	1.0E+02	4.0E-01	1.9E+03	2.1E-02
128-H-3_Shallow_Focused	non-Rad	Methylene chloride	75-09-2	ug/kg	6.00	No Value	--	1.7E+05	3.6E-05
128-H-3_Shallow_Focused	non-Rad	Molybdenum	7439-98-7	ug/kg	680.00	2.0E+03	3.4E-01	1.4E+04	4.9E-02
128-H-3_Shallow_Focused	non-Rad	Nickel	7440-02-0	ug/kg	15400.00	3.0E+04	5.1E-01	3.3E+04	4.7E-01
128-H-3_Shallow_Focused	non-Rad	Pyrene	129-00-0	ug/kg	28.00	1.8E+04	1.6E-03	6.0E+05	4.7E-05
128-H-3_Shallow_Focused	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	ug/kg	6000.00	2.0E+05	3.0E-02	3.6E+08	1.7E-05
128-H-3_Shallow_Focused	non-Rad	Total petroleum hydrocarbons - motor oil (high boiling)	TPH/OILH	ug/kg	13000.00	No Value	--	No Value	--
128-H-3_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	60500.00	2.0E+03	**3.0E+01**	3.1E+04	**1.9E+00**
128-H-3_Shallow_Focused	non-Rad	Zinc	7440-66-6	ug/kg	49800.00	5.0E+04	1.0E+00	6.8E+04	7.4E-01
1607-H1_Overburden	non-Rad	Antimony	7440-36-0	ug/kg	420.00	5.0E+03	8.4E-02	6.0E+03	7.0E-02
1607-H1_Overburden	non-Rad	Arsenic	7440-38-2	ug/kg	14321.10	1.0E+04	**1.4E+00**	1.9E+05	7.6E-02
1607-H1_Overburden	non-Rad	Barium	7440-39-3	ug/kg	79109.03	3.3E+05	2.4E-01	1.3E+06	6.0E-02
1607-H1_Overburden	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	55.90	1.8E+04	3.1E-03	3.9E+04	1.4E-03
1607-H1_Overburden	non-Rad	Beryllium	7440-41-7	ug/kg	267.00	1.0E+04	2.7E-02	1.4E+04	1.9E-02
1607-H1_Overburden	non-Rad	beta-1,2,3,4,5,6-Hexachlorocyclohexane (beta-BHC)	319-85-7	ug/kg	1.37	No Value	--	4.1E+03	3.4E-04
1607-H1_Overburden	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	ug/kg	282.00	1.0E+05	2.8E-03	4.5E+04	6.2E-03
1607-H1_Overburden	non-Rad	Boron	7440-42-8	ug/kg	3760.46	5.0E+02	**7.5E+00**	1.3E+05	2.8E-02
1607-H1_Overburden	non-Rad	Cadmium	7440-43-9	ug/kg	107.76	4.0E+03	2.7E-02	1.6E+03	6.6E-02
1607-H1_Overburden	Rad	Carbon-14	14762-75-5	pCi/g	1.54	6.1E+04	2.5E-05	3.2E+01	4.9E-02
1607-H1_Overburden	non-Rad	Chromium	7440-47-3	ug/kg	12120.27	4.0E+02	**3.0E+01**	3.8E+04	3.2E-01
1607-H1_Overburden	non-Rad	Cobalt	7440-48-4	ug/kg	6260.27	1.3E+04	4.8E-01	1.1E+05	5.6E-02
1607-H1_Overburden	non-Rad	Copper	7440-50-8	ug/kg	14455.89	5.0E+04	2.9E-01	1.1E+05	1.4E-01
1607-H1_Overburden	non-Rad	Dieldrin	60-57-1	ug/kg	2.01	No Value	--	2.1E+01	9.6E-02
1607-H1_Overburden	non-Rad	Fluoranthene	206-44-0	ug/kg	71.10	1.8E+04	4.0E-03	8.4E+05	8.5E-05
1607-H1_Overburden	non-Rad	Fluoride	16984-48-8	ug/kg	1465.42	No Value	--	2.3E+06	6.4E-04
1607-H1_Overburden	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	169.20	No Value	--	1.3E+06	1.4E-04
1607-H1_Overburden	non-Rad	Lead	7439-92-1	ug/kg	60452.36	5.0E+04	**1.2E+00**	3.6E+04	**1.7E+00**
1607-H1_Overburden	non-Rad	Manganese	7439-96-5	ug/kg	299829.98	2.2E+05	**1.4E+00**	5.8E+06	5.2E-02

Table H-8. Comparison of 100-H OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/ Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
1607-H1_Overburden	non-Rad	Mercury	7439-97-6	ug/kg	14.89	1.0E+02	1.5E-01	1.9E+03	8.0E-03
1607-H1_Overburden	non-Rad	Molybdenum	7439-98-7	ug/kg	449.00	2.0E+03	2.2E-01	1.4E+04	3.2E-02
1607-H1_Overburden	non-Rad	Nickel	7440-02-0	ug/kg	11144.21	3.0E+04	3.7E-01	3.3E+04	3.4E-01
1607-H1_Overburden	non-Rad	Nitrate	14797-55-8	ug/kg	57506.21	No Value	--	3.4E+08	1.7E-04
1607-H1_Overburden	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	ug/kg	13996.26	No Value	--	No Value	--
1607-H1_Overburden	non-Rad	Pyrene	129-00-0	ug/kg	95.70	1.8E+04	5.3E-03	6.0E+05	1.6E-04
1607-H1_Overburden	Rad	Rads SOF	---	pCi/g	--	--	8.5E-05	--	4.9E-02
1607-H1_Overburden	non-Rad	Selenium	7782-49-2	ug/kg	978.65	5.2E+02	**1.9E+00**	1.9E+03	5.2E-01
1607-H1_Overburden	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	2112.28	5.0E+03	4.2E-01	3.6E+04	2.7E-03
1607-H1_Overburden	Rad	Uranium-233/234	U-233/234	pCi/g	0.73	5.2E+04	1.4E-05	6.4E+03	1.1E-04
1607-H1_Overburden	Rad	Uranium-238	U-238	pCi/g	0.71	1.6E+04	4.5E-05	5.2E+03	1.4E-04
1607-H1_Overburden	non-Rad	Vanadium	7440-62-2	ug/kg	46454.27	2.0E+03	**2.3E+01**	3.1E+04	**1.5E+00**
1607-H1_Overburden	non-Rad	Zinc	7440-66-6	ug/kg	39273.42	5.0E+04	7.9E-01	6.8E+04	5.8E-01
1607-H1_Shallow	non-Rad	4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	ug/kg	3.98	No Value	--	4.0E+02	1.0E-02
1607-H1_Shallow	non-Rad	4,4'-DDT (Dichlorodiphenyltrichloroethane)	50-29-3	ug/kg	1.29	No Value	--	8.8E+02	1.5E-03
1607-H1_Shallow	non-Rad	Antimony	7440-36-0	ug/kg	208.00	5.0E+03	4.2E-02	6.0E+03	3.5E-02
1607-H1_Shallow	non-Rad	Aroclor-1254	11097-69-1	ug/kg	26.78	4.0E+04	6.7E-04	1.5E+03	1.8E-02
1607-H1_Shallow	non-Rad	Aroclor-1260	11096-82-5	ug/kg	13.67	4.0E+04	3.4E-04	1.5E+03	9.3E-03
1607-H1_Shallow	non-Rad	Aroclors HI	---	ug/kg	--	--	1.0E-03	--	2.7E-02
1607-H1_Shallow	non-Rad	Arsenic	7440-38-2	ug/kg	9508.20	1.0E+04	9.5E-01	1.9E+05	5.0E-02
1607-H1_Shallow	non-Rad	Barium	7440-39-3	ug/kg	80402.97	3.3E+05	2.4E-01	1.3E+06	6.1E-02
1607-H1_Shallow	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	72.80	1.8E+04	4.0E-03	6.4E+04	1.1E-03
1607-H1_Shallow	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	67.80	1.8E+04	3.8E-03	7.6E+04	8.9E-04
1607-H1_Shallow	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	54.80	1.8E+04	3.0E-03	3.9E+04	1.4E-03
1607-H1_Shallow	non-Rad	Beryllium	7440-41-7	ug/kg	267.80	1.0E+04	2.7E-02	1.4E+04	1.9E-02
1607-H1_Shallow	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	ug/kg	211.00	1.0E+05	2.1E-03	4.5E+04	4.7E-03
1607-H1_Shallow	non-Rad	Boron	7440-42-8	ug/kg	3051.66	5.0E+02	**6.1E+00**	1.3E+05	2.3E-02
1607-H1_Shallow	non-Rad	Cadmium	7440-43-9	ug/kg	127.31	4.0E+03	3.2E-02	1.6E+03	7.8E-02
1607-H1_Shallow	Rad	Carbon-14	14762-75-5	pCi/g	1.53	6.1E+04	2.5E-05	3.2E+01	4.9E-02
1607-H1_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.08	2.2E+03	3.5E-05	9.2E+02	8.3E-05
1607-H1_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	13088.62	4.0E+02	**3.3E+01**	3.8E+04	3.4E-01
1607-H1_Shallow	non-Rad	Chrysene	218-01-9	ug/kg	78.30	1.8E+04	4.4E-03	4.5E+04	1.8E-03
1607-H1_Shallow	non-Rad	Cobalt	7440-48-4	ug/kg	7042.09	1.3E+04	5.4E-01	1.1E+05	6.3E-02
1607-H1_Shallow	non-Rad	Copper	7440-50-8	ug/kg	15042.53	5.0E+04	3.0E-01	1.1E+05	1.4E-01
1607-H1_Shallow	non-Rad	Dieldrin	60-57-1	ug/kg	3.90	No Value	--	2.1E+01	1.9E-01
1607-H1_Shallow	non-Rad	Di-n-butylphthalate	84-74-2	ug/kg	253.00	No Value	--	No Value	--
1607-H1_Shallow	non-Rad	Fluoranthene	206-44-0	ug/kg	171.00	1.8E+04	9.5E-03	8.4E+05	2.0E-04
1607-H1_Shallow	non-Rad	Fluoride	16984-48-8	ug/kg	4029.29	No Value	--	2.3E+06	1.8E-03
1607-H1_Shallow	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	137.33	No Value	--	1.3E+06	1.1E-04
1607-H1_Shallow	non-Rad	Lead	7439-92-1	ug/kg	25360.96	5.0E+04	5.1E-01	3.6E+04	7.1E-01
1607-H1_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	315366.51	2.2E+05	**1.4E+00**	5.8E+06	5.4E-02
1607-H1_Shallow	non-Rad	Mercury	7439-97-6	ug/kg	97.00	1.0E+02	9.7E-01	1.9E+03	5.2E-02
1607-H1_Shallow	non-Rad	Molybdenum	7439-98-7	ug/kg	383.09	2.0E+03	1.9E-01	1.4E+04	2.7E-02
1607-H1_Shallow	non-Rad	Nickel	7440-02-0	ug/kg	11939.84	3.0E+04	4.0E-01	3.3E+04	3.7E-01
1607-H1_Shallow	non-Rad	Nitrate	14797-55-8	ug/kg	12617.67	No Value	--	3.4E+08	3.7E-05
1607-H1_Shallow	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	ug/kg	2746.68	No Value	--	No Value	--

Table H-8. Comparison of 100-H OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/ Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
1607-H1_Shallow	Rad	Plutonium-238	13981-16-3	pCi/g	0.34	1.8E+04	1.9E-05	6.0E+03	5.6E-05
1607-H1_Shallow	non-Rad	Pyrene	129-00-0	ug/kg	233.00	1.8E+04	1.3E-02	6.0E+05	3.9E-04
1607-H1_Shallow	Rad	Rads SOF	---	pCi/g	--	--	1.3E-04	--	6.6E-02
1607-H1_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	1781.49	5.0E+03	3.6E-01	3.6E+04	2.3E-03
1607-H1_Shallow	Rad	Tritium	10028-17-8	pCi/g	7.38	1.7E+06	4.4E-06	4.2E+02	1.8E-02
1607-H1_Shallow	Rad	Uranium-233/234	U-233/234	pCi/g	0.67	5.2E+04	1.3E-05	6.4E+03	1.1E-04
1607-H1_Shallow	Rad	Uranium-238	U-238	pCi/g	0.60	1.6E+04	3.8E-05	5.2E+03	1.2E-04
1607-H1_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	50477.16	2.0E+03	**2.5E+01**	3.1E+04	**1.6E+00**
1607-H1_Shallow	non-Rad	Zinc	7440-66-6	ug/kg	43328.13	5.0E+04	8.7E-01	6.8E+04	6.4E-01
1607-H1_Shallow_Focused	non-Rad	Arsenic	7440-38-2	ug/kg	1300.00	1.0E+04	1.3E-01	1.9E+05	6.9E-03
1607-H1_Shallow_Focused	non-Rad	Barium	7440-39-3	ug/kg	40500.00	3.3E+05	1.2E-01	1.3E+06	3.1E-02
1607-H1_Shallow_Focused	non-Rad	Cadmium	7440-43-9	ug/kg	55.00	4.0E+03	1.4E-02	1.6E+03	3.4E-02
1607-H1_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	9800.00	4.0E+02	**2.5E+01**	3.8E+04	2.6E-01
1607-H1_Shallow_Focused	non-Rad	Cobalt	7440-48-4	ug/kg	4800.00	1.3E+04	3.7E-01	1.1E+05	4.3E-02
1607-H1_Shallow_Focused	non-Rad	Copper	7440-50-8	ug/kg	13400.00	5.0E+04	2.7E-01	1.1E+05	1.3E-01
1607-H1_Shallow_Focused	non-Rad	Lead	7439-92-1	ug/kg	2700.00	5.0E+04	5.4E-02	3.6E+04	7.6E-02
1607-H1_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	228000.00	2.2E+05	**1.0E+00**	5.8E+06	3.9E-02
1607-H1_Shallow_Focused	non-Rad	Nickel	7440-02-0	ug/kg	11200.00	3.0E+04	3.7E-01	3.3E+04	3.4E-01
1607-H1_Shallow_Focused	non-Rad	Nitrogen in Nitrate	NO3-N	ug/kg	840.00	No Value	--	No Value	--
1607-H1_Shallow_Focused	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	ug/kg	570.00	No Value	--	No Value	--
1607-H1_Shallow_Focused	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	0.04	5.0E+03	8.5E-06	3.6E+04	5.4E-08
1607-H1_Shallow_Focused	Rad	Uranium-234	13966-29-5	pCi/g	0.27	5.2E+04	5.1E-06	6.4E+03	4.2E-05
1607-H1_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	33500.00	2.0E+03	**1.7E+01**	3.1E+04	**1.1E+00**
1607-H1_Shallow_Focused	non-Rad	Zinc	7440-66-6	ug/kg	29900.00	5.0E+04	6.0E-01	6.8E+04	4.4E-01
1607-H2_Overburden	non-Rad	Anthracene	120-12-7	ug/kg	23.00	2.9E+04	7.9E-04	6.8E+05	3.4E-05
1607-H2_Overburden	non-Rad	Arsenic	7440-38-2	ug/kg	15800.00	1.0E+04	**1.6E+00**	1.9E+05	8.3E-02
1607-H2_Overburden	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	100.00	1.8E+04	5.6E-03	6.4E+04	1.6E-03
1607-H2_Overburden	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	130.00	1.8E+04	7.2E-03	7.6E+04	1.7E-03
1607-H2_Overburden	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	76.00	1.8E+04	4.2E-03	3.9E+04	1.9E-03
1607-H2_Overburden	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	94.00	1.8E+04	5.2E-03	3.9E+04	2.4E-03
1607-H2_Overburden	Rad	Cesium-137	10045-97-3	pCi/g	0.04	2.2E+03	1.7E-05	9.2E+02	4.1E-05
1607-H2_Overburden	non-Rad	Chromium	7440-47-3	ug/kg	10300.00	4.0E+02	**2.6E+01**	3.8E+04	2.7E-01
1607-H2_Overburden	non-Rad	Chrysene	218-01-9	ug/kg	120.00	1.8E+04	6.7E-03	4.5E+04	2.7E-03
1607-H2_Overburden	non-Rad	Fluoranthene	206-44-0	ug/kg	230.00	1.8E+04	1.3E-02	8.4E+05	2.7E-04
1607-H2_Overburden	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	79.00	1.8E+04	4.4E-03	3.6E+04	2.2E-03
1607-H2_Overburden	non-Rad	Lead	7439-92-1	ug/kg	54900.00	5.0E+04	**1.1E+00**	3.6E+04	**1.5E+00**
1607-H2_Overburden	non-Rad	Pyrene	129-00-0	ug/kg	220.00	1.8E+04	1.2E-02	6.0E+05	3.7E-04
1607-H2_Overburden	Rad	Rads SOF	---	pCi/g	--	--	7.6E-05	--	2.9E-04
1607-H2_Overburden	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	2116.49	5.0E+03	4.2E-01	3.6E+04	2.7E-03
1607-H2_Overburden	Rad	Uranium-233/234	U-233/234	pCi/g	0.70	5.2E+04	1.4E-05	6.4E+03	1.1E-04
1607-H2_Overburden	Rad	Uranium-238	U-238	pCi/g	0.71	1.6E+04	4.5E-05	5.2E+03	1.4E-04
1607-H2_Shallow	non-Rad	Aroclor-1254	11097-69-1	ug/kg	160.00	4.0E+04	4.0E-03	1.5E+03	1.1E-01
1607-H2_Shallow	non-Rad	Aroclors HI	---	ug/kg	--	--	4.0E-03	--	1.1E-01
1607-H2_Shallow	non-Rad	Arsenic	7440-38-2	ug/kg	7132.40	1.0E+04	7.1E-01	1.9E+05	3.8E-02
1607-H2_Shallow	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	ug/kg	24.00	1.0E+05	2.4E-04	4.5E+04	5.3E-04
1607-H2_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.07	2.2E+03	3.3E-05	9.2E+02	7.9E-05
1607-H2_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	204000.00	4.0E+02	**5.1E+02**	3.8E+04	**5.4E+00**
1607-H2_Shallow	non-Rad	Di-n-butylphthalate	84-74-2	ug/kg	110.00	No Value	--	No Value	--

Table H-8. Comparison of 100-H OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/ Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
1607-H2_Shallow	non-Rad	Lead	7439-92-1	ug/kg	37629.23	5.0E+04	7.5E-01	3.6E+04	**1.1E+00**
1607-H2_Shallow	non-Rad	Mercury	7439-97-6	ug/kg	2591.37	1.0E+02	**2.6E+01**	1.9E+03	**1.4E+00**
1607-H2_Shallow	Rad	Rads SOF	---	pCi/g	--	--	9.9E-05	--	3.7E-04
1607-H2_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	2241.77	5.0E+03	4.5E-01	3.6E+04	2.9E-03
1607-H2_Shallow	Rad	Uranium-233/234	U-233/234	pCi/g	0.92	5.2E+04	1.8E-05	6.4E+03	1.4E-04
1607-H2_Shallow	Rad	Uranium-238	U-238	pCi/g	0.75	1.6E+04	4.8E-05	5.2E+03	1.5E-04
1607-H2_Shallow_Focused	non-Rad	Arsenic	7440-38-2	ug/kg	1500.00	1.0E+04	1.5E-01	1.9E+05	7.9E-03
1607-H2_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	7900.00	4.0E+02	**2.0E+01**	3.8E+04	2.1E-01
1607-H2_Shallow_Focused	non-Rad	Lead	7439-92-1	ug/kg	2500.00	5.0E+04	5.0E-02	3.6E+04	7.0E-02
1607-H2_Shallow_Focused	non-Rad	Mercury	7439-97-6	ug/kg	65.00	1.0E+02	6.5E-01	1.9E+03	3.5E-02
1607-H3_Overburden	non-Rad	4,4'-DDD (Dichlorodiphenyldichloroethane)	72-54-8	ug/kg	1.98	No Value	--	No Value	--
1607-H3_Overburden	non-Rad	4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	ug/kg	18.40	No Value	--	4.0E+02	4.6E-02
1607-H3_Overburden	non-Rad	4,4'-DDT (Dichlorodiphenyltrichloroethane)	50-29-3	ug/kg	2.50	No Value	--	8.8E+02	2.8E-03
1607-H3_Overburden	non-Rad	Acenaphthene	83-32-9	ug/kg	17.50	2.0E+04	8.8E-04	1.1E+06	1.6E-05
1607-H3_Overburden	non-Rad	Anthracene	120-12-7	ug/kg	1.73	2.9E+04	6.0E-05	6.8E+05	2.6E-06
1607-H3_Overburden	non-Rad	Aroclor-1254	11097-69-1	ug/kg	15.40	4.0E+04	3.9E-04	1.5E+03	1.0E-02
1607-H3_Overburden	non-Rad	Aroclor-1260	11096-82-5	ug/kg	9.44	4.0E+04	2.4E-04	1.5E+03	6.4E-03
1607-H3_Overburden	non-Rad	Aroclors HI	---	ug/kg	--	--	6.2E-04	--	1.7E-02
1607-H3_Overburden	non-Rad	Arsenic	7440-38-2	ug/kg	4302.12	1.0E+04	4.3E-01	1.9E+05	2.3E-02
1607-H3_Overburden	non-Rad	Barium	7440-39-3	ug/kg	97721.54	3.3E+05	3.0E-01	1.3E+06	7.4E-02
1607-H3_Overburden	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	7.23	1.8E+04	4.0E-04	6.4E+04	1.1E-04
1607-H3_Overburden	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	10.67	1.8E+04	5.9E-04	7.6E+04	1.4E-04
1607-H3_Overburden	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	8.75	1.8E+04	4.9E-04	3.9E+04	2.2E-04
1607-H3_Overburden	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	3.93	1.8E+04	2.2E-04	3.9E+04	1.0E-04
1607-H3_Overburden	non-Rad	Beryllium	7440-41-7	ug/kg	261.21	1.0E+04	2.6E-02	1.4E+04	1.9E-02
1607-H3_Overburden	non-Rad	Boron	7440-42-8	ug/kg	4725.31	5.0E+02	**9.5E+00**	1.3E+05	3.6E-02
1607-H3_Overburden	non-Rad	Cadmium	7440-43-9	ug/kg	139.28	4.0E+03	3.5E-02	1.6E+03	8.6E-02
1607-H3_Overburden	non-Rad	Chromium	7440-47-3	ug/kg	49817.68	4.0E+02	**1.3E+02**	3.8E+04	**1.3E+00**
1607-H3_Overburden	non-Rad	Chrysene	218-01-9	ug/kg	11.90	1.8E+04	6.6E-04	4.5E+04	2.7E-04
1607-H3_Overburden	non-Rad	Cobalt	7440-48-4	ug/kg	7299.55	1.3E+04	5.6E-01	1.1E+05	6.6E-02
1607-H3_Overburden	non-Rad	Copper	7440-50-8	ug/kg	14980.07	5.0E+04	3.0E-01	1.1E+05	1.4E-01
1607-H3_Overburden	non-Rad	Dibenz[a,h]anthracene	53-70-3	ug/kg	1.69	1.8E+04	9.4E-05	4.4E+04	3.8E-05
1607-H3_Overburden	non-Rad	Endosulfan I	959-98-8	ug/kg	3.20	No Value	--	7.1E+02	4.5E-03
1607-H3_Overburden	non-Rad	Fluoranthene	206-44-0	ug/kg	22.38	1.8E+04	1.2E-03	8.4E+05	2.7E-05
1607-H3_Overburden	non-Rad	Fluorene	86-73-7	ug/kg	1.37	2.9E+04	4.7E-05	1.8E+05	7.8E-06
1607-H3_Overburden	non-Rad	Fluoride	16984-48-8	ug/kg	992.31	No Value	--	2.3E+06	4.4E-04
1607-H3_Overburden	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	128.61	No Value	--	1.3E+06	1.0E-04
1607-H3_Overburden	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	6.96	1.8E+04	3.9E-04	3.6E+04	2.0E-04
1607-H3_Overburden	non-Rad	Lead	7439-92-1	ug/kg	21505.12	5.0E+04	4.3E-01	3.6E+04	6.0E-01
1607-H3_Overburden	non-Rad	Manganese	7439-96-5	ug/kg	306124.87	2.2E+05	**1.4E+00**	5.8E+06	5.3E-02
1607-H3_Overburden	non-Rad	Mercury	7439-97-6	ug/kg	15.00	1.0E+02	1.5E-01	1.9E+03	8.0E-03
1607-H3_Overburden	non-Rad	Methylene chloride	75-09-2	ug/kg	10.73	No Value	--	1.7E+05	6.5E-05
1607-H3_Overburden	non-Rad	Molybdenum	7439-98-7	ug/kg	365.08	2.0E+03	1.8E-01	1.4E+04	2.6E-02
1607-H3_Overburden	non-Rad	Naphthalene	91-20-3	ug/kg	102.65	2.9E+04	3.5E-03	1.0E+05	1.0E-03
1607-H3_Overburden	non-Rad	Nickel	7440-02-0	ug/kg	21414.42	3.0E+04	7.1E-01	3.3E+04	6.6E-01

Table H-8. Comparison of 100-H OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/ Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
1607-H3_Overburden	non-Rad	Nitrate	14797-55-8	ug/kg	43233.91	No Value	--	3.4E+08	1.3E-04
1607-H3_Overburden	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	ug/kg	6068.30	No Value	--	No Value	--
1607-H3_Overburden	non-Rad	Pyrene	129-00-0	ug/kg	15.89	1.8E+04	8.8E-04	6.0E+05	2.7E-05
1607-H3_Overburden	non-Rad	Silver	7440-22-4	ug/kg	840.00	2.0E+03	4.2E-01	5.0E+04	1.7E-02
1607-H3_Overburden	non-Rad	Vanadium	7440-62-2	ug/kg	51140.67	2.0E+03	**2.6E+01**	3.1E+04	**1.6E+00**
1607-H3_Overburden	non-Rad	Zinc	7440-66-6	ug/kg	51057.98	5.0E+04	**1.0E+00**	6.8E+04	7.5E-01
1607-H3_Shallow_1	non-Rad	2-Methylnaphthalene	91-57-6	ug/kg	219.00	2.9E+04	7.6E-03	6.0E+03	3.6E-02
1607-H3_Shallow_1	non-Rad	4,4'-DDD (Dichlorodiphenyldichloroethane)	72-54-8	ug/kg	1.64	No Value	--	No Value	--
1607-H3_Shallow_1	non-Rad	4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	ug/kg	4.78	No Value	--	4.0E+02	1.2E-02
1607-H3_Shallow_1	non-Rad	4,4'-DDT (Dichlorodiphenyltrichloroethane)	50-29-3	ug/kg	10.40	No Value	--	8.8E+02	1.2E-02
1607-H3_Shallow_1	non-Rad	Acenaphthene	83-32-9	ug/kg	409.00	2.0E+04	2.1E-02	1.1E+06	3.7E-04
1607-H3_Shallow_1	non-Rad	Anthracene	120-12-7	ug/kg	7.80	2.9E+04	2.7E-04	6.8E+05	1.2E-05
1607-H3_Shallow_1	non-Rad	Antimony	7440-36-0	ug/kg	388.82	5.0E+03	7.8E-02	6.0E+03	6.5E-02
1607-H3_Shallow_1	non-Rad	Aroclor-1254	11097-69-1	ug/kg	10.50	4.0E+04	2.6E-04	1.5E+03	7.1E-03
1607-H3_Shallow_1	non-Rad	Aroclor-1260	11096-82-5	ug/kg	19.30	4.0E+04	4.8E-04	1.5E+03	1.3E-02
1607-H3_Shallow_1	non-Rad	Aroclors HI	---	ug/kg	--	--	7.5E-04	--	2.0E-02
1607-H3_Shallow_1	non-Rad	Arsenic	7440-38-2	ug/kg	3239.88	1.0E+04	3.2E-01	1.9E+05	1.7E-02
1607-H3_Shallow_1	non-Rad	Barium	7440-39-3	ug/kg	70120.15	3.3E+05	2.1E-01	1.3E+06	5.3E-02
1607-H3_Shallow_1	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	11.32	1.8E+04	6.3E-04	6.4E+04	1.8E-04
1607-H3_Shallow_1	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	4.56	1.8E+04	2.5E-04	7.6E+04	6.0E-05
1607-H3_Shallow_1	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	3.68	1.8E+04	2.0E-04	3.9E+04	9.4E-05
1607-H3_Shallow_1	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	4.17	1.8E+04	2.3E-04	3.9E+04	1.1E-04
1607-H3_Shallow_1	non-Rad	Beryllium	7440-41-7	ug/kg	245.12	1.0E+04	2.5E-02	1.4E+04	1.8E-02
1607-H3_Shallow_1	non-Rad	beta-1,2,3,4,5,6-Hexachlorocyclohexane (beta-BHC)	319-85-7	ug/kg	4.63	No Value	--	4.1E+03	1.1E-03
1607-H3_Shallow_1	non-Rad	Boron	7440-42-8	ug/kg	1944.73	5.0E+02	**3.9E+00**	1.3E+05	1.5E-02
1607-H3_Shallow_1	non-Rad	Cadmium	7440-43-9	ug/kg	120.75	4.0E+03	3.0E-02	1.6E+03	7.4E-02
1607-H3_Shallow_1	non-Rad	Chromium	7440-47-3	ug/kg	12103.82	4.0E+02	**3.0E+01**	3.8E+04	3.2E-01
1607-H3_Shallow_1	non-Rad	Chrysene	218-01-9	ug/kg	42.86	1.8E+04	2.4E-03	4.5E+04	9.6E-04
1607-H3_Shallow_1	non-Rad	Cobalt	7440-48-4	ug/kg	6689.95	1.3E+04	5.2E-01	1.1E+05	6.0E-02
1607-H3_Shallow_1	non-Rad	Copper	7440-50-8	ug/kg	13284.61	5.0E+04	2.7E-01	1.1E+05	1.2E-01
1607-H3_Shallow_1	non-Rad	Dibenz[a,h]anthracene	53-70-3	ug/kg	2.25	1.8E+04	1.3E-04	4.4E+04	5.1E-05
1607-H3_Shallow_1	non-Rad	Endosulfan I	959-98-8	ug/kg	2.98	No Value	--	7.1E+02	4.2E-03
1607-H3_Shallow_1	non-Rad	Fluoranthene	206-44-0	ug/kg	68.95	1.8E+04	3.8E-03	8.4E+05	8.2E-05
1607-H3_Shallow_1	non-Rad	Fluorene	86-73-7	ug/kg	75.90	2.9E+04	2.6E-03	1.8E+05	4.3E-04
1607-H3_Shallow_1	non-Rad	Fluoride	16984-48-8	ug/kg	1326.17	No Value	--	2.3E+06	5.8E-04
1607-H3_Shallow_1	non-Rad	Lead	7439-92-1	ug/kg	9027.20	5.0E+04	1.8E-01	3.6E+04	2.5E-01
1607-H3_Shallow_1	non-Rad	Manganese	7439-96-5	ug/kg	287009.05	2.2E+05	**1.3E+00**	5.8E+06	5.0E-02
1607-H3_Shallow_1	non-Rad	Mercury	7439-97-6	ug/kg	9.00	1.0E+02	9.0E-02	1.9E+03	4.8E-03
1607-H3_Shallow_1	non-Rad	Molybdenum	7439-98-7	ug/kg	441.23	2.0E+03	2.2E-01	1.4E+04	3.2E-02
1607-H3_Shallow_1	non-Rad	Naphthalene	91-20-3	ug/kg	169.00	2.9E+04	5.8E-03	1.0E+05	1.7E-03
1607-H3_Shallow_1	non-Rad	Nickel	7440-02-0	ug/kg	10738.88	3.0E+04	3.6E-01	3.3E+04	3.3E-01
1607-H3_Shallow_1	non-Rad	Nitrate	14797-55-8	ug/kg	6544.44	No Value	--	3.4E+08	1.9E-05
1607-H3_Shallow_1	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	ug/kg	1980.05	No Value	--	No Value	--
1607-H3_Shallow_1	non-Rad	Pyrene	129-00-0	ug/kg	22.08	1.8E+04	1.2E-03	6.0E+05	3.7E-05

Table H-8. Comparison of 100-H OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/ Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
1607-H3_Shallow_1	non-Rad	Selenium	7782-49-2	ug/kg	300.00	5.2E+02	5.8E-01	1.9E+03	1.6E-01
1607-H3_Shallow_1	non-Rad	Vanadium	7440-62-2	ug/kg	51055.08	2.0E+03	**2.6E+01**	3.1E+04	**1.6E+00**
1607-H3_Shallow_1	non-Rad	Zinc	7440-66-6	ug/kg	58149.70	5.0E+04	**1.2E+00**	6.8E+04	8.6E-01
1607-H3_Shallow_2	non-Rad	Acenaphthene	83-32-9	ug/kg	10.30	2.0E+04	5.2E-04	1.1E+06	9.4E-06
1607-H3_Shallow_2	non-Rad	Arsenic	7440-38-2	ug/kg	2274.54	1.0E+04	2.3E-01	1.9E+05	1.2E-02
1607-H3_Shallow_2	non-Rad	Barium	7440-39-3	ug/kg	50645.48	3.3E+05	1.5E-01	1.3E+06	3.8E-02
1607-H3_Shallow_2	non-Rad	Beryllium	7440-41-7	ug/kg	196.81	1.0E+04	2.0E-02	1.4E+04	1.4E-02
1607-H3_Shallow_2	non-Rad	Boron	7440-42-8	ug/kg	1136.18	5.0E+02	**2.3E+00**	1.3E+05	8.6E-03
1607-H3_Shallow_2	non-Rad	Cadmium	7440-43-9	ug/kg	93.19	4.0E+03	2.3E-02	1.6E+03	5.7E-02
1607-H3_Shallow_2	non-Rad	Chromium	7440-47-3	ug/kg	10587.23	4.0E+02	**2.7E+01**	3.8E+04	2.8E-01
1607-H3_Shallow_2	non-Rad	Cobalt	7440-48-4	ug/kg	5450.17	1.3E+04	4.2E-01	1.1E+05	4.9E-02
1607-H3_Shallow_2	non-Rad	Copper	7440-50-8	ug/kg	13435.53	5.0E+04	2.7E-01	1.1E+05	1.3E-01
1607-H3_Shallow_2	non-Rad	Fluoride	16984-48-8	ug/kg	1004.53	No Value	--	2.3E+06	4.4E-04
1607-H3_Shallow_2	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	132.97	No Value	--	1.3E+06	1.1E-04
1607-H3_Shallow_2	non-Rad	Lead	7439-92-1	ug/kg	4086.46	5.0E+04	8.2E-02	3.6E+04	1.2E-01
1607-H3_Shallow_2	non-Rad	Manganese	7439-96-5	ug/kg	256330.69	2.2E+05	**1.2E+00**	5.8E+06	4.4E-02
1607-H3_Shallow_2	non-Rad	Mercury	7439-97-6	ug/kg	16.00	1.0E+02	1.6E-01	1.9E+03	8.6E-03
1607-H3_Shallow_2	non-Rad	Molybdenum	7439-98-7	ug/kg	267.73	2.0E+03	1.3E-01	1.4E+04	1.9E-02
1607-H3_Shallow_2	non-Rad	Naphthalene	91-20-3	ug/kg	7.58	2.9E+04	2.6E-04	1.0E+05	7.6E-05
1607-H3_Shallow_2	non-Rad	Nickel	7440-02-0	ug/kg	10188.28	3.0E+04	3.4E-01	3.3E+04	3.1E-01
1607-H3_Shallow_2	non-Rad	Nitrate	14797-55-8	ug/kg	2497.22	No Value	--	3.4E+08	7.3E-06
1607-H3_Shallow_2	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	ug/kg	540.83	No Value	--	No Value	--
1607-H3_Shallow_2	non-Rad	Vanadium	7440-62-2	ug/kg	42062.67	2.0E+03	**2.1E+01**	3.1E+04	**1.4E+00**
1607-H3_Shallow_2	non-Rad	Zinc	7440-66-6	ug/kg	33110.35	5.0E+04	6.6E-01	6.8E+04	4.9E-01
1607-H4_Shallow	non-Rad	Acenaphthene	83-32-9	ug/kg	100.00	2.0E+04	5.0E-03	1.1E+06	9.1E-05
1607-H4_Shallow	non-Rad	Anthracene	120-12-7	ug/kg	280.00	2.9E+04	9.7E-03	6.8E+05	4.1E-04
1607-H4_Shallow	non-Rad	Arsenic	7440-38-2	ug/kg	7500.00	1.0E+04	7.5E-01	1.9E+05	4.0E-02
1607-H4_Shallow	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	365.11	1.8E+04	2.0E-02	6.4E+04	5.7E-03
1607-H4_Shallow	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	381.44	1.8E+04	2.1E-02	7.6E+04	5.0E-03
1607-H4_Shallow	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	355.91	1.8E+04	2.0E-02	3.9E+04	9.1E-03
1607-H4_Shallow	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	355.00	1.8E+04	2.0E-02	3.9E+04	9.1E-03
1607-H4_Shallow	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	ug/kg	32.00	1.0E+05	3.2E-04	4.5E+04	7.1E-04
1607-H4_Shallow	non-Rad	Carbazole	86-74-8	ug/kg	120.00	No Value	--	No Value	--
1607-H4_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.14	2.2E+03	6.2E-05	9.2E+02	1.5E-04
1607-H4_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	10200.00	4.0E+02	**2.6E+01**	3.8E+04	2.7E-01
1607-H4_Shallow	non-Rad	Chrysene	218-01-9	ug/kg	388.75	1.8E+04	2.2E-02	4.5E+04	8.7E-03
1607-H4_Shallow	non-Rad	Dibenz[a,h]anthracene	53-70-3	ug/kg	21.97	1.8E+04	1.2E-03	4.4E+04	5.0E-04
1607-H4_Shallow	non-Rad	Dibenzofuran	132-64-9	ug/kg	42.00	No Value	--	No Value	--
1607-H4_Shallow	non-Rad	Fluoranthene	206-44-0	ug/kg	1300.00	1.8E+04	7.2E-02	8.4E+05	1.6E-03
1607-H4_Shallow	non-Rad	Fluorene	86-73-7	ug/kg	93.00	2.9E+04	3.2E-03	1.8E+05	5.3E-04
1607-H4_Shallow	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	180.00	1.8E+04	1.0E-02	3.6E+04	5.1E-03
1607-H4_Shallow	non-Rad	Lead	7439-92-1	ug/kg	44100.00	5.0E+04	8.8E-01	3.6E+04	**1.2E+00**
1607-H4_Shallow	non-Rad	Mercury	7439-97-6	ug/kg	40.00	1.0E+02	4.0E-01	1.9E+03	2.1E-02
1607-H4_Shallow	non-Rad	Naphthalene	91-20-3	ug/kg	25.00	2.9E+04	8.6E-04	1.0E+05	2.5E-04
1607-H4_Shallow	non-Rad	Pyrene	129-00-0	ug/kg	1200.00	1.8E+04	6.7E-02	6.0E+05	2.0E-03
1607-H4_Shallow	Rad	Rads SOF	---	pCi/g	--	--	1.1E-04	--	3.5E-04
1607-H4_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	1586.64	5.0E+03	3.2E-01	3.6E+04	2.0E-03
1607-H4_Shallow	Rad	Uranium-233/234	U-233/234	pCi/g	0.61	5.2E+04	1.2E-05	6.4E+03	9.6E-05

Table H-8. Comparison of 100-H OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/ Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
1607-H4_Shallow	Rad	Uranium-238	U-238	pCi/g	0.53	1.6E+04	3.4E-05	5.2E+03	1.0E-04
600-151_Shallow_1	non-Rad	4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	ug/kg	0.70	No Value	--	4.0E+02	1.8E-03
600-151_Shallow_1	non-Rad	4,4'-DDT (Dichlorodiphenyltrichloroethane)	50-29-3	ug/kg	0.89	No Value	--	8.8E+02	1.0E-03
600-151_Shallow_1	non-Rad	Acetone	67-64-1	ug/kg	6.80	No Value	--	No Value	--
600-151_Shallow_1	non-Rad	Anthracene	120-12-7	ug/kg	5.36	2.9E+04	1.9E-04	6.8E+05	7.9E-06
600-151_Shallow_1	non-Rad	Arsenic	7440-38-2	ug/kg	31816.35	1.0E+04	**3.2E+00**	1.9E+05	1.7E-01
600-151_Shallow_1	non-Rad	Barium	7440-39-3	ug/kg	100703.90	3.3E+05	3.1E-01	1.3E+06	7.6E-02
600-151_Shallow_1	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	74.89	1.8E+04	4.2E-03	6.4E+04	1.2E-03
600-151_Shallow_1	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	58.15	1.8E+04	3.2E-03	7.6E+04	7.6E-04
600-151_Shallow_1	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	45.97	1.8E+04	2.6E-03	3.9E+04	1.2E-03
600-151_Shallow_1	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	23.48	1.8E+04	1.3E-03	3.9E+04	6.0E-04
600-151_Shallow_1	non-Rad	Beryllium	7440-41-7	ug/kg	177.72	1.0E+04	1.8E-02	1.4E+04	1.3E-02
600-151_Shallow_1	non-Rad	Boron	7440-42-8	ug/kg	4858.61	5.0E+02	**9.7E+00**	1.3E+05	3.7E-02
600-151_Shallow_1	non-Rad	Cadmium	7440-43-9	ug/kg	286.27	4.0E+03	7.2E-02	1.6E+03	1.8E-01
600-151_Shallow_1	non-Rad	Chromium	7440-47-3	ug/kg	13125.48	4.0E+02	**3.3E+01**	3.8E+04	3.4E-01
600-151_Shallow_1	non-Rad	Chrysene	218-01-9	ug/kg	59.28	1.8E+04	3.3E-03	4.5E+04	1.3E-03
600-151_Shallow_1	non-Rad	Cobalt	7440-48-4	ug/kg	7921.08	1.3E+04	6.1E-01	1.1E+05	7.1E-02
600-151_Shallow_1	non-Rad	Copper	7440-50-8	ug/kg	22586.73	5.0E+04	4.5E-01	1.1E+05	2.1E-01
600-151_Shallow_1	non-Rad	Dibenz[a,h]anthracene	53-70-3	ug/kg	23.00	1.8E+04	1.3E-03	4.4E+04	5.2E-04
600-151_Shallow_1	non-Rad	Fluoranthene	206-44-0	ug/kg	124.90	1.8E+04	6.9E-03	8.4E+05	1.5E-04
600-151_Shallow_1	non-Rad	Fluorene	86-73-7	ug/kg	6.70	2.9E+04	2.3E-04	1.8E+05	3.8E-05
600-151_Shallow_1	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	264.22	No Value	--	1.3E+06	2.1E-04
600-151_Shallow_1	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	45.33	1.8E+04	2.5E-03	3.6E+04	1.3E-03
600-151_Shallow_1	non-Rad	Lead	7439-92-1	ug/kg	126983.64	5.0E+04	**2.5E+00**	3.6E+04	**3.6E+00**
600-151_Shallow_1	non-Rad	Manganese	7439-96-5	ug/kg	352408.65	2.2E+05	**1.6E+00**	5.8E+06	6.1E-02
600-151_Shallow_1	non-Rad	Mercury	7439-97-6	ug/kg	14.62	1.0E+02	1.5E-01	1.9E+03	7.8E-03
600-151_Shallow_1	non-Rad	Methylene chloride	75-09-2	ug/kg	1.97	No Value	--	1.7E+05	1.2E-05
600-151_Shallow_1	non-Rad	Molybdenum	7439-98-7	ug/kg	470.00	2.0E+03	2.4E-01	1.4E+04	3.4E-02
600-151_Shallow_1	non-Rad	Nickel	7440-02-0	ug/kg	13000.46	3.0E+04	4.3E-01	3.3E+04	4.0E-01
600-151_Shallow_1	non-Rad	Pyrene	129-00-0	ug/kg	159.28	1.8E+04	8.9E-03	6.0E+05	2.7E-04
600-151_Shallow_1	non-Rad	Selenium	7782-49-2	ug/kg	940.00	5.2E+02	**1.8E+00**	1.9E+03	5.0E-01
600-151_Shallow_1	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	ug/kg	17453.90	2.0E+05	8.7E-02	3.6E+08	4.9E-05
600-151_Shallow_1	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	ug/kg	30036.93	No Value	--	No Value	--
600-151_Shallow_1	non-Rad	Vanadium	7440-62-2	ug/kg	41178.14	2.0E+03	**2.1E+01**	3.1E+04	**1.3E+00**
600-151_Shallow_1	non-Rad	Zinc	7440-66-6	ug/kg	64969.35	5.0E+04	**1.3E+00**	6.8E+04	9.6E-01
600-151_Shallow_2	non-Rad	2-Butanone	78-93-3	ug/kg	6.90	No Value	--	3.1E+06	2.2E-06
600-151_Shallow_2	non-Rad	4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	ug/kg	0.47	No Value	--	4.0E+02	1.2E-03
600-151_Shallow_2	non-Rad	Acetone	67-64-1	ug/kg	30.00	No Value	--	No Value	--
600-151_Shallow_2	non-Rad	Arsenic	7440-38-2	ug/kg	59605.68	1.0E+04	**6.0E+00**	1.9E+05	3.2E-01
600-151_Shallow_2	non-Rad	Barium	7440-39-3	ug/kg	93206.35	3.3E+05	2.8E-01	1.3E+06	7.1E-02
600-151_Shallow_2	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	23.92	1.8E+04	1.3E-03	6.4E+04	3.7E-04
600-151_Shallow_2	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	24.58	1.8E+04	1.4E-03	7.6E+04	3.2E-04
600-151_Shallow_2	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	24.58	1.8E+04	1.4E-03	3.9E+04	6.3E-04

Table H-8. Comparison of 100-H OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/ Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
600-151_Shallow_2	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	15.67	1.8E+04	8.7E-04	3.9E+04	4.0E-04
600-151_Shallow_2	non-Rad	Beryllium	7440-41-7	ug/kg	128.83	1.0E+04	1.3E-02	1.4E+04	9.2E-03
600-151_Shallow_2	non-Rad	Boron	7440-42-8	ug/kg	2270.82	5.0E+02	**4.5E+00**	1.3E+05	1.7E-02
600-151_Shallow_2	non-Rad	Cadmium	7440-43-9	ug/kg	596.32	4.0E+03	1.5E-01	1.6E+03	3.7E-01
600-151_Shallow_2	non-Rad	Chromium	7440-47-3	ug/kg	12220.82	4.0E+02	**3.1E+01**	3.8E+04	3.2E-01
600-151_Shallow_2	non-Rad	Chrysene	218-01-9	ug/kg	29.33	1.8E+04	1.6E-03	4.5E+04	6.6E-04
600-151_Shallow_2	non-Rad	Cobalt	7440-48-4	ug/kg	7500.14	1.3E+04	5.8E-01	1.1E+05	6.7E-02
600-151_Shallow_2	non-Rad	Copper	7440-50-8	ug/kg	14467.80	5.0E+04	2.9E-01	1.1E+05	1.4E-01
600-151_Shallow_2	non-Rad	Fluoranthene	206-44-0	ug/kg	59.75	1.8E+04	3.3E-03	8.4E+05	7.1E-05
600-151_Shallow_2	non-Rad	Lead	7439-92-1	ug/kg	266765.08	5.0E+04	**5.3E+00**	3.6E+04	**7.5E+00**
600-151_Shallow_2	non-Rad	Manganese	7439-96-5	ug/kg	359398.85	2.2E+05	**1.6E+00**	5.8E+06	6.2E-02
600-151_Shallow_2	non-Rad	Mercury	7439-97-6	ug/kg	13.27	1.0E+02	1.3E-01	1.9E+03	7.1E-03
600-151_Shallow_2	non-Rad	Methylene chloride	75-09-2	ug/kg	11.00	No Value	--	1.7E+05	6.6E-05
600-151_Shallow_2	non-Rad	Molybdenum	7439-98-7	ug/kg	330.00	2.0E+03	1.7E-01	1.4E+04	2.4E-02
600-151_Shallow_2	non-Rad	Nickel	7440-02-0	ug/kg	11535.69	3.0E+04	3.9E-01	3.3E+04	3.5E-01
600-151_Shallow_2	non-Rad	Pyrene	129-00-0	ug/kg	72.25	1.8E+04	4.0E-03	6.0E+05	1.2E-04
600-151_Shallow_2	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	ug/kg	1660.00	2.0E+05	8.3E-03	3.6E+08	4.7E-06
600-151_Shallow_2	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	ug/kg	6646.29	No Value	--	No Value	--
600-151_Shallow_2	non-Rad	Vanadium	7440-62-2	ug/kg	38406.62	2.0E+03	**1.9E+01**	3.1E+04	**1.2E+00**
600-151_Shallow_2	non-Rad	Zinc	7440-66-6	ug/kg	47155.67	5.0E+04	9.4E-01	6.8E+04	7.0E-01
600-151_Shallow_3	non-Rad	4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	ug/kg	3.40	No Value	--	4.0E+02	8.5E-03
600-151_Shallow_3	non-Rad	4,4'-DDT (Dichlorodiphenyltrichloroethane)	50-29-3	ug/kg	0.91	No Value	--	8.8E+02	1.0E-03
600-151_Shallow_3	non-Rad	Anthracene	120-12-7	ug/kg	6.70	2.9E+04	2.3E-04	6.8E+05	9.9E-06
600-151_Shallow_3	non-Rad	Arsenic	7440-38-2	ug/kg	53960.69	1.0E+04	**5.4E+00**	1.9E+05	2.9E-01
600-151_Shallow_3	non-Rad	Barium	7440-39-3	ug/kg	215867.31	3.3E+05	6.5E-01	1.3E+06	1.6E-01
600-151_Shallow_3	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	38.38	1.8E+04	2.1E-03	6.4E+04	6.0E-04
600-151_Shallow_3	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	39.48	1.8E+04	2.2E-03	7.6E+04	5.2E-04
600-151_Shallow_3	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	30.69	1.8E+04	1.7E-03	3.9E+04	7.8E-04
600-151_Shallow_3	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	15.98	1.8E+04	8.9E-04	3.9E+04	4.1E-04
600-151_Shallow_3	non-Rad	Beryllium	7440-41-7	ug/kg	136.50	1.0E+04	1.4E-02	1.4E+04	9.8E-03
600-151_Shallow_3	non-Rad	Boron	7440-42-8	ug/kg	2612.30	5.0E+02	**5.2E+00**	1.3E+05	2.0E-02
600-151_Shallow_3	non-Rad	Cadmium	7440-43-9	ug/kg	510.56	4.0E+03	1.3E-01	1.6E+03	3.1E-01
600-151_Shallow_3	non-Rad	Chromium	7440-47-3	ug/kg	13174.67	4.0E+02	**3.3E+01**	3.8E+04	3.5E-01
600-151_Shallow_3	non-Rad	Chrysene	218-01-9	ug/kg	44.69	1.8E+04	2.5E-03	4.5E+04	1.0E-03
600-151_Shallow_3	non-Rad	Cobalt	7440-48-4	ug/kg	7685.99	1.3E+04	5.9E-01	1.1E+05	6.9E-02
600-151_Shallow_3	non-Rad	Copper	7440-50-8	ug/kg	16047.27	5.0E+04	3.2E-01	1.1E+05	1.5E-01
600-151_Shallow_3	non-Rad	Fluoranthene	206-44-0	ug/kg	69.38	1.8E+04	3.9E-03	8.4E+05	8.3E-05
600-151_Shallow_3	non-Rad	Fluorene	86-73-7	ug/kg	9.00	2.9E+04	3.1E-04	1.8E+05	5.1E-05
600-151_Shallow_3	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	31.46	1.8E+04	1.8E-03	3.6E+04	8.8E-04
600-151_Shallow_3	non-Rad	Lead	7439-92-1	ug/kg	276282.82	5.0E+04	**5.5E+00**	3.6E+04	**7.8E+00**
600-151_Shallow_3	non-Rad	Manganese	7439-96-5	ug/kg	323716.37	2.2E+05	**1.5E+00**	5.8E+06	5.6E-02
600-151_Shallow_3	non-Rad	Mercury	7439-97-6	ug/kg	29.32	1.0E+02	2.9E-01	1.9E+03	1.6E-02
600-151_Shallow_3	non-Rad	Methylene chloride	75-09-2	ug/kg	3.40	No Value	--	1.7E+05	2.1E-05
600-151_Shallow_3	non-Rad	Molybdenum	7439-98-7	ug/kg	370.00	2.0E+03	1.9E-01	1.4E+04	2.7E-02

Table H-8. Comparison of 100-H OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/ Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
600-151_Shallow_3	non-Rad	Naphthalene	91-20-3	ug/kg	18.00	2.9E+04	6.2E-04	1.0E+05	1.8E-04
600-151_Shallow_3	non-Rad	Nickel	7440-02-0	ug/kg	12315.12	3.0E+04	4.1E-01	3.3E+04	3.8E-01
600-151_Shallow_3	non-Rad	Pyrene	129-00-0	ug/kg	93.08	1.8E+04	5.2E-03	6.0E+05	1.6E-04
600-151_Shallow_3	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	ug/kg	4406.15	2.0E+05	2.2E-02	3.6E+08	1.2E-05
600-151_Shallow_3	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	ug/kg	17034.14	No Value	--	No Value	--
600-151_Shallow_3	non-Rad	Vanadium	7440-62-2	ug/kg	38453.72	2.0E+03	**1.9E+01**	3.1E+04	**1.2E+00**
600-151_Shallow_3	non-Rad	Zinc	7440-66-6	ug/kg	62832.70	5.0E+04	**1.3E+00**	6.8E+04	9.3E-01
600-152_Shallow	non-Rad	Anthracene	120-12-7	ug/kg	15.44	2.9E+04	5.3E-04	6.8E+05	2.3E-05
600-152_Shallow	non-Rad	Arsenic	7440-38-2	ug/kg	4940.80	1.0E+04	4.9E-01	1.9E+05	2.6E-02
600-152_Shallow	non-Rad	Barium	7440-39-3	ug/kg	67842.93	3.3E+05	2.1E-01	1.3E+06	5.1E-02
600-152_Shallow	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	13.35	1.8E+04	7.4E-04	6.4E+04	2.1E-04
600-152_Shallow	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	15.34	1.8E+04	8.5E-04	7.6E+04	2.0E-04
600-152_Shallow	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	13.28	1.8E+04	7.4E-04	3.9E+04	3.4E-04
600-152_Shallow	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	5.59	1.8E+04	3.1E-04	3.9E+04	1.4E-04
600-152_Shallow	non-Rad	Beryllium	7440-41-7	ug/kg	278.64	1.0E+04	2.8E-02	1.4E+04	2.0E-02
600-152_Shallow	non-Rad	Boron	7440-42-8	ug/kg	1784.86	5.0E+02	**3.6E+00**	1.3E+05	1.3E-02
600-152_Shallow	non-Rad	Cadmium	7440-43-9	ug/kg	80.77	4.0E+03	2.0E-02	1.6E+03	5.0E-02
600-152_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	12729.52	4.0E+02	**3.2E+01**	3.8E+04	3.3E-01
600-152_Shallow	non-Rad	Chrysene	218-01-9	ug/kg	10.11	1.8E+04	5.6E-04	4.5E+04	2.3E-04
600-152_Shallow	non-Rad	Cobalt	7440-48-4	ug/kg	6103.71	1.3E+04	4.7E-01	1.1E+05	5.5E-02
600-152_Shallow	non-Rad	Copper	7440-50-8	ug/kg	23251.15	5.0E+04	4.7E-01	1.1E+05	2.2E-01
600-152_Shallow	non-Rad	Dibenz[a,h]anthracene	53-70-3	ug/kg	2.00	1.8E+04	1.1E-04	4.4E+04	4.5E-05
600-152_Shallow	non-Rad	Fluoranthene	206-44-0	ug/kg	39.46	1.8E+04	2.2E-03	8.4E+05	4.7E-05
600-152_Shallow	non-Rad	Fluorene	86-73-7	ug/kg	1.69	2.9E+04	5.8E-05	1.8E+05	9.6E-06
600-152_Shallow	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	10.40	1.8E+04	5.8E-04	3.6E+04	2.9E-04
600-152_Shallow	non-Rad	Lead	7439-92-1	ug/kg	13577.92	5.0E+04	2.7E-01	3.6E+04	3.8E-01
600-152_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	299188.24	2.2E+05	**1.4E+00**	5.8E+06	5.2E-02
600-152_Shallow	non-Rad	Mercury	7439-97-6	ug/kg	13.42	1.0E+02	1.3E-01	1.9E+03	7.2E-03
600-152_Shallow	non-Rad	Molybdenum	7439-98-7	ug/kg	280.06	2.0E+03	1.4E-01	1.4E+04	2.0E-02
600-152_Shallow	non-Rad	Nickel	7440-02-0	ug/kg	11630.44	3.0E+04	3.9E-01	3.3E+04	3.6E-01
600-152_Shallow	non-Rad	Pyrene	129-00-0	ug/kg	17.68	1.8E+04	9.8E-04	6.0E+05	3.0E-05
600-152_Shallow	Rad	Total beta radiostrontium	SR-RAD	pCi/g	0.27	3.6E+03	7.4E-05	9.1E+01	2.9E-03
600-152_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	39511.65	2.0E+03	**2.0E+01**	3.1E+04	**1.3E+00**
600-152_Shallow	non-Rad	Zinc	7440-66-6	ug/kg	40243.24	5.0E+04	8.1E-01	6.8E+04	5.9E-01

Notes:

1 Plant/Invertebrate SSLs are the lowest NOAEL based values found in *Tier 1 Risk-Based Soil Concentrations Protective of Ecological Receptors at the Hanford Site* [CHPRC-00784] located in Appendix H of *Remedial Investigation/Feasibility Study for the 100-KR-1, 100-KR, and 100-KR-4 Operable Units* (DOE/RL-2010-97).

2 Avian/mammal SSLs are the lowest NOAEL based values found in *Tier 1 Risk-Based Soil Concentrations Protective of Ecological Receptors at the Hanford Site* [CHPRC-00784] located in Appendix H of *Remedial Investigation/Feasibility Study for the 100-KR-1, 100-KR, and 100-KR-4 Operable Units* (DOE/RL-2010-97).

All data represent detected concentrations of the chemicals.

Hazard Quotients greater than one are in bold font and highlighted yellow.

Uranium 234 SSLs were used as surrogates for Uranium 233/234.

pCi/g = pico Curie per gram

SSL = Soil screening level

µg/kg = Microgram per kilogram

Table H-9. Comparison of Chemicals Exceeding SSLs in 100-D OU Surface Soils (0 to 15 feet [0 to 4.6m]) to Background

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Lognormal 90th Percentile Background Value	EPC > Background
100-D-1_Shallow	non-Rad	Boron	7440-42-8	µg/kg	2100.00	3.9E+03	No
100-D-1_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	10134.61	1.9E+04	No
100-D-1_Shallow	non-Rad	Manganese	7439-96-5	µg/kg	322020.59	5.1E+05	No
100-D-1_Shallow	non-Rad	Vanadium	7440-62-2	µg/kg	63050.63	8.5E+04	No
100-D-13_Shallow_Focused	non-Rad	Boron	7440-42-8	µg/kg	4900.00	3.9E+03	**Yes**
100-D-13_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	10900.00	1.9E+04	No
100-D-13_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	271000.00	5.1E+05	No
100-D-13_Shallow_Focused	non-Rad	Selenium	7782-49-2	µg/kg	890.00	7.8E+02	**Yes**
100-D-13_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	46400.00	8.5E+04	No
100-D-13_Shallow_Focused	non-Rad	Zinc	7440-66-6	µg/kg	122000.00	6.8E+04	**Yes**
100-D-15_Shallow_1	non-Rad	Boron	7440-42-8	µg/kg	1510.11	3.9E+03	No
100-D-15_Shallow_1	non-Rad	Chromium	7440-47-3	µg/kg	11800.94	1.9E+04	No
100-D-15_Shallow_1	non-Rad	Manganese	7439-96-5	µg/kg	277857.01	5.1E+05	No
100-D-15_Shallow_1	non-Rad	Vanadium	7440-62-2	µg/kg	54073.17	8.5E+04	No
100-D-15_Shallow_2	non-Rad	Boron	7440-42-8	µg/kg	1652.40	3.9E+03	No
100-D-15_Shallow_2	non-Rad	Chromium	7440-47-3	µg/kg	14486.33	1.9E+04	No
100-D-15_Shallow_2	non-Rad	Manganese	7439-96-5	µg/kg	326394.50	5.1E+05	No
100-D-15_Shallow_2	non-Rad	Vanadium	7440-62-2	µg/kg	60475.17	8.5E+04	No
100-D-15_Shallow_2	non-Rad	Zinc	7440-66-6	µg/kg	92810.11	6.8E+04	**Yes**
100-D-2_Shallow_Focused	non-Rad	Boron	7440-42-8	µg/kg	3300.00	3.9E+03	No
100-D-2_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	7300.00	1.9E+04	No
100-D-2_Shallow_Focused	non-Rad	Lithium	7439-93-2	µg/kg	4700.00	1.3E+04	No
100-D-2_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	294000.00	5.1E+05	No
100-D-2_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	50100.00	8.5E+04	No
100-D-2_Shallow_Focused	non-Rad	Zinc	7440-66-6	µg/kg	51300.00	6.8E+04	No
100-D-24_Shallow_Focused	non-Rad	Boron	7440-42-8	µg/kg	1900.00	3.9E+03	No
100-D-24_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	6200.00	1.9E+04	No
100-D-24_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	295000.00	5.1E+05	No
100-D-24_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	48700.00	8.5E+04	No
100-D-28:1_Overburden	non-Rad	Boron	7440-42-8	µg/kg	1041.67	3.9E+03	No
100-D-28:1_Overburden	non-Rad	Chromium	7440-47-3	µg/kg	9398.84	1.9E+04	No
100-D-28:1_Overburden	non-Rad	Manganese	7439-96-5	µg/kg	283916.77	5.1E+05	No
100-D-28:1_Overburden	non-Rad	Vanadium	7440-62-2	µg/kg	54468.60	8.5E+04	No
100-D-28:1_Shallow	non-Rad	Boron	7440-42-8	µg/kg	1300.00	3.9E+03	No
100-D-28:1_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	9867.48	1.9E+04	No
100-D-28:1_Shallow	non-Rad	Manganese	7439-96-5	µg/kg	305115.91	5.1E+05	No
100-D-28:1_Shallow	non-Rad	Mercury	7439-97-6	µg/kg	571.98	1.3E+01	**Yes**
100-D-28:1_Shallow	non-Rad	Selenium	7782-49-2	µg/kg	1700.00	7.8E+02	**Yes**
100-D-28:1_Shallow	non-Rad	Vanadium	7440-62-2	µg/kg	54614.51	8.5E+04	No
100-D-28:1_Shallow	non-Rad	Zinc	7440-66-6	µg/kg	59413.73	6.8E+04	No

Table H-9. Comparison of Chemicals Exceeding SSLs in 100-D OU Surface Soils (0 to 15 feet [0 to 4.6m]) to Background

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Lognormal 90th Percentile Background Value	EPC > Background
100-D-28:1_Staging Pile Area Footprint	non-Rad	Boron	7440-42-8	µg/kg	1500.00	3.9E+03	No
100-D-28:1_Staging Pile Area Footprint	non-Rad	Chromium	7440-47-3	µg/kg	8532.39	1.9E+04	No
100-D-28:1_Staging Pile Area Footprint	non-Rad	Manganese	7439-96-5	µg/kg	290097.62	5.1E+05	No
100-D-28:1_Staging Pile Area Footprint	non-Rad	Vanadium	7440-62-2	µg/kg	43439.30	8.5E+04	No
100-D-29_Overburden	non-Rad	Boron	7440-42-8	µg/kg	1128.11	3.9E+03	No
100-D-29_Overburden	non-Rad	Chromium	7440-47-3	µg/kg	7050.35	1.9E+04	No
100-D-29_Overburden	non-Rad	Manganese	7439-96-5	µg/kg	297023.16	5.1E+05	No
100-D-29_Overburden	non-Rad	Vanadium	7440-62-2	µg/kg	65107.42	8.5E+04	No
100-D-29_Shallow	non-Rad	Boron	7440-42-8	µg/kg	5333.33	3.9E+03	**Yes**
100-D-29_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	8317.42	1.9E+04	No
100-D-29_Shallow	non-Rad	Manganese	7439-96-5	µg/kg	292329.99	5.1E+05	No
100-D-29_Shallow	non-Rad	Vanadium	7440-62-2	µg/kg	60568.62	8.5E+04	No
100-D-29_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	8200.00	1.9E+04	No
100-D-29_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	270000.00	5.1E+05	No
100-D-29_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	44000.00	8.5E+04	No
100-D-31:1, 100-D-31:2_Overburden	non-Rad	Boron	7440-42-8	µg/kg	2017.55	3.9E+03	No
100-D-31:1, 100-D-31:2_Overburden	non-Rad	Chromium	7440-47-3	µg/kg	8844.44	1.9E+04	No
100-D-31:1, 100-D-31:2_Overburden	non-Rad	Manganese	7439-96-5	µg/kg	318306.22	5.1E+05	No
100-D-31:1, 100-D-31:2_Overburden	non-Rad	Vanadium	7440-62-2	µg/kg	58650.34	8.5E+04	No
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Boron	7440-42-8	µg/kg	2139.48	3.9E+03	No
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	9619.51	1.9E+04	No
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Manganese	7439-96-5	µg/kg	350951.97	5.1E+05	No
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Vanadium	7440-62-2	µg/kg	69961.00	8.5E+04	No
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Zinc	7440-66-6	µg/kg	50885.76	6.8E+04	No
100-D-31:10_Overburden	non-Rad	Boron	7440-42-8	µg/kg	1283.33	3.9E+03	No
100-D-31:10_Overburden	non-Rad	Chromium	7440-47-3	µg/kg	7761.65	1.9E+04	No
100-D-31:10_Overburden	non-Rad	Manganese	7439-96-5	µg/kg	289762.71	5.1E+05	No
100-D-31:10_Overburden	non-Rad	Vanadium	7440-62-2	µg/kg	41549.38	8.5E+04	No
100-D-31:10_Shallow	non-Rad	Boron	7440-42-8	µg/kg	1400.00	3.9E+03	No
100-D-31:10_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	7199.09	1.9E+04	No
100-D-31:10_Shallow	non-Rad	Manganese	7439-96-5	µg/kg	310284.52	5.1E+05	No
100-D-31:10_Shallow	non-Rad	Vanadium	7440-62-2	µg/kg	65877.05	8.5E+04	No
100-D-31:10_Shallow_Focused	non-Rad	Boron	7440-42-8	µg/kg	1800.00	3.9E+03	No
100-D-31:10_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	6900.00	1.9E+04	No
100-D-31:10_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	318000.00	5.1E+05	No
100-D-31:10_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	58300.00	8.5E+04	No
100-D-31:3, 100-D-31:4_Overburden	non-Rad	Boron	7440-42-8	µg/kg	1300.00	3.9E+03	No
100-D-31:3, 100-D-31:4_Overburden	non-Rad	Chromium	7440-47-3	µg/kg	7300.80	1.9E+04	No

Table H-9. Comparison of Chemicals Exceeding SSLs in 100-D OU Surface Soils (0 to 15 feet [0 to 4.6m]) to Background

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Lognormal 90th Percentile Background Value	EPC > Background
100-D-31:3, 100-D-31:4_Overburden	non-Rad	Manganese	7439-96-5	µg/kg	318256.91	5.1E+05	No
100-D-31:3, 100-D-31:4_Overburden	non-Rad	Selenium	7782-49-2	µg/kg	1200.00	7.8E+02	**Yes**
100-D-31:3, 100-D-31:4_Overburden	non-Rad	Vanadium	7440-62-2	µg/kg	70800.79	8.5E+04	No
100-D-31:3_Shallow	non-Rad	Boron	7440-42-8	µg/kg	1200.00	3.9E+03	No
100-D-31:3_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	7656.10	1.9E+04	No
100-D-31:3_Shallow	non-Rad	Manganese	7439-96-5	µg/kg	302830.88	5.1E+05	No
100-D-31:3_Shallow	non-Rad	Vanadium	7440-62-2	µg/kg	71700.09	8.5E+04	No
100-D-31:4_Shallow	non-Rad	Boron	7440-42-8	µg/kg	1000.00	3.9E+03	No
100-D-31:4_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	7357.63	1.9E+04	No
100-D-31:4_Shallow	non-Rad	Manganese	7439-96-5	µg/kg	322668.67	5.1E+05	No
100-D-31:4_Shallow	non-Rad	Vanadium	7440-62-2	µg/kg	85009.00	8.5E+04	No
100-D-31:4_Shallow_Focused	non-Rad	Boron	7440-42-8	µg/kg	825.00	3.9E+03	No
100-D-31:4_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	9490.00	1.9E+04	No
100-D-31:4_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	346000.00	5.1E+05	No
100-D-31:4_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	75300.00	8.5E+04	No
100-D-31:5_Overburden	non-Rad	Boron	7440-42-8	µg/kg	20105.26	3.9E+03	**Yes**
100-D-31:5_Overburden	non-Rad	Chromium	7440-47-3	µg/kg	12462.43	1.9E+04	No
100-D-31:5_Overburden	non-Rad	Manganese	7439-96-5	µg/kg	371944.54	5.1E+05	No
100-D-31:5_Overburden	non-Rad	Mercury	7439-97-6	µg/kg	141.76	1.3E+01	**Yes**
100-D-31:5_Overburden	non-Rad	Selenium	7782-49-2	µg/kg	1728.33	7.8E+02	**Yes**
100-D-31:5_Overburden	non-Rad	Vanadium	7440-62-2	µg/kg	65425.63	8.5E+04	No
100-D-31:5_Overburden	non-Rad	Zinc	7440-66-6	µg/kg	56473.99	6.8E+04	No
100-D-31:5_Shallow	non-Rad	Boron	7440-42-8	µg/kg	10483.76	3.9E+03	**Yes**
100-D-31:5_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	12394.73	1.9E+04	No
100-D-31:5_Shallow	non-Rad	Manganese	7439-96-5	µg/kg	331457.57	5.1E+05	No
100-D-31:5_Shallow	non-Rad	Mercury	7439-97-6	µg/kg	240.00	1.3E+01	**Yes**
100-D-31:5_Shallow	non-Rad	Selenium	7782-49-2	µg/kg	1500.00	7.8E+02	**Yes**
100-D-31:5_Shallow	non-Rad	Vanadium	7440-62-2	µg/kg	54695.62	8.5E+04	No
100-D-31:5_Shallow	non-Rad	Zinc	7440-66-6	µg/kg	89616.66	6.8E+04	**Yes**
100-D-31:6_Overburden	non-Rad	Boron	7440-42-8	µg/kg	5998.26	3.9E+03	**Yes**
100-D-31:6_Overburden	non-Rad	Chromium	7440-47-3	µg/kg	9736.03	1.9E+04	No
100-D-31:6_Overburden	non-Rad	Manganese	7439-96-5	µg/kg	355498.34	5.1E+05	No
100-D-31:6_Overburden	non-Rad	Mercury	7439-97-6	µg/kg	870.00	1.3E+01	**Yes**
100-D-31:6_Overburden	non-Rad	Vanadium	7440-62-2	µg/kg	66498.89	8.5E+04	No
100-D-31:6_Overburden	non-Rad	Zinc	7440-66-6	µg/kg	65613.64	6.8E+04	No
100-D-31:6_Shallow	non-Rad	Boron	7440-42-8	µg/kg	5859.75	3.9E+03	**Yes**
100-D-31:6_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	10797.55	1.9E+04	No
100-D-31:6_Shallow	non-Rad	Manganese	7439-96-5	µg/kg	330083.22	5.1E+05	No
100-D-31:6_Shallow	non-Rad	Mercury	7439-97-6	µg/kg	576.97	1.3E+01	**Yes**
100-D-31:6_Shallow	non-Rad	Vanadium	7440-62-2	µg/kg	65022.94	8.5E+04	No

Table H-9. Comparison of Chemicals Exceeding SSLs in 100-D OU Surface Soils (0 to 15 feet [0 to 4.6m]) to Background

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Lognormal 90th Percentile Background Value	EPC > Background
100-D-31:6_Shallow	non-Rad	Zinc	7440-66-6	µg/kg	63960.15	6.8E+04	No
100-D-31:7_Overburden	non-Rad	Boron	7440-42-8	µg/kg	2304.64	3.9E+03	No
100-D-31:7_Overburden	non-Rad	Chromium	7440-47-3	µg/kg	6037.81	1.9E+04	No
100-D-31:7_Overburden	non-Rad	Manganese	7439-96-5	µg/kg	304517.89	5.1E+05	No
100-D-31:7_Overburden	non-Rad	Vanadium	7440-62-2	µg/kg	66619.46	8.5E+04	No
100-D-31:7_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	7233.83	1.9E+04	No
100-D-31:7_Shallow	non-Rad	Manganese	7439-96-5	µg/kg	335983.30	5.1E+05	No
100-D-31:7_Shallow	non-Rad	Vanadium	7440-62-2	µg/kg	80979.69	8.5E+04	No
100-D-31:7_Shallow_Focused	non-Rad	Boron	7440-42-8	µg/kg	1500.00	3.9E+03	No
100-D-31:7_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	5900.00	1.9E+04	No
100-D-31:7_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	340000.00	5.1E+05	No
100-D-31:7_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	79500.00	8.5E+04	No
100-D-31:8_Overburden	non-Rad	Boron	7440-42-8	µg/kg	1200.00	3.9E+03	No
100-D-31:8_Overburden	non-Rad	Chromium	7440-47-3	µg/kg	7016.79	1.9E+04	No
100-D-31:8_Overburden	non-Rad	Manganese	7439-96-5	µg/kg	339534.90	5.1E+05	No
100-D-31:8_Overburden	non-Rad	Vanadium	7440-62-2	µg/kg	64671.72	8.5E+04	No
100-D-31:8_Shallow	non-Rad	Boron	7440-42-8	µg/kg	940.00	3.9E+03	No
100-D-31:8_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	5289.91	1.9E+04	No
100-D-31:8_Shallow	non-Rad	Manganese	7439-96-5	µg/kg	312190.15	5.1E+05	No
100-D-31:8_Shallow	non-Rad	Vanadium	7440-62-2	µg/kg	48087.29	8.5E+04	No
100-D-31:8_Shallow_Focused_1	non-Rad	Chromium	7440-47-3	µg/kg	6790.00	1.9E+04	No
100-D-31:8_Shallow_Focused_1	non-Rad	Manganese	7439-96-5	µg/kg	334000.00	5.1E+05	No
100-D-31:8_Shallow_Focused_1	non-Rad	Vanadium	7440-62-2	µg/kg	94900.00	8.5E+04	**Yes**
100-D-31:8_Shallow_Focused_1	non-Rad	Zinc	7440-66-6	µg/kg	51800.00	6.8E+04	No
100-D-31:8_Shallow_Focused_2	non-Rad	Barium	7440-39-3	µg/kg	1570000.00	1.3E+05	**Yes**
100-D-31:8_Shallow_Focused_2	non-Rad	Boron	7440-42-8	µg/kg	169000.00	3.9E+03	**Yes**
100-D-31:8_Shallow_Focused_2	non-Rad	Chromium	7440-47-3	µg/kg	13400.00	1.9E+04	No
100-D-31:8_Shallow_Focused_2	non-Rad	Manganese	7439-96-5	µg/kg	368000.00	5.1E+05	No
100-D-31:8_Shallow_Focused_2	non-Rad	Mercury	7439-97-6	µg/kg	120.00	1.3E+01	**Yes**
100-D-31:8_Shallow_Focused_2	non-Rad	Molybdenum	7439-98-7	µg/kg	2300.00	4.7E+02	**Yes**
100-D-31:8_Shallow_Focused_2	non-Rad	Vanadium	7440-62-2	µg/kg	67200.00	8.5E+04	No
100-D-31:8_Shallow_Focused_2	non-Rad	Zinc	7440-66-6	µg/kg	83000.00	6.8E+04	**Yes**
100-D-31:9_Overburden	non-Rad	Chromium	7440-47-3	µg/kg	5328.36	1.9E+04	No
100-D-31:9_Overburden	non-Rad	Manganese	7439-96-5	µg/kg	292130.13	5.1E+05	No
100-D-31:9_Overburden	non-Rad	Vanadium	7440-62-2	µg/kg	52679.79	8.5E+04	No
100-D-31:9_Shallow	non-Rad	Boron	7440-42-8	µg/kg	1100.00	3.9E+03	No
100-D-31:9_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	5132.29	1.9E+04	No
100-D-31:9_Shallow	non-Rad	Manganese	7439-96-5	µg/kg	318748.42	5.1E+05	No
100-D-31:9_Shallow	non-Rad	Vanadium	7440-62-2	µg/kg	57014.21	8.5E+04	No
100-D-32_Overburden	non-Rad	Boron	7440-42-8	µg/kg	1234.46	3.9E+03	No

Table H-9. Comparison of Chemicals Exceeding SSLs in 100-D OU Surface Soils (0 to 15 feet [0 to 4.6m]) to Background

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Lognormal 90th Percentile Background Value	EPC > Background
100-D-32_Overburden	non-Rad	Chromium	7440-47-3	µg/kg	11852.11	1.9E+04	No
100-D-32_Overburden	non-Rad	Manganese	7439-96-5	µg/kg	369294.44	5.1E+05	No
100-D-32_Overburden	non-Rad	Vanadium	7440-62-2	µg/kg	76983.48	8.5E+04	No
100-D-32_Overburden	non-Rad	Zinc	7440-66-6	µg/kg	51820.94	6.8E+04	No
100-D-32_Shallow	non-Rad	Boron	7440-42-8	µg/kg	1504.98	3.9E+03	No
100-D-32_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	10447.38	1.9E+04	No
100-D-32_Shallow	non-Rad	Manganese	7439-96-5	µg/kg	356899.42	5.1E+05	No
100-D-32_Shallow	non-Rad	Vanadium	7440-62-2	µg/kg	76249.02	8.5E+04	No
100-D-32_Shallow	non-Rad	Zinc	7440-66-6	µg/kg	62122.52	6.8E+04	No
100-D-42, 100-D-43, 100-D-45_Overburden	non-Rad	Boron	7440-42-8	µg/kg	928.81	3.9E+03	No
100-D-42, 100-D-43, 100-D-45_Overburden	non-Rad	Chromium	7440-47-3	µg/kg	9297.31	1.9E+04	No
100-D-42, 100-D-43, 100-D-45_Overburden	non-Rad	Manganese	7439-96-5	µg/kg	316433.17	5.1E+05	No
100-D-42, 100-D-43, 100-D-45_Overburden	non-Rad	Selenium	7782-49-2	µg/kg	700.00	7.8E+02	No
100-D-42, 100-D-43, 100-D-45_Overburden	non-Rad	Vanadium	7440-62-2	µg/kg	63875.27	8.5E+04	No
100-D-42, 100-D-43, 100-D-45_Shallow	non-Rad	Boron	7440-42-8	µg/kg	1180.83	3.9E+03	No
100-D-42, 100-D-43, 100-D-45_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	7962.81	1.9E+04	No
100-D-42, 100-D-43, 100-D-45_Shallow	non-Rad	Copper	7440-50-8	µg/kg	90383.94	2.2E+04	**Yes**
100-D-42, 100-D-43, 100-D-45_Shallow	non-Rad	Manganese	7439-96-5	µg/kg	313772.55	5.1E+05	No
100-D-42, 100-D-43, 100-D-45_Shallow	non-Rad	Vanadium	7440-62-2	µg/kg	69326.33	8.5E+04	No
100-D-42, 100-D-43, 100-D-45_Shallow	non-Rad	Zinc	7440-66-6	µg/kg	59192.25	6.8E+04	No
100-D-42, 100-D-43, 100-D-45_Shallow_Focused	non-Rad	Boron	7440-42-8	µg/kg	660.00	3.9E+03	No
100-D-42, 100-D-43, 100-D-45_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	7800.00	1.9E+04	No
100-D-42, 100-D-43, 100-D-45_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	335000.00	5.1E+05	No
100-D-42, 100-D-43, 100-D-45_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	77900.00	8.5E+04	No
100-D-42, 100-D-43, 100-D-45_Shallow_Focused	non-Rad	Zinc	7440-66-6	µg/kg	55000.00	6.8E+04	No
100-D-47_Overburden	non-Rad	Boron	7440-42-8	µg/kg	1497.15	3.9E+03	No
100-D-47_Overburden	non-Rad	Chromium	7440-47-3	µg/kg	11948.32	1.9E+04	No
100-D-47_Overburden	non-Rad	Manganese	7439-96-5	µg/kg	342771.41	5.1E+05	No
100-D-47_Overburden	non-Rad	Vanadium	7440-62-2	µg/kg	68751.63	8.5E+04	No
100-D-47_Shallow	non-Rad	Boron	7440-42-8	µg/kg	1317.42	3.9E+03	No

Table H-9. Comparison of Chemicals Exceeding SSLs in 100-D OU Surface Soils (0 to 15 feet [0 to 4.6m]) to Background

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Lognormal 90th Percentile Background Value	EPC > Background
100-D-47_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	11827.84	1.9E+04	No
100-D-47_Shallow	non-Rad	Manganese	7439-96-5	µg/kg	338839.37	5.1E+05	No
100-D-47_Shallow	non-Rad	Vanadium	7440-62-2	µg/kg	70090.43	8.5E+04	No
100-D-47_Shallow_Focused	non-Rad	Boron	7440-42-8	µg/kg	1700.00	3.9E+03	No
100-D-47_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	11300.00	1.9E+04	No
100-D-47_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	360000.00	5.1E+05	No
100-D-47_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	85700.00	8.5E+04	**Yes**
100-D-47_Shallow_Focused	non-Rad	Zinc	7440-66-6	µg/kg	55300.00	6.8E+04	No
100-D-50:5_Shallow_Focused	non-Rad	Boron	7440-42-8	µg/kg	811.00	3.9E+03	No
100-D-50:5_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	7400.00	1.9E+04	No
100-D-50:5_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	271000.00	5.1E+05	No
100-D-50:5_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	34900.00	8.5E+04	No
100-D-52_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	7400.00	1.9E+04	No
100-D-56:1_Overburden	non-Rad	Boron	7440-42-8	µg/kg	5633.33	3.9E+03	**Yes**
100-D-56:1_Overburden	non-Rad	Chromium	7440-47-3	µg/kg	10203.88	1.9E+04	No
100-D-56:1_Overburden	non-Rad	Manganese	7439-96-5	µg/kg	327758.02	5.1E+05	No
100-D-56:1_Overburden	non-Rad	Selenium	7782-49-2	µg/kg	2100.00	7.8E+02	**Yes**
100-D-56:1_Overburden	non-Rad	Vanadium	7440-62-2	µg/kg	58592.60	8.5E+04	No
100-D-56:1_Overburden	non-Rad	Zinc	7440-66-6	µg/kg	66961.73	6.8E+04	No
100-D-56:1_Shallow	non-Rad	Boron	7440-42-8	µg/kg	1600.00	3.9E+03	No
100-D-56:1_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	10457.30	1.9E+04	No
100-D-56:1_Shallow	non-Rad	Manganese	7439-96-5	µg/kg	290500.54	5.1E+05	No
100-D-56:1_Shallow	non-Rad	Selenium	7782-49-2	µg/kg	1700.00	7.8E+02	**Yes**
100-D-56:1_Shallow	non-Rad	Vanadium	7440-62-2	µg/kg	49162.02	8.5E+04	No
100-D-56:1_Shallow	non-Rad	Zinc	7440-66-6	µg/kg	52499.42	6.8E+04	No
100-D-56:1_Shallow_Focused	non-Rad	Boron	7440-42-8	µg/kg	1800.00	3.9E+03	No
100-D-56:1_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	11800.00	1.9E+04	No
100-D-56:1_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	339000.00	5.1E+05	No
100-D-56:1_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	51100.00	8.5E+04	No
100-D-56:2_Overburden_4	non-Rad	Boron	7440-42-8	µg/kg	1250.00	3.9E+03	No
100-D-56:2_Overburden_4	non-Rad	Chromium	7440-47-3	µg/kg	17678.19	1.9E+04	No
100-D-56:2_Overburden_4	non-Rad	Manganese	7439-96-5	µg/kg	311403.93	5.1E+05	No
100-D-56:2_Overburden_4	non-Rad	Vanadium	7440-62-2	µg/kg	56979.85	8.5E+04	No
100-D-56:2_Overburden_4	non-Rad	Zinc	7440-66-6	µg/kg	56993.18	6.8E+04	No
100-D-56:2_Overburden_5	non-Rad	Boron	7440-42-8	µg/kg	1407.32	3.9E+03	No
100-D-56:2_Overburden_5	non-Rad	Chromium	7440-47-3	µg/kg	16179.15	1.9E+04	No
100-D-56:2_Overburden_5	non-Rad	Manganese	7439-96-5	µg/kg	306865.52	5.1E+05	No
100-D-56:2_Overburden_5	non-Rad	Vanadium	7440-62-2	µg/kg	52528.41	8.5E+04	No
100-D-56:2_Overburden_Focused_2	non-Rad	Chromium	7440-47-3	µg/kg	11000.00	1.9E+04	No
100-D-56:2_Overburden_Focused_2	non-Rad	Manganese	7439-96-5	µg/kg	310000.00	5.1E+05	No

Table H-9. Comparison of Chemicals Exceeding SSLs in 100-D OU Surface Soils (0 to 15 feet [0 to 4.6m]) to Background

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Lognormal 90th Percentile Background Value	EPC > Background
100-D-56:2_Overburden_Focused_2	non-Rad	Vanadium	7440-62-2	µg/kg	60000.00	8.5E+04	No
100-D-56:2_Shallow_1	non-Rad	Boron	7440-42-8	µg/kg	1525.00	3.9E+03	No
100-D-56:2_Shallow_1	non-Rad	Chromium	7440-47-3	µg/kg	10823.55	1.9E+04	No
100-D-56:2_Shallow_1	non-Rad	Manganese	7439-96-5	µg/kg	306134.30	5.1E+05	No
100-D-56:2_Shallow_1	non-Rad	Vanadium	7440-62-2	µg/kg	56965.62	8.5E+04	No
100-D-56:2_Shallow_2	non-Rad	Boron	7440-42-8	µg/kg	1100.00	3.9E+03	No
100-D-56:2_Shallow_2	non-Rad	Chromium	7440-47-3	µg/kg	12515.18	1.9E+04	No
100-D-56:2_Shallow_2	non-Rad	Manganese	7439-96-5	µg/kg	281886.96	5.1E+05	No
100-D-56:2_Shallow_2	non-Rad	Vanadium	7440-62-2	µg/kg	45416.40	8.5E+04	No
100-D-56:2_Shallow_3	non-Rad	Boron	7440-42-8	µg/kg	1605.37	3.9E+03	No
100-D-56:2_Shallow_3	non-Rad	Chromium	7440-47-3	µg/kg	9261.03	1.9E+04	No
100-D-56:2_Shallow_3	non-Rad	Manganese	7439-96-5	µg/kg	322267.04	5.1E+05	No
100-D-56:2_Shallow_3	non-Rad	Vanadium	7440-62-2	µg/kg	64761.58	8.5E+04	No
100-D-56:2_Shallow_Focused	non-Rad	Boron	7440-42-8	µg/kg	1000.00	3.9E+03	No
100-D-56:2_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	29300.00	1.9E+04	**Yes**
100-D-56:2_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	300000.00	5.1E+05	No
100-D-56:2_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	57900.00	8.5E+04	No
100-D-56:2_Staging pile area footprint_focused	non-Rad	Boron	7440-42-8	µg/kg	1500.00	3.9E+03	No
100-D-56:2_Staging pile area footprint_focused	non-Rad	Chromium	7440-47-3	µg/kg	11000.00	1.9E+04	No
100-D-56:2_Staging pile area footprint_focused	non-Rad	Manganese	7439-96-5	µg/kg	350000.00	5.1E+05	No
100-D-56:2_Staging pile area footprint_focused	non-Rad	Vanadium	7440-62-2	µg/kg	55000.00	8.5E+04	No
100-D-61_Shallow	non-Rad	Boron	7440-42-8	µg/kg	11172.22	3.9E+03	**Yes**
100-D-61_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	9565.38	1.9E+04	No
100-D-61_Shallow	non-Rad	Manganese	7439-96-5	µg/kg	347566.52	5.1E+05	No
100-D-61_Shallow	non-Rad	Selenium	7782-49-2	µg/kg	1040.28	7.8E+02	**Yes**
100-D-61_Shallow	non-Rad	Vanadium	7440-62-2	µg/kg	63681.59	8.5E+04	No
100-D-7_Shallow_1	non-Rad	Boron	7440-42-8	µg/kg	1900.00	3.9E+03	No
100-D-7_Shallow_1	non-Rad	Chromium	7440-47-3	µg/kg	7035.44	1.9E+04	No
100-D-7_Shallow_1	non-Rad	Manganese	7439-96-5	µg/kg	290471.85	5.1E+05	No
100-D-7_Shallow_1	non-Rad	Selenium	7782-49-2	µg/kg	834.30	7.8E+02	**Yes**
100-D-7_Shallow_1	non-Rad	Vanadium	7440-62-2	µg/kg	70959.78	8.5E+04	No
100-D-7_Shallow_2	non-Rad	Boron	7440-42-8	µg/kg	1533.00	3.9E+03	No
100-D-7_Shallow_2	non-Rad	Chromium	7440-47-3	µg/kg	9024.18	1.9E+04	No
100-D-7_Shallow_2	non-Rad	Manganese	7439-96-5	µg/kg	343655.19	5.1E+05	No
100-D-7_Shallow_2	non-Rad	Vanadium	7440-62-2	µg/kg	63912.59	8.5E+04	No
100-D-7_Shallow_Focused	non-Rad	Boron	7440-42-8	µg/kg	1200.00	3.9E+03	No
100-D-7_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	9000.00	1.9E+04	No
100-D-7_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	303000.00	5.1E+05	No
100-D-7_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	63200.00	8.5E+04	No
100-D-7_Staging pile area footprint	non-Rad	Boron	7440-42-8	µg/kg	1719.17	3.9E+03	No

Table H-9. Comparison of Chemicals Exceeding SSLs in 100-D OU Surface Soils (0 to 15 feet [0 to 4.6m]) to Background

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Lognormal 90th Percentile Background Value	EPC > Background
100-D-7_Staging pile area footprint	non-Rad	Chromium	7440-47-3	µg/kg	8442.94	1.9E+04	No
100-D-7_Staging pile area footprint	non-Rad	Manganese	7439-96-5	µg/kg	279738.99	5.1E+05	No
100-D-7_Staging pile area footprint	non-Rad	Mercury	7439-97-6	µg/kg	303.55	1.3E+01	**Yes**
100-D-7_Staging pile area footprint	non-Rad	Vanadium	7440-62-2	µg/kg	34101.75	8.5E+04	No
100-D-70_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	11800.00	1.9E+04	No
100-D-70_Shallow_Focused	non-Rad	Copper	7440-50-8	µg/kg	73900.00	2.2E+04	**Yes**
100-D-70_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	340000.00	5.1E+05	No
100-D-70_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	61100.00	8.5E+04	No
100-D-70_Shallow_Focused	non-Rad	Zinc	7440-66-6	µg/kg	78800.00	6.8E+04	**Yes**
100-D-74_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	6400.00	1.9E+04	No
100-D-74_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	278000.00	5.1E+05	No
100-D-74_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	57600.00	8.5E+04	No
100-D-75:3_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	5900.00	1.9E+04	No
100-D-75:3_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	297000.00	5.1E+05	No
100-D-75:3_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	52700.00	8.5E+04	No
100-D-82_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	8300.00	1.9E+04	No
100-D-82_Shallow_Focused	non-Rad	Lead	7439-92-1	µg/kg	134000.00	1.0E+04	**Yes**
100-D-82_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	17800.00	8.5E+04	No
100-D-83:4_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	7800.00	1.9E+04	No
100-D-83:4_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	284000.00	5.1E+05	No
100-D-83:4_Shallow_Focused	non-Rad	Mercury	7439-97-6	µg/kg	950.00	1.3E+01	**Yes**
100-D-83:4_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	76100.00	8.5E+04	No
100-D-84:1_Shallow_Focused	non-Rad	Boron	7440-42-8	µg/kg	1500.00	3.9E+03	No
100-D-84:1_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	11900.00	1.9E+04	No
100-D-84:1_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	343000.00	5.1E+05	No
100-D-84:1_Shallow_Focused	non-Rad	Mercury	7439-97-6	µg/kg	120.00	1.3E+01	**Yes**
100-D-84:1_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	94400.00	8.5E+04	**Yes**
100-D-84:1_Shallow_Focused	non-Rad	Zinc	7440-66-6	µg/kg	52500.00	6.8E+04	No
100-D-85:1_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	5400.00	1.9E+04	No
100-D-85:1_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	278000.00	5.1E+05	No
100-D-85:1_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	57900.00	8.5E+04	No
100-D-87_Shallow_Focused	non-Rad	Boron	7440-42-8	µg/kg	2400.00	3.9E+03	No
100-D-87_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	9300.00	1.9E+04	No
100-D-87_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	304000.00	5.1E+05	No
100-D-87_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	48000.00	8.5E+04	No
100-D-87_Shallow_Focused	non-Rad	Zinc	7440-66-6	µg/kg	83600.00	6.8E+04	**Yes**
100-D-88_Shallow_Focused	non-Rad	Boron	7440-42-8	µg/kg	930.00	3.9E+03	No
100-D-88_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	10400.00	1.9E+04	No
100-D-88_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	384000.00	5.1E+05	No
100-D-88_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	104000.00	8.5E+04	**Yes**

Table H-9. Comparison of Chemicals Exceeding SSLs in 100-D OU Surface Soils (0 to 15 feet [0 to 4.6m]) to Background

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Lognormal 90th Percentile Background Value	EPC > Background
100-D-88_Shallow_Focused	non-Rad	Zinc	7440-66-6	µg/kg	63900.00	6.8E+04	No
100-D-9_Shallow_Focused	non-Rad	Boron	7440-42-8	µg/kg	820.00	3.9E+03	No
100-D-9_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	3500.00	1.9E+04	No
100-D-9_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	299000.00	5.1E+05	No
100-D-9_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	67300.00	8.5E+04	No
100-D-94_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	9000.00	1.9E+04	No
100-D-94_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	275000.00	5.1E+05	No
100-D-94_Shallow_Focused	non-Rad	Mercury	7439-97-6	µg/kg	580.00	1.3E+01	**Yes**
100-D-94_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	40200.00	8.5E+04	No
116-D-10_Shallow	non-Rad	Boron	7440-42-8	µg/kg	1220.33	3.9E+03	No
116-D-10_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	9277.84	1.9E+04	No
116-D-10_Shallow	non-Rad	Manganese	7439-96-5	µg/kg	320612.46	5.1E+05	No
116-D-10_Shallow	non-Rad	Vanadium	7440-62-2	µg/kg	67123.02	8.5E+04	No
116-D-10_Staging Pile Area	non-Rad	Boron	7440-42-8	µg/kg	856.19	3.9E+03	No
116-D-10_Staging Pile Area	non-Rad	Chromium	7440-47-3	µg/kg	5983.06	1.9E+04	No
116-D-10_Staging Pile Area	non-Rad	Manganese	7439-96-5	µg/kg	318855.58	5.1E+05	No
116-D-10_Staging Pile Area	non-Rad	Vanadium	7440-62-2	µg/kg	76277.70	8.5E+04	No
116-D-5_Overburden	non-Rad	Boron	7440-42-8	µg/kg	850.21	3.9E+03	No
116-D-5_Overburden	non-Rad	Chromium	7440-47-3	µg/kg	6881.24	1.9E+04	No
116-D-5_Overburden	non-Rad	Manganese	7439-96-5	µg/kg	284702.08	5.1E+05	No
116-D-5_Overburden	non-Rad	Vanadium	7440-62-2	µg/kg	56600.64	8.5E+04	No
116-D-5_Shallow	non-Rad	Boron	7440-42-8	µg/kg	1133.55	3.9E+03	No
116-D-5_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	11364.62	1.9E+04	No
116-D-5_Shallow	non-Rad	Manganese	7439-96-5	µg/kg	324765.98	5.1E+05	No
116-D-5_Shallow	non-Rad	Vanadium	7440-62-2	µg/kg	62589.23	8.5E+04	No
116-D-5_Shallow	non-Rad	Zinc	7440-66-6	µg/kg	51203.59	6.8E+04	No
116-D-5_Staging pile area footprint	non-Rad	Boron	7440-42-8	µg/kg	1067.07	3.9E+03	No
116-D-5_Staging pile area footprint	non-Rad	Chromium	7440-47-3	µg/kg	8013.60	1.9E+04	No
116-D-5_Staging pile area footprint	non-Rad	Manganese	7439-96-5	µg/kg	276906.30	5.1E+05	No
116-D-5_Staging pile area footprint	non-Rad	Vanadium	7440-62-2	µg/kg	52464.38	8.5E+04	No
116-D-7_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	8241.36	1.9E+04	No
116-D-8_Shallow	non-Rad	Boron	7440-42-8	µg/kg	1416.67	3.9E+03	No
116-D-8_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	10654.30	1.9E+04	No
116-D-8_Shallow	non-Rad	Lead	7439-92-1	µg/kg	41187.93	1.0E+04	**Yes**
116-D-8_Shallow	non-Rad	Manganese	7439-96-5	µg/kg	304542.21	5.1E+05	No
116-D-8_Shallow	non-Rad	Vanadium	7440-62-2	µg/kg	53268.05	8.5E+04	No
116-D-8_Shallow_Focused_1	non-Rad	Chromium	7440-47-3	µg/kg	5600.00	1.9E+04	No
116-D-8_Shallow_Focused_1	non-Rad	Manganese	7439-96-5	µg/kg	232000.00	5.1E+05	No
116-D-8_Shallow_Focused_1	non-Rad	Vanadium	7440-62-2	µg/kg	22100.00	8.5E+04	No
116-D-8_Shallow_Focused_2	non-Rad	Boron	7440-42-8	µg/kg	2700.00	3.9E+03	No

Table H-9. Comparison of Chemicals Exceeding SSLs in 100-D OU Surface Soils (0 to 15 feet [0 to 4.6m]) to Background

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Lognormal 90th Percentile Background Value	EPC > Background
116-D-8_Shallow_Focused_2	non-Rad	Chromium	7440-47-3	µg/kg	10100.00	1.9E+04	No
116-D-8_Shallow_Focused_2	non-Rad	Manganese	7439-96-5	µg/kg	301000.00	5.1E+05	No
116-D-8_Shallow_Focused_2	non-Rad	Selenium	7782-49-2	µg/kg	1200.00	7.8E+02	**Yes**
116-D-8_Shallow_Focused_2	non-Rad	Vanadium	7440-62-2	µg/kg	58700.00	8.5E+04	No
116-D-8_Shallow_Focused_2	non-Rad	Zinc	7440-66-6	µg/kg	55200.00	6.8E+04	No
116-DR-10_Overburden	non-Rad	Boron	7440-42-8	µg/kg	1049.30	3.9E+03	No
116-DR-10_Overburden	non-Rad	Chromium	7440-47-3	µg/kg	10292.28	1.9E+04	No
116-DR-10_Overburden	non-Rad	Manganese	7439-96-5	µg/kg	288834.10	5.1E+05	No
116-DR-10_Overburden	non-Rad	Vanadium	7440-62-2	µg/kg	51135.72	8.5E+04	No
116-DR-10_Shallow	non-Rad	Boron	7440-42-8	µg/kg	1034.69	3.9E+03	No
116-DR-10_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	11445.37	1.9E+04	No
116-DR-10_Shallow	non-Rad	Manganese	7439-96-5	µg/kg	279316.53	5.1E+05	No
116-DR-10_Shallow	non-Rad	Vanadium	7440-62-2	µg/kg	50456.41	8.5E+04	No
116-DR-10_Shallow_Focused	non-Rad	Boron	7440-42-8	µg/kg	598.00	3.9E+03	No
116-DR-10_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	6650.00	1.9E+04	No
116-DR-10_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	310000.00	5.1E+05	No
116-DR-10_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	73400.00	8.5E+04	No
116-DR-5_Overburden	non-Rad	Boron	7440-42-8	µg/kg	1141.67	3.9E+03	No
116-DR-5_Overburden	non-Rad	Chromium	7440-47-3	µg/kg	11533.54	1.9E+04	No
116-DR-5_Overburden	non-Rad	Manganese	7439-96-5	µg/kg	336162.74	5.1E+05	No
116-DR-5_Overburden	non-Rad	Vanadium	7440-62-2	µg/kg	59625.36	8.5E+04	No
116-DR-5_Overburden	non-Rad	Zinc	7440-66-6	µg/kg	76416.54	6.8E+04	**Yes**
116-DR-5_Shallow	non-Rad	Boron	7440-42-8	µg/kg	1500.00	3.9E+03	No
116-DR-5_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	25435.76	1.9E+04	**Yes**
116-DR-5_Shallow	non-Rad	Manganese	7439-96-5	µg/kg	309849.08	5.1E+05	No
116-DR-5_Shallow	non-Rad	Vanadium	7440-62-2	µg/kg	55591.16	8.5E+04	No
116-DR-5_Shallow_Focused	non-Rad	Boron	7440-42-8	µg/kg	1400.00	3.9E+03	No
116-DR-5_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	16600.00	1.9E+04	No
116-DR-5_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	325000.00	5.1E+05	No
116-DR-5_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	56300.00	8.5E+04	No
116-DR-5_Staging Pile Area	non-Rad	Chromium	7440-47-3	µg/kg	11196.52	1.9E+04	No
116-DR-5_Staging Pile Area	non-Rad	Manganese	7439-96-5	µg/kg	292940.12	5.1E+05	No
116-DR-5_Staging Pile Area	non-Rad	Vanadium	7440-62-2	µg/kg	51249.90	8.5E+04	No
116-DR-8_Overburden_2	non-Rad	Chromium	7440-47-3	µg/kg	7333.96	1.9E+04	No
116-DR-8_Overburden_2	non-Rad	Lithium	7439-93-2	µg/kg	6085.70	1.3E+04	No
116-DR-8_Overburden_2	non-Rad	Manganese	7439-96-5	µg/kg	323772.69	5.1E+05	No
116-DR-8_Overburden_2	non-Rad	Vanadium	7440-62-2	µg/kg	65299.38	8.5E+04	No
116-DR-8_Overburden_3	non-Rad	Boron	7440-42-8	µg/kg	1274.16	3.9E+03	No
116-DR-8_Overburden_3	non-Rad	Chromium	7440-47-3	µg/kg	9365.24	1.9E+04	No
116-DR-8_Overburden_3	non-Rad	Lithium	7439-93-2	µg/kg	27769.76	1.3E+04	**Yes**

Table H-9. Comparison of Chemicals Exceeding SSLs in 100-D OU Surface Soils (0 to 15 feet [0 to 4.6m]) to Background

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Lognormal 90th Percentile Background Value	EPC > Background
116-DR-8_Overburden_3	non-Rad	Manganese	7439-96-5	µg/kg	348288.64	5.1E+05	No
116-DR-8_Overburden_3	non-Rad	Silver	7440-22-4	µg/kg	2200.00	1.7E+02	**Yes**
116-DR-8_Overburden_3	non-Rad	Vanadium	7440-62-2	µg/kg	70346.37	8.5E+04	No
116-DR-8_Overburden_3	non-Rad	Zinc	7440-66-6	µg/kg	72845.69	6.8E+04	**Yes**
116-DR-8_Shallow	non-Rad	Boron	7440-42-8	µg/kg	1783.33	3.9E+03	No
116-DR-8_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	8234.63	1.9E+04	No
116-DR-8_Shallow	non-Rad	Lithium	7439-93-2	µg/kg	70443.73	1.3E+04	**Yes**
116-DR-8_Shallow	non-Rad	Manganese	7439-96-5	µg/kg	305029.34	5.1E+05	No
116-DR-8_Shallow	non-Rad	Vanadium	7440-62-2	µg/kg	64428.87	8.5E+04	No
116-DR-8_Shallow	non-Rad	Zinc	7440-66-6	µg/kg	50213.41	6.8E+04	No
116-DR-9_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	16093.18	1.9E+04	No
118-D-1_Overburden	non-Rad	Boron	7440-42-8	µg/kg	1233.33	3.9E+03	No
118-D-1_Overburden	non-Rad	Chromium	7440-47-3	µg/kg	10001.44	1.9E+04	No
118-D-1_Overburden	non-Rad	Manganese	7439-96-5	µg/kg	306161.06	5.1E+05	No
118-D-1_Overburden	non-Rad	Vanadium	7440-62-2	µg/kg	50373.42	8.5E+04	No
118-D-1_Shallow_1	non-Rad	Boron	7440-42-8	µg/kg	1700.00	3.9E+03	No
118-D-1_Shallow_1	non-Rad	Chromium	7440-47-3	µg/kg	9458.16	1.9E+04	No
118-D-1_Shallow_1	non-Rad	Manganese	7439-96-5	µg/kg	288049.45	5.1E+05	No
118-D-1_Shallow_1	non-Rad	Vanadium	7440-62-2	µg/kg	59297.77	8.5E+04	No
118-D-1_Shallow_5	non-Rad	Boron	7440-42-8	µg/kg	1206.77	3.9E+03	No
118-D-1_Shallow_5	non-Rad	Chromium	7440-47-3	µg/kg	10857.13	1.9E+04	No
118-D-1_Shallow_5	non-Rad	Manganese	7439-96-5	µg/kg	319582.04	5.1E+05	No
118-D-1_Shallow_5	non-Rad	Vanadium	7440-62-2	µg/kg	55100.25	8.5E+04	No
118-D-1_Shallow_Focused	non-Rad	Boron	7440-42-8	µg/kg	1000.00	3.9E+03	No
118-D-1_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	11700.00	1.9E+04	No
118-D-1_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	293000.00	5.1E+05	No
118-D-1_Shallow_Focused	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	5090.35	3.2E+03	**Yes**
118-D-1_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	62500.00	8.5E+04	No
118-D-1_Staging Pile Area Footprint	non-Rad	Boron	7440-42-8	µg/kg	1316.67	3.9E+03	No
118-D-1_Staging Pile Area Footprint	non-Rad	Chromium	7440-47-3	µg/kg	10489.69	1.9E+04	No
118-D-1_Staging Pile Area Footprint	non-Rad	Manganese	7439-96-5	µg/kg	284457.99	5.1E+05	No
118-D-1_Staging Pile Area Footprint	non-Rad	Vanadium	7440-62-2	µg/kg	54073.22	8.5E+04	No
118-D-4_Overburden	non-Rad	Boron	7440-42-8	µg/kg	1546.43	3.9E+03	No
118-D-4_Overburden	non-Rad	Chromium	7440-47-3	µg/kg	12931.08	1.9E+04	No
118-D-4_Overburden	non-Rad	Manganese	7439-96-5	µg/kg	352925.00	5.1E+05	No
118-D-4_Overburden	non-Rad	Vanadium	7440-62-2	µg/kg	66685.58	8.5E+04	No
118-D-4_Shallow	non-Rad	Boron	7440-42-8	µg/kg	1189.27	3.9E+03	No
118-D-4_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	12376.73	1.9E+04	No
118-D-4_Shallow	non-Rad	Manganese	7439-96-5	µg/kg	342787.71	5.1E+05	No
118-D-4_Shallow	non-Rad	Vanadium	7440-62-2	µg/kg	80969.41	8.5E+04	No

Table H-9. Comparison of Chemicals Exceeding SSLs in 100-D OU Surface Soils (0 to 15 feet [0 to 4.6m]) to Background

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Lognormal 90th Percentile Background Value	EPC > Background
118-D-4_Shallow	non-Rad	Zinc	7440-66-6	µg/kg	59118.37	6.8E+04	No
118-D-4_Shallow_Focused	non-Rad	Boron	7440-42-8	µg/kg	1300.00	3.9E+03	No
118-D-4_Shallow_Focused	non-Rad	Cadmium	7440-43-9	µg/kg	4660.00	5.6E+02	**Yes**
118-D-4_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	48100.00	1.9E+04	**Yes**
118-D-4_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	399000.00	5.1E+05	No
118-D-4_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	92400.00	8.5E+04	**Yes**
118-D-4_Shallow_Focused	non-Rad	Zinc	7440-66-6	µg/kg	59600.00	6.8E+04	No
118-D-5_Overburden	non-Rad	Chromium	7440-47-3	µg/kg	8598.22	1.9E+04	No
118-D-5_Overburden	non-Rad	Manganese	7439-96-5	µg/kg	275203.75	5.1E+05	No
118-D-5_Overburden	non-Rad	Vanadium	7440-62-2	µg/kg	50941.12	8.5E+04	No
118-D-5_Shallow	non-Rad	Boron	7440-42-8	µg/kg	1500.00	3.9E+03	No
118-D-5_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	8937.43	1.9E+04	No
118-D-5_Shallow	non-Rad	Manganese	7439-96-5	µg/kg	281366.66	5.1E+05	No
118-D-5_Shallow	non-Rad	Vanadium	7440-62-2	µg/kg	54073.43	8.5E+04	No
118-D-5_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	8500.00	1.9E+04	No
118-D-5_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	290000.00	5.1E+05	No
118-D-5_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	62000.00	8.5E+04	No
118-D-6:4_Shallow_1	non-Rad	Boron	7440-42-8	µg/kg	1800.00	3.9E+03	No
118-D-6:4_Shallow_1	non-Rad	Chromium	7440-47-3	µg/kg	7250.55	1.9E+04	No
118-D-6:4_Shallow_1	non-Rad	Manganese	7439-96-5	µg/kg	323193.18	5.1E+05	No
118-D-6:4_Shallow_1	non-Rad	Vanadium	7440-62-2	µg/kg	77926.90	8.5E+04	No
118-D-6:4_Shallow_2	non-Rad	Chromium	7440-47-3	µg/kg	10049.85	1.9E+04	No
118-D-6:4_Shallow_2	non-Rad	Manganese	7439-96-5	µg/kg	328312.15	5.1E+05	No
118-D-6:4_Shallow_2	non-Rad	Mercury	7439-97-6	µg/kg	1200.00	1.3E+01	**Yes**
118-D-6:4_Shallow_2	non-Rad	Vanadium	7440-62-2	µg/kg	68233.01	8.5E+04	No
118-DR-1_Shallow	non-Rad	Boron	7440-42-8	µg/kg	1226.32	3.9E+03	No
118-DR-1_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	7079.76	1.9E+04	No
118-DR-1_Shallow	non-Rad	Manganese	7439-96-5	µg/kg	284561.10	5.1E+05	No
118-DR-1_Shallow	non-Rad	Vanadium	7440-62-2	µg/kg	54963.66	8.5E+04	No
118-DR-1_Shallow_Focused	non-Rad	Boron	7440-42-8	µg/kg	1100.00	3.9E+03	No
118-DR-1_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	7300.00	1.9E+04	No
118-DR-1_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	290000.00	5.1E+05	No
118-DR-1_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	54000.00	8.5E+04	No
118-DR-2:2_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	11700.00	1.9E+04	No
118-DR-2:2_Shallow	non-Rad	Mercury	7439-97-6	µg/kg	164.29	1.3E+01	**Yes**
120-D-2_Shallow	non-Rad	Boron	7440-42-8	µg/kg	2703.52	3.9E+03	No
120-D-2_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	7074.86	1.9E+04	No
120-D-2_Shallow	non-Rad	Manganese	7439-96-5	µg/kg	339487.60	5.1E+05	No
120-D-2_Shallow	non-Rad	Mercury	7439-97-6	µg/kg	111.00	1.3E+01	**Yes**
120-D-2_Shallow	non-Rad	Vanadium	7440-62-2	µg/kg	77181.49	8.5E+04	No

Table H-9. Comparison of Chemicals Exceeding SSLs in 100-D OU Surface Soils (0 to 15 feet [0 to 4.6m]) to Background

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Lognormal 90th Percentile Background Value	EPC > Background
120-D-2_Shallow	non-Rad	Zinc	7440-66-6	µg/kg	52904.30	6.8E+04	No
120-D-2_Shallow_Focused	non-Rad	Boron	7440-42-8	µg/kg	1000.00	3.9E+03	No
120-D-2_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	4500.00	1.9E+04	No
120-D-2_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	316000.00	5.1E+05	No
120-D-2_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	80200.00	8.5E+04	No
122-DR-1:2_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	11900.00	1.9E+04	No
122-DR-1:2_Shallow	non-Rad	Lithium	7439-93-2	µg/kg	12500.00	1.3E+04	No
126-D-2_Overburden	non-Rad	Boron	7440-42-8	µg/kg	2076.84	3.9E+03	No
126-D-2_Overburden	non-Rad	Chromium	7440-47-3	µg/kg	7899.47	1.9E+04	No
126-D-2_Overburden	non-Rad	Manganese	7439-96-5	µg/kg	313316.19	5.1E+05	No
126-D-2_Overburden	non-Rad	Vanadium	7440-62-2	µg/kg	61719.90	8.5E+04	No
126-D-2_Shallow	non-Rad	Boron	7440-42-8	µg/kg	3041.80	3.9E+03	No
126-D-2_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	7871.98	1.9E+04	No
126-D-2_Shallow	non-Rad	Manganese	7439-96-5	µg/kg	354940.21	5.1E+05	No
126-D-2_Shallow	non-Rad	Vanadium	7440-62-2	µg/kg	78289.46	8.5E+04	No
126-D-2_Shallow	non-Rad	Zinc	7440-66-6	µg/kg	52411.77	6.8E+04	No
126-D-2_Shallow_Focused	non-Rad	Boron	7440-42-8	µg/kg	7900.00	3.9E+03	**Yes**
126-D-2_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	7800.00	1.9E+04	No
126-D-2_Shallow_Focused	non-Rad	Lead	7439-92-1	µg/kg	72000.00	1.0E+04	**Yes**
126-D-2_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	360000.00	5.1E+05	No
126-D-2_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	76000.00	8.5E+04	No
126-D-2_Shallow_Focused	non-Rad	Zinc	7440-66-6	µg/kg	50000.00	6.8E+04	No
128-D-2_Shallow_1	non-Rad	Boron	7440-42-8	µg/kg	1816.67	3.9E+03	No
128-D-2_Shallow_1	non-Rad	Chromium	7440-47-3	µg/kg	11002.62	1.9E+04	No
128-D-2_Shallow_1	non-Rad	Manganese	7439-96-5	µg/kg	341770.49	5.1E+05	No
128-D-2_Shallow_1	non-Rad	Selenium	7782-49-2	µg/kg	1100.00	7.8E+02	**Yes**
128-D-2_Shallow_1	non-Rad	Vanadium	7440-62-2	µg/kg	53369.39	8.5E+04	No
128-D-2_Shallow_2	non-Rad	Boron	7440-42-8	µg/kg	1200.00	3.9E+03	No
128-D-2_Shallow_2	non-Rad	Chromium	7440-47-3	µg/kg	11152.90	1.9E+04	No
128-D-2_Shallow_2	non-Rad	Manganese	7439-96-5	µg/kg	277702.30	5.1E+05	No
128-D-2_Shallow_2	non-Rad	Vanadium	7440-62-2	µg/kg	50094.91	8.5E+04	No
130-D-1_Shallow	non-Rad	Boron	7440-42-8	µg/kg	1641.67	3.9E+03	No
130-D-1_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	7451.90	1.9E+04	No
130-D-1_Shallow	non-Rad	Manganese	7439-96-5	µg/kg	306040.84	5.1E+05	No
130-D-1_Shallow	non-Rad	Vanadium	7440-62-2	µg/kg	51858.52	8.5E+04	No
130-D-1_Shallow	non-Rad	Zinc	7440-66-6	µg/kg	52217.52	6.8E+04	No
130-D-1_Shallow_Focused	non-Rad	Boron	7440-42-8	µg/kg	1400.00	3.9E+03	No
130-D-1_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	5200.00	1.9E+04	No
130-D-1_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	305000.00	5.1E+05	No
130-D-1_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	82200.00	8.5E+04	No

Table H-9. Comparison of Chemicals Exceeding SSLs in 100-D OU Surface Soils (0 to 15 feet [0 to 4.6m]) to Background

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Lognormal 90th Percentile Background Value	EPC > Background
130-D-1_Staging Pile Area Footprint	non-Rad	Boron	7440-42-8	µg/kg	2147.50	3.9E+03	No
130-D-1_Staging Pile Area Footprint	non-Rad	Chromium	7440-47-3	µg/kg	13221.84	1.9E+04	No
130-D-1_Staging Pile Area Footprint	non-Rad	Manganese	7439-96-5	µg/kg	379422.46	5.1E+05	No
130-D-1_Staging Pile Area Footprint	non-Rad	Vanadium	7440-62-2	µg/kg	43838.86	8.5E+04	No
132-D-1_Shallow	non-Rad	Boron	7440-42-8	µg/kg	1150.00	3.9E+03	No
132-D-1_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	6667.21	1.9E+04	No
132-D-1_Shallow	non-Rad	Manganese	7439-96-5	µg/kg	314188.39	5.1E+05	No
132-D-1_Shallow	non-Rad	Mercury	7439-97-6	µg/kg	1000.00	1.3E+01	**Yes**
132-D-1_Shallow	non-Rad	Selenium	7782-49-2	µg/kg	860.00	7.8E+02	**Yes**
132-D-1_Shallow	non-Rad	Vanadium	7440-62-2	µg/kg	69877.02	8.5E+04	No
132-D-1_Staging Pile Area Footprint	non-Rad	Boron	7440-42-8	µg/kg	1225.00	3.9E+03	No
132-D-1_Staging Pile Area Footprint	non-Rad	Chromium	7440-47-3	µg/kg	8495.66	1.9E+04	No
132-D-1_Staging Pile Area Footprint	non-Rad	Manganese	7439-96-5	µg/kg	299872.83	5.1E+05	No
132-D-1_Staging Pile Area Footprint	non-Rad	Mercury	7439-97-6	µg/kg	680.47	1.3E+01	**Yes**
132-D-1_Staging Pile Area Footprint	non-Rad	Vanadium	7440-62-2	µg/kg	57749.03	8.5E+04	No
1607-D1_Shallow_1	non-Rad	Boron	7440-42-8	µg/kg	1325.00	3.9E+03	No
1607-D1_Shallow_1	non-Rad	Chromium	7440-47-3	µg/kg	12828.08	1.9E+04	No
1607-D1_Shallow_1	non-Rad	Manganese	7439-96-5	µg/kg	273291.00	5.1E+05	No
1607-D1_Shallow_1	non-Rad	Vanadium	7440-62-2	µg/kg	38625.09	8.5E+04	No
1607-D1_Shallow_2	non-Rad	Boron	7440-42-8	µg/kg	1248.02	3.9E+03	No
1607-D1_Shallow_2	non-Rad	Chromium	7440-47-3	µg/kg	13336.25	1.9E+04	No
1607-D1_Shallow_2	non-Rad	Manganese	7439-96-5	µg/kg	282970.51	5.1E+05	No
1607-D1_Shallow_2	non-Rad	Vanadium	7440-62-2	µg/kg	37046.30	8.5E+04	No
1607-D1_Shallow_Focused	non-Rad	Boron	7440-42-8	µg/kg	1400.00	3.9E+03	No
1607-D1_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	12400.00	1.9E+04	No
1607-D1_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	273000.00	5.1E+05	No
1607-D1_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	34500.00	8.5E+04	No
1607-D1_Staging Pile Area Footprint	non-Rad	Chromium	7440-47-3	µg/kg	11970.87	1.9E+04	No
1607-D1_Staging Pile Area Footprint	non-Rad	Manganese	7439-96-5	µg/kg	268017.75	5.1E+05	No
1607-D1_Staging Pile Area Footprint	non-Rad	Vanadium	7440-62-2	µg/kg	39209.61	8.5E+04	No
1607-D2-1_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	5900.00	1.9E+04	No
1607-D2-2_Shallow	non-Rad	Boron	7440-42-8	µg/kg	1842.45	3.9E+03	No
1607-D2-2_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	19771.25	1.9E+04	**Yes**
1607-D2-2_Shallow	non-Rad	Manganese	7439-96-5	µg/kg	344088.69	5.1E+05	No
1607-D2-2_Shallow	non-Rad	Mercury	7439-97-6	µg/kg	483.64	1.3E+01	**Yes**
1607-D2-2_Shallow	non-Rad	Silver	7440-22-4	µg/kg	11800.00	1.7E+02	**Yes**
1607-D2-2_Shallow	non-Rad	Vanadium	7440-62-2	µg/kg	68019.95	8.5E+04	No
1607-D2-2_Shallow	non-Rad	Zinc	7440-66-6	µg/kg	91971.22	6.8E+04	**Yes**
1607-D2-3_Overburden	non-Rad	Chromium	7440-47-3	µg/kg	6597.11	1.9E+04	No
1607-D2-3_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	9575.55	1.9E+04	No

Table H-9. Comparison of Chemicals Exceeding SSLs in 100-D OU Surface Soils (0 to 15 feet [0 to 4.6m]) to Background

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Lognormal 90th Percentile Background Value	EPC > Background
1607-D2-4_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	6100.00	1.9E+04	No
1607-D4_Shallow_Focused	non-Rad	Boron	7440-42-8	µg/kg	1100.00	3.9E+03	No
1607-D4_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	3500.00	1.9E+04	No
1607-D4_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	269000.00	5.1E+05	No
1607-D4_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	54500.00	8.5E+04	No
1607-D5_Shallow	non-Rad	Barium	7440-39-3	µg/kg	775391.03	1.3E+05	**Yes**
1607-D5_Shallow	non-Rad	Boron	7440-42-8	µg/kg	69503.46	3.9E+03	**Yes**
1607-D5_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	9673.41	1.9E+04	No
1607-D5_Shallow	non-Rad	Lead	7439-92-1	µg/kg	106537.32	1.0E+04	**Yes**
1607-D5_Shallow	non-Rad	Manganese	7439-96-5	µg/kg	330505.14	5.1E+05	No
1607-D5_Shallow	non-Rad	Vanadium	7440-62-2	µg/kg	71779.09	8.5E+04	No
600-30_Shallow_1	non-Rad	Boron	7440-42-8	µg/kg	2431.23	3.9E+03	No
600-30_Shallow_1	non-Rad	Chromium	7440-47-3	µg/kg	11154.36	1.9E+04	No
600-30_Shallow_1	non-Rad	Manganese	7439-96-5	µg/kg	360368.66	5.1E+05	No
600-30_Shallow_1	non-Rad	Vanadium	7440-62-2	µg/kg	49219.04	8.5E+04	No
600-30_Shallow_2	non-Rad	Boron	7440-42-8	µg/kg	1525.00	3.9E+03	No
600-30_Shallow_2	non-Rad	Chromium	7440-47-3	µg/kg	12014.44	1.9E+04	No
600-30_Shallow_2	non-Rad	Manganese	7439-96-5	µg/kg	351747.95	5.1E+05	No
600-30_Shallow_2	non-Rad	Vanadium	7440-62-2	µg/kg	57064.36	8.5E+04	No
600-30_Shallow_3	non-Rad	Boron	7440-42-8	µg/kg	1700.00	3.9E+03	No
600-30_Shallow_3	non-Rad	Chromium	7440-47-3	µg/kg	7707.76	1.9E+04	No
600-30_Shallow_3	non-Rad	Manganese	7439-96-5	µg/kg	346687.92	5.1E+05	No
600-30_Shallow_3	non-Rad	Vanadium	7440-62-2	µg/kg	67222.19	8.5E+04	No
600-30_Shallow_Focused	non-Rad	Boron	7440-42-8	µg/kg	2460.00	3.9E+03	No
600-30_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	11800.00	1.9E+04	No
600-30_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	382000.00	5.1E+05	No
600-30_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	62200.00	8.5E+04	No
628-3_Shallow	non-Rad	Boron	7440-42-8	µg/kg	1771.13	3.9E+03	No
628-3_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	11406.05	1.9E+04	No
628-3_Shallow	non-Rad	Manganese	7439-96-5	µg/kg	284235.20	5.1E+05	No
628-3_Shallow	non-Rad	Mercury	7439-97-6	µg/kg	164.87	1.3E+01	**Yes**
628-3_Shallow	non-Rad	Vanadium	7440-62-2	µg/kg	53113.09	8.5E+04	No
628-3_Staging Pile Area_2	non-Rad	Boron	7440-42-8	µg/kg	2111.79	3.9E+03	No
628-3_Staging Pile Area_2	non-Rad	Chromium	7440-47-3	µg/kg	12445.07	1.9E+04	No
628-3_Staging Pile Area_2	non-Rad	Manganese	7439-96-5	µg/kg	323863.19	5.1E+05	No
628-3_Staging Pile Area_2	non-Rad	Mercury	7439-97-6	µg/kg	113.28	1.3E+01	**Yes**
628-3_Staging Pile Area_2	non-Rad	Vanadium	7440-62-2	µg/kg	55453.84	8.5E+04	No
628-3_Staging Pile Area_3	non-Rad	Boron	7440-42-8	µg/kg	2240.68	3.9E+03	No
628-3_Staging Pile Area_3	non-Rad	Chromium	7440-47-3	µg/kg	41154.50	1.9E+04	**Yes**
628-3_Staging Pile Area_3	non-Rad	Manganese	7439-96-5	µg/kg	328755.36	5.1E+05	No

Table H-9. Comparison of Chemicals Exceeding SSLs in 100-D OU Surface Soils (0 to 15 feet [0 to 4.6m]) to Background

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Lognormal 90th Percentile Background Value	EPC > Background
628-3_Staging Pile Area_3	non-Rad	Vanadium	7440-62-2	µg/kg	58456.17	8.5E+04	No
628-3_Staging Pile Area_3	non-Rad	Zinc	7440-66-6	µg/kg	54972.41	6.8E+04	No
628-3_Staging Pile Area_Focused	non-Rad	Boron	7440-42-8	µg/kg	3500.00	3.9E+03	No
628-3_Staging Pile Area_Focused	non-Rad	Chromium	7440-47-3	µg/kg	12000.00	1.9E+04	No
628-3_Staging Pile Area_Focused	non-Rad	Manganese	7439-96-5	µg/kg	363000.00	5.1E+05	No
628-3_Staging Pile Area_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	52400.00	8.5E+04	No
UPR-100-D-5_Overburden	non-Rad	Boron	7440-42-8	µg/kg	1084.82	3.9E+03	No
UPR-100-D-5_Overburden	non-Rad	Chromium	7440-47-3	µg/kg	6103.38	1.9E+04	No
UPR-100-D-5_Overburden	non-Rad	Manganese	7439-96-5	µg/kg	397996.65	5.1E+05	No
UPR-100-D-5_Overburden	non-Rad	Vanadium	7440-62-2	µg/kg	66616.30	8.5E+04	No
UPR-100-D-5_Shallow	non-Rad	Boron	7440-42-8	µg/kg	2067.10	3.9E+03	No
UPR-100-D-5_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	8860.71	1.9E+04	No
UPR-100-D-5_Shallow	non-Rad	Manganese	7439-96-5	µg/kg	305219.78	5.1E+05	No
UPR-100-D-5_Shallow	non-Rad	Vanadium	7440-62-2	µg/kg	65392.63	8.5E+04	No
UPR-100-D-5_Shallow_Focused	non-Rad	Boron	7440-42-8	µg/kg	744.00	3.9E+03	No
UPR-100-D-5_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	5560.00	1.9E+04	No
UPR-100-D-5_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	254000.00	5.1E+05	No
UPR-100-D-5_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	60100.00	8.5E+04	No

Notes:

All data represent detected concentrations of the chemicals.

Exposure Point Concentrations greater than background are in bold font and highlighted yellow.

EPC = Exposure Point Concentration

SSL = Soil screening level

µg/kg = Microgram per kilogram

Table H-10. Comparison of Chemicals Exceeding SSLs in 100-H OU Surface Soils (0 to 15 feet [0 to 4.6m]) to Background

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Lognormal 90th Percentile Background Value	EPC > Background
100-H-17_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	11014.57	1.9E+04	No
100-H-21_Overburden	non-Rad	Arsenic	7440-38-2	µg/kg	11453.00	6.5E+03	**Yes**
100-H-21_Overburden	non-Rad	Chromium	7440-47-3	µg/kg	14234.22	1.9E+04	No
100-H-21_Overburden	non-Rad	Lead	7439-92-1	µg/kg	36425.51	1.0E+04	**Yes**
100-H-21_Shallow	non-Rad	Arsenic	7440-38-2	µg/kg	13300.72	6.5E+03	**Yes**
100-H-21_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	14826.24	1.9E+04	No
100-H-21_Shallow	non-Rad	Lead	7439-92-1	µg/kg	40131.71	1.0E+04	**Yes**
100-H-28:1_Shallow_Focused	non-Rad	Barium	7440-39-3	µg/kg	540000.00	1.3E+05	**Yes**
100-H-28:1_Shallow_Focused	non-Rad	Boron	7440-42-8	µg/kg	66400.00	3.9E+03	**Yes**
100-H-28:1_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	15000.00	1.9E+04	No
100-H-28:1_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	340000.00	5.1E+05	No
100-H-28:1_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	52700.00	8.5E+04	No
100-H-28:6_Shallow_Focused	non-Rad	Boron	7440-42-8	µg/kg	2300.00	3.9E+03	No
100-H-28:6_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	16800.00	1.9E+04	No
100-H-28:6_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	287000.00	5.1E+05	No
100-H-28:6_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	45200.00	8.5E+04	No
100-H-3_Shallow	non-Rad	Arsenic	7440-38-2	µg/kg	14689.20	6.5E+03	**Yes**
100-H-3_Shallow	non-Rad	Boron	7440-42-8	µg/kg	4683.82	3.9E+03	**Yes**
100-H-3_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	17524.68	1.9E+04	No
100-H-3_Shallow	non-Rad	Lead	7439-92-1	µg/kg	47556.52	1.0E+04	**Yes**
100-H-3_Shallow	non-Rad	Manganese	7439-96-5	µg/kg	305798.76	5.1E+05	No
100-H-3_Shallow	non-Rad	Mercury	7439-97-6	µg/kg	257.17	1.3E+01	**Yes**
100-H-3_Shallow	non-Rad	Vanadium	7440-62-2	µg/kg	48985.36	8.5E+04	No
100-H-35_Shallow_Focused_1	non-Rad	Boron	7440-42-8	µg/kg	2630.00	3.9E+03	No
100-H-35_Shallow_Focused_1	non-Rad	Chromium	7440-47-3	µg/kg	20700.00	1.9E+04	**Yes**
100-H-35_Shallow_Focused_1	non-Rad	Manganese	7439-96-5	µg/kg	322000.00	5.1E+05	No
100-H-35_Shallow_Focused_1	non-Rad	Vanadium	7440-62-2	µg/kg	43600.00	8.5E+04	No
100-H-35_Shallow_Focused_2	non-Rad	Boron	7440-42-8	µg/kg	1930.00	3.9E+03	No
100-H-35_Shallow_Focused_2	non-Rad	Chromium	7440-47-3	µg/kg	20900.00	1.9E+04	**Yes**
100-H-35_Shallow_Focused_2	non-Rad	Manganese	7439-96-5	µg/kg	309000.00	5.1E+05	No
100-H-35_Shallow_Focused_2	non-Rad	Mercury	7439-97-6	µg/kg	102.00	1.3E+01	**Yes**
100-H-35_Shallow_Focused_2	non-Rad	Vanadium	7440-62-2	µg/kg	41600.00	8.5E+04	No
100-H-35_Shallow_Focused_3	non-Rad	Arsenic	7440-38-2	µg/kg	18500.00	6.5E+03	**Yes**
100-H-35_Shallow_Focused_3	non-Rad	Boron	7440-42-8	µg/kg	1100.00	3.9E+03	No
100-H-35_Shallow_Focused_3	non-Rad	Chromium	7440-47-3	µg/kg	14800.00	1.9E+04	No
100-H-35_Shallow_Focused_3	non-Rad	Manganese	7439-96-5	µg/kg	253000.00	5.1E+05	No
100-H-35_Shallow_Focused_3	non-Rad	Vanadium	7440-62-2	µg/kg	43500.00	8.5E+04	No
100-H-35_Shallow_Focused_3	non-Rad	Zinc	7440-66-6	µg/kg	94200.00	6.8E+04	**Yes**
100-H-37_Shallow_Focused	non-Rad	Arsenic	7440-38-2	µg/kg	13000.00	6.5E+03	**Yes**
100-H-37_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	11000.00	1.9E+04	No
100-H-37_Shallow_Focused	non-Rad	Lead	7439-92-1	µg/kg	54000.00	1.0E+04	**Yes**

Table H-10. Comparison of Chemicals Exceeding SSLs in 100-H OU Surface Soils (0 to 15 feet [0 to 4.6m]) to Background

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Lognormal 90th Percentile Background Value	EPC > Background
100-H-37_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	290000.00	5.1E+05	No
100-H-37_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	43000.00	8.5E+04	No
100-H-4_Shallow	non-Rad	Boron	7440-42-8	µg/kg	3026.47	3.9E+03	No
100-H-4_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	11056.95	1.9E+04	No
100-H-4_Shallow	non-Rad	Manganese	7439-96-5	µg/kg	263323.72	5.1E+05	No
100-H-4_Shallow	non-Rad	Mercury	7439-97-6	µg/kg	408.00	1.3E+01	**Yes**
100-H-4_Shallow	non-Rad	Vanadium	7440-62-2	µg/kg	50477.34	8.5E+04	No
100-H-4_Shallow_Focused	non-Rad	Boron	7440-42-8	µg/kg	19400.00	3.9E+03	**Yes**
100-H-4_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	17500.00	1.9E+04	No
100-H-4_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	364000.00	5.1E+05	No
100-H-4_Shallow_Focused	non-Rad	Uranium	7440-61-1	µg/kg	10100.00	3.2E+03	**Yes**
100-H-4_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	51500.00	8.5E+04	No
100-H-4_Shallow_Focused	non-Rad	Zinc	7440-66-6	µg/kg	62500.00	6.8E+04	No
100-H-40_Shallow_Focused	non-Rad	Boron	7440-42-8	µg/kg	2840.00	3.9E+03	No
100-H-40_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	11900.00	1.9E+04	No
100-H-40_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	325000.00	5.1E+05	No
100-H-40_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	45300.00	8.5E+04	No
100-H-40_Shallow_Focused	non-Rad	Zinc	7440-66-6	µg/kg	83400.00	6.8E+04	**Yes**
100-H-41_Shallow_Focused	non-Rad	Boron	7440-42-8	µg/kg	1110.00	3.9E+03	No
100-H-41_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	18500.00	1.9E+04	No
100-H-41_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	281000.00	5.1E+05	No
100-H-41_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	40900.00	8.5E+04	No
100-H-45_Shallow_Focused	non-Rad	Boron	7440-42-8	µg/kg	584.00	3.9E+03	No
100-H-45_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	9910.00	1.9E+04	No
100-H-45_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	227000.00	5.1E+05	No
100-H-45_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	42600.00	8.5E+04	No
100-H-49:2_Shallow_Focused	non-Rad	Boron	7440-42-8	µg/kg	5660.00	3.9E+03	**Yes**
100-H-49:2_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	18800.00	1.9E+04	**Yes**
100-H-49:2_Shallow_Focused	non-Rad	Lead	7439-92-1	µg/kg	46200.00	1.0E+04	**Yes**
100-H-49:2_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	291000.00	5.1E+05	No
100-H-49:2_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	48900.00	8.5E+04	No
100-H-49:2_Shallow_Focused	non-Rad	Zinc	7440-66-6	µg/kg	96700.00	6.8E+04	**Yes**
100-H-5_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	11198.92	1.9E+04	No
100-H-50_Shallow_Focused	non-Rad	Boron	7440-42-8	µg/kg	2420.00	3.9E+03	No
100-H-50_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	15100.00	1.9E+04	No
100-H-50_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	284000.00	5.1E+05	No
100-H-50_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	53200.00	8.5E+04	No
100-H-51:4_Shallow_Focused	non-Rad	Boron	7440-42-8	µg/kg	1650.00	3.9E+03	No
100-H-51:4_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	13500.00	1.9E+04	No
100-H-51:4_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	504000.00	5.1E+05	No
100-H-51:4_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	46300.00	8.5E+04	No

Table H-10. Comparison of Chemicals Exceeding SSLs in 100-H OU Surface Soils (0 to 15 feet [0 to 4.6m]) to Background

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Lognormal 90th Percentile Background Value	EPC > Background
100-H-51:4_Shallow_Focused	non-Rad	Zinc	7440-66-6	µg/kg	79100.00	6.8E+04	**Yes**
100-H-51:5_Shallow_Focused	non-Rad	Boron	7440-42-8	µg/kg	26300.00	3.9E+03	**Yes**
100-H-51:5_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	11400.00	1.9E+04	No
100-H-51:5_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	290000.00	5.1E+05	No
100-H-51:5_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	38600.00	8.5E+04	No
100-H-53_Shallow_Focused	non-Rad	Boron	7440-42-8	µg/kg	1310.00	3.9E+03	No
100-H-53_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	15900.00	1.9E+04	No
100-H-53_Shallow_Focused	non-Rad	Lead	7439-92-1	µg/kg	35900.00	1.0E+04	**Yes**
100-H-53_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	300000.00	5.1E+05	No
100-H-53_Shallow_Focused	non-Rad	Molybdenum	7439-98-7	µg/kg	3840.00	4.7E+02	**Yes**
100-H-53_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	35100.00	8.5E+04	No
100-H-53_Shallow_Focused	non-Rad	Zinc	7440-66-6	µg/kg	79900.00	6.8E+04	**Yes**
100-H-7_Shallow_Focused	non-Rad	Boron	7440-42-8	µg/kg	930.00	3.9E+03	No
100-H-7_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	9700.00	1.9E+04	No
100-H-7_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	264000.00	5.1E+05	No
100-H-7_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	57100.00	8.5E+04	No
100-H-8_Shallow_Focused	non-Rad	Boron	7440-42-8	µg/kg	1200.00	3.9E+03	No
100-H-8_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	13500.00	1.9E+04	No
100-H-8_Shallow_Focused	non-Rad	Lead	7439-92-1	µg/kg	46800.00	1.0E+04	**Yes**
100-H-8_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	340000.00	5.1E+05	No
100-H-8_Shallow_Focused	non-Rad	Mercury	7439-97-6	µg/kg	310.00	1.3E+01	**Yes**
100-H-8_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	63900.00	8.5E+04	No
100-H-8_Shallow_Focused	non-Rad	Zinc	7440-66-6	µg/kg	53500.00	6.8E+04	No
116-H-1_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	10151.33	1.9E+04	No
116-H-5_Overburden	non-Rad	Boron	7440-42-8	µg/kg	1458.32	3.9E+03	No
116-H-5_Overburden	non-Rad	Chromium	7440-47-3	µg/kg	11538.23	1.9E+04	No
116-H-5_Overburden	non-Rad	Manganese	7439-96-5	µg/kg	258052.97	5.1E+05	No
116-H-5_Overburden	non-Rad	Vanadium	7440-62-2	µg/kg	44444.44	8.5E+04	No
116-H-5_Shallow	non-Rad	Boron	7440-42-8	µg/kg	2169.41	3.9E+03	No
116-H-5_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	13830.59	1.9E+04	No
116-H-5_Shallow	non-Rad	Manganese	7439-96-5	µg/kg	270919.36	5.1E+05	No
116-H-5_Shallow	non-Rad	Vanadium	7440-62-2	µg/kg	48734.50	8.5E+04	No
116-H-5_Staging Pile Area Footprint	non-Rad	Arsenic	7440-38-2	µg/kg	10279.99	6.5E+03	**Yes**
116-H-5_Staging Pile Area Footprint	non-Rad	Boron	7440-42-8	µg/kg	2700.00	3.9E+03	No
116-H-5_Staging Pile Area Footprint	non-Rad	Chromium	7440-47-3	µg/kg	10981.15	1.9E+04	No
116-H-5_Staging Pile Area Footprint	non-Rad	Lead	7439-92-1	µg/kg	45682.12	1.0E+04	**Yes**
116-H-5_Staging Pile Area Footprint	non-Rad	Manganese	7439-96-5	µg/kg	280936.49	5.1E+05	No
116-H-5_Staging Pile Area Footprint	non-Rad	Vanadium	7440-62-2	µg/kg	47751.55	8.5E+04	No
116-H-7_Overburden	non-Rad	Chromium	7440-47-3	µg/kg	11041.55	1.9E+04	No
116-H-7_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	19655.57	1.9E+04	**Yes**
116-H-9_Shallow	non-Rad	Boron	7440-42-8	µg/kg	1253.20	3.9E+03	No

Table H-10. Comparison of Chemicals Exceeding SSLs in 100-H OU Surface Soils (0 to 15 feet [0 to 4.6m]) to Background

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Lognormal 90th Percentile Background Value	EPC > Background
116-H-9_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	11945.09	1.9E+04	No
116-H-9_Shallow	non-Rad	Manganese	7439-96-5	µg/kg	286352.06	5.1E+05	No
116-H-9_Shallow	non-Rad	Vanadium	7440-62-2	µg/kg	42911.37	8.5E+04	No
118-H-1:1_Overburden	non-Rad	Boron	7440-42-8	µg/kg	10531.96	3.9E+03	**Yes**
118-H-1:1_Overburden	non-Rad	Chromium	7440-47-3	µg/kg	13618.49	1.9E+04	No
118-H-1:1_Overburden	non-Rad	Manganese	7439-96-5	µg/kg	344386.72	5.1E+05	No
118-H-1:1_Overburden	non-Rad	Vanadium	7440-62-2	µg/kg	58280.61	8.5E+04	No
118-H-1:1_Shallow_1	non-Rad	Boron	7440-42-8	µg/kg	1455.59	3.9E+03	No
118-H-1:1_Shallow_1	non-Rad	Chromium	7440-47-3	µg/kg	10810.19	1.9E+04	No
118-H-1:1_Shallow_1	non-Rad	Manganese	7439-96-5	µg/kg	252370.41	5.1E+05	No
118-H-1:1_Shallow_1	non-Rad	Selenium	7782-49-2	µg/kg	1000.00	7.8E+02	**Yes**
118-H-1:1_Shallow_1	non-Rad	Vanadium	7440-62-2	µg/kg	43653.09	8.5E+04	No
118-H-1:1_Shallow_2	non-Rad	Boron	7440-42-8	µg/kg	1762.72	3.9E+03	No
118-H-1:1_Shallow_2	non-Rad	Chromium	7440-47-3	µg/kg	12051.27	1.9E+04	No
118-H-1:1_Shallow_2	non-Rad	Manganese	7439-96-5	µg/kg	254152.72	5.1E+05	No
118-H-1:1_Shallow_2	non-Rad	Vanadium	7440-62-2	µg/kg	45883.03	8.5E+04	No
118-H-1:1_Shallow_Focused	non-Rad	Boron	7440-42-8	µg/kg	4160.00	3.9E+03	**Yes**
118-H-1:1_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	22000.00	1.9E+04	**Yes**
118-H-1:1_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	295000.00	5.1E+05	No
118-H-1:1_Shallow_Focused	non-Rad	Mercury	7439-97-6	µg/kg	202.00	1.3E+01	**Yes**
118-H-1:1_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	44900.00	8.5E+04	No
118-H-1:1_Staging Pile Area Footprint	non-Rad	Boron	7440-42-8	µg/kg	1216.93	3.9E+03	No
118-H-1:1_Staging Pile Area Footprint	non-Rad	Chromium	7440-47-3	µg/kg	12038.80	1.9E+04	No
118-H-1:1_Staging Pile Area Footprint	non-Rad	Manganese	7439-96-5	µg/kg	254282.63	5.1E+05	No
118-H-1:1_Staging Pile Area Footprint	non-Rad	Vanadium	7440-62-2	µg/kg	42420.39	8.5E+04	No
118-H-1:2_Shallow	non-Rad	Boron	7440-42-8	µg/kg	2322.98	3.9E+03	No
118-H-1:2_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	12971.25	1.9E+04	No
118-H-1:2_Shallow	non-Rad	Manganese	7439-96-5	µg/kg	340196.02	5.1E+05	No
118-H-1:2_Shallow	non-Rad	Vanadium	7440-62-2	µg/kg	44407.29	8.5E+04	No
118-H-1:2_Shallow_Focused	non-Rad	Boron	7440-42-8	µg/kg	1300.00	3.9E+03	No
118-H-1:2_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	12000.00	1.9E+04	No
118-H-1:2_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	273000.00	5.1E+05	No
118-H-1:2_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	37100.00	8.5E+04	No
118-H-2_Shallow	non-Rad	Boron	7440-42-8	µg/kg	1364.91	3.9E+03	No
118-H-2_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	10049.37	1.9E+04	No
118-H-2_Shallow	non-Rad	Manganese	7439-96-5	µg/kg	266309.48	5.1E+05	No
118-H-2_Shallow	non-Rad	Vanadium	7440-62-2	µg/kg	41612.93	8.5E+04	No
118-H-3_Shallow_1	non-Rad	Arsenic	7440-38-2	µg/kg	15852.07	6.5E+03	**Yes**
118-H-3_Shallow_1	non-Rad	Boron	7440-42-8	µg/kg	3103.83	3.9E+03	No
118-H-3_Shallow_1	non-Rad	Chromium	7440-47-3	µg/kg	13217.68	1.9E+04	No
118-H-3_Shallow_1	non-Rad	Lead	7439-92-1	µg/kg	57642.19	1.0E+04	**Yes**

Table H-10. Comparison of Chemicals Exceeding SSLs in 100-H OU Surface Soils (0 to 15 feet [0 to 4.6m]) to Background

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Lognormal 90th Percentile Background Value	EPC > Background
118-H-3_Shallow_1	non-Rad	Manganese	7439-96-5	µg/kg	345494.18	5.1E+05	No
118-H-3_Shallow_1	non-Rad	Vanadium	7440-62-2	µg/kg	45491.42	8.5E+04	No
118-H-3_Shallow_1	non-Rad	Zinc	7440-66-6	µg/kg	132913.41	6.8E+04	**Yes**
118-H-3_Shallow_2	non-Rad	Boron	7440-42-8	µg/kg	2578.25	3.9E+03	No
118-H-3_Shallow_2	non-Rad	Chromium	7440-47-3	µg/kg	11621.69	1.9E+04	No
118-H-3_Shallow_2	non-Rad	Manganese	7439-96-5	µg/kg	300387.11	5.1E+05	No
118-H-3_Shallow_2	non-Rad	Vanadium	7440-62-2	µg/kg	45328.92	8.5E+04	No
118-H-3_Shallow_Focused	non-Rad	Boron	7440-42-8	µg/kg	2630.00	3.9E+03	No
118-H-3_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	9110.00	1.9E+04	No
118-H-3_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	255000.00	5.1E+05	No
118-H-3_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	48300.00	8.5E+04	No
118-H-4_Shallow	non-Rad	Boron	7440-42-8	µg/kg	1534.25	3.9E+03	No
118-H-4_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	11714.85	1.9E+04	No
118-H-4_Shallow	non-Rad	Manganese	7439-96-5	µg/kg	279088.44	5.1E+05	No
118-H-4_Shallow	non-Rad	Vanadium	7440-62-2	µg/kg	45963.54	8.5E+04	No
118-H-4_Shallow_Focused	non-Rad	Boron	7440-42-8	µg/kg	1440.00	3.9E+03	No
118-H-4_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	9900.00	1.9E+04	No
118-H-4_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	222000.00	5.1E+05	No
118-H-4_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	39000.00	8.5E+04	No
118-H-4_Staging Pile Area	non-Rad	Boron	7440-42-8	µg/kg	2987.38	3.9E+03	No
118-H-4_Staging Pile Area	non-Rad	Chromium	7440-47-3	µg/kg	9779.97	1.9E+04	No
118-H-4_Staging Pile Area	non-Rad	Manganese	7439-96-5	µg/kg	258295.95	5.1E+05	No
118-H-4_Staging Pile Area	non-Rad	Vanadium	7440-62-2	µg/kg	48115.09	8.5E+04	No
118-H-4_Staging Pile Area	non-Rad	Zinc	7440-66-6	µg/kg	72798.99	6.8E+04	**Yes**
118-H-5_Shallow	non-Rad	Boron	7440-42-8	µg/kg	6246.49	3.9E+03	**Yes**
118-H-5_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	10718.18	1.9E+04	No
118-H-5_Shallow	non-Rad	Manganese	7439-96-5	µg/kg	276171.52	5.1E+05	No
118-H-5_Shallow	non-Rad	Vanadium	7440-62-2	µg/kg	39148.68	8.5E+04	No
118-H-5_Shallow_Focused	non-Rad	Boron	7440-42-8	µg/kg	1290.00	3.9E+03	No
118-H-5_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	10500.00	1.9E+04	No
118-H-5_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	257000.00	5.1E+05	No
118-H-5_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	39400.00	8.5E+04	No
118-H-6:4_Overburden	non-Rad	Boron	7440-42-8	µg/kg	809.10	3.9E+03	No
118-H-6:4_Overburden	non-Rad	Chromium	7440-47-3	µg/kg	9709.69	1.9E+04	No
118-H-6:4_Overburden	non-Rad	Manganese	7439-96-5	µg/kg	265613.49	5.1E+05	No
118-H-6:4_Overburden	non-Rad	Vanadium	7440-62-2	µg/kg	45938.80	8.5E+04	No
118-H-6:4_Shallow	non-Rad	Boron	7440-42-8	µg/kg	632.59	3.9E+03	No
118-H-6:4_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	10217.86	1.9E+04	No
118-H-6:4_Shallow	non-Rad	Manganese	7439-96-5	µg/kg	251118.00	5.1E+05	No
118-H-6:4_Shallow	non-Rad	Vanadium	7440-62-2	µg/kg	48568.27	8.5E+04	No
118-H-6:5_Shallow_1	non-Rad	Arsenic	7440-38-2	µg/kg	39808.79	6.5E+03	**Yes**

Table H-10. Comparison of Chemicals Exceeding SSLs in 100-H OU Surface Soils (0 to 15 feet [0 to 4.6m]) to Background

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Lognormal 90th Percentile Background Value	EPC > Background
118-H-6:5_Shallow_1	non-Rad	Boron	7440-42-8	µg/kg	2400.95	3.9E+03	No
118-H-6:5_Shallow_1	non-Rad	Chromium	7440-47-3	µg/kg	13671.73	1.9E+04	No
118-H-6:5_Shallow_1	non-Rad	Lead	7439-92-1	µg/kg	171631.51	1.0E+04	**Yes**
118-H-6:5_Shallow_1	non-Rad	Manganese	7439-96-5	µg/kg	338381.30	5.1E+05	No
118-H-6:5_Shallow_1	non-Rad	Vanadium	7440-62-2	µg/kg	50094.79	8.5E+04	No
118-H-6:5_Shallow_2	non-Rad	Boron	7440-42-8	µg/kg	12189.72	3.9E+03	**Yes**
118-H-6:5_Shallow_2	non-Rad	Chromium	7440-47-3	µg/kg	11952.62	1.9E+04	No
118-H-6:5_Shallow_2	non-Rad	Manganese	7439-96-5	µg/kg	310414.97	5.1E+05	No
118-H-6:5_Shallow_2	non-Rad	Mercury	7439-97-6	µg/kg	166.93	1.3E+01	**Yes**
118-H-6:5_Shallow_2	non-Rad	Vanadium	7440-62-2	µg/kg	53432.38	8.5E+04	No
118-H-6:5_Shallow_3	non-Rad	Boron	7440-42-8	µg/kg	1891.90	3.9E+03	No
118-H-6:5_Shallow_3	non-Rad	Chromium	7440-47-3	µg/kg	10827.24	1.9E+04	No
118-H-6:5_Shallow_3	non-Rad	Manganese	7439-96-5	µg/kg	281265.38	5.1E+05	No
118-H-6:5_Shallow_3	non-Rad	Vanadium	7440-62-2	µg/kg	46610.85	8.5E+04	No
118-H-6:5_Shallow_Focused	non-Rad	Arsenic	7440-38-2	µg/kg	27000.00	6.5E+03	**Yes**
118-H-6:5_Shallow_Focused	non-Rad	Boron	7440-42-8	µg/kg	1710.00	3.9E+03	No
118-H-6:5_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	13000.00	1.9E+04	No
118-H-6:5_Shallow_Focused	non-Rad	Lead	7439-92-1	µg/kg	114000.00	1.0E+04	**Yes**
118-H-6:5_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	311000.00	5.1E+05	No
118-H-6:5_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	49400.00	8.5E+04	No
128-H-1_Overburden	non-Rad	Arsenic	7440-38-2	µg/kg	40542.13	6.5E+03	**Yes**
128-H-1_Overburden	non-Rad	Boron	7440-42-8	µg/kg	2799.04	3.9E+03	No
128-H-1_Overburden	non-Rad	Chromium	7440-47-3	µg/kg	13084.58	1.9E+04	No
128-H-1_Overburden	non-Rad	Lead	7439-92-1	µg/kg	253829.55	1.0E+04	**Yes**
128-H-1_Overburden	non-Rad	Manganese	7439-96-5	µg/kg	313885.55	5.1E+05	No
128-H-1_Overburden	non-Rad	Vanadium	7440-62-2	µg/kg	47043.66	8.5E+04	No
128-H-1_Shallow_3	non-Rad	Arsenic	7440-38-2	µg/kg	10641.93	6.5E+03	**Yes**
128-H-1_Shallow_3	non-Rad	Boron	7440-42-8	µg/kg	4921.60	3.9E+03	**Yes**
128-H-1_Shallow_3	non-Rad	Chromium	7440-47-3	µg/kg	13633.70	1.9E+04	No
128-H-1_Shallow_3	non-Rad	Lead	7439-92-1	µg/kg	65619.57	1.0E+04	**Yes**
128-H-1_Shallow_3	non-Rad	Manganese	7439-96-5	µg/kg	298334.49	5.1E+05	No
128-H-1_Shallow_3	non-Rad	Vanadium	7440-62-2	µg/kg	46141.26	8.5E+04	No
128-H-1_Shallow_4	non-Rad	Boron	7440-42-8	µg/kg	4462.05	3.9E+03	**Yes**
128-H-1_Shallow_4	non-Rad	Chromium	7440-47-3	µg/kg	14369.30	1.9E+04	No
128-H-1_Shallow_4	non-Rad	Lead	7439-92-1	µg/kg	44535.62	1.0E+04	**Yes**
128-H-1_Shallow_4	non-Rad	Manganese	7439-96-5	µg/kg	319233.94	5.1E+05	No
128-H-1_Shallow_4	non-Rad	Mercury	7439-97-6	µg/kg	1021.50	1.3E+01	**Yes**
128-H-1_Shallow_4	non-Rad	Vanadium	7440-62-2	µg/kg	51296.70	8.5E+04	No
128-H-1_Shallow_5	non-Rad	Boron	7440-42-8	µg/kg	1533.57	3.9E+03	No
128-H-1_Shallow_5	non-Rad	Chromium	7440-47-3	µg/kg	12741.39	1.9E+04	No
128-H-1_Shallow_5	non-Rad	Manganese	7439-96-5	µg/kg	270578.10	5.1E+05	No

Table H-10. Comparison of Chemicals Exceeding SSLs in 100-H OU Surface Soils (0 to 15 feet [0 to 4.6m]) to Background

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Lognormal 90th Percentile Background Value	EPC > Background
128-H-1_Shallow_5	non-Rad	Vanadium	7440-62-2	µg/kg	40806.84	8.5E+04	No
128-H-1_Staging pile area footprint_2	non-Rad	Arsenic	7440-38-2	µg/kg	54141.64	6.5E+03	**Yes**
128-H-1_Staging pile area footprint_2	non-Rad	Boron	7440-42-8	µg/kg	3306.34	3.9E+03	No
128-H-1_Staging pile area footprint_2	non-Rad	Chromium	7440-47-3	µg/kg	15219.65	1.9E+04	No
128-H-1_Staging pile area footprint_2	non-Rad	Lead	7439-92-1	µg/kg	124843.14	1.0E+04	**Yes**
128-H-1_Staging pile area footprint_2	non-Rad	Manganese	7439-96-5	µg/kg	339767.58	5.1E+05	No
128-H-1_Staging pile area footprint_2	non-Rad	Vanadium	7440-62-2	µg/kg	46690.43	8.5E+04	No
128-H-1_Staging pile area footprint_6	non-Rad	Boron	7440-42-8	µg/kg	1747.13	3.9E+03	No
128-H-1_Staging pile area footprint_6	non-Rad	Chromium	7440-47-3	µg/kg	14174.47	1.9E+04	No
128-H-1_Staging pile area footprint_6	non-Rad	Manganese	7439-96-5	µg/kg	333856.82	5.1E+05	No
128-H-1_Staging pile area footprint_6	non-Rad	Vanadium	7440-62-2	µg/kg	40714.80	8.5E+04	No
128-H-2_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	13800.00	1.9E+04	No
128-H-2_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	329000.00	5.1E+05	No
128-H-2_Shallow_Focused	non-Rad	Selenium	7782-49-2	µg/kg	1200.00	7.8E+02	**Yes**
128-H-2_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	58500.00	8.5E+04	No
128-H-3_Shallow_Focused	non-Rad	Arsenic	7440-38-2	µg/kg	11000.00	6.5E+03	**Yes**
128-H-3_Shallow_Focused	non-Rad	Boron	7440-42-8	µg/kg	3700.00	3.9E+03	No
128-H-3_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	16900.00	1.9E+04	No
128-H-3_Shallow_Focused	non-Rad	Lead	7439-92-1	µg/kg	94100.00	1.0E+04	**Yes**
128-H-3_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	360000.00	5.1E+05	No
128-H-3_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	60500.00	8.5E+04	No
1607-H1_Overburden	non-Rad	Arsenic	7440-38-2	µg/kg	14321.10	6.5E+03	**Yes**
1607-H1_Overburden	non-Rad	Boron	7440-42-8	µg/kg	3760.46	3.9E+03	No
1607-H1_Overburden	non-Rad	Chromium	7440-47-3	µg/kg	12120.27	1.9E+04	No
1607-H1_Overburden	non-Rad	Lead	7439-92-1	µg/kg	60452.36	1.0E+04	**Yes**
1607-H1_Overburden	non-Rad	Manganese	7439-96-5	µg/kg	299829.98	5.1E+05	No
1607-H1_Overburden	non-Rad	Selenium	7782-49-2	µg/kg	978.65	7.8E+02	**Yes**
1607-H1_Overburden	non-Rad	Vanadium	7440-62-2	µg/kg	46454.27	8.5E+04	No
1607-H1_Shallow	non-Rad	Boron	7440-42-8	µg/kg	3051.66	3.9E+03	No
1607-H1_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	13088.62	1.9E+04	No
1607-H1_Shallow	non-Rad	Manganese	7439-96-5	µg/kg	315366.51	5.1E+05	No
1607-H1_Shallow	non-Rad	Vanadium	7440-62-2	µg/kg	50477.16	8.5E+04	No
1607-H1_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	9800.00	1.9E+04	No
1607-H1_Shallow_Focused	non-Rad	Manganese	7439-96-5	µg/kg	228000.00	5.1E+05	No
1607-H1_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	33500.00	8.5E+04	No

Table H-10. Comparison of Chemicals Exceeding SSLs in 100-H OU Surface Soils (0 to 15 feet [0 to 4.6m]) to Background

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Lognormal 90th Percentile Background Value	EPC > Background
1607-H2_Overburden	non-Rad	Arsenic	7440-38-2	µg/kg	15800.00	6.5E+03	**Yes**
1607-H2_Overburden	non-Rad	Chromium	7440-47-3	µg/kg	10300.00	1.9E+04	No
1607-H2_Overburden	non-Rad	Lead	7439-92-1	µg/kg	54900.00	1.0E+04	**Yes**
1607-H2_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	204000.00	1.9E+04	**Yes**
1607-H2_Shallow	non-Rad	Lead	7439-92-1	µg/kg	37629.23	1.0E+04	**Yes**
1607-H2_Shallow	non-Rad	Mercury	7439-97-6	µg/kg	2591.37	1.3E+01	**Yes**
1607-H2_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	7900.00	1.9E+04	No
1607-H3_Overburden	non-Rad	Boron	7440-42-8	µg/kg	4725.31	3.9E+03	**Yes**
1607-H3_Overburden	non-Rad	Chromium	7440-47-3	µg/kg	49817.68	1.9E+04	**Yes**
1607-H3_Overburden	non-Rad	Manganese	7439-96-5	µg/kg	306124.87	5.1E+05	No
1607-H3_Overburden	non-Rad	Vanadium	7440-62-2	µg/kg	51140.67	8.5E+04	No
1607-H3_Overburden	non-Rad	Zinc	7440-66-6	µg/kg	51057.98	6.8E+04	No
1607-H3_Shallow_1	non-Rad	Boron	7440-42-8	µg/kg	1944.73	3.9E+03	No
1607-H3_Shallow_1	non-Rad	Chromium	7440-47-3	µg/kg	12103.82	1.9E+04	No
1607-H3_Shallow_1	non-Rad	Manganese	7439-96-5	µg/kg	287009.05	5.1E+05	No
1607-H3_Shallow_1	non-Rad	Vanadium	7440-62-2	µg/kg	51055.08	8.5E+04	No
1607-H3_Shallow_1	non-Rad	Zinc	7440-66-6	µg/kg	58149.70	6.8E+04	No
1607-H3_Shallow_2	non-Rad	Boron	7440-42-8	µg/kg	1136.18	3.9E+03	No
1607-H3_Shallow_2	non-Rad	Chromium	7440-47-3	µg/kg	10587.23	1.9E+04	No
1607-H3_Shallow_2	non-Rad	Manganese	7439-96-5	µg/kg	256330.69	5.1E+05	No
1607-H3_Shallow_2	non-Rad	Vanadium	7440-62-2	µg/kg	42062.67	8.5E+04	No
1607-H4_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	10200.00	1.9E+04	No
1607-H4_Shallow	non-Rad	Lead	7439-92-1	µg/kg	44100.00	1.0E+04	**Yes**
600-151_Shallow_1	non-Rad	Arsenic	7440-38-2	µg/kg	31816.35	6.5E+03	**Yes**
600-151_Shallow_1	non-Rad	Boron	7440-42-8	µg/kg	4858.61	3.9E+03	**Yes**
600-151_Shallow_1	non-Rad	Chromium	7440-47-3	µg/kg	13125.48	1.9E+04	No
600-151_Shallow_1	non-Rad	Lead	7439-92-1	µg/kg	126983.64	1.0E+04	**Yes**
600-151_Shallow_1	non-Rad	Manganese	7439-96-5	µg/kg	352408.65	5.1E+05	No
600-151_Shallow_1	non-Rad	Selenium	7782-49-2	µg/kg	940.00	7.8E+02	**Yes**
600-151_Shallow_1	non-Rad	Vanadium	7440-62-2	µg/kg	41178.14	8.5E+04	No
600-151_Shallow_1	non-Rad	Zinc	7440-66-6	µg/kg	64969.35	6.8E+04	No
600-151_Shallow_2	non-Rad	Arsenic	7440-38-2	µg/kg	59605.68	6.5E+03	**Yes**
600-151_Shallow_2	non-Rad	Boron	7440-42-8	µg/kg	2270.82	3.9E+03	No
600-151_Shallow_2	non-Rad	Chromium	7440-47-3	µg/kg	12220.82	1.9E+04	No
600-151_Shallow_2	non-Rad	Lead	7439-92-1	µg/kg	266765.08	1.0E+04	**Yes**
600-151_Shallow_2	non-Rad	Manganese	7439-96-5	µg/kg	359398.85	5.1E+05	No
600-151_Shallow_2	non-Rad	Vanadium	7440-62-2	µg/kg	38406.62	8.5E+04	No
600-151_Shallow_3	non-Rad	Arsenic	7440-38-2	µg/kg	53960.69	6.5E+03	**Yes**
600-151_Shallow_3	non-Rad	Boron	7440-42-8	µg/kg	2612.30	3.9E+03	No
600-151_Shallow_3	non-Rad	Chromium	7440-47-3	µg/kg	13174.67	1.9E+04	No
600-151_Shallow_3	non-Rad	Lead	7439-92-1	µg/kg	276282.82	1.0E+04	**Yes**

Table H-10. Comparison of Chemicals Exceeding SSLs in 100-H OU Surface Soils (0 to 15 feet [0 to 4.6m]) to Background

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Lognormal 90th Percentile Background Value	EPC > Background
600-151_Shallow_3	non-Rad	Manganese	7439-96-5	µg/kg	323716.37	5.1E+05	No
600-151_Shallow_3	non-Rad	Vanadium	7440-62-2	µg/kg	38453.72	8.5E+04	No
600-151_Shallow_3	non-Rad	Zinc	7440-66-6	µg/kg	62832.70	6.8E+04	No
600-152_Shallow	non-Rad	Boron	7440-42-8	µg/kg	1784.86	3.9E+03	No
600-152_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	12729.52	1.9E+04	No
600-152_Shallow	non-Rad	Manganese	7439-96-5	µg/kg	299188.24	5.1E+05	No
600-152_Shallow	non-Rad	Vanadium	7440-62-2	µg/kg	39511.65	8.5E+04	No

Notes:

All data represent detected concentrations of the chemicals.

Exposure Point Concentrations greater than background are in bold font and highlighted yellow.

EPC = Exposure Point Concentration

SSL = Soil screening level

µg/kg = Microgram per kilogram

Table H-11. Ecological PRG Comparisons for 100-D Area Waste Site Decision Units

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/ Invertebrate PRG	Hazard Quotient	Wildlife PRG	Hazard Quotient
100-D-13_Shallow_Focused	non-Rad	Boron	7440-42-8	µg/kg	4900.00	2.9E+04	1.7E-01	3.2E+04	1.5E-01
100-D-13_Shallow_Focused	non-Rad	Selenium	7782-49-2	µg/kg	890.00	2.0E+03	4.4E-01	1.4E+03	6.2E-01
100-D-13_Shallow_Focused	non-Rad	Zinc	7440-66-6	µg/kg	122000.00	6.2E+05	2.0E-01	8.6E+05	1.4E-01
100-D-15_Shallow_2	non-Rad	Zinc	7440-66-6	µg/kg	92810.11	6.2E+05	1.5E-01	8.6E+05	1.1E-01
100-D-28:1_Shallow	non-Rad	Mercury	7439-97-6	µg/kg	571.98	3.0E+02	**1.9E+00**	1.6E+03	3.7E-01
100-D-28:1_Shallow	non-Rad	Selenium	7782-49-2	µg/kg	1700.00	2.0E+03	8.4E-01	1.4E+03	**1.2E+00**
100-D-29_Shallow	non-Rad	Boron	7440-42-8	µg/kg	5333.33	2.9E+04	1.9E-01	3.2E+04	1.7E-01
100-D-31:3, 100-D-31:4_Overburden	non-Rad	Selenium	7782-49-2	µg/kg	1200.00	2.0E+03	5.9E-01	1.4E+03	8.4E-01
100-D-31:5_Overburden	non-Rad	Boron	7440-42-8	µg/kg	20105.26	2.9E+04	7.0E-01	3.2E+04	6.3E-01
100-D-31:5_Overburden	non-Rad	Mercury	7439-97-6	µg/kg	141.76	3.0E+02	4.7E-01	1.6E+03	9.1E-02
100-D-31:5_Overburden	non-Rad	Selenium	7782-49-2	µg/kg	1728.33	2.0E+03	8.6E-01	1.4E+03	**1.2E+00**
100-D-31:5_Shallow	non-Rad	Boron	7440-42-8	µg/kg	10483.76	2.9E+04	3.7E-01	3.2E+04	3.3E-01
100-D-31:5_Shallow	non-Rad	Mercury	7439-97-6	µg/kg	240.00	3.0E+02	8.0E-01	1.6E+03	1.5E-01
100-D-31:5_Shallow	non-Rad	Selenium	7782-49-2	µg/kg	1500.00	2.0E+03	7.4E-01	1.4E+03	**1.1E+00**
100-D-31:5_Shallow	non-Rad	Zinc	7440-66-6	µg/kg	89616.66	6.2E+05	1.4E-01	8.6E+05	1.1E-01
100-D-31:6_Overburden	non-Rad	Boron	7440-42-8	µg/kg	5998.26	2.9E+04	2.1E-01	3.2E+04	1.9E-01
100-D-31:6_Overburden	non-Rad	Mercury	7439-97-6	µg/kg	870.00	3.0E+02	**2.9E+00**	1.6E+03	5.6E-01
100-D-31:6_Shallow	non-Rad	Boron	7440-42-8	µg/kg	5859.75	2.9E+04	2.1E-01	3.2E+04	1.8E-01
100-D-31:6_Shallow	non-Rad	Mercury	7439-97-6	µg/kg	576.97	3.0E+02	**1.9E+00**	1.6E+03	3.7E-01
100-D-31:8_Shallow_Focused_1	non-Rad	Vanadium	7440-62-2	µg/kg	94900.00	8.9E+04	**1.1E+00**	4.3E+04	**2.2E+00**
100-D-31:8_Shallow_Focused_2	non-Rad	Barium	7440-39-3	µg/kg	1570000.00	3.6E+05	**4.4E+00**	1.7E+06	9.3E-01
100-D-31:8_Shallow_Focused_2	non-Rad	Boron	7440-42-8	µg/kg	169000.00	2.9E+04	**5.9E+00**	3.2E+04	**5.3E+00**
100-D-31:8_Shallow_Focused_2	non-Rad	Mercury	7439-97-6	µg/kg	120.00	3.0E+02	4.0E-01	1.6E+03	7.7E-02
100-D-31:8_Shallow_Focused_2	non-Rad	Molybdenum	7439-98-7	µg/kg	2300.00	2.0E+03	**1.2E+00**	5.7E+03	4.0E-01
100-D-31:8_Shallow_Focused_2	non-Rad	Zinc	7440-66-6	µg/kg	83000.00	6.2E+05	1.3E-01	8.6E+05	9.7E-02
100-D-42, 100-D-43, 100-D-45_Shallow	non-Rad	Copper	7440-50-8	µg/kg	90383.94	5.8E+04	**1.6E+00**	1.9E+05	4.7E-01
100-D-47_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	85700.00	8.9E+04	9.6E-01	4.3E+04	**2.0E+00**
100-D-56:1_Overburden	non-Rad	Boron	7440-42-8	µg/kg	5633.33	2.9E+04	2.0E-01	3.2E+04	1.8E-01
100-D-56:1_Overburden	non-Rad	Selenium	7782-49-2	µg/kg	2100.00	2.0E+03	**1.0E+00**	1.4E+03	**1.5E+00**
100-D-56:1_Shallow	non-Rad	Selenium	7782-49-2	µg/kg	1700.00	2.0E+03	8.4E-01	1.4E+03	**1.2E+00**
100-D-56:2_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	29300.00	1.5E+05	2.0E-01	1.1E+05	2.7E-01
100-D-61_Shallow	non-Rad	Boron	7440-42-8	µg/kg	11172.22	2.9E+04	3.9E-01	3.2E+04	3.5E-01
100-D-61_Shallow	non-Rad	Selenium	7782-49-2	µg/kg	1040.28	2.0E+03	5.2E-01	1.4E+03	7.3E-01
100-D-7_Shallow_1	non-Rad	Selenium	7782-49-2	µg/kg	834.30	2.0E+03	4.1E-01	1.4E+03	5.8E-01
100-D-7_Staging pile area footprint	non-Rad	Mercury	7439-97-6	µg/kg	303.55	3.0E+02	**1.0E+00**	1.6E+03	2.0E-01
100-D-70_Shallow_Focused	non-Rad	Copper	7440-50-8	µg/kg	73900.00	5.8E+04	**1.3E+00**	1.9E+05	3.8E-01
100-D-70_Shallow_Focused	non-Rad	Zinc	7440-66-6	µg/kg	78800.00	6.2E+05	1.3E-01	8.6E+05	9.2E-02
100-D-82_Shallow_Focused	non-Rad	Lead	7439-92-1	µg/kg	134000.00	1.7E+06	7.9E-02	1.6E+05	8.6E-01
100-D-83:4_Shallow_Focused	non-Rad	Mercury	7439-97-6	µg/kg	950.00	3.0E+02	**3.2E+00**	1.6E+03	6.1E-01
100-D-84:1_Shallow_Focused	non-Rad	Mercury	7439-97-6	µg/kg	120.00	3.0E+02	4.0E-01	1.6E+03	7.7E-02
100-D-84:1_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	94400.00	8.9E+04	**1.1E+00**	4.3E+04	**2.2E+00**

Table H-11. Ecological PRG Comparisons for 100-D Area Waste Site Decision Units

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/ Invertebrate PRG	Hazard Quotient	Wildlife PRG	Hazard Quotient
100-D-87_Shallow_Focused	non-Rad	Zinc	7440-66-6	µg/kg	83600.00	6.2E+05	1.4E-01	8.6E+05	9.8E-02
100-D-88_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	104000.00	8.9E+04	**1.2E+00**	4.3E+04	**2.4E+00**
100-D-94_Shallow_Focused	non-Rad	Mercury	7439-97-6	µg/kg	580.00	3.0E+02	**1.9E+00**	1.6E+03	3.7E-01
116-D-8_Shallow	non-Rad	Lead	7439-92-1	µg/kg	41187.93	1.7E+06	2.4E-02	1.6E+05	2.6E-01
116-D-8_Shallow_Focused_2	non-Rad	Selenium	7782-49-2	µg/kg	1200.00	2.0E+03	5.9E-01	1.4E+03	8.4E-01
116-DR-5_Overburden	non-Rad	Zinc	7440-66-6	µg/kg	76416.54	6.2E+05	1.2E-01	8.6E+05	8.9E-02
116-DR-5_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	25435.76	1.5E+05	1.7E-01	1.1E+05	2.3E-01
116-DR-8_Overburden_3	non-Rad	Lithium	7439-93-2	µg/kg	27769.76	3.5E+04	7.9E-01	1.7E+06	1.7E-02
116-DR-8_Overburden_3	non-Rad	Silver	7440-22-4	µg/kg	2200.00	3.0E+03	7.4E-01	9.8E+05	2.2E-03
116-DR-8_Overburden_3	non-Rad	Zinc	7440-66-6	µg/kg	72845.69	6.2E+05	1.2E-01	8.6E+05	8.5E-02
116-DR-8_Shallow	non-Rad	Lithium	7439-93-2	µg/kg	70443.73	3.5E+04	**2.0E+00**	1.7E+06	4.2E-02
118-D-1_Shallow_Focused	non-Rad	Total_U_Isotopes	Total_U_Isotopes	µg/kg	5090.35	1.0E+05	5.1E-02	2.2E+04	1.3E-01
118-D-4_Shallow_Focused	non-Rad	Cadmium	7440-43-9	µg/kg	4660.00	9.8E+03	4.7E-01	2.9E+04	1.6E-01
118-D-4_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	48100.00	1.5E+05	3.2E-01	1.1E+05	4.4E-01
118-D-4_Shallow_Focused	non-Rad	Vanadium	7440-62-2	µg/kg	92400.00	8.9E+04	**1.0E+00**	4.3E+04	**2.1E+00**
118-D-6:4_Shallow_2	non-Rad	Mercury	7439-97-6	µg/kg	1200.00	3.0E+02	**4.0E+00**	1.6E+03	7.7E-01
118-DR-2:2_Shallow	non-Rad	Mercury	7439-97-6	µg/kg	164.29	3.0E+02	5.5E-01	1.6E+03	1.1E-01
120-D-2_Shallow	non-Rad	Mercury	7439-97-6	µg/kg	111.00	3.0E+02	3.7E-01	1.6E+03	7.1E-02
126-D-2_Shallow_Focused	non-Rad	Boron	7440-42-8	µg/kg	7900.00	2.9E+04	2.8E-01	3.2E+04	2.5E-01
126-D-2_Shallow_Focused	non-Rad	Lead	7439-92-1	µg/kg	72000.00	1.7E+06	4.2E-02	1.6E+05	4.6E-01
128-D-2_Shallow_1	non-Rad	Selenium	7782-49-2	µg/kg	1100.00	2.0E+03	5.5E-01	1.4E+03	7.7E-01
132-D-1_Shallow	non-Rad	Mercury	7439-97-6	µg/kg	1000.00	3.0E+02	**3.3E+00**	1.6E+03	6.4E-01
132-D-1_Shallow	non-Rad	Selenium	7782-49-2	µg/kg	860.00	2.0E+03	4.3E-01	1.4E+03	6.0E-01
132-D-1_Staging Pile Area Footprint	non-Rad	Mercury	7439-97-6	µg/kg	680.47	3.0E+02	**2.3E+00**	1.6E+03	4.4E-01
1607-D2-2_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	19771.25	1.5E+05	1.3E-01	1.1E+05	1.8E-01
1607-D2-2_Shallow	non-Rad	Mercury	7439-97-6	µg/kg	483.64	3.0E+02	**1.6E+00**	1.6E+03	3.1E-01
1607-D2-2_Shallow	non-Rad	Silver	7440-22-4	µg/kg	11800.00	3.0E+03	**4.0E+00**	9.8E+05	1.2E-02
1607-D2-2_Shallow	non-Rad	Zinc	7440-66-6	µg/kg	91971.22	6.2E+05	1.5E-01	8.6E+05	1.1E-01
1607-D5_Shallow	non-Rad	Barium	7440-39-3	µg/kg	775391.03	3.6E+05	**2.2E+00**	1.7E+06	4.6E-01
1607-D5_Shallow	non-Rad	Boron	7440-42-8	µg/kg	69503.46	2.9E+04	**2.4E+00**	3.2E+04	**2.2E+00**
1607-D5_Shallow	non-Rad	Lead	7439-92-1	µg/kg	106537.32	1.7E+06	6.3E-02	1.6E+05	6.8E-01
628-3_Shallow	non-Rad	Mercury	7439-97-6	µg/kg	164.87	3.0E+02	5.5E-01	1.6E+03	1.1E-01
628-3_Staging Pile Area_2	non-Rad	Mercury	7439-97-6	µg/kg	113.28	3.0E+02	3.8E-01	1.6E+03	7.3E-02
628-3_Staging Pile Area_3	non-Rad	Chromium	7440-47-3	µg/kg	41154.50	1.5E+05	2.8E-01	1.1E+05	3.8E-01

Notes: All data represent detected concentrations of the chemicals.

Exposure Point Concentrations greater than PRG are in bold font and highlighted yellow.

EPC = Exposure Point Concentration

PRG = Preliminary Remediation Goal

µg/kg = Microgram per kilogram

Table H-12. Ecological PRG Comparisons for 100-H Area Waste Site Decision Units

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/ Invertebrate PRG	Hazard Quotient	Wildlife PRG	Hazard Quotient
100-H-21_Overburden	non-Rad	Arsenic	7440-38-2	µg/kg	11453.00	1.3E+05	9.0E-02	1.3E+05	9.0E-02
100-H-21_Overburden	non-Rad	Lead	7439-92-1	µg/kg	36425.51	1.7E+06	2.1E-02	1.6E+05	2.3E-01
100-H-21_Shallow	non-Rad	Arsenic	7440-38-2	µg/kg	13300.72	1.3E+05	1.0E-01	1.3E+05	1.1E-01
100-H-21_Shallow	non-Rad	Lead	7439-92-1	µg/kg	40131.71	1.7E+06	2.4E-02	1.6E+05	2.6E-01
100-H-28:1_Shallow_Focused	non-Rad	Barium	7440-39-3	µg/kg	540000.00	3.6E+05	**1.5E+00**	1.7E+06	3.2E-01
100-H-28:1_Shallow_Focused	non-Rad	Boron	7440-42-8	µg/kg	66400.00	2.9E+04	**2.3E+00**	3.2E+04	**2.1E+00**
100-H-3_Shallow	non-Rad	Arsenic	7440-38-2	µg/kg	14689.20	1.3E+05	1.2E-01	1.3E+05	1.2E-01
100-H-3_Shallow	non-Rad	Boron	7440-42-8	µg/kg	4683.82	2.9E+04	1.6E-01	3.2E+04	1.5E-01
100-H-3_Shallow	non-Rad	Lead	7439-92-1	µg/kg	47556.52	1.7E+06	2.8E-02	1.6E+05	3.1E-01
100-H-3_Shallow	non-Rad	Mercury	7439-97-6	µg/kg	257.17	3.0E+02	8.6E-01	1.6E+03	1.7E-01
100-H-35_Shallow_Focused_1	non-Rad	Chromium	7440-47-3	µg/kg	20700.00	1.5E+05	1.4E-01	1.1E+05	1.9E-01
100-H-35_Shallow_Focused_2	non-Rad	Chromium	7440-47-3	µg/kg	20900.00	1.5E+05	1.4E-01	1.1E+05	1.9E-01
100-H-35_Shallow_Focused_2	non-Rad	Mercury	7439-97-6	µg/kg	102.00	3.0E+02	3.4E-01	1.6E+03	6.5E-02
100-H-35_Shallow_Focused_3	non-Rad	Arsenic	7440-38-2	µg/kg	18500.00	1.3E+05	1.5E-01	1.3E+05	1.5E-01
100-H-35_Shallow_Focused_3	non-Rad	Zinc	7440-66-6	µg/kg	94200.00	6.2E+05	1.5E-01	8.6E+05	1.1E-01
100-H-37_Shallow_Focused	non-Rad	Arsenic	7440-38-2	µg/kg	13000.00	1.3E+05	1.0E-01	1.3E+05	1.0E-01
100-H-37_Shallow_Focused	non-Rad	Lead	7439-92-1	µg/kg	54000.00	1.7E+06	3.2E-02	1.6E+05	3.5E-01
100-H-4_Shallow	non-Rad	Mercury	7439-97-6	µg/kg	408.00	3.0E+02	**1.4E+00**	1.6E+03	2.6E-01
100-H-4_Shallow_Focused	non-Rad	Boron	7440-42-8	µg/kg	19400.00	2.9E+04	6.8E-01	3.2E+04	6.1E-01
100-H-4_Shallow_Focused	non-Rad	Uranium	7440-61-1	µg/kg	10100.00	1.0E+05	1.0E-01	2.2E+04	2.5E-01
100-H-40_Shallow_Focused	non-Rad	Zinc	7440-66-6	µg/kg	83400.00	6.2E+05	1.3E-01	8.6E+05	9.7E-02
100-H-49:2_Shallow_Focused	non-Rad	Boron	7440-42-8	µg/kg	5660.00	2.9E+04	2.0E-01	3.2E+04	1.8E-01
100-H-49:2_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	18800.00	1.5E+05	1.3E-01	1.1E+05	1.7E-01
100-H-49:2_Shallow_Focused	non-Rad	Lead	7439-92-1	µg/kg	46200.00	1.7E+06	2.7E-02	1.6E+05	3.0E-01
100-H-49:2_Shallow_Focused	non-Rad	Zinc	7440-66-6	µg/kg	96700.00	6.2E+05	1.6E-01	8.6E+05	1.1E-01
100-H-51:4_Shallow_Focused	non-Rad	Zinc	7440-66-6	µg/kg	79100.00	6.2E+05	1.3E-01	8.6E+05	9.2E-02
100-H-51:5_Shallow_Focused	non-Rad	Boron	7440-42-8	µg/kg	26300.00	2.9E+04	9.2E-01	3.2E+04	8.2E-01
100-H-53_Shallow_Focused	non-Rad	Lead	7439-92-1	µg/kg	35900.00	1.7E+06	2.1E-02	1.6E+05	2.3E-01
100-H-53_Shallow_Focused	non-Rad	Molybdenum	7439-98-7	µg/kg	3840.00	2.0E+03	**1.9E+00**	5.7E+03	6.7E-01
100-H-53_Shallow_Focused	non-Rad	Zinc	7440-66-6	µg/kg	79900.00	6.2E+05	1.3E-01	8.6E+05	9.3E-02
100-H-8_Shallow_Focused	non-Rad	Lead	7439-92-1	µg/kg	46800.00	1.7E+06	2.8E-02	1.6E+05	3.0E-01
100-H-8_Shallow_Focused	non-Rad	Mercury	7439-97-6	µg/kg	310.00	3.0E+02	**1.0E+00**	1.6E+03	2.0E-01
116-H-5_Staging Pile Area Footprint	non-Rad	Arsenic	7440-38-2	µg/kg	10279.99	1.3E+05	8.0E-02	1.3E+05	8.1E-02
116-H-5_Staging Pile Area Footprint	non-Rad	Lead	7439-92-1	µg/kg	45682.12	1.7E+06	2.7E-02	1.6E+05	2.9E-01
116-H-7_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	19655.57	1.5E+05	1.3E-01	1.1E+05	1.8E-01
118-H-1:1_Overburden	non-Rad	Boron	7440-42-8	µg/kg	10531.96	2.9E+04	3.7E-01	3.2E+04	3.3E-01
118-H-1:1_Shallow_1	non-Rad	Selenium	7782-49-2	µg/kg	1000.00	2.0E+03	5.0E-01	1.4E+03	7.0E-01
118-H-1:1_Shallow_Focused	non-Rad	Boron	7440-42-8	µg/kg	4160.00	2.9E+04	1.5E-01	3.2E+04	1.3E-01
118-H-1:1_Shallow_Focused	non-Rad	Chromium	7440-47-3	µg/kg	22000.00	1.5E+05	1.5E-01	1.1E+05	2.0E-01
118-H-1:1_Shallow_Focused	non-Rad	Mercury	7439-97-6	µg/kg	202.00	3.0E+02	6.7E-01	1.6E+03	1.3E-01
118-H-3_Shallow_1	non-Rad	Arsenic	7440-38-2	µg/kg	15852.07	1.3E+05	1.2E-01	1.3E+05	1.3E-01
118-H-3_Shallow_1	non-Rad	Lead	7439-92-1	µg/kg	57642.19	1.7E+06	3.4E-02	1.6E+05	3.7E-01
118-H-3_Shallow_1	non-Rad	Zinc	7440-66-6	µg/kg	132913.41	6.2E+05	2.1E-01	8.6E+05	1.6E-01
118-H-4_Staging Pile Area	non-Rad	Zinc	7440-66-6	µg/kg	72798.99	6.2E+05	1.2E-01	8.6E+05	8.5E-02
118-H-5_Shallow	non-Rad	Boron	7440-42-8	µg/kg	6246.49	2.9E+04	2.2E-01	3.2E+04	2.0E-01
118-H-6:5_Shallow_1	non-Rad	Arsenic	7440-38-2	µg/kg	39808.79	1.3E+05	3.1E-01	1.3E+05	3.1E-01
118-H-6:5_Shallow_1	non-Rad	Lead	7439-92-1	µg/kg	171631.51	1.7E+06	1.0E-01	1.6E+05	**1.1E+00**
118-H-6:5_Shallow_2	non-Rad	Boron	7440-42-8	µg/kg	12189.72	2.9E+04	4.3E-01	3.2E+04	3.8E-01

Table H-12. Ecological PRG Comparisons for 100-H Area Waste Site Decision Units

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/ Invertebrate PRG	Hazard Quotient	Wildlife PRG	Hazard Quotient
118-H-6:5_Shallow_2	non-Rad	Mercury	7439-97-6	µg/kg	166.93	3.0E+02	5.6E-01	1.6E+03	1.1E-01
118-H-6:5_Shallow_Focused	non-Rad	Arsenic	7440-38-2	µg/kg	27000.00	1.3E+05	2.1E-01	1.3E+05	2.1E-01
118-H-6:5_Shallow_Focused	non-Rad	Lead	7439-92-1	µg/kg	114000.00	1.7E+06	6.7E-02	1.6E+05	7.3E-01
128-H-1_Overburden	non-Rad	Arsenic	7440-38-2	µg/kg	40542.13	1.3E+05	3.2E-01	1.3E+05	3.2E-01
128-H-1_Overburden	non-Rad	Lead	7439-92-1	µg/kg	253829.55	1.7E+06	1.5E-01	1.6E+05	**1.6E+00**
128-H-1_Shallow_3	non-Rad	Arsenic	7440-38-2	µg/kg	10641.93	1.3E+05	8.3E-02	1.3E+05	8.4E-02
128-H-1_Shallow_3	non-Rad	Boron	7440-42-8	µg/kg	4921.60	2.9E+04	1.7E-01	3.2E+04	1.5E-01
128-H-1_Shallow_3	non-Rad	Lead	7439-92-1	µg/kg	65619.57	1.7E+06	3.9E-02	1.6E+05	4.2E-01
128-H-1_Shallow_4	non-Rad	Boron	7440-42-8	µg/kg	4462.05	2.9E+04	1.6E-01	3.2E+04	1.4E-01
128-H-1_Shallow_4	non-Rad	Lead	7439-92-1	µg/kg	44535.62	1.7E+06	2.6E-02	1.6E+05	2.9E-01
128-H-1_Shallow_4	non-Rad	Mercury	7439-97-6	µg/kg	1021.50	3.0E+02	**3.4E+00**	1.6E+03	6.6E-01
128-H-1_Staging pile area footprint_2	non-Rad	Arsenic	7440-38-2	µg/kg	54141.64	1.3E+05	4.2E-01	1.3E+05	4.3E-01
128-H-1_Staging pile area footprint_2	non-Rad	Lead	7439-92-1	µg/kg	124843.14	1.7E+06	7.3E-02	1.6E+05	8.0E-01
128-H-2_Shallow_Focused	non-Rad	Selenium	7782-49-2	µg/kg	1200.00	2.0E+03	5.9E-01	1.4E+03	8.4E-01
128-H-3_Shallow_Focused	non-Rad	Arsenic	7440-38-2	µg/kg	11000.00	1.3E+05	8.6E-02	1.3E+05	8.7E-02
128-H-3_Shallow_Focused	non-Rad	Lead	7439-92-1	µg/kg	94100.00	1.7E+06	5.5E-02	1.6E+05	6.0E-01
1607-H1_Overburden	non-Rad	Arsenic	7440-38-2	µg/kg	14321.10	1.3E+05	1.1E-01	1.3E+05	1.1E-01
1607-H1_Overburden	non-Rad	Lead	7439-92-1	µg/kg	60452.36	1.7E+06	3.6E-02	1.6E+05	3.9E-01
1607-H1_Overburden	non-Rad	Selenium	7782-49-2	µg/kg	978.65	2.0E+03	4.8E-01	1.4E+03	6.8E-01
1607-H2_Overburden	non-Rad	Arsenic	7440-38-2	µg/kg	15800.00	1.3E+05	1.2E-01	1.3E+05	1.2E-01
1607-H2_Overburden	non-Rad	Lead	7439-92-1	µg/kg	54900.00	1.7E+06	3.2E-02	1.6E+05	3.5E-01
1607-H2_Shallow	non-Rad	Chromium	7440-47-3	µg/kg	204000.00	1.5E+05	**1.4E+00**	1.1E+05	**1.9E+00**
1607-H2_Shallow	non-Rad	Lead	7439-92-1	µg/kg	37629.23	1.7E+06	2.2E-02	1.6E+05	2.4E-01
1607-H2_Shallow	non-Rad	Mercury	7439-97-6	µg/kg	2591.37	3.0E+02	**8.6E+00**	1.6E+03	**1.7E+00**
1607-H3_Overburden	non-Rad	Boron	7440-42-8	µg/kg	4725.31	2.9E+04	1.7E-01	3.2E+04	1.5E-01
1607-H3_Overburden	non-Rad	Chromium	7440-47-3	µg/kg	49817.68	1.5E+05	3.3E-01	1.1E+05	4.6E-01
1607-H4_Shallow	non-Rad	Lead	7439-92-1	µg/kg	44100.00	1.7E+06	2.6E-02	1.6E+05	2.8E-01
600-151_Shallow_1	non-Rad	Arsenic	7440-38-2	µg/kg	31816.35	1.3E+05	2.5E-01	1.3E+05	2.5E-01
600-151_Shallow_1	non-Rad	Boron	7440-42-8	µg/kg	4858.61	2.9E+04	1.7E-01	3.2E+04	1.5E-01
600-151_Shallow_1	non-Rad	Lead	7439-92-1	µg/kg	126983.64	1.7E+06	7.5E-02	1.6E+05	8.1E-01
600-151_Shallow_1	non-Rad	Selenium	7782-49-2	µg/kg	940.00	2.0E+03	4.7E-01	1.4E+03	6.6E-01
600-151_Shallow_2	non-Rad	Arsenic	7440-38-2	µg/kg	59605.68	1.3E+05	4.7E-01	1.3E+05	4.7E-01
600-151_Shallow_2	non-Rad	Lead	7439-92-1	µg/kg	266765.08	1.7E+06	1.6E-01	1.6E+05	**1.7E+00**
600-151_Shallow_3	non-Rad	Arsenic	7440-38-2	µg/kg	53960.69	1.3E+05	4.2E-01	1.3E+05	4.3E-01
600-151_Shallow_3	non-Rad	Lead	7439-92-1	µg/kg	276282.82	1.7E+06	1.6E-01	1.6E+05	**1.8E+00**

Notes: All data represent detected concentrations of the chemicals.

Exposure Point Concentrations greater than PRG are in bold font and highlighted yellow.

EPC = Exposure Point Concentration

PRG = Preliminary Remediation Goal

µg/kg = Microgram per kilogram

Table H-13. Wildlife Exposure to Inorganic Chemicals through Drinking from Seeps in the 100-D Riparian Area

Analyte Name	Seeps EPC (mg/L)	Mammal LOAEL TRV (mg/kg/d)	Bird LOAEL TRV (mg/kg/d)	Elk Drinking Water Dose (mg/kg-BW/d)	Elk LOAEL HQ	Badger Drinking Water Dose (mg/kg-BW/d)	Badger LOAEL HQ	Bat Drinking Water Dose (mg/kg-BW/d)	Bat LOAEL HQ	Killdeer Drinking Water Dose (mg/kg-BW/d)	Killdeer LOAEL HQ	Swallow Drinking Water Dose (mg/kg-BW/d)	Swallow LOAEL HQ	Quail Drinking Water Dose (mg/kg-BW/d)	Quail LOAEL HQ	Meadowlark Drinking Water Dose (mg/kg-BW/d)	Meadowlark LOAEL HQ	Hawk Drinking Water Dose (mg/kg-BW/d)	Hawk LOAEL HQ
Unfiltered Samples																			
Aluminum	2.10E+01	1.93E+01	1.10E+02	9.17E-01	**4.75E-02**	1.27E+00	**6.60E-02**	1.64E+00	**8.52E-02**	2.18E+00	**1.99E-02**	3.19E+00	**2.91E-02**	1.64E+00	**1.49E-02**	9.31E-01	8.49E-03	8.81E-01	8.03E-03
Antimony	2.03E-04	5.90E-01	NA	8.84E-06	1.50E-05	1.23E-05	2.08E-05	1.58E-05	2.69E-05	2.10E-05	NA	3.07E-05	NA	1.58E-05	NA	8.98E-06	NA	8.49E-06	NA
Arsenic	1.44E-03	1.66E+00	4.03E+01	6.30E-05	3.79E-05	8.75E-05	5.27E-05	1.13E-04	6.80E-05	1.50E-04	3.72E-06	2.19E-04	5.43E-06	1.12E-04	2.79E-06	6.40E-05	1.59E-06	6.05E-05	1.50E-06
Barium	1.14E-01	7.50E+01	4.17E+01	4.98E-03	6.64E-05	6.92E-03	9.22E-05	8.92E-03	1.19E-04	1.18E-02	2.84E-04	1.73E-02	4.15E-04	8.89E-03	2.13E-04	5.06E-03	1.21E-04	4.78E-03	1.15E-04
Beryllium	3.10E-04	5.32E-01	NA	1.35E-05	2.54E-05	1.88E-05	3.53E-05	2.43E-05	4.56E-05	3.22E-05	NA	4.70E-05	NA	2.42E-05	NA	1.37E-05	NA	1.30E-05	NA
Bromide	1.00E-01	NA	NA	4.36E-03	NA	6.06E-03	NA	7.82E-03	NA	1.04E-02	NA	1.52E-02	NA	7.79E-03	NA	4.43E-03	NA	4.19E-03	NA
Cadmium	3.27E-04	1.00E+01	1.47E+00	1.43E-05	1.43E-06	1.98E-05	1.98E-06	2.56E-05	2.56E-06	3.39E-05	2.31E-05	4.96E-05	3.37E-05	2.55E-05	1.73E-05	1.45E-05	9.86E-06	1.37E-05	9.32E-06
Calculated Total Uranium	1.77E-03	6.13E+00	1.60E+01	7.70E-05	1.26E-05	1.07E-04	1.75E-05	1.38E-04	2.25E-05	1.83E-04	1.15E-05	2.68E-04	1.67E-05	1.38E-04	8.60E-06	7.83E-05	4.89E-06	7.40E-05	4.63E-06
Chloride	1.33E+01	NA	NA	5.79E-01	NA	8.05E-01	NA	1.04E+00	NA	1.38E+00	NA	2.01E+00	NA	1.03E+00	NA	5.88E-01	NA	5.56E-01	NA
Chloroform	4.10E-03	4.10E+01	3.44E+01	1.79E-04	4.36E-06	2.49E-04	6.06E-06	3.21E-04	7.82E-06	4.25E-04	1.24E-05	6.22E-04	1.81E-05	3.19E-04	9.29E-06	1.82E-04	5.28E-06	1.72E-04	5.00E-06
Chromium	1.80E-01	9.62E+00	2.78E+00	7.87E-03	8.18E-04	1.09E-02	1.14E-03	1.41E-02	1.47E-03	1.87E-02	6.73E-03	2.74E-02	9.85E-03	1.41E-02	5.06E-03	8.00E-03	2.88E-03	7.56E-03	2.72E-03
Cobalt	9.60E-03	1.09E+01	7.80E+00	4.19E-04	3.84E-05	5.82E-04	5.34E-05	7.51E-04	6.89E-05	9.96E-04	1.28E-04	1.46E-03	1.87E-04	7.48E-04	9.59E-05	4.26E-04	5.46E-05	4.02E-04	5.16E-05
Copper	8.89E-03	9.34E+00	1.21E+01	3.88E-04	4.15E-05	5.39E-04	5.77E-05	6.96E-04	7.45E-05	9.23E-04	7.63E-05	1.35E-03	1.12E-04	6.93E-04	5.73E-05	3.94E-04	3.26E-05	3.73E-04	3.08E-05
Fluoride	3.33E-01	5.28E+01	3.20E+01	1.45E-02	2.75E-04	2.02E-02	3.82E-04	2.60E-02	4.93E-04	3.45E-02	1.08E-03	5.05E-02	1.58E-03	2.59E-02	8.10E-04	1.48E-02	4.61E-04	1.39E-02	4.36E-04
Hexavalent Chromium	7.02E-02	4.00E+01	NA	3.06E-03	7.66E-05	4.26E-03	1.06E-04	5.49E-03	1.37E-04	7.28E-03	NA	1.07E-02	NA	5.47E-03	NA	3.11E-03	NA	2.94E-03	NA
Iron	2.03E+01	NA	NA	8.86E-01	NA	1.23E+00	NA	1.59E+00	NA	2.11E+00	NA	3.08E+00	NA	1.58E+00	NA	9.00E-01	NA	8.51E-01	NA
Lead	4.74E-03	8.90E+00	3.26E+00	2.07E-04	2.32E-05	2.87E-04	3.23E-05	3.70E-04	4.16E-05	4.91E-04	1.51E-04	7.19E-04	2.20E-04	3.69E-04	1.13E-04	2.10E-04	6.44E-05	1.99E-04	6.09E-05
Manganese	9.32E-01	7.10E+01	3.48E+02	4.07E-02	5.73E-04	5.65E-02	7.96E-04	7.29E-02	1.03E-03	9.67E-02	2.78E-04	1.41E-01	4.06E-04	7.26E-02	2.09E-04	4.13E-02	1.19E-04	3.91E-02	1.12E-04
Mercury	1.90E-05	1.60E-01	3.70E-01	8.30E-07	5.19E-06	1.15E-06	7.21E-06	1.49E-06	9.31E-06	1.97E-06	5.34E-06	2.89E-06	7.81E-06	1.48E-06	4.01E-06	8.44E-07	2.28E-06	7.98E-07	2.16E-06
Methylene chloride	1.20E-03	5.00E+01	3.44E+01	5.23E-05	1.05E-06	7.27E-05	1.45E-06	9.39E-05	1.88E-06	1.25E-04	3.62E-06	1.82E-04	5.29E-06	9.35E-05	2.72E-06	5.32E-05	1.55E-06	5.03E-05	1.46E-06
Nickel	9.28E-03	3.40E+00	1.15E+01	4.05E-04	1.19E-04	5.63E-04	1.66E-04	7.26E-04	2.14E-04	9.63E-04	8.37E-05	1.41E-03	1.22E-04	7.23E-04	6.29E-05	4.11E-04	3.58E-05	3.89E-04	3.38E-05
Nitrogen in Nitrate	1.81E+02	1.13E+03	NA	7.89E+00	6.99E-03	1.10E+01	9.71E-03	1.42E+01	**1.25E-02**	1.88E+01	NA	2.75E+01	NA	1.41E+01	NA	8.02E+00	NA	7.58E+00	NA
Selenium	1.40E-03	2.15E-01	5.79E-01	6.11E-05	2.84E-04	8.49E-05	3.95E-04	1.10E-04	5.09E-04	1.45E-04	2.51E-04	2.12E-04	3.67E-04	1.09E-04	1.88E-04	6.21E-05	1.07E-04	5.87E-05	1.01E-04
Silicon	2.08E-01	NA	NA	9.07E-03	NA	1.26E-02	NA	1.63E-02	NA	2.16E-02	NA	3.16E-02	NA	1.62E-02	NA	9.22E-03	NA	8.72E-03	NA
Silver	4.16E-05	6.02E+01	2.02E+01	1.81E-06	3.01E-08	2.52E-06	4.18E-08	3.25E-06	5.40E-08	4.31E-06	2.13E-07	6.31E-06	3.12E-07	3.24E-06	1.60E-07	1.84E-06	9.12E-08	1.74E-06	8.62E-08
Strontium	2.26E-01	2.63E+02	NA	9.85E-03	3.74E-05	1.37E-02	5.20E-05	1.77E-02	6.71E-05	2.34E-02	NA	3.43E-02	NA	1.76E-02	NA	1.00E-02	NA	9.46E-03	NA
Sulfate	6.22E+01	NA	NA	2.71E+00	NA	3.77E+00	NA	4.87E+00	NA	6.45E+00	NA	9.44E+00	NA	4.85E+00	NA	2.76E+00	NA	2.61E+00	NA
Thallium	7.48E-05	7.50E-02	NA	3.26E-06	4.35E-05	4.54E-06	6.05E-05	5.85E-06	7.80E-05	7.76E-06	NA	1.14E-05	NA	5.83E-06	NA	3.32E-06	NA	3.14E-06	NA
Vanadium	2.08E-02	8.31E+00	6.88E-01	9.08E-04	1.09E-04	1.26E-03	1.52E-04	1.63E-03	1.96E-04	2.16E-03	3.14E-03	3.16E-03	4.59E-03	1.62E-03	2.36E-03	9.23E-04	1.34E-03	8.73E-04	1.27E-03
Zinc	1.29E-01	7.59E+01	6.65E+01	5.65E-03	7.44E-05	7.85E-03	1.03E-04	1.01E-02	1.33E-04	1.34E-02	2.02E-04	1.96E-02	2.95E-04	1.01E-02	1.52E-04	5.74E-03	8.63E-05	5.42E-03	8.16E-05
Filtered Samples																			
Antimony	2.48E-04	5.90E-01	NA	1.08E-05	1.83E-05	1.50E-05	2.55E-05	1.94E-05	3.29E-05	2.57E-05	NA	3.76E-05	NA	1.93E-05	NA	1.10E-05	NA	1.04E-05	NA
Arsenic	8.92E-04	1.66E+00	4.03E+01	3.89E-05	2.34E-05	5.41E-05	3.26E-05	6.98E-05	4.20E-05	9.25E-05	2.30E-06	1.35E-04	3.36E-06	6.95E-05	1.72E-06	3.95E-05	9.81E-07	3.74E-05	9.28E-07
Barium	7.87E-02	7.50E+01	4.17E+01	3.43E-03	4.58E-05	4.77E-03	6.36E-05	6.16E-03	8.21E-05	8.17E-03	1.96E-04	1.19E-02	2.86E-04	6.13E-03	1.47E-04	3.49E-03	8.37E-05	3.30E-03	7.91E-05
Beryllium	1.18E-05	5.32E-01	NA	5.15E-07	9.68E-07	7.15E-07	1.34E-06	9.23E-07	1.73E-06	1.22E-06	NA	1.79E-06	NA	9.20E-07	NA	5.23E-07	NA	4.95E-07	NA
Cadmium	5.40E-05	1.00E+01	1.47E+00	2.36E-06	2.36E-07	3.27E-06	3.27E-07	4.22E-06	4.22E-07	5.60E-06	3.81E-06	8.19E-06	5.57E-06	4.21E-06	2.86E-06	2.39E-06	1.63E-06	2.26E-06	1.54E-06
Chromium	9.79E-02	9.62E+00	2.78E+00	4.27E-03	4.44E-04	5.93E-03	6.17E-04	7.65E-03	7.96E-04	1.02E-02	3.65E-03	1.48E-02	5.34E-03	7.63E-03	2.74E-03	4.34E-03	1.56E-03	4.10E-03	1.48E-03
Copper	3.05E-03	9.34E+00	1.21E+01	1.33E-04	1.43E-05	1.85E-04	1.98E-05	2.39E-04	2.56E-05	3.17E-04	2.62E-05	4.63E-04	3.83E-05	2.38E-04	1.96E-05	1.35E-04	1.12E-05	1.28E-04	1.06E-05
Iron	1.82E-02	NA	NA	7.94E-04	NA	1.10E-03	NA	1.42E-03	NA	1.89E-03	NA	2.76E-03	NA	1.42E-03	NA	8.07E-04	NA	7.63E-04	NA

Table H-13. Wildlife Exposure to Inorganic Chemicals through Drinking from Seeps in the 100-D Riparian Area

Analyte Name	Seeps EPC (mg/L)	Mammal LOAEL TRV (mg/kg/d)	Bird LOAEL TRV (mg/kg/d)	Elk Drinking Water Dose (mg/kg-BW/d)	Elk LOAEL HQ	Badger Drinking Water Dose (mg/kg-BW/d)	Badger LOAEL HQ	Bat Drinking Water Dose (mg/kg-BW/d)	Bat LOAEL HQ	Killdeer Drinking Water Dose (mg/kg-BW/d)	Killdeer LOAEL HQ	Swallow Drinking Water Dose (mg/kg-BW/d)	Swallow LOAEL HQ	Quail Drinking Water Dose (mg/kg-BW/d)	Quail LOAEL HQ	Meadowlark Drinking Water Dose (mg/kg-BW/d)	Meadowlark LOAEL HQ	Hawk Drinking Water Dose (mg/kg-BW/d)	Hawk LOAEL HQ
Lead	2.04E-04	8.90E+00	3.26E+00	8.90E-06	1.00E-06	1.24E-05	1.39E-06	1.60E-05	1.79E-06	2.12E-05	6.49E-06	3.10E-05	9.49E-06	1.59E-05	4.88E-06	9.04E-06	2.77E-06	8.55E-06	2.62E-06
Manganese	8.50E-03	7.10E+01	3.48E+02	3.71E-04	5.22E-06	5.15E-04	7.26E-06	6.65E-04	9.36E-06	8.82E-04	2.53E-06	1.29E-03	3.71E-06	6.62E-04	1.90E-06	3.77E-04	1.08E-06	3.56E-04	1.02E-06
Nickel	3.61E-03	3.40E+00	1.15E+01	1.57E-04	4.63E-05	2.19E-04	6.43E-05	2.82E-04	8.29E-05	3.74E-04	3.25E-05	5.47E-04	4.76E-05	2.81E-04	2.44E-05	1.60E-04	1.39E-05	1.51E-04	1.31E-05
Selenium	3.28E-04	2.15E-01	5.79E-01	1.43E-05	6.66E-05	1.99E-05	9.25E-05	2.57E-05	1.19E-04	3.40E-05	5.88E-05	4.98E-05	8.59E-05	2.56E-05	4.41E-05	1.45E-05	2.51E-05	1.37E-05	2.37E-05
Strontium	2.59E-01	2.63E+02	NA	1.13E-02	4.30E-05	1.57E-02	5.97E-05	2.03E-02	7.70E-05	2.69E-02	NA	3.93E-02	NA	2.02E-02	NA	1.15E-02	NA	1.09E-02	NA
Thallium	2.41E-05	7.50E-02	NA	1.05E-06	1.40E-05	1.46E-06	1.95E-05	1.89E-06	2.51E-05	2.50E-06	NA	3.66E-06	NA	1.88E-06	NA	1.07E-06	NA	1.01E-06	NA
Vanadium	1.80E-02	8.31E+00	6.88E-01	7.85E-04	9.45E-05	1.09E-03	1.31E-04	1.41E-03	1.69E-04	1.87E-03	2.71E-03	2.73E-03	3.97E-03	1.40E-03	2.04E-03	7.98E-04	1.16E-03	7.54E-04	1.10E-03
Zinc	1.51E-02	7.59E+01	6.65E+01	6.60E-04	8.69E-06	9.16E-04	1.21E-05	1.18E-03	1.56E-05	1.57E-03	2.36E-05	2.29E-03	3.45E-05	1.18E-03	1.77E-05	6.70E-04	1.01E-05	6.34E-04	9.53E-06

Notes:

Drinking water ingestion rate estimated using Calder and Braun, 1983

Calder and Braun (1983) regression equation format --> L water/kg body weight/day = a(kilograms body weight)^b/kg body weight

Group	*a*	*b*
all birds	0.059	0.67
all mammals	0.099	0.90

Body weight (kg) for: Elk =	204	assumed average weight of Rocky Mountain Elk (*Cervus canadensis*) cow (Red Orbit, 2012)
Badger =	7.6	median from multiple studies (Messick and Hornocker, 1981; Silva and Downing, 1995)
Little Brown Bat =	0.0103	assumed average weight (*Myotis lucifugus*) from Silva and Downing, 1995
Killdeer =	0.0756	median from multiple studies (Purdue and Haines, 1977; Stegeman, 1955; Jackson and Jackson, 2000; Dunning, 1993)
Swallow =	0.0239	mean adult weight (*Hirundo pyrrhonota*) during breeding (Brown and Brown, 1995)
California Quail =	0.18	median from multiple studies (Robel, 1969; Roseberry and Klimstra, 1971; Guthery et al., 1988)
Western Meadowlark =	0.995	median from multiple studies (Wiens and Rotenberry, 1980; Maher, 1979)
Red-tailed Hawk =	1.179	median from multiple studies (Craighead and Craighead,1956; Steenhof,1983; Springer and Osborne,1983)

	Elk	Badger	Bat	Killdeer	Swallow	California Quail	Western Meadowlark	Red-tailed Hawk
Drinking water ingestion rate (L/kg-bw-d) =	0.058	0.081	0.156	0.138	0.202	0.104	0.059	0.056
Area use factor (unitless) =	0.750	0.750	0.500	0.750	0.750	0.750	0.750	0.750

EPC = exposure point concentration

HQ = hazard quotient

LOAEL = lowest observed adverse effect level

mg/kg/d = milligrams of chemical per kilogram per day

mg/kg-bw/d = milligrams of chemical per kilogram bodyweight per day

mg/L = milligrams per liter

NA = not available

NOAEL = no observed adverse effect level

TRV = toxicological reference value

Table H-14. Wildlife Exposure to Inorganic Chemicals through Drinking from Seeps in the 100-H Riparian Area

Analyte Name	Seeps EPC (mg/L)	Mammal LOAEL TRV (mg/kg/d)	Bird LOAEL TRV (mg/kg/d)	Elk Drinking Water Dose (mg/kg-BW/d)	Elk LOAEL HQ	Badger Drinking Water Dose (mg/kg-BW/d)	Badger LOAEL HQ	Bat Drinking Water Dose (mg/kg-BW/d)	Bat LOAEL HQ	Killdeer Drinking Water Dose (mg/kg-BW/d)	Killdeer LOAEL HQ	Swallow Drinking Water Dose (mg/kg-BW/d)	Swallow LOAEL HQ	Quail Drinking Water Dose (mg/kg-BW/d)	Quail LOAEL HQ	Meadowlark Drinking Water Dose (mg/kg-BW/d)	Meadowlark LOAEL HQ	Hawk Drinking Water Dose (mg/kg-BW/d)	Hawk LOAEL HQ
Unfiltered samples																			
Aluminum	1.33E+00	1.93E+01	1.10E+02	5.79E-02	3.00E-03	8.04E-02	4.17E-03	1.04E-01	5.38E-03	1.38E-01	1.25E-03	2.01E-01	1.83E-03	1.03E-01	9.42E-04	5.88E-02	5.36E-04	5.56E-02	5.07E-04
Antimony	2.94E-04	5.90E-01	NA	1.28E-05	2.18E-05	1.78E-05	3.02E-05	2.30E-05	3.90E-05	3.05E-05	NA	4.46E-05	NA	2.29E-05	NA	1.30E-05	NA	1.23E-05	NA
Arsenic	5.65E-03	1.66E+00	4.03E+01	2.46E-04	1.48E-04	3.42E-04	2.06E-04	4.42E-04	2.66E-04	5.86E-04	1.45E-05	8.57E-04	2.13E-05	4.40E-04	1.09E-05	2.50E-04	6.21E-06	2.37E-04	5.87E-06
Barium	4.15E-02	7.50E+01	4.17E+01	1.81E-03	2.42E-05	2.52E-03	3.36E-05	3.25E-03	4.33E-05	4.31E-03	1.03E-04	6.30E-03	1.51E-04	3.24E-03	7.76E-05	1.84E-03	4.41E-05	1.74E-03	4.17E-05
Beryllium	2.30E-04	5.32E-01	NA	1.00E-05	1.88E-05	1.39E-05	2.62E-05	1.80E-05	3.38E-05	2.38E-05	NA	3.48E-05	NA	1.79E-05	NA	1.02E-05	NA	9.62E-06	NA
Cadmium	3.50E-03	1.00E+01	1.47E+00	1.53E-04	1.53E-05	2.12E-04	2.12E-05	2.74E-04	2.74E-05	3.63E-04	2.47E-04	5.31E-04	3.61E-04	2.73E-04	1.86E-04	1.55E-04	1.06E-04	1.47E-04	9.98E-05
Calculated Total Uranium	5.50E-03	6.13E+00	1.60E+01	2.40E-04	3.91E-05	3.33E-04	5.43E-05	4.30E-04	7.01E-05	5.70E-04	3.56E-05	8.34E-04	5.21E-05	4.28E-04	2.68E-05	2.44E-04	1.52E-05	2.30E-04	1.44E-05
Chloride	6.17E+00	NA	NA	2.69E-01	NA	3.74E-01	NA	4.83E-01	NA	6.41E-01	NA	9.37E-01	NA	4.81E-01	NA	2.74E-01	NA	2.59E-01	NA
Chloroform	1.40E-02	4.10E+01	3.44E+01	6.11E-04	1.49E-05	8.49E-04	2.07E-05	1.10E-03	2.67E-05	1.45E-03	4.22E-05	2.12E-03	6.17E-05	1.09E-03	3.17E-05	6.21E-04	1.80E-05	5.87E-04	1.71E-05
Chromium	2.64E-02	9.62E+00	2.78E+00	1.15E-03	1.20E-04	1.60E-03	1.66E-04	2.06E-03	2.14E-04	2.74E-03	9.84E-04	4.00E-03	1.44E-03	2.05E-03	7.39E-04	1.17E-03	4.20E-04	1.10E-03	3.97E-04
Copper	1.11E-02	9.34E+00	1.21E+01	4.86E-04	5.21E-05	6.76E-04	7.24E-05	8.72E-04	9.34E-05	1.16E-03	9.56E-05	1.69E-03	1.40E-04	8.69E-04	7.18E-05	4.94E-04	4.08E-05	4.67E-04	3.86E-05
Fluoride	3.26E-01	5.28E+01	3.20E+01	1.42E-02	2.70E-04	1.98E-02	3.75E-04	2.55E-02	4.83E-04	3.38E-02	1.06E-03	4.95E-02	1.55E-03	2.54E-02	7.94E-04	1.44E-02	4.51E-04	1.37E-02	4.27E-04
Iron	1.03E+00	NA	NA	4.49E-02	NA	6.24E-02	NA	8.05E-02	NA	1.07E-01	NA	1.56E-01	NA	8.02E-02	NA	4.56E-02	NA	4.31E-02	NA
Lead	6.60E-02	8.90E+00	3.26E+00	2.88E-03	3.24E-04	4.00E-03	4.50E-04	5.16E-03	5.80E-04	6.85E-03	2.10E-03	1.00E-02	3.07E-03	5.14E-03	1.58E-03	2.93E-03	8.97E-04	2.77E-03	8.48E-04
Manganese	4.87E-02	7.10E+01	3.48E+02	2.13E-03	2.99E-05	2.95E-03	4.16E-05	3.81E-03	5.37E-05	5.06E-03	1.45E-05	7.39E-03	2.12E-05	3.80E-03	1.09E-05	2.16E-03	6.21E-06	2.04E-03	5.87E-06
Mercury	4.07E-05	1.60E-01	3.70E-01	1.78E-06	1.11E-05	2.47E-06	1.54E-05	3.18E-06	1.99E-05	4.22E-06	1.14E-05	6.17E-06	1.67E-05	3.17E-06	8.57E-06	1.80E-06	4.88E-06	1.71E-06	4.61E-06
Methylene chloride	1.20E-03	5.00E+01	3.44E+01	5.23E-05	1.05E-06	7.27E-05	1.45E-06	9.39E-05	1.88E-06	1.25E-04	3.62E-06	1.82E-04	5.29E-06	9.35E-05	2.72E-06	5.32E-05	1.55E-06	5.03E-05	1.46E-06
Nickel	1.09E-02	3.40E+00	1.15E+01	4.76E-04	1.40E-04	6.61E-04	1.94E-04	8.53E-04	2.51E-04	1.13E-03	9.83E-05	1.65E-03	1.44E-04	8.49E-04	7.39E-05	4.83E-04	4.20E-05	4.57E-04	3.97E-05
Nitrogen in Nitrate	6.75E+03	1.13E+03	NA	2.94E+02	**2.61E-01**	4.09E+02	**3.62E-01**	5.28E+02	**4.67E-01**	7.00E+02	NA	1.02E+03	NA	5.26E+02	NA	2.99E+02	NA	2.83E+02	NA
Selenium	7.35E-04	2.15E-01	5.79E-01	3.21E-05	1.49E-04	4.46E-05	2.07E-04	5.75E-05	2.67E-04	7.63E-05	1.32E-04	1.12E-04	1.93E-04	5.73E-05	9.89E-05	3.26E-05	5.63E-05	3.08E-05	5.32E-05
Silver	2.86E-03	6.02E+01	2.02E+01	1.25E-04	2.07E-06	1.73E-04	2.88E-06	2.24E-04	3.72E-06	2.97E-04	1.47E-05	4.34E-04	2.15E-05	2.23E-04	1.10E-05	1.27E-04	6.28E-06	1.20E-04	5.94E-06
Strontium	1.54E-01	2.63E+02	NA	6.73E-03	2.56E-05	9.36E-03	3.56E-05	1.21E-02	4.59E-05	1.60E-02	NA	2.34E-02	NA	1.20E-02	NA	6.84E-03	NA	6.47E-03	NA
Sulfate	3.11E+01	NA	NA	1.35E+00	NA	1.88E+00	NA	2.43E+00	NA	3.22E+00	NA	4.71E+00	NA	2.42E+00	NA	1.38E+00	NA	1.30E+00	NA
Thallium	1.42E-04	7.50E-02	NA	6.18E-06	8.25E-05	8.59E-06	1.15E-04	1.11E-05	1.48E-04	1.47E-05	NA	2.15E-05	NA	1.10E-05	NA	6.28E-06	NA	5.94E-06	NA
Vanadium	6.00E-03	8.31E+00	6.88E-01	2.62E-04	3.15E-05	3.64E-04	4.38E-05	4.69E-04	5.65E-05	6.23E-04	9.05E-04	9.10E-04	1.32E-03	4.68E-04	6.80E-04	2.66E-04	3.87E-04	2.51E-04	3.65E-04

Table H-14. Wildlife Exposure to Inorganic Chemicals through Drinking from Seeps in the 100-H Riparian Area

Analyte Name	Seeps EPC (mg/L)	Mammal LOAEL TRV (mg/kg/d)	Bird LOAEL TRV (mg/kg/d)	Elk Drinking Water Dose (mg/kg-BW/d)	Elk LOAEL HQ	Badger Drinking Water Dose (mg/kg-BW/d)	Badger LOAEL HQ	Bat Drinking Water Dose (mg/kg-BW/d)	Bat LOAEL HQ	Killdeer Drinking Water Dose (mg/kg-BW/d)	Killdeer LOAEL HQ	Swallow Drinking Water Dose (mg/kg-BW/d)	Swallow LOAEL HQ	Quail Drinking Water Dose (mg/kg-BW/d)	Quail LOAEL HQ	Meadowlark Drinking Water Dose (mg/kg-BW/d)	Meadowlark LOAEL HQ	Hawk Drinking Water Dose (mg/kg-BW/d)	Hawk LOAEL HQ
Zinc	1.04E-01	7.59E+01	6.65E+01	4.52E-03	5.95E-05	6.28E-03	8.27E-05	8.10E-03	1.07E-04	1.07E-02	1.62E-04	1.57E-02	2.36E-04	8.07E-03	1.21E-04	4.59E-03	6.90E-05	4.34E-03	6.53E-05
Filtered samples																			
Antimony	2.60E-04	5.90E-01	NA	1.13E-05	1.92E-05	1.57E-05	2.67E-05	2.03E-05	3.44E-05	2.70E-05	NA	3.94E-05	NA	2.02E-05	NA	1.15E-05	NA	1.09E-05	NA
Arsenic	2.86E-03	1.66E+00	4.03E+01	1.25E-04	7.52E-05	1.73E-04	1.04E-04	2.24E-04	1.35E-04	2.97E-04	7.36E-06	4.34E-04	1.08E-05	2.23E-04	5.53E-06	1.27E-04	3.15E-06	1.20E-04	2.97E-06
Barium	2.75E-02	7.50E+01	4.17E+01	1.20E-03	1.60E-05	1.67E-03	2.22E-05	2.15E-03	2.87E-05	2.85E-03	6.85E-05	4.17E-03	1.00E-04	2.14E-03	5.14E-05	1.22E-03	2.92E-05	1.15E-03	2.77E-05
Cadmium	3.62E-05	1.00E+01	1.47E+00	1.58E-06	1.58E-07	2.20E-06	2.20E-07	2.83E-06	2.83E-07	3.76E-06	2.56E-06	5.50E-06	3.74E-06	2.82E-06	1.92E-06	1.61E-06	1.09E-06	1.52E-06	1.03E-06
Chromium	1.63E-02	9.62E+00	2.78E+00	7.13E-04	7.41E-05	9.90E-04	1.03E-04	1.28E-03	1.33E-04	1.70E-03	6.10E-04	2.48E-03	8.92E-04	1.27E-03	4.58E-04	7.24E-04	2.60E-04	6.85E-04	2.46E-04
Copper	5.11E-04	9.34E+00	1.21E+01	2.23E-05	2.39E-06	3.10E-05	3.32E-06	4.00E-05	4.28E-06	5.31E-05	4.38E-06	7.76E-05	6.41E-06	3.98E-05	3.29E-06	2.27E-05	1.87E-06	2.14E-05	1.77E-06
Iron	1.63E-02	NA	NA	7.11E-04	NA	9.88E-04	NA	1.27E-03	NA	1.69E-03	NA	2.47E-03	NA	1.27E-03	NA	7.22E-04	NA	6.83E-04	NA
Lead	2.84E-04	8.90E+00	3.26E+00	1.24E-05	1.39E-06	1.72E-05	1.93E-06	2.22E-05	2.50E-06	2.95E-05	9.04E-06	4.31E-05	1.32E-05	2.21E-05	6.79E-06	1.26E-05	3.86E-06	1.19E-05	3.65E-06
Nickel	1.32E-03	3.40E+00	1.15E+01	5.77E-05	1.70E-05	8.01E-05	2.36E-05	1.03E-04	3.04E-05	1.37E-04	1.19E-05	2.01E-04	1.74E-05	1.03E-04	8.95E-06	5.86E-05	5.09E-06	5.54E-05	4.82E-06
Selenium	1.12E-03	2.15E-01	5.79E-01	4.89E-05	2.27E-04	6.79E-05	3.16E-04	8.76E-05	4.07E-04	1.16E-04	2.01E-04	1.70E-04	2.93E-04	8.73E-05	1.51E-04	4.96E-05	8.57E-05	4.69E-05	8.11E-05
Silver	1.80E-03	6.02E+01	2.02E+01	7.85E-05	1.30E-06	1.09E-04	1.81E-06	1.41E-04	2.34E-06	1.87E-04	9.25E-06	2.73E-04	1.35E-05	1.40E-04	6.94E-06	7.98E-05	3.95E-06	7.54E-05	3.73E-06
Strontium	1.23E-01	2.63E+02	NA	5.36E-03	2.04E-05	7.45E-03	2.83E-05	9.61E-03	3.65E-05	1.27E-02	NA	1.86E-02	NA	9.57E-03	NA	5.45E-03	NA	5.15E-03	NA
Thallium	1.66E-05	7.50E-02	NA	7.24E-07	9.66E-06	1.01E-06	1.34E-05	1.30E-06	1.73E-05	1.72E-06	NA	2.52E-06	NA	1.29E-06	NA	7.36E-07	NA	6.96E-07	NA
Zinc	2.97E-03	7.59E+01	6.65E+01	1.30E-04	1.71E-06	1.80E-04	2.38E-06	2.33E-04	3.07E-06	3.09E-04	4.64E-06	4.51E-04	6.79E-06	2.32E-04	3.49E-06	1.32E-04	1.98E-06	1.25E-04	1.87E-06

Notes:

Drinking water ingestion rate estimated using Calder and Braun, 1983

Calder and Braun (1983) regression equation format --> L water/kg body weight/day = a(kilograms body weight)^{b}/kg body weight

Group	*a*	*b*
all birds	0.059	0.67
all mammals	0.099	0.90

Body weight (kg) for: Elk =	204	assumed average weight of Rocky Mountain Elk (*Cervus canadensis*) cow (Red Orbit, 2012)
Badger =	7.6	median from multiple studies (Messick and Hornocker, 1981; Silva and Downing, 1995)
Little Brown Bat =	0.0103	assumed average weight (*Myotis lucifugus*) from Silva and Downing, 1995
Killdeer =	0.0756	median from multiple studies (Purdue and Haines, 1977; Stegeman, 1955; Jackson and Jackson, 2000; Dunning, 1993)
Swallow =	0.0239	mean adult weight (*Hirundo pyrrhonota*) during breeding (Brown and Brown, 1995)
California Quail =	0.18	median from multiple studies (Robel, 1969; Roseberry and Klimstra, 1971; Guthery et al., 1988)
Western Meadowlark =	0.995	median from multiple studies (Wiens and Rotenberry, 1980; Maher, 1979)
Red-tailed Hawk =	1.179	median from multiple studies (Craighead and Craighead,1956; Steenhof,1983; Springer and Osborne,1983)

Table H-14. Wildlife Exposure to Inorganic Chemicals through Drinking from Seeps in the 100-H Riparian Area

Analyte Name	Seeps EPC (mg/L)	Mammal LOAEL TRV (mg/kg/d)	Bird LOAEL TRV (mg/kg/d)	Elk Drinking Water Dose (mg/kg-BW/d)	Elk LOAEL HQ	Badger Drinking Water Dose (mg/kg-BW/d)	Badger LOAEL HQ	Bat Drinking Water Dose (mg/kg-BW/d)	Bat LOAEL HQ	Killdeer Drinking Water Dose (mg/kg-BW/d)	Killdeer LOAEL HQ	Swallow Drinking Water Dose (mg/kg-BW/d)	Swallow LOAEL HQ	Quail Drinking Water Dose (mg/kg-BW/d)	Quail LOAEL HQ	Meadowlark Drinking Water Dose (mg/kg-BW/d)	Meadowlark LOAEL HQ	Hawk Drinking Water Dose (mg/kg-BW/d)	Hawk LOAEL HQ
			Elk	Badger	Bat	Killdeer	Swallow	California Quail	Western Meadowlark	Red-tailed Hawk									
Drinking water ingestion rate (L/kg-bw-d) =			0.058	0.081	0.156	0.138	0.202	0.104	0.059	0.056									
Area use factor (unitless) =			0.750	0.750	0.500	0.750	0.750	0.750	0.750	0.750									

EPC = exposure point concentration
HQ = hazard quotient
LOAEL = lowest observed adverse effect level
mg/kg/d = milligrams of chemical per kilogram per day
mg/kg-bw/d = milligrams of chemical per kilogram bodyweight per day
mg/L = milligrams per liter
NA = not available
NOAEL = no observed adverse effect level
TRV = toxicological reference value

Table H-15. Exposure of Wildlife to Radionuclides through Drinking from Seeps in the 100-D and 100-H Riparian Area

Site	Analyte Name	Units	Seeps EPC	Water BCG	Exposure Dose to Wildlife using AUF of 0.75	Wildlife HQ (using AUF of 0.75)	Exposure Dose to Bats using AUF of 0.5	Wildlife HQ (using AUF of 0.5 for bats)
100-D-SEEP	Beryllium-7	pCi/L	1.40E+01	--	1.05E+01	--	6.99E+00	--
100-D-SEEP	Cesium-137	pCi/L	1.18E+00	4.26E+01	8.85E-01	**2.08E-02**	5.90E-01	**1.38E-02**
100-D-SEEP	Cobalt-60	pCi/L	2.32E+00	4.78E+03	1.74E+00	3.64E-04	1.16E+00	2.43E-04
100-D-SEEP	Europium-154	pCi/L	7.43E+00	5.73E+04	5.57E+00	9.73E-05	3.72E+00	6.48E-05
100-D-SEEP	Gross alpha	pCi/L	5.60E+00	--	4.20E+00	--	2.80E+00	--
100-D-SEEP	Gross beta	pCi/L	1.14E+01	--	8.57E+00	--	5.71E+00	--
100-D-SEEP	Strontium-90	pCi/L	5.18E+00	2.78E+02	3.89E+00	**1.40E-02**	2.59E+00	9.32E-03
100-D-SEEP	Tritium	pCi/L	3.65E+03	2.31E+08	2.73E+03	1.18E-05	1.82E+03	7.89E-06
100-D-SEEP	Uranium-234	pCi/L	7.16E-01	6.76E+02	5.37E-01	7.95E-04	3.58E-01	5.30E-04
100-D-SEEP	Uranium-235	pCi/L	2.52E-02	7.36E+02	1.89E-02	2.56E-05	1.26E-02	1.71E-05
100-D-SEEP	Uranium-238	pCi/L	5.90E-01	7.56E+02	4.43E-01	5.85E-04	2.95E-01	3.90E-04
100-D-SEEP	Rads SOF	pCi/L	--	--	--	**3.66E-02**	--	**2.44E-02**
100-H-SEEP	Beryllium-7	pCi/L	1.66E+01	--	1.24E+01	--	8.29E+00	--
100-H-SEEP	Cesium-134	pCi/L	1.20E+00	2.11E+01	9.00E-01	**4.27E-02**	6.00E-01	**2.84E-02**
100-H-SEEP	Cesium-137	pCi/L	1.88E+00	4.26E+01	1.41E+00	**3.31E-02**	9.40E-01	**2.21E-02**
100-H-SEEP	Europium-155	pCi/L	5.88E+00	8.48E+04	4.41E+00	5.20E-05	2.94E+00	3.47E-05
100-H-SEEP	Gross alpha	pCi/L	4.20E+00	--	3.15E+00	--	2.10E+00	--
100-H-SEEP	Gross beta	pCi/L	4.20E+01	--	3.15E+01	--	2.10E+01	--
100-H-SEEP	Strontium-90	pCi/L	1.07E+01	2.78E+02	8.05E+00	**2.89E-02**	5.36E+00	**1.93E-02**
100-H-SEEP	Technetium-99	pCi/L	3.80E+01	6.67E+05	2.85E+01	4.28E-05	1.90E+01	2.85E-05
100-H-SEEP	Tritium	pCi/L	1.53E+03	2.31E+08	1.15E+03	4.96E-06	7.64E+02	3.31E-06
100-H-SEEP	Uranium [radionuclide]	pCi/L	3.23E+00	6.76E+02	2.43E+00	3.59E-03	1.62E+00	2.39E-03
100-H-SEEP	Uranium-234	pCi/L	2.09E+00	6.83E+02	1.56E+00	2.29E-03	1.04E+00	1.53E-03
100-H-SEEP	Uranium-235	pCi/L	1.07E-01	7.36E+02	7.99E-02	1.09E-04	5.33E-02	7.24E-05
100-H-SEEP	Uranium-238	pCi/L	1.71E+00	7.56E+02	1.28E+00	1.70E-03	8.55E-01	1.13E-03
100-H-SEEP	Rads SOF	pCi/L	--	--	--	**1.12E-01**	--	**7.50E-02**

Notes:

AUF = area use factor which was assumed as 0.75 due to inaccessibility of seeps from mid April to mid July for all wildlife except bats for which it was assumed to be 0.5 due to their hibernation in winter in addition to the summer inaccessibility of the seeps.

EPC (Exposure Point Concentrations) were calculated as the 95 percent upper confidence limit (UCL) on the arithmetic mean using the most recent version of EPA's Pro UCL software

BCG (Biota Concentration Guides) represent the lowest value among those calculated for riparian and terrestrial animals

BCGs for cesium-137, strontium-90, technetium-99, and uranium isotopes were published in DOE-STD-1153-2002

BCGs for carbon-14, cobalt-60, and potassium-40 were calcualted according to DOE/EH-0676 using RESRAD BIOTA version 1.5 (ANL, 2009).

HQ = hazard quotient calculated as the exposure dose divided by the water BCG

SOF = sum of fractiosn calculated as the sum of hazard quotients for individual radionuclides

References:

ANL, 2009, RESRAD-Biota computer code, Release 1.5.

DOE/EH-0676, *RESRAD-BIOTA: A Tool for Implementing a Graded Approach to Biota Dose Evaluation, User's Guide, Version 1*.

DOE-STD-1153-2002, *A Graded Approach for Evaluating Radiation Doses to Aquatic and Terrestrial Biota*.

Table H-16. Summary of RI/LFI Soil Borings/ Wells Included in Uncertainty Evaluation for the 100-D Source OU

Well Name or Test Pit	Top Sample Interval (ft bgs)	Bottom Sample Interval (ft bgs)
100-D-12	8	10
100-D-12	10	12
100-D-12	13	15
100-D-12 TP 1	--	0.5
100-D-12 TP 1	--	5
100-D-12 TP 1	--	10
100-D-12 TP 1	--	15
100-D-12 TP 2	--	0.5
100-D-12 TP 3	--	0.5
100-D-4	9	11
100-D-4	11	13
100-D-4	13	15
108-D-TNKS-TP-1	4	4
108-D-TP-1	5	5
116-D-4	9	11
116-D-4	11	13
116-D-4	13	15
116-DR-3 TP	--	0.5
116-DR-3 TP	--	5
116-DR-3 TP	--	10
118-D-5 TP	--	0.5
118-D-5 TP	--	5
199-D5-21	0	2
199-D5-21	8	10.5
199-D5-21	12.2	13.7
199-D5-22	12	15
199-D5-24	3	5.5
199-D5-24	10	12.5
199-D5-27	10	12
199-D5-29	0	2
199-D5-29	5	10
199-D5-30	9.5	12.7
199-D8-60	4.2	7.3
199-D8-64	0.8	3
199-D8-64	4.3	6.8
199-D8-64	9	11.8
199-D8-65	1.1	4
199-D8-65	4.8	7.5
199-D8-65	8	11.1
199-D8-66	0	2
199-D8-66	4.7	7.4
199-D8-66	9.6	12.2

Table H-17. Summary of RI/LFI Soil Borings/ Wells Included in Uncertainty Evaluation for the 100-H Source OU

Well Name or Test Pit	Top Sample Interval (ft bgs)	Bottom Sample Interval (ft bgs)
116-H-2	9	11
116-H-2	11	13
116-H-2	13	15
1607-H4	11	13
1607-H4	13	15
199-H4-58	10	12
199-H4-59	9.9	12.1
199-H4-61	1	3
199-H4-61	8	10
199-H4-61	9.8	12.4
199-H4-62	3.1	5.3
C7630	10	12.5
C7860	10.1	12.6
C7862	4.8	7.3
C7862	9.8	11.6
C7862	12.5	14.3

Table H-18. Comparison of Maximum Detected Soil Concentrations Less than or Equal to 15 Feet BGS from 100-D OU RI/LFI to Ecological PRGs

Well Name or Test Pit	CAS No.	Analyte Name	Units	Total Samples	Total Detects	Minimum Detection Limit	Maximum Detection Limit	Minimum Detect	Maximum Detect	Hanford Site Background	Maximum Detect > Background?	Ecological PRG	Maximum Detect > Ecological PRG
100-D-12	7429-90-5	Aluminum	µg/kg	3	3	--	--	4,910,000	5,770,000	11,800,000	No	3,988,000	Yes
100-D-12	7440-38-2	Arsenic	µg/kg	3	3	--	--	1,960	2,360	6,470	No	127,000	No
100-D-12	7440-39-3	Barium	µg/kg	3	3	--	--	45,200	66,600	132,000	No	358,000	No
100-D-12	7440-41-7	Beryllium	µg/kg	3	3	--	--	200	207	1,510	No	10,000	No
100-D-12	7440-42-8	Boron	µg/kg	3	3	--	--	550	757	3,890	No	28,600	No
100-D-12	7440-43-9	Cadmium	µg/kg	3	3	--	--	55	91	563	No	9,840	No
100-D-12	7440-47-3	Chromium	µg/kg	3	3	--	--	11,000	74,400	18,500	Yes	109,000	No
100-D-12	7440-48-4	Cobalt	µg/kg	3	3	--	--	6,930	8,490	15,700	No	15,700	No
100-D-12	7440-50-8	Copper	µg/kg	3	3	--	--	12,200	16,100	22,000	No	58,000	No
100-D-12	18540-29-9	Hexavalent Chromium	µg/kg	3	2	520	520	460	1,290	--	--	1,245,000	No
100-D-12	7439-92-1	Lead	µg/kg	3	3	--	--	2,540	3,460	10,200	No	156,000	No
100-D-12	7439-93-2	Lithium	µg/kg	3	3	--	--	4,520	7,080	13,300	No	2,000	Yes
100-D-12	7439-96-5	Manganese	µg/kg	3	3	--	--	275,000	328,000	512,000	No	1,260,000	No
100-D-12	7439-98-7	Molybdenum	µg/kg	3	3	--	--	343	371	470	No	2,000	No
100-D-12	7440-02-0	Nickel	µg/kg	3	3	--	--	7,060	9,390	19,100	No	38,000	No
100-D-12	14797-55-8	Nitrate	µg/kg	3	3	--	--	2,000	4,000	52,000	No	340,361,000	No
100-D-12	7440-24-6	Strontium	µg/kg	3	3	--	--	20,200	23,300	--	--	1,214,000	No
100-D-12	7440-31-5	Tin	µg/kg	3	3	--	--	1,050	1,860	--	--	204,000	No
100-D-12	108-88-3	Toluene	µg/kg	3	3	--	--	0.92	2.7	--	--	195,000	No
100-D-12	U-233/234	Uranium-233/234	pCi/g	3	3	--	--	0.47	0.55	1.1	No	6,370	No
100-D-12	U-238	Uranium-238	pCi/g	3	3	--	--	0.31	0.44	1.1	No	5,150	No
100-D-12	7440-62-2	Vanadium	µg/kg	3	3	--	--	57,500	65,900	85,100	No	43,000	Yes
100-D-12	7440-66-6	Zinc	µg/kg	3	3	--	--	42,000	47,100	67,800	No	621,000	No
100-D-12 TP 1	7440-47-3	Chromium	µg/kg	4	4	--	--	35,700	207,000	18,500	Yes	109,000	Yes
100-D-12 TP 1	16984-48-8	Fluoride	µg/kg	4	4	--	--	1,600	3,100	2,810	Yes	2,281,000	No
100-D-12 TP 1	7439-92-1	Lead	µg/kg	4	4	--	--	3,600	4,300	10,200	No	156,000	No
100-D-12 TP 1	7439-97-6	Mercury	µg/kg	4	1	50	50	90	90	13	Yes	300	No
100-D-12 TP 1	14133-76-7	Technetium-99	pCi/g	3	1	0.37	0.57	0.64	0.64	--	--	5,360	No
100-D-12 TP 1	U-233/234	Uranium-233/234	pCi/g	3	3	--	--	0.39	0.56	1.1	No	6,370	No
100-D-12 TP 1	U-238	Uranium-238	pCi/g	3	3	--	--	0.34	0.50	1.1	No	5,150	No
100-D-12 TP 2	7440-47-3	Chromium	µg/kg	2	2	--	--	29,600	35,900	18,500	Yes	109,000	No
100-D-12 TP 2	16984-48-8	Fluoride	µg/kg	2	2	--	--	900	1,100	2,810	No	2,281,000	No
100-D-12 TP 2	7439-92-1	Lead	µg/kg	2	2	--	--	4,700	5,300	10,200	No	156,000	No
100-D-12 TP 2	U-233/234	Uranium-233/234	pCi/g	1	1	--	--	0.47	0.47	1.1	No	6,370	No
100-D-12 TP 2	U-238	Uranium-238	pCi/g	1	1	--	--	0.40	0.40	1.1	No	5,150	No
100-D-12 TP 3	10045-97-3	Cesium-137	pCi/g	1	1	--	--	0.30	0.30	1.1	No	924	No
100-D-12 TP 3	7440-47-3	Chromium	µg/kg	2	2	--	--	11,700	78,400	18,500	Yes	109,000	No
100-D-12 TP 3	16984-48-8	Fluoride	µg/kg	2	2	--	--	1,000	1,200	2,810	No	2,281,000	No
100-D-12 TP 3	7439-92-1	Lead	µg/kg	2	2	--	--	5,000	9,500	10,200	No	156,000	No
100-D-12 TP 3	14133-76-7	Technetium-99	pCi/g	1	1	--	--	0.40	0.40	--	--	5,360	No
100-D-12 TP 3	U-233/234	Uranium-233/234	pCi/g	1	1	--	--	0.26	0.26	1.1	No	6,370	No
100-D-12 TP 3	U-238	Uranium-238	pCi/g	1	1	--	--	0.36	0.36	1.1	No	5,150	No
100-D-4	83-32-9	Acenaphthene	µg/kg	3	1	3.33	3.39	1.1	1.1	--	--	20,000	No
100-D-4	208-96-8	Acenaphthylene	µg/kg	3	1	3.33	3.39	35	35	--	--	29,000	No
100-D-4	7429-90-5	Aluminum	µg/kg	3	3	--	--	3,390,000	4,360,000	11,800,000	No	3,988,000	Yes
100-D-4	7440-38-2	Arsenic	µg/kg	3	3	--	--	1,240	1,610	6,470	No	127,000	No
100-D-4	7440-39-3	Barium	µg/kg	3	3	--	--	49,300	57,900	132,000	No	358,000	No

Table H-18. Comparison of Maximum Detected Soil Concentrations Less than or Equal to 15 Feet BGS from 100-D OU RI/LFI to Ecological PRGs

Well Name or Test Pit	CAS No.	Analyte Name	Units	Total Samples	Total Detects	Minimum Detection Limit	Maximum Detection Limit	Minimum Detect	Maximum Detect	Hanford Site Background	Maximum Detect > Background?	Ecological PRG	Maximum Detect > Ecological PRG
100-D-4	7440-41-7	Beryllium	µg/kg	3	3	--	--	128	196	1,510	No	10,000	No
100-D-4	7440-43-9	Cadmium	µg/kg	3	3	--	--	59	77	563	No	9,840	No
100-D-4	7440-47-3	Chromium	µg/kg	3	3	--	--	2,780	4,100	18,500	No	109,000	No
100-D-4	7440-48-4	Cobalt	µg/kg	3	3	--	--	6,640	7,750	15,700	No	15,700	No
100-D-4	7440-50-8	Copper	µg/kg	3	3	--	--	10,800	12,500	22,000	No	58,000	No
100-D-4	7439-92-1	Lead	µg/kg	3	3	--	--	2,050	2,430	10,200	No	156,000	No
100-D-4	7439-93-2	Lithium	µg/kg	3	3	--	--	2,000	2,710	13,300	No	2,000	Yes
100-D-4	7439-96-5	Manganese	µg/kg	3	3	--	--	250,000	304,000	512,000	No	1,260,000	No
100-D-4	75-09-2	Methylene chloride	µg/kg	3	1	6.28	6.63	2.4	2.4	--	--	166,000	No
100-D-4	7439-98-7	Molybdenum	µg/kg	3	3	--	--	292	348	470	No	2,000	No
100-D-4	7440-02-0	Nickel	µg/kg	3	3	--	--	4,940	5,810	19,100	No	38,000	No
100-D-4	14797-55-8	Nitrate	µg/kg	3	3	--	--	1,700	6,600	52,000	No	340,361,000	No
100-D-4	7440-24-6	Strontium	µg/kg	3	3	--	--	20,700	23,200	--	--	1,214,000	No
100-D-4	7440-31-5	Tin	µg/kg	3	3	--	--	1,540	1,870	--	--	204,000	No
100-D-4	U-233/234	Uranium-233/234	pCi/g	3	3	--	--	0.32	0.90	1.1	No	6,370	No
100-D-4	U-238	Uranium-238	pCi/g	3	3	--	--	0.45	0.55	1.1	No	5,150	No
100-D-4	7440-62-2	Vanadium	µg/kg	3	3	--	--	66,900	77,000	85,100	No	43,000	Yes
100-D-4	7440-66-6	Zinc	µg/kg	3	3	--	--	41,300	48,300	67,800	No	621,000	No
108-D-TNKS-TP-1	7429-90-5	Aluminum	µg/kg	1	1	--	--	3,350,000	3,350,000	11,800,000	No	3,988,000	No
108-D-TNKS-TP-1	7440-38-2	Arsenic	µg/kg	1	1	--	--	1,600	1,600	6,470	No	127,000	No
108-D-TNKS-TP-1	7440-39-3	Barium	µg/kg	1	1	--	--	47,600	47,600	132,000	No	358,000	No
108-D-TNKS-TP-1	7440-47-3	Chromium	µg/kg	1	1	--	--	5,700	5,700	18,500	No	109,000	No
108-D-TNKS-TP-1	7440-48-4	Cobalt	µg/kg	1	1	--	--	5,100	5,100	15,700	No	15,700	No
108-D-TNKS-TP-1	7440-50-8	Copper	µg/kg	1	1	--	--	12,600	12,600	22,000	No	58,000	No
108-D-TNKS-TP-1	7439-92-1	Lead	µg/kg	1	1	--	--	5,000	5,000	10,200	No	156,000	No
108-D-TNKS-TP-1	7439-96-5	Manganese	µg/kg	1	1	--	--	178,000	178,000	512,000	No	1,260,000	No
108-D-TNKS-TP-1	7439-97-6	Mercury	µg/kg	1	1	--	--	60	60	13	Yes	300	No
108-D-TNKS-TP-1	7440-02-0	Nickel	µg/kg	1	1	--	--	6,600	6,600	19,100	No	38,000	No
108-D-TNKS-TP-1	14797-55-8	Nitrate	µg/kg	1	1	--	--	17,000	17,000	52,000	No	340,361,000	No
108-D-TNKS-TP-1	10098-97-2	Strontium-90	pCi/g	1	1	--	--	0.057	0.057	0.18	No	91	No
108-D-TNKS-TP-1	108-88-3	Toluene	µg/kg	1	1	--	--	1.0	1.0	--	--	195,000	No
108-D-TNKS-TP-1	U-238	Uranium-238	pCi/g	1	1	--	--	0.12	0.12	1.1	No	5,150	No
108-D-TNKS-TP-1	7440-62-2	Vanadium	µg/kg	1	1	--	--	12,100	12,100	85,100	No	43,000	No
108-D-TNKS-TP-1	7440-66-6	Zinc	µg/kg	1	1	--	--	22,300	22,300	67,800	No	621,000	No
108-D-TP-1	78-93-3	2-Butanone	µg/kg	1	1	--	--	16	16	--	--	3,123,000	No
108-D-TP-1	7429-90-5	Aluminum	µg/kg	1	1	--	--	7,310,000	7,310,000	11,800,000	No	3,988,000	Yes
108-D-TP-1	7440-38-2	Arsenic	µg/kg	1	1	--	--	2,200	2,200	6,470	No	127,000	No
108-D-TP-1	7440-39-3	Barium	µg/kg	1	1	--	--	80,200	80,200	132,000	No	358,000	No
108-D-TP-1	56-55-3	Benzo(a)anthracene	µg/kg	1	1	--	--	120	120	--	--	2,030	No
108-D-TP-1	50-32-8	Benzo(a)pyrene	µg/kg	1	1	--	--	180	180	--	--	2,410	No
108-D-TP-1	205-99-2	Benzo(b)fluoranthene	µg/kg	1	1	--	--	190	190	--	--	1,270	No
108-D-TP-1	191-24-2	Benzo(ghi)perylene	µg/kg	1	1	--	--	61	61	--	--	1,120	No
108-D-TP-1	207-08-9	Benzo(k)fluoranthene	µg/kg	1	1	--	--	70	70	--	--	1,270	No
108-D-TP-1	7440-41-7	Beryllium	µg/kg	1	1	--	--	350	350	1,510	No	10,000	No
108-D-TP-1	7440-47-3	Chromium	µg/kg	1	1	--	--	13,800	13,800	18,500	No	109,000	No
108-D-TP-1	218-01-9	Chrysene	µg/kg	1	1	--	--	130	130	--	--	1,430	No
108-D-TP-1	7440-48-4	Cobalt	µg/kg	1	1	--	--	11,400	11,400	15,700	No	15,700	No

Table H-18. Comparison of Maximum Detected Soil Concentrations Less than or Equal to 15 Feet BGS from 100-D OU RI/LFI to Ecological PRGs

Well Name or Test Pit	CAS No.	Analyte Name	Units	Total Samples	Total Detects	Minimum Detection Limit	Maximum Detection Limit	Minimum Detect	Maximum Detect	Hanford Site Background	Maximum Detect > Background?	Ecological PRG	Maximum Detect > Ecological PRG
108-D-TP-1	7440-50-8	Copper	µg/kg	1	1	--	--	16,900	16,900	22,000	No	58,000	No
108-D-TP-1	206-44-0	Fluoranthene	µg/kg	1	1	--	--	65	65	--	--	1,090	No
108-D-TP-1	16984-48-8	Fluoride	µg/kg	1	1	--	--	4,500	4,500	2,810	Yes	2,281,000	No
108-D-TP-1	193-39-5	Indeno(1,2,3-cd)pyrene	µg/kg	1	1	--	--	53	53	--	--	1,150	No
108-D-TP-1	7439-92-1	Lead	µg/kg	1	1	--	--	4,300	4,300	10,200	No	156,000	No
108-D-TP-1	7439-96-5	Manganese	µg/kg	1	1	--	--	333,000	333,000	512,000	No	1,260,000	No
108-D-TP-1	7439-97-6	Mercury	µg/kg	1	1	--	--	80	80	13	Yes	300	No
108-D-TP-1	7440-02-0	Nickel	µg/kg	1	1	--	--	11,800	11,800	19,100	No	38,000	No
108-D-TP-1	14797-55-8	Nitrate	µg/kg	1	1	--	--	22,600	22,600	52,000	No	340,361,000	No
108-D-TP-1	129-00-0	Pyrene	µg/kg	1	1	--	--	97	97	--	--	1,860	No
108-D-TP-1	7440-22-4	Silver	µg/kg	1	1	--	--	940	940	167	Yes	2,990	No
108-D-TP-1	15117-96-1	Uranium-235	pCi/g	1	1	--	--	0.0096	0.0096	0.11	No	4,360	No
108-D-TP-1	U-238	Uranium-238	pCi/g	1	1	--	--	0.11	0.11	1.1	No	5,150	No
108-D-TP-1	7440-62-2	Vanadium	µg/kg	1	1	--	--	53,300	53,300	85,100	No	43,000	Yes
108-D-TP-1	7440-66-6	Zinc	µg/kg	1	1	--	--	46,900	46,900	67,800	No	621,000	No
116-D-4	71-55-6	1,1,1-Trichloroethane	µg/kg	3	1	4.7	4.85	4.9	4.9	--	--	165,000	No
116-D-4	7429-90-5	Aluminum	µg/kg	3	3	--	--	5,540,000	6,870,000	11,800,000	No	3,988,000	Yes
116-D-4	7440-38-2	Arsenic	µg/kg	3	3	--	--	2,030	3,370	6,470	No	127,000	No
116-D-4	7440-39-3	Barium	µg/kg	3	3	--	--	55,400	64,700	132,000	No	358,000	No
116-D-4	7440-41-7	Beryllium	µg/kg	3	3	--	--	224	261	1,510	No	10,000	No
116-D-4	7440-42-8	Boron	µg/kg	3	3	--	--	862	1,690	3,890	No	28,600	No
116-D-4	7440-43-9	Cadmium	µg/kg	3	3	--	--	106	114	563	No	9,840	No
116-D-4	14762-75-5	Carbon-14	pCi/g	3	1	-1.3	-0.91	21	21	--	--	32	No
116-D-4	7440-47-3	Chromium	µg/kg	3	3	--	--	6,910	9,120	18,500	No	109,000	No
116-D-4	7440-48-4	Cobalt	µg/kg	3	3	--	--	6,810	8,250	15,700	No	15,700	No
116-D-4	7440-50-8	Copper	µg/kg	3	3	--	--	14,000	23,200	22,000	Yes	58,000	No
116-D-4	18540-29-9	Hexavalent Chromium	µg/kg	3	1	530	550	390	390	--	--	1,245,000	No
116-D-4	7439-92-1	Lead	µg/kg	3	3	--	--	3,490	4,110	10,200	No	156,000	No
116-D-4	7439-93-2	Lithium	µg/kg	3	3	--	--	3,930	5,460	13,300	No	2,000	Yes
116-D-4	7439-96-5	Manganese	µg/kg	3	3	--	--	301,000	345,000	512,000	No	1,260,000	No
116-D-4	75-09-2	Methylene chloride	µg/kg	3	3	--	--	2.0	8.8	--	--	166,000	No
116-D-4	7439-98-7	Molybdenum	µg/kg	3	3	--	--	385	430	470	No	2,000	No
116-D-4	7440-02-0	Nickel	µg/kg	3	3	--	--	8,770	9,350	19,100	No	38,000	No
116-D-4	14797-55-8	Nitrate	µg/kg	3	3	--	--	10,900	16,800	52,000	No	340,361,000	No
116-D-4	7440-24-6	Strontium	µg/kg	3	3	--	--	27,700	36,700	--	--	1,214,000	No
116-D-4	7440-31-5	Tin	µg/kg	3	3	--	--	1,200	1,820	--	--	204,000	No
116-D-4	U-233/234	Uranium-233/234	pCi/g	3	3	--	--	0.59	0.74	1.1	No	6,370	No
116-D-4	U-238	Uranium-238	pCi/g	3	3	--	--	0.43	0.73	1.1	No	5,150	No
116-D-4	7440-62-2	Vanadium	µg/kg	3	3	--	--	57,400	80,500	85,100	No	43,000	Yes
116-D-4	7440-66-6	Zinc	µg/kg	3	3	--	--	39,400	45,200	67,800	No	621,000	No
116-DR-3 TP	7440-47-3	Chromium	µg/kg	3	2	7800	7800	4,900	13,000	18,500	No	109,000	No
116-DR-3 TP	16984-48-8	Fluoride	µg/kg	3	3	--	--	900	1,200	2,810	No	2,281,000	No
116-DR-3 TP	7439-92-1	Lead	µg/kg	3	3	--	--	2,400	5,600	10,200	No	156,000	No
116-DR-3 TP	10098-97-2	Strontium-90	pCi/g	2	1	-0.037	-0.037	0.076	0.076	0.18	No	91	No
116-DR-3 TP	14133-76-7	Technetium-99	pCi/g	2	2	--	--	0.39	0.40	--	--	5,360	No
116-DR-3 TP	U-233/234	Uranium-233/234	pCi/g	2	2	--	--	0.33	0.37	1.1	No	6,370	No
116-DR-3 TP	U-238	Uranium-238	pCi/g	3	3	--	--	0.35	0.43	1.1	No	5,150	No

Table H-18. Comparison of Maximum Detected Soil Concentrations Less than or Equal to 15 Feet BGS from 100-D OU RI/LFI to Ecological PRGs

Well Name or Test Pit	CAS No.	Analyte Name	Units	Total Samples	Total Detects	Minimum Detection Limit	Maximum Detection Limit	Minimum Detect	Maximum Detect	Hanford Site Background	Maximum Detect > Background?	Ecological PRG	Maximum Detect > Ecological PRG
118-D-5 TP	10045-97-3	Cesium-137	pCi/g	1	1	--	--	0.63	0.63	1.1	No	924	No
118-D-5 TP	7440-47-3	Chromium	µg/kg	2	1	9100	9100	9,500	9,500	18,500	No	109,000	No
118-D-5 TP	16984-48-8	Fluoride	µg/kg	2	2	--	--	1,700	3,400	2,810	Yes	2,281,000	No
118-D-5 TP	7439-92-1	Lead	µg/kg	2	2	--	--	4,500	8,600	10,200	No	156,000	No
118-D-5 TP	PU-239/240	Plutonium-239/240	pCi/g	1	1	--	--	0.023	0.023	0.025	No	6,270	No
118-D-5 TP	14133-76-7	Technetium-99	pCi/g	1	1	--	--	0.49	0.49	--	--	5,360	No
118-D-5 TP	U-233/234	Uranium-233/234	pCi/g	1	1	--	--	0.38	0.38	1.1	No	6,370	No
118-D-5 TP	U-238	Uranium-238	pCi/g	1	1	--	--	0.48	0.48	1.1	No	5,150	No
199-D5-21	7429-90-5	Aluminum	µg/kg	3	3	--	--	3,240,000	3,500,000	11,800,000	No	3,988,000	No
199-D5-21	14596-10-2	Americium-241	pCi/g	3	3	--	--	0.12	0.17	--	--	4,840	No
199-D5-21	7440-38-2	Arsenic	µg/kg	3	2	760	760	860	1,000	6,470	No	127,000	No
199-D5-21	7440-39-3	Barium	µg/kg	3	3	--	--	48,800	50,700	132,000	No	358,000	No
199-D5-21	7440-41-7	Beryllium	µg/kg	3	3	--	--	280	340	1,510	No	10,000	No
199-D5-21	117-81-7	Bis(2-ethylhexyl) phthalate	µg/kg	3	1	340	360	48	48	--	--	140	No
199-D5-21	10045-97-3	Cesium-137	pCi/g	3	3	--	--	0.079	41	1.1	Yes	924	No
199-D5-21	7440-47-3	Chromium	µg/kg	3	3	--	--	4,500	41,600	18,500	Yes	109,000	No
199-D5-21	7440-48-4	Cobalt	µg/kg	3	3	--	--	7,900	8,700	15,700	No	15,700	No
199-D5-21	10198-40-0	Cobalt-60	pCi/g	3	2	0.02	0.02	1.0	5.4	0.0084	Yes	805	No
199-D5-21	7440-50-8	Copper	µg/kg	3	3	--	--	12,600	17,600	22,000	No	58,000	No
199-D5-21	14683-23-9	Europium-152	pCi/g	3	2	0.05	0.05	9.2	84	--	--	1,740	No
199-D5-21	15585-10-1	Europium-154	pCi/g	3	2	0.07	0.07	0.87	11	0.033	Yes	1,610	No
199-D5-21	7439-92-1	Lead	µg/kg	3	3	--	--	3,700	14,400	10,200	Yes	156,000	No
199-D5-21	7439-96-5	Manganese	µg/kg	3	3	--	--	200,000	229,000	512,000	No	1,260,000	No
199-D5-21	7440-02-0	Nickel	µg/kg	3	3	--	--	6,400	12,400	19,100	No	38,000	No
199-D5-21	10098-97-2	Strontium-90	pCi/g	3	3	--	--	0.36	5.0	0.18	Yes	91	No
199-D5-21	108-88-3	Toluene	µg/kg	3	1	5	5	1.0	1.0	--	--	195,000	No
199-D5-21	U-238	Uranium-238	pCi/g	3	3	--	--	0.11	0.21	1.1	No	5,150	No
199-D5-21	7440-62-2	Vanadium	µg/kg	3	3	--	--	16,700	23,500	85,100	No	43,000	No
199-D5-21	7440-66-6	Zinc	µg/kg	3	3	--	--	32,800	39,900	67,800	No	621,000	No
199-D5-22	7429-90-5	Aluminum	µg/kg	1	1	--	--	3,490,000	3,490,000	11,800,000	No	3,988,000	No
199-D5-22	14596-10-2	Americium-241	pCi/g	1	1	--	--	0.10	0.10	--	--	4,840	No
199-D5-22	7440-38-2	Arsenic	µg/kg	1	1	--	--	630	630	6,470	No	127,000	No
199-D5-22	7440-39-3	Barium	µg/kg	1	1	--	--	53,900	53,900	132,000	No	358,000	No
199-D5-22	7440-47-3	Chromium	µg/kg	1	1	--	--	14,000	14,000	18,500	No	109,000	No
199-D5-22	7440-48-4	Cobalt	µg/kg	1	1	--	--	11,700	11,700	15,700	No	15,700	No
199-D5-22	10198-40-0	Cobalt-60	pCi/g	1	1	--	--	0.16	0.16	0.0084	Yes	805	No
199-D5-22	7440-50-8	Copper	µg/kg	1	1	--	--	13,200	13,200	22,000	No	58,000	No
199-D5-22	14683-23-9	Europium-152	pCi/g	1	1	--	--	6.9	6.9	--	--	1,740	No
199-D5-22	15585-10-1	Europium-154	pCi/g	1	1	--	--	5.0	5.0	0.033	Yes	1,610	No
199-D5-22	7439-92-1	Lead	µg/kg	1	1	--	--	1,600	1,600	10,200	No	156,000	No
199-D5-22	7439-96-5	Manganese	µg/kg	1	1	--	--	240,000	240,000	512,000	No	1,260,000	No
199-D5-22	75-09-2	Methylene chloride	µg/kg	1	1	--	--	3.0	3.0	--	--	166,000	No
199-D5-22	7440-02-0	Nickel	µg/kg	1	1	--	--	11,600	11,600	19,100	No	38,000	No
199-D5-22	10098-97-2	Strontium-90	pCi/g	1	1	--	--	26	26	0.18	Yes	91	No
199-D5-22	15117-96-1	Uranium-235	pCi/g	1	1	--	--	0.0084	0.0084	0.11	No	4,360	No
199-D5-22	U-238	Uranium-238	pCi/g	1	1	--	--	0.13	0.13	1.1	No	5,150	No

Table H-18. Comparison of Maximum Detected Soil Concentrations Less than or Equal to 15 Feet BGS from 100-D OU RI/LFI to Ecological PRGs

Well Name or Test Pit	CAS No.	Analyte Name	Units	Total Samples	Total Detects	Minimum Detection Limit	Maximum Detection Limit	Minimum Detect	Maximum Detect	Hanford Site Background	Maximum Detect > Background?	Ecological PRG	Maximum Detect > Ecological PRG
199-D5-22	7440-62-2	Vanadium	µg/kg	1	1	--	--	52,200	52,200	85,100	No	43,000	Yes
199-D5-22	7440-66-6	Zinc	µg/kg	1	1	--	--	35,500	35,500	67,800	No	621,000	No
199-D5-24	108-10-1	4-Methyl-2-pentanone	µg/kg	2	1	11	11	4.0	4.0	--	--	1,927,000	No
199-D5-24	7429-90-5	Aluminum	µg/kg	2	2	--	--	3,340,000	3,960,000	11,800,000	No	3,988,000	No
199-D5-24	7440-38-2	Arsenic	µg/kg	2	2	--	--	860	1,400	6,470	No	127,000	No
199-D5-24	7440-39-3	Barium	µg/kg	2	2	--	--	56,000	61,200	132,000	No	358,000	No
199-D5-24	7440-47-3	Chromium	µg/kg	2	2	--	--	4,700	4,800	18,500	No	109,000	No
199-D5-24	7440-48-4	Cobalt	µg/kg	2	2	--	--	8,900	9,300	15,700	No	15,700	No
199-D5-24	7440-50-8	Copper	µg/kg	2	2	--	--	12,000	13,700	22,000	No	58,000	No
199-D5-24	206-44-0	Fluoranthene	µg/kg	2	1	340	340	37	37	--	--	1,090	No
199-D5-24	7439-92-1	Lead	µg/kg	2	2	--	--	2,400	3,600	10,200	No	156,000	No
199-D5-24	7439-96-5	Manganese	µg/kg	2	2	--	--	256,000	264,000	512,000	No	1,260,000	No
199-D5-24	7440-02-0	Nickel	µg/kg	2	2	--	--	8,700	9,300	19,100	No	38,000	No
199-D5-24	129-00-0	Pyrene	µg/kg	2	1	340	340	37	37	--	--	1,860	No
199-D5-24	10098-97-2	Strontium-90	pCi/g	1	1	--	--	0.46	0.46	0.18	Yes	91	No
199-D5-24	7440-28-0	Thallium	µg/kg	2	1	390	390	480	480	185	Yes	459	Yes
199-D5-24	108-88-3	Toluene	µg/kg	2	1	6	6	2.0	2.0	--	--	195,000	No
199-D5-24	U-238	Uranium-238	pCi/g	1	1	--	--	0.15	0.15	1.1	No	5,150	No
199-D5-24	7440-62-2	Vanadium	µg/kg	2	2	--	--	23,200	30,400	85,100	No	43,000	No
199-D5-24	7440-66-6	Zinc	µg/kg	2	2	--	--	29,800	30,400	67,800	No	621,000	No
199-D5-27	7429-90-5	Aluminum	µg/kg	1	1	--	--	2,680,000	2,680,000	11,800,000	No	3,988,000	No
199-D5-27	7440-38-2	Arsenic	µg/kg	1	1	--	--	730	730	6,470	No	127,000	No
199-D5-27	7440-39-3	Barium	µg/kg	1	1	--	--	45,400	45,400	132,000	No	358,000	No
199-D5-27	7440-41-7	Beryllium	µg/kg	1	1	--	--	220	220	1,510	No	10,000	No
199-D5-27	117-81-7	Bis(2-ethylhexyl) phthalate	µg/kg	1	1	--	--	6,300	6,300	--	--	140	Yes
199-D5-27	7440-43-9	Cadmium	µg/kg	1	1	--	--	890	890	563	Yes	9,840	No
199-D5-27	7440-47-3	Chromium	µg/kg	1	1	--	--	4,200	4,200	18,500	No	109,000	No
199-D5-27	7440-48-4	Cobalt	µg/kg	1	1	--	--	7,900	7,900	15,700	No	15,700	No
199-D5-27	7440-50-8	Copper	µg/kg	1	1	--	--	11,400	11,400	22,000	No	58,000	No
199-D5-27	7439-92-1	Lead	µg/kg	1	1	--	--	18,800	18,800	10,200	Yes	156,000	No
199-D5-27	7439-96-5	Manganese	µg/kg	1	1	--	--	236,000	236,000	512,000	No	1,260,000	No
199-D5-27	7440-02-0	Nickel	µg/kg	1	1	--	--	7,000	7,000	19,100	No	38,000	No
199-D5-27	7440-22-4	Silver	µg/kg	1	1	--	--	870	870	167	Yes	2,990	No
199-D5-27	7440-62-2	Vanadium	µg/kg	1	1	--	--	16,700	16,700	85,100	No	43,000	No
199-D5-27	1330-20-7	Xylenes (total)	µg/kg	1	1	--	--	1.0	1.0	--	--	149,000	No
199-D5-27	7440-66-6	Zinc	µg/kg	1	1	--	--	25,900	25,900	67,800	No	621,000	No
199-D5-29	309-00-2	Aldrin	µg/kg	2	1	7.9	7.9	7.5	7.5	--	--	164	No
199-D5-29	7429-90-5	Aluminum	µg/kg	2	2	--	--	2,660,000	2,930,000	11,800,000	No	3,988,000	No
199-D5-29	7440-39-3	Barium	µg/kg	2	2	--	--	43,900	44,000	132,000	No	358,000	No
199-D5-29	7440-41-7	Beryllium	µg/kg	2	2	--	--	200	240	1,510	No	10,000	No
199-D5-29	117-81-7	Bis(2-ethylhexyl) phthalate	µg/kg	2	1	340	340	39	39	--	--	140	No
199-D5-29	7440-47-3	Chromium	µg/kg	2	2	--	--	3,000	3,900	18,500	No	109,000	No
199-D5-29	7440-48-4	Cobalt	µg/kg	2	2	--	--	6,200	6,600	15,700	No	15,700	No
199-D5-29	7440-50-8	Copper	µg/kg	2	2	--	--	11,400	11,800	22,000	No	58,000	No
199-D5-29	84-66-2	Diethylphthalate	µg/kg	2	1	340	340	91	91	--	--	100,000	No

Table H-18. Comparison of Maximum Detected Soil Concentrations Less than or Equal to 15 Feet BGS from 100-D OU RI/LFI to Ecological PRGs

Well Name or Test Pit	CAS No.	Analyte Name	Units	Total Samples	Total Detects	Minimum Detection Limit	Maximum Detection Limit	Minimum Detect	Maximum Detect	Hanford Site Background	Maximum Detect > Background?	Ecological PRG	Maximum Detect > Ecological PRG
199-D5-29	7439-92-1	Lead	µg/kg	2	2	--	--	2,500	3,500	10,200	No	156,000	No
199-D5-29	7439-96-5	Manganese	µg/kg	2	2	--	--	188,000	205,000	512,000	No	1,260,000	No
199-D5-29	7439-97-6	Mercury	µg/kg	2	1	50	50	100	100	13	Yes	300	No
199-D5-29	7440-02-0	Nickel	µg/kg	2	2	--	--	5,800	5,900	19,100	No	38,000	No
199-D5-29	10098-97-2	Strontium-90	pCi/g	2	2	--	--	1.3	1.6	0.18	Yes	91	No
199-D5-29	7440-62-2	Vanadium	µg/kg	2	2	--	--	12,200	15,500	85,100	No	43,000	No
199-D5-29	7440-66-6	Zinc	µg/kg	2	2	--	--	22,200	24,200	67,800	No	621,000	No
199-D5-30	7429-90-5	Aluminum	µg/kg	1	1	--	--	6,600,000	6,600,000	11,800,000	No	3,988,000	Yes
199-D5-30	7440-38-2	Arsenic	µg/kg	1	1	--	--	3,000	3,000	6,470	No	127,000	No
199-D5-30	7440-39-3	Barium	µg/kg	1	1	--	--	68,400	68,400	132,000	No	358,000	No
199-D5-30	7440-41-7	Beryllium	µg/kg	1	1	--	--	460	460	1,510	No	10,000	No
199-D5-30	7440-47-3	Chromium	µg/kg	1	1	--	--	10,700	10,700	18,500	No	109,000	No
199-D5-30	7440-48-4	Cobalt	µg/kg	1	1	--	--	9,200	9,200	15,700	No	15,700	No
199-D5-30	7440-50-8	Copper	µg/kg	1	1	--	--	15,700	15,700	22,000	No	58,000	No
199-D5-30	16984-48-8	Fluoride	µg/kg	1	1	--	--	1,600	1,600	2,810	No	2,281,000	No
199-D5-30	7439-92-1	Lead	µg/kg	1	1	--	--	6,800	6,800	10,200	No	156,000	No
199-D5-30	7439-96-5	Manganese	µg/kg	1	1	--	--	294,000	294,000	512,000	No	1,260,000	No
199-D5-30	7440-02-0	Nickel	µg/kg	1	1	--	--	10,400	10,400	19,100	No	38,000	No
199-D5-30	U-233/234	Uranium-233/234	pCi/g	1	1	--	--	0.57	0.57	1.1	No	6,370	No
199-D5-30	U-238	Uranium-238	pCi/g	1	1	--	--	0.58	0.58	1.1	No	5,150	No
199-D5-30	7440-62-2	Vanadium	µg/kg	1	1	--	--	43,400	43,400	85,100	No	43,000	Yes
199-D5-30	7440-66-6	Zinc	µg/kg	1	1	--	--	38,400	38,400	67,800	No	621,000	No
199-D8-60	7429-90-5	Aluminum	µg/kg	1	1	--	--	4,780,000	4,780,000	11,800,000	No	3,988,000	Yes
199-D8-60	7440-39-3	Barium	µg/kg	1	1	--	--	106,000	106,000	132,000	No	358,000	No
199-D8-60	7440-41-7	Beryllium	µg/kg	1	1	--	--	350	350	1,510	No	10,000	No
199-D8-60	10045-97-3	Cesium-137	pCi/g	1	1	--	--	9.6	9.6	1.1	Yes	924	No
199-D8-60	7440-47-3	Chromium	µg/kg	1	1	--	--	51,600	51,600	18,500	Yes	109,000	No
199-D8-60	7440-48-4	Cobalt	µg/kg	1	1	--	--	6,500	6,500	15,700	No	15,700	No
199-D8-60	7440-50-8	Copper	µg/kg	1	1	--	--	12,800	12,800	22,000	No	58,000	No
199-D8-60	7439-92-1	Lead	µg/kg	1	1	--	--	3,800	3,800	10,200	No	156,000	No
199-D8-60	7439-96-5	Manganese	µg/kg	1	1	--	--	179,000	179,000	512,000	No	1,260,000	No
199-D8-60	7439-97-6	Mercury	µg/kg	1	1	--	--	70	70	13	Yes	300	No
199-D8-60	7440-02-0	Nickel	µg/kg	1	1	--	--	3,900	3,900	19,100	No	38,000	No
199-D8-60	7440-22-4	Silver	µg/kg	1	1	--	--	880	880	167	Yes	2,990	No
199-D8-60	10098-97-2	Strontium-90	pCi/g	1	1	--	--	1.9	1.9	0.18	Yes	91	No
199-D8-60	U-238	Uranium-238	pCi/g	1	1	--	--	0.18	0.18	1.1	No	5,150	No
199-D8-60	7440-62-2	Vanadium	µg/kg	1	1	--	--	11,500	11,500	85,100	No	43,000	No
199-D8-60	7440-66-6	Zinc	µg/kg	1	1	--	--	21,400	21,400	67,800	No	621,000	No
199-D8-64	7429-90-5	Aluminum	µg/kg	3	3	--	--	2,390,000	5,270,000	11,800,000	No	3,988,000	Yes
199-D8-64	11096-82-5	Aroclor-1260	µg/kg	3	1	160	170	19	19	--	--	1,470	No
199-D8-64	7440-38-2	Arsenic	µg/kg	1	1	--	--	720	720	6,470	No	127,000	No
199-D8-64	7440-39-3	Barium	µg/kg	3	3	--	--	40,800	71,300	132,000	No	358,000	No
199-D8-64	7440-41-7	Beryllium	µg/kg	3	3	--	--	230	450	1,510	No	10,000	No
199-D8-64	117-81-7	Bis(2-ethylhexyl) phthalate	µg/kg	3	2	340	340	90	220	--	--	140	Yes
199-D8-64	7440-43-9	Cadmium	µg/kg	3	1	600	640	680	680	563	Yes	9,840	No
199-D8-64	7440-47-3	Chromium	µg/kg	3	2	3900	3900	3,400	24,000	18,500	Yes	109,000	No

Table H-18. Comparison of Maximum Detected Soil Concentrations Less than or Equal to 15 Feet BGS from 100-D OU RI/LFI to Ecological PRGs

Well Name or Test Pit	CAS No.	Analyte Name	Units	Total Samples	Total Detects	Minimum Detection Limit	Maximum Detection Limit	Minimum Detect	Maximum Detect	Hanford Site Background	Maximum Detect > Background?	Ecological PRG	Maximum Detect > Ecological PRG
199-D8-64	7440-48-4	Cobalt	µg/kg	3	3	--	--	7,200	8,100	15,700	No	15,700	No
199-D8-64	7440-50-8	Copper	µg/kg	3	3	--	--	11,100	19,300	22,000	No	58,000	No
199-D8-64	7439-92-1	Lead	µg/kg	3	3	--	--	1,600	3,400	10,200	No	156,000	No
199-D8-64	7439-96-5	Manganese	µg/kg	3	3	--	--	158,000	184,000	512,000	No	1,260,000	No
199-D8-64	75-09-2	Methylene chloride	µg/kg	3	2	11	11	7.0	7.0	--	--	166,000	No
199-D8-64	7440-02-0	Nickel	µg/kg	3	3	--	--	4,000	6,500	19,100	No	38,000	No
199-D8-64	7440-22-4	Silver	µg/kg	3	3	--	--	1,600	1,700	167	Yes	2,990	No
199-D8-64	10098-97-2	Strontium-90	pCi/g	2	2	--	--	1.0	2.1	0.18	Yes	91	No
199-D8-64	108-88-3	Toluene	µg/kg	3	1	5	5	2.0	2.0	--	--	195,000	No
199-D8-64	U-238	Uranium-238	pCi/g	1	1	--	--	0.14	0.14	1.1	No	5,150	No
199-D8-64	7440-62-2	Vanadium	µg/kg	3	3	--	--	15,800	22,200	85,100	No	43,000	No
199-D8-64	7440-66-6	Zinc	µg/kg	3	2	20300	20300	22,300	51,200	67,800	No	621,000	No
199-D8-65	7429-90-5	Aluminum	µg/kg	3	3	--	--	2,950,000	3,870,000	11,800,000	No	3,988,000	No
199-D8-65	7440-38-2	Arsenic	µg/kg	3	2	410	410	420	960	6,470	No	127,000	No
199-D8-65	7440-39-3	Barium	µg/kg	3	3	--	--	55,000	106,000	132,000	No	358,000	No
199-D8-65	56-55-3	Benzo(a)anthracene	µg/kg	3	1	360	370	130	130	--	--	2,030	No
199-D8-65	50-32-8	Benzo(a)pyrene	µg/kg	3	1	360	370	110	110	--	--	2,410	No
199-D8-65	205-99-2	Benzo(b)fluoranthene	µg/kg	3	1	360	370	120	120	--	--	1,270	No
199-D8-65	191-24-2	Benzo(ghi)perylene	µg/kg	3	1	360	370	85	85	--	--	1,120	No
199-D8-65	207-08-9	Benzo(k)fluoranthene	µg/kg	3	1	360	370	95	95	--	--	1,270	No
199-D8-65	10045-97-3	Cesium-137	pCi/g	2	2	--	--	1.1	2.0	1.1	Yes	924	No
199-D8-65	7440-47-3	Chromium	µg/kg	3	3	--	--	4,100	30,000	18,500	Yes	109,000	No
199-D8-65	218-01-9	Chrysene	µg/kg	3	1	360	370	140	140	--	--	1,430	No
199-D8-65	7440-48-4	Cobalt	µg/kg	3	3	--	--	7,600	9,100	15,700	No	15,700	No
199-D8-65	10198-40-0	Cobalt-60	pCi/g	2	2	--	--	0.26	0.28	0.0084	Yes	805	No
199-D8-65	7440-50-8	Copper	µg/kg	3	3	--	--	13,600	18,200	22,000	No	58,000	No
199-D8-65	14683-23-9	Europium-152	pCi/g	2	2	--	--	0.49	0.82	--	--	1,740	No
199-D8-65	206-44-0	Fluoranthene	µg/kg	3	1	360	370	240	240	--	--	1,090	No
199-D8-65	193-39-5	Indeno(1,2,3-cd)pyrene	µg/kg	3	1	360	370	76	76	--	--	1,150	No
199-D8-65	7439-92-1	Lead	µg/kg	3	3	--	--	1,900	4,700	10,200	No	156,000	No
199-D8-65	7439-96-5	Manganese	µg/kg	3	3	--	--	194,000	266,000	512,000	No	1,260,000	No
199-D8-65	75-09-2	Methylene chloride	µg/kg	3	2	11	11	4.0	10	--	--	166,000	No
199-D8-65	7440-02-0	Nickel	µg/kg	3	3	--	--	5,000	6,600	19,100	No	38,000	No
199-D8-65	85-01-8	Phenanthrene	µg/kg	3	1	360	370	150	150	--	--	29,000	No
199-D8-65	129-00-0	Pyrene	µg/kg	3	2	360	360	38	240	--	--	1,860	No
199-D8-65	7440-22-4	Silver	µg/kg	3	3	--	--	2,000	2,100	167	Yes	2,990	No
199-D8-65	10098-97-2	Strontium-90	pCi/g	2	2	--	--	1.4	2.4	0.18	Yes	91	No
199-D8-65	108-88-3	Toluene	µg/kg	3	1	5	6	3.0	3.0	--	--	195,000	No
199-D8-65	15117-96-1	Uranium-235	pCi/g	2	1	0.0023	0.0023	0.011	0.011	0.11	No	4,360	No
199-D8-65	U-238	Uranium-238	pCi/g	2	2	--	--	0.34	0.39	1.1	No	5,150	No
199-D8-65	7440-62-2	Vanadium	µg/kg	3	3	--	--	16,100	20,100	85,100	No	43,000	No
199-D8-65	7440-66-6	Zinc	µg/kg	3	3	--	--	24,300	27,700	67,800	No	621,000	No
199-D8-66	7429-90-5	Aluminum	µg/kg	3	3	--	--	2,250,000	6,130,000	11,800,000	No	3,988,000	Yes
199-D8-66	11096-82-5	Aroclor-1260	µg/kg	3	1	160	160	130	130	--	--	1,470	No
199-D8-66	7440-38-2	Arsenic	µg/kg	3	2	1600	1600	450	740	6,470	No	127,000	No
199-D8-66	7440-39-3	Barium	µg/kg	3	3	--	--	46,300	75,100	132,000	No	358,000	No
199-D8-66	7440-41-7	Beryllium	µg/kg	3	2	650	650	270	330	1,510	No	10,000	No

Table H-18. Comparison of Maximum Detected Soil Concentrations Less than or Equal to 15 Feet BGS from 100-D OU RI/LFI to Ecological PRGs

Well Name or Test Pit	CAS No.	Analyte Name	Units	Total Samples	Total Detects	Minimum Detection Limit	Maximum Detection Limit	Minimum Detect	Maximum Detect	Hanford Site Background	Maximum Detect > Background?	Ecological PRG	Maximum Detect > Ecological PRG
199-D8-66	117-81-7	Bis(2-ethylhexyl) phthalate	µg/kg	3	2	350	350	61	77	--	--	140	No
199-D8-66	10045-97-3	Cesium-137	pCi/g	2	1	0.1	0.1	0.053	0.053	1.1	No	924	No
199-D8-66	7440-47-3	Chromium	µg/kg	3	3	--	--	7,900	73,400	18,500	Yes	109,000	No
199-D8-66	7440-48-4	Cobalt	µg/kg	3	3	--	--	6,600	12,400	15,700	No	15,700	No
199-D8-66	7440-50-8	Copper	µg/kg	3	3	--	--	11,900	14,800	22,000	No	58,000	No
199-D8-66	14683-23-9	Europium-152	pCi/g	2	1	0.06	0.06	0.60	0.60	--	--	1,740	No
199-D8-66	7439-92-1	Lead	µg/kg	3	3	--	--	2,300	6,600	10,200	No	156,000	No
199-D8-66	7439-96-5	Manganese	µg/kg	3	3	--	--	169,000	319,000	512,000	No	1,260,000	No
199-D8-66	7440-02-0	Nickel	µg/kg	3	3	--	--	4,600	37,000	19,100	Yes	38,000	No
199-D8-66	7440-22-4	Silver	µg/kg	3	3	--	--	1,000	1,800	167	Yes	2,990	No
199-D8-66	10098-97-2	Strontium-90	pCi/g	2	2	--	--	2.5	3.8	0.18	Yes	91	No
199-D8-66	108-88-3	Toluene	µg/kg	2	1	6	6	1.0	1.0	--	--	195,000	No
199-D8-66	79-01-6	Trichloroethene	µg/kg	2	1	5	5	6.0	6.0	--	--	70,000	No
199-D8-66	U-238	Uranium-238	pCi/g	2	2	--	--	0.13	0.15	1.1	No	5,150	No
199-D8-66	7440-62-2	Vanadium	µg/kg	3	2	11200	11200	12,900	47,400	85,100	No	43,000	Yes
199-D8-66	7440-66-6	Zinc	µg/kg	3	3	--	--	22,200	42,900	67,800	No	621,000	No

Table H-19. Comparison of Maximum Detected Soil Concentrations Less than or Equal to 15 Feet BGS from 100-H OU RI/LFI to Ecological PRGs

Well Name or Test Pit	CAS No.	Analyte Name	Units	Total Samples	Total Detects	Minimum Detection Limit	Maximum Detection Limit	Minimum Detect	Maximum Detect	Hanford Site Background	Maximum Detect > Background?	Ecological PRG	Maximum Detect > Ecological PRG
116-H-2	7429-90-5	Aluminum	µg/kg	3	3	--	--	5,390,000	5,490,000	11,800,000	No	3,988,000	Yes
116-H-2	7440-38-2	Arsenic	µg/kg	3	3	--	--	2,200	2,300	6,470	No	127,000	No
116-H-2	7440-39-3	Barium	µg/kg	3	3	--	--	35,100	41,100	132,000	No	358,000	No
116-H-2	7440-41-7	Beryllium	µg/kg	3	3	--	--	214	219	1,510	No	10,000	No
116-H-2	117-81-7	Bis(2-ethylhexyl) phthalate	µg/kg	3	3	--	--	128	758	--	--	140	Yes
116-H-2	7440-42-8	Boron	µg/kg	3	3	--	--	789	946	3,890	No	28,600	No
116-H-2	7440-43-9	Cadmium	µg/kg	3	3	--	--	86	95	563	No	9,840	No
116-H-2	7440-47-3	Chromium	µg/kg	3	3	--	--	9,360	11,700	18,500	No	109,000	No
116-H-2	7440-48-4	Cobalt	µg/kg	3	3	--	--	4,280	4,400	15,700	No	15,700	No
116-H-2	7440-50-8	Copper	µg/kg	3	3	--	--	10,900	11,200	22,000	No	58,000	No
116-H-2	16984-48-8	Fluoride	µg/kg	3	2	2,500	2,500	300	700	2,810	No	2,281,000	No
116-H-2	7439-92-1	Lead	µg/kg	3	3	--	--	2,670	3,420	10,200	No	156,000	No
116-H-2	7439-93-2	Lithium	µg/kg	3	3	--	--	6,390	7,300	13,300	No	2,000	Yes
116-H-2	7439-96-5	Manganese	µg/kg	3	3	--	--	226,000	226,000	512,000	No	1,260,000	No
116-H-2	75-09-2	Methylene chloride	µg/kg	3	3	--	--	2.6	2.9	--	--	166,000	No
116-H-2	7439-98-7	Molybdenum	µg/kg	3	3	--	--	253	372	470	No	2,000	No
116-H-2	7440-02-0	Nickel	µg/kg	3	3	--	--	9,530	10,400	19,100	No	38,000	No
116-H-2	14797-55-8	Nitrate	µg/kg	3	3	--	--	1,100	4,400	52,000	No	340,361,000	No
116-H-2	7440-24-6	Strontium	µg/kg	3	3	--	--	29,500	32,900	--	--	1,214,000	No
116-H-2	7440-31-5	Tin	µg/kg	3	3	--	--	2,460	2,900	--	--	204,000	No
116-H-2	U-233/234	Uranium-233/234	pCi/g	3	3	--	--	0.46	0.65	1.1	No	6,370	No
116-H-2	U-238	Uranium-238	pCi/g	3	3	--	--	0.25	1.2	1.1	Yes	5,150	No
116-H-2	7440-62-2	Vanadium	µg/kg	3	3	--	--	34,600	37,400	85,100	No	43,000	No
116-H-2	7440-66-6	Zinc	µg/kg	3	3	--	--	27,700	28,500	67,800	No	621,000	No
1607-H4	83-32-9	Acenaphthene	µg/kg	2	1	3.4	3.4	2,630	2,630	--	--	20,000	No
1607-H4	208-96-8	Acenaphthylene	µg/kg	2	1	3.4	3.4	526	526	--	--	29,000	No
1607-H4	7429-90-5	Aluminum	µg/kg	2	2	--	--	5,690,000	6,190,000	11,800,000	No	3,988,000	Yes
1607-H4	120-12-7	Anthracene	µg/kg	2	1	3.4	3.4	754	754	--	--	29,000	No
1607-H4	7440-38-2	Arsenic	µg/kg	2	2	--	--	2,330	3,470	6,470	No	127,000	No
1607-H4	7440-39-3	Barium	µg/kg	2	2	--	--	34,700	48,000	132,000	No	358,000	No
1607-H4	56-55-3	Benzo(a)anthracene	µg/kg	2	2	--	--	1.8	2,090	--	--	2,030	Yes
1607-H4	50-32-8	Benzo(a)pyrene	µg/kg	2	2	--	--	4.8	2,120	--	--	2,410	No
1607-H4	205-99-2	Benzo(b)fluoranthene	µg/kg	2	2	--	--	7.8	2,100	--	--	1,270	Yes
1607-H4	191-24-2	Benzo(ghi)perylene	µg/kg	2	1	3.4	3.4	1,780	1,780	--	--	1,120	Yes
1607-H4	207-08-9	Benzo(k)fluoranthene	µg/kg	2	2	--	--	1.3	1,140	--	--	1,270	No
1607-H4	7440-41-7	Beryllium	µg/kg	2	2	--	--	207	240	1,510	No	10,000	No
1607-H4	117-81-7	Bis(2-ethylhexyl) phthalate	µg/kg	2	2	--	--	132	306	--	--	140	Yes
1607-H4	7440-42-8	Boron	µg/kg	2	2	--	--	1,060	1,140	3,890	No	28,600	No
1607-H4	7440-43-9	Cadmium	µg/kg	2	2	--	--	79	96	563	No	9,840	No
1607-H4	7440-47-3	Chromium	µg/kg	2	2	--	--	9,940	11,300	18,500	No	109,000	No
1607-H4	218-01-9	Chrysene	µg/kg	2	2	--	--	25	1,640	--	--	1,430	Yes
1607-H4	7440-48-4	Cobalt	µg/kg	2	2	--	--	4,890	4,990	15,700	No	15,700	No
1607-H4	7440-50-8	Copper	µg/kg	2	2	--	--	11,500	11,900	22,000	No	58,000	No
1607-H4	53-70-3	Dibenz[a,h]anthracene	µg/kg	2	1	3.4	3.4	241	241	--	--	1,420	No
1607-H4	206-44-0	Fluoranthene	µg/kg	2	2	--	--	7.4	4,370	--	--	1,090	Yes
1607-H4	86-73-7	Fluorene	µg/kg	2	1	3.4	3.4	234	234	--	--	29,000	No

Table H-19. Comparison of Maximum Detected Soil Concentrations Less than or Equal to 15 Feet BGS from 100-H OU RI/LFI to Ecological PRGs

Well Name or Test Pit	CAS No.	Analyte Name	Units	Total Samples	Total Detects	Minimum Detection Limit	Maximum Detection Limit	Minimum Detect	Maximum Detect	Hanford Site Background	Maximum Detect > Background?	Ecological PRG	Maximum Detect > Ecological PRG
1607-H4	16984-48-8	Fluoride	µg/kg	2	1	2,400	2,400	300	300	2,810	No	2,281,000	No
1607-H4	193-39-5	Indeno(1,2,3-cd)pyrene	µg/kg	2	1	3.4	3.4	1,280	1,280	--	--	1,150	Yes
1607-H4	7439-92-1	Lead	µg/kg	2	2	--	--	4,740	7,660	10,200	No	156,000	No
1607-H4	7439-93-2	Lithium	µg/kg	2	2	--	--	6,960	7,740	13,300	No	2,000	Yes
1607-H4	7439-96-5	Manganese	µg/kg	2	2	--	--	227,000	239,000	512,000	No	1,260,000	No
1607-H4	75-09-2	Methylene chloride	µg/kg	2	2	--	--	2.6	2.6	--	--	166,000	No
1607-H4	7439-98-7	Molybdenum	µg/kg	2	2	--	--	274	317	470	No	2,000	No
1607-H4	7440-02-0	Nickel	µg/kg	2	2	--	--	9,540	10,200	19,100	No	38,000	No
1607-H4	14797-55-8	Nitrate	µg/kg	2	2	--	--	2,100	3,000	52,000	No	340,361,000	No
1607-H4	85-01-8	Phenanthrene	µg/kg	2	2	--	--	3.8	2,880	--	--	29,000	No
1607-H4	129-00-0	Pyrene	µg/kg	2	2	--	--	42	4,310	--	--	1,860	Yes
1607-H4	7440-24-6	Strontium	µg/kg	2	2	--	--	27,800	37,500	--	--	1,214,000	No
1607-H4	7440-31-5	Tin	µg/kg	2	2	--	--	3,100	3,140	--	--	204,000	No
1607-H4	U-233/234	Uranium-233/234	pCi/g	2	2	--	--	0.49	0.91	1.1	No	6,370	No
1607-H4	U-238	Uranium-238	pCi/g	2	2	--	--	0.34	0.68	1.1	No	5,150	No
1607-H4	7440-62-2	Vanadium	µg/kg	2	2	--	--	43,500	44,600	85,100	No	43,000	Yes
1607-H4	7440-66-6	Zinc	µg/kg	2	2	--	--	30,800	32,100	67,800	No	621,000	No
199-H4-58	7429-90-5	Aluminum	µg/kg	1	1	--	--	6,710,000	6,710,000	11,800,000	No	3,988,000	Yes
199-H4-58	14596-10-2	Americium-241	pCi/g	1	1	--	--	0.20	0.20	--	--	4,840	No
199-H4-58	7440-38-2	Arsenic	µg/kg	1	1	--	--	37,900	37,900	6,470	Yes	127,000	No
199-H4-58	7440-39-3	Barium	µg/kg	1	1	--	--	72,300	72,300	132,000	No	358,000	No
199-H4-58	10045-97-3	Cesium-137	pCi/g	1	1	--	--	32	32	1.1	Yes	924	No
199-H4-58	7440-47-3	Chromium	µg/kg	1	1	--	--	16,000	16,000	18,500	No	109,000	No
199-H4-58	7440-48-4	Cobalt	µg/kg	1	1	--	--	7,700	7,700	15,700	No	15,700	No
199-H4-58	10198-40-0	Cobalt-60	pCi/g	1	1	--	--	2.5	2.5	0.0084	Yes	805	No
199-H4-58	14683-23-9	Europium-152	pCi/g	1	1	--	--	54	54	--	--	1,740	No
199-H4-58	15585-10-1	Europium-154	pCi/g	1	1	--	--	5.4	5.4	0.033	Yes	1,610	No
199-H4-58	7439-92-1	Lead	µg/kg	1	1	--	--	187,000	187,000	10,200	Yes	156,000	Yes
199-H4-58	7439-96-5	Manganese	µg/kg	1	1	--	--	278,000	278,000	512,000	No	1,260,000	No
199-H4-58	7440-02-0	Nickel	µg/kg	1	1	--	--	10,800	10,800	19,100	No	38,000	No
199-H4-58	PU-239/240	Plutonium-239/240	pCi/g	1	1	--	--	0.74	0.74	0.025	Yes	6,270	No
199-H4-58	108-88-3	Toluene	µg/kg	1	1	--	--	14	14	--	--	195,000	No
199-H4-58	U-238	Uranium-238	pCi/g	1	1	--	--	0.61	0.61	1.1	No	5,150	No
199-H4-58	7440-62-2	Vanadium	µg/kg	1	1	--	--	32,000	32,000	85,100	No	43,000	No
199-H4-58	7440-66-6	Zinc	µg/kg	1	1	--	--	48,700	48,700	67,800	No	621,000	No
199-H4-59	7429-90-5	Aluminum	µg/kg	1	1	--	--	4,560,000	4,560,000	11,800,000	No	3,988,000	Yes
199-H4-59	7440-39-3	Barium	µg/kg	1	1	--	--	57,600	57,600	132,000	No	358,000	No
199-H4-59	7440-47-3	Chromium	µg/kg	1	1	--	--	7,600	7,600	18,500	No	109,000	No
199-H4-59	7440-48-4	Cobalt	µg/kg	1	1	--	--	6,900	6,900	15,700	No	15,700	No
199-H4-59	7440-50-8	Copper	µg/kg	1	1	--	--	13,600	13,600	22,000	No	58,000	No
199-H4-59	7439-92-1	Lead	µg/kg	1	1	--	--	2,900	2,900	10,200	No	156,000	No
199-H4-59	7439-96-5	Manganese	µg/kg	1	1	--	--	211,000	211,000	512,000	No	1,260,000	No
199-H4-59	7440-02-0	Nickel	µg/kg	1	1	--	--	7,400	7,400	19,100	No	38,000	No
199-H4-59	U-238	Uranium-238	pCi/g	1	1	--	--	0.33	0.33	1.1	No	5,150	No
199-H4-59	7440-62-2	Vanadium	µg/kg	1	1	--	--	32,200	32,200	85,100	No	43,000	No
199-H4-59	7440-66-6	Zinc	µg/kg	1	1	--	--	31,700	31,700	67,800	No	621,000	No
199-H4-61	7429-90-5	Aluminum	µg/kg	3	3	--	--	5,330,000	9,070,000	11,800,000	No	3,988,000	Yes

Table H-19. Comparison of Maximum Detected Soil Concentrations Less than or Equal to 15 Feet BGS from 100-H OU RI/LFI to Ecological PRGs

Well Name or Test Pit	CAS No.	Analyte Name	Units	Total Samples	Total Detects	Minimum Detection Limit	Maximum Detection Limit	Minimum Detect	Maximum Detect	Hanford Site Background	Maximum Detect > Background?	Ecological PRG	Maximum Detect > Ecological PRG
199-H4-61	14596-10-2	Americium-241	pCi/g	3	2	0.011	0.011	0.54	0.72	--	--	4,840	No
199-H4-61	7440-38-2	Arsenic	µg/kg	3	3	--	--	2,800	47,000	6,470	Yes	127,000	No
199-H4-61	7440-39-3	Barium	µg/kg	3	3	--	--	64,700	94,900	132,000	No	358,000	No
199-H4-61	7440-41-7	Beryllium	µg/kg	3	1	240	250	370	370	1,510	No	10,000	No
199-H4-61	14762-75-5	Carbon-14	pCi/g	3	2	-1.5	-1.5	28	33	--	--	32	Yes
199-H4-61	10045-97-3	Cesium-137	pCi/g	3	2	0.077	0.077	11	35	1.1	Yes	924	No
199-H4-61	7440-47-3	Chromium	µg/kg	3	3	--	--	12,300	28,300	18,500	Yes	109,000	No
199-H4-61	7440-48-4	Cobalt	µg/kg	3	1	7,100	7,500	9,200	9,200	15,700	No	15,700	No
199-H4-61	10198-40-0	Cobalt-60	pCi/g	3	2	0.067	0.067	14	36	0.0084	Yes	805	No
199-H4-61	7440-50-8	Copper	µg/kg	3	3	--	--	17,000	23,400	22,000	Yes	58,000	No
199-H4-61	14683-23-9	Europium-152	pCi/g	2	2	--	--	120	260	--	--	1,740	No
199-H4-61	15585-10-1	Europium-154	pCi/g	2	2	--	--	19	37	0.033	Yes	1,610	No
199-H4-61	7439-92-1	Lead	µg/kg	3	3	--	--	5,900	540,000	10,200	Yes	156,000	Yes
199-H4-61	7439-96-5	Manganese	µg/kg	3	3	--	--	245,000	325,000	512,000	No	1,260,000	No
199-H4-61	7439-97-6	Mercury	µg/kg	3	2	90	90	450	1,100	13	Yes	300	Yes
199-H4-61	7440-02-0	Nickel	µg/kg	3	1	7,300	7,600	11,800	11,800	19,100	No	38,000	No
199-H4-61	PU-239/240	Plutonium-239/240	pCi/g	3	3	--	--	0.026	1.3	0.025	Yes	6,270	No
199-H4-61	10098-97-2	Strontium-90	pCi/g	3	1	-0.15	0.93	3.2	3.2	0.18	Yes	91	No
199-H4-61	108-88-3	Toluene	µg/kg	3	2	5.0	5.0	2.0	49	--	--	195,000	No
199-H4-61	U-238	Uranium-238	pCi/g	3	3	--	--	0.47	0.69	1.1	No	5,150	No
199-H4-61	7440-62-2	Vanadium	µg/kg	3	3	--	--	31,700	40,000	85,100	No	43,000	No
199-H4-61	7440-66-6	Zinc	µg/kg	3	3	--	--	53,100	83,100	67,800	Yes	621,000	No
199-H4-62	7429-90-5	Aluminum	µg/kg	1	1	--	--	74,400,000	74,400,000	11,800,000	Yes	3,988,000	Yes
199-H4-62	7440-39-3	Barium	µg/kg	1	1	--	--	672,000	672,000	132,000	Yes	358,000	Yes
199-H4-62	7440-41-7	Beryllium	µg/kg	1	1	--	--	4,700	4,700	1,510	Yes	10,000	No
199-H4-62	7440-43-9	Cadmium	µg/kg	1	1	--	--	10,600	10,600	563	Yes	9,840	Yes
199-H4-62	7440-47-3	Chromium	µg/kg	1	1	--	--	114,000	114,000	18,500	Yes	109,000	Yes
199-H4-62	7440-48-4	Cobalt	µg/kg	1	1	--	--	86,400	86,400	15,700	Yes	15,700	Yes
199-H4-62	7440-50-8	Copper	µg/kg	1	1	--	--	195,000	195,000	22,000	Yes	58,000	Yes
199-H4-62	7439-92-1	Lead	µg/kg	1	1	--	--	7,900	7,900	10,200	No	156,000	No
199-H4-62	7439-96-5	Manganese	µg/kg	1	1	--	--	3.05E+06	3.05E+06	512,000	Yes	1,260,000	Yes
199-H4-62	7440-02-0	Nickel	µg/kg	1	1	--	--	132,000	132,000	19,100	Yes	38,000	Yes
199-H4-62	U-238	Uranium-238	pCi/g	1	1	--	--	0.47	0.47	1.1	No	5,150	No
199-H4-62	7440-62-2	Vanadium	µg/kg	1	1	--	--	389,000	389,000	85,100	Yes	43,000	Yes
199-H4-62	7440-66-6	Zinc	µg/kg	1	1	--	--	430,000	430,000	67,800	Yes	621,000	No
C7630	7429-90-5	Aluminum	µg/kg	1	1	--	--	5,190,000	5,190,000	11,800,000	No	3,988,000	Yes
C7630	7440-38-2	Arsenic	µg/kg	1	1	--	--	1,620	1,620	6,470	No	127,000	No
C7630	7440-39-3	Barium	µg/kg	1	1	--	--	46,000	46,000	132,000	No	358,000	No
C7630	7440-41-7	Beryllium	µg/kg	1	1	--	--	152	152	1,510	No	10,000	No
C7630	7440-42-8	Boron	µg/kg	1	1	--	--	556	556	3,890	No	28,600	No
C7630	7440-43-9	Cadmium	µg/kg	1	1	--	--	68	68	563	No	9,840	No
C7630	7440-47-3	Chromium	µg/kg	1	1	--	--	9,380	9,380	18,500	No	109,000	No
C7630	7440-48-4	Cobalt	µg/kg	1	1	--	--	4,510	4,510	15,700	No	15,700	No
C7630	7440-50-8	Copper	µg/kg	1	1	--	--	12,300	12,300	22,000	No	58,000	No
C7630	16984-48-8	Fluoride	µg/kg	1	1	--	--	600	600	2,810	No	2,281,000	No
C7630	7439-92-1	Lead	µg/kg	1	1	--	--	3,250	3,250	10,200	No	156,000	No
C7630	7439-93-2	Lithium	µg/kg	1	1	--	--	5,640	5,640	13,300	No	2,000	Yes

Table H-19. Comparison of Maximum Detected Soil Concentrations Less than or Equal to 15 Feet BGS from 100-H OU RI/LFI to Ecological PRGs

Well Name or Test Pit	CAS No.	Analyte Name	Units	Total Samples	Total Detects	Minimum Detection Limit	Maximum Detection Limit	Minimum Detect	Maximum Detect	Hanford Site Background	Maximum Detect > Background?	Ecological PRG	Maximum Detect > Ecological PRG
C7630	7439-96-5	Manganese	µg/kg	1	1	--	--	228,000	228,000	512,000	No	1,260,000	No
C7630	7439-98-7	Molybdenum	µg/kg	1	1	--	--	329	329	470	No	2,000	No
C7630	7440-02-0	Nickel	µg/kg	1	1	--	--	8,080	8,080	19,100	No	38,000	No
C7630	7440-24-6	Strontium	µg/kg	1	1	--	--	24,000	24,000	--	--	1,214,000	No
C7630	7440-28-0	Thallium	µg/kg	1	1	--	--	190	190	185	Yes	459	No
C7630	7440-31-5	Tin	µg/kg	1	1	--	--	2,020	2,020	--	--	204,000	No
C7630	7440-61-1	Uranium	µg/kg	1	1	--	--	1,110	1,110	3,210	No	22,000	No
C7630	7440-62-2	Vanadium	µg/kg	1	1	--	--	45,700	45,700	85,100	No	43,000	Yes
C7630	7440-66-6	Zinc	µg/kg	1	1	--	--	34,800	34,800	67,800	No	621,000	No
C7860	7429-90-5	Aluminum	µg/kg	1	1	--	--	6,680,000	6,680,000	11,800,000	No	3,988,000	Yes
C7860	7440-38-2	Arsenic	µg/kg	1	1	--	--	12,100	12,100	6,470	Yes	127,000	No
C7860	7440-39-3	Barium	µg/kg	1	1	--	--	59,000	59,000	132,000	No	358,000	No
C7860	7440-41-7	Beryllium	µg/kg	1	1	--	--	218	218	1,510	No	10,000	No
C7860	7440-42-8	Boron	µg/kg	1	1	--	--	1,260	1,260	3,890	No	28,600	No
C7860	7440-43-9	Cadmium	µg/kg	1	1	--	--	217	217	563	No	9,840	No
C7860	7440-47-3	Chromium	µg/kg	1	1	--	--	10,600	10,600	18,500	No	109,000	No
C7860	7440-48-4	Cobalt	µg/kg	1	1	--	--	5,270	5,270	15,700	No	15,700	No
C7860	7440-50-8	Copper	µg/kg	1	1	--	--	16,700	16,700	22,000	No	58,000	No
C7860	16984-48-8	Fluoride	µg/kg	1	1	--	--	2,600	2,600	2,810	No	2,281,000	No
C7860	18540-29-9	Hexavalent Chromium	µg/kg	1	1	--	--	500	500	--	--	1,245,000	No
C7860	7439-92-1	Lead	µg/kg	1	1	--	--	36,500	36,500	10,200	Yes	156,000	No
C7860	7439-93-2	Lithium	µg/kg	1	1	--	--	6,700	6,700	13,300	No	2,000	Yes
C7860	7439-96-5	Manganese	µg/kg	1	1	--	--	249,000	249,000	512,000	No	1,260,000	No
C7860	7439-97-6	Mercury	µg/kg	1	1	--	--	10	10	13	No	300	No
C7860	7439-98-7	Molybdenum	µg/kg	1	1	--	--	459	459	470	No	2,000	No
C7860	7440-02-0	Nickel	µg/kg	1	1	--	--	9,530	9,530	19,100	No	38,000	No
C7860	14797-55-8	Nitrate	µg/kg	1	1	--	--	16,800	16,800	52,000	No	340,361,000	No
C7860	7782-49-2	Selenium	µg/kg	1	1	--	--	263	263	780	No	1,400	No
C7860	7440-24-6	Strontium	µg/kg	1	1	--	--	25,700	25,700	--	--	1,214,000	No
C7860	7440-31-5	Tin	µg/kg	1	1	--	--	1,290	1,290	--	--	204,000	No
C7860	U-233/234	Uranium-233/234	pCi/g	1	1	--	--	0.56	0.56	1.1	No	6,370	No
C7860	U-238	Uranium-238	pCi/g	1	1	--	--	0.54	0.54	1.1	No	5,150	No
C7860	7440-62-2	Vanadium	µg/kg	1	1	--	--	41,300	41,300	85,100	No	43,000	No
C7860	7440-66-6	Zinc	µg/kg	1	1	--	--	35,800	35,800	67,800	No	621,000	No
C7862	7429-90-5	Aluminum	µg/kg	3	3	--	--	4,960,000	6,470,000	11,800,000	No	3,988,000	Yes
C7862	7440-38-2	Arsenic	µg/kg	3	3	--	--	6,110	10,100	6,470	Yes	127,000	No
C7862	7440-39-3	Barium	µg/kg	3	3	--	--	62,300	92,800	132,000	No	358,000	No
C7862	7440-41-7	Beryllium	µg/kg	3	3	--	--	182	243	1,510	No	10,000	No
C7862	7440-42-8	Boron	µg/kg	3	3	--	--	752	1,410	3,890	No	28,600	No
C7862	7440-43-9	Cadmium	µg/kg	3	3	--	--	108	153	563	No	9,840	No
C7862	14762-75-5	Carbon-14	pCi/g	3	1	1.3	1.3	2.2	2.2	--	--	32	No
C7862	7440-47-3	Chromium	µg/kg	3	3	--	--	20,900	63,800	18,500	Yes	109,000	No
C7862	7440-48-4	Cobalt	µg/kg	3	3	--	--	4,880	5,620	15,700	No	15,700	No
C7862	7440-50-8	Copper	µg/kg	3	3	--	--	14,400	16,100	22,000	No	58,000	No
C7862	16984-48-8	Fluoride	µg/kg	3	2	4,900	4,900	1,100	1,400	2,810	No	2,281,000	No
C7862	7439-92-1	Lead	µg/kg	3	3	--	--	14,700	17,100	10,200	Yes	156,000	No
C7862	7439-93-2	Lithium	µg/kg	3	3	--	--	5,220	7,090	13,300	No	2,000	Yes

Table H-19. Comparison of Maximum Detected Soil Concentrations Less than or Equal to 15 Feet BGS from 100-H OU RI/LFI to Ecological PRGs

Well Name or Test Pit	CAS No.	Analyte Name	Units	Total Samples	Total Detects	Minimum Detection Limit	Maximum Detection Limit	Minimum Detect	Maximum Detect	Hanford Site Background	Maximum Detect > Background?	Ecological PRG	Maximum Detect > Ecological PRG
C7862	7439-96-5	Manganese	µg/kg	3	3	--	--	236,000	286,000	512,000	No	1,260,000	No
C7862	7439-98-7	Molybdenum	µg/kg	3	3	--	--	416	454	470	No	2,000	No
C7862	7440-02-0	Nickel	µg/kg	3	3	--	--	9,510	12,300	19,100	No	38,000	No
C7862	14797-55-8	Nitrate	µg/kg	3	3	--	--	4,300	8,900	52,000	No	340,361,000	No
C7862	7782-49-2	Selenium	µg/kg	3	1	206	235	271	271	780	No	1,400	No
C7862	7440-24-6	Strontium	µg/kg	3	3	--	--	22,000	30,300	--	--	1,214,000	No
C7862	7440-31-5	Tin	µg/kg	3	2	7,820	7,820	743	813	--	--	204,000	No
C7862	U-233/234	Uranium-233/234	pCi/g	3	3	--	--	0.47	0.48	1.1	No	6,370	No
C7862	U-238	Uranium-238	pCi/g	3	2	0.169	0.17	0.48	0.61	1.1	No	5,150	No
C7862	7440-62-2	Vanadium	µg/kg	3	3	--	--	40,800	43,000	85,100	No	43,000	No
C7862	7440-66-6	Zinc	µg/kg	3	3	--	--	33,900	39,000	67,800	No	621,000	No

Table H-20. Summary of Factors Considered for Scientific Management Decision Process for the 100-D/100-H Source OUs

Waste Site and Waste Site Description	Decision Unit	COPEC	EPC (mg/kg)	Plant/ Invertebrate PRG (mg/kg)	Confidence and Basis	Avian/ Mammal PRG (mg/kg)	Basis and Confidence	#Sampling Locations	Area or Length of Waste Site	Depth of Samples (bgs)	# Results > PRG	Range of Concentrations (mg/kg)	Range of HQ	Data Quality	Carry Waste Site into FS for Remedy Evaluation?
100-D-28:1 Replacement Septic System	Shallow	Mercury	0.57	0.3	Confidence in the PRG is low. The basis of the value is the ORNL compendium of plant toxicity thresholds (ES/ER/TM-85/R3). The LOEC was assigned low confidence by the authors because the toxicity threshold in the chosen study was more than two orders of magnitude lower than the next usable study and no primary literature available for effects on plants.	1.6	Not exceeded.	12	74.3 m^2 (800 ft^2)	Max of 4.9 m (16 ft)	1	<0.0054 to 0.61	0.022 to 2.03		No. No soil concentrations greater than lowest wildlife PRG for this biomagnifying compound. EPC slightly greater than plant/invert PRG. Only 1 sample of 12 exceeding plant/invert PRG. Effects to plants are uncertain given the low confidence in the PRG. With a maximum excavation depth of 4.9 m (16 ft), in any of the areas excavated below 4.6m (15 ft), direct contact within the point of compliance is incomplete. If adverse effects did occur, habitat fragmentation in the 100-D Source OU would not be likely given the level of ecological services the habitat is providing in the current condition and the available habitat refugia nearby (see Section 7.6.3).
100-D-28:1 Replacement Septic System	Shallow	Selenium	1.7	2.0	Not exceeded.	1.4	Confidence in the PRG is moderate to high. The value is a PRG based on estimates of dietary exposure to a deer mouse represented by a regression model for plants and median BAF for invertebrates that included Hanford Site-specific prey tissue samples in the data set. The effect level was appropriately set using a LOAEL. The PRG model assumed all individuals of the population being protected obtain all food and other exposure to COPCs exclusively from the waste site. For all the 100-D/H area waste sites this is a conservative assumption. The PRG values are intended to be protective of populations not individuals but factors such as population densities and distributions, were not considered in the development of the PRGs. PRGs would have been greater had these factors been considered.	12	74.3 m^2 (800 ft^2)	Max of 4.9 m (16 ft)	1	<0.78 to 1.7	<0.56 to 1.21		No. The size of the waste site is very small at 74.3 m^2 (800 ft^2). The home range of the deer mouse is more than 10 times greater 900 m^2 (9,670 ft^2) (Bowers and Smith, 1979). Employing an AUF would result in a hazard quotient below 1 and just 1 of 12 samples exceeds the wildlife PRG. Further, with a maximum excavation depth of 4.9 m (16 ft), in any of the areas excavated below 4.6m (15 ft), direct contact within the point of compliance is incomplete.

Table H-20. Summary of Factors Considered for Scientific Management Decision Process for the 100-D/100-H Source OUs

Waste Site and Waste Site Description	Decision Unit	COPEC	EPC (mg/kg)	Plant/ Invertebrate PRG (mg/kg)	Confidence and Basis	Avian/ Mammal PRG (mg/kg)	Basis and Confidence	#Sampling Locations	Area or Length of Waste Site	Depth of Samples (bgs)	# Results > PRG	Range of Concentrations (mg/kg)	Range of HQ	Data Quality	Carry Waste Site into FS for Remedy Evaluation?
100-D-31:5–188-D Ash Disposal Pipeline	Overburden	Selenium	1.7	2.0	Not exceeded.	1.4	Confidence in the PRG is moderate to high. The value is a PRG based on estimates of dietary exposure to a deer mouse represented by a regression model for plants and median BAF for invertebrates that included Hanford Site-specific prey tissue samples in the data set. The effect level was appropriately set using a LOAEL. The PRG model assumed all individuals of the population being protected obtain all food and other exposure to COPCs exclusively from the waste site. For all the 100-D/H area waste sites this is a conservative assumption. The PRG values are intended to be protective of populations not individuals but factors such as population densities and distributions, were not considered in the development of the PRGs. PRGs would have been greater had these factors been considered.	11	Length =134 m (440 ft)	Not Applicable	1	<1.2 to 1.8	<0.86 to 1.29	MDLs within the same range as PRGs.	No. EPC only slightly greater than wildlife PRG. Low confidence in analytical method. Detected concentrations and MDLs are reported within the same range as the PRG values. One slightly elevated sample along a linear pipeline does not suggest exposure is sufficient to cause an adverse effect to the population of deer mice or other small mammals. Exposure to unimpacted areas adjacent to this linear feature would reduce the exposure to acceptable levels. If the samples were to be included in a future excavation, the excavated material with slightly elevated concentrations in 1 of 11 samples would be mixed with surrounding unimpacted material resulting in exposure below the PRG.
100-D-31:5–188-D Ash Disposal Pipeline	Shallow	Selenium	1.5	2.0	Not exceeded.	1.4	Confidence in the PRG is moderate to high. The value is a PRG based on estimates of dietary exposure to a deer mouse represented by a regression model for plants and median BAF for invertebrates that included Hanford Site-specific prey tissue samples in the data set. The effect level was appropriately set using a LOAEL. The PRG model assumed all individuals of the population being protected obtain all food and other exposure to COPCs exclusively from the waste site. For all the 100-D/H area waste sites this is a conservative assumption. The PRG values are intended to be protective of populations not individuals but factors such as population densities and distributions, were not considered in the development of the PRGs. PRGs would have been greater had these factors been considered.	10	Length =134 m (440 ft)	1.7 m (5.5ft)	1	<1.3 to 1.5	<0.93 to 1.1	MDLs within the same range as PRGs.	No. EPC only slightly greater than wildlife PRG. Low confidence in analytical method. Detected concentrations and MDLs are reported within the same range as the PRG values. Only 1 of 10 slightly elevated samples along a linear pipeline does not suggest exposure is sufficient to cause an adverse effect to the population of deer mice or other small mammals. Exposure to unimpacted areas adjacent to this linear feature would reduce the exposure to acceptable levels. Samples collected at a depth well below the maximum observed at Hanford for small mammals (1 m [3.3 ft] pocket mouse [Cline et al., 1980]). If the samples were to be included in a future excavation, the excavated material with slightly elevated concentrations in 1 of 10 samples would be mixed with surrounding unimpacted material resulting in exposure below the PRG.

Table H-20. Summary of Factors Considered for Scientific Management Decision Process for the 100-D/100-H Source OUs

Waste Site and Waste Site Description	Decision Unit	COPEC	EPC (mg/kg)	Plant/ Invertebrate PRG (mg/kg)	Confidence and Basis	Avian/ Mammal PRG (mg/kg)	Basis and Confidence	#Sampling Locations	Area or Length of Waste Site	Depth of Samples (bgs)	# Results > PRG	Range of Concentrations (mg/kg)	Range of HQ	Data Quality	Carry Waste Site into FS for Remedy Evaluation?
100-D-31:6–184-D Powerhouse Sewer Pipelines	Overburden	Mercury	0.87	0.3	Confidence in the PRG is low. The basis of the value is the ORNL compendium of plant toxicity thresholds (ES/ER/TM-85/R3). The LOEC was assigned low confidence by the authors because the toxicity threshold in the chosen study was more than two orders of magnitude lower than the next usable study and no primary literature available for effects on plants.	1.6	Not exceeded.	10	Length =335 m (1,099 ft)	Not Applic-able	2	<0.0057 to 0.87	<0.02 to 2.9	--	No. EPC slightly greater than the plant PRG. Only 2 of 10 samples exceeded the PRG and size of site is small with ample unaffected habitat available in adjacent area. Also, effects to plants are uncertain given the low confidence in the PRG. No soil concentrations greater than lowest wildlife PRG for biomagnifying compound. For plants, if adverse effects did occur, habitat fragmentation in the 100-D OU would not be likely given the level of ecological services the habitat is providing in the current condition and the available habitat refugia nearby (see Section 7.6.3).
100-D-31:6–184-D Powerhouse Sewer Pipelines	Shallow	Mercury	0.58	0.3	Confidence in the PRG is low. The basis of the value is the ORNL compendium of plant toxicity thresholds (ES/ER/TM-85/R3). The LOEC was assigned low confidence by the authors because the toxicity threshold in the chosen study was more than two orders of magnitude lower than the next usable study and no primary literature available for effects on plants.	1.6	Not exceeded.	10	Length =335 m (1,099 ft)	1.5 to 2.3 m (5 to 7.5 ft)	2	<0.0057 to 0.81	<0.02 to 2.7	--	No. EPC slightly greater than the plant PRG. Only 2 of 10 samples exceeded the PRG and size of site is small with ample unaffected habitat available in adjacent area. Also, effects to plants are uncertain given the low confidence in the PRG. No soil concentrations greater than lowest wildlife PRG for biomagnifying compound. For plants, if adverse effects did occur, habitat fragmentation in the 100-D OU would not be likely given the level of ecological services the habitat is providing in the current condition and the available habitat refugia nearby (see Section 7.6.3).
100-D-31:8 Land Bridge	Shallow_ Focused_1	Vanadium	94.9	89	Confidence in the PRG is High. The basis of the value is a Hanford Site-specific NOEC for plants published in ECF-HANFORD-11-0158. There is high confidence with respect to a lack of toxicity at this concentration because there was no correlation between vanadium soil concentration up to this value and the measured response in the bioassays. The PRG is a NOEC set at the highest concentration tested in Hanford Site samples (no LOEC established); thus the concentration at which effects might be observed is unknown.	43	Confidence in the PRG is moderate. The value is a PRG based on estimates of dietary exposure to a killdeer using a regression model for invertebrates that included Hanford Site-specific prey tissue samples in the data set. The effect level was appropriately set using a LOAEL. The PRG model assumed all individuals of the population being protected obtained all food and other exposure to COPCs exclusively from the waste site. For all the 100 D/H Area waste sites this is a conservative assumption. The PRG values are intended to be protective of populations, not individuals, but factors such as population densities and distributions were not considered in the development of the PRGs. PRGs would have been greater had these factors been considered.	3	Length =543 m (1,782 ft)	Max of 9.1 m (30 ft)	1 Plant/3 Avian	74.9 to 94.9	0.8 to 1.07, 1.7 to 2.2	--	No. EPC slightly greater than the plant PRG of 89 mg/kg and the site background of 85 mg/kg. For plants, if adverse effects did occur, habitat fragmentation in the 100-D OU would not be likely given the level of ecological services the habitat is providing in the current condition and the available habitat refugia nearby (see Section 7.6.3). For wildlife, while 3 samples exceeded the lowest wildlife PRG, only one of the values is above background. Elevated concentrations along a linear pipeline do not suggest exposure is sufficient to cause an adverse effect to the population of killdeer or other wildlife. The exposure estimates for wildlife do not include consideration of AUFs. As shown in Appendix H Table H-6, the home ranges of the killdeer of 80,128 m^2 (862,488 ft^2 [Mace, 1971]) is greater than the size of the waste site. Thus employing an AUF yields a hazard quotient below 1. With a maximum excavation depth of 9.1m (30 ft), in any of the areas excavated below 4.6m (15 ft), direct contact within the point of compliance is incomplete. If the samples were to be included in a future excavation, the excavated material

Table H-20. Summary of Factors Considered for Scientific Management Decision Process for the 100-D/100-H Source OUs

Waste Site and Waste Site Description	Decision Unit	COPEC	EPC (mg/kg)	Plant/ Invertebrate PRG (mg/kg)	Confidence and Basis	Avian/ Mammal PRG (mg/kg)	Basis and Confidence	#Sampling Locations	Area or Length of Waste Site	Depth of Samples (bgs)	# Results > PRG	Range of Concentrations (mg/kg)	Range of HQ	Data Quality	Carry Waste Site into FS for Remedy Evaluation?
															with slightly elevated concentrations in 1 of 3 samples would be mixed with surrounding unimpacted material resulting in exposure similar to the PRG.
100-D-31:8_ _2 Land Bridge	Shallow_Focused_2	Barium	1,570	358	Confidence in the PRG is moderate to high. The basis of the value is the site-specific NOEC for invertebrates published in the RCBRA (DOE/RL-2007-21). There is high confidence with respect to a lack of toxicity at this concentration because there was no correlation between barium soil concentration up to this value and the measured response in the bioassays. The PRG is a NOEC set at the highest concentration tested in Hanford Site samples (no LOEC established), thus the concentration at which effects might be observed is unknown.	1,690	Not exceeded.	6	Length =543 m (1,782 ft)	Max of 9.1 m (30 ft)	2	65 to 1570	0.18 to 4.39		No. The invertebrate PRG is an unbounded NOEC, thus there is uncertainty as to what concentration at the site would result in an adverse risk to the invertebrate community. For terrestrial invertebrates, two elevated samples along a linear pipeline do not suggest exposure is sufficient to cause an adverse effect to the community present. There is ample unimpacted habitat for terrestrial invertebrates available in the adjacent area and along the River Corridor. For plants, if adverse effects did occur, habitat fragmentation in the 100-D OUs would not be likely given the level of ecological services the habitat is providing in the current condition and the available habitat refugia nearby (see Section 7.6.3). Lastly, with a maximum excavation depth of 9.1m (30 ft), in any of the areas excavated below 4.6m (15 ft), direct contact within the point of compliance is incomplete.
100-D-31:8_ _2 Land Bridge	Shallow_ Focused_2	Boron	169	29	Confidence in the PRG is moderate to high. The basis of the value is the Hanford Site-specific NOEC for plants published in the RCBRA (DOE/RL-2007-21). There is high confidence with respect to a lack of toxicity at this concentration because there was no correlation between boron soil concentration up to this value and the measured response in the bioassays. The PRG is a NOEC set at the highest concentration tested in Hanford samples (no LOEC established), thus the concentration at which effects might be observed is unknown.	32	Confidence in the PRG is moderate. The value is a PRG based on estimates of dietary exposure to a great basin pocket mouse represented by a median BAF for plants that included Hanford Site-specific prey tissue samples in the data set. The effect level was appropriately set using a LOAEL. The PRG model assumed all individuals of the population being protected obtain all food and other exposure to COPCs exclusively from the waste site. For all the 100-D/H area waste sites this is a conservative assumption. The PRG values are intended to be protective of populations not individuals but factors such as population densities and distributions, were not considered in the development of the PRGs. PRGs would have been greater had these factors been considered.	6	Length =543 m (1,782 ft)	Max of 9.1 m (30 ft)	2plant, 2 avian	3 to 169	0.1 to 5.8, 0.09 to 5.3		No. The EPC exceeded the PRGs for all herbivorous, insectivorous, and omnivorous birds and mammals evaluated. With the site being such a small linear feature, at most only individual not population level impacts is expected for small mammals. In 1976, the reported population density for the Great Basin pocket mouse in the 200 Area averaged 27 individuals per hectare (BNWL-2181). The exposure estimates for wildlife do not include consideration of AUFs. As shown in Appendix H Table H-6, the home ranges of the smaller herbivorous, insectivorous, and omnivorous birds such as passerines are all significantly greater than the acreage of the site. The meadowlark has the smallest home range of the three representative species at 30,350 m^2 (236,700 ft^2 [Lanyon, 1994]), greater than the size of the waste site. Thus employing an AUF yields a hazard quotient below 1. For plants, if adverse effects did occur, habitat fragmentation in the100-D Source OUs would not be likely given the level of ecological services the habitat is providing in the current condition and the available habitat refugia nearby (See Section 7.6.3). Lastly, the depth of sample is up to 9.1 m

Table H-20. Summary of Factors Considered for Scientific Management Decision Process for the 100-D/100-H Source OUs

Waste Site and Waste Site Description	Decision Unit	COPEC	EPC (mg/kg)	Plant/ Invertebrate PRG (mg/kg)	Confidence and Basis	Avian/ Mammal PRG (mg/kg)	Basis and Confidence	#Sampling Locations	Area or Length of Waste Site	Depth of Samples (bgs)	# Results > PRG	Range of Concentrations (mg/kg)	Range of HQ	Data Quality	Carry Waste Site into FS for Remedy Evaluation?
															(30 ft); in any of the areas excavated below 4.6m (15 ft) direct contact within the point of compliance is incomplete. If deep excavation were to occur, the elevated concentrations would be mixed with much lower concentration material resulting in a lower exposure concentration.
100-D-31:8_ _2 Land Bridge	Shallow_ Focused_2	Molybdenum	2.3	2.0	Confidence in the PRG is low. The basis of the value is the ORNL compendium of plant toxicity thresholds (ES/ER/TM-85/R3). The value was assigned low confidence by the authors as a result of the limited number of studies available in the published literature and because no primary literature was available for effects on plants. Neuman et al. (1987) reported that phytotoxicity of molybdenum has never been reported in the literature.	5.74	Not exceeded.	6	Length =543 m (1,782 ft)	Max of 9.1 m (30 ft)	1	<0.27 to 2.3	0.14-1.2		No. One sample at a small site is just above the PRG for plants that was given a low confidence. Neuman et al. (1987) noted phytotoxicity of molybdenum is undocumented in published literature. If adverse effects did occur in plants at then waste site, habitat fragmentation in the 100-D Source OUs would not be likely given the level of ecological services the habitat is providing in the current condition and the available habitat refugia nearby (See Section 7.6.3). Lastly, the depth of sample is up to 9.1 m (30 ft); in any of the areas excavated below 4.6m (15 ft) direct contact within the point of compliance is incomplete. If deep excavation were to occur, the elevated concentrations would be mixed with much lower concentration material resulting in a lower exposure concentration.
100-D-42, 100-D-43, 100-D-45–Buried VSR Thimble Sites	Shallow	Copper	90	58	Confidence in the PRG is moderate. The basis is the Hanford Site-specific NOEC for effects on invertebrates based on results of toxicity testing conducted by and interpreted by Ecology (Ecology Publication 11-03-006). There is high confidence with respect to a lack of toxicity at this concentration because there was no correlation between copper soil concentration up to this value and the measured response in the bioassays. The PRG is a NOEC set at the highest concentration tested in Hanford samples (no LOEC established), thus the higher concentration at which effects might be observed is unknown.	193	Not exceeded.	12	608 m2 (6,544 ft2)	4.9 to 7.0 m (16 to 23 ft)	2	14 to 146	0.23 to 2.5	Results flagged with "C" qualifier.	No. Soil samples collected from a depth greater than 4.6 m (15 ft) bgs: direct contact within point of compliance is incomplete.
100-D-47 – Burial Ground 4E	Shallow Focused	Vanadium	86	89	Not exceeded.	43	Confidence in the PRG is moderate. The value is a PRG based on estimates of dietary exposure to a killdeer using a regression model for invertebrates that included Hanford Site-specific prey tissue samples in the data set. The effect level was appropriately set using a LOAEL. The PRG model	5	2,892 m2 (31,129 ft2)	4.6 to 6.0 m (15 to 19 ft)	4	42 to 86	0.97 to 1.99	--	No. Soil samples collected from a depth greater than 4.6 m (15 ft) bgs: direct contact within point of compliance is incomplete.

Table H-20. Summary of Factors Considered for Scientific Management Decision Process for the 100-D/100-H Source OUs

Waste Site and Waste Site Description	Decision Unit	COPEC	EPC (mg/kg)	Plant/ Invertebrate PRG (mg/kg)	Confidence and Basis	Avian/ Mammal PRG (mg/kg)	Basis and Confidence	#Sampling Locations	Area or Length of Waste Site	Depth of Samples (bgs)	# Results > PRG	Range of Concentrations (mg/kg)	Range of HQ	Data Quality	Carry Waste Site into FS for Remedy Evaluation?
							assumed all individuals of the population being protected obtained all food and other exposure to COPCs exclusively from the waste site. For all the 100 D/H Area waste sites this is a conservative assumption. The PRG values are intended to be protective of populations, not individuals, but factors such as population densities and distributions were not considered in the development of the PRGs. PRGs would have been greater had these factors been considered.								
100-D-70–184DA Steam Generating Dry Well	Shallow Focused	Copper	74	58	Confidence in the PRG is moderate. The basis is the Hanford Site-specific NOEC for effects on invertebrates based on results of toxicity testing conducted by and interpreted by Ecology (Ecology Publication 11-03-006). There is high confidence with respect to a lack of toxicity at this concentration because there was no correlation between copper soil concentration up to this value and the measured response in the bioassays. The PRG is a NOEC set at the highest concentration tested in Hanford samples (no LOEC established), thus the higher concentration at which effects might be observed is unknown.	193	Not exceeded.	1	1.2 m2 (13 ft2)	1.5 m (5 ft)	1	73.9	1.3	--	No. EPC only slightly greater than the plant/invert PRG. No soil concentrations greater than lowest wildlife PRG for biomagnifying compound. Investigation area insignificant. The site is insignificant in size; There is ample unimpacted habitat for terrestrial invertebrates available in adjacent area and along the River Corridor. For plants, if adverse effects did occur, habitat fragmentation in the 100-D Source OU would not be likely given the level of ecological services the habitat is providing in the current condition and the available habitat refugia nearby (see Section 7.6.3).
100-D-56:1	Overburden	Selenium	2.1	2.0	Confidence in the PRG is moderate to high. The basis of the value is the site-specific NOEC for plants published in ECF-HANFORD-11-0158. There is high confidence with respect to a lack of toxicity at this concentration because there was no correlation between selenium soil concentration up to this value and the measured response in the bioassays. The PRG is a NOEC set at the highest concentration tested in Hanford Site samples (no LOEC established); thus the concentration at which effects might be observed is unknown.	1.4	Confidence in the PRG is moderate to high. The value is a PRG based on estimates of dietary exposure to a deer mouse represented by a regression model for plants and median BAF for invertebrates that included Hanford Site-specific prey tissue samples in the data set. The effect level was appropriately set using a LOAEL. The PRG model assumed all individuals of the population being protected obtain all food and other exposure to COPCs exclusively from the waste site. For all the 100-D/H area waste sites this is a conservative assumption. The PRG values are intended to be protective of populations not individuals but factors such as population densities and distributions, were not considered in the	18	Length =533 m (1,749 ft)	Not Applic-able	1 plant, 2 avian	<1.3 to 2.1	<0.65 to 1.05, <0.93 to 1.5		No. EPC only slightly greater than PRGs. Only 2 of 18 slightly elevated samples along a linear pipeline does not suggest exposure is sufficient to cause an adverse effect to the population of deer mice or other small mammals. Exposure to unimpacted areas adjacent to this linear feature would reduce the exposure to acceptable levels. There is ample unimpacted habitat for terrestrial invertebrates available in adjacent area and along the River Corridor. For plants, if adverse effects did occur, habitat fragmentation in the 100-D Source OU would not be likely given the level of ecological services the habitat is providing in the current condition and the available habitat refugia nearby (see Section 7.6.3). If the samples were to be included in a future excavation, the excavated material with slightly elevated concentrations in 2 of 18 samples would be mixed with surrounding unimpacted material resulting in exposure below the PRG.

Table H-20. Summary of Factors Considered for Scientific Management Decision Process for the 100-D/100-H Source OUs

Waste Site and Waste Site Description	Decision Unit	COPEC	EPC (mg/kg)	Plant/ Invertebrate PRG (mg/kg)	Confidence and Basis	Avian/ Mammal PRG (mg/kg)	Basis and Confidence	#Sampling Locations	Area or Length of Waste Site	Depth of Samples (bgs)	# Results > PRG	Range of Concentrations (mg/kg)	Range of HQ	Data Quality	Carry Waste Site into FS for Remedy Evaluation?
							development of the PRGs. PRGs would have been greater had these factors been considered.								
100-D-56:1	Shallow	Selenium	1.7	2.0	Not exceeded.	1.4	Confidence in the PRG is moderate to high. The value is a PRG based on estimates of dietary exposure to a deer mouse represented by a regression model for plants and median BAF for invertebrates that included Hanford Site-specific prey tissue samples in the data set. The effect level was appropriately set using a LOAEL. The PRG model assumed all individuals of the population being protected obtain all food and other exposure to COPCs exclusively from the waste site. For all the 100-D/H area waste sites this is a conservative assumption. The PRG values are intended to be protective of populations not individuals but factors such as population densities and distributions, were not considered in the development of the PRGs. PRGs would have been greater had these factors been considered.	12	Length =533 m (1,749 ft)	<4.6 m (< 15 ft)	1	<1.5 to 1.7	<1.07 to 1.21		No. EPC only slightly greater than PRGs. Only 1 of 12 slightly elevated samples along a linear pipeline does not suggest exposure is sufficient to cause an adverse effect to the population of deer mice or other small mammals. Exposure to unimpacted areas adjacent to this linear feature would reduce the exposure to acceptable levels. There is ample unimpacted habitat for terrestrial invertebrates available in adjacent area and along the River Corridor. For plants, if adverse effects did occur, habitat fragmentation in the 100-D Source OU would not be likely given the level of ecological services the habitat is providing in the current condition and the available habitat refugia nearby (see Section 7.6.3). If the samples were to be included in a future excavation, the excavated material with slightly elevated concentrations in 1 of 12 samples would be mixed with surrounding unimpacted material resulting in exposure below the PRG.
100-D-7	Staging pile area footprint	Mercury	0.3	0.3	Confidence in the PRG is low. The basis of the value is the ORNL compendium of plant toxicity thresholds (ES/ER/TM-85/R3). The LOEC was assigned low confidence by the authors because the toxicity threshold in the chosen study was more than two orders of magnitude lower than the next usable study and no primary literature available for effects on plants.	1.6	Not exceeded.	12	13,899 m^2 (149,603 ft^2)	4 m (13 ft)	1	0.0053 to 0.420	<0.02 to 1.4		No. EPC slightly greater than the plant PRG. Only 1 of 12 samples exceeded the PRG. No soil concentrations greater than lowest wildlife PRG for biomagnifying compound. Also, effects to plants are uncertain given the low confidence in the PRG. For plants, if adverse effects did occur, habitat fragmentation in the 100-D OU would not be likely given the level of ecological services the habitat is providing in the current condition and the available habitat refugia nearby (see Section 7.6.3).
100-D-83:4– Additional Treated Water Pipelines	Shallow Focused	Mercury	0.95	0.3	Confidence in the PRG is low. The basis of the value is the ORNL compendium of plant toxicity thresholds (ES/ER/TM-85/R3). The LOEC was assigned low confidence by the authors because the toxicity threshold in the chosen study was more than two orders of magnitude lower than the next usable study and no primary literature available for effects on plants.	1.6	Not exceeded.	3	Length =373 m (1,224 ft)	1.2 m (4 ft), 1.8 m (6 ft), and 4.6 m (15 ft)	1	<0.005 to 0.95	<0.02 to 3.2	--	No. EPC slightly greater than the plant PRG. Only 1 sample exceeded the PRG and size of site is small with ample unaffected habitat available nearby. No soil concentrations greater than lowest wildlife PRG for biomagnifying compound. Also, effects to plants are uncertain given the low confidence in the PRG. For plants, if adverse effects did occur, habitat fragmentation in the 100-D OU would not be likely given the level of ecological services the habitat is providing in the current condition and the

Table H-20. Summary of Factors Considered for Scientific Management Decision Process for the 100-D/100-H Source OUs

Waste Site and Waste Site Description	Decision Unit	COPEC	EPC (mg/kg)	Plant/ Invertebrate PRG (mg/kg)	Confidence and Basis	Avian/ Mammal PRG (mg/kg)	Basis and Confidence	#Sampling Locations	Area or Length of Waste Site	Depth of Samples (bgs)	# Results > PRG	Range of Concentrations (mg/kg)	Range of HQ	Data Quality	Carry Waste Site into FS for Remedy Evaluation?
															available habitat refugia nearby (see Section 7.6.3).
100-D-84:1	Shallow Focused	Vanadium	94	89	Confidence in the PRG is High. The basis of the value is a Hanford Site-specific NOEC for plants published in ECF-HANFORD-11-0158. There is high confidence with respect to a lack of toxicity at this concentration because there was no correlation between vanadium soil concentration up to this value and the measured response in the bioassays. The PRG is a NOEC set at the highest concentration tested in Hanford Site samples (no LOEC established); thus the concentration at which effects might be observed is unknown.	43	Confidence in the PRG is moderate. The value is a PRG based on estimates of dietary exposure to a killdeer using a regression model for invertebrates that included Hanford Site-specific prey tissue samples in the data set. The effect level was appropriately set using a LOAEL. The PRG model assumed all individuals of the population being protected obtained all food and other exposure to COPCs exclusively from the waste site. For all the 100 D/H Area waste sites this is a conservative assumption. The PRG values are intended to be protective of populations, not individuals, but factors such as population densities and distributions were not considered in the development of the PRGs. PRGs would have been greater had these factors been considered.	5	Length =696 m (2,283 ft)	1.5 m (5 ft), 2.7 m (9 ft), 3 m (10 ft)	1 plant, 5 avian	43.6 to 94.4	0.49 to 1.1, 1.01 to 2.2	--	No. Only two samples above background (85 mg/kg) and both were collected at 3.05 m (10 ft), which is below the maximum depth observed at Hanford Site for plants (3 m [9.8 ft]; PNL-1948) and invertebrates (2.7 m [8.9 ft]; PNL-2774) and well below for small mammals (1 m [3.3 ft] pocket mouse [Cline et al., 1980]). For plants, if adverse effects did occur, habitat fragmentation in the 100-D OU would not be likely given the level of ecological services the habitat is providing in the current condition and the available habitat refugia nearby (see Section 7.6.3). For wildlife, while 5 samples exceeded the lowest wildlife PRG, only one of the values is above background. Elevated concentrations along a linear pipeline do not suggest exposure is sufficient to cause an adverse effect to the population of killdeer or other wildlife. The exposure estimates for wildlife do not include consideration of AUFs. As shown in Appendix H Table H-6, the home ranges of the killdeer at 80,128 m2 (862,488 ft2 [Mace, 1971]), greater than the size of the waste site. Thus employing an AUF yields a hazard quotient below 1. If the samples were to be included in a future excavation, the excavated material with slightly elevated concentrations would be mixed with surrounding unimpacted material resulting in exposure similar to the PRG.
100-D-88 – 100-D Miscellaneous Pipelines	Shallow Focused	Vanadium	104	89	Confidence in the PRG is High. The basis of the value is a Hanford Site-specific NOEC for plants published in ECF-HANFORD-11-0158. There is high confidence with respect to a lack of toxicity at this concentration because there was no correlation between vanadium soil concentration up to this value and the measured response in the bioassays. The PRG is a NOEC set at the highest concentration tested in Hanford Site samples (no LOEC established); thus the concentration at which effects might be observed is unknown.	43	Confidence in the PRG is moderate. The value is a PRG based on estimates of dietary exposure to a killdeer using a regression model for invertebrates that included Hanford Site-specific prey tissue samples in the data set. The effect level was appropriately set using a LOAEL. The PRG model assumed all individuals of the population being protected obtained all food and other exposure to COPCs exclusively from the waste site. For all the 100 D/H Area waste sites this is a conservative assumption. The PRG values are intended to be protective of populations, not individuals, but factors such as population densities and	3	Length = 86 m (282 ft)	2.1 m (7 ft), 3.6 m (12 ft), and 4.8 m (16 ft)	1 plant, 2 avian	33 to 104	0.37 to 1.17, 0.8 to 2.4	--	No. Two of the three samples were collected below the maximum depth observed at Hanford Site for plants (3 m [9.8 ft]; PNL-1948) and invertebrates (2.7 m [8.9 ft]; PNL-2774) and well below for small mammals (1 m [3.3 ft] pocket mouse [Cline et al., 1980]. For plants, if adverse effects did occur, habitat fragmentation in the 100-D OU would not be likely given the level of ecological services the habitat is providing in the current condition and the available habitat refugia nearby (see Section 7.6.3). For wildlife, while 5 samples exceeded the lowest wildlife PRG, only one of the values is above background. Elevated concentrations along a linear pipeline do not suggest exposure is sufficient to cause an adverse effect to the population of killdeer or other wildlife. The exposure estimates for wildlife do not include

Table H-20. Summary of Factors Considered for Scientific Management Decision Process for the 100-D/100-H Source OUs

Waste Site and Waste Site Description	Decision Unit	COPEC	EPC (mg/kg)	Plant/ Invertebrate PRG (mg/kg)	Confidence and Basis	Avian/ Mammal PRG (mg/kg)	Basis and Confidence	#Sampling Locations	Area or Length of Waste Site	Depth of Samples (bgs)	# Results > PRG	Range of Concentrations (mg/kg)	Range of HQ	Data Quality	Carry Waste Site into FS for Remedy Evaluation?
							distributions were not considered in the development of the PRGs. PRGs would have been greater had these factors been considered.								consideration of AUFs. As shown in Appendix H Table H-6, the home ranges of the killdeer at 80,128 m^2 (862,488 ft^2 [Mace, 1971]), greater than the size of the waste site. Thus employing an AUF yields a hazard quotient below 1. If the samples were to be included in a future excavation, the excavated material with slightly elevated concentrations would be mixed with surrounding unimpacted material resulting in exposure similar to the PRG.
100-D-94–Dichromate Contaminated Pit Associated with 187-DR	Shallow Focused	Mercury	0.58	0.3	Confidence in the PRG is low. The basis of the value is the ORNL compendium of plant toxicity thresholds (ES/ER/TM-85/R3). The LOEC was assigned low confidence by the authors because the toxicity threshold in the chosen study was more than two orders of magnitude lower than the next usable study and no primary literature available for effects on plants.	1.6	Not exceeded.	2	3.3 m2 (36 ft2)	2.0 to 3.0 m (6.6 to 9.8 ft)	2	0.53 to 0.58	1.8 to 2.0	--	No. No soil concentrations greater than lowest wildlife PRG for biomagnifying compound. EPC slightly greater than the plant PRG. The size of site is small with ample unaffected habitat available in adjacent area. Also, effects to plants are uncertain given the low confidence in the PRG. For plants, if adverse effects did occur in this very small area, habitat fragmentation in the 100-D OU would not be likely given the level of ecological services the habitat is providing in the current condition and the available habitat refugia nearby (see Section 7.6.3).
116-DR-8–Seal Pit Crib	Shallow	Lithium	70	35	Confidence in the PRG is low. The basis of the value is naturally occurring background for Washington State as published in WAC 173-340-900, Table 749-3. Confidence in the PRG is high with respect to a lack of toxicity at this concentration. But the concentration at which effects might be observed is unknown.	1,660	Not exceeded.	12	934 m2 (10,053 ft2)	6.8 m (22 ft)	1	3.9 to 150	0.11 to 4.3	--	No. Soil samples collected from a depth greater than 4.6 m (15 ft) bgs: direct contact within point of compliance is incomplete.
118-D-4-Burial Ground	Shallow Focused	Vanadium	92	89	Confidence in the PRG is High. The basis of the value is a Hanford Site-specific NOEC for plants published in ECF-HANFORD-11-0158. There is high confidence with respect to a lack of toxicity at this concentration because there was no correlation between vanadium soil concentration up to this value and the measured response in the bioassays. The PRG is a NOEC set at the highest concentration tested in Hanford Site samples (no LOEC established); thus the concentration at which effects might be observed is unknown.	43	Confidence in the PRG is moderate. The value is a PRG based on estimates of dietary exposure to a killdeer using a regression model for invertebrates that included Hanford Site-specific prey tissue samples in the data set. The effect level was appropriately set using a LOAEL. The PRG model assumed all individuals of the population being protected obtained all food and other exposure to COPCs exclusively from the waste site. For all the 100 D/H Area waste sites this is a conservative assumption. The PRG values are intended to be protective of populations, not individuals, but factors such as population densities and distributions were not	5	5298m2 (57,027 ft2)	6.4 m (21 ft)	1 plant, 5 avian	58 to 92	0.65 to 1.04, 1.34 to 2.15	--	No. Soil samples collected from a depth greater than 4.6 m (15 ft) bgs: direct contact within point of compliance is incomplete.

Table H-20. Summary of Factors Considered for Scientific Management Decision Process for the 100-D/100-H Source OUs

Waste Site and Waste Site Description	Decision Unit	COPEC	EPC (mg/kg)	Plant/ Invertebrate PRG (mg/kg)	Confidence and Basis	Avian/ Mammal PRG (mg/kg)	Basis and Confidence	#Sampling Locations	Area or Length of Waste Site	Depth of Samples (bgs)	# Results > PRG	Range of Concentrations (mg/kg)	Range of HQ	Data Quality	Carry Waste Site into FS for Remedy Evaluation?
							considered in the development of the PRGs. PRGs would have been greater had these factors been considered.								
118-D-6:4	Shallow_2	Mercury	1.2	0.3	Confidence in the PRG is low. The basis of the value is the ORNL compendium of plant toxicity thresholds (ES/ER/TM-85/R3). The LOEC was assigned low confidence by the authors because the toxicity threshold in the chosen study was more than two orders of magnitude lower than the next usable study and no primary literature available for effects on plants.	1.6	Not exceeded.	12	2,217 m^2 (23,862 ft^2)	>4.6 m (> 15 ft)	2	0.0054 to 1.2	0.02 to 4		No. No soil concentrations greater than lowest wildlife PRG for biomagnifying compound. Only 2 of 12 samples exceeded the PRG and size of site is small with ample unaffected habitat available in adjacent area. Also, effects to plants are uncertain given the low confidence in the PRG. For plants, if adverse effects did occur, habitat fragmentation in the 100-D OU would not be likely given the level of ecological services the habitat is providing in the current condition and the available habitat refugia nearby (see Section 7.6.3). Lastly, in any of the areas excavated below 4.6m (15 ft), direct contact within the point of compliance is incomplete.
132-D-1	Shallow	Mercury	1.0	0.3	Confidence in the PRG is low. The basis of the value is the ORNL compendium of plant toxicity thresholds (ES/ER/TM-85/R3). The LOEC was assigned low confidence by the authors because the toxicity threshold in the chosen study was more than two orders of magnitude lower than the next usable study and no primary literature available for effects on plants.	1.6	Not exceeded.	12	1,373 m^2 (14,779 ft^2)	3.6 to 4.5 m (12 to 15 ft)	2	0.005 to 1.0	0.023 to 3.33		No. No soil concentrations greater than lowest wildlife PRG for biomagnifying compound. Only 2 of 12 samples exceeded the PRG and size of site is small with ample unaffected habitat available in adjacent area. The maximum observed depth of plants reported at the Hanford Site was 3 m ([9.8 ft]; PNL-1948). Samples at this site were collected below this depth. Also, effects to plants are uncertain given the low confidence in the PRG. For plants, if adverse effects did occur, habitat fragmentation in the 100-D OU would not be likely given the level of ecological services the habitat is providing in the current condition and the available habitat refugia nearby (see Section 7.6.3). Any excavation would mix the deeper soil with the overlying soil resulting in a lower exposure concentration.
132-D-1	Staging Pile Area Footprint	Mercury	0.68	0.3	Confidence in the PRG is low. The basis of the value is the ORNL compendium of plant toxicity thresholds (ES/ER/TM-85/R3). The LOEC was assigned low confidence by the authors because the toxicity threshold in the chosen study was more than two orders of magnitude lower than the next usable study and no primary literature available for effects on plants.	1.6	Not exceeded.	12	3,340 m^2 (35,951 ft^2)	3.6 to 4.5 m (12 to 15 ft)	5	0.01 to 1.0	0.03 to 3.3		No. No soil concentrations greater than lowest wildlife PRG for biomagnifying compound. The maximum observed depth of plants reported at the Hanford Site was 3 m ([9.8 ft]; PNL-1948). Samples at this site were collected below this depth. Also, effects to plants are uncertain given the low confidence in the PRG. For plants, if adverse effects did occur, habitat fragmentation in the 100-D OU would not be likely given the level of ecological services the habitat is providing in the current condition and the available habitat refugia nearby (see Section 7.6.3). Any excavation would mix the deeper soil with the overlying soil resulting in a lower exposure concentration.

Table H-20. Summary of Factors Considered for Scientific Management Decision Process for the 100-D/100-H Source OUs

Waste Site and Waste Site Description	Decision Unit	COPEC	EPC (mg/kg)	Plant/ Invertebrate PRG (mg/kg)	Confidence and Basis	Avian/ Mammal PRG (mg/kg)	Basis and Confidence	#Sampling Locations	Area or Length of Waste Site	Depth of Samples (bgs)	# Results > PRG	Range of Concentrations (mg/kg)	Range of HQ	Data Quality	Carry Waste Site into FS for Remedy Evaluation?
1607-D2-2	Shallow	Mercury	0.52	0.3	Confidence in the PRG is low. The basis of the value is the ORNL compendium of plant toxicity thresholds (ES/ER/TM-85/R3). The LOEC was assigned low confidence by the authors because the toxicity threshold in the chosen study was more than two orders of magnitude lower than the next usable study and no primary literature available for effects on plants.	1.6	Not exceeded.	9	6,593 m^2 (70,966 ft^2)	Max of 3.1 m (10 ft)	2	<0.0234 to 1.24	<0.08 to 4.13		No. No soil concentrations greater than lowest wildlife PRG for biomagnifying compound. Only 2 of 9 samples exceeded the PRG and size of site is small with ample unaffected habitat available in adjacent area. Also, effects to plants are uncertain given the low confidence in the PRG. For plants, if adverse effects did occur, habitat fragmentation in the 100-D OU would not be likely given the level of ecological services the habitat is providing in the current condition and the available habitat refugia nearby (see Section 7.6.3). If the soil were to be included in a future excavation, the excavated material with slightly elevated concentrations in 2 of 9 samples would be mixed with surrounding unimpacted material resulting in exposure below the PRG. There were 2 of 9 samples that exceeded the PRG. Evaluation of contaminant concentrations and other ecological considerations lead to the conclusion that there was not a community level effect and therefore there is not a basis for action for mercury at this waste site.
1607-D2-2	Shallow	Silver	12	3	Confidence in the PRG is High. The basis of the value is a Hanford-specific NOEC for invertebrates published in ECF-HANFORD-11-0158. There is high confidence with respect to a lack of toxicity at this concentration because there was no correlation between silver soil concentration up to this value and the measured response in the bioassays. The PRG is a NOEC set at the highest concentration tested in Hanford Site samples (no LOEC established); thus the concentration at which effects might be observed is unknown.	98	Not exceeded.	10	6,593 m^2 (70,966 ft^2)	Max of 3.1 m (10 ft)	1	<0.1 to 11.8	<0.03 to 3.9		No. For invertebrates, the PRG is an unbounded NOEC, thus there is uncertainty as to what higher concentration at the site would result in an adverse risk to the community living at this site. There is ample unimpacted habitat for terrestrial invertebrates available in adjacent area and along the River Corridor. If the soil were to be included in a future excavation, the excavated material with slightly elevated concentrations in 1 of 10 samples would be mixed with surrounding unimpacted material resulting in exposure below the PRG. There was 1 of 10 samples that exceeded the PRG. Evaluation of contaminant concentrations and other ecological considerations lead to the conclusion that there was not a community level effect and therefore there is not a basis for action for silver at this waste site
1607-D5	Shallow	Barium	775.4	358	Confidence in the PRG is moderate to high. The basis of the value is the site-specific NOEC for invertebrates published in the RCBRA (DOE/RL-2007-21). There is high confidence with respect to a lack of toxicity at this concentration because there was no correlation between barium soil concentration up to this value and the measured response in the bioassays. The PRG	1,690	Not Exceeded	12	139 m^2 (1,496 ft^2)	Max of 3.3 m (11 ft)	7	68.1 to 1590	0.19 to 4.44		No. Samples were collected below the maximum depth observed at Hanford Site for plants (3 m [9.8 ft]; PNL-1948) and invertebrates (2.7 m [8.9 ft]; PNL-2774). There is ample unimpacted habitat for terrestrial invertebrates available in adjacent area and along the River Corridor. For plants, if adverse effects did occur, habitat fragmentation in the 100-D OU would not be likely given the level of ecological services the habitat is

Table H-20. Summary of Factors Considered for Scientific Management Decision Process for the 100-D/100-H Source OUs

Waste Site and Waste Site Description	Decision Unit	COPEC	EPC (mg/kg)	Plant/ Invertebrate PRG (mg/kg)	Confidence and Basis	Avian/ Mammal PRG (mg/kg)	Basis and Confidence	#Sampling Locations	Area or Length of Waste Site	Depth of Samples (bgs)	# Results > PRG	Range of Concentrations (mg/kg)	Range of HQ	Data Quality	Carry Waste Site into FS for Remedy Evaluation?
					is a NOEC set at the highest concentration tested in Hanford Site samples (no LOEC established); thus the concentration at which effects might be observed is unknown.										providing in the current condition and the available habitat refugia nearby (see Section 7.6.3). Any excavation would mix the deeper soil with the overlying soil resulting in a lower exposure concentration.
1607-D5	Shallow	Boron	69.5	29	Confidence in the PRG is moderate to high. The basis of the value is the Hanford Site-specific NOEC for plants published in the RCBRA (DOE/RL-2007-21). There is high confidence with respect to a lack of toxicity at this concentration because there was no correlation between boron soil concentration up to this value and the measured response in the bioassays. The PRG is a NOEC set at the highest concentration tested in Hanford samples (no LOEC established), thus the concentration at which effects might be observed is unknown.	32	Confidence in the PRG is moderate. The value is a PRG based on estimates of dietary exposure to a great basin pocket mouse represented by a median BAF for plants that included Hanford Site-specific prey tissue samples in the data set. The effect level was appropriately set using a LOAEL. The PRG model assumed all individuals of the population being protected obtain all food and other exposure to COPCs exclusively from the waste site. For all the 100-D/H area waste sites this is a conservative assumption. The PRG values are intended to be protective of populations not individuals but factors such as population densities and distributions, were not considered in the development of the PRGs. PRGs would have been greater had these factors been considered.	12	139 m^2 (1,496 ft^2)	Max of 3.3 m (11 ft)	5 Plant/5 Avian	0.94 to 140	0.03 to 4.83, 0.03 to 4.38		No. The EPC exceeded the PRGs for all herbivorous and omnivorous birds and mammals evaluated. With the site being such a small linear feature, at most only individual not population level impacts is expected for small mammals. In 1976, the reported population density for the Great Basin pocket mouse in the 200 Area averaged 27 individuals per hectare (BNWL-2181). Moreover, the depth of samples is up to 3.3 m (11 ft), well below the maximum observed burrowing depth for small mammals at Hanford (1 m [3.3 ft] pocket mouse [Cline et al., 1980]). If deep excavation were to occur, the elevated concentrations would be mixed with much lower concentration material resulting in a lower exposure concentration. The exposure estimates for wildlife do not include consideration of AUFs. As shown in Appendix H Table H-6, the home ranges of the California quail and Western meadowlark are significantly greater than the acreage of the site. The meadowlark has the smallest home range at 30,350 m^2 (236,700 ft^2 [Lanyon, 1994]), over one thousand times greater than the size of the waste site. Thus employing an AUF yields a hazard quotient below 1. There is ample unimpacted habitat for terrestrial invertebrates available in adjacent area and along the River Corridor. For plants, if adverse effects did occur, habitat fragmentation in the 100-D Source OUs would not be likely given the level of ecological services the habitat is providing in the current condition and the available habitat refugia nearby (See section 7.6.3).
100-H-4	Shallow	Mercury	0.41	0.3	Confidence in the PRG is low. The basis of the value is the ORNL compendium of plant toxicity thresholds (ES/ER/TM-85/R3). The LOEC was assigned low confidence by the authors because the toxicity threshold in the chosen study was more than two orders of magnitude lower than the next usable study and no primary literature available for effects on plants.	1.6	Not exceeded.	12	314 m^2 (3,380 ft^2)	French drain 4m (12 ft) Building 1m (3 ft)	1	<0.024 to 0.408	<0.08 to 1.36		No. No soil concentrations greater than lowest wildlife PRG for biomagnifying compound. The site is small with ample unaffected habitat available in adjacent area. Also, effects to plants are uncertain given the low confidence in the PRG. For plants, if adverse effects did occur, habitat fragmentation in the 100-H OU would not be likely given the level of ecological services the habitat is providing in the current condition and the available habitat refugia nearby (see Section 7.6.3). Lastly,

Table H-20. Summary of Factors Considered for Scientific Management Decision Process for the 100-D/100-H Source OUs

Waste Site and Waste Site Description	Decision Unit	COPEC	EPC (mg/kg)	Plant/ Invertebrate PRG (mg/kg)	Confidence and Basis	Avian/ Mammal PRG (mg/kg)	Basis and Confidence	#Sampling Locations	Area or Length of Waste Site	Depth of Samples (bgs)	# Results > PRG	Range of Concentrations (mg/kg)	Range of HQ	Data Quality	Carry Waste Site into FS for Remedy Evaluation?
															samples around the French drain were collected at a depth below the maximum observed plant rooting depth at Hanford (3 m [9.8 ft]; PNL-1948). Any excavation would mix the deeper soil with the overlying soil resulting in a lower exposure concentration.
100-H-53	Shallow_Focused	Molybdenum	3.84	2.0	Confidence in the PRG is low. The basis of the value is the ORNL compendium of plant toxicity thresholds (ES/ER/TM-85/R3). The value was assigned low confidence by the authors as a result of the limited number of studies available in the published literature and because no primary literature was available for effects on plants. Neuman et al. (1987) reported that phytotoxicity of molybdenum has never been reported in the literature.	5.74	Not exceeded.	2	0.78 m^2 (8.4 ft^2)	<4.6 m (< 15 ft)	2	2.82 to 3.84	1.4 to1.9		No. Two samples at a small site were just above the PRG for plants that was given a low confidence. Neuman et al. (1987) noted phytotoxicity of molybdenum is undocumented in published literature. If adverse effects did occur in plants at the waste site, habitat fragmentation in the 100-H Source OUs would not be likely given the level of ecological services the habitat is providing in the current condition and the available habitat refugia nearby (See section 7.6.3). Any excavation would mix the deeper soil with the overlying soil resulting in a lower exposure concentration.
100-H-8	Shallow Focused	Mercury	0.31	0.3	Confidence in the PRG is low. The basis of the value is the ORNL compendium of plant toxicity thresholds (ES/ER/TM-85/R3). The LOEC was assigned low confidence by the authors because the toxicity threshold in the chosen study was more than two orders of magnitude lower than the next usable study and no primary literature available for effects on plants.	1.6	Not exceeded.	1	4.7 m2 (51 ft2)	Max of 3.6 m (12 ft)	1	0.31	1.03		No. No soil concentrations greater than lowest wildlife PRG for biomagnifying compound. The size of site is small with ample unaffected habitat available in adjacent area. Also, effects to plants are uncertain given the low confidence in the PRG. For plants, if adverse effects did occur in this very small area, habitat fragmentation in the 100-H OU would not be likely given the level of ecological services the habitat is providing in the current condition and the available habitat refugia nearby (see Section 7.6.3).
100-H-28:1–184-H Power House Ash Sluicing Line	Shallow Focused	Barium	540	358	Confidence in the PRG is moderate to high. The basis of the value is the site-specific NOEC for invertebrates published in the RCBRA (DOE/RL-2007-21). There is high confidence with respect to a lack of toxicity at this concentration because there was no correlation between barium soil concentration up to this value and the measured response in the bioassays. The PRG is a NOEC set at the highest concentration tested in Hanford Site samples (no LOEC established); thus the concentration at which effects might be observed is unknown.	1,690	Not exceeded.	1	260 m (853 ft)	1.5 m (5 ft)	1	540	1.5	--	No. The invertebrate PRG is an unbounded NOEC, thus there is uncertainty as to what concentration at the site would result in an adverse risk to the invertebrate community. For terrestrial invertebrates, one elevated sample along a linear pipeline does not suggest exposure is sufficient to cause an adverse effect to the community present. There is ample unimpacted habitat for terrestrial invertebrates available in the adjacent area and along the River Corridor. For plants, if adverse effects did occur, habitat fragmentation in the 100-H OUs would not be likely given the level of ecological services the habitat is providing in the current condition and the available habitat refugia nearby (see Section 7.6.3).
100-H-28:1–184-H Power House Ash Sluicing Line	Shallow Focused	Boron	66	29	Confidence in the PRG is moderate to high. The basis of the value is the Hanford Site-specific NOEC for plants published in the RCBRA (DOE/RL-2007-21). There is high confidence with respect to a lack of	32	Confidence in the PRG is moderate. The value is a PRG based on estimates of dietary exposure to a great basin pocket mouse represented by a median BAF for plants that included	1	260 m (853 ft)	1.5 m (5 ft)	1 plant, 1 avian	66	2.3, 2.1	--	No. The EPC exceeded the PRGs for all herbivorous and omnivorous birds and mammals evaluated. With the site being such a small linear feature, at most only individual not population level impacts is expected for small mammals. In 1976, the

Table H-20. Summary of Factors Considered for Scientific Management Decision Process for the 100-D/100-H Source OUs

Waste Site and Waste Site Description	Decision Unit	COPEC	EPC (mg/kg)	Plant/ Invertebrate PRG (mg/kg)	Confidence and Basis	Avian/ Mammal PRG (mg/kg)	Basis and Confidence	#Sampling Locations	Area or Length of Waste Site	Depth of Samples (bgs)	# Results > PRG	Range of Concentrations (mg/kg)	Range of HQ	Data Quality	Carry Waste Site into FS for Remedy Evaluation?
					toxicity at this concentration because there was no correlation between boron soil concentration up to this value and the measured response in the bioassays. The PRG is a NOEC set at the highest concentration tested in Hanford samples (no LOEC established), thus the concentration at which effects might be observed is unknown.		Hanford Site-specific prey tissue samples in the data set. The effect level was appropriately set using a LOAEL. The PRG model assumed all individuals of the population being protected obtain all food and other exposure to COPCs exclusively from the waste site. For all the 100-D/H area waste sites this is a conservative assumption. The PRG values are intended to be protective of populations not individuals but factors such as population densities and distributions, were not considered in the development of the PRGs. PRGs would have been greater had these factors been considered.								reported population density for the Great Basin pocket mouse in the 200 Area averaged 27 individuals per hectare (BNWL-2181). The exposure estimates for wildlife do not include consideration of AUFs. As shown in Appendix H Table H-6, the home ranges of the California quail and Western meadowlark are significantly greater than the acreage of the site. The meadowlark has the smallest home range at 30,350 m2 (236,700 ft2 [Lanyon, 1994]), over one thousand times greater than the size of the waste site. Thus employing an AUF yields a hazard quotient below 1. There is ample unimpacted habitat for terrestrial invertebrates available in adjacent area and along the River Corridor. For plants, if adverse effects did occur, habitat fragmentation in the 100-D Source OUs would not be likely given the level of ecological services the habitat is providing in the current condition and the available habitat refugia nearby (See section 7.6.3).
118-H-6:5	Shallow_1	Lead	171.6	1,700	Not Exceeded	156	Confidence in the PRG is high. The value is a PRG based on estimates of dietary exposure to killdeer represented by a regression model for invertebrates that included Hanford Site-specific prey tissue samples in the data set. The effect level was appropriately set using a LOAEL. The PRG model assumed all individuals of the population being protected obtain all food and other exposure to COPCs exclusively from the waste site. For all the 100-D/H area waste sites this is a conservative assumption. The PRG values are intended to be protective of populations not individuals but factors such as population densities and distributions, were not considered in the development of the PRGs. PRGs would have been greater had these factors been considered.	12	1,566 m^2 (16,857 ft^2)	Pads 1 to 2 m (3.3 to 6.6 ft) Focused excavations 3 to 4 m (9.8 to 13.1 ft)	3	5.97 to 262	0.038 to 1.68		No. The exposure estimate does not include consideration of an AUF such as foraging range. As shown in Appendix H Table H-6, the home ranges of the killdeer at 80,128 m^2 (862,488 ft^2 [Mace, 1971]) is over 50 times the size of the waste site. Thus employing an AUF yields a hazard quotient well below 1.
128-H-1 100-H Burning Pit Waste Site	Overburden	Lead	253.8	1,700	Not Exceeded	156	Confidence in the PRG is high. The value is a PRG based on estimates of dietary exposure to killdeer represented by a regression model for invertebrates that included Hanford Site-specific prey tissue samples in the data set.	12	33,596 m^2 (361,620 ft^2)	Not Applic-able	6	73.6 to 406	0.47 to 2.60		No. The exposure estimate does not include consideration of an AUF such as foraging range. As shown in Appendix H Table H-6, the home ranges of the killdeer ranges from 80,128 m^2 to 399,829 m^2 (862,488 ft^2 to 4,303,728 ft^2 [Mace, 1971]). Employing an AUF would result in HQs between 0.2 and 1.1. Thus

Table H-20. Summary of Factors Considered for Scientific Management Decision Process for the 100-D/100-H Source OUs

Waste Site and Waste Site Description	Decision Unit	COPEC	EPC (mg/kg)	Plant/ Invertebrate PRG (mg/kg)	Confidence and Basis	Avian/ Mammal PRG (mg/kg)	Basis and Confidence	#Sampling Locations	Area or Length of Waste Site	Depth of Samples (bgs)	# Results > PRG	Range of Concentrations (mg/kg)	Range of HQ	Data Quality	Carry Waste Site into FS for Remedy Evaluation?
							The effect level was appropriately set using a LOAEL. The PRG model assumed all individuals of the population being protected obtain all food and other exposure to COPCs exclusively from the waste site. For all the 100-D/H area waste sites this is a conservative assumption. The PRG values are intended to be protective of populations not individuals but factors such as population densities and distributions, were not considered in the development of the PRGs. PRGs would have been greater had these factors been considered.								employing an AUF yields a hazard quotient well below 1. Moreover, population density data for killdeer range from 11 to 100 pairs per 100 ha (247 ac [Nol and Lambert, 1984; Cadman et al., 1987]). At that density, the site would be occupied between 0.2 and 7 pairs of killdeer, and just a portion of the population found across the Hanford Plateau. In addition, exposure just at the area of the elevated concentrations is unlikely.
128-H-1 100-H Burning Pit Waste Site	Shallow_4	Mercury	1.0	0.3	Confidence in the PRG is low. The basis of the value is the ORNL compendium of plant toxicity thresholds (ES/ER/TM-85/R3). The LOEC was assigned low confidence by the authors because the toxicity threshold in the chosen study was more than two orders of magnitude lower than the next usable study and no primary literature available for effects on plants.	1.6	Not exceeded.	12	33,596 m^2 (361,620 ft^2)	Max of 7 m (23 ft)	1	0.024 to 1.07	0.08 to 3.57		No. No soil concentrations greater than lowest wildlife PRG for this biomagnifying compound. Only 1 sample of 12 exceeding plant/invert PRG. Also, effects to plants are uncertain given the low confidence in the PRG. If adverse effects did occur, habitat fragmentation in the 100-D Source OU would not be likely given the level of ecological services the habitat is providing in the current condition and the available habitat refugia nearby (see Section 7.6.3). Lastly, with a maximum excavation depth of 7 m (23 ft), in any of the areas excavated below 4.6m (15 ft), direct contact within the point of compliance is incomplete. There was 1 of 12 samples that exceeded the PRG. Evaluation of contaminant concentrations and other ecological considerations lead to the conclusion that there was not a community level effect and therefore there is not a basis for action for mercury at this waste site.
1607-H2–Septic System	Shallow	Chromium	204	149	Confidence in the PRG is moderate to high. The basis of the value is the Hanford Site-specific NOEC for invertebrates published in the RCBRA (DOE/RL-2007-21). There is high confidence with respect to a lack of toxicity at this concentration because there was no correlation between boron soil concentration up to this value and the measured response in the bioassays. The PRG is a NOEC set at the highest concentration tested in Hanford samples (no LOEC established), thus the concentration at which effects might be observed is unknown.	109	Confidence in the PRG is moderate. The value is a PRG based on estimates of dietary exposure to killdeer represented by a median BAF for invertebrates that included Hanford Site-specific prey tissue samples in the data set. The effect level was appropriately set using a LOAEL. The PRG model assumed all individuals of the population being protected obtain all food and other exposure to COPCs exclusively from the waste site. For all the 100-D/H area waste sites this is a conservative assumption. The	8	2,985 m^2 (32,130 ft^2)	6.6 m (21.7 ft)	1 plant, 1 avian	9.2 to 204	0.06 to 1.4 0.08 to 1.9	--	No. Soil samples collected from a depth greater than 4.6 m (15 ft) bgs: direct contact within point of compliance is incomplete.

Table H-20. Summary of Factors Considered for Scientific Management Decision Process for the 100-D/100-H Source OUs

Waste Site and Waste Site Description	Decision Unit	COPEC	EPC (mg/kg)	Plant/ Invertebrate PRG (mg/kg)	Confidence and Basis	Avian/ Mammal PRG (mg/kg)	Basis and Confidence	#Sampling Locations	Area or Length of Waste Site	Depth of Samples (bgs)	# Results > PRG	Range of Concentrations (mg/kg)	Range of HQ	Data Quality	Carry Waste Site into FS for Remedy Evaluation?
							PRG values are intended to be protective of populations not individuals but factors such as population densities and distributions, were not considered in the development of the PRGs. PRGs would have been greater had these factors been considered.								
1607-H2–Septic System	Shallow	Mercury	2.6	0.3	Confidence in the PRG is low. The basis of the value is the ORNL compendium of plant toxicity thresholds (ES/ER/TM-85/R3). The LOEC was assigned low confidence by the authors because the toxicity threshold in the chosen study was more than two orders of magnitude lower than the next usable study and no primary literature available for effects on plants.	1.6	Confidence in the PRG is moderate to high. The value is a PRG based on estimates of dietary exposure to a deer mouse represented by a regression model for plants and median BAF for invertebrates that included Hanford Site-specific prey tissue samples in the data set. The effect level was appropriately set using a LOAEL. The PRG model assumed all individuals of the population being protected obtained all food and other exposure to COPCs exclusively from the waste site. For all the 100 D/H Area waste sites, this is a conservative assumption. The PRG values are intended to be protective of populations, not individuals, but factors such as population densities and distributions, were not considered in the development of the PRGs. PRGs would have been greater had these factors been considered.	8	2,985 m^2 (32,130 ft^2)	6.6 m (21.7 ft)	3 plant, 1 avian	<0.02 to 3.5	<0.07 to 12, <0.01 to 2.2	--	No. Soil samples collected from a depth greater than 4.6 m [15 ft] bgs: direct contact within point of compliance is incomplete.
600-151	Shallow_2	Lead	266.8	1,700	Not exceeded.	156	Confidence in the PRG is high. The value is a PRG based on estimates of dietary exposure to killdeer represented by a regression model for invertebrates that included Hanford Site-specific prey tissue samples in the data set. The effect level was appropriately set using a LOAEL. The PRG model assumed all individuals of the population being protected obtain all food and other exposure to COPCs exclusively from the waste site. For all the 100-D/H area waste sites this is a conservative assumption. The PRG values are intended to be protective of populations not individuals but factors such as population densities and	12	1,814 m^2 (19,520 ft^2)	Min 0.3 m (1 ft)	6	12 to 518	0.077 to 3.32		No. The exposure estimate does not include consideration of an AUF such as foraging range. As shown in Appendix H Table H-6, the home ranges of the killdeer at 80,128 m^2 (862,488 ft^2 [Mace, 1971]) is over 40 times the size of the waste site. Thus employing an AUF yields a hazard quotient well below 1.

Table H-20. Summary of Factors Considered for Scientific Management Decision Process for the 100-D/100-H Source OUs

Waste Site and Waste Site Description	Decision Unit	COPEC	EPC (mg/kg)	Plant/ Invertebrate PRG (mg/kg)	Confidence and Basis	Avian/ Mammal PRG (mg/kg)	Basis and Confidence	#Sampling Locations	Area or Length of Waste Site	Depth of Samples (bgs)	# Results > PRG	Range of Concentrations (mg/kg)	Range of HQ	Data Quality	Carry Waste Site into FS for Remedy Evaluation?
							distributions, were not considered in the development of the PRGs. PRGs would have been greater had these factors been considered.								
600-151	Shallow_3	Lead	276.3	1,700	Not exceeded.	156	Confidence in the PRG is high. The value is a PRG based on estimates of dietary exposure to killdeer represented by a regression model for invertebrates that included Hanford Site-specific prey tissue samples in the data set. The effect level was appropriately set using a LOAEL. The PRG model assumed all individuals of the population being protected obtain all food and other exposure to COPCs exclusively from the waste site. For all the 100-D/H area waste sites this is a conservative assumption. The PRG values are intended to be protective of populations not individuals but factors such as population densities and distributions, were not considered in the development of the PRGs. PRGs would have been greater had these factors been considered.	13	1,814 m^2 (19,520 ft^2)	Min 0.3 m (1 ft)	2	6.7 to 641	0.043 to 4.11		No. The exposure estimate does not include consideration of an AUF such as foraging range. As shown in Appendix H Table H-6, the home ranges of the killdeer at 80,128 m^2 (862,488 ft^2 [Mace, 1971]) is over 40 times the size of the waste site. Thus employing an AUF yields a hazard quotient well below 1.

Note: Analytical results flagged with a "C" qualifier indicate that analyte was detected in both the sample and the associated QC blank.

Sources (complete citations for the following references are listed in the main text of this appendix):

BNWL-2181, *Characterization of Small Mammal Populations Inhabiting the B-C Cribs Environs*.

Bowers and Smith, 1979, "Differential Habitat Utilization by Sexes of the Deer Mouse, *Peromyscus maniculatus*."

Cadman et al., 1987, *Atlas of the Breeding Birds of Ontario*.

Cline et al., 1980, "Loose Rock as Biobarriers in Shallow Land Burial."

DOE/RL-2007-21, *River Corridor Baseline Risk Assessment, Volume I: Ecological Risk Assessment*.

ECF-HANFORD-11-0158, *Tier 2 Terrestrial Plant and Invertebrate Preliminary Remediation Goals (PRGs) for Nonradionuclides for Use at the Hanford Site*.

Ecology Publication 11-03-006, *Ecological Soil Screening Levels for Arsenic and Lead in the Tacoma Smelter Plume Footprint and Hanford Site Old Orchards Ecology*.

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Lanyon, W.E., 1994, "Western Meadowlark (*Sturnella neglecta*)," *The Birds of North America*.

Mace, Terrence R., 1971, *Nest Dispersion and Productivity of Killdeers (Charadrium vociferous)*.

Neuman et al., 1987, "Copper and Molybdenum," *Reclaiming Mine Soils and Overburden in the Western United States: Analytical Parameters and Procedures*.

Nol and Lambert, 1984, "Comparison of Killdeers, *Charadrius vociferus*, Breeding in Mainland and Peninsular Sites in Southern Ontario."

PNL-1948, *Radioactivity Associated with Biota and Soils of the 216-A-24 Crib*.

PNL-2774, *Characterization of the Hanford 300 Area Burial Grounds: Task IV – Biological Transport*.

WAC 173-340-900, "Model Toxics Control Act—Cleanup," "Tables" (Table 749-3).

AUF = area use factor
BAF = bioaccumulation factor
COPEC = chemical of potential ecological concern
EPC = exposure point concentration
FS = feasibility study
HQ = hazard quotient

Table H-20. Summary of Factors Considered for Scientific Management Decision Process for the 100-D/100-H Source OUs

Waste Site and Waste Site Description	Decision Unit	COPEC	EPC (mg/kg)	Plant/ Invertebrate PRG (mg/kg)	Confidence and Basis	Avian/ Mammal PRG (mg/kg)	Basis and Confidence	#Sampling Locations	Area or Length of Waste Site	Depth of Samples (bgs)	# Results > PRG	Range of Concentrations (mg/kg)	Range of HQ	Data Quality	Carry Waste Site into FS for Remedy Evaluation?

LOAEL = lowest observed adverse effect level
LOEC = lowest observed effect concentration
MD = method detection limit
NOEC = no observed effect level
ORNL = Oak Ridge National Laboratory
OU = operable unit
PRG = preliminary remediation goal
RCBRA = River Corridor Baseline Risk Assessment
WAC = Washington Administrative Code

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H4.Fauna Occurrence

This section includes a brief discussion of the fauna occurring or potentially occurring on the Hanford Site as referenced in Chapter 3 of this report. Table H-21 contains the functional type, scientific name, common name, habitat type and whether data is available to identify the species at the Hanford Site. Table H-22 presents the federal and state status of the threatened and endangered flora and fauna.

Wildlife use of habitat overlaps considerably between the riparian and upland zones. Use of the riparian zone is likely higher than that of the upland zone associated with the *Comprehensive Environmental Response, Compensation, and Liability Act of 1980* (CERCLA) waste sites because of its proximity to the Columbia River. River access results in greater species diversity and the presence of higher density and higher stature vegetation that remains productive over a longer period of time (*River Corridor Baseline Risk Assessment, Volume I: Ecological Risk Assessment* [DOE/RL-2007-21], hereinafter called RCBRA). Species lists have been compiled for the major classes of vertebrates that have been observed on the Hanford Site or within the Hanford Reach of the Columbia River and include 46 species of mammals, 145 species of birds, 10 species of reptiles, 5 species of amphibians, and more than 45 species of fish (*Hanford Site National Environmental Policy Act (NEPA) Characterization* [PNNL-6415]). For invertebrates, a total of 1,509 species-level identifications have been completed, and the collection of 40,000 specimens has resulted in the identification of 43 new taxa and 142 new findings in the State of Washington (*Biodiversity Inventory and Analysis of the Hanford Site Final Report 1994-1999* [Soll et al., 1999]). The high diversity of insect species on the Hanford Site reflects the size, complexity, and relatively undisturbed quality of the shrub-steppe habitat. Table H-21 presents an extensive list of species known or potentially occurring on the Hanford Site classified by habitat type.

Mammals of the upland environment that might be found in and adjacent to the 100 and 300 Areas include mule deer (*Odocoileus hemionus*), badger (*Taxidea taxus*), coyote (*Canis latrans*), Great Basin pocket mouse (*Perognathus parvus*), northern pocket gopher (*Thomomys talpoides*), black-tailed jackrabbit (*Lepus californicus*), and cottontail rabbit (*Sylvilagus nuttalii*) (*100 Areas CERCLA Ecological Investigations* [WHC-EP-0620]). The abundance of these species and the occurrence of others vary according to the soil type and vegetative community. While other large mammals, such as elk (*Cervus elaphus*), are infrequently observed in the 100 and 300 Areas upland reactor areas, the number of individual large mammals present per unit area may increase as habitat quality and shrub cover improve through natural recovery and waste site restoration. Some mammals common to the upland environment are also likely to use and inhabit the riparian environment, including the western harvest mouse (*Reithrodontomys megalotis*), the Great Basin pocket mouse (*Perognathus parvus*), and the deer mouse (*Peromyscus maniculatus*) (*Synthesis of Ecological Data Collected in the Riparian and Riverine Environments of the Hanford Reach* [PNNL-14516]). A complete list of mammals observed and expected in all habitats of the 100 Area is provided in *100 Areas CERCLA Ecological Investigations* (WHC-EP-0620). *Hanford Site National Environmental Policy Act (NEPA) Characterization* (PNNL-6415) presents a complete listing of Hanford Site wildlife species.

Several species of birds present in the upland zones rely on structures such as buildings, fences, and utility poles for some of their habitat needs. Raptors, such as red-tailed hawks (*Buteo jamaicensis*), are present and frequently nest on buildings, utility poles and towers, and trees along the river. Nonvegetated areas provide nesting habitat for nighthawks (*Chordeiles minor*) and killdeer (*Charadrius vociferus*). Canada geese (*Branta canadensis*) use open cheatgrass areas for winter grazing. Following restoration, improvements in shrub coverage will provide important habitat for native shrub-steppe bird species such as the horned lark (*Eremophila alpestris*), western meadowlark (*Sturnella neglecta*), savannah sparrow (*Passerculus sandwichensis*), loggerhead shrike (*Lanius ludovicianus*), and possibly sage sparrow (*Amphispiza belli*). Raptors will continue to be present, but as the shrubs develop and the open grassy

areas shrink in size, wintering geese will likely avoid the area, preferring the cheatgrass areas associated with nearby abandoned farm fields and orchards. A list of bird species observed in the 100 Area is available in *100 Areas CERCLA Ecological Investigations* (WHC-EP-0620). A catalogue of Hanford Site avian species is presented in *Hanford Site National Environmental Policy Act (NEPA) Characterization* (PNNL-6415).

Synthesis of Ecological Data Collected in the Riparian and Riverine Environments of the Hanford Reach (PNNL-14516) provides information on bird populations with respect to riparian vegetation. Location data are available in the electronic Environmental Monitoring and Compliance Project database managed by PNNL. Research efforts have assessed winter bird populations in cottonwood/willow (*Populus*/*Salix*) communities of the Columbia River shoreline ("A Vagrant Occurrence of the Black Phoebe in Southeastern Washington" [Rickard, 1964]; "Comparison of Winter Bird Populations After a Decade," [Rickard and Rickard, 1972]), and quantified shorebird response to water fluctuations in the Columbia River nearshore environment ("Avian Interactions with Mid-Columbia River Water Level Fluctuations" [Books, 1985]). The information gathered during these research efforts has been used to document the status and ecology of the Hanford Site's avian wildlife.

Common reptiles found in upland environments at the Hanford Site include the rattlesnake (*Crotalus viridis*), gopher snake (*Pituophis melanoleucus*), yellow-bellied racer (*Coluber constrictor*), and side blotch lizard (*Uta stansburiana*) (*Habitat Types on the Hanford Site: Wildlife and Plant Species of Concern* [PNL-8942]; *A Synthesis of Ecological Data from the 100 Areas of the Hanford Site* [WHC-EP-0601]). A variety of snakes common to the upland areas may also use the riparian habitat. Other reptiles that may be found in the riparian zone include the western terrestrial garter snake (*Thamnophis sirtalis*) and the painted turtle (*Chrysemys picta*) (*Herpetofauna of the Hanford Nuclear Reservation, Grant, Franklin and* Benton Counties, Washington, Hallock, 1998*; Synthesis of Ecological Data Collected in the Riparian and Riverine Environments of the Hanford Reach,* PNNL-14516). Amphibians in the riparian and nearshore environments of the Hanford Reach include mostly Woodhouse's toads (*Bufo woodhousii*), but bullfrogs (*Rana catesbeiana*) and Great Basin spadefoot toads (*Scaphiopus intermontanus*) may also be present (*Synthesis of Ecological Data Collected in the Riparian and Riverine Environments of the Hanford Reach* [PNNL-14516]).

The dominant ground-dwelling invertebrate species in the upland environment are harvester ants (*Pogonomyrmex owyheei*) and darkling beetles (family *Tenebrionidae*). Harvester ants can exist on vegetated and nonvegetated soils and have been documented on waste sites (*Characterization of the Hanford 300 Area Burial Grounds: Task IV – Biological Transport* [PNL-2774]). Darkling beetles, however, rely on vegetative matter in the soil during their larval stage and therefore are not expected to occur in areas void of vegetation (*Darkling Beetle Populations (*Tenebrionidae*) of the Hanford Site in Southcentral Washington* [PNL-2465]). Areas that were not used as waste sites or have not been affected by Hanford Site operations likely have less soil disturbance and may support a more robust and diverse community of soil-dwelling fauna than previously disturbed or remediated sites.

More than 45 species of fish have been identified in the Hanford Reach of the Columbia River. Of these species, Chinook salmon (*Oncorhynchus tshawytscha*), Sockeye salmon (*Oncorhynchus nerka*), Coho salmon (*Oncorhynchus kisutch*), and steelhead (*Oncorhynchus mykiss*) use the river as a migration route to and from upstream spawning areas and are of the greatest economic importance. Other fish of importance to sport anglers are the native mountain whitefish (*Prosopium williamsoni*) and white sturgeon (*Acipenser transmontanus*). Introduced species like smallmouth bass (*Micropterus dolomieui*), black crappie (*Pomoxis nigromaculatus*), channel catfish (*Ictalurus punctatus*), and walleye (*Stizostedion vitreum*) are also popular. Other large fish populations include introduced common carp (*Cyprinus carpio*) and native species such as redside shiner (*Richardsonius balteatus*) and largescale suckers

(*Catostomus macrocheilus*). Smaller fish, such as sculpin (*Cottus* sp.), are associated with shoreline habitats and have small home ranges (RCBRA [DOE/RL-2007-21]).

Table H-21. Species Known or Potentially Occurring on the Hanford Site Classified by Primary Functional and Habitat Type

Functional Type	Scientific Name	Common Name	Hanford Location Data*	Habitat Type		
				Riparian	Aquatic	Upland
Avian Herbivore	*Callipepla californica*	California quail	x	x		x
	Branta canadensis moffitti	Canada goose	x	x	x	
	Eremophila alpestris	Horned lark				x
	Anas platyrhynchos	Mallard	x	x	x	
	Zenaida macroura	Mourning dove	x	x		x
	Melospiza melodia	Song sparrow	x	x		x
Avian Predator	*Recurvirostra americana*	American avocet	x	x		
	Fulica americana	American coot	x		x	
	Corvus brachyrhynchos	American crow	x	x		x
	Carduelis tristis	American goldfinch	x	x		x
	Falco sparverius	American kestrel	x	x		x
	Anthus rubescens	American pipit	x			x
	Turdus migratorius	American robin	x	x		x
	Spizella arborea	American tree sparrow	x	x		x
	Pelecanus erythrorhynchos	American white pelican	x	x	x	
	Anas americana	American wigeon	x		x	
	Haliaeetus leucocephalus	Bald eagle	x	x		x
	Riparia riparia	Bank swallow	x	x		x
	Tyto alba	Barn owl	x	x		x
	Hirundo rustica	Barn swallow	x	x		x

Table H-21. Species Known or Potentially Occurring on the Hanford Site Classified by Primary Functional and Habitat Type

Functional Type	Scientific Name	Common Name	Hanford Location Data*	Habitat Type		
				Riparian	Aquatic	Upland
	Bucephala islandica	Barrow's goldeneye	x		x	
	Ceryle alcyon	Belted kingfisher	x	x	x	
	Thryomanes bewickii	Bewick's wren	x	x		
	Sayomis nigricans	Black phoebe	x			x
	Pica pica	Black-billed magpie	x	x		x
	Nycticorax nycticorax	Black-crowned night heron	x	x	x	
	Pheucticus melanocephalus	Black-headed grosbeak	x	x		x
	Amphispiza bilineata	Black-throated sparrow	x			x
	Anas discors	Blue-winged teal	x		x	
	Vireo solitarius	Blue-headed vireo	x	x		
	Euphagus cyanocephalus	Brewer's blackbird	x	x		x
	Spizella breweri	Brewer's sparrow	x			x
	Molothrus ater	Brown-headed cowbird	x	x		x
	Bucephala albeola	Bufflehead	x		x	
	Icterus galbula	Bullock's oriole	x	x		x
	Athene cunicularia hypugea	Burrowing owl	x			x
	Larus californicus	California gull	x		x	
	Aythya valisineria	Canvasback	x		x	
	Catherpes mexicanus	Canyon wren	x			x
	Sterna caspia	Caspian tern	x		x	
	Carpodacus cassinii	Cassin's finch	x			x
	Bombycilla cedrorum	Cedar waxwing	x	x		x

Table H-21. Species Known or Potentially Occurring on the Hanford Site Classified by Primary Functional and Habitat Type

Functional Type	Scientific Name	Common Name	Hanford Location Data*	Habitat Type		
				Riparian	Aquatic	Upland
	Spizella passerina	Chipping sparrow	x	x		x
	Alectoris chukar	Chukar	x			x
	Anas cyanoptera	Cinnamon teal	x		x	
	Hirundo pyrrhonota	Cliff swallow	x	x		x
	Bucephala clangula	Common goldeneye	x		x	
	Gavia immer	Common loon	x		x	
	Mergus merganser	Common merganser	x		x	
	Chordeiles minor	Common nighthawk	x	x		x
	Phalaenoptilus nuttallii	Common poorwill	x	x		
	Corvus corax	Common raven	x	x		x
	Carduelis flammea	Common redpoll	x			x
	Gallinago gallinago	Common snipe	x	x		
	Accipiter cooperii	Cooper's hawk	x	x		x
	Junco hyemalis	Dark-eyed junco	x	x		x
	Phalacrocorax auritus	Double-crested cormorant	x		x	
	Picoides pubescens	Downy woodpecker	x	x		x
	Calidris alpina	Dunlin	x	x		
	Podiceps nigricollis	Eared grebe	x		x	
	Tyrannus tyrannus	Eastern kingbird	x	x		x
	Empidonax spp.	Empidonax flycatcher	x	x		x
	Sturnus vulgaris	European starling	x			x
	Coccothraustes vespertinus	Evening grosbeak	x			x

Table H-21. Species Known or Potentially Occurring on the Hanford Site Classified by Primary Functional and Habitat Type

Functional Type	Scientific Name	Common Name	Hanford Location Data*	Habitat Type		
				Riparian	Aquatic	Upland
	Buteo regalis	Ferruginous hawk	x			x
	Sterna forsteri	Forster's tern	x		x	
	Passerella iliaca	Fox sparrow	x	x		x
	Anas strepera	Gadwall	x		x	
	Larus glaucescens	Glaucous-winged gull	x		x	
	Aquila chrysaetos	Golden eagle	x			x
	Regulus satrapa	Golden-crowned kinglet	x	x		x
	Zonotrichia atricapilla	Golden-crowned sparrow	x	x		x
	Ammodramus savannarum	Grasshopper sparrow	x			x
	Perdix perdix	Gray partridge	x			x
	Leucosticte tephrocotis	Gray-crowned Rosy-Finch	x			x
	Ardea herodias	Great blue heron	x	x	x	
	Casmerodius albus	Great egret	x	x	x	
	Bubo virginianus	Great horned owl	x	x		x
	Aythya marila	Greater scaup	x		x	
	Tringa melanoleuca	Greater yellowlegs	x		x	
	Anas crecca	Green-winged teal	x		x	
	Empidonax hammondii	Hammond's flycatcher	x	x		x
	Larus argentatus	Herring gull	x		x	x
	Catharus guttatus	Hermit thrush	x	x		x
	Lophodytes cucullatus	Hooded merganser	x		x	
	Podiceps auritus	Horned grebe	x		x	

Table H-21. Species Known or Potentially Occurring on the Hanford Site Classified by Primary Functional and Habitat Type

Functional Type	Scientific Name	Common Name	Hanford Location Data*	Habitat Type		
				Riparian	Aquatic	Upland
	Carpodacus mexicanus	House finch	x	x		x
	Passer domesticus	House sparrow	x	x		x
	Troglodytes aedon	House wren	x	x		x
	Charadrius vociferus	Killdeer	x	x		x
	Calcarius lapponicus	Lapland longspur	x			x
	Chondestes grammacus	Lark sparrow	x			x
	Passerina amoena	Lazuli bunting	x			x
	Aythya affinis	Lesser scaup	x		x	
	Tringa flavipes	Lesser yellowlegs	x		x	
	Melanerpes lewis	Lewis's woodpecker	x	x		x
	Melospiza lincolnii	Lincoln's sparrow	x	x		x
	Lanius ludovicianus	Loggerhead shrike	x			x
	Numenius americanus	Long-billed curlew	x			x
	Limnodromus scolopaceus	Long-billed dowitcher	x		x	
	Asio otus	Long-eared owl	x	x		x
	Oporornis tolmiei	MacGillivray's warbler	x	x		x
	Cistothorus palustris	Marsh wren	x	x		x
	Falco columbarius	Merlin	x			x
	Sialia currucoides	Mountain bluebird	x			x
	Vermivora ruficapilla	Nashville warbler	x	x		x
	Colaptes auratus	Northern flicker	x	x		x
	Accipiter gentilis	Northern goshawk	x			x

Table H-21. Species Known or Potentially Occurring on the Hanford Site Classified by Primary Functional and Habitat Type

Functional Type	Scientific Name	Common Name	Hanford Location Data*	Habitat Type		
				Riparian	Aquatic	Upland
	Circus cyaneus	Northern harrier	x			x
	Mimus polyglottos	Northern mockingbird	x			x
	Anas acuta	Northern pintail duck	x		x	
	Stelgidopteryx serripennis	Northern rough-winged swallow	x	x		x
	Anas clypeata	Northern shoveler	x		x	
	Lanius excubitor	Northern shrike	x			x
	Contopus borealis	Olive-sided flycatcher	x	x		x
	Vermivora celata	Orange-crowned warbler	x	x		x
	Pandion haliaetus	Osprey	x	x	x	
	Empidonax difficilis	Pacific-slope flycatcher	x	x		
	Falco peregrinus anatum	Peregrine falcon	x		x	x
	Podilymbus podiceps	Pied-billed grebe	x		x	
	Falco mexicanus	Prairie falcon	x			x
	Mergus serrator	Red-breasted merganser	x		x	
	Sitta canadensis	Red-breasted nuthatch	x			x
	Aythya americana	Redhead	x		x	
	Sphyrapicus nuchalis	Red-naped sapsucker	x	x		x
	Podiceps grisegena	Red-necked grebe	x		x	
	Phalaropus lobatus	Red-necked phalarope	x	x		
	Buteo jamaicensis	Red-tailed hawk	x			x

Table H-21. Species Known or Potentially Occurring on the Hanford Site Classified by Primary Functional and Habitat Type

Functional Type	Scientific Name	Common Name	Hanford Location Data*	Habitat Type		
				Riparian	Aquatic	Upland
	Agelaius phoeniceus	Red-winged blackbird	x	x		x
	Larus delawarensis	Ring-billed gull	x	x		
	Aythya collaris	Ring-necked duck	x		x	
	Phasianus colchicus	Ring-necked pheasant	x	x		x
	Columba livia	Rock dove	x			x
	Salpinctes obsoletus	Rock wren	x			x
	Buteo lagopus	Rough-legged hawk	x			x
	Regulus calendula	Ruby-crowned kinglet	x	x		x
	Oxyura jamaicensis	Ruddy duck	x		x	
	Selasphorus rufus	Rufous hummingbird	x	x		x
	Amphispiza belli	Sage sparrow	x			x
	Oreoscoptes montanus	Sage thrasher	x			x
	Grus canadensis	Sandhill crane	x	x		
	Passerculus sandwichensis	Savannah sparrow	x			x
	Sayornis saya	Say's phoebe	x			x
	Accipiter striatus	Sharp-shinned hawk	x	x		x
	Asio flammeus	Short-eared owl	x			x
	Tringa solitaria	Solitary sandpiper	x		x	
	Porzana carolina	Sora	x	x	x	
	Pipilo erythrophthalmus	Spotted towhee	x	x		x
	Actitis macularia	Spotted sandpiper	x		x	
	Buteo swainsoni	Swainson's hawk	x			x

Table H-21. Species Known or Potentially Occurring on the Hanford Site Classified by Primary Functional and Habitat Type

Functional Type	Scientific Name	Common Name	Hanford Location Data*	Habitat Type		
				Riparian	Aquatic	Upland
	Myadestes townsendi	Townsend's solitaire	x	x		x
	Dendroica townsendi	Townsend's warbler	x	x		
	Tachycineta bicolor	Tree swallow	x	x	x	
	Cygnus columbianus	Tundra (Whistling) swan	x		x	
	Ixoreus naevius	Varied thrush	x	x		x
	Pooecetes gramineus affinis	Vesper sparrow	x			x
	Tachycineta thalassina	Violet-green swallow	x	x		x
	Rallus limicola	Virginia rail	x	x	x	
	Vireo gilvus	Warbling vireo	x	x		x
	Sialia mexicana	Western bluebird	x			x
	Aechmophorus occidentalis	Western grebe	x		x	
	Tyrannus verticalis	Western kingbird	x	x		x
	Sturnella neglecta	Western meadowlark	x	x		x
	Calidris mauri	Western sandpiper	x		x	
	Piranga ludoviciana	Western tanager	x	x		x
	Contopus sordidulus	Western wood-pewee	x	x		x
	Zonotrichia leucophrys	White-crowned sparrow	x	x		x
	Wilsonia pusilla	Wilson's warbler	x	x		x

Table H-21. Species Known or Potentially Occurring on the Hanford Site Classified by Primary Functional and Habitat Type

Functional Type	Scientific Name	Common Name	Hanford Location Data*	Habitat Type		
				Riparian	Aquatic	Upland
	Troglodytes troglodytes	Winter wren	x	x		x
	Aix sponsa	Wood duck	x		x	
	Dendroica petechia	Yellow warbler	x	x		x
	Icteria virens	Yellow-breasted chat	x	x		
	Xanthocephalus xanthocephalus	Yellow-headed blackbird	x	x		x
	Dendroica coronata	Yellow-rumped warbler	x	x		x
Benthic Biota	*Pacifasticus leniusculus*	Crayfish	x		x	
	Anodonta californiensis	California floater (mussel)			x	
	Anodonta kennerlyi	Western floater (mussel)			x	
	Anodonta nuttalliana	Winged floater (mussel)			x	
	Anodonta oregonensis	Oregon floater (mussel)			x	
	Corbicula fluminea	Asiatic clam	x		x	
	Gonidea angulata	Western ridged mussel			x	
	Margaritifera falcata	Western pearlshell mussel			x	
	Fisherola nuttalli	Shortface lanx			x	
	Fulminicola columbianus	Columbia pebblesnail			x	
	Pisidium sp.	Peaclam			x	
	Gyraulus sp.	Snail			x	
	Limnaea sp.	Snail			x	
	Physa sp.	Snail			x	
	Radix sp.	Snail			x	

Table H-21. Species Known or Potentially Occurring on the Hanford Site Classified by Primary Functional and Habitat Type

Functional Type	Scientific Name	Common Name	Hanford Location Data*	Habitat Type		
				Riparian	Aquatic	Upland
	Stagnicola sp.	Pondsnail			x	
Carnivorous Reptiles and Amphibians	*Rana catesbeiana*	Bullfrog	x	x		x
	Pituophis catenifer deserticola	Great Basin gopher snake	x	x		x
	Scaphiopus intermontanus	Great Basin spadefoot toad	x			x
	Hypsiglena torquata	Night snake				x
	Sceloporus graciosus	Northern sagebrush lizard	x			x
	Pseudacris regilla (formally Hyla regilla)	Pacific tree frog		x		
	Chrysemys picta	Painted turtle		x	x	
	Phrynosoma douglassii	Short-horned lizard				x
	Uta stansburiana	Side-blotched lizard	x			x
	Charina bottae	Rocky Mountain rubber boa		x		
	Ambystoma tigrinum	Tiger salamander			x	
	Crotalus viridis	Western rattlesnake	x			x
	Thamnophis sirtalis	Western terrestrial garter snake		x	x	
	Coluber constrictor	Western yellow-bellied racer	x	x		x
	Bufo woodhousei	Woodhouse's toad	x	x		x
Fish Herbivore	*Cyprinus carpio*	Common carp	x		x	
	Catostomus columbianus	Bridgelip sucker			x	
	Catostomus macrocheilus	Largescale sucker			x	
Fish Predator	*Alosa sapidissima*	American shad			x	
	Ameiurus melas	Black bullhead			x	

Table H-21. Species Known or Potentially Occurring on the Hanford Site Classified by Primary Functional and Habitat Type

Functional Type	Scientific Name	Common Name	Hanford Location Data*	Habitat Type		
				Riparian	Aquatic	Upland
	Pomoxis nigromaculatus	Black crappie			x	
	Ictalurus furcatus	Blue catfish			x	
	Lepomis macrochirus	Bluegill	x		x	
	Ameiurus nebulosus	Brown bullhead	x		x	
	Salvelinus confluentus	Bull trout			x	
	Lota lota	Burbot			x	
	Ictalurus punctatus	Channel catfish			x	
	Oncorhynchus tshawytscha	Chinook salmon	x		x	
	Acrocheilus alutaceus	Chiselmouth	x		x	
	Oncorhynchus kisutch	Coho salmon	x		x	
	Oncorhynchus clarkii	Cutthroat trout			x	
	Salvelinus malma	Dolly Varden			x	
	Coregonus clupeaformis	Lake whitefish			x	
	Micropterus salmoides	Largemouth bass			x	
	Rhinichthys falcatus	Leopard dace			x	
	Rhinichthys cataractae	Longnose dace			x	
	Gambusia affinis	Western mosquitofish			x	
	Cottus bairdii	Mottled sculpin			x	
	Prosopium williamsoni	Mountain whitefish	x		x	
	Catostomus platyrhynchus	Mountain sucker			x	

Table H-21. Species Known or Potentially Occurring on the Hanford Site Classified by Primary Functional and Habitat Type

Functional Type	Scientific Name	Common Name	Hanford Location Data*	Habitat Type		
				Riparian	Aquatic	Upland
	Pungitius pungitius	Nine spine stickleback			x	
	Ptychocheilus oregonensis	Northern pikeminnow	x		x	
	Lampetra tridentata	Pacific lamprey	x		x	
	Mylocheilus caurinus	Peamouth	x		x	
	Cottus beldingii	Piute sculpin			x	
	Cottus asper	Prickly sculpin	x		x	
	Lepomis gibbosus	Pumpkinseed	x		x	
	Oncorhynchus mykiss	Rainbow trout (steelhead)			x	
	Richardsonius balteatus	Redside shiner	x		x	
	Cottus perplexus	Reticulate sculpin			x	
	Lampetra ayresii	River lamprey			x	
	Percopsis transmontana	Sand roller			x	
	Micropterus dolomieu	Smallmouth bass	x		x	
	Oncorhynchus nerka	Sockeye salmon	x		x	
	Rhinichthys osculus	Speckled (Spotted) dace	x		x	
	Gasterosteus aculeatus	Threespine stickleback	x		x	
	Cottus rhotheus	Torrent sculpin			x	
	Sander vitreus	Walleye	x		x	
	Pomoxis annularis	White crappie			x	
	Acipenser transmontanus	White sturgeon			x	
	Ameiurus natalis	Yellow bullhead			x	
	Perca flavescens	Yellow perch	x		x	

Table H-21. Species Known or Potentially Occurring on the Hanford Site Classified by Primary Functional and Habitat Type

Functional Type	Scientific Name	Common Name	Hanford Location Data*	Habitat Type		
				Riparian	Aquatic	Upland
Mammal Herbivore	*Castor canadensis*	Beaver		x	x	
	Lepus californicus	Black-tailed jackrabbit	x			x
	Neotoma cinerea	Bushy-tailed woodrat	x			x
	Cervus elaphus	Rocky Mountain elk	x	x		x
	Perognathus parvus	Great Basin pocket mouse	x	x		x
	Tamias minimus	Least chipmunk				x
	Microtus montanus	Montane vole	x			x
	Odocoileus hemionus	Mule deer	x	x		x
	Ondatra zibethica	Muskrat		x	x	
	Thomomys talpoides	Northern pocket gopher	x			x
	Sylvilagus nuttallii	Nuttall's (or mountain) cottontail	x			x
	Erethizon dorsatum	Porcupine		x		
	Lemmiscus curtatus	Sagebrush vole	x			x
	Urocitellus townsendii (formally Spermophilus townsendii)	Townsend's ground squirrel	x			x
	Urocitellus washingtoni (formally Spermophilus washingtoni)	Washington ground squirrel				x
	Reithrodontomys megalotis	Western harvest mouse	x	x		x
	Odocoileus virginianus	White-tailed deer		x		

Table H-21. Species Known or Potentially Occurring on the Hanford Site Classified by Primary Functional and Habitat Type

Functional Type	Scientific Name	Common Name	Hanford Location Data*	Habitat Type		
				Riparian	Aquatic	Upland
	Lepus townsendii	White-tailed jackrabbit				x
	Marmota flaviventris	Yellow-bellied marmot				x
Mammal Predator	*Taxidea taxus*	badger				x
	Eptesicus fuscus	Big brown bat	x	x		x
	Lynx rufus	Bobcat		x		x
	Canis latrans	Coyote	x			x
	Peromyscus maniculatus	Deer mouse	x	x		x
	Lasiurus cinereus	Hoary bat	x	x		x
	Mus musculus	House mouse	x	x		
	Myotis rolans	Long-legged myotis (bat)	x	x		x
	Myotis lucifugus	Little brown myotis (bat)	x	x		x
	Mustela frenata	Long-tailed weasel		x		
	Sorex merriami	Merriam's shrew				x
	Mustela vison	Mink		x		
	Puma concolor concolor	Mountain lion				x
	Onychomys leucogaster	Northern grasshopper mouse	x			x
	Rattus norvegicus	Norway rat		x		x
	Antrozous pallidus	Pallid bat	x	x		x
	Procyon lotor	Raccoon		x		
	Lutra canadensis	River otter		x	x	
	Mustela erminea	Short-tail weasel		x		
	Lasionycteris noctivagans	Silver-haired bat	x	x		x
	Mephitis mephitis	Striped skunk		x		

Table H-21. Species Known or Potentially Occurring on the Hanford Site Classified by Primary Functional and Habitat Type

Functional Type	Scientific Name	Common Name	Hanford Location Data*	Habitat Type		
				Riparian	Aquatic	Upland
	Sorex vagrans	Vagrant shrew		x		
	Pipistrellus hesperus	Western pipistrelle (bat)	x	x		x
	Myotis leibii	Western small-footed myotis (bat)	x			x
	Myotis yumanensis	Yuma myotis (bat)	x	x		x

* Species listed in this table are from the following sources: locational data from EMC and SESP Project databases; TNC (*Biodiversity Inventory and Analysis of the Hanford Site Final Report 1994-1999* [Soll et al., 1999]; *Biodiversity Studies of the Hanford Site: Final Report August 2003* [Evans et al., 2003]); "The Status, Distribution and Ecology of Wildlife on the U.S. DOE Hanford Site: A Historical Overview of Research Activities" [Fitzner and Gray, 1991]; *Hanford Site National Environmental Policy Act (NEPA) Characterization* [PNNL-6415]; a working list of species developed by B.L. Tiller under EMC Project.

Table H-22. Flora and Fauna Threatened and Endangered Species List

Scientific Name	Common Name	State Status	Federal Status
Upland Flora			
Oenothera caespitosa ssp. *caespitosa*	Caespitose evening primrose	SS	
Orobanche californica	California broomrape	SX	
Astragalus columbianus	Columbia milk-vetch	SS	FCo
Nicotiana attenuata	Coyote tobacco	SS	
Cuscuta denticulata	Desert dodder	ST	
Camissonia pygmaea	Dwarf evening-primrose	SS	
Astragalus geyeri	Geyer's milk-vetch	ST	
Cryptantha leucophaea	Gray cryptantha	SS	FCo
Aliciella leptomeria	Great Basin gilia	ST	
Lomatium tuberosum	Hoover's desert parsley	SS	FCo
Loeflingia squarrosa var. *squarrosa*	Loeflingia	ST	
Cryptantha scoparia	Miner's candle	SS	
Erigeron piperianus	Piper's daisy	SS	
Cistanthe rosea	Rosy pussypaws	ST	
Calochortus macrocarpus	Sagebrush-mariposa lily	SE	
Camissonia minor	Small-flower evening primrose	SS	
Cryptantha spiculifera	Snake River cryptantha	SS	
Ribes cereum	Squaw currant	SE	
Mimulus suksdorfii	Suksdorf's monkey-flower	SS	
Eriogonum codium	Umtanum desert buckwheat	SE	FC
Eatonella nivea	White etonella	ST	
Riparian Flora			
Lipocarpha aristulata	Awned halfchaff sedge	ST	
Eleocharis rostellata	Beaked spike-rush	SS	
Hypericum majus	Canadian St. John's-wort	SS	
Anagallis minima	Chaffweed	ST	
Ammannia robusta	Grand redstem	ST	

Table H-22. Flora and Fauna Threatened and Endangered Species List

Scientific Name	Common Name	State Status	Federal Status
Rotala ramosior	Lowland toothcup	ST	
Rorippa columbiae	Persistent sepal yellowcress	SE	FCo
Birds			
Pelecanus erythrorhynchos	American white pelican	SE	
Haliaeetus leucocephalus	Bald eagle	SS	FCo
Athene cunicularia	Burrowing owl	SC	FCo
Gavia immer	Common loon	SS	
Buteo regalis	Ferruginous hawk	ST	FCo
Otus flammeolus	Flammulated owl	SC	
Aquila chrysaetos	Golden eagle	SC	
Centrocercus urophasianus	Greater sage grouse	ST	FC
Melanerpes lewis	Lewis' woodpecker	SC	
Lanius ludovicianus	Loggerhead shrike	SC	FCo
Accipiter gentilis	Northern goshawk	SC	FCo
Falco peregrinus	Peregrine falcon	SS	FCo
Amphispiza belli	Sage sparrow	SC	
Oreoscoptes montanus	Sage thrasher	SC	
Grus canadensis	Sandhill crane	SE	
Aechmophorus occidenalis	Western grebe	SC	
Mammals			
Lepus californicus	Black-tailed jackrabbit	SC	
Sorex merriami	Merriam's shrew	SC	
*Urocitellus townsendii (*formerly *Spermophilus townsendii)*	Townsend's ground squirrel	SC	FCo
*Urocitellus washingtoni (*formerly *Spermophilus washingtoni)*	Washington ground squirrel	SC	FC
Lepus townsendii	White-tailed jackrabbit	SC	
Reptiles/Amphibians			
Sceloporus graciosus	Northern sagebrush lizard	SC	FCo

Table H-22. Flora and Fauna Threatened and Endangered Species List

Scientific Name	Common Name	State Status	Federal Status
Masticophis taeniatus	Striped whipsnake	SC	
Aquatics			
Salvelinus confluentus	Bull trout	SC	FT
Anodonta californiensis	California floater (mussel)	SC	FCo
Oncorhynchus tshawytscha	Chinook salmon	SC	FE
Rhinichthys falcatus	Leopard dace	SC	
Catostormus platyrhynchus	Mountain sucker	SC	
Lampetra tridentata	Pacific lamprey	SM	FCo
Oncorhynchus mykiss	Rainbow trout (steelhead)	SC	FT
Lampetra ayresi	River lamprey	SC	FCo
Fisherola nuttalli	Giant Columbia River limpet	SC	

Sources: "List of Vascular Plants Tracked by the Washington Natural Heritage Program" (WNHP, 2011); "Species of Concern" (WDFW, 2011).

FC = Federal Candidate
FCo = Federal Species of Concern
FE = Federal Endangered
FT = Federal Threatened
SC = State Candidate
SE = State Endangered
SM = State Monitored
SS = State Sensitive
ST = State Threatened
SX = Possibly extinct or extirpated from Washington

H5.Tissue Samples

This section includes the tissue samples presented in Tables H-23 through H-27 and brief discussion as referenced in Chapter 4 of this report. These tables present the analyte concentrations for detected and non-detected tissue samples (plant, invertebrate, small mammal, deer antler, and bird) collected from the 100-D/H Area.

The location of SESP and RCBRA biota samples summarized are shown in Chapter 4. The terrestrial plant and animal species collected and the tissues analyzed are as follows:

- Perennial vegetation: stems and leaves (combined)
- Dominant shrub: current year's growth
- Dominant grass: current year's growth
- Balsamroot: leaves, roots
  - Terrestrial invertebrate: whole body composites
  - Mouse: whole body composites; kidney and liver (combined)
  - Mule Deer: antler

Bird: Western Kingbird organs, crop

Table H-23 summarizes plant tissue samples collected within the 100-D/H Area for the SESP and RCBRA projects. Samples collected for RCBRA were analyzed for radioactive and nonradioactive constituents. The samples collected for SESP were analyzed for radionuclides and total uranium only. The table also shows a summary of plant tissue samples collected from several reference areas (unaffected areas) as a part of the RCBRA project. The reference samples were analyzed for the same suite of analytes as the RCBRA study site samples. The plant tissue sample results from the 100-D/H study sites are within the range of the results for the reference area samples.

Table H-24 summarizes the invertebrate tissue samples collected within 100-D/H Area for the RCBRA project. The samples were analyzed for metals and radionuclides only. Because of insufficient sample volumes, organic constituents were not analyzed. The table also shows a summary of invertebrate tissue samples collected from several reference areas (unaffected areas) as a part of the RCBRA project. The reference samples were analyzed for the same suite of analytes as the RCBRA study site samples. For the inorganic analytes, the invertebrate tissue sample results from the 100-D/H study sites are within the range of the results for the reference area samples with the exception of aluminum, arsenic, total uranium, lead, nickel, silicon, and zinc, which show slightly higher concentrations. For the radionuclides, the invertebrate tissue sample results from the 100-D/H study sites are within the range of the results for the reference area samples, except technetium-99 and uranium-233/234, which show slightly higher concentrations.

Table H-25 summarizes the mouse tissue samples collected within 100-D/H for the RCBRA project. The samples were analyzed for radioactive and nonradioactive constituents. The table also shows a summary of mouse tissue samples collected from several reference areas (unaffected areas) as a part of the RCBRA project. The reference samples were analyzed for the same suite of analytes as the RCBRA study site samples. For the inorganic analytes, the mouse tissue sample results from the 100-D/H study sites are within the range of the results for the reference area samples with the exception of boron, sodium, and tin, which show slightly higher concentrations. For the radionuclides, the invertebrate tissue sample results from the 100-D/H study sites are within the range of the results for the reference area samples with the exception of potassium-40 and radium-228, which show slightly higher concentrations.

Table H-26 summarizes two mule deer antler samples collected for SESP. The samples were analyzed for strontium-90 only. No anomalies were observed for strontium-90. There are no comparable reference samples for the mule deer antler samples.

Table H-27 summarizes the western kingbird organ and crop tissue samples collected within 100-D/H for the RCBRA project. The samples were analyzed for metals and radionuclides only. Because of insufficient sample volumes, organic constituents were not analyzed. The table also shows a summary of bird tissue samples collected from several reference areas (unaffected areas) as a part of the RCBRA project. The reference samples were analyzed for the same suite of analytes as the RCBRA study site samples. For the inorganic analytes, the bird tissue sample results from the 100-D/H study sites are within the range of the results for the reference area samples with the exception of boron, phosphorus, and zinc, which show slightly higher concentrations. For the radionuclides, the invertebrate tissue sample results from the 100-D/H study sites are within the range of the results for the reference area samples with the exception of potassium-40, which shows slightly higher concentrations.

Table H-23. Plant Tissue Samples from 100-D and 100-H

Analyte	Data Source	Nondetect Samples			Detect Samples			Total of All Samples		
		Number	Minimum	Maximum	Number	Minimum	Maximum	Number	Minimum	Maximum
Inorganics (mg/kg)										
Aluminum	RCBRA	5	6.2	17	19	22.6	296	24	6.2	296
Antimony	PNNL	2	0.00225	0.00225				2	0.00225	0.00225
	RCBRA	24	0.3	2.4				24	0.3	2.4
Arsenic	PNNL				2	0.0255	0.0375	2	0.0255	0.0375
	RCBRA	23	0.39	3.3	1	0.6	0.6	24	0.39	3.3
Barium	RCBRA				24	2.4	26	24	2.4	26
Beryllium	PNNL	2	0.0225	0.0225				2	0.0225	0.0225
	RCBRA	23	0.01	0.11	1	0.02	0.02	24	0.01	0.11
Bismuth	RCBRA	24	0.49	2.7				24	0.49	2.7
Boron	RCBRA	1	1.1	1.1	23	0.57	104	24	0.57	104
Cadmium	PNNL				2	0.0227	0.0309	2	0.0227	0.0309
	RCBRA	20	0.03	0.38	4	0.14	1.1	24	0.03	1.1
Calcium	RCBRA				24	666	13,200	24	666	13,200
Calculated total uranium	PNNL	9	-0.0030008	0.00567	1	0.00555	0.00555	10	-0.0030008	0.00567
	RCBRA	24	-0.0245	0.0883				24	-0.0245	0.0883
Chromium	PNNL				2	0.0428	0.0471	2	0.0428	0.0471
	RCBRA	1	0.13	0.13	23	0.18	3	24	0.13	3
Cobalt	RCBRA	23	0.09	0.75	1	0.34	0.34	24	0.09	0.75
Copper	PNNL				2	1.31	1.31	2	1.31	1.31

Table H-23. Plant Tissue Samples from 100-D and 100-H

Analyte	Data Source	Nondetect Samples			Detect Samples			Total of All Samples		
		Number	Minimum	Maximum	Number	Minimum	Maximum	Number	Minimum	Maximum
	RCBRA				24	1.8	9.8	24	1.8	9.8
Iron	RCBRA	1	24.8	24.8	23	26.7	604	24	24.8	604
Lead	PNNL				2	0.0171	0.0291	2	0.0171	0.0291
	RCBRA	20	0.27	1.7	4	0.39	0.97	24	0.27	1.7
Lithium	RCBRA	3	0.03	0.04	21	0.03	0.87	24	0.03	0.87
Magnesium	RCBRA				24	352	3,070	24	352	3,070
Manganese	RCBRA				24	4.7	57.2	24	4.7	57.2
Mercury	PNNL				2	0.00305	0.00315	2	0.00305	0.00315
	RCBRA	24	0.01	0.08				24	0.01	0.08
Molybdenum	RCBRA	12	0.28	1.6	12	0.17	1.5	24	0.17	1.6
Nickel	PNNL				2	0.126	0.162	2	0.126	0.162
	RCBRA	4	0.23	1.1	20	0.32	8.4	24	0.23	8.4
Phosphorus	RCBRA				24	676	7,260	24	676	7,260
Potassium	RCBRA				24	5,090	32,200	24	5,090	32,200
Selenium	PNNL	2	0.15	0.15				2	0.15	0.15
	RCBRA	21	0.35	2.5	3	0.8	1.7	24	0.35	2.5
Silicon	RCBRA				24	63.7	828	24	63.7	828
Silver	PNNL	2	0.00675	0.00675				2	0.00675	0.00675
	RCBRA	22	0.07	0.38	2	0.07	7.6	24	0.07	7.6
Sodium	RCBRA	2	7.5	8.9	22	6.8	63.5	24	6.8	63.5

Table H-23. Plant Tissue Samples from 100-D and 100-H

Analyte	Data Source	Nondetect Samples			Detect Samples			Total of All Samples		
		Number	Minimum	Maximum	Number	Minimum	Maximum	Number	Minimum	Maximum
Strontium	RCBRA				24	2.6	48.7	24	2.6	48.7
Thallium	PNNL				2	0.00075	0.00282	2	0.00075	0.00282
	RCBRA	24	0.54	3.8				24	0.54	3.8
Tin	RCBRA	23	1	5.8	1	5.2	5.2	24	1	5.8
Titanium	RCBRA				22	0.7	23	22	0.7	23
Uranium	RCBRA	20	0.85	4.7	4	2.5	6.3	24	0.85	6.3
Vanadium	RCBRA	13	0.09	0.49	11	0.14	0.95	24	0.09	0.95
Zinc	PNNL				2	1.94	2.51	2	1.94	2.51
	RCBRA				24	9	72.6	24	9	72.6
Zirconium	RCBRA	22	1	5.7				22	1	5.7
Organics (mg/kg)										
1,2,4-Trichlorobenzene	RCBRA	24	2	74				24	2	74
1,2-Dichlorobenzene	RCBRA	24	2	74				24	2	74
1,3-Dichlorobenzene	RCBRA	24	2	74				24	2	74
1,4-Dichlorobenzene	RCBRA	24	2	74				24	2	74
2,4,5-Trichlorophenol	RCBRA	24	5	180				24	5	180
2,4,6-Trichlorophenol	RCBRA	24	2	74				24	2	74
2,4-Dichlorophenol	RCBRA	24	2	74				24	2	74
2,4-Dimethylphenol	RCBRA	24	2	74				24	2	74
2,4-Dinitrophenol	RCBRA	24	5	180				24	5	180

Table H-23. Plant Tissue Samples from 100-D and 100-H

Analyte	Data Source	Nondetect Samples			Detect Samples			Total of All Samples		
		Number	Minimum	Maximum	Number	Minimum	Maximum	Number	Minimum	Maximum
2,4-Dinitrotoluene	RCBRA	24	2	74				24	2	74
2,6-Dinitrotoluene	RCBRA	24	2	74				24	2	74
2-Chloronaphthalene	RCBRA	24	2	74				24	2	74
2-Chlorophenol	RCBRA	24	2	74				24	2	74
2-Methylnaphthalene	RCBRA	24	2	74				24	2	74
2-Methylphenol [cresol, o-]	RCBRA	24	2	74				24	2	74
2-Nitroaniline	RCBRA	24	5	180				24	5	180
2-Nitrophenol	RCBRA	24	2	74				24	2	74
3,3*-Dichlorobenzidine	RCBRA	24	2	74				24	2	74
3+4 Methylphenol[cresol, m+p]	RCBRA	23	2	74	1	3.1	3.1	24	2	74
3-Nitroaniline	RCBRA	24	5	180				24	5	180
4,6-Dinitro-2-methylphenol	RCBRA	24	5	180				24	5	180
4-Bromophenylphenyl ether	RCBRA	24	2	74				24	2	74
4-Chloro-3-methylphenol	RCBRA	24	2	74				24	2	74
4-Chloroaniline	RCBRA	24	2	74				24	2	74
4-Chlorophenylphenyl ether	RCBRA	24	2	74				24	2	74
4-Nitroaniline	RCBRA	24	5	180				24	5	180
4-Nitrophenol	RCBRA	24	5	180				24	5	180
Acenaphthene	RCBRA	24	2	74				24	2	74
Acenaphthylene	RCBRA	24	2	74				24	2	74

Table H-23. Plant Tissue Samples from 100-D and 100-H

Analyte	Data Source	Nondetect Samples			Detect Samples			Total of All Samples		
		Number	Minimum	Maximum	Number	Minimum	Maximum	Number	Minimum	Maximum
Aldrin	RCBRA	24	0.019	0.087				24	0.019	0.087
Alpha-BHC	RCBRA	23	0.019	0.087	1	0.03	0.03	24	0.019	0.087
alpha-Chlordane	RCBRA	21	0.019	0.087	3	0.15	0.25	24	0.019	0.25
Anthracene	RCBRA	24	2	74				24	2	74
Aroclor-1016	RCBRA	24	0.18	0.87				24	0.18	0.87
Aroclor-1221	RCBRA	24	0.18	0.87				24	0.18	0.87
Aroclor-1232	RCBRA	24	0.18	0.87				24	0.18	0.87
Aroclor-1242	RCBRA	24	0.18	0.87				24	0.18	0.87
Aroclor-1248	RCBRA	24	0.18	0.87				24	0.18	0.87
Aroclor-1254	RCBRA	24	0.18	0.87				24	0.18	0.87
Aroclor-1260	RCBRA	24	0.18	0.87				24	0.18	0.87
Benzo[a]anthracene	RCBRA	24	2	74				24	2	74
Benzo[a]pyrene	RCBRA	24	2	74				24	2	74
Benzo[b]fluoranthene	RCBRA	24	2	74				24	2	74
Benzo[ghi]perylene	RCBRA	24	2	74				24	2	74
Benzo[k]fluoranthene	RCBRA	23	2	74	1	1.3	1.3	24	1.3	74
beta-1,2,3,4,5,6-Hexachlorocyclohexane	RCBRA	18	0.02	0.087	6	0.014	0.14	24	0.014	0.14
Bis[2-chloro-1-methylethyl]ether	RCBRA	24	2	74				24	2	74
Bis[2-Chloroethoxy]methane	RCBRA	24	2	74				24	2	74
Bis[2-chloroethyl] ether	RCBRA	24	2	74				24	2	74

Table H-23. Plant Tissue Samples from 100-D and 100-H

Analyte	Data Source	Nondetect Samples			Detect Samples			Total of All Samples		
		Number	Minimum	Maximum	Number	Minimum	Maximum	Number	Minimum	Maximum
Bis[2-ethylhexyl] phthalate	RCBRA	20	4	74	4	0.23	2.3	24	0.23	74
Butylbenzylphthalate	RCBRA	24	2	74				24	2	74
Carbazole	RCBRA	24	2	74				24	2	74
Chrysene	RCBRA	24	2	74				24	2	74
Delta-BHC	RCBRA	21	0.019	0.087	3	0.0075	0.18	24	0.0075	0.18
Dibenz[a,h]anthracene	RCBRA	24	2	74				24	2	74
Dibenzofuran	RCBRA	24	2	74				24	2	74
Dichlorodiphenyldichloroethane	RCBRA	24	0.019	0.087				24	0.019	0.087
Dichlorodiphenyldichloroethylene	RCBRA	18	0.019	0.087	6	0.012	0.39	24	0.012	0.39
Dichlorodiphenyltrichloroethane	RCBRA	21	0.019	0.087	3	0.027	0.096	24	0.019	0.096
Dieldrin	RCBRA	24	0.019	0.087				24	0.019	0.087
Diethylphthalate	RCBRA	23	2	74	1	8.4	8.4	24	2	74
Dimethyl phthalate	RCBRA	24	2	74				24	2	74
Di-n-butylphthalate	RCBRA	22	0.48	74	2	0.25	0.92	24	0.25	74
Di-n-octylphthalate	RCBRA	24	2	74				24	2	74
Endosulfan I	RCBRA	20	0.019	0.087	4	0.01	0.1	24	0.01	0.1
Endosulfan II	RCBRA	19	0.019	0.087	5	0.014	0.068	24	0.014	0.087
Endosulfan sulfate	RCBRA	24	0.019	0.087				24	0.019	0.087
Endrin	RCBRA	22	0.019	0.087	2	0.11	0.21	24	0.019	0.21
Endrin aldehyde	RCBRA	22	0.019	0.087	2	0.0085	0.013	24	0.0085	0.087

Table H-23. Plant Tissue Samples from 100-D and 100-H

Analyte	Data Source	Nondetect Samples			Detect Samples			Total of All Samples		
		Number	Minimum	Maximum	Number	Minimum	Maximum	Number	Minimum	Maximum
Endrin ketone	RCBRA	23	0.019	0.087	1	0.032	0.032	24	0.019	0.087
Fluoranthene	RCBRA	24	2	74				24	2	74
Fluorene	RCBRA	24	2	74				24	2	74
Gamma-BHC (lindane)	RCBRA	21	0.019	0.087	3	0.0047	0.12	24	0.0047	0.12
gamma-Chlordane	RCBRA	20	0.019	0.087	4	0.027	0.083	24	0.019	0.087
Heptachlor	RCBRA	17	0.019	0.087	7	0.012	0.21	24	0.012	0.21
Heptachlor epoxide	RCBRA	24	0.019	0.087				24	0.019	0.087
Hexachlorobenzene	RCBRA	24	2	74				24	2	74
Hexachlorobutadiene	RCBRA	24	2	74				24	2	74
Hexachlorocyclopentadiene	RCBRA	24	2	74				24	2	74
Hexachloroethane	RCBRA	24	2	74				24	2	74
Indeno[1,2,3-cd]pyrene	RCBRA	24	2	74				24	2	74
Isophorone	RCBRA	24	2	74				24	2	74
Methoxychlor	RCBRA	19	0.019	0.087	5	0.051	0.086	24	0.019	0.087
Naphthalene	RCBRA	24	2	74				24	2	74
Nitrobenzene	RCBRA	24	2	74				24	2	74
N-Nitroso-di-n-dipropylamine	RCBRA	24	2	74				24	2	74
N-Nitrosodiphenylamine	RCBRA	24	2	74				24	2	74
Pentachlorophenol	RCBRA	23	5	180	1	1	1	24	1	180
Phenanthrene	RCBRA	24	2	74				24	2	74

Table H-23. Plant Tissue Samples from 100-D and 100-H

Analyte	Data Source	Nondetect Samples			Detect Samples			Total of All Samples		
		Number	Minimum	Maximum	Number	Minimum	Maximum	Number	Minimum	Maximum
Phenol	RCBRA	21	2	74	3	1.2	11	24	1.2	74
Pyrene	RCBRA	24	2	74				24	2	74
Toxaphene	RCBRA	24	0.19	0.87				24	0.19	0.87
Radionuclides (pCi/g)										
Americium-241	RCBRA	24	0.02	0.7				24	0.02	0.7
Antimony-125	PNNL	17	-0.0488	0.038				17	-0.0488	0.038
	RCBRA	24	0.05	0.23				24	0.05	0.23
Beryllium-7	PNNL	4	0.048	0.947	13	0.0268	2.58	17	0.0268	2.58
	RCBRA	24	0.018	2.4				24	0.018	2.4
Cerium/Praseodymium-144	PNNL	3	0.00273	0.00348				3	0.00273	0.00348
Cesium-134	PNNL	17	-0.0454	0.00494				17	-0.0454	0.00494
	RCBRA	24	0.028	0.11				24	0.028	0.11
Cesium-137	PNNL	15	-0.0117	0.0618	2	0.00303	0.00702	17	-0.0117	0.0618
	RCBRA	24	0.02	0.096				24	0.02	0.096
Cobalt-60	PNNL	16	-0.0021	0.0213	1	0.00522	0.00522	17	-0.0021	0.0213
	RCBRA	24	0.026	0.11				24	0.026	0.11
Europium-152	PNNL	2	-0.000798	0.00489				2	-0.000798	0.00489
	RCBRA	24	0.056	0.25				24	0.056	0.25
Europium-154	PNNL	17	-0.0692	0.0888				17	-0.0692	0.0888
	RCBRA	24	0.084	0.35				24	0.084	0.35

Table H-23. Plant Tissue Samples from 100-D and 100-H

Analyte	Data Source	Nondetect Samples			Detect Samples			Total of All Samples		
		Number	Minimum	Maximum	Number	Minimum	Maximum	Number	Minimum	Maximum
Europium-155	PNNL	17	-0.0266	0.0266				17	-0.0266	0.0266
	RCBRA	24	0.041	0.3				24	0.041	0.3
Plutonium-238	PNNL	5	-0.0000125	0.0000141				5	-0.0000125	0.0000141
	RCBRA	10	-0.045	0.059				10	-0.045	0.059
Plutonium-239/240	PNNL	4	-0.00000231	0.0000281	1	0.0000539	0.0000539	5	-0.00000231	0.0000539
	RCBRA	9	0	0.034	1	0.173	0.173	10	0	0.173
Potassium-40	PNNL				17	0.825	48.5	17	0.825	48.5
	RCBRA	1	0.038	0.038	23	2.55	13.1	24	0.038	13.1
Radium-226	RCBRA	24	0.043	0.22				24	0.043	0.22
Radium-228	RCBRA	24	0.09	0.65				24	0.09	0.65
Ruthenium-106	PNNL	17	-0.313	0.0615				17	-0.313	0.0615
	RCBRA	24	0.19	0.85				24	0.19	0.85
Strontium-90	PNNL	3	-0.00135	0.00353	13	0.00311	5.34	16	-0.00135	5.34
	RCBRA	23	-0.083	0.086	1	0.484	0.484	24	-0.083	0.484
Technetium-99	PNNL	2	0.00836	0.0709	2	0.29	0.81	4	0.00836	0.81
Thorium-228	RCBRA	23	-0.047	0.085	1	0.112	0.112	24	-0.047	0.112
Thorium-230	RCBRA	24	-0.137	0.204				24	-0.137	0.204
Thorium-232	RCBRA	24	-0.041	0.042				24	-0.041	0.042
Uranium-233/234	PNNL	7	-0.00115	0.00531	3	0.00155	0.0224	10	-0.00115	0.0224
	RCBRA	24	-0.008	0.033				24	-0.008	0.033

Table H-23. Plant Tissue Samples from 100-D and 100-H

Analyte	Data Source	Nondetect Samples			Detect Samples			Total of All Samples		
		Number	Minimum	Maximum	Number	Minimum	Maximum	Number	Minimum	Maximum
Uranium-235	PNNL	10	-0.000185	0.00761				10	-0.000185	0.00761
	RCBRA	24	-0.013	0.042				24	-0.013	0.042
Uranium-238	PNNL	9	-0.000980	0.0071	1	0.0113	0.0113	10	-0.000980	0.0113
	RCBRA	24	-0.009	0.028				24	-0.009	0.028
Zinc-65	PNNL	3	-0.00177	0.00261				3	-0.00177	0.00261
Zirconium/Niobium-95	PNNL	3	-0.00269	-0.000359				3	-0.00269	-0.000359

PNNL = Pacific Northwest National Laboratory

RCBRA = River Corridor Baseline Risk Assessment

Table H-24. Invertebrate Tissue Samples from 100-D and 100-H

Analyte	Data Source	Nondetect Samples			Detect Samples			Total of All Samples		
		Number	Minimum	Maximum	Number	Minimum	Maximum	Number	Minimum	Maximum
Inorganics (mg/kg)										
Aluminum	RCBRA				12	8	71.8	12	8	71.8
Antimony	RCBRA	12	0.21	0.67				12	0.21	0.67
Arsenic	RCBRA	2	0.59	0.88	10	0.59	1.6	12	0.59	1.6
Barium	RCBRA				12	0.4	8.8	12	0.4	8.8
Beryllium	RCBRA	12	0.01	0.03				12	0.01	0.03
Bismuth	RCBRA	12	0.39	0.77				12	0.39	0.77
Boron	RCBRA	1	0.25	0.25	11	0.24	6.9	12	0.24	6.9

Table H-24. Invertebrate Tissue Samples from 100-D and 100-H

Analyte	Data Source	Nondetect Samples			Detect Samples			Total of All Samples		
		Number	Minimum	Maximum	Number	Minimum	Maximum	Number	Minimum	Maximum
Cadmium	RCBRA	3	0.07	0.07	9	0.07	1.1	12	0.07	1.1
Calcium	RCBRA				12	154	3,850	12	154	3,850
Calculated total uranium	RCBRA	1	0.104	0.104				1	0.104	0.104
Chromium	RCBRA				12	0.15	0.67	12	0.15	0.67
Cobalt	RCBRA	10	0.08	0.21	2	0.14	0.18	12	0.08	0.21
Copper	RCBRA				12	4.1	21.2	12	4.1	21.2
Iron	RCBRA				12	24.3	211	12	24.3	211
Lead	RCBRA	12	0.3	0.47				12	0.3	0.47
Lithium	RCBRA	1	0.13	0.13	11	0.04	0.11	12	0.04	0.13
Magnesium	RCBRA				12	274	828	12	274	828
Manganese	RCBRA				12	4.5	55.9	12	4.5	55.9
Mercury	RCBRA	10	0.01	0.02	2	0.02	0.03	12	0.01	0.03
Molybdenum	RCBRA	3	0.28	0.44	9	0.25	0.74	12	0.25	0.74
Nickel	RCBRA	10	0.23	0.36	2	0.35	0.44	12	0.23	0.44
Phosphorus	RCBRA				12	1,380	2,840	12	1,380	2,840
Potassium	RCBRA				12	2,170	2,830	12	2,170	2,830
Selenium	RCBRA	4	0.45	1	8	0.56	1.8	12	0.45	1.8
Silicon	RCBRA				12	14.1	122	12	14.1	122
Silver	RCBRA	9	0.07	0.11	3	0.07	0.1	12	0.07	0.11
Sodium	RCBRA				12	137	1,140	12	137	1,140

Table H-24. Invertebrate Tissue Samples from 100-D and 100-H

Analyte	Data Source	Nondetect Samples			Detect Samples			Total of All Samples		
		Number	Minimum	Maximum	Number	Minimum	Maximum	Number	Minimum	Maximum
Strontium (elemental)	RCBRA				6	3.6	14.2	6	3.6	14.2
Thallium	RCBRA	12	0.67	1.1				12	0.67	1.1
Tin	RCBRA	12	1	3				12	1	3
Titanium	RCBRA				6	0.58	1.6	6	0.58	1.6
Uranium (inorganic)	RCBRA	12	0.85	1.4				12	0.85	1.4
Vanadium	RCBRA	6	0.09	0.14	6	0.14	0.46	12	0.09	0.46
Zinc	RCBRA				12	28	99.4	12	28	99.4
Zirconium	RCBRA	11	1	1.6				11	1	1.6
Organics (mg/kg)										
Acenaphthene	RCBRA	3	0.787	0.926				3	0.787	0.926
Acenaphthylene	RCBRA	3	0.787	0.926				3	0.787	0.926
Anthracene	RCBRA	3	0.0787	0.0926				3	0.0787	0.0926
Benzo[a]anthracene	RCBRA	3	0.0787	0.0926				3	0.0787	0.0926
Benzo[a]pyrene	RCBRA	3	0.0787	0.0926				3	0.0787	0.0926
Benzo[b]fluoranthene	RCBRA	3	0.0787	0.0926				3	0.0787	0.0926
Benzo[ghi]perylene	RCBRA	3	0.0787	0.0926				3	0.0787	0.0926
Benzo[k]fluoranthene	RCBRA	3	0.0787	0.0926				3	0.0787	0.0926
Chrysene	RCBRA	2	0.0787	0.0833	1	0.033	0.033	3	0.033	0.0833
Dibenz[a,h]anthracene	RCBRA	3	0.0787	0.0926				3	0.0787	0.0926
Fluoranthene	RCBRA	1	0.0787	0.0787	2	0.062	0.36	3	0.062	0.36

Table H-24. Invertebrate Tissue Samples from 100-D and 100-H

Analyte	Data Source	Nondetect Samples			Detect Samples			Total of All Samples		
		Number	Minimum	Maximum	Number	Minimum	Maximum	Number	Minimum	Maximum
Fluorene	RCBRA	3	0.0787	0.0926				3	0.0787	0.0926
Indeno[1,2,3-cd]pyrene	RCBRA	3	0.0787	0.0926				3	0.0787	0.0926
Naphthalene	RCBRA	3	0.787	0.926				3	0.787	0.926
Phenanthrene	RCBRA	3	0.0787	0.0926				3	0.0787	0.0926
Pyrene	RCBRA	2	0.0787	0.0833	1	0.041	0.041	3	0.041	0.0833
Radionuclides (pCi/g)										
Strontium-90	RCBRA	1	-0.119	-0.119				1	-0.119	-0.119
Thorium-228	RCBRA	1	0.112	0.112				1	0.112	0.112
Thorium-230	RCBRA	1	0.112	0.112				1	0.112	0.112
Thorium-232	RCBRA	1	-0.037	-0.037				1	-0.037	-0.037
Uranium-233/234	RCBRA	1	0.035	0.035				1	0.035	0.035
Uranium-235	RCBRA	1	0	0				1	0	0
Uranium-238	RCBRA	1	0.035	0.035				1	0.035	0.035

RCBRA = River Corridor Baseline Risk Assessment

Table H-25. Small Mammal Tissue Samples from 100-D and 100-H

Analyte	Data Source	Nondetect Samples			Detect Samples			Total of All Samples		
		Number	Minimum	Maximum	Number	Minimum	Maximum	Number	Minimum	Maximum
Inorganics (mg/kg)										
Aluminum	RCBRA	8	2.3	2.9	16	2.3	176	24	2.3	176
Antimony	RCBRA	24	0.21	0.44				24	0.21	0.44
Arsenic	RCBRA	20	0.39	0.6	4	0.42	0.75	24	0.39	0.75
Barium	RCBRA				24	0.06	5.4	24	0.06	5.4
Beryllium	RCBRA	24	0.01	0.02				24	0.01	0.02
Bismuth	RCBRA	24	0.38	0.51				24	0.38	0.51
Boron	RCBRA	12	0.23	0.35	12	0.26	1.5	24	0.23	1.5
Cadmium	RCBRA	12	0.05	0.07	12	0.08	0.66	24	0.05	0.66
Calcium	RCBRA				24	68.1	18,900	24	68.1	18,900
Calculated total uranium	RCBRA	12	0	0.202				12	0	0.202
Chromium	RCBRA	1	0.13	0.13	23	0.13	0.83	24	0.13	0.83
Cobalt	RCBRA	24	0.08	0.14				24	0.08	0.14
Copper	RCBRA				24	2	7.2	24	2	7.2
Iron	RCBRA				24	32.5	203	24	32.5	203
Lead	RCBRA	13	0.3	0.32	11	0.33	1.5	24	0.3	1.5
Lithium	RCBRA	12	0.03	0.1	12	0.04	0.16	24	0.03	0.16
Magnesium	RCBRA				24	121	788	24	121	788
Manganese	RCBRA				24	1	7	24	1	7
Mercury	RCBRA	21	0.01	0.02	3	0.02	0.13	24	0.01	0.13

Table H-25. Small Mammal Tissue Samples from 100-D and 100-H

Analyte	Data Source	Nondetect Samples			Detect Samples			Total of All Samples		
		Number	Minimum	Maximum	Number	Minimum	Maximum	Number	Minimum	Maximum
Molybdenum	RCBRA	8	0.27	0.28	16	0.23	1.9	24	0.23	1.9
Nickel	RCBRA	15	0.23	0.26	9	0.24	1.4	24	0.23	1.4
Phosphorus	RCBRA				24	1,730	11,900	24	1,730	11,900
Potassium	RCBRA				24	731	3,540	24	731	3,540
Selenium	RCBRA	2	0.41	0.46	22	0.66	2.4	24	0.41	2.4
Silicon	RCBRA				24	4.9	73.5	24	4.9	73.5
Silver	RCBRA	24	0.07	0.09				24	0.07	0.09
Sodium	RCBRA				24	331	3,400	24	331	3,400
Strontium (elemental)	RCBRA				12	0.09	17.8	12	0.09	17.8
Thallium	RCBRA	24	0.66	0.77				24	0.66	0.77
Tin	RCBRA	15	0.63	1.1	9	1.1	2.2	24	0.63	2.2
Titanium	RCBRA	4	0.03	0.03	8	0.04	2.9	12	0.03	2.9
Uranium (inorganic)	RCBRA	22	0.83	1.4	2	0.87	0.98	24	0.83	1.4
Vanadium	RCBRA	18	0.08	0.09	6	0.1	0.25	24	0.08	0.25
Zinc	RCBRA				24	17.7	106	24	17.7	106
Zirconium	RCBRA	5	0.31	0.31	12	0.43	1	17	0.31	1
Organics (mg/kg)										
1,2,4-Trichlorobenzene	RCBRA	12	2.9	4.3				12	2.9	4.3
1,2-Dichlorobenzene	RCBRA	12	2.9	4.3				12	2.9	4.3
1,3-Dichlorobenzene	RCBRA	12	2.9	4.3				12	2.9	4.3

Table H-25. Small Mammal Tissue Samples from 100-D and 100-H

Analyte	Data Source	Nondetect Samples			Detect Samples			Total of All Samples		
		Number	Minimum	Maximum	Number	Minimum	Maximum	Number	Minimum	Maximum
1,4-Dichlorobenzene	RCBRA	12	2.9	4.3				12	2.9	4.3
2,4,5-Trichlorophenol	RCBRA	12	7.1	11				12	7.1	11
2,4,6-Trichlorophenol	RCBRA	12	2.9	4.3				12	2.9	4.3
2,4-Dichlorophenol	RCBRA	10	2.9	4.3				10	2.9	4.3
2,4-Dimethylphenol	RCBRA	12	2.9	4.3				12	2.9	4.3
2,4-Dinitrophenol	RCBRA	11	7.1	11				11	7.1	11
2,4-Dinitrotoluene	RCBRA	12	2.9	4.3				12	2.9	4.3
2,6-Dinitrotoluene	RCBRA	11	2.9	4.3				11	2.9	4.3
2-Chloronaphthalene	RCBRA	12	2.9	4.3				12	2.9	4.3
2-Chlorophenol	RCBRA	10	2.9	4.3				10	2.9	4.3
2-Methylnaphthalene	RCBRA	12	2.9	4.3				12	2.9	4.3
2-Methylphenol [cresol, o-]	RCBRA	12	2.9	4.3				12	2.9	4.3
2-Nitroaniline	RCBRA	11	7.1	11				11	7.1	11
2-Nitrophenol	RCBRA	11	2.9	4.3				11	2.9	4.3
3,3*-Dichlorobenzidine	RCBRA	12	2.9	4.3				12	2.9	4.3
3+4 Methylphenol [cresol, m+p]	RCBRA	9	2.9	4.3	3	0.15	0.31	12	0.15	4.3
3-Nitroaniline	RCBRA	11	7.1	11				11	7.1	11
4,6-Dinitro-2-methylphenol	RCBRA	12	7.1	11				12	7.1	11
4-Bromophenylphenyl ether	RCBRA	12	2.9	4.3				12	2.9	4.3
4-Chloro-3-methylphenol	RCBRA	10	2.9	4.3				10	2.9	4.3

Table H-25. Small Mammal Tissue Samples from 100-D and 100-H

Analyte	Data Source	Nondetect Samples			Detect Samples			Total of All Samples		
		Number	Minimum	Maximum	Number	Minimum	Maximum	Number	Minimum	Maximum
4-Chloroaniline	RCBRA	11	2.9	4.3				11	2.9	4.3
4-Chlorophenylphenyl ether	RCBRA	12	2.9	4.3				12	2.9	4.3
4-Nitroaniline	RCBRA	11	7.1	11				11	7.1	11
4-Nitrophenol	RCBRA	12	7.1	11				12	7.1	11
Acenaphthene	RCBRA	12	2.9	4.3				12	2.9	4.3
Acenaphthylene	RCBRA	12	2.9	4.3				12	2.9	4.3
Aldrin	RCBRA	8	0.015	0.019	4	0.014	0.028	12	0.014	0.028
Alpha-BHC	RCBRA	12	0.014	0.019				12	0.014	0.019
alpha-Chlordane	RCBRA	12	0.014	0.019				12	0.014	0.019
Anthracene	RCBRA	12	2.9	4.3				12	2.9	4.3
Aroclor-1016	RCBRA	12	0.14	0.18				12	0.14	0.18
Aroclor-1221	RCBRA	12	0.14	0.18				12	0.14	0.18
Aroclor-1232	RCBRA	12	0.14	0.18				12	0.14	0.18
Aroclor-1242	RCBRA	12	0.14	0.18				12	0.14	0.18
Aroclor-1248	RCBRA	12	0.14	0.18				12	0.14	0.18
Aroclor-1254	RCBRA	12	0.14	0.18				12	0.14	0.18
Aroclor-1260	RCBRA	12	0.14	0.18				12	0.14	0.18
Benzo[a]anthracene	RCBRA	12	2.9	4.3				12	2.9	4.3
Benzo[a]pyrene	RCBRA	12	2.9	4.3				12	2.9	4.3
Benzo[b]fluoranthene	RCBRA	12	2.9	4.3				12	2.9	4.3

Table H-25. Small Mammal Tissue Samples from 100-D and 100-H

Analyte	Data Source	Nondetect Samples			Detect Samples			Total of All Samples		
		Number	Minimum	Maximum	Number	Minimum	Maximum	Number	Minimum	Maximum
Benzo[ghi]perylene	RCBRA	12	2.9	4.3				12	2.9	4.3
Benzo[k]fluoranthene	RCBRA	12	2.9	4.3				12	2.9	4.3
beta-1,2,3,4,5,6-Hexachlorocyclohexane	RCBRA	9	0.015	0.018	3	0.016	0.051	12	0.015	0.051
Bis[2-chloro-1-methylethyl]ether	RCBRA	12	2.9	4.3				12	2.9	4.3
Bis[2-Chloroethoxy]methane	RCBRA	12	2.9	4.3				12	2.9	4.3
Bis[2-chloroethyl] ether	RCBRA	12	2.9	4.3				12	2.9	4.3
Bis[2-ethylhexyl] phthalate	RCBRA	6	1.3	4	6	0.23	1.7	12	0.23	4
Butylbenzylphthalate	RCBRA	12	2.9	4.3				12	2.9	4.3
Carbazole	RCBRA	12	2.9	4.3				12	2.9	4.3
Chrysene	RCBRA	12	2.9	4.3				12	2.9	4.3
Delta-BHC	RCBRA	10	0.014	0.019	2	0.035	0.04	12	0.014	0.04
Dibenz[a,h]anthracene	RCBRA	12	2.9	4.3				12	2.9	4.3
Dibenzofuran	RCBRA	12	2.9	4.3				12	2.9	4.3
Dichlorodiphenyldichloroethane	RCBRA	11	0.015	0.019				11	0.015	0.019
Dichlorodiphenyldichloroethylene	RCBRA	11	0.014	0.019	1	0.012	0.012	12	0.012	0.019
Dichlorodiphenyltrichloroethane	RCBRA	11	0.015	0.019	1	0.019	0.019	12	0.015	0.019
Dieldrin	RCBRA	12	0.014	0.019				12	0.014	0.019
Diethylphthalate	RCBRA	12	2.9	4.3				12	2.9	4.3
Dimethyl phthalate	RCBRA	12	2.9	4.3				12	2.9	4.3
Di-n-butylphthalate	RCBRA	9	2.9	4.3	3	0.18	0.24	12	0.18	4.3

Table H-25. Small Mammal Tissue Samples from 100-D and 100-H

Analyte	Data Source	Nondetect Samples			Detect Samples			Total of All Samples		
		Number	Minimum	Maximum	Number	Minimum	Maximum	Number	Minimum	Maximum
Di-n-octylphthalate	RCBRA	11	2.9	4	1	0.64	0.64	12	0.64	4
Endosulfan I	RCBRA	11	0.015	0.019	1	0.0098	0.0098	12	0.0098	0.019
Endosulfan II	RCBRA	12	0.014	0.019				12	0.014	0.019
Endosulfan sulfate	RCBRA	12	0.014	0.019				12	0.014	0.019
Endrin	RCBRA	12	0.014	0.019				12	0.014	0.019
Endrin aldehyde	RCBRA	11	0.015	0.019	1	0.014	0.014	12	0.014	0.019
Endrin ketone	RCBRA	12	0.014	0.019				12	0.014	0.019
Fluoranthene	RCBRA	12	2.9	4.3				12	2.9	4.3
Fluorene	RCBRA	12	2.9	4.3				12	2.9	4.3
Gamma-BHC (lindane)	RCBRA	10	0.015	0.019	2	0.0088	0.015	12	0.0088	0.019
gamma-Chlordane	RCBRA	12	0.014	0.019				12	0.014	0.019
Heptachlor	RCBRA	12	0.014	0.019				12	0.014	0.019
Heptachlor epoxide	RCBRA	12	0.014	0.019				12	0.014	0.019
Hexachlorobenzene	RCBRA	12	2.9	4.3				12	2.9	4.3
Hexachlorobutadiene	RCBRA	12	2.9	4.3				12	2.9	4.3
Hexachlorocyclopentadiene	RCBRA	12	2.9	4.3				12	2.9	4.3
Hexachloroethane	RCBRA	12	2.9	4.3				12	2.9	4.3
Indeno[1,2,3-cd]pyrene	RCBRA	12	2.9	4.3				12	2.9	4.3
Isophorone	RCBRA	12	2.9	4.3				12	2.9	4.3
Methoxychlor	RCBRA	11	0.014	0.019	1	0.032	0.032	12	0.014	0.032

Table H-25. Small Mammal Tissue Samples from 100-D and 100-H

Analyte	Data Source	Nondetect Samples			Detect Samples			Total of All Samples		
		Number	Minimum	Maximum	Number	Minimum	Maximum	Number	Minimum	Maximum
Naphthalene	RCBRA	12	2.9	4.3				12	2.9	4.3
Nitrobenzene	RCBRA	11	2.9	4.3				11	2.9	4.3
N-Nitroso-di-n-dipropylamine	RCBRA	11	2.9	4.3				11	2.9	4.3
N-Nitrosodiphenylamine	RCBRA	11	2.9	4.3				11	2.9	4.3
Pentachlorophenol	RCBRA	12	7.1	11				12	7.1	11
Phenanthrene	RCBRA	12	2.9	4.3				12	2.9	4.3
Phenol	RCBRA	2	4	4.3	10	0.25	0.64	12	0.25	4.3
Pyrene	RCBRA	12	2.9	4.3				12	2.9	4.3
Toxaphene	RCBRA	12	0.14	0.19				12	0.14	0.19
Radionuclides (pCi/g)										
Americium-241	RCBRA	12	0.113	0.32				12	0.113	0.32
Antimony-125	RCBRA	12	0.12	0.296				12	0.12	0.296
Barium-133	RCBRA	5	0.063	0.11				5	0.063	0.11
Beryllium-7	RCBRA	12	0.031	0.91				12	0.031	0.91
Cesium-134	RCBRA	12	0.061	0.162				12	0.061	0.162
Cesium-137	RCBRA	12	0.054	0.17				12	0.054	0.17
Cobalt-60	RCBRA	12	0.055	0.21				12	0.055	0.21
Europium-152	RCBRA	12	0.13	0.365				12	0.13	0.365
Europium-154	RCBRA	12	0.17	0.409				12	0.17	0.409
Europium-155	RCBRA	12	0.13	0.27				12	0.13	0.27

Table H-25. Small Mammal Tissue Samples from 100-D and 100-H

Analyte	Data Source	Nondetect Samples			Detect Samples			Total of All Samples		
		Number	Minimum	Maximum	Number	Minimum	Maximum	Number	Minimum	Maximum
Plutonium-238	RCBRA	5	-0.084	0.034				5	-0.084	0.034
Plutonium-239/240	RCBRA	5	-0.027	0.042				5	-0.027	0.042
Potassium-40	RCBRA	8	0	9.6	4	2.43	3.46	12	0	9.6
Radium-226	RCBRA	12	0.092	0.286				12	0.092	0.286
Radium-228	RCBRA	12	0.22	0.619				12	0.22	0.619
Ruthenium-106	RCBRA	12	0.43	1.02				12	0.43	1.02
Strontium-90	RCBRA	12	-0.075	0.112				12	-0.075	0.112
Thorium-228	RCBRA	12	-0.066	0.282				12	-0.066	0.282
Thorium-230	RCBRA	10	-0.068	0.253	2	0.318	0.392	12	-0.068	0.392
Thorium-232	RCBRA	12	-0.03	0.084				12	-0.03	0.084
Uranium-233/234	RCBRA	12	0	0.068				12	0	0.068
Uranium-235	RCBRA	12	0	0.048				12	0	0.048
Uranium-238	RCBRA	12	0	0.068				12	0	0.068

RCBRA = River Corridor Baseline Risk Assessment

Table H-26. Deer Antler Samples from 100-D and 100-H

Analyte	Data Source	Nondetect Samples			Detect Samples			Total of All Samples		
		Number	Minimum	Maximum	Number	Minimum	Maximum	Number	Minimum	Maximum
Inorganics (mg/kg)										
Aluminum	PNNL	1	0.192	0.192				1	0.192	0.192
Antimony	PNNL	1	0.0032	0.0032				1	0.0032	0.0032
Arsenic	PNNL				1	0.7328	0.7328	1	0.7328	0.7328
Beryllium	PNNL	1	0.0064	0.0064				1	0.0064	0.0064
Cadmium	PNNL				1	0.246	0.246	1	0.246	0.246
Chromium	PNNL				1	0.114	0.114	1	0.114	0.114
Copper	PNNL				1	7.62	7.62	1	7.62	7.62
Lead	PNNL				1	0.0129	0.0129	1	0.0129	0.0129
Manganese	PNNL				1	4.26	4.26	1	4.26	4.26
Nickel	PNNL	1	0.016	0.016				1	0.016	0.016
Selenium	PNNL				1	0.228	0.228	1	0.228	0.228
Silver	PNNL				1	0.0125	0.0125	1	0.0125	0.0125
Thallium	PNNL				1	0.00165	0.00165	1	0.00165	0.00165
Thorium	PNNL	1	0.00171	0.00171				1	0.00171	0.00171
Uranium	PNNL	1	0.00288	0.00288				1	0.00288	0.00288
Zinc	PNNL				1	28.8	28.8	1	28.8	28.8
Radionuclides (pCi/g)										
Antimony-125	PNNL	1	-0.00782	-0.00782				1	-0.00782	-0.00782
Beryllium-7	PNNL	1	-0.0276	-0.0276				1	-0.0276	-0.0276

Table H-26. Deer Antler Samples from 100-D and 100-H

Analyte	Data Source	Nondetect Samples			Detect Samples			Total of All Samples		
		Number	Minimum	Maximum	Number	Minimum	Maximum	Number	Minimum	Maximum
Cesium-134	PNNL	1	0.00283	0.00283				1	0.00283	0.00283
Cesium-137	PNNL	1	0.0101	0.0101				1	0.0101	0.0101
Cobalt-60	PNNL	1	0.00331	0.00331				1	0.00331	0.00331
Europium-152	PNNL	1	-0.00707	-0.00707				1	-0.00707	-0.00707
Europium-154	PNNL	1	0.00633	0.00633				1	0.00633	0.00633
Europium-155	PNNL	1	0.00144	0.00144				1	0.00144	0.00144
Potassium-40	PNNL				1	2.73	2.73	1	2.73	2.73
Ruthenium-106	PNNL	1	-0.0625	-0.0625				1	-0.0625	-0.0625
Strontium-90	PNNL				2	0.277	1.24	2	0.277	1.24

PNNL = Pacific Northwest National Laboratory

Table H-27. Bird Tissue Samples from 100-D and 100-H

Analyte	Data Source	Nondetect Samples			Detect Samples			Total of All Samples		
		Number	Minimum	Maximum	Number	Minimum	Maximum	Number	Minimum	Maximum
Inorganics (mg/kg)										
Aluminum	PNNL				4	0.467	1.21	4	0.467	1.21
	RCBRA	2	2.4	2.4	8	2.6	43.2	10	2.4	43.2
Antimony	PNNL	4	0.0032	0.0033				4	0.0032	0.0033
	RCBRA	10	0.21	2.2				10	0.21	2.2
Arsenic	PNNL	1	0.032	0.032	3	0.0488	0.394	4	0.032	0.394
	RCBRA	8	0.58	3	2	0.39	1.3	10	0.39	3
Barium	PNNL				1	0.0726	0.0726	1	0.0726	0.0726
	RCBRA				10	0.37	2.2	10	0.37	2.2
Beryllium	PNNL	4	0.00231	0.0064				4	0.00231	0.0064
	RCBRA	7	0.009	0.03	3	0.03	0.11	10	0.009	0.11
Bismuth	RCBRA	10	0.38	2.6				10	0.38	2.6
Boron	RCBRA	1	0.23	0.23	9	0.24	12.7	10	0.23	12.7
Cadmium	PNNL				4	0.141	1.64	4	0.141	1.64
	RCBRA	6	0.07	0.15	4	0.11	0.76	10	0.07	0.76
Calcium	RCBRA				10	276	5520	10	276	5520
Calculated total uranium	RCBRA	5	0.0000035	0.0000105				5	0.0000035	0.0000105
Chromium	PNNL				4	0.0726	0.461	4	0.0726	0.461
	RCBRA	3	0.28	0.65	7	0.22	1.7	10	0.22	1.7
Cobalt	RCBRA	10	0.08	0.7				10	0.08	0.7

Table H-27. Bird Tissue Samples from 100-D and 100-H

Analyte	Data Source	Nondetect Samples			Detect Samples			Total of All Samples		
		Number	Minimum	Maximum	Number	Minimum	Maximum	Number	Minimum	Maximum
Copper	PNNL				4	5.06	8.8	4	5.06	8.8
	RCBRA				10	3.7	14.3	10	3.7	14.3
Iron	RCBRA				10	39.2	150	10	39.2	150
Lead	PNNL				4	0.0135	0.245	4	0.0135	0.245
	RCBRA	10	0.3	1.6				10	0.3	1.6
Lithium	RCBRA	2	0.07	0.16	8	0.03	0.2	10	0.03	0.2
Magnesium	RCBRA				10	178	499	10	178	499
Manganese	PNNL				4	3.33	6.05	4	3.33	6.05
	RCBRA				10	0.85	12.5	10	0.85	12.5
Mercury	PNNL				1	0.0107	0.0107	1	0.0107	0.0107
	RCBRA	5	0.01	0.02	5	0.03	0.05	10	0.01	0.05
Molybdenum	RCBRA	6	0.15	0.63	4	0.43	1.4	10	0.15	1.4
Nickel	PNNL	3	0.016	0.0165	1	0.0170	0.0170	4	0.016	0.0170
	RCBRA	9	0.23	1.2	1	0.47	0.47	10	0.23	1.2
Phosphorus	RCBRA				10	504	4420	10	504	4420
Potassium	RCBRA				10	1130	2570	10	1130	2570
Selenium	PNNL				4	0.586	2.13	4	0.586	2.13
	RCBRA	1	2.4	2.4	9	0.85	2.2	10	0.85	2.4
Silicon	RCBRA				10	3.1	79.8	10	3.1	79.8
Silver	PNNL	2	0.00288	0.0032	2	0.00142	0.00496	4	0.00142	0.00496

Table H-27. Bird Tissue Samples from 100-D and 100-H

Analyte	Data Source	Nondetect Samples			Detect Samples			Total of All Samples		
		Number	Minimum	Maximum	Number	Minimum	Maximum	Number	Minimum	Maximum
	RCBRA	7	0.07	0.35	3	0.07	0.12	10	0.07	0.35
Sodium	RCBRA				10	781	2220	10	781	2220
Strontium (elemental)	RCBRA				10	1.5	15.8	10	1.5	15.8
Thallium	PNNL				4	0.00143	0.0325	4	0.00143	0.0325
	RCBRA	10	0.67	3.5				10	0.67	3.5
Thorium	PNNL	3	0.00171	0.0064	1	0.00366	0.00366	4	0.00171	0.0064
Tin	RCBRA	4	1.7	4.7	6	1.1	5.4	10	1.1	5.4
Titanium	RCBRA				8	0.15	7.5	8	0.15	7.5
Uranium (inorganic)	PNNL	3	0.00288	0.0032	1	0.000502	0.000502	4	0.000502	0.0032
	RCBRA	10	0.84	4.4				10	0.84	4.4
Vanadium	RCBRA	8	0.08	0.45	2	0.2	0.32	10	0.08	0.45
Zinc	PNNL				4	28.6	51.2	4	28.6	51.2
	RCBRA				10	19.9	56.4	10	19.9	56.4
Zirconium	RCBRA	8	0.84	5.3				8	0.84	5.3
Radionuclides (pCi/g)										
Americium-241	RCBRA	5	0.058	0.52				5	0.058	0.52
Antimony-125	PNNL	21	-0.0255	0.0852				21	-0.0255	0.0852
	RCBRA	5	0.15	0.36				5	0.15	0.36
Barium-133	RCBRA	4	0.061	0.15				4	0.061	0.15

Table H-27. Bird Tissue Samples from 100-D and 100-H

Analyte	Data Source	Nondetect Samples			Detect Samples			Total of All Samples		
		Number	Minimum	Maximum	Number	Minimum	Maximum	Number	Minimum	Maximum
Beryllium-7	PNNL	21	-0.124	0.361				21	-0.124	0.361
	RCBRA	5	0.021	1.3				5	0.021	1.3
Cerium/Praseodymium-144	PNNL	4	-0.00951	0.0132				4	-0.00951	0.0132
Cesium-134	PNNL	20	-0.0387	0.0432	1	0.0113	0.0113	21	-0.0387	0.0432
	RCBRA	5	0.079	0.21				5	0.079	0.21
Cesium-137	PNNL	20	-0.00767	0.0182	1	0.173	0.173	21	-0.00767	0.173
	RCBRA	5	0.062	0.18				5	0.062	0.18
Cobalt-60	PNNL	20	-0.0239	0.0535	1	0.0118	0.0118	21	-0.0239	0.0535
	RCBRA	5	0.079	0.23				5	0.079	0.23
Europium-152	PNNL	4	-0.0216	0.0109				4	-0.0216	0.0109
	RCBRA	5	0.15	0.42				5	0.15	0.42
Europium-154	PNNL	20	-0.103	0.0457	1	0.0544	0.0544	21	-0.103	0.0544
	RCBRA	5	0.21	0.57				5	0.21	0.57
Europium-155	PNNL	21	-0.0457	0.0377				21	-0.0457	0.0377
	RCBRA	5	0.1	0.41				5	0.1	0.41
Potassium-40	PNNL	1	0.819	0.819	20	1.17	4.15	21	0.819	4.15
	RCBRA	1	5	5	4	2.3	8.04	5	2.3	8.04
Radium-226	RCBRA	5	0.13	0.64				5	0.13	0.64
Radium-228	RCBRA	5	0.28	0.85				5	0.28	0.85
Ruthenium-106	PNNL	21	-0.228	0.0717				21	-0.228	0.0717

Table H-27. Bird Tissue Samples from 100-D and 100-H

Analyte	Data Source	Nondetect Samples			Detect Samples			Total of All Samples		
		Number	Minimum	Maximum	Number	Minimum	Maximum	Number	Minimum	Maximum
	RCBRA	5	0.59	1.4				5	0.59	1.4
Strontium-90	PNNL	16	-0.027	0.0739	13	0.0418	0.705	29	-0.027	0.705
	RCBRA	4	-0.093	0.028	1	0.19	0.19	5	-0.093	0.19
Thorium-228	RCBRA	5	-0.049	0.07				5	-0.049	0.07
Thorium-230	RCBRA	4	-0.09	0.19	1	0.195	0.195	5	-0.09	0.195
Thorium-232	RCBRA	5	-0.012	0.09				5	-0.012	0.09
Uranium-233/234	RCBRA	5	0.022	0.065				5	0.022	0.065
Uranium-235	RCBRA	5	0	0				5	0	0
Uranium-238	RCBRA	5	0	0				5	0	0
Zinc-65	PNNL	4	0.00758	0.0218				4	0.00758	0.0218
Zirconium/Niobium-95	PNNL	4	-0.0128	0.00831				4	-0.0128	0.00831

PNNL = Pacific Northwest National Laboratory

RCBRA = River Corridor Baseline Risk Assessment

H6.References

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CHPRC ADMINISTRATIVE DOCUMENT PROCESSING AND APPROVAL

DOCUMENT TITLE:	OWNING ORGANIZATION/FACILITY:
Ecological Risk Evaluation for the 100-DR-1, 100-DR-2, 100-HR-1, and 100-HR-2 Source Operable Units	EP&SP

Document Number: ECF-100DR1-11-0006 **Revision/Change Number:** 2

DOCUMENT TYPE *(Check Applicable)* [ ] Plan [X] Report [ ] Study [ ] Description Document [ ] Other

DOCUMENT ACTION *(Check One)* [ ] New [X] Revision [ ] Cancellation

RESPONSIBLE CONTACTS

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DOCUMENT CONTROL

Is the document intended to be controlled within the Document Management Control System (DMCS)? [X] Yes [ ] No
Does document contain scientific and technical information intended for public use? [X] Yes [ ] No
Does document contain controlled-use information [ ] Yes [X] No
("yes" requires information clearance review in accordance with PRC-PRO-IRM-184)

DOCUMENT REVISION SUMMARY

NOTE: Provide a brief description or summary of the changes for the document listed.
Addition of new uranium TRV and associated PRGs for mammals

REVIEWERS Others

Name *(print)*	Organization
Chris McCarthy	
Mike Elias	

APPROVAL SIGNATURES

Author:	John R Burgess	7/31/14 Date	RELEASE / ISSUE
Name: (Print)	John Burgess		DATE: Jul 31, 2014 HANFORD RELEASE
Responsible Manager:	Acting for A.H. Aly	31 JUL 2014 Date	
Name: (print)	AH Aly		
Other:		Date	
Name: (print)			

A-6005-184 (REV 3)

Date Received for Clearance Process (MM/DD/YYYY)
07/31/2014

INFORMATION CLEARANCE FORM

A. Information Category

- [ ] Abstract
- [ ] Summary
- [ ] Visual Aid
- [ ] Full Paper
- [ ] Journal Article
- [ ] Internet
- [ ] Software
- [x] Report
- [ ] Other _____

B. Document Number ECF-100DR1-11-0006 Revision 2

C. Title
Ecological Risk Evaluation for the 100-DR-1, 100-DR-2, 100-HR-1, and 100-HR-2 Source Operable Units

D. Proposed Internet Address

E. Required Information (MANDATORY)

1. Is document potentially Classified? (●) No ( ) Yes

Aly, Alaa H Will Nichols Approved via IDMS Data File
Manager Required (Print and Sign)

If Yes _____
ADC Required (Print and Sign) ( ) No ( ) Yes Classified

2. Official Use Only (●) No ( ) Yes Exemption No. ____
3. Export Controlled Information (●) No ( ) Yes OUO Exemption No. 3
4. UCNI (●) No ( ) Yes
5. Applied Technology (●) No ( ) Yes OUO Exemption No. 5
6. Other (Specify) _____

7. Does Information Contain the Following:

a. New or Novel (Patentable) Subject Matter? (●) No ( ) Yes
If "Yes", OUO Exemption No. 3
If "Yes", Disclosure No.: _____

b. Commercial Proprietary Information Received in Confidence, Such as Proprietary and/or Inventions?
(●) No ( ) Yes If "Yes", OUO Exemption No. 4

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If "Yes", OUO Exemption No. 4

d. Government Privileged Information? (●) No ( ) Yes
If "Yes", Exemption No. 5

e. Copyrights? (●) No ( ) Yes If "Yes", Attach Permission.

f. Trademarks? (●) No ( ) Yes If "Yes", Identify in Document.

8. Is Information requiring submission to OSTI? (●) No ( ) Yes

9. Release Level? (●) Public ( ) Limited

F. Complete for a Journal Article

1. Title of Journal

G. Complete for a Presentation

1. Title for Conference or Meeting _____
2. Group Sponsoring _____
3. Date of Conference _____
4. City/State _____
5. Will Information be Published in Proceedings? (●) No ( ) Yes
6. Will Material be Handed Out? (●) No ( ) Yes

H. Information Owner/Author/Requestor
Carr, Linda Approved via IDMS Data File
(Print and Sign)

Responsible Manager
Aly, Alaa H Will Nichols Approved via IDMS Data File
(Print and Sign)

Approval by Direct Report to President (Speech/Articles Only) _____
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I. Reviewers	Yes	Print	Signature	Public Y/N (If N, complete J)
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Office of External Affairs	[ ]			Y / N
DOE	[ ]			Y / N
Other	[ ]			Y / N
Other	[ ]			Y / N
Other	[ ]			Y / N

J. Comments

Information Clearance Approval

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APPROVED
By Lee Ann Snyder at 1:26 pm, Jul 31, 2014

If Additional Comments, Please Attach Separate Sheet

A-6001-401 (REV 5)

ECF-100DR1-11-0006
Revision 2

Ecological Risk Evaluation for the 100-DR-1, 100-DR-2, 100-HR-1, and 100-HR-2 Source Operable Units

Prepared for the U.S. Department of Energy
Assistant Secretary for Environmental Management

Contractor for the U.S. Department of Energy
under Contract DE-AC06-08RL14788

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Approved for Public Release;
Further Dissemination Unlimited

ECF-100DR1-11-0006
Revision 2

Ecological Risk Evaluation for the 100-DR-1, 100-DR-2, 100-HR-1, and 100-HR-2 Source Operable Units

Document Type: ENV Program/Project: EP & SP

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Date Published
July 2014

Prepared for the U.S. Department of Energy
Assistant Secretary for Environmental Management

Contractor for the U.S. Department of Energy
under Contract DE-AC06-08RL14788

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APPROVED
By Lee Ann Snyder at 1:26 pm, Jul 31, 2014

Release Approval Date

Approved for Public Release;
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ECF-100DR1-11-0006
Revision 2

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ENVIRONMENTAL CALCULATION COVER PAGE

Section 1: Completed by the Responsible Manager

Project: EP & SP

Date: 07/23/2014

Calculation Title & Description: Ecological Risk Evaluation for the 100-DR-1, 100-DR-2, 100-HR-1, and 100-HR-2 Source Operable Units

RELEASE / ISSUE

Section 2: Completed by Preparer

Calculation No.: ECF-100DR1-11-0006 Revision No.: 2

Revision History

Revision No.	Description	Date	Affected Pages ADD ROW
Decisional Draft	Addition of new waste sites	6/27/11	Tables
A	Addition of new waste sites. Incorporation of RL comments. Updated plant/invert. ORGs	9/21/11	All ☒
0	Addition of Total U Isotopes and RAD SOF, HI and drinking water ingestion tables and text. Removed two waste sites from the dataset and re-ran EPCs.	6/10/12	All ☒
1	Addition of new waste sites	11/30/12	Tables ☒
2	Addition of new uranium TRV and associated PRGs for mammals	7/23/14	Tables ☒

Section 3: Completed by the Responsible Manager

Document Control:

Is the document intended to be controlled within the Document Management Control System (DMCS)? ☒ Yes ☐ No

Does document contain scientific and technical information intended for public use? ☒ Yes ☐ No

Does document contain controlled-use information ☐ Yes ☒ No

Section 4: Document Review & Approval

John Burgess
Preparer: (Name /Position) Signature Date

Chris McCarthy
Checker: (Name /Position) Signature 07/24/2014 Date

Mike Elias
Senior Reviewer: (Name /Position) Signature 07/24/2014 Date

APPLICABLE IF CALCULATION IS A RISK ASSESSMENT OR USES AN ENVIRONMENTAL MODEL

AH Aly
Modeling Integration Manager:
Risk/Modeling Integration Manager: (Name /Position) Signature 29 July 2014 Date

ACTING FOR AH ALY

EC1_Environmental_Calculation_Cover_Page Page 1 of 2 A-6005-812 (REV 3)

1 Purpose

This Environmental Calculation for the 100-D/H OUs documents the following:

- Calculation of Hazard Quotients (HQs), Sum of Fractions (SOFs), and Hazard Indexes (HIs) for the evaluation of risk to ecological receptors (plants, soil invertebrates, and wildlife) from radionuclides and chemical constituents in the upper 4.6 m (15 ft) of the upland area soils; and,
- Evaluation of the site-relatedness of constituents based on the comparison of site concentrations to non-site-impacted background concentrations for radionuclides and chemical constituents with HQs, SOFs, or HIs $\geq$ 1.

The HQ, SOF, HI, and background comparisons presented in this Environmental Calculation are intended for use in the Ecological Risk Assessment (ERA) being prepared for the 100-D/H OUs of the Hanford Site. That ERA completes both a screening and Preliminary Remediation Goal (PRG) evaluation; the results of the ERA will be used to evaluate the ecological risk remaining following remediation and to provide information for risk managers to consider when deciding if additional remediation is necessary with respect to ecological risks for the 100-D/H OUs.

HQs are intended to characterize the potential for risk to the specified receptors from exposure to contaminants via the evaluated exposure pathways. HQs are the ratios of the estimated site-specific exposures to a constituent compared to the estimated exposure levels at which no adverse health effects are likely to occur. Because the dose from radionuclides is additive, the combined effects from two or more radionuclides are calculated as ratios of the estimated total site-specific exposures to effect levels using the SOF method. The dose from polychlorinated biphenyls (Aroclors) is also additive; therefore, the total contributions of Aroclors were also calculated using the HI method. For constituents indicating a potential risk (HQ, SOF, or HI $\geq$ 1) for at least one ecological receptor (and for which background values were available), additional comparisons to background were conducted to determine if the concentrations of those constituents are elevated above those in non-site-impacted areas. Risks are not considered to be site-related in the ERA if onsite concentrations do not exceed those concentrations present as background. Background concentrations were not available for organic constituents.

The risk characterization process described in this document is consistent with *Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments, Interim Final* (EPA 540-R-97-006). The HQs, SOFs, HIs, and background comparison outcomes presented in this Environmental Calculation are not intended to be final risk outcomes; it will be revised as needed to incorporate updates to the risk characterization process and/or underlying values used to calculate risks that occur during the Remedial Investigation/Feasibility Study (RI/FS) process for the 100-D/H OUs.

The risk characterization process presented in this document is intended for use in evaluating risks for waste sites located in upland habitats. Except for the evaluation of wildlife drinking from seeps in the riparian habitat (as described below), it is not intended for evaluating riparian or near-shore areas of the River Corridor, as these have been defined in the *River Corridor Baseline Risk Assessment Volume 1: Ecological Risk Assessment* (DOE/RL-2007-21, Rev 0).

2 Methodology

The HQs, SOFs, HIs, and background comparisons are based on the evaluation of risk to ecological receptors as described in Section 1. The following sections describe the steps used to develop the HQs, SOFs, and HIs (Section 2.1), the approach for comparing site to background concentrations (Section 2.2),

the approach for developing the PRG HQs (Section 2.3), and the approach for estimating wildlife exposure to chemicals and radionuclides received by drinking from seeps in the 100-D/H OUs (Section 2.4).

2.1 Screening HQ, SOF, and HI Calculations

Risks at the 100-D/H OUs were evaluated based on the ratio of Exposure Point Concentrations (EPCs) to SSLs (defined below), resulting in HQs, and are described by the following equation:

$$HQ = EPC/SSL$$

where:

HQ	=	ecological hazard quotient (unitless)
EPC	=	soil concentration (µg/kg for non-radionuclides and pCi/g for radionuclides)
SSL	=	soil screening level (µg/kg for non-radionuclides and pCi/g for radionuclides)

Once the HQ was calculated, the SOF for radionuclides or the HI for Aroclors was calculated for a decision unit as follows:

$$\text{SOF or HI} = \sum_{j=1}^{n} \text{Exposure}_j / \text{SSL}_j$$

where:

SOF = Sum of Fractions

HI = Hazard Index

Exposure_j = exposure concentration for individual radionuclides or Aroclors

SSL_j = soil screening level for individual radionuclides or Aroclors

HQ, HI, or SOF values less than 1.0 indicate that adverse effects associated with exposure to a given constituent are unlikely (EPA/540-R-97-006). These constituents were not considered to represent a risk and were excluded from further evaluation in the ERA. An HQ, SOF, or HI $\geq$ 1.0 indicates a potential for risk, but does not indicate that a risk is actually present. Constituents with an HQ $\geq$ 1.0 for at least one ecological receptor (plant, invertebrate, bird, or mammal) were further evaluated, as discussed in Section 2.2, to determine if the detected concentrations also exceed background. As noted above, background concentrations were not available for organic constituents, so this evaluation was not completed for Aroclors or other organics.

Tables 1 and 2 identify the soil decision units that were designated for each waste site in the 100-D and 100-H OUs. Table 3 defines the area and depth sampled within each soil decision unit and describes the sampling design used, the soil depth decision units evaluated in the ERA, and constituents for which EPCs were calculated. These decision units included overburden (backfill), staging pile area (0 to 15 bgs), staging pile area-footprint (0 to 15 bgs), staging pile area-focused (0 to 15 bgs), aging pile area-footprint-focused (0 to 15 bgs),shallow (0 to 15 ft bgs), and shallow-focused (0 to 15 ft bgs). All focused samples were collected using the focused study design. Samples collected greater than 15 ft bgs (deep and deep_focused) were excluded in the ERA.

The EPC represents the Upper Confidence Limit (UCL) of the arithmetic mean concentration of the analyzed constituent for each decision unit within the footprint of each remediated waste site. A detailed description of the process used to calculate the EPCs and the resulting EPC values for t the 100-D/H OUs are provided in the *Computation of Exposure Point Concentrations for the 100-DR-1, 100-DR-2, 100-HR-1 and 100-HR-2 Source Operable Units* (ECF-100DR-11-0004).

The soil EPCs (including metals, pesticides, PAHs, and Aroclors) for each evaluated waste site and decision unit were compared to the following SSLs for each receptor group selected for evaluation in the ERA:

- Terrestrial Plants and Soil Invertebrates - The overall lowest of the available plant and soil invertebrate values in *Tier 1 Risk Based Concentrations for the Protection of Ecological Receptors at the Hanford Site* (CHPRC-00784, found in Appendix H of *Remedial Investigation/ Feasibility Study for the 100-KR1, 100-KR-2, and 100-KR4 Operable Units* (DOE/RL-2010-97) were used as the SSLs for this calculation.
- Avian and Mammalian Wildlife - The overall lowest of the avian and mammalian lowest observed adverse effect level (LOAEL)-based values in *Tier 1 Risk-Based Soil Concentrations Protective of Ecological Receptors at the Hanford Site* (CHPRC-00784, found in Appendix H of DOE/RL-2010-97) were used as the SSLs for this calculation.

Because the plant/invertebrate and/or wildlife SSL values for 10 COPCs (arsenic, boron, lithium, mercury, manganese, molybdenum, selenium, strontium, thallium, and uranium) were higher than the corresponding PRG values, these COPCs were reviewed to confirm they were below both the SSL and the PRG. Any of these 10 COPCs greater than either the SSL or the PRG were carried forward to the background evaluation.

2.2 Background Concentration Comparison

The soil EPCs for inorganics with an HQ $\geq$ 1.0 (Section 2.1) were compared to the lognormal 90th percentile background concentrations for the Hanford Site. No SOFs or HIs were greater than or equal to 1.0, so individual radionuclides were not carried into the background evaluation for the 100-D/H Source OUs. Background concentrations are not available for organic chemicals, so organics were not evaluated in the background comparison. For inorganic constituents in soil at the Hanford Site, background concentrations are described in *Hanford Site Background, Part 1, Soil Background for Nonradioactive Analytes* (DOE/RL-92-24). That document provides the 90th percentile background concentrations for several inorganic constituents. For selected inorganic constituents not included in *Hanford Site Background, Part 1, Soil Background for Nonradioactive Analytes* (DOE/RL-92-24), the 90th percentile concentrations were obtained from Ecology (Ecology Publication 94-115, *Natural Background Soil Metals Concentrations in Washington State*) or *Soil Background for Interim Use at the Hanford Site* (ECF-Hanford-11-038), and from *Remedial Design Report/Remedial Action Work Plan for the 100 Area* (DOE/RL-96-17) for uranium.

Constituents with EPCs meeting or exceeding SSLs (i.e., HQ $\geq$ 1.0) but with EPCs that did not exceed the 90th percentile background concentration were not considered to represent a site-related risk and were excluded from further evaluation. Constituents with EPCs meeting or exceeding SSLs and with EPCs greater than the 90th percentile background concentrations were further considered in the PRG evaluation.

2.3 PRG HQ Calculation

Chemical-decision-unit combinations with EPCs meeting or exceeding the SSLs and with EPCs greater than the 90th percentile background concentrations at the 100-D/H OUs were further evaluated based on the ratio of EPCs to PRGs, resulting in HQs, as described by the following equation:

$$HQ = EPC/PRG$$

where:

HQ	=	ecological hazard quotient (unitless)
EPC	=	soil concentration (µg/kg for non-radionuclides)
PRG	=	preliminary remediation goal (µg/kg for non-radionuclides)

As described in Section 2.1, the EPC represents the 95% UCL of the arithmetic mean concentration of the analyzed constituent for each decision unit within the footprint of each remediated waste site. The soil EPCs for each evaluated waste site and decision unit were compared to PRGs for each receptor group with EPCs exceeding SSLs and background.

The primary difference between the SSL and PRG comparisons for wildlife is the use of bioaccumulation factors based on the foodchain present at the Hanford site (e.g., arthropods in soil) for the calculation of the PRG, and the incorporation of Hanford-specific tissue data in the models. Development of the PRGs for birds and mammals focused on the integration of available Hanford-specific bioaccumulation data for plants, terrestrial arthropods, and small mammals with data from existing bioaccumulation models to more accurately reflect site-specific conditions and the potential exposure of wildlife to chemicals from the ingestion of prey at this Site. Details of the calculations of the avian and mammalian PRGs are found in *Tier 2 Risk Based Concentrations for the Protection of Ecological Receptors at the Hanford Site* (CHPRC-01311). As with SSLs, the PRGs selected are based on LOAELs.

PRGs for the evaluation of potential impacts to terrestrial plants and soil invertebrates are primarily no observed effect concentrations (NOECs) from the RCBRA Report (DOE/RL-2007-21, Rev. 0), *Ecological Soil Screening Levels for Arsenic and Lead in the Tacoma Smelter Plume Footprint and Hanford Site Old Orchards* (Ecology Publication-11-003-006), and a recent study in 2011 as presented in ECF Hanford-11-0158 (*Tier 2 Terrestrial Plant and Invertebrate Preliminary Remediation Goals (PRGs) for Nonradionuclides for Use at the Hanford Site*).

2.4 Freshwater Seeps Drinking Water and HQ Calculations

The estimates of exposure from drinking water ingestion by wildlife include the use of a simplified model whereby the rate of ingestion is standardized to the body weight of the receptor on a per kilogram basis. The simplified allometric scaling equations presented in “Scaling of Osmotic Regulation in Mammals and Birds” (Calder and Braun, 1983) were used to estimate the number of liters consumed per kilogram body weight per day. These rates of ingestion were then multiplied by the concentration of chemicals to calculate the total dose from the drinking water pathway as shown below:

$$\text{Dose} = [\text{Water} \times \text{DWIR}] \times \text{AUF}$$

where:

Dose	=	drinking water exposure (mg/kg body weight/day)
Water	=	chemical concentration in seep (mg/L)
DWIR	=	drinking water ingestion rate (L/kg body weight/day)

AUF = area use factor (area of site/home range of receptor) (unitless)

Drinking water ingestion was estimated for several species of birds and mammals expected to occur in the 100-D/H riparian areas along the Columbia River, with the initial assumption that they reside at the site and fulfill their drinking water requirements exclusively from the seeps, but only for nine months of the year as the river stage is elevated from mid-April to mid-July making the seeps inaccessible. Therefore, an AUF of 0.75 was employed for all species except bats. For bats, an AUF of 0.5 was used since bats use a combination of hibernating and seeking alternative sources of emergent insects during the winter months (WDFW, 2012, *Living with Wildlife: Bats*).

Estimates are not included for rodents (i.e., deer mouse, grasshopper mouse, and pocket mouse) because they maintain water balance through excreting concentrated urine, obtaining water from food and water generated during metabolism (Verts and Kirkland, 1988, "*Perognathus parvus*").

Assuming that wildlife meet their daily drinking water requirements from the seeps, instead of a more readily available source such as the river, is a conservative approach meant to evaluate a worst-case scenario. Therefore, though it represents an overestimate, the 95% UCL of the arithmetic mean concentration of the analyzed constituent (as described in Section 2.1) was employed as the EPC as a conservative estimate of exposure. While filtered water data are used in evaluations of the effects on aquatic receptors (because those are the concentrations that are bioavailable), unfiltered concentrations are more appropriate for drinking water (because bioavailability may change within the digestive tract). Both were included to be comprehensive, as in rare cases filtered measurements can be higher than unfiltered. Results of filtered concentration and unfiltered concentration data were evaluated separately. When both filtered and unfiltered concentrations were measured in the same sampling location and event they were not pooled because doing so would overestimate the exposure concentration.

HQs for inorganics were estimated as the ratio of estimated ingestion doses to toxicological reference values (TRVs). The TRVs employed were the same as those used to develop the wildlife PRGs used to evaluate soil as presented in *Tier 1 Risk-Based Concentrations for the Protection of Ecological Receptors at the Hanford Site* (CHPRC-00784) and *Tier 2 Risk-Based Concentrations for the Protection of Ecological Receptors at the Hanford Site* (CHPRC-01311).

$$HQ = Dose/TRV$$

where:

HQ = ecological hazard quotient (unitless)

Dose = drinking water exposure (mg/kg body weight/day)

TRV = toxicological reference value (mg/kg-body weight-day)

For radionuclides, the HQs were simply a ratio of the measured concentrations in water to the biota concentration guides (BCGs) for wildlife. The lowest water BCGs of terrestrial or riparian animal receptors were taken from the DOE's *A Graded Approach for Evaluating Radiation Doses to Aquatic and terrestrial Biota* (DOE-STD-1153-2002) or were calculated using *RESRAD-BIOTA: A Tool for Implementing a Graded Approach to Biota Dose Evaluation, User's Guide, Version 1* (DOE/EH-0676) when not available. SOFs were calculated as described in Section 2.1. Also as described in Section 2.1, the EPC represents the 95% UCL of the arithmetic mean concentration of the analyzed constituent.

$$HQ = (EPC*AUF) / BCG$$

where:

HQ = ecological hazard quotient (unitless)

EPC = radionuclide concentration in seep (pCi/L)

AUF = area use factor (unitless)

BCG = biota concentration guides (pCi/L)

3 Assumptions and Inputs

The following sections provide the input values for the HQ calculations (Sections 3.1, 3.2, 3.4, and 3.5) and comparison to background concentrations (Section 3.3).

3.1 EPC Concentrations

Site and decision unit EPCs (described in Section 2.1) for surface soil used to calculate HQs, SOFs, and HIs are shown in Tables 4 and 5 for the 100-D and 100-H OUs, respectively.

3.2 Soil Screening Levels (SSLs)

Available SSLs (described in Section 2.1) used to calculate the HQs, SOFs, and HIs are included in Table 4 and Table 5 for the 100-D and 100-H OU waste sites, respectively.

3.3 Background Concentrations

Background concentrations (described in Section 2.2) for soil used to evaluate exceedances of background are provided in Table 6 for the 100-D OU waste sites and Table 7 for the 100-H OU waste sites. The results of the comparisons are then summarized in Tables 8 and 9 for the 100-D and 100-H OU waste sites, respectively.

3.4 PRG Evaluation

PRGs (described in Section 2.3) used to calculate the HQs for chemicals with EPCs that exceeded both SSLs and background are provided in Table 10 and Table 11 for the 100-D and 100-H OU waste sites, respectively, and results are summarized in Tables 12 and 13.

3.5 Freshwater Seeps Drinking Water Evaluation

EPCs of seep data for inorganics used to calculate drinking water ingestion HQs are found in Tables 14 and 15 and those for radionuclides in seeps are found in Table 16. TRVs for inorganics are provided in Tables 14 and 15, while BCGs are provided in Table 16. Body weights and allometric scaling-based drinking water ingestion rates are provided in Tables 14 and 15.

4 Software Applications

All supporting calculations were performed on electronic spreadsheets using Microsoft Excel. Electronic versions of all spreadsheets are provided with calculations included to facilitate comparison with hand calculations and checking of logical or lookup functions. This approach meets the requirements for “Single Use Software” as described in *CHPRC Environmental Calculation Preparation and Issue* (PRC-PRO-EP-40205).

5 Calculation

5.1 Screening HQ, SOF, HI, and PRG HQ Calculations

HQs were calculated by comparing EPC concentrations to SSLs and PRGs using Microsoft Excel spreadsheets. EPCs were compared to SSLs and PRGs for terrestrial plants or soil invertebrates (the lower of the two) and for avian or mammalian wildlife (similarly, the lower of the two). The SOFs for radionuclides were calculated for a decision unit by summing the individual HQs for each radionuclide within that decision unit. The HIs for Aroclors were similarly calculated for a decision unit by summing the individual HQs for each Aroclor within that decision unit. The results of these calculations are presented in Tables 4 and 5 for the SSL comparison.

5.2 Background Concentration Comparison

Site concentrations were compared to background by comparing EPC concentrations to background concentrations using Microsoft Excel spreadsheets. EPCs were compared only for constituents with SSL-based HQs $\geq$ 1.0. The results of these calculations are presented in Table 6 for the 100-D OU and Table 7 for the 100-H OU.

5.3 Freshwater Seeps Drinking Water Evaluation

EPCs of chemicals in seeps were used to estimate a worst case scenario of potential wildlife exposure to chemicals in seep water based on the assumption that wildlife use seeps as an exclusive source of drinking water when the wildlife are present on site and seeps are available. However, area use factors were employed that account for the fact that many of the receptors are not present year round due to migration or hibernation, and the seeps themselves are not “available” year round such as when the river stage is high. Results are presented in Tables 14 and 15 for inorganics. For radionuclides, EPCs of radioactivity were compared to BCGs to evaluate the potential dose of radioactivity received through drinking seep water. Results are presented in Table 16.

6 Results/Conclusions

Comparisons of EPCs for inorganic and organic chemicals and radionuclides in soil to SSLs are shown in Table 4 for 100-D and Table 5 for 100-H. For those chemicals with EPC HQs > 1, comparisons to background are shown in Table 6 for 100-D and Table 7 for 100-H. Table 8 provides a summary of the chemicals exceeding the SSLs (plant/invertebrate and/or wildlife) or both the SSLs and background for 100-D, and the summary for 100-H is presented in Table 9. The SOFs for radionuclides were less than 1 for all waste sites and therefore were not carried forward for background evaluation. Similarly, HIs for Aroclors did not exceed 1, so they were not carried forward. Arsenic, barium, boron, cadmium, chromium, copper, lead, lithium, mercury, molybdenum, selenium, silver, uranium, vanadium, zinc, and total U isotopes were detected with EPCs greater than the SSL and outside of the range of background, so these COPECs were carried forward for additional evaluation.

Comparisons of EPCs to PRGs for the chemicals carried forward are shown in Table 10 for 100-D and Table 11 for 100-H, and results are summarized in Table 12 for 100-D and Table 13 for 100-H.

The inorganic chemicals barium, boron, copper, lithium, mercury, molybdenum, selenium, silver, and vanadium were detected at concentrations exceeding one or both groups of PRGs (plants/invertebrates, wildlife) in one or more of the following 100-D OU waste sites:

- 100-D-28:1_Shallow: Mercury, Selenium
- 100-D-31:5_Overburden: Selenium
- 100-D-31:5_Shallow: Selenium
- 100-D-31:6_Overburden: Mercury
- 100-D-31:6_Shallow: Mercury
- 100-D-31:8_Shallow_Focused_1: Vanadium
- 100-D-31:8_Shallow_Focused_2: Barium, Boron, Molybdenum
- 100-D-42, 100-D-43, 100-D-45_Shallow: Copper
- 100-D-47_Shallow_Focused: Vanadium
- 100-D-56:1_Overburden: Selenium
- 100-D-56:1_Shallow: Selenium
- 100-D-7_Staging pile area footprint: Mercury
- 100-D-70_Shallow_Focused: Copper
- 100-D-83:4_Shallow_Focused: Mercury
- 100-D-84:1_Shallow_Focused: Vanadium
- 100-D-88_Shallow_Focused: Vanadium
- 100-D-94_Shallow_Focused: Mercury
- 116-DR-8_Shallow: Lithium
- 118-D-4_Shallow_Focused: Vanadium
- 118-D-6:4_Shallow_2: Mercury
- 132-D-1_Shallow: Mercury
- 1607-D2-2_Shallow: Mercury, Silver
- 1607-D5_Shallow: Barium, Boron

The inorganic chemicals barium, boron, chromium, lead, mercury, and molybdenum were detected at concentrations exceeding one or both groups of PRGs (plants/invertebrates, birds/mammals) and background in one or more of the following 100-H OU waste sites:

- 100-H-28:1_Shallow_Focused: Barium, Boron
- 100-H-4_Shallow: Mercury
- 100-H-53_Shallow_Focused: Molybdenum
- 100-H-8_Shallow_Focused: Mercury
- 118-H-6:5_Shallow_1: Lead
- 128-H-1_Overburden: Lead
- 128-H-1_Shallow_4: Mercury
- 1607-H2_Shallow: Chromium, Mercury
- 600-151_Shallow_2: Lead
- 600-151_Shallow_3: Lead

Comparison of EPCs for seeps along the 100-D and 100-H riparian area to TRVs resulted in HQs of less than 0.01 for all chemicals except aluminum and nitrate at 100-D and nitrate at 100-H. In all cases, HQs were below 0.05 (Tables 14 and 15). Results indicate that no further evaluation of inorganics in drinking water is warranted. The same conclusion is reached even when considering the drinking ingestion in combination with total ingestion from terrestrial pathways, as presented below:

Aluminum - For aluminum, the dose from ingestion of prey and soil is not significant in terrestrial environments with soil pH greater than 5.5 as the aluminum is bound and unavailable for biological

uptake (OSWER Directive 9285.7-60, *Ecological Soil Screening Level for Aluminum: Interim Final*). Hence, for wildlife residing in the circumneutral soils of the 100-D and 100-H Source OUs, drinking water ingestion by wildlife represents the primary contribution to the total dose of aluminum and even for mammals yielded an HQ less than 0.1 (Tables 4 and 5) under the worst case scenario, even for the more susceptible bats.

Nitrate - While the drinking water ingestion dose at 100-D yielded a HQ of 0.013 for bats, dietary ingestion shown in Table 4 for 100-D is below 0.001 for all waste sites. Thus, dietary ingestion of nitrate would be insignificant relative to drinking water ingestion from seeps and total exposure from the combined prey ingestion and drinking water ingestion would not be at a level of concern. Similarly, the drinking water ingestion dose at 100-H yielded HQs of 0.26 for elk, 0.36 for badgers, and 0.47 for bats, and the dietary ingestion shown in Table 5 for 100-D is below 0.0001 for all waste sites. Dietary ingestion of nitrate would be insignificant relative to drinking water ingestion from seeps and total exposure from the combined prey ingestion and drinking water ingestion would not be at a level of concern. Thus, with the HQs being below 1 under a worst-case scenario and with more available and uncontaminated sources of drinking water available (e.g., the Columbia River), it is concluded there is no unacceptable risk and exposure to nitrate through drinking seep water does not warrant further evaluation.

Comparison of seep EPCs to BCGs showed that all radionuclide concentrations in seep water are below levels of concern. The total SOF for wildlife drinking seep water from 100-D was 0.037. With the maximum SOF from terrestrial soil pathways from any waste site within the 100-D Source OUs being 0.04 (Table 4), there is no additional risk for wildlife exposure to radionuclides from drinking at seeps at 100-D. Similarly, the total drinking water ingestion SOF for 100-H seep water was 0.11. Combined with a worst case SOF from terrestrial soil pathways of 0.23 within 100-H waste sites (Table 5), there is no risk for wildlife exposure to radionuclides from drinking seep water at 100-H.

6.1 Supporting Information

The backup information supporting these calculations is provided in the following files:

Microsoft Excel workbook “100-DH_AreaEcoRiskCalcBriefTables.xlsx” containing:

- Table 1. Waste Sites and Decision Units for the 100-D OU
- Table 2. Waste Sites and Decision Units for the 100-H OU
- Table 3. Summary of Decision Unit Soil Reaches
- Table 4. Comparison of 100-D OU Surface Soil (0 to 15 feet [0 to 4.6m]) Concentrations to Lowest SSLs
- Table 5. Comparison of 100-H OU Surface Soil (0 to 15 feet [0 to 4.6m]) Concentrations to Lowest SSLs
- Table 6. Comparison of Chemicals Exceeding SSLs in 100-D OU Surface Soils (0 to 15 feet [0 to 4.6m]) to Background
- Table 7. Comparison of Chemicals Exceeding SSLs in 100-H OU Surface Soils (0 to 15 feet [0 to 4.6m]) to Background

- Table 8. Summary of Chemicals in 100-D OU Surface Soils (0 to 15 feet [0 to 4.6m]) Exceeding SSLs and Background
- Table 9. Summary of Chemicals in 100-H OU Surface Soils (0 to 15 feet [0 to 4.6m]) Exceeding SSLs and Background
- Table 10. Ecological PRG Comparisons for 100-D OU Waste Site Decision Units
- Table 11. Ecological PRG Comparisons for 100-H OU Waste Site Decision Units
- Table 12. Summary of 100-D OU Waste Sites Ecological Evaluation Based on PRGs for Surface Soils (0 to 15 feet [0 to 4.6m])
- Table 13. Summary of 100-H OU Waste Sites Ecological Evaluation Based on PRGs for Surface Soils (0 to 15 feet [0 to 4.6m])
- Table 14. Wildlife Exposure to Inorganic Chemicals through Drinking from Seeps in the 100-D Riparian Area
- Table 15. Wildlife Exposure to Inorganic Chemicals through Drinking from Seeps in the 100-H Riparian Area
- Table 16. Wildlife Exposure to Radionuclides through Drinking from Seeps in the 100-D and 100-H Riparian Area

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Table 1. Waste Sites and Decision Units for the 100-D OU	
Waste Site	**Decision Unit**
100-D-1	Shallow
100-D-12	Shallow
100-D-13	Shallow_Focused
100-D-15	Shallow_1
	Shallow_2
100-D-18	Deep
100-D-19	Deep_Focused
100-D-2	Shallow_Focused
100-D-20	Shallow
100-D-21	Shallow
100-D-22	Shallow
100-D-24	Shallow_Focused
100-D-28:1	Overburden
	Shallow
	Staging Pile Area Footprint
100-D-29	Overburden
	Shallow
	Shallow_Focused
100-D-3	Shallow_Focused
100-D-31:1, 100-D-31:2	Overburden
	Shallow
100-D-31:10	Overburden
	Shallow
	Shallow_Focused
100-D-31:3	Shallow
100-D-31:3, 100-D-31:4	Overburden
100-D-31:4	Shallow
	Shallow_Focused
100-D-31:5	Overburden
	Shallow
100-D-31:6	Overburden
	Shallow
100-D-31:7	Overburden
	Shallow
	Shallow_Focused
100-D-31:8	Overburden
	Shallow
	Shallow_Focused_1
	Shallow_Focused_2
100-D-31:9	Overburden
	Shallow
100-D-32	Overburden
	Shallow
100-D-4	Overburden
	Shallow
100-D-42, 100-D-43, 100-D-45	Overburden
	Shallow
	Shallow_Focused
100-D-47	Overburden
	Shallow
	Shallow_Focused
100-D-48:1	Deep
	Shallow
100-D-48:2	Deep
	Overburden
	Shallow
100-D-48:3	Deep
	Overburden
	Shallow
100-D-48:4	Shallow

Table 1. Waste Sites and Decision Units for the 100-D OU	
Waste Site	**Decision Unit**
100-D-49:2	Deep
	Shallow
100-D-49:3	Shallow_Focused
100-D-49:4	Deep
	Shallow
100-D-50:5	Shallow_Focused
100-D-52	Shallow
100-D-56:1	Overburden
	Shallow
	Shallow_Focused
100-D-56:2	Overburden_4
	Overburden_5
	Overburden_Focused_1
	Overburden_Focused_2
	Shallow_1
	Shallow_2
	Shallow_3
	Shallow_Focused
	Staging pile area footprint_focused
100-D-61	Shallow
100-D-7	Shallow_1
	Shallow_2
	Shallow_Focused
	Staging pile area footprint
100-D-70	Shallow_Focused
100-D-74	Shallow_Focused
100-D-75:3	Shallow_Focused
100-D-80:1	Shallow_Focused
100-D-82	Shallow_Focused
100-D-83:4	Shallow_Focused
100-D-84:1	Shallow_Focused
100-D-85:1	Shallow_Focused
100-D-87	Shallow_Focused
100-D-88	Shallow_Focused
100-D-9	Shallow_Focused
100-D-90	Shallow_Focused
100-D-94	Shallow_Focused
116-D-10	Shallow
	Staging Pile Area
116-D-1A	Deep
	Shallow
116-D-2	Shallow
116-D-4	Shallow
116-D-5	Deep
	Overburden
	Shallow
	Staging pile area footprint
116-D-6	Deep
116-D-7	Deep
	Shallow
116-D-8	Shallow
	Shallow_Focused_1
	Shallow_Focused_2
116-D-9	Shallow
116-DR-1 & 2	Deep
	Shallow
116-DR-10	Overburden
	Shallow
	Shallow_Focused

Table 1. Waste Sites and Decision Units for the 100-D OU	
Waste Site	**Decision Unit**
116-DR-4	Shallow
116-DR-5	Overburden
	Shallow
	Shallow_Focused
	Staging Pile Area
116-DR-6	Deep
	Shallow
116-DR-7	Shallow
116-DR-8	Overburden_2
	Overburden_3
	Shallow
116-DR-9	Deep
	Shallow
118-D-1	Deep
	Overburden
	Shallow_1
	Shallow_5
	Shallow_Focused
	Staging pile area footprint
118-D-4	Overburden
	Shallow
	Shallow_Focused
118-D-5	Overburden
	Shallow
	Shallow_Focused
118-D-6:4	Deep
	Deep_Focused
	Shallow_1
	Shallow_2
118-DR-1	Shallow
	Shallow_Focused
118-DR-2:2	Deep
	Shallow
120-D-2	Shallow
	Shallow_Focused
122-DR-1:2	Deep
	Shallow
126-D-2	Overburden
	Shallow
	Shallow_Focused
128-D-2	Shallow_1
	Shallow_2
130-D-1	Shallow
	Shallow_Focused
	Staging pile area footprint
132-D-1	Shallow
	Staging pile are footprint
1607-D1	Shallow_1
	Shallow_2
	Shallow_Focused
	Staging pile area footprint
1607-D2:1	Shallow
1607-D2:2	Shallow
1607-D2:3	Overburden
	Shallow
1607-D2:4	Shallow
1607-D4	Shallow_Focused
1607-D5	Shallow
600-30	Shallow_1
	Shallow_2
	Shallow_3

Table 1. Waste Sites and Decision Units for the 100-D OU	
Waste Site	**Decision Unit**
	Shallow_Focused
628-3	Shallow
	Staging Pile Area_2
	Staging Pile Area_3
	Staging Pile Area_Focused
UPR-100-D-5	Overburden
	Shallow
	Shallow_Focused
100-D-23	See 122-DR-1:2
100-D-53	
100-D-54	
100-D-64	
100-D-25	See 116-DR-9
100-D-46	See 116-D-1A
116-D-1B	
100-D-49:1	See 100-D-48:1
UPR-100-D-4	
UPR-100-D-2	See 100-D-48:2
UPR-100-D-3	
100-D-5	See 100-D-48:3
100-D-6	

Table 2. Waste Sites and Decision Units for the 100-H OU

Waste Site	Decision Unit
100-H-17	Shallow
100-H-21	Deep
	Overburden
	Shallow
100-H-24	Shallow
100-H-28:1	Shallow_Focused
100-H-28:6	Shallow_Focused
100-H-3	Shallow
100-H-35	Shallow_Focused_2
	Shallow_Focused_1
	Shallow_Focused_3
100-H-37	Shallow_Focused
100-H-4	Shallow
	Shallow_Focused
100-H-40	Shallow_Focused
100-H-41	Shallow_Focused
100-H-45	Shallow_Focused
100-H-49:2	Shallow_Focused
100-H-5	Deep
	Shallow
100-H-50	Shallow_Focused
100-H-51:4	Shallow_Focused
100-H-51:5	Shallow_Focused
100-H-53	Shallow_Focused
100-H-7	Shallow_Focused
100-H-8	Shallow_Focused
116-H-1	Deep
	Shallow
116-H-3	Deep
	Shallow
116-H-5	Deep
	Overburden
	Shallow
	Staging pile area footprint
116-H-7	Deep
	Overburden
	Shallow
116-H-9	Shallow
118-H-1:1	Overburden
	Shallow_1
	Shallow_2
	Shallow_Focused
	Staging pile area footprint
118-H-1:2	Shallow
	Shallow_Focused
118-H-2	Shallow
118-H-3	Shallow_1
	Shallow_2
	Shallow_Focused
118-H-4	Shallow
	Shallow_Focused
	Staging Pile Area
118-H-5	Shallow
	Shallow_Focused
118-H-6:2,:3,:6, 100-H-9,10,11,12,13,14,31	Deep_2
	Deep_3
	Deep_4
	Deep_Focused_1
	Deep_Focused_2
	Overburden

Table 2. Waste Sites and Decision Units for the 100-H OU

Waste Site	Decision Unit
118-H-6:4	Shallow
118-H-6:5	Shallow_1
	Shallow_2
	Shallow_3
	Shallow_Focused
128-H-1	Overburden
	Shallow_3
	Shallow_4
	Shallow_5
	Staging pile area footprint_2
	Staging pile area footprint_6
128-H-2	Shallow_Focused
128-H-3	Shallow_Focused
1607-H1	Shallow
	Overburden
	Shallow_Focused
1607-H2	Deep_Focused
	Overburden
	Shallow
	Shallow_Focused
1607-H3	Overburden
	Shallow_1
	Shallow_2
1607-H4	Shallow
600-151	Shallow_1
	Shallow_2
	Shallow_3
600-152	Shallow
	Shallow_Focused
100-H-1	See 100-H-21
100-H-22	
100-H-2	See 100-H-17
100-H-30	
116-H-2	

Note: 100-H-9, 100-H-10, 100-H-13, 100-H-31, and 118-H-6:2 are considered "consolidated waste sites" with 100-H-11, 100-H-12, 100-H-14, 118-H-6:3, and 118-H-6:6

Table 3. Summary of Decision Unit Soil Reaches

Decision Unit Name	Depth	Sampling Design Description
Shallow	0 to 4.6 m (15 ft) bgs	Samples collected using a statistical sampling design
Deep	Greater than 4.6 m (15 ft) bgs	
Overburden	Not applicable	
Staging Pile Area	Not applicable	
Staging pile Area_Focused	Not applicable	Samples collected using a focused sampling design
Deep_Focused	Greater than 4.6 m (15 ft) bgs	
Staging pile Area_Footprint	Not applicable	
Staging Pile Area Footprint_focused	Not applicable	
Shallow_Focused	0 to 4.6 m (15 ft) bgs	

Notes:
bgs = below ground surface
ft = feet
m = meters

Table 4. Comparison of 100-D OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
100-D-1_Shallow	non-Rad	Arsenic	7440-38-2	ug/kg	2,027	1.0E+04	2.0E-01	1.9E+05	1.1E-02
100-D-1_Shallow	non-Rad	Barium	7440-39-3	ug/kg	67,985	3.3E+05	2.1E-01	1.3E+06	5.1E-02
100-D-1_Shallow	non-Rad	Beryllium	7440-41-7	ug/kg	202	1.0E+04	2.0E-02	1.4E+04	1.5E-02
100-D-1_Shallow	non-Rad	Boron	7440-42-8	ug/kg	2,100	5.0E+02	**4.2E+00**	1.3E+05	1.6E-02
100-D-1_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.079	2.2E+03	3.6E-05	9.2E+02	8.5E-05
100-D-1_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	10,135	4.0E+02	**2.5E+01**	3.8E+04	2.7E-01
100-D-1_Shallow	non-Rad	Cobalt	7440-48-4	ug/kg	8,617	1.3E+04	6.6E-01	1.1E+05	7.7E-02
100-D-1_Shallow	non-Rad	Copper	7440-50-8	ug/kg	20,107	5.0E+04	4.0E-01	1.1E+05	1.9E-01
100-D-1_Shallow	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	417	No Value	--	1.3E+06	3.4E-04
100-D-1_Shallow	non-Rad	Lead	7439-92-1	ug/kg	3,961	5.0E+04	7.9E-02	3.6E+04	1.1E-01
100-D-1_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	322,021	2.2E+05	**1.5E+00**	5.8E+06	5.6E-02
100-D-1_Shallow	non-Rad	Mercury	7439-97-6	ug/kg	7.3	1.0E+02	7.3E-02	1.9E+03	3.9E-03
100-D-1_Shallow	non-Rad	Methylene chloride	75-09-2	ug/kg	1.4	No Value	--	1.7E+05	8.6E-06
100-D-1_Shallow	non-Rad	Molybdenum	7439-98-7	ug/kg	350	2.0E+03	1.8E-01	1.4E+04	2.5E-02
100-D-1_Shallow	non-Rad	Nickel	7440-02-0	ug/kg	11,343	3.0E+04	3.8E-01	3.3E+04	3.5E-01
100-D-1_Shallow	non-Rad	Pyrene	129-00-0	ug/kg	17	1.8E+04	9.4E-04	6.0E+05	2.8E-05
100-D-1_Shallow	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	ug/kg	12,187	2.0E+05	6.1E-02	3.6E+08	3.4E-05
100-D-1_Shallow	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	ug/kg	43,478	No Value	--	No Value	--
100-D-1_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	63,051	2.0E+03	**3.2E+01**	3.1E+04	**2.0E+00**
100-D-1_Shallow	non-Rad	Zinc	7440-66-6	ug/kg	43,845	5.0E+04	8.8E-01	6.8E+04	6.5E-01
100-D-13_Shallow_Focused	non-Rad	2,4-DB(4-(2,4-Dichlorophenoxy)butanoic acid)	94-82-6	ug/kg	11	No Value	--	No Value	--
100-D-13_Shallow_Focused	non-Rad	4,4'-DDT (Dichlorodiphenyltrichloroethane)	50-29-3	ug/kg	0.66	No Value	--	8.8E+02	7.5E-04
100-D-13_Shallow_Focused	non-Rad	Arsenic	7440-38-2	ug/kg	3,100	1.0E+04	3.1E-01	1.9E+05	1.6E-02
100-D-13_Shallow_Focused	non-Rad	Barium	7440-39-3	ug/kg	70,600	3.3E+05	2.1E-01	1.3E+06	5.3E-02
100-D-13_Shallow_Focused	non-Rad	Beryllium	7440-41-7	ug/kg	1,000	1.0E+04	1.0E-01	1.4E+04	7.2E-02
100-D-13_Shallow_Focused	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	ug/kg	74	1.0E+05	7.4E-04	4.5E+04	1.6E-03
100-D-13_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	4,900	5.0E+02	**9.8E+00**	1.3E+05	3.7E-02
100-D-13_Shallow_Focused	non-Rad	Cadmium	7440-43-9	ug/kg	66	4.0E+03	1.7E-02	1.6E+03	4.1E-02
100-D-13_Shallow_Focused	Rad	Cesium-137	10045-97-3	pCi/g	0.20	2.2E+03	9.1E-05	9.2E+02	2.2E-04
100-D-13_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	10,900	4.0E+02	**2.7E+01**	3.8E+04	2.9E-01
100-D-13_Shallow_Focused	non-Rad	Cobalt	7440-48-4	ug/kg	7,000	1.3E+04	5.4E-01	1.1E+05	6.3E-02
100-D-13_Shallow_Focused	non-Rad	Copper	7440-50-8	ug/kg	13,400	5.0E+04	2.7E-01	1.1E+05	1.3E-01
100-D-13_Shallow_Focused	non-Rad	Di-n-butylphthalate	84-74-2	ug/kg	64	No Value	--	No Value	--
100-D-13_Shallow_Focused	non-Rad	Dinoseb(2-secButyl-4,6-dinitrophenol)	88-85-7	ug/kg	3.0	No Value	--	No Value	--
100-D-13_Shallow_Focused	non-Rad	Fluoride	16984-48-8	ug/kg	1,400	No Value	--	2.3E+06	6.1E-04
100-D-13_Shallow_Focused	non-Rad	Lead	7439-92-1	ug/kg	6,300	5.0E+04	1.3E-01	3.6E+04	1.8E-01
100-D-13_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	271,000	2.2E+05	**1.2E+00**	5.8E+06	4.7E-02
100-D-13_Shallow_Focused	non-Rad	Mercury	7439-97-6	ug/kg	14	1.0E+02	1.4E-01	1.9E+03	7.5E-03
100-D-13_Shallow_Focused	non-Rad	Molybdenum	7439-98-7	ug/kg	680	2.0E+03	3.4E-01	1.4E+04	4.9E-02
100-D-13_Shallow_Focused	non-Rad	Nickel	7440-02-0	ug/kg	11,000	3.0E+04	3.7E-01	3.3E+04	3.4E-01
100-D-13_Shallow_Focused	non-Rad	Nitrate	14797-55-8	ug/kg	27,500	No Value	--	3.4E+08	8.1E-05
100-D-13_Shallow_Focused	non-Rad	Nitrogen in Nitrate	NO3-N	ug/kg	1,800	No Value	--	No Value	--
100-D-13_Shallow_Focused	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	ug/kg	6,700	No Value	--	No Value	--
100-D-13_Shallow_Focused	non-Rad	Phenol	108-95-2	ug/kg	22	3.0E+04	7.3E-04	1.5E+06	1.5E-05
100-D-13_Shallow_Focused	Rad	Rads SOF	---	pCi/g	--	--	1.0E-04	--	2.7E-04
100-D-13_Shallow_Focused	non-Rad	Selenium	7782-49-2	ug/kg	890	5.2E+02	**1.7E+00**	1.9E+03	4.7E-01
100-D-13_Shallow_Focused	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	ug/kg	2,600	No Value	--	No Value	--
100-D-13_Shallow_Focused	non-Rad	Uranium	7440-61-1	ug/kg	1,500	5.0E+03	3.0E-01	3.6E+05	4.2E-03
100-D-13_Shallow_Focused	Rad	Uranium-234	13966-29-5	pCi/g	0.097	5.2E+04	1.9E-06	6.4E+03	1.5E-05
100-D-13_Shallow_Focused	Rad	Uranium-238	U-238	pCi/g	0.18	1.6E+04	1.2E-05	5.2E+03	3.6E-05
100-D-13_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	46,400	2.0E+03	**2.3E+01**	3.1E+04	**1.5E+00**
100-D-13_Shallow_Focused	non-Rad	Zinc	7440-66-6	ug/kg	122,000	5.0E+04	**2.4E+00**	6.8E+04	**1.8E+00**
100-D-15_Shallow_1	non-Rad	Aroclor HI	---	ug/kg	--	--	4.0E-04	--	1.1E-02
100-D-15_Shallow_1	non-Rad	Aroclor-1254	11097-69-1	ug/kg	7.4	4.0E+04	1.8E-04	1.5E+03	5.0E-03
100-D-15_Shallow_1	non-Rad	Aroclor-1260	11096-82-5	ug/kg	8.5	4.0E+04	2.1E-04	1.5E+03	5.8E-03
100-D-15_Shallow_1	non-Rad	Arsenic	7440-38-2	ug/kg	3199.4	1.0E+04	3.2E-01	1.9E+05	1.7E-02
100-D-15_Shallow_1	non-Rad	Barium	7440-39-3	ug/kg	64052.5	3.3E+05	1.9E-01	1.3E+06	4.8E-02
100-D-15_Shallow_1	non-Rad	Beryllium	7440-41-7	ug/kg	190.7	1.0E+04	1.9E-02	1.4E+04	1.4E-02
100-D-15_Shallow_1	non-Rad	Boron	7440-42-8	ug/kg	1510.1	5.0E+02	**3.0E+00**	1.3E+05	1.1E-02
100-D-15_Shallow_1	non-Rad	Cadmium	7440-43-9	ug/kg	61.8	4.0E+03	1.5E-02	1.6E+03	3.8E-02
100-D-15_Shallow_1	non-Rad	Chromium	7440-47-3	ug/kg	11800.9	4.0E+02	**3.0E+01**	3.8E+04	3.1E-01
100-D-15_Shallow_1	non-Rad	Cobalt	7440-48-4	ug/kg	6697.7	1.3E+04	5.2E-01	1.1E+05	6.0E-02
100-D-15_Shallow_1	non-Rad	Copper	7440-50-8	ug/kg	12272.7	5.0E+04	2.5E-01	1.1E+05	1.2E-01
100-D-15_Shallow_1	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	130.0	No Value	--	1.3E+06	1.0E-04
100-D-15_Shallow_1	non-Rad	Lead	7439-92-1	ug/kg	4546.4	5.0E+04	9.1E-02	3.6E+04	1.3E-01
100-D-15_Shallow_1	non-Rad	Manganese	7439-96-5	ug/kg	277857.0	2.2E+05	**1.3E+00**	5.8E+06	4.8E-02
100-D-15_Shallow_1	non-Rad	Mercury	7439-97-6	ug/kg	29.3	1.0E+02	2.9E-01	1.9E+03	1.6E-02
100-D-15_Shallow_1	non-Rad	Molybdenum	7439-98-7	ug/kg	379.7	2.0E+03	1.9E-01	1.4E+04	2.7E-02
100-D-15_Shallow_1	non-Rad	Nickel	7440-02-0	ug/kg	10447.0	3.0E+04	3.5E-01	3.3E+04	3.2E-01
100-D-15_Shallow_1	non-Rad	Total petroleum hydrocarbons - motor oil (high boiling)	TPH/OILH	ug/kg	8272.1	No Value	--	No Value	--
100-D-15_Shallow_1	non-Rad	Vanadium	7440-62-2	ug/kg	54073.2	2.0E+03	**2.7E+01**	3.1E+04	**1.7E+00**
100-D-15_Shallow_1	non-Rad	Zinc	7440-66-6	ug/kg	39833.1	5.0E+04	8.0E-01	6.8E+04	5.9E-01
100-D-15_Shallow_2	non-Rad	4,4'-DDD (Dichlorodiphenyldichloroethane)	72-54-8	ug/kg	3.6	No Value	--	No Value	--
100-D-15_Shallow_2	non-Rad	4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	ug/kg	5.7	No Value	--	4.0E+02	1.4E-02
100-D-15_Shallow_2	non-Rad	Arsenic	7440-38-2	ug/kg	4025.4	1.0E+04	4.0E-01	1.9E+05	2.1E-02
100-D-15_Shallow_2	non-Rad	Barium	7440-39-3	ug/kg	84308.9	3.3E+05	2.6E-01	1.3E+06	6.4E-02
100-D-15_Shallow_2	non-Rad	Beryllium	7440-41-7	ug/kg	269.7	1.0E+04	2.7E-02	1.4E+04	1.9E-02
100-D-15_Shallow_2	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	ug/kg	427.0	1.0E+05	4.3E-03	4.5E+04	9.4E-03
100-D-15_Shallow_2	non-Rad	Boron	7440-42-8	ug/kg	1652.4	5.0E+02	**3.3E+00**	1.3E+05	1.2E-02
100-D-15_Shallow_2	non-Rad	Cadmium	7440-43-9	ug/kg	965.0	4.0E+03	2.4E-01	1.6E+03	5.9E-01
100-D-15_Shallow_2	non-Rad	Chromium	7440-47-3	ug/kg	14486.3	4.0E+02	**3.6E+01**	3.8E+04	3.8E-01
100-D-15_Shallow_2	non-Rad	Cobalt	7440-48-4	ug/kg	7880.0	1.3E+04	6.1E-01	1.1E+05	7.1E-02
100-D-15_Shallow_2	non-Rad	Copper	7440-50-8	ug/kg	20641.1	5.0E+04	4.1E-01	1.1E+05	1.9E-01
100-D-15_Shallow_2	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	172.7	No Value	--	1.3E+06	1.4E-04
100-D-15_Shallow_2	non-Rad	Lead	7439-92-1	ug/kg	7174.8	5.0E+04	1.4E-01	3.6E+04	2.0E-01
100-D-15_Shallow_2	non-Rad	Manganese	7439-96-5	ug/kg	326394.5	2.2E+05	**1.5E+00**	5.8E+06	5.6E-02
100-D-15_Shallow_2	non-Rad	Mercury	7439-97-6	ug/kg	24.5	1.0E+02	2.5E-01	1.9E+03	1.3E-02
100-D-15_Shallow_2	non-Rad	Molybdenum	7439-98-7	ug/kg	553.4	2.0E+03	2.8E-01	1.4E+04	4.0E-02
100-D-15_Shallow_2	non-Rad	Nickel	7440-02-0	ug/kg	13099.5	3.0E+04	4.4E-01	3.3E+04	4.0E-01
100-D-15_Shallow_2	non-Rad	Selenium	7782-49-2	ug/kg	477.0	5.2E+02	9.2E-01	1.9E+03	2.5E-01
100-D-15_Shallow_2	non-Rad	Total petroleum hydrocarbons - motor oil (high boiling)	TPH/OILH	ug/kg	32560.0	No Value	--	No Value	--
100-D-15_Shallow_2	non-Rad	Vanadium	7440-62-2	ug/kg	60475.2	2.0E+03	**3.0E+01**	3.1E+04	**1.9E+00**
100-D-15_Shallow_2	non-Rad	Zinc	7440-66-6	ug/kg	92810.1	5.0E+04	**1.9E+00**	6.8E+04	**1.4E+00**
100-D-2_Shallow_Focused	non-Rad	Arsenic	7440-38-2	ug/kg	2100.0	1.0E+04	2.1E-01	1.9E+05	1.1E-02
100-D-2_Shallow_Focused	non-Rad	Barium	7440-39-3	ug/kg	65000.0	3.3E+05	2.0E-01	1.3E+06	4.9E-02
100-D-2_Shallow_Focused	non-Rad	Beryllium	7440-41-7	ug/kg	190.0	1.0E+04	1.9E-02	1.4E+04	1.4E-02
100-D-2_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	3300.0	5.0E+02	**6.6E+00**	1.3E+05	2.5E-02
100-D-2_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	7300.0	4.0E+02	**1.8E+01**	3.8E+04	1.9E-01
100-D-2_Shallow_Focused	non-Rad	Cobalt	7440-48-4	ug/kg	7000.0	1.3E+04	5.4E-01	1.1E+05	6.3E-02
100-D-2_Shallow_Focused	non-Rad	Copper	7440-50-8	ug/kg	14500.0	5.0E+04	2.9E-01	1.1E+05	1.4E-01
100-D-2_Shallow_Focused	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	410.0	No Value	--	1.3E+06	3.3E-04
100-D-2_Shallow_Focused	non-Rad	Lead	7439-92-1	ug/kg	8900.0	5.0E+04	1.8E-01	3.6E+04	2.5E-01
100-D-2_Shallow_Focused	non-Rad	Lithium	7439-93-2	ug/kg	4700.0	2.0E+03	**2.4E+00**	5.2E+05	9.1E-03
100-D-2_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	294000.0	2.2E+05	**1.3E+00**	5.8E+06	5.1E-02
100-D-2_Shallow_Focused	non-Rad	Molybdenum	7439-98-7	ug/kg	920.0	2.0E+03	4.6E-01	1.4E+04	6.6E-02
100-D-2_Shallow_Focused	non-Rad	Nickel	7440-02-0	ug/kg	11800.0	3.0E+04	3.9E-01	3.3E+04	3.6E-01

Table 4. Comparison of 100-D OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
100-D-2_Shallow_Focused	non-Rad	Strontium	7440-24-6	ug/kg	24600.0	No Value	--	4.2E+06	5.8E-03
100-D-2_Shallow_Focused	non-Rad	Tin	7440-31-5	ug/kg	2400.0	5.0E+04	4.8E-02	2.0E+05	1.2E-02
100-D-2_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	50100.0	2.0E+03	**2.5E+01**	3.1E+04	**1.6E+00**
100-D-2_Shallow_Focused	non-Rad	Zinc	7440-66-6	ug/kg	51300.0	5.0E+04	**1.0E+00**	6.8E+04	7.6E-01
100-D-20_Shallow	Rad	Americium-241	14596-10-2	pCi/g	0.2	2.2E+04	9.5E-06	4.8E+03	4.2E-05
100-D-20_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	1.5	2.2E+03	6.7E-04	9.2E+02	1.6E-03
100-D-20_Shallow	Rad	Cobalt-60	10198-40-0	pCi/g	0.1	6.1E+03	1.2E-05	8.1E+02	9.0E-05
100-D-20_Shallow	Rad	Europium-152	14683-23-9	pCi/g	0.6	1.5E+04	3.8E-05	1.7E+03	3.2E-04
100-D-20_Shallow	Rad	Plutonium-239/240	PU-239/240	pCi/g	0.0	1.3E+04	3.2E-06	6.3E+03	6.5E-06
100-D-20_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	2563.0	5.0E+03	5.1E-01	3.6E+05	7.1E-03
100-D-20_Shallow	Rad	Uranium-234	13966-29-5	pCi/g	0.8	5.2E+04	1.5E-05	6.4E+03	1.2E-04
100-D-20_Shallow	Rad	Uranium-235	15117-96-1	pCi/g	0.0	2.7E+04	1.3E-06	4.4E+03	8.2E-06
100-D-20_Shallow	Rad	Uranium-238	U-238	pCi/g	0.9	1.6E+04	5.5E-05	5.2E+03	1.7E-04
100-D-21_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.0	2.2E+03	1.3E-05	9.2E+02	3.0E-05
100-D-22_Shallow	Rad	Americium-241	14596-10-2	pCi/g	0.1	2.2E+04	2.7E-06	4.8E+03	1.2E-05
100-D-22_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.2	2.2E+03	9.1E-05	9.2E+02	2.2E-04
100-D-22_Shallow	Rad	Cobalt-60	10198-40-0	pCi/g	0.0	6.1E+03	5.5E-06	8.1E+02	4.2E-05
100-D-22_Shallow	Rad	Europium-152	14683-23-9	pCi/g	0.4	1.5E+04	2.5E-05	1.7E+03	2.2E-04
100-D-22_Shallow	non-Rad	Lead	7439-92-1	ug/kg	7200.0	5.0E+04	1.4E-01	3.6E+04	2.0E-01
100-D-22_Shallow	Rad	Rads SOF	---	pCi/g	--	--	2.6E-04	--	4.0E-03
100-D-22_Shallow	Rad	Total beta radiostrontium	SR-RAD	pCi/g	0.3	3.6E+03	8.5E-05	9.1E+01	3.3E-03
100-D-22_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	2500.4	5.0E+03	5.0E-01	3.6E+05	7.0E-03
100-D-22_Shallow	Rad	Uranium-238	U-238	pCi/g	0.8	1.6E+04	5.4E-05	5.2E+03	1.6E-04
100-D-24_Shallow_Focused	non-Rad	Arsenic	7440-38-2	ug/kg	2300.0	1.0E+04	2.3E-01	1.9E+05	1.2E-02
100-D-24_Shallow_Focused	non-Rad	Barium	7440-39-3	ug/kg	60300.0	3.3E+05	1.8E-01	1.3E+06	4.6E-02
100-D-24_Shallow_Focused	non-Rad	Beryllium	7440-41-7	ug/kg	271.0	1.0E+04	2.7E-02	1.4E+04	1.9E-02
100-D-24_Shallow_Focused	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	ug/kg	57.5	1.0E+05	5.8E-04	4.5E+04	1.3E-03
100-D-24_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	1900.0	5.0E+02	**3.8E+00**	1.3E+05	1.4E-02
100-D-24_Shallow_Focused	non-Rad	Cadmium	7440-43-9	ug/kg	201.0	4.0E+03	5.0E-02	1.6E+03	1.2E-01
100-D-24_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	6200.0	4.0E+02	**1.6E+01**	3.8E+04	1.6E-01
100-D-24_Shallow_Focused	non-Rad	Cobalt	7440-48-4	ug/kg	7600.0	1.3E+04	5.9E-01	1.1E+05	6.8E-02
100-D-24_Shallow_Focused	non-Rad	Copper	7440-50-8	ug/kg	15300.0	5.0E+04	3.1E-01	1.1E+05	1.4E-01
100-D-24_Shallow_Focused	non-Rad	Di-n-butylphthalate	84-74-2	ug/kg	21.5	No Value	--	No Value	--
100-D-24_Shallow_Focused	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	243.0	No Value	--	1.3E+06	2.0E-04
100-D-24_Shallow_Focused	non-Rad	Lead	7439-92-1	ug/kg	4100.0	5.0E+04	8.2E-02	3.6E+04	1.2E-01
100-D-24_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	295000.0	2.2E+05	**1.3E+00**	5.8E+06	5.1E-02
100-D-24_Shallow_Focused	non-Rad	Mercury	7439-97-6	ug/kg	65.0	1.0E+02	6.5E-01	1.9E+03	3.5E-02
100-D-24_Shallow_Focused	non-Rad	Methylene chloride	75-09-2	ug/kg	7.1	No Value	--	1.7E+05	4.3E-05
100-D-24_Shallow_Focused	non-Rad	Molybdenum	7439-98-7	ug/kg	466.0	2.0E+03	2.3E-01	1.4E+04	3.3E-02
100-D-24_Shallow_Focused	non-Rad	Nickel	7440-02-0	ug/kg	9800.0	3.0E+04	3.3E-01	3.3E+04	3.0E-01
100-D-24_Shallow_Focused	Rad	Rads SOF	---	pCi/g	--	--	5.3E-05	--	2.2E-04
100-D-24_Shallow_Focused	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	1955.8	5.0E+03	3.9E-01	3.6E+05	5.4E-03
100-D-24_Shallow_Focused	Rad	Uranium-233/234	U-233/234	pCi/g	0.6	5.2E+04	1.1E-05	6.4E+03	8.9E-05
100-D-24_Shallow_Focused	Rad	Uranium-238	U-238	pCi/g	0.7	1.6E+04	4.2E-05	5.2E+03	1.3E-04
100-D-24_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	48700.0	2.0E+03	**2.4E+01**	3.1E+04	**1.6E+00**
100-D-24_Shallow_Focused	non-Rad	Zinc	7440-66-6	ug/kg	41600.0	5.0E+04	8.3E-01	6.8E+04	6.1E-01
100-D-28:1_Overburden	non-Rad	Anthracene	120-12-7	ug/kg	32.4	2.9E+04	1.1E-03	6.8E+05	4.8E-05
100-D-28:1_Overburden	non-Rad	Antimony	7440-36-0	ug/kg	615.7	5.0E+03	1.2E-01	6.0E+03	1.0E-01
100-D-28:1_Overburden	non-Rad	Arsenic	7440-38-2	ug/kg	2242.0	1.0E+04	2.2E-01	1.9E+05	1.2E-02
100-D-28:1_Overburden	non-Rad	Barium	7440-39-3	ug/kg	57527.2	3.3E+05	1.7E-01	1.3E+06	4.4E-02
100-D-28:1_Overburden	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	878.9	1.8E+04	4.9E-02	6.4E+04	1.4E-02
100-D-28:1_Overburden	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	126.8	1.8E+04	7.1E-03	7.6E+04	1.7E-03
100-D-28:1_Overburden	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	165.3	1.8E+04	9.2E-03	3.9E+04	4.2E-03
100-D-28:1_Overburden	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	80.2	1.8E+04	4.5E-03	3.9E+04	2.1E-03
100-D-28:1_Overburden	non-Rad	Boron	7440-42-8	ug/kg	1041.7	5.0E+02	**2.1E+00**	1.3E+05	7.8E-03
100-D-28:1_Overburden	non-Rad	Cadmium	7440-43-9	ug/kg	72.9	4.0E+03	1.8E-02	1.6E+03	4.5E-02
100-D-28:1_Overburden	non-Rad	Carbazole	86-74-8	ug/kg	76.0	No Value	--	No Value	--
100-D-28:1_Overburden	non-Rad	Chromium	7440-47-3	ug/kg	9398.8	4.0E+02	**2.4E+01**	3.8E+04	2.5E-01
100-D-28:1_Overburden	non-Rad	Chrysene	218-01-9	ug/kg	559.5	1.8E+04	3.1E-02	4.5E+04	1.3E-02
100-D-28:1_Overburden	non-Rad	Cobalt	7440-48-4	ug/kg	7750.8	1.3E+04	6.0E-01	1.1E+05	7.0E-02
100-D-28:1_Overburden	non-Rad	Copper	7440-50-8	ug/kg	14726.5	5.0E+04	3.0E-01	1.1E+05	1.4E-01
100-D-28:1_Overburden	non-Rad	Dibenz[a,h]anthracene	53-70-3	ug/kg	48.0	1.8E+04	2.7E-03	4.4E+04	1.1E-03
100-D-28:1_Overburden	non-Rad	Fluoranthene	206-44-0	ug/kg	373.8	1.8E+04	2.1E-02	8.4E+05	4.5E-04
100-D-28:1_Overburden	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	284.0	No Value	--	1.3E+06	2.3E-04
100-D-28:1_Overburden	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	95.5	1.8E+04	5.3E-03	3.6E+04	2.7E-03
100-D-28:1_Overburden	non-Rad	Lead	7439-92-1	ug/kg	13258.4	5.0E+04	2.7E-01	3.6E+04	3.7E-01
100-D-28:1_Overburden	non-Rad	Manganese	7439-96-5	ug/kg	283916.8	2.2E+05	**1.3E+00**	5.8E+06	4.9E-02
100-D-28:1_Overburden	non-Rad	Mercury	7439-97-6	ug/kg	78.5	1.0E+02	7.9E-01	1.9E+03	4.2E-02
100-D-28:1_Overburden	non-Rad	Molybdenum	7439-98-7	ug/kg	330.0	2.0E+03	1.7E-01	1.4E+04	2.4E-02
100-D-28:1_Overburden	non-Rad	Nickel	7440-02-0	ug/kg	10387.1	3.0E+04	3.5E-01	3.3E+04	3.2E-01
100-D-28:1_Overburden	non-Rad	Pyrene	129-00-0	ug/kg	826.6	1.8E+04	4.6E-02	6.0E+05	1.4E-03
100-D-28:1_Overburden	non-Rad	Vanadium	7440-62-2	ug/kg	54468.6	2.0E+03	**2.7E+01**	3.1E+04	**1.8E+00**
100-D-28:1_Overburden	non-Rad	Zinc	7440-66-6	ug/kg	42796.3	5.0E+04	8.6E-01	6.8E+04	6.3E-01
100-D-28:1_Shallow	non-Rad	Acenaphthene	83-32-9	ug/kg	45.0	2.0E+04	2.3E-03	1.1E+06	4.1E-05
100-D-28:1_Shallow	non-Rad	Anthracene	120-12-7	ug/kg	110.0	2.9E+04	3.8E-03	6.8E+05	1.6E-04
100-D-28:1_Shallow	non-Rad	Antimony	7440-36-0	ug/kg	380.0	5.0E+03	7.6E-02	6.0E+03	6.4E-02
100-D-28:1_Shallow	non-Rad	Arsenic	7440-38-2	ug/kg	2257.6	1.0E+04	2.3E-01	1.9E+05	1.2E-02
100-D-28:1_Shallow	non-Rad	Barium	7440-39-3	ug/kg	63401.8	3.3E+05	1.9E-01	1.3E+06	4.8E-02
100-D-28:1_Shallow	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	32.0	1.8E+04	1.8E-03	6.4E+04	5.0E-04
100-D-28:1_Shallow	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	47.3	1.8E+04	2.6E-03	7.6E+04	6.2E-04
100-D-28:1_Shallow	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	38.8	1.8E+04	2.2E-03	3.9E+04	9.9E-04
100-D-28:1_Shallow	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	20.0	1.8E+04	1.1E-03	3.9E+04	5.1E-04
100-D-28:1_Shallow	non-Rad	Beryllium	7440-41-7	ug/kg	90.0	1.0E+04	9.0E-03	1.4E+04	6.5E-03
100-D-28:1_Shallow	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	ug/kg	160.0	1.0E+05	1.6E-03	4.5E+04	3.5E-03
100-D-28:1_Shallow	non-Rad	Boron	7440-42-8	ug/kg	1300.0	5.0E+02	**2.6E+00**	1.3E+05	9.8E-03
100-D-28:1_Shallow	non-Rad	Cadmium	7440-43-9	ug/kg	129.9	4.0E+03	3.3E-02	1.6E+03	8.0E-02
100-D-28:1_Shallow	non-Rad	Carbazole	86-74-8	ug/kg	120.0	No Value	--	No Value	--
100-D-28:1_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	9867.5	4.0E+02	**2.5E+01**	3.8E+04	2.6E-01
100-D-28:1_Shallow	non-Rad	Chrysene	218-01-9	ug/kg	47.2	1.8E+04	2.6E-03	4.5E+04	1.1E-03
100-D-28:1_Shallow	non-Rad	Cobalt	7440-48-4	ug/kg	8100.7	1.3E+04	6.2E-01	1.1E+05	7.3E-02
100-D-28:1_Shallow	non-Rad	Copper	7440-50-8	ug/kg	15361.6	5.0E+04	3.1E-01	1.1E+05	1.4E-01
100-D-28:1_Shallow	non-Rad	Dibenzofuran	132-64-9	ug/kg	43.0	No Value	--	No Value	--
100-D-28:1_Shallow	non-Rad	Fluoranthene	206-44-0	ug/kg	30.3	1.8E+04	1.7E-03	8.4E+05	3.6E-05
100-D-28:1_Shallow	non-Rad	Fluorene	86-73-7	ug/kg	50.0	2.9E+04	1.7E-03	1.8E+05	2.9E-04
100-D-28:1_Shallow	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	203.4	No Value	--	1.3E+06	1.6E-04
100-D-28:1_Shallow	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	35.8	1.8E+04	2.0E-03	3.6E+04	1.0E-03
100-D-28:1_Shallow	non-Rad	Lead	7439-92-1	ug/kg	7143.9	5.0E+04	1.4E-01	3.6E+04	2.0E-01
100-D-28:1_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	305115.9	2.2E+05	**1.4E+00**	5.8E+06	5.3E-02
100-D-28:1_Shallow	non-Rad	Mercury	7439-97-6	ug/kg	572.0	1.0E+02	**5.7E+00**	1.9E+03	3.1E-01
100-D-28:1_Shallow	non-Rad	Molybdenum	7439-98-7	ug/kg	410.0	2.0E+03	2.1E-01	1.4E+04	2.9E-02
100-D-28:1_Shallow	non-Rad	Naphthalene	91-20-3	ug/kg	46.0	2.9E+04	1.6E-03	1.0E+05	4.6E-04
100-D-28:1_Shallow	non-Rad	Nickel	7440-02-0	ug/kg	11863.6	3.0E+04	4.0E-01	3.3E+04	3.6E-01
100-D-28:1_Shallow	non-Rad	Phenol	108-95-2	ug/kg	28.0	3.0E+04	9.3E-04	1.5E+06	1.9E-05
100-D-28:1_Shallow	non-Rad	Pyrene	129-00-0	ug/kg	90.7	1.8E+04	5.0E-03	6.0E+05	1.5E-04
100-D-28:1_Shallow	non-Rad	Selenium	7782-49-2	ug/kg	1700.0	5.2E+02	**3.3E+00**	1.9E+03	9.0E-01
100-D-28:1_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	54614.5	2.0E+03	**2.7E+01**	3.1E+04	**1.8E+00**
100-D-28:1_Shallow	non-Rad	Zinc	7440-66-6	ug/kg	59413.7	5.0E+04	**1.2E+00**	6.8E+04	8.8E-01
100-D-28:1_Staging Pile Area Footprint	non-Rad	4,4'-DDT (Dichlorodiphenyltrichloroethane)	50-29-3	ug/kg	1.0	No Value	--	8.8E+02	1.1E-03
100-D-28:1_Staging Pile Area Footprint	non-Rad	Alpha-BHC	319-84-6	ug/kg	0.5	No Value	--	No Value	--
100-D-28:1_Staging Pile Area Footprint	non-Rad	Aroclor-1254	11097-69-1	ug/kg	3.3	4.0E+04	8.3E-05	1.5E+03	2.2E-03
100-D-28:1_Staging Pile Area Footprint	non-Rad	Arsenic	7440-38-2	ug/kg	2591.5	1.0E+04	2.6E-01	1.9E+05	1.4E-02
100-D-28:1_Staging Pile Area Footprint	non-Rad	Barium	7440-39-3	ug/kg	63110.5	3.3E+05	1.9E-01	1.3E+06	4.8E-02
100-D-28:1_Staging Pile Area Footprint	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	12.0	1.8E+04	6.7E-04	6.4E+04	1.9E-04
100-D-28:1_Staging Pile Area Footprint	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	21.0	1.8E+04	1.2E-03	7.6E+04	2.8E-04
100-D-28:1_Staging Pile Area Footprint	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	19.5	1.8E+04	1.1E-03	3.9E+04	5.0E-04
100-D-28:1_Staging Pile Area Footprint	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	16.0	1.8E+04	8.9E-04	3.9E+04	4.1E-04

Table 4. Comparison of 100-D OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
100-D-28:1_Staging Pile Area Footprint	non-Rad	Beryllium	7440-41-7	ug/kg	44.0	1.0E+04	4.4E-03	1.4E+04	3.2E-03
100-D-28:1_Staging Pile Area Footprint	non-Rad	Boron	7440-42-8	ug/kg	1500.0	5.0E+02	**3.0E+00**	1.3E+05	1.1E-02
100-D-28:1_Staging Pile Area Footprint	non-Rad	Cadmium	7440-43-9	ug/kg	79.3	4.0E+03	2.0E-02	1.6E+03	4.9E-02
100-D-28:1_Staging Pile Area Footprint	non-Rad	Chromium	7440-47-3	ug/kg	8532.4	4.0E+02	**2.1E+01**	3.8E+04	2.2E-01
100-D-28:1_Staging Pile Area Footprint	non-Rad	Chrysene	218-01-9	ug/kg	48.0	1.8E+04	2.7E-03	4.5E+04	1.1E-03
100-D-28:1_Staging Pile Area Footprint	non-Rad	Cobalt	7440-48-4	ug/kg	8475.4	1.3E+04	6.5E-01	1.1E+05	7.6E-02
100-D-28:1_Staging Pile Area Footprint	non-Rad	Copper	7440-50-8	ug/kg	15936.7	5.0E+04	3.2E-01	1.1E+05	1.5E-01
100-D-28:1_Staging Pile Area Footprint	non-Rad	Fluoranthene	206-44-0	ug/kg	27.6	1.8E+04	1.5E-03	8.4E+05	3.3E-05
100-D-28:1_Staging Pile Area Footprint	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	236.6	No Value	--	1.3E+06	1.9E-04
100-D-28:1_Staging Pile Area Footprint	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	41.0	1.8E+04	2.3E-03	3.6E+04	1.2E-03
100-D-28:1_Staging Pile Area Footprint	non-Rad	Lead	7439-92-1	ug/kg	4779.8	5.0E+04	9.6E-02	3.6E+04	1.3E-01
100-D-28:1_Staging Pile Area Footprint	non-Rad	Manganese	7439-96-5	ug/kg	290097.6	2.2E+05	**1.3E+00**	5.8E+06	5.0E-02
100-D-28:1_Staging Pile Area Footprint	non-Rad	Mercury	7439-97-6	ug/kg	8.4	1.0E+02	8.5E-02	1.9E+03	4.5E-03
100-D-28:1_Staging Pile Area Footprint	non-Rad	Molybdenum	7439-98-7	ug/kg	340.0	2.0E+03	1.7E-01	1.4E+04	2.4E-02
100-D-28:1_Staging Pile Area Footprint	non-Rad	Nickel	7440-02-0	ug/kg	10461.6	3.0E+04	3.5E-01	3.3E+04	3.2E-01
100-D-28:1_Staging Pile Area Footprint	non-Rad	Pyrene	129-00-0	ug/kg	100.0	1.8E+04	5.6E-03	6.0E+05	1.7E-04
100-D-28:1_Staging Pile Area Footprint	non-Rad	Vanadium	7440-62-2	ug/kg	43439.3	2.0E+03	**2.2E+01**	3.1E+04	**1.4E+00**
100-D-28:1_Staging Pile Area Footprint	non-Rad	Zinc	7440-66-6	ug/kg	38595.5	5.0E+04	7.7E-01	6.8E+04	5.7E-01
100-D-29_Overburden	non-Rad	Antimony	7440-36-0	ug/kg	686.3	5.0E+03	1.4E-01	6.0E+03	1.2E-01
100-D-29_Overburden	non-Rad	Arsenic	7440-38-2	ug/kg	2301.9	1.0E+04	2.3E-01	1.9E+05	1.2E-02
100-D-29_Overburden	non-Rad	Barium	7440-39-3	ug/kg	62795.9	3.3E+05	1.9E-01	1.3E+06	4.8E-02
100-D-29_Overburden	non-Rad	Beryllium	7440-41-7	ug/kg	355.9	1.0E+04	3.6E-02	1.4E+04	2.6E-02
100-D-29_Overburden	non-Rad	Boron	7440-42-8	ug/kg	1128.1	5.0E+02	**2.3E+00**	1.3E+05	8.5E-03
100-D-29_Overburden	non-Rad	Chromium	7440-47-3	ug/kg	7050.3	4.0E+02	**1.8E+01**	3.8E+04	1.9E-01
100-D-29_Overburden	non-Rad	Cobalt	7440-48-4	ug/kg	7730.9	1.3E+04	6.0E-01	1.1E+05	6.9E-02
100-D-29_Overburden	non-Rad	Lead	7439-92-1	ug/kg	2763.0	5.0E+04	5.5E-02	3.6E+04	7.8E-02
100-D-29_Overburden	non-Rad	Manganese	7439-96-5	ug/kg	297023.2	2.2E+05	**1.4E+00**	5.8E+06	5.1E-02
100-D-29_Overburden	non-Rad	Mercury	7439-97-6	ug/kg	7.4	1.0E+02	7.4E-02	1.9E+03	4.0E-03
100-D-29_Overburden	non-Rad	Molybdenum	7439-98-7	ug/kg	260.0	2.0E+03	1.3E-01	1.4E+04	1.9E-02
100-D-29_Overburden	non-Rad	Nickel	7440-02-0	ug/kg	9804.0	3.0E+04	3.3E-01	3.3E+04	3.0E-01
100-D-29_Overburden	Rad	Rads SOF	---	pCi/g	--	--	5.3E-05	--	1.7E-03
100-D-29_Overburden	Rad	Total beta radiostrontium	SR-RAD	pCi/g	0.1	3.6E+03	4.0E-05	9.1E+01	1.6E-03
100-D-29_Overburden	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	493.5	5.0E+03	9.9E-02	3.6E+05	1.4E-03
100-D-29_Overburden	Rad	Tritium	10028-17-8	pCi/g	0.0	1.7E+06	8.6E-09	4.2E+02	3.5E-05
100-D-29_Overburden	Rad	Uranium-234	13966-29-5	pCi/g	0.1	5.2E+04	2.9E-06	6.4E+03	2.4E-05
100-D-29_Overburden	Rad	Uranium-238	U-238	pCi/g	0.2	1.6E+04	1.1E-05	5.2E+03	3.2E-05
100-D-29_Overburden	non-Rad	Vanadium	7440-62-2	ug/kg	65107.4	2.0E+03	**3.3E+01**	3.1E+04	**2.1E+00**
100-D-29_Overburden	non-Rad	Zinc	7440-66-6	ug/kg	42896.7	5.0E+04	8.6E-01	6.8E+04	6.3E-01
100-D-29_Shallow	non-Rad	Antimony	7440-36-0	ug/kg	617.8	5.0E+03	1.2E-01	6.0E+03	1.0E-01
100-D-29_Shallow	non-Rad	Arsenic	7440-38-2	ug/kg	2842.9	1.0E+04	2.8E-01	1.9E+05	1.5E-02
100-D-29_Shallow	non-Rad	Barium	7440-39-3	ug/kg	67886.6	3.3E+05	2.1E-01	1.3E+06	5.1E-02
100-D-29_Shallow	non-Rad	Beryllium	7440-41-7	ug/kg	240.0	1.0E+04	2.4E-02	1.4E+04	1.7E-02
100-D-29_Shallow	non-Rad	Boron	7440-42-8	ug/kg	5333.3	5.0E+02	**1.1E+01**	1.3E+05	4.0E-02
100-D-29_Shallow	non-Rad	Cadmium	7440-43-9	ug/kg	49.3	4.0E+03	1.2E-02	1.6E+03	3.0E-02
100-D-29_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.1	2.2E+03	3.8E-05	9.2E+02	9.0E-05
100-D-29_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	8317.4	4.0E+02	**2.1E+01**	3.8E+04	2.2E-01
100-D-29_Shallow	non-Rad	Cobalt	7440-48-4	ug/kg	7282.2	1.3E+04	5.6E-01	1.1E+05	6.5E-02
100-D-29_Shallow	non-Rad	Lead	7439-92-1	ug/kg	3051.2	5.0E+04	6.1E-02	3.6E+04	8.6E-02
100-D-29_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	292330.0	2.2E+05	**1.3E+00**	5.8E+06	5.0E-02
100-D-29_Shallow	non-Rad	Mercury	7439-97-6	ug/kg	10.0	1.0E+02	1.0E-01	1.9E+03	5.4E-03
100-D-29_Shallow	non-Rad	Molybdenum	7439-98-7	ug/kg	290.0	2.0E+03	1.5E-01	1.4E+04	2.1E-02
100-D-29_Shallow	non-Rad	Nickel	7440-02-0	ug/kg	9776.7	3.0E+04	3.3E-01	3.3E+04	3.0E-01
100-D-29_Shallow	Rad	Rads SOF	---	pCi/g	--	--	6.2E-05	--	2.3E-04
100-D-29_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	853.4	5.0E+03	1.7E-01	3.6E+05	2.4E-03
100-D-29_Shallow	Rad	Tritium	10028-17-8	pCi/g	0.0	1.7E+06	8.0E-09	4.2E+02	3.2E-05
100-D-29_Shallow	Rad	Uranium-234	13966-29-5	pCi/g	0.3	5.2E+04	5.1E-06	6.4E+03	4.1E-05
100-D-29_Shallow	Rad	Uranium-235	15117-96-1	pCi/g	0.0	2.7E+04	1.0E-06	4.4E+03	6.5E-06
100-D-29_Shallow	Rad	Uranium-238	U-238	pCi/g	0.3	1.6E+04	1.8E-05	5.2E+03	5.6E-05
100-D-29_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	60568.6	2.0E+03	**3.0E+01**	3.1E+04	**2.0E+00**
100-D-29_Shallow	non-Rad	Zinc	7440-66-6	ug/kg	40906.0	5.0E+04	8.2E-01	6.8E+04	6.0E-01
100-D-29_Shallow_Focused	non-Rad	Antimony	7440-36-0	ug/kg	400.0	5.0E+03	8.0E-02	6.0E+03	6.7E-02
100-D-29_Shallow_Focused	non-Rad	Arsenic	7440-38-2	ug/kg	2300.0	1.0E+04	2.3E-01	1.9E+05	1.2E-02
100-D-29_Shallow_Focused	non-Rad	Barium	7440-39-3	ug/kg	49000.0	3.3E+05	1.5E-01	1.3E+06	3.7E-02
100-D-29_Shallow_Focused	non-Rad	Beryllium	7440-41-7	ug/kg	270.0	1.0E+04	2.7E-02	1.4E+04	1.9E-02
100-D-29_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	8200.0	4.0E+02	**2.1E+01**	3.8E+04	2.2E-01
100-D-29_Shallow_Focused	non-Rad	Cobalt	7440-48-4	ug/kg	5800.0	1.3E+04	4.5E-01	1.1E+05	5.2E-02
100-D-29_Shallow_Focused	non-Rad	Lead	7439-92-1	ug/kg	2300.0	5.0E+04	4.6E-02	3.6E+04	6.5E-02
100-D-29_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	270000.0	2.2E+05	**1.2E+00**	5.8E+06	4.7E-02
100-D-29_Shallow_Focused	non-Rad	Nickel	7440-02-0	ug/kg	8600.0	3.0E+04	2.9E-01	3.3E+04	2.6E-01
100-D-29_Shallow_Focused	Rad	Rads SOF	---	pCi/g	--	--	7.7E-06	--	1.1E-04
100-D-29_Shallow_Focused	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	286.7	5.0E+03	5.7E-02	3.6E+05	8.0E-04
100-D-29_Shallow_Focused	Rad	Tritium	10028-17-8	pCi/g	0.0	1.7E+06	2.0E-08	4.2E+02	8.0E-05
100-D-29_Shallow_Focused	Rad	Uranium-234	13966-29-5	pCi/g	0.1	5.2E+04	1.6E-06	6.4E+03	1.3E-05
100-D-29_Shallow_Focused	Rad	Uranium-238	U-238	pCi/g	0.1	1.6E+04	6.1E-06	5.2E+03	1.9E-05
100-D-29_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	44000.0	2.0E+03	**2.2E+01**	3.1E+04	**1.4E+00**
100-D-29_Shallow_Focused	non-Rad	Zinc	7440-66-6	ug/kg	33000.0	5.0E+04	6.6E-01	6.8E+04	4.9E-01
100-D-3_Shallow_Focused	Rad	Cesium-137	10045-97-3	pCi/g	0.1	2.2E+03	5.7E-05	9.2E+02	1.4E-04
100-D-3_Shallow_Focused	Rad	Rads SOF	---	pCi/g	--	--	6.1E-05	--	1.6E-04
100-D-3_Shallow_Focused	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	50.4	5.0E+03	1.0E-02	3.6E+05	1.4E-04
100-D-3_Shallow_Focused	Rad	Uranium-235	15117-96-1	pCi/g	0.1	2.7E+04	4.0E-06	4.4E+03	2.5E-05
100-D-31:1, 100-D-31:2_Overburden	non-Rad	Acetone	67-64-1	ug/kg	6.7	No Value	--	No Value	--
100-D-31:1, 100-D-31:2_Overburden	non-Rad	Aroclor-1254	11097-69-1	ug/kg	9.8	4.0E+04	2.5E-04	1.5E+03	6.7E-03
100-D-31:1, 100-D-31:2_Overburden	non-Rad	Arsenic	7440-38-2	ug/kg	2952.7	1.0E+04	3.0E-01	1.9E+05	1.6E-02
100-D-31:1, 100-D-31:2_Overburden	non-Rad	Barium	7440-39-3	ug/kg	76789.1	3.3E+05	2.3E-01	1.3E+06	5.8E-02
100-D-31:1, 100-D-31:2_Overburden	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	1.5	1.8E+04	8.3E-05	6.4E+04	2.3E-05
100-D-31:1, 100-D-31:2_Overburden	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	1.2	1.8E+04	6.5E-05	7.6E+04	1.5E-05
100-D-31:1, 100-D-31:2_Overburden	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	2.4	1.8E+04	1.3E-04	3.9E+04	6.1E-05
100-D-31:1, 100-D-31:2_Overburden	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	1.2	1.8E+04	6.5E-05	3.9E+04	3.0E-05
100-D-31:1, 100-D-31:2_Overburden	non-Rad	Beryllium	7440-41-7	ug/kg	215.4	1.0E+04	2.2E-02	1.4E+04	1.5E-02
100-D-31:1, 100-D-31:2_Overburden	non-Rad	Boron	7440-42-8	ug/kg	2017.6	5.0E+02	**4.0E+00**	1.3E+05	1.5E-02
100-D-31:1, 100-D-31:2_Overburden	non-Rad	Cadmium	7440-43-9	ug/kg	81.8	4.0E+03	2.1E-02	1.6E+03	5.0E-02
100-D-31:1, 100-D-31:2_Overburden	non-Rad	Chromium	7440-47-3	ug/kg	8844.4	4.0E+02	**2.2E+01**	3.8E+04	2.3E-01
100-D-31:1, 100-D-31:2_Overburden	non-Rad	Chrysene	218-01-9	ug/kg	1.7	1.8E+04	9.3E-05	4.5E+04	3.8E-05
100-D-31:1, 100-D-31:2_Overburden	non-Rad	Cobalt	7440-48-4	ug/kg	7970.7	1.3E+04	6.1E-01	1.1E+05	7.2E-02
100-D-31:1, 100-D-31:2_Overburden	non-Rad	Copper	7440-50-8	ug/kg	15457.9	5.0E+04	3.1E-01	1.1E+05	1.4E-01
100-D-31:1, 100-D-31:2_Overburden	non-Rad	Fluoranthene	206-44-0	ug/kg	4.6	1.8E+04	2.6E-04	8.4E+05	5.5E-06
100-D-31:1, 100-D-31:2_Overburden	non-Rad	Fluoride	16984-48-8	ug/kg	900.0	No Value	--	2.3E+06	4.0E-04
100-D-31:1, 100-D-31:2_Overburden	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	2.8	1.8E+04	1.6E-04	3.6E+04	8.0E-05
100-D-31:1, 100-D-31:2_Overburden	non-Rad	Lead	7439-92-1	ug/kg	3626.0	5.0E+04	7.3E-02	3.6E+04	1.0E-01
100-D-31:1, 100-D-31:2_Overburden	non-Rad	Manganese	7439-96-5	ug/kg	318306.2	2.2E+05	**1.5E+00**	5.8E+06	5.5E-02
100-D-31:1, 100-D-31:2_Overburden	non-Rad	Mercury	7439-97-6	ug/kg	13.0	1.0E+02	1.3E-01	1.9E+03	7.0E-03
100-D-31:1, 100-D-31:2_Overburden	non-Rad	Methylene chloride	75-09-2	ug/kg	3.4	No Value	--	1.7E+05	2.0E-05
100-D-31:1, 100-D-31:2_Overburden	non-Rad	Molybdenum	7439-98-7	ug/kg	386.4	2.0E+03	1.9E-01	1.4E+04	2.8E-02
100-D-31:1, 100-D-31:2_Overburden	non-Rad	Nickel	7440-02-0	ug/kg	10376.9	3.0E+04	3.5E-01	3.3E+04	3.2E-01
100-D-31:1, 100-D-31:2_Overburden	non-Rad	Nitrate	14797-55-8	ug/kg	4032.1	No Value	--	3.4E+08	1.2E-05
100-D-31:1, 100-D-31:2_Overburden	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	ug/kg	710.1	No Value	--	No Value	--
100-D-31:1, 100-D-31:2_Overburden	non-Rad	Pyrene	129-00-0	ug/kg	5.7	1.8E+04	3.2E-04	6.0E+05	9.5E-06
100-D-31:1, 100-D-31:2_Overburden	Rad	Rads SOF	---	pCi/g	--	--	5.0E-05	--	2.2E-04
100-D-31:1, 100-D-31:2_Overburden	non-Rad	Total petroleum hydrocarbons - motor oil (high boiling)	TPH/OILH	ug/kg	9120.0	No Value	--	No Value	--
100-D-31:1, 100-D-31:2_Overburden	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	1756.5	5.0E+03	3.5E-01	3.6E+05	4.9E-03
100-D-31:1, 100-D-31:2_Overburden	Rad	Uranium-233/234	U-233/234	pCi/g	0.7	5.2E+04	1.3E-05	6.4E+03	1.0E-04
100-D-31:1, 100-D-31:2_Overburden	Rad	Uranium-238	U-238	pCi/g	0.6	1.6E+04	3.7E-05	5.2E+03	1.1E-04
100-D-31:1, 100-D-31:2_Overburden	non-Rad	Vanadium	7440-62-2	ug/kg	58650.3	2.0E+03	**2.9E+01**	3.1E+04	**1.9E+00**
100-D-31:1, 100-D-31:2_Overburden	non-Rad	Zinc	7440-66-6	ug/kg	44390.5	5.0E+04	8.9E-01	6.8E+04	6.6E-01
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Acenaphthene	83-32-9	ug/kg	18.2	2.0E+04	9.1E-04	1.1E+06	1.7E-05
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Acetone	67-64-1	ug/kg	4.3	No Value	--	No Value	--

Table 4. Comparison of 100-D OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Anthracene	120-12-7	ug/kg	3.0	2.9E+04	1.1E-04	6.8E+05	4.5E-06
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Antimony	7440-36-0	ug/kg	659.2	5.0E+03	1.3E-01	6.0E+03	1.1E-01
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Aroclor HI	---	ug/kg	--	--	6.8E-04	--	1.8E-02
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Aroclor-1254	11097-69-1	ug/kg	15.9	4.0E+04	4.0E-04	1.5E+03	1.1E-02
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Aroclor-1260	11096-82-5	ug/kg	11.1	4.0E+04	2.8E-04	1.5E+03	7.5E-03
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Arsenic	7440-38-2	ug/kg	2936.3	1.0E+04	2.9E-01	1.9E+05	1.6E-02
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Barium	7440-39-3	ug/kg	81895.8	3.3E+05	2.5E-01	1.3E+06	6.2E-02
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	9.0	1.8E+04	5.0E-04	6.4E+04	1.4E-04
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	9.9	1.8E+04	5.5E-04	7.6E+04	1.3E-04
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	12.2	1.8E+04	6.8E-04	3.9E+04	3.1E-04
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	8.3	1.8E+04	4.6E-04	3.9E+04	2.1E-04
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Beryllium	7440-41-7	ug/kg	222.5	1.0E+04	2.2E-02	1.4E+04	1.6E-02
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Boron	7440-42-8	ug/kg	2139.5	5.0E+02	**4.3E+00**	1.3E+05	1.6E-02
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Cadmium	7440-43-9	ug/kg	95.3	4.0E+03	2.4E-02	1.6E+03	5.9E-02
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	9619.5	4.0E+02	**2.4E+01**	3.8E+04	2.5E-01
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Chrysene	218-01-9	ug/kg	8.9	1.8E+04	4.9E-04	4.5E+04	2.0E-04
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Cobalt	7440-48-4	ug/kg	9241.2	1.3E+04	7.1E-01	1.1E+05	8.3E-02
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Copper	7440-50-8	ug/kg	17019.0	5.0E+04	3.4E-01	1.1E+05	1.6E-01
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Dibenz[a,h]anthracene	53-70-3	ug/kg	2.4	1.8E+04	1.3E-04	4.4E+04	5.4E-05
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Fluoranthene	206-44-0	ug/kg	31.3	1.8E+04	1.7E-03	8.4E+05	3.7E-05
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Fluorene	86-73-7	ug/kg	3.3	2.9E+04	1.1E-04	1.8E+05	1.9E-05
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	204.7	No Value	--	1.3E+06	1.6E-04
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	16.7	1.8E+04	9.3E-04	3.6E+04	4.7E-04
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Lead	7439-92-1	ug/kg	4509.6	5.0E+04	9.0E-02	3.6E+04	1.3E-01
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	350952.0	2.2E+05	**1.6E+00**	5.8E+06	6.1E-02
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Mercury	7439-97-6	ug/kg	10.0	1.0E+02	1.0E-01	1.9E+03	5.4E-03
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Methylene chloride	75-09-2	ug/kg	3.9	No Value	--	1.7E+05	2.4E-05
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Molybdenum	7439-98-7	ug/kg	451.2	2.0E+03	2.3E-01	1.4E+04	3.2E-02
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Nickel	7440-02-0	ug/kg	10623.0	3.0E+04	3.5E-01	3.3E+04	3.3E-01
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Nitrate	14797-55-8	ug/kg	45529.9	No Value	--	3.4E+08	1.3E-04
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Nitrite	14797-65-0	ug/kg	1800.0	No Value	--	3.4E+08	5.3E-06
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	ug/kg	8616.5	No Value	--	No Value	--
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Pyrene	129-00-0	ug/kg	10.5	1.8E+04	5.8E-04	6.0E+05	1.8E-05
100-D-31:1, 100-D-31:2_Shallow	Rad	Rads SOF	---	pCi/g	--	--	5.2E-05	--	2.2E-04
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Silver	7440-22-4	ug/kg	174.1	2.0E+03	8.7E-02	5.0E+04	3.5E-03
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Total petroleum hydrocarbons - motor oil (high boiling)	TPH/OILH	ug/kg	22431.7	No Value	--	No Value	--
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	1861.2	5.0E+03	3.7E-01	3.6E+05	5.2E-03
100-D-31:1, 100-D-31:2_Shallow	Rad	Uranium-233/234	U-233/234	pCi/g	0.6	5.2E+04	1.2E-05	6.4E+03	1.0E-04
100-D-31:1, 100-D-31:2_Shallow	Rad	Uranium-238	U-238	pCi/g	0.6	1.6E+04	4.0E-05	5.2E+03	1.2E-04
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	69961.0	2.0E+03	**3.5E+01**	3.1E+04	**2.3E+00**
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Zinc	7440-66-6	ug/kg	50885.8	5.0E+04	**1.0E+00**	6.8E+04	7.5E-01
100-D-31:10_Overburden	non-Rad	4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	ug/kg	0.5	No Value	--	4.0E+02	1.2E-03
100-D-31:10_Overburden	non-Rad	Arsenic	7440-38-2	ug/kg	2617.8	1.0E+04	2.6E-01	1.9E+05	1.4E-02
100-D-31:10_Overburden	non-Rad	Barium	7440-39-3	ug/kg	67626.4	3.3E+05	2.1E-01	1.3E+06	5.1E-02
100-D-31:10_Overburden	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	ug/kg	103.2	1.0E+05	1.0E-03	4.5E+04	2.3E-03
100-D-31:10_Overburden	non-Rad	Boron	7440-42-8	ug/kg	1283.3	5.0E+02	**2.6E+00**	1.3E+05	9.7E-03
100-D-31:10_Overburden	non-Rad	Cadmium	7440-43-9	ug/kg	99.4	4.0E+03	2.5E-02	1.6E+03	6.1E-02
100-D-31:10_Overburden	non-Rad	Chromium	7440-47-3	ug/kg	7761.7	4.0E+02	**1.9E+01**	3.8E+04	2.0E-01
100-D-31:10_Overburden	non-Rad	Cobalt	7440-48-4	ug/kg	7309.1	1.3E+04	5.6E-01	1.1E+05	6.6E-02
100-D-31:10_Overburden	non-Rad	Copper	7440-50-8	ug/kg	15562.6	5.0E+04	3.1E-01	1.1E+05	1.5E-01
100-D-31:10_Overburden	non-Rad	Fluoride	16984-48-8	ug/kg	1218.6	No Value	--	2.3E+06	5.3E-04
100-D-31:10_Overburden	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	411.9	No Value	--	1.3E+06	3.3E-04
100-D-31:10_Overburden	non-Rad	Lead	7439-92-1	ug/kg	3692.2	5.0E+04	7.4E-02	3.6E+04	1.0E-01
100-D-31:10_Overburden	non-Rad	Manganese	7439-96-5	ug/kg	289762.7	2.2E+05	**1.3E+00**	5.8E+06	5.0E-02
100-D-31:10_Overburden	non-Rad	Mercury	7439-97-6	ug/kg	15.8	1.0E+02	1.6E-01	1.9E+03	8.5E-03
100-D-31:10_Overburden	non-Rad	Molybdenum	7439-98-7	ug/kg	290.0	2.0E+03	1.5E-01	1.4E+04	2.1E-02
100-D-31:10_Overburden	non-Rad	Nickel	7440-02-0	ug/kg	9988.2	3.0E+04	3.3E-01	3.3E+04	3.1E-01
100-D-31:10_Overburden	Rad	Nickel-63	13981-37-8	pCi/g	20.0	No Value	--	No Value	--
100-D-31:10_Overburden	non-Rad	Nitrogen in Nitrate	NO3-N	ug/kg	1040.4	No Value	--	No Value	--
100-D-31:10_Overburden	non-Rad	Nitrogen in Nitrite	NO2-N	ug/kg	400.0	No Value	--	No Value	--
100-D-31:10_Overburden	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	ug/kg	880.0	No Value	--	No Value	--
100-D-31:10_Overburden	non-Rad	Phenol	108-95-2	ug/kg	29.0	3.0E+04	9.7E-04	1.5E+06	1.9E-05
100-D-31:10_Overburden	Rad	Rads SOF	---	pCi/g	--	--	1.2E-04	--	4.0E-03
100-D-31:10_Overburden	Rad	Total beta radiostrontium	SR-RAD	pCi/g	0.4	3.6E+03	1.0E-04	9.1E+01	3.9E-03
100-D-31:10_Overburden	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	ug/kg	1977.6	2.0E+05	9.9E-03	3.6E+08	5.6E-06
100-D-31:10_Overburden	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	ug/kg	5361.2	No Value	--	No Value	--
100-D-31:10_Overburden	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	712.9	5.0E+03	1.4E-01	3.6E+05	2.0E-03
100-D-31:10_Overburden	Rad	Uranium-234	13966-29-5	pCi/g	0.2	5.2E+04	4.6E-06	6.4E+03	3.7E-05
100-D-31:10_Overburden	Rad	Uranium-238	U-238	pCi/g	0.3	1.6E+04	1.6E-05	5.2E+03	4.9E-05
100-D-31:10_Overburden	non-Rad	Vanadium	7440-62-2	ug/kg	41549.4	2.0E+03	**2.1E+01**	3.1E+04	**1.3E+00**
100-D-31:10_Overburden	non-Rad	Zinc	7440-66-6	ug/kg	36532.3	5.0E+04	7.3E-01	6.8E+04	5.4E-01
100-D-31:10_Shallow	non-Rad	4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	ug/kg	2.2	No Value	--	4.0E+02	5.5E-03
100-D-31:10_Shallow	non-Rad	4,4'-DDT (Dichlorodiphenyltrichloroethane)	50-29-3	ug/kg	1.4	No Value	--	8.8E+02	1.6E-03
100-D-31:10_Shallow	non-Rad	Arsenic	7440-38-2	ug/kg	2720.5	1.0E+04	2.7E-01	1.9E+05	1.4E-02
100-D-31:10_Shallow	non-Rad	Barium	7440-39-3	ug/kg	60424.4	3.3E+05	1.8E-01	1.3E+06	4.6E-02
100-D-31:10_Shallow	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	ug/kg	91.7	1.0E+05	9.2E-04	4.5E+04	2.0E-03
100-D-31:10_Shallow	non-Rad	Boron	7440-42-8	ug/kg	1400.0	5.0E+02	**2.8E+00**	1.3E+05	1.1E-02
100-D-31:10_Shallow	non-Rad	Cadmium	7440-43-9	ug/kg	162.1	4.0E+03	4.1E-02	1.6E+03	9.9E-02
100-D-31:10_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.1	2.2E+03	3.1E-05	9.2E+02	7.4E-05
100-D-31:10_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	7199.1	4.0E+02	**1.8E+01**	3.8E+04	1.9E-01
100-D-31:10_Shallow	non-Rad	Cobalt	7440-48-4	ug/kg	9426.3	1.3E+04	7.3E-01	1.1E+05	8.5E-02
100-D-31:10_Shallow	non-Rad	Copper	7440-50-8	ug/kg	16569.8	5.0E+04	3.3E-01	1.1E+05	1.6E-01
100-D-31:10_Shallow	non-Rad	Fluoride	16984-48-8	ug/kg	1476.3	No Value	--	2.3E+06	6.5E-04
100-D-31:10_Shallow	non-Rad	Lead	7439-92-1	ug/kg	3201.2	5.0E+04	6.4E-02	3.6E+04	9.0E-02
100-D-31:10_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	310284.5	2.2E+05	**1.4E+00**	5.8E+06	5.4E-02
100-D-31:10_Shallow	non-Rad	Mercury	7439-97-6	ug/kg	9.4	1.0E+02	9.4E-02	1.9E+03	5.1E-03
100-D-31:10_Shallow	non-Rad	Molybdenum	7439-98-7	ug/kg	250.0	2.0E+03	1.3E-01	1.4E+04	1.8E-02
100-D-31:10_Shallow	non-Rad	Nickel	7440-02-0	ug/kg	9326.4	3.0E+04	3.1E-01	3.3E+04	2.9E-01
100-D-31:10_Shallow	non-Rad	Nitrogen in Nitrate	NO3-N	ug/kg	7582.3	No Value	--	No Value	--
100-D-31:10_Shallow	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	ug/kg	13545.2	No Value	--	No Value	--
100-D-31:10_Shallow	Rad	Rads SOF	---	pCi/g	--	--	4.7E-05	--	1.4E-04
100-D-31:10_Shallow	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	ug/kg	1000.0	2.0E+05	5.0E-03	3.6E+08	2.8E-06
100-D-31:10_Shallow	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	ug/kg	5700.0	No Value	--	No Value	--
100-D-31:10_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	587.7	5.0E+03	1.2E-01	3.6E+05	1.6E-03
100-D-31:10_Shallow	Rad	Uranium-234	13966-29-5	pCi/g	0.2	5.2E+04	3.5E-06	6.4E+03	2.9E-05
100-D-31:10_Shallow	Rad	Uranium-238	U-238	pCi/g	0.2	1.6E+04	1.3E-05	5.2E+03	4.0E-05
100-D-31:10_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	65877.0	2.0E+03	**3.3E+01**	3.1E+04	**2.1E+00**
100-D-31:10_Shallow	non-Rad	Zinc	7440-66-6	ug/kg	45509.8	5.0E+04	9.1E-01	6.8E+04	6.7E-01
100-D-31:10_Shallow_Focused	non-Rad	4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	ug/kg	0.7	No Value	--	4.0E+02	1.8E-03
100-D-31:10_Shallow_Focused	non-Rad	Arsenic	7440-38-2	ug/kg	2500.0	1.0E+04	2.5E-01	1.9E+05	1.3E-02
100-D-31:10_Shallow_Focused	non-Rad	Barium	7440-39-3	ug/kg	64600.0	3.3E+05	2.0E-01	1.3E+06	4.9E-02
100-D-31:10_Shallow_Focused	non-Rad	Beryllium	7440-41-7	ug/kg	33.0	1.0E+04	3.3E-03	1.4E+04	2.4E-03
100-D-31:10_Shallow_Focused	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	ug/kg	91.0	1.0E+05	9.1E-04	4.5E+04	2.0E-03
100-D-31:10_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	1800.0	5.0E+02	**3.6E+00**	1.3E+05	1.4E-02
100-D-31:10_Shallow_Focused	non-Rad	Cadmium	7440-43-9	ug/kg	180.0	4.0E+03	4.5E-02	1.6E+03	1.1E-01
100-D-31:10_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	6900.0	4.0E+02	**1.7E+01**	3.8E+04	1.8E-01
100-D-31:10_Shallow_Focused	non-Rad	Cobalt	7440-48-4	ug/kg	9200.0	1.3E+04	7.1E-01	1.1E+05	8.3E-02
100-D-31:10_Shallow_Focused	non-Rad	Copper	7440-50-8	ug/kg	15300.0	5.0E+04	3.1E-01	1.1E+05	1.4E-01

Table 4. Comparison of 100-D OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
100-D-31:10_Shallow_Focused	non-Rad	Fluoride	16984-48-8	ug/kg	1400.0	No Value	--	2.3E+06	6.1E-04
100-D-31:10_Shallow_Focused	non-Rad	Lead	7439-92-1	ug/kg	3800.0	5.0E+04	7.6E-02	3.6E+04	1.1E-01
100-D-31:10_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	318000.0	2.2E+05	**1.5E+00**	5.8E+06	5.5E-02
100-D-31:10_Shallow_Focused	non-Rad	Mercury	7439-97-6	ug/kg	5.8	1.0E+02	5.8E-02	1.9E+03	3.1E-03
100-D-31:10_Shallow_Focused	non-Rad	Nickel	7440-02-0	ug/kg	9300.0	3.0E+04	3.1E-01	3.3E+04	2.9E-01
100-D-31:10_Shallow_Focused	non-Rad	Nitrogen in Nitrate	NO3-N	ug/kg	1200.0	No Value	--	No Value	--
100-D-31:10_Shallow_Focused	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	ug/kg	1500.0	No Value	--	No Value	--
100-D-31:10_Shallow_Focused	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	ug/kg	2300.0	2.0E+05	1.2E-02	3.6E+08	6.5E-06
100-D-31:10_Shallow_Focused	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	ug/kg	5600.0	No Value	--	No Value	--
100-D-31:10_Shallow_Focused	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	1866.4	5.0E+03	3.7E-01	3.6E+05	5.2E-03
100-D-31:10_Shallow_Focused	Rad	Uranium-238	U-238	pCi/g	0.6	1.6E+04	4.0E-05	5.2E+03	1.2E-04
100-D-31:10_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	58300.0	2.0E+03	**2.9E+01**	3.1E+04	**1.9E+00**
100-D-31:10_Shallow_Focused	non-Rad	Zinc	7440-66-6	ug/kg	47800.0	5.0E+04	9.6E-01	6.8E+04	7.1E-01
100-D-31:3, 100-D-31:4_Overburden	non-Rad	4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	ug/kg	29.0	No Value	--	4.0E+02	7.3E-02
100-D-31:3, 100-D-31:4_Overburden	non-Rad	4,4'-DDT (Dichlorodiphenyltrichloroethane)	50-29-3	ug/kg	5.6	No Value	--	8.8E+02	6.4E-03
100-D-31:3, 100-D-31:4_Overburden	non-Rad	Acenaphthene	83-32-9	ug/kg	100.0	2.0E+04	5.0E-03	1.1E+06	9.1E-05
100-D-31:3, 100-D-31:4_Overburden	non-Rad	Anthracene	120-12-7	ug/kg	200.0	2.9E+04	6.9E-03	6.8E+05	3.0E-04
100-D-31:3, 100-D-31:4_Overburden	non-Rad	Arsenic	7440-38-2	ug/kg	1854.7	1.0E+04	1.9E-01	1.9E+05	9.8E-03
100-D-31:3, 100-D-31:4_Overburden	non-Rad	Barium	7440-39-3	ug/kg	66352.3	3.3E+05	2.0E-01	1.3E+06	5.0E-02
100-D-31:3, 100-D-31:4_Overburden	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	158.9	1.8E+04	8.8E-03	6.4E+04	2.5E-03
100-D-31:3, 100-D-31:4_Overburden	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	114.0	1.8E+04	6.3E-03	7.6E+04	1.5E-03
100-D-31:3, 100-D-31:4_Overburden	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	79.1	1.8E+04	4.4E-03	3.9E+04	2.0E-03
100-D-31:3, 100-D-31:4_Overburden	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	48.0	1.8E+04	2.7E-03	3.9E+04	1.2E-03
100-D-31:3, 100-D-31:4_Overburden	non-Rad	Beryllium	7440-41-7	ug/kg	120.3	1.0E+04	1.2E-02	1.4E+04	8.6E-03
100-D-31:3, 100-D-31:4_Overburden	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	ug/kg	94.3	1.0E+05	9.4E-04	4.5E+04	2.1E-03
100-D-31:3, 100-D-31:4_Overburden	non-Rad	Boron	7440-42-8	ug/kg	1300.0	5.0E+02	**2.6E+00**	1.3E+05	9.8E-03
100-D-31:3, 100-D-31:4_Overburden	Rad	Cesium-137	10045-97-3	pCi/g	0.2	2.2E+03	6.8E-05	9.2E+02	1.6E-04
100-D-31:3, 100-D-31:4_Overburden	non-Rad	Chromium	7440-47-3	ug/kg	7300.8	4.0E+02	**1.8E+01**	3.8E+04	1.9E-01
100-D-31:3, 100-D-31:4_Overburden	non-Rad	Chrysene	218-01-9	ug/kg	83.0	1.8E+04	4.6E-03	4.5E+04	1.9E-03
100-D-31:3, 100-D-31:4_Overburden	non-Rad	Cobalt	7440-48-4	ug/kg	9490.6	1.3E+04	7.3E-01	1.1E+05	8.5E-02
100-D-31:3, 100-D-31:4_Overburden	non-Rad	Copper	7440-50-8	ug/kg	18617.4	5.0E+04	3.7E-01	1.1E+05	1.7E-01
100-D-31:3, 100-D-31:4_Overburden	non-Rad	Fluoranthene	206-44-0	ug/kg	181.6	1.8E+04	1.0E-02	8.4E+05	2.2E-04
100-D-31:3, 100-D-31:4_Overburden	non-Rad	Fluorene	86-73-7	ug/kg	59.0	2.9E+04	2.0E-03	1.8E+05	3.4E-04
100-D-31:3, 100-D-31:4_Overburden	non-Rad	Fluoride	16984-48-8	ug/kg	1000.0	No Value	--	2.3E+06	4.4E-04
100-D-31:3, 100-D-31:4_Overburden	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	177.0	No Value	--	1.3E+06	1.4E-04
100-D-31:3, 100-D-31:4_Overburden	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	200.6	1.8E+04	1.1E-02	3.6E+04	5.6E-03
100-D-31:3, 100-D-31:4_Overburden	non-Rad	Lead	7439-92-1	ug/kg	3373.6	5.0E+04	6.8E-02	3.6E+04	9.5E-02
100-D-31:3, 100-D-31:4_Overburden	non-Rad	Manganese	7439-96-5	ug/kg	318256.9	2.2E+05	**1.5E+00**	5.8E+06	5.5E-02
100-D-31:3, 100-D-31:4_Overburden	non-Rad	Mercury	7439-97-6	ug/kg	15.3	1.0E+02	1.5E-01	1.9E+03	8.2E-03
100-D-31:3, 100-D-31:4_Overburden	non-Rad	Methylene chloride	75-09-2	ug/kg	1.3	No Value	--	1.7E+05	7.8E-06
100-D-31:3, 100-D-31:4_Overburden	non-Rad	Molybdenum	7439-98-7	ug/kg	480.0	2.0E+03	2.4E-01	1.4E+04	3.4E-02
100-D-31:3, 100-D-31:4_Overburden	non-Rad	Naphthalene	91-20-3	ug/kg	47.0	2.9E+04	1.6E-03	1.0E+05	4.7E-04
100-D-31:3, 100-D-31:4_Overburden	non-Rad	Nickel	7440-02-0	ug/kg	9701.7	3.0E+04	3.2E-01	3.3E+04	3.0E-01
100-D-31:3, 100-D-31:4_Overburden	non-Rad	Nitrogen in Nitrate	NO3-N	ug/kg	617.5	No Value	--	No Value	--
100-D-31:3, 100-D-31:4_Overburden	non-Rad	Nitrogen in Nitrite	NO2-N	ug/kg	410.0	No Value	--	No Value	--
100-D-31:3, 100-D-31:4_Overburden	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	ug/kg	590.0	No Value	--	No Value	--
100-D-31:3, 100-D-31:4_Overburden	non-Rad	Pyrene	129-00-0	ug/kg	630.0	1.8E+04	3.5E-02	6.0E+05	1.1E-03
100-D-31:3, 100-D-31:4_Overburden	Rad	Rads SOF	---	pCi/g	--	--	1.8E-04	--	2.4E-03
100-D-31:3, 100-D-31:4_Overburden	non-Rad	Selenium	7782-49-2	ug/kg	1200.0	5.2E+02	**2.3E+00**	1.9E+03	6.3E-01
100-D-31:3, 100-D-31:4_Overburden	Rad	Total beta radiostrontium	SR-RAD	pCi/g	0.2	3.6E+03	5.3E-05	9.1E+01	2.1E-03
100-D-31:3, 100-D-31:4_Overburden	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	ug/kg	2400.0	2.0E+05	1.2E-02	3.6E+08	6.7E-06
100-D-31:3, 100-D-31:4_Overburden	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	ug/kg	5558.3	No Value	--	No Value	--
100-D-31:3, 100-D-31:4_Overburden	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	2042.4	5.0E+03	4.1E-01	3.6E+05	5.7E-03
100-D-31:3, 100-D-31:4_Overburden	Rad	Uranium-234	13966-29-5	pCi/g	0.6	5.2E+04	1.1E-05	5.4E+03	9.2E-05
100-D-31:3, 100-D-31:4_Overburden	Rad	Uranium-238	U-238	pCi/g	0.7	1.6E+04	4.4E-05	5.2E+03	1.3E-04
100-D-31:3, 100-D-31:4_Overburden	non-Rad	Vanadium	7440-62-2	ug/kg	70800.8	2.0E+03	**3.5E+01**	3.1E+04	**2.3E+00**
100-D-31:3, 100-D-31:4_Overburden	non-Rad	Zinc	7440-66-6	ug/kg	47795.5	5.0E+04	9.6E-01	6.8E+04	7.1E-01
100-D-31:3_Shallow	non-Rad	4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	ug/kg	0.3	No Value	--	4.0E+02	6.5E-04
100-D-31:3_Shallow	non-Rad	4,4'-DDT (Dichlorodiphenyltrichloroethane)	50-29-3	ug/kg	1.6	No Value	--	8.8E+02	1.8E-03
100-D-31:3_Shallow	non-Rad	Acenaphthene	83-32-9	ug/kg	12.0	2.0E+04	6.0E-04	1.1E+06	1.1E-05
100-D-31:3_Shallow	non-Rad	Arsenic	7440-38-2	ug/kg	2174.8	1.0E+04	2.2E-01	1.9E+05	1.2E-02
100-D-31:3_Shallow	non-Rad	Barium	7440-39-3	ug/kg	60235.2	3.3E+05	1.8E-01	1.3E+06	4.6E-02
100-D-31:3_Shallow	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	42.0	1.8E+04	2.3E-03	6.4E+04	6.6E-04
100-D-31:3_Shallow	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	19.9	1.8E+04	1.1E-03	7.6E+04	2.6E-04
100-D-31:3_Shallow	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	44.0	1.8E+04	2.4E-03	3.9E+04	1.1E-03
100-D-31:3_Shallow	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	10.2	1.8E+04	5.7E-04	3.9E+04	2.6E-04
100-D-31:3_Shallow	non-Rad	Beryllium	7440-41-7	ug/kg	146.6	1.0E+04	1.5E-02	1.4E+04	1.1E-02
100-D-31:3_Shallow	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	ug/kg	4300.0	1.0E+05	4.3E-02	4.5E+04	9.5E-02
100-D-31:3_Shallow	non-Rad	Boron	7440-42-8	ug/kg	1200.0	5.0E+02	**2.4E+00**	1.3E+05	9.0E-03
100-D-31:3_Shallow	non-Rad	Cadmium	7440-43-9	ug/kg	72.0	4.0E+03	1.8E-02	1.6E+03	4.4E-02
100-D-31:3_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	7656.1	4.0E+02	**1.9E+01**	3.8E+04	2.0E-01
100-D-31:3_Shallow	non-Rad	Chrysene	218-01-9	ug/kg	45.0	1.8E+04	2.5E-03	4.5E+04	1.0E-03
100-D-31:3_Shallow	non-Rad	Cobalt	7440-48-4	ug/kg	9345.9	1.3E+04	7.2E-01	1.1E+05	8.4E-02
100-D-31:3_Shallow	non-Rad	Copper	7440-50-8	ug/kg	18361.5	5.0E+04	3.7E-01	1.1E+05	1.7E-01
100-D-31:3_Shallow	non-Rad	Fluoranthene	206-44-0	ug/kg	97.0	1.8E+04	5.4E-03	8.4E+05	1.2E-04
100-D-31:3_Shallow	non-Rad	Fluoride	16984-48-8	ug/kg	991.7	No Value	--	2.3E+06	4.4E-04
100-D-31:3_Shallow	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	181.0	No Value	--	1.3E+06	1.5E-04
100-D-31:3_Shallow	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	54.0	1.8E+04	3.0E-03	3.6E+04	1.5E-03
100-D-31:3_Shallow	non-Rad	Lead	7439-92-1	ug/kg	3311.2	5.0E+04	6.6E-02	3.6E+04	9.3E-02
100-D-31:3_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	302830.9	2.2E+05	**1.4E+00**	5.8E+06	5.2E-02
100-D-31:3_Shallow	non-Rad	Mercury	7439-97-6	ug/kg	18.5	1.0E+02	1.9E-01	1.9E+03	9.9E-03
100-D-31:3_Shallow	non-Rad	Methylene chloride	75-09-2	ug/kg	2.0	No Value	--	1.7E+05	1.2E-05
100-D-31:3_Shallow	non-Rad	Molybdenum	7439-98-7	ug/kg	380.0	2.0E+03	1.9E-01	1.4E+04	2.7E-02
100-D-31:3_Shallow	non-Rad	Nickel	7440-02-0	ug/kg	9006.2	3.0E+04	3.0E-01	3.3E+04	2.8E-01
100-D-31:3_Shallow	non-Rad	Nitrogen in Nitrate	NO3-N	ug/kg	1219.2	No Value	--	No Value	--
100-D-31:3_Shallow	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	ug/kg	1248.3	No Value	--	No Value	--
100-D-31:3_Shallow	non-Rad	Pyrene	129-00-0	ug/kg	97.0	1.8E+04	5.4E-03	6.0E+05	1.6E-04
100-D-31:3_Shallow	Rad	Rads SOF	---	pCi/g	--	--	6.9E-05	--	2.9E-04
100-D-31:3_Shallow	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	ug/kg	2,767	2.0E+05	1.4E-02	3.6E+08	7.8E-06
100-D-31:3_Shallow	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	ug/kg	6,440	No Value	--	No Value	--
100-D-31:3_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	2,554	5.0E+03	5.1E-01	3.6E+05	7.1E-03
100-D-31:3_Shallow	Rad	Uranium-234	13966-29-5	pCi/g	0.75	5.2E+04	1.5E-05	6.4E+03	1.2E-04
100-D-31:3_Shallow	Rad	Uranium-238	U-238	pCi/g	0.86	1.6E+04	5.5E-05	5.2E+03	1.7E-04
100-D-31:3_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	71,700	2.0E+03	**3.6E+01**	3.1E+04	**2.3E+00**
100-D-31:3_Shallow	non-Rad	Zinc	7440-66-6	ug/kg	47,716	5.0E+04	9.5E-01	6.8E+04	7.0E-01
100-D-31:4_Shallow	non-Rad	2-Methylnaphthalene	91-57-6	ug/kg	23	2.9E+04	7.9E-04	6.0E+03	3.8E-03
100-D-31:4_Shallow	non-Rad	4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	ug/kg	0.61	No Value	--	4.0E+02	1.5E-03
100-D-31:4_Shallow	non-Rad	Acetone	67-64-1	ug/kg	7.4	No Value	--	No Value	--
100-D-31:4_Shallow	non-Rad	Anthracene	120-12-7	ug/kg	562	2.9E+04	1.9E-02	6.8E+05	8.3E-04
100-D-31:4_Shallow	non-Rad	Aroclor-1254	11097-69-1	ug/kg	19	4.0E+04	4.8E-04	1.5E+03	1.3E-02
100-D-31:4_Shallow	non-Rad	Arsenic	7440-38-2	ug/kg	2,165	1.0E+04	2.2E-01	1.9E+05	1.1E-02
100-D-31:4_Shallow	non-Rad	Barium	7440-39-3	ug/kg	62,687	3.3E+05	1.9E-01	1.3E+06	4.7E-02
100-D-31:4_Shallow	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	649	1.8E+04	3.6E-02	6.4E+04	1.0E-02
100-D-31:4_Shallow	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	1,900	1.8E+04	1.1E-01	7.6E+04	2.5E-02
100-D-31:4_Shallow	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	1,600	1.8E+04	8.9E-02	3.9E+04	4.1E-02
100-D-31:4_Shallow	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	920	1.8E+04	5.1E-02	3.9E+04	2.4E-02

Table 4. Comparison of 100-D OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
100-D-31:4_Shallow	non-Rad	Beryllium	7440-41-7	ug/kg	129	1.0E+04	1.3E-02	1.4E+04	9.2E-03
100-D-31:4_Shallow	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	ug/kg	138	1.0E+05	1.4E-03	4.5E+04	3.0E-03
100-D-31:4_Shallow	non-Rad	Boron	7440-42-8	ug/kg	1,000	5.0E+02	**2.0E+00**	1.3E+05	7.5E-03
100-D-31:4_Shallow	non-Rad	Cadmium	7440-43-9	ug/kg	85	4.0E+03	2.1E-02	1.6E+03	5.2E-02
100-D-31:4_Shallow	non-Rad	Carbazole	86-74-8	ug/kg	230	No Value	--	No Value	--
100-D-31:4_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.062	2.2E+03	2.8E-05	9.2E+02	6.7E-05
100-D-31:4_Shallow	non-Rad	Chlordane	57-74-9	ug/kg	0.37	1.0E+03	3.7E-04	5.0E+04	7.3E-06
100-D-31:4_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	7,358	4.0E+02	**1.8E+01**	3.8E+04	1.9E-01
100-D-31:4_Shallow	non-Rad	Chrysene	218-01-9	ug/kg	1,900	1.8E+04	1.1E-01	4.5E+04	4.3E-02
100-D-31:4_Shallow	non-Rad	Cobalt	7440-48-4	ug/kg	11,170	1.3E+04	8.6E-01	1.1E+05	1.0E-01
100-D-31:4_Shallow	non-Rad	Copper	7440-50-8	ug/kg	16,125	5.0E+04	3.2E-01	1.1E+05	1.5E-01
100-D-31:4_Shallow	non-Rad	Dibenz[a,h]anthracene	53-70-3	ug/kg	176	1.8E+04	9.8E-03	4.4E+04	4.0E-03
100-D-31:4_Shallow	non-Rad	Dibenzofuran	132-64-9	ug/kg	92	No Value	--	No Value	--
100-D-31:4_Shallow	non-Rad	Fluoranthene	206-44-0	ug/kg	4,200	1.8E+04	2.3E-01	8.4E+05	5.0E-03
100-D-31:4_Shallow	non-Rad	Fluorene	86-73-7	ug/kg	243	2.9E+04	8.4E-03	1.8E+05	1.4E-03
100-D-31:4_Shallow	non-Rad	Fluoride	16984-48-8	ug/kg	950	No Value	--	2.3E+06	4.2E-04
100-D-31:4_Shallow	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	437	No Value	--	1.3E+06	3.5E-04
100-D-31:4_Shallow	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	975	1.8E+04	5.4E-02	3.6E+04	2.7E-02
100-D-31:4_Shallow	non-Rad	Lead	7439-92-1	ug/kg	4,636	5.0E+04	9.3E-02	3.6E+04	1.3E-01
100-D-31:4_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	322,669	2.2E+05	**1.5E+00**	5.8E+06	5.6E-02
100-D-31:4_Shallow	non-Rad	Mercury	7439-97-6	ug/kg	42	1.0E+02	4.2E-01	1.9E+03	2.2E-02
100-D-31:4_Shallow	non-Rad	Methylene chloride	75-09-2	ug/kg	1.3	No Value	--	1.7E+05	7.9E-06
100-D-31:4_Shallow	non-Rad	Molybdenum	7439-98-7	ug/kg	320	2.0E+03	1.6E-01	1.4E+04	2.3E-02
100-D-31:4_Shallow	non-Rad	Nickel	7440-02-0	ug/kg	10,006	3.0E+04	3.3E-01	3.3E+04	3.1E-01
100-D-31:4_Shallow	non-Rad	Nitrogen in Nitrate	NO3-N	ug/kg	566	No Value	--	No Value	--
100-D-31:4_Shallow	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	ug/kg	436	No Value	--	No Value	--
100-D-31:4_Shallow	non-Rad	Pyrene	129-00-0	ug/kg	1,276	1.8E+04	7.1E-02	6.0E+05	2.1E-03
100-D-31:4_Shallow	Rad	Rads SOF	---	pCi/g	--	--	8.0E-05	--	2.8E-04
100-D-31:4_Shallow	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	ug/kg	9750.0	2.0E+05	4.9E-02	3.6E+08	2.7E-05
100-D-31:4_Shallow	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	ug/kg	36219.4	No Value	--	No Value	--
100-D-31:4_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	1929.3	5.0E+03	3.9E-01	3.6E+05	5.4E-03
100-D-31:4_Shallow	Rad	Uranium-234	13966-29-5	pCi/g	0.6	5.2E+04	1.1E-05	6.4E+03	8.7E-05
100-D-31:4_Shallow	Rad	Uranium-238	U-238	pCi/g	0.6	1.6E+04	4.1E-05	5.2E+03	1.3E-04
100-D-31:4_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	85009.0	2.0E+03	**4.3E+01**	3.1E+04	**2.7E+00**
100-D-31:4_Shallow	non-Rad	Zinc	7440-66-6	ug/kg	48937.2	5.0E+04	9.8E-01	6.8E+04	7.2E-01
100-D-31:4_Shallow_Focused	non-Rad	Antimony	7440-36-0	ug/kg	473.0	5.0E+03	9.5E-02	6.0E+03	7.9E-02
100-D-31:4_Shallow_Focused	non-Rad	Arsenic	7440-38-2	ug/kg	2520.0	1.0E+04	2.5E-01	1.9E+05	1.3E-02
100-D-31:4_Shallow_Focused	non-Rad	Barium	7440-39-3	ug/kg	58700.0	3.3E+05	1.8E-01	1.3E+06	4.4E-02
100-D-31:4_Shallow_Focused	non-Rad	Beryllium	7440-41-7	ug/kg	219.0	1.0E+04	2.2E-02	1.4E+04	1.6E-02
100-D-31:4_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	825.0	5.0E+02	**1.7E+00**	1.3E+05	6.2E-03
100-D-31:4_Shallow_Focused	non-Rad	Cadmium	7440-43-9	ug/kg	60.0	4.0E+03	1.5E-02	1.6E+03	3.7E-02
100-D-31:4_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	9490.0	4.0E+02	**2.4E+01**	3.8E+04	2.5E-01
100-D-31:4_Shallow_Focused	non-Rad	Cobalt	7440-48-4	ug/kg	9050.0	1.3E+04	7.0E-01	1.1E+05	8.1E-02
100-D-31:4_Shallow_Focused	non-Rad	Copper	7440-50-8	ug/kg	17600.0	5.0E+04	3.5E-01	1.1E+05	1.6E-01
100-D-31:4_Shallow_Focused	non-Rad	Fluoranthene	206-44-0	ug/kg	5.7	1.8E+04	3.2E-04	8.4E+05	6.8E-06
100-D-31:4_Shallow_Focused	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	190.0	No Value	--	1.3E+06	1.5E-04
100-D-31:4_Shallow_Focused	non-Rad	Lead	7439-92-1	ug/kg	3460.0	5.0E+04	6.9E-02	3.6E+04	9.7E-02
100-D-31:4_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	346000.0	2.2E+05	**1.6E+00**	5.8E+06	6.0E-02
100-D-31:4_Shallow_Focused	non-Rad	Molybdenum	7439-98-7	ug/kg	472.0	2.0E+03	2.4E-01	1.4E+04	3.4E-02
100-D-31:4_Shallow_Focused	non-Rad	Nickel	7440-02-0	ug/kg	10500.0	3.0E+04	3.5E-01	3.3E+04	3.2E-01
100-D-31:4_Shallow_Focused	non-Rad	Nitrate	14797-55-8	ug/kg	5900.0	No Value	--	3.4E+08	1.7E-05
100-D-31:4_Shallow_Focused	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	ug/kg	1480.0	No Value	--	No Value	--
100-D-31:4_Shallow_Focused	Rad	Rads SOF	---	pCi/g	--	--	5.4E-05	--	2.2E-04
100-D-31:4_Shallow_Focused	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	2024.2	5.0E+03	4.1E-01	3.6E+05	5.6E-03
100-D-31:4_Shallow_Focused	Rad	Uranium-233/234	U-233/234	pCi/g	0.6	5.2E+04	1.1E-05	6.4E+03	8.8E-05
100-D-31:4_Shallow_Focused	Rad	Uranium-238	U-238	pCi/g	0.7	1.6E+04	4.3E-05	5.2E+03	1.3E-04
100-D-31:4_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	75300.0	2.0E+03	**3.8E+01**	3.1E+04	**2.4E+00**
100-D-31:4_Shallow_Focused	non-Rad	Zinc	7440-66-6	ug/kg	48600.0	5.0E+04	9.7E-01	6.8E+04	7.2E-01
100-D-31:5_Overburden	non-Rad	Arsenic	7440-38-2	ug/kg	4058.6	1.0E+04	4.1E-01	1.9E+05	2.1E-02
100-D-31:5_Overburden	non-Rad	Barium	7440-39-3	ug/kg	259913.7	3.3E+05	7.9E-01	1.3E+06	2.0E-01
100-D-31:5_Overburden	non-Rad	Beryllium	7440-41-7	ug/kg	492.1	1.0E+04	4.9E-02	1.4E+04	3.5E-02
100-D-31:5_Overburden	non-Rad	Boron	7440-42-8	ug/kg	20105.3	5.0E+02	**4.0E+01**	1.3E+05	1.5E-01
100-D-31:5_Overburden	non-Rad	Chromium	7440-47-3	ug/kg	12462.4	4.0E+02	**3.1E+01**	3.8E+04	3.3E-01
100-D-31:5_Overburden	non-Rad	Cobalt	7440-48-4	ug/kg	9645.9	1.3E+04	7.4E-01	1.1E+05	8.7E-02
100-D-31:5_Overburden	non-Rad	Copper	7440-50-8	ug/kg	17652.2	5.0E+04	3.5E-01	1.1E+05	1.7E-01
100-D-31:5_Overburden	non-Rad	Lead	7439-92-1	ug/kg	8925.2	5.0E+04	1.8E-01	3.6E+04	2.5E-01
100-D-31:5_Overburden	non-Rad	Manganese	7439-96-5	ug/kg	371944.5	2.2E+05	**1.7E+00**	5.8E+06	6.4E-02
100-D-31:5_Overburden	non-Rad	Mercury	7439-97-6	ug/kg	141.8	1.0E+02	**1.4E+00**	1.9E+03	7.6E-02
100-D-31:5_Overburden	non-Rad	Molybdenum	7439-98-7	ug/kg	1146.4	2.0E+03	5.7E-01	1.4E+04	8.2E-02
100-D-31:5_Overburden	non-Rad	Nickel	7440-02-0	ug/kg	14926.0	3.0E+04	5.0E-01	3.3E+04	4.6E-01
100-D-31:5_Overburden	non-Rad	Nitrate	14797-55-8	ug/kg	28748.5	No Value	--	3.4E+08	8.5E-05
100-D-31:5_Overburden	non-Rad	Selenium	7782-49-2	ug/kg	1728.3	5.2E+02	**3.3E+00**	1.9E+03	9.1E-01
100-D-31:5_Overburden	non-Rad	Vanadium	7440-62-2	ug/kg	65425.6	2.0E+03	**3.3E+01**	3.1E+04	**2.1E+00**
100-D-31:5_Overburden	non-Rad	Zinc	7440-66-6	ug/kg	56474.0	5.0E+04	**1.1E+00**	6.8E+04	8.3E-01
100-D-31:5_Shallow	non-Rad	Arsenic	7440-38-2	ug/kg	3275.7	1.0E+04	3.3E-01	1.9E+05	1.7E-02
100-D-31:5_Shallow	non-Rad	Barium	7440-39-3	ug/kg	144276.9	3.3E+05	4.4E-01	1.3E+06	1.1E-01
100-D-31:5_Shallow	non-Rad	Beryllium	7440-41-7	ug/kg	230.8	1.0E+04	2.3E-02	1.4E+04	1.7E-02
100-D-31:5_Shallow	non-Rad	Boron	7440-42-8	ug/kg	10483.8	5.0E+02	**2.1E+01**	1.3E+05	7.9E-02
100-D-31:5_Shallow	non-Rad	Cadmium	7440-43-9	ug/kg	241.9	4.0E+03	6.1E-02	1.6E+03	1.5E-01
100-D-31:5_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	12394.7	4.0E+02	**3.1E+01**	3.8E+04	3.3E-01
100-D-31:5_Shallow	non-Rad	Cobalt	7440-48-4	ug/kg	8126.4	1.3E+04	6.3E-01	1.1E+05	7.3E-02
100-D-31:5_Shallow	non-Rad	Copper	7440-50-8	ug/kg	15737.5	5.0E+04	3.2E-01	1.1E+05	1.5E-01
100-D-31:5_Shallow	non-Rad	Lead	7439-92-1	ug/kg	7456.0	5.0E+04	1.5E-01	3.6E+04	2.1E-01
100-D-31:5_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	331457.6	2.2E+05	**1.5E+00**	5.8E+06	5.7E-02
100-D-31:5_Shallow	non-Rad	Mercury	7439-97-6	ug/kg	240.0	1.0E+02	**2.4E+00**	1.9E+03	1.3E-01
100-D-31:5_Shallow	non-Rad	Molybdenum	7439-98-7	ug/kg	700.0	2.0E+03	3.5E-01	1.4E+04	5.0E-02
100-D-31:5_Shallow	non-Rad	Nickel	7440-02-0	ug/kg	12578.9	3.0E+04	4.2E-01	3.3E+04	3.9E-01
100-D-31:5_Shallow	non-Rad	Nitrate	14797-55-8	ug/kg	46046.6	No Value	--	3.4E+08	1.4E-04
100-D-31:5_Shallow	non-Rad	Selenium	7782-49-2	ug/kg	1500.0	5.2E+02	**2.9E+00**	1.9E+03	7.9E-01
100-D-31:5_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	54695.6	2.0E+03	**2.7E+01**	3.1E+04	**1.8E+00**
100-D-31:5_Shallow	non-Rad	Zinc	7440-66-6	ug/kg	89616.7	5.0E+04	**1.8E+00**	6.8E+04	**1.3E+00**
100-D-31:6_Overburden	non-Rad	4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	ug/kg	0.3	No Value	--	4.0E+02	7.5E-04
100-D-31:6_Overburden	non-Rad	Antimony	7440-36-0	ug/kg	556.0	5.0E+03	1.1E-01	6.0E+03	9.3E-02
100-D-31:6_Overburden	non-Rad	Arsenic	7440-38-2	ug/kg	3551.2	1.0E+04	3.6E-01	1.9E+05	1.9E-02
100-D-31:6_Overburden	non-Rad	Barium	7440-39-3	ug/kg	110920.4	3.3E+05	3.4E-01	1.3E+06	8.4E-02
100-D-31:6_Overburden	non-Rad	Beryllium	7440-41-7	ug/kg	1379.9	1.0E+04	1.4E-01	1.4E+04	9.9E-02
100-D-31:6_Overburden	non-Rad	Boron	7440-42-8	ug/kg	5998.3	5.0E+02	**1.2E+01**	1.3E+05	4.5E-02
100-D-31:6_Overburden	non-Rad	Cadmium	7440-43-9	ug/kg	60.1	4.0E+03	1.5E-02	1.6E+03	3.7E-02
100-D-31:6_Overburden	non-Rad	Chromium	7440-47-3	ug/kg	9736.0	4.0E+02	**2.4E+01**	3.8E+04	2.6E-01
100-D-31:6_Overburden	non-Rad	Chrysene	218-01-9	ug/kg	14.0	1.8E+04	7.8E-04	4.5E+04	3.1E-04
100-D-31:6_Overburden	non-Rad	Cobalt	7440-48-4	ug/kg	8947.4	1.3E+04	6.9E-01	1.1E+05	8.0E-02
100-D-31:6_Overburden	non-Rad	Copper	7440-50-8	ug/kg	24687.2	5.0E+04	4.9E-01	1.1E+05	2.3E-01
100-D-31:6_Overburden	non-Rad	Dieldrin	60-57-1	ug/kg	3.0	No Value	--	2.1E+01	1.4E-01
100-D-31:6_Overburden	non-Rad	Fluoride	16984-48-8	ug/kg	1709.0	No Value	--	2.3E+06	7.5E-04
100-D-31:6_Overburden	non-Rad	Heptachlor epoxide	1024-57-3	ug/kg	1.0	No Value	--	No Value	--
100-D-31:6_Overburden	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	606.7	No Value	--	1.3E+06	4.9E-04
100-D-31:6_Overburden	non-Rad	Lead	7439-92-1	ug/kg	7536.8	5.0E+04	1.5E-01	3.6E+04	2.1E-01
100-D-31:6_Overburden	non-Rad	Manganese	7439-96-5	ug/kg	355498.3	2.2E+05	**1.6E+00**	5.8E+06	6.1E-02
100-D-31:6_Overburden	non-Rad	Mercury	7439-97-6	ug/kg	870.0	1.0E+02	**8.7E+00**	1.9E+03	4.7E-01
100-D-31:6_Overburden	non-Rad	Molybdenum	7439-98-7	ug/kg	326.1	2.0E+03	1.6E-01	1.4E+04	2.3E-02
100-D-31:6_Overburden	non-Rad	Nickel	7440-02-0	ug/kg	11582.6	3.0E+04	3.9E-01	3.3E+04	3.6E-01
100-D-31:6_Overburden	non-Rad	Nitrogen in Nitrate	NO3-N	ug/kg	3654.2	No Value	--	No Value	--
100-D-31:6_Overburden	non-Rad	Vanadium	7440-62-2	ug/kg	66498.9	2.0E+03	**3.3E+01**	3.1E+04	**2.1E+00**
100-D-31:6_Overburden	non-Rad	Zinc	7440-66-6	ug/kg	65613.6	5.0E+04	**1.3E+00**	6.8E+04	9.7E-01

Table 4. Comparison of 100-D OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
100-D-31:6_Shallow	non-Rad	Antimony	7440-36-0	ug/kg	800.0	5.0E+03	1.6E-01	6.0E+03	1.3E-01
100-D-31:6_Shallow	non-Rad	Arsenic	7440-38-2	ug/kg	3998.2	1.0E+04	4.0E-01	1.9E+05	2.1E-02
100-D-31:6_Shallow	non-Rad	Barium	7440-39-3	ug/kg	105117.6	3.3E+05	3.2E-01	1.3E+06	8.0E-02
100-D-31:6_Shallow	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	8.0	1.8E+04	4.4E-04	6.4E+04	1.3E-04
100-D-31:6_Shallow	non-Rad	Beryllium	7440-41-7	ug/kg	1273.6	1.0E+04	1.3E-01	1.4E+04	9.1E-02
100-D-31:6_Shallow	non-Rad	Boron	7440-42-8	ug/kg	5859.7	5.0E+02	**1.2E+01**	1.3E+05	4.4E-02
100-D-31:6_Shallow	non-Rad	Cadmium	7440-43-9	ug/kg	103.2	4.0E+03	2.6E-02	1.6E+03	6.3E-02
100-D-31:6_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	10797.6	4.0E+02	**2.7E+01**	3.8E+04	2.8E-01
100-D-31:6_Shallow	non-Rad	Chrysene	218-01-9	ug/kg	9.3	1.8E+04	5.2E-04	4.5E+04	2.1E-04
100-D-31:6_Shallow	non-Rad	Cobalt	7440-48-4	ug/kg	9066.4	1.3E+04	7.0E-01	1.1E+05	8.1E-02
100-D-31:6_Shallow	non-Rad	Copper	7440-50-8	ug/kg	26377.3	5.0E+04	5.3E-01	1.1E+05	2.5E-01
100-D-31:6_Shallow	non-Rad	Fluoride	16984-48-8	ug/kg	1171.6	No Value	--	2.3E+06	5.1E-04
100-D-31:6_Shallow	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	363.3	No Value	--	1.3E+06	2.9E-04
100-D-31:6_Shallow	non-Rad	Lead	7439-92-1	ug/kg	8354.4	5.0E+04	1.7E-01	3.6E+04	2.4E-01
100-D-31:6_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	330083.2	2.2E+05	**1.5E+00**	5.8E+06	5.7E-02
100-D-31:6_Shallow	non-Rad	Mercury	7439-97-6	ug/kg	577.0	1.0E+02	**5.8E+00**	1.9E+03	3.1E-01
100-D-31:6_Shallow	non-Rad	Molybdenum	7439-98-7	ug/kg	460.0	2.0E+03	2.3E-01	1.4E+04	3.3E-02
100-D-31:6_Shallow	non-Rad	Nickel	7440-02-0	ug/kg	12585.4	3.0E+04	4.2E-01	3.3E+04	3.9E-01
100-D-31:6_Shallow	non-Rad	Nitrogen in Nitrate	NO3-N	ug/kg	6984.9	No Value	--	No Value	--
100-D-31:6_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	65022.9	2.0E+03	**3.3E+01**	3.1E+04	**2.1E+00**
100-D-31:6_Shallow	non-Rad	Zinc	7440-66-6	ug/kg	63960.1	5.0E+04	**1.3E+00**	6.8E+04	9.4E-01
100-D-31:7_Overburden	non-Rad	2-Butanone	78-93-3	ug/kg	2.0	No Value	--	3.1E+06	6.3E-07
100-D-31:7_Overburden	non-Rad	4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	ug/kg	0.7	No Value	--	4.0E+02	1.7E-03
100-D-31:7_Overburden	non-Rad	Acetone	67-64-1	ug/kg	13.0	No Value	--	No Value	--
100-D-31:7_Overburden	non-Rad	Antimony	7440-36-0	ug/kg	404.2	5.0E+03	8.1E-02	6.0E+03	6.8E-02
100-D-31:7_Overburden	non-Rad	Aroclor-1260	11096-82-5	ug/kg	8.2	4.0E+04	2.1E-04	1.5E+03	5.6E-03
100-D-31:7_Overburden	non-Rad	Arsenic	7440-38-2	ug/kg	1861.8	1.0E+04	1.9E-01	1.9E+05	9.8E-03
100-D-31:7_Overburden	non-Rad	Barium	7440-39-3	ug/kg	66232.5	3.3E+05	2.0E-01	1.3E+06	5.0E-02
100-D-31:7_Overburden	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	4.0	1.8E+04	2.2E-04	6.4E+04	6.3E-05
100-D-31:7_Overburden	non-Rad	Beryllium	7440-41-7	ug/kg	1700.0	1.0E+04	1.7E-01	1.4E+04	1.2E-01
100-D-31:7_Overburden	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	ug/kg	73.3	1.0E+05	7.3E-04	4.5E+04	1.6E-03
100-D-31:7_Overburden	non-Rad	Boron	7440-42-8	ug/kg	2304.6	5.0E+02	**4.6E+00**	1.3E+05	1.7E-02
100-D-31:7_Overburden	non-Rad	Cadmium	7440-43-9	ug/kg	46.0	4.0E+03	1.2E-02	1.6E+03	2.8E-02
100-D-31:7_Overburden	non-Rad	Chromium	7440-47-3	ug/kg	6037.8	4.0E+02	**1.5E+01**	3.8E+04	1.6E-01
100-D-31:7_Overburden	non-Rad	Cobalt	7440-48-4	ug/kg	8774.9	1.3E+04	6.8E-01	1.1E+05	7.9E-02
100-D-31:7_Overburden	non-Rad	Copper	7440-50-8	ug/kg	20400.0	5.0E+04	4.1E-01	1.1E+05	1.9E-01
100-D-31:7_Overburden	non-Rad	Fluoride	16984-48-8	ug/kg	1300.0	No Value	--	2.3E+06	5.7E-04
100-D-31:7_Overburden	non-Rad	Lead	7439-92-1	ug/kg	2665.2	5.0E+04	5.3E-02	3.6E+04	7.5E-02
100-D-31:7_Overburden	non-Rad	Manganese	7439-96-5	ug/kg	304517.9	2.2E+05	**1.4E+00**	5.8E+06	5.3E-02
100-D-31:7_Overburden	non-Rad	Methylene chloride	75-09-2	ug/kg	2.4	No Value	--	1.7E+05	1.5E-05
100-D-31:7_Overburden	non-Rad	Molybdenum	7439-98-7	ug/kg	514.3	2.0E+03	2.6E-01	1.4E+04	3.7E-02
100-D-31:7_Overburden	non-Rad	Nickel	7440-02-0	ug/kg	9125.0	3.0E+04	3.0E-01	3.3E+04	2.8E-01
100-D-31:7_Overburden	non-Rad	Nitrogen in Nitrate	NO3-N	ug/kg	939.5	No Value	--	No Value	--
100-D-31:7_Overburden	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	ug/kg	687.4	No Value	--	No Value	--
100-D-31:7_Overburden	Rad	Rads SOF	---	pCi/g	--	--	4.3E-05	--	1.2E-03
100-D-31:7_Overburden	Rad	Total beta radiostrontium	SR-RAD	pCi/g	0.1	3.6E+03	2.9E-05	9.1E+01	1.2E-03
100-D-31:7_Overburden	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	ug/kg	1766.7	2.0E+05	8.8E-03	3.6E+08	5.0E-06
100-D-31:7_Overburden	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	ug/kg	3876.0	No Value	--	No Value	--
100-D-31:7_Overburden	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	472.3	5.0E+03	9.5E-02	3.6E+05	1.3E-03
100-D-31:7_Overburden	Rad	Uranium-234	13966-29-5	pCi/g	0.2	5.2E+04	3.1E-06	6.4E+03	2.5E-05
100-D-31:7_Overburden	Rad	Uranium-238	U-238	pCi/g	0.2	1.6E+04	1.0E-05	5.2E+03	3.1E-05
100-D-31:7_Overburden	non-Rad	Vanadium	7440-62-2	ug/kg	66619.5	2.0E+03	**3.3E+01**	3.1E+04	**2.1E+00**
100-D-31:7_Overburden	non-Rad	Zinc	7440-66-6	ug/kg	42803.8	5.0E+04	8.6E-01	6.8E+04	6.3E-01
100-D-31:7_Shallow	non-Rad	2-Butanone	78-93-3	ug/kg	1.8	No Value	--	3.1E+06	5.7E-07
100-D-31:7_Shallow	non-Rad	Acetone	67-64-1	ug/kg	13.0	No Value	--	No Value	--
100-D-31:7_Shallow	non-Rad	Arsenic	7440-38-2	ug/kg	1391.4	1.0E+04	1.4E-01	1.9E+05	7.3E-03
100-D-31:7_Shallow	non-Rad	Barium	7440-39-3	ug/kg	66248.3	3.3E+05	2.0E-01	1.3E+06	5.0E-02
100-D-31:7_Shallow	non-Rad	Beryllium	7440-41-7	ug/kg	1500.0	1.0E+04	1.5E-01	1.4E+04	1.1E-01
100-D-31:7_Shallow	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	ug/kg	68.0	1.0E+05	6.8E-04	4.5E+04	1.5E-03
100-D-31:7_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	7233.8	4.0E+02	**1.8E+01**	3.8E+04	1.9E-01
100-D-31:7_Shallow	non-Rad	Cobalt	7440-48-4	ug/kg	10431.5	1.3E+04	8.0E-01	1.1E+05	9.4E-02
100-D-31:7_Shallow	non-Rad	Copper	7440-50-8	ug/kg	17912.5	5.0E+04	3.6E-01	1.1E+05	1.7E-01
100-D-31:7_Shallow	non-Rad	Lead	7439-92-1	ug/kg	1793.9	5.0E+04	3.6E-02	3.6E+04	5.0E-02
100-D-31:7_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	335983.3	2.2E+05	**1.5E+00**	5.8E+06	5.8E-02
100-D-31:7_Shallow	non-Rad	Mercury	7439-97-6	ug/kg	92.1	1.0E+02	9.2E-01	1.9E+03	4.9E-02
100-D-31:7_Shallow	non-Rad	Methylene chloride	75-09-2	ug/kg	2.2	No Value	--	1.7E+05	1.4E-05
100-D-31:7_Shallow	non-Rad	Molybdenum	7439-98-7	ug/kg	259.5	2.0E+03	1.3E-01	1.4E+04	1.9E-02
100-D-31:7_Shallow	non-Rad	Nickel	7440-02-0	ug/kg	9656.8	3.0E+04	3.2E-01	3.3E+04	3.0E-01
100-D-31:7_Shallow	non-Rad	Nitrogen in Nitrate	NO3-N	ug/kg	695.8	No Value	--	No Value	--
100-D-31:7_Shallow	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	ug/kg	1458.6	No Value	--	No Value	--
100-D-31:7_Shallow	Rad	Rads SOF	---	pCi/g	--	--	9.1E-06	--	3.9E-05
100-D-31:7_Shallow	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	ug/kg	900.0	2.0E+05	4.5E-03	3.6E+08	2.5E-06
100-D-31:7_Shallow	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	ug/kg	1100.0	No Value	--	No Value	--
100-D-31:7_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	323.7	5.0E+03	6.5E-02	3.6E+05	9.0E-04
100-D-31:7_Shallow	Rad	Uranium-234	13966-29-5	pCi/g	0.1	5.2E+04	2.2E-06	6.4E+03	1.8E-05
100-D-31:7_Shallow	Rad	Uranium-238	U-238	pCi/g	0.1	1.6E+04	6.9E-06	5.2E+03	2.1E-05
100-D-31:7_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	80979.7	2.0E+03	**4.1E+01**	3.1E+04	**2.6E+00**
100-D-31:7_Shallow	non-Rad	Zinc	7440-66-6	ug/kg	48513.5	5.0E+04	9.7E-01	6.8E+04	7.2E-01
100-D-31:7_Shallow_Focused	non-Rad	Arsenic	7440-38-2	ug/kg	1000.0	1.0E+04	1.0E-01	1.9E+05	5.3E-03
100-D-31:7_Shallow_Focused	non-Rad	Barium	7440-39-3	ug/kg	75300.0	3.3E+05	2.3E-01	1.3E+06	5.7E-02
100-D-31:7_Shallow_Focused	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	ug/kg	63.0	1.0E+05	6.3E-04	4.5E+04	1.4E-03
100-D-31:7_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	1500.0	5.0E+02	**3.0E+00**	1.3E+05	1.1E-02
100-D-31:7_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	5900.0	4.0E+02	**1.5E+01**	3.8E+04	1.6E-01
100-D-31:7_Shallow_Focused	non-Rad	Cobalt	7440-48-4	ug/kg	10600.0	1.3E+04	8.2E-01	1.1E+05	9.5E-02
100-D-31:7_Shallow_Focused	non-Rad	Copper	7440-50-8	ug/kg	17900.0	5.0E+04	3.6E-01	1.1E+05	1.7E-01
100-D-31:7_Shallow_Focused	non-Rad	Lead	7439-92-1	ug/kg	1800.0	5.0E+04	3.6E-02	3.6E+04	5.1E-02
100-D-31:7_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	340000.0	2.2E+05	**1.6E+00**	5.8E+06	5.9E-02
100-D-31:7_Shallow_Focused	non-Rad	Molybdenum	7439-98-7	ug/kg	230.0	2.0E+03	1.2E-01	1.4E+04	1.7E-02
100-D-31:7_Shallow_Focused	non-Rad	Nickel	7440-02-0	ug/kg	10400.0	3.0E+04	3.5E-01	3.3E+04	3.2E-01
100-D-31:7_Shallow_Focused	non-Rad	Nitrogen in Nitrate	NO3-N	ug/kg	700.0	No Value	--	No Value	--
100-D-31:7_Shallow_Focused	Rad	Rads SOF	---	pCi/g	--	--	1.1E-05	--	5.0E-05
100-D-31:7_Shallow_Focused	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	363.2	5.0E+03	7.3E-02	3.6E+05	1.0E-03
100-D-31:7_Shallow_Focused	Rad	Uranium-234	13966-29-5	pCi/g	0.2	5.2E+04	3.3E-06	6.4E+03	2.6E-05
100-D-31:7_Shallow_Focused	Rad	Uranium-238	U-238	pCi/g	0.1	1.6E+04	7.8E-06	5.2E+03	2.4E-05
100-D-31:7_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	79500.0	2.0E+03	**4.0E+01**	3.1E+04	**2.6E+00**
100-D-31:7_Shallow_Focused	non-Rad	Zinc	7440-66-6	ug/kg	48100.0	5.0E+04	9.6E-01	6.8E+04	7.1E-01
100-D-31:8_Overburden	non-Rad	Arsenic	7440-38-2	ug/kg	1796.2	1.0E+04	1.8E-01	1.9E+05	9.5E-03
100-D-31:8_Overburden	non-Rad	Barium	7440-39-3	ug/kg	74527.2	3.3E+05	2.3E-01	1.3E+06	5.6E-02
100-D-31:8_Overburden	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	9.0	1.8E+04	5.0E-04	7.6E+04	1.2E-04
100-D-31:8_Overburden	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	7.0	1.8E+04	3.9E-04	3.9E+04	1.8E-04
100-D-31:8_Overburden	non-Rad	Boron	7440-42-8	ug/kg	1200.0	5.0E+02	**2.4E+00**	1.3E+05	9.0E-03
100-D-31:8_Overburden	non-Rad	Cadmium	7440-43-9	ug/kg	49.0	4.0E+03	1.2E-02	1.6E+03	3.0E-02
100-D-31:8_Overburden	non-Rad	Chromium	7440-47-3	ug/kg	7016.8	4.0E+02	**1.8E+01**	3.8E+04	1.8E-01
100-D-31:8_Overburden	non-Rad	Chrysene	218-01-9	ug/kg	13.0	1.8E+04	7.2E-04	4.5E+04	2.9E-04
100-D-31:8_Overburden	non-Rad	Cobalt	7440-48-4	ug/kg	8458.0	1.3E+04	6.5E-01	1.1E+05	7.6E-02
100-D-31:8_Overburden	non-Rad	Copper	7440-50-8	ug/kg	15323.4	5.0E+04	3.1E-01	1.1E+05	1.4E-01
100-D-31:8_Overburden	non-Rad	Fluoride	16984-48-8	ug/kg	1168.2	No Value	--	2.3E+06	5.1E-04
100-D-31:8_Overburden	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	332.0	No Value	--	1.3E+06	2.7E-04
100-D-31:8_Overburden	non-Rad	Lead	7439-92-1	ug/kg	3584.4	5.0E+04	7.2E-02	3.6E+04	1.0E-01
100-D-31:8_Overburden	non-Rad	Manganese	7439-96-5	ug/kg	339534.9	2.2E+05	**1.5E+00**	5.8E+06	5.9E-02
100-D-31:8_Overburden	non-Rad	Mercury	7439-97-6	ug/kg	7.8	1.0E+02	7.8E-02	1.9E+03	4.2E-03
100-D-31:8_Overburden	non-Rad	Molybdenum	7439-98-7	ug/kg	480.0	2.0E+03	2.4E-01	1.4E+04	3.4E-02

Table 4. Comparison of 100-D OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
100-D-31:8_Overburden	non-Rad	Nickel	7440-02-0	ug/kg	10367.8	3.0E+04	3.5E-01	3.3E+04	3.2E-01
100-D-31:8_Overburden	non-Rad	Nitrogen in Nitrate	NO3-N	ug/kg	1022.9	No Value	--	No Value	--
100-D-31:8_Overburden	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	ug/kg	783.3	No Value	--	No Value	--
100-D-31:8_Overburden	Rad	Rads SOF	---	pCi/g	--	--	2.8E-04	--	1.0E-02
100-D-31:8_Overburden	Rad	Total beta radiostrontium	SR-RAD	pCi/g	0.9	3.6E+03	2.6E-04	9.1E+01	1.0E-02
100-D-31:8_Overburden	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	ug/kg	1916.7	No Value	--	No Value	--
100-D-31:8_Overburden	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	838.6	5.0E+03	1.7E-01	3.6E+05	2.3E-03
100-D-31:8_Overburden	Rad	Uranium-234	13966-29-5	pCi/g	0.3	5.2E+04	5.1E-06	6.4E+03	4.1E-05
100-D-31:8_Overburden	Rad	Uranium-238	U-238	pCi/g	0.3	1.6E+04	1.8E-05	5.2E+03	5.5E-05
100-D-31:8_Overburden	non-Rad	Vanadium	7440-62-2	ug/kg	64671.7	2.0E+03	**3.2E+01**	3.1E+04	**2.1E+00**
100-D-31:8_Overburden	non-Rad	Zinc	7440-66-6	ug/kg	44757.6	5.0E+04	9.0E-01	6.8E+04	6.6E-01
100-D-31:8_Shallow	non-Rad	4,4'-DDT (Dichlorodiphenyltrichloroethane)	50-29-3	ug/kg	0.6	No Value	--	8.8E+02	7.1E-04
100-D-31:8_Shallow	non-Rad	Arsenic	7440-38-2	ug/kg	2205.0	1.0E+04	2.2E-01	1.9E+05	1.2E-02
100-D-31:8_Shallow	non-Rad	Barium	7440-39-3	ug/kg	62186.1	3.3E+05	1.9E-01	1.3E+06	4.7E-02
100-D-31:8_Shallow	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	5.9	1.8E+04	3.3E-04	6.4E+04	9.3E-05
100-D-31:8_Shallow	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	12.0	1.8E+04	6.7E-04	7.6E+04	1.6E-04
100-D-31:8_Shallow	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	12.0	1.8E+04	6.7E-04	3.9E+04	3.1E-04
100-D-31:8_Shallow	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	6.9	1.8E+04	3.8E-04	3.9E+04	1.8E-04
100-D-31:8_Shallow	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	ug/kg	102.5	1.0E+05	1.0E-03	4.5E+04	2.3E-03
100-D-31:8_Shallow	non-Rad	Boron	7440-42-8	ug/kg	940.0	5.0E+02	**1.9E+00**	1.3E+05	7.1E-03
100-D-31:8_Shallow	non-Rad	Cadmium	7440-43-9	ug/kg	71.0	4.0E+03	1.8E-02	1.6E+03	4.4E-02
100-D-31:8_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	5289.9	4.0E+02	**1.3E+01**	3.8E+04	1.4E-01
100-D-31:8_Shallow	non-Rad	Chrysene	218-01-9	ug/kg	9.2	1.8E+04	5.1E-04	4.5E+04	2.1E-04
100-D-31:8_Shallow	non-Rad	Cobalt	7440-48-4	ug/kg	8016.5	1.3E+04	6.2E-01	1.1E+05	7.2E-02
100-D-31:8_Shallow	non-Rad	Copper	7440-50-8	ug/kg	14311.2	5.0E+04	2.9E-01	1.1E+05	1.3E-01
100-D-31:8_Shallow	non-Rad	Fluoranthene	206-44-0	ug/kg	17.0	1.8E+04	9.4E-04	8.4E+05	2.0E-05
100-D-31:8_Shallow	non-Rad	Fluoride	16984-48-8	ug/kg	1850.0	No Value	--	2.3E+06	8.1E-04
100-D-31:8_Shallow	non-Rad	Lead	7439-92-1	ug/kg	3024.0	5.0E+04	6.1E-02	3.6E+04	8.5E-02
100-D-31:8_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	312190.2	2.2E+05	**1.4E+00**	5.8E+06	5.4E-02
100-D-31:8_Shallow	non-Rad	Mercury	7439-97-6	ug/kg	9.6	1.0E+02	9.6E-02	1.9E+03	5.1E-03
100-D-31:8_Shallow	non-Rad	Molybdenum	7439-98-7	ug/kg	630.0	2.0E+03	3.2E-01	1.4E+04	4.5E-02
100-D-31:8_Shallow	non-Rad	Nickel	7440-02-0	ug/kg	8942.8	3.0E+04	3.0E-01	3.3E+04	2.7E-01
100-D-31:8_Shallow	non-Rad	Nitrogen in Nitrate	NO3-N	ug/kg	563.2	No Value	--	No Value	--
100-D-31:8_Shallow	non-Rad	Pyrene	129-00-0	ug/kg	27.0	1.8E+04	1.5E-03	6.0E+05	4.5E-05
100-D-31:8_Shallow	Rad	Rads SOF	---	pCi/g	--	--	1.6E-05	--	6.7E-05
100-D-31:8_Shallow	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	ug/kg	1700.0	2.0E+05	8.5E-03	3.6E+08	4.8E-06
100-D-31:8_Shallow	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	ug/kg	2100.0	No Value	--	No Value	--
100-D-31:8_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	516.0	5.0E+03	1.0E-01	3.6E+05	1.4E-03
100-D-31:8_Shallow	Rad	Uranium-234	13966-29-5	pCi/g	0.2	5.2E+04	3.6E-06	6.4E+03	2.9E-05
100-D-31:8_Shallow	Rad	Uranium-238	U-238	pCi/g	0.2	1.6E+04	1.2E-05	5.2E+03	3.7E-05
100-D-31:8_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	48087.3	2.0E+03	**2.4E+01**	3.1E+04	**1.5E+00**
100-D-31:8_Shallow	non-Rad	Zinc	7440-66-6	ug/kg	38019.1	5.0E+04	7.6E-01	6.8E+04	5.6E-01
100-D-31:8_Shallow_Focused_1	non-Rad	Antimony	7440-36-0	ug/kg	446.0	5.0E+03	8.9E-02	6.0E+03	7.5E-02
100-D-31:8_Shallow_Focused_1	non-Rad	Arsenic	7440-38-2	ug/kg	1890.0	1.0E+04	1.9E-01	1.9E+05	1.0E-02
100-D-31:8_Shallow_Focused_1	non-Rad	Barium	7440-39-3	ug/kg	70500.0	3.3E+05	2.1E-01	1.3E+06	5.3E-02
100-D-31:8_Shallow_Focused_1	non-Rad	Beryllium	7440-41-7	ug/kg	169.0	1.0E+04	1.7E-02	1.4E+04	1.2E-02
100-D-31:8_Shallow_Focused_1	non-Rad	Cadmium	7440-43-9	ug/kg	65.0	4.0E+03	1.6E-02	1.6E+03	4.0E-02
100-D-31:8_Shallow_Focused_1	non-Rad	Chromium	7440-47-3	ug/kg	6790.0	4.0E+02	**1.7E+01**	3.8E+04	1.8E-01
100-D-31:8_Shallow_Focused_1	non-Rad	Cobalt	7440-48-4	ug/kg	9000.0	1.3E+04	6.9E-01	1.1E+05	8.1E-02
100-D-31:8_Shallow_Focused_1	non-Rad	Copper	7440-50-8	ug/kg	16200.0	5.0E+04	3.2E-01	1.1E+05	1.5E-01
100-D-31:8_Shallow_Focused_1	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	190.0	No Value	--	1.3E+06	1.5E-04
100-D-31:8_Shallow_Focused_1	non-Rad	Isophorone	78-59-1	ug/kg	77.1	No Value	--	No Value	--
100-D-31:8_Shallow_Focused_1	non-Rad	Lead	7439-92-1	ug/kg	2510.0	5.0E+04	5.0E-02	3.6E+04	7.1E-02
100-D-31:8_Shallow_Focused_1	non-Rad	Manganese	7439-96-5	ug/kg	334000.0	2.2E+05	**1.5E+00**	5.8E+06	5.8E-02
100-D-31:8_Shallow_Focused_1	non-Rad	Mercury	7439-97-6	ug/kg	26.0	1.0E+02	2.6E-01	1.9E+03	1.4E-02
100-D-31:8_Shallow_Focused_1	non-Rad	Molybdenum	7439-98-7	ug/kg	502.0	2.0E+03	2.5E-01	1.4E+04	3.6E-02
100-D-31:8_Shallow_Focused_1	non-Rad	Nickel	7440-02-0	ug/kg	8890.0	3.0E+04	3.0E-01	3.3E+04	2.7E-01
100-D-31:8_Shallow_Focused_1	non-Rad	Nitrate	14797-55-8	ug/kg	9400.0	No Value	--	3.4E+08	2.8E-05
100-D-31:8_Shallow_Focused_1	non-Rad	Silver	7440-22-4	ug/kg	147.0	2.0E+03	7.4E-02	5.0E+04	3.0E-03
100-D-31:8_Shallow_Focused_1	non-Rad	Vanadium	7440-62-2	ug/kg	94900.0	2.0E+03	**4.8E+01**	3.1E+04	**3.1E+00**
100-D-31:8_Shallow_Focused_1	non-Rad	Zinc	7440-66-6	ug/kg	51800.0	5.0E+04	**1.0E+00**	6.8E+04	7.6E-01
100-D-31:8_Shallow_Focused_2	non-Rad	Arsenic	7440-38-2	ug/kg	5900.0	1.0E+04	5.9E-01	1.9E+05	3.1E-02
100-D-31:8_Shallow_Focused_2	non-Rad	Barium	7440-39-3	ug/kg	1570000.0	3.3E+05	**4.8E+00**	1.3E+06	**1.2E+00**
100-D-31:8_Shallow_Focused_2	non-Rad	Beryllium	7440-41-7	ug/kg	1300.0	1.0E+04	1.3E-01	1.4E+04	9.3E-02
100-D-31:8_Shallow_Focused_2	non-Rad	Boron	7440-42-8	ug/kg	169000.0	5.0E+02	**3.4E+02**	1.3E+05	**1.3E+00**
100-D-31:8_Shallow_Focused_2	non-Rad	Cadmium	7440-43-9	ug/kg	430.0	4.0E+03	1.1E-01	1.6E+03	2.6E-01
100-D-31:8_Shallow_Focused_2	non-Rad	Chromium	7440-47-3	ug/kg	13400.0	4.0E+02	**3.4E+01**	3.8E+04	3.5E-01
100-D-31:8_Shallow_Focused_2	non-Rad	Cobalt	7440-48-4	ug/kg	9900.0	1.3E+04	7.6E-01	1.1E+05	8.9E-02
100-D-31:8_Shallow_Focused_2	non-Rad	Copper	7440-50-8	ug/kg	42400.0	5.0E+04	8.5E-01	1.1E+05	4.0E-01
100-D-31:8_Shallow_Focused_2	non-Rad	Lead	7439-92-1	ug/kg	24200.0	5.0E+04	4.8E-01	3.6E+04	6.8E-01
100-D-31:8_Shallow_Focused_2	non-Rad	Manganese	7439-96-5	ug/kg	368000.0	2.2E+05	**1.7E+00**	5.8E+06	6.4E-02
100-D-31:8_Shallow_Focused_2	non-Rad	Mercury	7439-97-6	ug/kg	120.0	1.0E+02	**1.2E+00**	1.9E+03	6.4E-02
100-D-31:8_Shallow_Focused_2	non-Rad	Molybdenum	7439-98-7	ug/kg	2300.0	2.0E+03	**1.2E+00**	1.4E+04	1.7E-01
100-D-31:8_Shallow_Focused_2	non-Rad	Nickel	7440-02-0	ug/kg	19700.0	3.0E+04	6.6E-01	3.3E+04	6.1E-01
100-D-31:8_Shallow_Focused_2	non-Rad	Vanadium	7440-62-2	ug/kg	67200.0	2.0E+03	**3.4E+01**	3.1E+04	**2.2E+00**
100-D-31:8_Shallow_Focused_2	non-Rad	Zinc	7440-66-6	ug/kg	83000.0	5.0E+04	**1.7E+00**	6.8E+04	**1.2E+00**
100-D-31:9_Overburden	non-Rad	4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	ug/kg	31.0	No Value	--	4.0E+02	7.8E-02
100-D-31:9_Overburden	non-Rad	4,4'-DDT (Dichlorodiphenyltrichloroethane)	50-29-3	ug/kg	12.0	No Value	--	8.8E+02	1.4E-02
100-D-31:9_Overburden	non-Rad	Arsenic	7440-38-2	ug/kg	1175.3	1.0E+04	1.2E-01	1.9E+05	6.2E-03
100-D-31:9_Overburden	non-Rad	Barium	7440-39-3	ug/kg	58675.6	3.3E+05	1.8E-01	1.3E+06	4.4E-02
100-D-31:9_Overburden	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	ug/kg	87.1	1.0E+05	8.7E-04	4.5E+04	1.9E-03
100-D-31:9_Overburden	non-Rad	Cadmium	7440-43-9	ug/kg	73.7	4.0E+03	1.8E-02	1.6E+03	4.5E-02
100-D-31:9_Overburden	non-Rad	Chromium	7440-47-3	ug/kg	5328.4	4.0E+02	**1.3E+01**	3.8E+04	1.4E-01
100-D-31:9_Overburden	non-Rad	Cobalt	7440-48-4	ug/kg	8066.0	1.3E+04	6.2E-01	1.1E+05	7.2E-02
100-D-31:9_Overburden	non-Rad	Copper	7440-50-8	ug/kg	13689.4	5.0E+04	2.7E-01	1.1E+05	1.3E-01
100-D-31:9_Overburden	non-Rad	Fluoride	16984-48-8	ug/kg	900.0	No Value	--	2.3E+06	4.0E-04
100-D-31:9_Overburden	non-Rad	Lead	7439-92-1	ug/kg	3028.6	5.0E+04	6.1E-02	3.6E+04	8.5E-02
100-D-31:9_Overburden	non-Rad	Manganese	7439-96-5	ug/kg	292130.1	2.2E+05	**1.3E+00**	5.8E+06	5.0E-02
100-D-31:9_Overburden	non-Rad	Mercury	7439-97-6	ug/kg	7.6	1.0E+02	7.6E-02	1.9E+03	4.0E-03
100-D-31:9_Overburden	non-Rad	Molybdenum	7439-98-7	ug/kg	360.0	2.0E+03	1.8E-01	1.4E+04	2.6E-02
100-D-31:9_Overburden	non-Rad	Nickel	7440-02-0	ug/kg	9187.3	3.0E+04	3.1E-01	3.3E+04	2.8E-01
100-D-31:9_Overburden	non-Rad	Nitrogen in Nitrate	NO3-N	ug/kg	652.4	No Value	--	No Value	--
100-D-31:9_Overburden	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	ug/kg	1300.0	No Value	--	No Value	--
100-D-31:9_Overburden	non-Rad	Phenol	108-95-2	ug/kg	24.0	3.0E+04	8.0E-04	1.5E+06	1.6E-05
100-D-31:9_Overburden	Rad	Rads SOF	---	pCi/g	--	--	2.3E-05	--	9.3E-05
100-D-31:9_Overburden	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	ug/kg	2800.0	No Value	--	No Value	--
100-D-31:9_Overburden	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	772.5	5.0E+03	1.6E-01	3.6E+05	2.2E-03
100-D-31:9_Overburden	Rad	Uranium-234	13966-29-5	pCi/g	0.2	5.2E+04	4.5E-06	6.4E+03	3.6E-05
100-D-31:9_Overburden	Rad	Uranium-238	U-238	pCi/g	0.3	1.6E+04	1.8E-05	5.2E+03	5.6E-05
100-D-31:9_Overburden	non-Rad	Vanadium	7440-62-2	ug/kg	52679.8	2.0E+03	**2.6E+01**	3.1E+04	**1.7E+00**
100-D-31:9_Overburden	non-Rad	Zinc	7440-66-6	ug/kg	39154.9	5.0E+04	7.8E-01	6.8E+04	5.8E-01
100-D-31:9_Shallow	non-Rad	Arsenic	7440-38-2	ug/kg	2517.4	1.0E+04	2.5E-01	1.9E+05	1.3E-02
100-D-31:9_Shallow	non-Rad	Barium	7440-39-3	ug/kg	61242.5	3.3E+05	1.9E-01	1.3E+06	4.6E-02
100-D-31:9_Shallow	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	47.0	1.8E+04	2.6E-03	6.4E+04	7.3E-04
100-D-31:9_Shallow	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	14.3	1.8E+04	7.9E-04	7.6E+04	1.9E-04
100-D-31:9_Shallow	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	28.0	1.8E+04	1.6E-03	3.9E+04	7.1E-04
100-D-31:9_Shallow	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	11.0	1.8E+04	6.1E-04	3.9E+04	2.8E-04
100-D-31:9_Shallow	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	ug/kg	114.2	1.0E+05	1.1E-03	4.5E+04	2.5E-03
100-D-31:9_Shallow	non-Rad	Boron	7440-42-8	ug/kg	1100.0	5.0E+02	**2.2E+00**	1.3E+05	8.3E-03
100-D-31:9_Shallow	non-Rad	Cadmium	7440-43-9	ug/kg	52.7	4.0E+03	1.3E-02	1.6E+03	3.2E-02

Table 4. Comparison of 100-D OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
100-D-31:9_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	5132.3	4.0E+02	**1.3E+01**	3.8E+04	1.3E-01
100-D-31:9_Shallow	non-Rad	Chrysene	218-01-9	ug/kg	18.6	1.8E+04	1.0E-03	4.5E+04	4.2E-04
100-D-31:9_Shallow	non-Rad	Cobalt	7440-48-4	ug/kg	8665.9	1.3E+04	6.7E-01	1.1E+05	7.8E-02
100-D-31:9_Shallow	non-Rad	Copper	7440-50-8	ug/kg	14871.5	5.0E+04	3.0E-01	1.1E+05	1.4E-01
100-D-31:9_Shallow	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	222.0	No Value	--	1.3E+06	1.8E-04
100-D-31:9_Shallow	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	12.0	1.8E+04	6.7E-04	3.6E+04	3.4E-04
100-D-31:9_Shallow	non-Rad	Lead	7439-92-1	ug/kg	2853.4	5.0E+04	5.7E-02	3.6E+04	8.0E-02
100-D-31:9_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	318748.4	2.2E+05	**1.5E+00**	5.8E+06	5.5E-02
100-D-31:9_Shallow	non-Rad	Mercury	7439-97-6	ug/kg	6.6	1.0E+02	6.6E-02	1.9E+03	3.6E-03
100-D-31:9_Shallow	non-Rad	Molybdenum	7439-98-7	ug/kg	260.0	2.0E+03	1.3E-01	1.4E+04	1.9E-02
100-D-31:9_Shallow	non-Rad	Nickel	7440-02-0	ug/kg	8677.7	3.0E+04	2.9E-01	3.3E+04	2.7E-01
100-D-31:9_Shallow	non-Rad	Nitrogen in Nitrate	NO3-N	ug/kg	607.3	No Value	--	No Value	--
100-D-31:9_Shallow	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	ug/kg	690.0	No Value	--	No Value	--
100-D-31:9_Shallow	non-Rad	Pyrene	129-00-0	ug/kg	70.0	1.8E+04	3.9E-03	6.0E+05	1.2E-04
100-D-31:9_Shallow	Rad	Rads SOF	---	pCi/g	--	--	1.9E-05	--	7.5E-05
100-D-31:9_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	734.7	5.0E+03	1.5E-01	3.6E+05	2.0E-03
100-D-31:9_Shallow	Rad	Uranium-234	13966-29-5	pCi/g	0.2	5.2E+04	3.3E-06	6.4E+03	2.7E-05
100-D-31:9_Shallow	Rad	Uranium-238	U-238	pCi/g	0.2	1.6E+04	1.6E-05	5.2E+03	4.8E-05
100-D-31:9_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	57014.2	2.0E+03	**2.9E+01**	3.1E+04	**1.8E+00**
100-D-31:9_Shallow	non-Rad	Zinc	7440-66-6	ug/kg	40433.1	5.0E+04	8.1E-01	6.8E+04	6.0E-01
100-D-32_Overburden	non-Rad	Antimony	7440-36-0	ug/kg	833.2	5.0E+03	1.7E-01	6.0E+03	1.4E-01
100-D-32_Overburden	non-Rad	Arsenic	7440-38-2	ug/kg	3245.1	1.0E+04	3.3E-01	1.9E+05	1.7E-02
100-D-32_Overburden	non-Rad	Barium	7440-39-3	ug/kg	74480.3	3.3E+05	2.3E-01	1.3E+06	5.6E-02
100-D-32_Overburden	non-Rad	Beryllium	7440-41-7	ug/kg	224.7	1.0E+04	2.3E-02	1.4E+04	1.6E-02
100-D-32_Overburden	non-Rad	Boron	7440-42-8	ug/kg	1234.5	5.0E+02	**2.5E+00**	1.3E+05	9.3E-03
100-D-32_Overburden	non-Rad	Cadmium	7440-43-9	ug/kg	200.0	4.0E+03	5.0E-02	1.6E+03	1.2E-01
100-D-32_Overburden	non-Rad	Chromium	7440-47-3	ug/kg	11852.1	4.0E+02	**3.0E+01**	3.8E+04	3.1E-01
100-D-32_Overburden	non-Rad	Cobalt	7440-48-4	ug/kg	8060.7	1.3E+04	6.2E-01	1.1E+05	7.2E-02
100-D-32_Overburden	non-Rad	Copper	7440-50-8	ug/kg	18182.7	5.0E+04	3.6E-01	1.1E+05	1.7E-01
100-D-32_Overburden	non-Rad	Lead	7439-92-1	ug/kg	3836.0	5.0E+04	7.7E-02	3.6E+04	1.1E-01
100-D-32_Overburden	non-Rad	Manganese	7439-96-5	ug/kg	369294.4	2.2E+05	**1.7E+00**	5.8E+06	6.4E-02
100-D-32_Overburden	non-Rad	Molybdenum	7439-98-7	ug/kg	549.3	2.0E+03	2.8E-01	1.4E+04	3.9E-02
100-D-32_Overburden	non-Rad	Nickel	7440-02-0	ug/kg	12365.2	3.0E+04	4.1E-01	3.3E+04	3.8E-01
100-D-32_Overburden	Rad	Rads SOF	---	pCi/g	--	--	5.1E-05	--	2.2E-04
100-D-32_Overburden	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	1762.1	5.0E+03	3.5E-01	3.6E+05	4.9E-03
100-D-32_Overburden	Rad	Uranium-233/234	U-233/234	pCi/g	0.6	5.2E+04	1.2E-05	6.4E+03	9.6E-05
100-D-32_Overburden	Rad	Uranium-235	15117-96-1	pCi/g	0.0	2.7E+04	1.6E-06	4.4E+03	9.9E-06
100-D-32_Overburden	Rad	Uranium-238	U-238	pCi/g	0.6	1.6E+04	3.8E-05	5.2E+03	1.1E-04
100-D-32_Overburden	non-Rad	Vanadium	7440-62-2	ug/kg	76983.5	2.0E+03	**3.9E+01**	3.1E+04	**2.5E+00**
100-D-32_Overburden	non-Rad	Zinc	7440-66-6	ug/kg	51820.9	5.0E+04	**1.0E+00**	6.8E+04	7.6E-01
100-D-32_Shallow	non-Rad	Antimony	7440-36-0	ug/kg	825.9	5.0E+03	1.7E-01	6.0E+03	1.4E-01
100-D-32_Shallow	non-Rad	Arsenic	7440-38-2	ug/kg	2499.2	1.0E+04	2.5E-01	1.9E+05	1.3E-02
100-D-32_Shallow	non-Rad	Barium	7440-39-3	ug/kg	68886.9	3.3E+05	2.1E-01	1.3E+06	5.2E-02
100-D-32_Shallow	non-Rad	Beryllium	7440-41-7	ug/kg	694.1	1.0E+04	6.9E-02	1.4E+04	5.0E-02
100-D-32_Shallow	non-Rad	Boron	7440-42-8	ug/kg	1505.0	5.0E+02	**3.0E+00**	1.3E+05	1.1E-02
100-D-32_Shallow	non-Rad	Cadmium	7440-43-9	ug/kg	200.0	4.0E+03	5.0E-02	1.6E+03	1.2E-01
100-D-32_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.1	2.2E+03	4.7E-05	9.2E+02	1.1E-04
100-D-32_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	10447.4	4.0E+02	**2.6E+01**	3.8E+04	2.7E-01
100-D-32_Shallow	non-Rad	Cobalt	7440-48-4	ug/kg	7969.5	1.3E+04	6.1E-01	1.1E+05	7.2E-02
100-D-32_Shallow	non-Rad	Copper	7440-50-8	ug/kg	14996.7	5.0E+04	3.0E-01	1.1E+05	1.4E-01
100-D-32_Shallow	non-Rad	Lead	7439-92-1	ug/kg	5773.9	5.0E+04	1.2E-01	3.6E+04	1.6E-01
100-D-32_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	356899.4	2.2E+05	**1.6E+00**	5.8E+06	6.2E-02
100-D-32_Shallow	non-Rad	Molybdenum	7439-98-7	ug/kg	568.2	2.0E+03	2.8E-01	1.4E+04	4.1E-02
100-D-32_Shallow	non-Rad	Nickel	7440-02-0	ug/kg	12032.8	3.0E+04	4.0E-01	3.3E+04	3.7E-01
100-D-32_Shallow	Rad	Nickel-63	13981-37-8	pCi/g	4.0	No Value	--	No Value	--
100-D-32_Shallow	Rad	Rads SOF	---	pCi/g	--	--	9.1E-05	--	3.1E-04
100-D-32_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	1465.9	5.0E+03	2.9E-01	3.6E+05	4.1E-03
100-D-32_Shallow	Rad	Uranium-233/234	U-233/234	pCi/g	0.5	5.2E+04	9.7E-06	6.4E+03	7.8E-05
100-D-32_Shallow	Rad	Uranium-234	13966-29-5	pCi/g	0.1	5.2E+04	2.6E-06	6.4E+03	2.1E-05
100-D-32_Shallow	Rad	Uranium-238	U-238	pCi/g	0.5	1.6E+04	3.1E-05	5.2E+03	9.6E-05
100-D-32_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	76249.0	2.0E+03	**3.8E+01**	3.1E+04	**2.5E+00**
100-D-32_Shallow	non-Rad	Zinc	7440-66-6	ug/kg	62122.5	5.0E+04	**1.2E+00**	6.8E+04	9.2E-01
100-D-4_Overburden	Rad	Cesium-137	10045-97-3	pCi/g	0.1	2.2E+03	5.8E-05	9.2E+02	1.4E-04
100-D-4_Overburden	Rad	Rads SOF	---	pCi/g	--	--	1.3E-04	--	3.5E-04
100-D-4_Overburden	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	3274.3	5.0E+03	6.6E-01	3.6E+05	9.1E-03
100-D-4_Overburden	Rad	Uranium-238	U-238	pCi/g	1.1	1.6E+04	7.0E-05	5.2E+03	2.1E-04
100-D-4_Shallow	non-Rad	Aroclor HI	---	ug/kg	--	--	4.8E-03	--	1.3E-01
100-D-4_Shallow	non-Rad	Aroclor-1254	11097-69-1	ug/kg	71.0	4.0E+04	1.8E-03	1.5E+03	4.8E-02
100-D-4_Shallow	non-Rad	Aroclor-1260	11096-82-5	ug/kg	120.0	4.0E+04	3.0E-03	1.5E+03	8.1E-02
100-D-4_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.1	2.2E+03	5.4E-05	9.2E+02	1.3E-04
100-D-4_Shallow	Rad	Europium-152	14683-23-9	pCi/g	0.3	1.5E+04	1.9E-05	1.7E+03	1.6E-04
100-D-4_Shallow	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	199.0	No Value	--	1.3E+06	1.6E-04
100-D-4_Shallow	Rad	Rads SOF	---	pCi/g	--	--	1.5E-04	--	1.8E-03
100-D-4_Shallow	Rad	Total beta radiostrontium	SR-RAD	pCi/g	0.13	3.6E+03	3.5E-05	9.1E+01	1.4E-03
100-D-4_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	1,831	5.0E+03	3.7E-01	3.6E+05	5.1E-03
100-D-4_Shallow	Rad	Uranium-238	U-238	pCi/g	0.62	1.6E+04	3.9E-05	5.2E+03	1.2E-04
100-D-42, 100-D-43, 100-D-45_Overburden	non-Rad	Antimony	7440-36-0	ug/kg	393	5.0E+03	7.9E-02	6.0E+03	6.6E-02
100-D-42, 100-D-43, 100-D-45_Overburden	non-Rad	Arsenic	7440-38-2	ug/kg	2,340	1.0E+04	2.3E-01	1.9E+05	1.2E-02
100-D-42, 100-D-43, 100-D-45_Overburden	non-Rad	Barium	7440-39-3	ug/kg	61,074	3.3E+05	1.9E-01	1.3E+06	4.6E-02
100-D-42, 100-D-43, 100-D-45_Overburden	non-Rad	Beryllium	7440-41-7	ug/kg	233	1.0E+04	2.3E-02	1.4E+04	1.7E-02
100-D-42, 100-D-43, 100-D-45_Overburden	non-Rad	Boron	7440-42-8	ug/kg	929	5.0E+02	**1.9E+00**	1.3E+05	7.0E-03
100-D-42, 100-D-43, 100-D-45_Overburden	non-Rad	Cadmium	7440-43-9	ug/kg	101	4.0E+03	2.5E-02	1.6E+03	6.2E-02
100-D-42, 100-D-43, 100-D-45_Overburden	non-Rad	Chromium	7440-47-3	ug/kg	9,297	4.0E+02	**2.3E+01**	3.8E+04	2.4E-01
100-D-42, 100-D-43, 100-D-45_Overburden	non-Rad	Cobalt	7440-48-4	ug/kg	8,359	1.3E+04	6.4E-01	1.1E+05	7.5E-02
100-D-42, 100-D-43, 100-D-45_Overburden	non-Rad	Copper	7440-50-8	ug/kg	26,641	5.0E+04	5.3E-01	1.1E+05	2.5E-01
100-D-42, 100-D-43, 100-D-45_Overburden	non-Rad	Lead	7439-92-1	ug/kg	3,752	5.0E+04	7.5E-02	3.6E+04	1.1E-01
100-D-42, 100-D-43, 100-D-45_Overburden	non-Rad	Manganese	7439-96-5	ug/kg	316,433	2.2E+05	**1.4E+00**	5.8E+06	5.5E-02
100-D-42, 100-D-43, 100-D-45_Overburden	non-Rad	Mercury	7439-97-6	ug/kg	20	1.0E+02	2.0E-01	1.9E+03	1.1E-02
100-D-42, 100-D-43, 100-D-45_Overburden	non-Rad	Molybdenum	7439-98-7	ug/kg	513	2.0E+03	2.6E-01	1.4E+04	3.7E-02
100-D-42, 100-D-43, 100-D-45_Overburden	non-Rad	Nickel	7440-02-0	ug/kg	10,120	3.0E+04	3.4E-01	3.3E+04	3.1E-01
100-D-42, 100-D-43, 100-D-45_Overburden	non-Rad	Selenium	7782-49-2	ug/kg	700	5.2E+02	**1.4E+00**	1.9E+03	3.7E-01
100-D-42, 100-D-43, 100-D-45_Overburden	non-Rad	Vanadium	7440-62-2	ug/kg	63,875	2.0E+03	**3.2E+01**	3.1E+04	**2.1E+00**
100-D-42, 100-D-43, 100-D-45_Overburden	non-Rad	Zinc	7440-66-6	ug/kg	43,856	5.0E+04	8.8E-01	6.8E+04	6.5E-01
100-D-42, 100-D-43, 100-D-45_Shallow	non-Rad	Antimony	7440-36-0	ug/kg	456	5.0E+03	9.1E-02	6.0E+03	7.6E-02
100-D-42, 100-D-43, 100-D-45_Shallow	non-Rad	Arsenic	7440-38-2	ug/kg	1,740	1.0E+04	1.7E-01	1.9E+05	9.2E-03
100-D-42, 100-D-43, 100-D-45_Shallow	non-Rad	Barium	7440-39-3	ug/kg	60,900	3.3E+05	1.9E-01	1.3E+06	4.6E-02
100-D-42, 100-D-43, 100-D-45_Shallow	non-Rad	Beryllium	7440-41-7	ug/kg	242	1.0E+04	2.4E-02	1.4E+04	1.7E-02
100-D-42, 100-D-43, 100-D-45_Shallow	non-Rad	Boron	7440-42-8	ug/kg	1,181	5.0E+02	**2.4E+00**	1.3E+05	8.9E-03
100-D-42, 100-D-43, 100-D-45_Shallow	non-Rad	Cadmium	7440-43-9	ug/kg	91	4.0E+03	2.3E-02	1.6E+03	5.6E-02
100-D-42, 100-D-43, 100-D-45_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.16	2.2E+03	7.2E-05	9.2E+02	1.7E-04
100-D-42, 100-D-43, 100-D-45_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	7,963	4.0E+02	**2.0E+01**	3.8E+04	2.1E-01
100-D-42, 100-D-43, 100-D-45_Shallow	non-Rad	Cobalt	7440-48-4	ug/kg	8,682	1.3E+04	6.7E-01	1.1E+05	7.8E-02
100-D-42, 100-D-43, 100-D-45_Shallow	Rad	Cobalt-60	10198-40-0	pCi/g	0.062	6.1E+03	1.0E-05	8.1E+02	7.7E-05
100-D-42, 100-D-43, 100-D-45_Shallow	non-Rad	Copper	7440-50-8	ug/kg	90,384	5.0E+04	**1.8E+00**	1.1E+05	8.4E-01
100-D-42, 100-D-43, 100-D-45_Shallow	non-Rad	Lead	7439-92-1	ug/kg	4,745	5.0E+04	9.5E-02	3.6E+04	1.3E-01
100-D-42, 100-D-43, 100-D-45_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	313,773	2.2E+05	**1.4E+00**	5.8E+06	5.4E-02
100-D-42, 100-D-43, 100-D-45_Shallow	non-Rad	Mercury	7439-97-6	ug/kg	14	1.0E+02	1.4E-01	1.9E+03	7.5E-03
100-D-42, 100-D-43, 100-D-45_Shallow	non-Rad	Molybdenum	7439-98-7	ug/kg	520	2.0E+03	2.6E-01	1.4E+04	3.7E-02
100-D-42, 100-D-43, 100-D-45_Shallow	non-Rad	Nickel	7440-02-0	ug/kg	9,516	3.0E+04	3.2E-01	3.3E+04	2.9E-01
100-D-42, 100-D-43, 100-D-45_Shallow	Rad	Rads SOF	---	pCi/g	--	--	8.2E-05	--	2.5E-04
100-D-42, 100-D-43, 100-D-45_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	69326.3	2.0E+03	**3.5E+01**	3.1E+04	**2.2E+00**
100-D-42, 100-D-43, 100-D-45_Shallow	non-Rad	Zinc	7440-66-6	ug/kg	59192.2	5.0E+04	**1.2E+00**	6.8E+04	8.7E-01
100-D-42, 100-D-43, 100-D-45_Shallow_Focused	non-Rad	Arsenic	7440-38-2	ug/kg	2000.0	1.0E+04	2.0E-01	1.9E+05	1.1E-02
100-D-42, 100-D-43, 100-D-45_Shallow_Focused	non-Rad	Barium	7440-39-3	ug/kg	59000.0	3.3E+05	1.8E-01	1.3E+06	4.5E-02
100-D-42, 100-D-43, 100-D-45_Shallow_Focused	non-Rad	Beryllium	7440-41-7	ug/kg	100.0	1.0E+04	1.0E-02	1.4E+04	7.2E-03
100-D-42, 100-D-43, 100-D-45_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	660.0	5.0E+02	**1.3E+00**	1.3E+05	5.0E-03
100-D-42, 100-D-43, 100-D-45_Shallow_Focused	non-Rad	Cadmium	7440-43-9	ug/kg	160.0	4.0E+03	4.0E-02	1.6E+03	9.8E-02

Table 4. Comparison of 100-D OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
100-D-42, 100-D-43, 100-D-45_Shallow_Focused	Rad	Cesium-137	10045-97-3	pCi/g	0.6	2.2E+03	2.9E-04	9.2E+02	7.0E-04
100-D-42, 100-D-43, 100-D-45_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	7800.0	4.0E+02	**2.0E+01**	3.8E+04	2.0E-01
100-D-42, 100-D-43, 100-D-45_Shallow_Focused	non-Rad	Cobalt	7440-48-4	ug/kg	9700.0	1.3E+04	7.5E-01	1.1E+05	8.7E-02
100-D-42, 100-D-43, 100-D-45_Shallow_Focused	Rad	Cobalt-60	10198-40-0	pCi/g	1.2	6.1E+03	2.0E-04	8.1E+02	1.5E-03
100-D-42, 100-D-43, 100-D-45_Shallow_Focused	non-Rad	Copper	7440-50-8	ug/kg	15500.0	5.0E+04	3.1E-01	1.1E+05	1.5E-01
100-D-42, 100-D-43, 100-D-45_Shallow_Focused	non-Rad	Fluorene	86-73-7	ug/kg	1.9	2.9E+04	6.6E-05	1.8E+05	1.1E-05
100-D-42, 100-D-43, 100-D-45_Shallow_Focused	non-Rad	Lead	7439-92-1	ug/kg	3200.0	5.0E+04	6.4E-02	3.6E+04	9.0E-02
100-D-42, 100-D-43, 100-D-45_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	335000.0	2.2E+05	**1.5E+00**	5.8E+06	5.8E-02
100-D-42, 100-D-43, 100-D-45_Shallow_Focused	non-Rad	Methylene chloride	75-09-2	ug/kg	10.0	No Value	--	1.7E+05	6.0E-05
100-D-42, 100-D-43, 100-D-45_Shallow_Focused	non-Rad	Molybdenum	7439-98-7	ug/kg	530.0	2.0E+03	2.7E-01	1.4E+04	3.8E-02
100-D-42, 100-D-43, 100-D-45_Shallow_Focused	non-Rad	Nickel	7440-02-0	ug/kg	9200.0	3.0E+04	3.1E-01	3.3E+04	2.8E-01
100-D-42, 100-D-43, 100-D-45_Shallow_Focused	Rad	Nickel-63	13981-37-8	pCi/g	464.0	No Value	--	No Value	--
100-D-42, 100-D-43, 100-D-45_Shallow_Focused	Rad	Rads SOF	---	pCi/g	--	--	4.9E-04	--	2.2E-03
100-D-42, 100-D-43, 100-D-45_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	77900.0	2.0E+03	**3.9E+01**	3.1E+04	**2.5E+00**
100-D-42, 100-D-43, 100-D-45_Shallow_Focused	non-Rad	Zinc	7440-66-6	ug/kg	55000.0	5.0E+04	**1.1E+00**	6.8E+04	8.1E-01
100-D-47_Overburden	non-Rad	Antimony	7440-36-0	ug/kg	789.4	5.0E+03	1.6E-01	6.0E+03	1.3E-01
100-D-47_Overburden	non-Rad	Arsenic	7440-38-2	ug/kg	3159.0	1.0E+04	3.2E-01	1.9E+05	1.7E-02
100-D-47_Overburden	non-Rad	Barium	7440-39-3	ug/kg	74846.8	3.3E+05	2.3E-01	1.3E+06	5.7E-02
100-D-47_Overburden	non-Rad	Beryllium	7440-41-7	ug/kg	224.7	1.0E+04	2.3E-02	1.4E+04	1.6E-02
100-D-47_Overburden	non-Rad	Boron	7440-42-8	ug/kg	1497.1	5.0E+02	**3.0E+00**	1.3E+05	1.1E-02
100-D-47_Overburden	non-Rad	Cadmium	7440-43-9	ug/kg	200.0	4.0E+03	5.0E-02	1.6E+03	1.2E-01
100-D-47_Overburden	non-Rad	Chromium	7440-47-3	ug/kg	11948.3	4.0E+02	**3.0E+01**	3.8E+04	3.1E-01
100-D-47_Overburden	non-Rad	Cobalt	7440-48-4	ug/kg	7294.8	1.3E+04	5.6E-01	1.1E+05	6.5E-02
100-D-47_Overburden	non-Rad	Copper	7440-50-8	ug/kg	15503.8	5.0E+04	3.1E-01	1.1E+05	1.5E-01
100-D-47_Overburden	non-Rad	Lead	7439-92-1	ug/kg	4065.5	5.0E+04	8.1E-02	3.6E+04	1.1E-01
100-D-47_Overburden	non-Rad	Manganese	7439-96-5	ug/kg	342771.4	2.2E+05	**1.6E+00**	5.8E+06	5.9E-02
100-D-47_Overburden	non-Rad	Mercury	7439-97-6	ug/kg	11.0	1.0E+02	1.1E-01	1.9E+03	5.9E-03
100-D-47_Overburden	non-Rad	Molybdenum	7439-98-7	ug/kg	492.2	2.0E+03	2.5E-01	1.4E+04	3.5E-02
100-D-47_Overburden	non-Rad	Nickel	7440-02-0	ug/kg	12406.0	3.0E+04	4.1E-01	3.3E+04	3.8E-01
100-D-47_Overburden	Rad	Rads SOF	---	pCi/g	--	--	6.1E-04	--	2.2E-02
100-D-47_Overburden	Rad	Total beta radiostrontium	SR-RAD	pCi/g	2.0	3.6E+03	5.6E-04	9.1E+01	2.2E-02
100-D-47_Overburden	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	1713.1	5.0E+03	3.4E-01	3.6E+05	4.8E-03
100-D-47_Overburden	Rad	Uranium-233/234	U-233/234	pCi/g	0.6	5.2E+04	1.2E-05	6.4E+03	1.0E-04
100-D-47_Overburden	Rad	Uranium-235	15117-96-1	pCi/g	0.1	2.7E+04	2.0E-06	4.4E+03	1.3E-05
100-D-47_Overburden	Rad	Uranium-238	U-238	pCi/g	0.6	1.6E+04	3.7E-05	5.2E+03	1.1E-04
100-D-47_Overburden	non-Rad	Vanadium	7440-62-2	ug/kg	68751.6	2.0E+03	**3.4E+01**	3.1E+04	**2.2E+00**
100-D-47_Overburden	non-Rad	Zinc	7440-66-6	ug/kg	45247.8	5.0E+04	9.1E-01	6.8E+04	6.7E-01
100-D-47_Shallow	non-Rad	Arsenic	7440-38-2	ug/kg	3157.1	1.0E+04	3.2E-01	1.9E+05	1.7E-02
100-D-47_Shallow	non-Rad	Barium	7440-39-3	ug/kg	74541.7	3.3E+05	2.3E-01	1.3E+06	5.6E-02
100-D-47_Shallow	non-Rad	Beryllium	7440-41-7	ug/kg	509.7	1.0E+04	5.1E-02	1.4E+04	3.7E-02
100-D-47_Shallow	non-Rad	Boron	7440-42-8	ug/kg	1317.4	5.0E+02	**2.6E+00**	1.3E+05	9.9E-03
100-D-47_Shallow	non-Rad	Cadmium	7440-43-9	ug/kg	224.7	4.0E+03	5.6E-02	1.6E+03	1.4E-01
100-D-47_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.1	2.2E+03	4.1E-05	9.2E+02	9.7E-05
100-D-47_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	11827.8	4.0E+02	**3.0E+01**	3.8E+04	3.1E-01
100-D-47_Shallow	non-Rad	Cobalt	7440-48-4	ug/kg	7982.2	1.3E+04	6.1E-01	1.1E+05	7.2E-02
100-D-47_Shallow	Rad	Cobalt-60	10198-40-0	pCi/g	0.6	6.1E+03	9.9E-05	8.1E+02	7.5E-04
100-D-47_Shallow	non-Rad	Copper	7440-50-8	ug/kg	15445.3	5.0E+04	3.1E-01	1.1E+05	1.4E-01
100-D-47_Shallow	Rad	Europium-152	14683-23-9	pCi/g	0.2	1.5E+04	1.2E-05	1.7E+03	1.0E-04
100-D-47_Shallow	non-Rad	Lead	7439-92-1	ug/kg	4017.7	5.0E+04	8.0E-02	3.6E+04	1.1E-01
100-D-47_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	338839.4	2.2E+05	**1.5E+00**	5.8E+06	5.8E-02
100-D-47_Shallow	non-Rad	Molybdenum	7439-98-7	ug/kg	500.8	2.0E+03	2.5E-01	1.4E+04	3.6E-02
100-D-47_Shallow	non-Rad	Nickel	7440-02-0	ug/kg	11350.5	3.0E+04	3.8E-01	3.3E+04	3.5E-01
100-D-47_Shallow	Rad	Nickel-63	13981-37-8	pCi/g	7.2	No Value	--	No Value	--
100-D-47_Shallow	Rad	Rads SOF	---	pCi/g	--	--	4.6E-04	--	1.1E-02
100-D-47_Shallow	Rad	Total beta radiostrontium	SR-RAD	pCi/g	0.9	3.6E+03	2.6E-04	9.1E+01	1.0E-02
100-D-47_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	1694.4	5.0E+03	3.4E-01	3.6E+05	4.7E-03
100-D-47_Shallow	Rad	Uranium-233/234	U-233/234	pCi/g	0.6	5.2E+04	1.2E-05	6.4E+03	9.5E-05
100-D-47_Shallow	Rad	Uranium-235	15117-96-1	pCi/g	0.0	2.7E+04	1.4E-06	4.4E+03	8.9E-06
100-D-47_Shallow	Rad	Uranium-238	U-238	pCi/g	0.6	1.6E+04	3.6E-05	5.2E+03	1.1E-04
100-D-47_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	70090.4	2.0E+03	**3.5E+01**	3.1E+04	**2.3E+00**
100-D-47_Shallow	non-Rad	Zinc	7440-66-6	ug/kg	49435.4	5.0E+04	9.9E-01	6.8E+04	7.3E-01
100-D-47_Shallow_Focused	non-Rad	Antimony	7440-36-0	ug/kg	700.0	5.0E+03	1.4E-01	6.0E+03	1.2E-01
100-D-47_Shallow_Focused	non-Rad	Arsenic	7440-38-2	ug/kg	3300.0	1.0E+04	3.3E-01	1.9E+05	1.7E-02
100-D-47_Shallow_Focused	non-Rad	Barium	7440-39-3	ug/kg	69600.0	3.3E+05	2.1E-01	1.3E+06	5.3E-02
100-D-47_Shallow_Focused	non-Rad	Beryllium	7440-41-7	ug/kg	300.0	1.0E+04	3.0E-02	1.4E+04	2.2E-02
100-D-47_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	1700.0	5.0E+02	**3.4E+00**	1.3E+05	1.3E-02
100-D-47_Shallow_Focused	non-Rad	Cadmium	7440-43-9	ug/kg	200.0	4.0E+03	5.0E-02	1.6E+03	1.2E-01
100-D-47_Shallow_Focused	Rad	Cesium-137	10045-97-3	pCi/g	0.7	2.2E+03	3.1E-04	9.2E+02	7.4E-04
100-D-47_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	11300.0	4.0E+02	**2.8E+01**	3.8E+04	3.0E-01
100-D-47_Shallow_Focused	non-Rad	Cobalt	7440-48-4	ug/kg	8500.0	1.3E+04	6.5E-01	1.1E+05	7.6E-02
100-D-47_Shallow_Focused	Rad	Cobalt-60	10198-40-0	pCi/g	0.1	6.1E+03	2.2E-05	8.1E+02	1.6E-04
100-D-47_Shallow_Focused	non-Rad	Copper	7440-50-8	ug/kg	14100.0	5.0E+04	2.8E-01	1.1E+05	1.3E-01
100-D-47_Shallow_Focused	Rad	Europium-152	14683-23-9	pCi/g	1.5	1.5E+04	1.0E-04	1.7E+03	8.7E-04
100-D-47_Shallow_Focused	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	320.0	No Value	--	1.3E+06	2.6E-04
100-D-47_Shallow_Focused	non-Rad	Lead	7439-92-1	ug/kg	5100.0	5.0E+04	1.0E-01	3.6E+04	1.4E-01
100-D-47_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	360000.0	2.2E+05	**1.6E+00**	5.8E+06	6.2E-02
100-D-47_Shallow_Focused	non-Rad	Molybdenum	7439-98-7	ug/kg	500.0	2.0E+03	2.5E-01	1.4E+04	3.6E-02
100-D-47_Shallow_Focused	non-Rad	Nickel	7440-02-0	ug/kg	11300.0	3.0E+04	3.8E-01	3.3E+04	3.5E-01
100-D-47_Shallow_Focused	Rad	Nickel-63	13981-37-8	pCi/g	36.2	No Value	--	No Value	--
100-D-47_Shallow_Focused	Rad	Rads SOF	---	pCi/g	--	--	8.1E-04	--	1.5E-02
100-D-47_Shallow_Focused	Rad	Total beta radiostrontium	SR-RAD	pCi/g	1.2	3.6E+03	3.3E-04	9.1E+01	1.3E-02
100-D-47_Shallow_Focused	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	1550.9	5.0E+03	3.1E-01	3.6E+05	4.3E-03
100-D-47_Shallow_Focused	Rad	Uranium-233/234	U-233/234	pCi/g	0.5	5.2E+04	1.1E-05	6.4E+03	8.5E-05
100-D-47_Shallow_Focused	Rad	Uranium-238	U-238	pCi/g	0.5	1.6E+04	3.3E-05	5.2E+03	1.0E-04
100-D-47_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	85700.0	2.0E+03	**4.3E+01**	3.1E+04	**2.8E+00**
100-D-47_Shallow_Focused	non-Rad	Zinc	7440-66-6	ug/kg	55300.0	5.0E+04	**1.1E+00**	6.8E+04	8.2E-01
100-D-48:1_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.3	2.2E+03	1.2E-04	9.2E+02	2.9E-04
100-D-48:1_Shallow	Rad	Europium-152	14683-23-9	pCi/g	0.3	1.5E+04	2.1E-05	1.7E+03	1.8E-04
100-D-48:1_Shallow	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	643.0	No Value	--	1.3E+06	5.2E-04
100-D-48:1_Shallow	Rad	Rads SOF	---	pCi/g	--	--	2.3E-04	--	2.8E-03
100-D-48:1_Shallow	Rad	Total beta radiostrontium	SR-RAD	pCi/g	0.2	3.6E+03	5.5E-05	9.1E+01	2.2E-03
100-D-48:1_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	1223.1	5.0E+03	2.5E-01	3.6E+05	3.4E-03
100-D-48:1_Shallow	Rad	Uranium-233/234	U-233/234	pCi/g	0.5	5.2E+04	9.6E-06	6.4E+03	7.8E-05
100-D-48:1_Shallow	Rad	Uranium-238	U-238	pCi/g	0.4	1.6E+04	2.6E-05	5.2E+03	8.0E-05
100-D-48:2_Overburden	Rad	Cesium-137	10045-97-3	pCi/g	0.1	2.2E+03	4.1E-05	9.2E+02	9.9E-05
100-D-48:2_Overburden	Rad	Cobalt-60	10198-40-0	pCi/g	0.1	6.1E+03	9.0E-06	8.1E+02	6.8E-05
100-D-48:2_Overburden	Rad	Europium-152	14683-23-9	pCi/g	0.1	1.5E+04	7.8E-06	1.7E+03	6.6E-05
100-D-48:2_Overburden	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	608.3	No Value	--	1.3E+06	4.9E-04
100-D-48:2_Overburden	Rad	Plutonium-239/240	PU-239/240	pCi/g	0.0	1.3E+04	2.0E-06	6.3E+03	4.0E-06
100-D-48:2_Overburden	Rad	Rads SOF	---	pCi/g	--	--	1.0E-04	--	4.1E-04
100-D-48:2_Overburden	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	1414.7	5.0E+03	2.8E-01	3.6E+05	3.9E-03
100-D-48:2_Overburden	Rad	Uranium-233/234	U-233/234	pCi/g	0.5	5.2E+04	9.3E-06	6.4E+03	7.5E-05
100-D-48:2_Overburden	Rad	Uranium-235	15117-96-1	pCi/g	0.0	2.7E+04	1.3E-06	4.4E+03	8.0E-06
100-D-48:2_Overburden	Rad	Uranium-238	U-238	pCi/g	0.5	1.6E+04	3.0E-05	5.2E+03	9.2E-05
100-D-48:2_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.9	2.2E+03	4.0E-04	9.2E+02	9.6E-04
100-D-48:2_Shallow	Rad	Cobalt-60	10198-40-0	pCi/g	0.1	6.1E+03	1.6E-05	8.1E+02	1.2E-04
100-D-48:2_Shallow	Rad	Europium-152	14683-23-9	pCi/g	0.6	1.5E+04	3.8E-05	1.7E+03	3.2E-04
100-D-48:2_Shallow	Rad	Europium-154	15585-10-1	pCi/g	0.2	1.3E+04	1.6E-05	1.6E+03	1.2E-04
100-D-48:2_Shallow	Rad	Plutonium-239/240	PU-239/240	pCi/g	0.0	1.3E+04	3.6E-06	6.3E+03	7.3E-06
100-D-48:2_Shallow	Rad	Rads SOF	---	pCi/g	--	--	5.7E-04	--	3.6E-03
100-D-48:2_Shallow	Rad	Total beta radiostrontium	SR-RAD	pCi/g	0.2	3.6E+03	4.9E-05	9.1E+01	1.9E-03
100-D-48:2_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	1496.1	5.0E+03	3.0E-01	3.6E+05	4.2E-03
100-D-48:2_Shallow	Rad	Uranium-233/234	U-233/234	pCi/g	0.5	5.2E+04	9.8E-06	6.4E+03	8.0E-05
100-D-48:2_Shallow	Rad	Uranium-235	15117-96-1	pCi/g	0.0	2.7E+04	1.1E-06	4.4E+03	6.9E-06
100-D-48:2_Shallow	Rad	Uranium-238	U-238	pCi/g	0.5	1.6E+04	3.2E-05	5.2E+03	9.8E-05
100-D-48:3_Overburden	Rad	Americium-241	14596-10-2	pCi/g	0.1	2.2E+04	2.4E-06	4.8E+03	1.1E-05
100-D-48:3_Overburden	Rad	Cesium-137	10045-97-3	pCi/g	0.2	2.2E+03	9.4E-05	9.2E+02	2.2E-04

Table 4. Comparison of 100-D OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
100-D-48:3_Overburden	Rad	Cobalt-60	10198-40-0	pCi/g	0.0	6.1E+03	6.5E-06	8.1E+02	5.0E-05
100-D-48:3_Overburden	Rad	Europium-152	14683-23-9	pCi/g	0.2	1.5E+04	1.7E-05	1.7E+03	1.4E-04
100-D-48:3_Overburden	Rad	Plutonium-238	13981-16-3	pCi/g	0.4	1.8E+04	2.1E-05	6.0E+03	6.2E-05
100-D-48:3_Overburden	Rad	Plutonium-239/240	PU-239/240	pCi/g	2.4	1.3E+04	1.9E-04	6.3E+03	3.9E-04
100-D-48:3_Overburden	Rad	Rads SOF	---	pCi/g	--	--	3.7E-04	--	1.0E-03
100-D-48:3_Overburden	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	1278.0	5.0E+03	2.6E-01	3.6E+05	3.6E-03
100-D-48:3_Overburden	Rad	Uranium-233/234	U-233/234	pCi/g	0.5	5.2E+04	9.1E-06	6.4E+03	7.4E-05
100-D-48:3_Overburden	Rad	Uranium-238	U-238	pCi/g	0.4	1.6E+04	2.7E-05	5.2E+03	8.3E-05
100-D-48:3_Shallow	Rad	Americium-241	14596-10-2	pCi/g	0.1	2.2E+04	2.5E-06	4.8E+03	1.1E-05
100-D-48:3_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.8	2.2E+03	3.6E-04	9.2E+02	8.5E-04
100-D-48:3_Shallow	Rad	Europium-152	14683-23-9	pCi/g	0.1	1.5E+04	9.1E-06	1.7E+03	7.7E-05
100-D-48:3_Shallow	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	802.0	No Value	--	1.3E+06	6.4E-04
100-D-48:3_Shallow	Rad	Plutonium-239/240	PU-239/240	pCi/g	0.1	1.3E+04	4.8E-06	6.3E+03	9.8E-06
100-D-48:3_Shallow	Rad	Rads SOF	---	pCi/g	--	--	1.2E-03	--	3.1E-02
100-D-48:3_Shallow	Rad	Total beta radiostrontium	SR-RAD	pCi/g	2.7	3.6E+03	7.5E-04	9.1E+01	3.0E-02
100-D-48:3_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	1498.8	5.0E+03	3.0E-01	3.6E+05	4.2E-03
100-D-48:3_Shallow	Rad	Uranium-233/234	U-233/234	pCi/g	0.5	5.2E+04	9.9E-06	6.4E+03	8.0E-05
100-D-48:3_Shallow	Rad	Uranium-238	U-238	pCi/g	0.5	1.6E+04	3.2E-05	5.2E+03	9.8E-05
100-D-48:4_Shallow	Rad	Americium-241	14596-10-2	pCi/g	0.0	2.2E+04	1.4E-06	4.8E+03	6.0E-06
100-D-48:4_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.4	2.2E+03	2.0E-04	9.2E+02	4.7E-04
100-D-48:4_Shallow	Rad	Cobalt-60	10198-40-0	pCi/g	0.0	6.1E+03	7.0E-06	8.1E+02	5.3E-05
100-D-48:4_Shallow	Rad	Europium-152	14683-23-9	pCi/g	0.3	1.5E+04	1.9E-05	1.7E+03	1.6E-04
100-D-48:4_Shallow	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	1900.0	No Value	--	1.3E+06	1.5E-03
100-D-48:4_Shallow	Rad	Plutonium-239/240	PU-239/240	pCi/g	0.0	1.3E+04	2.2E-06	6.3E+03	4.4E-06
100-D-48:4_Shallow	Rad	Rads SOF	---	pCi/g	--	--	3.9E-04	--	5.7E-03
100-D-48:4_Shallow	Rad	Total beta radiostrontium	SR-RAD	pCi/g	0.4	3.6E+03	1.2E-04	9.1E+01	4.9E-03
100-D-48:4_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	1596.2	5.0E+03	3.2E-01	3.6E+05	4.4E-03
100-D-48:4_Shallow	Rad	Uranium-233/234	U-233/234	pCi/g	0.5	5.2E+04	9.5E-06	6.4E+03	7.7E-05
100-D-48:4_Shallow	Rad	Uranium-238	U-238	pCi/g	0.5	1.6E+04	3.4E-05	5.2E+03	1.0E-04
100-D-49:2_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.2	2.2E+03	9.0E-05	9.2E+02	2.1E-04
100-D-49:2_Shallow	Rad	Europium-152	14683-23-9	pCi/g	0.2	1.5E+04	1.7E-05	1.7E+03	1.4E-04
100-D-49:2_Shallow	Rad	Rads SOF	---	pCi/g	--	--	1.4E-04	--	5.1E-04
100-D-49:2_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	1062.8	5.0E+03	2.1E-01	3.6E+05	3.0E-03
100-D-49:2_Shallow	Rad	Uranium-233/234	U-233/234	pCi/g	0.4	5.2E+04	8.3E-06	6.4E+03	6.7E-05
100-D-49:2_Shallow	Rad	Uranium-235	15117-96-1	pCi/g	0.1	2.7E+04	3.3E-06	4.4E+03	2.0E-05
100-D-49:2_Shallow	Rad	Uranium-238	U-238	pCi/g	0.4	1.6E+04	2.3E-05	5.2E+03	6.9E-05
100-D-49:3_Shallow_Focused	Rad	Rads SOF	---	pCi/g	--	--	4.8E-05	--	2.0E-04
100-D-49:3_Shallow_Focused	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	1762.3	5.0E+03	3.5E-01	3.6E+05	4.9E-03
100-D-49:3_Shallow_Focused	Rad	Uranium-233/234	U-233/234	pCi/g	0.5	5.2E+04	1.0E-05	6.4E+03	8.2E-05
100-D-49:3_Shallow_Focused	Rad	Uranium-238	U-238	pCi/g	0.6	1.6E+04	3.8E-05	5.2E+03	1.2E-04
100-D-49:4_Shallow	non-Rad	Aroclor-1254	11097-69-1	ug/kg	170.0	4.0E+04	4.3E-03	1.5E+03	1.2E-01
100-D-49:4_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.5	2.2E+03	2.1E-04	9.2E+02	4.9E-04
100-D-49:4_Shallow	Rad	Cobalt-60	10198-40-0	pCi/g	0.1	6.1E+03	9.4E-06	8.1E+02	7.2E-05
100-D-49:4_Shallow	Rad	Europium-152	14683-23-9	pCi/g	1.5	1.5E+04	1.0E-04	1.7E+03	8.5E-04
100-D-49:4_Shallow	Rad	Europium-154	15585-10-1	pCi/g	0.2	1.3E+04	1.6E-05	1.6E+03	1.3E-04
100-D-49:4_Shallow	non-Rad	Lead	7439-92-1	ug/kg	21359.3	5.0E+04	4.3E-01	3.6E+04	6.0E-01
100-D-49:4_Shallow	non-Rad	Mercury	7439-97-6	ug/kg	33.0	1.0E+02	3.3E-01	1.9E+03	1.8E-02
100-D-49:4_Shallow	Rad	Plutonium-239/240	PU-239/240	pCi/g	0.1	1.3E+04	5.4E-06	6.3E+03	1.1E-05
100-D-49:4_Shallow	Rad	Rads SOF	---	pCi/g	--	--	3.8E-04	--	1.7E-03
100-D-49:4_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	1458.3	5.0E+03	2.9E-01	3.6E+05	4.1E-03
100-D-49:4_Shallow	Rad	Uranium-233/234	U-233/234	pCi/g	0.5	5.2E+04	9.4E-06	6.4E+03	7.6E-05
100-D-49:4_Shallow	Rad	Uranium-235	15117-96-1	pCi/g	0.1	2.7E+04	2.0E-06	4.4E+03	1.2E-05
100-D-49:4_Shallow	Rad	Uranium-238	U-238	pCi/g	0.5	1.6E+04	3.1E-05	5.2E+03	9.5E-05
100-D-50:5_Shallow_Focused	non-Rad	Arsenic	7440-38-2	ug/kg	2500.0	1.0E+04	2.5E-01	1.9E+05	1.3E-02
100-D-50:5_Shallow_Focused	non-Rad	Barium	7440-39-3	ug/kg	69600.0	3.3E+05	2.1E-01	1.3E+06	5.3E-02
100-D-50:5_Shallow_Focused	non-Rad	Beryllium	7440-41-7	ug/kg	419.0	1.0E+04	4.2E-02	1.4E+04	3.0E-02
100-D-50:5_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	811.0	5.0E+02	**1.6E+00**	1.3E+05	6.1E-03
100-D-50:5_Shallow_Focused	non-Rad	Cadmium	7440-43-9	ug/kg	88.0	4.0E+03	2.2E-02	1.6E+03	5.4E-02
100-D-50:5_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	7400.0	4.0E+02	**1.9E+01**	3.8E+04	1.9E-01
100-D-50:5_Shallow_Focused	non-Rad	Cobalt	7440-48-4	ug/kg	6400.0	1.3E+04	4.9E-01	1.1E+05	5.7E-02
100-D-50:5_Shallow_Focused	non-Rad	Copper	7440-50-8	ug/kg	14500.0	5.0E+04	2.9E-01	1.1E+05	1.4E-01
100-D-50:5_Shallow_Focused	non-Rad	Lead	7439-92-1	ug/kg	3500.0	5.0E+04	7.0E-02	3.6E+04	9.8E-02
100-D-50:5_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	271000.0	2.2E+05	**1.2E+00**	5.8E+06	4.7E-02
100-D-50:5_Shallow_Focused	non-Rad	Molybdenum	7439-98-7	ug/kg	243.0	2.0E+03	1.2E-01	1.4E+04	1.7E-02
100-D-50:5_Shallow_Focused	non-Rad	Nickel	7440-02-0	ug/kg	9200.0	3.0E+04	3.1E-01	3.3E+04	2.8E-01
100-D-50:5_Shallow_Focused	non-Rad	Uranium	7440-61-1	ug/kg	1.5	5.0E+03	3.1E-04	3.6E+05	4.3E-06
100-D-50:5_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	34900.0	2.0E+03	**1.8E+01**	3.1E+04	**1.1E+00**
100-D-50:5_Shallow_Focused	non-Rad	Zinc	7440-66-6	ug/kg	32900.0	5.0E+04	6.6E-01	6.8E+04	4.9E-01
100-D-52_Shallow	non-Rad	Barium	7440-39-3	ug/kg	68900.0	3.3E+05	2.1E-01	1.3E+06	5.2E-02
100-D-52_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.1	2.2E+03	2.9E-05	9.2E+02	7.0E-05
100-D-52_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	7400.0	4.0E+02	**1.9E+01**	3.8E+04	1.9E-01
100-D-52_Shallow	Rad	Europium-152	14683-23-9	pCi/g	0.4	1.5E+04	2.5E-05	1.7E+03	2.1E-04
100-D-52_Shallow	non-Rad	Lead	7439-92-1	ug/kg	4300.0	5.0E+04	8.6E-02	3.6E+04	1.2E-01
100-D-52_Shallow	Rad	Rads SOF	---	pCi/g	--	--	9.9E-05	--	4.7E-04
100-D-52_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	1646.2	5.0E+03	3.3E-01	3.6E+05	4.6E-03
100-D-52_Shallow	Rad	Uranium-233/234	U-233/234	pCi/g	0.5	5.2E+04	9.8E-06	6.4E+03	7.9E-05
100-D-52_Shallow	Rad	Uranium-238	U-238	pCi/g	0.6	1.6E+04	3.5E-05	5.2E+03	1.1E-04
100-D-56:1_Overburden	non-Rad	Antimony	7440-36-0	ug/kg	1200.0	5.0E+03	2.4E-01	6.0E+03	2.0E-01
100-D-56:1_Overburden	non-Rad	Arsenic	7440-38-2	ug/kg	3522.1	1.0E+04	3.5E-01	1.9E+05	1.9E-02
100-D-56:1_Overburden	non-Rad	Barium	7440-39-3	ug/kg	70319.2	3.3E+05	2.1E-01	1.3E+06	5.3E-02
100-D-56:1_Overburden	non-Rad	Beryllium	7440-41-7	ug/kg	570.1	1.0E+04	5.7E-02	1.4E+04	4.1E-02
100-D-56:1_Overburden	non-Rad	Boron	7440-42-8	ug/kg	5633.3	5.0E+02	**1.1E+01**	1.3E+05	4.2E-02
100-D-56:1_Overburden	non-Rad	Cadmium	7440-43-9	ug/kg	189.4	4.0E+03	4.7E-02	1.6E+03	1.2E-01
100-D-56:1_Overburden	non-Rad	Chromium	7440-47-3	ug/kg	10203.9	4.0E+02	**2.6E+01**	3.8E+04	2.7E-01
100-D-56:1_Overburden	non-Rad	Cobalt	7440-48-4	ug/kg	8319.8	1.3E+04	6.4E-01	1.1E+05	7.5E-02
100-D-56:1_Overburden	non-Rad	Copper	7440-50-8	ug/kg	16173.8	5.0E+04	3.2E-01	1.1E+05	1.5E-01
100-D-56:1_Overburden	non-Rad	Fluoride	16984-48-8	ug/kg	3300.0	No Value	--	2.3E+06	1.5E-03
100-D-56:1_Overburden	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	271.1	No Value	--	1.3E+06	2.2E-04
100-D-56:1_Overburden	non-Rad	Lead	7439-92-1	ug/kg	9648.9	5.0E+04	1.9E-01	3.6E+04	2.7E-01
100-D-56:1_Overburden	non-Rad	Manganese	7439-96-5	ug/kg	327758.0	2.2E+05	**1.5E+00**	5.8E+06	5.7E-02
100-D-56:1_Overburden	non-Rad	Mercury	7439-97-6	ug/kg	75.0	1.0E+02	7.5E-01	1.9E+03	4.0E-02
100-D-56:1_Overburden	non-Rad	Molybdenum	7439-98-7	ug/kg	950.0	2.0E+03	4.8E-01	1.4E+04	6.8E-02
100-D-56:1_Overburden	non-Rad	Nickel	7440-02-0	ug/kg	11052.7	3.0E+04	3.7E-01	3.3E+04	3.4E-01
100-D-56:1_Overburden	non-Rad	Nitrate	14797-55-8	ug/kg	22647.8	No Value	--	3.4E+08	6.7E-05
100-D-56:1_Overburden	non-Rad	Nitrite	14797-65-0	ug/kg	4080.0	No Value	--	3.4E+08	1.2E-05
100-D-56:1_Overburden	non-Rad	Selenium	7782-49-2	ug/kg	2100.0	5.2E+02	**4.0E+00**	1.9E+03	**1.1E+00**
100-D-56:1_Overburden	non-Rad	Vanadium	7440-62-2	ug/kg	58592.6	2.0E+03	**2.9E+01**	3.1E+04	**1.9E+00**
100-D-56:1_Overburden	non-Rad	Zinc	7440-66-6	ug/kg	66961.7	5.0E+04	**1.3E+00**	6.8E+04	9.9E-01
100-D-56:1_Shallow	non-Rad	Antimony	7440-36-0	ug/kg	1100.0	5.0E+03	2.2E-01	6.0E+03	1.8E-01
100-D-56:1_Shallow	non-Rad	Arsenic	7440-38-2	ug/kg	2560.1	1.0E+04	2.6E-01	1.9E+05	1.4E-02
100-D-56:1_Shallow	non-Rad	Barium	7440-39-3	ug/kg	59734.2	3.3E+05	1.8E-01	1.3E+06	4.5E-02
100-D-56:1_Shallow	non-Rad	Beryllium	7440-41-7	ug/kg	496.5	1.0E+04	5.0E-02	1.4E+04	3.6E-02
100-D-56:1_Shallow	non-Rad	Boron	7440-42-8	ug/kg	1600.0	5.0E+02	**3.2E+00**	1.3E+05	1.2E-02
100-D-56:1_Shallow	non-Rad	Cadmium	7440-43-9	ug/kg	195.0	4.0E+03	4.9E-02	1.6E+03	1.2E-01
100-D-56:1_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	10457.3	4.0E+02	**2.6E+01**	3.8E+04	2.7E-01
100-D-56:1_Shallow	non-Rad	Cobalt	7440-48-4	ug/kg	7299.9	1.3E+04	5.6E-01	1.1E+05	6.6E-02
100-D-56:1_Shallow	non-Rad	Copper	7440-50-8	ug/kg	14186.5	5.0E+04	2.8E-01	1.1E+05	1.3E-01
100-D-56:1_Shallow	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	280.0	No Value	--	1.3E+06	2.3E-04
100-D-56:1_Shallow	non-Rad	Lead	7439-92-1	ug/kg	4079.8	5.0E+04	8.2E-02	3.6E+04	1.2E-01
100-D-56:1_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	290500.5	2.2E+05	**1.3E+00**	5.8E+06	5.0E-02
100-D-56:1_Shallow	non-Rad	Mercury	7439-97-6	ug/kg	20.0	1.0E+02	2.0E-01	1.9E+03	1.1E-02
100-D-56:1_Shallow	non-Rad	Nickel	7440-02-0	ug/kg	10800.1	3.0E+04	3.6E-01	3.3E+04	3.3E-01
100-D-56:1_Shallow	non-Rad	Nitrate	14797-55-8	ug/kg	29400.0	No Value	--	3.4E+08	8.6E-05
100-D-56:1_Shallow	non-Rad	Selenium	7782-49-2	ug/kg	1700.0	5.2E+02	**3.3E+00**	1.9E+03	9.0E-01
100-D-56:1_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	49162.0	2.0E+03	**2.5E+01**	3.1E+04	**1.6E+00**
100-D-56:1_Shallow	non-Rad	Zinc	7440-66-6	ug/kg	52499.4	5.0E+04	**1.1E+00**	6.8E+04	7.7E-01
100-D-56:1_Shallow_Focused	non-Rad	Antimony	7440-36-0	ug/kg	1000.0	5.0E+03	2.0E-01	6.0E+03	1.7E-01

Table 4. Comparison of 100-D OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
100-D-56:1_Shallow_Focused	non-Rad	Arsenic	7440-38-2	ug/kg	3200.0	1.0E+04	3.2E-01	1.9E+05	1.7E-02
100-D-56:1_Shallow_Focused	non-Rad	Barium	7440-39-3	ug/kg	60900.0	3.3E+05	1.9E-01	1.3E+06	4.6E-02
100-D-56:1_Shallow_Focused	non-Rad	Beryllium	7440-41-7	ug/kg	550.0	1.0E+04	5.5E-02	1.4E+04	3.9E-02
100-D-56:1_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	1800.0	5.0E+02	**3.6E+00**	1.3E+05	1.4E-02
100-D-56:1_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	11800.0	4.0E+02	**3.0E+01**	3.8E+04	3.1E-01
100-D-56:1_Shallow_Focused	non-Rad	Cobalt	7440-48-4	ug/kg	7600.0	1.3E+04	5.9E-01	1.1E+05	6.8E-02
100-D-56:1_Shallow_Focused	non-Rad	Copper	7440-50-8	ug/kg	14600.0	5.0E+04	2.9E-01	1.1E+05	1.4E-01
100-D-56:1_Shallow_Focused	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	280.0	No Value	--	1.3E+06	2.3E-04
100-D-56:1_Shallow_Focused	non-Rad	Lead	7439-92-1	ug/kg	5000.0	5.0E+04	1.0E-01	3.6E+04	1.4E-01
100-D-56:1_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	339000.0	2.2E+05	**1.5E+00**	5.8E+06	5.9E-02
100-D-56:1_Shallow_Focused	non-Rad	Mercury	7439-97-6	ug/kg	10.0	1.0E+02	1.0E-01	1.9E+03	5.4E-03
100-D-56:1_Shallow_Focused	non-Rad	Nickel	7440-02-0	ug/kg	13100.0	3.0E+04	4.4E-01	3.3E+04	4.0E-01
100-D-56:1_Shallow_Focused	non-Rad	Nitrate	14797-55-8	ug/kg	8830.0	No Value	--	3.4E+08	2.6E-05
100-D-56:1_Shallow_Focused	non-Rad	Silver	7440-22-4	ug/kg	240.0	2.0E+03	1.2E-01	5.0E+04	4.8E-03
100-D-56:1_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	51100.0	2.0E+03	**2.6E+01**	3.1E+04	**1.6E+00**
100-D-56:1_Shallow_Focused	non-Rad	Zinc	7440-66-6	ug/kg	45900.0	5.0E+04	9.2E-01	6.8E+04	6.8E-01
100-D-56:2_Overburden_4	non-Rad	Antimony	7440-36-0	ug/kg	500.0	5.0E+03	1.0E-01	6.0E+03	8.4E-02
100-D-56:2_Overburden_4	non-Rad	Arsenic	7440-38-2	ug/kg	3421.3	1.0E+04	3.4E-01	1.9E+05	1.8E-02
100-D-56:2_Overburden_4	non-Rad	Barium	7440-39-3	ug/kg	71232.3	3.3E+05	2.2E-01	1.3E+06	5.4E-02
100-D-56:2_Overburden_4	non-Rad	Beryllium	7440-41-7	ug/kg	983.6	1.0E+04	9.8E-02	1.4E+04	7.1E-02
100-D-56:2_Overburden_4	non-Rad	Boron	7440-42-8	ug/kg	1250.0	5.0E+02	**2.5E+00**	1.3E+05	9.4E-03
100-D-56:2_Overburden_4	non-Rad	Cadmium	7440-43-9	ug/kg	120.9	4.0E+03	3.0E-02	1.6E+03	7.4E-02
100-D-56:2_Overburden_4	non-Rad	Chromium	7440-47-3	ug/kg	17678.2	4.0E+02	**4.4E+01**	3.8E+04	4.6E-01
100-D-56:2_Overburden_4	non-Rad	Cobalt	7440-48-4	ug/kg	7597.3	1.3E+04	5.8E-01	1.1E+05	6.8E-02
100-D-56:2_Overburden_4	non-Rad	Copper	7440-50-8	ug/kg	15676.5	5.0E+04	3.1E-01	1.1E+05	1.5E-01
100-D-56:2_Overburden_4	non-Rad	Fluoride	16984-48-8	ug/kg	1700.0	No Value	--	2.3E+06	7.5E-04
100-D-56:2_Overburden_4	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	371.0	No Value	--	1.3E+06	3.0E-04
100-D-56:2_Overburden_4	non-Rad	Lead	7439-92-1	ug/kg	4232.2	5.0E+04	8.5E-02	3.6E+04	1.2E-01
100-D-56:2_Overburden_4	non-Rad	Manganese	7439-96-5	ug/kg	311403.9	2.2E+05	**1.4E+00**	5.8E+06	5.4E-02
100-D-56:2_Overburden_4	non-Rad	Mercury	7439-97-6	ug/kg	11.1	1.0E+02	1.1E-01	1.9E+03	5.9E-03
100-D-56:2_Overburden_4	non-Rad	Molybdenum	7439-98-7	ug/kg	350.0	2.0E+03	1.8E-01	1.4E+04	2.5E-02
100-D-56:2_Overburden_4	non-Rad	Nickel	7440-02-0	ug/kg	11137.9	3.0E+04	3.7E-01	3.3E+04	3.4E-01
100-D-56:2_Overburden_4	non-Rad	Nitrogen in Nitrate	NO3-N	ug/kg	1187.7	No Value	--	No Value	--
100-D-56:2_Overburden_4	non-Rad	Nitrogen in Nitrite	NO2-N	ug/kg	638.1	No Value	--	No Value	--
100-D-56:2_Overburden_4	non-Rad	Vanadium	7440-62-2	ug/kg	56979.8	2.0E+03	**2.9E+01**	3.1E+04	**1.8E+00**
100-D-56:2_Overburden_4	non-Rad	Zinc	7440-66-6	ug/kg	56993.2	5.0E+04	**1.1E+00**	6.8E+04	8.4E-01
100-D-56:2_Overburden_5	non-Rad	Arsenic	7440-38-2	ug/kg	2947.3	1.0E+04	3.0E-01	1.9E+05	1.6E-02
100-D-56:2_Overburden_5	non-Rad	Barium	7440-39-3	ug/kg	67670.4	3.3E+05	2.1E-01	1.3E+06	5.1E-02
100-D-56:2_Overburden_5	non-Rad	Beryllium	7440-41-7	ug/kg	1271.0	1.0E+04	1.3E-01	1.4E+04	9.1E-02
100-D-56:2_Overburden_5	non-Rad	Boron	7440-42-8	ug/kg	1407.3	5.0E+02	**2.8E+00**	1.3E+05	1.1E-02
100-D-56:2_Overburden_5	non-Rad	Cadmium	7440-43-9	ug/kg	86.0	4.0E+03	2.2E-02	1.6E+03	5.3E-02
100-D-56:2_Overburden_5	non-Rad	Chromium	7440-47-3	ug/kg	16179.2	4.0E+02	**4.0E+01**	3.8E+04	4.2E-01
100-D-56:2_Overburden_5	non-Rad	Cobalt	7440-48-4	ug/kg	7546.6	1.3E+04	5.8E-01	1.1E+05	6.8E-02
100-D-56:2_Overburden_5	non-Rad	Copper	7440-50-8	ug/kg	15393.1	5.0E+04	3.1E-01	1.1E+05	1.4E-01
100-D-56:2_Overburden_5	non-Rad	Fluoride	16984-48-8	ug/kg	1091.3	No Value	--	2.3E+06	4.8E-04
100-D-56:2_Overburden_5	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	223.1	No Value	--	1.3E+06	1.8E-04
100-D-56:2_Overburden_5	non-Rad	Lead	7439-92-1	ug/kg	4437.6	5.0E+04	8.9E-02	3.6E+04	1.3E-01
100-D-56:2_Overburden_5	non-Rad	Manganese	7439-96-5	ug/kg	306865.5	2.2E+05	**1.4E+00**	5.8E+06	5.3E-02
100-D-56:2_Overburden_5	non-Rad	Mercury	7439-97-6	ug/kg	20.9	1.0E+02	2.1E-01	1.9E+03	1.1E-02
100-D-56:2_Overburden_5	non-Rad	Nickel	7440-02-0	ug/kg	10691.8	3.0E+04	3.6E-01	3.3E+04	3.3E-01
100-D-56:2_Overburden_5	non-Rad	Nitrogen in Nitrate	NO3-N	ug/kg	1534.8	No Value	--	No Value	--
100-D-56:2_Overburden_5	non-Rad	Nitrogen in Nitrite	NO2-N	ug/kg	492.0	No Value	--	No Value	--
100-D-56:2_Overburden_5	non-Rad	Vanadium	7440-62-2	ug/kg	52528.4	2.0E+03	**2.6E+01**	3.1E+04	**1.7E+00**
100-D-56:2_Overburden_5	non-Rad	Zinc	7440-66-6	ug/kg	41329.7	5.0E+04	8.3E-01	6.8E+04	6.1E-01
100-D-56:2_Overburden_Focused_1	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	493.0	No Value	--	1.3E+06	4.0E-04
100-D-56:2_Overburden_Focused_2	non-Rad	Arsenic	7440-38-2	ug/kg	4000.0	1.0E+04	4.0E-01	1.9E+05	2.1E-02
100-D-56:2_Overburden_Focused_2	non-Rad	Barium	7440-39-3	ug/kg	65000.0	3.3E+05	2.0E-01	1.3E+06	4.9E-02
100-D-56:2_Overburden_Focused_2	non-Rad	Beryllium	7440-41-7	ug/kg	1400.0	1.0E+04	1.4E-01	1.4E+04	1.0E-01
100-D-56:2_Overburden_Focused_2	non-Rad	Chromium	7440-47-3	ug/kg	11000.0	4.0E+02	**2.8E+01**	3.8E+04	2.9E-01
100-D-56:2_Overburden_Focused_2	non-Rad	Cobalt	7440-48-4	ug/kg	8300.0	1.3E+04	6.4E-01	1.1E+05	7.4E-02
100-D-56:2_Overburden_Focused_2	non-Rad	Copper	7440-50-8	ug/kg	16000.0	5.0E+04	3.2E-01	1.1E+05	1.5E-01
100-D-56:2_Overburden_Focused_2	non-Rad	Fluoride	16984-48-8	ug/kg	3400.0	No Value	--	2.3E+06	1.5E-03
100-D-56:2_Overburden_Focused_2	non-Rad	Lead	7439-92-1	ug/kg	4200.0	5.0E+04	8.4E-02	3.6E+04	1.2E-01
100-D-56:2_Overburden_Focused_2	non-Rad	Manganese	7439-96-5	ug/kg	310000.0	2.2E+05	**1.4E+00**	5.8E+06	5.4E-02
100-D-56:2_Overburden_Focused_2	non-Rad	Molybdenum	7439-98-7	ug/kg	280.0	2.0E+03	1.4E-01	1.4E+04	2.0E-02
100-D-56:2_Overburden_Focused_2	non-Rad	Nickel	7440-02-0	ug/kg	11000.0	3.0E+04	3.7E-01	3.3E+04	3.4E-01
100-D-56:2_Overburden_Focused_2	non-Rad	Nitrogen in Nitrate	NO3-N	ug/kg	1300.0	No Value	--	No Value	--
100-D-56:2_Overburden_Focused_2	non-Rad	Vanadium	7440-62-2	ug/kg	60000.0	2.0E+03	**3.0E+01**	3.1E+04	**1.9E+00**
100-D-56:2_Overburden_Focused_2	non-Rad	Zinc	7440-66-6	ug/kg	42000.0	5.0E+04	8.4E-01	6.8E+04	6.2E-01
100-D-56:2_Shallow_1	non-Rad	Antimony	7440-36-0	ug/kg	420.0	5.0E+03	8.4E-02	6.0E+03	7.0E-02
100-D-56:2_Shallow_1	non-Rad	Arsenic	7440-38-2	ug/kg	3208.0	1.0E+04	3.2E-01	1.9E+05	1.7E-02
100-D-56:2_Shallow_1	non-Rad	Barium	7440-39-3	ug/kg	62220.2	3.3E+05	1.9E-01	1.3E+06	4.7E-02
100-D-56:2_Shallow_1	non-Rad	Beryllium	7440-41-7	ug/kg	405.0	1.0E+04	4.1E-02	1.4E+04	2.9E-02
100-D-56:2_Shallow_1	non-Rad	Boron	7440-42-8	ug/kg	1525.0	5.0E+02	**3.1E+00**	1.3E+05	1.2E-02
100-D-56:2_Shallow_1	non-Rad	Cadmium	7440-43-9	ug/kg	65.2	4.0E+03	1.6E-02	1.6E+03	4.0E-02
100-D-56:2_Shallow_1	non-Rad	Chromium	7440-47-3	ug/kg	10823.6	4.0E+02	**2.7E+01**	3.8E+04	2.8E-01
100-D-56:2_Shallow_1	non-Rad	Cobalt	7440-48-4	ug/kg	7635.7	1.3E+04	5.9E-01	1.1E+05	6.9E-02
100-D-56:2_Shallow_1	non-Rad	Copper	7440-50-8	ug/kg	14188.3	5.0E+04	2.8E-01	1.1E+05	1.3E-01
100-D-56:2_Shallow_1	non-Rad	Fluoride	16984-48-8	ug/kg	1750.0	No Value	--	2.3E+06	7.7E-04
100-D-56:2_Shallow_1	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	244.0	No Value	--	1.3E+06	2.0E-04
100-D-56:2_Shallow_1	non-Rad	Lead	7439-92-1	ug/kg	3871.9	5.0E+04	7.7E-02	3.6E+04	1.1E-01
100-D-56:2_Shallow_1	non-Rad	Manganese	7439-96-5	ug/kg	306134.3	2.2E+05	**1.4E+00**	5.8E+06	5.3E-02
100-D-56:2_Shallow_1	non-Rad	Mercury	7439-97-6	ug/kg	9.7	1.0E+02	9.7E-02	1.9E+03	5.2E-03
100-D-56:2_Shallow_1	non-Rad	Nickel	7440-02-0	ug/kg	10387.8	3.0E+04	3.5E-01	3.3E+04	3.2E-01
100-D-56:2_Shallow_1	non-Rad	Nitrogen in Nitrate	NO3-N	ug/kg	902.5	No Value	--	No Value	--
100-D-56:2_Shallow_1	non-Rad	Nitrogen in Nitrite	NO2-N	ug/kg	513.3	No Value	--	No Value	--
100-D-56:2_Shallow_1	non-Rad	Vanadium	7440-62-2	ug/kg	56965.6	2.0E+03	**2.9E+01**	3.1E+04	**1.8E+00**
100-D-56:2_Shallow_1	non-Rad	Zinc	7440-66-6	ug/kg	41374.7	5.0E+04	8.3E-01	6.8E+04	6.1E-01
100-D-56:2_Shallow_2	non-Rad	Arsenic	7440-38-2	ug/kg	3810.3	1.0E+04	3.8E-01	1.9E+05	2.0E-02
100-D-56:2_Shallow_2	non-Rad	Barium	7440-39-3	ug/kg	59233.6	3.3E+05	1.8E-01	1.3E+06	4.5E-02
100-D-56:2_Shallow_2	non-Rad	Beryllium	7440-41-7	ug/kg	328.0	1.0E+04	3.3E-02	1.4E+04	2.4E-02
100-D-56:2_Shallow_2	non-Rad	Boron	7440-42-8	ug/kg	1100.0	5.0E+02	**2.2E+00**	1.3E+05	8.3E-03
100-D-56:2_Shallow_2	non-Rad	Cadmium	7440-43-9	ug/kg	84.3	4.0E+03	2.1E-02	1.6E+03	5.2E-02
100-D-56:2_Shallow_2	non-Rad	Chromium	7440-47-3	ug/kg	12515.2	4.0E+02	**3.1E+01**	3.8E+04	3.3E-01
100-D-56:2_Shallow_2	non-Rad	Cobalt	7440-48-4	ug/kg	6535.8	1.3E+04	5.0E-01	1.1E+05	5.9E-02
100-D-56:2_Shallow_2	non-Rad	Copper	7440-50-8	ug/kg	13634.9	5.0E+04	2.7E-01	1.1E+05	1.3E-01
100-D-56:2_Shallow_2	non-Rad	Fluoride	16984-48-8	ug/kg	1708.3	No Value	--	2.3E+06	7.5E-04
100-D-56:2_Shallow_2	non-Rad	Lead	7439-92-1	ug/kg	3413.8	5.0E+04	6.8E-02	3.6E+04	9.6E-02
100-D-56:2_Shallow_2	non-Rad	Manganese	7439-96-5	ug/kg	281887.0	2.2E+05	**1.3E+00**	5.8E+06	4.9E-02
100-D-56:2_Shallow_2	non-Rad	Mercury	7439-97-6	ug/kg	9.0	1.0E+02	9.0E-02	1.9E+03	4.8E-03
100-D-56:2_Shallow_2	non-Rad	Nickel	7440-02-0	ug/kg	11048.2	3.0E+04	3.7E-01	3.3E+04	3.4E-01
100-D-56:2_Shallow_2	non-Rad	Nitrogen in Nitrate	NO3-N	ug/kg	3478.0	No Value	--	No Value	--
100-D-56:2_Shallow_2	non-Rad	Vanadium	7440-62-2	ug/kg	45416.4	2.0E+03	**2.3E+01**	3.1E+04	**1.5E+00**
100-D-56:2_Shallow_2	non-Rad	Zinc	7440-66-6	ug/kg	36899.0	5.0E+04	7.4E-01	6.8E+04	5.4E-01
100-D-56:2_Shallow_3	non-Rad	Arsenic	7440-38-2	ug/kg	3169.9	1.0E+04	3.2E-01	1.9E+05	1.7E-02
100-D-56:2_Shallow_3	non-Rad	Barium	7440-39-3	ug/kg	67570.4	3.3E+05	2.1E-01	1.3E+06	5.1E-02
100-D-56:2_Shallow_3	non-Rad	Beryllium	7440-41-7	ug/kg	1164.3	1.0E+04	1.2E-01	1.4E+04	8.4E-02
100-D-56:2_Shallow_3	non-Rad	Boron	7440-42-8	ug/kg	1605.4	5.0E+02	**3.2E+00**	1.3E+05	1.2E-02
100-D-56:2_Shallow_3	non-Rad	Cadmium	7440-43-9	ug/kg	96.0	4.0E+03	2.4E-02	1.6E+03	5.9E-02
100-D-56:2_Shallow_3	non-Rad	Chromium	7440-47-3	ug/kg	9261.0	4.0E+02	**2.3E+01**	3.8E+04	2.4E-01
100-D-56:2_Shallow_3	non-Rad	Cobalt	7440-48-4	ug/kg	8172.6	1.3E+04	6.3E-01	1.1E+05	7.3E-02
100-D-56:2_Shallow_3	non-Rad	Copper	7440-50-8	ug/kg	15430.6	5.0E+04	3.1E-01	1.1E+05	1.4E-01
100-D-56:2_Shallow_3	non-Rad	Fluoride	16984-48-8	ug/kg	1430.8	No Value	--	2.3E+06	6.3E-04
100-D-56:2_Shallow_3	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	659.0	No Value	--	1.3E+06	5.3E-04
100-D-56:2_Shallow_3	non-Rad	Lead	7439-92-1	ug/kg	5446.1	5.0E+04	1.1E-01	3.6E+04	1.5E-01
100-D-56:2_Shallow_3	non-Rad	Manganese	7439-96-5	ug/kg	322267.0	2.2E+05	**1.5E+00**	5.8E+06	5.6E-02
100-D-56:2_Shallow_3	non-Rad	Mercury	7439-97-6	ug/kg	11.1	1.0E+02	1.1E-01	1.9E+03	6.0E-03

Table 4. Comparison of 100-D OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
100-D-56:2_Shallow_3	non-Rad	Nickel	7440-02-0	ug/kg	10049.4	3.0E+04	3.4E-01	3.3E+04	3.1E-01
100-D-56:2_Shallow_3	non-Rad	Nitrogen in Nitrate	NO3-N	ug/kg	1431.3	No Value	--	No Value	--
100-D-56:2_Shallow_3	non-Rad	Nitrogen in Nitrite	NO2-N	ug/kg	674.6	No Value	--	No Value	--
100-D-56:2_Shallow_3	non-Rad	Vanadium	7440-62-2	ug/kg	64761.6	2.0E+03	**3.2E+01**	3.1E+04	**2.1E+00**
100-D-56:2_Shallow_3	non-Rad	Zinc	7440-66-6	ug/kg	46651.5	5.0E+04	9.3E-01	6.8E+04	6.9E-01
100-D-56:2_Shallow_Focused	non-Rad	Antimony	7440-36-0	ug/kg	390.0	5.0E+03	7.8E-02	6.0E+03	6.5E-02
100-D-56:2_Shallow_Focused	non-Rad	Arsenic	7440-38-2	ug/kg	3200.0	1.0E+04	3.2E-01	1.9E+05	1.7E-02
100-D-56:2_Shallow_Focused	non-Rad	Barium	7440-39-3	ug/kg	70500.0	3.3E+05	2.1E-01	1.3E+06	5.3E-02
100-D-56:2_Shallow_Focused	non-Rad	Beryllium	7440-41-7	ug/kg	140.0	1.0E+04	1.4E-02	1.4E+04	1.0E-02
100-D-56:2_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	1000.0	5.0E+02	**2.0E+00**	1.3E+05	7.5E-03
100-D-56:2_Shallow_Focused	non-Rad	Cadmium	7440-43-9	ug/kg	93.0	4.0E+03	2.3E-02	1.6E+03	5.7E-02
100-D-56:2_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	29300.0	4.0E+02	**7.3E+01**	3.8E+04	7.7E-01
100-D-56:2_Shallow_Focused	non-Rad	Cobalt	7440-48-4	ug/kg	8300.0	1.3E+04	6.4E-01	1.1E+05	7.4E-02
100-D-56:2_Shallow_Focused	non-Rad	Copper	7440-50-8	ug/kg	14800.0	5.0E+04	3.0E-01	1.1E+05	1.4E-01
100-D-56:2_Shallow_Focused	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	662.0	No Value	--	1.3E+06	5.3E-04
100-D-56:2_Shallow_Focused	non-Rad	Lead	7439-92-1	ug/kg	2700.0	5.0E+04	5.4E-02	3.6E+04	7.6E-02
100-D-56:2_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	300000.0	2.2E+05	**1.4E+00**	5.8E+06	5.2E-02
100-D-56:2_Shallow_Focused	non-Rad	Mercury	7439-97-6	ug/kg	7.9	1.0E+02	7.9E-02	1.9E+03	4.2E-03
100-D-56:2_Shallow_Focused	non-Rad	Molybdenum	7439-98-7	ug/kg	300.0	2.0E+03	1.5E-01	1.4E+04	2.2E-02
100-D-56:2_Shallow_Focused	non-Rad	Nickel	7440-02-0	ug/kg	10600.0	3.0E+04	3.5E-01	3.3E+04	3.3E-01
100-D-56:2_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	57900.0	2.0E+03	**2.9E+01**	3.1E+04	**1.9E+00**
100-D-56:2_Shallow_Focused	non-Rad	Zinc	7440-66-6	ug/kg	39400.0	5.0E+04	7.9E-01	6.8E+04	5.8E-01
100-D-56:2_Staging pile area footprint_focused	non-Rad	Arsenic	7440-38-2	ug/kg	3600.0	1.0E+04	3.6E-01	1.9E+05	1.9E-02
100-D-56:2_Staging pile area footprint_focused	non-Rad	Barium	7440-39-3	ug/kg	79000.0	3.3E+05	2.4E-01	1.3E+06	6.0E-02
100-D-56:2_Staging pile area footprint_focused	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	84.0	1.8E+04	4.7E-03	7.6E+04	1.1E-03
100-D-56:2_Staging pile area footprint_focused	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	100.0	1.8E+04	5.6E-03	3.9E+04	2.6E-03
100-D-56:2_Staging pile area footprint_focused	non-Rad	Beryllium	7440-41-7	ug/kg	490.0	1.0E+04	4.9E-02	1.4E+04	3.5E-02
100-D-56:2_Staging pile area footprint_focused	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	ug/kg	82.0	1.0E+05	8.2E-04	4.5E+04	1.8E-03
100-D-56:2_Staging pile area footprint_focused	non-Rad	Boron	7440-42-8	ug/kg	1500.0	5.0E+02	**3.0E+00**	1.3E+05	1.1E-02
100-D-56:2_Staging pile area footprint_focused	non-Rad	Cadmium	7440-43-9	ug/kg	88.0	4.0E+03	2.2E-02	1.6E+03	5.4E-02
100-D-56:2_Staging pile area footprint_focused	non-Rad	Chromium	7440-47-3	ug/kg	11000.0	4.0E+02	**2.8E+01**	3.8E+04	2.9E-01
100-D-56:2_Staging pile area footprint_focused	non-Rad	Chrysene	218-01-9	ug/kg	29.0	1.8E+04	1.6E-03	4.5E+04	6.5E-04
100-D-56:2_Staging pile area footprint_focused	non-Rad	Cobalt	7440-48-4	ug/kg	7500.0	1.3E+04	5.8E-01	1.1E+05	6.7E-02
100-D-56:2_Staging pile area footprint_focused	non-Rad	Copper	7440-50-8	ug/kg	15000.0	5.0E+04	3.0E-01	1.1E+05	1.4E-01
100-D-56:2_Staging pile area footprint_focused	non-Rad	Lead	7439-92-1	ug/kg	4400.0	5.0E+04	8.8E-02	3.6E+04	1.2E-01
100-D-56:2_Staging pile area footprint_focused	non-Rad	Manganese	7439-96-5	ug/kg	350000.0	2.2E+05	**1.6E+00**	5.8E+06	6.0E-02
100-D-56:2_Staging pile area footprint_focused	non-Rad	Mercury	7439-97-6	ug/kg	9.7	1.0E+02	9.7E-02	1.9E+03	5.2E-03
100-D-56:2_Staging pile area footprint_focused	non-Rad	Nickel	7440-02-0	ug/kg	11000.0	3.0E+04	3.7E-01	3.3E+04	3.4E-01
100-D-56:2_Staging pile area footprint_focused	non-Rad	Nitrogen in Nitrate	NO3-N	ug/kg	590.0	No Value	--	No Value	--
100-D-56:2_Staging pile area footprint_focused	non-Rad	Pyrene	129-00-0	ug/kg	15.0	1.8E+04	8.3E-04	6.0E+05	2.5E-05
100-D-56:2_Staging pile area footprint_focused	non-Rad	Vanadium	7440-62-2	ug/kg	55000.0	2.0E+03	**2.8E+01**	3.1E+04	**1.8E+00**
100-D-56:2_Staging pile area footprint_focused	non-Rad	Zinc	7440-66-6	ug/kg	44000.0	5.0E+04	8.8E-01	6.8E+04	6.5E-01
100-D-61_Shallow	non-Rad	4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	ug/kg	1.3	No Value	--	4.0E+02	3.3E-03
100-D-61_Shallow	non-Rad	Anthracene	120-12-7	ug/kg	5.2	2.9E+04	1.8E-04	6.8E+05	7.7E-06
100-D-61_Shallow	non-Rad	Antimony	7440-36-0	ug/kg	491.3	5.0E+03	9.8E-02	6.0E+03	8.2E-02
100-D-61_Shallow	non-Rad	Arsenic	7440-38-2	ug/kg	3005.7	1.0E+04	3.0E-01	1.9E+05	1.6E-02
100-D-61_Shallow	non-Rad	Barium	7440-39-3	ug/kg	158794.1	3.3E+05	4.8E-01	1.3E+06	1.2E-01
100-D-61_Shallow	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	16.0	1.8E+04	8.9E-04	6.4E+04	2.5E-04
100-D-61_Shallow	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	3.5	1.8E+04	1.9E-04	7.6E+04	4.5E-05
100-D-61_Shallow	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	5.5	1.8E+04	3.1E-04	3.9E+04	1.4E-04
100-D-61_Shallow	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	3.6	1.8E+04	2.0E-04	3.9E+04	9.2E-05
100-D-61_Shallow	non-Rad	Beryllium	7440-41-7	ug/kg	864.6	1.0E+04	8.7E-02	1.4E+04	6.2E-02
100-D-61_Shallow	non-Rad	Boron	7440-42-8	ug/kg	11172.2	5.0E+02	**2.2E+01**	1.3E+05	8.4E-02
100-D-61_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	9565.4	4.0E+02	**2.4E+01**	3.8E+04	2.5E-01
100-D-61_Shallow	non-Rad	Chrysene	218-01-9	ug/kg	14.6	1.8E+04	8.1E-04	4.5E+04	3.3E-04
100-D-61_Shallow	non-Rad	Cobalt	7440-48-4	ug/kg	9407.1	1.3E+04	7.2E-01	1.1E+05	8.4E-02
100-D-61_Shallow	non-Rad	Copper	7440-50-8	ug/kg	17830.9	5.0E+04	3.6E-01	1.1E+05	1.7E-01
100-D-61_Shallow	non-Rad	Dibenz[a,h]anthracene	53-70-3	ug/kg	1.5	1.8E+04	8.3E-05	4.4E+04	3.4E-05
100-D-61_Shallow	non-Rad	Fluoranthene	206-44-0	ug/kg	24.4	1.8E+04	1.4E-03	8.4E+05	2.9E-05
100-D-61_Shallow	non-Rad	Fluorene	86-73-7	ug/kg	2.6	2.9E+04	9.0E-05	1.8E+05	1.5E-05
100-D-61_Shallow	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	169.0	No Value	--	1.3E+06	1.4E-04
100-D-61_Shallow	non-Rad	Lead	7439-92-1	ug/kg	4458.9	5.0E+04	8.9E-02	3.6E+04	1.3E-01
100-D-61_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	347566.5	2.2E+05	**1.6E+00**	5.8E+06	6.0E-02
100-D-61_Shallow	non-Rad	Mercury	7439-97-6	ug/kg	13.0	1.0E+02	1.3E-01	1.9E+03	7.0E-03
100-D-61_Shallow	non-Rad	Molybdenum	7439-98-7	ug/kg	516.3	2.0E+03	2.6E-01	1.4E+04	3.7E-02
100-D-61_Shallow	non-Rad	Nickel	7440-02-0	ug/kg	12720.0	3.0E+04	4.2E-01	3.3E+04	3.9E-01
100-D-61_Shallow	non-Rad	Pyrene	129-00-0	ug/kg	43.0	1.8E+04	2.4E-03	6.0E+05	7.2E-05
100-D-61_Shallow	non-Rad	Selenium	7782-49-2	ug/kg	1040.3	5.2E+02	**2.0E+00**	1.9E+03	5.5E-01
100-D-61_Shallow	non-Rad	Total petroleum hydrocarbons - motor oil (high boiling)	TPH/OILH	ug/kg	11436.4	No Value	--	No Value	--
100-D-61_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	63681.6	2.0E+03	**3.2E+01**	3.1E+04	**2.1E+00**
100-D-61_Shallow	non-Rad	Zinc	7440-66-6	ug/kg	45816.3	5.0E+04	9.2E-01	6.8E+04	6.8E-01
100-D-7_Shallow_1	non-Rad	2-Butanone	78-93-3	ug/kg	1.7	No Value	--	3.1E+06	5.3E-07
100-D-7_Shallow_1	non-Rad	4,4'-DDT (Dichlorodiphenyltrichloroethane)	50-29-3	ug/kg	0.9	No Value	--	8.8E+02	9.8E-04
100-D-7_Shallow_1	non-Rad	Acetone	67-64-1	ug/kg	15.1	No Value	--	No Value	--
100-D-7_Shallow_1	non-Rad	Alpha-BHC	319-84-6	ug/kg	5.0	No Value	--	No Value	--
100-D-7_Shallow_1	non-Rad	Arsenic	7440-38-2	ug/kg	1524.0	1.0E+04	1.5E-01	1.9E+05	8.0E-03
100-D-7_Shallow_1	non-Rad	Barium	7440-39-3	ug/kg	59795.2	3.3E+05	1.8E-01	1.3E+06	4.5E-02
100-D-7_Shallow_1	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	30.0	1.8E+04	1.7E-03	3.9E+04	7.7E-04
100-D-7_Shallow_1	non-Rad	Beryllium	7440-41-7	ug/kg	126.1	1.0E+04	1.3E-02	1.4E+04	9.0E-03
100-D-7_Shallow_1	non-Rad	Boron	7440-42-8	ug/kg	1900.0	5.0E+02	**3.8E+00**	1.3E+05	1.4E-02
100-D-7_Shallow_1	non-Rad	Cadmium	7440-43-9	ug/kg	45.7	4.0E+03	1.1E-02	1.6E+03	2.8E-02
100-D-7_Shallow_1	non-Rad	Chromium	7440-47-3	ug/kg	7035.4	4.0E+02	**1.8E+01**	3.8E+04	1.8E-01
100-D-7_Shallow_1	non-Rad	Cobalt	7440-48-4	ug/kg	7813.9	1.3E+04	6.0E-01	1.1E+05	7.0E-02
100-D-7_Shallow_1	non-Rad	Copper	7440-50-8	ug/kg	11689.2	5.0E+04	2.3E-01	1.1E+05	1.1E-01
100-D-7_Shallow_1	non-Rad	Dibenz[a,h]anthracene	53-70-3	ug/kg	130.0	1.8E+04	7.2E-03	4.4E+04	3.0E-03
100-D-7_Shallow_1	non-Rad	Diethylphthalate	84-66-2	ug/kg	68.0	1.0E+05	6.8E-04	No Value	--
100-D-7_Shallow_1	non-Rad	Endosulfan II	33213-65-9	ug/kg	0.5	No Value	--	7.1E+02	7.3E-04
100-D-7_Shallow_1	non-Rad	Gamma-BHC (Lindane)	58-89-9	ug/kg	0.8	No Value	--	No Value	--
100-D-7_Shallow_1	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	184.0	No Value	--	1.3E+06	1.5E-04
100-D-7_Shallow_1	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	29.0	1.8E+04	1.6E-03	3.6E+04	8.1E-04
100-D-7_Shallow_1	non-Rad	Lead	7439-92-1	ug/kg	3490.5	5.0E+04	7.0E-02	3.6E+04	9.8E-02
100-D-7_Shallow_1	non-Rad	Manganese	7439-96-5	ug/kg	290471.9	2.2E+05	**1.3E+00**	5.8E+06	5.0E-02
100-D-7_Shallow_1	non-Rad	Mercury	7439-97-6	ug/kg	6.5	1.0E+02	6.5E-02	1.9E+03	3.5E-03
100-D-7_Shallow_1	non-Rad	Methylene chloride	75-09-2	ug/kg	10.0	No Value	--	1.7E+05	6.0E-05
100-D-7_Shallow_1	non-Rad	Molybdenum	7439-98-7	ug/kg	381.7	2.0E+03	1.9E-01	1.4E+04	2.7E-02
100-D-7_Shallow_1	non-Rad	Nickel	7440-02-0	ug/kg	9120.4	3.0E+04	3.0E-01	3.3E+04	2.8E-01
100-D-7_Shallow_1	non-Rad	Selenium	7782-49-2	ug/kg	834.3	5.2E+02	**1.6E+00**	1.9E+03	4.4E-01
100-D-7_Shallow_1	non-Rad	Toluene	108-88-3	ug/kg	0.9	2.0E+05	4.6E-06	5.2E+06	1.8E-07
100-D-7_Shallow_1	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	ug/kg	1385.8	2.0E+05	6.9E-03	3.6E+08	3.9E-06
100-D-7_Shallow_1	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	ug/kg	1725.0	No Value	--	No Value	--
100-D-7_Shallow_1	non-Rad	Vanadium	7440-62-2	ug/kg	70959.8	2.0E+03	**3.6E+01**	3.1E+04	**2.3E+00**
100-D-7_Shallow_1	non-Rad	Zinc	7440-66-6	ug/kg	43436.8	5.0E+04	8.7E-01	6.8E+04	6.4E-01
100-D-7_Shallow_2	non-Rad	4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	ug/kg	0.6	No Value	--	4.0E+02	1.4E-03
100-D-7_Shallow_2	non-Rad	4,4'-DDT (Dichlorodiphenyltrichloroethane)	50-29-3	ug/kg	0.9	No Value	--	8.8E+02	9.9E-04
100-D-7_Shallow_2	non-Rad	Acetone	67-64-1	ug/kg	10.0	No Value	--	No Value	--
100-D-7_Shallow_2	non-Rad	Alpha-BHC	319-84-6	ug/kg	0.2	No Value	--	No Value	--
100-D-7_Shallow_2	non-Rad	Arsenic	7440-38-2	ug/kg	2073.3	1.0E+04	2.1E-01	1.9E+05	1.1E-02
100-D-7_Shallow_2	non-Rad	Barium	7440-39-3	ug/kg	81722.6	3.3E+05	2.5E-01	1.3E+06	6.2E-02
100-D-7_Shallow_2	non-Rad	Beryllium	7440-41-7	ug/kg	142.5	1.0E+04	1.4E-02	1.4E+04	1.0E-02
100-D-7_Shallow_2	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	ug/kg	90.0	1.0E+05	9.0E-04	4.5E+04	2.0E-03

Table 4. Comparison of 100-D OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
100-D-7_Shallow_2	non-Rad	Boron	7440-42-8	ug/kg	1533.0	5.0E+02	**3.1E+00**	1.3E+05	1.2E-02
100-D-7_Shallow_2	non-Rad	Cadmium	7440-43-9	ug/kg	85.0	4.0E+03	2.1E-02	1.6E+03	5.2E-02
100-D-7_Shallow_2	non-Rad	Chromium	7440-47-3	ug/kg	9024.2	4.0E+02	**2.3E+01**	3.8E+04	2.4E-01
100-D-7_Shallow_2	non-Rad	Cobalt	7440-48-4	ug/kg	8014.7	1.3E+04	6.2E-01	1.1E+05	7.2E-02
100-D-7_Shallow_2	non-Rad	Copper	7440-50-8	ug/kg	11765.7	5.0E+04	2.4E-01	1.1E+05	1.1E-01
100-D-7_Shallow_2	non-Rad	Endosulfan II	33213-65-9	ug/kg	0.6	No Value	--	7.1E+02	8.3E-04
100-D-7_Shallow_2	non-Rad	Gamma-BHC (Lindane)	58-89-9	ug/kg	0.9	No Value	--	No Value	--
100-D-7_Shallow_2	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	236.1	No Value	--	1.3E+06	1.9E-04
100-D-7_Shallow_2	non-Rad	Lead	7439-92-1	ug/kg	4003.0	5.0E+04	8.0E-02	3.6E+04	1.1E-01
100-D-7_Shallow_2	non-Rad	Manganese	7439-96-5	ug/kg	343655.2	2.2E+05	**1.6E+00**	5.8E+06	5.9E-02
100-D-7_Shallow_2	non-Rad	Mercury	7439-97-6	ug/kg	12.3	1.0E+02	1.2E-01	1.9E+03	6.6E-03
100-D-7_Shallow_2	non-Rad	Methylene chloride	75-09-2	ug/kg	2.2	No Value	--	1.7E+05	1.3E-05
100-D-7_Shallow_2	non-Rad	Molybdenum	7439-98-7	ug/kg	352.9	2.0E+03	1.8E-01	1.4E+04	2.5E-02
100-D-7_Shallow_2	non-Rad	Nickel	7440-02-0	ug/kg	9972.8	3.0E+04	3.3E-01	3.3E+04	3.1E-01
100-D-7_Shallow_2	non-Rad	Silver	7440-22-4	ug/kg	410.0	2.0E+03	2.1E-01	5.0E+04	8.3E-03
100-D-7_Shallow_2	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	ug/kg	1700.0	No Value	--	No Value	--
100-D-7_Shallow_2	non-Rad	Vanadium	7440-62-2	ug/kg	63912.6	2.0E+03	**3.2E+01**	3.1E+04	**2.1E+00**
100-D-7_Shallow_2	non-Rad	Zinc	7440-66-6	ug/kg	46278.7	5.0E+04	9.3E-01	6.8E+04	6.8E-01
100-D-7_Shallow_Focused	non-Rad	Acetone	67-64-1	ug/kg	6.3	No Value	--	No Value	--
100-D-7_Shallow_Focused	non-Rad	Alpha-BHC	319-84-6	ug/kg	5.0	No Value	--	No Value	--
100-D-7_Shallow_Focused	non-Rad	Arsenic	7440-38-2	ug/kg	1900.0	1.0E+04	1.9E-01	1.9E+05	1.0E-02
100-D-7_Shallow_Focused	non-Rad	Barium	7440-39-3	ug/kg	69300.0	3.3E+05	2.1E-01	1.3E+06	5.2E-02
100-D-7_Shallow_Focused	non-Rad	Beryllium	7440-41-7	ug/kg	180.0	1.0E+04	1.8E-02	1.4E+04	1.3E-02
100-D-7_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	1200.0	5.0E+02	**2.4E+00**	1.3E+05	9.0E-03
100-D-7_Shallow_Focused	non-Rad	Cadmium	7440-43-9	ug/kg	63.0	4.0E+03	1.6E-02	1.6E+03	3.9E-02
100-D-7_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	9000.0	4.0E+02	**2.3E+01**	3.8E+04	2.4E-01
100-D-7_Shallow_Focused	non-Rad	Cobalt	7440-48-4	ug/kg	7600.0	1.3E+04	5.9E-01	1.1E+05	6.8E-02
100-D-7_Shallow_Focused	non-Rad	Copper	7440-50-8	ug/kg	14400.0	5.0E+04	2.9E-01	1.1E+05	1.3E-01
100-D-7_Shallow_Focused	non-Rad	Lead	7439-92-1	ug/kg	3300.0	5.0E+04	6.6E-02	3.6E+04	9.3E-02
100-D-7_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	303000.0	2.2E+05	**1.4E+00**	5.8E+06	5.2E-02
100-D-7_Shallow_Focused	non-Rad	Mercury	7439-97-6	ug/kg	8.8	1.0E+02	8.8E-02	1.9E+03	4.7E-03
100-D-7_Shallow_Focused	non-Rad	Methylene chloride	75-09-2	ug/kg	10.0	No Value	--	1.7E+05	6.0E-05
100-D-7_Shallow_Focused	non-Rad	Nickel	7440-02-0	ug/kg	11600.0	3.0E+04	3.9E-01	3.3E+04	3.6E-01
100-D-7_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	63200.0	2.0E+03	**3.2E+01**	3.1E+04	**2.0E+00**
100-D-7_Shallow_Focused	non-Rad	Zinc	7440-66-6	ug/kg	42000.0	5.0E+04	8.4E-01	6.8E+04	6.2E-01
100-D-7_Staging pile area footprint	non-Rad	4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	ug/kg	0.8	No Value	--	4.0E+02	2.1E-03
100-D-7_Staging pile area footprint	non-Rad	4,4'-DDT (Dichlorodiphenyltrichloroethane)	50-29-3	ug/kg	2.6	No Value	--	8.8E+02	3.0E-03
100-D-7_Staging pile area footprint	non-Rad	Acetone	67-64-1	ug/kg	6.2	No Value	--	No Value	--
100-D-7_Staging pile area footprint	non-Rad	Aroclor HI	---	ug/kg	--	--	3.9E-03	--	3.5E-01
100-D-7_Staging pile area footprint	non-Rad	Aroclor-1248	12672-29-6	ug/kg	100	4.0E+04	2.5E-03	3.3E+02	3.1E-01
100-D-7_Staging pile area footprint	non-Rad	Aroclor-1254	11097-69-1	ug/kg	7.9	4.0E+04	2.0E-04	1.5E+03	5.4E-03
100-D-7_Staging pile area footprint	non-Rad	Aroclor-1260	11096-82-5	ug/kg	49	4.0E+04	1.2E-03	1.5E+03	3.3E-02
100-D-7_Staging pile area footprint	non-Rad	Arsenic	7440-38-2	ug/kg	1,625	1.0E+04	1.6E-01	1.9E+05	8.6E-03
100-D-7_Staging pile area footprint	non-Rad	Barium	7440-39-3	ug/kg	72,000	3.3E+05	2.2E-01	1.3E+06	5.4E-02
100-D-7_Staging pile area footprint	non-Rad	Beryllium	7440-41-7	ug/kg	155	1.0E+04	1.6E-02	1.4E+04	1.1E-02
100-D-7_Staging pile area footprint	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	ug/kg	1,100	1.0E+05	1.1E-02	4.5E+04	2.4E-02
100-D-7_Staging pile area footprint	non-Rad	Boron	7440-42-8	ug/kg	1,719	5.0E+02	**3.4E+00**	1.3E+05	1.3E-02
100-D-7_Staging pile area footprint	non-Rad	Cadmium	7440-43-9	ug/kg	103	4.0E+03	2.6E-02	1.6E+03	6.3E-02
100-D-7_Staging pile area footprint	Rad	Cesium-137	10045-97-3	pCi/g	0.056	2.2E+03	2.5E-05	9.2E+02	6.0E-05
100-D-7_Staging pile area footprint	non-Rad	Chromium	7440-47-3	ug/kg	8,443	4.0E+02	**2.1E+01**	3.8E+04	2.2E-01
100-D-7_Staging pile area footprint	non-Rad	Cobalt	7440-48-4	ug/kg	6,081	1.3E+04	4.7E-01	1.1E+05	5.5E-02
100-D-7_Staging pile area footprint	non-Rad	Copper	7440-50-8	ug/kg	16,451	5.0E+04	3.3E-01	1.1E+05	1.5E-01
100-D-7_Staging pile area footprint	non-Rad	Diethylphthalate	84-66-2	ug/kg	452	1.0E+05	4.5E-03	No Value	--
100-D-7_Staging pile area footprint	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	285	No Value	--	1.3E+06	2.3E-04
100-D-7_Staging pile area footprint	non-Rad	Lead	7439-92-1	ug/kg	5,630	5.0E+04	1.1E-01	3.6E+04	1.6E-01
100-D-7_Staging pile area footprint	non-Rad	Manganese	7439-96-5	ug/kg	279,739	2.2E+05	**1.3E+00**	5.8E+06	4.8E-02
100-D-7_Staging pile area footprint	non-Rad	Mercury	7439-97-6	ug/kg	304	1.0E+02	**3.0E+00**	1.9E+03	1.6E-01
100-D-7_Staging pile area footprint	non-Rad	Methylene chloride	75-09-2	ug/kg	1.7	No Value	--	1.7E+05	1.0E-05
100-D-7_Staging pile area footprint	non-Rad	Molybdenum	7439-98-7	ug/kg	340	2.0E+03	1.7E-01	1.4E+04	2.4E-02
100-D-7_Staging pile area footprint	non-Rad	Nickel	7440-02-0	ug/kg	9,889	3.0E+04	3.3E-01	3.3E+04	3.0E-01
100-D-7_Staging pile area footprint	non-Rad	Silver	7440-22-4	ug/kg	710	2.0E+03	3.6E-01	5.0E+04	1.4E-02
100-D-7_Staging pile area footprint	non-Rad	Toluene	108-88-3	ug/kg	0.72	2.0E+05	3.6E-06	5.2E+06	1.4E-07
100-D-7_Staging pile area footprint	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	ug/kg	2,152	2.0E+05	1.1E-02	3.6E+08	6.0E-06
100-D-7_Staging pile area footprint	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	ug/kg	4,699	No Value	--	No Value	--
100-D-7_Staging pile area footprint	non-Rad	Vanadium	7440-62-2	ug/kg	34,102	2.0E+03	**1.7E+01**	3.1E+04	**1.1E+00**
100-D-7_Staging pile area footprint	non-Rad	Xylenes (total)	1330-20-7	ug/kg	1.0	No Value	--	8.3E+05	1.2E-06
100-D-7_Staging pile area footprint	non-Rad	Zinc	7440-66-6	ug/kg	40,486	5.0E+04	8.1E-01	6.8E+04	6.0E-01
100-D-70_Shallow_Focused	non-Rad	Arsenic	7440-38-2	ug/kg	1,800	1.0E+04	1.8E-01	1.9E+05	9.5E-03
100-D-70_Shallow_Focused	non-Rad	Barium	7440-39-3	ug/kg	99,000	3.3E+05	3.0E-01	1.3E+06	7.5E-02
100-D-70_Shallow_Focused	non-Rad	Beryllium	7440-41-7	ug/kg	250	1.0E+04	2.5E-02	1.4E+04	1.8E-02
100-D-70_Shallow_Focused	non-Rad	Cadmium	7440-43-9	ug/kg	130	4.0E+03	3.3E-02	1.6E+03	8.0E-02
100-D-70_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	11,800	4.0E+02	**3.0E+01**	3.8E+04	3.1E-01
100-D-70_Shallow_Focused	non-Rad	Cobalt	7440-48-4	ug/kg	8,500	1.3E+04	6.5E-01	1.1E+05	7.6E-02
100-D-70_Shallow_Focused	non-Rad	Copper	7440-50-8	ug/kg	73,900	5.0E+04	**1.5E+00**	1.1E+05	6.9E-01
100-D-70_Shallow_Focused	non-Rad	Lead	7439-92-1	ug/kg	7,300	5.0E+04	1.5E-01	3.6E+04	2.1E-01
100-D-70_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	340,000	2.2E+05	**1.6E+00**	5.8E+06	5.9E-02
100-D-70_Shallow_Focused	non-Rad	Methylene chloride	75-09-2	ug/kg	3.7	No Value	--	1.7E+05	2.2E-05
100-D-70_Shallow_Focused	non-Rad	Molybdenum	7439-98-7	ug/kg	390	2.0E+03	2.0E-01	1.4E+04	2.8E-02
100-D-70_Shallow_Focused	non-Rad	Nickel	7440-02-0	ug/kg	14,000	3.0E+04	4.7E-01	3.3E+04	4.3E-01
100-D-70_Shallow_Focused	non-Rad	Nitrogen in Nitrate	NO3-N	ug/kg	2,200	No Value	--	No Value	--
100-D-70_Shallow_Focused	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	ug/kg	2,000	2.0E+05	1.0E-02	3.6E+08	5.6E-06
100-D-70_Shallow_Focused	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	ug/kg	4,400	No Value	--	No Value	--
100-D-70_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	61,100	2.0E+03	**3.1E+01**	3.1E+04	**2.0E+00**
100-D-70_Shallow_Focused	non-Rad	Zinc	7440-66-6	ug/kg	78,800	5.0E+04	**1.6E+00**	6.8E+04	**1.2E+00**
100-D-74_Shallow_Focused	non-Rad	Anthracene	120-12-7	ug/kg	10	2.9E+04	3.5E-04	6.8E+05	1.5E-05
100-D-74_Shallow_Focused	non-Rad	Arsenic	7440-38-2	ug/kg	1,500	1.0E+04	1.5E-01	1.9E+05	7.9E-03
100-D-74_Shallow_Focused	non-Rad	Barium	7440-39-3	ug/kg	54,300	3.3E+05	1.7E-01	1.3E+06	4.1E-02
100-D-74_Shallow_Focused	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	11	1.8E+04	6.1E-04	7.6E+04	1.4E-04
100-D-74_Shallow_Focused	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	11	1.8E+04	6.1E-04	3.9E+04	2.8E-04
100-D-74_Shallow_Focused	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	8.9	1.8E+04	4.9E-04	3.9E+04	2.3E-04
100-D-74_Shallow_Focused	non-Rad	Beryllium	7440-41-7	ug/kg	120	1.0E+04	1.2E-02	1.4E+04	8.6E-03
100-D-74_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	6,400	4.0E+02	**1.6E+01**	3.8E+04	1.7E-01
100-D-74_Shallow_Focused	non-Rad	Chrysene	218-01-9	ug/kg	16	1.8E+04	8.9E-04	4.5E+04	3.6E-04
100-D-74_Shallow_Focused	non-Rad	Cobalt	7440-48-4	ug/kg	8,300	1.3E+04	6.4E-01	1.1E+05	7.4E-02
100-D-74_Shallow_Focused	non-Rad	Copper	7440-50-8	ug/kg	13,400	5.0E+04	2.7E-01	1.1E+05	1.3E-01
100-D-74_Shallow_Focused	non-Rad	Lead	7439-92-1	ug/kg	2,300	5.0E+04	4.6E-02	3.6E+04	6.5E-02
100-D-74_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	278,000	2.2E+05	**1.3E+00**	5.8E+06	4.8E-02
100-D-74_Shallow_Focused	non-Rad	Mercury	7439-97-6	ug/kg	17	1.0E+02	1.7E-01	1.9E+03	9.1E-03
100-D-74_Shallow_Focused	non-Rad	Molybdenum	7439-98-7	ug/kg	320	2.0E+03	1.6E-01	1.4E+04	2.3E-02
100-D-74_Shallow_Focused	non-Rad	Nickel	7440-02-0	ug/kg	9,500	3.0E+04	3.2E-01	3.3E+04	2.9E-01
100-D-74_Shallow_Focused	non-Rad	Pyrene	129-00-0	ug/kg	40	1.8E+04	2.2E-03	6.0E+05	6.7E-05
100-D-74_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	57,600	2.0E+03	**2.9E+01**	3.1E+04	**1.9E+00**
100-D-74_Shallow_Focused	non-Rad	Zinc	7440-66-6	ug/kg	40,900	5.0E+04	8.2E-01	6.8E+04	6.0E-01
100-D-75;3_Shallow_Focused	non-Rad	Arsenic	7440-38-2	ug/kg	2,000	1.0E+04	2.0E-01	1.9E+05	1.1E-02
100-D-75;3_Shallow_Focused	non-Rad	Barium	7440-39-3	ug/kg	60,500	3.3E+05	1.8E-01	1.3E+06	4.6E-02
100-D-75;3_Shallow_Focused	non-Rad	Cadmium	7440-43-9	ug/kg	76	4.0E+03	1.9E-02	1.6E+03	4.7E-02
100-D-75;3_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	5,900	4.0E+02	**1.5E+01**	3.8E+04	1.6E-01
100-D-75;3_Shallow_Focused	non-Rad	Cobalt	7440-48-4	ug/kg	8,700	1.3E+04	6.7E-01	1.1E+05	7.8E-02
100-D-75;3_Shallow_Focused	non-Rad	Copper	7440-50-8	ug/kg	18,000	5.0E+04	3.6E-01	1.1E+05	1.7E-01
100-D-75;3_Shallow_Focused	non-Rad	Lead	7439-92-1	ug/kg	5,000	5.0E+04	1.0E-01	3.6E+04	1.4E-01

Table 4. Comparison of 100-D OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
100-D-75:3_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	297,000	2.2E+05	**1.4E+00**	5.8E+06	5.1E-02
100-D-75:3_Shallow_Focused	non-Rad	Mercury	7439-97-6	ug/kg	17	1.0E+02	1.7E-01	1.9E+03	9.1E-03
100-D-75:3_Shallow_Focused	non-Rad	Molybdenum	7439-98-7	ug/kg	350	2.0E+03	1.8E-01	1.4E+04	2.5E-02
100-D-75:3_Shallow_Focused	non-Rad	Nickel	7440-02-0	ug/kg	11,100	3.0E+04	3.7E-01	3.3E+04	3.4E-01
100-D-75:3_Shallow_Focused	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	ug/kg	2,400	No Value	--	No Value	--
100-D-75:3_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	52,700	2.0E+03	**2.6E+01**	3.1E+04	**1.7E+00**
100-D-75:3_Shallow_Focused	non-Rad	Zinc	7440-66-6	ug/kg	39,600	5.0E+04	7.9E-01	6.8E+04	5.8E-01
100-D-80:1_Shallow_Focused	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	ug/kg	1,300	2.0E+05	6.5E-03	3.6E+08	3.7E-06
100-D-80:1_Shallow_Focused	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	ug/kg	4,600	No Value	--	No Value	--
100-D-82_Shallow_Focused	non-Rad	Aroclor-1260	11096-82-5	ug/kg	3.5	4.0E+04	8.8E-05	1.5E+03	2.4E-03
100-D-82_Shallow_Focused	non-Rad	Arsenic	7440-38-2	ug/kg	1,900	1.0E+04	1.9E-01	1.9E+05	1.0E-02
100-D-82_Shallow_Focused	non-Rad	Barium	7440-39-3	ug/kg	27,800	3.3E+05	8.4E-02	1.3E+06	2.1E-02
100-D-82_Shallow_Focused	non-Rad	Beryllium	7440-41-7	ug/kg	93	1.0E+04	9.3E-03	1.4E+04	6.7E-03
100-D-82_Shallow_Focused	non-Rad	Cadmium	7440-43-9	ug/kg	49	4.0E+03	1.2E-02	1.6E+03	3.0E-02
100-D-82_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	8,300	4.0E+02	**2.1E+01**	3.8E+04	2.2E-01
100-D-82_Shallow_Focused	non-Rad	Cobalt	7440-48-4	ug/kg	5,400	1.3E+04	4.2E-01	1.1E+05	4.8E-02
100-D-82_Shallow_Focused	non-Rad	Copper	7440-50-8	ug/kg	8,700	5.0E+04	1.7E-01	1.1E+05	8.1E-02
100-D-82_Shallow_Focused	non-Rad	Lead	7439-92-1	ug/kg	134,000	5.0E+04	**2.7E+00**	3.6E+04	**3.8E+00**
100-D-82_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	164,000	2.2E+05	7.5E-01	5.8E+06	2.8E-02
100-D-82_Shallow_Focused	non-Rad	Molybdenum	7439-98-7	ug/kg	290	2.0E+03	1.5E-01	1.4E+04	2.1E-02
100-D-82_Shallow_Focused	non-Rad	Nickel	7440-02-0	ug/kg	6,900	3.0E+04	2.3E-01	3.3E+04	2.1E-01
100-D-82_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	17,800	2.0E+03	**8.9E+00**	3.1E+04	5.7E-01
100-D-82_Shallow_Focused	non-Rad	Zinc	7440-66-6	ug/kg	37,500	5.0E+04	7.5E-01	6.8E+04	5.5E-01
100-D-83:4_Shallow_Focused	non-Rad	Antimony	7440-36-0	ug/kg	550	5.0E+03	1.1E-01	6.0E+03	9.2E-02
100-D-83:4_Shallow_Focused	non-Rad	Arsenic	7440-38-2	ug/kg	4,800	1.0E+04	4.8E-01	1.9E+05	2.5E-02
100-D-83:4_Shallow_Focused	non-Rad	Barium	7440-39-3	ug/kg	62,400	3.3E+05	1.9E-01	1.3E+06	4.7E-02
100-D-83:4_Shallow_Focused	non-Rad	Beryllium	7440-41-7	ug/kg	120	1.0E+04	1.2E-02	1.4E+04	8.6E-03
100-D-83:4_Shallow_Focused	non-Rad	Cadmium	7440-43-9	ug/kg	52	4.0E+03	1.3E-02	1.6E+03	3.2E-02
100-D-83:4_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	7,800	4.0E+02	**2.0E+01**	3.8E+04	2.0E-01
100-D-83:4_Shallow_Focused	non-Rad	Cobalt	7440-48-4	ug/kg	8,200	1.3E+04	6.3E-01	1.1E+05	7.4E-02
100-D-83:4_Shallow_Focused	non-Rad	Copper	7440-50-8	ug/kg	18,400	5.0E+04	3.7E-01	1.1E+05	1.7E-01
100-D-83:4_Shallow_Focused	non-Rad	Fluoride	16984-48-8	ug/kg	1,000	No Value	--	2.3E+06	4.4E-04
100-D-83:4_Shallow_Focused	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	172	No Value	--	1.3E+06	1.4E-04
100-D-83:4_Shallow_Focused	non-Rad	Lead	7439-92-1	ug/kg	8,600	5.0E+04	1.7E-01	3.6E+04	2.4E-01
100-D-83:4_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	284,000	2.2E+05	**1.3E+00**	5.8E+06	4.9E-02
100-D-83:4_Shallow_Focused	non-Rad	Mercury	7439-97-6	ug/kg	950	1.0E+02	**9.5E+00**	1.9E+03	5.1E-01
100-D-83:4_Shallow_Focused	non-Rad	Molybdenum	7439-98-7	ug/kg	440	2.0E+03	2.2E-01	1.4E+04	3.2E-02
100-D-83:4_Shallow_Focused	non-Rad	Nickel	7440-02-0	ug/kg	10,900	3.0E+04	3.6E-01	3.3E+04	3.4E-01
100-D-83:4_Shallow_Focused	non-Rad	Nitrogen in Nitrate	NO3-N	ug/kg	1,600	No Value	--	No Value	--
100-D-83:4_Shallow_Focused	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	ug/kg	2,500	No Value	--	No Value	--
100-D-83:4_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	76,100	2.0E+03	**3.8E+01**	3.1E+04	**2.4E+00**
100-D-83:4_Shallow_Focused	non-Rad	Zinc	7440-66-6	ug/kg	49,100	5.0E+04	9.8E-01	6.8E+04	7.2E-01
100-D-84:1_Shallow_Focused	non-Rad	Arsenic	7440-38-2	ug/kg	2,500	1.0E+04	2.5E-01	1.9E+05	1.3E-02
100-D-84:1_Shallow_Focused	non-Rad	Barium	7440-39-3	ug/kg	74,700	3.3E+05	2.3E-01	1.3E+06	5.7E-02
100-D-84:1_Shallow_Focused	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	4.4	1.8E+04	2.4E-04	6.4E+04	6.9E-05
100-D-84:1_Shallow_Focused	non-Rad	Beryllium	7440-41-7	ug/kg	300	1.0E+04	3.0E-02	1.4E+04	2.2E-02
100-D-84:1_Shallow_Focused	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	ug/kg	79	1.0E+05	7.9E-04	4.5E+04	1.7E-03
100-D-84:1_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	1,500	5.0E+02	**3.0E+00**	1.3E+05	1.1E-02
100-D-84:1_Shallow_Focused	non-Rad	Cadmium	7440-43-9	ug/kg	43	4.0E+03	1.1E-02	1.6E+03	2.6E-02
100-D-84:1_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	11,900	4.0E+02	**3.0E+01**	3.8E+04	3.1E-01
100-D-84:1_Shallow_Focused	non-Rad	Cobalt	7440-48-4	ug/kg	11,800	1.3E+04	9.1E-01	1.1E+05	1.1E-01
100-D-84:1_Shallow_Focused	non-Rad	Copper	7440-50-8	ug/kg	15,200	5.0E+04	3.0E-01	1.1E+05	1.4E-01
100-D-84:1_Shallow_Focused	non-Rad	Diethylphthalate	84-66-2	ug/kg	72	1.0E+05	7.2E-04	No Value	--
100-D-84:1_Shallow_Focused	non-Rad	Fluoride	16984-48-8	ug/kg	1,100	No Value	--	2.3E+06	4.8E-04
100-D-84:1_Shallow_Focused	non-Rad	Lead	7439-92-1	ug/kg	4,400	5.0E+04	8.8E-02	3.6E+04	1.2E-01
100-D-84:1_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	343,000	2.2E+05	**1.6E+00**	5.8E+06	5.9E-02
100-D-84:1_Shallow_Focused	non-Rad	Mercury	7439-97-6	ug/kg	120	1.0E+02	**1.2E+00**	1.9E+03	6.4E-02
100-D-84:1_Shallow_Focused	non-Rad	Molybdenum	7439-98-7	ug/kg	390	2.0E+03	2.0E-01	1.4E+04	2.8E-02
100-D-84:1_Shallow_Focused	non-Rad	Nickel	7440-02-0	ug/kg	11,800	3.0E+04	3.9E-01	3.3E+04	3.6E-01
100-D-84:1_Shallow_Focused	non-Rad	Nitrogen in Nitrate	NO3-N	ug/kg	9,400	No Value	--	No Value	--
100-D-84:1_Shallow_Focused	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	ug/kg	10,200	No Value	--	No Value	--
100-D-84:1_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	94,400	2.0E+03	**4.7E+01**	3.1E+04	**3.0E+00**
100-D-84:1_Shallow_Focused	non-Rad	Zinc	7440-66-6	ug/kg	52,500	5.0E+04	**1.1E+00**	6.8E+04	7.7E-01
100-D-85:1_Shallow_Focused	non-Rad	Arsenic	7440-38-2	ug/kg	1,100	1.0E+04	1.1E-01	1.9E+05	5.8E-03
100-D-85:1_Shallow_Focused	non-Rad	Barium	7440-39-3	ug/kg	53,900	3.3E+05	1.6E-01	1.3E+06	4.1E-02
100-D-85:1_Shallow_Focused	non-Rad	Beryllium	7440-41-7	ug/kg	88	1.0E+04	8.8E-03	1.4E+04	6.3E-03
100-D-85:1_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	5,400	4.0E+02	**1.4E+01**	3.8E+04	1.4E-01
100-D-85:1_Shallow_Focused	non-Rad	Cobalt	7440-48-4	ug/kg	7,600	1.3E+04	5.9E-01	1.1E+05	6.8E-02
100-D-85:1_Shallow_Focused	non-Rad	Copper	7440-50-8	ug/kg	11,600	5.0E+04	2.3E-01	1.1E+05	1.1E-01
100-D-85:1_Shallow_Focused	non-Rad	Lead	7439-92-1	ug/kg	1,800	5.0E+04	3.6E-02	3.6E+04	5.1E-02
100-D-85:1_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	278,000	2.2E+05	**1.3E+00**	5.8E+06	4.8E-02
100-D-85:1_Shallow_Focused	non-Rad	Molybdenum	7439-98-7	ug/kg	390	2.0E+03	2.0E-01	1.4E+04	2.8E-02
100-D-85:1_Shallow_Focused	non-Rad	Nickel	7440-02-0	ug/kg	9,500	3.0E+04	3.2E-01	3.3E+04	2.9E-01
100-D-85:1_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	57,900	2.0E+03	**2.9E+01**	3.1E+04	**1.9E+00**
100-D-85:1_Shallow_Focused	non-Rad	Zinc	7440-66-6	ug/kg	40,100	5.0E+04	8.0E-01	6.8E+04	5.9E-01
100-D-87_Shallow_Focused	non-Rad	Antimony	7440-36-0	ug/kg	480	5.0E+03	9.6E-02	6.0E+03	8.0E-02
100-D-87_Shallow_Focused	non-Rad	Arsenic	7440-38-2	ug/kg	7,000	1.0E+04	7.0E-01	1.9E+05	3.7E-02
100-D-87_Shallow_Focused	non-Rad	Barium	7440-39-3	ug/kg	89,200	3.3E+05	2.7E-01	1.3E+06	6.7E-02
100-D-87_Shallow_Focused	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	45	1.8E+04	2.5E-03	6.4E+04	7.0E-04
100-D-87_Shallow_Focused	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	55	1.8E+04	3.1E-03	7.6E+04	7.2E-04
100-D-87_Shallow_Focused	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	120	1.8E+04	6.7E-03	3.9E+04	3.1E-03
100-D-87_Shallow_Focused	non-Rad	Beryllium	7440-41-7	ug/kg	180	1.0E+04	1.8E-02	1.4E+04	1.3E-02
100-D-87_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	2,400	5.0E+02	**4.8E+00**	1.3E+05	1.8E-02
100-D-87_Shallow_Focused	non-Rad	Cadmium	7440-43-9	ug/kg	450	4.0E+03	1.1E-01	1.6E+03	2.8E-01
100-D-87_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	9,300	4.0E+02	**2.3E+01**	3.8E+04	2.4E-01
100-D-87_Shallow_Focused	non-Rad	Chrysene	218-01-9	ug/kg	64	1.8E+04	3.6E-03	4.5E+04	1.4E-03
100-D-87_Shallow_Focused	non-Rad	Cobalt	7440-48-4	ug/kg	7,600	1.3E+04	5.9E-01	1.1E+05	6.8E-02
100-D-87_Shallow_Focused	non-Rad	Copper	7440-50-8	ug/kg	16,800	5.0E+04	3.4E-01	1.1E+05	1.6E-01
100-D-87_Shallow_Focused	non-Rad	Fluoranthene	206-44-0	ug/kg	41	1.8E+04	2.3E-03	8.4E+05	4.9E-05
100-D-87_Shallow_Focused	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	36	1.8E+04	2.0E-03	3.6E+04	1.0E-03
100-D-87_Shallow_Focused	non-Rad	Lead	7439-92-1	ug/kg	19,300	5.0E+04	3.9E-01	3.6E+04	5.4E-01
100-D-87_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	304,000	2.2E+05	**1.4E+00**	5.8E+06	5.2E-02
100-D-87_Shallow_Focused	non-Rad	Mercury	7439-97-6	ug/kg	16	1.0E+02	1.6E-01	1.9E+03	8.6E-03
100-D-87_Shallow_Focused	non-Rad	Molybdenum	7439-98-7	ug/kg	380	2.0E+03	1.9E-01	1.4E+04	2.7E-02
100-D-87_Shallow_Focused	non-Rad	Nickel	7440-02-0	ug/kg	11,800	3.0E+04	3.9E-01	3.3E+04	3.6E-01
100-D-87_Shallow_Focused	non-Rad	Pyrene	129-00-0	ug/kg	55	1.8E+04	3.1E-03	6.0E+05	9.2E-05
100-D-87_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	48,000	2.0E+03	**2.4E+01**	3.1E+04	**1.5E+00**
100-D-87_Shallow_Focused	non-Rad	Zinc	7440-66-6	ug/kg	83,600	5.0E+04	**1.7E+00**	6.8E+04	**1.2E+00**
100-D-88_Shallow_Focused	non-Rad	Antimony	7440-36-0	ug/kg	510	5.0E+03	1.0E-01	6.0E+03	8.5E-02
100-D-88_Shallow_Focused	non-Rad	Aroclor-1260	11096-82-5	ug/kg	2.9	4.0E+04	7.3E-05	1.5E+03	2.0E-03
100-D-88_Shallow_Focused	non-Rad	Arsenic	7440-38-2	ug/kg	2,100	1.0E+04	2.1E-01	1.9E+05	1.1E-02
100-D-88_Shallow_Focused	non-Rad	Barium	7440-39-3	ug/kg	105,000	3.3E+05	3.2E-01	1.3E+06	7.9E-02
100-D-88_Shallow_Focused	non-Rad	Beryllium	7440-41-7	ug/kg	270	1.0E+04	2.7E-02	1.4E+04	1.9E-02
100-D-88_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	930	5.0E+02	**1.9E+00**	1.3E+05	7.0E-03
100-D-88_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	10,400	4.0E+02	**2.6E+01**	3.8E+04	2.7E-01
100-D-88_Shallow_Focused	non-Rad	Cobalt	7440-48-4	ug/kg	11,500	1.3E+04	8.9E-01	1.1E+05	1.0E-01
100-D-88_Shallow_Focused	non-Rad	Copper	7440-50-8	ug/kg	29,200	5.0E+04	5.8E-01	1.1E+05	2.7E-01
100-D-88_Shallow_Focused	non-Rad	Fluoride	16984-48-8	ug/kg	1,900	No Value	--	2.3E+06	8.3E-04
100-D-88_Shallow_Focused	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	300	No Value	--	1.3E+06	2.4E-04
100-D-88_Shallow_Focused	non-Rad	Lead	7439-92-1	ug/kg	4,400	5.0E+04	8.8E-02	3.6E+04	1.2E-01
100-D-88_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	384,000	2.2E+05	**1.8E+00**	5.8E+06	6.6E-02
100-D-88_Shallow_Focused	non-Rad	Mercury	7439-97-6	ug/kg	12	1.0E+02	1.2E-01	1.9E+03	6.4E-03
100-D-88_Shallow_Focused	non-Rad	Methylene chloride	75-09-2	ug/kg	1.9	No Value	--	1.7E+05	1.2E-05
100-D-88_Shallow_Focused	non-Rad	Molybdenum	7439-98-7	ug/kg	300	2.0E+03	1.5E-01	1.4E+04	2.2E-02

Table 4. Comparison of 100-D OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
100-D-88_Shallow_Focused	non-Rad	Nickel	7440-02-0	ug/kg	10,400	3.0E+04	3.5E-01	3.3E+04	3.2E-01
100-D-88_Shallow_Focused	non-Rad	Nitrogen in Nitrate	NO3-N	ug/kg	1,900	No Value	--	No Value	--
100-D-88_Shallow_Focused	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	ug/kg	2,800	No Value	--	No Value	--
100-D-88_Shallow_Focused	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	ug/kg	6,300	2.0E+05	3.2E-02	3.6E+08	1.8E-05
100-D-88_Shallow_Focused	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	ug/kg	15,000	No Value	--	No Value	--
100-D-88_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	104,000	2.0E+03	**5.2E+01**	3.1E+04	**3.3E+00**
100-D-88_Shallow_Focused	non-Rad	Zinc	7440-66-6	ug/kg	63,900	5.0E+04	**1.3E+00**	6.8E+04	9.4E-01
100-D-9_Shallow_Focused	non-Rad	Acetone	67-64-1	ug/kg	7.0	No Value	--	No Value	--
100-D-9_Shallow_Focused	non-Rad	Arsenic	7440-38-2	ug/kg	1,200	1.0E+04	1.2E-01	1.9E+05	6.3E-03
100-D-9_Shallow_Focused	non-Rad	Barium	7440-39-3	ug/kg	63,800	3.3E+05	1.9E-01	1.3E+06	4.8E-02
100-D-9_Shallow_Focused	non-Rad	Beryllium	7440-41-7	ug/kg	470	1.0E+04	4.7E-02	1.4E+04	3.4E-02
100-D-9_Shallow_Focused	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	ug/kg	29	1.0E+05	2.9E-04	4.5E+04	6.4E-04
100-D-9_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	820	5.0E+02	**1.6E+00**	1.3E+05	6.2E-03
100-D-9_Shallow_Focused	non-Rad	Cadmium	7440-43-9	ug/kg	170	4.0E+03	4.3E-02	1.6E+03	1.0E-01
100-D-9_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	3,500	4.0E+02	**8.8E+00**	3.8E+04	9.2E-02
100-D-9_Shallow_Focused	non-Rad	Cobalt	7440-48-4	ug/kg	8,600	1.3E+04	6.6E-01	1.1E+05	7.7E-02
100-D-9_Shallow_Focused	non-Rad	Copper	7440-50-8	ug/kg	14,300	5.0E+04	2.9E-01	1.1E+05	1.3E-01
100-D-9_Shallow_Focused	non-Rad	Di-n-butylphthalate	84-74-2	ug/kg	25	No Value	--	No Value	--
100-D-9_Shallow_Focused	non-Rad	Lead	7439-92-1	ug/kg	2,000	5.0E+04	4.0E-02	3.6E+04	5.6E-02
100-D-9_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	299,000	2.2E+05	**1.4E+00**	5.8E+06	5.2E-02
100-D-9_Shallow_Focused	non-Rad	Methylene chloride	75-09-2	ug/kg	8.0	No Value	--	1.7E+05	4.8E-05
100-D-9_Shallow_Focused	non-Rad	Molybdenum	7439-98-7	ug/kg	450	2.0E+03	2.3E-01	1.4E+04	3.2E-02
100-D-9_Shallow_Focused	non-Rad	Nickel	7440-02-0	ug/kg	9,100	3.0E+04	3.0E-01	3.3E+04	2.8E-01
100-D-9_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	67,300	2.0E+03	**3.4E+01**	3.1E+04	**2.2E+00**
100-D-9_Shallow_Focused	non-Rad	Zinc	7440-66-6	ug/kg	43,100	5.0E+04	8.6E-01	6.8E+04	6.4E-01
100-D-94_Shallow_Focused	non-Rad	Antimony	7440-36-0	ug/kg	450	5.0E+03	9.0E-02	6.0E+03	7.5E-02
100-D-94_Shallow_Focused	non-Rad	Arsenic	7440-38-2	ug/kg	2,100	1.0E+04	2.1E-01	1.9E+05	1.1E-02
100-D-94_Shallow_Focused	non-Rad	Barium	7440-39-3	ug/kg	59,800	3.3E+05	1.8E-01	1.3E+06	4.5E-02
100-D-94_Shallow_Focused	non-Rad	Beryllium	7440-41-7	ug/kg	200	1.0E+04	2.0E-02	1.4E+04	1.4E-02
100-D-94_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	9,000	4.0E+02	**2.3E+01**	3.8E+04	2.4E-01
100-D-94_Shallow_Focused	non-Rad	Cobalt	7440-48-4	ug/kg	6,300	1.3E+04	4.9E-01	1.1E+05	5.7E-02
100-D-94_Shallow_Focused	non-Rad	Copper	7440-50-8	ug/kg	12,000	5.0E+04	2.4E-01	1.1E+05	1.1E-01
100-D-94_Shallow_Focused	non-Rad	Fluoride	16984-48-8	ug/kg	1,100	No Value	--	2.3E+06	4.8E-04
100-D-94_Shallow_Focused	non-Rad	Lead	7439-92-1	ug/kg	24,700	5.0E+04	4.9E-01	3.6E+04	6.9E-01
100-D-94_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	275,000	2.2E+05	**1.3E+00**	5.8E+06	4.7E-02
100-D-94_Shallow_Focused	non-Rad	Mercury	7439-97-6	ug/kg	580	1.0E+02	**5.8E+00**	1.9E+03	3.1E-01
100-D-94_Shallow_Focused	non-Rad	Nickel	7440-02-0	ug/kg	10,000	3.0E+04	3.3E-01	3.3E+04	3.1E-01
100-D-94_Shallow_Focused	non-Rad	Nitrogen in Nitrate	NO3-N	ug/kg	1,800	No Value	--	No Value	--
100-D-94_Shallow_Focused	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	ug/kg	2,700	No Value	--	No Value	--
100-D-94_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	40,200	2.0E+03	**2.0E+01**	3.1E+04	**1.3E+00**
100-D-94_Shallow_Focused	non-Rad	Zinc	7440-66-6	ug/kg	38,700	5.0E+04	7.7E-01	6.8E+04	5.7E-01
116-D-10_Shallow	non-Rad	Antimony	7440-36-0	ug/kg	463	5.0E+03	9.3E-02	6.0E+03	7.7E-02
116-D-10_Shallow	non-Rad	Arsenic	7440-38-2	ug/kg	2,666	1.0E+04	2.7E-01	1.9E+05	1.4E-02
116-D-10_Shallow	non-Rad	Barium	7440-39-3	ug/kg	69,640	3.3E+05	2.1E-01	1.3E+06	5.3E-02
116-D-10_Shallow	non-Rad	Beryllium	7440-41-7	ug/kg	227	1.0E+04	2.3E-02	1.4E+04	1.6E-02
116-D-10_Shallow	non-Rad	Boron	7440-42-8	ug/kg	1,220	5.0E+02	**2.4E+00**	1.3E+05	9.2E-03
116-D-10_Shallow	non-Rad	Cadmium	7440-43-9	ug/kg	109	4.0E+03	2.7E-02	1.6E+03	6.7E-02
116-D-10_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.092	2.2E+03	4.1E-05	9.2E+02	9.9E-05
116-D-10_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	9,278	4.0E+02	**2.3E+01**	3.8E+04	2.4E-01
116-D-10_Shallow	non-Rad	Cobalt	7440-48-4	ug/kg	8,369	1.3E+04	6.4E-01	1.1E+05	7.5E-02
116-D-10_Shallow	non-Rad	Copper	7440-50-8	ug/kg	15,218	5.0E+04	3.0E-01	1.1E+05	1.4E-01
116-D-10_Shallow	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	213	No Value	--	1.3E+06	1.7E-04
116-D-10_Shallow	non-Rad	Lead	7439-92-1	ug/kg	3,465	5.0E+04	6.9E-02	3.6E+04	9.7E-02
116-D-10_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	320,612	2.2E+05	**1.5E+00**	5.8E+06	5.5E-02
116-D-10_Shallow	non-Rad	Molybdenum	7439-98-7	ug/kg	383	2.0E+03	1.9E-01	1.4E+04	2.7E-02
116-D-10_Shallow	non-Rad	Nickel	7440-02-0	ug/kg	10,914	3.0E+04	3.6E-01	3.3E+04	3.4E-01
116-D-10_Shallow	Rad	Rads SOF	---	pCi/g	--	--	8.3E-05	--	2.8E-04
116-D-10_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	1491.5	5.0E+03	3.0E-01	3.6E+05	4.1E-03
116-D-10_Shallow	Rad	Uranium-233/234	U-233/234	pCi/g	0.5	5.2E+04	1.0E-05	6.4E+03	8.1E-05
116-D-10_Shallow	Rad	Uranium-238	U-238	pCi/g	0.5	1.6E+04	3.2E-05	5.2E+03	9.7E-05
116-D-10_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	67123.0	2.0E+03	**3.4E+01**	3.1E+04	**2.2E+00**
116-D-10_Shallow	non-Rad	Zinc	7440-66-6	ug/kg	44463.6	5.0E+04	8.9E-01	6.8E+04	6.6E-01
116-D-10_Staging Pile Area	non-Rad	Antimony	7440-36-0	ug/kg	484.0	5.0E+03	9.7E-02	6.0E+03	8.1E-02
116-D-10_Staging Pile Area	non-Rad	Arsenic	7440-38-2	ug/kg	2037.2	1.0E+04	2.0E-01	1.9E+05	1.1E-02
116-D-10_Staging Pile Area	non-Rad	Barium	7440-39-3	ug/kg	60779.7	3.3E+05	1.8E-01	1.3E+06	4.6E-02
116-D-10_Staging Pile Area	non-Rad	Beryllium	7440-41-7	ug/kg	170.7	1.0E+04	1.7E-02	1.4E+04	1.2E-02
116-D-10_Staging Pile Area	non-Rad	Boron	7440-42-8	ug/kg	856.2	5.0E+02	**1.7E+00**	1.3E+05	6.4E-03
116-D-10_Staging Pile Area	non-Rad	Cadmium	7440-43-9	ug/kg	98.5	4.0E+03	2.5E-02	1.6E+03	6.1E-02
116-D-10_Staging Pile Area	Rad	Cesium-137	10045-97-3	pCi/g	0.1	2.2E+03	3.6E-05	9.2E+02	8.6E-05
116-D-10_Staging Pile Area	non-Rad	Chromium	7440-47-3	ug/kg	5983.1	4.0E+02	**1.5E+01**	3.8E+04	1.6E-01
116-D-10_Staging Pile Area	non-Rad	Cobalt	7440-48-4	ug/kg	8902.1	1.3E+04	6.9E-01	1.1E+05	8.0E-02
116-D-10_Staging Pile Area	non-Rad	Copper	7440-50-8	ug/kg	13930.1	5.0E+04	2.8E-01	1.1E+05	1.3E-01
116-D-10_Staging Pile Area	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	168.4	No Value	--	1.3E+06	1.4E-04
116-D-10_Staging Pile Area	non-Rad	Lead	7439-92-1	ug/kg	2893.8	5.0E+04	5.8E-02	3.6E+04	8.1E-02
116-D-10_Staging Pile Area	non-Rad	Manganese	7439-96-5	ug/kg	318855.6	2.2E+05	**1.5E+00**	5.8E+06	5.5E-02
116-D-10_Staging Pile Area	non-Rad	Mercury	7439-97-6	ug/kg	15.0	1.0E+02	1.5E-01	1.9E+03	8.0E-03
116-D-10_Staging Pile Area	non-Rad	Molybdenum	7439-98-7	ug/kg	414.2	2.0E+03	2.1E-01	1.4E+04	3.0E-02
116-D-10_Staging Pile Area	non-Rad	Nickel	7440-02-0	ug/kg	8845.2	3.0E+04	3.0E-01	3.3E+04	2.7E-01
116-D-10_Staging Pile Area	Rad	Rads SOF	---	pCi/g	--	--	3.3E-04	--	1.0E-02
116-D-10_Staging Pile Area	non-Rad	Silver	7440-22-4	ug/kg	179.9	2.0E+03	9.0E-02	5.0E+04	3.6E-03
116-D-10_Staging Pile Area	Rad	Total beta radiostrontium	SR-RAD	pCi/g	0.9	3.6E+03	2.5E-04	9.1E+01	9.8E-03
116-D-10_Staging Pile Area	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	1546.8	5.0E+03	3.1E-01	3.6E+05	4.3E-03
116-D-10_Staging Pile Area	Rad	Uranium-233/234	U-233/234	pCi/g	0.5	5.2E+04	1.1E-05	6.4E+03	8.6E-05
116-D-10_Staging Pile Area	Rad	Uranium-238	U-238	pCi/g	0.5	1.6E+04	3.3E-05	5.2E+03	1.0E-04
116-D-10_Staging Pile Area	non-Rad	Vanadium	7440-62-2	ug/kg	76277.7	2.0E+03	**3.8E+01**	3.1E+04	**2.5E+00**
116-D-10_Staging Pile Area	non-Rad	Zinc	7440-66-6	ug/kg	45859.1	5.0E+04	9.2E-01	6.8E+04	6.8E-01
116-D-1A_Shallow	Rad	Americium-241	14596-10-2	pCi/g	0.2	2.2E+04	7.0E-06	4.8E+03	3.1E-05
116-D-1A_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.8	2.2E+03	3.5E-04	9.2E+02	8.3E-04
116-D-1A_Shallow	Rad	Europium-152	14683-23-9	pCi/g	0.3	1.5E+04	2.3E-05	1.7E+03	1.9E-04
116-D-1A_Shallow	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	611.0	No Value	--	1.3E+06	4.9E-04
116-D-1A_Shallow	Rad	Rads SOF	---	pCi/g	--	--	5.0E-04	--	4.7E-03
116-D-1A_Shallow	Rad	Total beta radiostrontium	SR-RAD	pCi/g	0.3	3.6E+03	8.8E-05	9.1E+01	3.5E-03
116-D-1A_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	1450.8	5.0E+03	2.9E-01	3.6E+05	4.0E-03
116-D-1A_Shallow	Rad	Uranium-233/234	U-233/234	pCi/g	0.5	5.2E+04	9.4E-06	6.4E+03	7.6E-05
116-D-1A_Shallow	Rad	Uranium-238	U-238	pCi/g	0.5	1.6E+04	3.1E-05	5.2E+03	9.5E-05
116-D-2_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.1	2.2E+03	3.1E-05	9.2E+02	7.4E-05
116-D-2_Shallow	Rad	Rads SOF	---	pCi/g	--	--	7.3E-05	--	2.6E-04
116-D-2_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	1422.9	5.0E+03	2.9E-01	3.6E+05	4.0E-03
116-D-2_Shallow	Rad	Uranium-233/234	U-233/234	pCi/g	0.6	5.2E+04	1.1E-05	6.4E+03	8.7E-05
116-D-2_Shallow	Rad	Uranium-235	15117-96-1	pCi/g	0.0	2.7E+04	1.2E-06	4.4E+03	7.3E-06
116-D-2_Shallow	Rad	Uranium-238	U-238	pCi/g	0.5	1.6E+04	3.0E-05	5.2E+03	9.2E-05
116-D-4_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.1	2.2E+03	2.3E-05	9.2E+02	5.4E-05
116-D-4_Shallow	Rad	Rads SOF	---	pCi/g	--	--	6.1E-05	--	2.2E-04
116-D-4_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	1268.2	5.0E+03	2.5E-01	3.6E+05	3.5E-03
116-D-4_Shallow	Rad	Uranium-233/234	U-233/234	pCi/g	0.5	5.2E+04	9.3E-06	6.4E+03	7.5E-05
116-D-4_Shallow	Rad	Uranium-235	15117-96-1	pCi/g	0.1	2.7E+04	2.2E-06	4.4E+03	1.4E-05
116-D-4_Shallow	Rad	Uranium-238	U-238	pCi/g	0.4	1.6E+04	2.7E-05	5.2E+03	8.1E-05
116-D-5_Overburden	non-Rad	Anthracene	120-12-7	ug/kg	12.2	2.9E+04	4.2E-04	6.8E+05	1.8E-05
116-D-5_Overburden	non-Rad	Arsenic	7440-38-2	ug/kg	2147.4	1.0E+04	2.2E-01	1.9E+05	1.1E-02
116-D-5_Overburden	non-Rad	Barium	7440-39-3	ug/kg	58353.9	3.3E+05	1.8E-01	1.3E+06	4.4E-02
116-D-5_Overburden	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	47.3	1.8E+04	2.6E-03	6.4E+04	7.4E-04
116-D-5_Overburden	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	37.1	1.8E+04	2.1E-03	7.6E+04	4.9E-04
116-D-5_Overburden	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	54.5	1.8E+04	3.0E-03	3.9E+04	1.4E-03
116-D-5_Overburden	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	16.8	1.8E+04	9.3E-04	3.9E+04	4.3E-04
116-D-5_Overburden	non-Rad	Beryllium	7440-41-7	ug/kg	177.1	1.0E+04	1.8E-02	1.4E+04	1.3E-02

Table 4. Comparison of 100-D OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
116-D-5_Overburden	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	ug/kg	854.0	1.0E+05	8.5E-03	4.5E+04	1.9E-02
116-D-5_Overburden	non-Rad	Boron	7440-42-8	ug/kg	850.2	5.0E+02	**1.7E+00**	1.3E+05	6.4E-03
116-D-5_Overburden	non-Rad	Cadmium	7440-43-9	ug/kg	62.2	4.0E+03	1.6E-02	1.6E+03	3.8E-02
116-D-5_Overburden	Rad	Cesium-137	10045-97-3	pCi/g	0.1	2.2E+03	5.3E-05	9.2E+02	1.3E-04
116-D-5_Overburden	non-Rad	Chromium	7440-47-3	ug/kg	6881.2	4.0E+02	**1.7E+01**	3.8E+04	1.8E-01
116-D-5_Overburden	non-Rad	Chrysene	218-01-9	ug/kg	33.1	1.8E+04	1.8E-03	4.5E+04	7.4E-04
116-D-5_Overburden	non-Rad	Cobalt	7440-48-4	ug/kg	7545.8	1.3E+04	5.8E-01	1.1E+05	6.8E-02
116-D-5_Overburden	non-Rad	Copper	7440-50-8	ug/kg	15050.2	5.0E+04	3.0E-01	1.1E+05	1.4E-01
116-D-5_Overburden	non-Rad	Dibenz[a,h]anthracene	53-70-3	ug/kg	3.5	1.8E+04	2.0E-04	4.4E+04	8.0E-05
116-D-5_Overburden	Rad	Europium-152	14683-23-9	pCi/g	0.1	1.5E+04	6.8E-06	1.7E+03	5.8E-05
116-D-5_Overburden	non-Rad	Fluoranthene	206-44-0	ug/kg	130.8	1.8E+04	7.3E-03	8.4E+05	1.6E-04
116-D-5_Overburden	non-Rad	Heptachlor epoxide	1024-57-3	ug/kg	1.5	No Value	--	No Value	--
116-D-5_Overburden	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	151.1	No Value	--	1.3E+06	1.2E-04
116-D-5_Overburden	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	14.7	1.8E+04	8.2E-04	3.6E+04	4.1E-04
116-D-5_Overburden	non-Rad	Lead	7439-92-1	ug/kg	2606.3	5.0E+04	5.2E-02	3.6E+04	7.3E-02
116-D-5_Overburden	non-Rad	Manganese	7439-96-5	ug/kg	284702.1	2.2E+05	**1.3E+00**	5.8E+06	4.9E-02
116-D-5_Overburden	non-Rad	Mercury	7439-97-6	ug/kg	16.1	1.0E+02	1.6E-01	1.9E+03	8.7E-03
116-D-5_Overburden	non-Rad	Molybdenum	7439-98-7	ug/kg	305.1	2.0E+03	1.5E-01	1.4E+04	2.2E-02
116-D-5_Overburden	non-Rad	Nickel	7440-02-0	ug/kg	8734.1	3.0E+04	2.9E-01	3.3E+04	2.7E-01
116-D-5_Overburden	Rad	Nickel-63	13981-37-8	pCi/g	2.8	No Value	--	No Value	--
116-D-5_Overburden	non-Rad	Nitrate	14797-55-8	ug/kg	29336.9	No Value	--	3.4E+08	8.6E-05
116-D-5_Overburden	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	ug/kg	3756.6	No Value	--	No Value	--
116-D-5_Overburden	non-Rad	Pyrene	129-00-0	ug/kg	79.0	1.8E+04	4.4E-03	6.0E+05	1.3E-04
116-D-5_Overburden	Rad	Rads SOF	---	pCi/g	--	--	1.2E-04	--	4.2E-04
116-D-5_Overburden	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	2105.6	5.0E+03	4.2E-01	3.6E+05	5.9E-03
116-D-5_Overburden	Rad	Uranium-233/234	U-233/234	pCi/g	0.6	5.2E+04	1.2E-05	6.4E+03	9.4E-05
116-D-5_Overburden	Rad	Uranium-238	U-238	pCi/g	0.7	1.6E+04	4.5E-05	5.2E+03	1.4E-04
116-D-5_Overburden	non-Rad	Vanadium	7440-62-2	ug/kg	56600.6	2.0E+03	**2.8E+01**	3.1E+04	**1.8E+00**
116-D-5_Overburden	non-Rad	Zinc	7440-66-6	ug/kg	43706.2	5.0E+04	8.7E-01	6.8E+04	6.5E-01
116-D-5_Shallow	non-Rad	Arsenic	7440-38-2	ug/kg	2876.8	1.0E+04	2.9E-01	1.9E+05	1.5E-02
116-D-5_Shallow	non-Rad	Barium	7440-39-3	ug/kg	63089.0	3.3E+05	1.9E-01	1.3E+06	4.8E-02
116-D-5_Shallow	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	10.4	1.8E+04	5.8E-04	6.4E+04	1.6E-04
116-D-5_Shallow	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	8.4	1.8E+04	4.7E-04	7.6E+04	1.1E-04
116-D-5_Shallow	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	14.1	1.8E+04	7.8E-04	3.9E+04	3.6E-04
116-D-5_Shallow	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	5.0	1.8E+04	2.8E-04	3.9E+04	1.3E-04
116-D-5_Shallow	non-Rad	Beryllium	7440-41-7	ug/kg	212.2	1.0E+04	2.1E-02	1.4E+04	1.5E-02
116-D-5_Shallow	non-Rad	Boron	7440-42-8	ug/kg	1133.5	5.0E+02	**2.3E+00**	1.3E+05	8.5E-03
116-D-5_Shallow	non-Rad	Cadmium	7440-43-9	ug/kg	67.1	4.0E+03	1.7E-02	1.6E+03	4.1E-02
116-D-5_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.4	2.2E+03	1.9E-04	9.2E+02	4.6E-04
116-D-5_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	11364.6	4.0E+02	**2.8E+01**	3.8E+04	3.0E-01
116-D-5_Shallow	non-Rad	Chrysene	218-01-9	ug/kg	12.8	1.8E+04	7.1E-04	4.5E+04	2.9E-04
116-D-5_Shallow	non-Rad	Cobalt	7440-48-4	ug/kg	8904.8	1.3E+04	6.9E-01	1.1E+05	8.0E-02
116-D-5_Shallow	non-Rad	Copper	7440-50-8	ug/kg	17071.2	5.0E+04	3.4E-01	1.1E+05	1.6E-01
116-D-5_Shallow	Rad	Europium-152	14683-23-9	pCi/g	1.0	1.5E+04	7.1E-05	1.7E+03	6.0E-04
116-D-5_Shallow	non-Rad	Fluoranthene	206-44-0	ug/kg	12.8	1.8E+04	7.1E-04	8.4E+05	1.5E-05
116-D-5_Shallow	non-Rad	Fluoride	16984-48-8	ug/kg	480.3	No Value	--	2.3E+06	2.1E-04
116-D-5_Shallow	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	185.2	No Value	--	1.3E+06	1.5E-04
116-D-5_Shallow	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	5.9	1.8E+04	3.3E-04	3.6E+04	1.7E-04
116-D-5_Shallow	non-Rad	Lead	7439-92-1	ug/kg	3774.6	5.0E+04	7.6E-02	3.6E+04	1.1E-01
116-D-5_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	324766.0	2.2E+05	**1.5E+00**	5.8E+06	5.6E-02
116-D-5_Shallow	non-Rad	Mercury	7439-97-6	ug/kg	65.0	1.0E+02	6.5E-01	1.9E+03	3.5E-02
116-D-5_Shallow	non-Rad	Molybdenum	7439-98-7	ug/kg	314.3	2.0E+03	1.6E-01	1.4E+04	2.3E-02
116-D-5_Shallow	non-Rad	Nickel	7440-02-0	ug/kg	12276.5	3.0E+04	4.1E-01	3.3E+04	3.8E-01
116-D-5_Shallow	Rad	Nickel-63	13981-37-8	pCi/g	7.5	No Value	--	No Value	--
116-D-5_Shallow	non-Rad	Nitrate	14797-55-8	ug/kg	9325.0	No Value	--	3.4E+08	2.7E-05
116-D-5_Shallow	non-Rad	Nitrite	14797-65-0	ug/kg	91100.0	No Value	--	3.4E+08	2.7E-04
116-D-5_Shallow	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	ug/kg	2478.6	No Value	--	No Value	--
116-D-5_Shallow	Rad	Plutonium-239/240	PU-239/240	pCi/g	0.0	1.3E+04	3.5E-06	6.3E+03	7.2E-06
116-D-5_Shallow	non-Rad	Pyrene	129-00-0	ug/kg	13.9	1.8E+04	7.7E-04	6.0E+05	2.3E-05
116-D-5_Shallow	Rad	Rads SOF	---	pCi/g	--	--	3.2E-04	--	1.3E-03
116-D-5_Shallow	non-Rad	Silver	7440-22-4	ug/kg	1300.0	2.0E+03	6.5E-01	5.0E+04	2.6E-02
116-D-5_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	1934.9	5.0E+03	3.9E-01	3.6E+05	5.4E-03
116-D-5_Shallow	Rad	Uranium-233/234	U-233/234	pCi/g	0.7	5.2E+04	1.3E-05	6.4E+03	1.0E-04
116-D-5_Shallow	Rad	Uranium-238	U-238	pCi/g	0.6	1.6E+04	4.1E-05	5.2E+03	1.3E-04
116-D-5_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	62589.2	2.0E+03	**3.1E+01**	3.1E+04	**2.0E+00**
116-D-5_Shallow	non-Rad	Zinc	7440-66-6	ug/kg	51203.6	5.0E+04	**1.0E+00**	6.8E+04	7.6E-01
116-D-5_Staging pile area footprint	non-Rad	4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	ug/kg	6.6	No Value	--	4.0E+02	1.6E-02
116-D-5_Staging pile area footprint	non-Rad	Antimony	7440-36-0	ug/kg	239.0	5.0E+03	4.8E-02	6.0E+03	4.0E-02
116-D-5_Staging pile area footprint	non-Rad	Arsenic	7440-38-2	ug/kg	2371.1	1.0E+04	2.4E-01	1.9E+05	1.3E-02
116-D-5_Staging pile area footprint	non-Rad	Barium	7440-39-3	ug/kg	61780.6	3.3E+05	1.9E-01	1.3E+06	4.7E-02
116-D-5_Staging pile area footprint	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	4.0	1.8E+04	2.2E-04	6.4E+04	6.3E-05
116-D-5_Staging pile area footprint	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	3.2	1.8E+04	1.8E-04	7.6E+04	4.2E-05
116-D-5_Staging pile area footprint	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	5.0	1.8E+04	2.8E-04	3.9E+04	1.3E-04
116-D-5_Staging pile area footprint	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	2.3	1.8E+04	1.3E-04	3.9E+04	5.8E-05
116-D-5_Staging pile area footprint	non-Rad	Beryllium	7440-41-7	ug/kg	185.2	1.0E+04	1.9E-02	1.4E+04	1.3E-02
116-D-5_Staging pile area footprint	non-Rad	beta-1,2,3,4,5,6-Hexachlorocyclohexane (beta-BHC)	319-85-7	ug/kg	1.5	No Value	--	4.1E+03	3.7E-04
116-D-5_Staging pile area footprint	non-Rad	Boron	7440-42-8	ug/kg	1067.1	5.0E+02	**2.1E+00**	1.3E+05	8.0E-03
116-D-5_Staging pile area footprint	non-Rad	Cadmium	7440-43-9	ug/kg	58.7	4.0E+03	1.5E-02	1.6E+03	3.6E-02
116-D-5_Staging pile area footprint	non-Rad	Chromium	7440-47-3	ug/kg	8013.6	4.0E+02	**2.0E+01**	3.8E+04	2.1E-01
116-D-5_Staging pile area footprint	non-Rad	Chrysene	218-01-9	ug/kg	12.1	1.8E+04	6.7E-04	4.5E+04	2.7E-04
116-D-5_Staging pile area footprint	non-Rad	Cobalt	7440-48-4	ug/kg	7289.5	1.3E+04	5.6E-01	1.1E+05	6.5E-02
116-D-5_Staging pile area footprint	non-Rad	Copper	7440-50-8	ug/kg	14234.1	5.0E+04	2.9E-01	1.1E+05	1.3E-01
116-D-5_Staging pile area footprint	non-Rad	Dibenz[a,h]anthracene	53-70-3	ug/kg	1.4	1.8E+04	7.7E-05	4.4E+04	3.2E-05
116-D-5_Staging pile area footprint	non-Rad	Fluoranthene	206-44-0	ug/kg	8.8	1.8E+04	4.9E-04	8.4E+05	1.1E-05
116-D-5_Staging pile area footprint	non-Rad	Fluoride	16984-48-8	ug/kg	300.0	No Value	--	2.3E+06	1.3E-04
116-D-5_Staging pile area footprint	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	148.8	No Value	--	1.3E+06	1.2E-04
116-D-5_Staging pile area footprint	non-Rad	Lead	7439-92-1	ug/kg	3269.4	5.0E+04	6.5E-02	3.6E+04	9.2E-02
116-D-5_Staging pile area footprint	non-Rad	Manganese	7439-96-5	ug/kg	276906.3	2.2E+05	**1.3E+00**	5.8E+06	4.8E-02
116-D-5_Staging pile area footprint	non-Rad	Methoxychlor	72-43-5	ug/kg	19.6	No Value	--	2.2E+04	9.0E-04
116-D-5_Staging pile area footprint	non-Rad	Molybdenum	7439-98-7	ug/kg	281.3	2.0E+03	1.4E-01	1.4E+04	2.0E-02
116-D-5_Staging pile area footprint	non-Rad	Nickel	7440-02-0	ug/kg	10056.5	3.0E+04	3.4E-01	3.3E+04	3.1E-01
116-D-5_Staging pile area footprint	non-Rad	Nitrate	14797-55-8	ug/kg	13893.5	No Value	--	3.4E+08	4.1E-05
116-D-5_Staging pile area footprint	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	ug/kg	2627.1	No Value	--	No Value	--
116-D-5_Staging pile area footprint	non-Rad	Pyrene	129-00-0	ug/kg	6.2	1.8E+04	3.5E-04	6.0E+05	1.0E-05
116-D-5_Staging pile area footprint	Rad	Rads SOF	---	pCi/g	--	--	4.9E-05	--	2.1E-04
116-D-5_Staging pile area footprint	non-Rad	Silver	7440-22-4	ug/kg	228.0	2.0E+03	1.1E-01	5.0E+04	4.6E-03
116-D-5_Staging pile area footprint	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	1770.3	5.0E+03	3.5E-01	3.6E+05	4.9E-03
116-D-5_Staging pile area footprint	Rad	Uranium-233/234	U-233/234	pCi/g	0.6	5.2E+04	1.1E-05	6.4E+03	9.2E-05
116-D-5_Staging pile area footprint	Rad	Uranium-238	U-238	pCi/g	0.6	1.6E+04	3.8E-05	5.2E+03	1.2E-04
116-D-5_Staging pile area footprint	non-Rad	Vanadium	7440-62-2	ug/kg	52464.4	2.0E+03	**2.6E+01**	3.1E+04	**1.7E+00**
116-D-5_Staging pile area footprint	non-Rad	Zinc	7440-66-6	ug/kg	41996.0	5.0E+04	8.4E-01	6.8E+04	6.2E-01
116-D-7_Shallow	Rad	Americium-241	14596-10-2	pCi/g	0.0	2.2E+04	6.5E-07	4.8E+03	2.9E-06
116-D-7_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.2	2.2E+03	8.8E-05	9.2E+02	2.1E-04
116-D-7_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	8241.4	4.0E+02	**2.1E+01**	3.8E+04	2.2E-01
116-D-7_Shallow	Rad	Cobalt-60	10198-40-0	pCi/g	0.1	6.1E+03	8.2E-06	8.1E+02	6.2E-05
116-D-7_Shallow	Rad	Europium-152	14683-23-9	pCi/g	0.4	1.5E+04	2.5E-05	1.7E+03	2.1E-04
116-D-7_Shallow	Rad	Europium-154	15585-10-1	pCi/g	0.0	1.3E+04	3.8E-06	1.6E+03	2.9E-05
116-D-7_Shallow	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	1126.3	No Value	--	1.3E+06	9.0E-04
116-D-7_Shallow	non-Rad	Lead	7439-92-1	ug/kg	3655.4	5.0E+04	7.3E-02	3.6E+04	1.0E-01
116-D-7_Shallow	Rad	Nickel-63	13981-37-8	pCi/g	7.8	No Value	--	No Value	--
116-D-7_Shallow	Rad	Rads SOF	---	pCi/g	--	--	1.7E-04	--	7.0E-04
116-D-7_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	1474.3	5.0E+03	3.0E-01	3.6E+05	4.1E-03
116-D-7_Shallow	Rad	Uranium-233/234	U-233/234	pCi/g	0.5	5.2E+04	9.2E-06	6.4E+03	7.5E-05
116-D-7_Shallow	Rad	Uranium-235	15117-96-1	pCi/g	0.0	2.7E+04	1.5E-06	4.4E+03	9.1E-06
116-D-7_Shallow	Rad	Uranium-238	U-238	pCi/g	0.5	1.6E+04	3.1E-05	5.2E+03	9.5E-05

Table 4. Comparison of 100-D OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
116-D-8_Shallow	non-Rad	Acetone	67-64-1	ug/kg	7.3	No Value	--	No Value	--
116-D-8_Shallow	non-Rad	Anthracene	120-12-7	ug/kg	21.0	2.9E+04	7.2E-04	6.8E+05	3.1E-05
116-D-8_Shallow	non-Rad	Antimony	7440-36-0	ug/kg	385.2	5.0E+03	7.7E-02	6.0E+03	6.4E-02
116-D-8_Shallow	non-Rad	Aroclor-1260	11096-82-5	ug/kg	26.8	4.0E+04	6.7E-04	1.5E+03	1.8E-02
116-D-8_Shallow	non-Rad	Arsenic	7440-38-2	ug/kg	2905.9	1.0E+04	2.9E-01	1.9E+05	1.5E-02
116-D-8_Shallow	non-Rad	Barium	7440-39-3	ug/kg	71253.2	3.3E+05	2.2E-01	1.3E+06	5.4E-02
116-D-8_Shallow	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	31.0	1.8E+04	1.7E-03	6.4E+04	4.8E-04
116-D-8_Shallow	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	30.0	1.8E+04	1.7E-03	7.6E+04	3.9E-04
116-D-8_Shallow	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	49.0	1.8E+04	2.7E-03	3.9E+04	1.3E-03
116-D-8_Shallow	non-Rad	Beryllium	7440-41-7	ug/kg	475.3	1.0E+04	4.8E-02	1.4E+04	3.4E-02
116-D-8_Shallow	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	ug/kg	200.0	1.0E+05	2.0E-03	4.5E+04	4.4E-03
116-D-8_Shallow	non-Rad	Boron	7440-42-8	ug/kg	1416.7	5.0E+02	**2.8E+00**	1.3E+05	1.1E-02
116-D-8_Shallow	non-Rad	Cadmium	7440-43-9	ug/kg	61.2	4.0E+03	1.5E-02	1.6E+03	3.8E-02
116-D-8_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	2.7	2.2E+03	1.2E-03	9.2E+02	2.9E-03
116-D-8_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	10654.3	4.0E+02	**2.7E+01**	3.8E+04	2.8E-01
116-D-8_Shallow	non-Rad	Chrysene	218-01-9	ug/kg	660.0	1.8E+04	3.7E-02	4.5E+04	1.5E-02
116-D-8_Shallow	non-Rad	Cobalt	7440-48-4	ug/kg	7731.8	1.3E+04	6.0E-01	1.1E+05	6.9E-02
116-D-8_Shallow	non-Rad	Copper	7440-50-8	ug/kg	13183.0	5.0E+04	2.6E-01	1.1E+05	1.2E-01
116-D-8_Shallow	non-Rad	Fluoranthene	206-44-0	ug/kg	56.0	1.8E+04	3.1E-03	8.4E+05	6.7E-05
116-D-8_Shallow	non-Rad	Fluoride	16984-48-8	ug/kg	2047.7	No Value	--	2.3E+06	9.0E-04
116-D-8_Shallow	non-Rad	Lead	7439-92-1	ug/kg	41187.9	5.0E+04	8.2E-01	3.6E+04	**1.2E+00**
116-D-8_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	304542.2	2.2E+05	**1.4E+00**	5.8E+06	5.3E-02
116-D-8_Shallow	non-Rad	Mercury	7439-97-6	ug/kg	22.9	1.0E+02	2.3E-01	1.9E+03	1.2E-02
116-D-8_Shallow	non-Rad	Methylene chloride	75-09-2	ug/kg	10.0	No Value	--	1.7E+05	6.0E-05
116-D-8_Shallow	non-Rad	Nickel	7440-02-0	ug/kg	11657.1	3.0E+04	3.9E-01	3.3E+04	3.6E-01
116-D-8_Shallow	non-Rad	Nitrogen in Nitrate	NO3-N	ug/kg	2208.1	No Value	--	No Value	--
116-D-8_Shallow	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	ug/kg	1942.5	No Value	--	No Value	--
116-D-8_Shallow	non-Rad	Pyrene	129-00-0	ug/kg	24.0	1.8E+04	1.3E-03	6.0E+05	4.0E-05
116-D-8_Shallow	Rad	Rads SOF	---	pCi/g	--	--	1.3E-03	--	7.3E-03
116-D-8_Shallow	Rad	Total beta radiostrontium	SR-RAD	pCi/g	0.4	3.6E+03	1.1E-04	9.1E+01	4.3E-03
116-D-8_Shallow	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	ug/kg	11472.5	2.0E+05	5.7E-02	3.6E+08	3.2E-05
116-D-8_Shallow	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	ug/kg	23750.5	No Value	--	No Value	--
116-D-8_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	436.0	5.0E+03	8.7E-02	3.6E+05	1.2E-03
116-D-8_Shallow	Rad	Uranium-234	13966-29-5	pCi/g	0.1	5.2E+04	2.9E-06	6.4E+03	2.3E-05
116-D-8_Shallow	Rad	Uranium-238	U-238	pCi/g	0.1	1.6E+04	9.3E-06	5.2E+03	2.8E-05
116-D-8_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	53268.1	2.0E+03	**2.7E+01**	3.1E+04	**1.7E+00**
116-D-8_Shallow	non-Rad	Zinc	7440-66-6	ug/kg	46326.5	5.0E+04	9.3E-01	6.8E+04	6.8E-01
116-D-8_Shallow_Focused_1	non-Rad	Aroclor-1260	11096-82-5	ug/kg	2.6	4.0E+04	6.5E-05	1.5E+03	1.8E-03
116-D-8_Shallow_Focused_1	non-Rad	Arsenic	7440-38-2	ug/kg	1800.0	1.0E+04	1.8E-01	1.9E+05	9.5E-03
116-D-8_Shallow_Focused_1	non-Rad	Barium	7440-39-3	ug/kg	47900.0	3.3E+05	1.5E-01	1.3E+06	3.6E-02
116-D-8_Shallow_Focused_1	non-Rad	Beryllium	7440-41-7	ug/kg	120.0	1.0E+04	1.2E-02	1.4E+04	8.6E-03
116-D-8_Shallow_Focused_1	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	ug/kg	130.0	1.0E+05	1.3E-03	4.5E+04	2.9E-03
116-D-8_Shallow_Focused_1	non-Rad	Cadmium	7440-43-9	ug/kg	41.0	4.0E+03	1.0E-02	1.6E+03	2.5E-02
116-D-8_Shallow_Focused_1	Rad	Cesium-137	10045-97-3	pCi/g	0.5	2.2E+03	2.3E-04	9.2E+02	5.5E-04
116-D-8_Shallow_Focused_1	non-Rad	Chromium	7440-47-3	ug/kg	5600.0	4.0E+02	**1.4E+01**	3.8E+04	1.5E-01
116-D-8_Shallow_Focused_1	non-Rad	Cobalt	7440-48-4	ug/kg	6200.0	1.3E+04	4.8E-01	1.1E+05	5.6E-02
116-D-8_Shallow_Focused_1	non-Rad	Copper	7440-50-8	ug/kg	12800.0	5.0E+04	2.6E-01	1.1E+05	1.2E-01
116-D-8_Shallow_Focused_1	non-Rad	Lead	7439-92-1	ug/kg	35000.0	5.0E+04	7.0E-01	3.6E+04	9.8E-01
116-D-8_Shallow_Focused_1	non-Rad	Manganese	7439-96-5	ug/kg	232000.0	2.2E+05	**1.1E+00**	5.8E+06	4.0E-02
116-D-8_Shallow_Focused_1	non-Rad	Nickel	7440-02-0	ug/kg	9700.0	3.0E+04	3.2E-01	3.3E+04	3.0E-01
116-D-8_Shallow_Focused_1	non-Rad	Vanadium	7440-62-2	ug/kg	22100.0	2.0E+03	**1.1E+01**	3.1E+04	7.1E-01
116-D-8_Shallow_Focused_1	non-Rad	Zinc	7440-66-6	ug/kg	26900.0	5.0E+04	5.4E-01	6.8E+04	4.0E-01
116-D-8_Shallow_Focused_2	non-Rad	Antimony	7440-36-0	ug/kg	490.0	5.0E+03	9.8E-02	6.0E+03	8.2E-02
116-D-8_Shallow_Focused_2	non-Rad	Aroclor HI	---	ug/kg	--	--	6.9E-03	--	1.9E-01
116-D-8_Shallow_Focused_2	non-Rad	Aroclor-1254	11097-69-1	ug/kg	96.0	4.0E+04	2.4E-03	1.5E+03	6.5E-02
116-D-8_Shallow_Focused_2	non-Rad	Aroclor-1260	11096-82-5	ug/kg	180.0	4.0E+04	4.5E-03	1.5E+03	1.2E-01
116-D-8_Shallow_Focused_2	non-Rad	Arsenic	7440-38-2	ug/kg	2700.0	1.0E+04	2.7E-01	1.9E+05	1.4E-02
116-D-8_Shallow_Focused_2	non-Rad	Barium	7440-39-3	ug/kg	77900.0	3.3E+05	2.4E-01	1.3E+06	5.9E-02
116-D-8_Shallow_Focused_2	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	29.0	1.8E+04	1.6E-03	6.4E+04	4.5E-04
116-D-8_Shallow_Focused_2	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	27.0	1.8E+04	1.5E-03	7.6E+04	3.5E-04
116-D-8_Shallow_Focused_2	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	53.0	1.8E+04	2.9E-03	3.9E+04	1.4E-03
116-D-8_Shallow_Focused_2	non-Rad	Beryllium	7440-41-7	ug/kg	120.0	1.0E+04	1.2E-02	1.4E+04	8.6E-03
116-D-8_Shallow_Focused_2	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	ug/kg	92.0	1.0E+05	9.2E-04	4.5E+04	2.0E-03
116-D-8_Shallow_Focused_2	non-Rad	Boron	7440-42-8	ug/kg	2700.0	5.0E+02	**5.4E+00**	1.3E+05	2.0E-02
116-D-8_Shallow_Focused_2	non-Rad	Cadmium	7440-43-9	ug/kg	170.0	4.0E+03	4.3E-02	1.6E+03	1.0E-01
116-D-8_Shallow_Focused_2	Rad	Cesium-137	10045-97-3	pCi/g	7.6	2.2E+03	3.5E-03	9.2E+02	8.3E-03
116-D-8_Shallow_Focused_2	non-Rad	Chromium	7440-47-3	ug/kg	10100.0	4.0E+02	**2.5E+01**	3.8E+04	2.7E-01
116-D-8_Shallow_Focused_2	non-Rad	Chrysene	218-01-9	ug/kg	45.0	1.8E+04	2.5E-03	4.5E+04	1.0E-03
116-D-8_Shallow_Focused_2	non-Rad	Cobalt	7440-48-4	ug/kg	8000.0	1.3E+04	6.2E-01	1.1E+05	7.2E-02
116-D-8_Shallow_Focused_2	non-Rad	Copper	7440-50-8	ug/kg	15300.0	5.0E+04	3.1E-01	1.1E+05	1.4E-01
116-D-8_Shallow_Focused_2	non-Rad	Fluoranthene	206-44-0	ug/kg	52.0	1.8E+04	2.9E-03	8.4E+05	6.2E-05
116-D-8_Shallow_Focused_2	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	154.0	No Value	--	1.3E+06	1.2E-04
116-D-8_Shallow_Focused_2	non-Rad	Lead	7439-92-1	ug/kg	10800.0	5.0E+04	2.2E-01	3.6E+04	3.0E-01
116-D-8_Shallow_Focused_2	non-Rad	Manganese	7439-96-5	ug/kg	301000.0	2.2E+05	**1.4E+00**	5.8E+06	5.2E-02
116-D-8_Shallow_Focused_2	non-Rad	Mercury	7439-97-6	ug/kg	29.0	1.0E+02	2.9E-01	1.9E+03	1.6E-02
116-D-8_Shallow_Focused_2	non-Rad	Methylene chloride	75-09-2	ug/kg	2.4	No Value	--	1.7E+05	1.5E-05
116-D-8_Shallow_Focused_2	non-Rad	Molybdenum	7439-98-7	ug/kg	370.0	2.0E+03	1.9E-01	1.4E+04	2.7E-02
116-D-8_Shallow_Focused_2	non-Rad	Nickel	7440-02-0	ug/kg	9900.0	3.0E+04	3.3E-01	3.3E+04	3.0E-01
116-D-8_Shallow_Focused_2	non-Rad	Nitrogen in Nitrate	NO3-N	ug/kg	5000.0	No Value	--	No Value	--
116-D-8_Shallow_Focused_2	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	ug/kg	5300.0	No Value	--	No Value	--
116-D-8_Shallow_Focused_2	non-Rad	Pyrene	129-00-0	ug/kg	53.0	1.8E+04	2.9E-03	6.0E+05	8.8E-05
116-D-8_Shallow_Focused_2	Rad	Rads SOF	---	pCi/g	--	--	3.5E-03	--	8.3E-03
116-D-8_Shallow_Focused_2	non-Rad	Selenium	7782-49-2	ug/kg	1200.0	5.2E+02	**2.3E+00**	1.9E+03	6.3E-01
116-D-8_Shallow_Focused_2	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	ug/kg	17000.0	2.0E+05	8.5E-02	3.6E+08	4.8E-05
116-D-8_Shallow_Focused_2	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	ug/kg	46000.0	No Value	--	No Value	--
116-D-8_Shallow_Focused_2	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	765.0	5.0E+03	1.5E-01	3.6E+05	2.1E-03
116-D-8_Shallow_Focused_2	Rad	Uranium-234	13966-29-5	pCi/g	0.2	5.2E+04	3.8E-06	6.4E+03	3.1E-05
116-D-8_Shallow_Focused_2	Rad	Uranium-238	U-238	pCi/g	0.3	1.6E+04	1.6E-05	5.2E+03	5.0E-05
116-D-8_Shallow_Focused_2	non-Rad	Vanadium	7440-62-2	ug/kg	58700.0	2.0E+03	**2.9E+01**	3.1E+04	**1.9E+00**
116-D-8_Shallow_Focused_2	non-Rad	Zinc	7440-66-6	ug/kg	55200.0	5.0E+04	**1.1E+00**	6.8E+04	8.1E-01
116-D-9_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.1	2.2E+03	2.5E-05	9.2E+02	6.0E-05
116-D-9_Shallow	Rad	Rads SOF	---	pCi/g	--	--	2.3E-04	--	6.4E-03
116-D-9_Shallow	Rad	Total beta radiostrontium	SR-RAD	pCi/g	0.6	3.6E+03	1.6E-04	9.1E+01	6.1E-03
116-D-9_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	1647.7	5.0E+03	3.3E-01	3.6E+05	4.6E-03
116-D-9_Shallow	Rad	Uranium-233/234	U-233/234	pCi/g	0.5	5.2E+04	9.6E-06	6.4E+03	7.8E-05
116-D-9_Shallow	Rad	Uranium-235	15117-96-1	pCi/g	0.1	2.7E+04	1.9E-06	4.4E+03	1.2E-05
116-D-9_Shallow	Rad	Uranium-238	U-238	pCi/g	0.6	1.6E+04	3.5E-05	5.2E+03	1.1E-04
116-DR-1,2_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.7	2.2E+03	3.1E-04	9.2E+02	7.4E-04
116-DR-1,2_Shallow	Rad	Cobalt-60	10198-40-0	pCi/g	0.0	6.1E+03	8.0E-06	8.1E+02	6.1E-05
116-DR-1,2_Shallow	Rad	Europium-152	14683-23-9	pCi/g	0.2	1.5E+04	1.2E-05	1.7E+03	1.0E-04
116-DR-1,2_Shallow	Rad	Plutonium-238	13981-16-3	pCi/g	0.0	1.8E+04	1.7E-06	6.0E+03	4.9E-06
116-DR-1,2_Shallow	Rad	Rads SOF	---	pCi/g	--	--	3.7E-04	--	1.1E-03
116-DR-1,2_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	1431.5	5.0E+03	2.9E-01	3.6E+05	4.0E-03
116-DR-1,2_Shallow	Rad	Uranium-233/234	U-233/234	pCi/g	0.5	5.2E+04	9.1E-06	6.4E+03	7.3E-05
116-DR-1,2_Shallow	Rad	Uranium-235	15117-96-1	pCi/g	0.0	2.7E+04	9.7E-07	4.4E+03	6.1E-06
116-DR-1,2_Shallow	Rad	Uranium-238	U-238	pCi/g	0.5	1.6E+04	3.1E-05	5.2E+03	9.3E-05
116-DR-10_Overburden	non-Rad	Aroclor-1260	11096-82-5	ug/kg	6.0	4.0E+04	1.5E-04	1.5E+03	4.0E-03
116-DR-10_Overburden	non-Rad	Arsenic	7440-38-2	ug/kg	2957.7	1.0E+04	3.0E-01	1.9E+05	1.6E-02
116-DR-10_Overburden	non-Rad	Barium	7440-39-3	ug/kg	66524.0	3.3E+05	2.0E-01	1.3E+06	5.0E-02
116-DR-10_Overburden	non-Rad	Beryllium	7440-41-7	ug/kg	190.5	1.0E+04	1.9E-02	1.4E+04	1.4E-02
116-DR-10_Overburden	non-Rad	Boron	7440-42-8	ug/kg	1049.3	5.0E+02	**2.1E+00**	1.3E+05	7.9E-03
116-DR-10_Overburden	non-Rad	Cadmium	7440-43-9	ug/kg	87.6	4.0E+03	2.2E-02	1.6E+03	5.4E-02
116-DR-10_Overburden	non-Rad	Chromium	7440-47-3	ug/kg	10292.3	4.0E+02	**2.6E+01**	3.8E+04	2.7E-01

Table 4. Comparison of 100-D OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
116-DR-10_Overburden	non-Rad	Cobalt	7440-48-4	ug/kg	6708.2	1.3E+04	5.2E-01	1.1E+05	6.0E-02
116-DR-10_Overburden	non-Rad	Copper	7440-50-8	ug/kg	13263.2	5.0E+04	2.7E-01	1.1E+05	1.2E-01
116-DR-10_Overburden	non-Rad	Lead	7439-92-1	ug/kg	7025.7	5.0E+04	1.4E-01	3.6E+04	2.0E-01
116-DR-10_Overburden	non-Rad	Manganese	7439-96-5	ug/kg	288834.1	2.2E+05	**1.3E+00**	5.8E+06	5.0E-02
116-DR-10_Overburden	non-Rad	Mercury	7439-97-6	ug/kg	35.4	1.0E+02	3.5E-01	1.9E+03	1.9E-02
116-DR-10_Overburden	non-Rad	Molybdenum	7439-98-7	ug/kg	307.2	2.0E+03	1.5E-01	1.4E+04	2.2E-02
116-DR-10_Overburden	non-Rad	Nickel	7440-02-0	ug/kg	9733.8	3.0E+04	3.2E-01	3.3E+04	3.0E-01
116-DR-10_Overburden	Rad	Rads SOF	---	pCi/g	--		5.1E-05	--	2.1E-04
116-DR-10_Overburden	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	1831.4	5.0E+03	3.7E-01	3.6E+05	5.1E-03
116-DR-10_Overburden	Rad	Uranium-233/234	U-233/234	pCi/g	0.6	5.2E+04	1.2E-05	6.4E+03	9.3E-05
116-DR-10_Overburden	Rad	Uranium-238	U-238	pCi/g	0.6	1.6E+04	3.9E-05	5.2E+03	1.2E-04
116-DR-10_Overburden	non-Rad	Vanadium	7440-62-2	ug/kg	51135.7	2.0E+03	**2.6E+01**	3.1E+04	**1.6E+00**
116-DR-10_Overburden	non-Rad	Zinc	7440-66-6	ug/kg	38620.9	5.0E+04	7.7E-01	6.8E+04	5.7E-01
116-DR-10_Shallow	non-Rad	Aroclor-1260	11096-82-5	ug/kg	8.5	4.0E+04	2.1E-04	1.5E+03	5.8E-03
116-DR-10_Shallow	non-Rad	Arsenic	7440-38-2	ug/kg	3821.4	1.0E+04	3.8E-01	1.9E+05	2.0E-02
116-DR-10_Shallow	non-Rad	Barium	7440-39-3	ug/kg	57993.2	3.3E+05	1.8E-01	1.3E+06	4.4E-02
116-DR-10_Shallow	non-Rad	Beryllium	7440-41-7	ug/kg	181.7	1.0E+04	1.8E-02	1.4E+04	1.3E-02
116-DR-10_Shallow	non-Rad	Boron	7440-42-8	ug/kg	1034.7	5.0E+02	**2.1E+00**	1.3E+05	7.8E-03
116-DR-10_Shallow	non-Rad	Cadmium	7440-43-9	ug/kg	101.2	4.0E+03	2.5E-02	1.6E+03	6.2E-02
116-DR-10_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.4	2.2E+03	1.9E-04	9.2E+02	4.6E-04
116-DR-10_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	11445.4	4.0E+02	**2.9E+01**	3.8E+04	3.0E-01
116-DR-10_Shallow	non-Rad	Cobalt	7440-48-4	ug/kg	7100.9	1.3E+04	5.5E-01	1.1E+05	6.4E-02
116-DR-10_Shallow	non-Rad	Copper	7440-50-8	ug/kg	14969.6	5.0E+04	3.0E-01	1.1E+05	1.4E-01
116-DR-10_Shallow	Rad	Europium-152	14683-23-9	pCi/g	0.2	1.5E+04	1.1E-05	1.7E+03	9.0E-05
116-DR-10_Shallow	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	100.0	No Value	--	1.3E+06	8.0E-05
116-DR-10_Shallow	non-Rad	Lead	7439-92-1	ug/kg	3280.8	5.0E+04	6.6E-02	3.6E+04	9.2E-02
116-DR-10_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	279316.5	2.2E+05	**1.3E+00**	5.8E+06	4.8E-02
116-DR-10_Shallow	non-Rad	Mercury	7439-97-6	ug/kg	21.9	1.0E+02	2.2E-01	1.9E+03	1.2E-02
116-DR-10_Shallow	non-Rad	Molybdenum	7439-98-7	ug/kg	331.7	2.0E+03	1.7E-01	1.4E+04	2.4E-02
116-DR-10_Shallow	non-Rad	Nickel	7440-02-0	ug/kg	10308.1	3.0E+04	3.4E-01	3.3E+04	3.2E-01
116-DR-10_Shallow	Rad	Plutonium-239/240	PU-239/240	pCi/g	0.0	1.3E+04	3.4E-06	6.3E+03	6.9E-06
116-DR-10_Shallow	Rad	Rads SOF	---	pCi/g	--	--	2.6E-04	--	7.8E-04
116-DR-10_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	1926.3	5.0E+03	3.9E-01	3.6E+05	5.4E-03
116-DR-10_Shallow	Rad	Uranium-233/234	U-233/234	pCi/g	0.6	5.2E+04	1.2E-05	6.4E+03	9.6E-05
116-DR-10_Shallow	Rad	Uranium-238	U-238	pCi/g	0.6	1.6E+04	4.1E-05	5.2E+03	1.3E-04
116-DR-10_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	50456.4	2.0E+03	**2.5E+01**	3.1E+04	**1.6E+00**
116-DR-10_Shallow	non-Rad	Zinc	7440-66-6	ug/kg	38543.4	5.0E+04	7.7E-01	6.8E+04	5.7E-01
116-DR-10_Shallow_Focused	non-Rad	Arsenic	7440-38-2	ug/kg	1790.0	1.0E+04	1.8E-01	1.9E+05	9.5E-03
116-DR-10_Shallow_Focused	non-Rad	Barium	7440-39-3	ug/kg	41600.0	3.3E+05	1.3E-01	1.3E+06	3.1E-02
116-DR-10_Shallow_Focused	non-Rad	Beryllium	7440-41-7	ug/kg	161.0	1.0E+04	1.6E-02	1.4E+04	1.2E-02
116-DR-10_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	598.0	5.0E+02	**1.2E+00**	1.3E+05	4.5E-03
116-DR-10_Shallow_Focused	non-Rad	Cadmium	7440-43-9	ug/kg	143.0	4.0E+03	3.6E-02	1.6E+03	8.8E-02
116-DR-10_Shallow_Focused	Rad	Cesium-137	10045-97-3	pCi/g	0.6	2.2E+03	2.9E-04	9.2E+02	7.0E-04
116-DR-10_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	6650.0	4.0E+02	**1.7E+01**	3.8E+04	1.7E-01
116-DR-10_Shallow_Focused	non-Rad	Cobalt	7440-48-4	ug/kg	8370.0	1.3E+04	6.4E-01	1.1E+05	7.5E-02
116-DR-10_Shallow_Focused	non-Rad	Copper	7440-50-8	ug/kg	15000.0	5.0E+04	3.0E-01	1.1E+05	1.4E-01
116-DR-10_Shallow_Focused	Rad	Europium-152	14683-23-9	pCi/g	0.6	1.5E+04	3.9E-05	1.7E+03	3.3E-04
116-DR-10_Shallow_Focused	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	240.0	No Value	--	1.3E+06	1.9E-04
116-DR-10_Shallow_Focused	non-Rad	Lead	7439-92-1	ug/kg	2750.0	5.0E+04	5.5E-02	3.6E+04	7.7E-02
116-DR-10_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	310000.0	2.2E+05	**1.4E+00**	5.8E+06	5.4E-02
116-DR-10_Shallow_Focused	non-Rad	Mercury	7439-97-6	ug/kg	13.0	1.0E+02	1.3E-01	1.9E+03	7.0E-03
116-DR-10_Shallow_Focused	non-Rad	Molybdenum	7439-98-7	ug/kg	497.0	2.0E+03	2.5E-01	1.4E+04	3.6E-02
116-DR-10_Shallow_Focused	non-Rad	Nickel	7440-02-0	ug/kg	8630.0	3.0E+04	2.9E-01	3.3E+04	2.7E-01
116-DR-10_Shallow_Focused	Rad	Plutonium-239/240	PU-239/240	pCi/g	0.2	1.3E+04	1.6E-05	6.3E+03	3.2E-05
116-DR-10_Shallow_Focused	Rad	Rads SOF	---	pCi/g	--		3.8E-04	--	1.2E-03
116-DR-10_Shallow_Focused	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	1164.0	5.0E+03	2.3E-01	3.6E+05	3.2E-03
116-DR-10_Shallow_Focused	Rad	Uranium-233/234	U-233/234	pCi/g	0.6	5.2E+04	1.2E-05	6.4E+03	9.3E-05
116-DR-10_Shallow_Focused	Rad	Uranium-238	U-238	pCi/g	0.4	1.6E+04	2.5E-05	5.2E+03	7.6E-05
116-DR-10_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	73400.0	2.0E+03	**3.7E+01**	3.1E+04	**2.4E+00**
116-DR-10_Shallow_Focused	non-Rad	Zinc	7440-66-6	ug/kg	46500.0	5.0E+04	9.3E-01	6.8E+04	6.9E-01
116-DR-4_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.1	2.2E+03	2.8E-05	9.2E+02	6.6E-05
116-DR-4_Shallow	Rad	Rads SOF	---	pCi/g	--		7.2E-05	--	2.6E-04
116-DR-4_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	1476.5	5.0E+03	3.0E-01	3.6E+05	4.1E-03
116-DR-4_Shallow	Rad	Uranium-233/234	U-233/234	pCi/g	0.6	5.2E+04	1.3E-05	6.4E+03	1.0E-04
116-DR-4_Shallow	Rad	Uranium-238	U-238	pCi/g	0.5	1.6E+04	3.2E-05	5.2E+03	9.6E-05
116-DR-5_Overburden	non-Rad	Arsenic	7440-38-2	ug/kg	2616.2	1.0E+04	2.6E-01	1.9E+05	1.4E-02
116-DR-5_Overburden	non-Rad	Barium	7440-39-3	ug/kg	72420.1	3.3E+05	2.2E-01	1.3E+06	5.5E-02
116-DR-5_Overburden	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	73.8	1.8E+04	4.1E-03	6.4E+04	1.2E-03
116-DR-5_Overburden	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	57.5	1.8E+04	3.2E-03	7.6E+04	7.5E-04
116-DR-5_Overburden	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	102.3	1.8E+04	5.7E-03	3.9E+04	2.6E-03
116-DR-5_Overburden	non-Rad	Beryllium	7440-41-7	ug/kg	119.6	1.0E+04	1.2E-02	1.4E+04	8.6E-03
116-DR-5_Overburden	non-Rad	Boron	7440-42-8	ug/kg	1141.7	5.0E+02	**2.3E+00**	1.3E+05	8.6E-03
116-DR-5_Overburden	Rad	Cesium-137	10045-97-3	pCi/g	0.3	2.2E+03	1.1E-04	9.2E+02	2.7E-04
116-DR-5_Overburden	non-Rad	Chromium	7440-47-3	ug/kg	11533.5	4.0E+02	**2.9E+01**	3.8E+04	3.0E-01
116-DR-5_Overburden	non-Rad	Chrysene	218-01-9	ug/kg	91.7	1.8E+04	5.1E-03	4.5E+04	2.1E-03
116-DR-5_Overburden	non-Rad	Cobalt	7440-48-4	ug/kg	9716.5	1.3E+04	7.5E-01	1.1E+05	8.7E-02
116-DR-5_Overburden	Rad	Cobalt-60	10198-40-0	pCi/g	0.2	6.1E+03	3.2E-05	8.1E+02	2.5E-04
116-DR-5_Overburden	non-Rad	Copper	7440-50-8	ug/kg	21451.5	5.0E+04	4.3E-01	1.1E+05	2.0E-01
116-DR-5_Overburden	Rad	Europium-152	14683-23-9	pCi/g	0.8	1.5E+04	5.5E-05	1.7E+03	4.6E-04
116-DR-5_Overburden	non-Rad	Fluoranthene	206-44-0	ug/kg	85.3	1.8E+04	4.7E-03	8.4E+05	1.0E-04
116-DR-5_Overburden	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	257.6	No Value	--	1.3E+06	2.1E-04
116-DR-5_Overburden	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	45.0	1.8E+04	2.5E-03	3.6E+04	1.3E-03
116-DR-5_Overburden	non-Rad	Lead	7439-92-1	ug/kg	4039.3	5.0E+04	8.1E-02	3.6E+04	1.1E-01
116-DR-5_Overburden	non-Rad	Manganese	7439-96-5	ug/kg	336162.7	2.2E+05	**1.5E+00**	5.8E+06	5.8E-02
116-DR-5_Overburden	non-Rad	Mercury	7439-97-6	ug/kg	50.9	1.0E+02	5.1E-01	1.9E+03	2.7E-02
116-DR-5_Overburden	non-Rad	Nickel	7440-02-0	ug/kg	11347.8	3.0E+04	3.8E-01	3.3E+04	3.5E-01
116-DR-5_Overburden	Rad	Nickel-63	13981-37-8	pCi/g	29.4	No Value	--	No Value	--
116-DR-5_Overburden	Rad	Plutonium-239/240	PU-239/240	pCi/g	0.1	1.3E+04	8.6E-06	6.3E+03	1.7E-05
116-DR-5_Overburden	non-Rad	Pyrene	129-00-0	ug/kg	87.3	1.8E+04	4.9E-03	6.0E+05	1.5E-04
116-DR-5_Overburden	Rad	Rads SOF	---	pCi/g	--	--	3.3E-04	--	3.8E-03
116-DR-5_Overburden	Rad	Total beta radiostrontium	SR-RAD	pCi/g	0.2	3.6E+03	5.2E-05	9.1E+01	2.0E-03
116-DR-5_Overburden	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	2212.6	5.0E+03	4.4E-01	3.6E+05	6.2E-03
116-DR-5_Overburden	Rad	Tritium	10028-17-8	pCi/g	0.2	1.7E+06	1.2E-07	4.2E+02	4.7E-04
116-DR-5_Overburden	Rad	Uranium-234	13966-29-5	pCi/g	0.8	5.2E+04	1.5E-05	6.4E+03	1.2E-04
116-DR-5_Overburden	Rad	Uranium-235	15117-96-1	pCi/g	0.1	2.7E+04	2.3E-06	4.4E+03	1.4E-05
116-DR-5_Overburden	Rad	Uranium-238	U-238	pCi/g	0.7	1.6E+04	4.7E-05	5.2E+03	1.4E-04
116-DR-5_Overburden	non-Rad	Vanadium	7440-62-2	ug/kg	59625.4	2.0E+03	**3.0E+01**	3.1E+04	**1.9E+00**
116-DR-5_Overburden	non-Rad	Zinc	7440-66-6	ug/kg	76416.5	5.0E+04	**1.5E+00**	6.8E+04	**1.1E+00**
116-DR-5_Shallow	non-Rad	Arsenic	7440-38-2	ug/kg	2551.0	1.0E+04	2.6E-01	1.9E+05	1.4E-02
116-DR-5_Shallow	non-Rad	Barium	7440-39-3	ug/kg	70791.6	3.3E+05	2.2E-01	1.3E+06	5.4E-02
116-DR-5_Shallow	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	146.4	1.8E+04	8.1E-03	6.4E+04	2.3E-03
116-DR-5_Shallow	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	57.7	1.8E+04	3.2E-03	7.6E+04	7.6E-04
116-DR-5_Shallow	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	177.6	1.8E+04	9.9E-03	3.9E+04	4.5E-03
116-DR-5_Shallow	non-Rad	Beryllium	7440-41-7	ug/kg	246.4	1.0E+04	2.5E-02	1.4E+04	1.8E-02
116-DR-5_Shallow	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	ug/kg	66.6	1.0E+05	6.7E-04	4.5E+04	1.5E-03
116-DR-5_Shallow	non-Rad	Boron	7440-42-8	ug/kg	1500.0	5.0E+02	**3.0E+00**	1.3E+05	1.1E-02
116-DR-5_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	1.0	2.2E+03	4.4E-04	9.2E+02	1.0E-03
116-DR-5_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	25435.8	4.0E+02	**6.4E+01**	3.8E+04	6.7E-01
116-DR-5_Shallow	non-Rad	Chrysene	218-01-9	ug/kg	169.4	1.8E+04	9.4E-03	4.5E+04	3.8E-03
116-DR-5_Shallow	non-Rad	Cobalt	7440-48-4	ug/kg	8532.9	1.3E+04	6.6E-01	1.1E+05	7.7E-02
116-DR-5_Shallow	Rad	Cobalt-60	10198-40-0	pCi/g	0.1	6.1E+03	2.0E-05	8.1E+02	1.5E-04
116-DR-5_Shallow	non-Rad	Copper	7440-50-8	ug/kg	21728.2	5.0E+04	4.4E-01	1.1E+05	2.0E-01
116-DR-5_Shallow	Rad	Europium-152	14683-23-9	pCi/g	2.5	1.5E+04	1.7E-04	1.7E+03	1.5E-03
116-DR-5_Shallow	non-Rad	Fluoranthene	206-44-0	ug/kg	250.3	1.8E+04	1.4E-02	8.4E+05	3.0E-04
116-DR-5_Shallow	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	554.3	No Value	--	1.3E+06	4.5E-04
116-DR-5_Shallow	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	38.4	1.8E+04	2.1E-03	3.6E+04	1.1E-03
116-DR-5_Shallow	non-Rad	Lead	7439-92-1	ug/kg	3907.1	5.0E+04	7.8E-02	3.6E+04	1.1E-01

Table 4. Comparison of 100-D OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
116-DR-5_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	309849.1	2.2E+05	**1.4E+00**	5.8E+06	5.3E-02
116-DR-5_Shallow	non-Rad	Mercury	7439-97-6	ug/kg	47.7	1.0E+02	4.8E-01	1.9E+03	2.6E-02
116-DR-5_Shallow	non-Rad	Molybdenum	7439-98-7	ug/kg	540.0	2.0E+03	2.7E-01	1.4E+04	3.9E-02
116-DR-5_Shallow	non-Rad	Nickel	7440-02-0	ug/kg	12850.4	3.0E+04	4.3E-01	3.3E+04	3.9E-01
116-DR-5_Shallow	Rad	Nickel-63	13981-37-8	pCi/g	29.7	No Value	--	No Value	--
116-DR-5_Shallow	Rad	Plutonium-239/240	PU-239/240	pCi/g	0.1	1.3E+04	9.1E-06	6.3E+03	1.8E-05
116-DR-5_Shallow	non-Rad	Pyrene	129-00-0	ug/kg	237.2	1.8E+04	1.3E-02	6.0E+05	4.0E-04
116-DR-5_Shallow	Rad	Rads SOF	---	pCi/g	--		8.2E-04	--	7.1E-03
116-DR-5_Shallow	Rad	Total beta radiostrontium	SR-RAD	pCi/g	0.3	3.6E+03	8.8E-05	9.1E+01	3.5E-03
116-DR-5_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	2812.5	5.0E+03	5.6E-01	3.6E+05	7.8E-03
116-DR-5_Shallow	Rad	Tritium	10028-17-8	pCi/g	0.2	1.7E+06	1.2E-07	4.2E+02	4.8E-04
116-DR-5_Shallow	Rad	Uranium-234	13966-29-5	pCi/g	1.0	5.2E+04	2.0E-05	6.4E+03	1.6E-04
116-DR-5_Shallow	Rad	Uranium-235	15117-96-1	pCi/g	0.4	2.7E+04	1.5E-05	4.4E+03	9.7E-05
116-DR-5_Shallow	Rad	Uranium-238	U-238	pCi/g	0.9	1.6E+04	5.9E-05	5.2E+03	1.8E-04
116-DR-5_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	55591.2	2.0E+03	**2.8E+01**	3.1E+04	**1.8E+00**
116-DR-5_Shallow	non-Rad	Zinc	7440-66-6	ug/kg	45491.8	5.0E+04	9.1E-01	6.8E+04	6.7E-01
116-DR-5_Shallow_Focused	non-Rad	Arsenic	7440-38-2	ug/kg	3100.0	1.0E+04	3.1E-01	1.9E+05	1.6E-02
116-DR-5_Shallow_Focused	non-Rad	Barium	7440-39-3	ug/kg	70300.0	3.3E+05	2.1E-01	1.3E+06	5.3E-02
116-DR-5_Shallow_Focused	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	56.0	1.8E+04	3.1E-03	6.4E+04	8.8E-04
116-DR-5_Shallow_Focused	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	70.0	1.8E+04	3.9E-03	3.9E+04	1.8E-03
116-DR-5_Shallow_Focused	non-Rad	Beryllium	7440-41-7	ug/kg	200.0	1.0E+04	2.0E-02	1.4E+04	1.4E-02
116-DR-5_Shallow_Focused	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	ug/kg	71.0	1.0E+05	7.1E-04	4.5E+04	1.6E-03
116-DR-5_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	1400.0	5.0E+02	**2.8E+00**	1.3E+05	1.1E-02
116-DR-5_Shallow_Focused	Rad	Cesium-137	10045-97-3	pCi/g	0.9	2.2E+03	4.3E-04	9.2E+02	1.0E-03
116-DR-5_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	16600.0	4.0E+02	**4.2E+01**	3.8E+04	4.4E-01
116-DR-5_Shallow_Focused	non-Rad	Chrysene	218-01-9	ug/kg	62.0	1.8E+04	3.4E-03	4.5E+04	1.4E-03
116-DR-5_Shallow_Focused	non-Rad	Cobalt	7440-48-4	ug/kg	9700.0	1.3E+04	7.5E-01	1.1E+05	8.7E-02
116-DR-5_Shallow_Focused	non-Rad	Copper	7440-50-8	ug/kg	26100.0	5.0E+04	5.2E-01	1.1E+05	2.4E-01
116-DR-5_Shallow_Focused	Rad	Europium-152	14683-23-9	pCi/g	0.5	1.5E+04	3.6E-05	1.7E+03	3.1E-04
116-DR-5_Shallow_Focused	non-Rad	Fluoranthene	206-44-0	ug/kg	94.0	1.8E+04	5.2E-03	8.4E+05	1.1E-04
116-DR-5_Shallow_Focused	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	361.0	No Value	--	1.3E+06	2.9E-04
116-DR-5_Shallow_Focused	non-Rad	Lead	7439-92-1	ug/kg	4500.0	5.0E+04	9.0E-02	3.6E+04	1.3E-01
116-DR-5_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	325000.0	2.2E+05	**1.5E+00**	5.8E+06	5.6E-02
116-DR-5_Shallow_Focused	non-Rad	Mercury	7439-97-6	ug/kg	45.0	1.0E+02	4.5E-01	1.9E+03	2.4E-02
116-DR-5_Shallow_Focused	non-Rad	Nickel	7440-02-0	ug/kg	15900.0	3.0E+04	5.3E-01	3.3E+04	4.9E-01
116-DR-5_Shallow_Focused	Rad	Nickel-63	13981-37-8	pCi/g	7.1	No Value	--	No Value	--
116-DR-5_Shallow_Focused	non-Rad	Pyrene	129-00-0	ug/kg	100.0	1.8E+04	5.6E-03	6.0E+05	1.7E-04
116-DR-5_Shallow_Focused	Rad	Rads SOF	---	pCi/g	--	--	5.3E-04	--	2.3E-03
116-DR-5_Shallow_Focused	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	2274.3	5.0E+03	4.6E-01	3.6E+05	6.3E-03
116-DR-5_Shallow_Focused	Rad	Tritium	10028-17-8	pCi/g	0.3	1.7E+06	1.8E-07	4.2E+02	7.1E-04
116-DR-5_Shallow_Focused	Rad	Uranium-234	13966-29-5	pCi/g	0.9	5.2E+04	1.7E-05	6.4E+03	1.4E-04
116-DR-5_Shallow_Focused	Rad	Uranium-238	U-238	pCi/g	0.8	1.6E+04	4.9E-05	5.2E+03	1.5E-04
116-DR-5_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	56300.0	2.0E+03	**2.8E+01**	3.1E+04	**1.8E+00**
116-DR-5_Shallow_Focused	non-Rad	Zinc	7440-66-6	ug/kg	49400.0	5.0E+04	9.9E-01	6.8E+04	7.3E-01
116-DR-5_Staging Pile Area	non-Rad	Arsenic	7440-38-2	ug/kg	2837.0	1.0E+04	2.8E-01	1.9E+05	1.5E-02
116-DR-5_Staging Pile Area	non-Rad	Barium	7440-39-3	ug/kg	58874.1	3.3E+05	1.8E-01	1.3E+06	4.5E-02
116-DR-5_Staging Pile Area	non-Rad	Beryllium	7440-41-7	ug/kg	109.8	1.0E+04	1.1E-02	1.4E+04	7.9E-03
116-DR-5_Staging Pile Area	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	ug/kg	62.3	1.0E+05	6.2E-04	4.5E+04	1.4E-03
116-DR-5_Staging Pile Area	Rad	Cesium-137	10045-97-3	pCi/g	0.1	2.2E+03	6.2E-05	9.2E+02	1.5E-04
116-DR-5_Staging Pile Area	non-Rad	Chromium	7440-47-3	ug/kg	11196.5	4.0E+02	**2.8E+01**	3.8E+04	2.9E-01
116-DR-5_Staging Pile Area	non-Rad	Cobalt	7440-48-4	ug/kg	7807.9	1.3E+04	6.0E-01	1.1E+05	7.0E-02
116-DR-5_Staging Pile Area	non-Rad	Copper	7440-50-8	ug/kg	17612.4	5.0E+04	3.5E-01	1.1E+05	1.6E-01
116-DR-5_Staging Pile Area	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	427.3	No Value	--	1.3E+06	3.4E-04
116-DR-5_Staging Pile Area	non-Rad	Lead	7439-92-1	ug/kg	2929.5	5.0E+04	5.9E-02	3.6E+04	8.2E-02
116-DR-5_Staging Pile Area	non-Rad	Manganese	7439-96-5	ug/kg	292940.1	2.2E+05	**1.3E+00**	5.8E+06	5.1E-02
116-DR-5_Staging Pile Area	non-Rad	Mercury	7439-97-6	ug/kg	24.1	1.0E+02	2.4E-01	1.9E+03	1.3E-02
116-DR-5_Staging Pile Area	non-Rad	Nickel	7440-02-0	ug/kg	11700.1	3.0E+04	3.9E-01	3.3E+04	3.6E-01
116-DR-5_Staging Pile Area	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	2094.6	5.0E+03	4.2E-01	3.6E+05	5.8E-03
116-DR-5_Staging Pile Area	Rad	Tritium	10028-17-8	pCi/g	0.2	1.7E+06	1.2E-07	4.2E+02	4.7E-04
116-DR-5_Staging Pile Area	Rad	Uranium-234	13966-29-5	pCi/g	0.7	5.2E+04	1.4E-05	6.4E+03	1.1E-04
116-DR-5_Staging Pile Area	Rad	Uranium-235	15117-96-1	pCi/g	0.1	2.7E+04	3.9E-06	4.4E+03	2.4E-05
116-DR-5_Staging Pile Area	Rad	Uranium-238	U-238	pCi/g	0.7	1.6E+04	4.4E-05	5.2E+03	1.4E-04
116-DR-5_Staging Pile Area	non-Rad	Vanadium	7440-62-2	ug/kg	51249.9	2.0E+03	**2.6E+01**	3.1E+04	**1.7E+00**
116-DR-5_Staging Pile Area	non-Rad	Zinc	7440-66-6	ug/kg	39187.2	5.0E+04	7.8E-01	6.8E+04	5.8E-01
116-DR-6_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.1	2.2E+03	4.1E-05	9.2E+02	9.9E-05
116-DR-6_Shallow	Rad	Europium-152	14683-23-9	pCi/g	0.5	1.5E+04	3.3E-05	1.7E+03	2.8E-04
116-DR-6_Shallow	Rad	Rads SOF	---	pCi/g	--	--	2.4E-04	--	5.2E-03
116-DR-6_Shallow	Rad	Total beta radiostrontium	SR-RAD	pCi/g	0.4	3.6E+03	1.2E-04	9.1E+01	4.7E-03
116-DR-6_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	1417.0	5.0E+03	2.8E-01	3.6E+05	3.9E-03
116-DR-6_Shallow	Rad	Uranium-233/234	U-233/234	pCi/g	0.6	5.2E+04	1.2E-05	6.4E+03	9.7E-05
116-DR-6_Shallow	Rad	Uranium-238	U-238	pCi/g	0.5	1.6E+04	3.0E-05	5.2E+03	9.2E-05
116-DR-7_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.1	2.2E+03	3.3E-05	9.2E+02	7.9E-05
116-DR-7_Shallow	Rad	Europium-152	14683-23-9	pCi/g	0.2	1.5E+04	1.5E-05	1.7E+03	1.3E-04
116-DR-7_Shallow	Rad	Rads SOF	---	pCi/g	--	--	9.8E-05	--	4.4E-04
116-DR-7_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	1586.1	5.0E+03	3.2E-01	3.6E+05	4.4E-03
116-DR-7_Shallow	Rad	Uranium-233/234	U-233/234	pCi/g	0.7	5.2E+04	1.4E-05	6.4E+03	1.1E-04
116-DR-7_Shallow	Rad	Uranium-235	15117-96-1	pCi/g	0.1	2.7E+04	4.4E-06	4.4E+03	2.8E-05
116-DR-7_Shallow	Rad	Uranium-238	U-238	pCi/g	0.5	1.6E+04	3.3E-05	5.2E+03	1.0E-04
116-DR-8_Overburden_2	non-Rad	Acetone	67-64-1	ug/kg	26.4	No Value	--	No Value	--
116-DR-8_Overburden_2	non-Rad	Antimony	7440-36-0	ug/kg	535.4	5.0E+03	1.1E-01	6.0E+03	9.0E-02
116-DR-8_Overburden_2	non-Rad	Arsenic	7440-38-2	ug/kg	2248.0	1.0E+04	2.3E-01	1.9E+05	1.2E-02
116-DR-8_Overburden_2	non-Rad	Barium	7440-39-3	ug/kg	51820.8	3.3E+05	1.6E-01	1.3E+06	3.9E-02
116-DR-8_Overburden_2	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	77.0	1.8E+04	4.3E-03	6.4E+04	1.2E-03
116-DR-8_Overburden_2	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	46.0	1.8E+04	2.6E-03	7.6E+04	6.0E-04
116-DR-8_Overburden_2	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	95.0	1.8E+04	5.3E-03	3.9E+04	2.4E-03
116-DR-8_Overburden_2	non-Rad	Beryllium	7440-41-7	ug/kg	555.0	1.0E+04	5.6E-02	1.4E+04	4.0E-02
116-DR-8_Overburden_2	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	ug/kg	347.4	1.0E+05	3.5E-03	4.5E+04	7.7E-03
116-DR-8_Overburden_2	non-Rad	Chromium	7440-47-3	ug/kg	7334.0	4.0E+02	**1.8E+01**	3.8E+04	1.9E-01
116-DR-8_Overburden_2	non-Rad	Chrysene	218-01-9	ug/kg	110.0	1.8E+04	6.1E-03	4.5E+04	2.5E-03
116-DR-8_Overburden_2	non-Rad	Cobalt	7440-48-4	ug/kg	8689.1	1.3E+04	6.7E-01	1.1E+05	7.8E-02
116-DR-8_Overburden_2	non-Rad	Copper	7440-50-8	ug/kg	13744.5	5.0E+04	2.8E-01	1.1E+05	1.3E-01
116-DR-8_Overburden_2	non-Rad	Fluoranthene	206-44-0	ug/kg	180.0	1.8E+04	1.0E-02	8.4E+05	2.2E-04
116-DR-8_Overburden_2	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	175.0	No Value	--	1.3E+06	1.4E-04
116-DR-8_Overburden_2	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	22.0	1.8E+04	1.2E-03	3.6E+04	6.2E-04
116-DR-8_Overburden_2	non-Rad	Lead	7439-92-1	ug/kg	3831.1	5.0E+04	7.7E-02	3.6E+04	1.1E-01
116-DR-8_Overburden_2	non-Rad	Lithium	7439-93-2	ug/kg	6085.7	2.0E+03	**3.0E+00**	5.2E+05	1.2E-02
116-DR-8_Overburden_2	non-Rad	Manganese	7439-96-5	ug/kg	323772.7	2.2E+05	**1.5E+00**	5.8E+06	5.6E-02
116-DR-8_Overburden_2	non-Rad	Methylene chloride	75-09-2	ug/kg	1.8	No Value	--	1.7E+05	1.1E-05
116-DR-8_Overburden_2	non-Rad	Nickel	7440-02-0	ug/kg	11375.5	3.0E+04	3.8E-01	3.3E+04	3.5E-01
116-DR-8_Overburden_2	Rad	Plutonium-238	13981-16-3	pCi/g	0.1	1.8E+04	5.2E-06	6.0E+03	1.5E-05
116-DR-8_Overburden_2	non-Rad	Pyrene	129-00-0	ug/kg	120.0	1.8E+04	6.7E-03	6.0E+05	2.0E-04
116-DR-8_Overburden_2	Rad	Rads SOF	---	pCi/g	--	--	8.7E-05	--	2.4E-03
116-DR-8_Overburden_2	Rad	Total beta radiostrontium	SR-RAD	pCi/g	0.2	3.6E+03	5.7E-05	9.1E+01	2.2E-03
116-DR-8_Overburden_2	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	898.0	5.0E+03	1.8E-01	3.6E+05	2.5E-03
116-DR-8_Overburden_2	Rad	Uranium-234	13966-29-5	pCi/g	0.3	5.2E+04	5.4E-06	6.4E+03	4.3E-05
116-DR-8_Overburden_2	Rad	Uranium-238	U-238	pCi/g	0.3	1.6E+04	1.9E-05	5.2E+03	5.9E-05
116-DR-8_Overburden_2	non-Rad	Vanadium	7440-62-2	ug/kg	65299.4	2.0E+03	**3.3E+01**	3.1E+04	**2.1E+00**
116-DR-8_Overburden_2	non-Rad	Zinc	7440-66-6	ug/kg	47916.5	5.0E+04	9.6E-01	6.8E+04	7.1E-01
116-DR-8_Overburden_3	non-Rad	Acetone	67-64-1	ug/kg	8.6	No Value	--	No Value	--
116-DR-8_Overburden_3	non-Rad	Antimony	7440-36-0	ug/kg	746.9	5.0E+03	1.5E-01	6.0E+03	1.3E-01
116-DR-8_Overburden_3	non-Rad	Arsenic	7440-38-2	ug/kg	2507.3	1.0E+04	2.5E-01	1.9E+05	1.3E-02
116-DR-8_Overburden_3	non-Rad	Barium	7440-39-3	ug/kg	63743.6	3.3E+05	1.9E-01	1.3E+06	4.8E-02
116-DR-8_Overburden_3	non-Rad	Beryllium	7440-41-7	ug/kg	1958.0	1.0E+04	2.0E-01	1.4E+04	1.4E-01
116-DR-8_Overburden_3	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	ug/kg	133.2	1.0E+05	1.3E-03	4.5E+04	2.9E-03
116-DR-8_Overburden_3	non-Rad	Boron	7440-42-8	ug/kg	1274.2	5.0E+02	**2.6E+00**	1.3E+05	9.6E-03
116-DR-8_Overburden_3	non-Rad	Cadmium	7440-43-9	ug/kg	78.0	4.0E+03	2.0E-02	1.6E+03	4.8E-02
116-DR-8_Overburden_3	Rad	Cesium-137	10045-97-3	pCi/g	0.1	2.2E+03	4.8E-05	9.2E+02	1.2E-04

Table 4. Comparison of 100-D OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
116-DR-8_Overburden_3	non-Rad	Chromium	7440-47-3	ug/kg	9365.2	4.0E+02	**2.3E+01**	3.8E+04	2.5E-01
116-DR-8_Overburden_3	non-Rad	Chrysene	218-01-9	ug/kg	30.0	1.8E+04	1.7E-03	4.5E+04	6.7E-04
116-DR-8_Overburden_3	non-Rad	Cobalt	7440-48-4	ug/kg	9279.2	1.3E+04	7.1E-01	1.1E+05	8.3E-02
116-DR-8_Overburden_3	non-Rad	Copper	7440-50-8	ug/kg	13020.5	5.0E+04	2.6E-01	1.1E+05	1.2E-01
116-DR-8_Overburden_3	non-Rad	Lead	7439-92-1	ug/kg	4812.6	5.0E+04	9.6E-02	3.6E+04	1.4E-01
116-DR-8_Overburden_3	non-Rad	Lithium	7439-93-2	ug/kg	27769.8	2.0E+03	**1.4E+01**	5.2E+05	5.4E-02
116-DR-8_Overburden_3	non-Rad	Manganese	7439-96-5	ug/kg	348288.6	2.2E+05	**1.6E+00**	5.8E+06	6.0E-02
116-DR-8_Overburden_3	non-Rad	Methylene chloride	75-09-2	ug/kg	3.4	No Value	--	1.7E+05	2.0E-05
116-DR-8_Overburden_3	non-Rad	Molybdenum	7439-98-7	ug/kg	370.0	2.0E+03	1.9E-01	1.4E+04	2.7E-02
116-DR-8_Overburden_3	non-Rad	Nickel	7440-02-0	ug/kg	11807.1	3.0E+04	3.9E-01	3.3E+04	3.6E-01
116-DR-8_Overburden_3	non-Rad	Pyrene	129-00-0	ug/kg	16.6	1.8E+04	9.2E-04	6.0E+05	2.8E-05
116-DR-8_Overburden_3	Rad	Rads SOF	---	pCi/g	--	--	1.3E-04	--	2.9E-03
116-DR-8_Overburden_3	non-Rad	Silver	7440-22-4	ug/kg	2200.0	2.0E+03	**1.1E+00**	5.0E+04	4.4E-02
116-DR-8_Overburden_3	Rad	Total beta radiostrontium	SR-RAD	pCi/g	0.2	3.6E+03	6.9E-05	9.1E+01	2.7E-03
116-DR-8_Overburden_3	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	478.1	5.0E+03	9.6E-02	3.6E+05	1.3E-03
116-DR-8_Overburden_3	Rad	Uranium-234	13966-29-5	pCi/g	0.1	5.2E+04	2.9E-06	6.4E+03	2.3E-05
116-DR-8_Overburden_3	Rad	Uranium-238	U-238	pCi/g	0.2	1.6E+04	1.0E-05	5.2E+03	3.1E-05
116-DR-8_Overburden_3	non-Rad	Vanadium	7440-62-2	ug/kg	70346.4	2.0E+03	**3.5E+01**	3.1E+04	**2.3E+00**
116-DR-8_Overburden_3	non-Rad	Zinc	7440-66-6	ug/kg	72845.7	5.0E+04	**1.5E+00**	6.8E+04	**1.1E+00**
116-DR-8_Shallow	non-Rad	1,2-Dichlorobenzene	95-50-1	ug/kg	26.0	No Value	--	1.6E+05	1.6E-04
116-DR-8_Shallow	non-Rad	2,4,5-Trichlorophenol	95-95-4	ug/kg	10.0	No Value	--	No Value	--
116-DR-8_Shallow	non-Rad	2,4-Dichlorophenol	120-83-2	ug/kg	11.0	No Value	--	No Value	--
116-DR-8_Shallow	non-Rad	2-Chloronaphthalene	91-58-7	ug/kg	11.0	No Value	--	No Value	--
116-DR-8_Shallow	non-Rad	Acenaphthene	83-32-9	ug/kg	12.0	2.0E+04	6.0E-04	1.1E+06	1.1E-05
116-DR-8_Shallow	non-Rad	Acetone	67-64-1	ug/kg	19.0	No Value	--	No Value	--
116-DR-8_Shallow	non-Rad	Antimony	7440-36-0	ug/kg	530.8	5.0E+03	1.1E-01	6.0E+03	8.9E-02
116-DR-8_Shallow	non-Rad	Arsenic	7440-38-2	ug/kg	2451.8	1.0E+04	2.5E-01	1.9E+05	1.3E-02
116-DR-8_Shallow	non-Rad	Barium	7440-39-3	ug/kg	65315.3	3.3E+05	2.0E-01	1.3E+06	4.9E-02
116-DR-8_Shallow	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	42.0	1.8E+04	2.3E-03	6.4E+04	6.6E-04
116-DR-8_Shallow	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	28.0	1.8E+04	1.6E-03	7.6E+04	3.7E-04
116-DR-8_Shallow	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	32.3	1.8E+04	1.8E-03	3.9E+04	8.2E-04
116-DR-8_Shallow	non-Rad	Beryllium	7440-41-7	ug/kg	1024.1	1.0E+04	1.0E-01	1.4E+04	7.3E-02
116-DR-8_Shallow	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	ug/kg	210.0	1.0E+05	2.1E-03	4.5E+04	4.6E-03
116-DR-8_Shallow	non-Rad	Boron	7440-42-8	ug/kg	1783.3	5.0E+02	**3.6E+00**	1.3E+05	1.3E-02
116-DR-8_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.1	2.2E+03	6.7E-05	9.2E+02	1.6E-04
116-DR-8_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	8234.6	4.0E+02	**2.1E+01**	3.8E+04	2.2E-01
116-DR-8_Shallow	non-Rad	Chrysene	218-01-9	ug/kg	33.2	1.8E+04	1.8E-03	4.5E+04	7.5E-04
116-DR-8_Shallow	non-Rad	Cobalt	7440-48-4	ug/kg	8776.0	1.3E+04	6.8E-01	1.1E+05	7.9E-02
116-DR-8_Shallow	non-Rad	Copper	7440-50-8	ug/kg	13953.4	5.0E+04	2.8E-01	1.1E+05	1.3E-01
116-DR-8_Shallow	non-Rad	Dibenz[a,h]anthracene	53-70-3	ug/kg	25.0	1.8E+04	1.4E-03	4.4E+04	5.7E-04
116-DR-8_Shallow	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	192.0	No Value	--	1.3E+06	1.5E-04
116-DR-8_Shallow	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	22.0	1.8E+04	1.2E-03	3.6E+04	6.2E-04
116-DR-8_Shallow	non-Rad	Lead	7439-92-1	ug/kg	4208.1	5.0E+04	8.4E-02	3.6E+04	1.2E-01
116-DR-8_Shallow	non-Rad	Lithium	7439-93-2	ug/kg	70443.7	2.0E+03	**3.5E+01**	5.2E+05	1.4E-01
116-DR-8_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	305029.3	2.2E+05	**1.4E+00**	5.8E+06	5.3E-02
116-DR-8_Shallow	non-Rad	Mercury	7439-97-6	ug/kg	9.5	1.0E+02	9.5E-02	1.9E+03	5.1E-03
116-DR-8_Shallow	non-Rad	Methylene chloride	75-09-2	ug/kg	1.9	No Value	--	1.7E+05	1.1E-05
116-DR-8_Shallow	non-Rad	Molybdenum	7439-98-7	ug/kg	640.0	2.0E+03	3.2E-01	1.4E+04	4.6E-02
116-DR-8_Shallow	non-Rad	Nickel	7440-02-0	ug/kg	11726.7	3.0E+04	3.9E-01	3.3E+04	3.6E-01
116-DR-8_Shallow	non-Rad	Pyrene	129-00-0	ug/kg	18.6	1.8E+04	1.0E-03	6.0E+05	3.1E-05
116-DR-8_Shallow	Rad	Rads SOF	---	pCi/g	--	--	1.7E-04	--	3.7E-03
116-DR-8_Shallow	non-Rad	Toluene	108-88-3	ug/kg	1.1	2.0E+05	5.5E-06	5.2E+06	2.1E-07
116-DR-8_Shallow	Rad	Total beta radiostrontium	SR-RAD	pCi/g	0.3	3.6E+03	8.9E-05	9.1E+01	3.5E-03
116-DR-8_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	585.4	5.0E+03	1.2E-01	3.6E+05	1.6E-03
116-DR-8_Shallow	Rad	Uranium-234	13966-29-5	pCi/g	0.2	5.2E+04	3.4E-06	6.4E+03	2.8E-05
116-DR-8_Shallow	Rad	Uranium-238	U-238	pCi/g	0.2	1.6E+04	1.3E-05	5.2E+03	3.8E-05
116-DR-8_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	64428.9	2.0E+03	**3.2E+01**	3.1E+04	**2.1E+00**
116-DR-8_Shallow	non-Rad	Zinc	7440-66-6	ug/kg	50213.4	5.0E+04	**1.0E+00**	6.8E+04	7.4E-01
116-DR-9_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	10.0	2.2E+03	4.5E-03	9.2E+02	1.1E-02
116-DR-9_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	16093.2	4.0E+02	**4.0E+01**	3.8E+04	4.2E-01
116-DR-9_Shallow	Rad	Cobalt-60	10198-40-0	pCi/g	0.0	6.1E+03	7.2E-06	8.1E+02	5.5E-05
116-DR-9_Shallow	Rad	Europium-152	14683-23-9	pCi/g	0.4	1.5E+04	3.0E-05	1.7E+03	2.5E-04
116-DR-9_Shallow	Rad	Europium-154	15585-10-1	pCi/g	0.1	1.3E+04	5.7E-06	1.6E+03	4.4E-05
116-DR-9_Shallow	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	1900.0	No Value	--	1.3E+06	1.5E-03
116-DR-9_Shallow	non-Rad	Lead	7439-92-1	ug/kg	2837.7	5.0E+04	5.7E-02	3.6E+04	8.0E-02
116-DR-9_Shallow	Rad	Nickel-63	13981-37-8	pCi/g	5.0	No Value	--	No Value	--
116-DR-9_Shallow	Rad	Plutonium-238	13981-16-3	pCi/g	0.4	1.8E+04	2.1E-05	6.0E+03	6.0E-05
116-DR-9_Shallow	Rad	Plutonium-239/240	PU-239/240	pCi/g	0.7	1.3E+04	5.7E-05	6.3E+03	1.2E-04
116-DR-9_Shallow	Rad	Rads SOF	---	pCi/g	--	--	4.7E-03	--	1.4E-02
116-DR-9_Shallow	Rad	Total beta radiostrontium	SR-RAD	pCi/g	0.3	3.6E+03	7.3E-05	9.1E+01	2.9E-03
118-D-1_Overburden	non-Rad	Arsenic	7440-38-2	ug/kg	3014.0	1.0E+04	3.0E-01	1.9E+05	1.6E-02
118-D-1_Overburden	non-Rad	Barium	7440-39-3	ug/kg	69917.7	3.3E+05	2.1E-01	1.3E+06	5.3E-02
118-D-1_Overburden	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	120.0	1.8E+04	6.7E-03	3.9E+04	3.1E-03
118-D-1_Overburden	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	ug/kg	245.0	1.0E+05	2.5E-03	4.5E+04	5.4E-03
118-D-1_Overburden	non-Rad	Boron	7440-42-8	ug/kg	1233.3	5.0E+02	**2.5E+00**	1.3E+05	9.3E-03
118-D-1_Overburden	non-Rad	Butylbenzylphthalate	85-68-7	ug/kg	110.0	No Value	--	No Value	--
118-D-1_Overburden	non-Rad	Cadmium	7440-43-9	ug/kg	65.3	4.0E+03	1.6E-02	1.6E+03	4.0E-02
118-D-1_Overburden	Rad	Cesium-137	10045-97-3	pCi/g	0.1	2.2E+03	3.6E-05	9.2E+02	8.7E-05
118-D-1_Overburden	non-Rad	Chromium	7440-47-3	ug/kg	10001.4	4.0E+02	**2.5E+01**	3.8E+04	2.6E-01
118-D-1_Overburden	non-Rad	Cobalt	7440-48-4	ug/kg	7317.9	1.3E+04	5.6E-01	1.1E+05	6.6E-02
118-D-1_Overburden	non-Rad	Copper	7440-50-8	ug/kg	15107.0	5.0E+04	3.0E-01	1.1E+05	1.4E-01
118-D-1_Overburden	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	396.9	No Value	--	1.3E+06	3.2E-04
118-D-1_Overburden	non-Rad	Lead	7439-92-1	ug/kg	3919.3	5.0E+04	7.8E-02	3.6E+04	1.1E-01
118-D-1_Overburden	non-Rad	Manganese	7439-96-5	ug/kg	306161.1	2.2E+05	**1.4E+00**	5.8E+06	5.3E-02
118-D-1_Overburden	non-Rad	Mercury	7439-97-6	ug/kg	7.3	1.0E+02	7.3E-02	1.9E+03	3.9E-03
118-D-1_Overburden	non-Rad	Molybdenum	7439-98-7	ug/kg	760.0	2.0E+03	3.8E-01	1.4E+04	5.4E-02
118-D-1_Overburden	non-Rad	Nickel	7440-02-0	ug/kg	11640.0	3.0E+04	3.9E-01	3.3E+04	3.6E-01
118-D-1_Overburden	Rad	Rads SOF	---	pCi/g	--	--	9.8E-05	--	4.5E-04
118-D-1_Overburden	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	ug/kg	870.0	2.0E+05	4.4E-03	3.6E+08	2.4E-06
118-D-1_Overburden	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	ug/kg	1300.0	No Value	--	No Value	--
118-D-1_Overburden	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	2196.6	5.0E+03	4.4E-01	3.6E+05	6.1E-03
118-D-1_Overburden	Rad	Tritium	10028-17-8	pCi/g	0.0	1.7E+06	2.4E-08	4.2E+02	9.8E-05
118-D-1_Overburden	Rad	Uranium-234	13966-29-5	pCi/g	0.7	5.2E+04	1.5E-05	6.4E+03	1.2E-04
118-D-1_Overburden	Rad	Uranium-238	U-238	pCi/g	0.7	1.6E+04	4.7E-05	5.2E+03	1.4E-04
118-D-1_Overburden	non-Rad	Vanadium	7440-62-2	ug/kg	50373.4	2.0E+03	**2.5E+01**	3.1E+04	**1.6E+00**
118-D-1_Overburden	non-Rad	Zinc	7440-66-6	ug/kg	38461.0	5.0E+04	7.7E-01	6.8E+04	5.7E-01
118-D-1_Shallow_1	non-Rad	Arsenic	7440-38-2	ug/kg	2632.0	1.0E+04	2.6E-01	1.9E+05	1.4E-02
118-D-1_Shallow_1	non-Rad	Barium	7440-39-3	ug/kg	60014.8	3.3E+05	1.8E-01	1.3E+06	4.5E-02
118-D-1_Shallow_1	non-Rad	Beryllium	7440-41-7	ug/kg	229.9	1.0E+04	2.3E-02	1.4E+04	1.7E-02
118-D-1_Shallow_1	non-Rad	Boron	7440-42-8	ug/kg	1700.0	5.0E+02	**3.4E+00**	1.3E+05	1.3E-02
118-D-1_Shallow_1	non-Rad	Cadmium	7440-43-9	ug/kg	44.2	4.0E+03	1.1E-02	1.6E+03	2.7E-02
118-D-1_Shallow_1	Rad	Cesium-137	10045-97-3	pCi/g	0.0	2.2E+03	1.8E-05	9.2E+02	4.2E-05
118-D-1_Shallow_1	non-Rad	Chromium	7440-47-3	ug/kg	9458.2	4.0E+02	**2.4E+01**	3.8E+04	2.5E-01
118-D-1_Shallow_1	non-Rad	Cobalt	7440-48-4	ug/kg	7736.3	1.3E+04	6.0E-01	1.1E+05	6.9E-02
118-D-1_Shallow_1	non-Rad	Copper	7440-50-8	ug/kg	16751.9	5.0E+04	3.4E-01	1.1E+05	1.6E-01
118-D-1_Shallow_1	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	175.0	No Value	--	1.3E+06	1.4E-04
118-D-1_Shallow_1	non-Rad	Lead	7439-92-1	ug/kg	3664.3	5.0E+04	7.3E-02	3.6E+04	1.0E-01
118-D-1_Shallow_1	non-Rad	Manganese	7439-96-5	ug/kg	288049.5	2.2E+05	**1.3E+00**	5.8E+06	5.0E-02
118-D-1_Shallow_1	non-Rad	Mercury	7439-97-6	ug/kg	16.8	1.0E+02	1.7E-01	1.9E+03	9.0E-03
118-D-1_Shallow_1	non-Rad	Molybdenum	7439-98-7	ug/kg	320.0	2.0E+03	1.6E-01	1.4E+04	2.3E-02
118-D-1_Shallow_1	non-Rad	Nickel	7440-02-0	ug/kg	12503.8	3.0E+04	4.2E-01	3.3E+04	3.8E-01
118-D-1_Shallow_1	Rad	Rads SOF	---	pCi/g	--	--	1.3E-04	--	2.3E-03
118-D-1_Shallow_1	Rad	Technetium-99	14133-76-7	pCi/g	1.1	2.2E+04	4.9E-05	5.4E+03	2.0E-04
118-D-1_Shallow_1	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	ug/kg	2470.8	2.0E+05	1.2E-02	3.6E+08	6.9E-06

Table 4. Comparison of 100-D OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
118-D-1_Shallow_1	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	ug/kg	5641.7	No Value	--	No Value	--
118-D-1_Shallow_1	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	2394.9	5.0E+03	4.8E-01	3.6E+05	6.7E-03
118-D-1_Shallow_1	Rad	Tritium	10028-17-8	pCi/g	0.7	1.7E+06	4.3E-07	4.2E+02	1.7E-03
118-D-1_Shallow_1	Rad	Uranium-234	13966-29-5	pCi/g	0.8	5.2E+04	1.6E-05	6.4E+03	1.3E-04
118-D-1_Shallow_1	Rad	Uranium-238	U-238	pCi/g	0.8	1.6E+04	5.1E-05	5.2E+03	1.6E-04
118-D-1_Shallow_1	non-Rad	Vanadium	7440-62-2	ug/kg	59297.8	2.0E+03	**3.0E+01**	3.1E+04	**1.9E+00**
118-D-1_Shallow_1	non-Rad	Zinc	7440-66-6	ug/kg	41623.6	5.0E+04	8.3E-01	6.8E+04	6.1E-01
118-D-1_Shallow_5	non-Rad	Arsenic	7440-38-2	ug/kg	3466.7	1.0E+04	3.5E-01	1.9E+05	1.8E-02
118-D-1_Shallow_5	non-Rad	Barium	7440-39-3	ug/kg	71721.2	3.3E+05	2.2E-01	1.3E+06	5.4E-02
118-D-1_Shallow_5	non-Rad	Beryllium	7440-41-7	ug/kg	141.4	1.0E+04	1.4E-02	1.4E+04	1.0E-02
118-D-1_Shallow_5	non-Rad	Boron	7440-42-8	ug/kg	1206.8	5.0E+02	**2.4E+00**	1.3E+05	9.1E-03
118-D-1_Shallow_5	non-Rad	Cadmium	7440-43-9	ug/kg	71.9	4.0E+03	1.8E-02	1.6E+03	4.4E-02
118-D-1_Shallow_5	Rad	Cesium-137	10045-97-3	pCi/g	0.1	2.2E+03	2.7E-05	9.2E+02	6.4E-05
118-D-1_Shallow_5	non-Rad	Chromium	7440-47-3	ug/kg	10857.1	4.0E+02	**2.7E+01**	3.8E+04	2.8E-01
118-D-1_Shallow_5	non-Rad	Cobalt	7440-48-4	ug/kg	8554.0	1.3E+04	6.6E-01	1.1E+05	7.7E-02
118-D-1_Shallow_5	non-Rad	Copper	7440-50-8	ug/kg	16263.3	5.0E+04	3.3E-01	1.1E+05	1.5E-01
118-D-1_Shallow_5	non-Rad	Lead	7439-92-1	ug/kg	4866.4	5.0E+04	9.7E-02	3.6E+04	1.4E-01
118-D-1_Shallow_5	non-Rad	Manganese	7439-96-5	ug/kg	319582.0	2.2E+05	**1.5E+00**	5.8E+06	5.5E-02
118-D-1_Shallow_5	non-Rad	Mercury	7439-97-6	ug/kg	13.3	1.0E+02	1.3E-01	1.9E+03	7.1E-03
118-D-1_Shallow_5	non-Rad	Nickel	7440-02-0	ug/kg	13106.2	3.0E+04	4.4E-01	3.3E+04	4.0E-01
118-D-1_Shallow_5	Rad	Rads SOF	---	pCi/g	--	--	4.3E-05	--	2.1E-04
118-D-1_Shallow_5	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	ug/kg	8382.0	2.0E+05	4.2E-02	3.6E+08	2.4E-05
118-D-1_Shallow_5	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	ug/kg	13055.8	No Value	--	No Value	--
118-D-1_Shallow_5	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	729.3	5.0E+03	1.5E-01	3.6E+05	2.0E-03
118-D-1_Shallow_5	Rad	Tritium	10028-17-8	pCi/g	0.0	1.7E+06	1.8E-08	4.2E+02	7.2E-05
118-D-1_Shallow_5	Rad	Uranium-234	13966-29-5	pCi/g	0.2	5.2E+04	4.0E-06	6.4E+03	3.2E-05
118-D-1_Shallow_5	Rad	Uranium-238	U-238	pCi/g	0.2	1.6E+04	1.2E-05	5.2E+03	3.7E-05
118-D-1_Shallow_5	non-Rad	Vanadium	7440-62-2	ug/kg	55100.2	2.0E+03	**2.8E+01**	3.1E+04	**1.8E+00**
118-D-1_Shallow_5	non-Rad	Zinc	7440-66-6	ug/kg	42151.4	5.0E+04	8.4E-01	6.8E+04	6.2E-01
118-D-1_Shallow_Focused	non-Rad	Arsenic	7440-38-2	ug/kg	3600.0	1.0E+04	3.6E-01	1.9E+05	1.9E-02
118-D-1_Shallow_Focused	non-Rad	Barium	7440-39-3	ug/kg	64100.0	3.3E+05	1.9E-01	1.3E+06	4.9E-02
118-D-1_Shallow_Focused	non-Rad	Beryllium	7440-41-7	ug/kg	240.0	1.0E+04	2.4E-02	1.4E+04	1.7E-02
118-D-1_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	1000.0	5.0E+02	**2.0E+00**	1.3E+05	7.5E-03
118-D-1_Shallow_Focused	non-Rad	Cadmium	7440-43-9	ug/kg	89.0	4.0E+03	2.2E-02	1.6E+03	5.5E-02
118-D-1_Shallow_Focused	Rad	Cesium-137	10045-97-3	pCi/g	0.3	2.2E+03	1.2E-04	9.2E+02	2.8E-04
118-D-1_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	11700.0	4.0E+02	**2.9E+01**	3.8E+04	3.1E-01
118-D-1_Shallow_Focused	non-Rad	Cobalt	7440-48-4	ug/kg	8300.0	1.3E+04	6.4E-01	1.1E+05	7.4E-02
118-D-1_Shallow_Focused	non-Rad	Copper	7440-50-8	ug/kg	14200.0	5.0E+04	2.8E-01	1.1E+05	1.3E-01
118-D-1_Shallow_Focused	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	261.0	No Value	--	1.3E+06	2.1E-04
118-D-1_Shallow_Focused	non-Rad	Lead	7439-92-1	ug/kg	4400.0	5.0E+04	8.8E-02	3.6E+04	1.2E-01
118-D-1_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	293000.0	2.2E+05	**1.3E+00**	5.8E+06	5.1E-02
118-D-1_Shallow_Focused	non-Rad	Mercury	7439-97-6	ug/kg	11.0	1.0E+02	1.1E-01	1.9E+03	5.9E-03
118-D-1_Shallow_Focused	non-Rad	Nickel	7440-02-0	ug/kg	11200.0	3.0E+04	3.7E-01	3.3E+04	3.4E-01
118-D-1_Shallow_Focused	Rad	Rads SOF	---	pCi/g	--	--	3.0E-04	--	2.6E-03
118-D-1_Shallow_Focused	Rad	Total beta radiostrontium	SR-RAD	pCi/g	0.1	3.6E+03	4.0E-05	9.1E+01	1.6E-03
118-D-1_Shallow_Focused	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	ug/kg	1700.0	2.0E+05	8.5E-03	3.6E+08	4.8E-06
118-D-1_Shallow_Focused	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	ug/kg	3000.0	No Value	--	No Value	--
118-D-1_Shallow_Focused	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	5090.4	5.0E+03	**1.0E+00**	3.6E+05	1.4E-02
118-D-1_Shallow_Focused	Rad	Tritium	10028-17-8	pCi/g	0.1	1.7E+06	3.0E-08	4.2E+02	1.2E-04
118-D-1_Shallow_Focused	Rad	Uranium-234	13966-29-5	pCi/g	1.5	5.2E+04	3.0E-05	6.4E+03	2.4E-04
118-D-1_Shallow_Focused	Rad	Uranium-238	U-238	pCi/g	1.7	1.6E+04	1.1E-04	5.2E+03	3.3E-04
118-D-1_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	62500.0	2.0E+03	**3.1E+01**	3.1E+04	**2.0E+00**
118-D-1_Shallow_Focused	non-Rad	Zinc	7440-66-6	ug/kg	39700.0	5.0E+04	7.9E-01	6.8E+04	5.9E-01
118-D-1_Staging Pile Area Footprint	non-Rad	Arsenic	7440-38-2	ug/kg	2695.2	1.0E+04	2.7E-01	1.9E+05	1.4E-02
118-D-1_Staging Pile Area Footprint	non-Rad	Barium	7440-39-3	ug/kg	75217.4	3.3E+05	2.3E-01	1.3E+06	5.7E-02
118-D-1_Staging Pile Area Footprint	non-Rad	Beryllium	7440-41-7	ug/kg	193.2	1.0E+04	1.9E-02	1.4E+04	1.4E-02
118-D-1_Staging Pile Area Footprint	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	ug/kg	68.0	1.0E+05	6.8E-04	4.5E+04	1.5E-03
118-D-1_Staging Pile Area Footprint	non-Rad	Boron	7440-42-8	ug/kg	1316.7	5.0E+02	**2.6E+00**	1.3E+05	9.9E-03
118-D-1_Staging Pile Area Footprint	Rad	Carbon-14	14762-75-5	pCi/g	0.4	6.1E+04	6.1E-06	3.2E+01	1.2E-02
118-D-1_Staging Pile Area Footprint	non-Rad	Chromium	7440-47-3	ug/kg	10489.7	4.0E+02	**2.6E+01**	3.8E+04	2.8E-01
118-D-1_Staging Pile Area Footprint	non-Rad	Cobalt	7440-48-4	ug/kg	7233.5	1.3E+04	5.6E-01	1.1E+05	6.5E-02
118-D-1_Staging Pile Area Footprint	non-Rad	Copper	7440-50-8	ug/kg	19108.7	5.0E+04	3.8E-01	1.1E+05	1.8E-01
118-D-1_Staging Pile Area Footprint	non-Rad	Lead	7439-92-1	ug/kg	3614.3	5.0E+04	7.2E-02	3.6E+04	1.0E-01
118-D-1_Staging Pile Area Footprint	non-Rad	Manganese	7439-96-5	ug/kg	284458.0	2.2E+05	**1.3E+00**	5.8E+06	4.9E-02
118-D-1_Staging Pile Area Footprint	non-Rad	Mercury	7439-97-6	ug/kg	6.0	1.0E+02	6.0E-02	1.9E+03	3.2E-03
118-D-1_Staging Pile Area Footprint	non-Rad	Molybdenum	7439-98-7	ug/kg	310.0	2.0E+03	1.6E-01	1.4E+04	2.2E-02
118-D-1_Staging Pile Area Footprint	non-Rad	Nickel	7440-02-0	ug/kg	12366.2	3.0E+04	4.1E-01	3.3E+04	3.8E-01
118-D-1_Staging Pile Area Footprint	Rad	Rads SOF	---	pCi/g	--	--	7.2E-05	--	1.5E-02
118-D-1_Staging Pile Area Footprint	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	ug/kg	1800.0	2.0E+05	9.0E-03	3.6E+08	5.1E-06
118-D-1_Staging Pile Area Footprint	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	ug/kg	3400.0	No Value	--	No Value	--
118-D-1_Staging Pile Area Footprint	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	2319.6	5.0E+03	4.6E-01	3.6E+05	6.5E-03
118-D-1_Staging Pile Area Footprint	Rad	Tritium	10028-17-8	pCi/g	1.3	1.7E+06	8.0E-07	4.2E+02	3.2E-03
118-D-1_Staging Pile Area Footprint	Rad	Uranium-234	13966-29-5	pCi/g	0.8	5.2E+04	1.5E-05	6.4E+03	1.2E-04
118-D-1_Staging Pile Area Footprint	Rad	Uranium-238	U-238	pCi/g	0.8	1.6E+04	5.0E-05	5.2E+03	1.5E-04
118-D-1_Staging Pile Area Footprint	non-Rad	Vanadium	7440-62-2	ug/kg	54073.2	2.0E+03	**2.7E+01**	3.1E+04	**1.7E+00**
118-D-1_Staging Pile Area Footprint	non-Rad	Zinc	7440-66-6	ug/kg	38513.1	5.0E+04	7.7E-01	6.8E+04	5.7E-01
118-D-4_Overburden	non-Rad	Arsenic	7440-38-2	ug/kg	3133.2	1.0E+04	3.1E-01	1.9E+05	1.7E-02
118-D-4_Overburden	non-Rad	Barium	7440-39-3	ug/kg	75116.4	3.3E+05	2.3E-01	1.3E+06	5.7E-02
118-D-4_Overburden	non-Rad	Beryllium	7440-41-7	ug/kg	277.1	1.0E+04	2.8E-02	1.4E+04	2.0E-02
118-D-4_Overburden	non-Rad	Boron	7440-42-8	ug/kg	1546.4	5.0E+02	**3.1E+00**	1.3E+05	1.2E-02
118-D-4_Overburden	non-Rad	Cadmium	7440-43-9	ug/kg	200.0	4.0E+03	5.0E-02	1.6E+03	1.2E-01
118-D-4_Overburden	Rad	Cesium-137	10045-97-3	pCi/g	0.0	2.2E+03	1.5E-05	9.2E+02	3.6E-05
118-D-4_Overburden	non-Rad	Chromium	7440-47-3	ug/kg	12931.1	4.0E+02	**3.2E+01**	3.8E+04	3.4E-01
118-D-4_Overburden	non-Rad	Cobalt	7440-48-4	ug/kg	7559.9	1.3E+04	5.8E-01	1.1E+05	6.8E-02
118-D-4_Overburden	non-Rad	Copper	7440-50-8	ug/kg	14932.0	5.0E+04	3.0E-01	1.1E+05	1.4E-01
118-D-4_Overburden	non-Rad	Lead	7439-92-1	ug/kg	3760.3	5.0E+04	7.5E-02	3.6E+04	1.1E-01
118-D-4_Overburden	non-Rad	Manganese	7439-96-5	ug/kg	352925.0	2.2E+05	**1.6E+00**	5.8E+06	6.1E-02
118-D-4_Overburden	non-Rad	Mercury	7439-97-6	ug/kg	39.9	1.0E+02	4.0E-01	1.9E+03	2.1E-02
118-D-4_Overburden	non-Rad	Molybdenum	7439-98-7	ug/kg	500.0	2.0E+03	2.5E-01	1.4E+04	3.6E-02
118-D-4_Overburden	non-Rad	Nickel	7440-02-0	ug/kg	13143.9	3.0E+04	4.4E-01	3.3E+04	4.0E-01
118-D-4_Overburden	Rad	Rads SOF	---	pCi/g	--	--	6.8E-05	--	2.7E-04
118-D-4_Overburden	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	1797.0	5.0E+03	3.6E-01	3.6E+05	5.0E-03
118-D-4_Overburden	Rad	Uranium-233/234	U-233/234	pCi/g	0.7	5.2E+04	1.4E-05	6.4E+03	1.1E-04
118-D-4_Overburden	Rad	Uranium-238	U-238	pCi/g	0.6	1.6E+04	3.9E-05	5.2E+03	1.2E-04
118-D-4_Overburden	non-Rad	Vanadium	7440-62-2	ug/kg	66685.6	2.0E+03	**3.3E+01**	3.1E+04	**2.1E+00**
118-D-4_Overburden	non-Rad	Zinc	7440-66-6	ug/kg	47811.4	5.0E+04	9.6E-01	6.8E+04	7.1E-01
118-D-4_Shallow	non-Rad	Antimony	7440-36-0	ug/kg	2400.0	5.0E+03	4.8E-01	6.0E+03	4.0E-01
118-D-4_Shallow	non-Rad	Arsenic	7440-38-2	ug/kg	2983.1	1.0E+04	3.0E-01	1.9E+05	1.6E-02
118-D-4_Shallow	non-Rad	Barium	7440-39-3	ug/kg	70991.1	3.3E+05	2.2E-01	1.3E+06	5.4E-02
118-D-4_Shallow	non-Rad	Beryllium	7440-41-7	ug/kg	231.3	1.0E+04	2.3E-02	1.4E+04	1.7E-02
118-D-4_Shallow	non-Rad	Boron	7440-42-8	ug/kg	1189.3	5.0E+02	**2.4E+00**	1.3E+05	9.0E-03
118-D-4_Shallow	non-Rad	Cadmium	7440-43-9	ug/kg	397.5	4.0E+03	9.9E-02	1.6E+03	2.4E-01
118-D-4_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.4	2.2E+03	1.7E-04	9.2E+02	4.1E-04
118-D-4_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	12376.7	4.0E+02	**3.1E+01**	3.8E+04	3.2E-01
118-D-4_Shallow	non-Rad	Cobalt	7440-48-4	ug/kg	8104.3	1.3E+04	6.2E-01	1.1E+05	7.3E-02
118-D-4_Shallow	non-Rad	Copper	7440-50-8	ug/kg	15591.7	5.0E+04	3.1E-01	1.1E+05	1.5E-01
118-D-4_Shallow	Rad	Europium-152	14683-23-9	pCi/g	0.3	1.5E+04	2.2E-05	1.7E+03	1.9E-04
118-D-4_Shallow	non-Rad	Lead	7439-92-1	ug/kg	7908.1	5.0E+04	1.6E-01	3.6E+04	2.2E-01
118-D-4_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	342787.7	2.2E+05	**1.6E+00**	5.8E+06	5.9E-02
118-D-4_Shallow	non-Rad	Mercury	7439-97-6	ug/kg	65.5	1.0E+02	6.6E-01	1.9E+03	3.5E-02

Table 4. Comparison of 100-D OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
118-D-4_Shallow	non-Rad	Molybdenum	7439-98-7	ug/kg	582.1	2.0E+03	2.9E-01	1.4E+04	4.2E-02
118-D-4_Shallow	non-Rad	Nickel	7440-02-0	ug/kg	12565.5	3.0E+04	4.2E-01	3.3E+04	3.9E-01
118-D-4_Shallow	Rad	Nickel-63	13981-37-8	pCi/g	4.0	No Value	--	No Value	--
118-D-4_Shallow	Rad	Plutonium-239/240	PU-239/240	pCi/g	0.3	1.3E+04	2.5E-05	6.3E+03	5.0E-05
118-D-4_Shallow	Rad	Rads SOF	---	pCi/g	--	--	7.8E-04	--	2.1E-02
118-D-4_Shallow	Rad	Total beta radiostrontium	SR-RAD	pCi/g	1.8	3.6E+03	5.1E-04	9.1E+01	2.0E-02
118-D-4_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	2041.6	5.0E+03	4.1E-01	3.6E+05	5.7E-03
118-D-4_Shallow	Rad	Uranium-233/234	U-233/234	pCi/g	0.6	5.2E+04	1.1E-05	6.4E+03	9.1E-05
118-D-4_Shallow	Rad	Uranium-238	U-238	pCi/g	0.7	1.6E+04	4.4E-05	5.2E+03	1.3E-04
118-D-4_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	80969.4	2.0E+03	**4.1E+01**	3.1E+04	**2.6E+00**
118-D-4_Shallow	non-Rad	Zinc	7440-66-6	ug/kg	59118.4	5.0E+04	**1.2E+00**	6.8E+04	8.7E-01
118-D-4_Shallow_Focused	non-Rad	Antimony	7440-36-0	ug/kg	900.0	5.0E+03	1.8E-01	6.0E+03	1.5E-01
118-D-4_Shallow_Focused	non-Rad	Arsenic	7440-38-2	ug/kg	3300.0	1.0E+04	3.3E-01	1.9E+05	1.7E-02
118-D-4_Shallow_Focused	non-Rad	Barium	7440-39-3	ug/kg	77300.0	3.3E+05	2.3E-01	1.3E+06	5.8E-02
118-D-4_Shallow_Focused	non-Rad	Beryllium	7440-41-7	ug/kg	200.0	1.0E+04	2.0E-02	1.4E+04	1.4E-02
118-D-4_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	1300.0	5.0E+02	**2.6E+00**	1.3E+05	9.8E-03
118-D-4_Shallow_Focused	non-Rad	Cadmium	7440-43-9	ug/kg	4660.0	4.0E+03	**1.2E+00**	1.6E+03	**2.9E+00**
118-D-4_Shallow_Focused	Rad	Cesium-137	10045-97-3	pCi/g	0.2	2.2E+03	6.8E-05	9.2E+02	1.6E-04
118-D-4_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	48100.0	4.0E+02	**1.2E+02**	3.8E+04	**1.3E+00**
118-D-4_Shallow_Focused	non-Rad	Cobalt	7440-48-4	ug/kg	11000.0	1.3E+04	8.5E-01	1.1E+05	9.9E-02
118-D-4_Shallow_Focused	non-Rad	Copper	7440-50-8	ug/kg	15500.0	5.0E+04	3.1E-01	1.1E+05	1.5E-01
118-D-4_Shallow_Focused	Rad	Europium-152	14683-23-9	pCi/g	0.5	1.5E+04	3.1E-05	1.7E+03	2.6E-04
118-D-4_Shallow_Focused	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	170.0	No Value	--	1.3E+06	1.4E-04
118-D-4_Shallow_Focused	non-Rad	Lead	7439-92-1	ug/kg	3700.0	5.0E+04	7.4E-02	3.6E+04	1.0E-01
118-D-4_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	399000.0	2.2E+05	**1.8E+00**	5.8E+06	6.9E-02
118-D-4_Shallow_Focused	non-Rad	Mercury	7439-97-6	ug/kg	58.3	1.0E+02	5.8E-01	1.9E+03	3.1E-02
118-D-4_Shallow_Focused	non-Rad	Molybdenum	7439-98-7	ug/kg	500.0	2.0E+03	2.5E-01	1.4E+04	3.6E-02
118-D-4_Shallow_Focused	non-Rad	Nickel	7440-02-0	ug/kg	27300.0	3.0E+04	9.1E-01	3.3E+04	8.4E-01
118-D-4_Shallow_Focused	Rad	Rads SOF	---	pCi/g	--	--	1.6E-04	--	6.4E-04
118-D-4_Shallow_Focused	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	ug/kg	5460.0	2.0E+05	2.7E-02	3.6E+08	1.5E-05
118-D-4_Shallow_Focused	non-Rad	Total petroleum hydrocarbons - motor oil (high boiling)	TPH/OILH	ug/kg	10500.0	No Value	--	No Value	--
118-D-4_Shallow_Focused	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	2220.7	5.0E+03	4.4E-01	3.6E+05	6.2E-03
118-D-4_Shallow_Focused	Rad	Uranium-233/234	U-233/234	pCi/g	0.5	5.2E+04	9.6E-06	6.4E+03	7.8E-05
118-D-4_Shallow_Focused	Rad	Uranium-238	U-238	pCi/g	0.7	1.6E+04	4.8E-05	5.2E+03	1.5E-04
118-D-4_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	92400.0	2.0E+03	**4.6E+01**	3.1E+04	**3.0E+00**
118-D-4_Shallow_Focused	non-Rad	Zinc	7440-66-6	ug/kg	59600.0	5.0E+04	**1.2E+00**	6.8E+04	8.8E-01
118-D-5_Overburden	non-Rad	Antimony	7440-36-0	ug/kg	561.7	5.0E+03	1.1E-01	6.0E+03	9.4E-02
118-D-5_Overburden	non-Rad	Arsenic	7440-38-2	ug/kg	2763.2	1.0E+04	2.8E-01	1.9E+05	1.5E-02
118-D-5_Overburden	non-Rad	Barium	7440-39-3	ug/kg	56467.7	3.3E+05	1.7E-01	1.3E+06	4.3E-02
118-D-5_Overburden	non-Rad	Beryllium	7440-41-7	ug/kg	654.7	1.0E+04	6.6E-02	1.4E+04	4.7E-02
118-D-5_Overburden	non-Rad	Cadmium	7440-43-9	ug/kg	76.5	4.0E+03	1.9E-02	1.6E+03	4.7E-02
118-D-5_Overburden	non-Rad	Chromium	7440-47-3	ug/kg	8598.2	4.0E+02	**2.2E+01**	3.8E+04	2.3E-01
118-D-5_Overburden	non-Rad	Cobalt	7440-48-4	ug/kg	9244.6	1.3E+04	7.1E-01	1.1E+05	8.3E-02
118-D-5_Overburden	non-Rad	Copper	7440-50-8	ug/kg	12492.8	5.0E+04	2.5E-01	1.1E+05	1.2E-01
118-D-5_Overburden	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	217.5	No Value	--	1.3E+06	1.8E-04
118-D-5_Overburden	non-Rad	Lead	7439-92-1	ug/kg	3715.9	5.0E+04	7.4E-02	3.6E+04	1.0E-01
118-D-5_Overburden	non-Rad	Manganese	7439-96-5	ug/kg	275203.8	2.2E+05	**1.3E+00**	5.8E+06	4.8E-02
118-D-5_Overburden	non-Rad	Mercury	7439-97-6	ug/kg	40.7	1.0E+02	4.1E-01	1.9E+03	2.2E-02
118-D-5_Overburden	non-Rad	Molybdenum	7439-98-7	ug/kg	370.0	2.0E+03	1.9E-01	1.4E+04	2.7E-02
118-D-5_Overburden	non-Rad	Nickel	7440-02-0	ug/kg	12132.1	3.0E+04	4.0E-01	3.3E+04	3.7E-01
118-D-5_Overburden	Rad	Total beta radiostrontium	SR-RAD	pCi/g	0.2	3.6E+03	5.6E-05	9.1E+01	2.2E-03
118-D-5_Overburden	non-Rad	Vanadium	7440-62-2	ug/kg	50941.1	2.0E+03	**2.6E+01**	3.1E+04	**1.6E+00**
118-D-5_Overburden	non-Rad	Zinc	7440-66-6	ug/kg	40220.4	5.0E+04	8.0E-01	6.8E+04	5.9E-01
118-D-5_Shallow	non-Rad	Antimony	7440-36-0	ug/kg	441.7	5.0E+03	8.8E-02	6.0E+03	7.4E-02
118-D-5_Shallow	non-Rad	Arsenic	7440-38-2	ug/kg	2659.7	1.0E+04	2.7E-01	1.9E+05	1.4E-02
118-D-5_Shallow	non-Rad	Barium	7440-39-3	ug/kg	60857.6	3.3E+05	1.8E-01	1.3E+06	4.6E-02
118-D-5_Shallow	non-Rad	Beryllium	7440-41-7	ug/kg	672.4	1.0E+04	6.7E-02	1.4E+04	4.8E-02
118-D-5_Shallow	non-Rad	Boron	7440-42-8	ug/kg	1500.0	5.0E+02	**3.0E+00**	1.3E+05	1.1E-02
118-D-5_Shallow	non-Rad	Cadmium	7440-43-9	ug/kg	75.9	4.0E+03	1.9E-02	1.6E+03	4.7E-02
118-D-5_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	8937.4	4.0E+02	**2.2E+01**	3.8E+04	2.3E-01
118-D-5_Shallow	non-Rad	Cobalt	7440-48-4	ug/kg	9627.7	1.3E+04	7.4E-01	1.1E+05	8.6E-02
118-D-5_Shallow	non-Rad	Copper	7440-50-8	ug/kg	12558.1	5.0E+04	2.5E-01	1.1E+05	1.2E-01
118-D-5_Shallow	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	235.0	No Value	--	1.3E+06	1.9E-04
118-D-5_Shallow	non-Rad	Lead	7439-92-1	ug/kg	3611.1	5.0E+04	7.2E-02	3.6E+04	1.0E-01
118-D-5_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	281366.7	2.2E+05	**1.3E+00**	5.8E+06	4.9E-02
118-D-5_Shallow	non-Rad	Mercury	7439-97-6	ug/kg	7.6	1.0E+02	7.6E-02	1.9E+03	4.1E-03
118-D-5_Shallow	non-Rad	Molybdenum	7439-98-7	ug/kg	950.0	2.0E+03	4.8E-01	1.4E+04	6.8E-02
118-D-5_Shallow	non-Rad	Nickel	7440-02-0	ug/kg	10849.9	3.0E+04	3.6E-01	3.3E+04	3.3E-01
118-D-5_Shallow	Rad	Nickel-63	13981-37-8	pCi/g	20.2	No Value	--	No Value	--
118-D-5_Shallow	Rad	Rads SOF	---	pCi/g	--	--	7.1E-05	--	2.8E-03
118-D-5_Shallow	Rad	Total beta radiostrontium	SR-RAD	pCi/g	0.3	3.6E+03	7.1E-05	9.1E+01	2.8E-03
118-D-5_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	54073.4	2.0E+03	**2.7E+01**	3.1E+04	**1.7E+00**
118-D-5_Shallow	non-Rad	Zinc	7440-66-6	ug/kg	41880.9	5.0E+04	8.4E-01	6.8E+04	6.2E-01
118-D-5_Shallow_Focused	non-Rad	Antimony	7440-36-0	ug/kg	440.0	5.0E+03	8.8E-02	6.0E+03	7.4E-02
118-D-5_Shallow_Focused	non-Rad	Arsenic	7440-38-2	ug/kg	2500.0	1.0E+04	2.5E-01	1.9E+05	1.3E-02
118-D-5_Shallow_Focused	non-Rad	Barium	7440-39-3	ug/kg	53000.0	3.3E+05	1.6E-01	1.3E+06	4.0E-02
118-D-5_Shallow_Focused	non-Rad	Beryllium	7440-41-7	ug/kg	930.0	1.0E+04	9.3E-02	1.4E+04	6.7E-02
118-D-5_Shallow_Focused	non-Rad	Cadmium	7440-43-9	ug/kg	54.0	4.0E+03	1.4E-02	1.6E+03	3.3E-02
118-D-5_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	8500.0	4.0E+02	**2.1E+01**	3.8E+04	2.2E-01
118-D-5_Shallow_Focused	non-Rad	Cobalt	7440-48-4	ug/kg	9800.0	1.3E+04	7.5E-01	1.1E+05	8.8E-02
118-D-5_Shallow_Focused	Rad	Cobalt-60	10198-40-0	pCi/g	1.1	6.1E+03	1.8E-04	8.1E+02	1.4E-03
118-D-5_Shallow_Focused	non-Rad	Copper	7440-50-8	ug/kg	13000.0	5.0E+04	2.6E-01	1.1E+05	1.2E-01
118-D-5_Shallow_Focused	non-Rad	Lead	7439-92-1	ug/kg	3400.0	5.0E+04	6.8E-02	3.6E+04	9.6E-02
118-D-5_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	290000.0	2.2E+05	**1.3E+00**	5.8E+06	5.0E-02
118-D-5_Shallow_Focused	non-Rad	Mercury	7439-97-6	ug/kg	6.1	1.0E+02	6.1E-02	1.9E+03	3.3E-03
118-D-5_Shallow_Focused	non-Rad	Molybdenum	7439-98-7	ug/kg	320.0	2.0E+03	1.6E-01	1.4E+04	2.3E-02
118-D-5_Shallow_Focused	non-Rad	Nickel	7440-02-0	ug/kg	10000.0	3.0E+04	3.3E-01	3.3E+04	3.1E-01
118-D-5_Shallow_Focused	Rad	Nickel-63	13981-37-8	pCi/g	113.0	No Value	--	No Value	--
118-D-5_Shallow_Focused	Rad	Rads SOF	---	pCi/g	--	--	1.8E-04	--	1.7E-03
118-D-5_Shallow_Focused	Rad	Tritium	10028-17-8	pCi/g	0.2	1.7E+06	8.9E-08	4.2E+02	3.6E-04
118-D-5_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	62000.0	2.0E+03	**3.1E+01**	3.1E+04	**2.0E+00**
118-D-5_Shallow_Focused	non-Rad	Zinc	7440-66-6	ug/kg	43000.0	5.0E+04	8.6E-01	6.8E+04	6.3E-01
118-D-6:4_Shallow_1	non-Rad	Aroclor HI	---	ug/kg	--	--	4.1E-04	--	1.1E-02
118-D-6:4_Shallow_1	non-Rad	Aroclor-1254	11097-69-1	ug/kg	8.3	4.0E+04	2.1E-04	1.5E+03	5.6E-03
118-D-6:4_Shallow_1	non-Rad	Aroclor-1260	11096-82-5	ug/kg	7.9	4.0E+04	2.0E-04	1.5E+03	5.4E-03
118-D-6:4_Shallow_1	non-Rad	Arsenic	7440-38-2	ug/kg	2,091	1.0E+04	2.1E-01	1.9E+05	1.1E-02
118-D-6:4_Shallow_1	non-Rad	Barium	7440-39-3	ug/kg	62,434	3.3E+05	1.9E-01	1.3E+06	4.7E-02
118-D-6:4_Shallow_1	non-Rad	Beryllium	7440-41-7	ug/kg	247	1.0E+04	2.5E-02	1.4E+04	1.8E-02
118-D-6:4_Shallow_1	non-Rad	Boron	7440-42-8	ug/kg	1,800	5.0E+02	**3.6E+00**	1.3E+05	1.4E-02
118-D-6:4_Shallow_1	non-Rad	Cadmium	7440-43-9	ug/kg	95	4.0E+03	2.4E-02	1.6E+03	5.8E-02
118-D-6:4_Shallow_1	Rad	Cesium-137	10045-97-3	pCi/g	0.071	2.2E+03	3.2E-05	9.2E+02	7.7E-05
118-D-6:4_Shallow_1	non-Rad	Chromium	7440-47-3	ug/kg	7,251	4.0E+02	**1.8E+01**	3.8E+04	1.9E-01
118-D-6:4_Shallow_1	non-Rad	Cobalt	7440-48-4	ug/kg	9,140	1.3E+04	7.0E-01	1.1E+05	8.2E-02
118-D-6:4_Shallow_1	non-Rad	Copper	7440-50-8	ug/kg	15,162	5.0E+04	3.0E-01	1.1E+05	1.4E-01
118-D-6:4_Shallow_1	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	403	No Value	--	1.3E+06	3.2E-04
118-D-6:4_Shallow_1	non-Rad	Lead	7439-92-1	ug/kg	13,267	5.0E+04	2.7E-01	3.6E+04	3.7E-01
118-D-6:4_Shallow_1	non-Rad	Manganese	7439-96-5	ug/kg	323,193	2.2E+05	**1.5E+00**	5.8E+06	5.6E-02
118-D-6:4_Shallow_1	non-Rad	Mercury	7439-97-6	ug/kg	31	1.0E+02	3.1E-01	1.9E+03	1.6E-02
118-D-6:4_Shallow_1	non-Rad	Molybdenum	7439-98-7	ug/kg	312	2.0E+03	1.6E-01	1.4E+04	2.2E-02
118-D-6:4_Shallow_1	non-Rad	Nickel	7440-02-0	ug/kg	10,531	3.0E+04	3.5E-01	3.3E+04	3.2E-01
118-D-6:4_Shallow_1	Rad	Rads SOF	---	pCi/g	--	--	8.7E-05	--	3.9E-04
118-D-6:4_Shallow_1	non-Rad	Silver	7440-22-4	ug/kg	630.0	2.0E+03	3.2E-01	5.0E+04	1.3E-02
118-D-6:4_Shallow_1	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	1982.3	5.0E+03	4.0E-01	3.6E+05	5.5E-03
118-D-6:4_Shallow_1	Rad	Tritium	10028-17-8	pCi/g	0.0	1.7E+06	2.0E-08	4.2E+02	8.0E-05
118-D-6:4_Shallow_1	Rad	Uranium-234	13966-29-5	pCi/g	0.7	5.2E+04	1.3E-05	6.4E+03	1.0E-04

Table 4. Comparison of 100-D OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
118-D-6:4_Shallow_1	Rad	Uranium-238	U-238	pCi/g	0.7	1.6E+04	4.2E-05	5.2E+03	1.3E-04
118-D-6:4_Shallow_1	non-Rad	Vanadium	7440-62-2	ug/kg	77926.9	2.0E+03	**3.9E+01**	3.1E+04	**2.5E+00**
118-D-6:4_Shallow_1	non-Rad	Zinc	7440-66-6	ug/kg	49761.6	5.0E+04	1.0E+00	6.8E+04	7.3E-01
118-D-6:4_Shallow_2	non-Rad	Aroclor HI	---	ug/kg	--	--	7.0E-04	--	1.9E-02
118-D-6:4_Shallow_2	non-Rad	Aroclor-1254	11097-69-1	ug/kg	21.3	4.0E+04	5.3E-04	1.5E+03	1.4E-02
118-D-6:4_Shallow_2	non-Rad	Aroclor-1260	11096-82-5	ug/kg	6.8	4.0E+04	1.7E-04	1.5E+03	4.6E-03
118-D-6:4_Shallow_2	non-Rad	Arsenic	7440-38-2	ug/kg	3057.1	1.0E+04	3.1E-01	1.9E+05	1.6E-02
118-D-6:4_Shallow_2	non-Rad	Barium	7440-39-3	ug/kg	67361.9	3.3E+05	2.0E-01	1.3E+06	5.1E-02
118-D-6:4_Shallow_2	non-Rad	Beryllium	7440-41-7	ug/kg	273.6	1.0E+04	2.7E-02	1.4E+04	2.0E-02
118-D-6:4_Shallow_2	non-Rad	Cadmium	7440-43-9	ug/kg	62.1	4.0E+03	1.6E-02	1.6E+03	3.8E-02
118-D-6:4_Shallow_2	Rad	Cesium-137	10045-97-3	pCi/g	2.9	2.2E+03	1.3E-03	9.2E+02	3.1E-03
118-D-6:4_Shallow_2	non-Rad	Chromium	7440-47-3	ug/kg	10049.8	4.0E+02	**2.5E+01**	3.8E+04	2.6E-01
118-D-6:4_Shallow_2	non-Rad	Cobalt	7440-48-4	ug/kg	8093.2	1.3E+04	6.2E-01	1.1E+05	7.3E-02
118-D-6:4_Shallow_2	non-Rad	Copper	7440-50-8	ug/kg	21766.1	5.0E+04	4.4E-01	1.1E+05	2.0E-01
118-D-6:4_Shallow_2	Rad	Europium-152	14683-23-9	pCi/g	1.4	1.5E+04	9.6E-05	1.7E+03	8.1E-04
118-D-6:4_Shallow_2	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	558.7	No Value	--	1.3E+06	4.5E-04
118-D-6:4_Shallow_2	non-Rad	Lead	7439-92-1	ug/kg	5072.3	5.0E+04	1.0E-01	3.6E+04	1.4E-01
118-D-6:4_Shallow_2	non-Rad	Manganese	7439-96-5	ug/kg	328312.2	2.2E+05	**1.5E+00**	5.8E+06	5.7E-02
118-D-6:4_Shallow_2	non-Rad	Mercury	7439-97-6	ug/kg	1200.0	1.0E+02	**1.2E+01**	1.9E+03	6.4E-01
118-D-6:4_Shallow_2	non-Rad	Molybdenum	7439-98-7	ug/kg	285.0	2.0E+03	1.4E-01	1.4E+04	2.0E-02
118-D-6:4_Shallow_2	non-Rad	Nickel	7440-02-0	ug/kg	10571.4	3.0E+04	3.5E-01	3.3E+04	3.2E-01
118-D-6:4_Shallow_2	Rad	Plutonium-239/240	PU-239/240	pCi/g	0.2	1.3E+04	1.7E-05	6.3E+03	3.3E-05
118-D-6:4_Shallow_2	Rad	Rads SOF	---	pCi/g	--	--	1.6E-03	--	8.5E-03
118-D-6:4_Shallow_2	Rad	Total beta radiostrontium	SR-RAD	pCi/g	0.4	3.6E+03	1.0E-04	9.1E+01	4.0E-03
118-D-6:4_Shallow_2	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	3344.5	5.0E+03	6.7E-01	3.6E+05	9.3E-03
118-D-6:4_Shallow_2	Rad	Tritium	10028-17-8	pCi/g	0.1	1.7E+06	4.4E-08	4.2E+02	1.7E-04
118-D-6:4_Shallow_2	Rad	Uranium-234	13966-29-5	pCi/g	0.9	5.2E+04	1.8E-05	6.4E+03	1.5E-04
118-D-6:4_Shallow_2	Rad	Uranium-238	U-238	pCi/g	1.1	1.6E+04	7.2E-05	5.2E+03	2.2E-04
118-D-6:4_Shallow_2	non-Rad	Vanadium	7440-62-2	ug/kg	68233.0	2.0E+03	**3.4E+01**	3.1E+04	**2.2E+00**
118-D-6:4_Shallow_2	non-Rad	Zinc	7440-66-6	ug/kg	46961.4	5.0E+04	9.4E-01	6.8E+04	6.9E-01
118-DR-1_Shallow	non-Rad	Arsenic	7440-38-2	ug/kg	2229.5	1.0E+04	2.2E-01	1.9E+05	1.2E-02
118-DR-1_Shallow	non-Rad	Barium	7440-39-3	ug/kg	56290.6	3.3E+05	1.7E-01	1.3E+06	4.3E-02
118-DR-1_Shallow	non-Rad	Beryllium	7440-41-7	ug/kg	1045.3	1.0E+04	1.1E-01	1.4E+04	7.5E-02
118-DR-1_Shallow	non-Rad	Boron	7440-42-8	ug/kg	1226.3	5.0E+02	**2.5E+00**	1.3E+05	9.2E-03
118-DR-1_Shallow	non-Rad	Cadmium	7440-43-9	ug/kg	57.8	4.0E+03	1.4E-02	1.6E+03	3.6E-02
118-DR-1_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.1	2.2E+03	5.0E-05	9.2E+02	1.2E-04
118-DR-1_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	7079.8	4.0E+02	**1.8E+01**	3.8E+04	1.9E-01
118-DR-1_Shallow	non-Rad	Cobalt	7440-48-4	ug/kg	8719.8	1.3E+04	6.7E-01	1.1E+05	7.8E-02
118-DR-1_Shallow	Rad	Cobalt-60	10198-40-0	pCi/g	0.8	6.1E+03	1.3E-04	8.1E+02	9.6E-04
118-DR-1_Shallow	non-Rad	Copper	7440-50-8	ug/kg	13464.2	5.0E+04	2.7E-01	1.1E+05	1.3E-01
118-DR-1_Shallow	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	248.4	No Value	--	1.3E+06	2.0E-04
118-DR-1_Shallow	non-Rad	Lead	7439-92-1	ug/kg	4013.9	5.0E+04	8.0E-02	3.6E+04	1.1E-01
118-DR-1_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	284561.1	2.2E+05	**1.3E+00**	5.8E+06	4.9E-02
118-DR-1_Shallow	non-Rad	Mercury	7439-97-6	ug/kg	7.2	1.0E+02	7.2E-02	1.9E+03	3.8E-03
118-DR-1_Shallow	non-Rad	Nickel	7440-02-0	ug/kg	9930.0	3.0E+04	3.3E-01	3.3E+04	3.1E-01
118-DR-1_Shallow	Rad	Nickel-63	13981-37-8	pCi/g	124.0	No Value	--	No Value	--
118-DR-1_Shallow	Rad	Rads SOF	---	pCi/g	--	--	1.8E-04	--	1.1E-03
118-DR-1_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	54963.7	2.0E+03	**2.8E+01**	3.1E+04	**1.8E+00**
118-DR-1_Shallow	non-Rad	Zinc	7440-66-6	ug/kg	41443.6	5.0E+04	8.3E-01	6.8E+04	6.1E-01
118-DR-1_Shallow_Focused	non-Rad	Antimony	7440-36-0	ug/kg	1500.0	5.0E+03	3.0E-01	6.0E+03	2.5E-01
118-DR-1_Shallow_Focused	non-Rad	Arsenic	7440-38-2	ug/kg	2800.0	1.0E+04	2.8E-01	1.9E+05	1.5E-02
118-DR-1_Shallow_Focused	non-Rad	Barium	7440-39-3	ug/kg	62000.0	3.3E+05	1.9E-01	1.3E+06	4.7E-02
118-DR-1_Shallow_Focused	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	4.4	1.8E+04	2.4E-04	3.9E+04	1.1E-04
118-DR-1_Shallow_Focused	non-Rad	Beryllium	7440-41-7	ug/kg	480.0	1.0E+04	4.8E-02	1.4E+04	3.4E-02
118-DR-1_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	1100.0	5.0E+02	**2.2E+00**	1.3E+05	8.3E-03
118-DR-1_Shallow_Focused	non-Rad	Cadmium	7440-43-9	ug/kg	79.0	4.0E+03	2.0E-02	1.6E+03	4.9E-02
118-DR-1_Shallow_Focused	Rad	Cesium-137	10045-97-3	pCi/g	0.0	2.2E+03	2.2E-05	9.2E+02	5.4E-05
118-DR-1_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	7300.0	4.0E+02	**1.8E+01**	3.8E+04	1.9E-01
118-DR-1_Shallow_Focused	non-Rad	Cobalt	7440-48-4	ug/kg	7600.0	1.3E+04	5.9E-01	1.1E+05	6.8E-02
118-DR-1_Shallow_Focused	non-Rad	Copper	7440-50-8	ug/kg	14000.0	5.0E+04	2.8E-01	1.1E+05	1.3E-01
118-DR-1_Shallow_Focused	non-Rad	Heptachlor epoxide	1024-57-3	ug/kg	0.5	No Value		No Value	--
118-DR-1_Shallow_Focused	non-Rad	Lead	7439-92-1	ug/kg	3700.0	5.0E+04	7.4E-02	3.6E+04	1.0E-01
118-DR-1_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	290000.0	2.2E+05	**1.3E+00**	5.8E+06	5.0E-02
118-DR-1_Shallow_Focused	non-Rad	Mercury	7439-97-6	ug/kg	6.4	1.0E+02	6.4E-02	1.9E+03	3.4E-03
118-DR-1_Shallow_Focused	non-Rad	Nickel	7440-02-0	ug/kg	9200.0	3.0E+04	3.1E-01	3.3E+04	2.8E-01
118-DR-1_Shallow_Focused	Rad	Nickel-63	13981-37-8	pCi/g	9.7	No Value	--	No Value	--
118-DR-1_Shallow_Focused	Rad	Rads SOF	---	pCi/g	--	--	2.2E-05	--	5.4E-05
118-DR-1_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	54000.0	2.0E+03	**2.7E+01**	3.1E+04	**1.7E+00**
118-DR-1_Shallow_Focused	non-Rad	Zinc	7440-66-6	ug/kg	40000.0	5.0E+04	8.0E-01	6.8E+04	5.9E-01
118-DR-2:2_Shallow	non-Rad	Aroclor-1260	11096-82-5	ug/kg	33.7	4.0E+04	8.4E-04	1.5E+03	2.3E-02
118-DR-2:2_Shallow	non-Rad	Arsenic	7440-38-2	ug/kg	3200.0	1.0E+04	3.2E-01	1.9E+05	1.7E-02
118-DR-2:2_Shallow	non-Rad	Barium	7440-39-3	ug/kg	67900.0	3.3E+05	2.1E-01	1.3E+06	5.1E-02
118-DR-2:2_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.5	2.2E+03	2.3E-04	9.2E+02	5.5E-04
118-DR-2:2_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	11700.0	4.0E+02	**2.9E+01**	3.8E+04	3.1E-01
118-DR-2:2_Shallow	Rad	Cobalt-60	10198-40-0	pCi/g	0.1	6.1E+03	2.0E-05	8.1E+02	1.5E-04
118-DR-2:2_Shallow	Rad	Europium-152	14683-23-9	pCi/g	0.5	1.5E+04	3.1E-05	1.7E+03	2.6E-04
118-DR-2:2_Shallow	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	699.4	No Value	--	1.3E+06	5.6E-04
118-DR-2:2_Shallow	non-Rad	Lead	7439-92-1	ug/kg	10111.6	5.0E+04	2.0E-01	3.6E+04	2.8E-01
118-DR-2:2_Shallow	non-Rad	Mercury	7439-97-6	ug/kg	164.3	1.0E+02	**1.6E+00**	1.9E+03	8.8E-02
118-DR-2:2_Shallow	Rad	Nickel-63	13981-37-8	pCi/g	4.8	No Value	--	No Value	--
118-DR-2:2_Shallow	Rad	Plutonium-239/240	PU-239/240	pCi/g	0.2	1.3E+04	1.4E-05	6.3E+03	2.9E-05
118-DR-2:2_Shallow	Rad	Rads SOF	---	pCi/g	--	--	6.9E-04	--	1.1E-02
118-DR-2:2_Shallow	Rad	Technetium-99	14133-76-7	pCi/g	2.4	2.2E+04	1.1E-04	5.4E+03	4.5E-04
118-DR-2:2_Shallow	Rad	Total beta radiostrontium	SR-RAD	pCi/g	0.9	3.6E+03	2.5E-04	9.1E+01	9.7E-03
118-DR-2:2_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	1474.4	5.0E+03	3.0E-01	3.6E+05	4.1E-03
118-DR-2:2_Shallow	Rad	Uranium-233/234	U-233/234	pCi/g	0.4	5.2E+04	8.3E-06	6.4E+03	6.7E-05
118-DR-2:2_Shallow	Rad	Uranium-238	U-238	pCi/g	0.5	1.6E+04	3.2E-05	5.2E+03	9.7E-05
120-D-2_Shallow	non-Rad	Antimony	7440-36-0	ug/kg	720.0	5.0E+03	1.4E-01	6.0E+03	1.2E-01
120-D-2_Shallow	non-Rad	Arsenic	7440-38-2	ug/kg	2309.9	1.0E+04	2.3E-01	1.9E+05	1.2E-02
120-D-2_Shallow	non-Rad	Barium	7440-39-3	ug/kg	73265.0	3.3E+05	2.2E-01	1.3E+06	5.5E-02
120-D-2_Shallow	non-Rad	Beryllium	7440-41-7	ug/kg	251.1	1.0E+04	2.5E-02	1.4E+04	1.8E-02
120-D-2_Shallow	non-Rad	Boron	7440-42-8	ug/kg	2703.5	5.0E+02	**5.4E+00**	1.3E+05	2.0E-02
120-D-2_Shallow	non-Rad	Cadmium	7440-43-9	ug/kg	117.0	4.0E+03	2.9E-02	1.6E+03	7.2E-02
120-D-2_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	7074.9	4.0E+02	**1.8E+01**	3.8E+04	1.9E-01
120-D-2_Shallow	non-Rad	Cobalt	7440-48-4	ug/kg	9385.5	1.3E+04	7.2E-01	1.1E+05	8.4E-02
120-D-2_Shallow	non-Rad	Copper	7440-50-8	ug/kg	15512.4	5.0E+04	3.1E-01	1.1E+05	1.5E-01
120-D-2_Shallow	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	220.0	No Value	--	1.3E+06	1.8E-04
120-D-2_Shallow	non-Rad	Lead	7439-92-1	ug/kg	6162.2	5.0E+04	1.2E-01	3.6E+04	1.7E-01
120-D-2_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	339487.6	2.2E+05	**1.5E+00**	5.8E+06	5.9E-02
120-D-2_Shallow	non-Rad	Mercury	7439-97-6	ug/kg	111.0	1.0E+02	**1.1E+00**	1.9E+03	6.0E-02
120-D-2_Shallow	non-Rad	Molybdenum	7439-98-7	ug/kg	604.5	2.0E+03	3.0E-01	1.4E+04	4.3E-02
120-D-2_Shallow	non-Rad	Nickel	7440-02-0	ug/kg	9825.7	3.0E+04	3.3E-01	3.3E+04	3.0E-01
120-D-2_Shallow	non-Rad	Nitrate	14797-55-8	ug/kg	9910.0	No Value	--	3.4E+08	2.9E-05
120-D-2_Shallow	non-Rad	Nitrogen in Nitrate	NO3-N	ug/kg	554.0	No Value	--	No Value	--
120-D-2_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	77181.5	2.0E+03	**3.9E+01**	3.1E+04	**2.5E+00**
120-D-2_Shallow	non-Rad	Zinc	7440-66-6	ug/kg	52904.3	5.0E+04	**1.1E+00**	6.8E+04	7.8E-01
120-D-2_Shallow_Focused	non-Rad	Arsenic	7440-38-2	ug/kg	1300.0	1.0E+04	1.3E-01	1.9E+05	6.9E-03
120-D-2_Shallow_Focused	non-Rad	Barium	7440-39-3	ug/kg	61900.0	3.3E+05	1.9E-01	1.3E+06	4.7E-02
120-D-2_Shallow_Focused	non-Rad	Beryllium	7440-41-7	ug/kg	310.0	1.0E+04	3.1E-02	1.4E+04	2.2E-02
120-D-2_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	1000.0	5.0E+02	**2.0E+00**	1.3E+05	7.5E-03
120-D-2_Shallow_Focused	non-Rad	Cadmium	7440-43-9	ug/kg	160.0	4.0E+03	4.0E-02	1.6E+03	9.8E-02
120-D-2_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	4500.0	4.0E+02	**1.1E+01**	3.8E+04	1.2E-01
120-D-2_Shallow_Focused	non-Rad	Cobalt	7440-48-4	ug/kg	9300.0	1.3E+04	7.2E-01	1.1E+05	8.3E-02
120-D-2_Shallow_Focused	non-Rad	Copper	7440-50-8	ug/kg	14200.0	5.0E+04	2.8E-01	1.1E+05	1.3E-01
120-D-2_Shallow_Focused	non-Rad	Lead	7439-92-1	ug/kg	1700.0	5.0E+04	3.4E-02	3.6E+04	4.8E-02
120-D-2_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	316000.0	2.2E+05	**1.4E+00**	5.8E+06	5.5E-02
120-D-2_Shallow_Focused	non-Rad	Molybdenum	7439-98-7	ug/kg	560.0	2.0E+03	2.8E-01	1.4E+04	4.0E-02

Table 4. Comparison of 100-D OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
120-D-2_Shallow_Focused	non-Rad	Nickel	7440-02-0	ug/kg	9800.0	3.0E+04	3.3E-01	3.3E+04	3.0E-01
120-D-2_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	80200.0	2.0E+03	**4.0E+01**	3.1E+04	**2.6E+00**
120-D-2_Shallow_Focused	non-Rad	Zinc	7440-66-6	ug/kg	48800.0	5.0E+04	9.8E-01	6.8E+04	7.2E-01
122-DR-1:2_Shallow	non-Rad	Arsenic	7440-38-2	ug/kg	3100.0	1.0E+04	3.1E-01	1.9E+05	1.6E-02
122-DR-1:2_Shallow	non-Rad	Barium	7440-39-3	ug/kg	66900.0	3.3E+05	2.0E-01	1.3E+06	5.1E-02
122-DR-1:2_Shallow	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	66.0	1.8E+04	3.7E-03	6.4E+04	1.0E-03
122-DR-1:2_Shallow	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	30.0	1.8E+04	1.7E-03	7.6E+04	3.9E-04
122-DR-1:2_Shallow	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	36.0	1.8E+04	2.0E-03	3.9E+04	9.2E-04
122-DR-1:2_Shallow	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	25.0	1.8E+04	1.4E-03	3.9E+04	6.4E-04
122-DR-1:2_Shallow	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	ug/kg	130.0	1.0E+05	1.3E-03	4.5E+04	2.9E-03
122-DR-1:2_Shallow	non-Rad	Cadmium	7440-43-9	ug/kg	190.0	4.0E+03	4.8E-02	1.6E+03	1.2E-01
122-DR-1:2_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.1	2.2E+03	2.9E-05	9.2E+02	6.8E-05
122-DR-1:2_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	11900.0	4.0E+02	**3.0E+01**	3.8E+04	3.1E-01
122-DR-1:2_Shallow	non-Rad	Chrysene	218-01-9	ug/kg	55.0	1.8E+04	3.1E-03	4.5E+04	1.2E-03
122-DR-1:2_Shallow	non-Rad	Di-n-butylphthalate	84-74-2	ug/kg	19.0	No Value	--	No Value	--
122-DR-1:2_Shallow	non-Rad	Fluoranthene	206-44-0	ug/kg	110.0	1.8E+04	6.1E-03	8.4E+05	1.3E-04
122-DR-1:2_Shallow	non-Rad	Lead	7439-92-1	ug/kg	7400.0	5.0E+04	1.5E-01	3.6E+04	2.1E-01
122-DR-1:2_Shallow	non-Rad	Lithium	7439-93-2	ug/kg	12500.0	2.0E+03	**6.3E+00**	5.2E+05	2.4E-02
122-DR-1:2_Shallow	non-Rad	Pyrene	129-00-0	ug/kg	100.0	1.8E+04	5.6E-03	6.0E+05	1.7E-04
122-DR-1:2_Shallow	Rad	Rads SOF	---	pCi/g	--	--	8.3E-05	--	3.0E-04
122-DR-1:2_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	1940.9	5.0E+03	3.9E-01	3.6E+05	5.4E-03
122-DR-1:2_Shallow	Rad	Uranium-233/234	U-233/234	pCi/g	0.7	5.2E+04	1.3E-05	6.4E+03	1.0E-04
122-DR-1:2_Shallow	Rad	Uranium-238	U-238	pCi/g	0.7	1.6E+04	4.2E-05	5.2E+03	1.3E-04
126-D-2_Overburden	non-Rad	4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	ug/kg	1.2	No Value	--	4.0E+02	3.0E-03
126-D-2_Overburden	non-Rad	4,4'-DDT (Dichlorodiphenyltrichloroethane)	50-29-3	ug/kg	0.9	No Value	--	8.8E+02	9.8E-04
126-D-2_Overburden	non-Rad	Antimony	7440-36-0	ug/kg	832.5	5.0E+03	1.7E-01	6.0E+03	1.4E-01
126-D-2_Overburden	non-Rad	Arsenic	7440-38-2	ug/kg	2644.1	1.0E+04	2.6E-01	1.9E+05	1.4E-02
126-D-2_Overburden	non-Rad	Barium	7440-39-3	ug/kg	81680.4	3.3E+05	2.5E-01	1.3E+06	6.2E-02
126-D-2_Overburden	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	8.8	1.8E+04	4.9E-04	6.4E+04	1.4E-04
126-D-2_Overburden	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	8.4	1.8E+04	4.7E-04	7.6E+04	1.1E-04
126-D-2_Overburden	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	10.0	1.8E+04	5.6E-04	3.9E+04	2.6E-04
126-D-2_Overburden	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	6.0	1.8E+04	3.3E-04	3.9E+04	1.5E-04
126-D-2_Overburden	non-Rad	Beryllium	7440-41-7	ug/kg	802.0	1.0E+04	8.0E-02	1.4E+04	5.8E-02
126-D-2_Overburden	non-Rad	Boron	7440-42-8	ug/kg	2076.8	5.0E+02	**4.2E+00**	1.3E+05	1.6E-02
126-D-2_Overburden	non-Rad	Chromium	7440-47-3	ug/kg	7899.5	4.0E+02	**2.0E+01**	3.8E+04	2.1E-01
126-D-2_Overburden	non-Rad	Chrysene	218-01-9	ug/kg	15.5	1.8E+04	8.6E-04	4.5E+04	3.5E-04
126-D-2_Overburden	non-Rad	Cobalt	7440-48-4	ug/kg	8810.4	1.3E+04	6.8E-01	1.1E+05	7.9E-02
126-D-2_Overburden	non-Rad	Copper	7440-50-8	ug/kg	12859.5	5.0E+04	2.6E-01	1.1E+05	1.2E-01
126-D-2_Overburden	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	16.0	1.8E+04	8.9E-04	3.6E+04	4.5E-04
126-D-2_Overburden	non-Rad	Lead	7439-92-1	ug/kg	3586.2	5.0E+04	7.2E-02	3.6E+04	1.0E-01
126-D-2_Overburden	non-Rad	Manganese	7439-96-5	ug/kg	313316.2	2.2E+05	**1.4E+00**	5.8E+06	5.4E-02
126-D-2_Overburden	non-Rad	Mercury	7439-97-6	ug/kg	9.4	1.0E+02	9.4E-02	1.9E+03	5.0E-03
126-D-2_Overburden	non-Rad	Molybdenum	7439-98-7	ug/kg	334.0	2.0E+03	1.7E-01	1.4E+04	2.4E-02
126-D-2_Overburden	non-Rad	Nickel	7440-02-0	ug/kg	10525.3	3.0E+04	3.5E-01	3.3E+04	3.2E-01
126-D-2_Overburden	non-Rad	Pyrene	129-00-0	ug/kg	27.0	1.8E+04	1.5E-03	6.0E+05	4.5E-05
126-D-2_Overburden	non-Rad	Vanadium	7440-62-2	ug/kg	61719.9	2.0E+03	**3.1E+01**	3.1E+04	**2.0E+00**
126-D-2_Overburden	non-Rad	Zinc	7440-66-6	ug/kg	41994.4	5.0E+04	8.4E-01	6.8E+04	6.2E-01
126-D-2_Shallow	non-Rad	4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	ug/kg	7.2	No Value	--	4.0E+02	1.8E-02
126-D-2_Shallow	non-Rad	4,4'-DDT (Dichlorodiphenyltrichloroethane)	50-29-3	ug/kg	94.6	No Value	--	8.8E+02	1.1E-01
126-D-2_Shallow	non-Rad	Alpha-Chlordane	5103-71-9	ug/kg	0.6	1.0E+03	5.7E-04	5.0E+04	1.1E-05
126-D-2_Shallow	non-Rad	Anthracene	120-12-7	ug/kg	13.0	2.9E+04	4.5E-04	6.8E+05	1.9E-05
126-D-2_Shallow	non-Rad	Antimony	7440-36-0	ug/kg	57.0	5.0E+03	1.2E-01	6.0E+03	9.6E-02
126-D-2_Shallow	non-Rad	Aroclor-1260	11096-82-5	ug/kg	5.3	4.0E+04	1.3E-04	1.5E+03	3.6E-03
126-D-2_Shallow	non-Rad	Arsenic	7440-38-2	ug/kg	2825.7	1.0E+04	2.8E-01	1.9E+05	1.5E-02
126-D-2_Shallow	non-Rad	Barium	7440-39-3	ug/kg	86325.1	3.3E+05	2.6E-01	1.3E+06	6.5E-02
126-D-2_Shallow	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	14.4	1.8E+04	8.0E-04	6.4E+04	2.3E-04
126-D-2_Shallow	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	23.8	1.8E+04	1.3E-03	7.6E+04	3.1E-04
126-D-2_Shallow	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	22.6	1.8E+04	1.3E-03	3.9E+04	5.8E-04
126-D-2_Shallow	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	13.1	1.8E+04	7.3E-04	3.9E+04	3.3E-04
126-D-2_Shallow	non-Rad	Beryllium	7440-41-7	ug/kg	761.1	1.0E+04	7.6E-02	1.4E+04	5.5E-02
126-D-2_Shallow	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	ug/kg	187.9	1.0E+05	1.9E-03	4.5E+04	4.1E-03
126-D-2_Shallow	non-Rad	Boron	7440-42-8	ug/kg	3041.8	5.0E+02	**6.1E+00**	1.3E+05	2.3E-02
126-D-2_Shallow	non-Rad	Cadmium	7440-43-9	ug/kg	43.0	4.0E+03	1.1E-02	1.6E+03	2.6E-02
126-D-2_Shallow	non-Rad	Chlordane	57-74-9	ug/kg	0.5	1.0E+03	4.5E-04	5.0E+04	9.0E-06
126-D-2_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	7872.0	4.0E+02	**2.0E+01**	3.8E+04	2.1E-01
126-D-2_Shallow	non-Rad	Chrysene	218-01-9	ug/kg	37.5	1.8E+04	2.1E-03	4.5E+04	8.4E-04
126-D-2_Shallow	non-Rad	Cobalt	7440-48-4	ug/kg	10752.2	1.3E+04	8.3E-01	1.1E+05	9.6E-02
126-D-2_Shallow	non-Rad	Copper	7440-50-8	ug/kg	14151.1	5.0E+04	2.8E-01	1.1E+05	1.3E-01
126-D-2_Shallow	non-Rad	Dibenz[a,h]anthracene	53-70-3	ug/kg	26.0	1.8E+04	1.4E-03	4.4E+04	5.9E-04
126-D-2_Shallow	non-Rad	Dieldrin	60-57-1	ug/kg	0.4	No Value	--	2.1E+01	2.0E-02
126-D-2_Shallow	non-Rad	Fluoranthene	206-44-0	ug/kg	58.0	1.8E+04	3.2E-03	8.4E+05	6.9E-05
126-D-2_Shallow	non-Rad	Heptachlor epoxide	1024-57-3	ug/kg	7.8	No Value	--	No Value	--
126-D-2_Shallow	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	6.0	1.8E+04	3.3E-04	3.6E+04	1.7E-04
126-D-2_Shallow	non-Rad	Lead	7439-92-1	ug/kg	4228.6	5.0E+04	8.5E-02	3.6E+04	1.2E-01
126-D-2_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	354940.2	2.2E+05	**1.6E+00**	5.8E+06	6.1E-02
126-D-2_Shallow	non-Rad	Mercury	7439-97-6	ug/kg	16.5	1.0E+02	1.7E-01	1.9E+03	8.8E-03
126-D-2_Shallow	non-Rad	Molybdenum	7439-98-7	ug/kg	316.7	2.0E+03	1.6E-01	1.4E+04	2.3E-02
126-D-2_Shallow	non-Rad	Naphthalene	91-20-3	ug/kg	14.0	2.9E+04	4.8E-04	1.0E+05	1.4E-04
126-D-2_Shallow	non-Rad	Nickel	7440-02-0	ug/kg	11612.9	3.0E+04	3.9E-01	3.3E+04	3.6E-01
126-D-2_Shallow	non-Rad	Pyrene	129-00-0	ug/kg	37.2	1.8E+04	2.1E-03	6.0E+05	6.2E-05
126-D-2_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	78289.5	2.0E+03	**3.9E+01**	3.1E+04	**2.5E+00**
126-D-2_Shallow	non-Rad	Zinc	7440-66-6	ug/kg	52411.8	5.0E+04	**1.1E+00**	6.8E+04	7.7E-01
126-D-2_Shallow_Focused	non-Rad	2-Methylnaphthalene	91-57-6	ug/kg	91.5	2.9E+04	3.2E-03	6.0E+03	1.5E-02
126-D-2_Shallow_Focused	non-Rad	4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	ug/kg	2.9	No Value	--	4.0E+02	7.3E-03
126-D-2_Shallow_Focused	non-Rad	4,4'-DDT (Dichlorodiphenyltrichloroethane)	50-29-3	ug/kg	75.0	No Value	--	8.8E+02	8.5E-02
126-D-2_Shallow_Focused	non-Rad	Acenaphthene	83-32-9	ug/kg	240.0	2.0E+04	1.2E-02	1.1E+06	2.2E-04
126-D-2_Shallow_Focused	non-Rad	Anthracene	120-12-7	ug/kg	9.2	2.9E+04	3.2E-04	6.8E+05	1.4E-05
126-D-2_Shallow_Focused	non-Rad	Antimony	7440-36-0	ug/kg	620.0	5.0E+03	1.2E-01	6.0E+03	1.0E-01
126-D-2_Shallow_Focused	non-Rad	Aroclor-1260	11096-82-5	ug/kg	8.0	4.0E+04	2.0E-04	1.5E+03	5.4E-03
126-D-2_Shallow_Focused	non-Rad	Arsenic	7440-38-2	ug/kg	3000.0	1.0E+04	3.0E-01	1.9E+05	1.6E-02
126-D-2_Shallow_Focused	non-Rad	Barium	7440-39-3	ug/kg	120000.0	3.3E+05	3.6E-01	1.3E+06	9.1E-02
126-D-2_Shallow_Focused	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	35.1	1.8E+04	2.0E-03	6.4E+04	5.5E-04
126-D-2_Shallow_Focused	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	35.1	1.8E+04	2.0E-03	7.6E+04	4.6E-04
126-D-2_Shallow_Focused	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	24.1	1.8E+04	1.3E-03	3.9E+04	6.1E-04
126-D-2_Shallow_Focused	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	16.1	1.8E+04	8.9E-04	3.9E+04	4.1E-04
126-D-2_Shallow_Focused	non-Rad	Beryllium	7440-41-7	ug/kg	630.0	1.0E+04	6.3E-02	1.4E+04	4.5E-02
126-D-2_Shallow_Focused	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	ug/kg	1280.0	1.0E+05	1.3E-02	4.5E+04	2.8E-02
126-D-2_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	7900.0	5.0E+02	**1.6E+01**	1.3E+05	5.9E-02
126-D-2_Shallow_Focused	non-Rad	Chlordane	57-74-9	ug/kg	0.3	1.0E+03	3.1E-04	5.0E+04	6.2E-06
126-D-2_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	7800.0	4.0E+02	**2.0E+01**	3.8E+04	2.0E-01
126-D-2_Shallow_Focused	non-Rad	Chrysene	218-01-9	ug/kg	22.7	1.8E+04	1.3E-03	4.5E+04	5.1E-04
126-D-2_Shallow_Focused	non-Rad	Cobalt	7440-48-4	ug/kg	9700.0	1.3E+04	7.5E-01	1.1E+05	8.7E-02
126-D-2_Shallow_Focused	non-Rad	Copper	7440-50-8	ug/kg	14000.0	5.0E+04	2.8E-01	1.1E+05	1.3E-01
126-D-2_Shallow_Focused	non-Rad	Endosulfan II	33213-65-9	ug/kg	0.4	No Value	--	7.1E+02	5.5E-04
126-D-2_Shallow_Focused	non-Rad	Fluoranthene	206-44-0	ug/kg	221.0	1.8E+04	1.2E-02	8.4E+05	2.6E-04
126-D-2_Shallow_Focused	non-Rad	Fluorene	86-73-7	ug/kg	63.2	2.9E+04	2.2E-03	1.8E+05	3.6E-04
126-D-2_Shallow_Focused	--	Heptachlor epoxide	1024-57-3	ug/kg	5.8	No Value	--	No Value	--
126-D-2_Shallow_Focused	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	13.0	1.8E+04	7.2E-04	3.6E+04	3.6E-04
126-D-2_Shallow_Focused	non-Rad	Lead	7439-92-1	ug/kg	72000.0	5.0E+04	**1.4E+00**	3.6E+04	**2.0E+00**
126-D-2_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	360000.0	2.2E+05	**1.6E+00**	5.8E+06	6.2E-02
126-D-2_Shallow_Focused	non-Rad	Mercury	7439-97-6	ug/kg	23.0	1.0E+02	2.3E-01	1.9E+03	1.2E-02

Table 4. Comparison of 100-D OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
126-D-2_Shallow_Focused	non-Rad	Methoxychlor	72-43-5	ug/kg	0.9	No Value	--	2.2E+04	3.9E-05
126-D-2_Shallow_Focused	non-Rad	Molybdenum	7439-98-7	ug/kg	330.0	2.0E+03	1.7E-01	1.4E+04	2.4E-02
126-D-2_Shallow_Focused	non-Rad	Naphthalene	91-20-3	ug/kg	105.0	2.9E+04	3.6E-03	1.0E+05	1.1E-03
126-D-2_Shallow_Focused	non-Rad	Nickel	7440-02-0	ug/kg	12000.0	3.0E+04	4.0E-01	3.3E+04	3.7E-01
126-D-2_Shallow_Focused	non-Rad	Pyrene	129-00-0	ug/kg	63.8	1.8E+04	3.5E-03	6.0E+05	1.1E-04
126-D-2_Shallow_Focused	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	ug/kg	69000.0	2.0E+05	3.5E-01	3.6E+08	1.9E-04
126-D-2_Shallow_Focused	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	ug/kg	160000.0	No Value	--	No Value	--
126-D-2_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	76000.0	2.0E+03	**3.8E+01**	3.1E+04	**2.4E+00**
126-D-2_Shallow_Focused	non-Rad	Zinc	7440-66-6	ug/kg	50000.0	5.0E+04	**1.0E+00**	6.8E+04	7.4E-01
128-D-2_Shallow_1	non-Rad	4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	ug/kg	0.5	No Value	--	4.0E+02	1.3E-03
128-D-2_Shallow_1	non-Rad	Acetone	67-64-1	ug/kg	9.2	No Value	--	No Value	--
128-D-2_Shallow_1	non-Rad	Aroclor-1260	11096-82-5	ug/kg	36.0	4.0E+04	9.0E-04	1.5E+03	2.4E-02
128-D-2_Shallow_1	non-Rad	Arsenic	7440-38-2	ug/kg	2903.7	1.0E+04	2.9E-01	1.9E+05	1.5E-02
128-D-2_Shallow_1	non-Rad	Barium	7440-39-3	ug/kg	82982.7	3.3E+05	2.5E-01	1.3E+06	6.3E-02
128-D-2_Shallow_1	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	77.0	1.8E+04	4.3E-03	7.6E+04	1.0E-03
128-D-2_Shallow_1	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	32.0	1.8E+04	1.8E-03	3.9E+04	8.2E-04
128-D-2_Shallow_1	non-Rad	Beryllium	7440-41-7	ug/kg	204.9	1.0E+04	2.1E-02	1.4E+04	1.5E-02
128-D-2_Shallow_1	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	ug/kg	81.0	1.0E+05	8.1E-04	4.5E+04	1.8E-03
128-D-2_Shallow_1	non-Rad	Boron	7440-42-8	ug/kg	1816.7	5.0E+02	**3.6E+00**	1.3E+05	1.4E-02
128-D-2_Shallow_1	non-Rad	Cadmium	7440-43-9	ug/kg	58.7	4.0E+03	1.5E-02	1.6E+03	3.6E-02
128-D-2_Shallow_1	Rad	Cesium-137	10045-97-3	pCi/g	0.2	2.2E+03	1.1E-04	9.2E+02	2.6E-04
128-D-2_Shallow_1	non-Rad	Chloroform	67-66-3	ug/kg	0.9	No Value	--	1.7E+05	5.3E-06
128-D-2_Shallow_1	non-Rad	Chromium	7440-47-3	ug/kg	11002.6	4.0E+02	**2.8E+01**	3.8E+04	2.9E-01
128-D-2_Shallow_1	non-Rad	Cobalt	7440-48-4	ug/kg	7524.6	1.3E+04	5.8E-01	1.1E+05	6.8E-02
128-D-2_Shallow_1	non-Rad	Copper	7440-50-8	ug/kg	15094.0	5.0E+04	3.0E-01	1.1E+05	1.4E-01
128-D-2_Shallow_1	non-Rad	Diethylphthalate	84-66-2	ug/kg	400.0	1.0E+05	4.0E-03	No Value	--
128-D-2_Shallow_1	non-Rad	Ethylbenzene	100-41-4	ug/kg	0.6	No Value	--	1.0E+06	6.2E-07
128-D-2_Shallow_1	non-Rad	Lead	7439-92-1	ug/kg	4792.7	5.0E+04	9.6E-02	3.6E+04	1.4E-01
128-D-2_Shallow_1	non-Rad	Manganese	7439-96-5	ug/kg	341770.5	2.2E+05	**1.6E+00**	5.8E+06	5.9E-02
128-D-2_Shallow_1	non-Rad	Mercury	7439-97-6	ug/kg	41.0	1.0E+02	4.1E-01	1.9E+03	2.2E-02
128-D-2_Shallow_1	non-Rad	Methylene chloride	75-09-2	ug/kg	2.1	No Value	--	1.7E+05	1.3E-05
128-D-2_Shallow_1	non-Rad	Molybdenum	7439-98-7	ug/kg	310.0	2.0E+03	1.6E-01	1.4E+04	2.2E-02
128-D-2_Shallow_1	non-Rad	Nickel	7440-02-0	ug/kg	11886.7	3.0E+04	4.0E-01	3.3E+04	3.7E-01
128-D-2_Shallow_1	non-Rad	Selenium	7782-49-2	ug/kg	1100.0	5.2E+02	**2.1E+00**	1.9E+03	5.8E-01
128-D-2_Shallow_1	non-Rad	Toluene	108-88-3	ug/kg	1.4	2.0E+05	7.0E-06	5.2E+06	2.7E-07
128-D-2_Shallow_1	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	ug/kg	19691.0	2.0E+05	9.9E-02	3.6E+08	5.5E-05
128-D-2_Shallow_1	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	ug/kg	16599.3	No Value	--	No Value	--
128-D-2_Shallow_1	non-Rad	Vanadium	7440-62-2	ug/kg	53369.4	2.0E+03	**2.7E+01**	3.1E+04	**1.7E+00**
128-D-2_Shallow_1	non-Rad	Xylenes (total)	1330-20-7	ug/kg	2.7	No Value	--	8.3E+05	3.3E-06
128-D-2_Shallow_1	non-Rad	Zinc	7440-66-6	ug/kg	45366.0	5.0E+04	9.1E-01	6.8E+04	6.7E-01
128-D-2_Shallow_2	non-Rad	Acetone	67-64-1	ug/kg	10.0	No Value	--	No Value	--
128-D-2_Shallow_2	non-Rad	Arsenic	7440-38-2	ug/kg	2317.9	1.0E+04	2.3E-01	1.9E+05	1.2E-02
128-D-2_Shallow_2	non-Rad	Barium	7440-39-3	ug/kg	62230.5	3.3E+05	1.9E-01	1.3E+06	4.7E-02
128-D-2_Shallow_2	non-Rad	Beryllium	7440-41-7	ug/kg	146.8	1.0E+04	1.5E-02	1.4E+04	1.1E-02
128-D-2_Shallow_2	non-Rad	Boron	7440-42-8	ug/kg	1200.0	5.0E+02	**2.4E+00**	1.3E+05	9.0E-03
128-D-2_Shallow_2	non-Rad	Cadmium	7440-43-9	ug/kg	131.6	4.0E+03	3.3E-02	1.6E+03	8.1E-02
128-D-2_Shallow_2	non-Rad	Chromium	7440-47-3	ug/kg	11152.9	4.0E+02	**2.8E+01**	3.8E+04	2.9E-01
128-D-2_Shallow_2	non-Rad	Cobalt	7440-48-4	ug/kg	6447.5	1.3E+04	5.0E-01	1.1E+05	5.8E-02
128-D-2_Shallow_2	non-Rad	Copper	7440-50-8	ug/kg	13949.0	5.0E+04	2.8E-01	1.1E+05	1.3E-01
128-D-2_Shallow_2	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	154.0	No Value	--	1.3E+06	1.2E-04
128-D-2_Shallow_2	non-Rad	Lead	7439-92-1	ug/kg	3493.9	5.0E+04	7.0E-02	3.6E+04	9.8E-02
128-D-2_Shallow_2	non-Rad	Manganese	7439-96-5	ug/kg	277702.3	2.2E+05	**1.3E+00**	5.8E+06	4.8E-02
128-D-2_Shallow_2	non-Rad	Mercury	7439-97-6	ug/kg	18.5	1.0E+02	1.9E-01	1.9E+03	9.9E-03
128-D-2_Shallow_2	non-Rad	Methylene chloride	75-09-2	ug/kg	10.0	No Value	--	1.7E+05	6.0E-05
128-D-2_Shallow_2	non-Rad	Molybdenum	7439-98-7	ug/kg	262.8	2.0E+03	1.3E-01	1.4E+04	1.9E-02
128-D-2_Shallow_2	non-Rad	Nickel	7440-02-0	ug/kg	10946.6	3.0E+04	3.7E-01	3.3E+04	3.4E-01
128-D-2_Shallow_2	non-Rad	Silver	7440-22-4	ug/kg	190.0	2.0E+03	9.5E-02	5.0E+04	3.8E-03
128-D-2_Shallow_2	Rad	Total beta radiostrontium	SR-RAD	pCi/g	0.2	3.6E+03	6.8E-05	9.1E+01	2.7E-03
128-D-2_Shallow_2	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	ug/kg	1500.0	2.0E+05	7.5E-03	3.6E+08	4.2E-06
128-D-2_Shallow_2	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	ug/kg	3300.0	No Value	--	No Value	--
128-D-2_Shallow_2	non-Rad	Vanadium	7440-62-2	ug/kg	50094.9	2.0E+03	**2.5E+01**	3.1E+04	**1.6E+00**
128-D-2_Shallow_2	non-Rad	Zinc	7440-66-6	ug/kg	36764.9	5.0E+04	7.4E-01	6.8E+04	5.4E-01
130-D-1_Shallow	non-Rad	1,1-Dichloroethene	75-35-4	ug/kg	0.9	No Value	--	1.7E+05	5.4E-06
130-D-1_Shallow	non-Rad	Acenaphthene	83-32-9	ug/kg	18.0	2.0E+04	9.0E-04	1.1E+06	1.6E-05
130-D-1_Shallow	non-Rad	Acetone	67-64-1	ug/kg	13.0	No Value	--	No Value	--
130-D-1_Shallow	non-Rad	Aroclor-1260	11096-82-5	ug/kg	24.0	4.0E+04	6.0E-04	1.5E+03	1.6E-02
130-D-1_Shallow	non-Rad	Arsenic	7440-38-2	ug/kg	2031.3	1.0E+04	2.0E-01	1.9E+05	1.1E-02
130-D-1_Shallow	non-Rad	Barium	7440-39-3	ug/kg	72121.2	3.3E+05	2.2E-01	1.3E+06	5.5E-02
130-D-1_Shallow	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	3.7	1.8E+04	2.1E-04	6.4E+04	5.8E-05
130-D-1_Shallow	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	16.4	1.8E+04	9.1E-04	7.6E+04	2.1E-04
130-D-1_Shallow	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	69.0	1.8E+04	3.8E-03	3.9E+04	1.8E-03
130-D-1_Shallow	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	25.0	1.8E+04	1.4E-03	3.9E+04	6.4E-04
130-D-1_Shallow	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	ug/kg	51.0	1.0E+05	5.1E-04	4.5E+04	1.1E-03
130-D-1_Shallow	non-Rad	Boron	7440-42-8	ug/kg	1641.7	5.0E+02	**3.3E+00**	1.3E+05	1.2E-02
130-D-1_Shallow	non-Rad	Cadmium	7440-43-9	ug/kg	80.7	4.0E+03	2.0E-02	1.6E+03	5.0E-02
130-D-1_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	7451.9	4.0E+02	**1.9E+01**	3.8E+04	2.0E-01
130-D-1_Shallow	non-Rad	Chrysene	218-01-9	ug/kg	43.0	1.8E+04	2.4E-03	4.5E+04	9.7E-04
130-D-1_Shallow	non-Rad	Cobalt	7440-48-4	ug/kg	8788.9	1.3E+04	6.8E-01	1.1E+05	7.9E-02
130-D-1_Shallow	non-Rad	Copper	7440-50-8	ug/kg	15835.1	5.0E+04	3.2E-01	1.1E+05	1.5E-01
130-D-1_Shallow	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	63.0	1.8E+04	3.5E-03	3.6E+04	1.8E-03
130-D-1_Shallow	non-Rad	Lead	7439-92-1	ug/kg	10060.2	5.0E+04	2.0E-01	3.6E+04	2.8E-01
130-D-1_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	306040.8	2.2E+05	**1.4E+00**	5.8E+06	5.3E-02
130-D-1_Shallow	non-Rad	Mercury	7439-97-6	ug/kg	11.1	1.0E+02	1.1E-01	1.9E+03	5.9E-03
130-D-1_Shallow	non-Rad	Methylene chloride	75-09-2	ug/kg	1.9	No Value	--	1.7E+05	1.1E-05
130-D-1_Shallow	non-Rad	Molybdenum	7439-98-7	ug/kg	273.1	2.0E+03	1.4E-01	1.4E+04	2.0E-02
130-D-1_Shallow	non-Rad	Nickel	7440-02-0	ug/kg	9743.5	3.0E+04	3.3E-01	3.3E+04	3.0E-01
130-D-1_Shallow	non-Rad	Pyrene	129-00-0	ug/kg	56.0	1.8E+04	3.1E-03	6.0E+05	9.3E-05
130-D-1_Shallow	non-Rad	Toluene	108-88-3	ug/kg	2.7	2.0E+05	1.4E-05	5.2E+06	5.2E-07
130-D-1_Shallow	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	ug/kg	3333.3	2.0E+05	1.7E-02	3.6E+08	9.4E-06
130-D-1_Shallow	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	ug/kg	9897.8	No Value	--	No Value	--
130-D-1_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	51858.5	2.0E+03	**2.6E+01**	3.1E+04	**1.7E+00**
130-D-1_Shallow	non-Rad	Zinc	7440-66-6	ug/kg	52217.5	5.0E+04	**1.0E+00**	6.8E+04	7.7E-01
130-D-1_Shallow_Focused	non-Rad	1,1-Dichloroethene	75-35-4	ug/kg	2.9	No Value	--	1.7E+05	1.8E-05
130-D-1_Shallow_Focused	non-Rad	Arsenic	7440-38-2	ug/kg	1600.0	1.0E+04	1.6E-01	1.9E+05	8.4E-03
130-D-1_Shallow_Focused	non-Rad	Barium	7440-39-3	ug/kg	59600.0	3.3E+05	1.8E-01	1.3E+06	4.5E-02
130-D-1_Shallow_Focused	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	ug/kg	130.0	1.0E+05	1.3E-03	4.5E+04	2.9E-03
130-D-1_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	1400.0	5.0E+02	**2.8E+00**	1.3E+05	1.1E-02
130-D-1_Shallow_Focused	non-Rad	Cadmium	7440-43-9	ug/kg	73.0	4.0E+03	1.8E-02	1.6E+03	4.5E-02
130-D-1_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	5200.0	4.0E+02	**1.3E+01**	3.8E+04	1.4E-01
130-D-1_Shallow_Focused	non-Rad	Cobalt	7440-48-4	ug/kg	11400.0	1.3E+04	8.8E-01	1.1E+05	1.0E-01
130-D-1_Shallow_Focused	non-Rad	Copper	7440-50-8	ug/kg	14800.0	5.0E+04	3.0E-01	1.1E+05	1.4E-01
130-D-1_Shallow_Focused	non-Rad	Lead	7439-92-1	ug/kg	3200.0	5.0E+04	6.4E-02	3.6E+04	9.0E-02
130-D-1_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	305000.0	2.2E+05	**1.4E+00**	5.8E+06	5.3E-02
130-D-1_Shallow_Focused	non-Rad	Methylene chloride	75-09-2	ug/kg	3.2	No Value	--	1.7E+05	1.9E-05
130-D-1_Shallow_Focused	non-Rad	Molybdenum	7439-98-7	ug/kg	280.0	2.0E+03	1.4E-01	1.4E+04	2.0E-02
130-D-1_Shallow_Focused	non-Rad	Nickel	7440-02-0	ug/kg	9100.0	3.0E+04	3.0E-01	3.3E+04	2.8E-01
130-D-1_Shallow_Focused	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	ug/kg	64000.0	2.0E+05	3.2E-01	3.6E+08	1.8E-04

Table 4. Comparison of 100-D OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
130-D-1_Shallow_Focused	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	ug/kg	110000.0	No Value	--	No Value	--
130-D-1_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	82200.0	2.0E+03	**4.1E+01**	3.1E+04	**2.6E+00**
130-D-1_Shallow_Focused	non-Rad	Zinc	7440-66-6	ug/kg	43900.0	5.0E+04	8.8E-01	6.8E+04	6.5E-01
130-D-1_Staging Pile Area Footprint	non-Rad	1,1-Dichloroethene	75-35-4	ug/kg	2.0	No Value	--	1.7E+05	1.2E-05
130-D-1_Staging Pile Area Footprint	non-Rad	Aroclor-1260	11096-82-5	ug/kg	14.0	4.0E+04	3.5E-04	1.5E+03	9.5E-03
130-D-1_Staging Pile Area Footprint	non-Rad	Arsenic	7440-38-2	ug/kg	2871.1	1.0E+04	2.9E-01	1.9E+05	1.5E-02
130-D-1_Staging Pile Area Footprint	non-Rad	Barium	7440-39-3	ug/kg	102564.9	3.3E+05	3.1E-01	1.3E+06	7.8E-02
130-D-1_Staging Pile Area Footprint	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	11.0	1.8E+04	6.1E-04	3.9E+04	2.8E-04
130-D-1_Staging Pile Area Footprint	non-Rad	Beryllium	7440-41-7	ug/kg	142.5	1.0E+04	1.4E-02	1.4E+04	1.0E-02
130-D-1_Staging Pile Area Footprint	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	ug/kg	1900.0	1.0E+05	1.9E-02	4.5E+04	4.2E-02
130-D-1_Staging Pile Area Footprint	non-Rad	Boron	7440-42-8	ug/kg	2147.5	5.0E+02	**4.3E+00**	1.3E+05	1.6E-02
130-D-1_Staging Pile Area Footprint	non-Rad	Cadmium	7440-43-9	ug/kg	127.7	4.0E+03	3.2E-02	1.6E+03	7.8E-02
130-D-1_Staging Pile Area Footprint	non-Rad	Chromium	7440-47-3	ug/kg	13221.8	4.0E+02	**3.3E+01**	3.8E+04	3.5E-01
130-D-1_Staging Pile Area Footprint	non-Rad	Chrysene	218-01-9	ug/kg	29.0	1.8E+04	1.6E-03	4.5E+04	6.5E-04
130-D-1_Staging Pile Area Footprint	non-Rad	Cobalt	7440-48-4	ug/kg	8623.5	1.3E+04	6.6E-01	1.1E+05	7.7E-02
130-D-1_Staging Pile Area Footprint	non-Rad	Copper	7440-50-8	ug/kg	18874.0	5.0E+04	3.8E-01	1.1E+05	1.8E-01
130-D-1_Staging Pile Area Footprint	non-Rad	Diethylphthalate	84-66-2	ug/kg	45.0	1.0E+05	4.5E-04	No Value	--
130-D-1_Staging Pile Area Footprint	non-Rad	Lead	7439-92-1	ug/kg	7527.3	5.0E+04	1.5E-01	3.6E+04	2.1E-01
130-D-1_Staging Pile Area Footprint	non-Rad	Manganese	7439-96-5	ug/kg	379422.5	2.2E+05	**1.7E+00**	5.8E+06	6.5E-02
130-D-1_Staging Pile Area Footprint	non-Rad	Mercury	7439-97-6	ug/kg	10.1	1.0E+02	1.0E-01	1.9E+03	5.4E-03
130-D-1_Staging Pile Area Footprint	non-Rad	Methylene chloride	75-09-2	ug/kg	1.8	No Value	--	1.7E+05	1.1E-05
130-D-1_Staging Pile Area Footprint	non-Rad	Molybdenum	7439-98-7	ug/kg	300.0	2.0E+03	1.5E-01	1.4E+04	2.2E-02
130-D-1_Staging Pile Area Footprint	non-Rad	Nickel	7440-02-0	ug/kg	14522.2	3.0E+04	4.8E-01	3.3E+04	4.5E-01
130-D-1_Staging Pile Area Footprint	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	ug/kg	3161.8	2.0E+05	1.6E-02	3.6E+08	8.9E-06
130-D-1_Staging Pile Area Footprint	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	ug/kg	18492.4	No Value	--	No Value	--
130-D-1_Staging Pile Area Footprint	non-Rad	Vanadium	7440-62-2	ug/kg	43838.9	2.0E+03	**2.2E+01**	3.1E+04	**1.4E+00**
130-D-1_Staging Pile Area Footprint	non-Rad	Zinc	7440-66-6	ug/kg	45472.8	5.0E+04	9.1E-01	6.8E+04	6.7E-01
132-D-1_Shallow	non-Rad	Aroclor HI	---	ug/kg	--	--	5.9E-03	--	1.6E-01
132-D-1_Shallow	non-Rad	Aroclor-1254	11097-69-1	ug/kg	6.3	4.0E+04	1.6E-04	1.5E+03	4.3E-03
132-D-1_Shallow	non-Rad	Aroclor-1260	11096-82-5	ug/kg	230.0	4.0E+04	5.8E-03	1.5E+03	1.6E-01
132-D-1_Shallow	non-Rad	Arsenic	7440-38-2	ug/kg	1758.3	1.0E+04	1.8E-01	1.9E+05	9.3E-03
132-D-1_Shallow	non-Rad	Barium	7440-39-3	ug/kg	63595.4	3.3E+05	1.9E-01	1.3E+06	4.8E-02
132-D-1_Shallow	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	4.0	1.8E+04	2.2E-04	3.9E+04	1.0E-04
132-D-1_Shallow	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	ug/kg	660.0	1.0E+05	6.6E-03	4.5E+04	1.5E-02
132-D-1_Shallow	non-Rad	Boron	7440-42-8	ug/kg	1150.0	5.0E+02	**2.3E+00**	1.3E+05	8.7E-03
132-D-1_Shallow	non-Rad	Cadmium	7440-43-9	ug/kg	61.8	4.0E+03	1.6E-02	1.6E+03	3.8E-02
132-D-1_Shallow	Rad	Carbon-14	14762-75-5	pCi/g	1.2	6.1E+04	2.0E-05	3.2E+01	3.8E-02
132-D-1_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.1	2.2E+03	6.2E-05	9.2E+02	1.5E-04
132-D-1_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	6667.2	4.0E+02	**1.7E+01**	3.8E+04	1.8E-01
132-D-1_Shallow	non-Rad	Chrysene	218-01-9	ug/kg	4.9	1.8E+04	2.7E-04	4.5E+04	1.1E-04
132-D-1_Shallow	non-Rad	Cobalt	7440-48-4	ug/kg	10535.5	1.3E+04	8.1E-01	1.1E+05	9.5E-02
132-D-1_Shallow	non-Rad	Copper	7440-50-8	ug/kg	16707.4	5.0E+04	3.3E-01	1.1E+05	1.6E-01
132-D-1_Shallow	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	164.0	No Value	--	1.3E+06	1.3E-04
132-D-1_Shallow	non-Rad	Lead	7439-92-1	ug/kg	5177.2	5.0E+04	1.0E-01	3.6E+04	1.5E-01
132-D-1_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	314188.4	2.2E+05	**1.4E+00**	5.8E+06	5.4E-02
132-D-1_Shallow	non-Rad	Mercury	7439-97-6	ug/kg	1000.0	1.0E+02	**1.0E+01**	1.9E+03	5.4E-01
132-D-1_Shallow	non-Rad	Molybdenum	7439-98-7	ug/kg	580.0	2.0E+03	2.9E-01	1.4E+04	4.2E-02
132-D-1_Shallow	non-Rad	Nickel	7440-02-0	ug/kg	9450.7	3.0E+04	3.2E-01	3.3E+04	2.9E-01
132-D-1_Shallow	Rad	Rads SOF	---	pCi/g	--	--	1.0E-04	--	4.0E-02
132-D-1_Shallow	non-Rad	Selenium	7782-49-2	ug/kg	860.0	5.2E+02	**1.7E+00**	1.9E+03	4.5E-01
132-D-1_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	1092.5	5.0E+03	2.2E-01	3.6E+05	3.0E-03
132-D-1_Shallow	Rad	Tritium	10028-17-8	pCi/g	0.8	1.7E+06	5.0E-07	4.2E+02	2.0E-03
132-D-1_Shallow	Rad	Uranium-234	13966-29-5	pCi/g	0.2	5.2E+04	4.4E-06	6.4E+03	3.6E-05
132-D-1_Shallow	Rad	Uranium-238	U-238	pCi/g	0.2	1.6E+04	1.4E-05	5.2E+03	4.3E-05
132-D-1_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	69877.0	2.0E+03	**3.5E+01**	3.1E+04	**2.2E+00**
132-D-1_Shallow	non-Rad	Zinc	7440-66-6	ug/kg	48502.2	5.0E+04	9.7E-01	6.8E+04	7.2E-01
132-D-1_Staging Pile Area Footprint	non-Rad	Anthracene	120-12-7	ug/kg	39.1	2.9E+04	1.4E-03	6.8E+05	5.8E-05
132-D-1_Staging Pile Area Footprint	non-Rad	Aroclor HI	---	ug/kg	--	--	1.6E-03	--	1.3E-01
132-D-1_Staging Pile Area Footprint	non-Rad	Aroclor-1248	12672-29-6	ug/kg	35.0	4.0E+04	8.8E-04	3.3E+02	1.1E-01
132-D-1_Staging Pile Area Footprint	non-Rad	Aroclor-1254	11097-69-1	ug/kg	10.0	4.0E+04	2.5E-04	1.5E+03	6.8E-03
132-D-1_Staging Pile Area Footprint	non-Rad	Aroclor-1260	11096-82-5	ug/kg	18.0	4.0E+04	4.5E-04	1.5E+03	1.2E-02
132-D-1_Staging Pile Area Footprint	non-Rad	Arsenic	7440-38-2	ug/kg	3513.1	1.0E+04	3.5E-01	1.9E+05	1.9E-02
132-D-1_Staging Pile Area Footprint	non-Rad	Barium	7440-39-3	ug/kg	65825.4	3.3E+05	2.0E-01	1.3E+06	5.0E-02
132-D-1_Staging Pile Area Footprint	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	225.0	1.8E+04	1.3E-02	6.4E+04	3.5E-03
132-D-1_Staging Pile Area Footprint	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	174.2	1.8E+04	9.7E-03	7.6E+04	2.3E-03
132-D-1_Staging Pile Area Footprint	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	160.8	1.8E+04	8.9E-03	3.9E+04	4.1E-03
132-D-1_Staging Pile Area Footprint	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	59.4	1.8E+04	3.3E-03	3.9E+04	1.5E-03
132-D-1_Staging Pile Area Footprint	non-Rad	Beryllium	7440-41-7	ug/kg	48.5	1.0E+04	4.9E-03	1.4E+04	3.5E-03
132-D-1_Staging Pile Area Footprint	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	ug/kg	82.1	1.0E+05	8.2E-04	4.5E+04	1.8E-03
132-D-1_Staging Pile Area Footprint	non-Rad	Boron	7440-42-8	ug/kg	1225.0	5.0E+02	**2.5E+00**	1.3E+05	9.2E-03
132-D-1_Staging Pile Area Footprint	non-Rad	Cadmium	7440-43-9	ug/kg	91.0	4.0E+03	2.3E-02	1.6E+03	5.6E-02
132-D-1_Staging Pile Area Footprint	Rad	Cesium-137	10045-97-3	pCi/g	0.6	2.2E+03	2.7E-04	9.2E+02	6.4E-04
132-D-1_Staging Pile Area Footprint	non-Rad	Chromium	7440-47-3	ug/kg	8495.7	4.0E+02	**2.1E+01**	3.8E+04	2.2E-01
132-D-1_Staging Pile Area Footprint	non-Rad	Chrysene	218-01-9	ug/kg	193.1	1.8E+04	1.1E-02	4.5E+04	4.3E-03
132-D-1_Staging Pile Area Footprint	non-Rad	Cobalt	7440-48-4	ug/kg	9153.8	1.3E+04	7.0E-01	1.1E+05	8.2E-02
132-D-1_Staging Pile Area Footprint	non-Rad	Copper	7440-50-8	ug/kg	16081.5	5.0E+04	3.2E-01	1.1E+05	1.5E-01
132-D-1_Staging Pile Area Footprint	non-Rad	Dibenz[a,h]anthracene	53-70-3	ug/kg	54.0	1.8E+04	3.0E-03	4.4E+04	1.2E-03
132-D-1_Staging Pile Area Footprint	non-Rad	Diethylphthalate	84-66-2	ug/kg	44.5	1.0E+05	4.5E-04	No Value	--
132-D-1_Staging Pile Area Footprint	non-Rad	Fluoranthene	206-44-0	ug/kg	402.2	1.8E+04	2.2E-02	8.4E+05	4.8E-04
132-D-1_Staging Pile Area Footprint	non-Rad	Fluorene	86-73-7	ug/kg	68.0	2.9E+04	2.3E-03	1.8E+05	3.9E-04
132-D-1_Staging Pile Area Footprint	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	185.3	No Value	--	1.3E+06	1.5E-04
132-D-1_Staging Pile Area Footprint	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	78.8	1.8E+04	4.4E-03	3.6E+04	2.2E-03
132-D-1_Staging Pile Area Footprint	non-Rad	Lead	7439-92-1	ug/kg	6740.1	5.0E+04	1.4E-01	3.6E+04	1.9E-01
132-D-1_Staging Pile Area Footprint	non-Rad	Manganese	7439-96-5	ug/kg	299872.8	2.2E+05	**1.4E+00**	5.8E+06	5.2E-02
132-D-1_Staging Pile Area Footprint	non-Rad	Mercury	7439-97-6	ug/kg	680.5	1.0E+02	**6.8E+00**	1.9E+03	3.7E-01
132-D-1_Staging Pile Area Footprint	non-Rad	Molybdenum	7439-98-7	ug/kg	240.0	2.0E+03	1.2E-01	1.4E+04	1.7E-02
132-D-1_Staging Pile Area Footprint	non-Rad	Nickel	7440-02-0	ug/kg	10761.0	3.0E+04	3.6E-01	3.3E+04	3.3E-01
132-D-1_Staging Pile Area Footprint	non-Rad	Pyrene	129-00-0	ug/kg	438.8	1.8E+04	2.4E-02	6.0E+05	7.3E-04
132-D-1_Staging Pile Area Footprint	Rad	Rads SOF	---	pCi/g	--	--	2.8E-04	--	8.7E-04
132-D-1_Staging Pile Area Footprint	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	480.5	5.0E+03	9.6E-02	3.6E+05	1.3E-03
132-D-1_Staging Pile Area Footprint	Rad	Tritium	10028-17-8	pCi/g	0.1	1.7E+06	3.9E-08	4.2E+02	1.6E-04
132-D-1_Staging Pile Area Footprint	Rad	Uranium-234	13966-29-5	pCi/g	0.2	5.2E+04	4.1E-06	6.4E+03	3.4E-05
132-D-1_Staging Pile Area Footprint	Rad	Uranium-238	U-238	pCi/g	0.2	1.6E+04	1.2E-05	5.2E+03	3.7E-05
132-D-1_Staging Pile Area Footprint	non-Rad	Vanadium	7440-62-2	ug/kg	57749.0	2.0E+03	**2.9E+01**	3.1E+04	**1.9E+00**
132-D-1_Staging Pile Area Footprint	non-Rad	Zinc	7440-66-6	ug/kg	48544.4	5.0E+04	9.7E-01	6.8E+04	7.2E-01
1607-D1_Shallow_1	non-Rad	Arsenic	7440-38-2	ug/kg	3395.5	1.0E+04	3.4E-01	1.9E+05	1.8E-02
1607-D1_Shallow_1	non-Rad	Barium	7440-39-3	ug/kg	64671.0	3.3E+05	2.0E-01	1.3E+06	4.9E-02
1607-D1_Shallow_1	non-Rad	Beryllium	7440-41-7	ug/kg	228.5	1.0E+04	2.3E-02	1.4E+04	1.6E-02
1607-D1_Shallow_1	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	ug/kg	90.4	1.0E+05	9.0E-04	4.5E+04	2.0E-03
1607-D1_Shallow_1	non-Rad	Boron	7440-42-8	ug/kg	1325.0	5.0E+02	**2.7E+00**	1.3E+05	1.0E-02
1607-D1_Shallow_1	non-Rad	Cadmium	7440-43-9	ug/kg	78.7	4.0E+03	2.0E-02	1.6E+03	4.8E-02
1607-D1_Shallow_1	non-Rad	Chromium	7440-47-3	ug/kg	12828.1	4.0E+02	**3.2E+01**	3.8E+04	3.4E-01
1607-D1_Shallow_1	non-Rad	Cobalt	7440-48-4	ug/kg	5716.6	1.3E+04	4.4E-01	1.1E+05	5.1E-02
1607-D1_Shallow_1	non-Rad	Copper	7440-50-8	ug/kg	12881.0	5.0E+04	2.6E-01	1.1E+05	1.2E-01
1607-D1_Shallow_1	non-Rad	Lead	7439-92-1	ug/kg	4020.0	5.0E+04	8.0E-02	3.6E+04	1.1E-01
1607-D1_Shallow_1	non-Rad	Manganese	7439-96-5	ug/kg	273291.0	2.2E+05	**1.2E+00**	5.8E+06	4.7E-02
1607-D1_Shallow_1	non-Rad	Mercury	7439-97-6	ug/kg	6.7	1.0E+02	6.7E-02	1.9E+03	3.6E-03
1607-D1_Shallow_1	non-Rad	Nickel	7440-02-0	ug/kg	11264.3	3.0E+04	3.8E-01	3.3E+04	3.5E-01
1607-D1_Shallow_1	non-Rad	Nitrogen in Nitrate	NO3-N	ug/kg	1366.7	No Value	--	No Value	--
1607-D1_Shallow_1	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	ug/kg	1650.0	No Value	--	No Value	--
1607-D1_Shallow_1	non-Rad	Vanadium	7440-62-2	ug/kg	38625.1	2.0E+03	**1.9E+01**	3.1E+04	**1.2E+00**
1607-D1_Shallow_1	non-Rad	Zinc	7440-66-6	ug/kg	35700.2	5.0E+04	7.1E-01	6.8E+04	5.3E-01
1607-D1_Shallow_2	non-Rad	Arsenic	7440-38-2	ug/kg	3837.3	1.0E+04	3.8E-01	1.9E+05	2.0E-02
1607-D1_Shallow_2	non-Rad	Barium	7440-39-3	ug/kg	67938.4	3.3E+05	2.1E-01	1.3E+06	5.1E-02

Table 4. Comparison of 100-D OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
1607-D1_Shallow_2	non-Rad	Beryllium	7440-41-7	ug/kg	245.3	1.0E+04	2.5E-02	1.4E+04	1.8E-02
1607-D1_Shallow_2	non-Rad	Boron	7440-42-8	ug/kg	1248.0	5.0E+02	**2.5E+00**	1.3E+05	9.4E-03
1607-D1_Shallow_2	non-Rad	Cadmium	7440-43-9	ug/kg	78.2	4.0E+03	2.0E-02	1.6E+03	4.8E-02
1607-D1_Shallow_2	non-Rad	Chromium	7440-47-3	ug/kg	13336.3	4.0E+02	**3.3E+01**	3.8E+04	3.5E-01
1607-D1_Shallow_2	non-Rad	Cobalt	7440-48-4	ug/kg	5678.7	1.3E+04	4.4E-01	1.1E+05	5.1E-02
1607-D1_Shallow_2	non-Rad	Copper	7440-50-8	ug/kg	13123.0	5.0E+04	2.6E-01	1.1E+05	1.2E-01
1607-D1_Shallow_2	non-Rad	Fluoride	16984-48-8	ug/kg	990.0	No Value	--	2.3E+06	4.3E-04
1607-D1_Shallow_2	non-Rad	Lead	7439-92-1	ug/kg	4185.7	5.0E+04	8.4E-02	3.6E+04	1.2E-01
1607-D1_Shallow_2	non-Rad	Manganese	7439-96-5	ug/kg	282970.5	2.2E+05	**1.3E+00**	5.8E+06	4.9E-02
1607-D1_Shallow_2	non-Rad	Mercury	7439-97-6	ug/kg	8.0	1.0E+02	8.0E-02	1.9E+03	4.3E-03
1607-D1_Shallow_2	non-Rad	Nickel	7440-02-0	ug/kg	11792.1	3.0E+04	3.9E-01	3.3E+04	3.6E-01
1607-D1_Shallow_2	non-Rad	Nitrogen in Nitrate	NO3-N	ug/kg	940.3	No Value	--	No Value	--
1607-D1_Shallow_2	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	ug/kg	1444.2	No Value	--	No Value	--
1607-D1_Shallow_2	non-Rad	Vanadium	7440-62-2	ug/kg	37046.3	2.0E+03	**1.9E+01**	3.1E+04	**1.2E+00**
1607-D1_Shallow_2	non-Rad	Zinc	7440-66-6	ug/kg	35076.8	5.0E+04	7.0E-01	6.8E+04	5.2E-01
1607-D1_Shallow_Focused	non-Rad	Arsenic	7440-38-2	ug/kg	3400.0	1.0E+04	3.4E-01	1.9E+05	1.8E-02
1607-D1_Shallow_Focused	non-Rad	Barium	7440-39-3	ug/kg	84000.0	3.3E+05	2.6E-01	1.3E+06	6.4E-02
1607-D1_Shallow_Focused	non-Rad	Beryllium	7440-41-7	ug/kg	240.0	1.0E+04	2.4E-02	1.4E+04	1.7E-02
1607-D1_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	1400.0	5.0E+02	**2.8E+00**	1.3E+05	1.1E-02
1607-D1_Shallow_Focused	non-Rad	Cadmium	7440-43-9	ug/kg	86.0	4.0E+03	2.2E-02	1.6E+03	5.3E-02
1607-D1_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	12400.0	4.0E+02	**3.1E+01**	3.8E+04	3.3E-01
1607-D1_Shallow_Focused	non-Rad	Cobalt	7440-48-4	ug/kg	5400.0	1.3E+04	4.2E-01	1.1E+05	4.8E-02
1607-D1_Shallow_Focused	non-Rad	Copper	7440-50-8	ug/kg	12300.0	5.0E+04	2.5E-01	1.1E+05	1.2E-01
1607-D1_Shallow_Focused	non-Rad	Lead	7439-92-1	ug/kg	4000.0	5.0E+04	8.0E-02	3.6E+04	1.1E-01
1607-D1_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	273000.0	2.2E+05	**1.2E+00**	5.8E+06	4.7E-02
1607-D1_Shallow_Focused	non-Rad	Mercury	7439-97-6	ug/kg	18.0	1.0E+02	1.8E-01	1.9E+03	9.6E-03
1607-D1_Shallow_Focused	non-Rad	Nickel	7440-02-0	ug/kg	10900.0	3.0E+04	3.6E-01	3.3E+04	3.4E-01
1607-D1_Shallow_Focused	non-Rad	Nitrogen in Nitrate	NO3-N	ug/kg	4500.0	No Value	--	No Value	--
1607-D1_Shallow_Focused	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	ug/kg	2600.0	No Value	--	No Value	--
1607-D1_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	34500.0	2.0E+03	**1.7E+01**	3.1E+04	**1.1E+00**
1607-D1_Shallow_Focused	non-Rad	Zinc	7440-66-6	ug/kg	34200.0	5.0E+04	6.8E-01	6.8E+04	5.0E-01
1607-D1_Staging Pile Area Footprint	non-Rad	Aroclor-1260	11096-82-5	ug/kg	2.9	4.0E+04	7.3E-05	1.5E+03	2.0E-03
1607-D1_Staging Pile Area Footprint	non-Rad	Arsenic	7440-38-2	ug/kg	3159.0	1.0E+04	3.2E-01	1.9E+05	1.7E-02
1607-D1_Staging Pile Area Footprint	non-Rad	Barium	7440-39-3	ug/kg	61877.8	3.3E+05	1.9E-01	1.3E+06	4.7E-02
1607-D1_Staging Pile Area Footprint	non-Rad	Beryllium	7440-41-7	ug/kg	223.9	1.0E+04	2.2E-02	1.4E+04	1.6E-02
1607-D1_Staging Pile Area Footprint	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	ug/kg	660.0	1.0E+05	6.6E-03	4.5E+04	1.5E-02
1607-D1_Staging Pile Area Footprint	non-Rad	Cadmium	7440-43-9	ug/kg	77.2	4.0E+03	1.9E-02	1.6E+03	4.7E-02
1607-D1_Staging Pile Area Footprint	non-Rad	Chromium	7440-47-3	ug/kg	11970.9	4.0E+02	**3.0E+01**	3.8E+04	3.1E-01
1607-D1_Staging Pile Area Footprint	non-Rad	Cobalt	7440-48-4	ug/kg	6118.7	1.3E+04	4.7E-01	1.1E+05	5.5E-02
1607-D1_Staging Pile Area Footprint	non-Rad	Copper	7440-50-8	ug/kg	13304.1	5.0E+04	2.7E-01	1.1E+05	1.2E-01
1607-D1_Staging Pile Area Footprint	non-Rad	Lead	7439-92-1	ug/kg	4178.6	5.0E+04	8.4E-02	3.6E+04	1.2E-01
1607-D1_Staging Pile Area Footprint	non-Rad	Manganese	7439-96-5	ug/kg	268017.8	2.2E+05	**1.2E+00**	5.8E+06	4.6E-02
1607-D1_Staging Pile Area Footprint	non-Rad	Mercury	7439-97-6	ug/kg	15.0	1.0E+02	1.5E-01	1.9E+03	8.0E-03
1607-D1_Staging Pile Area Footprint	non-Rad	Molybdenum	7439-98-7	ug/kg	260.0	2.0E+03	1.3E-01	1.4E+04	1.9E-02
1607-D1_Staging Pile Area Footprint	non-Rad	Nickel	7440-02-0	ug/kg	11512.2	3.0E+04	3.8E-01	3.3E+04	3.5E-01
1607-D1_Staging Pile Area Footprint	non-Rad	Nitrogen in Nitrate	NO3-N	ug/kg	4900.0	No Value	--	No Value	--
1607-D1_Staging Pile Area Footprint	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	ug/kg	3225.6	No Value	--	No Value	--
1607-D1_Staging Pile Area Footprint	non-Rad	Vanadium	7440-62-2	ug/kg	39209.6	2.0E+03	**2.0E+01**	3.1E+04	**1.3E+00**
1607-D1_Staging Pile Area Footprint	non-Rad	Zinc	7440-66-6	ug/kg	34383.1	5.0E+04	6.9E-01	6.8E+04	5.1E-01
1607-D2-1_Shallow	Rad	Americium-241	14596-10-2	pCi/g	0.0	2.2E+04	2.3E-06	4.8E+03	1.0E-05
1607-D2-1_Shallow	non-Rad	Arsenic	7440-38-2	ug/kg	1100.0	1.0E+04	1.1E-01	1.9E+05	5.8E-03
1607-D2-1_Shallow	non-Rad	Barium	7440-39-3	ug/kg	62400.0	3.3E+05	1.9E-01	1.3E+06	4.7E-02
1607-D2-1_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	5900.0	4.0E+02	**1.5E+01**	3.8E+04	1.6E-01
1607-D2-1_Shallow	non-Rad	Lead	7439-92-1	ug/kg	1900.0	5.0E+04	3.8E-02	3.6E+04	5.3E-02
1607-D2-1_Shallow	Rad	Plutonium-238	13981-16-3	pCi/g	0.0	1.8E+04	1.6E-06	6.0E+03	4.6E-06
1607-D2-1_Shallow	Rad	Plutonium-239/240	PU-239/240	pCi/g	0.4	1.3E+04	3.0E-05	6.3E+03	6.0E-05
1607-D2-1_Shallow	Rad	Rads SOF	---	pCi/g	--	--	9.6E-05	--	3.4E-04
1607-D2-1_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	2268.3	5.0E+03	4.5E-01	3.6E+05	6.3E-03
1607-D2-1_Shallow	Rad	Uranium-234	13966-29-5	pCi/g	0.7	5.2E+04	1.3E-05	6.4E+03	1.1E-04
1607-D2-1_Shallow	Rad	Uranium-235	15117-96-1	pCi/g	0.0	2.7E+04	1.7E-06	4.4E+03	1.1E-05
1607-D2-1_Shallow	Rad	Uranium-238	U-238	pCi/g	0.8	1.6E+04	4.9E-05	5.2E+03	1.5E-04
1607-D2-2_Shallow	non-Rad	Antimony	7440-36-0	ug/kg	1210.8	5.0E+03	2.4E-01	6.0E+03	2.0E-01
1607-D2-2_Shallow	non-Rad	Aroclor HI	---	ug/kg	--		1.5E-02	--	4.1E-01
1607-D2-2_Shallow	non-Rad	Aroclor-1254	11097-69-1	ug/kg	447.0	4.0E+04	1.1E-02	1.5E+03	3.0E-01
1607-D2-2_Shallow	non-Rad	Aroclor-1260	11096-82-5	ug/kg	156.9	4.0E+04	3.9E-03	1.5E+03	1.1E-01
1607-D2-2_Shallow	non-Rad	Arsenic	7440-38-2	ug/kg	3481.3	1.0E+04	3.5E-01	1.9E+05	1.8E-02
1607-D2-2_Shallow	non-Rad	Barium	7440-39-3	ug/kg	249126.3	3.3E+05	7.6E-01	1.3E+06	1.9E-01
1607-D2-2_Shallow	non-Rad	Beryllium	7440-41-7	ug/kg	343.0	1.0E+04	3.4E-02	1.4E+04	2.5E-02
1607-D2-2_Shallow	non-Rad	Boron	7440-42-8	ug/kg	1842.4	5.0E+02	**3.7E+00**	1.3E+05	1.4E-02
1607-D2-2_Shallow	non-Rad	Cadmium	7440-43-9	ug/kg	377.8	4.0E+03	9.5E-02	1.6E+03	2.3E-01
1607-D2-2_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.4	2.2E+03	1.6E-04	9.2E+02	3.8E-04
1607-D2-2_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	19771.2	4.0E+02	**4.9E+01**	3.8E+04	5.2E-01
1607-D2-2_Shallow	non-Rad	Cobalt	7440-48-4	ug/kg	7840.3	1.3E+04	6.0E-01	1.1E+05	7.0E-02
1607-D2-2_Shallow	non-Rad	Copper	7440-50-8	ug/kg	25777.0	5.0E+04	5.2E-01	1.1E+05	2.4E-01
1607-D2-2_Shallow	non-Rad	Fluoride	16984-48-8	ug/kg	1700.0	No Value	--	2.3E+06	7.5E-04
1607-D2-2_Shallow	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	300.0	No Value	--	1.3E+06	2.4E-04
1607-D2-2_Shallow	non-Rad	Lead	7439-92-1	ug/kg	8699.1	5.0E+04	1.7E-01	3.6E+04	2.4E-01
1607-D2-2_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	344088.7	2.2E+05	**1.6E+00**	5.8E+06	5.9E-02
1607-D2-2_Shallow	non-Rad	Mercury	7439-97-6	ug/kg	483.6	1.0E+02	**4.8E+00**	1.9E+03	2.6E-01
1607-D2-2_Shallow	non-Rad	Molybdenum	7439-98-7	ug/kg	643.5	2.0E+03	3.2E-01	1.4E+04	4.6E-02
1607-D2-2_Shallow	non-Rad	Nickel	7440-02-0	ug/kg	13308.8	3.0E+04	4.4E-01	3.3E+04	4.1E-01
1607-D2-2_Shallow	non-Rad	Nitrate	14797-55-8	ug/kg	204415.4	No Value	--	3.4E+08	6.0E-04
1607-D2-2_Shallow	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	ug/kg	55960.5	No Value	--	No Value	--
1607-D2-2_Shallow	Rad	Rads SOF	---	pCi/g	--	--	2.4E-04	--	7.0E-04
1607-D2-2_Shallow	non-Rad	Silver	7440-22-4	ug/kg	11800.0	2.0E+03	**5.9E+00**	5.0E+04	2.4E-01
1607-D2-2_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	2789.5	5.0E+03	5.6E-01	3.6E+05	7.8E-03
1607-D2-2_Shallow	Rad	Uranium-233/234	U-233/234	pCi/g	0.9	5.2E+04	1.7E-05	6.4E+03	1.3E-04
1607-D2-2_Shallow	Rad	Uranium-238	U-238	pCi/g	0.9	1.6E+04	6.0E-05	5.2E+03	1.8E-04
1607-D2-2_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	68019.9	2.0E+03	**3.4E+01**	3.1E+04	**2.2E+00**
1607-D2-2_Shallow	non-Rad	Zinc	7440-66-6	ug/kg	91971.2	5.0E+04	**1.8E+00**	6.8E+04	**1.4E+00**
1607-D2-3_Overburden	non-Rad	Barium	7440-39-3	ug/kg	55844.7	3.3E+05	1.7E-01	1.3E+06	4.2E-02
1607-D2-3_Overburden	Rad	Cesium-137	10045-97-3	pCi/g	0.2	2.2E+03	7.8E-05	9.2E+02	1.9E-04
1607-D2-3_Overburden	non-Rad	Chromium	7440-47-3	ug/kg	6597.1	4.0E+02	**1.7E+01**	3.8E+04	1.7E-01
1607-D2-3_Overburden	Rad	Cobalt-60	10198-40-0	pCi/g	0.1	6.1E+03	1.2E-05	8.1E+02	9.3E-05
1607-D2-3_Overburden	Rad	Europium-152	14683-23-9	pCi/g	0.6	1.5E+04	4.1E-05	1.7E+03	3.5E-04
1607-D2-3_Overburden	non-Rad	Lead	7439-92-1	ug/kg	5699.8	5.0E+04	1.1E-01	3.6E+04	1.6E-01
1607-D2-3_Overburden	Rad	Rads SOF	---	pCi/g	--	--	1.3E-04	--	6.2E-04
1607-D2-3_Shallow	non-Rad	Barium	7440-39-3	ug/kg	88075.1	3.3E+05	2.7E-01	1.3E+06	6.7E-02
1607-D2-3_Shallow	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	ug/kg	25.0	1.0E+05	2.5E-04	4.5E+04	5.5E-04
1607-D2-3_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.1	2.2E+03	2.3E-05	9.2E+02	5.5E-05
1607-D2-3_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	9575.6	4.0E+02	**2.4E+01**	3.8E+04	2.5E-01
1607-D2-3_Shallow	Rad	Europium-152	14683-23-9	pCi/g	0.2	1.5E+04	1.5E-05	1.7E+03	1.3E-04
1607-D2-3_Shallow	non-Rad	Lead	7439-92-1	ug/kg	4939.1	5.0E+04	9.9E-02	3.6E+04	1.4E-01
1607-D2-3_Shallow	non-Rad	Mercury	7439-97-6	ug/kg	31.4	1.0E+02	3.1E-01	1.9E+03	1.7E-02
1607-D2-3_Shallow	Rad	Rads SOF	---	pCi/g	--	--	3.8E-05	--	1.8E-04
1607-D2-4_Shallow	non-Rad	Barium	7440-39-3	ug/kg	60300.0	3.3E+05	1.8E-01	1.3E+06	4.6E-02
1607-D2-4_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	6100.0	4.0E+02	**1.5E+01**	3.8E+04	1.6E-01
1607-D2-4_Shallow	Rad	Europium-152	14683-23-9	pCi/g	0.0	1.5E+04	2.5E-06	1.7E+03	2.1E-05
1607-D2-4_Shallow	non-Rad	Lead	7439-92-1	ug/kg	4000.0	5.0E+04	8.0E-02	3.6E+04	1.1E-01
1607-D2-4_Shallow	Rad	Rads SOF	---	pCi/g	--	--	4.2E-05	--	1.9E-04
1607-D2-4_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	1339.6	5.0E+03	2.7E-01	3.6E+05	3.7E-03
1607-D2-4_Shallow	Rad	Uranium-233/234	U-233/234	pCi/g	0.5	5.2E+04	1.0E-05	6.4E+03	8.3E-05
1607-D2-4_Shallow	Rad	Uranium-238	U-238	pCi/g	0.5	1.6E+04	2.9E-05	5.2E+03	8.7E-05
1607-D4_Shallow_Focused	non-Rad	Arsenic	7440-38-2	ug/kg	1500.0	1.0E+04	1.5E-01	1.9E+05	7.9E-03
1607-D4_Shallow_Focused	non-Rad	Barium	7440-39-3	ug/kg	41900.0	3.3E+05	1.3E-01	1.3E+06	3.2E-02
1607-D4_Shallow_Focused	non-Rad	Beryllium	7440-41-7	ug/kg	900.0	1.0E+04	9.0E-02	1.4E+04	6.5E-02
1607-D4_Shallow_Focused	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	ug/kg	100.0	1.0E+05	1.0E-03	4.5E+04	2.2E-03

Table 4. Comparison of 100-D OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
1607-D4_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	1100.0	5.0E+02	**2.2E+00**	1.3E+05	8.3E-03
1607-D4_Shallow_Focused	non-Rad	Cadmium	7440-43-9	ug/kg	350.0	4.0E+03	8.8E-02	1.6E+03	2.2E-01
1607-D4_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	3500.0	4.0E+02	**8.8E+00**	3.8E+04	9.2E-02
1607-D4_Shallow_Focused	non-Rad	Cobalt	7440-48-4	ug/kg	7400.0	1.3E+04	5.7E-01	1.1E+05	6.6E-02
1607-D4_Shallow_Focused	non-Rad	Copper	7440-50-8	ug/kg	14700.0	5.0E+04	2.9E-01	1.1E+05	1.4E-01
1607-D4_Shallow_Focused	non-Rad	Di-n-butylphthalate	84-74-2	ug/kg	60.0	No Value	--	No Value	--
1607-D4_Shallow_Focused	non-Rad	Lead	7439-92-1	ug/kg	2600.0	5.0E+04	5.2E-02	3.6E+04	7.3E-02
1607-D4_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	269000.0	2.2E+05	**1.2E+00**	5.8E+06	4.6E-02
1607-D4_Shallow_Focused	non-Rad	Molybdenum	7439-98-7	ug/kg	280.0	2.0E+03	1.4E-01	1.4E+04	2.0E-02
1607-D4_Shallow_Focused	non-Rad	Nickel	7440-02-0	ug/kg	8100.0	3.0E+04	2.7E-01	3.3E+04	2.5E-01
1607-D4_Shallow_Focused	non-Rad	Nitrate	14797-55-8	ug/kg	2460.0	No Value	--	3.4E+08	7.2E-06
1607-D4_Shallow_Focused	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	ug/kg	715.0	No Value	--	No Value	--
1607-D4_Shallow_Focused	non-Rad	Uranium	7440-61-1	ug/kg	1.6	5.0E+03	3.2E-04	3.6E+05	4.4E-06
1607-D4_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	54500.0	2.0E+03	**2.7E+01**	3.1E+04	**1.8E+00**
1607-D4_Shallow_Focused	non-Rad	Zinc	7440-66-6	ug/kg	38100.0	5.0E+04	7.6E-01	6.8E+04	5.6E-01
1607-D5_Shallow	non-Rad	2,4-Dinitrophenol	51-28-5	ug/kg	370.0	No Value	--	No Value	--
1607-D5_Shallow	non-Rad	2-Methylnaphthalene	91-57-6	ug/kg	34.0	2.9E+04	1.2E-03	6.0E+03	5.7E-03
1607-D5_Shallow	non-Rad	4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	ug/kg	29.0	No Value	--	4.0E+02	7.3E-02
1607-D5_Shallow	non-Rad	4,4'-DDT (Dichlorodiphenyltrichloroethane)	50-29-3	ug/kg	4.0	No Value	--	8.8E+02	4.6E-03
1607-D5_Shallow	non-Rad	Alpha-Chlordane	5103-71-9	ug/kg	0.8	1.0E+03	8.0E-04	5.0E+04	1.6E-05
1607-D5_Shallow	non-Rad	Anthracene	120-12-7	ug/kg	163.4	2.9E+04	5.6E-03	6.8E+05	2.4E-04
1607-D5_Shallow	non-Rad	Aroclor-1254	11097-69-1	ug/kg	12.0	4.0E+04	3.0E-04	1.5E+03	8.1E-03
1607-D5_Shallow	non-Rad	Arsenic	7440-38-2	ug/kg	3557.6	1.0E+04	3.6E-01	1.9E+05	1.9E-02
1607-D5_Shallow	non-Rad	Barium	7440-39-3	ug/kg	775391.0	3.3E+05	**2.4E+00**	1.3E+06	5.9E-01
1607-D5_Shallow	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	1962.4	1.8E+04	1.1E-01	6.4E+04	3.1E-02
1607-D5_Shallow	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	405.2	1.8E+04	2.3E-02	7.6E+04	5.3E-03
1607-D5_Shallow	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	449.1	1.8E+04	2.5E-02	3.9E+04	1.1E-02
1607-D5_Shallow	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	252.6	1.8E+04	1.4E-02	3.9E+04	6.4E-03
1607-D5_Shallow	non-Rad	Beryllium	7440-41-7	ug/kg	492.5	1.0E+04	4.9E-02	1.4E+04	3.5E-02
1607-D5_Shallow	non-Rad	Boron	7440-42-8	ug/kg	69503.5	5.0E+02	**1.4E+02**	1.3E+05	5.2E-01
1607-D5_Shallow	non-Rad	Cadmium	7440-43-9	ug/kg	96.9	4.0E+03	2.4E-02	1.6E+03	5.9E-02
1607-D5_Shallow	non-Rad	Carbazole	86-74-8	ug/kg	48.0	No Value	--	No Value	--
1607-D5_Shallow	non-Rad	Chlordane	57-74-9	ug/kg	1.2	1.0E+03	1.2E-03	5.0E+04	2.4E-05
1607-D5_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	9673.4	4.0E+02	**2.4E+01**	3.8E+04	2.5E-01
1607-D5_Shallow	non-Rad	Chrysene	218-01-9	ug/kg	778.9	1.8E+04	4.3E-02	4.5E+04	1.8E-02
1607-D5_Shallow	non-Rad	Cobalt	7440-48-4	ug/kg	10198.4	1.3E+04	7.8E-01	1.1E+05	9.2E-02
1607-D5_Shallow	non-Rad	Copper	7440-50-8	ug/kg	31565.3	5.0E+04	6.3E-01	1.1E+05	3.0E-01
1607-D5_Shallow	non-Rad	Dibenz[a,h]anthracene	53-70-3	ug/kg	99.0	1.8E+04	5.5E-03	4.4E+04	2.2E-03
1607-D5_Shallow	non-Rad	Fluoranthene	206-44-0	ug/kg	1925.2	1.8E+04	1.1E-01	8.4E+05	2.3E-03
1607-D5_Shallow	non-Rad	Fluorene	86-73-7	ug/kg	125.5	2.9E+04	4.3E-03	1.8E+05	7.2E-04
1607-D5_Shallow	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	159.8	1.8E+04	8.9E-03	3.6E+04	4.5E-03
1607-D5_Shallow	non-Rad	Lead	7439-92-1	ug/kg	106537.3	5.0E+04	**2.1E+00**	3.6E+04	**3.0E+00**
1607-D5_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	330505.1	2.2E+05	**1.5E+00**	5.8E+06	5.7E-02
1607-D5_Shallow	non-Rad	Mercury	7439-97-6	ug/kg	24.7	1.0E+02	2.5E-01	1.9E+03	1.3E-02
1607-D5_Shallow	non-Rad	Molybdenum	7439-98-7	ug/kg	1201.3	2.0E+03	6.0E-01	1.4E+04	8.6E-02
1607-D5_Shallow	non-Rad	Nickel	7440-02-0	ug/kg	14373.3	3.0E+04	4.8E-01	3.3E+04	4.4E-01
1607-D5_Shallow	non-Rad	Nitrogen in Nitrate	NO3-N	ug/kg	3855.4	No Value	--	No Value	--
1607-D5_Shallow	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	ug/kg	5527.8	No Value	--	No Value	--
1607-D5_Shallow	non-Rad	Pyrene	129-00-0	ug/kg	2647.2	1.8E+04	1.5E-01	6.0E+05	4.4E-03
1607-D5_Shallow	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	ug/kg	21904.2	2.0E+05	1.1E-01	3.6E+08	6.2E-05
1607-D5_Shallow	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	ug/kg	37993.6	No Value	--	No Value	--
1607-D5_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	71779.1	2.0E+03	**3.6E+01**	3.1E+04	**2.3E+00**
1607-D5_Shallow	non-Rad	Zinc	7440-66-6	ug/kg	44033.1	5.0E+04	8.8E-01	6.8E+04	6.5E-01
600-30_Shallow_1	non-Rad	Arsenic	7440-38-2	ug/kg	3262.8	1.0E+04	3.3E-01	1.9E+05	1.7E-02
600-30_Shallow_1	non-Rad	Barium	7440-39-3	ug/kg	89130.2	3.3E+05	2.7E-01	1.3E+06	6.7E-02
600-30_Shallow_1	non-Rad	Beryllium	7440-41-7	ug/kg	292.0	1.0E+04	2.9E-02	1.4E+04	2.1E-02
600-30_Shallow_1	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	ug/kg	408.0	1.0E+05	4.1E-03	4.5E+04	9.0E-03
600-30_Shallow_1	non-Rad	Boron	7440-42-8	ug/kg	2431.2	5.0E+02	**4.9E+00**	1.3E+05	1.8E-02
600-30_Shallow_1	non-Rad	Cadmium	7440-43-9	ug/kg	109.2	4.0E+03	2.7E-02	1.6E+03	6.7E-02
600-30_Shallow_1	non-Rad	Chromium	7440-47-3	ug/kg	11154.4	4.0E+02	**2.8E+01**	3.8E+04	2.9E-01
600-30_Shallow_1	non-Rad	Cobalt	7440-48-4	ug/kg	7886.8	1.3E+04	6.1E-01	1.1E+05	7.1E-02
600-30_Shallow_1	non-Rad	Copper	7440-50-8	ug/kg	15226.2	5.0E+04	3.1E-01	1.1E+05	1.4E-01
600-30_Shallow_1	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	230.0	No Value	--	1.3E+06	1.9E-04
600-30_Shallow_1	non-Rad	Lead	7439-92-1	ug/kg	4710.7	5.0E+04	9.4E-02	3.6E+04	1.3E-01
600-30_Shallow_1	non-Rad	Manganese	7439-96-5	ug/kg	360368.7	2.2E+05	**1.6E+00**	5.8E+06	6.2E-02
600-30_Shallow_1	non-Rad	Molybdenum	7439-98-7	ug/kg	385.5	2.0E+03	1.9E-01	1.4E+04	2.8E-02
600-30_Shallow_1	non-Rad	Nickel	7440-02-0	ug/kg	11429.1	3.0E+04	3.8E-01	3.3E+04	3.5E-01
600-30_Shallow_1	non-Rad	Total petroleum hydrocarbons - motor oil (high boiling)	TPH/OILH	ug/kg	6410.0	No Value	--	No Value	--
600-30_Shallow_1	non-Rad	Vanadium	7440-62-2	ug/kg	49219.0	2.0E+03	**2.5E+01**	3.1E+04	**1.6E+00**
600-30_Shallow_1	non-Rad	Zinc	7440-66-6	ug/kg	43816.5	5.0E+04	8.8E-01	6.8E+04	6.5E-01
600-30_Shallow_2	non-Rad	Arsenic	7440-38-2	ug/kg	3242.5	1.0E+04	3.2E-01	1.9E+05	1.7E-02
600-30_Shallow_2	non-Rad	Barium	7440-39-3	ug/kg	85372.9	3.3E+05	2.6E-01	1.3E+06	6.5E-02
600-30_Shallow_2	non-Rad	Beryllium	7440-41-7	ug/kg	105.4	1.0E+04	1.1E-02	1.4E+04	7.6E-03
600-30_Shallow_2	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	ug/kg	101.4	1.0E+05	1.0E-03	4.5E+04	2.2E-03
600-30_Shallow_2	non-Rad	Boron	7440-42-8	ug/kg	1525.0	5.0E+02	**3.1E+00**	1.3E+05	1.2E-02
600-30_Shallow_2	non-Rad	Cadmium	7440-43-9	ug/kg	103.5	4.0E+03	2.6E-02	1.6E+03	6.4E-02
600-30_Shallow_2	non-Rad	Chromium	7440-47-3	ug/kg	12014.4	4.0E+02	**3.0E+01**	3.8E+04	3.2E-01
600-30_Shallow_2	non-Rad	Cobalt	7440-48-4	ug/kg	9144.6	1.3E+04	7.0E-01	1.1E+05	8.2E-02
600-30_Shallow_2	non-Rad	Copper	7440-50-8	ug/kg	17329.7	5.0E+04	3.5E-01	1.1E+05	1.6E-01
600-30_Shallow_2	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	293.8	No Value	--	1.3E+06	2.4E-04
600-30_Shallow_2	non-Rad	Lead	7439-92-1	ug/kg	4021.4	5.0E+04	8.0E-02	3.6E+04	1.1E-01
600-30_Shallow_2	non-Rad	Manganese	7439-96-5	ug/kg	351748.0	2.2E+05	**1.6E+00**	5.8E+06	6.1E-02
600-30_Shallow_2	non-Rad	Mercury	7439-97-6	ug/kg	6.5	1.0E+02	6.5E-02	1.9E+03	3.5E-03
600-30_Shallow_2	non-Rad	Molybdenum	7439-98-7	ug/kg	390.0	2.0E+03	2.0E-01	1.4E+04	2.8E-02
600-30_Shallow_2	non-Rad	Nickel	7440-02-0	ug/kg	12530.4	3.0E+04	4.2E-01	3.3E+04	3.9E-01
600-30_Shallow_2	non-Rad	Silver	7440-22-4	ug/kg	170.0	2.0E+03	8.5E-02	5.0E+04	3.4E-03
600-30_Shallow_2	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	ug/kg	820.0	2.0E+05	4.1E-03	3.6E+08	2.3E-06
600-30_Shallow_2	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	ug/kg	1274.6	No Value	--	No Value	--
600-30_Shallow_2	non-Rad	Vanadium	7440-62-2	ug/kg	57064.4	2.0E+03	**2.9E+01**	3.1E+04	**1.8E+00**
600-30_Shallow_2	non-Rad	Zinc	7440-66-6	ug/kg	43113.7	5.0E+04	8.6E-01	6.8E+04	6.4E-01
600-30_Shallow_3	non-Rad	Antimony	7440-36-0	ug/kg	430.0	5.0E+03	8.6E-02	6.0E+03	7.2E-02
600-30_Shallow_3	non-Rad	Arsenic	7440-38-2	ug/kg	2866.3	1.0E+04	2.9E-01	1.9E+05	1.5E-02
600-30_Shallow_3	non-Rad	Barium	7440-39-3	ug/kg	64907.1	3.3E+05	2.0E-01	1.3E+06	4.9E-02
600-30_Shallow_3	non-Rad	Beryllium	7440-41-7	ug/kg	66.0	1.0E+04	6.6E-03	1.4E+04	4.7E-03
600-30_Shallow_3	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	ug/kg	87.0	1.0E+05	8.7E-04	4.5E+04	1.9E-03
600-30_Shallow_3	non-Rad	Boron	7440-42-8	ug/kg	1700.0	5.0E+02	**3.4E+00**	1.3E+05	1.3E-02
600-30_Shallow_3	non-Rad	Cadmium	7440-43-9	ug/kg	66.6	4.0E+03	1.7E-02	1.6E+03	4.1E-02
600-30_Shallow_3	non-Rad	Chromium	7440-47-3	ug/kg	7707.8	4.0E+02	**1.9E+01**	3.8E+04	2.0E-01
600-30_Shallow_3	non-Rad	Cobalt	7440-48-4	ug/kg	10659.6	1.3E+04	8.2E-01	1.1E+05	9.6E-02
600-30_Shallow_3	non-Rad	Copper	7440-50-8	ug/kg	18098.8	5.0E+04	3.6E-01	1.1E+05	1.7E-01
600-30_Shallow_3	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	210.0	No Value	--	1.3E+06	1.7E-04
600-30_Shallow_3	non-Rad	Lead	7439-92-1	ug/kg	7862.0	5.0E+04	1.6E-01	3.6E+04	2.2E-01
600-30_Shallow_3	non-Rad	Manganese	7439-96-5	ug/kg	346687.9	2.2E+05	**1.6E+00**	5.8E+06	6.0E-02
600-30_Shallow_3	non-Rad	Mercury	7439-97-6	ug/kg	6.4	1.0E+02	6.4E-02	1.9E+03	3.4E-03
600-30_Shallow_3	non-Rad	Molybdenum	7439-98-7	ug/kg	243.2	2.0E+03	1.2E-01	1.4E+04	1.7E-02
600-30_Shallow_3	non-Rad	Nickel	7440-02-0	ug/kg	12270.4	3.0E+04	4.1E-01	3.3E+04	3.8E-01
600-30_Shallow_3	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	ug/kg	1643.0	2.0E+05	8.2E-03	3.6E+08	4.6E-06
600-30_Shallow_3	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	ug/kg	8600.0	No Value	--	No Value	--

Table 4. Comparison of 100-D OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
600-30_Shallow_3	non-Rad	Vanadium	7440-62-2	ug/kg	67222.2	2.0E+03	**3.4E+01**	3.1E+04	**2.2E+00**
600-30_Shallow_3	non-Rad	Zinc	7440-66-6	ug/kg	43856.1	5.0E+04	8.8E-01	6.8E+04	6.5E-01
600-30_Shallow_Focused	non-Rad	Aldrin	309-00-2	ug/kg	1.7	No Value	--	1.7E+02	1.0E-02
600-30_Shallow_Focused	non-Rad	Antimony	7440-36-0	ug/kg	349.0	5.0E+03	7.0E-02	6.0E+03	5.8E-02
600-30_Shallow_Focused	non-Rad	Arsenic	7440-38-2	ug/kg	3590.0	1.0E+04	3.6E-01	1.9E+05	1.9E-02
600-30_Shallow_Focused	non-Rad	Barium	7440-39-3	ug/kg	99100.0	3.3E+05	3.0E-01	1.3E+06	7.5E-02
600-30_Shallow_Focused	non-Rad	Beryllium	7440-41-7	ug/kg	319.0	1.0E+04	3.2E-02	1.4E+04	2.3E-02
600-30_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	2460.0	5.0E+02	**4.9E+00**	1.3E+05	1.9E-02
600-30_Shallow_Focused	non-Rad	Cadmium	7440-43-9	ug/kg	134.0	4.0E+03	3.4E-02	1.6E+03	8.2E-02
600-30_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	11800.0	4.0E+02	**3.0E+01**	3.8E+04	3.1E-01
600-30_Shallow_Focused	non-Rad	Cobalt	7440-48-4	ug/kg	10300.0	1.3E+04	7.9E-01	1.1E+05	9.2E-02
600-30_Shallow_Focused	non-Rad	Copper	7440-50-8	ug/kg	18300.0	5.0E+04	3.7E-01	1.1E+05	1.7E-01
600-30_Shallow_Focused	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	270.0	No Value	--	1.3E+06	2.2E-04
600-30_Shallow_Focused	non-Rad	Lead	7439-92-1	ug/kg	10800.0	5.0E+04	2.2E-01	3.6E+04	3.0E-01
600-30_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	382000.0	2.2E+05	**1.7E+00**	5.8E+06	6.6E-02
600-30_Shallow_Focused	non-Rad	Molybdenum	7439-98-7	ug/kg	396.0	2.0E+03	2.0E-01	1.4E+04	2.8E-02
600-30_Shallow_Focused	non-Rad	Nickel	7440-02-0	ug/kg	12700.0	3.0E+04	4.2E-01	3.3E+04	3.9E-01
600-30_Shallow_Focused	non-Rad	Total petroleum hydrocarbons - motor oil (high boiling)	TPH/OILH	ug/kg	52500.0	No Value	--	No Value	--
600-30_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	62200.0	2.0E+03	**3.1E+01**	3.1E+04	**2.0E+00**
600-30_Shallow_Focused	non-Rad	Zinc	7440-66-6	ug/kg	46600.0	5.0E+04	9.3E-01	6.8E+04	6.9E-01
628-3_Shallow	non-Rad	Acenaphthene	83-32-9	ug/kg	17.8	2.0E+04	8.9E-04	1.1E+06	1.6E-05
628-3_Shallow	non-Rad	Aldrin	309-00-2	ug/kg	1.5	No Value	--	1.7E+02	8.9E-03
628-3_Shallow	non-Rad	Antimony	7440-36-0	ug/kg	3150.0	5.0E+03	6.3E-01	6.0E+03	5.3E-01
628-3_Shallow	non-Rad	Arsenic	7440-38-2	ug/kg	2520.9	1.0E+04	2.5E-01	1.9E+05	1.3E-02
628-3_Shallow	non-Rad	Barium	7440-39-3	ug/kg	57199.3	3.3E+05	1.7E-01	1.3E+06	4.3E-02
628-3_Shallow	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	4.0	1.8E+04	2.2E-04	6.4E+04	6.2E-05
628-3_Shallow	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	3.7	1.8E+04	2.1E-04	7.6E+04	4.8E-05
628-3_Shallow	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	3.3	1.8E+04	1.8E-04	3.9E+04	8.3E-05
628-3_Shallow	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	2.1	1.8E+04	1.2E-04	3.9E+04	5.4E-05
628-3_Shallow	non-Rad	Beryllium	7440-41-7	ug/kg	192.8	1.0E+04	1.9E-02	1.4E+04	1.4E-02
628-3_Shallow	non-Rad	Boron	7440-42-8	ug/kg	1771.1	5.0E+02	**3.5E+00**	1.3E+05	1.3E-02
628-3_Shallow	non-Rad	Cadmium	7440-43-9	ug/kg	136.3	4.0E+03	3.4E-02	1.6E+03	8.4E-02
628-3_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	11406.1	4.0E+02	**2.9E+01**	3.8E+04	3.0E-01
628-3_Shallow	non-Rad	Chrysene	218-01-9	ug/kg	8.5	1.8E+04	4.7E-04	4.5E+04	1.9E-04
628-3_Shallow	non-Rad	Cobalt	7440-48-4	ug/kg	6637.5	1.3E+04	5.1E-01	1.1E+05	6.0E-02
628-3_Shallow	non-Rad	Copper	7440-50-8	ug/kg	15747.4	5.0E+04	3.2E-01	1.1E+05	1.5E-01
628-3_Shallow	non-Rad	Fluoranthene	206-44-0	ug/kg	31.0	1.8E+04	1.7E-03	8.4E+05	3.7E-05
628-3_Shallow	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	5.6	1.8E+04	3.1E-04	3.6E+04	1.6E-04
628-3_Shallow	non-Rad	Lead	7439-92-1	ug/kg	15972.3	5.0E+04	3.2E-01	3.6E+04	4.5E-01
628-3_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	284235.2	2.2E+05	**1.3E+00**	5.8E+06	4.9E-02
628-3_Shallow	non-Rad	Mercury	7439-97-6	ug/kg	164.9	1.0E+02	**1.7E+00**	1.9E+03	8.8E-02
628-3_Shallow	non-Rad	Molybdenum	7439-98-7	ug/kg	372.2	2.0E+03	1.9E-01	1.4E+04	2.7E-02
628-3_Shallow	non-Rad	Nickel	7440-02-0	ug/kg	9673.7	3.0E+04	3.2E-01	3.3E+04	3.0E-01
628-3_Shallow	non-Rad	Pyrene	129-00-0	ug/kg	3.6	1.8E+04	2.0E-04	6.0E+05	6.0E-06
628-3_Shallow	non-Rad	Total petroleum hydrocarbons - motor oil (high boiling)	TPH/OILH	ug/kg	9961.3	No Value	--	No Value	--
628-3_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	53113.1	2.0E+03	**2.7E+01**	3.1E+04	**1.7E+00**
628-3_Shallow	non-Rad	Zinc	7440-66-6	ug/kg	43720.6	5.0E+04	8.7E-01	6.8E+04	6.5E-01
628-3_Staging Pile Area_2	non-Rad	4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	ug/kg	2.4	No Value	--	4.0E+02	6.0E-03
628-3_Staging Pile Area_2	non-Rad	Acenaphthene	83-32-9	ug/kg	1.4	2.0E+04	6.8E-05	1.1E+06	1.2E-06
628-3_Staging Pile Area_2	non-Rad	Anthracene	120-12-7	ug/kg	8.6	2.9E+04	3.0E-04	6.8E+05	1.3E-05
628-3_Staging Pile Area_2	non-Rad	Aroclor HI	---	ug/kg			5.6E-04		1.5E-02
628-3_Staging Pile Area_2	non-Rad	Aroclor-1254	11097-69-1	ug/kg	13.3	4.0E+04	3.3E-04	1.5E+03	9.1E-03
628-3_Staging Pile Area_2	non-Rad	Aroclor-1260	11096-82-5	ug/kg	9.1	4.0E+04	2.3E-04	1.5E+03	6.2E-03
628-3_Staging Pile Area_2	non-Rad	Arsenic	7440-38-2	ug/kg	2870.4	1.0E+04	2.9E-01	1.9E+05	1.5E-02
628-3_Staging Pile Area_2	non-Rad	Barium	7440-39-3	ug/kg	78503.1	3.3E+05	2.4E-01	1.3E+06	5.9E-02
628-3_Staging Pile Area_2	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	6.9	1.8E+04	3.8E-04	6.4E+04	1.1E-04
628-3_Staging Pile Area_2	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	6.5	1.8E+04	3.6E-04	7.6E+04	8.5E-05
628-3_Staging Pile Area_2	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	9.3	1.8E+04	5.2E-04	3.9E+04	2.4E-04
628-3_Staging Pile Area_2	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	3.9	1.8E+04	2.2E-04	3.9E+04	1.0E-04
628-3_Staging Pile Area_2	non-Rad	Beryllium	7440-41-7	ug/kg	254.7	1.0E+04	2.6E-02	1.4E+04	1.8E-02
628-3_Staging Pile Area_2	non-Rad	Boron	7440-42-8	ug/kg	2111.8	5.0E+02	**4.2E+00**	1.3E+05	1.6E-02
628-3_Staging Pile Area_2	non-Rad	Cadmium	7440-43-9	ug/kg	162.7	4.0E+03	4.1E-02	1.6E+03	1.0E-01
628-3_Staging Pile Area_2	non-Rad	Chromium	7440-47-3	ug/kg	12445.1	4.0E+02	**3.1E+01**	3.8E+04	3.3E-01
628-3_Staging Pile Area_2	non-Rad	Chrysene	218-01-9	ug/kg	6.7	1.8E+04	3.7E-04	4.5E+04	1.5E-04
628-3_Staging Pile Area_2	non-Rad	Cobalt	7440-48-4	ug/kg	7062.4	1.3E+04	5.4E-01	1.1E+05	6.3E-02
628-3_Staging Pile Area_2	non-Rad	Copper	7440-50-8	ug/kg	15225.8	5.0E+04	3.1E-01	1.1E+05	1.4E-01
628-3_Staging Pile Area_2	non-Rad	Dibenz[a,h]anthracene	53-70-3	ug/kg	3.0	1.8E+04	1.7E-04	4.4E+04	6.9E-05
628-3_Staging Pile Area_2	non-Rad	Fluoranthene	206-44-0	ug/kg	35.0	1.8E+04	1.9E-03	8.4E+05	4.2E-05
628-3_Staging Pile Area_2	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	15.2	1.8E+04	8.4E-04	3.6E+04	4.3E-04
628-3_Staging Pile Area_2	non-Rad	Lead	7439-92-1	ug/kg	7649.7	5.0E+04	1.5E-01	3.6E+04	2.2E-01
628-3_Staging Pile Area_2	non-Rad	Manganese	7439-96-5	ug/kg	323863.2	2.2E+05	**1.5E+00**	5.8E+06	5.6E-02
628-3_Staging Pile Area_2	non-Rad	Mercury	7439-97-6	ug/kg	113.3	1.0E+02	**1.1E+00**	1.9E+03	6.1E-02
628-3_Staging Pile Area_2	non-Rad	Molybdenum	7439-98-7	ug/kg	420.7	2.0E+03	2.1E-01	1.4E+04	3.0E-02
628-3_Staging Pile Area_2	non-Rad	Nickel	7440-02-0	ug/kg	10260.5	3.0E+04	3.4E-01	3.3E+04	3.2E-01
628-3_Staging Pile Area_2	non-Rad	Pyrene	129-00-0	ug/kg	10.6	1.8E+04	5.9E-04	6.0E+05	1.8E-05
628-3_Staging Pile Area_2	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	ug/kg	1200.0	2.0E+05	6.0E-03	3.6E+08	3.4E-06
628-3_Staging Pile Area_2	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	ug/kg	2900.0	No Value	--	No Value	--
628-3_Staging Pile Area_2	non-Rad	Total petroleum hydrocarbons - motor oil (high boiling)	TPH/OILH	ug/kg	10486.3	No Value	--	No Value	--
628-3_Staging Pile Area_2	non-Rad	Vanadium	7440-62-2	ug/kg	55453.8	2.0E+03	**2.8E+01**	3.1E+04	**1.8E+00**
628-3_Staging Pile Area_2	non-Rad	Zinc	7440-66-6	ug/kg	48319.4	5.0E+04	9.7E-01	6.8E+04	7.1E-01
628-3_Staging Pile Area_3	non-Rad	Aroclor HI	---	ug/kg	--	--	4.4E-04	--	1.2E-02
628-3_Staging Pile Area_3	non-Rad	Aroclor-1254	11097-69-1	ug/kg	8.3	4.0E+04	2.1E-04	1.5E+03	5.7E-03
628-3_Staging Pile Area_3	non-Rad	Aroclor-1260	11096-82-5	ug/kg	9.4	4.0E+04	2.4E-04	1.5E+03	6.4E-03
628-3_Staging Pile Area_3	non-Rad	Arsenic	7440-38-2	ug/kg	2494.1	1.0E+04	2.5E-01	1.9E+05	1.3E-02
628-3_Staging Pile Area_3	non-Rad	Barium	7440-39-3	ug/kg	74013.7	3.3E+05	2.2E-01	1.3E+06	5.6E-02
628-3_Staging Pile Area_3	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	1.8	1.8E+04	9.9E-05	6.4E+04	2.8E-05
628-3_Staging Pile Area_3	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	1.6	1.8E+04	8.9E-05	7.6E+04	2.1E-05
628-3_Staging Pile Area_3	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	2.4	1.8E+04	1.3E-04	3.9E+04	6.2E-05
628-3_Staging Pile Area_3	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	1.3	1.8E+04	7.0E-05	3.9E+04	3.2E-05
628-3_Staging Pile Area_3	non-Rad	Beryllium	7440-41-7	ug/kg	233.8	1.0E+04	2.3E-02	1.4E+04	1.7E-02
628-3_Staging Pile Area_3	non-Rad	Boron	7440-42-8	ug/kg	2240.7	5.0E+02	**4.5E+00**	1.3E+05	1.7E-02
628-3_Staging Pile Area_3	non-Rad	Cadmium	7440-43-9	ug/kg	166.0	4.0E+03	4.2E-02	1.6E+03	1.0E-01
628-3_Staging Pile Area_3	non-Rad	Chromium	7440-47-3	ug/kg	41154.5	4.0E+02	**1.0E+02**	3.8E+04	**1.1E+00**
628-3_Staging Pile Area_3	non-Rad	Chrysene	218-01-9	ug/kg	1.9	1.8E+04	1.1E-04	4.5E+04	4.3E-05
628-3_Staging Pile Area_3	non-Rad	Cobalt	7440-48-4	ug/kg	7462.9	1.3E+04	5.7E-01	1.1E+05	6.7E-02
628-3_Staging Pile Area_3	non-Rad	Copper	7440-50-8	ug/kg	18416.6	5.0E+04	3.7E-01	1.1E+05	1.7E-01
628-3_Staging Pile Area_3	non-Rad	Fluoranthene	206-44-0	ug/kg	85.2	1.8E+04	4.7E-03	8.4E+05	1.0E-04
628-3_Staging Pile Area_3	non-Rad	Lead	7439-92-1	ug/kg	13526.3	5.0E+04	2.7E-01	3.6E+04	3.8E-01
628-3_Staging Pile Area_3	non-Rad	Manganese	7439-96-5	ug/kg	328755.4	2.2E+05	**1.5E+00**	5.8E+06	5.7E-02
628-3_Staging Pile Area_3	non-Rad	Mercury	7439-97-6	ug/kg	29.7	1.0E+02	3.0E-01	1.9E+03	1.6E-02
628-3_Staging Pile Area_3	non-Rad	Molybdenum	7439-98-7	ug/kg	473.6	2.0E+03	2.4E-01	1.4E+04	3.4E-02
628-3_Staging Pile Area_3	non-Rad	Nickel	7440-02-0	ug/kg	9872.3	3.0E+04	3.3E-01	3.3E+04	3.0E-01
628-3_Staging Pile Area_3	non-Rad	Pyrene	129-00-0	ug/kg	3.0	1.8E+04	1.6E-04	6.0E+05	4.9E-06
628-3_Staging Pile Area_3	non-Rad	Total petroleum hydrocarbons - motor oil (high boiling)	TPH/OILH	ug/kg	13203.2	No Value	--	No Value	--
628-3_Staging Pile Area_3	non-Rad	Vanadium	7440-62-2	ug/kg	58456.2	2.0E+03	**2.9E+01**	3.1E+04	**1.9E+00**
628-3_Staging Pile Area_3	non-Rad	Zinc	7440-66-6	ug/kg	54972.4	5.0E+04	**1.1E+00**	6.8E+04	8.1E-01
628-3_Staging Pile Area_Focused	non-Rad	4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	ug/kg	1.5	No Value	--	4.0E+02	3.8E-03
628-3_Staging Pile Area_Focused	non-Rad	Arsenic	7440-38-2	ug/kg	2800.0	1.0E+04	2.8E-01	1.9E+05	1.5E-02
628-3_Staging Pile Area_Focused	non-Rad	Barium	7440-39-3	ug/kg	109000.0	3.3E+05	3.3E-01	1.3E+06	8.2E-02

Table 4. Comparison of 100-D OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
628-3_Staging Pile Area_Focused	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	1.4	1.8E+04	7.9E-05	6.4E+04	2.2E-05
628-3_Staging Pile Area_Focused	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	1.8	1.8E+04	1.0E-04	7.6E+04	2.4E-05
628-3_Staging Pile Area_Focused	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	4.3	1.8E+04	2.4E-04	3.9E+04	1.1E-04
628-3_Staging Pile Area_Focused	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	1.3	1.8E+04	7.3E-05	3.9E+04	3.4E-05
628-3_Staging Pile Area_Focused	non-Rad	Beryllium	7440-41-7	ug/kg	298.0	1.0E+04	3.0E-02	1.4E+04	2.1E-02
628-3_Staging Pile Area_Focused	non-Rad	Boron	7440-42-8	ug/kg	3500.0	5.0E+02	**7.0E+00**	1.3E+05	2.6E-02
628-3_Staging Pile Area_Focused	non-Rad	Cadmium	7440-43-9	ug/kg	189.0	4.0E+03	4.7E-02	1.6E+03	1.2E-01
628-3_Staging Pile Area_Focused	non-Rad	Chromium	7440-47-3	ug/kg	12000.0	4.0E+02	**3.0E+01**	3.8E+04	3.1E-01
628-3_Staging Pile Area_Focused	non-Rad	Chrysene	218-01-9	ug/kg	3.4	1.8E+04	1.9E-04	4.5E+04	7.6E-05
628-3_Staging Pile Area_Focused	non-Rad	Cobalt	7440-48-4	ug/kg	7420.0	1.3E+04	5.7E-01	1.1E+05	6.7E-02
628-3_Staging Pile Area_Focused	non-Rad	Copper	7440-50-8	ug/kg	19700.0	5.0E+04	3.9E-01	1.1E+05	1.8E-01
628-3_Staging Pile Area_Focused	non-Rad	Fluoranthene	206-44-0	ug/kg	26.1	1.8E+04	1.5E-03	8.4E+05	3.1E-05
628-3_Staging Pile Area_Focused	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	2.9	1.8E+04	1.6E-04	3.6E+04	8.2E-05
628-3_Staging Pile Area_Focused	non-Rad	Lead	7439-92-1	ug/kg	7500.0	5.0E+04	1.5E-01	3.6E+04	2.1E-01
628-3_Staging Pile Area_Focused	non-Rad	Manganese	7439-96-5	ug/kg	363000.0	2.2E+05	**1.7E+00**	5.8E+06	6.3E-02
628-3_Staging Pile Area_Focused	non-Rad	Molybdenum	7439-98-7	ug/kg	353.0	2.0E+03	1.8E-01	1.4E+04	2.5E-02
628-3_Staging Pile Area_Focused	non-Rad	Nickel	7440-02-0	ug/kg	10600.0	3.0E+04	3.5E-01	3.3E+04	3.3E-01
628-3_Staging Pile Area_Focused	non-Rad	Pyrene	129-00-0	ug/kg	4.5	1.8E+04	2.5E-04	6.0E+05	7.5E-06
628-3_Staging Pile Area_Focused	non-Rad	Total petroleum hydrocarbons - motor oil (high boiling)	TPH/OILH	ug/kg	20300.0	No Value	--	No Value	--
628-3_Staging Pile Area_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	52400.0	2.0E+03	**2.6E+01**	3.1E+04	**1.7E+00**
628-3_Staging Pile Area_Focused	non-Rad	Zinc	7440-66-6	ug/kg	49400.0	5.0E+04	9.9E-01	6.8E+04	7.3E-01
UPR-100-D-5_Overburden	non-Rad	Antimony	7440-36-0	ug/kg	484.9	5.0E+03	9.7E-02	6.0E+03	8.1E-02
UPR-100-D-5_Overburden	non-Rad	Aroclor-1260	11096-82-5	ug/kg	4.3	4.0E+04	1.1E-04	1.5E+03	2.9E-03
UPR-100-D-5_Overburden	non-Rad	Arsenic	7440-38-2	ug/kg	2639.7	1.0E+04	2.6E-01	1.9E+05	1.4E-02
UPR-100-D-5_Overburden	non-Rad	Barium	7440-39-3	ug/kg	78784.5	3.3E+05	2.4E-01	1.3E+06	6.0E-02
UPR-100-D-5_Overburden	non-Rad	Beryllium	7440-41-7	ug/kg	177.6	1.0E+04	1.8E-02	1.4E+04	1.3E-02
UPR-100-D-5_Overburden	non-Rad	Boron	7440-42-8	ug/kg	1084.8	5.0E+02	**2.2E+00**	1.3E+05	8.2E-03
UPR-100-D-5_Overburden	Rad	Cesium-137	10045-97-3	pCi/g	0.1	2.2E+03	3.0E-05	9.2E+02	7.1E-05
UPR-100-D-5_Overburden	non-Rad	Chromium	7440-47-3	ug/kg	6103.4	4.0E+02	**1.5E+01**	3.8E+04	1.6E-01
UPR-100-D-5_Overburden	non-Rad	Cobalt	7440-48-4	ug/kg	8238.0	1.3E+04	6.3E-01	1.1E+05	7.4E-02
UPR-100-D-5_Overburden	non-Rad	Copper	7440-50-8	ug/kg	13771.5	5.0E+04	2.8E-01	1.1E+05	1.3E-01
UPR-100-D-5_Overburden	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	164.7	No Value	--	1.3E+06	1.3E-04
UPR-100-D-5_Overburden	non-Rad	Lead	7439-92-1	ug/kg	2642.9	5.0E+04	5.3E-02	3.6E+04	7.4E-02
UPR-100-D-5_Overburden	non-Rad	Manganese	7439-96-5	ug/kg	397996.7	2.2E+05	**1.8E+00**	5.8E+06	6.9E-02
UPR-100-D-5_Overburden	non-Rad	Molybdenum	7439-98-7	ug/kg	389.4	2.0E+03	2.0E-01	1.4E+04	2.8E-02
UPR-100-D-5_Overburden	non-Rad	Nickel	7440-02-0	ug/kg	8771.9	3.0E+04	2.9E-01	3.3E+04	2.7E-01
UPR-100-D-5_Overburden	Rad	Rads SOF	---	pCi/g	--	--	2.3E-04	--	6.1E-03
UPR-100-D-5_Overburden	non-Rad	Selenium	7782-49-2	ug/kg	236.0	5.2E+02	4.5E-01	1.9E+03	1.2E-01
UPR-100-D-5_Overburden	non-Rad	Silver	7440-22-4	ug/kg	189.5	2.0E+03	9.5E-02	5.0E+04	3.8E-03
UPR-100-D-5_Overburden	Rad	Total beta radiostrontium	SR-RAD	pCi/g	0.5	3.6E+03	1.5E-04	9.1E+01	5.9E-03
UPR-100-D-5_Overburden	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	1866.3	5.0E+03	3.7E-01	3.6E+05	5.2E-03
UPR-100-D-5_Overburden	Rad	Uranium-233/234	U-233/234	pCi/g	0.5	5.2E+04	1.1E-05	6.4E+03	8.5E-05
UPR-100-D-5_Overburden	Rad	Uranium-235	15117-96-1	pCi/g	0.0	2.7E+04	1.4E-06	4.4E+03	9.0E-06
UPR-100-D-5_Overburden	Rad	Uranium-238	U-238	pCi/g	0.5	1.6E+04	3.5E-05	5.2E+03	1.1E-04
UPR-100-D-5_Overburden	non-Rad	Vanadium	7440-62-2	ug/kg	66616.3	2.0E+03	**3.3E+01**	3.1E+04	**2.1E+00**
UPR-100-D-5_Overburden	non-Rad	Zinc	7440-66-6	ug/kg	44265.5	5.0E+04	8.9E-01	6.8E+04	6.5E-01
UPR-100-D-5_Shallow	non-Rad	Antimony	7440-36-0	ug/kg	369.7	5.0E+03	7.4E-02	6.0E+03	6.2E-02
UPR-100-D-5_Shallow	non-Rad	Arsenic	7440-38-2	ug/kg	2611.8	1.0E+04	2.6E-01	1.9E+05	1.4E-02
UPR-100-D-5_Shallow	non-Rad	Barium	7440-39-3	ug/kg	64474.0	3.3E+05	2.0E-01	1.3E+06	4.9E-02
UPR-100-D-5_Shallow	non-Rad	Beryllium	7440-41-7	ug/kg	194.4	1.0E+04	1.9E-02	1.4E+04	1.4E-02
UPR-100-D-5_Shallow	non-Rad	Boron	7440-42-8	ug/kg	2067.1	5.0E+02	**4.1E+00**	1.3E+05	1.6E-02
UPR-100-D-5_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0.1	2.2E+03	3.4E-05	9.2E+02	8.0E-05
UPR-100-D-5_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	8860.7	4.0E+02	**2.2E+01**	3.8E+04	2.3E-01
UPR-100-D-5_Shallow	non-Rad	Cobalt	7440-48-4	ug/kg	8228.6	1.3E+04	6.3E-01	1.1E+05	7.4E-02
UPR-100-D-5_Shallow	non-Rad	Copper	7440-50-8	ug/kg	15438.6	5.0E+04	3.1E-01	1.1E+05	1.4E-01
UPR-100-D-5_Shallow	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	170.0	No Value	--	1.3E+06	1.4E-04
UPR-100-D-5_Shallow	non-Rad	Lead	7439-92-1	ug/kg	2747.7	5.0E+04	5.5E-02	3.6E+04	7.7E-02
UPR-100-D-5_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	305219.8	2.2E+05	**1.4E+00**	5.8E+06	5.3E-02
UPR-100-D-5_Shallow	non-Rad	Molybdenum	7439-98-7	ug/kg	332.2	2.0E+03	1.7E-01	1.4E+04	2.4E-02
UPR-100-D-5_Shallow	non-Rad	Nickel	7440-02-0	ug/kg	10157.8	3.0E+04	3.4E-01	3.3E+04	3.1E-01
UPR-100-D-5_Shallow	Rad	Rads SOF	---	pCi/g	--	--	7.7E-05	--	2.6E-04
UPR-100-D-5_Shallow	non-Rad	Silver	7440-22-4	ug/kg	170.0	2.0E+03	8.5E-02	5.0E+04	3.4E-03
UPR-100-D-5_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	1579.1	5.0E+03	3.2E-01	3.6E+05	4.4E-03
UPR-100-D-5_Shallow	Rad	Uranium-233/234	U-233/234	pCi/g	0.5	5.2E+04	9.5E-06	6.4E+03	7.7E-05
UPR-100-D-5_Shallow	Rad	Uranium-238	U-238	pCi/g	0.5	1.6E+04	3.4E-05	5.2E+03	1.0E-04
UPR-100-D-5_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	65392.6	2.0E+03	**3.3E+01**	3.1E+04	**2.1E+00**
UPR-100-D-5_Shallow	non-Rad	Zinc	7440-66-6	ug/kg	44676.5	5.0E+04	8.9E-01	6.8E+04	6.6E-01
UPR-100-D-5_Shallow_Focused	non-Rad	Arsenic	7440-38-2	ug/kg	2110.0	1.0E+04	2.1E-01	1.9E+05	1.1E-02
UPR-100-D-5_Shallow_Focused	non-Rad	Barium	7440-39-3	ug/kg	50200.0	3.3E+05	1.5E-01	1.3E+06	3.8E-02
UPR-100-D-5_Shallow_Focused	non-Rad	Beryllium	7440-41-7	ug/kg	146.0	1.0E+04	1.5E-02	1.4E+04	1.1E-02
UPR-100-D-5_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	744.0	5.0E+02	**1.5E+00**	1.3E+05	5.6E-03
UPR-100-D-5_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	5560.0	4.0E+02	**1.4E+01**	3.8E+04	1.5E-01
UPR-100-D-5_Shallow_Focused	non-Rad	Cobalt	7440-48-4	ug/kg	7240.0	1.3E+04	5.6E-01	1.1E+05	6.5E-02
UPR-100-D-5_Shallow_Focused	non-Rad	Copper	7440-50-8	ug/kg	12800.0	5.0E+04	2.6E-01	1.1E+05	1.2E-01
UPR-100-D-5_Shallow_Focused	non-Rad	Lead	7439-92-1	ug/kg	2200.0	5.0E+04	4.4E-02	3.6E+04	6.2E-02
UPR-100-D-5_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	254000.0	2.2E+05	**1.2E+00**	5.8E+06	4.4E-02
UPR-100-D-5_Shallow_Focused	non-Rad	Molybdenum	7439-98-7	ug/kg	330.0	2.0E+03	1.7E-01	1.4E+04	2.4E-02
UPR-100-D-5_Shallow_Focused	non-Rad	Nickel	7440-02-0	ug/kg	12000.0	3.0E+04	4.0E-01	3.3E+04	3.7E-01
UPR-100-D-5_Shallow_Focused	Rad	Rads SOF	---	pCi/g	--	--	3.3E-05	--	1.5E-04
UPR-100-D-5_Shallow_Focused	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	1,151	5.0E+03	2.3E-01	3.6E+05	3.2E-03
UPR-100-D-5_Shallow_Focused	Rad	Uranium-233/234	U-233/234	pCi/g	0.41	5.2E+04	8.0E-06	6.4E+03	6.5E-05
UPR-100-D-5_Shallow_Focused	Rad	Uranium-235	15117-96-1	pCi/g	0.030	2.7E+04	1.1E-06	4.4E+03	6.9E-06
UPR-100-D-5_Shallow_Focused	Rad	Uranium-238	U-238	pCi/g	0.38	1.6E+04	2.4E-05	5.2E+03	7.4E-05
UPR-100-D-5_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	60,100	2.0E+03	**3.0E+01**	3.1E+04	**1.9E+00**
UPR-100-D-5_Shallow_Focused	non-Rad	Zinc	7440-66-6	ug/kg	40,600	5.0E+04	8.1E-01	6.8E+04	6.0E-01

Notes:

1 Plant/Invertebrate SSLs are the lowest NOAEL based values found in *Tier 1 Risk-Based Soil Concentrations Protective of Ecological Receptors at the Hanford Site* [CHPRC-00784] located in Appendix H of *Remedial Investigation/Feasibility Study for the 100-KR-1,*

2 Avian/mammal SSLs are the lowest NOAEL based values found in *Tier 1 Risk-Based Soil Concentrations Protective of Ecological Receptors at the Hanford Site* [CHPRC-00784] located in Appendix H of *Remedial Investigation/Feasibility Study for the 100-KR-1,*

All data represent detected concentrations of the chemicals.

Hazard Quotients greater than one are in bold font and highlighted yellow.

Uranium 234 SSLs were used as surrogates for Uranium 233/234.

pCi/g = pico Curie per gram

SSL = Soil screening level

µg/kg = Microgram per kilogram

Table 5. Comparison of 100-H OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/ Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
100-H-17_Shallow	non-Rad	Arsenic	7440-38-2	ug/kg	3,395	1.0E+04	3.4E-01	1.9E+05	1.8E-02
100-H-17_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0,000	2.2E+03	1.2E-04	9.2E+02	2.8E-04
100-H-17_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	11,015	4.0E+02	**2.8E+01**	3.8E+04	2.9E-01
100-H-17_Shallow	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	0,471	No Value	--	1.3E+06	3.8E-04
100-H-17_Shallow	non-Rad	Lead	7439-92-1	ug/kg	6,489	5.0E+04	1.3E-01	3.6E+04	1.8E-01
100-H-17_Shallow	Rad	Rads SOF	---	pCi/g	--	--	3.1E-04	--	6.0E-03
100-H-17_Shallow	Rad	Total beta radiostrontium	SR-RAD	pCi/g	0,001	3.6E+03	1.4E-04	9.1E+01	5.5E-03
100-H-17_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	1,853	5.0E+03	3.7E-01	3.6E+05	5.2E-03
100-H-17_Shallow	Rad	Uranium-233/234	U-233/234	pCi/g	0,001	5.2E+04	1.2E-05	6.4E+03	9.4E-05
100-H-17_Shallow	Rad	Uranium-238	U-238	pCi/g	0,001	1.6E+04	4.0E-05	5.2E+03	1.2E-04
100-H-21_Overburden	non-Rad	Arsenic	7440-38-2	ug/kg	11,453	1.0E+04	**1.2E+00**	1.9E+05	6.0E-02
100-H-21_Overburden	Rad	Cesium-137	10045-97-3	pCi/g	0,000	2.2E+03	5.4E-05	9.2E+02	1.3E-04
100-H-21_Overburden	non-Rad	Chromium	7440-47-3	ug/kg	14,234	4.0E+02	**3.6E+01**	3.8E+04	3.7E-01
100-H-21_Overburden	Rad	Europium-152	14683-23-9	pCi/g	0,000	1.5E+04	1.9E-05	1.7E+03	1.6E-04
100-H-21_Overburden	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	0,813	No Value	--	1.3E+06	6.5E-04
100-H-21_Overburden	non-Rad	Lead	7439-92-1	ug/kg	36,426	5.0E+04	7.3E-01	3.6E+04	**1.0E+00**
100-H-21_Overburden	non-Rad	Mercury	7439-97-6	ug/kg	0,040	1.0E+02	4.0E-01	1.9E+03	2.1E-02
100-H-21_Overburden	Rad	Plutonium-239/240	PU-239/240	pCi/g	0,000	1.3E+04	3.5E-06	6.3E+03	7.2E-06
100-H-21_Overburden	Rad	Rads SOF	---	pCi/g	--	--	1.2E-04	--	4.7E-04
100-H-21_Overburden	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	1,342	5.0E+03	2.7E-01	3.6E+05	3.7E-03
100-H-21_Overburden	Rad	Uranium-233/234	U-233/234	pCi/g	0,000	5.2E+04	9.0E-06	6.4E+03	7.3E-05
100-H-21_Overburden	Rad	Uranium-235	15117-96-1	pCi/g	0,000	2.7E+04	1.9E-06	4.4E+03	1.2E-05
100-H-21_Overburden	Rad	Uranium-238	U-238	pCi/g	0,000	1.6E+04	2.9E-05	5.2E+03	8.7E-05
100-H-21_Shallow	non-Rad	Arsenic	7440-38-2	ug/kg	13,301	1.0E+04	**1.3E+00**	1.9E+05	7.0E-02
100-H-21_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0,000	2.2E+03	1.1E-04	9.2E+02	2.6E-04
100-H-21_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	14,826	4.0E+02	**3.7E+01**	3.8E+04	3.9E-01
100-H-21_Shallow	Rad	Europium-152	14683-23-9	pCi/g	0,000	1.5E+04	1.9E-05	1.7E+03	1.6E-04
100-H-21_Shallow	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	0,487	No Value	--	1.3E+06	3.9E-04
100-H-21_Shallow	non-Rad	Lead	7439-92-1	ug/kg	40,132	5.0E+04	8.0E-01	3.6E+04	**1.1E+00**
100-H-21_Shallow	Rad	Plutonium-238	13981-16-3	pCi/g	0,000	1.8E+04	4.1E-06	6.0E+03	1.2E-05
100-H-21_Shallow	Rad	Plutonium-239/240	PU-239/240	pCi/g	0,000	1.3E+04	5.9E-06	6.3E+03	1.2E-05
100-H-21_Shallow	Rad	Rads SOF	---	pCi/g	--	--	2.1E-04	--	7.4E-04
100-H-21_Shallow	Rad	Technetium-99	14133-76-7	pCi/g	0,001	2.2E+04	2.9E-05	5.4E+03	1.2E-04
100-H-21_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	1,473	5.0E+03	3.0E-01	3.6E+05	4.1E-03
100-H-21_Shallow	Rad	Uranium-233/234	U-233/234	pCi/g	0,001	5.2E+04	1.1E-05	6.4E+03	8.6E-05
100-H-21_Shallow	Rad	Uranium-238	U-238	pCi/g	0,000	1.6E+04	3.2E-05	5.2E+03	9.6E-05
100-H-24_Shallow	non-Rad	Aroclor-1260	11096-82-5	ug/kg	0,069	4.0E+04	1.7E-03	1.5E+03	4.7E-02
100-H-24_Shallow	non-Rad	Arsenic	7440-38-2	ug/kg	4,164	1.0E+04	4.2E-01	1.9E+05	2.2E-02
100-H-28:1_Shallow_Focused	non-Rad	Acenaphthene	83-32-9	ug/kg	0,022	2.0E+04	1.1E-03	1.1E+06	2.0E-05
100-H-28:1_Shallow_Focused	non-Rad	Arsenic	7440-38-2	ug/kg	3,300	1.0E+04	3.3E-01	1.9E+05	1.7E-02
100-H-28:1_Shallow_Focused	non-Rad	Barium	7440-39-3	ug/kg	540,000	3.3E+05	**1.6E+00**	1.3E+06	4.1E-01
100-H-28:1_Shallow_Focused	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	0,004	1.8E+04	2.1E-04	6.4E+04	5.8E-05
100-H-28:1_Shallow_Focused	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	0,004	1.8E+04	2.3E-04	7.6E+04	5.5E-05
100-H-28:1_Shallow_Focused	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	0,058	1.8E+04	3.2E-03	3.9E+04	1.5E-03
100-H-28:1_Shallow_Focused	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	0,002	1.8E+04	1.3E-04	3.9E+04	6.1E-05
100-H-28:1_Shallow_Focused	non-Rad	Beryllium	7440-41-7	ug/kg	0,530	1.0E+04	5.3E-02	1.4E+04	3.8E-02
100-H-28:1_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	66,400	5.0E+02	**1.3E+02**	1.3E+05	5.0E-01
100-H-28:1_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	15,000	4.0E+02	**3.8E+01**	3.8E+04	3.9E-01
100-H-28:1_Shallow_Focused	non-Rad	Chrysene	218-01-9	ug/kg	0,004	1.8E+04	2.4E-04	4.5E+04	9.7E-05
100-H-28:1_Shallow_Focused	non-Rad	Cobalt	7440-48-4	ug/kg	8,000	1.3E+04	6.2E-01	1.1E+05	7.2E-02
100-H-28:1_Shallow_Focused	non-Rad	Copper	7440-50-8	ug/kg	22,700	5.0E+04	4.5E-01	1.1E+05	2.1E-01
100-H-28:1_Shallow_Focused	non-Rad	Dibenz(a,h)anthracene	53-70-3	ug/kg	0,002	1.8E+04	1.2E-04	4.4E+04	5.0E-05
100-H-28:1_Shallow_Focused	non-Rad	Fluoranthene	206-44-0	ug/kg	0,007	1.8E+04	4.0E-04	8.4E+05	8.6E-06
100-H-28:1_Shallow_Focused	non-Rad	Fluorene	86-73-7	ug/kg	0,007	2.9E+04	2.4E-04	1.8E+05	3.9E-05
100-H-28:1_Shallow_Focused	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	0,034	1.8E+04	1.9E-03	3.6E+04	9.5E-04
100-H-28:1_Shallow_Focused	non-Rad	Lead	7439-92-1	ug/kg	5,700	5.0E+04	1.1E-01	3.6E+04	1.6E-01
100-H-28:1_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	340,000	2.2E+05	**1.6E+00**	5.8E+06	5.9E-02
100-H-28:1_Shallow_Focused	non-Rad	Mercury	7439-97-6	ug/kg	0,030	1.0E+02	3.0E-01	1.9E+03	1.6E-02
100-H-28:1_Shallow_Focused	non-Rad	Molybdenum	7439-98-7	ug/kg	1,100	2.0E+03	5.5E-01	1.4E+04	7.9E-02
100-H-28:1_Shallow_Focused	non-Rad	Naphthalene	91-20-3	ug/kg	0,023	2.9E+04	7.9E-04	1.0E+05	2.3E-04
100-H-28:1_Shallow_Focused	non-Rad	Nickel	7440-02-0	ug/kg	17,200	3.0E+04	5.7E-01	3.3E+04	5.3E-01
100-H-28:1_Shallow_Focused	non-Rad	Pyrene	129-00-0	ug/kg	0,008	1.8E+04	4.6E-04	6.0E+05	1.4E-05
100-H-28:1_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	52,700	2.0E+03	**2.6E+01**	3.1E+04	**1.7E+00**
100-H-28:1_Shallow_Focused	non-Rad	Zinc	7440-66-6	ug/kg	45,200	5.0E+04	9.0E-01	6.8E+04	6.7E-01
100-H-28:6_Shallow_Focused	non-Rad	Antimony	7440-36-0	ug/kg	0,200	5.0E+03	4.0E-02	6.0E+03	3.3E-02
100-H-28:6_Shallow_Focused	non-Rad	Arsenic	7440-38-2	ug/kg	7,300	1.0E+04	7.3E-01	1.9E+05	3.9E-02
100-H-28:6_Shallow_Focused	non-Rad	Barium	7440-39-3	ug/kg	75,800	3.3E+05	2.3E-01	1.3E+06	5.7E-02
100-H-28:6_Shallow_Focused	non-Rad	Beryllium	7440-41-7	ug/kg	0,250	1.0E+04	2.5E-02	1.4E+04	1.8E-02
100-H-28:6_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	2,300	5.0E+02	**4.6E+00**	1.3E+05	1.7E-02
100-H-28:6_Shallow_Focused	non-Rad	Cadmium	7440-43-9	ug/kg	0,200	4.0E+03	5.0E-02	1.6E+03	1.2E-01
100-H-28:6_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	16,800	4.0E+02	**4.2E+01**	3.8E+04	4.4E-01
100-H-28:6_Shallow_Focused	non-Rad	Cobalt	7440-48-4	ug/kg	7,100	1.3E+04	5.5E-01	1.1E+05	6.4E-02
100-H-28:6_Shallow_Focused	non-Rad	Copper	7440-50-8	ug/kg	15,000	5.0E+04	3.0E-01	1.1E+05	1.4E-01
100-H-28:6_Shallow_Focused	non-Rad	Lead	7439-92-1	ug/kg	31,400	5.0E+04	6.3E-01	3.6E+04	8.8E-01
100-H-28:6_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	287,000	2.2E+05	**1.3E+00**	5.8E+06	5.0E-02
100-H-28:6_Shallow_Focused	non-Rad	Mercury	7439-97-6	ug/kg	0,010	1.0E+02	1.0E-01	1.9E+03	5.4E-03
100-H-28:6_Shallow_Focused	non-Rad	Molybdenum	7439-98-7	ug/kg	0,430	2.0E+03	2.2E-01	1.4E+04	3.1E-02
100-H-28:6_Shallow_Focused	non-Rad	Nickel	7440-02-0	ug/kg	15,400	3.0E+04	5.1E-01	3.3E+04	4.7E-01
100-H-28:6_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	45,200	2.0E+03	**2.3E+01**	3.1E+04	**1.5E+00**
100-H-28:6_Shallow_Focused	non-Rad	Zinc	7440-66-6	ug/kg	49,300	5.0E+04	9.9E-01	6.8E+04	7.3E-01
100-H-3_Shallow	non-Rad	Aroclor-1254	11097-69-1	ug/kg	0,008	4.0E+04	2.0E-04	1.5E+03	5.4E-03
100-H-3_Shallow	non-Rad	Aroclor-1260	11096-82-5	ug/kg	0,013	4.0E+04	3.4E-04	1.5E+03	9.1E-03
100-H-3_Shallow	non-Rad	Aroclors HI	---	ug/kg	--	--	5.3E-04	--	1.5E-02
100-H-3_Shallow	non-Rad	Arsenic	7440-38-2	ug/kg	14,689	1.0E+04	**1.5E+00**	1.9E+05	7.8E-02
100-H-3_Shallow	non-Rad	Barium	7440-39-3	ug/kg	87,047	3.3E+05	2.6E-01	1.3E+06	6.6E-02
100-H-3_Shallow	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	0,070	1.8E+04	3.9E-03	6.4E+04	1.1E-03
100-H-3_Shallow	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	0,071	1.8E+04	3.9E-03	7.6E+04	9.3E-04
100-H-3_Shallow	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	0,061	1.8E+04	3.4E-03	3.9E+04	1.6E-03
100-H-3_Shallow	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	0,063	1.8E+04	3.5E-03	3.9E+04	1.6E-03
100-H-3_Shallow	non-Rad	Beryllium	7440-41-7	ug/kg	0,342	1.0E+04	3.4E-02	1.4E+04	2.5E-02
100-H-3_Shallow	non-Rad	beta-1,2,3,4,5,6-Hexachlorocyclohexane (beta-BHC)	319-85-7	ug/kg	0,003	No Value	--	4.1E+03	6.2E-04
100-H-3_Shallow	non-Rad	Boron	7440-42-8	ug/kg	4,684	5.0E+02	**9.4E+00**	1.3E+05	3.5E-02
100-H-3_Shallow	non-Rad	Cadmium	7440-43-9	ug/kg	0,242	4.0E+03	6.0E-02	1.6E+03	1.5E-01
100-H-3_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	17,525	4.0E+02	**4.4E+01**	3.8E+04	4.6E-01
100-H-3_Shallow	non-Rad	Chrysene	218-01-9	ug/kg	0,085	1.8E+04	4.7E-03	4.5E+04	1.9E-03
100-H-3_Shallow	non-Rad	Cobalt	7440-48-4	ug/kg	6,489	1.3E+04	5.0E-01	1.1E+05	5.8E-02
100-H-3_Shallow	non-Rad	Copper	7440-50-8	ug/kg	15,046	5.0E+04	3.0E-01	1.1E+05	1.4E-01
100-H-3_Shallow	non-Rad	Dieldrin	60-57-1	ug/kg	0,005	No Value	--	2.1E+01	2.4E-01
100-H-3_Shallow	non-Rad	Fluoranthene	206-44-0	ug/kg	0,138	1.8E+04	7.7E-03	8.4E+05	1.6E-04
100-H-3_Shallow	non-Rad	Lead	7439-92-1	ug/kg	47,557	5.0E+04	9.5E-01	3.6E+04	**1.3E+00**
100-H-3_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	305,799	2.2E+05	**1.4E+00**	5.8E+06	5.3E-02
100-H-3_Shallow	non-Rad	Mercury	7439-97-6	ug/kg	0,257	1.0E+02	**2.6E+00**	1.9E+03	1.4E-01
100-H-3_Shallow	non-Rad	Molybdenum	7439-98-7	ug/kg	0,453	2.0E+03	2.3E-01	1.4E+04	3.3E-02
100-H-3_Shallow	non-Rad	Nickel	7440-02-0	ug/kg	14,736	3.0E+04	4.9E-01	3.3E+04	4.5E-01
100-H-3_Shallow	non-Rad	Pyrene	129-00-0	ug/kg	0,143	1.8E+04	7.9E-03	6.0E+05	2.4E-04
100-H-3_Shallow	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	ug/kg	164,000	2.0E+05	8.2E-01	3.6E+08	4.6E-04
100-H-3_Shallow	non-Rad	Total petroleum hydrocarbons - motor oil (high boiling)	TPH/OILH	ug/kg	97,682	No Value	--	No Value	--
100-H-3_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	48,985	2.0E+03	**2.5E+01**	3.1E+04	**1.6E+00**
100-H-3_Shallow	non-Rad	Zinc	7440-66-6	ug/kg	48,349	5.0E+04	9.7E-01	6.8E+04	7.1E-01
100-H-35_Shallow_Focused_1	non-Rad	Arsenic	7440-38-2	ug/kg	5,000	1.0E+04	5.0E-01	1.9E+05	2.6E-02
100-H-35_Shallow_Focused_1	non-Rad	Barium	7440-39-3	ug/kg	99,000	3.3E+05	3.0E-01	1.3E+06	7.5E-02
100-H-35_Shallow_Focused_1	non-Rad	Beryllium	7440-41-7	ug/kg	0,371	1.0E+04	3.7E-02	1.4E+04	2.7E-02
100-H-35_Shallow_Focused_1	non-Rad	Boron	7440-42-8	ug/kg	2,630	5.0E+02	**5.3E+00**	1.3E+05	2.0E-02
100-H-35_Shallow_Focused_1	non-Rad	Cadmium	7440-43-9	ug/kg	0,172	4.0E+03	4.3E-02	1.6E+03	1.1E-01
100-H-35_Shallow_Focused_1	non-Rad	Chromium	7440-47-3	ug/kg	20,700	4.0E+02	**5.2E+01**	3.8E+04	5.4E-01
100-H-35_Shallow_Focused_1	non-Rad	Cobalt	7440-48-4	ug/kg	6,590	1.3E+04	5.1E-01	1.1E+05	5.9E-02
100-H-35_Shallow_Focused_1	non-Rad	Copper	7440-50-8	ug/kg	15,100	5.0E+04	3.0E-01	1.1E+05	1.4E-01
100-H-35_Shallow_Focused_1	non-Rad	Lead	7439-92-1	ug/kg	5,880	5.0E+04	1.2E-01	3.6E+04	1.7E-01
100-H-35_Shallow_Focused_1	non-Rad	Manganese	7439-96-5	ug/kg	322,000	2.2E+05	**1.5E+00**	5.8E+06	5.6E-02
100-H-35_Shallow_Focused_1	non-Rad	Molybdenum	7439-98-7	ug/kg	0,328	2.0E+03	1.6E-01	1.4E+04	2.4E-02

Table 5. Comparison of 100-H OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/ Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
100-H-35_Shallow_Focused_1	non-Rad	Nickel	7440-02-0	ug/kg	17,100	3.0E+04	5.7E-01	3.3E+04	5.3E-01
100-H-35_Shallow_Focused_1	non-Rad	Vanadium	7440-62-2	ug/kg	43,600	2.0E+03	**2.2E+01**	3.1E+04	**1.4E+00**
100-H-35_Shallow_Focused_1	non-Rad	Zinc	7440-66-6	ug/kg	47,400	5.0E+04	9.5E-01	6.8E+04	7.0E-01
100-H-35_Shallow_Focused_2	non-Rad	Arsenic	7440-38-2	ug/kg	4,720	1.0E+04	4.7E-01	1.9E+05	2.5E-02
100-H-35_Shallow_Focused_2	non-Rad	Barium	7440-39-3	ug/kg	86,300	3.3E+05	2.6E-01	1.3E+06	6.5E-02
100-H-35_Shallow_Focused_2	non-Rad	Beryllium	7440-41-7	ug/kg	0,330	1.0E+04	3.3E-02	1.4E+04	2.4E-02
100-H-35_Shallow_Focused_2	non-Rad	Boron	7440-42-8	ug/kg	1,930	5.0E+02	**3.9E+00**	1.3E+05	1.5E-02
100-H-35_Shallow_Focused_2	non-Rad	Cadmium	7440-43-9	ug/kg	0,114	4.0E+03	2.9E-02	1.6E+03	7.0E-02
100-H-35_Shallow_Focused_2	non-Rad	Chromium	7440-47-3	ug/kg	20,900	4.0E+02	**5.2E+01**	3.8E+04	5.5E-01
100-H-35_Shallow_Focused_2	non-Rad	Cobalt	7440-48-4	ug/kg	7,100	1.3E+04	5.5E-01	1.1E+05	6.4E-02
100-H-35_Shallow_Focused_2	non-Rad	Copper	7440-50-8	ug/kg	15,300	5.0E+04	3.1E-01	1.1E+05	1.4E-01
100-H-35_Shallow_Focused_2	non-Rad	Lead	7439-92-1	ug/kg	10,500	5.0E+04	2.1E-01	3.6E+04	3.0E-01
100-H-35_Shallow_Focused_2	non-Rad	Manganese	7439-96-5	ug/kg	309,000	2.2E+05	**1.4E+00**	5.8E+06	5.3E-02
100-H-35_Shallow_Focused_2	non-Rad	Mercury	7439-97-6	ug/kg	0,102	1.0E+02	**1.0E+00**	1.9E+03	5.5E-02
100-H-35_Shallow_Focused_2	non-Rad	Molybdenum	7439-98-7	ug/kg	0,428	2.0E+03	2.1E-01	1.4E+04	3.1E-02
100-H-35_Shallow_Focused_2	non-Rad	Nickel	7440-02-0	ug/kg	18,600	3.0E+04	6.2E-01	3.3E+04	5.7E-01
100-H-35_Shallow_Focused_2	Rad	Rads SOF	---	pCi/g	--	--	5.6E-05	--	2.5E-04
100-H-35_Shallow_Focused_2	non-Rad	Uranium	7440-61-1	ug/kg	1,280	5.0E+03	2.6E-01	3.6E+05	3.6E-03
100-H-35_Shallow_Focused_2	Rad	Uranium-233/234	U-233/234	pCi/g	0,001	5.2E+04	1.5E-05	6.4E+03	1.2E-04
100-H-35_Shallow_Focused_2	Rad	Uranium-235	15117-96-1	pCi/g	0,000	2.7E+04	2.1E-06	4.4E+03	1.3E-05
100-H-35_Shallow_Focused_2	Rad	Uranium-238	U-238	pCi/g	0,001	1.6E+04	3.9E-05	5.2E+03	1.2E-04
100-H-35_Shallow_Focused_2	non-Rad	Vanadium	7440-62-2	ug/kg	41,600	2.0E+03	**2.1E+01**	3.1E+04	**1.3E+00**
100-H-35_Shallow_Focused_2	non-Rad	Zinc	7440-66-6	ug/kg	48,000	5.0E+04	9.6E-01	6.8E+04	7.1E-01
100-H-35_Shallow_Focused_3	non-Rad	Arsenic	7440-38-2	ug/kg	18,500	1.0E+04	**1.9E+00**	1.9E+05	9.8E-02
100-H-35_Shallow_Focused_3	non-Rad	Barium	7440-39-3	ug/kg	62,600	3.3E+05	1.9E-01	1.3E+06	4.7E-02
100-H-35_Shallow_Focused_3	non-Rad	Beryllium	7440-41-7	ug/kg	0,200	1.0E+04	2.0E-02	1.4E+04	1.4E-02
100-H-35_Shallow_Focused_3	non-Rad	Boron	7440-42-8	ug/kg	1,100	5.0E+02	**2.2E+00**	1.3E+05	8.3E-03
100-H-35_Shallow_Focused_3	non-Rad	Cadmium	7440-43-9	ug/kg	0,154	4.0E+03	3.9E-02	1.6E+03	9.5E-02
100-H-35_Shallow_Focused_3	non-Rad	Chromium	7440-47-3	ug/kg	14,800	4.0E+02	**3.7E+01**	3.8E+04	3.9E-01
100-H-35_Shallow_Focused_3	non-Rad	Cobalt	7440-48-4	ug/kg	5,400	1.3E+04	4.2E-01	1.1E+05	4.8E-02
100-H-35_Shallow_Focused_3	non-Rad	Copper	7440-50-8	ug/kg	13,400	5.0E+04	2.7E-01	1.1E+05	1.3E-01
100-H-35_Shallow_Focused_3	non-Rad	Lead	7439-92-1	ug/kg	25,200	5.0E+04	5.0E-01	3.6E+04	7.1E-01
100-H-35_Shallow_Focused_3	non-Rad	Manganese	7439-96-5	ug/kg	253,000	2.2E+05	**1.2E+00**	5.8E+06	4.4E-02
100-H-35_Shallow_Focused_3	non-Rad	Molybdenum	7439-98-7	ug/kg	0,323	2.0E+03	1.6E-01	1.4E+04	2.3E-02
100-H-35_Shallow_Focused_3	non-Rad	Nickel	7440-02-0	ug/kg	13,700	3.0E+04	4.6E-01	3.3E+04	4.2E-01
100-H-35_Shallow_Focused_3	non-Rad	Vanadium	7440-62-2	ug/kg	43,500	2.0E+03	**2.2E+01**	3.1E+04	**1.4E+00**
100-H-35_Shallow_Focused_3	non-Rad	Zinc	7440-66-6	ug/kg	94,200	5.0E+04	**1.9E+00**	6.8E+04	**1.4E+00**
100-H-37_Shallow_Focusec	non-Rad	Arsenic	7440-38-2	ug/kg	13,000	1.0E+04	**1.3E+00**	1.9E+05	6.9E-02
100-H-37_Shallow_Focusec	non-Rad	Barium	7440-39-3	ug/kg	71,000	3.3E+05	2.2E-01	1.3E+06	5.4E-02
100-H-37_Shallow_Focusec	non-Rad	Beryllium	7440-41-7	ug/kg	0,970	1.0E+04	9.7E-02	1.4E+04	7.0E-02
100-H-37_Shallow_Focusec	non-Rad	Cadmium	7440-43-9	ug/kg	0,082	4.0E+03	2.1E-02	1.6E+03	5.0E-02
100-H-37_Shallow_Focusec	Rad	Cesium-137	10045-97-3	pCi/g	0,000	2.2E+03	7.9E-06	9.2E+02	1.9E-05
100-H-37_Shallow_Focusec	non-Rad	Chromium	7440-47-3	ug/kg	11,000	4.0E+02	**2.8E+01**	3.8E+04	2.9E-01
100-H-37_Shallow_Focusec	non-Rad	Cobalt	7440-48-4	ug/kg	7,100	1.3E+04	5.5E-01	1.1E+05	6.4E-02
100-H-37_Shallow_Focusec	non-Rad	Copper	7440-50-8	ug/kg	16,000	5.0E+04	3.2E-01	1.1E+05	1.5E-01
100-H-37_Shallow_Focusec	non-Rad	Lead	7439-92-1	ug/kg	54,000	5.0E+04	**1.1E+00**	3.6E+04	**1.5E+00**
100-H-37_Shallow_Focusec	non-Rad	Manganese	7439-96-5	ug/kg	290,000	2.2E+05	**1.3E+00**	5.8E+06	5.0E-02
100-H-37_Shallow_Focusec	non-Rad	Mercury	7439-97-6	ug/kg	0,019	1.0E+02	1.9E-01	1.9E+03	1.0E-02
100-H-37_Shallow_Focusec	non-Rad	Molybdenum	7439-98-7	ug/kg	1,200	2.0E+03	6.0E-01	1.4E+04	8.6E-02
100-H-37_Shallow_Focusec	non-Rad	Nickel	7440-02-0	ug/kg	12,000	3.0E+04	4.0E-01	3.3E+04	3.7E-01
100-H-37_Shallow_Focusec	Rad	Rads SOF	---	pCi/g	--	--	8.6E-05	--	2.7E-04
100-H-37_Shallow_Focusec	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	3,423	5.0E+03	6.9E-01	3.6E+05	9.5E-03
100-H-37_Shallow_Focusec	Rad	Uranium-235	15117-96-1	pCi/g	0,000	2.7E+04	5.1E-06	4.4E+03	3.2E-05
100-H-37_Shallow_Focusec	Rad	Uranium-238	U-238	pCi/g	0,001	1.6E+04	7.3E-05	5.2E+03	2.2E-04
100-H-37_Shallow_Focusec	non-Rad	Vanadium	7440-62-2	ug/kg	43,000	2.0E+03	**2.2E+01**	3.1E+04	**1.4E+00**
100-H-37_Shallow_Focusec	non-Rad	Zinc	7440-66-6	ug/kg	46,000	5.0E+04	9.2E-01	6.8E+04	6.8E-01
100-H-4_Shallow	non-Rad	4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	ug/kg	0,003	No Value	--	4.0E+02	7.4E-03
100-H-4_Shallow	non-Rad	4,4'-DDT (Dichlorodiphenyltrichloroethane)	50-29-3	ug/kg	0,002	No Value	--	8.8E+02	1.8E-03
100-H-4_Shallow	non-Rad	Acenaphthene	83-32-9	ug/kg	0,011	2.0E+04	5.5E-04	1.1E+06	1.0E-05
100-H-4_Shallow	non-Rad	Alpha-Chlordane	5103-71-9	ug/kg	0,003	1.0E+03	3.0E-03	5.0E+04	6.0E-05
100-H-4_Shallow	non-Rad	Aroclor-1254	11097-69-1	ug/kg	0,028	4.0E+04	6.9E-04	1.5E+03	1.9E-02
100-H-4_Shallow	non-Rad	Aroclor-1260	11096-82-5	ug/kg	0,013	4.0E+04	3.2E-04	1.5E+03	8.7E-03
100-H-4_Shallow	non-Rad	Aroclors HI	---	ug/kg	--	--	1.0E-03	--	2.8E-02
100-H-4_Shallow	non-Rad	Arsenic	7440-38-2	ug/kg	6,985	1.0E+04	7.0E-01	1.9E+05	3.7E-02
100-H-4_Shallow	non-Rad	Barium	7440-39-3	ug/kg	56,371	3.3E+05	1.7E-01	1.3E+06	4.3E-02
100-H-4_Shallow	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	0,004	1.8E+04	2.3E-04	6.4E+04	6.2E-05
100-H-4_Shallow	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	0,004	1.8E+04	2.4E-04	7.6E+04	5.7E-05
100-H-4_Shallow	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	0,004	1.8E+04	2.5E-04	3.9E+04	1.1E-04
100-H-4_Shallow	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	0,002	1.8E+04	1.3E-04	3.9E+04	5.9E-05
100-H-4_Shallow	non-Rad	Beryllium	7440-41-7	ug/kg	0,251	1.0E+04	2.5E-02	1.4E+04	1.8E-02
100-H-4_Shallow	non-Rad	Boron	7440-42-8	ug/kg	3,026	5.0E+02	**6.1E+00**	1.3E+05	2.3E-02
100-H-4_Shallow	non-Rad	Cadmium	7440-43-9	ug/kg	0,125	4.0E+03	3.1E-02	1.6E+03	7.7E-02
100-H-4_Shallow	non-Rad	Chlordane	57-74-9	ug/kg	0,001	1.0E+03	1.4E-03	5.0E+04	2.8E-05
100-H-4_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	11,057	4.0E+02	**2.8E+01**	3.8E+04	2.9E-01
100-H-4_Shallow	non-Rad	Chrysene	218-01-9	ug/kg	0,005	1.8E+04	2.7E-04	4.5E+04	1.1E-04
100-H-4_Shallow	non-Rad	Cobalt	7440-48-4	ug/kg	5,639	1.3E+04	4.3E-01	1.1E+05	5.1E-02
100-H-4_Shallow	non-Rad	Copper	7440-50-8	ug/kg	15,398	5.0E+04	3.1E-01	1.1E+05	1.4E-01
100-H-4_Shallow	non-Rad	Fluoranthene	206-44-0	ug/kg	0,009	1.8E+04	4.9E-04	8.4E+05	1.0E-05
100-H-4_Shallow	non-Rad	Fluorene	86-73-7	ug/kg	0,003	2.9E+04	1.0E-04	1.8E+05	1.7E-05
100-H-4_Shallow	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	0,031	1.8E+04	1.7E-03	3.6E+04	8.7E-04
100-H-4_Shallow	non-Rad	Lead	7439-92-1	ug/kg	27,406	5.0E+04	5.5E-01	3.6E+04	7.7E-01
100-H-4_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	263,324	2.2E+05	**1.2E+00**	5.8E+06	4.5E-02
100-H-4_Shallow	non-Rad	Mercury	7439-97-6	ug/kg	0,408	1.0E+02	**4.1E+00**	1.9E+03	2.2E-01
100-H-4_Shallow	non-Rad	Methylene chloride	75-09-2	ug/kg	0,006	No Value	--	1.7E+05	3.5E-05
100-H-4_Shallow	non-Rad	Molybdenum	7439-98-7	ug/kg	0,466	2.0E+03	2.3E-01	1.4E+04	3.3E-02
100-H-4_Shallow	non-Rad	Nickel	7440-02-0	ug/kg	10,166	3.0E+04	3.4E-01	3.3E+04	3.1E-01
100-H-4_Shallow	Rad	Nickel-63	13981-37-8	pCi/g	0,008	No Value	--	No Value	--
100-H-4_Shallow	non-Rad	Pyrene	129-00-0	ug/kg	0,007	1.8E+04	3.8E-04	6.0E+05	1.1E-05
100-H-4_Shallow	Rad	Rads SOF	---	pCi/g	--	--	7.8E-05	--	3.5E-04
100-H-4_Shallow	non-Rad	Selenium	7782-49-2	ug/kg	0,391	5.2E+02	7.5E-01	1.9E+03	2.1E-01
100-H-4_Shallow	non-Rad	Total petroleum hydrocarbons - motor oil (high boiling)	TPH/OILH	ug/kg	30,792	No Value	--	No Value	--
100-H-4_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	2,620	5.0E+03	5.2E-01	3.6E+05	7.3E-03
100-H-4_Shallow	Rad	Uranium-233/234	U-233/234	pCi/g	0,001	5.2E+04	2.2E-05	6.4E+03	1.8E-04
100-H-4_Shallow	Rad	Uranium-238	U-238	pCi/g	0,001	1.6E+04	5.6E-05	5.2E+03	1.7E-04
100-H-4_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	50,477	2.0E+03	**2.5E+01**	3.1E+04	**1.6E+00**
100-H-4_Shallow	non-Rad	Zinc	7440-66-6	ug/kg	36,149	5.0E+04	7.2E-01	6.8E+04	5.3E-01
100-H-4_Shallow_Focusec	non-Rad	4,4'-DDT (Dichlorodiphenyltrichloroethane)	50-29-3	ug/kg	0,002	No Value	--	8.8E+02	2.4E-03
100-H-4_Shallow_Focusec	non-Rad	Acenaphthene	83-32-9	ug/kg	0,051	2.0E+04	2.6E-03	1.1E+06	4.7E-05
100-H-4_Shallow_Focusec	non-Rad	Antimony	7440-36-0	ug/kg	0,420	5.0E+03	8.4E-02	6.0E+03	7.0E-02
100-H-4_Shallow_Focusec	non-Rad	Aroclor-1254	11097-69-1	ug/kg	0,014	4.0E+04	3.5E-04	1.5E+03	9.4E-03
100-H-4_Shallow_Focusec	non-Rad	Aroclor-1260	11096-82-5	ug/kg	0,073	4.0E+04	1.8E-03	1.5E+03	5.0E-02
100-H-4_Shallow_Focusec	non-Rad	Aroclors HI	---	ug/kg	--	--	2.2E-03	--	5.9E-02
100-H-4_Shallow_Focusec	non-Rad	Arsenic	7440-38-2	ug/kg	8,800	1.0E+04	8.8E-01	1.9E+05	4.6E-02
100-H-4_Shallow_Focusec	non-Rad	Barium	7440-39-3	ug/kg	163,000	3.3E+05	4.9E-01	1.3E+06	1.2E-01
100-H-4_Shallow_Focusec	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	0,075	1.8E+04	4.1E-03	6.4E+04	1.2E-03
100-H-4_Shallow_Focusec	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	0,053	1.8E+04	2.9E-03	7.6E+04	6.9E-04
100-H-4_Shallow_Focusec	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	0,044	1.8E+04	2.5E-03	3.9E+04	1.1E-03
100-H-4_Shallow_Focusec	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	0,033	1.8E+04	1.8E-03	3.9E+04	8.4E-04
100-H-4_Shallow_Focusec	non-Rad	Beryllium	7440-41-7	ug/kg	0,310	1.0E+04	3.1E-02	1.4E+04	2.2E-02
100-H-4_Shallow_Focused	non-Rad	beta-1,2,3,4,5,6-Hexachlorocyclohexane (beta-BHC)	319-85-7	ug/kg	0,002	No Value	--	4.1E+03	5.9E-04
100-H-4_Shallow_Focusec	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	ug/kg	0,027	1.0E+05	2.7E-04	4.5E+04	5.9E-04
100-H-4_Shallow_Focusec	non-Rad	Boron	7440-42-8	ug/kg	19,400	5.0E+02	**3.9E+01**	1.3E+05	1.5E-01
100-H-4_Shallow_Focusec	non-Rad	Cadmium	7440-43-9	ug/kg	0,260	4.0E+03	6.5E-02	1.6E+03	1.6E-01
100-H-4_Shallow_Focusec	non-Rad	Chromium	7440-47-3	ug/kg	17,500	4.0E+02	**4.4E+01**	3.8E+04	4.6E-01
100-H-4_Shallow_Focusec	non-Rad	Chrysene	218-01-9	ug/kg	0,041	1.8E+04	2.3E-03	4.5E+04	9.2E-04
100-H-4_Shallow_Focusec	non-Rad	Cobalt	7440-48-4	ug/kg	7,900	1.3E+04	6.1E-01	1.1E+05	7.1E-02
100-H-4_Shallow_Focusec	non-Rad	Copper	7440-50-8	ug/kg	25,300	5.0E+04	5.1E-01	1.1E+05	2.4E-01
100-H-4_Shallow_Focusec	non-Rad	Dibenz[a,h]anthracene	53-70-3	ug/kg	0,007	1.8E+04	3.7E-04	4.4E+04	1.5E-04
100-H-4_Shallow_Focusec	non-Rad	Di-n-butylphthalate	84-74-2	ug/kg	0,017	No Value	--	No Value	--
100-H-4_Shallow_Focusec	non-Rad	Fluoranthene	206-44-0	ug/kg	0,049	1.8E+04	2.7E-03	8.4E+05	5.8E-05
100-H-4_Shallow_Focusec	non-Rad	Fluorene	86-73-7	ug/kg	0,004	2.9E+04	1.4E-04	1.8E+05	2.4E-05
100-H-4_Shallow_Focusec	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	0,020	1.8E+04	1.1E-03	3.6E+04	5.6E-04

Table 5. Comparison of 100-H OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/ Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
100-H-4_Shallow_Focusec	non-Rad	Lead	7439-92-1	ug/kg	27,400	5.0E+04	5.5E-01	3.6E+04	7.7E-01
100-H-4_Shallow_Focusec	non-Rad	Manganese	7439-96-5	ug/kg	364,000	2.2E+05	**1.7E+00**	5.8E+06	6.3E-02
100-H-4_Shallow_Focusec	non-Rad	Mercury	7439-97-6	ug/kg	0,020	1.0E+02	2.0E-01	1.9E+03	1.1E-02
100-H-4_Shallow_Focusec	non-Rad	Methoxychlor	72-43-5	ug/kg	0,002	No Value	--	2.2E+04	8.7E-05
100-H-4_Shallow_Focusec	non-Rad	Methylene chloride	75-09-2	ug/kg	0,014	No Value	--	1.7E+05	8.5E-05
100-H-4_Shallow_Focusec	non-Rad	Molybdenum	7439-98-7	ug/kg	0,730	2.0E+03	3.7E-01	1.4E+04	5.2E-02
100-H-4_Shallow_Focusec	non-Rad	Nickel	7440-02-0	ug/kg	15,200	3.0E+04	5.1E-01	3.3E+04	4.7E-01
100-H-4_Shallow_Focusec	non-Rad	Pyrene	129-00-0	ug/kg	0,046	1.8E+04	2.6E-03	6.0E+05	7.7E-05
100-H-4_Shallow_Focusec	Rad	Rads SOF	---	pCi/g	--	--	1.1E-04	--	4.9E-04
100-H-4_Shallow_Focusec	non-Rad	Selenium	7782-49-2	ug/kg	0,410	5.2E+02	7.9E-01	1.9E+03	2.2E-01
100-H-4_Shallow_Focusec	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	ug/kg	2,300	2.0E+05	1.2E-02	3.6E+08	6.5E-06
100-H-4_Shallow_Focused	non-Rad	Total petroleum hydrocarbons - motor oil (high boiling)	TPH/OILH	ug/kg	188,000	No Value	--	No Value	--
100-H-4_Shallow_Focusec	non-Rad	Uranium	7440-61-1	ug/kg	10,100	5.0E+03	**2.0E+00**	3.6E+05	2.8E-02
100-H-4_Shallow_Focusec	Rad	Uranium-233/234	U-233/234	pCi/g	0,001	5.2E+04	2.8E-05	6.4E+03	2.3E-04
100-H-4_Shallow_Focusec	Rad	Uranium-238	U-238	pCi/g	0,001	1.6E+04	8.5E-05	5.2E+03	2.6E-04
100-H-4_Shallow_Focusec	non-Rad	Vanadium	7440-62-2	ug/kg	51,500	2.0E+03	**2.6E+01**	3.1E+04	**1.7E+00**
100-H-4_Shallow_Focusec	non-Rad	Zinc	7440-66-6	ug/kg	62,500	5.0E+04	**1.3E+00**	6.8E+04	9.2E-01
100-H-40_Shallow_Focusec	non-Rad	Antimony	7440-36-0	ug/kg	2,160	5.0E+03	4.3E-01	6.0E+03	3.6E-01
100-H-40_Shallow_Focusec	non-Rad	Arsenic	7440-38-2	ug/kg	7,830	1.0E+04	7.8E-01	1.9E+05	4.1E-02
100-H-40_Shallow_Focusec	non-Rad	Barium	7440-39-3	ug/kg	68,600	3.3E+05	2.1E-01	1.3E+06	5.2E-02
100-H-40_Shallow_Focusec	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	0,019	1.8E+04	1.1E-03	6.4E+04	3.0E-04
100-H-40_Shallow_Focusec	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	0,029	1.8E+04	1.6E-03	7.6E+04	3.7E-04
100-H-40_Shallow_Focusec	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	0,133	1.8E+04	7.4E-03	3.9E+04	3.4E-03
100-H-40_Shallow_Focusec	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	0,002	1.8E+04	1.0E-04	3.9E+04	4.6E-05
100-H-40_Shallow_Focusec	non-Rad	Beryllium	7440-41-7	ug/kg	0,225	1.0E+04	2.3E-02	1.4E+04	1.6E-02
100-H-40_Shallow_Focusec	non-Rad	Boron	7440-42-8	ug/kg	2,840	5.0E+02	**5.7E+00**	1.3E+05	2.1E-02
100-H-40_Shallow_Focusec	non-Rad	Cadmium	7440-43-9	ug/kg	0,469	4.0E+03	1.2E-01	1.6E+03	2.9E-01
100-H-40_Shallow_Focusec	non-Rad	Chromium	7440-47-3	ug/kg	11,900	4.0E+02	**3.0E+01**	3.8E+04	3.1E-01
100-H-40_Shallow_Focusec	non-Rad	Chrysene	218-01-9	ug/kg	0,044	1.8E+04	2.5E-03	4.5E+04	1.0E-03
100-H-40_Shallow_Focusec	non-Rad	Cobalt	7440-48-4	ug/kg	6,590	1.3E+04	5.1E-01	1.1E+05	5.9E-02
100-H-40_Shallow_Focusec	non-Rad	Copper	7440-50-8	ug/kg	25,700	5.0E+04	5.1E-01	1.1E+05	2.4E-01
100-H-40_Shallow_Focusec	non-Rad	Dibenz[a,h]anthracene	53-70-3	ug/kg	0,004	1.8E+04	2.3E-04	4.4E+04	9.2E-05
100-H-40_Shallow_Focusec	non-Rad	Fluoranthene	206-44-0	ug/kg	0,013	1.8E+04	7.3E-04	8.4E+05	1.6E-05
100-H-40_Shallow_Focusec	non-Rad	Fluorene	86-73-7	ug/kg	0,854	2.9E+04	2.9E-02	1.8E+05	4.9E-03
100-H-40_Shallow_Focusec	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	0,031	1.8E+04	1.7E-03	3.6E+04	8.8E-04
100-H-40_Shallow_Focusec	non-Rad	Lead	7439-92-1	ug/kg	24,400	5.0E+04	4.9E-01	3.6E+04	6.9E-01
100-H-40_Shallow_Focusec	non-Rad	Manganese	7439-96-5	ug/kg	325,000	2.2E+05	**1.5E+00**	5.8E+06	5.6E-02
100-H-40_Shallow_Focusec	non-Rad	Mercury	7439-97-6	ug/kg	0,080	1.0E+02	8.0E-01	1.9E+03	4.3E-02
100-H-40_Shallow_Focusec	non-Rad	Molybdenum	7439-98-7	ug/kg	0,961	2.0E+03	4.8E-01	1.4E+04	6.9E-02
100-H-40_Shallow_Focusec	non-Rad	Nickel	7440-02-0	ug/kg	13,400	3.0E+04	4.5E-01	3.3E+04	4.1E-01
100-H-40_Shallow_Focusec	non-Rad	Pyrene	129-00-0	ug/kg	0,024	1.8E+04	1.4E-03	6.0E+05	4.1E-05
100-H-40_Shallow_Focused	non-Rad	Total petroleum hydrocarbons - motor oil (high boiling)	TPH/OILH	ug/kg	170,000	No Value	--	No Value	--
100-H-40_Shallow_Focusec	non-Rad	Vanadium	7440-62-2	ug/kg	45,300	2.0E+03	**2.3E+01**	3.1E+04	**1.5E+00**
100-H-40_Shallow_Focusec	non-Rad	Zinc	7440-66-6	ug/kg	83,400	5.0E+04	**1.7E+00**	6.8E+04	**1.2E+00**
100-H-41_Shallow_Focusec	non-Rad	2-Methylnaphthalene	91-57-6	ug/kg	0,501	2.9E+04	1.7E-02	6.0E+03	8.3E-02
100-H-41_Shallow_Focusec	non-Rad	Acenaphthene	83-32-9	ug/kg	0,344	2.0E+04	1.7E-02	1.1E+06	3.1E-04
100-H-41_Shallow_Focusec	non-Rad	Anthracene	120-12-7	ug/kg	0,341	2.9E+04	1.2E-02	6.8E+05	5.0E-04
100-H-41_Shallow_Focusec	non-Rad	Arsenic	7440-38-2	ug/kg	8,020	1.0E+04	8.0E-01	1.9E+05	4.2E-02
100-H-41_Shallow_Focusec	non-Rad	Barium	7440-39-3	ug/kg	86,200	3.3E+05	2.6E-01	1.3E+06	6.5E-02
100-H-41_Shallow_Focusec	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	1,110	1.8E+04	6.2E-02	6.4E+04	1.7E-02
100-H-41_Shallow_Focusec	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	0,971	1.8E+04	5.4E-02	7.6E+04	1.3E-02
100-H-41_Shallow_Focusec	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	1,270	1.8E+04	7.1E-02	3.9E+04	3.2E-02
100-H-41_Shallow_Focusec	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	0,396	1.8E+04	2.2E-02	3.9E+04	1.0E-02
100-H-41_Shallow_Focusec	non-Rad	Beryllium	7440-41-7	ug/kg	0,298	1.0E+04	3.0E-02	1.4E+04	2.1E-02
100-H-41_Shallow_Focusec	non-Rad	Boron	7440-42-8	ug/kg	1,110	5.0E+02	**2.2E+00**	1.3E+05	8.4E-03
100-H-41_Shallow_Focusec	non-Rad	Cadmium	7440-43-9	ug/kg	0,088	4.0E+03	2.2E-02	1.6E+03	5.4E-02
100-H-41_Shallow_Focusec	non-Rad	Carbazole	86-74-8	ug/kg	3,740	No Value	--	No Value	--
100-H-41_Shallow_Focusec	non-Rad	Chromium	7440-47-3	ug/kg	18,500	4.0E+02	**4.6E+01**	3.8E+04	4.9E-01
100-H-41_Shallow_Focusec	non-Rad	Chrysene	218-01-9	ug/kg	0,854	1.8E+04	4.7E-02	4.5E+04	1.9E-02
100-H-41_Shallow_Focusec	non-Rad	Cobalt	7440-48-4	ug/kg	6,070	1.3E+04	4.7E-01	1.1E+05	5.4E-02
100-H-41_Shallow_Focusec	non-Rad	Copper	7440-50-8	ug/kg	14,200	5.0E+04	2.8E-01	1.1E+05	1.3E-01
100-H-41_Shallow_Focusec	non-Rad	Dibenz[a,h]anthracene	53-70-3	ug/kg	0,123	1.8E+04	6.8E-03	4.4E+04	2.8E-03
100-H-41_Shallow_Focusec	non-Rad	Dibenzofuran	132-64-9	ug/kg	1,630	No Value	--	No Value	--
100-H-41_Shallow_Focusec	non-Rad	Fluoranthene	206-44-0	ug/kg	2,310	1.8E+04	1.3E-01	8.4E+05	2.8E-03
100-H-41_Shallow_Focusec	non-Rad	Fluorene	86-73-7	ug/kg	0,200	2.9E+04	6.9E-03	1.8E+05	1.1E-03
100-H-41_Shallow_Focusec	non-Rad	Fluoride	16984-48-8	ug/kg	0,500	No Value	--	2.3E+06	2.2E-04
100-H-41_Shallow_Focusec	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	0,200	No Value	--	1.3E+06	1.6E-04
100-H-41_Shallow_Focusec	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	0,593	1.8E+04	3.3E-02	3.6E+04	1.7E-02
100-H-41_Shallow_Focusec	non-Rad	Lead	7439-92-1	ug/kg	7,690	5.0E+04	1.5E-01	3.6E+04	2.2E-01
100-H-41_Shallow_Focusec	non-Rad	Manganese	7439-96-5	ug/kg	281,000	2.2E+05	**1.3E+00**	5.8E+06	4.9E-02
100-H-41_Shallow_Focusec	non-Rad	Molybdenum	7439-98-7	ug/kg	0,237	2.0E+03	1.2E-01	1.4E+04	1.7E-02
100-H-41_Shallow_Focusec	non-Rad	Naphthalene	91-20-3	ug/kg	0,622	2.9E+04	2.1E-02	1.0E+05	6.2E-03
100-H-41_Shallow_Focusec	non-Rad	Nickel	7440-02-0	ug/kg	15,300	3.0E+04	5.1E-01	3.3E+04	4.7E-01
100-H-41_Shallow_Focusec	non-Rad	Pyrene	129-00-0	ug/kg	1,530	1.8E+04	8.5E-02	6.0E+05	2.6E-03
100-H-41_Shallow_Focusec	non-Rad	Vanadium	7440-62-2	ug/kg	40,900	2.0E+03	**2.1E+01**	3.1E+04	**1.3E+00**
100-H-41_Shallow_Focusec	non-Rad	Zinc	7440-66-6	ug/kg	46,500	5.0E+04	9.3E-01	6.8E+04	6.9E-01
100-H-45_Shallow_Focusec	non-Rad	Antimony	7440-36-0	ug/kg	0,288	5.0E+03	5.8E-02	6.0E+03	4.8E-02
100-H-45_Shallow_Focusec	non-Rad	Arsenic	7440-38-2	ug/kg	1,430	1.0E+04	1.4E-01	1.9E+05	7.6E-03
100-H-45_Shallow_Focusec	non-Rad	Barium	7440-39-3	ug/kg	32,900	3.3E+05	1.0E-01	1.3E+06	2.5E-02
100-H-45_Shallow_Focusec	non-Rad	Beryllium	7440-41-7	ug/kg	0,129	1.0E+04	1.3E-02	1.4E+04	9.3E-03
100-H-45_Shallow_Focusec	non-Rad	Boron	7440-42-8	ug/kg	0,584	5.0E+02	**1.2E+00**	1.3E+05	4.4E-03
100-H-45_Shallow_Focusec	non-Rad	Cadmium	7440-43-9	ug/kg	0,054	4.0E+03	1.4E-02	1.6E+03	3.3E-02
100-H-45_Shallow_Focusec	non-Rad	Chromium	7440-47-3	ug/kg	9,910	4.0E+02	**2.5E+01**	3.8E+04	2.6E-01
100-H-45_Shallow_Focusec	non-Rad	Cobalt	7440-48-4	ug/kg	4,180	1.3E+04	3.2E-01	1.1E+05	3.8E-02
100-H-45_Shallow_Focusec	non-Rad	Copper	7440-50-8	ug/kg	10,500	5.0E+04	2.1E-01	1.1E+05	9.8E-02
100-H-45_Shallow_Focusec	non-Rad	Lead	7439-92-1	ug/kg	1,870	5.0E+04	3.7E-02	3.6E+04	5.3E-02
100-H-45_Shallow_Focusec	non-Rad	Manganese	7439-96-5	ug/kg	227,000	2.2E+05	**1.0E+00**	5.8E+06	3.9E-02
100-H-45_Shallow_Focusec	non-Rad	Molybdenum	7439-98-7	ug/kg	0,262	2.0E+03	1.3E-01	1.4E+04	1.9E-02
100-H-45_Shallow_Focusec	non-Rad	Nickel	7440-02-0	ug/kg	7,780	3.0E+04	2.6E-01	3.3E+04	2.4E-01
100-H-45_Shallow_Focusec	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	ug/kg	1,080	2.0E+05	5.4E-03	3.6E+08	3.0E-06
100-H-45_Shallow_Focusec	non-Rad	Vanadium	7440-62-2	ug/kg	42,600	2.0E+03	**2.1E+01**	3.1E+04	**1.4E+00**
100-H-45_Shallow_Focusec	non-Rad	Zinc	7440-66-6	ug/kg	28,200	5.0E+04	5.6E-01	6.8E+04	4.2E-01
100-H-49:2_Shallow_Focusec	non-Rad	4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	ug/kg	0,005	No Value	--	4.0E+02	1.3E-02
100-H-49:2_Shallow_Focusec	non-Rad	4,4'-DDT (Dichlorodiphenyltrichloroethane)	50-29-3	ug/kg	0,002	No Value	--	8.8E+02	2.8E-03
100-H-49:2_Shallow_Focusec	non-Rad	Acenaphthene	83-32-9	ug/kg	0,213	2.0E+04	1.1E-02	1.1E+06	1.9E-04
100-H-49:2_Shallow_Focusec	non-Rad	Anthracene	120-12-7	ug/kg	0,013	2.9E+04	4.6E-04	6.8E+05	2.0E-05
100-H-49:2_Shallow_Focusec	non-Rad	Antimony	7440-36-0	ug/kg	0,332	5.0E+03	6.6E-02	6.0E+03	5.6E-02
100-H-49:2_Shallow_Focusec	non-Rad	Aroclor-1254	11097-69-1	ug/kg	0,052	4.0E+04	1.3E-03	1.5E+03	3.5E-02
100-H-49:2_Shallow_Focusec	non-Rad	Aroclor-1260	11096-82-5	ug/kg	0,048	4.0E+04	1.2E-03	1.5E+03	3.2E-02
100-H-49:2_Shallow_Focusec	non-Rad	Aroclors HI	---	ug/kg	--	--	2.5E-03	--	6.7E-02
100-H-49:2_Shallow_Focusec	non-Rad	Arsenic	7440-38-2	ug/kg	8,910	1.0E+04	8.9E-01	1.9E+05	4.7E-02
100-H-49:2_Shallow_Focusec	non-Rad	Barium	7440-39-3	ug/kg	175,000	3.3E+05	5.3E-01	1.3E+06	1.3E-01
100-H-49:2_Shallow_Focusec	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	0,020	1.8E+04	1.1E-03	6.4E+04	3.1E-04
100-H-49:2_Shallow_Focusec	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	0,034	1.8E+04	1.9E-03	7.6E+04	4.4E-04
100-H-49:2_Shallow_Focusec	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	0,088	1.8E+04	4.9E-03	3.9E+04	2.2E-03
100-H-49:2_Shallow_Focusec	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	0,017	1.8E+04	9.3E-04	3.9E+04	4.3E-04
100-H-49:2_Shallow_Focusec	non-Rad	Beryllium	7440-41-7	ug/kg	0,337	1.0E+04	3.4E-02	1.4E+04	2.4E-02
100-H-49:2_Shallow_Focused	non-Rad	beta-1,2,3,4,5,6-Hexachlorocyclohexane (beta-BHC)	319-85-7	ug/kg	0,003	No Value	--	4.1E+03	7.5E-04
100-H-49:2_Shallow_Focusec	non-Rad	Boron	7440-42-8	ug/kg	5,660	5.0E+02	**1.1E+01**	1.3E+05	4.3E-02
100-H-49:2_Shallow_Focusec	non-Rad	Cadmium	7440-43-9	ug/kg	0,255	4.0E+03	6.4E-02	1.6E+03	1.6E-01
100-H-49:2_Shallow_Focusec	Rad	Carbon-14	14762-75-5	pCi/g	0,002	6.1E+04	2.6E-05	3.2E+01	5.0E-02
100-H-49:2_Shallow_Focusec	Rad	Cesium-137	10045-97-3	pCi/g	0,000	2.2E+03	5.5E-05	9.2E+02	1.3E-04
100-H-49:2_Shallow_Focusec	non-Rad	Chromium	7440-47-3	ug/kg	18,800	4.0E+02	**4.7E+01**	3.8E+04	4.9E-01
100-H-49:2_Shallow_Focusec	non-Rad	Chrysene	218-01-9	ug/kg	0,316	1.8E+04	1.8E-02	4.5E+04	7.1E-03
100-H-49:2_Shallow_Focusec	non-Rad	Cobalt	7440-48-4	ug/kg	6,820	1.3E+04	5.3E-01	1.1E+05	6.1E-02
100-H-49:2_Shallow_Focusec	non-Rad	Copper	7440-50-8	ug/kg	27,200	5.0E+04	5.4E-01	1.1E+05	2.5E-01
100-H-49:2_Shallow_Focusec	non-Rad	Dibenz[a,h]anthracene	53-70-3	ug/kg	0,024	1.8E+04	1.3E-03	4.4E+04	5.4E-04
100-H-49:2_Shallow_Focusec	non-Rad	Fluoranthene	206-44-0	ug/kg	0,248	1.8E+04	1.4E-02	8.4E+05	3.0E-04
100-H-49:2_Shallow_Focusec	non-Rad	Fluorene	86-73-7	ug/kg	0,089	2.9E+04	3.1E-03	1.8E+05	5.1E-04
100-H-49:2_Shallow_Focusec	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	0,051	1.8E+04	2.9E-03	3.6E+04	1.4E-03
100-H-49:2_Shallow_Focusec	non-Rad	Lead	7439-92-1	ug/kg	46,200	5.0E+04	9.2E-01	3.6E+04	**1.3E+00**

Table 5. Comparison of 100-H OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/ Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
100-H-49:2_Shallow_Focusec	non-Rad	Manganese	7439-96-5	ug/kg	291,000	2.2E+05	**1.3E+00**	5.8E+06	5.0E-02
100-H-49:2_Shallow_Focusec	non-Rad	Mercury	7439-97-6	ug/kg	0,013	1.0E+02	1.3E-01	1.9E+03	7.0E-03
100-H-49:2_Shallow_Focusec	non-Rad	Methoxychlor	72-43-5	ug/kg	0,002	No Value	--	2.2E+04	7.1E-05
100-H-49:2_Shallow_Focusec	non-Rad	Methylene chloride	75-09-2	ug/kg	0,010	No Value	--	1.7E+05	6.0E-05
100-H-49:2_Shallow_Focusec	non-Rad	Molybdenum	7439-98-7	ug/kg	0,489	2.0E+03	2.5E-01	1.4E+04	3.5E-02
100-H-49:2_Shallow_Focusec	non-Rad	Naphthalene	91-20-3	ug/kg	0,115	2.9E+04	4.0E-03	1.0E+05	1.2E-03
100-H-49:2_Shallow_Focusec	non-Rad	Nickel	7440-02-0	ug/kg	16,600	3.0E+04	5.5E-01	3.3E+04	5.1E-01
100-H-49:2_Shallow_Focusec	non-Rad	Nitrate	14797-55-8	ug/kg	4,400	No Value	--	3.4E+08	1.3E-05
100-H-49:2_Shallow_Focusec	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	ug/kg	1,360	No Value	--	No Value	--
100-H-49:2_Shallow_Focusec	non-Rad	Pyrene	129-00-0	ug/kg	0,041	1.8E+04	2.3E-03	6.0E+05	6.8E-05
100-H-49:2_Shallow_Focusec	Rad	Rads SOF	---	pCi/g	--	--	8.1E-05	--	5.0E-02
100-H-49:2_Shallow_Focusec	non-Rad	Silver	7440-22-4	ug/kg	0,547	2.0E+03	2.7E-01	5.0E+04	1.1E-02
100-H-49:2_Shallow_Focusec	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	ug/kg	63,800	2.0E+05	3.2E-01	3.6E+08	1.8E-04
100-H-49:2_Shallow_Focused	non-Rad	Total petroleum hydrocarbons - motor oil (high boiling)	TPH/OILH	ug/kg	121,000	No Value	--	No Value	--
100-H-49:2_Shallow_Focusec	non-Rad	Vanadium	7440-62-2	ug/kg	48,900	2.0E+03	**2.5E+01**	3.1E+04	**1.6E+00**
100-H-49:2_Shallow_Focusec	non-Rad	Zinc	7440-66-6	ug/kg	96,700	5.0E+04	**1.9E+00**	6.8E+04	**1.4E+00**
100-H-5_Shallow	non-Rad	Arsenic	7440-38-2	ug/kg	4,586	1.0E+04	4.6E-01	1.9E+05	2.4E-02
100-H-5_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0,000	2.2E+03	3.3E-05	9.2E+02	7.8E-05
100-H-5_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	11,199	4.0E+02	**2.8E+01**	3.8E+04	2.9E-01
100-H-5_Shallow	non-Rad	Lead	7439-92-1	ug/kg	12,871	5.0E+04	2.6E-01	3.6E+04	3.6E-01
100-H-5_Shallow	non-Rad	Mercury	7439-97-6	ug/kg	0,072	1.0E+02	7.2E-01	1.9E+03	3.9E-02
100-H-5_Shallow	Rad	Rads SOF	---	pCi/g	--	--	9.1E-05	--	3.4E-04
100-H-5_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	1,869	5.0E+03	3.7E-01	3.6E+05	5.2E-03
100-H-5_Shallow	Rad	Uranium-233/234	U-233/234	pCi/g	0,001	5.2E+04	1.2E-05	6.4E+03	9.9E-05
100-H-5_Shallow	Rad	Uranium-235	15117-96-1	pCi/g	0,000	2.7E+04	6.7E-06	4.4E+03	4.2E-05
100-H-5_Shallow	Rad	Uranium-238	U-238	pCi/g	0,001	1.6E+04	4.0E-05	5.2E+03	1.2E-04
100-H-50_Shallow_Focusec	non-Rad	Arsenic	7440-38-2	ug/kg	4,860	1.0E+04	4.9E-01	1.9E+05	2.6E-02
100-H-50_Shallow_Focusec	non-Rad	Barium	7440-39-3	ug/kg	62,000	3.3E+05	1.9E-01	1.3E+06	4.7E-02
100-H-50_Shallow_Focusec	non-Rad	Beryllium	7440-41-7	ug/kg	0,272	1.0E+04	2.7E-02	1.4E+04	2.0E-02
100-H-50_Shallow_Focusec	non-Rad	Boron	7440-42-8	ug/kg	2,420	5.0E+02	**4.8E+00**	1.3E+05	1.8E-02
100-H-50_Shallow_Focusec	non-Rad	Cadmium	7440-43-9	ug/kg	0,140	4.0E+03	3.5E-02	1.6E+03	8.6E-02
100-H-50_Shallow_Focusec	non-Rad	Chromium	7440-47-3	ug/kg	15,100	4.0E+02	**3.8E+01**	3.8E+04	4.0E-01
100-H-50_Shallow_Focusec	non-Rad	Cobalt	7440-48-4	ug/kg	6,130	1.3E+04	4.7E-01	1.1E+05	5.5E-02
100-H-50_Shallow_Focusec	non-Rad	Copper	7440-50-8	ug/kg	13,700	5.0E+04	2.7E-01	1.1E+05	1.3E-01
100-H-50_Shallow_Focusec	non-Rad	Lead	7439-92-1	ug/kg	12,600	5.0E+04	2.5E-01	3.6E+04	3.5E-01
100-H-50_Shallow_Focusec	non-Rad	Manganese	7439-96-5	ug/kg	284,000	2.2E+05	**1.3E+00**	5.8E+06	4.9E-02
100-H-50_Shallow_Focusec	non-Rad	Mercury	7439-97-6	ug/kg	0,034	1.0E+02	3.4E-01	1.9E+03	1.8E-02
100-H-50_Shallow_Focusec	non-Rad	Molybdenum	7439-98-7	ug/kg	0,361	2.0E+03	1.8E-01	1.4E+04	2.6E-02
100-H-50_Shallow_Focusec	non-Rad	Nickel	7440-02-0	ug/kg	13,600	3.0E+04	4.5E-01	3.3E+04	4.2E-01
100-H-50_Shallow_Focusec	non-Rad	Selenium	7782-49-2	ug/kg	0,257	5.2E+02	4.9E-01	1.9E+03	1.4E-01
100-H-50_Shallow_Focusec	non-Rad	Vanadium	7440-62-2	ug/kg	53,200	2.0E+03	**2.7E+01**	3.1E+04	**1.7E+00**
100-H-50_Shallow_Focusec	non-Rad	Zinc	7440-66-6	ug/kg	45,100	5.0E+04	9.0E-01	6.8E+04	6.7E-01
100-H-51-4_Shallow_Focusec	non-Rad	Acenaphthene	83-32-9	ug/kg	0,003	2.0E+04	1.4E-04	1.1E+06	2.5E-06
100-H-51-4_Shallow_Focusec	non-Rad	Arsenic	7440-38-2	ug/kg	5,940	1.0E+04	5.9E-01	1.9E+05	3.1E-02
100-H-51-4_Shallow_Focusec	non-Rad	Barium	7440-39-3	ug/kg	112,000	3.3E+05	3.4E-01	1.3E+06	8.5E-02
100-H-51-4_Shallow_Focusec	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	0,002	1.8E+04	1.0E-04	6.4E+04	2.9E-05
100-H-51-4_Shallow_Focusec	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	0,005	1.8E+04	2.7E-04	7.6E+04	6.4E-05
100-H-51-4_Shallow_Focusec	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	0,006	1.8E+04	3.2E-04	3.9E+04	1.5E-04
100-H-51-4_Shallow_Focusec	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	0,002	1.8E+04	1.2E-04	3.9E+04	5.6E-05
100-H-51-4_Shallow_Focusec	non-Rad	Beryllium	7440-41-7	ug/kg	0,345	1.0E+04	3.5E-02	1.4E+04	2.5E-02
100-H-51-4_Shallow_Focusec	non-Rad	Boron	7440-42-8	ug/kg	1,650	5.0E+02	**3.3E+00**	1.3E+05	1.2E-02
100-H-51-4_Shallow_Focusec	non-Rad	Cadmium	7440-43-9	ug/kg	0,810	4.0E+03	2.0E-01	1.6E+03	5.0E-01
100-H-51-4_Shallow_Focusec	non-Rad	Chromium	7440-47-3	ug/kg	13,500	4.0E+02	**3.4E+01**	3.8E+04	3.5E-01
100-H-51-4_Shallow_Focusec	non-Rad	Chrysene	218-01-9	ug/kg	0,001	1.8E+04	5.8E-05	4.5E+04	2.3E-05
100-H-51-4_Shallow_Focusec	non-Rad	Cobalt	7440-48-4	ug/kg	7,450	1.3E+04	5.7E-01	1.1E+05	6.7E-02
100-H-51-4_Shallow_Focusec	non-Rad	Copper	7440-50-8	ug/kg	14,700	5.0E+04	2.9E-01	1.1E+05	1.4E-01
100-H-51-4_Shallow_Focusec	non-Rad	Fluoranthene	206-44-0	ug/kg	0,001	1.8E+04	7.1E-05	8.4E+05	1.5E-06
100-H-51-4_Shallow_Focusec	non-Rad	Lead	7439-92-1	ug/kg	6,470	5.0E+04	1.3E-01	3.6E+04	1.8E-01
100-H-51-4_Shallow_Focusec	non-Rad	Manganese	7439-96-5	ug/kg	504,000	2.2E+05	**2.3E+00**	5.8E+06	8.7E-02
100-H-51-4_Shallow_Focusec	non-Rad	Mercury	7439-97-6	ug/kg	0,045	1.0E+02	4.5E-01	1.9E+03	2.4E-02
100-H-51-4_Shallow_Focusec	non-Rad	Molybdenum	7439-98-7	ug/kg	0,401	2.0E+03	2.0E-01	1.4E+04	2.9E-02
100-H-51-4_Shallow_Focusec	non-Rad	Nickel	7440-02-0	ug/kg	12,600	3.0E+04	4.2E-01	3.3E+04	3.9E-01
100-H-51-4_Shallow_Focusec	non-Rad	Selenium	7782-49-2	ug/kg	0,276	5.2E+02	5.3E-01	1.9E+03	1.5E-01
100-H-51-4_Shallow_Focusec	non-Rad	Vanadium	7440-62-2	ug/kg	46,300	2.0E+03	**2.3E+01**	3.1E+04	**1.5E+00**
100-H-51-4_Shallow_Focusec	non-Rad	Zinc	7440-66-6	ug/kg	79,100	5.0E+04	**1.6E+00**	6.8E+04	**1.2E+00**
100-H-51-5_Shallow_Focusec	non-Rad	Acenaphthene	83-32-9	ug/kg	0,037	2.0E+04	1.9E-03	1.1E+06	3.4E-05
100-H-51-5_Shallow_Focusec	non-Rad	Anthracene	120-12-7	ug/kg	0,001	2.9E+04	3.2E-05	6.8E+05	1.4E-06
100-H-51-5_Shallow_Focusec	non-Rad	Arsenic	7440-38-2	ug/kg	3,470	1.0E+04	3.5E-01	1.9E+05	1.8E-02
100-H-51-5_Shallow_Focusec	non-Rad	Barium	7440-39-3	ug/kg	199,000	3.3E+05	6.0E-01	1.3E+06	1.5E-01
100-H-51-5_Shallow_Focusec	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	0,003	1.8E+04	1.7E-04	6.4E+04	4.6E-05
100-H-51-5_Shallow_Focusec	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	0,006	1.8E+04	3.6E-04	7.6E+04	8.5E-05
100-H-51-5_Shallow_Focusec	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	0,007	1.8E+04	3.8E-04	3.9E+04	1.7E-04
100-H-51-5_Shallow_Focusec	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	0,004	1.8E+04	2.2E-04	3.9E+04	1.0E-04
100-H-51-5_Shallow_Focusec	non-Rad	Beryllium	7440-41-7	ug/kg	0,383	1.0E+04	3.8E-02	1.4E+04	2.8E-02
100-H-51-5_Shallow_Focusec	non-Rad	Boron	7440-42-8	ug/kg	26,300	5.0E+02	**5.3E+01**	1.3E+05	2.0E-01
100-H-51-5_Shallow_Focusec	non-Rad	Cadmium	7440-43-9	ug/kg	0,133	4.0E+03	3.3E-02	1.6E+03	8.2E-02
100-H-51-5_Shallow_Focusec	non-Rad	Chromium	7440-47-3	ug/kg	11,400	4.0E+02	**2.9E+01**	3.8E+04	3.0E-01
100-H-51-5_Shallow_Focusec	non-Rad	Chrysene	218-01-9	ug/kg	0,016	1.8E+04	8.6E-04	4.5E+04	3.5E-04
100-H-51-5_Shallow_Focusec	non-Rad	Cobalt	7440-48-4	ug/kg	5,800	1.3E+04	4.5E-01	1.1E+05	5.2E-02
100-H-51-5_Shallow_Focusec	non-Rad	Copper	7440-50-8	ug/kg	13,000	5.0E+04	2.6E-01	1.1E+05	1.2E-01
100-H-51-5_Shallow_Focusec	non-Rad	Dibenz[a,h]anthracene	53-70-3	ug/kg	0,004	1.8E+04	2.2E-04	4.4E+04	8.8E-05
100-H-51-5_Shallow_Focusec	non-Rad	Fluoranthene	206-44-0	ug/kg	0,009	1.8E+04	5.1E-04	8.4E+05	1.1E-05
100-H-51-5_Shallow_Focusec	non-Rad	Fluorene	86-73-7	ug/kg	0,010	2.9E+04	3.6E-04	1.8E+05	5.9E-05
100-H-51-5_Shallow_Focusec	non-Rad	Lead	7439-92-1	ug/kg	6,250	5.0E+04	1.3E-01	3.6E+04	1.8E-01
100-H-51-5_Shallow_Focusec	non-Rad	Manganese	7439-96-5	ug/kg	290,000	2.2E+05	**1.3E+00**	5.8E+06	5.0E-02
100-H-51-5_Shallow_Focusec	non-Rad	Molybdenum	7439-98-7	ug/kg	0,440	2.0E+03	2.2E-01	1.4E+04	3.2E-02
100-H-51-5_Shallow_Focusec	non-Rad	Naphthalene	91-20-3	ug/kg	0,016	2.9E+04	5.5E-04	1.0E+05	1.6E-04
100-H-51-5_Shallow_Focusec	non-Rad	Nickel	7440-02-0	ug/kg	10,700	3.0E+04	3.6E-01	3.3E+04	3.3E-01
100-H-51-5_Shallow_Focusec	non-Rad	Pyrene	129-00-0	ug/kg	0,006	1.8E+04	3.2E-04	6.0E+05	9.6E-06
100-H-51-5_Shallow_Focusec	non-Rad	Selenium	7782-49-2	ug/kg	0,221	5.2E+02	4.3E-01	1.9E+03	1.2E-01
100-H-51-5_Shallow_Focusec	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	ug/kg	19,900	2.0E+05	1.0E-01	3.6E+08	5.6E-05
100-H-51-5_Shallow_Focused	non-Rad	Total petroleum hydrocarbons - motor oil (high boiling)	TPH/OILH	ug/kg	47,700	No Value	--	No Value	--
100-H-51-5_Shallow_Focusec	non-Rad	Vanadium	7440-62-2	ug/kg	38,600	2.0E+03	**1.9E+01**	3.1E+04	**1.2E+00**
100-H-51-5_Shallow_Focusec	non-Rad	Zinc	7440-66-6	ug/kg	36,300	5.0E+04	7.3E-01	6.8E+04	5.4E-01
100-H-53_Shallow_Focusec	non-Rad	Acenaphthene	83-32-9	ug/kg	0,007	2.0E+04	3.7E-04	1.1E+06	6.7E-06
100-H-53_Shallow_Focusec	non-Rad	Arsenic	7440-38-2	ug/kg	5,580	1.0E+04	5.6E-01	1.9E+05	2.9E-02
100-H-53_Shallow_Focusec	non-Rad	Barium	7440-39-3	ug/kg	52,300	3.3E+05	1.6E-01	1.3E+06	4.0E-02
100-H-53_Shallow_Focusec	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	0,061	1.8E+04	3.4E-03	6.4E+04	9.6E-04
100-H-53_Shallow_Focusec	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	0,009	1.8E+04	4.7E-04	7.6E+04	1.1E-04
100-H-53_Shallow_Focusec	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	0,008	1.8E+04	4.3E-04	3.9E+04	2.0E-04
100-H-53_Shallow_Focusec	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	0,003	1.8E+04	1.9E-04	3.9E+04	8.5E-05
100-H-53_Shallow_Focusec	non-Rad	Beryllium	7440-41-7	ug/kg	0,231	1.0E+04	2.3E-02	1.4E+04	1.7E-02
100-H-53_Shallow_Focusec	non-Rad	Boron	7440-42-8	ug/kg	1,310	5.0E+02	**2.6E+00**	1.3E+05	9.9E-03
100-H-53_Shallow_Focusec	non-Rad	Cadmium	7440-43-9	ug/kg	0,397	4.0E+03	9.9E-02	1.6E+03	2.4E-01
100-H-53_Shallow_Focusec	Rad	Cesium-137	10045-97-3	pCi/g	0,000	2.2E+03	6.9E-05	9.2E+02	1.7E-04
100-H-53_Shallow_Focusec	non-Rad	Chromium	7440-47-3	ug/kg	15,900	4.0E+02	**4.0E+01**	3.8E+04	4.2E-01
100-H-53_Shallow_Focusec	non-Rad	Chrysene	218-01-9	ug/kg	0,022	1.8E+04	1.2E-03	4.5E+04	4.9E-04
100-H-53_Shallow_Focusec	non-Rad	Cobalt	7440-48-4	ug/kg	10,500	1.3E+04	8.1E-01	1.1E+05	9.4E-02
100-H-53_Shallow_Focusec	non-Rad	Copper	7440-50-8	ug/kg	15,800	5.0E+04	3.2E-01	1.1E+05	1.5E-01
100-H-53_Shallow_Focusec	non-Rad	Dibenz[a,h]anthracene	53-70-3	ug/kg	0,001	1.8E+04	6.3E-05	4.4E+04	2.6E-05
100-H-53_Shallow_Focusec	non-Rad	Fluoranthene	206-44-0	ug/kg	0,082	1.8E+04	4.6E-03	8.4E+05	9.8E-05
100-H-53_Shallow_Focusec	non-Rad	Fluorene	86-73-7	ug/kg	0,002	2.9E+04	6.2E-05	1.8E+05	1.0E-05
100-H-53_Shallow_Focusec	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	1,520	No Value	--	1.3E+06	1.2E-03
100-H-53_Shallow_Focusec	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	0,024	1.8E+04	1.3E-03	3.6E+04	6.6E-04
100-H-53_Shallow_Focusec	non-Rad	Lead	7439-92-1	ug/kg	35,900	5.0E+04	7.2E-01	3.6E+04	**1.0E+00**
100-H-53_Shallow_Focusec	non-Rad	Manganese	7439-96-5	ug/kg	300,000	2.2E+05	**1.4E+00**	5.8E+06	5.2E-02
100-H-53_Shallow_Focusec	non-Rad	Molybdenum	7439-98-7	ug/kg	3,840	2.0E+03	**1.9E+00**	1.4E+04	2.8E-01
100-H-53_Shallow_Focusec	non-Rad	Naphthalene	91-20-3	ug/kg	0,007	2.9E+04	2.3E-04	1.0E+05	6.6E-05
100-H-53_Shallow_Focusec	non-Rad	Nickel	7440-02-0	ug/kg	13,200	3.0E+04	4.4E-01	3.3E+04	4.1E-01
100-H-53_Shallow_Focusec	non-Rad	Pyrene	129-00-0	ug/kg	0,042	1.8E+04	2.3E-03	6.0E+05	6.9E-05
100-H-53_Shallow_Focusec	non-Rad	Vanadium	7440-62-2	ug/kg	35,100	2.0E+03	**1.8E+01**	3.1E+04	**1.1E+00**
100-H-53_Shallow_Focusec	non-Rad	Zinc	7440-66-6	ug/kg	79,900	5.0E+04	**1.6E+00**	6.8E+04	**1.2E+00**

Table 5. Comparison of 100-H OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/ Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
100-H-7_Shallow_Focusec	non-Rad	Antimony	7440-36-0	ug/kg	0,470	5.0E+03	9.4E-02	6.0E+03	7.9E-02
100-H-7_Shallow_Focusec	non-Rad	Arsenic	7440-38-2	ug/kg	2,600	1.0E+04	2.6E-01	1.9E+05	1.4E-02
100-H-7_Shallow_Focusec	non-Rad	Barium	7440-39-3	ug/kg	47,200	3.3E+05	1.4E-01	1.3E+06	3.6E-02
100-H-7_Shallow_Focusec	non-Rad	Beryllium	7440-41-7	ug/kg	0,330	1.0E+04	3.3E-02	1.4E+04	2.4E-02
100-H-7_Shallow_Focusec	non-Rad	Boron	7440-42-8	ug/kg	0,930	5.0E+02	**1.9E+00**	1.3E+05	7.0E-03
100-H-7_Shallow_Focusec	non-Rad	Cadmium	7440-43-9	ug/kg	0,110	4.0E+03	2.8E-02	1.6E+03	6.8E-02
100-H-7_Shallow_Focusec	non-Rad	Chromium	7440-47-3	ug/kg	9,700	4.0E+02	**2.4E+01**	3.8E+04	2.5E-01
100-H-7_Shallow_Focusec	non-Rad	Cobalt	7440-48-4	ug/kg	6,800	1.3E+04	5.2E-01	1.1E+05	6.1E-02
100-H-7_Shallow_Focusec	non-Rad	Copper	7440-50-8	ug/kg	15,100	5.0E+04	3.0E-01	1.1E+05	1.4E-01
100-H-7_Shallow_Focusec	non-Rad	Lead	7439-92-1	ug/kg	8,900	5.0E+04	1.8E-01	3.6E+04	2.5E-01
100-H-7_Shallow_Focusec	non-Rad	Manganese	7439-96-5	ug/kg	264,000	2.2E+05	**1.2E+00**	5.8E+06	4.6E-02
100-H-7_Shallow_Focusec	non-Rad	Molybdenum	7439-98-7	ug/kg	0,620	2.0E+03	3.1E-01	1.4E+04	4.4E-02
100-H-7_Shallow_Focusec	non-Rad	Nickel	7440-02-0	ug/kg	9,900	3.0E+04	3.3E-01	3.3E+04	3.0E-01
100-H-7_Shallow_Focusec	non-Rad	Vanadium	7440-62-2	ug/kg	57,100	2.0E+03	**2.9E+01**	3.1E+04	**1.8E+00**
100-H-7_Shallow_Focusec	non-Rad	Zinc	7440-66-6	ug/kg	39,200	5.0E+04	7.8E-01	6.8E+04	5.8E-01
100-H-8_Shallow_Focusec	non-Rad	Antimony	7440-36-0	ug/kg	0,520	5.0E+03	1.0E-01	6.0E+03	8.7E-02
100-H-8_Shallow_Focusec	non-Rad	Arsenic	7440-38-2	ug/kg	7,300	1.0E+04	7.3E-01	1.9E+05	3.9E-02
100-H-8_Shallow_Focusec	non-Rad	Barium	7440-39-3	ug/kg	68,100	3.3E+05	2.1E-01	1.3E+06	5.2E-02
100-H-8_Shallow_Focusec	non-Rad	Beryllium	7440-41-7	ug/kg	0,440	1.0E+04	4.4E-02	1.4E+04	3.2E-02
100-H-8_Shallow_Focusec	non-Rad	Boron	7440-42-8	ug/kg	1,200	5.0E+02	**2.4E+00**	1.3E+05	9.0E-03
100-H-8_Shallow_Focusec	non-Rad	Cadmium	7440-43-9	ug/kg	0,340	4.0E+03	8.5E-02	1.6E+03	2.1E-01
100-H-8_Shallow_Focusec	non-Rad	Chromium	7440-47-3	ug/kg	13,500	4.0E+02	**3.4E+01**	3.8E+04	3.5E-01
100-H-8_Shallow_Focusec	non-Rad	Cobalt	7440-48-4	ug/kg	8,300	1.3E+04	6.4E-01	1.1E+05	7.4E-02
100-H-8_Shallow_Focusec	non-Rad	Copper	7440-50-8	ug/kg	23,400	5.0E+04	4.7E-01	1.1E+05	2.2E-01
100-H-8_Shallow_Focusec	non-Rad	Lead	7439-92-1	ug/kg	46,800	5.0E+04	9.4E-01	3.6E+04	**1.3E+00**
100-H-8_Shallow_Focusec	non-Rad	Manganese	7439-96-5	ug/kg	340,000	2.2E+05	**1.6E+00**	5.8E+06	5.9E-02
100-H-8_Shallow_Focusec	non-Rad	Mercury	7439-97-6	ug/kg	0,310	1.0E+02	**3.1E+00**	1.9E+03	1.7E-01
100-H-8_Shallow_Focusec	non-Rad	Molybdenum	7439-98-7	ug/kg	0,930	2.0E+03	4.7E-01	1.4E+04	6.7E-02
100-H-8_Shallow_Focusec	non-Rad	Nickel	7440-02-0	ug/kg	15,200	3.0E+04	5.1E-01	3.3E+04	4.7E-01
100-H-8_Shallow_Focusec	non-Rad	Vanadium	7440-62-2	ug/kg	63,900	2.0E+03	**3.2E+01**	3.1E+04	**2.1E+00**
100-H-8_Shallow_Focusec	non-Rad	Zinc	7440-66-6	ug/kg	53,500	5.0E+04	**1.1E+00**	6.8E+04	7.9E-01
116-H-1_Shallow	non-Rad	Arsenic	7440-38-2	ug/kg	6,625	1.0E+04	6.6E-01	1.9E+05	3.5E-02
116-H-1_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0,000	2.2E+03	1.9E-04	9.2E+02	4.5E-04
116-H-1_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	10,151	4.0E+02	**2.5E+01**	3.8E+04	2.7E-01
116-H-1_Shallow	Rad	Europium-152	14683-23-9	pCi/g	0,001	1.5E+04	4.7E-05	1.7E+03	4.0E-04
116-H-1_Shallow	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	0,502	No Value	--	1.3E+06	4.0E-04
116-H-1_Shallow	non-Rad	Lead	7439-92-1	ug/kg	12,408	5.0E+04	2.5E-01	3.6E+04	3.5E-01
116-H-1_Shallow	Rad	Plutonium-238	13981-16-3	pCi/g	0,000	1.8E+04	8.8E-06	6.0E+03	2.6E-05
116-H-1_Shallow	Rad	Plutonium-239/240	PU-239/240	pCi/g	0,000	1.3E+04	5.4E-06	6.3E+03	1.1E-05
116-H-1_Shallow	Rad	Rads SOF	---	pCi/g	--	--	4.6E-04	--	9.0E-03
116-H-1_Shallow	Rad	Total beta radiostrontium	SR-RAD	pCi/g	0,001	3.6E+03	2.1E-04	9.1E+01	8.1E-03
116-H-3_Shallow	non-Rad	Arsenic	7440-38-2	ug/kg	8,300	1.0E+04	8.3E-01	1.9E+05	4.4E-02
116-H-3_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0,000	2.2E+03	2.4E-05	9.2E+02	5.7E-05
116-H-3_Shallow	Rad	Cobalt-60	10198-40-0	pCi/g	0,000	6.1E+03	9.0E-06	8.1E+02	6.8E-05
116-H-3_Shallow	Rad	Europium-152	14683-23-9	pCi/g	0,001	1.5E+04	4.5E-05	1.7E+03	3.8E-04
116-H-3_Shallow	Rad	Rads SOF	---	pCi/g	--	--	7.8E-05	--	5.0E-04
116-H-5_Overburder	non-Rad	4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	ug/kg	0,000	No Value	--	4.0E+02	1.1E-03
116-H-5_Overburder	non-Rad	Acenaphthene	83-32-9	ug/kg	0,022	2.0E+04	1.1E-03	1.1E+06	2.0E-05
116-H-5_Overburder	non-Rad	Anthracene	120-12-7	ug/kg	0,036	2.9E+04	1.3E-03	6.8E+05	5.3E-05
116-H-5_Overburder	non-Rad	Antimony	7440-36-0	ug/kg	0,406	5.0E+03	8.1E-02	6.0E+03	6.8E-02
116-H-5_Overburder	non-Rad	Arsenic	7440-38-2	ug/kg	5,801	1.0E+04	5.8E-01	1.9E+05	3.1E-02
116-H-5_Overburder	non-Rad	Barium	7440-39-3	ug/kg	53,734	3.3E+05	1.6E-01	1.3E+06	4.1E-02
116-H-5_Overburder	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	0,047	1.8E+04	2.6E-03	6.4E+04	7.3E-04
116-H-5_Overburder	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	0,051	1.8E+04	2.8E-03	7.6E+04	6.7E-04
116-H-5_Overburder	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	0,052	1.8E+04	2.9E-03	3.9E+04	1.3E-03
116-H-5_Overburder	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	0,024	1.8E+04	1.3E-03	3.9E+04	6.1E-04
116-H-5_Overburder	non-Rad	Beryllium	7440-41-7	ug/kg	0,173	1.0E+04	1.7E-02	1.4E+04	1.2E-02
116-H-5_Overburder	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	ug/kg	0,120	1.0E+05	1.2E-03	4.5E+04	2.6E-03
116-H-5_Overburder	non-Rad	Boron	7440-42-8	ug/kg	1,458	5.0E+02	**2.9E+00**	1.3E+05	1.1E-02
116-H-5_Overburder	non-Rad	Cadmium	7440-43-9	ug/kg	0,068	4.0E+03	1.7E-02	1.6E+03	4.2E-02
116-H-5_Overburder	Rad	Carbon-14	14762-75-5	pCi/g	0,001	6.1E+04	2.2E-05	3.2E+01	4.2E-02
116-H-5_Overburder	non-Rad	Chromium	7440-47-3	ug/kg	11,538	4.0E+02	**2.9E+01**	3.8E+04	3.0E-01
116-H-5_Overburder	non-Rad	Chrysene	218-01-9	ug/kg	0,069	1.8E+04	3.9E-03	4.5E+04	1.6E-03
116-H-5_Overburder	non-Rad	Cobalt	7440-48-4	ug/kg	5,586	1.3E+04	4.3E-01	1.1E+05	5.0E-02
116-H-5_Overburder	non-Rad	Copper	7440-50-8	ug/kg	13,591	5.0E+04	2.7E-01	1.1E+05	1.3E-01
116-H-5_Overburder	non-Rad	Dibenz[a,h]anthracene	53-70-3	ug/kg	0,006	1.8E+04	3.6E-04	4.4E+04	1.4E-04
116-H-5_Overburder	non-Rad	Fluoranthene	206-44-0	ug/kg	0,130	1.8E+04	7.2E-03	8.4E+05	1.6E-04
116-H-5_Overburder	non-Rad	Fluorene	86-73-7	ug/kg	0,008	2.9E+04	2.6E-04	1.8E+05	4.3E-05
116-H-5_Overburder	non-Rad	Fluoride	16984-48-8	ug/kg	0,799	No Value	--	2.3E+06	3.5E-04
116-H-5_Overburder	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	0,165	No Value	--	1.3E+06	1.3E-04
116-H-5_Overburder	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	0,034	1.8E+04	1.9E-03	3.6E+04	9.5E-04
116-H-5_Overburder	non-Rad	Lead	7439-92-1	ug/kg	16,326	5.0E+04	3.3E-01	3.6E+04	4.6E-01
116-H-5_Overburder	non-Rad	Manganese	7439-96-5	ug/kg	258,053	2.2E+05	**1.2E+00**	5.8E+06	4.5E-02
116-H-5_Overburder	non-Rad	Molybdenum	7439-98-7	ug/kg	0,275	2.0E+03	1.4E-01	1.4E+04	2.0E-02
116-H-5_Overburder	non-Rad	Naphthalene	91-20-3	ug/kg	0,025	2.9E+04	8.7E-04	1.0E+05	2.5E-04
116-H-5_Overburder	non-Rad	Nickel	7440-02-0	ug/kg	10,808	3.0E+04	3.6E-01	3.3E+04	3.3E-01
116-H-5_Overburder	non-Rad	Nitrate	14797-55-8	ug/kg	9,911	No Value	--	3.4E+08	2.9E-05
116-H-5_Overburder	non-Rad	Nitrogen in Nitrate	NO3-N	ug/kg	0,960	No Value	--	No Value	--
116-H-5_Overburder	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	ug/kg	2,151	No Value	--	No Value	--
116-H-5_Overburder	Rad	Plutonium-238	13981-16-3	pCi/g	0,001	1.8E+04	8.2E-05	6.0E+03	2.4E-04
116-H-5_Overburder	non-Rad	Pyrene	129-00-0	ug/kg	0,100	1.8E+04	5.6E-03	6.0E+05	1.7E-04
116-H-5_Overburder	Rad	Rads SOF	---	pCi/g	--	--	1.5E-04	--	4.9E-02
116-H-5_Overburder	non-Rad	Silver	7440-22-4	ug/kg	0,156	2.0E+03	7.8E-02	5.0E+04	3.1E-03
116-H-5_Overburder	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	ug/kg	3,200	2.0E+05	1.6E-02	3.6E+08	9.0E-06
116-H-5_Overburden	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	ug/kg	6,500	No Value	--	No Value	--
116-H-5_Overburden	non-Rad	Total petroleum hydrocarbons - motor oil (high boiling)	TPH/OILH	ug/kg	9,996	No Value	--	No Value	--
116-H-5_Overburder	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	1,677	5.0E+03	3.4E-01	3.6E+05	4.7E-03
116-H-5_Overburder	Rad	Tritium	10028-17-8	pCi/g	0,003	1.7E+06	1.8E-06	4.2E+02	7.2E-03
116-H-5_Overburder	Rad	Uranium-233/234	U-233/234	pCi/g	0,001	5.2E+04	1.2E-05	6.4E+03	9.6E-05
116-H-5_Overburder	Rad	Uranium-238	U-238	pCi/g	0,001	1.6E+04	3.6E-05	5.2E+03	1.1E-04
116-H-5_Overburder	non-Rad	Vanadium	7440-62-2	ug/kg	44,444	2.0E+03	**2.2E+01**	3.1E+04	**1.4E+00**
116-H-5_Overburder	non-Rad	Zinc	7440-66-6	ug/kg	43,379	5.0E+04	8.7E-01	6.8E+04	6.4E-01
116-H-5_Shallow	non-Rad	4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	ug/kg	0,000	No Value	--	4.0E+02	1.1E-03
116-H-5_Shallow	non-Rad	Acenaphthene	83-32-9	ug/kg	0,003	2.0E+04	1.4E-04	1.1E+06	2.6E-06
116-H-5_Shallow	non-Rad	Anthracene	120-12-7	ug/kg	0,004	2.9E+04	1.3E-04	6.8E+05	5.5E-06
116-H-5_Shallow	non-Rad	Antimony	7440-36-0	ug/kg	0,378	5.0E+03	7.6E-02	6.0E+03	6.3E-02
116-H-5_Shallow	non-Rad	Aroclor-1260	11096-82-5	ug/kg	0,004	4.0E+04	9.6E-05	1.5E+03	2.6E-03
116-H-5_Shallow	non-Rad	Arsenic	7440-38-2	ug/kg	5,405	1.0E+04	5.4E-01	1.9E+05	2.9E-02
116-H-5_Shallow	non-Rad	Barium	7440-39-3	ug/kg	61,357	3.3E+05	1.9E-01	1.3E+06	4.6E-02
116-H-5_Shallow	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	0,011	1.8E+04	6.3E-04	6.4E+04	1.8E-04
116-H-5_Shallow	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	0,011	1.8E+04	5.9E-04	7.6E+04	1.4E-04
116-H-5_Shallow	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	0,014	1.8E+04	7.8E-04	3.9E+04	3.6E-04
116-H-5_Shallow	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	0,006	1.8E+04	3.2E-04	3.9E+04	1.5E-04
116-H-5_Shallow	non-Rad	Beryllium	7440-41-7	ug/kg	0,202	1.0E+04	2.0E-02	1.4E+04	1.5E-02
116-H-5_Shallow	non-Rad	Boron	7440-42-8	ug/kg	2,169	5.0E+02	**4.3E+00**	1.3E+05	1.6E-02
116-H-5_Shallow	non-Rad	Cadmium	7440-43-9	ug/kg	0,080	4.0E+03	2.0E-02	1.6E+03	4.9E-02
116-H-5_Shallow	Rad	Carbon-14	14762-75-5	pCi/g	0,001	6.1E+04	1.7E-05	3.2E+01	3.2E-02
116-H-5_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	13,831	4.0E+02	**3.5E+01**	3.8E+04	3.6E-01
116-H-5_Shallow	non-Rad	Chrysene	218-01-9	ug/kg	0,011	1.8E+04	6.0E-04	4.5E+04	2.4E-04
116-H-5_Shallow	non-Rad	Cobalt	7440-48-4	ug/kg	6,335	1.3E+04	4.9E-01	1.1E+05	5.7E-02
116-H-5_Shallow	non-Rad	Copper	7440-50-8	ug/kg	14,502	5.0E+04	2.9E-01	1.1E+05	1.4E-01
116-H-5_Shallow	non-Rad	Dibenz[a,h]anthracene	53-70-3	ug/kg	0,003	1.8E+04	1.4E-04	4.4E+04	5.9E-05
116-H-5_Shallow	non-Rad	Fluoranthene	206-44-0	ug/kg	0,027	1.8E+04	1.5E-03	8.4E+05	3.3E-05
116-H-5_Shallow	non-Rad	Fluorene	86-73-7	ug/kg	0,002	2.9E+04	5.4E-05	1.8E+05	9.0E-06
116-H-5_Shallow	non-Rad	Fluoride	16984-48-8	ug/kg	0,903	No Value	--	2.3E+06	4.0E-04
116-H-5_Shallow	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	0,060	No Value	--	1.3E+06	4.8E-05
116-H-5_Shallow	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	0,010	1.8E+04	5.5E-04	3.6E+04	2.8E-04
116-H-5_Shallow	non-Rad	Lead	7439-92-1	ug/kg	14,110	5.0E+04	2.8E-01	3.6E+04	4.0E-01
116-H-5_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	270,919	2.2E+05	**1.2E+00**	5.8E+06	4.7E-02
116-H-5_Shallow	non-Rad	Mercury	7439-97-6	ug/kg	0,018	1.0E+02	1.8E-01	1.9E+03	9.8E-03
116-H-5_Shallow	non-Rad	Molybdenum	7439-98-7	ug/kg	0,280	2.0E+03	1.4E-01	1.4E+04	2.0E-02
116-H-5_Shallow	non-Rad	Naphthalene	91-20-3	ug/kg	0,015	2.9E+04	5.2E-04	1.0E+05	1.5E-04

Table 5. Comparison of 100-H OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/ Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
116-H-5_Shallow	non-Rad	Nickel	7440-02-0	ug/kg	11,834	3.0E+04	3.9E-01	3.3E+04	3.6E-01
116-H-5_Shallow	Rad	Nickel-63	13981-37-8	pCi/g	0,019	No Value	--	No Value	--
116-H-5_Shallow	non-Rad	Nitrate	14797-55-8	ug/kg	8,424	No Value	--	3.4E+08	2.5E-05
116-H-5_Shallow	non-Rad	Nitrogen in Nitrate	NO3-N	ug/kg	1,100	No Value	--	No Value	--
116-H-5_Shallow	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	ug/kg	1,266	No Value	--	No Value	--
116-H-5_Shallow	non-Rad	Pyrene	129-00-0	ug/kg	0,026	1.8E+04	1.4E-03	6.0E+05	4.3E-05
116-H-5_Shallow	Rad	Rads SOF	---	pCi/g	--	--	7.5E-04	--	6.8E-02
116-H-5_Shallow	Rad	Total beta radiostrontium	SR-RAD	pCi/g	0,002	3.6E+03	6.7E-04	9.1E+01	2.6E-02
116-H-5_Shallow	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	ug/kg	2,600	2.0E+05	1.3E-02	3.6E+08	7.3E-06
116-H-5_Shallow	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	ug/kg	8,100	No Value	--	No Value	--
116-H-5_Shallow	non-Rad	Total petroleum hydrocarbons - motor oil (high boiling)	TPH/OILH	ug/kg	14,314	No Value	--	No Value	--
116-H-5_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	1,966	5.0E+03	3.9E-01	3.6E+05	5.5E-03
116-H-5_Shallow	Rad	Tritium	10028-17-8	pCi/g	0,004	1.7E+06	2.4E-06	4.2E+02	9.7E-03
116-H-5_Shallow	Rad	Uranium-233/234	U-233/234	pCi/g	0,001	5.2E+04	1.4E-05	6.4E+03	1.1E-04
116-H-5_Shallow	Rad	Uranium-234	13966-29-5	pCi/g	0,000	5.2E+04	3.8E-06	6.4E+03	3.1E-05
116-H-5_Shallow	Rad	Uranium-238	U-238	pCi/g	0,001	1.6E+04	4.2E-05	5.2E+03	1.3E-04
116-H-5_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	48,734	2.0E+03	**2.4E+01**	3.1E+04	**1.6E+00**
116-H-5_Shallow	non-Rad	Zinc	7440-66-6	ug/kg	48,292	5.0E+04	9.7E-01	6.8E+04	7.1E-01
116-H-5_Staging Pile Area Footprin	non-Rad	4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	ug/kg	0,011	No Value	--	4.0E+02	2.8E-02
116-H-5_Staging Pile Area Footprin	non-Rad	4,4'-DDT (Dichlorodiphenyltrichloroethane)	50-29-3	ug/kg	0,005	No Value	--	8.8E+02	6.0E-03
116-H-5_Staging Pile Area Footprin	non-Rad	Anthracene	120-12-7	ug/kg	0,087	2.9E+04	3.0E-03	6.8E+05	1.3E-04
116-H-5_Staging Pile Area Footprin	non-Rad	Aroclor-1254	11097-69-1	ug/kg	0,015	4.0E+04	3.8E-04	1.5E+03	1.0E-02
116-H-5_Staging Pile Area Footprin	non-Rad	Aroclor-1260	11096-82-5	ug/kg	0,010	4.0E+04	2.5E-04	1.5E+03	6.8E-03
116-H-5_Staging Pile Area Footprin	non-Rad	Aroclors HI	---	ug/kg	--	--	6.3E-04	--	1.7E-02
116-H-5_Staging Pile Area Footprin	non-Rad	Arsenic	7440-38-2	ug/kg	10,280	1.0E+04	**1.0E+00**	1.9E+05	5.4E-02
116-H-5_Staging Pile Area Footprin	non-Rad	Barium	7440-39-3	ug/kg	75,287	3.3E+05	2.3E-01	1.3E+06	5.7E-02
116-H-5_Staging Pile Area Footprin	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	0,076	1.8E+04	4.2E-03	6.4E+04	1.2E-03
116-H-5_Staging Pile Area Footprin	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	0,059	1.8E+04	3.3E-03	7.6E+04	7.7E-04
116-H-5_Staging Pile Area Footprin	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	0,064	1.8E+04	3.6E-03	3.9E+04	1.6E-03
116-H-5_Staging Pile Area Footprin	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	0,029	1.8E+04	1.6E-03	3.9E+04	7.4E-04
116-H-5_Staging Pile Area Footprin	non-Rad	Beryllium	7440-41-7	ug/kg	0,142	1.0E+04	1.4E-02	1.4E+04	1.0E-02
116-H-5_Staging Pile Area Footprin	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	ug/kg	0,122	1.0E+05	1.2E-03	4.5E+04	2.7E-03
116-H-5_Staging Pile Area Footprin	non-Rad	Boron	7440-42-8	ug/kg	2,700	5.0E+02	**5.4E+00**	1.3E+05	2.0E-02
116-H-5_Staging Pile Area Footprin	non-Rad	Cadmium	7440-43-9	ug/kg	0,112	4.0E+03	2.8E-02	1.6E+03	6.9E-02
116-H-5_Staging Pile Area Footprin	Rad	Cesium-137	10045-97-3	pCi/g	0,000	2.2E+03	3.1E-05	9.2E+02	7.4E-05
116-H-5_Staging Pile Area Footprin	non-Rad	Chromium	7440-47-3	ug/kg	10,981	4.0E+02	**2.8E+01**	3.8E+04	2.9E-01
116-H-5_Staging Pile Area Footprin	non-Rad	Chrysene	218-01-9	ug/kg	0,059	1.8E+04	3.3E-03	4.5E+04	1.3E-03
116-H-5_Staging Pile Area Footprin	non-Rad	Cobalt	7440-48-4	ug/kg	6,774	1.3E+04	5.2E-01	1.1E+05	6.1E-02
116-H-5_Staging Pile Area Footprin	non-Rad	Copper	7440-50-8	ug/kg	14,733	5.0E+04	3.0E-01	1.1E+05	1.4E-01
116-H-5_Staging Pile Area Footprin	non-Rad	Dibenz[a,h]anthracene	53-70-3	ug/kg	0,026	1.8E+04	1.4E-03	4.4E+04	5.9E-04
116-H-5_Staging Pile Area Footprin	non-Rad	Fluoranthene	206-44-0	ug/kg	0,400	1.8E+04	2.2E-02	8.4E+05	4.8E-04
116-H-5_Staging Pile Area Footprin	non-Rad	Fluorene	86-73-7	ug/kg	0,057	2.9E+04	2.0E-03	1.8E+05	3.3E-04
116-H-5_Staging Pile Area Footprin	non-Rad	Fluoride	16984-48-8	ug/kg	1,166	No Value	--	2.3E+06	5.1E-04
116-H-5_Staging Pile Area Footprin	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	0,042	1.8E+04	2.3E-03	3.6E+04	1.2E-03
116-H-5_Staging Pile Area Footprin	non-Rad	Lead	7439-92-1	ug/kg	45,682	5.0E+04	9.1E-01	3.6E+04	**1.3E+00**
116-H-5_Staging Pile Area Footprin	non-Rad	Manganese	7439-96-5	ug/kg	280,936	2.2E+05	**1.3E+00**	5.8E+06	4.9E-02
116-H-5_Staging Pile Area Footprin	non-Rad	Mercury	7439-97-6	ug/kg	0,012	1.0E+02	1.2E-01	1.9E+03	6.2E-03
116-H-5_Staging Pile Area Footprin	non-Rad	Molybdenum	7439-98-7	ug/kg	0,330	2.0E+03	1.7E-01	1.4E+04	2.4E-02
116-H-5_Staging Pile Area Footprin	non-Rad	Nickel	7440-02-0	ug/kg	10,771	3.0E+04	3.6E-01	3.3E+04	3.3E-01
116-H-5_Staging Pile Area Footprin	non-Rad	Nitrogen in Nitrate	NO3-N	ug/kg	44,800	No Value	--	No Value	--
116-H-5_Staging Pile Area Footprin	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	ug/kg	50,900	No Value	--	No Value	--
116-H-5_Staging Pile Area Footprin	non-Rad	Pyrene	129-00-0	ug/kg	0,137	1.8E+04	7.6E-03	6.0E+05	2.3E-04
116-H-5_Staging Pile Area Footprin	Rad	Rads SOF	---	pCi/g	--	--	8.5E-05	--	3.0E-04
116-H-5_Staging Pile Area Footprin	Rad	Technetium-99	14133-76-7	pCi/g	0,001	2.2E+04	3.7E-05	5.4E+03	1.5E-04
116-H-5_Staging Pile Area Footprin	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	ug/kg	7,400	2.0E+05	3.7E-02	3.6E+08	2.1E-05
116-H-5_Staging Pile Area Footprint	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	ug/kg	20,867	No Value	--	No Value	--
116-H-5_Staging Pile Area Footprint	non-Rad	Total petroleum hydrocarbons - motor oil (high boiling)	TPH/OILH	ug/kg	97,039	No Value	--	No Value	--
116-H-5_Staging Pile Area Footprin	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	0,703	5.0E+03	1.4E-01	3.6E+05	2.0E-03
116-H-5_Staging Pile Area Footprin	Rad	Uranium-234	13966-29-5	pCi/g	0,000	5.2E+04	4.5E-06	6.4E+03	3.6E-05
116-H-5_Staging Pile Area Footprin	Rad	Uranium-238	U-238	pCi/g	0,000	1.6E+04	1.3E-05	5.2E+03	3.8E-06
116-H-5_Staging Pile Area Footprin	non-Rad	Vanadium	7440-62-2	ug/kg	47,752	2.0E+03	**2.4E+01**	3.1E+04	**1.5E+00**
116-H-5_Staging Pile Area Footprin	non-Rad	Zinc	7440-66-6	ug/kg	40,271	5.0E+04	8.1E-01	6.8E+04	5.9E-01
116-H-7_Overburder	non-Rad	Aroclor-1260	11096-82-5	ug/kg	0,077	4.0E+04	1.9E-03	1.5E+03	5.2E-02
116-H-7_Overburder	non-Rad	Arsenic	7440-38-2	ug/kg	4,172	1.0E+04	4.2E-01	1.9E+05	2.2E-02
116-H-7_Overburder	Rad	Cesium-137	10045-97-3	pCi/g	0,000	2.2E+03	4.7E-05	9.2E+02	1.1E-04
116-H-7_Overburder	non-Rad	Chromium	7440-47-3	ug/kg	11,042	4.0E+02	**2.8E+01**	3.8E+04	2.9E-01
116-H-7_Overburder	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	0,590	No Value	--	1.3E+06	4.7E-04
116-H-7_Overburder	non-Rad	Lead	7439-92-1	ug/kg	9,806	5.0E+04	2.0E-01	3.6E+04	2.8E-01
116-H-7_Overburder	Rad	Rads SOF	---	pCi/g	--	--	8.9E-05	--	2.9E-04
116-H-7_Overburder	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	1,551	5.0E+03	3.1E-01	3.6E+05	4.3E-03
116-H-7_Overburder	Rad	Uranium-233/234	U-233/234	pCi/g	0,000	5.2E+04	8.8E-06	6.4E+03	7.1E-05
116-H-7_Overburder	Rad	Uranium-238	U-238	pCi/g	0,001	1.6E+04	3.3E-05	5.2E+03	1.0E-04
116-H-7_Shallow	non-Rad	Aroclor-1260	11096-82-5	ug/kg	0,660	4.0E+04	1.7E-02	1.5E+03	4.5E-01
116-H-7_Shallow	non-Rad	Arsenic	7440-38-2	ug/kg	5,540	1.0E+04	5.5E-01	1.9E+05	2.9E-02
116-H-7_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0,000	2.2E+03	5.6E-05	9.2E+02	1.3E-04
116-H-7_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	19,656	4.0E+02	**4.9E+01**	3.8E+04	5.2E-01
116-H-7_Shallow	Rad	Europium-152	14683-23-9	pCi/g	0,001	1.5E+04	4.6E-05	1.7E+03	3.9E-04
116-H-7_Shallow	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	0,958	No Value	--	1.3E+06	7.7E-04
116-H-7_Shallow	non-Rad	Lead	7439-92-1	ug/kg	20,249	5.0E+04	4.1E-01	3.6E+04	5.7E-01
116-H-7_Shallow	Rad	Rads SOF	---	pCi/g	--	--	1.5E-04	--	7.1E-04
116-H-7_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	1,583	5.0E+03	3.2E-01	3.6E+05	4.4E-03
116-H-7_Shallow	Rad	Uranium-233/234	U-233/234	pCi/g	0,001	5.2E+04	1.0E-05	6.4E+03	8.4E-05
116-H-7_Shallow	Rad	Uranium-238	U-238	pCi/g	0,001	1.6E+04	3.4E-05	5.2E+03	1.0E-04
116-H-9_Shallow	non-Rad	Antimony	7440-36-0	ug/kg	0,435	5.0E+03	8.7E-02	6.0E+03	7.3E-02
116-H-9_Shallow	non-Rad	Aroclor-1254	11097-69-1	ug/kg	0,023	4.0E+04	5.8E-04	1.5E+03	1.6E-02
116-H-9_Shallow	non-Rad	Aroclor-1260	11096-82-5	ug/kg	0,010	4.0E+04	2.4E-04	1.5E+03	6.5E-03
116-H-9_Shallow	non-Rad	Aroclors HI	---	ug/kg	--	--	8.2E-04	--	2.2E-02
116-H-9_Shallow	non-Rad	Arsenic	7440-38-2	ug/kg	3,605	1.0E+04	3.6E-01	1.9E+05	1.9E-02
116-H-9_Shallow	non-Rad	Barium	7440-39-3	ug/kg	68,597	3.3E+05	2.1E-01	1.3E+06	5.2E-02
116-H-9_Shallow	non-Rad	Beryllium	7440-41-7	ug/kg	0,272	1.0E+04	2.7E-02	1.4E+04	2.0E-02
116-H-9_Shallow	non-Rad	Boron	7440-42-8	ug/kg	1,253	5.0E+02	**2.5E+00**	1.3E+05	9.4E-03
116-H-9_Shallow	non-Rad	Cadmium	7440-43-9	ug/kg	0,100	4.0E+03	2.5E-02	1.6E+03	6.2E-02
116-H-9_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	11,945	4.0E+02	**3.0E+01**	3.8E+04	3.1E-01
116-H-9_Shallow	non-Rad	Cobalt	7440-48-4	ug/kg	6,313	1.3E+04	4.9E-01	1.1E+05	5.7E-02
116-H-9_Shallow	non-Rad	Copper	7440-50-8	ug/kg	13,904	5.0E+04	2.8E-01	1.1E+05	1.3E-01
116-H-9_Shallow	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	0,262	No Value	--	1.3E+06	2.1E-04
116-H-9_Shallow	non-Rad	Lead	7439-92-1	ug/kg	6,609	5.0E+04	1.3E-01	3.6E+04	1.9E-01
116-H-9_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	286,352	2.2E+05	**1.3E+00**	5.8E+06	4.9E-02
116-H-9_Shallow	non-Rad	Mercury	7439-97-6	ug/kg	0,015	1.0E+02	1.5E-01	1.9E+03	8.0E-03
116-H-9_Shallow	non-Rad	Molybdenum	7439-98-7	ug/kg	0,243	2.0E+03	1.2E-01	1.4E+04	1.7E-02
116-H-9_Shallow	non-Rad	Nickel	7440-02-0	ug/kg	10,510	3.0E+04	3.5E-01	3.3E+04	3.2E-01
116-H-9_Shallow	Rad	Plutonium-238	13981-16-3	pCi/g	0,000	1.8E+04	1.5E-06	6.0E+03	4.5E-06
116-H-9_Shallow	Rad	Rads SOF	---	pCi/g	--	--	5.9E-05	--	2.4E-04
116-H-9_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	2,072	5.0E+03	4.1E-01	3.6E+05	5.8E-03
116-H-9_Shallow	Rad	Uranium-233/234	U-233/234	pCi/g	0,001	5.2E+04	1.3E-05	6.4E+03	1.1E-04
116-H-9_Shallow	Rad	Uranium-238	U-238	pCi/g	0,001	1.6E+04	4.4E-05	5.2E+03	1.4E-04
116-H-9_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	42,911	2.0E+03	**2.2E+01**	3.1E+04	**1.4E+00**
116-H-9_Shallow	non-Rad	Zinc	7440-66-6	ug/kg	37,067	5.0E+04	7.4E-01	6.8E+04	5.5E-01
118-H-1:1_Overburder	non-Rad	Acenaphthene	83-32-9	ug/kg	0,075	2.0E+04	3.7E-03	1.1E+06	6.8E-05
118-H-1:1_Overburder	non-Rad	Anthracene	120-12-7	ug/kg	0,008	2.9E+04	2.8E-04	6.8E+05	1.2E-05
118-H-1:1_Overburder	non-Rad	Antimony	7440-36-0	ug/kg	0,489	5.0E+03	9.8E-02	6.0E+03	8.2E-02
118-H-1:1_Overburder	non-Rad	Aroclor-1254	11097-69-1	ug/kg	0,008	4.0E+04	2.1E-04	1.5E+03	5.7E-03
118-H-1:1_Overburder	non-Rad	Aroclor-1260	11096-82-5	ug/kg	0,010	4.0E+04	2.6E-04	1.5E+03	7.1E-03
118-H-1:1_Overburder	non-Rad	Aroclors HI	---	ug/kg	--	--	4.7E-04	--	1.3E-02
118-H-1:1_Overburder	non-Rad	Arsenic	7440-38-2	ug/kg	5,698	1.0E+04	5.7E-01	1.9E+05	3.0E-02
118-H-1:1_Overburder	non-Rad	Barium	7440-39-3	ug/kg	101,322	3.3E+05	3.1E-01	1.3E+06	7.7E-02
118-H-1:1_Overburder	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	0,034	1.8E+04	1.9E-03	6.4E+04	5.4E-04
118-H-1:1_Overburder	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	0,057	1.8E+04	3.2E-03	7.6E+04	7.5E-04
118-H-1:1_Overburder	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	0,033	1.8E+04	1.8E-03	3.9E+04	8.3E-04
118-H-1:1_Overburder	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	0,019	1.8E+04	1.1E-03	3.9E+04	4.9E-04

Table 5. Comparison of 100-H OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/ Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
118-H-1:1_Overburder	non-Rad	Beryllium	7440-41-7	ug/kg	0,288	1.0E+04	2.9E-02	1.4E+04	2.1E-02
118-H-1:1_Overburder	non-Rad	Boron	7440-42-8	ug/kg	10,532	5.0E+02	**2.1E+01**	1.3E+05	7.9E-02
118-H-1:1_Overburder	non-Rad	Cadmium	7440-43-9	ug/kg	0,076	4.0E+03	1.9E-02	1.6E+03	4.7E-02
118-H-1:1_Overburder	Rad	Carbon-14	14762-75-5	pCi/g	0,001	6.1E+04	2.3E-05	3.2E+01	4.4E-02
118-H-1:1_Overburder	Rad	Cesium-137	10045-97-3	pCi/g	0,000	2.2E+03	2.8E-05	9.2E+02	6.6E-05
118-H-1:1_Overburder	non-Rad	Chromium	7440-47-3	ug/kg	13,618	4.0E+02	**3.4E+01**	3.8E+04	3.6E-01
118-H-1:1_Overburder	non-Rad	Chrysene	218-01-9	ug/kg	0,051	1.8E+04	2.8E-03	4.5E+04	1.1E-03
118-H-1:1_Overburder	non-Rad	Cobalt	7440-48-4	ug/kg	7,752	1.3E+04	6.0E-01	1.1E+05	7.0E-02
118-H-1:1_Overburder	non-Rad	Copper	7440-50-8	ug/kg	16,317	5.0E+04	3.3E-01	1.1E+05	1.5E-01
118-H-1:1_Overburder	non-Rad	Dibenz[a,h]anthracene	53-70-3	ug/kg	0,005	1.8E+04	2.5E-04	4.4E+04	1.0E-04
118-H-1:1_Overburder	non-Rad	Fluoranthene	206-44-0	ug/kg	0,134	1.8E+04	7.4E-03	8.4E+05	1.6E-04
118-H-1:1_Overburder	non-Rad	Fluorene	86-73-7	ug/kg	0,007	2.9E+04	2.3E-04	1.8E+05	3.9E-05
118-H-1:1_Overburder	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	0,079	1.8E+04	4.4E-03	3.6E+04	2.2E-03
118-H-1:1_Overburder	non-Rad	Lead	7439-92-1	ug/kg	17,746	5.0E+04	3.6E-01	3.6E+04	5.0E-01
118-H-1:1_Overburder	non-Rad	Manganese	7439-96-5	ug/kg	344,387	2.2E+05	**1.6E+00**	5.8E+06	5.9E-02
118-H-1:1_Overburder	non-Rad	Mercury	7439-97-6	ug/kg	0,011	1.0E+02	1.1E-01	1.9E+03	5.9E-03
118-H-1:1_Overburder	non-Rad	Molybdenum	7439-98-7	ug/kg	0,366	2.0E+03	1.8E-01	1.4E+04	2.6E-02
118-H-1:1_Overburder	non-Rad	Naphthalene	91-20-3	ug/kg	0,013	2.9E+04	4.6E-04	1.0E+05	1.3E-04
118-H-1:1_Overburder	non-Rad	Nickel	7440-02-0	ug/kg	13,289	3.0E+04	4.4E-01	3.3E+04	4.1E-01
118-H-1:1_Overburder	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	ug/kg	4,753	No Value	--	No Value	--
118-H-1:1_Overburder	non-Rad	Pyrene	129-00-0	ug/kg	0,117	1.8E+04	6.5E-03	6.0E+05	2.0E-04
118-H-1:1_Overburder	Rad	Rads SOF	---	pCi/g	--	--	5.0E-05	--	4.4E-02
118-H-1:1_Overburder	non-Rad	Selenium	7782-49-2	ug/kg	0,326	5.2E+02	6.3E-01	1.9E+03	1.7E-01
118-H-1:1_Overburder	non-Rad	Silver	7440-22-4	ug/kg	0,224	2.0E+03	1.1E-01	5.0E+04	4.5E-03
118-H-1:1_Overburder	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	ug/kg	8,992	2.0E+05	4.5E-02	3.6E+08	2.5E-05
118-H-1:1_Overburden	non-Rad	Total petroleum hydrocarbons - motor oil (high boiling)	TPH/OILH	ug/kg	15,814	No Value	--	No Value	--
118-H-1:1_Overburder	non-Rad	Vanadium	7440-62-2	ug/kg	58,281	2.0E+03	**2.9E+01**	3.1E+04	**1.9E+00**
118-H-1:1_Overburder	non-Rad	Zinc	7440-66-6	ug/kg	44,523	5.0E+04	8.9E-01	6.8E+04	6.6E-01
118-H-1:1_Shallow_1	non-Rad	Acenaphthene	83-32-9	ug/kg	0,003	2.0E+04	1.3E-04	1.1E+06	2.3E-06
118-H-1:1_Shallow_1	non-Rad	Anthracene	120-12-7	ug/kg	0,004	2.9E+04	1.2E-04	6.8E+05	5.3E-06
118-H-1:1_Shallow_1	non-Rad	Arsenic	7440-38-2	ug/kg	3,459	1.0E+04	3.5E-01	1.9E+05	1.8E-02
118-H-1:1_Shallow_1	non-Rad	Barium	7440-39-3	ug/kg	49,873	3.3E+05	1.5E-01	1.3E+06	3.8E-02
118-H-1:1_Shallow_1	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	0,011	1.8E+04	6.3E-04	6.4E+04	1.8E-04
118-H-1:1_Shallow_1	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	0,010	1.8E+04	5.5E-04	7.6E+04	1.3E-04
118-H-1:1_Shallow_1	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	0,008	1.8E+04	4.6E-04	3.9E+04	2.1E-04
118-H-1:1_Shallow_1	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	0,005	1.8E+04	2.9E-04	3.9E+04	1.3E-04
118-H-1:1_Shallow_1	non-Rad	Beryllium	7440-41-7	ug/kg	0,181	1.0E+04	1.8E-02	1.4E+04	1.3E-02
118-H-1:1_Shallow_1	non-Rad	Boron	7440-42-8	ug/kg	1,456	5.0E+02	**2.9E+00**	1.3E+05	1.1E-02
118-H-1:1_Shallow_1	non-Rad	Cadmium	7440-43-9	ug/kg	0,050	4.0E+03	1.2E-02	1.6E+03	3.1E-02
118-H-1:1_Shallow_1	Rad	Carbon-14	14762-75-5	pCi/g	0,002	6.1E+04	3.1E-05	3.2E+01	6.0E-02
118-H-1:1_Shallow_1	Rad	Cesium-137	10045-97-3	pCi/g	0,000	2.2E+03	7.9E-05	9.2E+02	1.9E-04
118-H-1:1_Shallow_1	non-Rad	Chromium	7440-47-3	ug/kg	10,810	4.0E+02	**2.7E+01**	3.8E+04	2.8E-01
118-H-1:1_Shallow_1	non-Rad	Chrysene	218-01-9	ug/kg	0,011	1.8E+04	5.9E-04	4.5E+04	2.4E-04
118-H-1:1_Shallow_1	non-Rad	Cobalt	7440-48-4	ug/kg	5,630	1.3E+04	4.3E-01	1.1E+05	5.1E-02
118-H-1:1_Shallow_1	Rad	Cobalt-60	10198-40-0	pCi/g	0,000	6.1E+03	3.1E-05	8.1E+02	2.4E-04
118-H-1:1_Shallow_1	non-Rad	Copper	7440-50-8	ug/kg	12,893	5.0E+04	2.6E-01	1.1E+05	1.2E-01
118-H-1:1_Shallow_1	non-Rad	Dibenz[a,h]anthracene	53-70-3	ug/kg	0,003	1.8E+04	1.9E-04	4.4E+04	7.7E-05
118-H-1:1_Shallow_1	Rad	Europium-152	14683-23-9	pCi/g	0,000	1.5E+04	1.4E-05	1.7E+03	1.2E-04
118-H-1:1_Shallow_1	non-Rad	Fluoranthene	206-44-0	ug/kg	0,017	1.8E+04	9.6E-04	8.4E+05	2.1E-05
118-H-1:1_Shallow_1	non-Rad	Fluorene	86-73-7	ug/kg	0,002	2.9E+04	5.2E-05	1.8E+05	8.6E-06
118-H-1:1_Shallow_1	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	0,010	1.8E+04	5.3E-04	3.6E+04	2.7E-04
118-H-1:1_Shallow_1	non-Rad	Lead	7439-92-1	ug/kg	6,609	5.0E+04	1.3E-01	3.6E+04	1.9E-01
118-H-1:1_Shallow_1	non-Rad	Manganese	7439-96-5	ug/kg	252,370	2.2E+05	**1.2E+00**	5.8E+06	4.4E-02
118-H-1:1_Shallow_1	non-Rad	Mercury	7439-97-6	ug/kg	0,018	1.0E+02	1.8E-01	1.9E+03	9.6E-03
118-H-1:1_Shallow_1	non-Rad	Molybdenum	7439-98-7	ug/kg	0,249	2.0E+03	1.3E-01	1.4E+04	1.8E-02
118-H-1:1_Shallow_1	non-Rad	Naphthalene	91-20-3	ug/kg	0,003	2.9E+04	1.2E-04	1.0E+05	3.3E-05
118-H-1:1_Shallow_1	non-Rad	Nickel	7440-02-0	ug/kg	10,583	3.0E+04	3.5E-01	3.3E+04	3.3E-01
118-H-1:1_Shallow_1	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	ug/kg	5,340	No Value	--	No Value	--
118-H-1:1_Shallow_1	Rad	Plutonium-239/240	PU-239/240	pCi/g	0,003	1.3E+04	2.2E-04	6.3E+03	4.5E-04
118-H-1:1_Shallow_1	non-Rad	Pyrene	129-00-0	ug/kg	0,036	1.8E+04	2.0E-03	6.0E+05	6.0E-05
118-H-1:1_Shallow_1	Rad	Rads SOF	---	pCi/g	--	--	7.9E-04	--	8.5E-02
118-H-1:1_Shallow_1	non-Rad	Selenium	7782-49-2	ug/kg	1,000	5.2E+02	**1.9E+00**	1.9E+03	5.3E-01
118-H-1:1_Shallow_1	Rad	Total beta radiostrontium	SR-RAD	pCi/g	0,001	3.6E+03	4.1E-04	9.1E+01	1.6E-02
118-H-1:1_Shallow_1	non-Rad	Total petroleum hydrocarbons - motor oil (high boiling)	TPH/OILH	ug/kg	8,315	No Value	--	No Value	--
118-H-1:1_Shallow_1	Rad	Tritium	10028-17-8	pCi/g	0,003	1.7E+06	2.0E-06	4.2E+02	8.1E-03
118-H-1:1_Shallow_1	non-Rad	Vanadium	7440-62-2	ug/kg	43,653	2.0E+03	**2.2E+01**	3.1E+04	**1.4E+00**
118-H-1:1_Shallow_1	non-Rad	Zinc	7440-66-6	ug/kg	33,577	5.0E+04	6.7E-01	6.8E+04	5.0E-01
118-H-1:1_Shallow_2	non-Rad	Acenaphthene	83-32-9	ug/kg	0,002	2.0E+04	9.2E-05	1.1E+06	1.7E-06
118-H-1:1_Shallow_2	non-Rad	Anthracene	120-12-7	ug/kg	0,003	2.9E+04	1.0E-04	6.8E+05	4.5E-06
118-H-1:1_Shallow_2	non-Rad	Antimony	7440-36-0	ug/kg	0,257	5.0E+03	5.1E-02	6.0E+03	4.3E-02
118-H-1:1_Shallow_2	non-Rad	Aroclor-1254	11097-69-1	ug/kg	0,005	4.0E+04	1.3E-04	1.5E+03	3.4E-03
118-H-1:1_Shallow_2	non-Rad	Aroclor-1260	11096-82-5	ug/kg	0,004	4.0E+04	9.1E-05	1.5E+03	2.5E-03
118-H-1:1_Shallow_2	non-Rad	Aroclors HI	---	ug/kg	--	--	2.2E-04	--	5.9E-03
118-H-1:1_Shallow_2	non-Rad	Arsenic	7440-38-2	ug/kg	2,887	1.0E+04	2.9E-01	1.9E+05	1.5E-02
118-H-1:1_Shallow_2	non-Rad	Barium	7440-39-3	ug/kg	51,004	3.3E+05	1.6E-01	1.3E+06	3.9E-02
118-H-1:1_Shallow_2	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	0,009	1.8E+04	5.0E-04	6.4E+04	1.4E-04
118-H-1:1_Shallow_2	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	0,003	1.8E+04	1.8E-04	7.6E+04	4.3E-05
118-H-1:1_Shallow_2	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	0,008	1.8E+04	4.3E-04	3.9E+04	2.0E-04
118-H-1:1_Shallow_2	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	0,004	1.8E+04	2.4E-04	3.9E+04	1.1E-04
118-H-1:1_Shallow_2	non-Rad	Beryllium	7440-41-7	ug/kg	0,182	1.0E+04	1.8E-02	1.4E+04	1.3E-02
118-H-1:1_Shallow_2	non-Rad	Boron	7440-42-8	ug/kg	1,763	5.0E+02	**3.5E+00**	1.3E+05	1.3E-02
118-H-1:1_Shallow_2	non-Rad	Cadmium	7440-43-9	ug/kg	0,114	4.0E+03	2.9E-02	1.6E+03	7.0E-02
118-H-1:1_Shallow_2	Rad	Carbon-14	14762-75-5	pCi/g	0,002	6.1E+04	3.1E-05	3.2E+01	5.9E-02
118-H-1:1_Shallow_2	Rad	Cesium-137	10045-97-3	pCi/g	0,001	2.2E+03	2.4E-04	9.2E+02	5.6E-04
118-H-1:1_Shallow_2	non-Rad	Chromium	7440-47-3	ug/kg	12,051	4.0E+02	**3.0E+01**	3.8E+04	3.2E-01
118-H-1:1_Shallow_2	non-Rad	Chrysene	218-01-9	ug/kg	0,004	1.8E+04	2.1E-04	4.5E+04	8.4E-05
118-H-1:1_Shallow_2	non-Rad	Cobalt	7440-48-4	ug/kg	5,566	1.3E+04	4.3E-01	1.1E+05	5.0E-02
118-H-1:1_Shallow_2	Rad	Cobalt-60	10198-40-0	pCi/g	0,000	6.1E+03	1.8E-05	8.1E+02	1.4E-04
118-H-1:1_Shallow_2	non-Rad	Copper	7440-50-8	ug/kg	14,353	5.0E+04	2.9E-01	1.1E+05	1.3E-01
118-H-1:1_Shallow_2	non-Rad	Dibenz[a,h]anthracene	53-70-3	ug/kg	0,001	1.8E+04	8.1E-05	4.4E+04	3.3E-05
118-H-1:1_Shallow_2	Rad	Europium-152	14683-23-9	pCi/g	0,000	1.5E+04	1.8E-05	1.7E+03	1.5E-04
118-H-1:1_Shallow_2	non-Rad	Fluoranthene	206-44-0	ug/kg	0,021	1.8E+04	1.2E-03	8.4E+05	2.5E-05
118-H-1:1_Shallow_2	non-Rad	Fluorene	86-73-7	ug/kg	0,002	2.9E+04	5.2E-05	1.8E+05	8.6E-06
118-H-1:1_Shallow_2	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	0,004	1.8E+04	2.2E-04	3.6E+04	1.1E-04
118-H-1:1_Shallow_2	non-Rad	Lead	7439-92-1	ug/kg	3,641	5.0E+04	7.3E-02	3.6E+04	1.0E-01
118-H-1:1_Shallow_2	non-Rad	Manganese	7439-96-5	ug/kg	254,153	2.2E+05	**1.2E+00**	5.8E+06	4.4E-02
118-H-1:1_Shallow_2	non-Rad	Mercury	7439-97-6	ug/kg	0,057	1.0E+02	5.7E-01	1.9E+03	3.1E-02
118-H-1:1_Shallow_2	non-Rad	Molybdenum	7439-98-7	ug/kg	0,237	2.0E+03	1.2E-01	1.4E+04	1.7E-02
118-H-1:1_Shallow_2	non-Rad	Nickel	7440-02-0	ug/kg	11,937	3.0E+04	4.0E-01	3.3E+04	3.7E-01
118-H-1:1_Shallow_2	Rad	Nickel-63	13981-37-8	pCi/g	0,009	No Value	--	No Value	--
118-H-1:1_Shallow_2	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	ug/kg	1,950	No Value	--	No Value	--
118-H-1:1_Shallow_2	non-Rad	Pyrene	129-00-0	ug/kg	0,009	1.8E+04	5.1E-04	6.0E+05	1.5E-05
118-H-1:1_Shallow_2	Rad	Rads SOF	---	pCi/g	--	--	9.6E-04	--	9.4E-02
118-H-1:1_Shallow_2	Rad	Total beta radiostrontium	SR-RAD	pCi/g	0,002	3.6E+03	6.5E-04	9.1E+01	2.6E-02
118-H-1:1_Shallow_2	non-Rad	Total petroleum hydrocarbons - motor oil (high boiling)	TPH/OILH	ug/kg	3,880	No Value	--	No Value	--
118-H-1:1_Shallow_2	Rad	Tritium	10028-17-8	pCi/g	0,004	1.7E+06	2.4E-06	4.2E+02	9.6E-03
118-H-1:1_Shallow_2	non-Rad	Vanadium	7440-62-2	ug/kg	45,883	2.0E+03	**2.3E+01**	3.1E+04	**1.5E+00**
118-H-1:1_Shallow_2	non-Rad	Zinc	7440-66-6	ug/kg	34,227	5.0E+04	6.9E-01	6.8E+04	5.1E-01
118-H-1:1_Shallow_Focusec	non-Rad	Acenaphthene	83-32-9	ug/kg	0,007	2.0E+04	3.5E-04	1.1E+06	6.3E-06
118-H-1:1_Shallow_Focusec	non-Rad	Antimony	7440-36-0	ug/kg	0,226	5.0E+03	4.5E-02	6.0E+03	3.8E-02
118-H-1:1_Shallow_Focusec	non-Rad	Aroclor-1254	11097-69-1	ug/kg	0,029	4.0E+04	7.1E-04	1.5E+03	1.9E-02
118-H-1:1_Shallow_Focusec	non-Rad	Aroclor-1260	11096-82-5	ug/kg	0,028	4.0E+04	7.1E-04	1.5E+03	1.9E-02
118-H-1:1_Shallow_Focusec	non-Rad	Aroclors HI	---	ug/kg	--	--	1.4E-03	--	3.9E-02
118-H-1:1_Shallow_Focusec	non-Rad	Arsenic	7440-38-2	ug/kg	4,110	1.0E+04	4.1E-01	1.9E+05	2.2E-02
118-H-1:1_Shallow_Focusec	non-Rad	Barium	7440-39-3	ug/kg	98,300	3.3E+05	3.0E-01	1.3E+06	7.4E-02
118-H-1:1_Shallow_Focusec	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	0,005	1.8E+04	2.5E-04	6.4E+04	7.1E-05
118-H-1:1_Shallow_Focusec	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	0,005	1.8E+04	3.0E-04	7.6E+04	7.0E-05
118-H-1:1_Shallow_Focusec	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	0,010	1.8E+04	5.4E-04	3.9E+04	2.5E-04
118-H-1:1_Shallow_Focusec	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	0,002	1.8E+04	1.4E-04	3.9E+04	6.2E-05
118-H-1:1_Shallow_Focusec	non-Rad	Beryllium	7440-41-7	ug/kg	0,206	1.0E+04	2.1E-02	1.4E+04	1.5E-02
118-H-1:1_Shallow_Focusec	non-Rad	Boron	7440-42-8	ug/kg	4,160	5.0E+02	**8.3E+00**	1.3E+05	3.1E-02

Table 5. Comparison of 100-H OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/ Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
118-H-1:1_Shallow_Focusec	non-Rad	Cadmium	7440-43-9	ug/kg	0,306	4.0E+03	7.7E-02	1.6E+03	1.9E-01
118-H-1:1_Shallow_Focusec	Rad	Carbon-14	14762-75-5	pCi/g	0,002	6.1E+04	3.5E-05	3.2E+01	6.7E-02
118-H-1:1_Shallow_Focusec	Rad	Cesium-137	10045-97-3	pCi/g	0,001	2.2E+03	4.6E-04	9.2E+02	1.1E-03
118-H-1:1_Shallow_Focusec	non-Rad	Chromium	7440-47-3	ug/kg	22,000	4.0E+02	**5.5E+01**	3.8E+04	5.8E-01
118-H-1:1_Shallow_Focusec	non-Rad	Chrysene	218-01-9	ug/kg	0,025	1.8E+04	1.4E-03	4.5E+04	5.7E-04
118-H-1:1_Shallow_Focusec	non-Rad	Cobalt	7440-48-4	ug/kg	7,740	1.3E+04	6.0E-01	1.1E+05	6.9E-02
118-H-1:1_Shallow_Focusec	Rad	Cobalt-60	10198-40-0	pCi/g	0,000	6.1E+03	1.0E-05	8.1E+02	7.7E-05
118-H-1:1_Shallow_Focusec	non-Rad	Copper	7440-50-8	ug/kg	18,700	5.0E+04	3.7E-01	1.1E+05	1.8E-01
118-H-1:1_Shallow_Focusec	non-Rad	Dibenz[a,h]anthracene	53-70-3	ug/kg	0,001	1.8E+04	4.9E-05	4.4E+04	2.0E-05
118-H-1:1_Shallow_Focusec	Rad	Europium-152	14683-23-9	pCi/g	0,000	1.5E+04	2.1E-05	1.7E+03	1.7E-04
118-H-1:1_Shallow_Focusec	non-Rad	Fluoranthene	206-44-0	ug/kg	0,017	1.8E+04	9.6E-04	8.4E+05	2.1E-05
118-H-1:1_Shallow_Focusec	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	0,015	1.8E+04	8.4E-04	3.6E+04	4.3E-04
118-H-1:1_Shallow_Focusec	non-Rad	Lead	7439-92-1	ug/kg	10,900	5.0E+04	2.2E-01	3.6E+04	3.1E-01
118-H-1:1_Shallow_Focusec	non-Rad	Manganese	7439-96-5	ug/kg	295,000	2.2E+05	**1.3E+00**	5.8E+06	5.1E-02
118-H-1:1_Shallow_Focusec	non-Rad	Mercury	7439-97-6	ug/kg	0,202	1.0E+02	**2.0E+00**	1.9E+03	1.1E-01
118-H-1:1_Shallow_Focusec	non-Rad	Molybdenum	7439-98-7	ug/kg	0,341	2.0E+03	1.7E-01	1.4E+04	2.4E-02
118-H-1:1_Shallow_Focusec	non-Rad	Naphthalene	91-20-3	ug/kg	0,008	2.9E+04	2.8E-04	1.0E+05	8.2E-05
118-H-1:1_Shallow_Focusec	non-Rad	Nickel	7440-02-0	ug/kg	12,600	3.0E+04	4.2E-01	3.3E+04	3.9E-01
118-H-1:1_Shallow_Focusec	Rad	Nickel-63	13981-37-8	pCi/g	0,011	No Value	--	No Value	--
118-H-1:1_Shallow_Focusec	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	ug/kg	3,480	No Value	--	No Value	--
118-H-1:1_Shallow_Focusec	Rad	Plutonium-239/240	PU-239/240	pCi/g	0,000	1.3E+04	2.8E-05	6.3E+03	5.6E-05
118-H-1:1_Shallow_Focusec	non-Rad	Pyrene	129-00-0	ug/kg	0,011	1.8E+04	6.3E-04	6.0E+05	1.9E-05
118-H-1:1_Shallow_Focusec	Rad	Rads SOF	---	pCi/g	--	--	9.5E-04	--	1.0E-01
118-H-1:1_Shallow_Focusec	Rad	Total beta radiostrontium	SR-RAD	pCi/g	0,001	3.6E+03	3.9E-04	9.1E+01	1.6E-02
118-H-1:1_Shallow_Focusec	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	ug/kg	17,500	2.0E+05	8.8E-02	3.6E+08	4.9E-05
118-H-1:1_Shallow_Focused	non-Rad	Total petroleum hydrocarbons - motor oil (high boiling)	TPH/OILH	ug/kg	30,300	No Value	--	No Value	--
118-H-1:1_Shallow_Focusec	Rad	Tritium	10028-17-8	pCi/g	0,009	1.7E+06	5.2E-06	4.2E+02	2.1E-02
118-H-1:1_Shallow_Focusec	non-Rad	Vanadium	7440-62-2	ug/kg	44,900	2.0E+03	**2.3E+01**	3.1E+04	**1.4E+00**
118-H-1:1_Shallow_Focusec	non-Rad	Zinc	7440-66-6	ug/kg	40,700	5.0E+04	8.1E-01	6.8E+04	6.0E-01
118-H-1:1_Staging Pile Area Footprin	non-Rad	Acenaphthene	83-32-9	ug/kg	0,005	2.0E+04	2.7E-04	1.1E+06	4.9E-06
118-H-1:1_Staging Pile Area Footprin	non-Rad	Arsenic	7440-38-2	ug/kg	3,372	1.0E+04	3.4E-01	1.9E+05	1.8E-02
118-H-1:1_Staging Pile Area Footprin	non-Rad	Barium	7440-39-3	ug/kg	47,506	3.3E+05	1.4E-01	1.3E+06	3.6E-02
118-H-1:1_Staging Pile Area Footprin	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	0,002	1.8E+04	8.6E-05	6.4E+04	2.4E-05
118-H-1:1_Staging Pile Area Footprin	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	0,002	1.8E+04	1.1E-04	7.6E+04	2.5E-05
118-H-1:1_Staging Pile Area Footprin	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	0,002	1.8E+04	1.2E-04	3.9E+04	5.6E-05
118-H-1:1_Staging Pile Area Footprin	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	0,001	1.8E+04	7.2E-05	3.9E+04	3.3E-05
118-H-1:1_Staging Pile Area Footprin	non-Rad	Beryllium	7440-41-7	ug/kg	0,182	1.0E+04	1.8E-02	1.4E+04	1.3E-02
118-H-1:1_Staging Pile Area Footprin	non-Rad	Boron	7440-42-8	ug/kg	1,217	5.0E+02	**2.4E+00**	1.3E+05	9.2E-03
118-H-1:1_Staging Pile Area Footprin	non-Rad	Cadmium	7440-43-9	ug/kg	0,087	4.0E+03	2.2E-02	1.6E+03	5.4E-02
118-H-1:1_Staging Pile Area Footprin	Rad	Carbon-14	14762-75-5	pCi/g	0,001	6.1E+04	1.9E-05	3.2E+01	3.6E-02
118-H-1:1_Staging Pile Area Footprin	Rad	Cesium-137	10045-97-3	pCi/g	0,001	2.2E+03	3.1E-04	9.2E+02	7.5E-04
118-H-1:1_Staging Pile Area Footprin	non-Rad	Chromium	7440-47-3	ug/kg	12,039	4.0E+02	**3.0E+01**	3.8E+04	3.2E-01
118-H-1:1_Staging Pile Area Footprin	non-Rad	Chrysene	218-01-9	ug/kg	0,002	1.8E+04	1.2E-04	4.5E+04	4.7E-05
118-H-1:1_Staging Pile Area Footprin	non-Rad	Cobalt	7440-48-4	ug/kg	5,255	1.3E+04	4.0E-01	1.1E+05	4.7E-02
118-H-1:1_Staging Pile Area Footprin	Rad	Cobalt-60	10198-40-0	pCi/g	0,000	6.1E+03	2.0E-05	8.1E+02	1.6E-04
118-H-1:1_Staging Pile Area Footprin	non-Rad	Copper	7440-50-8	ug/kg	13,136	5.0E+04	2.6E-01	1.1E+05	1.2E-01
118-H-1:1_Staging Pile Area Footprin	Rad	Europium-152	14683-23-9	pCi/g	0,000	1.5E+04	1.3E-05	1.7E+03	1.1E-04
118-H-1:1_Staging Pile Area Footprin	non-Rad	Fluoranthene	206-44-0	ug/kg	0,004	1.8E+04	2.1E-04	8.4E+05	4.5E-06
118-H-1:1_Staging Pile Area Footprin	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	0,002	1.8E+04	9.9E-05	3.6E+04	5.0E-05
118-H-1:1_Staging Pile Area Footprin	non-Rad	Lead	7439-92-1	ug/kg	5,802	5.0E+04	1.2E-01	3.6E+04	1.6E-01
118-H-1:1_Staging Pile Area Footprin	non-Rad	Manganese	7439-96-5	ug/kg	254,283	2.2E+05	**1.2E+00**	5.8E+06	4.4E-02
118-H-1:1_Staging Pile Area Footprin	non-Rad	Mercury	7439-97-6	ug/kg	0,032	1.0E+02	3.2E-01	1.9E+03	1.7E-02
118-H-1:1_Staging Pile Area Footprin	non-Rad	Molybdenum	7439-98-7	ug/kg	0,223	2.0E+03	1.1E-01	1.4E+04	1.6E-02
118-H-1:1_Staging Pile Area Footprin	non-Rad	Nickel	7440-02-0	ug/kg	10,780	3.0E+04	3.6E-01	3.3E+04	3.3E-01
118-H-1:1_Staging Pile Area Footprin	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	ug/kg	4,861	No Value	--	No Value	--
118-H-1:1_Staging Pile Area Footprin	non-Rad	Pyrene	129-00-0	ug/kg	0,006	1.8E+04	3.2E-04	6.0E+05	9.5E-06
118-H-1:1_Staging Pile Area Footprin	Rad	Rads SOF	---	pCi/g	--	--	5.0E-04	--	4.9E-02
118-H-1:1_Staging Pile Area Footprin	non-Rad	Silver	7440-22-4	ug/kg	0,131	2.0E+03	6.6E-02	5.0E+04	2.6E-03
118-H-1:1_Staging Pile Area Footprin	Rad	Total beta radiostrontium	SR-RAD	pCi/g	0,000	3.6E+03	1.4E-04	9.1E+01	5.4E-03
118-H-1:1_Staging Pile Area Footprint	non-Rad	Total petroleum hydrocarbons - motor oil (high boiling)	TPH/OILH	ug/kg	7,617	No Value	--	No Value	--
118-H-1:1_Staging Pile Area Footprin	Rad	Tritium	10028-17-8	pCi/g	0,003	1.7E+06	1.6E-06	4.2E+02	6.4E-03
118-H-1:1_Staging Pile Area Footprin	non-Rad	Vanadium	7440-62-2	ug/kg	42,420	2.0E+03	**2.1E+01**	3.1E+04	**1.4E+00**
118-H-1:1_Staging Pile Area Footprin	non-Rad	Zinc	7440-66-6	ug/kg	32,172	5.0E+04	6.4E-01	6.8E+04	4.8E-01
118-H-1:2_Shallow	non-Rad	Anthracene	120-12-7	ug/kg	0,012	2.9E+04	4.1E-04	6.8E+05	1.8E-05
118-H-1:2_Shallow	non-Rad	Arsenic	7440-38-2	ug/kg	4,301	1.0E+04	4.3E-01	1.9E+05	2.3E-02
118-H-1:2_Shallow	non-Rad	Barium	7440-39-3	ug/kg	88,725	3.3E+05	2.7E-01	1.3E+06	6.7E-02
118-H-1:2_Shallow	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	0,028	1.8E+04	1.5E-03	6.4E+04	4.3E-04
118-H-1:2_Shallow	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	0,033	1.8E+04	1.9E-03	7.6E+04	4.4E-04
118-H-1:2_Shallow	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	0,024	1.8E+04	1.4E-03	3.9E+04	6.2E-04
118-H-1:2_Shallow	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	0,040	1.8E+04	2.2E-03	3.9E+04	1.0E-03
118-H-1:2_Shallow	non-Rad	Beryllium	7440-41-7	ug/kg	0,207	1.0E+04	2.1E-02	1.4E+04	1.5E-02
118-H-1:2_Shallow	non-Rad	Boron	7440-42-8	ug/kg	2,323	5.0E+02	**4.7E+00**	1.3E+05	1.8E-02
118-H-1:2_Shallow	non-Rad	Cadmium	7440-43-9	ug/kg	0,136	4.0E+03	3.4E-02	1.6E+03	8.3E-02
118-H-1:2_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	12,971	4.0E+02	**3.2E+01**	3.8E+04	3.4E-01
118-H-1:2_Shallow	non-Rad	Chrysene	218-01-9	ug/kg	0,033	1.8E+04	1.8E-03	4.5E+04	7.4E-04
118-H-1:2_Shallow	non-Rad	Cobalt	7440-48-4	ug/kg	8,234	1.3E+04	6.3E-01	1.1E+05	7.4E-02
118-H-1:2_Shallow	non-Rad	Copper	7440-50-8	ug/kg	17,149	5.0E+04	3.4E-01	1.1E+05	1.6E-01
118-H-1:2_Shallow	non-Rad	Fluoranthene	206-44-0	ug/kg	0,076	1.8E+04	4.2E-03	8.4E+05	9.0E-05
118-H-1:2_Shallow	non-Rad	Fluorene	86-73-7	ug/kg	0,007	2.9E+04	2.5E-04	1.8E+05	4.2E-05
118-H-1:2_Shallow	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	0,544	No Value	--	1.3E+06	4.4E-04
118-H-1:2_Shallow	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	0,068	1.8E+04	3.8E-03	3.6E+04	1.9E-03
118-H-1:2_Shallow	non-Rad	Lead	7439-92-1	ug/kg	10,968	5.0E+04	2.2E-01	3.6E+04	3.1E-01
118-H-1:2_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	340,196	2.2E+05	**1.6E+00**	5.8E+06	5.9E-02
118-H-1:2_Shallow	non-Rad	Mercury	7439-97-6	ug/kg	0,010	1.0E+02	1.0E-01	1.9E+03	5.4E-03
118-H-1:2_Shallow	non-Rad	Molybdenum	7439-98-7	ug/kg	0,300	2.0E+03	1.5E-01	1.4E+04	2.2E-02
118-H-1:2_Shallow	non-Rad	Nickel	7440-02-0	ug/kg	13,022	3.0E+04	4.3E-01	3.3E+04	4.0E-01
118-H-1:2_Shallow	non-Rad	Pyrene	129-00-0	ug/kg	0,084	1.8E+04	4.7E-03	6.0E+05	1.4E-04
118-H-1:2_Shallow	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	ug/kg	7,600	2.0E+05	3.8E-02	3.6E+08	2.1E-05
118-H-1:2_Shallow	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	ug/kg	4,042	No Value	--	No Value	--
118-H-1:2_Shallow	Rad	Tritium	10028-17-8	pCi/g	0,000	1.7E+06	3.8E-08	4.2E+02	1.5E-04
118-H-1:2_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	44,407	2.0E+03	**2.2E+01**	3.1E+04	**1.4E+00**
118-H-1:2_Shallow	non-Rad	Zinc	7440-66-6	ug/kg	43,743	5.0E+04	8.8E-01	6.8E+04	6.5E-01
118-H-1:2_Shallow_Focusec	non-Rad	Anthracene	120-12-7	ug/kg	0,008	2.9E+04	2.6E-04	6.8E+05	1.1E-05
118-H-1:2_Shallow_Focusec	non-Rad	Arsenic	7440-38-2	ug/kg	3,700	1.0E+04	3.7E-01	1.9E+05	2.0E-02
118-H-1:2_Shallow_Focusec	non-Rad	Barium	7440-39-3	ug/kg	53,700	3.3E+05	1.6E-01	1.3E+06	4.1E-02
118-H-1:2_Shallow_Focusec	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	0,043	1.8E+04	2.4E-03	6.4E+04	6.7E-04
118-H-1:2_Shallow_Focusec	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	0,033	1.8E+04	1.8E-03	7.6E+04	4.3E-04
118-H-1:2_Shallow_Focusec	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	0,035	1.8E+04	1.9E-03	3.9E+04	8.9E-04
118-H-1:2_Shallow_Focusec	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	0,016	1.8E+04	8.9E-04	3.9E+04	4.1E-04
118-H-1:2_Shallow_Focusec	non-Rad	Beryllium	7440-41-7	ug/kg	0,110	1.0E+04	1.1E-02	1.4E+04	7.9E-03
118-H-1:2_Shallow_Focusec	non-Rad	Boron	7440-42-8	ug/kg	1,300	5.0E+02	**2.6E+00**	1.3E+05	9.8E-03
118-H-1:2_Shallow_Focusec	non-Rad	Cadmium	7440-43-9	ug/kg	0,120	4.0E+03	3.0E-02	1.6E+03	7.4E-02
118-H-1:2_Shallow_Focusec	Rad	Carbon-14	14762-75-5	pCi/g	0,001	6.1E+04	1.3E-05	3.2E+01	2.6E-02
118-H-1:2_Shallow_Focusec	non-Rad	Chromium	7440-47-3	ug/kg	12,000	4.0E+02	**3.0E+01**	3.8E+04	3.1E-01
118-H-1:2_Shallow_Focusec	non-Rad	Chrysene	218-01-9	ug/kg	0,035	1.8E+04	1.9E-03	4.5E+04	7.9E-04
118-H-1:2_Shallow_Focusec	non-Rad	Cobalt	7440-48-4	ug/kg	6,600	1.3E+04	5.1E-01	1.1E+05	5.9E-02
118-H-1:2_Shallow_Focusec	non-Rad	Copper	7440-50-8	ug/kg	15,100	5.0E+04	3.0E-01	1.1E+05	1.4E-01
118-H-1:2_Shallow_Focusec	non-Rad	Fluoranthene	206-44-0	ug/kg	0,083	1.8E+04	4.6E-03	8.4E+05	9.9E-05
118-H-1:2_Shallow_Focusec	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	0,369	No Value	--	1.3E+06	3.0E-04
118-H-1:2_Shallow_Focusec	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	0,026	1.8E+04	1.4E-03	3.6E+04	7.3E-04
118-H-1:2_Shallow_Focusec	non-Rad	Lead	7439-92-1	ug/kg	11,700	5.0E+04	2.3E-01	3.6E+04	3.3E-01
118-H-1:2_Shallow_Focusec	non-Rad	Manganese	7439-96-5	ug/kg	273,000	2.2E+05	**1.2E+00**	5.8E+06	4.7E-02
118-H-1:2_Shallow_Focusec	non-Rad	Nickel	7440-02-0	ug/kg	12,200	3.0E+04	4.1E-01	3.3E+04	3.7E-01
118-H-1:2_Shallow_Focusec	non-Rad	Pyrene	129-00-0	ug/kg	0,052	1.8E+04	2.9E-03	6.0E+05	8.7E-05
118-H-1:2_Shallow_Focusec	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	ug/kg	2,400	2.0E+05	1.2E-02	3.6E+08	6.7E-06
118-H-1:2_Shallow_Focused	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	ug/kg	4,100	No Value	--	No Value	--
118-H-1:2_Shallow_Focusec	non-Rad	Vanadium	7440-62-2	ug/kg	37,100	2.0E+03	**1.9E+01**	3.1E+04	**1.2E+00**
118-H-1:2_Shallow_Focusec	non-Rad	Zinc	7440-66-6	ug/kg	36,800	5.0E+04	7.4E-01	6.8E+04	5.4E-01
118-H-2_Shallow	non-Rad	Arsenic	7440-38-2	ug/kg	5,041	1.0E+04	5.0E-01	1.9E+05	2.7E-02
118-H-2_Shallow	non-Rad	Barium	7440-39-3	ug/kg	64,447	3.3E+05	2.0E-01	1.3E+06	4.9E-02

Table 5. Comparison of 100-H OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/ Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
118-H-2_Shallow	non-Rad	Beryllium	7440-41-7	ug/kg	0,224	1.0E+04	2.2E-02	1.4E+04	1.6E-02
118-H-2_Shallow	non-Rad	Boron	7440-42-8	ug/kg	1,365	5.0E+02	**2.7E+00**	1.3E+05	1.0E-02
118-H-2_Shallow	non-Rad	Cadmium	7440-43-9	ug/kg	0,086	4.0E+03	2.1E-02	1.6E+03	5.3E-02
118-H-2_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0,000	2.2E+03	1.3E-04	9.2E+02	3.2E-04
118-H-2_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	10,049	4.0E+02	**2.5E+01**	3.8E+04	2.6E-01
118-H-2_Shallow	non-Rad	Cobalt	7440-48-4	ug/kg	5,814	1.3E+04	4.5E-01	1.1E+05	5.2E-02
118-H-2_Shallow	Rad	Cobalt-60	10198-40-0	pCi/g	0,000	6.1E+03	3.5E-05	8.1E+02	2.7E-04
118-H-2_Shallow	non-Rad	Copper	7440-50-8	ug/kg	13,954	5.0E+04	2.8E-01	1.1E+05	1.3E-01
118-H-2_Shallow	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	0,171	No Value	--	1.3E+06	1.4E-04
118-H-2_Shallow	non-Rad	Lead	7439-92-1	ug/kg	15,481	5.0E+04	3.1E-01	3.6E+04	4.4E-01
118-H-2_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	266,309	2.2E+05	**1.2E+00**	5.8E+06	4.6E-02
118-H-2_Shallow	non-Rad	Mercury	7439-97-6	ug/kg	0,014	1.0E+02	1.4E-01	1.9E+03	7.3E-03
118-H-2_Shallow	non-Rad	Molybdenum	7439-98-7	ug/kg	0,309	2.0E+03	1.5E-01	1.4E+04	2.2E-02
118-H-2_Shallow	non-Rad	Nickel	7440-02-0	ug/kg	11,619	3.0E+04	3.9E-01	3.3E+04	3.6E-01
118-H-2_Shallow	Rad	Nickel-63	13981-37-8	pCi/g	0,013	No Value	--	No Value	--
118-H-2_Shallow	Rad	Rads SOF	---	pCi/g	--	--	2.2E-04	--	7.8E-04
118-H-2_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	1,689	5.0E+03	3.4E-01	3.6E+05	4.7E-03
118-H-2_Shallow	Rad	Uranium-233/234	U-233/234	pCi/g	0,001	5.2E+04	1.0E-05	6.4E+03	8.1E-05
118-H-2_Shallow	Rad	Uranium-235	15117-96-1	pCi/g	0,000	2.7E+04	1.2E-06	4.4E+03	7.3E-06
118-H-2_Shallow	Rad	Uranium-238	U-238	pCi/g	0,001	1.6E+04	3.6E-05	5.2E+03	1.1E-04
118-H-2_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	41,613	2.0E+03	**2.1E+01**	3.1E+04	**1.3E+00**
118-H-2_Shallow	non-Rad	Zinc	7440-66-6	ug/kg	34,224	5.0E+04	6.8E-01	6.8E+04	5.1E-01
118-H-3_Shallow_1	non-Rad	Antimony	7440-36-0	ug/kg	0,743	5.0E+03	1.5E-01	6.0E+03	1.2E-01
118-H-3_Shallow_1	non-Rad	Aroclor-1260	11096-82-5	ug/kg	0,055	4.0E+04	1.4E-03	1.5E+03	3.8E-02
118-H-3_Shallow_1	non-Rad	Arsenic	7440-38-2	ug/kg	15,852	1.0E+04	**1.6E+00**	1.9E+05	8.4E-02
118-H-3_Shallow_1	non-Rad	Barium	7440-39-3	ug/kg	83,791	3.3E+05	2.5E-01	1.3E+06	6.3E-02
118-H-3_Shallow_1	non-Rad	Beryllium	7440-41-7	ug/kg	0,321	1.0E+04	3.2E-02	1.4E+04	2.3E-02
118-H-3_Shallow_1	non-Rad	Boron	7440-42-8	ug/kg	3,104	5.0E+02	**6.2E+00**	1.3E+05	2.3E-02
118-H-3_Shallow_1	non-Rad	Cadmium	7440-43-9	ug/kg	0,153	4.0E+03	3.8E-02	1.6E+03	9.4E-02
118-H-3_Shallow_1	non-Rad	Chromium	7440-47-3	ug/kg	13,218	4.0E+02	**3.3E+01**	3.8E+04	3.5E-01
118-H-3_Shallow_1	non-Rad	Cobalt	7440-48-4	ug/kg	6,931	1.3E+04	5.3E-01	1.1E+05	6.2E-02
118-H-3_Shallow_1	non-Rad	Copper	7440-50-8	ug/kg	23,535	5.0E+04	4.7E-01	1.1E+05	2.2E-01
118-H-3_Shallow_1	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	0,080	No Value	--	1.3E+06	6.4E-05
118-H-3_Shallow_1	non-Rad	Lead	7439-92-1	ug/kg	57,642	5.0E+04	**1.2E+00**	3.6E+04	**1.6E+00**
118-H-3_Shallow_1	non-Rad	Manganese	7439-96-5	ug/kg	345,494	2.2E+05	**1.6E+00**	5.8E+06	6.0E-02
118-H-3_Shallow_1	non-Rad	Mercury	7439-97-6	ug/kg	0,011	1.0E+02	1.1E-01	1.9E+03	5.9E-03
118-H-3_Shallow_1	non-Rad	Molybdenum	7439-98-7	ug/kg	1,412	2.0E+03	7.1E-01	1.4E+04	1.0E-01
118-H-3_Shallow_1	non-Rad	Nickel	7440-02-0	ug/kg	14,747	3.0E+04	4.9E-01	3.3E+04	4.5E-01
118-H-3_Shallow_1	Rad	Rads SOF	---	pCi/g	--	--	5.5E-05	--	2.4E-04
118-H-3_Shallow_1	non-Rad	Silver	7440-22-4	ug/kg	0,417	2.0E+03	2.1E-01	5.0E+04	8.4E-03
118-H-3_Shallow_1	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	1,864	5.0E+03	3.7E-01	3.6E+05	5.2E-03
118-H-3_Shallow_1	Rad	Uranium-233/234	U-233/234	pCi/g	0,001	5.2E+04	1.3E-05	6.4E+03	1.1E-04
118-H-3_Shallow_1	Rad	Uranium-235	15117-96-1	pCi/g	0,000	2.7E+04	1.2E-06	4.4E+03	7.6E-06
118-H-3_Shallow_1	Rad	Uranium-238	U-238	pCi/g	0,001	1.6E+04	4.0E-05	5.2E+03	1.2E-04
118-H-3_Shallow_1	non-Rad	Vanadium	7440-62-2	ug/kg	45,491	2.0E+03	**2.3E+01**	3.1E+04	**1.5E+00**
118-H-3_Shallow_1	non-Rad	Zinc	7440-66-6	ug/kg	132,913	5.0E+04	**2.7E+00**	6.8E+04	**2.0E+00**
118-H-3_Shallow_2	non-Rad	Aroclor-1260	11096-82-5	ug/kg	0,009	4.0E+04	2.4E-04	1.5E+03	6.4E-03
118-H-3_Shallow_2	non-Rad	Arsenic	7440-38-2	ug/kg	3,014	1.0E+04	3.0E-01	1.9E+05	1.6E-02
118-H-3_Shallow_2	non-Rad	Barium	7440-39-3	ug/kg	73,070	3.3E+05	2.2E-01	1.3E+06	5.5E-02
118-H-3_Shallow_2	non-Rad	Beryllium	7440-41-7	ug/kg	0,261	1.0E+04	2.6E-02	1.4E+04	1.9E-02
118-H-3_Shallow_2	non-Rad	Boron	7440-42-8	ug/kg	2,578	5.0E+02	**5.2E+00**	1.3E+05	1.9E-02
118-H-3_Shallow_2	non-Rad	Cadmium	7440-43-9	ug/kg	0,097	4.0E+03	2.4E-02	1.6E+03	5.9E-02
118-H-3_Shallow_2	non-Rad	Chromium	7440-47-3	ug/kg	11,622	4.0E+02	**2.9E+01**	3.8E+04	3.1E-01
118-H-3_Shallow_2	non-Rad	Cobalt	7440-48-4	ug/kg	6,141	1.3E+04	4.7E-01	1.1E+05	5.5E-02
118-H-3_Shallow_2	non-Rad	Copper	7440-50-8	ug/kg	14,147	5.0E+04	2.8E-01	1.1E+05	1.3E-01
118-H-3_Shallow_2	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	0,400	No Value	--	1.3E+06	3.2E-04
118-H-3_Shallow_2	non-Rad	Lead	7439-92-1	ug/kg	6,789	5.0E+04	1.4E-01	3.6E+04	1.9E-01
118-H-3_Shallow_2	non-Rad	Manganese	7439-96-5	ug/kg	300,387	2.2E+05	**1.4E+00**	5.8E+06	5.2E-02
118-H-3_Shallow_2	non-Rad	Mercury	7439-97-6	ug/kg	0,015	1.0E+02	1.5E-01	1.9E+03	7.9E-03
118-H-3_Shallow_2	non-Rad	Molybdenum	7439-98-7	ug/kg	0,280	2.0E+03	1.4E-01	1.4E+04	2.0E-02
118-H-3_Shallow_2	non-Rad	Nickel	7440-02-0	ug/kg	10,769	3.0E+04	3.6E-01	3.3E+04	3.3E-01
118-H-3_Shallow_2	Rad	Rads SOF	---	pCi/g	--	--	5.3E-05	--	2.2E-04
118-H-3_Shallow_2	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	1,910	5.0E+03	3.8E-01	3.6E+05	5.3E-03
118-H-3_Shallow_2	Rad	Uranium-233/234	U-233/234	pCi/g	0,001	5.2E+04	1.2E-05	6.4E+03	9.5E-05
118-H-3_Shallow_2	Rad	Uranium-238	U-238	pCi/g	0,001	1.6E+04	4.1E-05	5.2E+03	1.3E-04
118-H-3_Shallow_2	non-Rad	Vanadium	7440-62-2	ug/kg	45,329	2.0E+03	**2.3E+01**	3.1E+04	**1.5E+00**
118-H-3_Shallow_2	non-Rad	Zinc	7440-66-6	ug/kg	38,757	5.0E+04	7.8E-01	6.8E+04	5.7E-01
118-H-3_Shallow_Focusec	non-Rad	Arsenic	7440-38-2	ug/kg	4,800	1.0E+04	4.8E-01	1.9E+05	2.5E-02
118-H-3_Shallow_Focusec	non-Rad	Barium	7440-39-3	ug/kg	56,700	3.3E+05	1.7E-01	1.3E+06	4.3E-02
118-H-3_Shallow_Focusec	non-Rad	Beryllium	7440-41-7	ug/kg	0,211	1.0E+04	2.1E-02	1.4E+04	1.5E-02
118-H-3_Shallow_Focusec	non-Rad	Boron	7440-42-8	ug/kg	2,630	5.0E+02	**5.3E+00**	1.3E+05	2.0E-02
118-H-3_Shallow_Focusec	non-Rad	Cadmium	7440-43-9	ug/kg	0,081	4.0E+03	2.0E-02	1.6E+03	5.0E-02
118-H-3_Shallow_Focusec	Rad	Cesium-137	10045-97-3	pCi/g	0,000	2.2E+03	1.0E-04	9.2E+02	2.5E-04
118-H-3_Shallow_Focusec	non-Rad	Chromium	7440-47-3	ug/kg	9,110	4.0E+02	**2.3E+01**	3.8E+04	2.4E-01
118-H-3_Shallow_Focusec	non-Rad	Cobalt	7440-48-4	ug/kg	5,690	1.3E+04	4.4E-01	1.1E+05	5.1E-02
118-H-3_Shallow_Focusec	Rad	Cobalt-60	10198-40-0	pCi/g	0,001	6.1E+03	8.6E-05	8.1E+02	6.5E-04
118-H-3_Shallow_Focusec	non-Rad	Copper	7440-50-8	ug/kg	15,100	5.0E+04	3.0E-01	1.1E+05	1.4E-01
118-H-3_Shallow_Focusec	non-Rad	Lead	7439-92-1	ug/kg	11,600	5.0E+04	2.3E-01	3.6E+04	3.3E-01
118-H-3_Shallow_Focusec	non-Rad	Manganese	7439-96-5	ug/kg	255,000	2.2E+05	**1.2E+00**	5.8E+06	4.4E-02
118-H-3_Shallow_Focusec	non-Rad	Molybdenum	7439-98-7	ug/kg	0,363	2.0E+03	1.8E-01	1.4E+04	2.6E-02
118-H-3_Shallow_Focusec	non-Rad	Nickel	7440-02-0	ug/kg	8,550	3.0E+04	2.9E-01	3.3E+04	2.6E-01
118-H-3_Shallow_Focusec	Rad	Nickel-63	13981-37-8	pCi/g	0,009	No Value	--	No Value	--
118-H-3_Shallow_Focusec	Rad	Rads SOF	---	pCi/g	--	--	2.7E-04	--	1.3E-03
118-H-3_Shallow_Focusec	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	2,819	5.0E+03	5.6E-01	3.6E+05	7.9E-03
118-H-3_Shallow_Focusec	Rad	Uranium-233/234	U-233/234	pCi/g	0,001	5.2E+04	2.1E-05	6.4E+03	1.7E-04
118-H-3_Shallow_Focusec	Rad	Uranium-238	U-238	pCi/g	0,001	1.6E+04	6.0E-05	5.2E+03	1.8E-04
118-H-3_Shallow_Focusec	non-Rad	Vanadium	7440-62-2	ug/kg	48,300	2.0E+03	**2.4E+01**	3.1E+04	**1.6E+00**
118-H-3_Shallow_Focusec	non-Rad	Zinc	7440-66-6	ug/kg	36,900	5.0E+04	7.4E-01	6.8E+04	5.4E-01
118-H-4_Shallow	non-Rad	Arsenic	7440-38-2	ug/kg	3,442	1.0E+04	3.4E-01	1.9E+05	1.8E-02
118-H-4_Shallow	non-Rad	Barium	7440-39-3	ug/kg	66,445	3.3E+05	2.0E-01	1.3E+06	5.0E-02
118-H-4_Shallow	non-Rad	Beryllium	7440-41-7	ug/kg	0,228	1.0E+04	2.3E-02	1.4E+04	1.6E-02
118-H-4_Shallow	non-Rad	Boron	7440-42-8	ug/kg	1,534	5.0E+02	**3.1E+00**	1.3E+05	1.2E-02
118-H-4_Shallow	non-Rad	Cadmium	7440-43-9	ug/kg	0,132	4.0E+03	3.3E-02	1.6E+03	8.1E-02
118-H-4_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0,001	2.2E+03	4.8E-04	9.2E+02	1.2E-03
118-H-4_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	11,715	4.0E+02	**2.9E+01**	3.8E+04	3.1E-01
118-H-4_Shallow	non-Rad	Cobalt	7440-48-4	ug/kg	5,894	1.3E+04	4.5E-01	1.1E+05	5.3E-02
118-H-4_Shallow	Rad	Cobalt-60	10198-40-0	pCi/g	0,000	6.1E+03	1.7E-05	8.1E+02	1.3E-04
118-H-4_Shallow	non-Rad	Copper	7440-50-8	ug/kg	15,054	5.0E+04	3.0E-01	1.1E+05	1.4E-01
118-H-4_Shallow	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	0,090	No Value	--	1.3E+06	7.2E-05
118-H-4_Shallow	non-Rad	Lead	7439-92-1	ug/kg	9,065	5.0E+04	1.8E-01	3.6E+04	2.6E-01
118-H-4_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	279,088	2.2E+05	**1.3E+00**	5.8E+06	4.8E-02
118-H-4_Shallow	non-Rad	Mercury	7439-97-6	ug/kg	0,022	1.0E+02	2.2E-01	1.9E+03	1.2E-02
118-H-4_Shallow	non-Rad	Molybdenum	7439-98-7	ug/kg	0,437	2.0E+03	2.2E-01	1.4E+04	3.1E-02
118-H-4_Shallow	non-Rad	Nickel	7440-02-0	ug/kg	11,015	3.0E+04	3.7E-01	3.3E+04	3.4E-01
118-H-4_Shallow	Rad	Rads SOF	---	pCi/g	--	--	8.5E-04	--	1.5E-02
118-H-4_Shallow	Rad	Total beta radiostrontium	SR-RAD	pCi/g	0,001	3.6E+03	3.5E-04	9.1E+01	1.4E-02
118-H-4_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	45,964	2.0E+03	**2.3E+01**	3.1E+04	**1.5E+00**
118-H-4_Shallow	non-Rad	Zinc	7440-66-6	ug/kg	38,843	5.0E+04	7.8E-01	6.8E+04	5.7E-01
118-H-4_Shallow_Focusec	non-Rad	Arsenic	7440-38-2	ug/kg	2,100	1.0E+04	2.1E-01	1.9E+05	1.1E-02
118-H-4_Shallow_Focusec	non-Rad	Barium	7440-39-3	ug/kg	46,300	3.3E+05	1.4E-01	1.3E+06	3.5E-02
118-H-4_Shallow_Focusec	non-Rad	Beryllium	7440-41-7	ug/kg	0,148	1.0E+04	1.5E-02	1.4E+04	1.1E-02
118-H-4_Shallow_Focusec	non-Rad	Boron	7440-42-8	ug/kg	1,440	5.0E+02	**2.9E+00**	1.3E+05	1.1E-02
118-H-4_Shallow_Focusec	non-Rad	Cadmium	7440-43-9	ug/kg	0,113	4.0E+03	2.8E-02	1.6E+03	6.9E-02
118-H-4_Shallow_Focusec	Rad	Cesium-137	10045-97-3	pCi/g	0,000	2.2E+03	1.2E-04	9.2E+02	2.8E-04
118-H-4_Shallow_Focusec	non-Rad	Chromium	7440-47-3	ug/kg	9,900	4.0E+02	**2.5E+01**	3.8E+04	2.6E-01
118-H-4_Shallow_Focusec	non-Rad	Cobalt	7440-48-4	ug/kg	4,520	1.3E+04	3.5E-01	1.1E+05	4.1E-02
118-H-4_Shallow_Focusec	non-Rad	Copper	7440-50-8	ug/kg	12,600	5.0E+04	2.5E-01	1.1E+05	1.2E-01
118-H-4_Shallow_Focusec	non-Rad	Lead	7439-92-1	ug/kg	4,330	5.0E+04	8.7E-02	3.6E+04	1.2E-01
118-H-4_Shallow_Focusec	non-Rad	Manganese	7439-96-5	ug/kg	222,000	2.2E+05	**1.0E+00**	5.8E+06	3.8E-02
118-H-4_Shallow_Focusec	non-Rad	Molybdenum	7439-98-7	ug/kg	0,424	2.0E+03	2.1E-01	1.4E+04	3.0E-02
118-H-4_Shallow_Focusec	non-Rad	Nickel	7440-02-0	ug/kg	8,730	3.0E+04	2.9E-01	3.3E+04	2.7E-01
118-H-4_Shallow_Focusec	non-Rad	Vanadium	7440-62-2	ug/kg	39,000	2.0E+03	**2.0E+01**	3.1E+04	**1.3E+00**
118-H-4_Shallow_Focusec	non-Rad	Zinc	7440-66-6	ug/kg	40,300	5.0E+04	8.1E-01	6.8E+04	5.9E-01
118-H-4_Staging Pile Area	non-Rad	Arsenic	7440-38-2	ug/kg	3,913	1.0E+04	3.9E-01	1.9E+05	2.1E-02

Table 5. Comparison of 100-H OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/ Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
118-H-4_Staging Pile Area	non-Rad	Barium	7440-39-3	ug/kg	63,087	3.3E+05	1.9E-01	1.3E+06	4.8E-02
118-H-4_Staging Pile Area	non-Rad	Beryllium	7440-41-7	ug/kg	0,176	1.0E+04	1.8E-02	1.4E+04	1.3E-02
118-H-4_Staging Pile Area	non-Rad	Boron	7440-42-8	ug/kg	2,987	5.0E+02	**6.0E+00**	1.3E+05	2.3E-02
118-H-4_Staging Pile Area	non-Rad	Cadmium	7440-43-9	ug/kg	0,170	4.0E+03	4.2E-02	1.6E+03	1.0E-01
118-H-4_Staging Pile Area	Rad	Cesium-137	10045-97-3	pCi/g	0,000	2.2E+03	8.9E-05	9.2E+02	2.1E-04
118-H-4_Staging Pile Area	non-Rad	Chromium	7440-47-3	ug/kg	9,780	4.0E+02	**2.4E+01**	3.8E+04	2.6E-01
118-H-4_Staging Pile Area	non-Rad	Cobalt	7440-48-4	ug/kg	6,100	1.3E+04	4.7E-01	1.1E+05	5.5E-02
118-H-4_Staging Pile Area	non-Rad	Copper	7440-50-8	ug/kg	14,864	5.0E+04	3.0E-01	1.1E+05	1.4E-01
118-H-4_Staging Pile Area	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	0,150	No Value	--	1.3E+06	1.2E-04
118-H-4_Staging Pile Area	non-Rad	Lead	7439-92-1	ug/kg	28,136	5.0E+04	5.6E-01	3.6E+04	7.9E-01
118-H-4_Staging Pile Area	non-Rad	Manganese	7439-96-5	ug/kg	258,296	2.2E+05	**1.2E+00**	5.8E+06	4.5E-02
118-H-4_Staging Pile Area	non-Rad	Molybdenum	7439-98-7	ug/kg	0,482	2.0E+03	2.4E-01	1.4E+04	3.5E-02
118-H-4_Staging Pile Area	non-Rad	Nickel	7440-02-0	ug/kg	9,598	3.0E+04	3.2E-01	3.3E+04	3.0E-01
118-H-4_Staging Pile Area	non-Rad	Vanadium	7440-62-2	ug/kg	48,115	2.0E+03	**2.4E+01**	3.1E+04	**1.6E+00**
118-H-4_Staging Pile Area	non-Rad	Zinc	7440-66-6	ug/kg	72,799	5.0E+04	**1.5E+00**	6.8E+04	**1.1E+00**
118-H-5_Shallow	non-Rad	Arsenic	7440-38-2	ug/kg	4,597	1.0E+04	4.6E-01	1.9E+05	2.4E-02
118-H-5_Shallow	non-Rad	Barium	7440-39-3	ug/kg	61,388	3.3E+05	1.9E-01	1.3E+06	4.6E-02
118-H-5_Shallow	non-Rad	Beryllium	7440-41-7	ug/kg	0,232	1.0E+04	2.3E-02	1.4E+04	1.7E-02
118-H-5_Shallow	non-Rad	Boron	7440-42-8	ug/kg	6,246	5.0E+02	**1.3E+01**	1.3E+05	4.7E-02
118-H-5_Shallow	non-Rad	Cadmium	7440-43-9	ug/kg	0,057	4.0E+03	1.4E-02	1.6E+03	3.5E-02
118-H-5_Shallow	Rad	Carbon-14	14762-75-5	pCi/g	0,003	6.1E+04	4.6E-05	3.2E+01	8.7E-02
118-H-5_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	10,718	4.0E+02	**2.7E+01**	3.8E+04	2.8E-01
118-H-5_Shallow	non-Rad	Cobalt	7440-48-4	ug/kg	5,765	1.3E+04	4.4E-01	1.1E+05	5.2E-02
118-H-5_Shallow	non-Rad	Copper	7440-50-8	ug/kg	14,038	5.0E+04	2.8E-01	1.1E+05	1.3E-01
118-H-5_Shallow	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	0,369	No Value	--	1.3E+06	3.0E-04
118-H-5_Shallow	non-Rad	Lead	7439-92-1	ug/kg	10,128	5.0E+04	2.0E-01	3.6E+04	2.9E-01
118-H-5_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	276,172	2.2E+05	**1.3E+00**	5.8E+06	4.8E-02
118-H-5_Shallow	non-Rad	Molybdenum	7439-98-7	ug/kg	0,329	2.0E+03	1.7E-01	1.4E+04	2.4E-02
118-H-5_Shallow	non-Rad	Nickel	7440-02-0	ug/kg	9,970	3.0E+04	3.3E-01	3.3E+04	3.1E-01
118-H-5_Shallow	Rad	Rads SOF	---	pCi/g	--	--	2.0E-04	--	9.2E-02
118-H-5_Shallow	Rad	Total beta radiostrontium	SR-RAD	pCi/g	0,000	3.6E+03	1.0E-04	9.1E+01	4.0E-03
118-H-5_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	1,871	5.0E+03	3.7E-01	3.6E+05	5.2E-03
118-H-5_Shallow	Rad	Uranium-233/234	U-233/234	pCi/g	0,001	5.2E+04	1.3E-05	6.4E+03	1.1E-04
118-H-5_Shallow	Rad	Uranium-238	U-238	pCi/g	0,001	1.6E+04	4.0E-05	5.2E+03	1.2E-04
118-H-5_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	39,149	2.0E+03	**2.0E+01**	3.1E+04	**1.3E+00**
118-H-5_Shallow	non-Rad	Zinc	7440-66-6	ug/kg	36,296	5.0E+04	7.3E-01	6.8E+04	5.4E-01
118-H-5_Shallow_Focused	non-Rad	Arsenic	7440-38-2	ug/kg	4,490	1.0E+04	4.5E-01	1.9E+05	2.4E-02
118-H-5_Shallow_Focused	non-Rad	Barium	7440-39-3	ug/kg	46,100	3.3E+05	1.4E-01	1.3E+06	3.5E-02
118-H-5_Shallow_Focused	non-Rad	Beryllium	7440-41-7	ug/kg	0,197	1.0E+04	2.0E-02	1.4E+04	1.4E-02
118-H-5_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	1,290	5.0E+02	**2.6E+00**	1.3E+05	9.7E-03
118-H-5_Shallow_Focused	non-Rad	Cadmium	7440-43-9	ug/kg	0,047	4.0E+03	1.2E-02	1.6E+03	2.9E-02
118-H-5_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	10,500	4.0E+02	**2.6E+01**	3.8E+04	2.8E-01
118-H-5_Shallow_Focused	non-Rad	Cobalt	7440-48-4	ug/kg	5,490	1.3E+04	4.2E-01	1.1E+05	4.9E-02
118-H-5_Shallow_Focused	non-Rad	Copper	7440-50-8	ug/kg	13,700	5.0E+04	2.7E-01	1.1E+05	1.3E-01
118-H-5_Shallow_Focused	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	0,280	No Value	--	1.3E+06	2.3E-04
118-H-5_Shallow_Focused	non-Rad	Lead	7439-92-1	ug/kg	9,240	5.0E+04	1.9E-01	3.6E+04	2.6E-01
118-H-5_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	257,000	2.2E+05	**1.2E+00**	5.8E+06	4.4E-02
118-H-5_Shallow_Focused	non-Rad	Molybdenum	7439-98-7	ug/kg	0,277	2.0E+03	1.4E-01	1.4E+04	2.0E-02
118-H-5_Shallow_Focused	non-Rad	Nickel	7440-02-0	ug/kg	10,600	3.0E+04	3.5E-01	3.3E+04	3.3E-01
118-H-5_Shallow_Focused	Rad	Rads SOF	---	pCi/g	--	--	6.7E-05	--	3.1E-04
118-H-5_Shallow_Focused	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	2,105	5.0E+03	4.2E-01	3.6E+05	5.9E-03
118-H-5_Shallow_Focused	Rad	Uranium-233/234	U-233/234	pCi/g	0,001	5.2E+04	2.2E-05	6.4E+03	1.8E-04
118-H-5_Shallow_Focused	Rad	Uranium-238	U-238	pCi/g	0,001	1.6E+04	4.5E-05	5.2E+03	1.4E-04
118-H-5_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	39,400	2.0E+03	**2.0E+01**	3.1E+04	**1.3E+00**
118-H-5_Shallow_Focused	non-Rad	Zinc	7440-66-6	ug/kg	33,900	5.0E+04	6.8E-01	6.8E+04	5.0E-01
118-H-6:4_Overburder	non-Rad	Arsenic	7440-38-2	ug/kg	3,176	1.0E+04	3.2E-01	1.9E+05	1.7E-02
118-H-6:4_Overburder	non-Rad	Barium	7440-39-3	ug/kg	57,934	3.3E+05	1.8E-01	1.3E+06	4.4E-02
118-H-6:4_Overburder	non-Rad	Beryllium	7440-41-7	ug/kg	0,167	1.0E+04	1.7E-02	1.4E+04	1.2E-02
118-H-6:4_Overburder	non-Rad	Boron	7440-42-8	ug/kg	0,809	5.0E+02	**1.6E+00**	1.3E+05	6.1E-03
118-H-6:4_Overburder	non-Rad	Cadmium	7440-43-9	ug/kg	0,086	4.0E+03	2.2E-02	1.6E+03	5.3E-02
118-H-6:4_Overburder	Rad	Cesium-137	10045-97-3	pCi/g	0,000	2.2E+03	8.1E-05	9.2E+02	1.9E-04
118-H-6:4_Overburder	non-Rad	Chromium	7440-47-3	ug/kg	9,710	4.0E+02	**2.4E+01**	3.8E+04	2.5E-01
118-H-6:4_Overburder	non-Rad	Cobalt	7440-48-4	ug/kg	6,242	1.3E+04	4.8E-01	1.1E+05	5.6E-02
118-H-6:4_Overburder	non-Rad	Copper	7440-50-8	ug/kg	13,371	5.0E+04	2.7E-01	1.1E+05	1.3E-01
118-H-6:4_Overburder	Rad	Europium-152	14683-23-9	pCi/g	0,001	1.5E+04	6.4E-05	1.7E+03	5.4E-04
118-H-6:4_Overburder	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	0,127	No Value	--	1.3E+06	1.0E-04
118-H-6:4_Overburder	non-Rad	Lead	7439-92-1	ug/kg	4,138	5.0E+04	8.3E-02	3.6E+04	1.2E-01
118-H-6:4_Overburder	non-Rad	Manganese	7439-96-5	ug/kg	265,613	2.2E+05	**1.2E+00**	5.8E+06	4.6E-02
118-H-6:4_Overburder	non-Rad	Mercury	7439-97-6	ug/kg	0,024	1.0E+02	2.4E-01	1.9E+03	1.3E-02
118-H-6:4_Overburder	non-Rad	Molybdenum	7439-98-7	ug/kg	0,327	2.0E+03	1.6E-01	1.4E+04	2.3E-02
118-H-6:4_Overburder	Rad	Neptunium-237	13994-20-2	pCi/g	0,000	No Value	--	No Value	--
118-H-6:4_Overburder	non-Rad	Nickel	7440-02-0	ug/kg	10,985	3.0E+04	3.7E-01	3.3E+04	3.4E-01
118-H-6:4_Overburder	Rad	Rads SOF	---	pCi/g	--	--	3.2E-04	--	6.2E-03
118-H-6:4_Overburder	Rad	Total beta radiostrontium	SR-RAD	pCi/g	0,000	3.6E+03	1.3E-04	9.1E+01	5.3E-03
118-H-6:4_Overburder	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	1,569	5.0E+03	3.1E-01	3.6E+05	4.4E-03
118-H-6:4_Overburder	Rad	Uranium-233/234	U-233/234	pCi/g	0,000	5.2E+04	9.1E-06	6.4E+03	7.4E-05
118-H-6:4_Overburder	Rad	Uranium-238	U-238	pCi/g	0,001	1.6E+04	3.4E-05	5.2E+03	1.0E-04
118-H-6:4_Overburder	non-Rad	Vanadium	7440-62-2	ug/kg	45,939	2.0E+03	**2.3E+01**	3.1E+04	**1.5E+00**
118-H-6:4_Overburder	non-Rad	Zinc	7440-66-6	ug/kg	38,240	5.0E+04	7.7E-01	6.8E+04	5.6E-01
118-H-6:4_Shallow	non-Rad	Arsenic	7440-38-2	ug/kg	3,849	1.0E+04	3.9E-01	1.9E+05	2.0E-02
118-H-6:4_Shallow	non-Rad	Barium	7440-39-3	ug/kg	61,215	3.3E+05	1.9E-01	1.3E+06	4.6E-02
118-H-6:4_Shallow	non-Rad	Beryllium	7440-41-7	ug/kg	0,188	1.0E+04	1.9E-02	1.4E+04	1.4E-02
118-H-6:4_Shallow	non-Rad	Boron	7440-42-8	ug/kg	0,633	5.0E+02	**1.3E+00**	1.3E+05	4.8E-03
118-H-6:4_Shallow	non-Rad	Cadmium	7440-43-9	ug/kg	0,100	4.0E+03	2.5E-02	1.6E+03	6.1E-02
118-H-6:4_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0,000	2.2E+03	5.4E-05	9.2E+02	1.3E-04
118-H-6:4_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	10,218	4.0E+02	**2.6E+01**	3.8E+04	2.7E-01
118-H-6:4_Shallow	non-Rad	Cobalt	7440-48-4	ug/kg	6,711	1.3E+04	5.2E-01	1.1E+05	6.0E-02
118-H-6:4_Shallow	non-Rad	Copper	7440-50-8	ug/kg	19,414	5.0E+04	3.9E-01	1.1E+05	1.8E-01
118-H-6:4_Shallow	non-Rad	Lead	7439-92-1	ug/kg	8,409	5.0E+04	1.7E-01	3.6E+04	2.4E-01
118-H-6:4_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	251,118	2.2E+05	**1.1E+00**	5.8E+06	4.3E-02
118-H-6:4_Shallow	non-Rad	Molybdenum	7439-98-7	ug/kg	0,442	2.0E+03	2.2E-01	1.4E+04	3.2E-02
118-H-6:4_Shallow	non-Rad	Nickel	7440-02-0	ug/kg	11,521	3.0E+04	3.8E-01	3.3E+04	3.5E-01
118-H-6:4_Shallow	Rad	Rads SOF	---	pCi/g	--	--	1.0E-04	--	3.3E-04
118-H-6:4_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	1,653	5.0E+03	3.3E-01	3.6E+05	4.6E-03
118-H-6:4_Shallow	Rad	Uranium-233/234	U-233/234	pCi/g	0,001	5.2E+04	1.1E-05	6.4E+03	9.0E-05
118-H-6:4_Shallow	Rad	Uranium-238	U-238	pCi/g	0,001	1.6E+04	3.5E-05	5.2E+03	1.1E-04
118-H-6:4_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	48,568	2.0E+03	**2.4E+01**	3.1E+04	**1.6E+00**
118-H-6:4_Shallow	non-Rad	Zinc	7440-66-6	ug/kg	40,342	5.0E+04	8.1E-01	6.8E+04	6.0E-01
118-H-6:5_Shallow_1	non-Rad	Acenaphthene	83-32-9	ug/kg	0,006	2.0E+04	2.9E-04	1.1E+06	5.3E-06
118-H-6:5_Shallow_1	non-Rad	Anthracene	120-12-7	ug/kg	0,003	2.9E+04	9.8E-05	6.8E+05	4.2E-06
118-H-6:5_Shallow_1	non-Rad	Antimony	7440-36-0	ug/kg	0,664	5.0E+03	1.3E-01	6.0E+03	1.1E-01
118-H-6:5_Shallow_1	non-Rad	Aroclor-1254	11097-69-1	ug/kg	0,010	4.0E+04	2.6E-04	1.5E+03	6.9E-03
118-H-6:5_Shallow_1	non-Rad	Aroclor-1260	11096-82-5	ug/kg	0,005	4.0E+04	1.4E-04	1.5E+03	3.7E-03
118-H-6:5_Shallow_1	non-Rad	Aroclors HI	---	ug/kg	--	--	3.9E-04	--	1.1E-02
118-H-6:5_Shallow_1	non-Rad	Arsenic	7440-38-2	ug/kg	39,809	1.0E+04	**4.0E+00**	1.9E+05	2.1E-01
118-H-6:5_Shallow_1	non-Rad	Barium	7440-39-3	ug/kg	87,997	3.3E+05	2.7E-01	1.3E+06	6.7E-02
118-H-6:5_Shallow_1	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	0,023	1.8E+04	1.3E-03	6.4E+04	3.6E-04
118-H-6:5_Shallow_1	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	0,024	1.8E+04	1.3E-03	7.6E+04	3.2E-04
118-H-6:5_Shallow_1	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	0,026	1.8E+04	1.5E-03	3.9E+04	6.7E-04
118-H-6:5_Shallow_1	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	0,013	1.8E+04	7.2E-04	3.9E+04	3.3E-04
118-H-6:5_Shallow_1	non-Rad	Beryllium	7440-41-7	ug/kg	0,319	1.0E+04	3.2E-02	1.4E+04	2.3E-02
118-H-6:5_Shallow_1	non-Rad	Boron	7440-42-8	ug/kg	2,401	5.0E+02	**4.8E+00**	1.3E+05	1.8E-02
118-H-6:5_Shallow_1	non-Rad	Cadmium	7440-43-9	ug/kg	0,075	4.0E+03	1.9E-02	1.6E+03	4.6E-02
118-H-6:5_Shallow_1	Rad	Carbon-14	14762-75-5	pCi/g	0,007	6.1E+04	1.2E-04	3.2E+01	2.3E-01
118-H-6:5_Shallow_1	Rad	Cesium-137	10045-97-3	pCi/g	0,000	2.2E+03	8.0E-05	9.2E+02	1.9E-04
118-H-6:5_Shallow_1	non-Rad	Chromium	7440-47-3	ug/kg	13,672	4.0E+02	**3.4E+01**	3.8E+04	3.6E-01
118-H-6:5_Shallow_1	non-Rad	Chrysene	218-01-9	ug/kg	0,019	1.8E+04	1.1E-03	4.5E+04	4.4E-04
118-H-6:5_Shallow_1	non-Rad	Cobalt	7440-48-4	ug/kg	7,195	1.3E+04	5.5E-01	1.1E+05	6.5E-02
118-H-6:5_Shallow_1	non-Rad	Copper	7440-50-8	ug/kg	13,954	5.0E+04	2.8E-01	1.1E+05	1.3E-01
118-H-6:5_Shallow_1	non-Rad	Dibenz[a,h]anthracene	53-70-3	ug/kg	0,004	1.8E+04	2.3E-04	4.4E+04	9.5E-05
118-H-6:5_Shallow_1	non-Rad	Fluoranthene	206-44-0	ug/kg	0,078	1.8E+04	4.3E-03	8.4E+05	9.2E-05
118-H-6:5_Shallow_1	non-Rad	Fluorene	86-73-7	ug/kg	0,003	2.9E+04	9.3E-05	1.8E+05	1.5E-05
118-H-6:5_Shallow_1	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	0,080	No Value	--	1.3E+06	6.4E-05
118-H-6:5_Shallow_1	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	0,021	1.8E+04	1.2E-03	3.6E+04	6.0E-04

Table 5. Comparison of 100-H OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/ Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
118-H-6:5_Shallow_1	non-Rad	Lead	7439-92-1	ug/kg	171,632	5.0E+04	**3.4E+00**	3.6E+04	**4.8E+00**
118-H-6:5_Shallow_1	non-Rad	Manganese	7439-96-5	ug/kg	338,381	2.2E+05	**1.5E+00**	5.8E+06	5.8E-02
118-H-6:5_Shallow_1	non-Rad	Molybdenum	7439-98-7	ug/kg	0,485	2.0E+03	2.4E-01	1.4E+04	3.5E-02
118-H-6:5_Shallow_1	non-Rad	Naphthalene	91-20-3	ug/kg	0,016	2.9E+04	5.5E-04	1.0E+05	1.6E-04
118-H-6:5_Shallow_1	non-Rad	Nickel	7440-02-0	ug/kg	12,228	3.0E+04	4.1E-01	3.3E+04	3.8E-01
118-H-6:5_Shallow_1	non-Rad	Pyrene	129-00-0	ug/kg	0,066	1.8E+04	3.6E-03	6.0E+05	1.1E-04
118-H-6:5_Shallow_1	Rad	Rads SOF	---	pCi/g	--	--	2.7E-04	--	2.3E-01
118-H-6:5_Shallow_1	Rad	Technetium-99	14133-76-7	pCi/g	0,000	2.2E+04	1.7E-05	5.4E+03	7.1E-05
118-H-6:5_Shallow_1	non-Rad	Total petroleum hydrocarbons - motor oil (high boiling)	TPH/OILH	ug/kg	8,426	No Value	--	No Value	--
118-H-6:5_Shallow_1	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	1,998	5.0E+03	4.0E-01	3.6E+05	5.6E-03
118-H-6:5_Shallow_1	Rad	Uranium-233/234	U-233/234	pCi/g	0,001	5.2E+04	1.3E-05	6.4E+03	1.1E-04
118-H-6:5_Shallow_1	Rad	Uranium-238	U-238	pCi/g	0,001	1.6E+04	4.3E-05	5.2E+03	1.3E-04
118-H-6:5_Shallow_1	non-Rad	Vanadium	7440-62-2	ug/kg	50,095	2.0E+03	**2.5E+01**	3.1E+04	**1.6E+00**
118-H-6:5_Shallow_1	non-Rad	Zinc	7440-66-6	ug/kg	46,713	5.0E+04	9.3E-01	6.8E+04	6.9E-01
118-H-6:5_Shallow_2	non-Rad	Acenaphthene	83-32-9	ug/kg	0,024	2.0E+04	1.2E-03	1.1E+06	2.2E-05
118-H-6:5_Shallow_2	non-Rad	Anthracene	120-12-7	ug/kg	0,010	2.9E+04	3.3E-04	6.8E+05	1.4E-05
118-H-6:5_Shallow_2	non-Rad	Antimony	7440-36-0	ug/kg	0,464	5.0E+03	9.3E-02	6.0E+03	7.8E-02
118-H-6:5_Shallow_2	non-Rad	Arsenic	7440-38-2	ug/kg	6,824	1.0E+04	6.8E-01	1.9E+05	3.6E-02
118-H-6:5_Shallow_2	non-Rad	Barium	7440-39-3	ug/kg	111,681	3.3E+05	3.4E-01	1.3E+06	8.4E-02
118-H-6:5_Shallow_2	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	0,098	1.8E+04	5.5E-03	6.4E+04	1.5E-03
118-H-6:5_Shallow_2	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	0,069	1.8E+04	3.8E-03	7.6E+04	9.0E-04
118-H-6:5_Shallow_2	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	0,204	1.8E+04	1.1E-02	3.9E+04	5.2E-03
118-H-6:5_Shallow_2	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	0,062	1.8E+04	3.4E-03	3.9E+04	1.6E-03
118-H-6:5_Shallow_2	non-Rad	Beryllium	7440-41-7	ug/kg	0,239	1.0E+04	2.4E-02	1.4E+04	1.7E-02
118-H-6:5_Shallow_2	non-Rad	Boron	7440-42-8	ug/kg	12,190	5.0E+02	**2.4E+01**	1.3E+05	9.2E-02
118-H-6:5_Shallow_2	non-Rad	Cadmium	7440-43-9	ug/kg	0,088	4.0E+03	2.2E-02	1.6E+03	5.4E-02
118-H-6:5_Shallow_2	Rad	Carbon-14	14762-75-5	pCi/g	0,001	6.1E+04	2.3E-05	3.2E+01	4.5E-02
118-H-6:5_Shallow_2	Rad	Cesium-137	10045-97-3	pCi/g	0,000	2.2E+03	4.5E-05	9.2E+02	1.1E-04
118-H-6:5_Shallow_2	non-Rad	Chromium	7440-47-3	ug/kg	11,953	4.0E+02	**3.0E+01**	3.8E+04	3.1E-01
118-H-6:5_Shallow_2	non-Rad	Chrysene	218-01-9	ug/kg	0,121	1.8E+04	6.7E-03	4.5E+04	2.7E-03
118-H-6:5_Shallow_2	non-Rad	Cobalt	7440-48-4	ug/kg	6,641	1.3E+04	5.1E-01	1.1E+05	6.0E-02
118-H-6:5_Shallow_2	non-Rad	Copper	7440-50-8	ug/kg	15,897	5.0E+04	3.2E-01	1.1E+05	1.5E-01
118-H-6:5_Shallow_2	non-Rad	Dibenz[a,h]anthracene	53-70-3	ug/kg	0,007	1.8E+04	4.1E-04	4.4E+04	1.7E-04
118-H-6:5_Shallow_2	non-Rad	Fluoranthene	206-44-0	ug/kg	0,707	1.8E+04	3.9E-02	8.4E+05	8.4E-04
118-H-6:5_Shallow_2	non-Rad	Fluorene	86-73-7	ug/kg	0,006	2.9E+04	1.9E-04	1.8E+05	3.2E-05
118-H-6:5_Shallow_2	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	0,060	No Value	--	1.3E+06	4.8E-05
118-H-6:5_Shallow_2	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	0,041	1.8E+04	2.3E-03	3.6E+04	1.2E-03
118-H-6:5_Shallow_2	non-Rad	Lead	7439-92-1	ug/kg	13,861	5.0E+04	2.8E-01	3.6E+04	3.9E-01
118-H-6:5_Shallow_2	non-Rad	Manganese	7439-96-5	ug/kg	310,415	2.2E+05	**1.4E+00**	5.8E+06	5.4E-02
118-H-6:5_Shallow_2	non-Rad	Mercury	7439-97-6	ug/kg	0,167	1.0E+02	**1.7E+00**	1.9E+03	8.9E-02
118-H-6:5_Shallow_2	non-Rad	Molybdenum	7439-98-7	ug/kg	0,467	2.0E+03	2.3E-01	1.4E+04	3.4E-02
118-H-6:5_Shallow_2	non-Rad	Naphthalene	91-20-3	ug/kg	0,044	2.9E+04	1.5E-03	1.0E+05	4.4E-04
118-H-6:5_Shallow_2	non-Rad	Nickel	7440-02-0	ug/kg	10,980	3.0E+04	3.7E-01	3.3E+04	3.4E-01
118-H-6:5_Shallow_2	non-Rad	Pyrene	129-00-0	ug/kg	0,254	1.8E+04	1.4E-02	6.0E+05	4.2E-04
118-H-6:5_Shallow_2	Rad	Rads SOF	---	pCi/g	--	--	1.4E-04	--	6.1E-02
118-H-6:5_Shallow_2	Rad	Technetium-99	14133-76-7	pCi/g	0,000	2.2E+04	1.8E-05	5.4E+03	7.5E-05
118-H-6:5_Shallow_2	non-Rad	Total petroleum hydrocarbons - motor oil (high boiling)	TPH/OILH	ug/kg	38,884	No Value	--	No Value	--
118-H-6:5_Shallow_2	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	1,777	5.0E+03	3.6E-01	3.6E+05	5.0E-03
118-H-6:5_Shallow_2	Rad	Tritium	10028-17-8	pCi/g	0,007	1.7E+06	4.0E-06	4.2E+02	1.6E-02
118-H-6:5_Shallow_2	Rad	Uranium-233/234	U-233/234	pCi/g	0,001	5.2E+04	1.2E-05	6.4E+03	9.4E-05
118-H-6:5_Shallow_2	Rad	Uranium-238	U-238	pCi/g	0,001	1.6E+04	3.8E-05	5.2E+03	1.2E-04
118-H-6:5_Shallow_2	non-Rad	Vanadium	7440-62-2	ug/kg	53,432	2.0E+03	**2.7E+01**	3.1E+04	**1.7E+00**
118-H-6:5_Shallow_2	non-Rad	Xylenes (total)	1330-20-7	ug/kg	0,001	No Value	--	8.3E+05	1.3E-06
118-H-6:5_Shallow_2	non-Rad	Zinc	7440-66-6	ug/kg	44,927	5.0E+04	9.0E-01	6.8E+04	6.6E-01
118-H-6:5_Shallow_3	non-Rad	2-Hexanone	591-78-6	ug/kg	0,005	No Value	--	1.7E+06	2.8E-06
118-H-6:5_Shallow_3	non-Rad	Acenaphthene	83-32-9	ug/kg	0,003	2.0E+04	1.4E-04	1.1E+06	2.5E-06
118-H-6:5_Shallow_3	non-Rad	Anthracene	120-12-7	ug/kg	0,002	2.9E+04	8.3E-05	6.8E+05	3.6E-06
118-H-6:5_Shallow_3	non-Rad	Antimony	7440-36-0	ug/kg	0,505	5.0E+03	1.0E-01	6.0E+03	8.4E-02
118-H-6:5_Shallow_3	non-Rad	Arsenic	7440-38-2	ug/kg	4,522	1.0E+04	4.5E-01	1.9E+05	2.4E-02
118-H-6:5_Shallow_3	non-Rad	Barium	7440-39-3	ug/kg	62,837	3.3E+05	1.9E-01	1.3E+06	4.8E-02
118-H-6:5_Shallow_3	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	0,005	1.8E+04	2.9E-04	6.4E+04	8.1E-05
118-H-6:5_Shallow_3	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	0,005	1.8E+04	2.6E-04	7.6E+04	6.1E-05
118-H-6:5_Shallow_3	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	0,005	1.8E+04	2.9E-04	3.9E+04	1.3E-04
118-H-6:5_Shallow_3	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	0,003	1.8E+04	1.4E-04	3.9E+04	6.4E-05
118-H-6:5_Shallow_3	non-Rad	Beryllium	7440-41-7	ug/kg	0,211	1.0E+04	2.1E-02	1.4E+04	1.5E-02
118-H-6:5_Shallow_3	non-Rad	Boron	7440-42-8	ug/kg	1,892	5.0E+02	**3.8E+00**	1.3E+05	1.4E-02
118-H-6:5_Shallow_3	non-Rad	Cadmium	7440-43-9	ug/kg	0,097	4.0E+03	2.4E-02	1.6E+03	6.0E-02
118-H-6:5_Shallow_3	Rad	Carbon-14	14762-75-5	pCi/g	0,001	6.1E+04	1.6E-05	3.2E+01	3.1E-02
118-H-6:5_Shallow_3	Rad	Cesium-137	10045-97-3	pCi/g	0,000	2.2E+03	8.8E-05	9.2E+02	2.1E-04
118-H-6:5_Shallow_3	non-Rad	Chromium	7440-47-3	ug/kg	10,827	4.0E+02	**2.7E+01**	3.8E+04	2.8E-01
118-H-6:5_Shallow_3	non-Rad	Chrysene	218-01-9	ug/kg	0,003	1.8E+04	1.8E-04	4.5E+04	7.3E-05
118-H-6:5_Shallow_3	non-Rad	Cobalt	7440-48-4	ug/kg	6,132	1.3E+04	4.7E-01	1.1E+05	5.5E-02
118-H-6:5_Shallow_3	non-Rad	Copper	7440-50-8	ug/kg	13,821	5.0E+04	2.8E-01	1.1E+05	1.3E-01
118-H-6:5_Shallow_3	non-Rad	Dibenz[a,h]anthracene	53-70-3	ug/kg	0,001	1.8E+04	5.4E-05	4.4E+04	2.2E-05
118-H-6:5_Shallow_3	non-Rad	Fluoranthene	206-44-0	ug/kg	0,009	1.8E+04	5.3E-04	8.4E+05	1.1E-05
118-H-6:5_Shallow_3	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	0,006	1.8E+04	3.3E-04	3.6E+04	1.7E-04
118-H-6:5_Shallow_3	non-Rad	Lead	7439-92-1	ug/kg	11,233	5.0E+04	2.3E-01	3.6E+04	3.2E-01
118-H-6:5_Shallow_3	non-Rad	Manganese	7439-96-5	ug/kg	281,265	2.2E+05	**1.3E+00**	5.8E+06	4.9E-02
118-H-6:5_Shallow_3	non-Rad	Methylene chloride	75-09-2	ug/kg	0,004	No Value	--	1.7E+05	2.2E-05
118-H-6:5_Shallow_3	non-Rad	Molybdenum	7439-98-7	ug/kg	0,374	2.0E+03	1.9E-01	1.4E+04	2.7E-02
118-H-6:5_Shallow_3	non-Rad	Naphthalene	91-20-3	ug/kg	0,042	2.9E+04	1.5E-03	1.0E+05	4.2E-04
118-H-6:5_Shallow_3	non-Rad	Nickel	7440-02-0	ug/kg	12,882	3.0E+04	4.3E-01	3.3E+04	4.0E-01
118-H-6:5_Shallow_3	non-Rad	Pyrene	129-00-0	ug/kg	0,010	1.8E+04	5.8E-04	6.0E+05	1.7E-05
118-H-6:5_Shallow_3	Rad	Rads SOF	---	pCi/g	--	--	1.7E-04	--	4.8E-02
118-H-6:5_Shallow_3	non-Rad	Total petroleum hydrocarbons - motor oil (high boiling)	TPH/OILH	ug/kg	14,695	No Value	--	No Value	--
118-H-6:5_Shallow_3	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	2,234	5.0E+03	4.5E-01	3.6E+05	6.2E-03
118-H-6:5_Shallow_3	Rad	Tritium	10028-17-8	pCi/g	0,007	1.7E+06	4.2E-06	4.2E+02	1.7E-02
118-H-6:5_Shallow_3	Rad	Uranium-233/234	U-233/234	pCi/g	0,001	5.2E+04	1.4E-05	6.4E+03	1.2E-04
118-H-6:5_Shallow_3	Rad	Uranium-238	U-238	pCi/g	0,001	1.6E+04	4.8E-05	5.2E+03	1.5E-04
118-H-6:5_Shallow_3	non-Rad	Vanadium	7440-62-2	ug/kg	46,611	2.0E+03	**2.3E+01**	3.1E+04	**1.5E+00**
118-H-6:5_Shallow_3	non-Rad	Zinc	7440-66-6	ug/kg	43,700	5.0E+04	8.7E-01	6.8E+04	6.5E-01
118-H-6:5_Shallow_Focusec	non-Rad	Acenaphthene	83-32-9	ug/kg	0,008	2.0E+04	4.1E-04	1.1E+06	7.5E-06
118-H-6:5_Shallow_Focusec	non-Rad	Anthracene	120-12-7	ug/kg	0,005	2.9E+04	1.7E-04	6.8E+05	7.2E-06
118-H-6:5_Shallow_Focusec	non-Rad	Antimony	7440-36-0	ug/kg	0,592	5.0E+03	1.2E-01	6.0E+03	9.9E-02
118-H-6:5_Shallow_Focusec	non-Rad	Arsenic	7440-38-2	ug/kg	27,000	1.0E+04	**2.7E+00**	1.9E+05	1.4E-01
118-H-6:5_Shallow_Focusec	non-Rad	Barium	7440-39-3	ug/kg	65,600	3.3E+05	2.0E-01	1.3E+06	5.0E-02
118-H-6:5_Shallow_Focusec	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	0,053	1.8E+04	2.9E-03	6.4E+04	8.2E-04
118-H-6:5_Shallow_Focusec	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	0,040	1.8E+04	2.2E-03	7.6E+04	5.2E-04
118-H-6:5_Shallow_Focusec	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	0,056	1.8E+04	3.1E-03	3.9E+04	1.4E-03
118-H-6:5_Shallow_Focusec	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	0,027	1.8E+04	1.5E-03	3.9E+04	6.8E-04
118-H-6:5_Shallow_Focusec	non-Rad	Beryllium	7440-41-7	ug/kg	0,251	1.0E+04	2.5E-02	1.4E+04	1.8E-02
118-H-6:5_Shallow_Focusec	non-Rad	Boron	7440-42-8	ug/kg	1,710	5.0E+02	**3.4E+00**	1.3E+05	1.3E-02
118-H-6:5_Shallow_Focusec	non-Rad	Cadmium	7440-43-9	ug/kg	0,103	4.0E+03	2.6E-02	1.6E+03	6.3E-02
118-H-6:5_Shallow_Focusec	Rad	Carbon-14	14762-75-5	pCi/g	0,001	6.1E+04	2.0E-05	3.2E+01	3.8E-02
118-H-6:5_Shallow_Focusec	non-Rad	Chromium	7440-47-3	ug/kg	13,000	4.0E+02	**3.3E+01**	3.8E+04	3.4E-01
118-H-6:5_Shallow_Focusec	non-Rad	Chrysene	218-01-9	ug/kg	0,047	1.8E+04	2.6E-03	4.5E+04	1.1E-03
118-H-6:5_Shallow_Focusec	non-Rad	Cobalt	7440-48-4	ug/kg	6,700	1.3E+04	5.2E-01	1.1E+05	6.0E-02
118-H-6:5_Shallow_Focusec	non-Rad	Copper	7440-50-8	ug/kg	34,500	5.0E+04	6.9E-01	1.1E+05	3.2E-01
118-H-6:5_Shallow_Focusec	non-Rad	Dibenz[a,h]anthracene	53-70-3	ug/kg	0,007	1.8E+04	4.2E-04	4.4E+04	1.7E-04
118-H-6:5_Shallow_Focusec	non-Rad	Fluoranthene	206-44-0	ug/kg	0,171	1.8E+04	9.5E-03	8.4E+05	2.0E-04
118-H-6:5_Shallow_Focusec	non-Rad	Fluorene	86-73-7	ug/kg	0,004	2.9E+04	1.3E-04	1.8E+05	2.1E-05
118-H-6:5_Shallow_Focusec	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	0,031	1.8E+04	1.7E-03	3.6E+04	8.7E-04
118-H-6:5_Shallow_Focusec	non-Rad	Lead	7439-92-1	ug/kg	114,000	5.0E+04	**2.3E+00**	3.6E+04	**3.2E+00**
118-H-6:5_Shallow_Focusec	non-Rad	Manganese	7439-96-5	ug/kg	311,000	2.2E+05	**1.4E+00**	5.8E+06	5.4E-02
118-H-6:5_Shallow_Focusec	non-Rad	Molybdenum	7439-98-7	ug/kg	0,439	2.0E+03	2.2E-01	1.4E+04	3.1E-02
118-H-6:5_Shallow_Focusec	non-Rad	Naphthalene	91-20-3	ug/kg	0,010	2.9E+04	3.5E-04	1.0E+05	1.0E-04
118-H-6:5_Shallow_Focusec	non-Rad	Nickel	7440-02-0	ug/kg	12,600	3.0E+04	4.2E-01	3.3E+04	3.9E-01
118-H-6:5_Shallow_Focusec	non-Rad	Pyrene	129-00-0	ug/kg	0,149	1.8E+04	8.3E-03	6.0E+05	2.5E-04
118-H-6:5_Shallow_Focusec	Rad	Rads SOF	---	pCi/g	--	--	8.4E-05	--	4.8E-02
118-H-6:5_Shallow_Focusec	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	ug/kg	12,000	2.0E+05	6.0E-02	3.6E+08	3.4E-05

Table 5. Comparison of 100-H OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/ Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
118-H-6:5_Shallow_Focused	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	ug/kg	24,000	No Value	--	No Value	--
118-H-6:5_Shallow_Focused	non-Rad	Total petroleum hydrocarbons - gasoline range	TPHGASOLINE	ug/kg	0,470	No Value	--	No Value	--
118-H-6:5_Shallow_Focused	non-Rad	Total petroleum hydrocarbons - motor oil (high boiling)	TPH/OILH	ug/kg	41,600	No Value	--	No Value	--
118-H-6:5_Shallow_Focused	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	2,054	5.0E+03	4.1E-01	3.6E+05	5.7E-03
118-H-6:5_Shallow_Focused	Rad	Tritium	10028-17-8	pCi/g	0,004	1.7E+06	2.4E-06	4.2E+02	9.7E-03
118-H-6:5_Shallow_Focused	Rad	Uranium-233/234	U-233/234	pCi/g	0,001	5.2E+04	1.8E-05	6.4E+03	1.5E-04
118-H-6:5_Shallow_Focused	Rad	Uranium-238	U-238	pCi/g	0,001	1.6E+04	4.4E-05	5.2E+03	1.3E-04
118-H-6:5_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	49,400	2.0E+03	**2.5E+01**	3.1E+04	**1.6E+00**
118-H-6:5_Shallow_Focused	non-Rad	Zinc	7440-66-6	ug/kg	46,400	5.0E+04	9.3E-01	6.8E+04	6.8E-01
128-H-1_Overburder	non-Rad	4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	ug/kg	0,000	No Value	--	4.0E+02	7.3E-04
128-H-1_Overburder	non-Rad	Acenaphthene	83-32-9	ug/kg	0,004	2.0E+04	2.2E-04	1.1E+06	4.0E-06
128-H-1_Overburder	non-Rad	Anthracene	120-12-7	ug/kg	0,003	2.9E+04	1.1E-04	6.8E+05	4.6E-06
128-H-1_Overburder	non-Rad	Aroclor-1254	11097-69-1	ug/kg	0,008	4.0E+04	2.0E-04	1.5E+03	5.5E-03
128-H-1_Overburder	non-Rad	Arsenic	7440-38-2	ug/kg	40,542	1.0E+04	**4.1E+00**	1.9E+05	2.1E-01
128-H-1_Overburder	non-Rad	Barium	7440-39-3	ug/kg	85,541	3.3E+05	2.6E-01	1.3E+06	6.5E-02
128-H-1_Overburder	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	0,030	1.8E+04	1.7E-03	6.4E+04	4.8E-04
128-H-1_Overburder	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	0,058	1.8E+04	3.2E-03	7.6E+04	7.6E-04
128-H-1_Overburder	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	0,039	1.8E+04	2.2E-03	3.9E+04	9.9E-04
128-H-1_Overburder	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	0,019	1.8E+04	1.1E-03	3.9E+04	4.9E-04
128-H-1_Overburder	non-Rad	Beryllium	7440-41-7	ug/kg	0,274	1.0E+04	2.7E-02	1.4E+04	2.0E-02
128-H-1_Overburder	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	ug/kg	0,144	1.0E+05	1.4E-03	4.5E+04	3.2E-03
128-H-1_Overburder	non-Rad	Boron	7440-42-8	ug/kg	2,799	5.0E+02	**5.6E+00**	1.3E+05	2.1E-02
128-H-1_Overburder	non-Rad	Cadmium	7440-43-9	ug/kg	0,177	4.0E+03	4.4E-02	1.6E+03	1.1E-01
128-H-1_Overburder	non-Rad	Chromium	7440-47-3	ug/kg	13,085	4.0E+02	**3.3E+01**	3.8E+04	3.4E-01
128-H-1_Overburder	non-Rad	Chrysene	218-01-9	ug/kg	0,029	1.8E+04	1.6E-03	4.5E+04	6.5E-04
128-H-1_Overburder	non-Rad	Cobalt	7440-48-4	ug/kg	6,539	1.3E+04	5.0E-01	1.1E+05	5.9E-02
128-H-1_Overburder	non-Rad	Copper	7440-50-8	ug/kg	13,458	5.0E+04	2.7E-01	1.1E+05	1.3E-01
128-H-1_Overburder	non-Rad	Dibenz[a,h]anthracene	53-70-3	ug/kg	0,007	1.8E+04	3.7E-04	4.4E+04	1.5E-04
128-H-1_Overburder	non-Rad	Endosulfan I	959-98-8	ug/kg	0,001	No Value	--	7.1E+02	1.8E-03
128-H-1_Overburder	non-Rad	Fluoranthene	206-44-0	ug/kg	0,098	1.8E+04	5.5E-03	8.4E+05	1.2E-04
128-H-1_Overburder	non-Rad	Fluorene	86-73-7	ug/kg	0,003	2.9E+04	9.0E-05	1.8E+05	1.5E-05
128-H-1_Overburder	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	0,039	1.8E+04	2.2E-03	3.6E+04	1.1E-03
128-H-1_Overburder	non-Rad	Lead	7439-92-1	ug/kg	253,830	5.0E+04	**5.1E+00**	3.6E+04	**7.1E+00**
128-H-1_Overburder	non-Rad	Manganese	7439-96-5	ug/kg	313,886	2.2E+05	**1.4E+00**	5.8E+06	5.4E-02
128-H-1_Overburder	non-Rad	Mercury	7439-97-6	ug/kg	0,020	1.0E+02	2.0E-01	1.9E+03	1.1E-02
128-H-1_Overburder	non-Rad	Molybdenum	7439-98-7	ug/kg	0,391	2.0E+03	2.0E-01	1.4E+04	2.8E-02
128-H-1_Overburder	non-Rad	Naphthalene	91-20-3	ug/kg	0,005	2.9E+04	1.9E-04	1.0E+05	5.5E-05
128-H-1_Overburder	non-Rad	Nickel	7440-02-0	ug/kg	11,022	3.0E+04	3.7E-01	3.3E+04	3.4E-01
128-H-1_Overburder	non-Rad	Pyrene	129-00-0	ug/kg	0,095	1.8E+04	5.3E-03	6.0E+05	1.6E-04
128-H-1_Overburder	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	ug/kg	8,400	2.0E+05	4.2E-02	3.6E+08	2.4E-05
128-H-1_Overburden	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	ug/kg	24,000	No Value	--	No Value	--
128-H-1_Overburden	non-Rad	Total petroleum hydrocarbons - motor oil (high boiling)	TPH/OILH	ug/kg	39,451	No Value	--	No Value	--
128-H-1_Overburder	non-Rad	Vanadium	7440-62-2	ug/kg	47,044	2.0E+03	**2.4E+01**	3.1E+04	**1.5E+00**
128-H-1_Overburder	non-Rad	Zinc	7440-66-6	ug/kg	49,389	5.0E+04	9.9E-01	6.8E+04	7.3E-01
128-H-1_Shallow_3	non-Rad	4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	ug/kg	0,003	No Value	--	4.0E+02	7.3E-03
128-H-1_Shallow_3	non-Rad	Acenaphthene	83-32-9	ug/kg	0,026	2.0E+04	1.3E-03	1.1E+06	2.4E-05
128-H-1_Shallow_3	non-Rad	Anthracene	120-12-7	ug/kg	0,004	2.9E+04	1.2E-04	6.8E+05	5.2E-06
128-H-1_Shallow_3	non-Rad	Antimony	7440-36-0	ug/kg	0,239	5.0E+03	4.8E-02	6.0E+03	4.0E-02
128-H-1_Shallow_3	non-Rad	Aroclor-1260	11096-82-5	ug/kg	0,003	4.0E+04	8.5E-05	1.5E+03	2.3E-03
128-H-1_Shallow_3	non-Rad	Arsenic	7440-38-2	ug/kg	10,642	1.0E+04	**1.1E+00**	1.9E+05	5.6E-02
128-H-1_Shallow_3	non-Rad	Barium	7440-39-3	ug/kg	102,210	3.3E+05	3.1E-01	1.3E+06	7.7E-02
128-H-1_Shallow_3	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	0,050	1.8E+04	2.8E-03	6.4E+04	7.8E-04
128-H-1_Shallow_3	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	0,060	1.8E+04	3.3E-03	7.6E+04	7.8E-04
128-H-1_Shallow_3	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	0,059	1.8E+04	3.3E-03	3.9E+04	1.5E-03
128-H-1_Shallow_3	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	0,029	1.8E+04	1.6E-03	3.9E+04	7.3E-04
128-H-1_Shallow_3	non-Rad	Beryllium	7440-41-7	ug/kg	0,297	1.0E+04	3.0E-02	1.4E+04	2.1E-02
128-H-1_Shallow_3	non-Rad	Boron	7440-42-8	ug/kg	4,922	5.0E+02	**9.8E+00**	1.3E+05	3.7E-02
128-H-1_Shallow_3	non-Rad	Cadmium	7440-43-9	ug/kg	0,152	4.0E+03	3.8E-02	1.6E+03	9.3E-02
128-H-1_Shallow_3	non-Rad	Chromium	7440-47-3	ug/kg	13,634	4.0E+02	**3.4E+01**	3.8E+04	3.6E-01
128-H-1_Shallow_3	non-Rad	Chrysene	218-01-9	ug/kg	0,049	1.8E+04	2.8E-03	4.5E+04	1.1E-03
128-H-1_Shallow_3	non-Rad	Cobalt	7440-48-4	ug/kg	6,720	1.3E+04	5.2E-01	1.1E+05	6.0E-02
128-H-1_Shallow_3	non-Rad	Copper	7440-50-8	ug/kg	14,071	5.0E+04	2.8E-01	1.1E+05	1.3E-01
128-H-1_Shallow_3	non-Rad	Dibenz[a,h]anthracene	53-70-3	ug/kg	0,008	1.8E+04	4.2E-04	4.4E+04	1.7E-04
128-H-1_Shallow_3	non-Rad	Fluoranthene	206-44-0	ug/kg	0,154	1.8E+04	8.5E-03	8.4E+05	1.8E-04
128-H-1_Shallow_3	non-Rad	Fluorene	86-73-7	ug/kg	0,004	2.9E+04	1.5E-04	1.8E+05	2.5E-05
128-H-1_Shallow_3	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	0,170	No Value	--	1.3E+06	1.4E-04
128-H-1_Shallow_3	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	0,041	1.8E+04	2.3E-03	3.6E+04	1.2E-03
128-H-1_Shallow_3	non-Rad	Lead	7439-92-1	ug/kg	65,620	5.0E+04	**1.3E+00**	3.6E+04	**1.8E+00**
128-H-1_Shallow_3	non-Rad	Manganese	7439-96-5	ug/kg	298,334	2.2E+05	**1.4E+00**	5.8E+06	5.2E-02
128-H-1_Shallow_3	non-Rad	Mercury	7439-97-6	ug/kg	0,030	1.0E+02	3.0E-01	1.9E+03	1.6E-02
128-H-1_Shallow_3	non-Rad	Molybdenum	7439-98-7	ug/kg	0,347	2.0E+03	1.7E-01	1.4E+04	2.5E-02
128-H-1_Shallow_3	non-Rad	Nickel	7440-02-0	ug/kg	12,942	3.0E+04	4.3E-01	3.3E+04	4.0E-01
128-H-1_Shallow_3	non-Rad	Pyrene	129-00-0	ug/kg	0,102	1.8E+04	5.7E-03	6.0E+05	1.7E-04
128-H-1_Shallow_3	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	ug/kg	8,742	2.0E+05	4.4E-02	3.6E+08	2.5E-05
128-H-1_Shallow_3	non-Rad	Total petroleum hydrocarbons - motor oil (high boiling)	TPH/OILH	ug/kg	19,397	No Value	--	No Value	--
128-H-1_Shallow_3	non-Rad	Vanadium	7440-62-2	ug/kg	46,141	2.0E+03	**2.3E+01**	3.1E+04	**1.5E+00**
128-H-1_Shallow_3	non-Rad	Zinc	7440-66-6	ug/kg	43,831	5.0E+04	8.8E-01	6.8E+04	6.5E-01
128-H-1_Shallow_4	non-Rad	4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	ug/kg	0,002	No Value	--	4.0E+02	6.2E-03
128-H-1_Shallow_4	non-Rad	Acenaphthene	83-32-9	ug/kg	0,015	2.0E+04	7.6E-04	1.1E+06	1.4E-05
128-H-1_Shallow_4	non-Rad	Anthracene	120-12-7	ug/kg	0,001	2.9E+04	4.5E-05	6.8E+05	1.9E-06
128-H-1_Shallow_4	non-Rad	Aroclor-1254	11097-69-1	ug/kg	0,009	4.0E+04	2.4E-04	1.5E+03	6.4E-03
128-H-1_Shallow_4	non-Rad	Aroclor-1260	11096-82-5	ug/kg	0,019	4.0E+04	4.8E-04	1.5E+03	1.3E-02
128-H-1_Shallow_4	non-Rad	Aroclors HI	---	ug/kg	--	--	7.2E-04	--	1.9E-02
128-H-1_Shallow_4	non-Rad	Arsenic	7440-38-2	ug/kg	5,365	1.0E+04	5.4E-01	1.9E+05	2.8E-02
128-H-1_Shallow_4	non-Rad	Barium	7440-39-3	ug/kg	95,142	3.3E+05	2.9E-01	1.3E+06	7.2E-02
128-H-1_Shallow_4	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	0,010	1.8E+04	5.5E-04	6.4E+04	1.5E-04
128-H-1_Shallow_4	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	0,011	1.8E+04	5.9E-04	7.6E+04	1.4E-04
128-H-1_Shallow_4	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	0,011	1.8E+04	6.3E-04	3.9E+04	2.9E-04
128-H-1_Shallow_4	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	0,004	1.8E+04	2.4E-04	3.9E+04	1.1E-04
128-H-1_Shallow_4	non-Rad	Beryllium	7440-41-7	ug/kg	0,309	1.0E+04	3.1E-02	1.4E+04	2.2E-02
128-H-1_Shallow_4	non-Rad	Boron	7440-42-8	ug/kg	4,462	5.0E+02	**8.9E+00**	1.3E+05	3.4E-02
128-H-1_Shallow_4	non-Rad	Cadmium	7440-43-9	ug/kg	0,163	4.0E+03	4.1E-02	1.6E+03	1.0E-01
128-H-1_Shallow_4	non-Rad	Chromium	7440-47-3	ug/kg	14,369	4.0E+02	**3.6E+01**	3.8E+04	3.8E-01
128-H-1_Shallow_4	non-Rad	Chrysene	218-01-9	ug/kg	0,011	1.8E+04	6.0E-04	4.5E+04	2.4E-04
128-H-1_Shallow_4	non-Rad	Cobalt	7440-48-4	ug/kg	6,783	1.3E+04	5.2E-01	1.1E+05	6.1E-02
128-H-1_Shallow_4	non-Rad	Copper	7440-50-8	ug/kg	13,865	5.0E+04	2.8E-01	1.1E+05	1.3E-01
128-H-1_Shallow_4	non-Rad	Dibenz[a,h]anthracene	53-70-3	ug/kg	0,003	1.8E+04	1.4E-04	4.4E+04	5.9E-05
128-H-1_Shallow_4	non-Rad	Fluoranthene	206-44-0	ug/kg	0,028	1.8E+04	1.5E-03	8.4E+05	3.3E-05
128-H-1_Shallow_4	non-Rad	Fluorene	86-73-7	ug/kg	0,004	2.9E+04	1.5E-04	1.8E+05	2.4E-05
128-H-1_Shallow_4	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	0,156	No Value	--	1.3E+06	1.3E-04
128-H-1_Shallow_4	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	0,005	1.8E+04	3.0E-04	3.6E+04	1.5E-04
128-H-1_Shallow_4	non-Rad	Lead	7439-92-1	ug/kg	44,536	5.0E+04	8.9E-01	3.6E+04	**1.3E+00**
128-H-1_Shallow_4	non-Rad	Manganese	7439-96-5	ug/kg	319,234	2.2E+05	**1.5E+00**	5.8E+06	5.5E-02
128-H-1_Shallow_4	non-Rad	Mercury	7439-97-6	ug/kg	1,021	1.0E+02	**1.0E+01**	1.9E+03	5.5E-01
128-H-1_Shallow_4	non-Rad	Molybdenum	7439-98-7	ug/kg	0,414	2.0E+03	2.1E-01	1.4E+04	3.0E-02
128-H-1_Shallow_4	non-Rad	Naphthalene	91-20-3	ug/kg	0,007	2.9E+04	2.3E-04	1.0E+05	6.6E-05
128-H-1_Shallow_4	non-Rad	Nickel	7440-02-0	ug/kg	11,655	3.0E+04	3.9E-01	3.3E+04	3.6E-01
128-H-1_Shallow_4	non-Rad	Pyrene	129-00-0	ug/kg	0,018	1.8E+04	1.0E-03	6.0E+05	3.0E-05
128-H-1_Shallow_4	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	ug/kg	10,082	2.0E+05	5.0E-02	3.6E+08	2.8E-05
128-H-1_Shallow_4	non-Rad	Total petroleum hydrocarbons - motor oil (high boiling)	TPH/OILH	ug/kg	48,270	No Value	--	No Value	--
128-H-1_Shallow_4	non-Rad	Vanadium	7440-62-2	ug/kg	51,297	2.0E+03	**2.6E+01**	3.1E+04	**1.7E+00**
128-H-1_Shallow_4	non-Rad	Zinc	7440-66-6	ug/kg	40,798	5.0E+04	8.2E-01	6.8E+04	6.0E-01
128-H-1_Shallow_5	non-Rad	Arsenic	7440-38-2	ug/kg	3,785	1.0E+04	3.8E-01	1.9E+05	2.0E-02
128-H-1_Shallow_5	non-Rad	Barium	7440-39-3	ug/kg	66,201	3.3E+05	2.0E-01	1.3E+06	5.0E-02
128-H-1_Shallow_5	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	0,012	1.8E+04	6.7E-04	6.4E+04	1.9E-04
128-H-1_Shallow_5	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	0,013	1.8E+04	7.2E-04	3.9E+04	3.3E-04
128-H-1_Shallow_5	non-Rad	Beryllium	7440-41-7	ug/kg	0,122	1.0E+04	1.2E-02	1.4E+04	8.7E-03
128-H-1_Shallow_5	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	ug/kg	0,075	1.0E+05	7.5E-04	4.5E+04	1.6E-03

Table 5. Comparison of 100-H OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/ Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
128-H-1_Shallow_5	non-Rad	Boron	7440-42-8	ug/kg	1,534	5.0E+02	**3.1E+00**	1.3E+05	1.2E-02
128-H-1_Shallow_5	non-Rad	Cadmium	7440-43-9	ug/kg	0,074	4.0E+03	1.8E-02	1.6E+03	4.5E-02
128-H-1_Shallow_5	non-Rad	Chromium	7440-47-3	ug/kg	12,741	4.0E+02	**3.2E+01**	3.8E+04	3.3E-01
128-H-1_Shallow_5	non-Rad	Chrysene	218-01-9	ug/kg	0,015	1.8E+04	8.3E-04	4.5E+04	3.4E-04
128-H-1_Shallow_5	non-Rad	Cobalt	7440-48-4	ug/kg	6,508	1.3E+04	5.0E-01	1.1E+05	5.8E-02
128-H-1_Shallow_5	non-Rad	Copper	7440-50-8	ug/kg	16,559	5.0E+04	3.3E-01	1.1E+05	1.6E-01
128-H-1_Shallow_5	non-Rad	Fluoranthene	206-44-0	ug/kg	0,023	1.8E+04	1.3E-03	8.4E+05	2.7E-05
128-H-1_Shallow_5	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	0,917	No Value	--	1.3E+06	7.4E-04
128-H-1_Shallow_5	non-Rad	Lead	7439-92-1	ug/kg	6,674	5.0E+04	1.3E-01	3.6E+04	1.9E-01
128-H-1_Shallow_5	non-Rad	Manganese	7439-96-5	ug/kg	270,578	2.2E+05	**1.2E+00**	5.8E+06	4.7E-02
128-H-1_Shallow_5	non-Rad	Mercury	7439-97-6	ug/kg	0,023	1.0E+02	2.3E-01	1.9E+03	1.2E-02
128-H-1_Shallow_5	non-Rad	Molybdenum	7439-98-7	ug/kg	0,490	2.0E+03	2.5E-01	1.4E+04	3.5E-02
128-H-1_Shallow_5	non-Rad	Nickel	7440-02-0	ug/kg	11,527	3.0E+04	3.8E-01	3.3E+04	3.5E-01
128-H-1_Shallow_5	non-Rad	Pyrene	129-00-0	ug/kg	0,030	1.8E+04	1.7E-03	6.0E+05	5.0E-05
128-H-1_Shallow_5	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	ug/kg	160,000	2.0E+05	8.0E-01	3.6E+08	4.5E-04
128-H-1_Shallow_5	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	ug/kg	357,773	No Value	--	No Value	--
128-H-1_Shallow_5	non-Rad	Vanadium	7440-62-2	ug/kg	40,807	2.0E+03	**2.0E+01**	3.1E+04	**1.3E+00**
128-H-1_Shallow_5	non-Rad	Zinc	7440-66-6	ug/kg	36,178	5.0E+04	7.2E-01	6.8E+04	5.3E-01
128-H-1_Staging pile area footprint_	non-Rad	Acenaphthene	83-32-9	ug/kg	0,048	2.0E+04	2.4E-03	1.1E+06	4.4E-05
128-H-1_Staging pile area footprint_	non-Rad	Anthracene	120-12-7	ug/kg	0,002	2.9E+04	8.4E-05	6.8E+05	3.6E-06
128-H-1_Staging pile area footprint_	non-Rad	Aroclor-1254	11097-69-1	ug/kg	0,009	4.0E+04	2.2E-04	1.5E+03	5.9E-03
128-H-1_Staging pile area footprint_	non-Rad	Aroclor-1260	11096-82-5	ug/kg	0,004	4.0E+04	9.3E-05	1.5E+03	2.5E-03
128-H-1_Staging pile area footprint_	non-Rad	Aroclors HI	---	ug/kg	--	--	3.1E-04	--	8.5E-03
128-H-1_Staging pile area footprint_	non-Rad	Arsenic	7440-38-2	ug/kg	54,142	1.0E+04	**5.4E+00**	1.9E+05	2.9E-01
128-H-1_Staging pile area footprint_	non-Rad	Barium	7440-39-3	ug/kg	88,760	3.3E+05	2.7E-01	1.3E+06	6.7E-02
128-H-1_Staging pile area footprint_	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	0,012	1.8E+04	6.9E-04	6.4E+04	1.9E-04
128-H-1_Staging pile area footprint_	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	0,017	1.8E+04	9.2E-04	7.6E+04	2.2E-04
128-H-1_Staging pile area footprint_	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	0,014	1.8E+04	7.8E-04	3.9E+04	3.6E-04
128-H-1_Staging pile area footprint_	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	0,006	1.8E+04	3.5E-04	3.9E+04	1.6E-04
128-H-1_Staging pile area footprint_	non-Rad	Beryllium	7440-41-7	ug/kg	0,338	1.0E+04	3.4E-02	1.4E+04	2.4E-02
128-H-1_Staging pile area footprint_	non-Rad	Boron	7440-42-8	ug/kg	3,306	5.0E+02	**6.6E+00**	1.3E+05	2.5E-02
128-H-1_Staging pile area footprint_	non-Rad	Cadmium	7440-43-9	ug/kg	0,148	4.0E+03	3.7E-02	1.6E+03	9.1E-02
128-H-1_Staging pile area footprint_	non-Rad	Chromium	7440-47-3	ug/kg	15,220	4.0E+02	**3.8E+01**	3.8E+04	4.0E-01
128-H-1_Staging pile area footprint_	non-Rad	Chrysene	218-01-9	ug/kg	0,010	1.8E+04	5.8E-04	4.5E+04	2.3E-04
128-H-1_Staging pile area footprint_	non-Rad	Cobalt	7440-48-4	ug/kg	6,810	1.3E+04	5.2E-01	1.1E+05	6.1E-02
128-H-1_Staging pile area footprint_	non-Rad	Copper	7440-50-8	ug/kg	13,202	5.0E+04	2.6E-01	1.1E+05	1.2E-01
128-H-1_Staging pile area footprint_	non-Rad	Dibenz[a,h]anthracene	53-70-3	ug/kg	0,003	1.8E+04	1.5E-04	4.4E+04	5.9E-05
128-H-1_Staging pile area footprint_	non-Rad	Fluoranthene	206-44-0	ug/kg	0,056	1.8E+04	3.1E-03	8.4E+05	6.7E-05
128-H-1_Staging pile area footprint_	non-Rad	Fluorene	86-73-7	ug/kg	0,012	2.9E+04	4.1E-04	1.8E+05	6.7E-05
128-H-1_Staging pile area footprint_	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	0,013	1.8E+04	7.1E-04	3.6E+04	3.6E-04
128-H-1_Staging pile area footprint_	non-Rad	Lead	7439-92-1	ug/kg	124,843	5.0E+04	**2.5E+00**	3.6E+04	**3.5E+00**
128-H-1_Staging pile area footprint_	non-Rad	Manganese	7439-96-5	ug/kg	339,768	2.2E+05	**1.5E+00**	5.8E+06	5.9E-02
128-H-1_Staging pile area footprint_	non-Rad	Mercury	7439-97-6	ug/kg	0,067	1.0E+02	6.7E-01	1.9E+03	3.6E-02
128-H-1_Staging pile area footprint_	non-Rad	Molybdenum	7439-98-7	ug/kg	0,276	2.0E+03	1.4E-01	1.4E+04	2.0E-02
128-H-1_Staging pile area footprint_	non-Rad	Nickel	7440-02-0	ug/kg	12,076	3.0E+04	4.0E-01	3.3E+04	3.7E-01
128-H-1_Staging pile area footprint_	non-Rad	Pyrene	129-00-0	ug/kg	0,033	1.8E+04	1.8E-03	6.0E+05	5.5E-05
128-H-1_Staging pile area footprint_2	non-Rad	Total petroleum hydrocarbons - motor oil (high boiling)	TPH/OILH	ug/kg	23,047	No Value	--	No Value	--
128-H-1_Staging pile area footprint_	non-Rad	Vanadium	7440-62-2	ug/kg	46,690	2.0E+03	**2.3E+01**	3.1E+04	**1.5E+00**
128-H-1_Staging pile area footprint_	non-Rad	Zinc	7440-66-6	ug/kg	43,441	5.0E+04	8.7E-01	6.8E+04	6.4E-01
128-H-1_Staging pile area footprint_t	non-Rad	Arsenic	7440-38-2	ug/kg	3,730	1.0E+04	3.7E-01	1.9E+05	2.0E-02
128-H-1_Staging pile area footprint_t	non-Rad	Barium	7440-39-3	ug/kg	89,946	3.3E+05	2.7E-01	1.3E+06	6.8E-02
128-H-1_Staging pile area footprint_t	non-Rad	Beryllium	7440-41-7	ug/kg	0,272	1.0E+04	2.7E-02	1.4E+04	2.0E-02
128-H-1_Staging pile area footprint_t	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	ug/kg	0,074	1.0E+05	7.4E-04	4.5E+04	1.6E-03
128-H-1_Staging pile area footprint_t	non-Rad	Boron	7440-42-8	ug/kg	1,747	5.0E+02	**3.5E+00**	1.3E+05	1.3E-02
128-H-1_Staging pile area footprint_t	non-Rad	Cadmium	7440-43-9	ug/kg	0,091	4.0E+03	2.3E-02	1.6E+03	5.6E-02
128-H-1_Staging pile area footprint_t	non-Rad	Chromium	7440-47-3	ug/kg	14,174	4.0E+02	**3.5E+01**	3.8E+04	3.7E-01
128-H-1_Staging pile area footprint_t	non-Rad	Cobalt	7440-48-4	ug/kg	7,326	1.3E+04	5.6E-01	1.1E+05	6.6E-02
128-H-1_Staging pile area footprint_t	non-Rad	Copper	7440-50-8	ug/kg	14,851	5.0E+04	3.0E-01	1.1E+05	1.4E-01
128-H-1_Staging pile area footprint_t	non-Rad	Diethylphthalate	84-66-2	ug/kg	0,035	1.0E+05	3.5E-04	No Value	--
128-H-1_Staging pile area footprint_t	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	0,233	No Value	--	1.3E+06	1.9E-04
128-H-1_Staging pile area footprint_t	non-Rad	Lead	7439-92-1	ug/kg	5,852	5.0E+04	1.2E-01	3.6E+04	1.6E-01
128-H-1_Staging pile area footprint_t	non-Rad	Manganese	7439-96-5	ug/kg	333,857	2.2E+05	**1.5E+00**	5.8E+06	5.8E-02
128-H-1_Staging pile area footprint_t	non-Rad	Mercury	7439-97-6	ug/kg	0,007	1.0E+02	7.5E-02	1.9E+03	4.0E-03
128-H-1_Staging pile area footprint_t	non-Rad	Nickel	7440-02-0	ug/kg	13,384	3.0E+04	4.5E-01	3.3E+04	4.1E-01
128-H-1_Staging pile area footprint_t	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	ug/kg	8,700	2.0E+05	4.4E-02	3.6E+08	2.4E-05
128-H-1_Staging pile area footprint_6	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	ug/kg	23,494	No Value	--	No Value	--
128-H-1_Staging pile area footprint_t	non-Rad	Vanadium	7440-62-2	ug/kg	40,715	2.0E+03	**2.0E+01**	3.1E+04	**1.3E+00**
128-H-1_Staging pile area footprint_t	non-Rad	Zinc	7440-66-6	ug/kg	40,935	5.0E+04	8.2E-01	6.8E+04	6.0E-01
128-H-2_Shallow_Focusec	non-Rad	Arsenic	7440-38-2	ug/kg	3,500	1.0E+04	3.5E-01	1.9E+05	1.9E-02
128-H-2_Shallow_Focusec	non-Rad	Barium	7440-39-3	ug/kg	82,600	3.3E+05	2.5E-01	1.3E+06	6.2E-02
128-H-2_Shallow_Focusec	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	ug/kg	0,130	1.0E+05	1.3E-03	4.5E+04	2.9E-03
128-H-2_Shallow_Focusec	non-Rad	Butylbenzylphthalate	85-68-7	ug/kg	0,022	No Value	--	No Value	--
128-H-2_Shallow_Focusec	non-Rad	Chromium	7440-47-3	ug/kg	13,800	4.0E+02	**3.5E+01**	3.8E+04	3.6E-01
128-H-2_Shallow_Focusec	non-Rad	Copper	7440-50-8	ug/kg	16,300	5.0E+04	3.3E-01	1.1E+05	1.5E-01
128-H-2_Shallow_Focusec	non-Rad	Di-n-butylphthalate	84-74-2	ug/kg	0,036	No Value	--	No Value	--
128-H-2_Shallow_Focusec	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	0,220	No Value	--	1.3E+06	1.8E-04
128-H-2_Shallow_Focusec	non-Rad	Lead	7439-92-1	ug/kg	4,900	5.0E+04	9.8E-02	3.6E+04	1.4E-01
128-H-2_Shallow_Focusec	non-Rad	Manganese	7439-96-5	ug/kg	329,000	2.2E+05	**1.5E+00**	5.8E+06	5.7E-02
128-H-2_Shallow_Focusec	non-Rad	Methylene chloride	75-09-2	ug/kg	0,004	No Value	--	1.7E+05	2.4E-05
128-H-2_Shallow_Focusec	non-Rad	Nickel	7440-02-0	ug/kg	13,100	3.0E+04	4.4E-01	3.3E+04	4.0E-01
128-H-2_Shallow_Focusec	non-Rad	Selenium	7782-49-2	ug/kg	1,200	5.2E+02	**2.3E+00**	1.9E+03	6.3E-01
128-H-2_Shallow_Focused	non-Rad	Total petroleum hydrocarbons - motor oil (high boiling)	TPH/OILH	ug/kg	4,100	No Value	--	No Value	--
128-H-2_Shallow_Focusec	non-Rad	Vanadium	7440-62-2	ug/kg	58,500	2.0E+03	**2.9E+01**	3.1E+04	**1.9E+00**
128-H-2_Shallow_Focusec	non-Rad	Zinc	7440-66-6	ug/kg	42,000	5.0E+04	8.4E-01	6.8E+04	6.2E-01
128-H-3_Shallow_Focusec	non-Rad	4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	ug/kg	0,002	No Value	--	4.0E+02	4.3E-03
128-H-3_Shallow_Focusec	non-Rad	Arsenic	7440-38-2	ug/kg	11,000	1.0E+04	**1.1E+00**	1.9E+05	5.8E-02
128-H-3_Shallow_Focusec	non-Rad	Barium	7440-39-3	ug/kg	81,800	3.3E+05	2.5E-01	1.3E+06	6.2E-02
128-H-3_Shallow_Focusec	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	0,018	1.8E+04	1.0E-03	6.4E+04	2.8E-04
128-H-3_Shallow_Focusec	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	0,037	1.8E+04	2.1E-03	7.6E+04	4.8E-04
128-H-3_Shallow_Focusec	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	0,028	1.8E+04	1.6E-03	3.9E+04	7.1E-04
128-H-3_Shallow_Focusec	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	0,027	1.8E+04	1.5E-03	3.9E+04	6.9E-04
128-H-3_Shallow_Focusec	non-Rad	Beryllium	7440-41-7	ug/kg	0,360	1.0E+04	3.6E-02	1.4E+04	2.6E-02
128-H-3_Shallow_Focusec	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	ug/kg	0,160	1.0E+05	1.6E-03	4.5E+04	3.5E-03
128-H-3_Shallow_Focusec	non-Rad	Boron	7440-42-8	ug/kg	3,700	5.0E+02	**7.4E+00**	1.3E+05	2.8E-02
128-H-3_Shallow_Focusec	non-Rad	Butylbenzylphthalate	85-68-7	ug/kg	0,028	No Value	--	No Value	--
128-H-3_Shallow_Focusec	non-Rad	Chromium	7440-47-3	ug/kg	16,900	4.0E+02	**4.2E+01**	3.8E+04	4.4E-01
128-H-3_Shallow_Focusec	non-Rad	Chrysene	218-01-9	ug/kg	0,020	1.8E+04	1.1E-03	4.5E+04	4.5E-04
128-H-3_Shallow_Focusec	non-Rad	Cobalt	7440-48-4	ug/kg	8,400	1.3E+04	6.5E-01	1.1E+05	7.5E-02
128-H-3_Shallow_Focusec	non-Rad	Copper	7440-50-8	ug/kg	19,800	5.0E+04	4.0E-01	1.1E+05	1.9E-01
128-H-3_Shallow_Focusec	non-Rad	Di-n-butylphthalate	84-74-2	ug/kg	0,120	No Value	--	No Value	--
128-H-3_Shallow_Focusec	non-Rad	Fluoranthene	206-44-0	ug/kg	0,024	1.8E+04	1.3E-03	8.4E+05	2.9E-05
128-H-3_Shallow_Focusec	non-Rad	Lead	7439-92-1	ug/kg	94,100	5.0E+04	**1.9E+00**	3.6E+04	**2.6E+00**
128-H-3_Shallow_Focusec	non-Rad	Manganese	7439-96-5	ug/kg	360,000	2.2E+05	**1.6E+00**	5.8E+06	6.2E-02
128-H-3_Shallow_Focusec	non-Rad	Mercury	7439-97-6	ug/kg	0,040	1.0E+02	4.0E-01	1.9E+03	2.1E-02
128-H-3_Shallow_Focusec	non-Rad	Methylene chloride	75-09-2	ug/kg	0,006	No Value	--	1.7E+05	3.6E-05
128-H-3_Shallow_Focusec	non-Rad	Molybdenum	7439-98-7	ug/kg	0,680	2.0E+03	3.4E-01	1.4E+04	4.9E-02
128-H-3_Shallow_Focusec	non-Rad	Nickel	7440-02-0	ug/kg	15,400	3.0E+04	5.1E-01	3.3E+04	4.7E-01
128-H-3_Shallow_Focusec	non-Rad	Pyrene	129-00-0	ug/kg	0,028	1.8E+04	1.6E-03	6.0E+05	4.7E-05
128-H-3_Shallow_Focusec	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	ug/kg	6,000	2.0E+05	3.0E-02	3.6E+08	1.7E-05
128-H-3_Shallow_Focused	non-Rad	Total petroleum hydrocarbons - motor oil (high boiling)	TPH/OILH	ug/kg	13,000	No Value	--	No Value	--
128-H-3_Shallow_Focusec	non-Rad	Vanadium	7440-62-2	ug/kg	60,500	2.0E+03	**3.0E+01**	3.1E+04	**1.9E+00**
128-H-3_Shallow_Focusec	non-Rad	Zinc	7440-66-6	ug/kg	49,800	5.0E+04	1.0E+00	6.8E+04	7.4E-01
1607-H1_Overburder	non-Rad	Antimony	7440-36-0	ug/kg	0,420	5.0E+03	8.4E-02	6.0E+03	7.0E-02
1607-H1_Overburder	non-Rad	Arsenic	7440-38-2	ug/kg	14,321	1.0E+04	**1.4E+00**	1.9E+05	7.6E-02
1607-H1_Overburder	non-Rad	Barium	7440-39-3	ug/kg	79,109	3.3E+05	2.4E-01	1.3E+06	6.0E-02
1607-H1_Overburder	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	0,056	1.8E+04	3.1E-03	3.9E+04	1.4E-03
1607-H1_Overburder	non-Rad	Beryllium	7440-41-7	ug/kg	0,267	1.0E+04	2.7E-02	1.4E+04	1.9E-02
1607-H1_Overburden	non-Rad	beta-1,2,3,4,5,6-Hexachlorocyclohexane (beta-BHC)	319-85-7	ug/kg	0,001	No Value	--	4.1E+03	3.4E-04

Table 5. Comparison of 100-H OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/ Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
1607-H1_Overburder	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	ug/kg	0,282	1.0E+05	2.8E-03	4.5E+04	6.2E-03
1607-H1_Overburder	non-Rad	Boron	7440-42-8	ug/kg	3,760	5.0E+02	**7.5E+00**	1.3E+05	2.8E-02
1607-H1_Overburder	non-Rad	Cadmium	7440-43-9	ug/kg	0,108	4.0E+03	2.7E-02	1.6E+03	6.6E-02
1607-H1_Overburder	Rad	Carbon-14	14762-75-5	pCi/g	0,002	6.1E+04	2.5E-05	3.2E+01	4.9E-02
1607-H1_Overburder	non-Rad	Chromium	7440-47-3	ug/kg	12,120	4.0E+02	**3.0E+01**	3.8E+04	3.2E-01
1607-H1_Overburder	non-Rad	Cobalt	7440-48-4	ug/kg	6,260	1.3E+04	4.8E-01	1.1E+05	5.6E-02
1607-H1_Overburder	non-Rad	Copper	7440-50-8	ug/kg	14,456	5.0E+04	2.9E-01	1.1E+05	1.4E-01
1607-H1_Overburder	non-Rad	Dieldrin	60-57-1	ug/kg	0,002	No Value	--	2.1E+01	9.6E-02
1607-H1_Overburder	non-Rad	Fluoranthene	206-44-0	ug/kg	0,071	1.8E+04	4.0E-03	8.4E+05	8.5E-05
1607-H1_Overburder	non-Rad	Fluoride	16984-48-8	ug/kg	1,465	No Value	--	2.3E+06	6.4E-04
1607-H1_Overburder	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	0,169	No Value	--	1.3E+06	1.4E-04
1607-H1_Overburder	non-Rad	Lead	7439-92-1	ug/kg	60,452	5.0E+04	**1.2E+00**	3.6E+04	**1.7E+00**
1607-H1_Overburder	non-Rad	Manganese	7439-96-5	ug/kg	299,830	2.2E+05	**1.4E+00**	5.8E+06	5.2E-02
1607-H1_Overburder	non-Rad	Mercury	7439-97-6	ug/kg	0,015	1.0E+02	1.5E-01	1.9E+03	8.0E-03
1607-H1_Overburder	non-Rad	Molybdenum	7439-98-7	ug/kg	0,449	2.0E+03	2.2E-01	1.4E+04	3.2E-02
1607-H1_Overburder	non-Rad	Nickel	7440-02-0	ug/kg	11,144	3.0E+04	3.7E-01	3.3E+04	3.4E-01
1607-H1_Overburder	non-Rad	Nitrate	14797-55-8	ug/kg	57,506	No Value	--	3.4E+08	1.7E-04
1607-H1_Overburder	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	ug/kg	13,996	No Value	--	No Value	--
1607-H1_Overburder	non-Rad	Pyrene	129-00-0	ug/kg	0,096	1.8E+04	5.3E-03	6.0E+05	1.6E-04
1607-H1_Overburder	Rad	Rads SOF	---	pCi/g	--	--	8.5E-05	--	4.9E-02
1607-H1_Overburder	non-Rad	Selenium	7782-49-2	ug/kg	0,979	5.2E+02	**1.9E+00**	1.9E+03	5.2E-01
1607-H1_Overburder	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	2,112	5.0E+03	4.2E-01	3.6E+05	5.9E-03
1607-H1_Overburder	Rad	Uranium-233/234	U-233/234	pCi/g	0,001	5.2E+04	1.4E-05	6.4E+03	1.1E-04
1607-H1_Overburder	Rad	Uranium-238	U-238	pCi/g	0,001	1.6E+04	4.5E-05	5.2E+03	1.4E-04
1607-H1_Overburder	non-Rad	Vanadium	7440-62-2	ug/kg	46,454	2.0E+03	**2.3E+01**	3.1E+04	**1.5E+00**
1607-H1_Overburder	non-Rad	Zinc	7440-66-6	ug/kg	39,273	5.0E+04	7.9E-01	6.8E+04	5.8E-01
1607-H1_Shallow	non-Rad	4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	ug/kg	0,004	No Value	--	4.0E+02	1.0E-02
1607-H1_Shallow	non-Rad	4,4'-DDT (Dichlorodiphenyltrichloroethane)	50-29-3	ug/kg	0,001	No Value	--	8.8E+02	1.5E-03
1607-H1_Shallow	non-Rad	Antimony	7440-36-0	ug/kg	0,208	5.0E+03	4.2E-02	6.0E+03	3.5E-02
1607-H1_Shallow	non-Rad	Aroclor-1254	11097-69-1	ug/kg	0,027	4.0E+04	6.7E-04	1.5E+03	1.8E-02
1607-H1_Shallow	non-Rad	Aroclor-1260	11096-82-5	ug/kg	0,014	4.0E+04	3.4E-04	1.5E+03	9.3E-03
1607-H1_Shallow	non-Rad	Aroclors HI	---	ug/kg	--	--	1.0E-03	--	2.7E-02
1607-H1_Shallow	non-Rad	Arsenic	7440-38-2	ug/kg	9,508	1.0E+04	9.5E-01	1.9E+05	5.0E-02
1607-H1_Shallow	non-Rad	Barium	7440-39-3	ug/kg	80,403	3.3E+05	2.4E-01	1.3E+06	6.1E-02
1607-H1_Shallow	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	0,073	1.8E+04	4.0E-03	6.4E+04	1.1E-03
1607-H1_Shallow	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	0,068	1.8E+04	3.8E-03	7.6E+04	8.9E-04
1607-H1_Shallow	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	0,055	1.8E+04	3.0E-03	3.9E+04	1.4E-03
1607-H1_Shallow	non-Rad	Beryllium	7440-41-7	ug/kg	0,268	1.0E+04	2.7E-02	1.4E+04	1.9E-02
1607-H1_Shallow	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	ug/kg	0,211	1.0E+05	2.1E-03	4.5E+04	4.7E-03
1607-H1_Shallow	non-Rad	Boron	7440-42-8	ug/kg	3,052	5.0E+02	**6.1E+00**	1.3E+05	2.3E-02
1607-H1_Shallow	non-Rad	Cadmium	7440-43-9	ug/kg	0,127	4.0E+03	3.2E-02	1.6E+03	7.8E-02
1607-H1_Shallow	Rad	Carbon-14	14762-75-5	pCi/g	0,002	6.1E+04	2.5E-05	3.2E+01	4.9E-02
1607-H1_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0,000	2.2E+03	3.5E-05	9.2E+02	8.3E-05
1607-H1_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	13,089	4.0E+02	**3.3E+01**	3.8E+04	3.4E-01
1607-H1_Shallow	non-Rad	Chrysene	218-01-9	ug/kg	0,078	1.8E+04	4.4E-03	4.5E+04	1.8E-03
1607-H1_Shallow	non-Rad	Cobalt	7440-48-4	ug/kg	7,042	1.3E+04	5.4E-01	1.1E+05	6.3E-02
1607-H1_Shallow	non-Rad	Copper	7440-50-8	ug/kg	15,043	5.0E+04	3.0E-01	1.1E+05	1.4E-01
1607-H1_Shallow	non-Rad	Dieldrin	60-57-1	ug/kg	0,004	No Value	--	2.1E+01	1.9E-01
1607-H1_Shallow	non-Rad	Di-n-butylphthalate	84-74-2	ug/kg	0,253	No Value	--	No Value	--
1607-H1_Shallow	non-Rad	Fluoranthene	206-44-0	ug/kg	0,171	1.8E+04	9.5E-03	8.4E+05	2.0E-04
1607-H1_Shallow	non-Rad	Fluoride	16984-48-8	ug/kg	4,029	No Value	--	2.3E+06	1.8E-03
1607-H1_Shallow	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	0,137	No Value	--	1.3E+06	1.1E-04
1607-H1_Shallow	non-Rad	Lead	7439-92-1	ug/kg	25,361	5.0E+04	5.1E-01	3.6E+04	7.1E-01
1607-H1_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	315,367	2.2E+05	**1.4E+00**	5.8E+06	5.4E-02
1607-H1_Shallow	non-Rad	Mercury	7439-97-6	ug/kg	0,097	1.0E+02	9.7E-01	1.9E+03	5.2E-02
1607-H1_Shallow	non-Rad	Molybdenum	7439-98-7	ug/kg	0,383	2.0E+03	1.9E-01	1.4E+04	2.7E-02
1607-H1_Shallow	non-Rad	Nickel	7440-02-0	ug/kg	11,940	3.0E+04	4.0E-01	3.3E+04	3.7E-01
1607-H1_Shallow	non-Rad	Nitrate	14797-55-8	ug/kg	12,618	No Value	--	3.4E+08	3.7E-05
1607-H1_Shallow	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	ug/kg	2,747	No Value	--	No Value	--
1607-H1_Shallow	Rad	Plutonium-238	13981-16-3	pCi/g	0,000	1.8E+04	1.9E-05	6.0E+03	5.6E-05
1607-H1_Shallow	non-Rad	Pyrene	129-00-0	ug/kg	0,233	1.8E+04	1.3E-02	6.0E+05	3.9E-04
1607-H1_Shallow	Rad	Rads SOF	---	pCi/g	--	--	1.3E-04	--	6.6E-02
1607-H1_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	1,781	5.0E+03	3.6E-01	3.6E+05	5.0E-03
1607-H1_Shallow	Rad	Tritium	10028-17-8	pCi/g	0,007	1.7E+06	4.4E-06	4.2E+02	1.8E-02
1607-H1_Shallow	Rad	Uranium-233/234	U-233/234	pCi/g	0,001	5.2E+04	1.3E-05	6.4E+03	1.1E-04
1607-H1_Shallow	Rad	Uranium-238	U-238	pCi/g	0,001	1.6E+04	3.8E-05	5.2E+03	1.1E-04
1607-H1_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	50,477	2.0E+03	**2.5E+01**	3.1E+04	**1.6E+00**
1607-H1_Shallow	non-Rad	Zinc	7440-66-6	ug/kg	43,328	5.0E+04	8.7E-01	6.8E+04	6.4E-01
1607-H1_Shallow_Focusec	non-Rad	Arsenic	7440-38-2	ug/kg	1,300	1.0E+04	1.3E-01	1.9E+05	6.9E-03
1607-H1_Shallow_Focusec	non-Rad	Barium	7440-39-3	ug/kg	40,500	3.3E+05	1.2E-01	1.3E+06	3.1E-02
1607-H1_Shallow_Focusec	non-Rad	Cadmium	7440-43-9	ug/kg	0,055	4.0E+03	1.4E-02	1.6E+03	3.4E-02
1607-H1_Shallow_Focusec	non-Rad	Chromium	7440-47-3	ug/kg	9,800	4.0E+02	**2.5E+01**	3.8E+04	2.6E-01
1607-H1_Shallow_Focusec	non-Rad	Cobalt	7440-48-4	ug/kg	4,800	1.3E+04	3.7E-01	1.1E+05	4.3E-02
1607-H1_Shallow_Focusec	non-Rad	Copper	7440-50-8	ug/kg	13,400	5.0E+04	2.7E-01	1.1E+05	1.3E-01
1607-H1_Shallow_Focusec	non-Rad	Lead	7439-92-1	ug/kg	2,700	5.0E+04	5.4E-02	3.6E+04	7.6E-02
1607-H1_Shallow_Focusec	non-Rad	Manganese	7439-96-5	ug/kg	228,000	2.2E+05	**1.0E+00**	5.8E+06	3.9E-02
1607-H1_Shallow_Focusec	non-Rad	Nickel	7440-02-0	ug/kg	11,200	3.0E+04	3.7E-01	3.3E+04	3.4E-01
1607-H1_Shallow_Focusec	non-Rad	Nitrogen in Nitrate	NO3-N	ug/kg	0,840	No Value	--	No Value	--
1607-H1_Shallow_Focusec	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	ug/kg	0,570	No Value	--	No Value	--
1607-H1_Shallow_Focusec	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	0,000	5.0E+03	8.5E-06	3.6E+05	1.2E-07
1607-H1_Shallow_Focusec	Rad	Uranium-234	13966-29-5	pCi/g	0,000	5.2E+04	5.1E-06	6.4E+03	4.2E-05
1607-H1_Shallow_Focusec	non-Rad	Vanadium	7440-62-2	ug/kg	33,500	2.0E+03	**1.7E+01**	3.1E+04	**1.1E+00**
1607-H1_Shallow_Focusec	non-Rad	Zinc	7440-66-6	ug/kg	29,900	5.0E+04	6.0E-01	6.8E+04	4.4E-01
1607-H2_Overburder	non-Rad	Anthracene	120-12-7	ug/kg	0,023	2.9E+04	7.9E-04	6.8E+05	3.4E-05
1607-H2_Overburder	non-Rad	Arsenic	7440-38-2	ug/kg	15,800	1.0E+04	**1.6E+00**	1.9E+05	8.3E-02
1607-H2_Overburder	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	0,100	1.8E+04	5.6E-03	6.4E+04	1.6E-03
1607-H2_Overburder	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	0,130	1.8E+04	7.2E-03	7.6E+04	1.7E-03
1607-H2_Overburder	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	0,076	1.8E+04	4.2E-03	3.9E+04	1.9E-03
1607-H2_Overburder	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	0,094	1.8E+04	5.2E-03	3.9E+04	2.4E-03
1607-H2_Overburder	Rad	Cesium-137	10045-97-3	pCi/g	0,000	2.2E+03	1.7E-05	9.2E+02	4.1E-05
1607-H2_Overburder	non-Rad	Chromium	7440-47-3	ug/kg	10,300	4.0E+02	**2.6E+01**	3.8E+04	2.7E-01
1607-H2_Overburder	non-Rad	Chrysene	218-01-9	ug/kg	0,120	1.8E+04	6.7E-03	4.5E+04	2.7E-03
1607-H2_Overburder	non-Rad	Fluoranthene	206-44-0	ug/kg	0,230	1.8E+04	1.3E-02	8.4E+05	2.7E-04
1607-H2_Overburder	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	0,079	1.8E+04	4.4E-03	3.6E+04	2.2E-03
1607-H2_Overburder	non-Rad	Lead	7439-92-1	ug/kg	54,900	5.0E+04	**1.1E+00**	3.6E+04	**1.5E+00**
1607-H2_Overburder	non-Rad	Pyrene	129-00-0	ug/kg	0,220	1.8E+04	1.2E-02	6.0E+05	3.7E-04
1607-H2_Overburder	Rad	Rads SOF	---	pCi/g	--	--	7.6E-05	--	2.9E-04
1607-H2_Overburder	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	2,116	5.0E+03	4.2E-01	3.6E+05	5.9E-03
1607-H2_Overburder	Rad	Uranium-233/234	U-233/234	pCi/g	0,001	5.2E+04	1.4E-05	6.4E+03	1.1E-04
1607-H2_Overburder	Rad	Uranium-238	U-238	pCi/g	0,001	1.6E+04	4.5E-05	5.2E+03	1.4E-04
1607-H2_Shallow	non-Rad	Aroclor-1254	11097-69-1	ug/kg	0,160	4.0E+04	4.0E-03	1.5E+03	1.1E-01
1607-H2_Shallow	non-Rad	Aroclors HI	---	ug/kg	--	--	4.0E-03	--	1.1E-01
1607-H2_Shallow	non-Rad	Arsenic	7440-38-2	ug/kg	7,132	1.0E+04	7.1E-01	1.9E+05	3.8E-02
1607-H2_Shallow	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	ug/kg	0,024	1.0E+05	2.4E-04	4.5E+04	5.3E-04
1607-H2_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0,000	2.2E+03	3.3E-05	9.2E+02	7.9E-05
1607-H2_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	204,000	4.0E+02	**5.1E+02**	3.8E+04	**5.4E+00**
1607-H2_Shallow	non-Rad	Di-n-butylphthalate	84-74-2	ug/kg	0,110	No Value	--	No Value	--
1607-H2_Shallow	non-Rad	Lead	7439-92-1	ug/kg	37,629	5.0E+04	7.5E-01	3.6E+04	**1.1E+00**
1607-H2_Shallow	non-Rad	Mercury	7439-97-6	ug/kg	2,591	1.0E+02	**2.6E+01**	1.9E+03	**1.4E+00**
1607-H2_Shallow	Rad	Rads SOF	---	pCi/g	--	--	9.9E-05	--	3.7E-04
1607-H2_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	2,242	5.0E+03	4.5E-01	3.6E+05	6.2E-03
1607-H2_Shallow	Rad	Uranium-233/234	U-233/234	pCi/g	0,001	5.2E+04	1.8E-05	6.4E+03	1.4E-04
1607-H2_Shallow	Rad	Uranium-238	U-238	pCi/g	0,001	1.6E+04	4.8E-05	5.2E+03	1.5E-04
1607-H2_Shallow_Focusec	non-Rad	Arsenic	7440-38-2	ug/kg	1,500	1.0E+04	1.5E-01	1.9E+05	7.9E-03
1607-H2_Shallow_Focusec	non-Rad	Chromium	7440-47-3	ug/kg	7,900	4.0E+02	**2.0E+01**	3.8E+04	2.1E-01
1607-H2_Shallow_Focusec	non-Rad	Lead	7439-92-1	ug/kg	2,500	5.0E+04	5.0E-02	3.6E+04	7.0E-02
1607-H2_Shallow_Focusec	non-Rad	Mercury	7439-97-6	ug/kg	0,065	1.0E+02	6.5E-01	1.9E+03	3.5E-02
1607-H3_Overburder	non-Rad	4,4'-DDD (Dichlorodiphenyldichloroethane)	72-54-8	ug/kg	0,002	No Value	--	No Value	--
1607-H3_Overburder	non-Rad	4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	ug/kg	0,018	No Value	--	4.0E+02	4.6E-02
1607-H3_Overburder	non-Rad	4,4'-DDT (Dichlorodiphenyltrichloroethane)	50-29-3	ug/kg	0,003	No Value	--	8.8E+02	2.8E-03
1607-H3_Overburder	non-Rad	Acenaphthene	83-32-9	ug/kg	0,018	2.0E+04	8.8E-04	1.1E+06	1.6E-05
1607-H3_Overburder	non-Rad	Anthracene	120-12-7	ug/kg	0,002	2.9E+04	6.0E-05	6.8E+05	2.6E-06
1607-H3_Overburder	non-Rad	Aroclor-1254	11097-69-1	ug/kg	0,015	4.0E+04	3.9E-04	1.5E+03	1.0E-02
1607-H3_Overburder	non-Rad	Aroclor-1260	11096-82-5	ug/kg	0,009	4.0E+04	2.4E-04	1.5E+03	6.4E-03

Table 5. Comparison of 100-H OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/ Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
1607-H3_Overburder	non-Rad	Aroclors HI	---	ug/kg	--	--	6.2E-04	--	1.7E-02
1607-H3_Overburder	non-Rad	Arsenic	7440-38-2	ug/kg	4,302	1.0E+04	4.3E-01	1.9E+05	2.3E-02
1607-H3_Overburder	non-Rad	Barium	7440-39-3	ug/kg	97,722	3.3E+05	3.0E-01	1.3E+06	7.4E-02
1607-H3_Overburder	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	0,007	1.8E+04	4.0E-04	6.4E+04	1.1E-04
1607-H3_Overburder	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	0,011	1.8E+04	5.9E-04	7.6E+04	1.4E-04
1607-H3_Overburder	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	0,009	1.8E+04	4.9E-04	3.9E+04	2.2E-04
1607-H3_Overburder	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	0,004	1.8E+04	2.2E-04	3.9E+04	1.0E-04
1607-H3_Overburder	non-Rad	Beryllium	7440-41-7	ug/kg	0,261	1.0E+04	2.6E-02	1.4E+04	1.9E-02
1607-H3_Overburder	non-Rad	Boron	7440-42-8	ug/kg	4,725	5.0E+02	**9.5E+00**	1.3E+05	3.6E-02
1607-H3_Overburder	non-Rad	Cadmium	7440-43-9	ug/kg	0,139	4.0E+03	3.5E-02	1.6E+03	8.6E-02
1607-H3_Overburder	non-Rad	Chromium	7440-47-3	ug/kg	49,818	4.0E+02	**1.3E+02**	3.8E+04	**1.3E+00**
1607-H3_Overburder	non-Rad	Chrysene	218-01-9	ug/kg	0,012	1.8E+04	6.6E-04	4.5E+04	2.7E-04
1607-H3_Overburder	non-Rad	Cobalt	7440-48-4	ug/kg	7,300	1.3E+04	5.6E-01	1.1E+05	6.6E-02
1607-H3_Overburder	non-Rad	Copper	7440-50-8	ug/kg	14,980	5.0E+04	3.0E-01	1.1E+05	1.4E-01
1607-H3_Overburder	non-Rad	Dibenz[a,h]anthracene	53-70-3	ug/kg	0,002	1.8E+04	9.4E-05	4.4E+04	3.8E-05
1607-H3_Overburder	non-Rad	Endosulfan I	959-98-8	ug/kg	0,003	No Value	--	7.1E+02	4.5E-03
1607-H3_Overburder	non-Rad	Fluoranthene	206-44-0	ug/kg	0,022	1.8E+04	1.2E-03	8.4E+05	2.7E-05
1607-H3_Overburder	non-Rad	Fluorene	86-73-7	ug/kg	0,001	2.9E+04	4.7E-05	1.8E+05	7.8E-06
1607-H3_Overburder	non-Rad	Fluoride	16984-48-8	ug/kg	0,992	No Value	--	2.3E+06	4.4E-04
1607-H3_Overburder	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	0,129	No Value	--	1.3E+06	1.0E-04
1607-H3_Overburder	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	0,007	1.8E+04	3.9E-04	3.6E+04	2.0E-04
1607-H3_Overburder	non-Rad	Lead	7439-92-1	ug/kg	21,505	5.0E+04	4.3E-01	3.6E+04	6.0E-01
1607-H3_Overburder	non-Rad	Manganese	7439-96-5	ug/kg	306,125	2.2E+05	**1.4E+00**	5.8E+06	5.3E-02
1607-H3_Overburder	non-Rad	Mercury	7439-97-6	ug/kg	0,015	1.0E+02	1.5E-01	1.9E+03	8.0E-03
1607-H3_Overburder	non-Rad	Methylene chloride	75-09-2	ug/kg	0,011	No Value	--	1.7E+05	6.5E-05
1607-H3_Overburder	non-Rad	Molybdenum	7439-98-7	ug/kg	0,365	2.0E+03	1.8E-01	1.4E+04	2.6E-02
1607-H3_Overburder	non-Rad	Naphthalene	91-20-3	ug/kg	0,103	2.9E+04	3.5E-03	1.0E+05	1.0E-03
1607-H3_Overburder	non-Rad	Nickel	7440-02-0	ug/kg	21,414	3.0E+04	7.1E-01	3.3E+04	6.6E-01
1607-H3_Overburder	non-Rad	Nitrate	14797-55-8	ug/kg	43,234	No Value	--	3.4E+08	1.3E-04
1607-H3_Overburder	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	ug/kg	6,068	No Value	--	No Value	--
1607-H3_Overburder	non-Rad	Pyrene	129-00-0	ug/kg	0,016	1.8E+04	8.8E-04	6.0E+05	2.7E-05
1607-H3_Overburder	non-Rad	Silver	7440-22-4	ug/kg	0,840	2.0E+03	4.2E-01	5.0E+04	1.7E-02
1607-H3_Overburder	non-Rad	Vanadium	7440-62-2	ug/kg	51,141	2.0E+03	**2.6E+01**	3.1E+04	**1.6E+00**
1607-H3_Overburder	non-Rad	Zinc	7440-66-6	ug/kg	51,058	5.0E+04	**1.0E+00**	6.8E+04	7.5E-01
1607-H3_Shallow_1	non-Rad	2-Methylnaphthalene	91-57-6	ug/kg	0,219	2.9E+04	7.6E-03	6.0E+03	3.6E-02
1607-H3_Shallow_1	non-Rad	4,4'-DDD (Dichlorodiphenyldichloroethane)	72-54-8	ug/kg	0,002	No Value	--	No Value	--
1607-H3_Shallow_1	non-Rad	4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	ug/kg	0,005	No Value	--	4.0E+02	1.2E-02
1607-H3_Shallow_1	non-Rad	4,4'-DDT (Dichlorodiphenyltrichloroethane)	50-29-3	ug/kg	0,010	No Value	--	8.8E+02	1.2E-02
1607-H3_Shallow_1	non-Rad	Acenaphthene	83-32-9	ug/kg	0,409	2.0E+04	2.1E-02	1.1E+06	3.7E-04
1607-H3_Shallow_1	non-Rad	Anthracene	120-12-7	ug/kg	0,008	2.9E+04	2.7E-04	6.8E+05	1.2E-05
1607-H3_Shallow_1	non-Rad	Antimony	7440-36-0	ug/kg	0,389	5.0E+03	7.8E-02	6.0E+03	6.5E-02
1607-H3_Shallow_1	non-Rad	Aroclor-1254	11097-69-1	ug/kg	0,011	4.0E+04	2.6E-04	1.5E+03	7.1E-03
1607-H3_Shallow_1	non-Rad	Aroclor-1260	11096-82-5	ug/kg	0,019	4.0E+04	4.8E-04	1.5E+03	1.3E-02
1607-H3_Shallow_1	non-Rad	Aroclors HI	---	ug/kg	--	--	7.5E-04	--	2.0E-02
1607-H3_Shallow_1	non-Rad	Arsenic	7440-38-2	ug/kg	3,240	1.0E+04	3.2E-01	1.9E+05	1.7E-02
1607-H3_Shallow_1	non-Rad	Barium	7440-39-3	ug/kg	70,120	3.3E+05	2.1E-01	1.3E+06	5.3E-02
1607-H3_Shallow_1	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	0,011	1.8E+04	6.3E-04	6.4E+04	1.8E-04
1607-H3_Shallow_1	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	0,005	1.8E+04	2.5E-04	7.6E+04	6.0E-05
1607-H3_Shallow_1	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	0,004	1.8E+04	2.0E-04	3.9E+04	9.4E-05
1607-H3_Shallow_1	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	0,004	1.8E+04	2.3E-04	3.9E+04	1.1E-04
1607-H3_Shallow_1	non-Rad	Beryllium	7440-41-7	ug/kg	0,245	1.0E+04	2.5E-02	1.4E+04	1.8E-02
1607-H3_Shallow_1	non-Rad	beta-1,2,3,4,5,6-Hexachlorocyclohexane (beta-BHC)	319-85-7	ug/kg	0,005	No Value	--	4.1E+03	1.1E-03
1607-H3_Shallow_1	non-Rad	Boron	7440-42-8	ug/kg	1,945	5.0E+02	**3.9E+00**	1.3E+05	1.5E-02
1607-H3_Shallow_1	non-Rad	Cadmium	7440-43-9	ug/kg	0,121	4.0E+03	3.0E-02	1.6E+03	7.4E-02
1607-H3_Shallow_1	non-Rad	Chromium	7440-47-3	ug/kg	12,104	4.0E+02	**3.0E+01**	3.8E+04	3.2E-01
1607-H3_Shallow_1	non-Rad	Chrysene	218-01-9	ug/kg	0,043	1.8E+04	2.4E-03	4.5E+04	9.6E-04
1607-H3_Shallow_1	non-Rad	Cobalt	7440-48-4	ug/kg	6,690	1.3E+04	5.2E-01	1.1E+05	6.0E-02
1607-H3_Shallow_1	non-Rad	Copper	7440-50-8	ug/kg	13,285	5.0E+04	2.7E-01	1.1E+05	1.2E-01
1607-H3_Shallow_1	non-Rad	Dibenz[a,h]anthracene	53-70-3	ug/kg	0,002	1.8E+04	1.3E-04	4.4E+04	5.1E-05
1607-H3_Shallow_1	non-Rad	Endosulfan I	959-98-8	ug/kg	0,003	No Value	--	7.1E+02	4.2E-03
1607-H3_Shallow_1	non-Rad	Fluoranthene	206-44-0	ug/kg	0,069	1.8E+04	3.8E-03	8.4E+05	8.2E-05
1607-H3_Shallow_1	non-Rad	Fluorene	86-73-7	ug/kg	0,076	2.9E+04	2.6E-03	1.8E+05	4.3E-04
1607-H3_Shallow_1	non-Rad	Fluoride	16984-48-8	ug/kg	1,326	No Value	--	2.3E+06	5.8E-04
1607-H3_Shallow_1	non-Rad	Lead	7439-92-1	ug/kg	9,027	5.0E+04	1.8E-01	3.6E+04	2.5E-01
1607-H3_Shallow_1	non-Rad	Manganese	7439-96-5	ug/kg	287,009	2.2E+05	**1.3E+00**	5.8E+06	5.0E-02
1607-H3_Shallow_1	non-Rad	Mercury	7439-97-6	ug/kg	0,009	1.0E+02	9.0E-02	1.9E+03	4.8E-03
1607-H3_Shallow_1	non-Rad	Molybdenum	7439-98-7	ug/kg	0,441	2.0E+03	2.2E-01	1.4E+04	3.2E-02
1607-H3_Shallow_1	non-Rad	Naphthalene	91-20-3	ug/kg	0,169	2.9E+04	5.8E-03	1.0E+05	1.7E-03
1607-H3_Shallow_1	non-Rad	Nickel	7440-02-0	ug/kg	10,739	3.0E+04	3.6E-01	3.3E+04	3.3E-01
1607-H3_Shallow_1	non-Rad	Nitrate	14797-55-8	ug/kg	6,544	No Value	--	3.4E+08	1.9E-05
1607-H3_Shallow_1	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	ug/kg	1,980	No Value	--	No Value	--
1607-H3_Shallow_1	non-Rad	Pyrene	129-00-0	ug/kg	0,022	1.8E+04	1.2E-03	6.0E+05	3.7E-05
1607-H3_Shallow_1	non-Rad	Selenium	7782-49-2	ug/kg	0,300	5.2E+02	5.8E-01	1.9E+03	1.6E-01
1607-H3_Shallow_1	non-Rad	Vanadium	7440-62-2	ug/kg	51,055	2.0E+03	**2.6E+01**	3.1E+04	**1.6E+00**
1607-H3_Shallow_1	non-Rad	Zinc	7440-66-6	ug/kg	58,150	5.0E+04	**1.2E+00**	6.8E+04	8.6E-01
1607-H3_Shallow_2	non-Rad	Acenaphthene	83-32-9	ug/kg	0,010	2.0E+04	5.2E-04	1.1E+06	9.4E-06
1607-H3_Shallow_2	non-Rad	Arsenic	7440-38-2	ug/kg	2,275	1.0E+04	2.3E-01	1.9E+05	1.2E-02
1607-H3_Shallow_2	non-Rad	Barium	7440-39-3	ug/kg	50,645	3.3E+05	1.5E-01	1.3E+06	3.8E-02
1607-H3_Shallow_2	non-Rad	Beryllium	7440-41-7	ug/kg	0,197	1.0E+04	2.0E-02	1.4E+04	1.4E-02
1607-H3_Shallow_2	non-Rad	Boron	7440-42-8	ug/kg	1,136	5.0E+02	**2.3E+00**	1.3E+05	8.6E-03
1607-H3_Shallow_2	non-Rad	Cadmium	7440-43-9	ug/kg	0,093	4.0E+03	2.3E-02	1.6E+03	5.7E-02
1607-H3_Shallow_2	non-Rad	Chromium	7440-47-3	ug/kg	10,587	4.0E+02	**2.7E+01**	3.8E+04	2.8E-01
1607-H3_Shallow_2	non-Rad	Cobalt	7440-48-4	ug/kg	5,450	1.3E+04	4.2E-01	1.1E+05	4.9E-02
1607-H3_Shallow_2	non-Rad	Copper	7440-50-8	ug/kg	13,436	5.0E+04	2.7E-01	1.1E+05	1.3E-01
1607-H3_Shallow_2	non-Rad	Fluoride	16984-48-8	ug/kg	1,005	No Value	--	2.3E+06	4.4E-04
1607-H3_Shallow_2	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	0,133	No Value	--	1.3E+06	1.1E-04
1607-H3_Shallow_2	non-Rad	Lead	7439-92-1	ug/kg	4,086	5.0E+04	8.2E-02	3.6E+04	1.2E-01
1607-H3_Shallow_2	non-Rad	Manganese	7439-96-5	ug/kg	256,331	2.2E+05	**1.2E+00**	5.8E+06	4.4E-02
1607-H3_Shallow_2	non-Rad	Mercury	7439-97-6	ug/kg	0,016	1.0E+02	1.6E-01	1.9E+03	8.6E-03
1607-H3_Shallow_2	non-Rad	Molybdenum	7439-98-7	ug/kg	0,268	2.0E+03	1.3E-01	1.4E+04	1.9E-02
1607-H3_Shallow_2	non-Rad	Naphthalene	91-20-3	ug/kg	0,008	2.9E+04	2.6E-04	1.0E+05	7.6E-05
1607-H3_Shallow_2	non-Rad	Nickel	7440-02-0	ug/kg	10,188	3.0E+04	3.4E-01	3.3E+04	3.1E-01
1607-H3_Shallow_2	non-Rad	Nitrate	14797-55-8	ug/kg	2,497	No Value	--	3.4E+08	7.3E-06
1607-H3_Shallow_2	non-Rad	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	ug/kg	0,541	No Value	--	No Value	--
1607-H3_Shallow_2	non-Rad	Vanadium	7440-62-2	ug/kg	42,063	2.0E+03	**2.1E+01**	3.1E+04	**1.4E+00**
1607-H3_Shallow_2	non-Rad	Zinc	7440-66-6	ug/kg	33,110	5.0E+04	6.6E-01	6.8E+04	4.9E-01
1607-H4_Shallow	non-Rad	Acenaphthene	83-32-9	ug/kg	0,100	2.0E+04	5.0E-03	1.1E+06	9.1E-05
1607-H4_Shallow	non-Rad	Anthracene	120-12-7	ug/kg	0,280	2.9E+04	9.7E-03	6.8E+05	4.1E-04
1607-H4_Shallow	non-Rad	Arsenic	7440-38-2	ug/kg	7,500	1.0E+04	7.5E-01	1.9E+05	4.0E-02
1607-H4_Shallow	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	0,365	1.8E+04	2.0E-02	6.4E+04	5.7E-03
1607-H4_Shallow	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	0,381	1.8E+04	2.1E-02	7.6E+04	5.0E-03
1607-H4_Shallow	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	0,356	1.8E+04	2.0E-02	3.9E+04	9.1E-03
1607-H4_Shallow	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	0,355	1.8E+04	2.0E-02	3.9E+04	9.1E-03
1607-H4_Shallow	non-Rad	Bis(2-ethylhexyl) phthalate	117-81-7	ug/kg	0,032	1.0E+05	3.2E-04	4.5E+04	7.1E-04
1607-H4_Shallow	non-Rad	Carbazole	86-74-8	ug/kg	0,120	No Value	--	No Value	--
1607-H4_Shallow	Rad	Cesium-137	10045-97-3	pCi/g	0,000	2.2E+03	6.2E-05	9.2E+02	1.5E-04
1607-H4_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	10,200	4.0E+02	**2.6E+01**	3.8E+04	2.7E-01
1607-H4_Shallow	non-Rad	Chrysene	218-01-9	ug/kg	0,389	1.8E+04	2.2E-02	4.5E+04	8.7E-03
1607-H4_Shallow	non-Rad	Dibenz[a,h]anthracene	53-70-3	ug/kg	0,022	1.8E+04	1.2E-03	4.4E+04	5.0E-04
1607-H4_Shallow	non-Rad	Dibenzofuran	132-64-9	ug/kg	0,042	No Value	--	No Value	--
1607-H4_Shallow	non-Rad	Fluoranthene	206-44-0	ug/kg	1,300	1.8E+04	7.2E-02	8.4E+05	1.6E-03
1607-H4_Shallow	non-Rad	Fluorene	86-73-7	ug/kg	0,093	2.9E+04	3.2E-03	1.8E+05	5.3E-04
1607-H4_Shallow	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	0,180	1.8E+04	1.0E-02	3.6E+04	5.1E-03
1607-H4_Shallow	non-Rad	Lead	7439-92-1	ug/kg	44,100	5.0E+04	8.8E-01	3.6E+04	**1.2E+00**
1607-H4_Shallow	non-Rad	Mercury	7439-97-6	ug/kg	0,040	1.0E+02	4.0E-01	1.9E+03	2.1E-02
1607-H4_Shallow	non-Rad	Naphthalene	91-20-3	ug/kg	0,025	2.9E+04	8.6E-04	1.0E+05	2.5E-04
1607-H4_Shallow	non-Rad	Pyrene	129-00-0	ug/kg	1,200	1.8E+04	6.7E-02	6.0E+05	2.0E-03
1607-H4_Shallow	Rad	Rads SOF	---	pCi/g	--	--	1.1E-04	--	3.5E-04
1607-H4_Shallow	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	1,587	5.0E+03	3.2E-01	3.6E+05	4.4E-03
1607-H4_Shallow	Rad	Uranium-233/234	U-233/234	pCi/g	0,001	5.2E+04	1.2E-05	6.4E+03	9.6E-05
1607-H4_Shallow	Rad	Uranium-238	U-238	pCi/g	0,001	1.6E+04	3.4E-05	5.2E+03	1.0E-04
600-151_Shallow_1	non-Rad	4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	ug/kg	0,001	No Value	--	4.0E+02	1.8E-03
600-151_Shallow_1	non-Rad	4,4'-DDT (Dichlorodiphenyltrichloroethane)	50-29-3	ug/kg	0,001	No Value	--	8.8E+02	1.0E-03

Table 5. Comparison of 100-H OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/ Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient
600-151_Shallow_1	non-Rad	Acetone	67-64-1	ug/kg	0,007	No Value	--	No Value	--
600-151_Shallow_1	non-Rad	Anthracene	120-12-7	ug/kg	0,005	2.9E+04	1.9E-04	6.8E+05	7.9E-06
600-151_Shallow_1	non-Rad	Arsenic	7440-38-2	ug/kg	31,816	1.0E+04	**3.2E+00**	1.9E+05	1.7E-01
600-151_Shallow_1	non-Rad	Barium	7440-39-3	ug/kg	100,704	3.3E+05	3.1E-01	1.3E+06	7.6E-02
600-151_Shallow_1	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	0,075	1.8E+04	4.2E-03	6.4E+04	1.2E-03
600-151_Shallow_1	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	0,058	1.8E+04	3.2E-03	7.6E+04	7.6E-04
600-151_Shallow_1	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	0,046	1.8E+04	2.6E-03	3.9E+04	1.2E-03
600-151_Shallow_1	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	0,023	1.8E+04	1.3E-03	3.9E+04	6.0E-04
600-151_Shallow_1	non-Rad	Beryllium	7440-41-7	ug/kg	0,178	1.0E+04	1.8E-02	1.4E+04	1.3E-02
600-151_Shallow_1	non-Rad	Boron	7440-42-8	ug/kg	4,859	5.0E+02	**9.7E+00**	1.3E+05	3.7E-02
600-151_Shallow_1	non-Rad	Cadmium	7440-43-9	ug/kg	0,286	4.0E+03	7.2E-02	1.6E+03	1.8E-01
600-151_Shallow_1	non-Rad	Chromium	7440-47-3	ug/kg	13,125	4.0E+02	**3.3E+01**	3.8E+04	3.4E-01
600-151_Shallow_1	non-Rad	Chrysene	218-01-9	ug/kg	0,059	1.8E+04	3.3E-03	4.5E+04	1.3E-03
600-151_Shallow_1	non-Rad	Cobalt	7440-48-4	ug/kg	7,921	1.3E+04	6.1E-01	1.1E+05	7.1E-02
600-151_Shallow_1	non-Rad	Copper	7440-50-8	ug/kg	22,587	5.0E+04	4.5E-01	1.1E+05	2.1E-01
600-151_Shallow_1	non-Rad	Dibenz[a,h]anthracene	53-70-3	ug/kg	0,023	1.8E+04	1.3E-03	4.4E+04	5.2E-04
600-151_Shallow_1	non-Rad	Fluoranthene	206-44-0	ug/kg	0,125	1.8E+04	6.9E-03	8.4E+05	1.5E-04
600-151_Shallow_1	non-Rad	Fluorene	86-73-7	ug/kg	0,007	2.9E+04	2.3E-04	1.8E+05	3.8E-05
600-151_Shallow_1	non-Rad	Hexavalent Chromium	18540-29-9	ug/kg	0,264	No Value	--	1.3E+06	2.1E-04
600-151_Shallow_1	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	0,045	1.8E+04	2.5E-03	3.6E+04	1.3E-03
600-151_Shallow_1	non-Rad	Lead	7439-92-1	ug/kg	126,984	5.0E+04	**2.5E+00**	3.6E+04	**3.6E+00**
600-151_Shallow_1	non-Rad	Manganese	7439-96-5	ug/kg	352,409	2.2E+05	**1.6E+00**	5.8E+06	6.1E-02
600-151_Shallow_1	non-Rad	Mercury	7439-97-6	ug/kg	0,015	1.0E+02	1.5E-01	1.9E+03	7.8E-03
600-151_Shallow_1	non-Rad	Methylene chloride	75-09-2	ug/kg	0,002	No Value	--	1.7E+05	1.2E-05
600-151_Shallow_1	non-Rad	Molybdenum	7439-98-7	ug/kg	0,470	2.0E+03	2.4E-01	1.4E+04	3.4E-02
600-151_Shallow_1	non-Rad	Nickel	7440-02-0	ug/kg	13,000	3.0E+04	4.3E-01	3.3E+04	4.0E-01
600-151_Shallow_1	non-Rad	Pyrene	129-00-0	ug/kg	0,159	1.8E+04	8.9E-03	6.0E+05	2.7E-04
600-151_Shallow_1	non-Rad	Selenium	7782-49-2	ug/kg	0,940	5.2E+02	**1.8E+00**	1.9E+03	5.0E-01
600-151_Shallow_1	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	ug/kg	17,454	2.0E+05	8.7E-02	3.6E+08	4.9E-05
600-151_Shallow_1	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	ug/kg	30,037	No Value	--	No Value	--
600-151_Shallow_1	non-Rad	Vanadium	7440-62-2	ug/kg	41,178	2.0E+03	**2.1E+01**	3.1E+04	**1.3E+00**
600-151_Shallow_1	non-Rad	Zinc	7440-66-6	ug/kg	64,969	5.0E+04	**1.3E+00**	6.8E+04	9.6E-01
600-151_Shallow_2	non-Rad	2-Butanone	78-93-3	ug/kg	0,007	No Value	--	3.1E+06	2.2E-06
600-151_Shallow_2	non-Rad	4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	ug/kg	0,000	No Value	--	4.0E+02	1.2E-03
600-151_Shallow_2	non-Rad	Acetone	67-64-1	ug/kg	0,030	No Value	--	No Value	--
600-151_Shallow_2	non-Rad	Arsenic	7440-38-2	ug/kg	59,606	1.0E+04	**6.0E+00**	1.9E+05	3.2E-01
600-151_Shallow_2	non-Rad	Barium	7440-39-3	ug/kg	93,206	3.3E+05	2.8E-01	1.3E+06	7.1E-02
600-151_Shallow_2	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	0,024	1.8E+04	1.3E-03	6.4E+04	3.7E-04
600-151_Shallow_2	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	0,025	1.8E+04	1.4E-03	7.6E+04	3.2E-04
600-151_Shallow_2	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	0,025	1.8E+04	1.4E-03	3.9E+04	6.3E-04
600-151_Shallow_2	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	0,016	1.8E+04	8.7E-04	3.9E+04	4.0E-04
600-151_Shallow_2	non-Rad	Beryllium	7440-41-7	ug/kg	0,129	1.0E+04	1.3E-02	1.4E+04	9.2E-03
600-151_Shallow_2	non-Rad	Boron	7440-42-8	ug/kg	2,271	5.0E+02	**4.5E+00**	1.3E+05	1.7E-02
600-151_Shallow_2	non-Rad	Cadmium	7440-43-9	ug/kg	0,596	4.0E+03	1.5E-01	1.6E+03	3.7E-01
600-151_Shallow_2	non-Rad	Chromium	7440-47-3	ug/kg	12,221	4.0E+02	**3.1E+01**	3.8E+04	3.2E-01
600-151_Shallow_2	non-Rad	Chrysene	218-01-9	ug/kg	0,029	1.8E+04	1.6E-03	4.5E+04	6.6E-04
600-151_Shallow_2	non-Rad	Cobalt	7440-48-4	ug/kg	7,500	1.3E+04	5.8E-01	1.1E+05	6.7E-02
600-151_Shallow_2	non-Rad	Copper	7440-50-8	ug/kg	14,468	5.0E+04	2.9E-01	1.1E+05	1.4E-01
600-151_Shallow_2	non-Rad	Fluoranthene	206-44-0	ug/kg	0,060	1.8E+04	3.3E-03	8.4E+05	7.1E-05
600-151_Shallow_2	non-Rad	Lead	7439-92-1	ug/kg	266,765	5.0E+04	**5.3E+00**	3.6E+04	**7.5E+00**
600-151_Shallow_2	non-Rad	Manganese	7439-96-5	ug/kg	359,399	2.2E+05	**1.6E+00**	5.8E+06	6.2E-02
600-151_Shallow_2	non-Rad	Mercury	7439-97-6	ug/kg	0,013	1.0E+02	1.3E-01	1.9E+03	7.1E-03
600-151_Shallow_2	non-Rad	Methylene chloride	75-09-2	ug/kg	0,011	No Value	--	1.7E+05	6.6E-05
600-151_Shallow_2	non-Rad	Molybdenum	7439-98-7	ug/kg	0,330	2.0E+03	1.7E-01	1.4E+04	2.4E-02
600-151_Shallow_2	non-Rad	Nickel	7440-02-0	ug/kg	11,536	3.0E+04	3.9E-01	3.3E+04	3.5E-01
600-151_Shallow_2	non-Rad	Pyrene	129-00-0	ug/kg	0,072	1.8E+04	4.0E-03	6.0E+05	1.2E-04
600-151_Shallow_2	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	ug/kg	1,660	2.0E+05	8.3E-03	3.6E+08	4.7E-06
600-151_Shallow_2	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	ug/kg	6,646	No Value	--	No Value	--
600-151_Shallow_2	non-Rad	Vanadium	7440-62-2	ug/kg	38,407	2.0E+03	**1.9E+01**	3.1E+04	**1.2E+00**
600-151_Shallow_2	non-Rad	Zinc	7440-66-6	ug/kg	47,156	5.0E+04	9.4E-01	6.8E+04	7.0E-01
600-151_Shallow_3	non-Rad	4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	ug/kg	0,003	No Value	--	4.0E+02	8.5E-03
600-151_Shallow_3	non-Rad	4,4'-DDT (Dichlorodiphenyltrichloroethane)	50-29-3	ug/kg	0,001	No Value	--	8.8E+02	1.0E-03
600-151_Shallow_3	non-Rad	Anthracene	120-12-7	ug/kg	0,007	2.9E+04	2.3E-04	6.8E+05	9.9E-06
600-151_Shallow_3	non-Rad	Arsenic	7440-38-2	ug/kg	53,961	1.0E+04	**5.4E+00**	1.9E+05	2.8E-01
600-151_Shallow_3	non-Rad	Barium	7440-39-3	ug/kg	215,867	3.3E+05	6.5E-01	1.3E+06	1.6E-01
600-151_Shallow_3	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	0,038	1.8E+04	2.1E-03	6.4E+04	6.0E-04
600-151_Shallow_3	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	0,039	1.8E+04	2.2E-03	7.6E+04	5.2E-04
600-151_Shallow_3	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	0,031	1.8E+04	1.7E-03	3.9E+04	7.8E-04
600-151_Shallow_3	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	0,016	1.8E+04	8.9E-04	3.9E+04	4.1E-04
600-151_Shallow_3	non-Rad	Beryllium	7440-41-7	ug/kg	0,137	1.0E+04	1.4E-02	1.4E+04	9.8E-03
600-151_Shallow_3	non-Rad	Boron	7440-42-8	ug/kg	2,612	5.0E+02	**5.2E+00**	1.3E+05	2.0E-02
600-151_Shallow_3	non-Rad	Cadmium	7440-43-9	ug/kg	0,511	4.0E+03	1.3E-01	1.6E+03	3.1E-01
600-151_Shallow_3	non-Rad	Chromium	7440-47-3	ug/kg	13,175	4.0E+02	**3.3E+01**	3.8E+04	3.5E-01
600-151_Shallow_3	non-Rad	Chrysene	218-01-9	ug/kg	0,045	1.8E+04	2.5E-03	4.5E+04	1.0E-03
600-151_Shallow_3	non-Rad	Cobalt	7440-48-4	ug/kg	7,686	1.3E+04	5.9E-01	1.1E+05	6.9E-02
600-151_Shallow_3	non-Rad	Copper	7440-50-8	ug/kg	16,047	5.0E+04	3.2E-01	1.1E+05	1.5E-01
600-151_Shallow_3	non-Rad	Fluoranthene	206-44-0	ug/kg	0,069	1.8E+04	3.9E-03	8.4E+05	8.3E-05
600-151_Shallow_3	non-Rad	Fluorene	86-73-7	ug/kg	0,009	2.9E+04	3.1E-04	1.8E+05	5.1E-05
600-151_Shallow_3	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	0,031	1.8E+04	1.8E-03	3.6E+04	8.8E-04
600-151_Shallow_3	non-Rad	Lead	7439-92-1	ug/kg	276,283	5.0E+04	**5.5E+00**	3.6E+04	**7.8E+00**
600-151_Shallow_3	non-Rad	Manganese	7439-96-5	ug/kg	323,716	2.2E+05	**1.5E+00**	5.8E+06	5.6E-02
600-151_Shallow_3	non-Rad	Mercury	7439-97-6	ug/kg	0,029	1.0E+02	2.9E-01	1.9E+03	1.6E-02
600-151_Shallow_3	non-Rad	Methylene chloride	75-09-2	ug/kg	0,003	No Value	--	1.7E+05	2.1E-05
600-151_Shallow_3	non-Rad	Molybdenum	7439-98-7	ug/kg	0,370	2.0E+03	1.9E-01	1.4E+04	2.7E-02
600-151_Shallow_3	non-Rad	Naphthalene	91-20-3	ug/kg	0,018	2.9E+04	6.2E-04	1.0E+05	1.8E-04
600-151_Shallow_3	non-Rad	Nickel	7440-02-0	ug/kg	12,315	3.0E+04	4.1E-01	3.3E+04	3.8E-01
600-151_Shallow_3	non-Rad	Pyrene	129-00-0	ug/kg	0,093	1.8E+04	5.2E-03	6.0E+05	1.6E-04
600-151_Shallow_3	non-Rad	Total petroleum hydrocarbons - diesel range	TPHDIESEL	ug/kg	4,406	2.0E+05	2.2E-02	3.6E+08	1.2E-05
600-151_Shallow_3	non-Rad	Total petroleum hydrocarbons - diesel range extended to C36	TPHDIESELEXT	ug/kg	17,034	No Value	--	No Value	--
600-151_Shallow_3	non-Rad	Vanadium	7440-62-2	ug/kg	38,454	2.0E+03	**1.9E+01**	3.1E+04	**1.2E+00**
600-151_Shallow_3	non-Rad	Zinc	7440-66-6	ug/kg	62,833	5.0E+04	**1.3E+00**	6.8E+04	9.3E-01
600-152_Shallow	non-Rad	Anthracene	120-12-7	ug/kg	0,015	2.9E+04	5.3E-04	6.8E+05	2.3E-05
600-152_Shallow	non-Rad	Arsenic	7440-38-2	ug/kg	4,941	1.0E+04	4.9E-01	1.9E+05	2.6E-02
600-152_Shallow	non-Rad	Barium	7440-39-3	ug/kg	67,843	3.3E+05	2.1E-01	1.3E+06	5.1E-02
600-152_Shallow	non-Rad	Benzo(a)anthracene	56-55-3	ug/kg	0,013	1.8E+04	7.4E-04	6.4E+04	2.1E-04
600-152_Shallow	non-Rad	Benzo(a)pyrene	50-32-8	ug/kg	0,015	1.8E+04	8.5E-04	7.6E+04	2.0E-04
600-152_Shallow	non-Rad	Benzo(b)fluoranthene	205-99-2	ug/kg	0,013	1.8E+04	7.4E-04	3.9E+04	3.4E-04
600-152_Shallow	non-Rad	Benzo(k)fluoranthene	207-08-9	ug/kg	0,006	1.8E+04	3.1E-04	3.9E+04	1.4E-04
600-152_Shallow	non-Rad	Beryllium	7440-41-7	ug/kg	0,279	1.0E+04	2.8E-02	1.4E+04	2.0E-02
600-152_Shallow	non-Rad	Boron	7440-42-8	ug/kg	1,785	5.0E+02	**3.6E+00**	1.3E+05	1.3E-02
600-152_Shallow	non-Rad	Cadmium	7440-43-9	ug/kg	0,081	4.0E+03	2.0E-02	1.6E+03	5.0E-02
600-152_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	12,730	4.0E+02	**3.2E+01**	3.8E+04	3.3E-01
600-152_Shallow	non-Rad	Chrysene	218-01-9	ug/kg	0,010	1.8E+04	5.6E-04	4.5E+04	2.3E-04
600-152_Shallow	non-Rad	Cobalt	7440-48-4	ug/kg	6,104	1.3E+04	4.7E-01	1.1E+05	5.5E-02
600-152_Shallow	non-Rad	Copper	7440-50-8	ug/kg	23,251	5.0E+04	4.7E-01	1.1E+05	2.2E-01
600-152_Shallow	non-Rad	Dibenz[a,h]anthracene	53-70-3	ug/kg	0,002	1.8E+04	1.1E-04	4.4E+04	4.5E-05
600-152_Shallow	non-Rad	Fluoranthene	206-44-0	ug/kg	0,039	1.8E+04	2.2E-03	8.4E+05	4.7E-05
600-152_Shallow	non-Rad	Fluorene	86-73-7	ug/kg	0,002	2.9E+04	5.8E-05	1.8E+05	9.6E-06
600-152_Shallow	non-Rad	Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	0,010	1.8E+04	5.8E-04	3.6E+04	2.9E-04
600-152_Shallow	non-Rad	Lead	7439-92-1	ug/kg	13,578	5.0E+04	2.7E-01	3.6E+04	3.8E-01
600-152_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	299,188	2.2E+05	**1.4E+00**	5.8E+06	5.2E-02
600-152_Shallow	non-Rad	Mercury	7439-97-6	ug/kg	0,013	1.0E+02	1.3E-01	1.9E+03	7.2E-03
600-152_Shallow	non-Rad	Molybdenum	7439-98-7	ug/kg	0,280	2.0E+03	1.4E-01	1.4E+04	2.0E-02
600-152_Shallow	non-Rad	Nickel	7440-02-0	ug/kg	11,630	3.0E+04	3.9E-01	3.3E+04	3.6E-01
600-152_Shallow	non-Rad	Pyrene	129-00-0	ug/kg	0,018	1.8E+04	9.8E-04	6.0E+05	3.0E-05
600-152_Shallow	Rad	Total beta radiostrontium	SR-RAD	pCi/g	0,000	3.6E+03	7.4E-05	9.1E+01	2.9E-03
600-152_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	39,512	2.0E+03	**2.0E+01**	3.1E+04	**1.3E+00**
600-152_Shallow	non-Rad	Zinc	7440-66-6	ug/kg	40,243	5.0E+04	8.1E-01	6.8E+04	5.9E-01

Notes:

1 Plant/Invertebrate SSLs are the lowest NOAEL based values found in *Tier 1 Risk-Based Soil Concentrations Protective of Ecological Receptors at the Hanford Site* [CHPRC-00784] located in Appendix H of *Remedial Investigation/Feasibility Study for the 100-KR-1, 100-KR, and 100-KR-4*

2 Avian/mammal SSLs are the lowest NOAEL based values found in *Tier 1 Risk-Based Soil Concentrations Protective of Ecological Receptors at the Hanford Site* [CHPRC-00784] located in Appendix H of *Remedial Investigation/Feasibility Study for the 100-KR-1, 100-KR, and 100-KR-4*

Table 5. Comparison of 100-H OU Surface Soil (0 to 15 feet [0 to 4.6 m]) Concentrations to SSLs

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/ Invertebrate SSL[1]	Hazard Quotient	Wildlife SSL[2]	Hazard Quotient

All data represent detected concentrations of the chemical
Hazard Quotients greater than one are in bold font and highlighted yello
Uranium 234 SSLs were used as surrogates for Uranium 233/23
pCi/g = pico Curie per gram
SSL = Soil screening leve
µg/kg = Microgram per kilogram

Table 6. Comparison of Chemicals Exceeding SSLs in 100-D OU Surface Soils (0 to 15 feet [0 to 4.6m]) to Background

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Lognormal 90th Percentile Background Value	EPC > Background
100-D-1_Shallow	non-Rad	Boron	7440-42-8	ug/kg	2,100	3.9E+03	No
100-D-1_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	10,135	1.9E+04	No
100-D-1_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	322,021	5.1E+05	No
100-D-1_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	63,051	8.5E+04	No
100-D-13_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	4,900	3.9E+03	Yes
100-D-13_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	10,900	1.9E+04	No
100-D-13_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	271,000	5.1E+05	No
100-D-13_Shallow_Focused	non-Rad	Selenium	7782-49-2	ug/kg	890	7.8E+02	Yes
100-D-13_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	46,400	8.5E+04	No
100-D-13_Shallow_Focused	non-Rad	Zinc	7440-66-6	ug/kg	122,000	6.8E+04	Yes
100-D-15_Shallow_1	non-Rad	Boron	7440-42-8	ug/kg	1,510	3.9E+03	No
100-D-15_Shallow_1	non-Rad	Chromium	7440-47-3	ug/kg	11,801	1.9E+04	No
100-D-15_Shallow_1	non-Rad	Manganese	7439-96-5	ug/kg	277,857	5.1E+05	No
100-D-15_Shallow_1	non-Rad	Vanadium	7440-62-2	ug/kg	54,073	8.5E+04	No
100-D-15_Shallow_2	non-Rad	Boron	7440-42-8	ug/kg	1,652	3.9E+03	No
100-D-15_Shallow_2	non-Rad	Chromium	7440-47-3	ug/kg	14,486	1.9E+04	No
100-D-15_Shallow_2	non-Rad	Manganese	7439-96-5	ug/kg	326,395	5.1E+05	No
100-D-15_Shallow_2	non-Rad	Vanadium	7440-62-2	ug/kg	60,475	8.5E+04	No
100-D-15_Shallow_2	non-Rad	Zinc	7440-66-6	ug/kg	92,810	6.8E+04	Yes
100-D-2_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	3,300	3.9E+03	No
100-D-2_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	7,300	1.9E+04	No
100-D-2_Shallow_Focused	non-Rad	Lithium	7439-93-2	ug/kg	4,700	1.3E+04	No
100-D-2_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	294,000	5.1E+05	No
100-D-2_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	50,100	8.5E+04	No
100-D-2_Shallow_Focused	non-Rad	Zinc	7440-66-6	ug/kg	51,300	6.8E+04	No
100-D-24_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	1,900	3.9E+03	No
100-D-24_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	6,200	1.9E+04	No
100-D-24_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	295,000	5.1E+05	No
100-D-24_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	48,700	8.5E+04	No
100-D-28:1_Overburden	non-Rad	Boron	7440-42-8	ug/kg	1,042	3.9E+03	No
100-D-28:1_Overburden	non-Rad	Chromium	7440-47-3	ug/kg	9,399	1.9E+04	No
100-D-28:1_Overburden	non-Rad	Manganese	7439-96-5	ug/kg	283,917	5.1E+05	No
100-D-28:1_Overburden	non-Rad	Vanadium	7440-62-2	ug/kg	54,469	8.5E+04	No
100-D-28:1_Shallow	non-Rad	Boron	7440-42-8	ug/kg	1,300	3.9E+03	No
100-D-28:1_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	9,867	1.9E+04	No
100-D-28:1_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	305,116	5.1E+05	No
100-D-28:1_Shallow	non-Rad	Mercury	7439-97-6	ug/kg	572	1.3E+01	Yes
100-D-28:1_Shallow	non-Rad	Selenium	7782-49-2	ug/kg	1,700	7.8E+02	Yes
100-D-28:1_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	54,615	8.5E+04	No
100-D-28:1_Shallow	non-Rad	Zinc	7440-66-6	ug/kg	59,414	6.8E+04	No
100-D-28:1_Staging Pile Area Footprint	non-Rad	Boron	7440-42-8	ug/kg	1,500	3.9E+03	No
100-D-28:1_Staging Pile Area Footprint	non-Rad	Chromium	7440-47-3	ug/kg	8,532	1.9E+04	No
100-D-28:1_Staging Pile Area Footprint	non-Rad	Manganese	7439-96-5	ug/kg	290,098	5.1E+05	No
100-D-28:1_Staging Pile Area Footprint	non-Rad	Vanadium	7440-62-2	ug/kg	43,439	8.5E+04	No
100-D-29_Overburden	non-Rad	Boron	7440-42-8	ug/kg	1,128	3.9E+03	No
100-D-29_Overburden	non-Rad	Chromium	7440-47-3	ug/kg	7,050	1.9E+04	No
100-D-29_Overburden	non-Rad	Manganese	7439-96-5	ug/kg	297,023	5.1E+05	No
100-D-29_Overburden	non-Rad	Vanadium	7440-62-2	ug/kg	65,107	8.5E+04	No
100-D-29_Shallow	non-Rad	Boron	7440-42-8	ug/kg	5,333	3.9E+03	Yes
100-D-29_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	8,317	1.9E+04	No
100-D-29_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	292,330	5.1E+05	No
100-D-29_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	60,569	8.5E+04	No
100-D-29_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	8,200	1.9E+04	No
100-D-29_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	270,000	5.1E+05	No
100-D-29_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	44,000	8.5E+04	No
100-D-31:1, 100-D-31:2_Overburden	non-Rad	Boron	7440-42-8	ug/kg	2,018	3.9E+03	No
100-D-31:1, 100-D-31:2_Overburden	non-Rad	Chromium	7440-47-3	ug/kg	8,844	1.9E+04	No
100-D-31:1, 100-D-31:2_Overburden	non-Rad	Manganese	7439-96-5	ug/kg	318,306	5.1E+05	No
100-D-31:1, 100-D-31:2_Overburden	non-Rad	Vanadium	7440-62-2	ug/kg	58,650	8.5E+04	No
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Boron	7440-42-8	ug/kg	2,139	3.9E+03	No
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	9,620	1.9E+04	No
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	350,952	5.1E+05	No
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	69,961	8.5E+04	No
100-D-31:1, 100-D-31:2_Shallow	non-Rad	Zinc	7440-66-6	ug/kg	50,886	6.8E+04	No
100-D-31:10_Overburden	non-Rad	Boron	7440-42-8	ug/kg	1,283	3.9E+03	No
100-D-31:10_Overburden	non-Rad	Chromium	7440-47-3	ug/kg	7,762	1.9E+04	No
100-D-31:10_Overburden	non-Rad	Manganese	7439-96-5	ug/kg	289,763	5.1E+05	No
100-D-31:10_Overburden	non-Rad	Vanadium	7440-62-2	ug/kg	41,549	8.5E+04	No
100-D-31:10_Shallow	non-Rad	Boron	7440-42-8	ug/kg	1,400	3.9E+03	No
100-D-31:10_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	7,199	1.9E+04	No
100-D-31:10_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	310,285	5.1E+05	No
100-D-31:10_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	65,877	8.5E+04	No
100-D-31:10_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	1,800	3.9E+03	No
100-D-31:10_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	6,900	1.9E+04	No
100-D-31:10_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	318,000	5.1E+05	No
100-D-31:10_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	58,300	8.5E+04	No
100-D-31:3, 100-D-31:4_Overburden	non-Rad	Boron	7440-42-8	ug/kg	1,300	3.9E+03	No
100-D-31:3, 100-D-31:4_Overburden	non-Rad	Chromium	7440-47-3	ug/kg	7,301	1.9E+04	No
100-D-31:3, 100-D-31:4_Overburden	non-Rad	Manganese	7439-96-5	ug/kg	318,257	5.1E+05	No

Table 6. Comparison of Chemicals Exceeding SSLs in 100-D OU Surface Soils (0 to 15 feet [0 to 4.6m]) to Background

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Lognormal 90th Percentile Background Value	EPC > Background
100-D-31:3, 100-D-31:4_Overburden	non-Rad	Selenium	7782-49-2	ug/kg	1,200	7.8E+02	Yes
100-D-31:3, 100-D-31:4_Overburden	non-Rad	Vanadium	7440-62-2	ug/kg	70,801	8.5E+04	No
100-D-31:3_Shallow	non-Rad	Boron	7440-42-8	ug/kg	1,200	3.9E+03	No
100-D-31:3_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	7,656	1.9E+04	No
100-D-31:3_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	302,831	5.1E+05	No
100-D-31:3_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	71,700	8.5E+04	No
100-D-31:4_Shallow	non-Rad	Boron	7440-42-8	ug/kg	1,000	3.9E+03	No
100-D-31:4_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	7,358	1.9E+04	No
100-D-31:4_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	322,669	5.1E+05	No
100-D-31:4_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	85,009	8.5E+04	No
100-D-31:4_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	825	3.9E+03	No
100-D-31:4_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	9,490	1.9E+04	No
100-D-31:4_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	346,000	5.1E+05	No
100-D-31:4_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	75,300	8.5E+04	No
100-D-31:5_Overburden	non-Rad	Boron	7440-42-8	ug/kg	20,105	3.9E+03	Yes
100-D-31:5_Overburden	non-Rad	Chromium	7440-47-3	ug/kg	12,462	1.9E+04	No
100-D-31:5_Overburden	non-Rad	Manganese	7439-96-5	ug/kg	371,945	5.1E+05	No
100-D-31:5_Overburden	non-Rad	Mercury	7439-97-6	ug/kg	142	1.3E+01	Yes
100-D-31:5_Overburden	non-Rad	Selenium	7782-49-2	ug/kg	1,728	7.8E+02	Yes
100-D-31:5_Overburden	non-Rad	Vanadium	7440-62-2	ug/kg	65,426	8.5E+04	No
100-D-31:5_Overburden	non-Rad	Zinc	7440-66-6	ug/kg	56,474	6.8E+04	No
100-D-31:5_Shallow	non-Rad	Boron	7440-42-8	ug/kg	10,484	3.9E+03	Yes
100-D-31:5_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	12,395	1.9E+04	No
100-D-31:5_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	331,458	5.1E+05	No
100-D-31:5_Shallow	non-Rad	Mercury	7439-97-6	ug/kg	240	1.3E+01	Yes
100-D-31:5_Shallow	non-Rad	Selenium	7782-49-2	ug/kg	1,500	7.8E+02	Yes
100-D-31:5_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	54,696	8.5E+04	No
100-D-31:5_Shallow	non-Rad	Zinc	7440-66-6	ug/kg	89,617	6.8E+04	Yes
100-D-31:6_Overburden	non-Rad	Boron	7440-42-8	ug/kg	5,998	3.9E+03	Yes
100-D-31:6_Overburden	non-Rad	Chromium	7440-47-3	ug/kg	9,736	1.9E+04	No
100-D-31:6_Overburden	non-Rad	Manganese	7439-96-5	ug/kg	355,498	5.1E+05	No
100-D-31:6_Overburden	non-Rad	Mercury	7439-97-6	ug/kg	870	1.3E+01	Yes
100-D-31:6_Overburden	non-Rad	Vanadium	7440-62-2	ug/kg	66,499	8.5E+04	No
100-D-31:6_Overburden	non-Rad	Zinc	7440-66-6	ug/kg	65,614	6.8E+04	No
100-D-31:6_Shallow	non-Rad	Boron	7440-42-8	ug/kg	5,860	3.9E+03	Yes
100-D-31:6_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	10,798	1.9E+04	No
100-D-31:6_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	330,083	5.1E+05	No
100-D-31:6_Shallow	non-Rad	Mercury	7439-97-6	ug/kg	577	1.3E+01	Yes
100-D-31:6_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	65,023	8.5E+04	No
100-D-31:6_Shallow	non-Rad	Zinc	7440-66-6	ug/kg	63,960	6.8E+04	No
100-D-31:7_Overburden	non-Rad	Boron	7440-42-8	ug/kg	2,305	3.9E+03	No
100-D-31:7_Overburden	non-Rad	Chromium	7440-47-3	ug/kg	6,038	1.9E+04	No
100-D-31:7_Overburden	non-Rad	Manganese	7439-96-5	ug/kg	304,518	5.1E+05	No
100-D-31:7_Overburden	non-Rad	Vanadium	7440-62-2	ug/kg	66,619	8.5E+04	No
100-D-31:7_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	7,234	1.9E+04	No
100-D-31:7_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	335,983	5.1E+05	No
100-D-31:7_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	80,980	8.5E+04	No
100-D-31:7_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	1,500	3.9E+03	No
100-D-31:7_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	5,900	1.9E+04	No
100-D-31:7_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	340,000	5.1E+05	No
100-D-31:7_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	79,500	8.5E+04	No
100-D-31:8_Overburden	non-Rad	Boron	7440-42-8	ug/kg	1,200	3.9E+03	No
100-D-31:8_Overburden	non-Rad	Chromium	7440-47-3	ug/kg	7,017	1.9E+04	No
100-D-31:8_Overburden	non-Rad	Manganese	7439-96-5	ug/kg	339,535	5.1E+05	No
100-D-31:8_Overburden	non-Rad	Vanadium	7440-62-2	ug/kg	64,672	8.5E+04	No
100-D-31:8_Shallow	non-Rad	Boron	7440-42-8	ug/kg	940	3.9E+03	No
100-D-31:8_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	5,290	1.9E+04	No
100-D-31:8_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	312,190	5.1E+05	No
100-D-31:8_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	48,087	8.5E+04	No
100-D-31:8_Shallow_Focused_1	non-Rad	Chromium	7440-47-3	ug/kg	6,790	1.9E+04	No
100-D-31:8_Shallow_Focused_1	non-Rad	Manganese	7439-96-5	ug/kg	334,000	5.1E+05	No
100-D-31:8_Shallow_Focused_1	non-Rad	Vanadium	7440-62-2	ug/kg	94,900	8.5E+04	Yes
100-D-31:8_Shallow_Focused_1	non-Rad	Zinc	7440-66-6	ug/kg	51,800	6.8E+04	No
100-D-31:8_Shallow_Focused_2	non-Rad	Barium	7440-39-3	ug/kg	1.57E+06	1.3E+05	Yes
100-D-31:8_Shallow_Focused_2	non-Rad	Boron	7440-42-8	ug/kg	169,000	3.9E+03	Yes
100-D-31:8_Shallow_Focused_2	non-Rad	Chromium	7440-47-3	ug/kg	13,400	1.9E+04	No
100-D-31:8_Shallow_Focused_2	non-Rad	Manganese	7439-96-5	ug/kg	368,000	5.1E+05	No
100-D-31:8_Shallow_Focused_2	non-Rad	Mercury	7439-97-6	ug/kg	120	1.3E+01	Yes
100-D-31:8_Shallow_Focused_2	non-Rad	Molybdenum	7439-98-7	ug/kg	2,300	4.7E+02	Yes
100-D-31:8_Shallow_Focused_2	non-Rad	Vanadium	7440-62-2	ug/kg	67,200	8.5E+04	No
100-D-31:8_Shallow_Focused_2	non-Rad	Zinc	7440-66-6	ug/kg	83,000	6.8E+04	Yes
100-D-31:9_Overburden	non-Rad	Chromium	7440-47-3	ug/kg	5,328	1.9E+04	No
100-D-31:9_Overburden	non-Rad	Manganese	7439-96-5	ug/kg	292,130	5.1E+05	No
100-D-31:9_Overburden	non-Rad	Vanadium	7440-62-2	ug/kg	52,680	8.5E+04	No
100-D-31:9_Shallow	non-Rad	Boron	7440-42-8	ug/kg	1,100	3.9E+03	No
100-D-31:9_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	5,132	1.9E+04	No
100-D-31:9_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	318,748	5.1E+05	No
100-D-31:9_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	57,014	8.5E+04	No
100-D-32_Overburden	non-Rad	Boron	7440-42-8	ug/kg	1,234	3.9E+03	No
100-D-32_Overburden	non-Rad	Chromium	7440-47-3	ug/kg	11,852	1.9E+04	No
100-D-32_Overburden	non-Rad	Manganese	7439-96-5	ug/kg	369,294	5.1E+05	No
100-D-32_Overburden	non-Rad	Vanadium	7440-62-2	ug/kg	76,983	8.5E+04	No
100-D-32_Overburden	non-Rad	Zinc	7440-66-6	ug/kg	51,821	6.8E+04	No
100-D-32_Shallow	non-Rad	Boron	7440-42-8	ug/kg	1,505	3.9E+03	No
100-D-32_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	10,447	1.9E+04	No
100-D-32_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	356,899	5.1E+05	No
100-D-32_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	76,249	8.5E+04	No
100-D-32_Shallow	non-Rad	Zinc	7440-66-6	ug/kg	62,123	6.8E+04	No
100-D-42, 100-D-43, 100-D-45_Overburden	non-Rad	Boron	7440-42-8	ug/kg	929	3.9E+03	No

Table 6. Comparison of Chemicals Exceeding SSLs in 100-D OU Surface Soils (0 to 15 feet [0 to 4.6m]) to Background

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Lognormal 90th Percentile Background Value	EPC > Background
100-D-42, 100-D-43, 100-D-45_Overburden	non-Rad	Chromium	7440-47-3	ug/kg	9,297	1.9E+04	No
100-D-42, 100-D-43, 100-D-45_Overburden	non-Rad	Manganese	7439-96-5	ug/kg	316,433	5.1E+05	No
100-D-42, 100-D-43, 100-D-45_Overburden	non-Rad	Selenium	7782-49-2	ug/kg	700	7.8E+02	No
100-D-42, 100-D-43, 100-D-45_Overburden	non-Rad	Vanadium	7440-62-2	ug/kg	63,875	8.5E+04	No
100-D-42, 100-D-43, 100-D-45_Shallow	non-Rad	Boron	7440-42-8	ug/kg	1,181	3.9E+03	No
100-D-42, 100-D-43, 100-D-45_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	7,963	1.9E+04	No
100-D-42, 100-D-43, 100-D-45_Shallow	non-Rad	Copper	7440-50-8	ug/kg	90,384	2.2E+04	Yes
100-D-42, 100-D-43, 100-D-45_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	313,773	5.1E+05	No
100-D-42, 100-D-43, 100-D-45_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	69,326	8.5E+04	No
100-D-42, 100-D-43, 100-D-45_Shallow	non-Rad	Zinc	7440-66-6	ug/kg	59,192	6.8E+04	No
100-D-42, 100-D-43, 100-D-45_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	660	3.9E+03	No
100-D-42, 100-D-43, 100-D-45_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	7,800	1.9E+04	No
100-D-42, 100-D-43, 100-D-45_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	335,000	5.1E+05	No
100-D-42, 100-D-43, 100-D-45_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	77,900	8.5E+04	No
100-D-42, 100-D-43, 100-D-45_Shallow_Focused	non-Rad	Zinc	7440-66-6	ug/kg	55,000	6.8E+04	No
100-D-47_Overburden	non-Rad	Boron	7440-42-8	ug/kg	1,497	3.9E+03	No
100-D-47_Overburden	non-Rad	Chromium	7440-47-3	ug/kg	11,948	1.9E+04	No
100-D-47_Overburden	non-Rad	Manganese	7439-96-5	ug/kg	342,771	5.1E+05	No
100-D-47_Overburden	non-Rad	Vanadium	7440-62-2	ug/kg	68,752	8.5E+04	No
100-D-47_Shallow	non-Rad	Boron	7440-42-8	ug/kg	1,317	3.9E+03	No
100-D-47_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	11,828	1.9E+04	No
100-D-47_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	338,839	5.1E+05	No
100-D-47_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	70,090	8.5E+04	No
100-D-47_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	1,700	3.9E+03	No
100-D-47_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	11,300	1.9E+04	No
100-D-47_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	360,000	5.1E+05	No
100-D-47_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	85,700	8.5E+04	Yes
100-D-47_Shallow_Focused	non-Rad	Zinc	7440-66-6	ug/kg	55,300	6.8E+04	No
100-D-50:5_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	811	3.9E+03	No
100-D-50:5_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	7,400	1.9E+04	No
100-D-50:5_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	271,000	5.1E+05	No
100-D-50:5_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	34,900	8.5E+04	No
100-D-52_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	7,400	1.9E+04	No
100-D-56:1_Overburden	non-Rad	Boron	7440-42-8	ug/kg	5,633	3.9E+03	Yes
100-D-56:1_Overburden	non-Rad	Chromium	7440-47-3	ug/kg	10,204	1.9E+04	No
100-D-56:1_Overburden	non-Rad	Manganese	7439-96-5	ug/kg	327,758	5.1E+05	No
100-D-56:1_Overburden	non-Rad	Selenium	7782-49-2	ug/kg	2,100	7.8E+02	Yes
100-D-56:1_Overburden	non-Rad	Vanadium	7440-62-2	ug/kg	58,593	8.5E+04	No
100-D-56:1_Overburden	non-Rad	Zinc	7440-66-6	ug/kg	66,962	6.8E+04	No
100-D-56:1_Shallow	non-Rad	Boron	7440-42-8	ug/kg	1,600	3.9E+03	No
100-D-56:1_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	10,457	1.9E+04	No
100-D-56:1_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	290,501	5.1E+05	No
100-D-56:1_Shallow	non-Rad	Selenium	7782-49-2	ug/kg	1,700	7.8E+02	Yes
100-D-56:1_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	49,162	8.5E+04	No
100-D-56:1_Shallow	non-Rad	Zinc	7440-66-6	ug/kg	52,499	6.8E+04	No
100-D-56:1_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	1,800	3.9E+03	No
100-D-56:1_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	11,800	1.9E+04	No
100-D-56:1_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	339,000	5.1E+05	No
100-D-56:1_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	51,100	8.5E+04	No
100-D-56:2_Overburden_4	non-Rad	Boron	7440-42-8	ug/kg	1,250	3.9E+03	No
100-D-56:2_Overburden_4	non-Rad	Chromium	7440-47-3	ug/kg	17,678	1.9E+04	No
100-D-56:2_Overburden_4	non-Rad	Manganese	7439-96-5	ug/kg	311,404	5.1E+05	No
100-D-56:2_Overburden_4	non-Rad	Vanadium	7440-62-2	ug/kg	56,980	8.5E+04	No
100-D-56:2_Overburden_4	non-Rad	Zinc	7440-66-6	ug/kg	56,993	6.8E+04	No
100-D-56:2_Overburden_5	non-Rad	Boron	7440-42-8	ug/kg	1,407	3.9E+03	No
100-D-56:2_Overburden_5	non-Rad	Chromium	7440-47-3	ug/kg	16,179	1.9E+04	No
100-D-56:2_Overburden_5	non-Rad	Manganese	7439-96-5	ug/kg	306,866	5.1E+05	No
100-D-56:2_Overburden_5	non-Rad	Vanadium	7440-62-2	ug/kg	52,528	8.5E+04	No
100-D-56:2_Overburden_Focused_2	non-Rad	Chromium	7440-47-3	ug/kg	11,000	1.9E+04	No
100-D-56:2_Overburden_Focused_2	non-Rad	Manganese	7439-96-5	ug/kg	310,000	5.1E+05	No
100-D-56:2_Overburden_Focused_2	non-Rad	Vanadium	7440-62-2	ug/kg	60,000	8.5E+04	No
100-D-56:2_Shallow_1	non-Rad	Boron	7440-42-8	ug/kg	1,525	3.9E+03	No
100-D-56:2_Shallow_1	non-Rad	Chromium	7440-47-3	ug/kg	10,824	1.9E+04	No
100-D-56:2_Shallow_1	non-Rad	Manganese	7439-96-5	ug/kg	306,134	5.1E+05	No
100-D-56:2_Shallow_1	non-Rad	Vanadium	7440-62-2	ug/kg	56,966	8.5E+04	No
100-D-56:2_Shallow_2	non-Rad	Boron	7440-42-8	ug/kg	1,100	3.9E+03	No
100-D-56:2_Shallow_2	non-Rad	Chromium	7440-47-3	ug/kg	12,515	1.9E+04	No
100-D-56:2_Shallow_2	non-Rad	Manganese	7439-96-5	ug/kg	281,887	5.1E+05	No
100-D-56:2_Shallow_2	non-Rad	Vanadium	7440-62-2	ug/kg	45,416	8.5E+04	No
100-D-56:2_Shallow_3	non-Rad	Boron	7440-42-8	ug/kg	1,605	3.9E+03	No
100-D-56:2_Shallow_3	non-Rad	Chromium	7440-47-3	ug/kg	9,261	1.9E+04	No
100-D-56:2_Shallow_3	non-Rad	Manganese	7439-96-5	ug/kg	322,267	5.1E+05	No
100-D-56:2_Shallow_3	non-Rad	Vanadium	7440-62-2	ug/kg	64,762	8.5E+04	No
100-D-56:2_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	1,000	3.9E+03	No
100-D-56:2_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	29,300	1.9E+04	Yes

Table 6. Comparison of Chemicals Exceeding SSLs in 100-D OU Surface Soils (0 to 15 feet [0 to 4.6m]) to Background

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Lognormal 90th Percentile Background Value	EPC > Background
100-D-56:2_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	300,000	5.1E+05	No
100-D-56:2_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	57,900	8.5E+04	No
100-D-56:2_Staging pile area footprint_focused	non-Rad	Boron	7440-42-8	ug/kg	1,500	3.9E+03	No
100-D-56:2_Staging pile area footprint_focused	non-Rad	Chromium	7440-47-3	ug/kg	11,000	1.9E+04	No
100-D-56:2_Staging pile area footprint_focused	non-Rad	Manganese	7439-96-5	ug/kg	350,000	5.1E+05	No
100-D-56:2_Staging pile area footprint_focused	non-Rad	Vanadium	7440-62-2	ug/kg	55,000	8.5E+04	No
100-D-61_Shallow	non-Rad	Boron	7440-42-8	ug/kg	11,172	3.9E+03	Yes
100-D-61_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	9,565	1.9E+04	No
100-D-61_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	347,567	5.1E+05	No
100-D-61_Shallow	non-Rad	Selenium	7782-49-2	ug/kg	1,040	7.8E+02	Yes
100-D-61_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	63,682	8.5E+04	No
100-D-7_Shallow_1	non-Rad	Boron	7440-42-8	ug/kg	1,900	3.9E+03	No
100-D-7_Shallow_1	non-Rad	Chromium	7440-47-3	ug/kg	7,035	1.9E+04	No
100-D-7_Shallow_1	non-Rad	Manganese	7439-96-5	ug/kg	290,472	5.1E+05	No
100-D-7_Shallow_1	non-Rad	Selenium	7782-49-2	ug/kg	834	7.8E+02	Yes
100-D-7_Shallow_1	non-Rad	Vanadium	7440-62-2	ug/kg	70,960	8.5E+04	No
100-D-7_Shallow_2	non-Rad	Boron	7440-42-8	ug/kg	1,533	3.9E+03	No
100-D-7_Shallow_2	non-Rad	Chromium	7440-47-3	ug/kg	9,024	1.9E+04	No
100-D-7_Shallow_2	non-Rad	Manganese	7439-96-5	ug/kg	343,655	5.1E+05	No
100-D-7_Shallow_2	non-Rad	Vanadium	7440-62-2	ug/kg	63,913	8.5E+04	No
100-D-7_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	1,200	3.9E+03	No
100-D-7_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	9,000	1.9E+04	No
100-D-7_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	303,000	5.1E+05	No
100-D-7_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	63,200	8.5E+04	No
100-D-7_Staging pile area footprint	non-Rad	Boron	7440-42-8	ug/kg	1,719	3.9E+03	No
100-D-7_Staging pile area footprint	non-Rad	Chromium	7440-47-3	ug/kg	8,443	1.9E+04	No
100-D-7_Staging pile area footprint	non-Rad	Manganese	7439-96-5	ug/kg	279,739	5.1E+05	No
100-D-7_Staging pile area footprint	non-Rad	Mercury	7439-97-6	ug/kg	304	1.3E+01	Yes
100-D-7_Staging pile area footprint	non-Rad	Vanadium	7440-62-2	ug/kg	34,102	8.5E+04	No
100-D-70_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	11,800	1.9E+04	No
100-D-70_Shallow_Focused	non-Rad	Copper	7440-50-8	ug/kg	73,900	2.2E+04	Yes
100-D-70_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	340,000	5.1E+05	No
100-D-70_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	61,100	8.5E+04	No
100-D-70_Shallow_Focused	non-Rad	Zinc	7440-66-6	ug/kg	78,800	6.8E+04	Yes
100-D-74_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	6,400	1.9E+04	No
100-D-74_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	278,000	5.1E+05	No
100-D-74_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	57,600	8.5E+04	No
100-D-75:3_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	5,900	1.9E+04	No
100-D-75:3_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	297,000	5.1E+05	No
100-D-75:3_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	52,700	8.5E+04	No
100-D-82_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	8,300	1.9E+04	No
100-D-82_Shallow_Focused	non-Rad	Lead	7439-92-1	ug/kg	134,000	1.0E+04	Yes
100-D-82_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	17,800	8.5E+04	No
100-D-83:4_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	7,800	1.9E+04	No
100-D-83:4_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	284,000	5.1E+05	No
100-D-83:4_Shallow_Focused	non-Rad	Mercury	7439-97-6	ug/kg	950	1.3E+01	Yes
100-D-83:4_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	76,100	8.5E+04	No
100-D-84:1_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	1,500	3.9E+03	No
100-D-84:1_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	11,900	1.9E+04	No
100-D-84:1_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	343,000	5.1E+05	No
100-D-84:1_Shallow_Focused	non-Rad	Mercury	7439-97-6	ug/kg	120	1.3E+01	Yes
100-D-84:1_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	94,400	8.5E+04	Yes
100-D-84:1_Shallow_Focused	non-Rad	Zinc	7440-66-6	ug/kg	52,500	6.8E+04	No
100-D-85:1_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	5,400	1.9E+04	No
100-D-85:1_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	278,000	5.1E+05	No
100-D-85:1_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	57,900	8.5E+04	No
100-D-87_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	2,400	3.9E+03	No
100-D-87_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	9,300	1.9E+04	No
100-D-87_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	304,000	5.1E+05	No
100-D-87_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	48,000	8.5E+04	No
100-D-87_Shallow_Focused	non-Rad	Zinc	7440-66-6	ug/kg	83,600	6.8E+04	Yes
100-D-88_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	930	3.9E+03	No
100-D-88_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	10,400	1.9E+04	No
100-D-88_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	384,000	5.1E+05	No
100-D-88_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	104,000	8.5E+04	Yes
100-D-88_Shallow_Focused	non-Rad	Zinc	7440-66-6	ug/kg	63,900	6.8E+04	No
100-D-9_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	820	3.9E+03	No
100-D-9_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	3,500	1.9E+04	No
100-D-9_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	299,000	5.1E+05	No
100-D-9_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	67,300	8.5E+04	No
100-D-94_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	9,000	1.9E+04	No
100-D-94_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	275,000	5.1E+05	No
100-D-94_Shallow_Focused	non-Rad	Mercury	7439-97-6	ug/kg	580	1.3E+01	Yes
100-D-94_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	40,200	8.5E+04	No
116-D-10_Shallow	non-Rad	Boron	7440-42-8	ug/kg	1,220	3.9E+03	No
116-D-10_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	9,278	1.9E+04	No
116-D-10_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	320,612	5.1E+05	No
116-D-10_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	67,123	8.5E+04	No
116-D-10_Staging Pile Area	non-Rad	Boron	7440-42-8	ug/kg	856	3.9E+03	No
116-D-10_Staging Pile Area	non-Rad	Chromium	7440-47-3	ug/kg	5,983	1.9E+04	No
116-D-10_Staging Pile Area	non-Rad	Manganese	7439-96-5	ug/kg	318,856	5.1E+05	No
116-D-10_Staging Pile Area	non-Rad	Vanadium	7440-62-2	ug/kg	76,278	8.5E+04	No
116-D-5_Overburden	non-Rad	Boron	7440-42-8	ug/kg	850	3.9E+03	No
116-D-5_Overburden	non-Rad	Chromium	7440-47-3	ug/kg	6,881	1.9E+04	No
116-D-5_Overburden	non-Rad	Manganese	7439-96-5	ug/kg	284,702	5.1E+05	No
116-D-5_Overburden	non-Rad	Vanadium	7440-62-2	ug/kg	56,601	8.5E+04	No
116-D-5_Shallow	non-Rad	Boron	7440-42-8	ug/kg	1,134	3.9E+03	No
116-D-5_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	11,365	1.9E+04	No
116-D-5_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	324,766	5.1E+05	No

Table 6. Comparison of Chemicals Exceeding SSLs in 100-D OU Surface Soils (0 to 15 feet [0 to 4.6m]) to Background

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Lognormal 90th Percentile Background Value	EPC > Background
116-D-5_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	62,589	8.5E+04	No
116-D-5_Shallow	non-Rad	Zinc	7440-66-6	ug/kg	51,204	6.8E+04	No
116-D-5_Staging pile area footprint	non-Rad	Boron	7440-42-8	ug/kg	1,067	3.9E+03	No
116-D-5_Staging pile area footprint	non-Rad	Chromium	7440-47-3	ug/kg	8,014	1.9E+04	No
116-D-5_Staging pile area footprint	non-Rad	Manganese	7439-96-5	ug/kg	276,906	5.1E+05	No
116-D-5_Staging pile area footprint	non-Rad	Vanadium	7440-62-2	ug/kg	52,464	8.5E+04	No
116-D-7_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	8,241	1.9E+04	No
116-D-8_Shallow	non-Rad	Boron	7440-42-8	ug/kg	1,417	3.9E+03	No
116-D-8_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	10,654	1.9E+04	No
116-D-8_Shallow	non-Rad	Lead	7439-92-1	ug/kg	41,188	1.0E+04	Yes
116-D-8_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	304,542	5.1E+05	No
116-D-8_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	53,268	8.5E+04	No
116-D-8_Shallow_Focused_1	non-Rad	Chromium	7440-47-3	ug/kg	5,600	1.9E+04	No
116-D-8_Shallow_Focused_1	non-Rad	Manganese	7439-96-5	ug/kg	232,000	5.1E+05	No
116-D-8_Shallow_Focused_1	non-Rad	Vanadium	7440-62-2	ug/kg	22,100	8.5E+04	No
116-D-8_Shallow_Focused_2	non-Rad	Boron	7440-42-8	ug/kg	2,700	3.9E+03	No
116-D-8_Shallow_Focused_2	non-Rad	Chromium	7440-47-3	ug/kg	10,100	1.9E+04	No
116-D-8_Shallow_Focused_2	non-Rad	Manganese	7439-96-5	ug/kg	301,000	5.1E+05	No
116-D-8_Shallow_Focused_2	non-Rad	Selenium	7782-49-2	ug/kg	1,200	7.8E+02	Yes
116-D-8_Shallow_Focused_2	non-Rad	Vanadium	7440-62-2	ug/kg	58,700	8.5E+04	No
116-D-8_Shallow_Focused_2	non-Rad	Zinc	7440-66-6	ug/kg	55,200	6.8E+04	No
116-DR-10_Overburden	non-Rad	Boron	7440-42-8	ug/kg	1,049	3.9E+03	No
116-DR-10_Overburden	non-Rad	Chromium	7440-47-3	ug/kg	10,292	1.9E+04	No
116-DR-10_Overburden	non-Rad	Manganese	7439-96-5	ug/kg	288,834	5.1E+05	No
116-DR-10_Overburden	non-Rad	Vanadium	7440-62-2	ug/kg	51,136	8.5E+04	No
116-DR-10_Shallow	non-Rad	Boron	7440-42-8	ug/kg	1,035	3.9E+03	No
116-DR-10_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	11,445	1.9E+04	No
116-DR-10_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	279,317	5.1E+05	No
116-DR-10_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	50,456	8.5E+04	No
116-DR-10_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	598	3.9E+03	No
116-DR-10_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	6,650	1.9E+04	No
116-DR-10_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	310,000	5.1E+05	No
116-DR-10_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	73,400	8.5E+04	No
116-DR-5_Overburden	non-Rad	Boron	7440-42-8	ug/kg	1,142	3.9E+03	No
116-DR-5_Overburden	non-Rad	Chromium	7440-47-3	ug/kg	11,534	1.9E+04	No
116-DR-5_Overburden	non-Rad	Manganese	7439-96-5	ug/kg	336,163	5.1E+05	No
116-DR-5_Overburden	non-Rad	Vanadium	7440-62-2	ug/kg	59,625	8.5E+04	No
116-DR-5_Overburden	non-Rad	Zinc	7440-66-6	ug/kg	76,417	6.8E+04	Yes
116-DR-5_Shallow	non-Rad	Boron	7440-42-8	ug/kg	1,500	3.9E+03	No
116-DR-5_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	25,436	1.9E+04	Yes
116-DR-5_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	309,849	5.1E+05	No
116-DR-5_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	55,591	8.5E+04	No
116-DR-5_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	1,400	3.9E+03	No
116-DR-5_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	16,600	1.9E+04	No
116-DR-5_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	325,000	5.1E+05	No
116-DR-5_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	56,300	8.5E+04	No
116-DR-5_Staging Pile Area	non-Rad	Chromium	7440-47-3	ug/kg	11,197	1.9E+04	No
116-DR-5_Staging Pile Area	non-Rad	Manganese	7439-96-5	ug/kg	292,940	5.1E+05	No
116-DR-5_Staging Pile Area	non-Rad	Vanadium	7440-62-2	ug/kg	51,250	8.5E+04	No
116-DR-8_Overburden_2	non-Rad	Chromium	7440-47-3	ug/kg	7,334	1.9E+04	No
116-DR-8_Overburden_2	non-Rad	Lithium	7439-93-2	ug/kg	6,086	1.3E+04	No
116-DR-8_Overburden_2	non-Rad	Manganese	7439-96-5	ug/kg	323,773	5.1E+05	No
116-DR-8_Overburden_2	non-Rad	Vanadium	7440-62-2	ug/kg	65,299	8.5E+04	No
116-DR-8_Overburden_3	non-Rad	Boron	7440-42-8	ug/kg	1,274	3.9E+03	No
116-DR-8_Overburden_3	non-Rad	Chromium	7440-47-3	ug/kg	9,365	1.9E+04	No
116-DR-8_Overburden_3	non-Rad	Lithium	7439-93-2	ug/kg	27,770	1.3E+04	Yes
116-DR-8_Overburden_3	non-Rad	Manganese	7439-96-5	ug/kg	348,289	5.1E+05	No
116-DR-8_Overburden_3	non-Rad	Silver	7440-22-4	ug/kg	2,200	1.7E+02	Yes
116-DR-8_Overburden_3	non-Rad	Vanadium	7440-62-2	ug/kg	70,346	8.5E+04	No
116-DR-8_Overburden_3	non-Rad	Zinc	7440-66-6	ug/kg	72,846	6.8E+04	Yes
116-DR-8_Shallow	non-Rad	Boron	7440-42-8	ug/kg	1,783	3.9E+03	No
116-DR-8_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	8,235	1.9E+04	No
116-DR-8_Shallow	non-Rad	Lithium	7439-93-2	ug/kg	70,444	1.3E+04	Yes
116-DR-8_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	305,029	5.1E+05	No
116-DR-8_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	64,429	8.5E+04	No
116-DR-8_Shallow	non-Rad	Zinc	7440-66-6	ug/kg	50,213	6.8E+04	No
116-DR-9_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	16,093	1.9E+04	No
118-D-1_Overburden	non-Rad	Boron	7440-42-8	ug/kg	1,233	3.9E+03	No
118-D-1_Overburden	non-Rad	Chromium	7440-47-3	ug/kg	10,001	1.9E+04	No
118-D-1_Overburden	non-Rad	Manganese	7439-96-5	ug/kg	306,161	5.1E+05	No
118-D-1_Overburden	non-Rad	Vanadium	7440-62-2	ug/kg	50,373	8.5E+04	No
118-D-1_Shallow_1	non-Rad	Boron	7440-42-8	ug/kg	1,700	3.9E+03	No
118-D-1_Shallow_1	non-Rad	Chromium	7440-47-3	ug/kg	9,458	1.9E+04	No
118-D-1_Shallow_1	non-Rad	Manganese	7439-96-5	ug/kg	288,049	5.1E+05	No
118-D-1_Shallow_1	non-Rad	Vanadium	7440-62-2	ug/kg	59,298	8.5E+04	No
118-D-1_Shallow_5	non-Rad	Boron	7440-42-8	ug/kg	1,207	3.9E+03	No
118-D-1_Shallow_5	non-Rad	Chromium	7440-47-3	ug/kg	10,857	1.9E+04	No
118-D-1_Shallow_5	non-Rad	Manganese	7439-96-5	ug/kg	319,582	5.1E+05	No
118-D-1_Shallow_5	non-Rad	Vanadium	7440-62-2	ug/kg	55,100	8.5E+04	No
118-D-1_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	1,000	3.9E+03	No
118-D-1_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	11,700	1.9E+04	No
118-D-1_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	293,000	5.1E+05	No
118-D-1_Shallow_Focused	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	5,090	3.2E+03	Yes
118-D-1_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	62,500	8.5E+04	No
118-D-1_Staging Pile Area Footprint	non-Rad	Boron	7440-42-8	ug/kg	1,317	3.9E+03	No
118-D-1_Staging Pile Area Footprint	non-Rad	Chromium	7440-47-3	ug/kg	10,490	1.9E+04	No
118-D-1_Staging Pile Area Footprint	non-Rad	Manganese	7439-96-5	ug/kg	284,458	5.1E+05	No
118-D-1_Staging Pile Area Footprint	non-Rad	Vanadium	7440-62-2	ug/kg	54,073	8.5E+04	No
118-D-4_Overburden	non-Rad	Boron	7440-42-8	ug/kg	1,546	3.9E+03	No

Table 6. Comparison of Chemicals Exceeding SSLs in 100-D OU Surface Soils (0 to 15 feet [0 to 4.6m]) to Background

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Lognormal 90th Percentile Background Value	EPC > Background
118-D-4_Overburden	non-Rad	Chromium	7440-47-3	ug/kg	12,931	1.9E+04	No
118-D-4_Overburden	non-Rad	Manganese	7439-96-5	ug/kg	352,925	5.1E+05	No
118-D-4_Overburden	non-Rad	Vanadium	7440-62-2	ug/kg	66,686	8.5E+04	No
118-D-4_Shallow	non-Rad	Boron	7440-42-8	ug/kg	1,189	3.9E+03	No
118-D-4_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	12,377	1.9E+04	No
118-D-4_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	342,788	5.1E+05	No
118-D-4_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	80,969	8.5E+04	No
118-D-4_Shallow	non-Rad	Zinc	7440-66-6	ug/kg	59,118	6.8E+04	No
118-D-4_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	1,300	3.9E+03	No
118-D-4_Shallow_Focused	non-Rad	Cadmium	7440-43-9	ug/kg	4,660	5.6E+02	Yes
118-D-4_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	48,100	1.9E+04	Yes
118-D-4_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	399,000	5.1E+05	No
118-D-4_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	92,400	8.5E+04	Yes
118-D-4_Shallow_Focused	non-Rad	Zinc	7440-66-6	ug/kg	59,600	6.8E+04	No
118-D-5_Overburden	non-Rad	Chromium	7440-47-3	ug/kg	8,598	1.9E+04	No
118-D-5_Overburden	non-Rad	Manganese	7439-96-5	ug/kg	275,204	5.1E+05	No
118-D-5_Overburden	non-Rad	Vanadium	7440-62-2	ug/kg	50,941	8.5E+04	No
118-D-5_Shallow	non-Rad	Boron	7440-42-8	ug/kg	1,500	3.9E+03	No
118-D-5_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	8,937	1.9E+04	No
118-D-5_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	281,367	5.1E+05	No
118-D-5_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	54,073	8.5E+04	No
118-D-5_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	8,500	1.9E+04	No
118-D-5_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	290,000	5.1E+05	No
118-D-5_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	62,000	8.5E+04	No
118-D-6:4_Shallow_1	non-Rad	Boron	7440-42-8	ug/kg	1,800	3.9E+03	No
118-D-6:4_Shallow_1	non-Rad	Chromium	7440-47-3	ug/kg	7,251	1.9E+04	No
118-D-6:4_Shallow_1	non-Rad	Manganese	7439-96-5	ug/kg	323,193	5.1E+05	No
118-D-6:4_Shallow_1	non-Rad	Vanadium	7440-62-2	ug/kg	77,927	8.5E+04	No
118-D-6:4_Shallow_2	non-Rad	Chromium	7440-47-3	ug/kg	10,050	1.9E+04	No
118-D-6:4_Shallow_2	non-Rad	Manganese	7439-96-5	ug/kg	328,312	5.1E+05	No
118-D-6:4_Shallow_2	non-Rad	Mercury	7439-97-6	ug/kg	1,200	1.3E+01	Yes
118-D-6:4_Shallow_2	non-Rad	Vanadium	7440-62-2	ug/kg	68,233	8.5E+04	No
118-DR-1_Shallow	non-Rad	Boron	7440-42-8	ug/kg	1,226	3.9E+03	No
118-DR-1_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	7,080	1.9E+04	No
118-DR-1_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	284,561	5.1E+05	No
118-DR-1_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	54,964	8.5E+04	No
118-DR-1_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	1,100	3.9E+03	No
118-DR-1_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	7,300	1.9E+04	No
118-DR-1_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	290,000	5.1E+05	No
118-DR-1_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	54,000	8.5E+04	No
118-DR-2:2_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	11,700	1.9E+04	No
118-DR-2:2_Shallow	non-Rad	Mercury	7439-97-6	ug/kg	164	1.3E+01	Yes
120-D-2_Shallow	non-Rad	Boron	7440-42-8	ug/kg	2,704	3.9E+03	No
120-D-2_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	7,075	1.9E+04	No
120-D-2_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	339,488	5.1E+05	No
120-D-2_Shallow	non-Rad	Mercury	7439-97-6	ug/kg	111	1.3E+01	Yes
120-D-2_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	77,181	8.5E+04	No
120-D-2_Shallow	non-Rad	Zinc	7440-66-6	ug/kg	52,904	6.8E+04	No
120-D-2_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	1,000	3.9E+03	No
120-D-2_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	4,500	1.9E+04	No
120-D-2_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	316,000	5.1E+05	No
120-D-2_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	80,200	8.5E+04	No
122-DR-1:2_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	11,900	1.9E+04	No
122-DR-1:2_Shallow	non-Rad	Lithium	7439-93-2	ug/kg	12,500	1.3E+04	No
126-D-2_Overburden	non-Rad	Boron	7440-42-8	ug/kg	2,077	3.9E+03	No
126-D-2_Overburden	non-Rad	Chromium	7440-47-3	ug/kg	7,899	1.9E+04	No
126-D-2_Overburden	non-Rad	Manganese	7439-96-5	ug/kg	313,316	5.1E+05	No
126-D-2_Overburden	non-Rad	Vanadium	7440-62-2	ug/kg	61,720	8.5E+04	No
126-D-2_Shallow	non-Rad	Boron	7440-42-8	ug/kg	3,042	3.9E+03	No
126-D-2_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	7,872	1.9E+04	No
126-D-2_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	354,940	5.1E+05	No
126-D-2_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	78,289	8.5E+04	No
126-D-2_Shallow	non-Rad	Zinc	7440-66-6	ug/kg	52,412	6.8E+04	No
126-D-2_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	7,900	3.9E+03	Yes
126-D-2_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	7,800	1.9E+04	No
126-D-2_Shallow_Focused	non-Rad	Lead	7439-92-1	ug/kg	72,000	1.0E+04	Yes
126-D-2_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	360,000	5.1E+05	No
126-D-2_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	76,000	8.5E+04	No
126-D-2_Shallow_Focused	non-Rad	Zinc	7440-66-6	ug/kg	50,000	6.8E+04	No
128-D-2_Shallow_1	non-Rad	Boron	7440-42-8	ug/kg	1,817	3.9E+03	No
128-D-2_Shallow_1	non-Rad	Chromium	7440-47-3	ug/kg	11,003	1.9E+04	No
128-D-2_Shallow_1	non-Rad	Manganese	7439-96-5	ug/kg	341,770	5.1E+05	No
128-D-2_Shallow_1	non-Rad	Selenium	7782-49-2	ug/kg	1,100	7.8E+02	Yes
128-D-2_Shallow_1	non-Rad	Vanadium	7440-62-2	ug/kg	53,369	8.5E+04	No
128-D-2_Shallow_2	non-Rad	Boron	7440-42-8	ug/kg	1,200	3.9E+03	No
128-D-2_Shallow_2	non-Rad	Chromium	7440-47-3	ug/kg	11,153	1.9E+04	No
128-D-2_Shallow_2	non-Rad	Manganese	7439-96-5	ug/kg	277,702	5.1E+05	No
128-D-2_Shallow_2	non-Rad	Vanadium	7440-62-2	ug/kg	50,095	8.5E+04	No
130-D-1_Shallow	non-Rad	Boron	7440-42-8	ug/kg	1,642	3.9E+03	No
130-D-1_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	7,452	1.9E+04	No
130-D-1_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	306,041	5.1E+05	No
130-D-1_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	51,859	8.5E+04	No
130-D-1_Shallow	non-Rad	Zinc	7440-66-6	ug/kg	52,218	6.8E+04	No
130-D-1_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	1,400	3.9E+03	No
130-D-1_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	5,200	1.9E+04	No
130-D-1_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	305,000	5.1E+05	No
130-D-1_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	82,200	8.5E+04	No
130-D-1_Staging Pile Area Footprint	non-Rad	Boron	7440-42-8	ug/kg	2,148	3.9E+03	No
130-D-1_Staging Pile Area Footprint	non-Rad	Chromium	7440-47-3	ug/kg	13,222	1.9E+04	No
130-D-1_Staging Pile Area Footprint	non-Rad	Manganese	7439-96-5	ug/kg	379,422	5.1E+05	No

Table 6. Comparison of Chemicals Exceeding SSLs in 100-D OU Surface Soils (0 to 15 feet [0 to 4.6m]) to Background

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Lognormal 90th Percentile Background Value	EPC > Background
130-D-1_Staging Pile Area Footprint	non-Rad	Vanadium	7440-62-2	ug/kg	43,839	8.5E+04	No
132-D-1_Shallow	non-Rad	Boron	7440-42-8	ug/kg	1,150	3.9E+03	No
132-D-1_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	6,667	1.9E+04	No
132-D-1_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	314,188	5.1E+05	No
132-D-1_Shallow	non-Rad	Mercury	7439-97-6	ug/kg	1,000	1.3E+01	Yes
132-D-1_Shallow	non-Rad	Selenium	7782-49-2	ug/kg	860	7.8E+02	Yes
132-D-1_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	69,877	8.5E+04	No
132-D-1_Staging Pile Area Footprint	non-Rad	Boron	7440-42-8	ug/kg	1,225	3.9E+03	No
132-D-1_Staging Pile Area Footprint	non-Rad	Chromium	7440-47-3	ug/kg	8,496	1.9E+04	No
132-D-1_Staging Pile Area Footprint	non-Rad	Manganese	7439-96-5	ug/kg	299,873	5.1E+05	No
132-D-1_Staging Pile Area Footprint	non-Rad	Mercury	7439-97-6	ug/kg	680	1.3E+01	Yes
132-D-1_Staging Pile Area Footprint	non-Rad	Vanadium	7440-62-2	ug/kg	57,749	8.5E+04	No
1607-D1_Shallow_1	non-Rad	Boron	7440-42-8	ug/kg	1,325	3.9E+03	No
1607-D1_Shallow_1	non-Rad	Chromium	7440-47-3	ug/kg	12,828	1.9E+04	No
1607-D1_Shallow_1	non-Rad	Manganese	7439-96-5	ug/kg	273,291	5.1E+05	No
1607-D1_Shallow_1	non-Rad	Vanadium	7440-62-2	ug/kg	38,625	8.5E+04	No
1607-D1_Shallow_2	non-Rad	Boron	7440-42-8	ug/kg	1,248	3.9E+03	No
1607-D1_Shallow_2	non-Rad	Chromium	7440-47-3	ug/kg	13,336	1.9E+04	No
1607-D1_Shallow_2	non-Rad	Manganese	7439-96-5	ug/kg	282,971	5.1E+05	No
1607-D1_Shallow_2	non-Rad	Vanadium	7440-62-2	ug/kg	37,046	8.5E+04	No
1607-D1_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	1,400	3.9E+03	No
1607-D1_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	12,400	1.9E+04	No
1607-D1_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	273,000	5.1E+05	No
1607-D1_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	34,500	8.5E+04	No
1607-D1_Staging Pile Area Footprint	non-Rad	Chromium	7440-47-3	ug/kg	11,971	1.9E+04	No
1607-D1_Staging Pile Area Footprint	non-Rad	Manganese	7439-96-5	ug/kg	268,018	5.1E+05	No
1607-D1_Staging Pile Area Footprint	non-Rad	Vanadium	7440-62-2	ug/kg	39,210	8.5E+04	No
1607-D2-1_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	5,900	1.9E+04	No
1607-D2-2_Shallow	non-Rad	Boron	7440-42-8	ug/kg	1,842	3.9E+03	No
1607-D2-2_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	19,771	1.9E+04	Yes
1607-D2-2_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	344,089	5.1E+05	No
1607-D2-2_Shallow	non-Rad	Mercury	7439-97-6	ug/kg	484	1.3E+01	Yes
1607-D2-2_Shallow	non-Rad	Silver	7440-22-4	ug/kg	11,800	1.7E+02	Yes
1607-D2-2_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	68,020	8.5E+04	No
1607-D2-2_Shallow	non-Rad	Zinc	7440-66-6	ug/kg	91,971	6.8E+04	Yes
1607-D2-3_Overburden	non-Rad	Chromium	7440-47-3	ug/kg	6,597	1.9E+04	No
1607-D2-3_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	9,576	1.9E+04	No
1607-D2-4_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	6,100	1.9E+04	No
1607-D4_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	1,100	3.9E+03	No
1607-D4_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	3,500	1.9E+04	No
1607-D4_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	269,000	5.1E+05	No
1607-D4_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	54,500	8.5E+04	No
1607-D5_Shallow	non-Rad	Barium	7440-39-3	ug/kg	775,391	1.3E+05	Yes
1607-D5_Shallow	non-Rad	Boron	7440-42-8	ug/kg	69,503	3.9E+03	Yes
1607-D5_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	9,673	1.9E+04	No
1607-D5_Shallow	non-Rad	Lead	7439-92-1	ug/kg	106,537	1.0E+04	Yes
1607-D5_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	330,505	5.1E+05	No
1607-D5_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	71,779	8.5E+04	No
600-30_Shallow_1	non-Rad	Boron	7440-42-8	ug/kg	2,431	3.9E+03	No
600-30_Shallow_1	non-Rad	Chromium	7440-47-3	ug/kg	11,154	1.9E+04	No
600-30_Shallow_1	non-Rad	Manganese	7439-96-5	ug/kg	360,369	5.1E+05	No
600-30_Shallow_1	non-Rad	Vanadium	7440-62-2	ug/kg	49,219	8.5E+04	No
600-30_Shallow_2	non-Rad	Boron	7440-42-8	ug/kg	1,525	3.9E+03	No
600-30_Shallow_2	non-Rad	Chromium	7440-47-3	ug/kg	12,014	1.9E+04	No
600-30_Shallow_2	non-Rad	Manganese	7439-96-5	ug/kg	351,748	5.1E+05	No
600-30_Shallow_2	non-Rad	Vanadium	7440-62-2	ug/kg	57,064	8.5E+04	No
600-30_Shallow_3	non-Rad	Boron	7440-42-8	ug/kg	1,700	3.9E+03	No
600-30_Shallow_3	non-Rad	Chromium	7440-47-3	ug/kg	7,708	1.9E+04	No
600-30_Shallow_3	non-Rad	Manganese	7439-96-5	ug/kg	346,688	5.1E+05	No
600-30_Shallow_3	non-Rad	Vanadium	7440-62-2	ug/kg	67,222	8.5E+04	No
600-30_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	2,460	3.9E+03	No
600-30_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	11,800	1.9E+04	No
600-30_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	382,000	5.1E+05	No
600-30_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	62,200	8.5E+04	No
628-3_Shallow	non-Rad	Boron	7440-42-8	ug/kg	1,771	3.9E+03	No
628-3_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	11,406	1.9E+04	No
628-3_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	284,235	5.1E+05	No
628-3_Shallow	non-Rad	Mercury	7439-97-6	ug/kg	165	1.3E+01	Yes
628-3_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	53,113	8.5E+04	No
628-3_Staging Pile Area_2	non-Rad	Boron	7440-42-8	ug/kg	2,112	3.9E+03	No
628-3_Staging Pile Area_2	non-Rad	Chromium	7440-47-3	ug/kg	12,445	1.9E+04	No
628-3_Staging Pile Area_2	non-Rad	Manganese	7439-96-5	ug/kg	323,863	5.1E+05	No
628-3_Staging Pile Area_2	non-Rad	Mercury	7439-97-6	ug/kg	113	1.3E+01	Yes
628-3_Staging Pile Area_2	non-Rad	Vanadium	7440-62-2	ug/kg	55,454	8.5E+04	No
628-3_Staging Pile Area_3	non-Rad	Boron	7440-42-8	ug/kg	2,241	3.9E+03	No
628-3_Staging Pile Area_3	non-Rad	Chromium	7440-47-3	ug/kg	41,154	1.9E+04	Yes
628-3_Staging Pile Area_3	non-Rad	Manganese	7439-96-5	ug/kg	328,755	5.1E+05	No
628-3_Staging Pile Area_3	non-Rad	Vanadium	7440-62-2	ug/kg	58,456	8.5E+04	No
628-3_Staging Pile Area_3	non-Rad	Zinc	7440-66-6	ug/kg	54,972	6.8E+04	No
628-3_Staging Pile Area_Focused	non-Rad	Boron	7440-42-8	ug/kg	3,500	3.9E+03	No
628-3_Staging Pile Area_Focused	non-Rad	Chromium	7440-47-3	ug/kg	12,000	1.9E+04	No
628-3_Staging Pile Area_Focused	non-Rad	Manganese	7439-96-5	ug/kg	363,000	5.1E+05	No
628-3_Staging Pile Area_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	52,400	8.5E+04	No
UPR-100-D-5_Overburden	non-Rad	Boron	7440-42-8	ug/kg	1,085	3.9E+03	No

Table 6. Comparison of Chemicals Exceeding SSLs in 100-D OU Surface Soils (0 to 15 feet [0 to 4.6m]) to Background

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Lognormal 90th Percentile Background Value	EPC > Background
UPR-100-D-5_Overburden	non-Rad	Chromium	7440-47-3	ug/kg	6,103	1.9E+04	No
UPR-100-D-5_Overburden	non-Rad	Manganese	7439-96-5	ug/kg	397,997	5.1E+05	No
UPR-100-D-5_Overburden	non-Rad	Vanadium	7440-62-2	ug/kg	66,616	8.5E+04	No
UPR-100-D-5_Shallow	non-Rad	Boron	7440-42-8	ug/kg	2,067	3.9E+03	No
UPR-100-D-5_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	8,861	1.9E+04	No
UPR-100-D-5_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	305,220	5.1E+05	No
UPR-100-D-5_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	65,393	8.5E+04	No
UPR-100-D-5_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	744	3.9E+03	No
UPR-100-D-5_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	5,560	1.9E+04	No
UPR-100-D-5_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	254,000	5.1E+05	No
UPR-100-D-5_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	60,100	8.5E+04	No

Notes:
All data represent detected concentrations of the chemicals.
Exposure Point Concentrations greater than background are in bold font and highlighted yellow.
EPC = Exposure Point Concentration
pCi/g = pico Curie per gram
SSL = Soil screening level
µg/kg = Microgram per kilogram

Table 7. Comparison of Chemicals Exceeding SSLs in 100-H OU Surface Soils (0 to 15 feet [0 to 4.6m]) to Background

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Lognormal 90th Percentile Background Value	EPC > Background
100-H-17_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	11,015	1.9E+04	No
100-H-21_Overburden	non-Rad	Arsenic	7440-38-2	ug/kg	11,453	6.5E+03	Yes
100-H-21_Overburden	non-Rad	Chromium	7440-47-3	ug/kg	14,234	1.9E+04	No
100-H-21_Overburden	non-Rad	Lead	7439-92-1	ug/kg	36,426	1.0E+04	Yes
100-H-21_Shallow	non-Rad	Arsenic	7440-38-2	ug/kg	13,301	6.5E+03	Yes
100-H-21_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	14,826	1.9E+04	No
100-H-21_Shallow	non-Rad	Lead	7439-92-1	ug/kg	40,132	1.0E+04	Yes
100-H-28:1_Shallow_Focused	non-Rad	Barium	7440-39-3	ug/kg	540,000	1.3E+05	Yes
100-H-28:1_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	66,400	3.9E+03	Yes
100-H-28:1_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	15,000	1.9E+04	No
100-H-28:1_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	340,000	5.1E+05	No
100-H-28:1_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	52,700	8.5E+04	No
100-H-28:6_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	2,300	3.9E+03	No
100-H-28:6_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	16,800	1.9E+04	No
100-H-28:6_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	287,000	5.1E+05	No
100-H-28:6_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	45,200	8.5E+04	No
100-H-3_Shallow	non-Rad	Arsenic	7440-38-2	ug/kg	14,689	6.5E+03	Yes
100-H-3_Shallow	non-Rad	Boron	7440-42-8	ug/kg	4,684	3.9E+03	Yes
100-H-3_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	17,525	1.9E+04	No
100-H-3_Shallow	non-Rad	Lead	7439-92-1	ug/kg	47,557	1.0E+04	Yes
100-H-3_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	305,799	5.1E+05	No
100-H-3_Shallow	non-Rad	Mercury	7439-97-6	ug/kg	257	1.3E+01	Yes
100-H-3_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	48,985	8.5E+04	No
100-H-35_Shallow_Focused_1	non-Rad	Boron	7440-42-8	ug/kg	2,630	3.9E+03	No
100-H-35_Shallow_Focused_1	non-Rad	Chromium	7440-47-3	ug/kg	20,700	1.9E+04	Yes
100-H-35_Shallow_Focused_1	non-Rad	Manganese	7439-96-5	ug/kg	322,000	5.1E+05	No
100-H-35_Shallow_Focused_1	non-Rad	Vanadium	7440-62-2	ug/kg	43,600	8.5E+04	No
100-H-35_Shallow_Focused_2	non-Rad	Boron	7440-42-8	ug/kg	1,930	3.9E+03	No
100-H-35_Shallow_Focused_2	non-Rad	Chromium	7440-47-3	ug/kg	20,900	1.9E+04	Yes
100-H-35_Shallow_Focused_2	non-Rad	Manganese	7439-96-5	ug/kg	309,000	5.1E+05	No
100-H-35_Shallow_Focused_2	non-Rad	Mercury	7439-97-6	ug/kg	102	1.3E+01	Yes
100-H-35_Shallow_Focused_2	non-Rad	Vanadium	7440-62-2	ug/kg	41,600	8.5E+04	No
100-H-35_Shallow_Focused_3	non-Rad	Arsenic	7440-38-2	ug/kg	18,500	6.5E+03	Yes
100-H-35_Shallow_Focused_3	non-Rad	Boron	7440-42-8	ug/kg	1,100	3.9E+03	No
100-H-35_Shallow_Focused_3	non-Rad	Chromium	7440-47-3	ug/kg	14,800	1.9E+04	No
100-H-35_Shallow_Focused_3	non-Rad	Manganese	7439-96-5	ug/kg	253,000	5.1E+05	No
100-H-35_Shallow_Focused_3	non-Rad	Vanadium	7440-62-2	ug/kg	43,500	8.5E+04	No
100-H-35_Shallow_Focused_3	non-Rad	Zinc	7440-66-6	ug/kg	94,200	6.8E+04	Yes
100-H-37_Shallow_Focused	non-Rad	Arsenic	7440-38-2	ug/kg	13,000	6.5E+03	Yes
100-H-37_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	11,000	1.9E+04	No
100-H-37_Shallow_Focused	non-Rad	Lead	7439-92-1	ug/kg	54,000	1.0E+04	Yes
100-H-37_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	290,000	5.1E+05	No
100-H-37_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	43,000	8.5E+04	No
100-H-4_Shallow	non-Rad	Boron	7440-42-8	ug/kg	3,026	3.9E+03	No
100-H-4_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	11,057	1.9E+04	No
100-H-4_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	263,324	5.1E+05	No
100-H-4_Shallow	non-Rad	Mercury	7439-97-6	ug/kg	408	1.3E+01	Yes
100-H-4_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	50,477	8.5E+04	No
100-H-4_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	19,400	3.9E+03	Yes
100-H-4_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	17,500	1.9E+04	No
100-H-4_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	364,000	5.1E+05	No
100-H-4_Shallow_Focused	non-Rad	Uranium	7440-61-1	ug/kg	10,100	3.2E+03	Yes
100-H-4_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	51,500	8.5E+04	No
100-H-4_Shallow_Focused	non-Rad	Zinc	7440-66-6	ug/kg	62,500	6.8E+04	No
100-H-40_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	2,840	3.9E+03	No
100-H-40_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	11,900	1.9E+04	No
100-H-40_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	325,000	5.1E+05	No
100-H-40_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	45,300	8.5E+04	No
100-H-40_Shallow_Focused	non-Rad	Zinc	7440-66-6	ug/kg	83,400	6.8E+04	Yes
100-H-41_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	1,110	3.9E+03	No
100-H-41_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	18,500	1.9E+04	No
100-H-41_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	281,000	5.1E+05	No
100-H-41_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	40,900	8.5E+04	No
100-H-45_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	584	3.9E+03	No
100-H-45_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	9,910	1.9E+04	No
100-H-45_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	227,000	5.1E+05	No
100-H-45_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	42,600	8.5E+04	No
100-H-49:2_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	5,660	3.9E+03	Yes
100-H-49:2_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	18,800	1.9E+04	Yes
100-H-49:2_Shallow_Focused	non-Rad	Lead	7439-92-1	ug/kg	46,200	1.0E+04	Yes
100-H-49:2_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	291,000	5.1E+05	No
100-H-49:2_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	48,900	8.5E+04	No
100-H-49:2_Shallow_Focused	non-Rad	Zinc	7440-66-6	ug/kg	96,700	6.8E+04	Yes
100-H-5_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	11,199	1.9E+04	No
100-H-50_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	2,420	3.9E+03	No
100-H-50_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	15,100	1.9E+04	No
100-H-50_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	284,000	5.1E+05	No
100-H-50_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	53,200	8.5E+04	No
100-H-51:4_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	1,650	3.9E+03	No
100-H-51:4_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	13,500	1.9E+04	No
100-H-51:4_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	504,000	5.1E+05	No
100-H-51:4_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	46,300	8.5E+04	No
100-H-51:4_Shallow_Focused	non-Rad	Zinc	7440-66-6	ug/kg	79,100	6.8E+04	Yes
100-H-51:5_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	26,300	3.9E+03	Yes
100-H-51:5_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	11,400	1.9E+04	No
100-H-51:5_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	290,000	5.1E+05	No
100-H-51:5_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	38,600	8.5E+04	No
100-H-53_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	1,310	3.9E+03	No
100-H-53_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	15,900	1.9E+04	No
100-H-53_Shallow_Focused	non-Rad	Lead	7439-92-1	ug/kg	35,900	1.0E+04	Yes
100-H-53_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	300,000	5.1E+05	No
100-H-53_Shallow_Focused	non-Rad	Molybdenum	7439-98-7	ug/kg	3,840	4.7E+02	Yes

Table 7. Comparison of Chemicals Exceeding SSLs in 100-H OU Surface Soils (0 to 15 feet [0 to 4.6m]) to Background

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Lognormal 90th Percentile Background Value	EPC > Background
100-H-53_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	35,100	8.5E+04	No
100-H-53_Shallow_Focused	non-Rad	Zinc	7440-66-6	ug/kg	79,900	6.8E+04	Yes
100-H-7_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	930	3.9E+03	No
100-H-7_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	9,700	1.9E+04	No
100-H-7_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	264,000	5.1E+05	No
100-H-7_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	57,100	8.5E+04	No
100-H-8_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	1,200	3.9E+03	No
100-H-8_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	13,500	1.9E+04	No
100-H-8_Shallow_Focused	non-Rad	Lead	7439-92-1	ug/kg	46,800	1.0E+04	Yes
100-H-8_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	340,000	5.1E+05	No
100-H-8_Shallow_Focused	non-Rad	Mercury	7439-97-6	ug/kg	310	1.3E+01	Yes
100-H-8_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	63,900	8.5E+04	No
100-H-8_Shallow_Focused	non-Rad	Zinc	7440-66-6	ug/kg	53,500	6.8E+04	No
116-H-1_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	10,151	1.9E+04	No
116-H-5_Overburden	non-Rad	Boron	7440-42-8	ug/kg	1,458	3.9E+03	No
116-H-5_Overburden	non-Rad	Chromium	7440-47-3	ug/kg	11,538	1.9E+04	No
116-H-5_Overburden	non-Rad	Manganese	7439-96-5	ug/kg	258,053	5.1E+05	No
116-H-5_Overburden	non-Rad	Vanadium	7440-62-2	ug/kg	44,444	8.5E+04	No
116-H-5_Shallow	non-Rad	Boron	7440-42-8	ug/kg	2,169	3.9E+03	No
116-H-5_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	13,831	1.9E+04	No
116-H-5_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	270,919	5.1E+05	No
116-H-5_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	48,734	8.5E+04	No
116-H-5_Staging Pile Area Footprint	non-Rad	Arsenic	7440-38-2	ug/kg	10,280	6.5E+03	Yes
116-H-5_Staging Pile Area Footprint	non-Rad	Boron	7440-42-8	ug/kg	2,700	3.9E+03	No
116-H-5_Staging Pile Area Footprint	non-Rad	Chromium	7440-47-3	ug/kg	10,981	1.9E+04	No
116-H-5_Staging Pile Area Footprint	non-Rad	Lead	7439-92-1	ug/kg	45,682	1.0E+04	Yes
116-H-5_Staging Pile Area Footprint	non-Rad	Manganese	7439-96-5	ug/kg	280,936	5.1E+05	No
116-H-5_Staging Pile Area Footprint	non-Rad	Vanadium	7440-62-2	ug/kg	47,752	8.5E+04	No
116-H-7_Overburden	non-Rad	Chromium	7440-47-3	ug/kg	11,042	1.9E+04	No
116-H-7_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	19,656	1.9E+04	Yes
116-H-9_Shallow	non-Rad	Boron	7440-42-8	ug/kg	1,253	3.9E+03	No
116-H-9_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	11,945	1.9E+04	No
116-H-9_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	286,352	5.1E+05	No
116-H-9_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	42,911	8.5E+04	No
118-H-1:1_Overburden	non-Rad	Boron	7440-42-8	ug/kg	10,532	3.9E+03	Yes
118-H-1:1_Overburden	non-Rad	Chromium	7440-47-3	ug/kg	13,618	1.9E+04	No
118-H-1:1_Overburden	non-Rad	Manganese	7439-96-5	ug/kg	344,387	5.1E+05	No
118-H-1:1_Overburden	non-Rad	Vanadium	7440-62-2	ug/kg	58,281	8.5E+04	No
118-H-1:1_Shallow_1	non-Rad	Boron	7440-42-8	ug/kg	1,456	3.9E+03	No
118-H-1:1_Shallow_1	non-Rad	Chromium	7440-47-3	ug/kg	10,810	1.9E+04	No
118-H-1:1_Shallow_1	non-Rad	Manganese	7439-96-5	ug/kg	252,370	5.1E+05	No
118-H-1:1_Shallow_1	non-Rad	Selenium	7782-49-2	ug/kg	1,000	7.8E+02	Yes
118-H-1:1_Shallow_1	non-Rad	Vanadium	7440-62-2	ug/kg	43,653	8.5E+04	No
118-H-1:1_Shallow_2	non-Rad	Boron	7440-42-8	ug/kg	1,763	3.9E+03	No
118-H-1:1_Shallow_2	non-Rad	Chromium	7440-47-3	ug/kg	12,051	1.9E+04	No
118-H-1:1_Shallow_2	non-Rad	Manganese	7439-96-5	ug/kg	254,153	5.1E+05	No
118-H-1:1_Shallow_2	non-Rad	Vanadium	7440-62-2	ug/kg	45,883	8.5E+04	No
118-H-1:1_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	4,160	3.9E+03	Yes
118-H-1:1_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	22,000	1.9E+04	Yes
118-H-1:1_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	295,000	5.1E+05	No
118-H-1:1_Shallow_Focused	non-Rad	Mercury	7439-97-6	ug/kg	202	1.3E+01	Yes
118-H-1:1_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	44,900	8.5E+04	No
118-H-1:1_Staging Pile Area Footprint	non-Rad	Boron	7440-42-8	ug/kg	1,217	3.9E+03	No
118-H-1:1_Staging Pile Area Footprint	non-Rad	Chromium	7440-47-3	ug/kg	12,039	1.9E+04	No
118-H-1:1_Staging Pile Area Footprint	non-Rad	Manganese	7439-96-5	ug/kg	254,283	5.1E+05	No
118-H-1:1_Staging Pile Area Footprint	non-Rad	Vanadium	7440-62-2	ug/kg	42,420	8.5E+04	No
118-H-1:2_Shallow	non-Rad	Boron	7440-42-8	ug/kg	2,323	3.9E+03	No
118-H-1:2_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	12,971	1.9E+04	No
118-H-1:2_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	340,196	5.1E+05	No
118-H-1:2_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	44,407	8.5E+04	No
118-H-1:2_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	1,300	3.9E+03	No
118-H-1:2_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	12,000	1.9E+04	No
118-H-1:2_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	273,000	5.1E+05	No
118-H-1:2_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	37,100	8.5E+04	No
118-H-2_Shallow	non-Rad	Boron	7440-42-8	ug/kg	1,365	3.9E+03	No
118-H-2_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	10,049	1.9E+04	No
118-H-2_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	266,309	5.1E+05	No
118-H-2_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	41,613	8.5E+04	No
118-H-3_Shallow_1	non-Rad	Arsenic	7440-38-2	ug/kg	15,852	6.5E+03	Yes
118-H-3_Shallow_1	non-Rad	Boron	7440-42-8	ug/kg	3,104	3.9E+03	No
118-H-3_Shallow_1	non-Rad	Chromium	7440-47-3	ug/kg	13,218	1.9E+04	No
118-H-3_Shallow_1	non-Rad	Lead	7439-92-1	ug/kg	57,642	1.0E+04	Yes
118-H-3_Shallow_1	non-Rad	Manganese	7439-96-5	ug/kg	345,494	5.1E+05	No
118-H-3_Shallow_1	non-Rad	Vanadium	7440-62-2	ug/kg	45,491	8.5E+04	No
118-H-3_Shallow_1	non-Rad	Zinc	7440-66-6	ug/kg	132,913	6.8E+04	Yes
118-H-3_Shallow_2	non-Rad	Boron	7440-42-8	ug/kg	2,578	3.9E+03	No
118-H-3_Shallow_2	non-Rad	Chromium	7440-47-3	ug/kg	11,622	1.9E+04	No
118-H-3_Shallow_2	non-Rad	Manganese	7439-96-5	ug/kg	300,387	5.1E+05	No
118-H-3_Shallow_2	non-Rad	Vanadium	7440-62-2	ug/kg	45,329	8.5E+04	No
118-H-3_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	2,630	3.9E+03	No
118-H-3_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	9,110	1.9E+04	No
118-H-3_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	255,000	5.1E+05	No
118-H-3_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	48,300	8.5E+04	No
118-H-4_Shallow	non-Rad	Boron	7440-42-8	ug/kg	1,534	3.9E+03	No
118-H-4_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	11,715	1.9E+04	No
118-H-4_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	279,088	5.1E+05	No
118-H-4_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	45,964	8.5E+04	No
118-H-4_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	1,440	3.9E+03	No
118-H-4_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	9,900	1.9E+04	No
118-H-4_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	222,000	5.1E+05	No
118-H-4_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	39,000	8.5E+04	No
118-H-4_Staging Pile Area	non-Rad	Boron	7440-42-8	ug/kg	2,987	3.9E+03	No
118-H-4_Staging Pile Area	non-Rad	Chromium	7440-47-3	ug/kg	9,780	1.9E+04	No

Table 7. Comparison of Chemicals Exceeding SSLs in 100-H OU Surface Soils (0 to 15 feet [0 to 4.6m]) to Background

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Lognormal 90th Percentile Background Value	EPC > Background
118-H-4_Staging Pile Area	non-Rad	Manganese	7439-96-5	ug/kg	258,296	5.1E+05	No
118-H-4_Staging Pile Area	non-Rad	Vanadium	7440-62-2	ug/kg	48,115	8.5E+04	No
118-H-4_Staging Pile Area	non-Rad	Zinc	7440-66-6	ug/kg	72,799	6.8E+04	Yes
118-H-5_Shallow	non-Rad	Boron	7440-42-8	ug/kg	6,246	3.9E+03	Yes
118-H-5_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	10,718	1.9E+04	No
118-H-5_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	276,172	5.1E+05	No
118-H-5_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	39,149	8.5E+04	No
118-H-5_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	1,290	3.9E+03	No
118-H-5_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	10,500	1.9E+04	No
118-H-5_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	257,000	5.1E+05	No
118-H-5_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	39,400	8.5E+04	No
118-H-6:4_Overburden	non-Rad	Boron	7440-42-8	ug/kg	809	3.9E+03	No
118-H-6:4_Overburden	non-Rad	Chromium	7440-47-3	ug/kg	9,710	1.9E+04	No
118-H-6:4_Overburden	non-Rad	Manganese	7439-96-5	ug/kg	265,613	5.1E+05	No
118-H-6:4_Overburden	non-Rad	Vanadium	7440-62-2	ug/kg	45,939	8.5E+04	No
118-H-6:4_Shallow	non-Rad	Boron	7440-42-8	ug/kg	633	3.9E+03	No
118-H-6:4_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	10,218	1.9E+04	No
118-H-6:4_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	251,118	5.1E+05	No
118-H-6:4_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	48,568	8.5E+04	No
118-H-6:5_Shallow_1	non-Rad	Arsenic	7440-38-2	ug/kg	39,809	6.5E+03	Yes
118-H-6:5_Shallow_1	non-Rad	Boron	7440-42-8	ug/kg	2,401	3.9E+03	No
118-H-6:5_Shallow_1	non-Rad	Chromium	7440-47-3	ug/kg	13,672	1.9E+04	No
118-H-6:5_Shallow_1	non-Rad	Lead	7439-92-1	ug/kg	171,632	1.0E+04	Yes
118-H-6:5_Shallow_1	non-Rad	Manganese	7439-96-5	ug/kg	338,381	5.1E+05	No
118-H-6:5_Shallow_1	non-Rad	Vanadium	7440-62-2	ug/kg	50,095	8.5E+04	No
118-H-6:5_Shallow_2	non-Rad	Boron	7440-42-8	ug/kg	12,190	3.9E+03	Yes
118-H-6:5_Shallow_2	non-Rad	Chromium	7440-47-3	ug/kg	11,953	1.9E+04	No
118-H-6:5_Shallow_2	non-Rad	Manganese	7439-96-5	ug/kg	310,415	5.1E+05	No
118-H-6:5_Shallow_2	non-Rad	Mercury	7439-97-6	ug/kg	167	1.3E+01	Yes
118-H-6:5_Shallow_2	non-Rad	Vanadium	7440-62-2	ug/kg	53,432	8.5E+04	No
118-H-6:5_Shallow_3	non-Rad	Boron	7440-42-8	ug/kg	1,892	3.9E+03	No
118-H-6:5_Shallow_3	non-Rad	Chromium	7440-47-3	ug/kg	10,827	1.9E+04	No
118-H-6:5_Shallow_3	non-Rad	Manganese	7439-96-5	ug/kg	281,265	5.1E+05	No
118-H-6:5_Shallow_3	non-Rad	Vanadium	7440-62-2	ug/kg	46,611	8.5E+04	No
118-H-6:5_Shallow_Focused	non-Rad	Arsenic	7440-38-2	ug/kg	27,000	6.5E+03	Yes
118-H-6:5_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	1,710	3.9E+03	No
118-H-6:5_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	13,000	1.9E+04	No
118-H-6:5_Shallow_Focused	non-Rad	Lead	7439-92-1	ug/kg	114,000	1.0E+04	Yes
118-H-6:5_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	311,000	5.1E+05	No
118-H-6:5_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	49,400	8.5E+04	No
128-H-1_Overburden	non-Rad	Arsenic	7440-38-2	ug/kg	40,542	6.5E+03	Yes
128-H-1_Overburden	non-Rad	Boron	7440-42-8	ug/kg	2,799	3.9E+03	No
128-H-1_Overburden	non-Rad	Chromium	7440-47-3	ug/kg	13,085	1.9E+04	No
128-H-1_Overburden	non-Rad	Lead	7439-92-1	ug/kg	253,830	1.0E+04	Yes
128-H-1_Overburden	non-Rad	Manganese	7439-96-5	ug/kg	313,886	5.1E+05	No
128-H-1_Overburden	non-Rad	Vanadium	7440-62-2	ug/kg	47,044	8.5E+04	No
128-H-1_Shallow_3	non-Rad	Arsenic	7440-38-2	ug/kg	10,642	6.5E+03	Yes
128-H-1_Shallow_3	non-Rad	Boron	7440-42-8	ug/kg	4,922	3.9E+03	Yes
128-H-1_Shallow_3	non-Rad	Chromium	7440-47-3	ug/kg	13,634	1.9E+04	No
128-H-1_Shallow_3	non-Rad	Lead	7439-92-1	ug/kg	65,620	1.0E+04	Yes
128-H-1_Shallow_3	non-Rad	Manganese	7439-96-5	ug/kg	298,334	5.1E+05	No
128-H-1_Shallow_3	non-Rad	Vanadium	7440-62-2	ug/kg	46,141	8.5E+04	No
128-H-1_Shallow_4	non-Rad	Boron	7440-42-8	ug/kg	4,462	3.9E+03	Yes
128-H-1_Shallow_4	non-Rad	Chromium	7440-47-3	ug/kg	14,369	1.9E+04	No
128-H-1_Shallow_4	non-Rad	Lead	7439-92-1	ug/kg	44,536	1.0E+04	Yes
128-H-1_Shallow_4	non-Rad	Manganese	7439-96-5	ug/kg	319,234	5.1E+05	No
128-H-1_Shallow_4	non-Rad	Mercury	7439-97-6	ug/kg	1,021	1.3E+01	Yes
128-H-1_Shallow_4	non-Rad	Vanadium	7440-62-2	ug/kg	51,297	8.5E+04	No
128-H-1_Shallow_5	non-Rad	Boron	7440-42-8	ug/kg	1,534	3.9E+03	No
128-H-1_Shallow_5	non-Rad	Chromium	7440-47-3	ug/kg	12,741	1.9E+04	No
128-H-1_Shallow_5	non-Rad	Manganese	7439-96-5	ug/kg	270,578	5.1E+05	No
128-H-1_Shallow_5	non-Rad	Vanadium	7440-62-2	ug/kg	40,807	8.5E+04	No
128-H-1_Staging pile area footprint_2	non-Rad	Arsenic	7440-38-2	ug/kg	54,142	6.5E+03	Yes
128-H-1_Staging pile area footprint_2	non-Rad	Boron	7440-42-8	ug/kg	3,306	3.9E+03	No
128-H-1_Staging pile area footprint_2	non-Rad	Chromium	7440-47-3	ug/kg	15,220	1.9E+04	No
128-H-1_Staging pile area footprint_2	non-Rad	Lead	7439-92-1	ug/kg	124,843	1.0E+04	Yes
128-H-1_Staging pile area footprint_2	non-Rad	Manganese	7439-96-5	ug/kg	339,768	5.1E+05	No
128-H-1_Staging pile area footprint_2	non-Rad	Vanadium	7440-62-2	ug/kg	46,690	8.5E+04	No
128-H-1_Staging pile area footprint_6	non-Rad	Boron	7440-42-8	ug/kg	1,747	3.9E+03	No
128-H-1_Staging pile area footprint_6	non-Rad	Chromium	7440-47-3	ug/kg	14,174	1.9E+04	No
128-H-1_Staging pile area footprint_6	non-Rad	Manganese	7439-96-5	ug/kg	333,857	5.1E+05	No
128-H-1_Staging pile area footprint_6	non-Rad	Vanadium	7440-62-2	ug/kg	40,715	8.5E+04	No
128-H-2_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	13,800	1.9E+04	No
128-H-2_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	329,000	5.1E+05	No
128-H-2_Shallow_Focused	non-Rad	Selenium	7782-49-2	ug/kg	1,200	7.8E+02	Yes
128-H-2_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	58,500	8.5E+04	No
128-H-3_Shallow_Focused	non-Rad	Arsenic	7440-38-2	ug/kg	11,000	6.5E+03	Yes
128-H-3_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	3,700	3.9E+03	No
128-H-3_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	16,900	1.9E+04	No
128-H-3_Shallow_Focused	non-Rad	Lead	7439-92-1	ug/kg	94,100	1.0E+04	Yes
128-H-3_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	360,000	5.1E+05	No
128-H-3_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	60,500	8.5E+04	No
1607-H1_Overburden	non-Rad	Arsenic	7440-38-2	ug/kg	14,321	6.5E+03	Yes
1607-H1_Overburden	non-Rad	Boron	7440-42-8	ug/kg	3,760	3.9E+03	No
1607-H1_Overburden	non-Rad	Chromium	7440-47-3	ug/kg	12,120	1.9E+04	No
1607-H1_Overburden	non-Rad	Lead	7439-92-1	ug/kg	60,452	1.0E+04	Yes
1607-H1_Overburden	non-Rad	Manganese	7439-96-5	ug/kg	299,830	5.1E+05	No
1607-H1_Overburden	non-Rad	Selenium	7782-49-2	ug/kg	979	7.8E+02	Yes
1607-H1_Overburden	non-Rad	Vanadium	7440-62-2	ug/kg	46,454	8.5E+04	No
1607-H1_Shallow	non-Rad	Boron	7440-42-8	ug/kg	3,052	3.9E+03	No
1607-H1_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	13,089	1.9E+04	No
1607-H1_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	315,367	5.1E+05	No
1607-H1_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	50,477	8.5E+04	No

Table 7. Comparison of Chemicals Exceeding SSLs in 100-H OU Surface Soils (0 to 15 feet [0 to 4.6m]) to Background

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Lognormal 90th Percentile Background Value	EPC > Background
1607-H1_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	9,800	1.9E+04	No
1607-H1_Shallow_Focused	non-Rad	Manganese	7439-96-5	ug/kg	228,000	5.1E+05	No
1607-H1_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	33,500	8.5E+04	No
1607-H2_Overburden	non-Rad	Arsenic	7440-38-2	ug/kg	15,800	6.5E+03	Yes
1607-H2_Overburden	non-Rad	Chromium	7440-47-3	ug/kg	10,300	1.9E+04	No
1607-H2_Overburden	non-Rad	Lead	7439-92-1	ug/kg	54,900	1.0E+04	Yes
1607-H2_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	204,000	1.9E+04	Yes
1607-H2_Shallow	non-Rad	Lead	7439-92-1	ug/kg	37,629	1.0E+04	Yes
1607-H2_Shallow	non-Rad	Mercury	7439-97-6	ug/kg	2,591	1.3E+01	Yes
1607-H2_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	7,900	1.9E+04	No
1607-H3_Overburden	non-Rad	Boron	7440-42-8	ug/kg	4,725	3.9E+03	Yes
1607-H3_Overburden	non-Rad	Chromium	7440-47-3	ug/kg	49,818	1.9E+04	Yes
1607-H3_Overburden	non-Rad	Manganese	7439-96-5	ug/kg	306,125	5.1E+05	No
1607-H3_Overburden	non-Rad	Vanadium	7440-62-2	ug/kg	51,141	8.5E+04	No
1607-H3_Overburden	non-Rad	Zinc	7440-66-6	ug/kg	51,058	6.8E+04	No
1607-H3_Shallow_1	non-Rad	Boron	7440-42-8	ug/kg	1,945	3.9E+03	No
1607-H3_Shallow_1	non-Rad	Chromium	7440-47-3	ug/kg	12,104	1.9E+04	No
1607-H3_Shallow_1	non-Rad	Manganese	7439-96-5	ug/kg	287,009	5.1E+05	No
1607-H3_Shallow_1	non-Rad	Vanadium	7440-62-2	ug/kg	51,055	8.5E+04	No
1607-H3_Shallow_1	non-Rad	Zinc	7440-66-6	ug/kg	58,150	6.8E+04	No
1607-H3_Shallow_2	non-Rad	Boron	7440-42-8	ug/kg	1,136	3.9E+03	No
1607-H3_Shallow_2	non-Rad	Chromium	7440-47-3	ug/kg	10,587	1.9E+04	No
1607-H3_Shallow_2	non-Rad	Manganese	7439-96-5	ug/kg	256,331	5.1E+05	No
1607-H3_Shallow_2	non-Rad	Vanadium	7440-62-2	ug/kg	42,063	8.5E+04	No
1607-H4_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	10,200	1.9E+04	No
1607-H4_Shallow	non-Rad	Lead	7439-92-1	ug/kg	44,100	1.0E+04	Yes
600-151_Shallow_1	non-Rad	Arsenic	7440-38-2	ug/kg	31,816	6.5E+03	Yes
600-151_Shallow_1	non-Rad	Boron	7440-42-8	ug/kg	4,859	3.9E+03	Yes
600-151_Shallow_1	non-Rad	Chromium	7440-47-3	ug/kg	13,125	1.9E+04	No
600-151_Shallow_1	non-Rad	Lead	7439-92-1	ug/kg	126,984	1.0E+04	Yes
600-151_Shallow_1	non-Rad	Manganese	7439-96-5	ug/kg	352,409	5.1E+05	No
600-151_Shallow_1	non-Rad	Selenium	7782-49-2	ug/kg	940	7.8E+02	Yes
600-151_Shallow_1	non-Rad	Vanadium	7440-62-2	ug/kg	41,178	8.5E+04	No
600-151_Shallow_1	non-Rad	Zinc	7440-66-6	ug/kg	64,969	6.8E+04	No
600-151_Shallow_2	non-Rad	Arsenic	7440-38-2	ug/kg	59,606	6.5E+03	Yes
600-151_Shallow_2	non-Rad	Boron	7440-42-8	ug/kg	2,271	3.9E+03	No
600-151_Shallow_2	non-Rad	Chromium	7440-47-3	ug/kg	12,221	1.9E+04	No
600-151_Shallow_2	non-Rad	Lead	7439-92-1	ug/kg	266,765	1.0E+04	Yes
600-151_Shallow_2	non-Rad	Manganese	7439-96-5	ug/kg	359,399	5.1E+05	No
600-151_Shallow_2	non-Rad	Vanadium	7440-62-2	ug/kg	38,407	8.5E+04	No
600-151_Shallow_3	non-Rad	Arsenic	7440-38-2	ug/kg	53,961	6.5E+03	Yes
600-151_Shallow_3	non-Rad	Boron	7440-42-8	ug/kg	2,612	3.9E+03	No
600-151_Shallow_3	non-Rad	Chromium	7440-47-3	ug/kg	13,175	1.9E+04	No
600-151_Shallow_3	non-Rad	Lead	7439-92-1	ug/kg	276,283	1.0E+04	Yes
600-151_Shallow_3	non-Rad	Manganese	7439-96-5	ug/kg	323,716	5.1E+05	No
600-151_Shallow_3	non-Rad	Vanadium	7440-62-2	ug/kg	38,454	8.5E+04	No
600-151_Shallow_3	non-Rad	Zinc	7440-66-6	ug/kg	62,833	6.8E+04	No
600-152_Shallow	non-Rad	Boron	7440-42-8	ug/kg	1,785	3.9E+03	No
600-152_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	12,730	1.9E+04	No
600-152_Shallow	non-Rad	Manganese	7439-96-5	ug/kg	299,188	5.1E+05	No
600-152_Shallow	non-Rad	Vanadium	7440-62-2	ug/kg	39,512	8.5E+04	No

Table 8. Summary of Chemicals in 100-D OU Surface Soils (0 to 15 feet [0 to 4.6m]) Exceeding SSLs and Background

Waste Site/Decision Unit	Exceedances based on comparisons to SSLs and Background[1]	
	Plant/Invertebrate SSL-based HQ	Wildlife SSL-based HQ
100-D-13_Shallow_Focused	Boron (9.8) Selenium (1.7) Zinc (2.4)	Zinc (1.8)
100-D-15_Shallow_2	Zinc (1.9)	Zinc (1.4)
100-D-28:1_Shallow	Mercury (5.7) Selenium (3.3)	--
100-D-29_Shallow	Boron (10.7)	--
100-D-31:3, 100-D-31:4_Overburden	Selenium (2.3)	--
100-D-31:5_Overburden	Boron (40.2) Mercury (1.4) Selenium (3.3)	--
100-D-31:5_Shallow	Boron (21.0) Mercury (2.4) Selenium (2.9) Zinc (1.8)	Zinc (1.3)
100-D-31:6_Overburden	Boron (12.0) Mercury (8.7)	--
100-D-31:6_Shallow	Boron (11.7) Mercury (5.8)	--
100-D-31:8_Shallow_Focused_1	Vanadium (47.5)	Vanadium (3.0)
100-D-31:8_Shallow_Focused_2	Barium (4.8) Boron (338.0) Mercury (1.2) Molybdenum (1.2) Zinc (1.7)	Barium (1.2) Boron (1.3) Zinc (1.2)
100-D-42, 100-D-43, 100-D-45_Shallow	Copper (1.8)	--
100-D-47_Shallow_Focused	Vanadium (42.9)	Vanadium (2.8)
100-D-56:1_Overburden	Boron (11.3) Selenium (4.0)	Selenium (1.1)
100-D-56:1_Shallow	Selenium (3.3)	--
100-D-56:2_Shallow_Focused	Chromium (73.3)	--
100-D-61_Shallow	Boron (22.3) Selenium (2.0)	--
100-D-7_Shallow_1	Selenium (1.6)	--
100-D-7_Staging pile area footprint	Mercury (3.0)	--
100-D-70_Shallow_Focused	Copper (1.5) Zinc (1.6)	Zinc (1.2)
100-D-82_Shallow_Focused	Lead (2.7)	Lead (3.8)
100-D-83:4_Shallow_Focused	Mercury (9.5)	--
100-D-84:1_Shallow_Focused	Mercury (1.2) Vanadium (47.2)	Vanadium (3.0)
100-D-87_Shallow_Focused	Zinc (1.7)	Zinc (1.2)
100-D-88_Shallow_Focused	Vanadium (52.0)	Vanadium (3.3)
100-D-94_Shallow_Focused	Mercury (5.8)	--
116-D-8_Shallow	--	Lead (1.2)
116-D-8_Shallow_Focused_2	Selenium (2.3)	--
116-DR-5_Overburden	Zinc (1.5)	Zinc (1.1)
116-DR-5_Shallow	Chromium (63.6)	--
116-DR-8_Overburden_3	Lithium (13.9) Silver (1.1) Zinc (1.5)	Zinc (1.1)
116-DR-8_Shallow	Lithium (35.2)	--
118-D-1_Shallow_Focused	Total_U_Isotopes (1.0)	--

Table 8. Summary of Chemicals in 100-D OU Surface Soils (0 to 15 feet [0 to 4.6m]) Exceeding SSLs and Background

Waste Site/Decision Unit	Exceedances based on comparisons to SSLs and Background[1]	
	Plant/Invertebrate SSL-based HQ	Wildlife SSL-based HQ
118-D-4_Shallow_Focused	Cadmium (1.2) Chromium (120.3) Vanadium (46.2)	Cadmium (2.9) Chromium (1.3) Vanadium (3.0)
118-D-6:4_Shallow_2	Mercury (12.0)	--
118-DR-2:2_Shallow	Mercury (1.6)	--
120-D-2_Shallow	Mercury (1.1)	--
126-D-2_Shallow_Focused	Boron (15.8) Lead (1.4)	Lead (2.0)
128-D-2_Shallow_1	Selenium (2.1)	--
132-D-1_Shallow	Mercury (10.0) Selenium (1.7)	--
132-D-1_Staging Pile Area Footprint	Mercury (6.8)	--
1607-D2-2_Shallow	Chromium (49.4) Mercury (4.8) Silver (5.9) Zinc (1.8)	Zinc (1.4)
1607-D5_Shallow	Barium (2.3) Boron (139.0) Lead (2.1)	Lead (3.0)
628-3_Shallow	Mercury (1.6)	--
628-3_Staging Pile Area_2	Mercury (1.1)	--
628-3_Staging Pile Area_3	Chromium (102.9)	Chromium (1.1)

Notes:

1 Analytes with exposure point concentrations consistent with background are excluded in these results.

HQ = Hazard Quotient

NB = No background

SSL = Soil screening level

Table 9. Summary of Chemicals in 100-H OU Surface Soils (0 to 15 feet [0 to 4.6m]) Exceeding SSLs and Background

Waste Site/Decision Unit	Exceedances based on comparisons to SSLs and Background[1]	
	Plant/Invertebrate SSL-based HQ	Wildlife SSL-based HQ
100-H-21_Overburden	Arsenic (1.1)	Lead (1.0)
100-H-21_Shallow	Arsenic (1.3)	Lead (1.1)
100-H-28:1_Shallow_Focused	Barium (1.6) Boron (132.8)	--
100-H-3_Shallow	Arsenic (1.5) Boron (9.4) Mercury (2.6)	Lead (1.3)
100-H-35_Shallow_Focused_1	Chromium (51.8)	--
100-H-35_Shallow_Focused_2	Chromium (52.3) Mercury (1.0)	--
100-H-35_Shallow_Focused_3	Arsenic (1.9) Zinc (1.9)	Zinc (1.4)
100-H-37_Shallow_Focused	Arsenic (1.3) Lead (1.1)	Lead (1.5)
100-H-4_Shallow	Mercury (4.1)	--
100-H-4_Shallow_Focused	Boron (38.8) Uranium (2.0)	--
100-H-40_Shallow_Focused	Zinc (1.7)	Zinc (1.2)
100-H-49:2_Shallow_Focused	Boron (11.3) Chromium (47.0) Zinc (1.9)	Lead (1.3) Zinc (1.4)
100-H-51:4_Shallow_Focused	Zinc (1.6)	Zinc (1.2)
100-H-51:5_Shallow_Focused	Boron (52.6)	--
100-H-53_Shallow_Focused	Molybdenum (1.9) Zinc (1.6)	Lead (1.0) Zinc (1.2)
100-H-8_Shallow_Focused	Mercury (3.1)	Lead (1.3)
116-H-5_Staging Pile Area Footprint	Arsenic (1.0)	Lead (1.3)
116-H-7_Shallow	Chromium (49.1)	--
118-H-1:1_Overburden	Boron (21.1)	--
118-H-1:1_Shallow_1	Selenium (1.9)	--
118-H-1:1_Shallow_Focused	Boron (8.3) Chromium (55.0) Mercury (2.0)	--
118-H-3_Shallow_1	Arsenic (1.6) Lead (1.2) Zinc (2.7)	Lead (1.6) Zinc (2.0)
118-H-4_Staging Pile Area	Zinc (1.5)	Zinc (1.1)
118-H-5_Shallow	Boron (12.5)	--
118-H-6:5_Shallow_1	Arsenic (4.0) Lead (3.4)	Lead (4.8)
118-H-6:5_Shallow_2	Boron (24.4) Mercury (1.7)	--
118-H-6:5_Shallow_Focused	Arsenic (2.7) Lead (2.3)	Lead (3.2)
128-H-1_Overburden	Arsenic (4.1) Lead (5.1)	Lead (7.1)
128-H-1_Shallow_3	Arsenic (1.1) Boron (9.8) Lead (1.3)	Lead (1.8)
128-H-1_Shallow_4	Boron (8.9) Mercury (10.2)	Lead (1.3)
128-H-1_Staging pile area footprint_2	Arsenic (5.4) Lead (2.5)	Lead (3.5)

Table 9. Summary of Chemicals in 100-H OU Surface Soils (0 to 15 feet [0 to 4.6m]) Exceeding SSLs and Background

Waste Site/Decision Unit	Exceedances based on comparisons to SSLs and Background[1]	
	Plant/Invertebrate SSL-based HQ	Wildlife SSL-based HQ
128-H-2_Shallow_Focused	Selenium (2.3)	--
128-H-3_Shallow_Focused	Arsenic (1.1) Lead (1.9)	Lead (2.6)
1607-H1_Overburden	Arsenic (1.4) Lead (1.2) Selenium (1.9)	Lead (1.7)
1607-H2_Overburden	Arsenic (1.6) Lead (1.1)	Lead (1.5)
1607-H2_Shallow	Chromium (510.0) Mercury (25.9)	Chromium (5.3) Lead (1.1) Mercury (1.4)
1607-H3_Overburden	Boron (9.5) Chromium (124.5)	Chromium (1.3)
1607-H4_Shallow	--	Lead (1.2)
600-151_Shallow_1	Arsenic (3.2) Boron (9.7) Lead (2.5) Selenium (1.8)	Lead (3.6)
600-151_Shallow_2	Arsenic (6.0) Lead (5.3)	Lead (7.5)
600-151_Shallow_3	Arsenic (5.4) Lead (5.5)	Lead (7.8)

Notes:

1 Analytes with exposure point concentrations consistent with background are excluded in these results.

HQ = Hazard Quotient

NB = No background

SSL = Soil screening level

Table 10. Ecological PRG Comparisons for 100-D OU Waste Site Decision Units

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/ Invertebrate PRG	Hazard Quotient	Wildlife PRG	Hazard Quotient
100-D-13_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	4,900	2.9E+04	1.7E-01	3.2E+04	1.5E-01
100-D-13_Shallow_Focused	non-Rad	Selenium	7782-49-2	ug/kg	890	2.0E+03	4.4E-01	1.4E+03	6.2E-01
100-D-13_Shallow_Focused	non-Rad	Zinc	7440-66-6	ug/kg	122,000	6.2E+05	2.0E-01	8.6E+05	1.4E-01
100-D-15_Shallow_2	non-Rad	Zinc	7440-66-6	ug/kg	92,810	6.2E+05	1.5E-01	8.6E+05	1.1E-01
100-D-28:1_Shallow	non-Rad	Mercury	7439-97-6	ug/kg	572	3.0E+02	**1.9E+00**	1.6E+03	3.7E-01
100-D-28:1_Shallow	non-Rad	Selenium	7782-49-2	ug/kg	1,700	2.0E+03	8.4E-01	1.4E+03	**1.2E+00**
100-D-29_Shallow	non-Rad	Boron	7440-42-8	ug/kg	5,333	2.9E+04	1.9E-01	3.2E+04	1.7E-01
100-D-31:3, 100-D-31:4_Overburden	non-Rad	Selenium	7782-49-2	ug/kg	1,200	2.0E+03	5.9E-01	1.4E+03	8.4E-01
100-D-31:5_Overburden	non-Rad	Boron	7440-42-8	ug/kg	20,105	2.9E+04	7.0E-01	3.2E+04	6.3E-01
100-D-31:5_Overburden	non-Rad	Mercury	7439-97-6	ug/kg	142	3.0E+02	4.7E-01	1.6E+03	9.1E-02
100-D-31:5_Overburden	non-Rad	Selenium	7782-49-2	ug/kg	1,728	2.0E+03	8.6E-01	1.4E+03	**1.2E+00**
100-D-31:5_Shallow	non-Rad	Boron	7440-42-8	ug/kg	10,484	2.9E+04	3.7E-01	3.2E+04	3.3E-01
100-D-31:5_Shallow	non-Rad	Mercury	7439-97-6	ug/kg	240	3.0E+02	8.0E-01	1.6E+03	1.5E-01
100-D-31:5_Shallow	non-Rad	Selenium	7782-49-2	ug/kg	1,500	2.0E+03	7.4E-01	1.4E+03	**1.1E+00**
100-D-31:5_Shallow	non-Rad	Zinc	7440-66-6	ug/kg	89,617	6.2E+05	1.4E-01	8.6E+05	1.1E-01
100-D-31:6_Overburden	non-Rad	Boron	7440-42-8	ug/kg	5,998	2.9E+04	2.1E-01	3.2E+04	1.9E-01
100-D-31:6_Overburden	non-Rad	Mercury	7439-97-6	ug/kg	870	3.0E+02	**2.9E+00**	1.6E+03	5.6E-01
100-D-31:6_Shallow	non-Rad	Boron	7440-42-8	ug/kg	5,860	2.9E+04	2.1E-01	3.2E+04	1.8E-01
100-D-31:6_Shallow	non-Rad	Mercury	7439-97-6	ug/kg	577	3.0E+02	**1.9E+00**	1.6E+03	3.7E-01
100-D-31:8_Shallow_Focused_1	non-Rad	Vanadium	7440-62-2	ug/kg	94,900	8.9E+04	**1.1E+00**	4.3E+04	**2.2E+00**
100-D-31:8_Shallow_Focused_2	non-Rad	Barium	7440-39-3	ug/kg	1.57E+06	3.6E+05	**4.4E+00**	1.7E+06	9.3E-01
100-D-31:8_Shallow_Focused_2	non-Rad	Boron	7440-42-8	ug/kg	169,000	2.9E+04	**5.9E+00**	3.2E+04	**5.3E+00**
100-D-31:8_Shallow_Focused_2	non-Rad	Mercury	7439-97-6	ug/kg	120	3.0E+02	4.0E-01	1.6E+03	7.7E-02
100-D-31:8_Shallow_Focused_2	non-Rad	Molybdenum	7439-98-7	ug/kg	2,300	2.0E+03	**1.2E+00**	5.7E+03	4.0E-01
100-D-31:8_Shallow_Focused_2	non-Rad	Zinc	7440-66-6	ug/kg	83,000	6.2E+05	1.3E-01	8.6E+05	9.7E-02
100-D-42, 100-D-43, 100-D-45_Shallow	non-Rad	Copper	7440-50-8	ug/kg	90,384	5.8E+04	**1.6E+00**	1.9E+05	4.7E-01
100-D-47_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	85,700	8.9E+04	9.6E-01	4.3E+04	**2.0E+00**
100-D-56:1_Overburden	non-Rad	Boron	7440-42-8	ug/kg	5,633	2.9E+04	2.0E-01	3.2E+04	1.8E-01
100-D-56:1_Overburden	non-Rad	Selenium	7782-49-2	ug/kg	2,100	2.0E+03	**1.0E+00**	1.4E+03	**1.5E+00**
100-D-56:1_Shallow	non-Rad	Selenium	7782-49-2	ug/kg	1,700	2.0E+03	8.4E-01	1.4E+03	**1.2E+00**
100-D-56:2_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	29,300	1.5E+05	2.0E-01	1.1E+05	2.7E-01
100-D-61_Shallow	non-Rad	Boron	7440-42-8	ug/kg	11,172	2.9E+04	3.9E-01	3.2E+04	3.5E-01
100-D-61_Shallow	non-Rad	Selenium	7782-49-2	ug/kg	1,040	2.0E+03	5.2E-01	1.4E+03	7.3E-01
100-D-7_Shallow_1	non-Rad	Selenium	7782-49-2	ug/kg	834	2.0E+03	4.1E-01	1.4E+03	5.8E-01
100-D-7_Staging pile area footprint	non-Rad	Mercury	7439-97-6	ug/kg	304	3.0E+02	**1.0E+00**	1.6E+03	2.0E-01
100-D-70_Shallow_Focused	non-Rad	Copper	7440-50-8	ug/kg	73,900	5.8E+04	**1.3E+00**	1.9E+05	3.8E-01
100-D-70_Shallow_Focused	non-Rad	Zinc	7440-66-6	ug/kg	78,800	6.2E+05	1.3E-01	8.6E+05	9.2E-02
100-D-82_Shallow_Focused	non-Rad	Lead	7439-92-1	ug/kg	134,000	1.7E+06	7.9E-02	1.6E+05	8.6E-01
100-D-83:4_Shallow_Focused	non-Rad	Mercury	7439-97-6	ug/kg	950	3.0E+02	**3.2E+00**	1.6E+03	6.1E-01
100-D-84:1_Shallow_Focused	non-Rad	Mercury	7439-97-6	ug/kg	120	3.0E+02	4.0E-01	1.6E+03	7.7E-02
100-D-84:1_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	94,400	8.9E+04	**1.1E+00**	4.3E+04	**2.2E+00**
100-D-87_Shallow_Focused	non-Rad	Zinc	7440-66-6	ug/kg	83,600	6.2E+05	1.4E-01	8.6E+05	9.8E-02
100-D-88_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	104,000	8.9E+04	**1.2E+00**	4.3E+04	**2.4E+00**
100-D-94_Shallow_Focused	non-Rad	Mercury	7439-97-6	ug/kg	580	3.0E+02	**1.9E+00**	1.6E+03	3.7E-01
116-D-8_Shallow	non-Rad	Lead	7439-92-1	ug/kg	41,188	1.7E+06	2.4E-02	1.6E+05	2.6E-01
116-D-8_Shallow_Focused_2	non-Rad	Selenium	7782-49-2	ug/kg	1,200	2.0E+03	5.9E-01	1.4E+03	8.4E-01
116-DR-5_Overburden	non-Rad	Zinc	7440-66-6	ug/kg	76,417	6.2E+05	1.2E-01	8.6E+05	8.9E-02
116-DR-5_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	25,436	1.5E+05	1.7E-01	1.1E+05	2.3E-01
116-DR-8_Overburden_3	non-Rad	Lithium	7439-93-2	ug/kg	27,770	3.5E+04	7.9E-01	1.7E+06	1.7E-02
116-DR-8_Overburden_3	non-Rad	Silver	7440-22-4	ug/kg	2,200	3.0E+03	7.4E-01	9.8E+05	2.2E-03
116-DR-8_Overburden_3	non-Rad	Zinc	7440-66-6	ug/kg	72,846	6.2E+05	1.2E-01	8.6E+05	8.5E-02
116-DR-8_Shallow	non-Rad	Lithium	7439-93-2	ug/kg	70,444	3.5E+04	**2.0E+00**	1.7E+06	4.2E-02
118-D-1_Shallow_Focused	non-Rad	Total_U_Isotopes	Total_U_Isotopes	ug/kg	5,090	1.0E+05	5.1E-02	2.2E+04	2.3E-01
118-D-4_Shallow_Focused	non-Rad	Cadmium	7440-43-9	ug/kg	4,660	9.8E+03	4.7E-01	2.9E+04	1.6E-01
118-D-4_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	48,100	1.5E+05	3.2E-01	1.1E+05	4.4E-01
118-D-4_Shallow_Focused	non-Rad	Vanadium	7440-62-2	ug/kg	92,400	8.9E+04	**1.0E+00**	4.3E+04	**2.1E+00**
118-D-6:4_Shallow_2	non-Rad	Mercury	7439-97-6	ug/kg	1,200	3.0E+02	**4.0E+00**	1.6E+03	7.7E-01
118-DR-2:2_Shallow	non-Rad	Mercury	7439-97-6	ug/kg	164	3.0E+02	5.5E-01	1.6E+03	1.1E-01
120-D-2_Shallow	non-Rad	Mercury	7439-97-6	ug/kg	111	3.0E+02	3.7E-01	1.6E+03	7.1E-02
126-D-2_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	7,900	2.9E+04	2.8E-01	3.2E+04	2.5E-01
126-D-2_Shallow_Focused	non-Rad	Lead	7439-92-1	ug/kg	72,000	1.7E+06	4.2E-02	1.6E+05	4.6E-01
128-D-2_Shallow_1	non-Rad	Selenium	7782-49-2	ug/kg	1,100	2.0E+03	5.5E-01	1.4E+03	7.7E-01
132-D-1_Shallow	non-Rad	Mercury	7439-97-6	ug/kg	1,000	3.0E+02	**3.3E+00**	1.6E+03	6.4E-01
132-D-1_Shallow	non-Rad	Selenium	7782-49-2	ug/kg	860	2.0E+03	4.3E-01	1.4E+03	6.0E-01
132-D-1_Staging Pile Area Footprint	non-Rad	Mercury	7439-97-6	ug/kg	680	3.0E+02	**2.3E+00**	1.6E+03	4.4E-01
1607-D2-2_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	19,771	1.5E+05	1.3E-01	1.1E+05	1.8E-01
1607-D2-2_Shallow	non-Rad	Mercury	7439-97-6	ug/kg	484	3.0E+02	**1.6E+00**	1.6E+03	3.1E-01
1607-D2-2_Shallow	non-Rad	Silver	7440-22-4	ug/kg	11,800	3.0E+03	**4.0E+00**	9.8E+05	1.2E-02
1607-D2-2_Shallow	non-Rad	Zinc	7440-66-6	ug/kg	91,971	6.2E+05	1.5E-01	8.6E+05	1.1E-01
1607-D5_Shallow	non-Rad	Barium	7440-39-3	ug/kg	775,391	3.6E+05	**2.2E+00**	1.7E+06	4.6E-01
1607-D5_Shallow	non-Rad	Boron	7440-42-8	ug/kg	69,503	2.9E+04	**2.4E+00**	3.2E+04	**2.2E+00**
1607-D5_Shallow	non-Rad	Lead	7439-92-1	ug/kg	106,537	1.7E+06	6.3E-02	1.6E+05	6.8E-01
628-3_Shallow	non-Rad	Mercury	7439-97-6	ug/kg	165	3.0E+02	5.5E-01	1.6E+03	1.1E-01
628-3_Staging Pile Area_2	non-Rad	Mercury	7439-97-6	ug/kg	113	3.0E+02	3.8E-01	1.6E+03	7.3E-02
628-3_Staging Pile Area_3	non-Rad	Chromium	7440-47-3	ug/kg	41,154	1.5E+05	2.8E-01	1.1E+05	3.8E-01

Notes:

PRG = Preliminary Remediation Goal

µg/kg = Microgram per kilogram

Table 11 Ecological PRG Comparisons for 100-H OU Waste Site Decision Units

Waste Site/Decision Unit	Analyte Group	Analyte Name	CAS No.	Units	Exposure Point Concentration	Plant/ Invertebrate PRG	Hazard Quotient	Wildlife PRG	Hazard Quotient
100-H-21_Overburden	non-Rad	Arsenic	7440-38-2	ug/kg	11,453	1.3E+05	9.0E-02	1.3E+05	9.0E-02
100-H-21_Overburden	non-Rad	Lead	7439-92-1	ug/kg	36,426	1.7E+06	2.1E-02	1.6E+05	2.3E-01
100-H-21_Shallow	non-Rad	Arsenic	7440-38-2	ug/kg	13,301	1.3E+05	1.0E-01	1.3E+05	1.1E-01
100-H-21_Shallow	non-Rad	Lead	7439-92-1	ug/kg	40,132	1.7E+06	2.4E-02	1.6E+05	2.6E-01
100-H-28:1_Shallow_Focused	non-Rad	Barium	7440-39-3	ug/kg	540,000	3.6E+05	**1.5E+00**	1.7E+06	3.2E-01
100-H-28:1_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	66,400	2.9E+04	**2.3E+00**	3.2E+04	**2.1E+00**
100-H-3_Shallow	non-Rad	Arsenic	7440-38-2	ug/kg	14,689	1.3E+05	1.2E-01	1.3E+05	1.2E-01
100-H-3_Shallow	non-Rad	Boron	7440-42-8	ug/kg	4,684	2.9E+04	1.6E-01	3.2E+04	1.5E-01
100-H-3_Shallow	non-Rad	Lead	7439-92-1	ug/kg	47,557	1.7E+06	2.8E-02	1.6E+05	3.1E-01
100-H-3_Shallow	non-Rad	Mercury	7439-97-6	ug/kg	257	3.0E+02	8.6E-01	1.6E+03	1.7E-01
100-H-35_Shallow_Focused_1	non-Rad	Chromium	7440-47-3	ug/kg	20,700	1.5E+05	1.4E-01	1.1E+05	1.9E-01
100-H-35_Shallow_Focused_2	non-Rad	Chromium	7440-47-3	ug/kg	20,900	1.5E+05	1.4E-01	1.1E+05	1.9E-01
100-H-35_Shallow_Focused_2	non-Rad	Mercury	7439-97-6	ug/kg	102	3.0E+02	3.4E-01	1.6E+03	6.5E-02
100-H-35_Shallow_Focused_3	non-Rad	Arsenic	7440-38-2	ug/kg	18,500	1.3E+05	1.5E-01	1.3E+05	1.5E-01
100-H-35_Shallow_Focused_3	non-Rad	Zinc	7440-66-6	ug/kg	94,200	6.2E+05	1.5E-01	8.6E+05	1.1E-01
100-H-37_Shallow_Focused	non-Rad	Arsenic	7440-38-2	ug/kg	13,000	1.3E+05	1.0E-01	1.3E+05	1.0E-01
100-H-37_Shallow_Focused	non-Rad	Lead	7439-92-1	ug/kg	54,000	1.7E+06	3.2E-02	1.6E+05	3.5E-01
100-H-4_Shallow	non-Rad	Mercury	7439-97-6	ug/kg	408	3.0E+02	**1.4E+00**	1.6E+03	2.6E-01
100-H-4_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	19,400	2.9E+04	6.8E-01	3.2E+04	6.1E-01
100-H-4_Shallow_Focused	non-Rad	Uranium	7440-61-1	ug/kg	10,100	1.0E+05	1.0E-01	2.2E+04	4.6E-01
100-H-40_Shallow_Focused	non-Rad	Zinc	7440-66-6	ug/kg	83,400	6.2E+05	1.3E-01	8.6E+05	9.7E-02
100-H-49:2_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	5,660	2.9E+04	2.0E-01	3.2E+04	1.8E-01
100-H-49:2_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	18,800	1.5E+05	1.3E-01	1.1E+05	1.7E-01
100-H-49:2_Shallow_Focused	non-Rad	Lead	7439-92-1	ug/kg	46,200	1.7E+06	2.7E-02	1.6E+05	3.0E-01
100-H-49:2_Shallow_Focused	non-Rad	Zinc	7440-66-6	ug/kg	96,700	6.2E+05	1.6E-01	8.6E+05	1.1E-01
100-H-51:4_Shallow_Focused	non-Rad	Zinc	7440-66-6	ug/kg	79,100	6.2E+05	1.3E-01	8.6E+05	9.2E-02
100-H-51:5_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	26,300	2.9E+04	9.2E-01	3.2E+04	8.2E-01
100-H-53_Shallow_Focused	non-Rad	Lead	7439-92-1	ug/kg	35,900	1.7E+06	2.1E-02	1.6E+05	2.3E-01
100-H-53_Shallow_Focused	non-Rad	Molybdenum	7439-98-7	ug/kg	3,840	2.0E+03	**1.9E+00**	5.7E+03	6.7E-01
100-H-53_Shallow_Focused	non-Rad	Zinc	7440-66-6	ug/kg	79,900	6.2E+05	1.3E-01	8.6E+05	9.3E-02
100-H-8_Shallow_Focused	non-Rad	Lead	7439-92-1	ug/kg	46,800	1.7E+06	2.8E-02	1.6E+05	3.0E-01
100-H-8_Shallow_Focused	non-Rad	Mercury	7439-97-6	ug/kg	310	3.0E+02	**1.0E+00**	1.6E+03	2.0E-01
116-H-5_Staging Pile Area Footprint	non-Rad	Arsenic	7440-38-2	ug/kg	10,280	1.3E+05	8.0E-02	1.3E+05	8.1E-02
116-H-5_Staging Pile Area Footprint	non-Rad	Lead	7439-92-1	ug/kg	45,682	1.7E+06	2.7E-02	1.6E+05	2.9E-01
116-H-7_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	19,656	1.5E+05	1.3E-01	1.1E+05	1.8E-01
118-H-1:1_Overburden	non-Rad	Boron	7440-42-8	ug/kg	10,532	2.9E+04	3.7E-01	3.2E+04	3.3E-01
118-H-1:1_Shallow_1	non-Rad	Selenium	7782-49-2	ug/kg	1,000	2.0E+03	5.0E-01	1.4E+03	7.0E-01
118-H-1:1_Shallow_Focused	non-Rad	Boron	7440-42-8	ug/kg	4,160	2.9E+04	1.5E-01	3.2E+04	1.3E-01
118-H-1:1_Shallow_Focused	non-Rad	Chromium	7440-47-3	ug/kg	22,000	1.5E+05	1.5E-01	1.1E+05	2.0E-01
118-H-1:1_Shallow_Focused	non-Rad	Mercury	7439-97-6	ug/kg	202	3.0E+02	6.7E-01	1.6E+03	1.3E-01
118-H-3_Shallow_1	non-Rad	Arsenic	7440-38-2	ug/kg	15,852	1.3E+05	1.2E-01	1.3E+05	1.3E-01
118-H-3_Shallow_1	non-Rad	Lead	7439-92-1	ug/kg	57,642	1.7E+06	3.4E-02	1.6E+05	3.7E-01
118-H-3_Shallow_1	non-Rad	Zinc	7440-66-6	ug/kg	132,913	6.2E+05	2.1E-01	8.6E+05	1.6E-01
118-H-4_Staging Pile Area	non-Rad	Zinc	7440-66-6	ug/kg	72,799	6.2E+05	1.2E-01	8.6E+05	8.5E-02
118-H-5_Shallow	non-Rad	Boron	7440-42-8	ug/kg	6,246	2.9E+04	2.2E-01	3.2E+04	2.0E-01
118-H-6:5_Shallow_1	non-Rad	Arsenic	7440-38-2	ug/kg	39,809	1.3E+05	3.1E-01	1.3E+05	3.1E-01
118-H-6:5_Shallow_1	non-Rad	Lead	7439-92-1	ug/kg	171,632	1.7E+06	1.0E-01	1.6E+05	**1.1E+00**
118-H-6:5_Shallow_2	non-Rad	Boron	7440-42-8	ug/kg	12,190	2.9E+04	4.3E-01	3.2E+04	3.8E-01
118-H-6:5_Shallow_2	non-Rad	Mercury	7439-97-6	ug/kg	167	3.0E+02	5.6E-01	1.6E+03	1.1E-01
118-H-6:5_Shallow_Focused	non-Rad	Arsenic	7440-38-2	ug/kg	27,000	1.3E+05	2.1E-01	1.3E+05	2.1E-01
118-H-6:5_Shallow_Focused	non-Rad	Lead	7439-92-1	ug/kg	114,000	1.7E+06	6.7E-02	1.6E+05	7.3E-01
128-H-1_Overburden	non-Rad	Arsenic	7440-38-2	ug/kg	40,542	1.3E+05	3.2E-01	1.3E+05	3.2E-01
128-H-1_Overburden	non-Rad	Lead	7439-92-1	ug/kg	253,830	1.7E+06	1.5E-01	1.6E+05	**1.6E+00**
128-H-1_Shallow_3	non-Rad	Arsenic	7440-38-2	ug/kg	10,642	1.3E+05	8.3E-02	1.3E+05	8.4E-02
128-H-1_Shallow_3	non-Rad	Boron	7440-42-8	ug/kg	4,922	2.9E+04	1.7E-01	3.2E+04	1.5E-01
128-H-1_Shallow_3	non-Rad	Lead	7439-92-1	ug/kg	65,620	1.7E+06	3.9E-02	1.6E+05	4.2E-01
128-H-1_Shallow_4	non-Rad	Boron	7440-42-8	ug/kg	4,462	2.9E+04	1.6E-01	3.2E+04	1.4E-01
128-H-1_Shallow_4	non-Rad	Lead	7439-92-1	ug/kg	44,536	1.7E+06	2.6E-02	1.6E+05	2.9E-01
128-H-1_Shallow_4	non-Rad	Mercury	7439-97-6	ug/kg	1,021	3.0E+02	**3.4E+00**	1.6E+03	6.6E-01
128-H-1_Staging pile area footprint_2	non-Rad	Arsenic	7440-38-2	ug/kg	54,142	1.3E+05	4.2E-01	1.3E+05	4.3E-01
128-H-1_Staging pile area footprint_2	non-Rad	Lead	7439-92-1	ug/kg	124,843	1.7E+06	7.3E-02	1.6E+05	8.0E-01
128-H-2_Shallow_Focused	non-Rad	Selenium	7782-49-2	ug/kg	1,200	2.0E+03	5.9E-01	1.4E+03	8.4E-01
128-H-3_Shallow_Focused	non-Rad	Arsenic	7440-38-2	ug/kg	11,000	1.3E+05	8.6E-02	1.3E+05	8.7E-02
128-H-3_Shallow_Focused	non-Rad	Lead	7439-92-1	ug/kg	94,100	1.7E+06	5.5E-02	1.6E+05	6.0E-01
1607-H1_Overburden	non-Rad	Arsenic	7440-38-2	ug/kg	14,321	1.3E+05	1.1E-01	1.3E+05	1.1E-01
1607-H1_Overburden	non-Rad	Lead	7439-92-1	ug/kg	60,452	1.7E+06	3.6E-02	1.6E+05	3.9E-01
1607-H1_Overburden	non-Rad	Selenium	7782-49-2	ug/kg	979	2.0E+03	4.8E-01	1.4E+03	6.8E-01
1607-H2_Overburden	non-Rad	Arsenic	7440-38-2	ug/kg	15,800	1.3E+05	1.2E-01	1.3E+05	1.2E-01
1607-H2_Overburden	non-Rad	Lead	7439-92-1	ug/kg	54,900	1.7E+06	3.2E-02	1.6E+05	3.5E-01
1607-H2_Shallow	non-Rad	Chromium	7440-47-3	ug/kg	204,000	1.5E+05	**1.4E+00**	1.1E+05	**1.9E+00**
1607-H2_Shallow	non-Rad	Lead	7439-92-1	ug/kg	37,629	1.7E+06	2.2E-02	1.6E+05	2.4E-01
1607-H2_Shallow	non-Rad	Mercury	7439-97-6	ug/kg	2,591	3.0E+02	**8.6E+00**	1.6E+03	**1.7E+00**
1607-H3_Overburden	non-Rad	Boron	7440-42-8	ug/kg	4,725	2.9E+04	1.7E-01	3.2E+04	1.5E-01
1607-H3_Overburden	non-Rad	Chromium	7440-47-3	ug/kg	49,818	1.5E+05	3.3E-01	1.1E+05	4.6E-01
1607-H4_Shallow	non-Rad	Lead	7439-92-1	ug/kg	44,100	1.7E+06	2.6E-02	1.6E+05	2.8E-01
600-151_Shallow_1	non-Rad	Arsenic	7440-38-2	ug/kg	31,816	1.3E+05	2.5E-01	1.3E+05	2.5E-01
600-151_Shallow_1	non-Rad	Boron	7440-42-8	ug/kg	4,859	2.9E+04	1.7E-01	3.2E+04	1.5E-01
600-151_Shallow_1	non-Rad	Lead	7439-92-1	ug/kg	126,984	1.7E+06	7.5E-02	1.6E+05	8.1E-01
600-151_Shallow_1	non-Rad	Selenium	7782-49-2	ug/kg	940	2.0E+03	4.7E-01	1.4E+03	6.6E-01
600-151_Shallow_2	non-Rad	Arsenic	7440-38-2	ug/kg	59,606	1.3E+05	4.7E-01	1.3E+05	4.7E-01
600-151_Shallow_2	non-Rad	Lead	7439-92-1	ug/kg	266,765	1.7E+06	1.6E-01	1.6E+05	**1.7E+00**
600-151_Shallow_3	non-Rad	Arsenic	7440-38-2	ug/kg	53,961	1.3E+05	4.2E-01	1.3E+05	4.3E-01
600-151_Shallow_3	non-Rad	Lead	7439-92-1	ug/kg	276,283	1.7E+06	1.6E-01	1.6E+05	**1.8E+00**

Notes:
PRG = Preliminary Remediation Goal
µg/kg = Microgram per kilogram

Table 12. Summary of 100-D OU Waste Sites Ecological Evaluation Based on PRGs for Surface Soils (0 to 15 feet [0 to 4.6m])

Waste Site/Decision Unit	Exceedances based on comparisons to PRGs	
	Plant/Invertebrate HQ	Wildlife HQ
100-D-28:1_Shallow	Mercury (1.9)	Selenium (1.2)
100-D-31:5_Overburden	--	Selenium (1.2)
100-D-31:5_Shallow	--	Selenium (1.0)
100-D-31:6_Overburden	Mercury (2.9)	--
100-D-31:6_Shallow	Mercury (1.9)	--
100-D-31:8_Shallow_Focused_1	Vanadium (1.1)	Vanadium (2.2)
100-D-31:8_Shallow_Focused_2	Barium (4.4) Boron (5.9) Molybdenum (1.2)	Boron (5.3)
100-D-42, 100-D-43, 100-D-45_Shallow	Copper (1.6)	--
100-D-47_Shallow_Focused	--	Vanadium (2.0)
100-D-56:1_Overburden	Selenium (1.0)	Selenium (1.5)
100-D-56:1_Shallow	--	Selenium (1.2)
100-D-7_Staging pile area footprint	Mercury (1.0)	--
100-D-70_Shallow_Focused	Copper (1.3)	--
100-D-83:4_Shallow_Focused	Mercury (3.2)	--
100-D-84:1_Shallow_Focused	Vanadium (1.1)	Vanadium (2.2)
100-D-88_Shallow_Focused	Vanadium (1.2)	Vanadium (2.4)
100-D-94_Shallow_Focused	Mercury (1.9)	--
116-DR-8_Shallow	Lithium (2.0)	--
118-D-4_Shallow_Focused	Vanadium (1.0)	Vanadium (2.1)
118-D-6:4_Shallow_2	Mercury (4.0)	--
132-D-1_Shallow	Mercury (3.3)	--
132-D-1_Staging Pile Area Footprint	Mercury (2.3)	--
1607-D2-2_Shallow	Mercury (1.6) Silver (3.9)	--
1607-D5_Shallow	Barium (2.2) Boron (2.4)	Boron (2.2)

Notes:
HQ = Hazard Quotient
PRG = Preliminary Remediation Goal

Table 13. Summary of 100-H OU Waste Sites Ecological Evaluation Based on PRGs for Surface Soils (0 to 15 feet [0 to 4.6m])

Waste Site/Decision Unit	Exceedances based on comparisons to PRGs	
	Plant/Invertebrate HQ	Wildlife HQ
100-H-28:1_Shallow_Focused	Barium (1.5) Boron (2.3)	Boron (2.1)
100-H-4_Shallow	Mercury (1.4)	--
100-H-53_Shallow_Focused	Molybdenum (1.9)	--
100-H-8_Shallow_Focused	Mercury (1.0)	--
118-H-6:5_Shallow_1	--	Lead (1.1)
128-H-1_Overburden	--	Lead (1.6)
128-H-1_Shallow_4	Mercury (3.4)	--
1607-H2_Shallow	Chromium (1.4) Mercury (8.6)	Chromium (1.9) Mercury (1.7)
600-151_Shallow_2	--	Lead (1.7)
600-151_Shallow_3	--	Lead (1.8)

Notes:
HQ = Hazard Quotient
PRG = Preliminary Remediation Goal

Table 14. Wildlife Exposure to Inorganic Chemicals through Drinking from Seeps in the 100-D Riparian Area

Analyte Name	Seeps EPC (mg/L)	Mammal LOAEL TRV (mg/kg/d)	Bird LOAEL TRV (mg/kg/d)	Elk Drinking Water Dose (mg/kg-BW/d)	Elk LOAEL HQ	Badger Drinking Water Dose (mg/kg-BW/d)	Badger LOAEL HQ	Bat Drinking Water Dose (mg/kg-BW/d)	Bat LOAEL HQ	Killdeer Drinking Water Dose (mg/kg-BW/d)	Killdeer LOAEL HQ	Swallow Drinking Water Dose (mg/kg-BW/d)	Swallow LOAEL HQ	Quail Drinking Water Dose (mg/kg-BW/d)	Quail LOAEL HQ	Meadowlark Drinking Water Dose (mg/kg-BW/d)	Meadowlark LOAEL HQ	Hawk Drinking Water Dose (mg/kg-BW/d)	Hawk LOAEL HQ
Unfiltered Samples																			
Aluminum	2.10E+01	1.93E+01	1.10E+02	9.17E-01	**4.75E-02**	1.27E+00	**6.60E-02**	1.64E+00	**8.52E-02**	2.18E+00	**1.99E-02**	3.19E+00	**2.91E-02**	1.64E+00	**1.49E-02**	9.31E-01	8.49E-03	8.81E-01	8.03E-03
Antimony	2.03E-04	5.90E-01	NA	8.84E-06	1.50E-05	1.23E-05	2.08E-05	1.58E-05	2.69E-05	2.10E-05	NA	3.07E-05	NA	1.58E-05	NA	8.98E-06	NA	8.49E-06	NA
Arsenic	1.44E-03	1.66E+00	4.03E+01	6.30E-05	3.79E-05	8.75E-05	5.27E-05	1.13E-04	6.80E-05	1.50E-04	3.72E-06	2.19E-04	5.43E-06	1.12E-04	2.79E-06	6.40E-05	1.59E-06	6.05E-05	1.50E-06
Barium	1.14E-01	7.50E+01	4.17E+01	4.98E-03	6.64E-05	6.92E-03	9.22E-05	8.92E-03	1.19E-04	1.18E-02	2.84E-04	1.73E-02	4.15E-04	8.89E-03	2.13E-04	5.06E-03	1.21E-04	4.78E-03	1.15E-04
Beryllium	3.10E-04	5.32E-01	NA	1.35E-05	2.54E-05	1.88E-05	3.53E-05	2.43E-05	4.56E-05	3.22E-05	NA	4.70E-05	NA	2.42E-05	NA	1.37E-05	NA	1.30E-05	NA
Bromide	1.00E-01	NA	NA	4.36E-03	NA	6.06E-03	NA	7.82E-03	NA	1.04E-02	NA	1.52E-02	NA	7.79E-03	NA	4.43E-03	NA	4.19E-03	NA
Cadmium	3.27E-04	1.00E+01	1.47E+00	1.43E-05	1.43E-06	1.98E-05	1.98E-06	2.56E-05	2.56E-06	3.39E-05	2.31E-05	4.96E-05	3.37E-05	2.55E-05	1.73E-05	1.45E-05	9.86E-06	1.37E-05	9.32E-06
Calculated Total Uranium	1.77E-03	6.13E+00	1.60E+01	7.70E-05	1.26E-05	1.07E-04	1.75E-05	1.38E-04	2.25E-05	1.83E-04	1.15E-05	2.68E-04	1.67E-05	1.38E-04	8.60E-06	7.83E-05	4.89E-06	7.40E-05	4.63E-06
Chloride	1.33E+01	NA	NA	5.79E-01	NA	8.05E-01	NA	1.04E+00	NA	1.38E+00	NA	2.01E+00	NA	1.03E+00	NA	5.88E-01	NA	5.56E-01	NA
Chloroform	4.10E-03	4.10E+01	3.44E+01	1.79E-04	4.36E-06	2.49E-04	6.06E-06	3.21E-04	7.82E-06	4.25E-04	1.24E-05	6.22E-04	1.81E-05	3.19E-04	9.29E-06	1.82E-04	5.28E-06	1.72E-04	5.00E-06
Chromium	1.80E-01	9.62E+00	2.78E+00	7.87E-03	8.18E-04	1.09E-02	1.14E-03	1.41E-02	1.47E-03	1.87E-02	6.73E-03	2.74E-02	9.85E-03	1.41E-02	5.06E-03	8.00E-03	2.88E-03	7.56E-03	2.72E-03
Cobalt	9.60E-03	1.09E+01	7.80E+00	4.19E-04	3.84E-05	5.82E-04	5.34E-05	7.51E-04	6.89E-05	9.96E-04	1.28E-04	1.46E-03	1.87E-04	7.48E-04	9.59E-05	4.26E-04	5.46E-05	4.02E-04	5.16E-05
Copper	8.89E-03	9.34E+00	1.21E+01	3.88E-04	4.15E-05	5.39E-04	5.77E-05	6.96E-04	7.45E-05	9.23E-04	7.63E-05	1.35E-03	1.12E-04	6.93E-04	5.73E-05	3.94E-04	3.26E-05	3.73E-04	3.08E-05
Fluoride	3.33E-01	5.28E+01	3.20E+01	1.45E-02	2.75E-04	2.02E-02	3.82E-04	2.60E-02	4.93E-04	3.45E-02	1.08E-03	5.05E-02	1.58E-03	2.59E-02	8.10E-04	1.48E-02	4.61E-04	1.39E-02	4.36E-04
Hexavalent Chromium	7.02E-02	4.00E+01	NA	3.06E-03	7.66E-05	4.26E-03	1.06E-04	5.49E-03	1.37E-04	7.28E-03	NA	1.07E-02	NA	5.47E-03	NA	3.11E-03	NA	2.94E-03	NA
Iron	2.03E+01	NA	NA	8.86E-01	NA	1.23E+00	NA	1.59E+00	NA	2.11E+00	NA	3.08E+00	NA	1.58E+00	NA	9.00E-01	NA	8.51E-01	NA
Lead	4.74E-03	8.90E+00	3.26E+00	2.07E-04	2.32E-05	2.87E-04	3.23E-05	3.70E-04	4.16E-05	4.91E-04	1.51E-04	7.19E-04	2.20E-04	3.69E-04	1.13E-04	2.10E-04	6.44E-05	1.99E-04	6.09E-05
Manganese	9.32E-01	7.10E+01	3.48E+02	4.07E-02	5.73E-04	5.65E-02	7.96E-04	7.29E-02	1.03E-03	9.67E-02	2.78E-04	1.41E-01	4.06E-04	7.26E-02	2.09E-04	4.13E-02	1.19E-04	3.91E-02	1.12E-04
Mercury	1.90E-05	1.60E-01	3.70E-01	8.30E-07	5.19E-06	1.15E-06	7.21E-06	1.49E-06	9.31E-06	1.97E-06	5.34E-06	2.89E-06	7.81E-06	1.48E-06	4.01E-06	8.44E-07	2.28E-06	7.98E-07	2.16E-06
Methylene chloride	1.20E-03	5.00E+01	3.44E+01	5.23E-05	1.05E-06	7.27E-05	1.45E-06	9.39E-05	1.88E-06	1.25E-04	3.62E-06	1.82E-04	5.29E-06	9.35E-05	2.72E-06	5.32E-05	1.55E-06	5.03E-05	1.46E-06
Nickel	9.28E-03	3.40E+00	1.15E+01	4.05E-04	1.19E-04	5.63E-04	1.66E-04	7.26E-04	2.14E-04	9.63E-04	8.37E-05	1.41E-03	1.22E-04	7.23E-04	6.29E-05	4.11E-04	3.58E-05	3.89E-04	3.38E-05
Nitrogen in Nitrate	1.81E+02	1.13E+03	NA	7.89E+00	6.99E-03	1.10E+01	9.71E-03	1.42E+01	**1.25E-02**	1.88E+01	NA	2.75E+01	NA	1.41E+01	NA	8.02E+00	NA	7.58E+00	NA
Selenium	1.40E-02	2.15E-01	5.79E-01	6.11E-05	2.84E-04	8.49E-05	3.95E-04	1.10E-04	5.09E-04	1.45E-04	2.51E-04	2.12E-04	3.67E-04	1.09E-04	1.88E-04	6.21E-05	1.07E-04	5.87E-05	1.01E-04
Silicon	2.08E-01	NA	NA	9.07E-03	NA	1.26E-02	NA	1.63E-02	NA	2.16E-02	NA	3.16E-02	NA	1.62E-02	NA	9.22E-03	NA	8.72E-03	NA
Silver	4.16E-05	6.02E+01	2.02E+01	1.81E-06	3.01E-08	2.52E-06	4.18E-08	3.25E-06	5.40E-08	4.31E-06	2.13E-07	6.31E-06	3.12E-07	3.24E-06	1.60E-07	1.84E-06	9.12E-08	1.74E-06	8.62E-08
Strontium	2.26E-01	2.63E+02	NA	9.85E-03	3.74E-05	1.37E-02	5.20E-05	1.77E-02	6.71E-05	2.34E-02	NA	3.43E-02	NA	1.76E-02	NA	1.00E-02	NA	9.46E-03	NA
Sulfate	6.22E+01	NA	NA	2.71E+00	NA	3.77E+00	NA	4.87E+00	NA	6.45E+00	NA	9.44E+00	NA	4.85E+00	NA	2.76E+00	NA	2.61E+00	NA
Thallium	7.48E-05	7.50E-02	NA	3.26E-06	4.35E-05	4.54E-06	6.05E-05	5.85E-06	7.80E-05	7.76E-06	NA	1.14E-05	NA	5.83E-06	NA	3.32E-06	NA	3.14E-06	NA
Vanadium	2.08E-02	8.31E+00	6.88E-01	9.08E-04	1.09E-04	1.26E-03	1.52E-04	1.63E-03	1.96E-04	2.16E-03	3.14E-03	3.16E-03	4.59E-03	1.62E-03	2.36E-03	9.23E-04	1.34E-03	8.73E-04	1.27E-03
Zinc	1.29E-01	7.59E+01	6.65E+01	5.65E-03	7.44E-05	7.85E-03	1.03E-04	1.01E-02	1.33E-04	1.34E-02	2.02E-04	1.96E-02	2.95E-04	1.01E-02	1.52E-04	5.74E-03	8.63E-05	5.42E-03	8.16E-05
Filtered Samples																			
Antimony	2.48E-04	5.90E-01	NA	1.08E-05	1.83E-05	1.50E-05	2.55E-05	1.94E-05	3.29E-05	2.57E-05	NA	3.76E-05	NA	1.93E-05	NA	1.10E-05	NA	1.04E-05	NA
Arsenic	8.92E-04	1.66E+00	4.03E+01	3.89E-05	2.34E-05	5.41E-05	3.26E-05	6.98E-05	4.20E-05	9.25E-05	2.30E-06	1.35E-04	3.36E-06	6.95E-05	1.72E-06	3.95E-05	9.81E-07	3.74E-05	9.28E-07
Barium	7.87E-02	7.50E+01	4.17E+01	3.43E-03	4.58E-05	4.77E-03	6.36E-05	6.16E-03	8.21E-05	8.17E-03	1.96E-04	1.19E-02	2.86E-04	6.13E-03	1.47E-04	3.49E-03	8.37E-05	3.30E-03	7.91E-05
Beryllium	1.18E-05	5.32E-01	NA	5.15E-07	9.68E-07	7.15E-07	1.34E-06	9.23E-07	1.73E-06	1.22E-06	NA	1.79E-06	NA	9.20E-07	NA	5.23E-07	NA	4.95E-07	NA
Cadmium	5.40E-05	1.00E+01	1.47E+00	2.36E-06	2.36E-07	3.27E-06	3.27E-07	4.22E-06	4.22E-07	5.60E-06	3.81E-06	8.19E-06	5.57E-06	4.21E-06	2.86E-06	2.39E-06	1.63E-06	2.26E-06	1.54E-06
Chromium	9.79E-02	9.62E+00	2.78E+00	4.27E-03	4.44E-04	5.93E-03	6.17E-04	7.65E-03	7.96E-04	1.02E-02	3.65E-03	1.48E-02	5.34E-03	7.63E-03	2.74E-03	4.34E-03	1.56E-03	4.10E-03	1.48E-03
Copper	3.05E-03	9.34E+00	1.21E+01	1.33E-04	1.43E-05	1.85E-04	1.98E-05	2.39E-04	2.56E-05	3.17E-04	2.62E-05	4.63E-04	3.83E-05	2.38E-04	1.96E-05	1.35E-04	1.12E-05	1.28E-04	1.06E-05
Iron	1.82E-02	NA	NA	7.94E-04	NA	1.10E-03	NA	1.42E-03	NA	1.89E-03	NA	2.76E-03	NA	1.42E-03	NA	8.07E-04	NA	7.63E-04	NA
Lead	2.04E-04	8.90E+00	3.26E+00	8.90E-06	1.00E-06	1.24E-05	1.39E-06	1.60E-05	1.79E-06	2.12E-05	6.49E-06	3.10E-05	9.49E-06	1.59E-05	4.88E-06	9.04E-06	2.77E-06	8.55E-06	2.62E-06
Manganese	8.50E-03	7.10E+01	3.48E+02	3.71E-04	5.22E-06	5.15E-04	7.26E-06	6.65E-04	9.36E-06	8.82E-04	2.53E-06	1.29E-03	3.71E-06	6.62E-04	1.90E-06	3.77E-04	1.08E-06	3.56E-04	1.02E-06
Nickel	3.61E-03	3.40E+00	1.15E+01	1.57E-04	4.63E-05	2.19E-04	6.43E-05	2.82E-04	8.29E-05	3.74E-04	3.25E-05	5.47E-04	4.76E-05	2.81E-04	2.44E-05	1.60E-04	1.39E-05	1.51E-04	1.31E-05
Selenium	3.28E-04	2.15E-01	5.79E-01	1.43E-05	6.66E-05	1.99E-05	9.25E-05	2.57E-05	1.19E-04	3.40E-05	5.88E-05	4.98E-05	8.59E-05	2.56E-05	4.41E-05	1.45E-05	2.51E-05	1.37E-05	2.37E-05
Strontium	2.59E-01	2.63E+02	NA	1.13E-02	4.30E-05	1.57E-02	5.97E-05	2.03E-02	7.70E-05	2.69E-02	NA	3.93E-02	NA	2.02E-02	NA	1.15E-02	NA	1.09E-02	NA
Thallium	2.41E-05	7.50E-02	NA	1.05E-06	1.40E-05	1.46E-06	1.95E-05	1.89E-06	2.51E-05	2.50E-06	NA	3.66E-06	NA	1.88E-06	NA	1.07E-06	NA	1.01E-06	NA
Vanadium	1.80E-02	8.31E+00	6.88E-01	7.85E-04	9.45E-05	1.09E-03	1.31E-04	1.41E-03	1.69E-04	1.87E-03	2.71E-03	2.73E-03	3.97E-03	1.40E-03	2.04E-03	7.98E-04	1.16E-03	7.54E-04	1.10E-03
Zinc	1.51E-02	7.59E+01	6.65E+01	6.60E-04	8.69E-06	9.16E-04	1.21E-05	1.18E-03	1.56E-05	1.57E-03	2.36E-05	2.29E-03	3.45E-05	1.18E-03	1.77E-05	6.70E-04	1.01E-05	6.34E-04	9.53E-06

Notes:

Complete reference information is provided below.

Drinking water ingestion rate estimated using Calder and Braun, 1983

Calder and Braun (1983) regression equation format --> L water/kg body weight/day = a (kilograms body weight)^{b} /kg body weight

Group	*a*	*b*
all birds	0.059	0.67
all mammals	0.099	0.90

Body weight (kg) for: Elk =	204	assumed average weight of Rocky Mountain Elk (*Cervus canadensis*) cow (Red Orbit, 2012)
Badger =	7.6	median from multiple studies (Messick and Hornocker, 1981; Silva and Downing, 1995)
Little Brown Bat =	0.0103	assumed average weight (*Myotis lucifugus*) from Silva and Downing, 1995
Killdeer =	0.0756	median from multiple studies (Purdue and Haines, 1977; Stegeman, 1955; Jackson and Jackson, 2000; Dunning, 1993)
Swallow =	0.0239	mean adult weight (*Hirundo pyrrhonota*) during breeding (Brown and Brown, 1995)
California Quail =	0.18	median from multiple studies (Robel, 1969; Roseberry and Klimstra, 1971;Guthery et al., 1988)
Western Meadowlark =	0.995	median from multiple studies (Wiens and Rotenberry, 1980; Maher, 1979)
Red-tailed Hawk =	1.179	median from multiple studies (Craighead and Craighead,1956; Steenhof,1983; Springer and Osborne,1983)

	Elk	Badger	Bat	Killdeer	Swallow	California Quail	Western Meadowlark	Red-tailed Hawk
Drinking water ingestion rate (L/kg-bw-d) =	0.058	0.081	0.156	0.138	0.202	0.104	0.059	0.056
Area use factor (unitless) =	0.750	0.750	0.500	0.750	0.750	0.750	0.750	0.750

Acronyms:

EPC = exposure point concentration

HQ = hazard quotient

LOAEL = lowest observed adverse effect level

mg/kg/d = milligrams of chemical per kilogram per day

mg/kg-bw/d = milligrams of chemical per kilogram bodyweight per day

mg/L = milligrams per liter

NA = not available

NOAEL = no observed adverse effect level

TRV = toxicological reference value

References:

Brown and Brown, 1995, "Cliff Swallow (*Hirundo pyrrhonota*)."

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Table 15. Wildlife Exposure to Inorganic Chemicals through Drinking from Seeps in the 100-H Riparian Area

Analyte Name	Seeps EPC (mg/L)	Mammal LOAEL TRV (mg/kg/d)	Bird LOAEL TRV (mg/kg/d)	Elk Drinking Water Dose (mg/kg-BW/d)	Elk LOAEL HQ	Badger Drinking Water Dose (mg/kg-BW/d)	Badger LOAEL HQ	Bat Drinking Water Dose (mg/kg-BW/d)	Bat LOAEL HQ	Killdeer Drinking Water Dose (mg/kg-BW/d)	Killdeer LOAEL HQ	Swallow Drinking Water Dose (mg/kg-BW/d)	Swallow LOAEL HQ	Quail Drinking Water Dose (mg/kg-BW/d)	Quail LOAEL HQ	Meadowlark Drinking Water Dose (mg/kg-BW/d)	Meadowlark LOAEL HQ	Hawk Drinking Water Dose (mg/kg-BW/d)	Hawk LOAEL HQ
Unfiltered samples																			
Aluminum	1.33E+00	1.93E+01	1.10E+02	5.79E-02	3.00E-03	8.04E-02	4.17E-03	1.04E-01	5.38E-03	1.38E-01	1.25E-03	2.01E-01	1.83E-03	1.03E-01	9.42E-04	5.88E-02	5.36E-04	5.56E-02	5.07E-04
Antimony	2.94E-04	5.90E-01	NA	1.28E-05	2.18E-05	1.78E-05	3.02E-05	2.30E-05	3.90E-05	3.05E-05	**NA**	4.46E-05	**NA**	2.29E-05	**NA**	1.30E-05	**NA**	1.23E-05	**NA**
Arsenic	5.65E-03	1.66E+00	4.03E+01	2.46E-04	1.48E-04	3.42E-04	2.06E-04	4.42E-04	2.66E-04	5.86E-04	1.45E-05	8.57E-04	2.13E-05	4.40E-04	1.09E-05	2.50E-04	6.21E-06	2.37E-04	5.87E-06
Barium	4.15E-02	7.50E+01	4.17E+01	1.81E-03	2.42E-05	2.52E-03	3.36E-05	3.25E-03	4.33E-05	4.31E-03	1.03E-04	6.30E-03	1.51E-04	3.24E-03	7.76E-05	1.84E-03	4.41E-05	1.74E-03	4.17E-05
Beryllium	2.30E-04	5.32E-01	NA	1.00E-05	1.88E-05	1.39E-05	2.62E-05	1.80E-05	3.38E-05	2.38E-05	**NA**	3.48E-05	**NA**	1.79E-05	**NA**	1.02E-05	**NA**	9.62E-06	**NA**
Cadmium	3.50E-03	1.00E+01	1.47E+00	1.53E-04	1.53E-05	2.12E-04	2.12E-05	2.74E-04	2.74E-05	3.63E-04	2.47E-04	5.31E-04	3.61E-04	2.73E-04	1.86E-04	1.55E-04	1.06E-04	1.47E-04	9.98E-05
Calculated Total Uranium	5.50E-03	6.13E+00	1.60E+01	2.40E-04	3.91E-05	3.33E-04	5.43E-05	4.30E-04	7.01E-05	5.70E-04	3.56E-05	8.34E-04	5.21E-05	4.28E-04	2.68E-05	2.44E-04	1.52E-05	2.30E-04	1.44E-05
Chloride	6.17E+00	NA	NA	2.69E-01	**NA**	3.74E-01	**NA**	4.83E-01	**NA**	6.41E-01	**NA**	9.37E-01	**NA**	4.81E-01	**NA**	2.74E-01	**NA**	2.59E-01	**NA**
Chloroform	1.40E-02	4.10E+01	3.44E+01	6.11E-04	1.49E-05	8.49E-04	2.07E-05	1.10E-03	2.67E-05	1.45E-03	4.22E-05	2.12E-03	6.17E-05	1.09E-03	3.17E-05	6.21E-04	1.80E-05	5.87E-04	1.71E-05
Chromium	2.64E-02	9.62E+00	2.78E+00	1.15E-03	1.20E-04	1.60E-03	1.66E-04	2.06E-03	2.14E-04	2.74E-03	9.84E-04	4.00E-03	1.44E-03	2.05E-03	7.39E-04	1.17E-03	4.20E-04	1.10E-03	3.97E-04
Copper	1.11E-02	9.34E+00	1.21E+01	4.86E-04	5.21E-05	6.76E-04	7.24E-05	8.72E-04	9.34E-05	1.16E-03	9.56E-05	1.69E-03	1.40E-04	8.69E-04	7.18E-05	4.94E-04	4.08E-05	4.67E-04	3.86E-05
Fluoride	3.26E-01	5.28E+01	3.20E+01	1.42E-02	2.70E-04	1.98E-02	3.75E-04	2.55E-02	4.83E-04	3.38E-02	1.06E-03	4.95E-02	1.55E-03	2.54E-02	7.94E-04	1.44E-02	4.51E-04	1.37E-02	4.27E-04
Iron	1.03E+00	NA	NA	4.49E-02	**NA**	6.24E-02	**NA**	8.05E-02	**NA**	1.07E-01	**NA**	1.56E-01	**NA**	8.02E-02	**NA**	4.56E-02	**NA**	4.31E-02	**NA**
Lead	6.60E-02	8.90E+00	3.26E+00	2.88E-03	3.24E-04	4.00E-03	4.50E-04	5.16E-03	5.80E-04	6.85E-03	2.10E-03	1.00E-02	3.07E-03	5.14E-03	1.58E-03	2.93E-03	8.97E-04	2.77E-03	8.48E-04
Manganese	4.87E-02	7.10E+01	3.48E+02	2.13E-03	2.99E-05	2.95E-03	4.16E-05	3.81E-03	5.37E-05	5.06E-03	1.45E-05	7.39E-03	2.12E-05	3.80E-03	1.09E-05	2.16E-03	6.21E-06	2.04E-03	5.87E-06
Mercury	4.07E-05	1.60E-01	3.70E-01	1.78E-06	1.11E-05	2.47E-06	1.54E-05	3.18E-06	1.99E-05	4.22E-06	1.14E-05	6.17E-06	1.67E-05	3.17E-06	8.57E-06	1.80E-06	4.88E-06	1.71E-06	4.61E-06
Methylene chloride	1.20E-03	5.00E+01	3.44E+01	5.23E-05	1.05E-06	7.27E-05	1.45E-06	9.39E-05	1.88E-06	1.25E-04	3.62E-06	1.82E-04	5.29E-06	9.35E-05	2.72E-06	5.32E-05	1.55E-06	5.03E-05	1.46E-06
Nickel	1.09E-02	3.40E+00	1.15E+01	4.76E-04	1.40E-04	6.61E-04	1.94E-04	8.53E-04	2.51E-04	1.13E-03	9.83E-05	1.65E-03	1.44E-04	8.49E-04	7.39E-05	4.83E-04	4.20E-05	4.57E-04	3.97E-05
Nitrogen in Nitrate	6.75E+03	1.13E+03	NA	2.94E+02	**2.61E-01**	4.09E+02	**3.62E-01**	5.28E+02	**4.67E-01**	7.00E+02	**NA**	1.02E+03	**NA**	5.26E+02	**NA**	2.99E+02	**NA**	2.83E+02	**NA**
Selenium	7.35E-04	2.15E-01	5.79E-01	3.21E-05	1.49E-04	4.46E-05	2.07E-04	5.75E-05	2.67E-04	7.63E-05	1.32E-04	1.12E-04	1.93E-04	5.73E-05	9.89E-05	3.26E-05	5.63E-05	3.08E-05	5.32E-05
Silver	2.86E-03	6.02E+01	2.02E+01	1.25E-04	2.07E-06	1.73E-04	2.88E-06	2.24E-04	3.72E-06	2.97E-04	1.47E-05	4.34E-04	2.15E-05	2.23E-04	1.10E-05	1.27E-04	6.28E-06	1.20E-04	5.94E-06
Strontium	1.54E-01	2.63E+02	NA	6.73E-03	2.56E-05	9.36E-03	3.56E-05	1.21E-02	4.59E-05	1.60E-02	**NA**	2.34E-02	**NA**	1.20E-02	**NA**	6.84E-03	**NA**	6.47E-03	**NA**
Sulfate	3.11E+01	NA	NA	1.35E+00	**NA**	1.88E+00	**NA**	2.43E+00	**NA**	3.22E+00	**NA**	4.71E+00	**NA**	2.42E+00	**NA**	1.38E+00	**NA**	1.30E+00	**NA**
Thallium	1.42E-04	7.50E-02	NA	6.18E-06	8.25E-05	8.59E-06	1.15E-04	1.11E-05	1.48E-04	1.47E-05	**NA**	2.15E-05	**NA**	1.10E-05	**NA**	6.28E-06	**NA**	5.94E-06	**NA**
Vanadium	6.00E-03	8.31E+00	6.88E-01	2.62E-04	3.15E-05	3.64E-04	4.38E-05	4.69E-04	5.65E-05	6.23E-04	9.05E-04	9.10E-04	1.32E-03	4.68E-04	6.80E-04	2.66E-04	3.87E-04	2.51E-04	3.65E-04
Zinc	1.04E-01	7.59E+01	6.65E+01	4.52E-03	5.95E-05	6.28E-03	8.27E-05	8.10E-03	1.07E-04	1.07E-02	1.62E-04	1.57E-02	2.36E-04	8.07E-03	1.21E-04	4.59E-03	6.90E-05	4.34E-03	6.53E-05
Filtered samples																			
Antimony	2.60E-04	5.90E-01	NA	1.13E-05	1.92E-05	1.57E-05	2.67E-05	2.03E-05	3.44E-05	2.70E-05	**NA**	3.94E-05	**NA**	2.02E-05	**NA**	1.15E-05	**NA**	1.09E-05	**NA**
Arsenic	2.86E-03	1.66E+00	4.03E+01	1.25E-04	7.52E-05	1.73E-04	1.04E-04	2.24E-04	1.35E-04	2.97E-04	7.36E-06	4.34E-04	1.08E-05	2.23E-04	5.53E-06	1.27E-04	3.15E-06	1.20E-04	2.97E-06
Barium	2.75E-02	7.50E+01	4.17E+01	1.20E-03	1.60E-05	1.67E-03	2.22E-05	2.15E-03	2.87E-05	2.85E-03	6.85E-05	4.17E-03	1.00E-04	2.14E-03	5.14E-05	1.22E-03	2.92E-05	1.15E-03	2.77E-05
Cadmium	3.62E-05	1.00E+01	1.47E+00	1.58E-06	1.58E-07	2.20E-06	2.20E-07	2.83E-06	2.83E-07	3.76E-06	2.56E-06	5.50E-06	3.74E-06	2.82E-06	1.92E-06	1.61E-06	1.09E-06	1.52E-06	1.03E-06
Chromium	1.63E-02	9.62E+00	2.78E+00	7.13E-04	7.41E-05	9.90E-04	1.03E-04	1.28E-03	1.33E-04	1.70E-03	6.10E-04	2.48E-03	8.92E-04	1.27E-03	4.58E-04	7.24E-04	2.60E-04	6.85E-04	2.46E-04
Copper	5.11E-04	9.34E+00	1.21E+01	2.23E-05	2.39E-06	3.10E-05	3.32E-06	4.00E-05	4.28E-06	5.31E-05	4.38E-06	7.76E-05	6.41E-06	3.98E-05	3.29E-06	2.27E-05	1.87E-06	2.14E-05	1.77E-06
Iron	1.63E-02	NA	NA	7.11E-04	**NA**	9.88E-04	**NA**	1.27E-03	**NA**	1.69E-03	**NA**	2.47E-03	**NA**	1.27E-03	**NA**	7.22E-04	**NA**	6.83E-04	**NA**
Lead	2.84E-04	8.90E+00	3.26E+00	1.24E-05	1.39E-06	1.72E-05	1.93E-06	2.22E-05	2.50E-06	2.95E-05	9.04E-06	4.31E-05	1.32E-05	2.21E-05	6.79E-06	1.26E-05	3.86E-06	1.19E-05	3.65E-06
Nickel	1.32E-03	3.40E+00	1.15E+01	5.77E-05	1.70E-05	8.01E-05	2.36E-05	1.03E-04	3.04E-05	1.37E-04	1.19E-05	2.01E-04	1.74E-05	1.03E-04	8.95E-06	5.86E-05	5.09E-06	5.54E-05	4.82E-06
Selenium	1.12E-03	2.15E-01	5.79E-01	4.89E-05	2.27E-04	6.79E-05	3.16E-04	8.76E-05	4.07E-04	1.16E-04	2.01E-04	1.70E-04	2.93E-04	8.73E-05	1.51E-04	4.96E-05	8.57E-05	4.69E-05	8.11E-05
Silver	1.80E-03	6.02E+01	2.02E+01	7.85E-05	1.30E-06	1.09E-04	1.81E-06	1.41E-04	2.34E-06	1.87E-04	9.25E-06	2.73E-04	1.35E-05	1.40E-04	6.94E-06	7.98E-05	3.95E-06	7.54E-05	3.73E-06
Strontium	1.23E-01	2.63E+02	NA	5.36E-03	2.04E-05	7.45E-03	2.83E-05	9.61E-03	3.65E-05	1.27E-02	**NA**	1.86E-02	**NA**	9.57E-03	**NA**	5.45E-03	**NA**	5.15E-03	**NA**
Thallium	1.66E-05	7.50E-02	NA	7.24E-07	9.66E-06	1.01E-06	1.34E-05	1.30E-06	1.73E-05	1.72E-06	**NA**	2.52E-06	**NA**	1.29E-06	**NA**	7.36E-07	**NA**	6.96E-07	**NA**
Zinc	2.97E-03	7.59E+01	6.65E+01	1.30E-04	1.71E-06	1.80E-04	2.38E-06	2.33E-04	3.07E-06	3.09E-04	4.64E-06	4.51E-04	6.79E-06	2.32E-04	3.49E-06	1.32E-04	1.98E-06	1.25E-04	1.87E-06

Notes:
Complete reference information is provided below.
Drinking water ingestion rate estimated using Calder and Braun, 1983
Calder and Braun (1983) regression equation format --> L water/kg body weight/day = a(kilograms body weight)^{b} /kg body weight

Group	a	b
all birds	0.059	0.67
all mammals	0.099	0.90

Body weight (kg) for: Elk =	204	assumed average weight of Rocky Mountain Elk (*Cervus canadensis*) cow (Red Orbit, 2012)
Badger =	7.6	median from multiple studies (Messick and Hornocker, 1981; Silva and Downing, 1995)
Little Brown Bat =	0.0103	assumed average weight (*Myotis lucifugus*) from Silva and Downing, 1995
Killdeer =	0.0756	median from multiple studies (Purdue and Haines, 1977; Stegeman, 1955; Jackson and Jackson, 2000; Dunning, 1993)
Swallow =	0.0239	mean adult weight (*Hirundo pyrrhonota*) during breeding (Brown and Brown, 1995)
California Quail =	0.18	median from multiple studies (Robel, 1969; Roseberry and Klimstra, 1971;Guthery et al., 1988)
Western Meadowlark =	0.995	median from multiple studies (Wiens and Rotenberry, 1980; Maher, 1979)
Red-tailed Hawk =	1.179	median from multiple studies (Craighead and Craighead,1956; Steenhof,1983; Springer and Osborne,1983)

	Elk	Badger	Bat	Killdeer	Swallow	California Quail	Western Meadowlark	Red-tailed Hawk
Drinking water ingestion rate (L/kg-bw-d) =	0.058	0.081	0.156	0.138	0.202	0.104	0.059	0.056
Area use factor (unitless) =	0.750	0.750	0.500	0.750	0.750	0.750	0.750	0.750

Acronyms:
EPC = exposure point concentration
HQ = hazard quotient
LOAEL = lowest observed adverse effect level
mg/kg/d = milligrams of chemical per kilogram per day
mg/kg-bw/d = milligrams of chemical per kilogram bodyweight per day
mg/L = milligrams per liter
NA = not available
NOAEL = no observed adverse effect level
TRV = toxicological reference value

References:
Brown and Brown, 1995, "Cliff Swallow (*Hirundo pyrrhonota*)."
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Stegeman, 1955, "Weights of Some Small Birds in Central New York."
Wiens and Rotenberry, 1980, "Patterns of Morphology and Ecology in Grassland and Shrubsteppe Bird Populations."

Table 16. Wildlife Exposure to Radionuclides through Drinking from Seeps in the 100-D and 100-H Riparian Area

Site	Analyte Name	Units	Seeps EPC	Water BCG	Exposure Dose to Wildlife using AUF of 0.75	Wildlife HQ (using AUF of 0.75)	Exposure Dose to Bats using AUF of 0.5	Wildlife HQ (using AUF of 0.5 for bats)
100-D-SEEP	Beryllium-7	pCi/L	1.40E+01	--	1.05E+01	--	6.99E+00	--
100-D-SEEP	Cesium-137	pCi/L	1.18E+00	4.26E+01	8.85E-01	**2.08E-02**	5.90E-01	**1.38E-02**
100-D-SEEP	Cobalt-60	pCi/L	2.32E+00	4.78E+03	1.74E+00	3.64E-04	1.16E+00	2.43E-04
100-D-SEEP	Europium-154	pCi/L	7.43E+00	5.73E+04	5.57E+00	9.73E-05	3.72E+00	6.48E-05
100-D-SEEP	Gross alpha	pCi/L	5.60E+00	--	4.20E+00	--	2.80E+00	--
100-D-SEEP	Gross beta	pCi/L	1.14E+01	--	8.57E+00	--	5.71E+00	--
100-D-SEEP	Strontium-90	pCi/L	5.18E+00	2.78E+02	3.89E+00	**1.40E-02**	2.59E+00	9.32E-03
100-D-SEEP	Tritium	pCi/L	3.65E+03	2.31E+08	2.73E+03	1.18E-05	1.82E+03	7.89E-06
100-D-SEEP	Uranium-234	pCi/L	7.16E-01	6.76E+02	5.37E-01	7.95E-04	3.58E-01	5.30E-04
100-D-SEEP	Uranium-235	pCi/L	2.52E-02	7.36E+02	1.89E-02	2.56E-05	1.26E-02	1.71E-05
100-D-SEEP	Uranium-238	pCi/L	5.90E-01	7.56E+02	4.43E-01	5.85E-04	2.95E-01	3.90E-04
100-D-SEEP	Rads SOF	pCi/L	--	--	--	**3.66E-02**	--	**2.44E-02**
100-H-SEEP	Beryllium-7	pCi/L	1.66E+01	--	1.24E+01	--	8.29E+00	--
100-H-SEEP	Cesium-134	pCi/L	1.20E+00	2.11E+01	9.00E-01	**4.27E-02**	6.00E-01	**2.84E-02**
100-H-SEEP	Cesium-137	pCi/L	1.88E+00	4.26E+01	1.41E+00	**3.31E-02**	9.40E-01	**2.21E-02**
100-H-SEEP	Europium-155	pCi/L	5.88E+00	8.48E+04	4.41E+00	5.20E-05	2.94E+00	3.47E-05
100-H-SEEP	Gross alpha	pCi/L	4.20E+00	--	3.15E+00	--	2.10E+00	--
100-H-SEEP	Gross beta	pCi/L	4.20E+01	--	3.15E+01	--	2.10E+01	--
100-H-SEEP	Strontium-90	pCi/L	1.07E+01	2.78E+02	8.05E+00	**2.89E-02**	5.36E+00	**1.93E-02**
100-H-SEEP	Technetium-99	pCi/L	3.80E+01	6.67E+05	2.85E+01	4.28E-05	1.90E+01	2.85E-05
100-H-SEEP	Tritium	pCi/L	1.53E+03	2.31E+08	1.15E+03	4.96E-06	7.64E+02	3.31E-06
100-H-SEEP	Uranium [radionuclide]	pCi/L	3.23E+00	6.76E+02	2.43E+00	3.59E-03	1.62E+00	2.39E-03
100-H-SEEP	Uranium-234	pCi/L	2.09E+00	6.83E+02	1.56E+00	2.29E-03	1.04E+00	1.53E-03
100-H-SEEP	Uranium-235	pCi/L	1.07E-01	7.36E+02	7.99E-02	1.09E-04	5.33E-02	7.24E-05
100-H-SEEP	Uranium-238	pCi/L	1.71E+00	7.56E+02	1.28E+00	1.70E-03	8.55E-01	1.13E-03
100-H-SEEP	Cadmium	ug/L	3.50E+00		2.63E+00	#DIV/0!	1.75E+00	#DIV/0!
100-H-SEEP	Rads SOF	pCi/L	--	--	--	**1.12E-01**	--	**7.50E-02**

Notes:

AUF = area use factor which was assumed as 0.75 due to inaccessibility of seeps from mid April to mid July for all wildlife except bats for which it was assumed to be 0.5 due to their hibernation in winter in addition to the summer inaccessibility of the seeps.

EPC (Exposure Point Concentrations) were calculated as the 95 percent upper confidence limit (UCL) on the arithmetic mean using the most recent version of EPA's Pro UCL software

BCG (Biota Concentration Guides) represent the lowest value among those calculated for riparian and terrestrial animals
BCGs for cesium-137, europium-154, europium-155, strontium-90, technetium-99, tritium, and uranium isotopes were published in DOE-STD-1153-2002.

BCGs for cesium-134, and cobalt-60 were calcualted according to DOE/EH-0676 using RESRAD BIOTA version 1.5 (ANL, 2009).
HQ = hazard quotient calculated as the exposure dose divided by the water BCG
SOF = sum of fractiosn calculated as the sum of hazard quotients for individual radionuclides

References:

ANL, 2009, RESRAD-Biota computer code, Release 1.5.

DOE/EH-0676, 2004, RESRAD-BIOTA: A Tool for Implementing a Graded Approach to Biota Dose Evaluation. User's Guide, Version 1.

DOE-STD-1153-2002, A Graded Approach for Evaluating Radiation Doses to Aquatic and Terrestrial Biota.

CHPRC ADMINISTRATIVE DOCUMENT PROCESSING AND APPROVAL

DOCUMENT TITLE: Tier 2 Terrestrial Plant and Invertebrate Preliminary Remediation Goals (PRGs) for Nonradionuclides for Use at the Hanford Site	**OWNING ORGANIZATION/FACILITY:** EP&SP
Document Number: ECF-Hanford-11-0158	**Revision/Change Number:** 1

DOCUMENT TYPE *(Check Applicable)* [ ] Plan [X] Report [ ] Study [ ] Description Document [ ] Other

DOCUMENT ACTION *(Check One)* [ ] New [X] Revision [ ] Cancellation

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DOCUMENT CONTROL

Is the document intended to be controlled within the Document Management Control System (DMCS)? [X] Yes [ ] No
Does document contain scientific and technical information intended for public use? [X] Yes [ ] No
Does document contain controlled-use information [ ] Yes [X] No
("yes" requires information clearance review in accordance with PRC-PRO-IRM-184)

DOCUMENT REVISION SUMMARY

NOTE: Provide a brief description or summary of the changes for the document listed.
Changes throughout based on Ecology Comments

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APPROVAL SIGNATURES

Author:		07/31/14	RELEASE / ISSUE
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Responsible Manager:	Acting for A.H. Aly	31 July 2014	
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Other:			
Name: (print)		Date	

A-6005-184 (REV 3)

Date Received for Clearance Process (MM/DD/YYYY)
07/31/2014

INFORMATION CLEARANCE FORM

A. Information Category

- [ ] Abstract
- [ ] Summary
- [ ] Visual Aid
- [ ] Full Paper
- [ ] Journal Article
- [ ] Internet
- [ ] Software
- [x] Report
- [ ] Other _____

B. Document Number ECF-HANFORD-11-0158 Revision 1

C. Title
Tier 2 Terrestrial Plant and Invertebrate Preliminary Remediation Goals (PRGs) for Nonradionuclides for Use at the Hanford Site

D. Proposed Internet Address

E. Required Information (MANDATORY)

1. Is document potentially Classified? (●) No ( ) Yes

Aly, Alaa H Will Nichols Approved via IDMS Data File
Manager Required (Print and Sign)

If Yes _____
ADC Required (Print and Sign) ( ) No ( ) Yes Classified

2. Official Use Only (●) No ( ) Yes Exemption No. ____
3. Export Controlled Information (●) No ( ) Yes OUO Exemption No. 3
4. UCNI (●) No ( ) Yes
5. Applied Technology (●) No ( ) Yes OUO Exemption No. 5
6. Other (Specify) _____

7. Does Information Contain the Following:

a. New or Novel (Patentable) Subject Matter? (●) No ( ) Yes
If "Yes", OUO Exemption No. 3
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8. Is Information requiring submission to OSTI? (●) No ( ) Yes

9. Release Level? (●) Public ( ) Limited

F. Complete for a Journal Article

1. Title of Journal

G. Complete for a Presentation

1. Title for Conference or Meeting _____
2. Group Sponsoring _____
3. Date of Conference _____
4. City/State _____
5. Will Information be Published in Proceedings? (●) No ( ) Yes
6. Will Material be Handed Out? (●) No ( ) Yes

H. Information Owner/Author/Requestor
Carr, Linda Approved via IDMS Data File
(Print and Sign)

Responsible Manager
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Approval by Direct Report to President (Speech/Articles Only) _____
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Other	[ ]			Y / N
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J. Comments

Information Clearance Approval

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By Lee Ann Snyder at 1:38 pm, Jul 31, 2014

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A-6001-401 (REV 5)

ECF-HANFORD-11-0158
Revision 1

Tier 2 Terrestrial Plant and Invertebrate Preliminary Remediation Goals (PRGs) for Nonradionuclides for Use at the Hanford Site

Prepared for the U.S. Department of Energy
Assistant Secretary for Environmental Management

Contractor for the U.S. Department of Energy
under Contract DE-AC06-08RL14788

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Further Dissemination Unlimited

ECF-HANFORD-11-0158
Revision 1

Tier 2 Terrestrial Plant and Invertebrate Preliminary Remediation Goals (PRGs) for Nonradionuclides for Use at the Hanford Site

Document Type: ENV Program/Project: EP & SP

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Date Published
July 2014

Prepared for the U.S. Department of Energy
Assistant Secretary for Environmental Management

Contractor for the U.S. Department of Energy
under Contract DE-AC06-08RL14788

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APPROVED
By Lee Ann Snyder at 1:40 pm, Jul 31, 2014

Release Approval Date

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Environmental Calculation Cover Page

Calculation No.: ECF-Hanford-11-0158 Revision No.: 1

Project: Hanford Site-Wide CERCLA RI/FSs Date:7/24/2014

Calculation Title & Description:

Tier 2 Terrestrial Plant and Invertebrate Preliminary Remediation Goals (PRGs) for Nonradionuclides for Use at the Hanford Site

Revision History:

Revision No.	Description	Date	Affected Pages
1	Changes throughout based on Ecology Comments	06/30/2014	all

Document Review & Approval:

Originator:	Chris McCarthy Name/Position	
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	Approved via email Signature	7/29/14 Date
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Thanks!

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Subject: FW: Emailing: ECF HANFORD-11-0158 Rev 1_072414

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Thanks, Linda

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1 Purpose

This Environmental Calculation documents nonradioactive[1] ecological risk-based values in soil for plants and soil invertebrates in terrestrial environments across the Hanford Site. The ecological risk-based values presented in this document are intended for use in the Remedial Investigation/Feasibility Study (RI/FS) Reports being prepared for decision areas in the River Corridor (the 100 and 300 Areas) and Central Plateau (Inner Area and Outer Area) of the Hanford Site. Ecological risk-based values are concentration goals that protect specified receptors from exposure to contaminants through identified exposure pathways. The values presented in this document are part of a tiered process for the development of ecological risk-based values intended for: 1) screening waste site soil analytical data to identify sites and contaminants which may require further evaluation in the remedial investigations or in the alternatives analysis within the feasibility studies, and 2) consideration as preliminary remediation goals (PRGs) for evaluating remedial alternatives for terrestrial environments within waste sites. A more detailed description of this tiered process is presented in *Tier 1 Risk-Based Soil Concentrations Protective of Ecological Receptors at the Hanford Site* (CHPRC-00784).

The ecological risk-based values presented in this document are only applicable to terrestrial plants and soil invertebrates. In addition to evaluation of upland areas, they may be used for evaluating riparian areas of the River Corridor, but only the terrestrial portions of these areas where the conceptual model indicates exposure of plants and terrestrial invertebrates (e.g., ants, spiders, beetles) to soil, not sediment. Terrestrial portions within the riparian environment have been previously defined in the River Corridor Baseline Risk Assessment (RCBRA) (*River Corridor Baseline Risk Assessment: Evaluation of Current Conditions and Completed Interim Actions Volume 1: Ecological Risk Assessment*, DOE/RL-2007-21).

As described in the National Contingency Plan (NCP), PRGs are developed early in the RI/FS process to facilitate the development of remedial alternatives. PRGs for the Hanford site were initially developed using readily available information. According to the NCP, PRGs should be modified, as necessary, as more information becomes available during the RI/FS (*Risk Assessment Guidance for Superfund, Volume I – Human Health Evaluation Manual, Part B, Development of Risk-Based Preliminary Remediation Goals*, EPA/540/R-92/003). This Environmental Calculation documents the process of modifying PRGs specifically for use at the Hanford Site. The PRGs presented are not intended to be final remediation goals (RGs) but these are components that will be considered in the identification of final RGs.

For the purposes of developing PRGs within this Environmental Calculation document, the following preliminary Remedial Action Objective (RAO) (*Integrated 100 Area Remedial Investigation/Feasibility Study Work Plan*, DOE/RL-2008-46, Table 4-5) is used:

- Prevent unacceptable risk to human health and ecological receptors from exposure to the upper 4.6 m (15 ft) of soil contaminated with nonradioactive constituents at concentrations above the soil contaminant levels for ecological receptors.

This RAO was developed only for the purpose of calculating PRGs, as presented in this Environmental Calculation document, for protection of ecological receptors. While the development of PRGs typically is preceded by the definition of RAOs, it is not the intent of this document to supersede RAOs being developed in other RI/FS efforts.

[1] Tier 2 values for radionuclides are not presented in this document, Existing Biota Concentration Guides (BCGs) for terrestrial plants, presented in CHPRC-00784 as Tier 1 values, are sufficient for informing risk-based decisions at Hanford. BCGs are not available for terrestrial invertebrates but those for other animals are sufficiently protective as indicated in DOE-STD-1153-2002 ("A Graded Approach for Evaluating Radiation Doses to Aquatic and Terrestrial Biota").

Soil PRGs protective of plants and invertebrates at the Hanford Site have previously relied upon the use of values intended for use across North America or across the State of Washington. The use of these broadly applicable values as PRGs for the Hanford Site indicates that soil concentrations in excess of these values remain in place at both remediated and unremediated waste sites. Thus, the need for an understanding of potential risk to plants and invertebrates specific to the terrestrial environment at the Hanford Site was apparent. Initial attempts to develop Hanford Site-specific Tier 2 PRGs for plants and invertebrates in soil were undertaken as part of the RCBRA through the performance of ex-situ biological assays for plants and invertebrates conducted with paired soil chemistry analysis. While this study met the needs of the RCBRA and its established data quality objectives (DQOs), its results are insufficient for use across the entire Hanford Site including the Central Plateau and some waste sites within the 100 and 300 Areas of River Corridor. The concentration range of the soils tested in the development of the RCBRA PRGs is below the range of concentrations found at many of the sites with other ongoing investigations and cleanups. Hence, an additional bioassay sampling effort was undertaken in 2011 with the intent of:

1. producing site-specific plant and soil invertebrate toxicity thresholds;
2. including samples with broad concentration ranges of targeted analytes that overlapped the expected ranges in decision units and waste sites that will be included in RI/FS Documents across the Hanford Site; and
3. producing results that can support the development of Hanford site-wide soil PRGs.

The sampling and analysis plan and DQOs for this additional bioassay sampling effort are fully described in the *Sampling and Analysis Plan for Ex Situ Plant and Invertebrate Bioassays to Evaluate Terrestrial Environments Across the Hanford Site* (DOE/RL-2010-118). The results of this effort to collect samples for establishing Hanford Site-wide soil PRGs for plants and invertebrates, including the design, analysis, and interpretation used to establish those PRGs, are documented by means of this Environmental Calculation document.

2 Methodology

The ecological risk-based values are based on protection of ecological receptors as described previously in Section 1. The following sections describe the steps by which the results of the 2011 field study were used to develop ecological risk-based values for application as screening levels or as PRGs within the context of a tiered process.

2.1 Overview of Tiered Process for Plants and Soil Invertebrate PRGs

A tiered approach was used to develop ecological PRGs for plants and soil invertebrates. The objective of a tiered approach is to refine, if necessary, available generic screening levels (EPA's Ecological Soil Screening Levels [EcoSSLs] and Ecological Soil Indicator Concentrations in WAC 173-340 Table 749-3) with additional literature-derived or site-specific information and more appropriate methods to more realistically represent Hanford site-specific ecological risks. The following section presents a brief overview of the tiers used for the development of PRGs.

2.1.1 Generic Screening Levels and Tier 1 PRGs

Generic Screening Levels and Tier 1 PRGs for the protection of plants and soil invertebrates have previously been documented in CHPRC-00784. Whereas Generic Screening Levels represent initial conservative screening values readily available from published sources, Tier 1 PRGs represent ecological risk-based concentrations that are developed, using information obtained from the literature, to reflect site-specific conditions. Insufficient site-specific information for the effects of nonradioactive

contaminants to specific plants and insects found at Hanford was available to develop a traditional Tier 1 PRG. Hence, generic screening levels were recommended as Tier 1 PRGs. The Tier 1 PRGS are drawn from the following published sources:

- EPA's Ecological Soil Screening Levels http://www.epa.gov/ecotox/ecossl/ (OSWER Directive 9285.7-55)
- Washington Department of Ecology's (Ecology) Ecological Indicator Soil Concentrations for Protection of Terrestrial Plants and Animals (Washington Administrative Code [WAC] 173-340 Table 749-3) http://www.ecy.wa.gov/pubs/wac173340.pdf
- Oak Ridge National Laboratory (ORNL) screening benchmarks:
  - *Toxicological Benchmarks for Screening Contaminants of Potential Concern for Effects on Terrestrial Plants: 1997 Revision* (ES/ER/TM-85/R3). Available at: http://www.esd.ornl.gov/programs/ecorisk/benchmark_reports.html
  - *Toxicological Benchmarks for Contaminants of Potential Concern for Effects on Soil and Litter Invertebrates and Heterotrophic Processes: 1997 Revision* (ES/ER/TM-126/R2). Available at: http://www.esd.ornl.gov/programs/ecorisk/benchmark_reports.html

2.1.2 Tier 2 Ecological Risk-based Values and PRGs

Tier 2 ecological risk-based values are developed to reduce uncertainty and increase confidence in the decisions made based on those values. The development of Tier 2 values corresponds to exposure and effects assessment conducted as part of a baseline ecological risk assessment within EPA's ERAGS (EPA/540-R-97-006), and reflect EPA's *Ecological Risk Assessment and Management Principles for Superfund Sites* (OSWER Directive 9385.7-28P), which encourages the use of site-specific ecological risk data to support cleanup decisions, whenever practicable. The process for development of Tier 2 values is also consistent with Ecology's site-specific terrestrial ecological evaluation (TEE) procedure (WAC 173-340-7493).

As described earlier, Tier 2 ecological risk-based values were initially developed for the Central Plateau and River Corridor. Additional work was conducted, as described below, to establish additional Tier 2 ecological risk based values and select Tier 2 PRGs. This selection process evaluated multiple sets of available ecological risk based values and other values as described later in this document to identify the Tier 2 PRG.

2.2 Development of Tier 2 Risk-Based Values and PRGs for Plants and Soil Invertebrates from the 2011 Field Study

The process for the development of Tier 2 values and PRGs for plants and soil invertebrates is outlined in Figures 2-1 through 2-3. Key components in this process are as follows:

- Sampling Design
- Identification and prioritization of target analytes
- Selection of Samples for Bioassays
- Establishment of the Reference Envelope
- Designation of Samples as Different or Similar to the Reference Envelope
- Data Analysis and Interpretation.

2.2.1 Sampling Design

Data collection locations and sampling methods were selected that resolved the problem statement from the DQO process described in Section 3 (and documented in detail in DOE/RL-2010-118) and provided information regarding sample analytes. A biased (non-statistical), two-phase investigation approach was employed to identify locations with a range of concentrations. Samples from these locations were then used to develop PRGs for use across terrestrial environments at the Hanford Site. This investigative approach employed both field and laboratory components and relied on observational techniques and judgmental data review to determine appropriate locations for focused soil sampling.

Sampling is the application of a procedure to a portion of a particular population for the purpose of drawing a conclusion about the entire population. There are two general approaches to sampling: non-statistical and statistical. Both approaches require the use of professional judgment in planning, performing, and evaluating a sampling activity. Sample error is the chance that the sample results are significantly different from what would be attained had the entire population been tested and is inevitable whenever less than 100% of the population is examined. Non-statistical sampling relies more on judgment (subject to human bias) to address sample error, while statistical sampling uses quantitative measurements and probability theory to address sample error.

For this sampling effort a non-statistical design could result in either over- or underestimates of chemical concentrations in the actual population. For a sampling activity aimed at accuracy and precision in characterizing a population, a statistical design may have been more appropriate. However, here the goal was to obtain a sufficient number of samples within specified target chemical concentration ranges in order to observe biological responses within those ranges. Given the availability of existing post remedy confirmatory sampling data, a biased non-statistical sampling design was considered acceptable. It was preferred because ignoring the existing information would have increased the likelihood of obtaining samples outside the target concentration ranges. Historical information about range of metal concentrations were used to guide the sampling in order to obtain a broad range of concentrations for the dose response relationships.

Final sample locations were adjusted in the field based on conditions encountered.

Field Components

- Target sampling locations were established where it was predicted there would be a concentration range of interest (near and above existing site-specific values and published thresholds) based upon comparison of historic data to available toxicity thresholds.
- The established range was selected to be reflective of concentrations found across the Central Plateau and the River Corridor.
- Environmental conditions, as reflected by geophysical characteristics (e.g., pH, TOC), were selected to be representative of waste sites across the Hanford Site.
- Soil samples were collected from all targeted sampling locations at depths from 0 to 30 cm (0 to12 in.) below ground surface (bgs).
- Samples were collected from within waste sites across the Hanford Site and some additional higher concentration range areas in the River Corridor.
- Samples were collected from field control locations in areas where concentrations were measured at or below background.

- Soils were purposely oversampled knowing that analytical data would preclude the use of some samples (e.g., those that may contain detected levels of confounding parameters such as herbicides and pesticides or detections above background in reference samples).
- Sufficient sample volume was collected at each location for both analytical chemistry and bioassays in one mobilization.

Laboratory Components

- Analytical work was performed in two phases.
- Samples were analyzed for metals, other inorganics, herbicides, insecticides, pH, total organic carbon (TOC), cation exchange capacity, and grain size.
- Additional sample volume was archived at 4degrees Celsius until completion of analysis of chemistry.
- Based on results of analytical chemistry, a subset of 59 locations was selected for bioassays to be completed for Phase 2.
- Plant and invertebrate bioassays were performed using the following protocols:
    - Sandberg bluegrass (*Poa secunda*) 14-day post germination and 28-day growth bioassays using Ecology, 1996 Publication No. 96-324, and "Standard Guide for Conducting Plant Toxicity Tests" (ASTM E 1963-02). Metrics recorded by the lab included germination percentage, shoot length, and shoot weight (dry).
    - Springtail (*Folsomia candida*) 28-day reproduction and survival bioassays using the protocol from Environment Canada (EPS 1/RM/47). Metrics recorded by the lab included percent survival, and average number of progeny in each test vessel.
- Eleven bioassays were analyzed from field control locations (see Section 2.2.3) in addition to those from waste sites.

Species-specific chemical sensitivity data may help guide bioassay design and inform ecological risk assessment. For example, understanding the sensitivity of Sandberg bluegrass relative other Hanford plant species could help identify the most appropriate species for site-specific toxicity testing for development of site-specific risk-based thresholds and in this case support the selection of Sandberg bluegrass. However, these data were not available for species found at Hanford. The selection of Sandberg's bluegrass is consistent with prior bioassays (i.e. those conducted for the River Corridor Baseline Risk Assessment [DOE/RL-2007-21]) and with the ASTM standard for plant toxicity tests. Springtails were selected because they occur at the site, are representative of the terrestrial invertebrate community found at Hanford, and there are well-established bioassay protocols used in Canada and Europe.

2.2.2 Identification and Prioritization of Target Analytes

Existing analytical chemistry data and process history information for waste sites were reviewed to identify potential analytes of interest. From the analytes of interest (Table 2-1), a subset of priority analytes was identified for guiding the overall study design and, in particular, for selecting target sampling locations. Priority analytes (Table 2-2) were those for which the Tier 1 PRGs for plants and soil invertebrates were lower than other Hanford Site–specific PRGs (i.e., those developed for human health or NOECs developed in the RCBRA), and hence might drive remedy decisions.

Analytes where the difference between the Generic Screening Levels and the other PRGs is large were also included as priority analytes, as were those for which a significant number of historic samples exceed the screening levels, indicating a need to improve confidence and reduce uncertainty in the PRGs. Data presented in the analysis are based on:

- Available site soil concentration data from the Outer Area and River Corridor.[2] Ranges of concentrations from available data were used to indicate the need for Hanford Site-specific cleanup goals (Table 2-3).
- Available Hanford Site-specific bioassay data, including test results for the upland and riparian soils in the River Corridor.
- Comparison of Generic Screening Levels protective of plants and invertebrates (CHPRC-00784) relative to other Hanford Site-specific PRGs (wildlife [CHPRC-00784,CHPRC-01311) and human health [ECF-HANFORD-10-0444]), plant and invertebrate no observed effect concentrations (NOECs) from the River Corridor (DOE/RL-2007-21, Draft B), and background[3].

2.2.3 Selection of Samples for Bioassays

A total of eleven field-collected negative control samples were identified from 20 areas targeted. Before selecting samples to be used for the performance of bioassays, analytical chemistry data were reviewed to confirm that the DQOs established in the SAP (DOE/RL-2010-118) were met. The review included exclusion of samples (both Waste Site and Field Control Samples) with detects of pesticides or herbicides.

To avoid confounding interpretation of the bioassays with respect to the potential effects of metals, all samples for bioassays were field screened for cesium-137 as an indicator analyte for radionuclides. If cesium-137 was detected above background, surface soil samples were not collected from that area.

Field Control samples were also compared to background and any samples with detected concentrations above background were eliminated as potential negative controls for conducting the bioassays. In identifying the waste site samples to be used, those with the highest concentrations were selected in order to maximize the number of samples within the target concentration ranges for each of the priority analytes.

Appendix E provides figures showing the location of the waste sites where samples were collected and provides brief histories of the waste sites tom provide some level of understanding of characteristics of the soils in addition to the geochemical information provided in Table 3-1.

2.2.4 Establishment of the Reference Envelope

The Reference Envelope is a method for identifying samples as being toxic or non-toxic (different or similar for the purposes of this environmental calculation). The method was developed for, and is

[2] The sampling and analytical data in soil for these selected analytes were obtained from a data pull from the Hanford Environmental Information System (HEIS). This data pull captured soil sampling and analytical data found in HEIS as of July 21, 2010 for selected Central Plateau Outer Area waste sites and post remediation data from 100 and 300 Areas waste sites collected by the River Corridor Contractor. This data pull was performed on December 15, 2010 and exported to a Microsoft Excel™ workbook for further analysis.

[3] DOE/RL-92-24: arsenic, barium, chromium, cobalt, copper, lead, manganese, mercury, nickel, vanadium, zinc, 90th percentile of the log-normal distribution. DOE/RL-96-17: uranium. ECF-HANFORD-11-0038; antimony, boron, cadmium, molybdenum, thallium, selenium, and silver.

generally applied to, sediment bioassay data. The reference envelope allows for an evaluation of toxicity in test soils relative to that in uncontaminated soils from the same area. This approach provides a basis for quantifying the toxicity attributable to chemical or physical characteristics of soil samples that are beyond the range of characteristics in the reference samples (*Toxicity of sediment cores collected from the Ashtabula River in northeastern Ohio USA to the amphipod Hyalella azteca*, Ingersoll et al. 2009).

Examples of the application of the reference envelope approach to sediment bioassays include *Assessment of metal-contaminated sediments from Southeast Missouri (SEMO) mining district using sediment toxicity tests with amphipods and freshwater mussels* (Besser et al., 2009), Ingersoll et al. (2009), and *Contaminants in stream sediments from seven U.S. metropolitan areas: Data summary of the National Metropolitan Stream Pilot Study* (Moran et al., 2011).

Both laboratory and field-collected negative control samples were considered for establishing reference envelopes for Hanford soils. Multiple criteria were required for bioassay results from a laboratory and field control sample to be considered suitable for reference envelope derivation. These criteria were:

- bioassay results in laboratory or field control samples meet test acceptability criteria as defined in bioassay protocol (Plants: germination>80%; Collembola: survival>70% for field-collected controls and >80% for artificial soil, reproduction>100 juveniles),
- Analyte concentrations in soil from laboratory or field control samples are at or below background, and
- No detections of herbicides (plant toxicity tests) or pesticides and insecticides (collembola tests)
- Radionuclide concentrations (as Cesium-137) were below background

Laboratory control samples consisted of artificial soil comprised of 70 grade silica sand (70 percent by weight), kaolin clay (20 percent), and peat moss (10 percent). Calcium carbonate (0.4 percent of total weight) was added to adjust soil pH to 7.0 + 0.5. Field control samples were collected from within existing Hanford waste sites from areas where pre-screening revealed concentrations were below background and analysis of the samples reconfirmed concentrations were below background.

Laboratory and field control samples that met all of the above criteria were used to define the reference envelope. Reference envelopes were defined separately for each bioassay response measured: germination, shoot height and shoot weight for plants, and survival and reproduction (number of juveniles) for collembola. The reference envelope for each bioassay response was the lower 5th percentile for all laboratory and field control samples that met all of the above criteria (Ingersoll, 2009).

2.2.5 Designation of Samples Relative to the Reference Envelope

Bioassay results from all samples (laboratory and field controls as well as waste site soil samples) were categorized as being different (bioassay response is outside the range defined by the reference envelope) or similar (bioassay response is within the range defined by the reference envelope). This determination was performed separately for each bioassay response in each bioassay sample. Specifically a bioassay response in a sample was identified as different if the response was less than or equal to the 5th percentile of the reference envelope; it was identified as similar if the response was greater than the 5th percentile of the reference envelope.

2.2.6 Data Analysis and Interpretation

Once bioassay responses in each sample were categorized as indicating difference or similarity with respect to the reference envelope, multiple methods for data analysis and interpretation were performed to describe and quantify the associations between chemical, geochemical, and physical measurements in test soils and the observed responses (Figure 2-2).

2.2.6.1 Cumulative Frequency Distributions

Figures displaying the cumulative frequency distribution of each chemical, geochemical, or physical measurement in test soils were developed and plotted (Attachment A, Figures A-1 through A-33). Plots differentiate between: detected and not-detected concentrations; samples with concentrations in the high, medium, and low concentration ranges (as established and defined in the SAP [DOE/RL-2010-118]); and waste site and field control samples. Multiple reference lines (background and multiple generic soil screening levels) were overlaid in each plot. No hypotheses were evaluated with these figures. Rather the purpose was to evaluate if the DQO to capture low, medium and high concentration ranges was achieved. This determination was accomplished by displaying the distribution of each chemical measurements in test soils, and documenting whether the concentration range in the bioassay samples exceeds background and existing screening values, and therefore has potential to expand the existing soil toxicity database (i.e. achieve the stated objective from DQO Step 2 as described in the SAP [DOE/RL-2010-118]).

2.2.6.2 Wilcoxon's Rank-Sum Tests

Two-tailed non-parametric Wilcoxon's Rank-Sum tests were performed for each bioassay response and chemical, geochemical, and physical measurements in test soils to determine whether the distribution of analyte concentrations differed significantly between samples identified as similar to or different from the reference envelope. Laboratory and field control samples were included in this analysis. The null hypothesis for these tests was that there was no difference in the distributions of analyte concentrations between samples designated as similar or different from the reference envelope. Results were considered statistically significant if the p value was less than or equal to 0.05. The p value of 0.05 was selected as it is the most commonly used p value in biological statistics (Zar 1983).

Additional Wilcoxon's Rank-Sum tests were performed for response/analyte combinations where the null hypothesis was rejected ($p \leq 0.05$). Samples with the highest analyte concentrations were excluded and Wilcoxon's Rank-Sum tests were recalculated, to determine whether differences between analyte distributions [between sample designation groups] were driven by the highest observations.. This “leverage evaluation” was performed for any chemical for which the original Wilcoxon Rank-Sum test result of the “different from the reference” group was statistically significantly greater than the “similar to the reference” group. This process of sample removal and recalculation was to be repeated if necessary if visual evaluation of the cumulative frequency distributions for soil analytes indicated the potential for leverage. In no case was there an indication suggesting the process needed to be repeated. Results of the initial Wilcoxon Rank-Sum test for plants and invertebrates are found in Tables 5-5 and 5-10 respectively while results of the leverage tests for plants and invertebrates are found in Tables 5-6 and 5-11 respectively.

2.2.6.3 Spearman’s Rank Correlation

Correlation analysis was used for data exploration. For each individual chemical-measurement combination, if the results of the Wilcoxon’s Rank-Sum tests indicated a significant difference and lower response from those samples designated as different versus those designated as similar to the reference

envelope, then a correlation test was performed[4]. The intent of this analysis was to examine correlations between responses and different constituents in soil. Non-parametric Spearman's Rank Correlation Analyses were performed for each bioassay response and chemical, geochemical, and physical measurements in test soils to determine the degree to which analyte concentrations were associated with bioassay responses. Laboratory and field control samples were included in these analyses. The null hypothesis for these tests was that bioassay responses are not correlated with the chemical, geochemical, or physical constituents measured in test soils (i.e., there is no correlation between the constituent and the biological response observed). Results were considered statistically significant if the p value is less than or equal to 0.05 (Figure 2-2).

Spearman's Rank Correlation Analyses were also performed among all chemical, geochemical, and physical measurements in test soils to determine the degree to which analyte concentrations were associated with each other. Laboratory and field control samples were included in this analysis. The null hypothesis for these tests was that each chemical, geochemical, or physical measurement in test soils is not correlated with any other chemical, geochemical, or physical measurement. Results were considered statistically significant if the p value is less than or equal to 0.05.With a large number of correlation analyses, it could be prudent to reduce the statistical significance level (from alpha=-0.05) to minimize experimental-wise error (e.g., Bonferroni method) and avoid spurious correlations (e.g., Ingersoll et al (2009)). This type of Bonferroni correction could also be applied to other sets of multiple tests (i.e., Wilcoxon, regression). In this case, reduction of the statistical significance would reduce the possibility of relating soil concentration to an effect, in essence it would be a less ecologically-protective approach. Therefore the statistical significance level was not reduced.

2.2.6.4 Regression Analysis

Regression analysis was used for quantification of concentration-response. Following the process outlined in Figure 2-2, for cases where the Wilcoxon's Rank-Sum test yielded a statistical difference followed by a significant correlation from the Spearman’s Rank Correlation, regression analysis was performed to quantify the relationship. Simple linear regression analyses were performed on bioassay responses and chemical, geochemical, and physical measurements in test soils. Bioassay responses were scaled to the median of the laboratory and field control samples that comprised the reference envelope. Scaling responses refers to numerically characterizing the responses as a percentage of the median response from the reference envelope (i.e., each individual bioassay result was divided by the median of the pooled responses from reference envelope samples). Often response is measured relative to laboratory controls only. Here both field and laboratory negative control samples are pooled into a “reference envelope” and responses are then scaled relative to the median of that pooled negative control data set. First the median response (e.g. height) reported for all replicates for samples included within the reference envelope is calculated. Then, for all other samples, a scaled response was established as:

Scaled response = median response of all sample replicates/ reference envelope median response

Establishment of the reference envelope is described in more detail in Section 2.2.4.

Regressions were run using various data transformations (log, natural log, and arcsine [when appropriate]) to normalize data, and thus meet the assumption of normality for linear regression.

[4] Though not needed for the data analysis as described, correlation test results are reported for all constituents regardless of the results of the Wilcoxon’s Rank-Sum tests because the statistical software package employed returns results for the entire data set. Running the test for a subset of constituents would require additional data manipulation and introduce human error, thus the test was run for all constituents.

Chemical, geochemical, and physical measurements in test soils were natural-log transformed[5]. Ultimately, the transformations with the best fit regressions were considered. Regression results were considered statistically significant if $p \leq 0.05$ and the minimum goodness of fit[6] was set at a coefficient of determination (r^2) of less than 0.2.

Development of a definitive concentration-response function for a given chemical generally requires the testing of a dilution series containing a single contaminant. This design is intended to limit the influence of interactions among analytes in soil on bioassay responses. This Hanford-specific bioassay effort was conducted on samples containing a range of concentrations and differing list of detected analytes with each sample. This is not dissimilar from using bulk sediment toxicity tests to develop sediment quality guidelines. The potential for interactions among analytes in test soils is unknown. As a consequence, single chemical dose-response relationships may be either greater or less than that which was observed. Regardless of this uncertainty, the mixtures tested are reflective of mixtures present at the Site and therefore, the bioassay dose-responses are indicative of site-specific conditions.

Regression models for each bioassay response were as follows (ln stands for the natural log):

Plants

Germination: scaled germination = slope (soil conc) + intercept

Shoot Height: scaled height = slope (ln soil conc) + intercept

Shoot Weight: scaled weight = slope (ln soil conc) + intercept

Soil invertebrates

Adult Survival: scaled survival = slope (ln soil conc) + intercept

Reproduction (number of juveniles): scaled reproduction = slope (ln soil conc) + intercept

To facilitate interpretation of the regression analyses, bivariate dose-response scatterplots of bioassay responses versus chemical, geochemical, and physical measurements in test soils were developed for all response/soil measurement combinations. The scatterplots differentiate sample group designation and identify laboratory and field control versus waste site samples. Plant scatterplots are presented in Figures C-1 through C-33 of Attachment B and those for invertebrates are in Figures D-1 through D-33 of Attachment C. The scatterplots display all the biological response for each sample and the concentration measured in that sample. The samples are identified as different from or similar to the reference envelope and identify laboratory and field control versus waste site samples. Though they display the results of the reference envelope, the dose response scatterplots are independent as they demonstrate the relationship between analytical chemistry and biological response across all samples as a whole and easily identify the lack of trends (e.g., changes in response with change in chemistry) or presence thereof.

[5] As with the correlation results, the regression analysis results are reported for all constituents regardless of the results of the Wilcoxon's Rank-Sum tests.

[6] OSWER Directive 9285.7-55 used an r^2 value of 0.2 in establishing regressions sufficient for representing the relationship between soil chemistry and accumulation in biological tissues.

2.3 Identification of Tier 2 PRGs

A step-wise process, using the analyses described in Figure 2-3, was used to identify Tier 2 PRGs for terrestrial plants and soil invertebrates for each of the 17 priority analytes listed in Table 2-1 and for 4 additional analytes beryllium, molybdenum, silver, and tin.

Previously, PRGs for plants and invertebrates were established in the RCBRA as follows:

1) Establishing the most appropriate literature value (between values form Ecology and EPA) as the value with the highest confidence or the lowest value of those with equal confidence;
2) Establishing site specific NOECs;
3) Establishing Site-specific background;
4) Selecting the highest value from these three categories.

Risk-based thresholds established from the analysis of bioassays conducted in 2011 (i.e., NOECs) were considered in the context of the RCBRA PRGs which were based on the following:

1) published values from Washington Department of Ecology [Ecology] and the EPA;
2) values that were previously established for the Hanford site in the RCBRA (DOE/RL-2007-21);
3) values recently published by Ecology based on site specific bioassays (*Ecological Soil Screening Levels for Arsenic and Lead in the Tacoma Smelter Plume Footprint and Hanford Site Old Orchards Ecology*, Publication 11-03-006);
4) values published by ORNL (ES/ER/TM-85/R3 and ES/ER/TM-126/R2); and
5) site-specific background.

The process to identify appropriate site-specific effect concentrations from the 2011 study was established by the DQOs within DOE/RL-2010-118. This included establishing an EC_{20} and an EC_{50} if the dose/response relationship for a chemical was statistically significant. Since no statistically significant relationships were established, no EC_{20} or EC_{50} values could be established. The highest concentrations tested were therefore determined to be unbound[7] NOECs.

For selection of both the original RCBRA PRGs and the Tier 2 PRGs here in this document, the five different sets of values listed above and the 2011 ecological risk-based values were all considered equally. There was no hierarchy in selection of the PRGs. Rather, the highest available value among the listed sources with the least uncertainty and greatest confidence (as assigned by the original authors) was selected as the PRG. The highest value was selected because all site-specific thresholds were no effect concentrations, thus the study with the highest tested range represented the most appropriate value and was not simply selected as a matter of convenience but rather as a consequence of the study designs and results of the subsequent analysis. Below are some example applications of this selection process:

- For the cobalt PRG for plants, NOEC values in waste site soils from both the RCBRA (11.2 mg/kg) and 2011 (12.4 mg/kg) studies were lower than area background concentrations in soil (15.7 mg/kg). The EPA's EcoSSL (13 mg/kg) is between the site-specific values and background. The published literature value from ORNL (20 mg/kg), also selected by WAC, was greater but

[7]Unbound NOEC represents a NOEC with no results beyond it at which significantly adverse effects occur to suggest the concentration at which an effect could start to occur.

was given low confidence in the ORNL report. Thus, the Tier 2 PRG was set equivalent to area background [WAC 173-340-700(6) (d)].

- For the arsenic PRG for plants, three different bioassay studies were all available from the RCBRA, from Ecology, and from the 2011 study. All three produced a no significant effects at the highest concentration tested, and all were considered to have equal uncertainty and equal confidence (high). Thus, the highest value from the Ecology study was assigned as the tier 2 PRG.
- For the selenium PRG for invertebrates, NOEC values in waste site soils from both the RCBRA (0.97 mg/kg) and 2011 (2.02 mg/kg) studies were lower than the EPA's EcoSSL (4.1 mg/kg). The published literature value from ORNL (70 mg/kg), also selected by WAC, was greater but was given low confidence in the ORNL report. Thus, the Tier 2 PRG was set equivalent to the EPA's EcoSSL.

3 Assumptions and Inputs

3.1 Data Quality Objectives

The bioassay study was conducted and all data were collected in accordance with the Data Quality Objectives (DQOs) identified in DOE/RL-2010-118.

3.2 Site-Specific Soil Chemistry Data

Site-specific soil chemistry data for chemical, geochemical, and physical measurements in bioassay sample soils are presented in Table 3-1.

3.3 Results of Plant Bioassays

Results of plant bioassays conducted on laboratory control, field control, and waste site soils are presented in Tables 3-2 and 3-3.

3.4 Results of Soil Invertebrate Bioassays

Results of Collembola bioassays conducted on laboratory control, field control, and waste site soils are presented in Table 3-4.

3.5 Literature and Other Site-Specific Data

Analysis and interpretation of the results of the plant and soil invertebrate bioassays requires multiple analyte-specific and receptor-specific values. These include background soil concentrations for primary analytes in Hanford Site soils, existing published soil screening values (i.e., EPA EcoSSLs, ORNL Soil benchmarks, and MTCA screening values), and Hanford-specific effect thresholds developed though other Hanford Site projects (i.e., plant and soil invertebrate NOECs from RCBRA soil bioassays). These data are presented in Table 3-5.

3.6 Assumptions

For a given biological measure, if the median concentration between all samples inside and outside the reference envelope did not differ (as determined through the Wilcoxon's Rank-Sum test) then the highest overall tested concentration was considered a NOEC for that biological measure.

With all regressions performed, it was assumed that a goodness of fit (r^2) of 0.2 is sufficient to designate a relationship in establishment of a PRG. If adverse effects are observed within bioassay results, they must differ from and represent a greater than 20 percent difference from field control results to be considered statistically significant (Field et al., 2002;; Thursby et al., 1997). Thus, from the significant regressions, it was assumed that the concentration eliciting a 20 percent difference in the biological measure is a lower effect threshold value that could be used as a PRG.
The analysis assumed all biological measures (growth, weight, height, survival, number of juveniles) for a target receptor (i.e. plant or invertebrate) were given equal weight; thus analysis of data assumed that if a significant response was observed for one measurement relative to a chemical, then the establishment of the PRG for that chemical would be based upon that measured response.

The data analysis within this ECF operated under the assumption that the boron concentrations within the waste sites will not prove to have a significant relationship with the biological responses observed in the bioassays conducted in the 2011 study. Boron concentrations of waste site samples were measured with a different method than those for the negative controls. The method used for the analysis of waste site samples (ICP-AES) is known to be inaccurate due to positive iron interference of the signal for boron, which precedes boron in the sequencing of the instrumentation (Sah and Brown, 1997). To address this concern, subsequent analysis of boron by ICP-MS confirmed that boron concentrations in all the samples are relatively low (range: 0.93 – 15.5 mg/kg), with a Hanford Site background value of 3.89 mg/kg (90th percentile) and an unbounded NOEC value of about 29 mg/kg (Table 6-3 below).

4 Software Applications

All supporting calculations were performed on electronic spreadsheets using Microsoft Excel©. Electronic versions of all spreadsheets are provided with calculations included to facilitate comparison with hand calculations and for checking of logical or lookup functions. This approach meets the requirements for "Single Use Software" as described in *CHPRC Environmental Calculation Preparation and Issue*, PRC-PRO-EP-40205. These spreadsheets are listed below in Section 6.

All bivariate statistical analyses described in Sections 2.2.4 and regression analyses described in Section 2.2.5 were generated using SAS V9.2 (Version 9.2; SAS Institute Inc. 2008. SAS/STAT® 9.2 User's Guide) which has been verified and validated for performing these functions as documented in the SAS/STAT® Software Management Plan (CHPRC-01461), Software Test Report (CHPRC-01462), and the Requirements Traceability Matrix (CHPRC-01461).

5 Calculation

5.1 Establishment of Negative Controls

Analytical chemistry results for field collected control samples were compared to Hanford-specific background concentrations to establish negative controls for the performance of bioassays. The comparison was also used to establish the reference envelope. The results of the comparison are presented in Table 5-1.

5.2 Soils

Calculations that pertain strictly to data for soils used in the bioassays consist of cumulative frequency distributions (CFDs) for all analytes and Spearman's Correlation Analyses among analytes in soil. CFDs for analyte soil concentrations are contained in figures A-1 through A-33 in the Microsoft PowerPoint file “Attachment A-Cumulative Frequencies.pptx”. Results of nonparametric Spearman's correlation analyses are contained in the Microsoft Word file "Attachment B - Nonparametric Spearman Correlations between analytes.Docx".

5.3 Plants

Calculations representing the analysis of site-specific plant bioassays and derivation of Hanford-specific PRGs for plants include:

- Summary statistics of bioassay responses, and the derivation and application of reference envelopes for germination, height, and weight (Tables 5-2, 5-3, and 5-4, respectively)
- Summary statistics, results of Wilcoxon's Rank Sum test comparisons of analyte concentrations in soils identified as different or similar based on reference envelopes, and nonparametric Spearman's Rank Correlations between bioassay responses and analyte concentrations in bioassay soils (Table 5-5)
- Summary statistics, results of Wilcoxon's Rank Sum test comparisons of analyte concentrations in soils identified as different or similar based on reference envelopes, and nonparametric Spearman's Rank Correlations between bioassay responses and analyte concentrations in bioassay soils after removing maximum values (Table 5-6)
- Summary of regression analyses for bioassay responses and analyte concentrations in bioassay soils (Table 5-7)
- Plant dose response scatterplots are contained in Figures C-1 through C-33 in Microsoft PowerPoint file “Attachment C - Plant Dose-response Scatterplots.pptx”
- Summary of Site-Specific Plant Toxicity Thresholds for the Hanford Site (Table 5-8)

5.4 Invertebrates

Calculations representing the analysis of site-specific soil invertebrate bioassays and derivation of Hanford-specific PRGs for terrestrial invertebrates include:

- Summary statistics of bioassay responses, and the derivation and application of reference envelopes for adult survival and reproduction (Tables 5-9)
- Summary statistics, results of Wilcoxon's Rank Sum test comparisons of analyte concentrations in soils identified as different or similar based on reference envelopes, and nonparametric Spearman's Rank Correlations between bioassay responses and analyte concentrations in bioassay soils (Table 5-10)
- Summary statistics, results of Wilcoxon's Rank Sum test comparisons of analyte concentrations in soils identified as different or similar based on reference envelopes, and nonparametric Spearman's Rank Correlations between bioassay responses and analyte concentrations in bioassay soils after removing maximum values (Table 5-11)

- Summary of regression analyses for bioassay responses and analyte concentrations in bioassay soils (Table 5-12)
- Invertebrate dose response scatterplots are contained in Figures D-1 through D-33 in Microsoft PowerPoint file "Attachment D -Invertebrate Dose-response Scatterplots.pptx"
- Summary of Site-Specific Invertebrate Toxicity Thresholds for the Hanford Site (Table 5-13)

6 Results/Conclusions

This section describes all of the results of the effort to develop PRGs for plants and invertebrates from evaluation of the field work, performance of chemical and biological analysis through data evaluation and interpretation.

6.1 Achieving the DQOs established in the SAP

6.1.1 DQO Step 2—Goals of the Study

DQO Step 2 defines the Goals of the Study which can clearly be evaluated. Two key goals were to identify a broad range of samples and to hit target levels for each priority analyte. Table 6-1 presents the identification of bioassay sample locations in the Central Plateau that represent a range of soil analytical chemistry and geochemistry present throughout the Hanford Site. Table 6-2 presents the results of achieving the targeted analyte-specific low, medium, and high concentration ranges.

6.1.2 DQO Step 4—Define the Boundaries of the Study

The boundaries established were concentration ranges, and vertical and horizontal extent. As shown in Table 6-2, the high range was not achieved for most of the analytes. Boron, copper, lead, and zinc had the most even distribution and hit the low medium and high targets most efficiently. The most success was in hitting the targets for the medium priority analytes followed by the high priority analytes. Only the lowest range was achievable for the low priority analytes. While an ideal number of samples were not obtained for each target range for each analyte, the study was able to draw conclusions from what data were available. As noted in Section 6.3, conclusions regarding the lack of significant relationship between measured concentrations in soil and observed biological response were reached and can be applied up to the concentrations measured.

Samples were collected from within the horizontal and vertical boundaries established in the SAP.

6.1.3 DQO Step 5-Develop the Analytical Approach

The analytical approach and bioassay sample selection constituting Phase 1 of this two part analysis has been previously described and results presented (Tables 6-1 and 6-2). The second phase of the bioassay and data analysis involved several different components as discussed below:

Samples were to have minimal to no interfering factors such as PSBs, PAHs, pesticides, and herbicides and a sufficient number of samples were collected that met this requirement.

Samples were ideally to have only one analyte at a time in the high or medium range of its target concentration. As shown in Table 6-1, this was not always practical and thus best professional judgment was used to select samples and minimize the number of analytes within their high range at the same location as acknowledged in the SAP.

The bioassays described in the SAP were performed according to the protocols listed.

The following analyses were performed as described in DQO Step 5:

- Frequency distribution plots of chemistry data
- Combining chemical and biological data by sample location
- Plotting dose response curves
- Performing regression analysis (transformed and untransformed linear regressions)
- Designating samples as similar or different form the reference envelope as defined by a 20% difference from the reference envelope
- Hypothesis testing (Wilcoxon's Rank-Sum test)
- Correlative analysis (Spearman's Rank Correlation test)
- Establishing NOECs as the highest concentrations with no significant effects.

Analysis discussed in the DQO that were not performed include establishment of LOECs, principal component analysis, and other multivariate analysis. A determination as to the cause of adverse effects was not attempted.

6.1.4 DQO Step 6—Specific Performance Criteria

The analytical data met the PQLS established in the SAP.

Ten of eleven field collected samples were identified with concentrations below background thereby meeting the requirements of a negative control as defined in the bioassay protocols.

The bioassay specific acceptability criteria (regarding the biological measures within negative controls) were met (50 percent germination and 80 percent survival for plants in control soil; 70 percent survival of springtails in control soil, 80 percent survival of springtails in artificial soil, and average reproduction of ≥ 100 juveniles for springtails in control soil).

Significance levels defined in the SAP ($p \leq 0.05$) were employed within the hypothesis testing and regression analysis performed.

A deviation from the DQO was the use of the reference envelope. The DQO states that observed adverse effects within bioassays were considered significant if they differ statistically from, and represented a greater than 20 percent difference from, field control results. Instead, responses were designated as different from the reference envelope if they were below the 5th percentile of the reference envelope response. This is described in more detail in Section 2 and presented in Tables 5-2 through 5-4 and Table 5-9.

NOECs were defined as described in DQO Step 6 of the SAP; however, LOECs were not established as the highest concentrations measured produced no significant effect in most cases.

6.2 Statistical Analysis

6.2.1 Wilcoxon's Rank Sum Tests

Wilcoxon's Rank Sum tests indicate whether or not there is a significant difference in the concentration of an analyte within the reference envelope samples and those with similar response versus those samples that demonstrated a response that differed significantly from the reference envelope. Separate statistical analyses were performed relative to each biological measure with the following results (Table 5-5):

Plant Germination: Four COPCs and 7 other geophysical parameters showed no significant difference in the chemistry (Table 5-5). Fourteen COPCs and 4 other parameters showed significantly greater concentrations in the group of samples designated as “similar to the reference”. This is not a response that would be expected if these chemicals were responsible for eliciting a negative effect on the plant community. Mercury, selenium, vanadium and phosphorus showed higher concentrations with the samples designated as “different from reference” envelope samples.

A second run of this statistical test was performed for a subset of analytes after removing the maximum concentration from the data set. The results shown in Table 5-6 are as follows:

> Four of 11 COPCs and 4 of 7 other parameters showed no significant difference in the chemistry. Five chemicals and 2 parameters showed significantly greater concentrations samples designated as similar to the reference envelope. Mercury, selenium, and TOC showed higher concentrations with the samples designated as different.

Plant Height: Fourteen COPCs and 9 other geophysical parameters showed no significant difference in the chemistry (Table 5-5). Nitrogen and calcium showed significantly greater concentrations in the group of samples that includes the samples designated as “similar to the reference envelope”. Barium, mercury, zinc, boron, copper, molybdenum, silver, and sodium showed higher concentrations with the samples designated as different.

The results of the second run on a subset of parameters with their maximums removed are shown in Table 5-6 are as follows:

> Five of 11 COPCs and 4 of 7 other parameters showed no significant difference in the chemistry. Nitrogen showed significantly greater concentrations in samples designated as similar to the reference envelope. Mercury, zinc, boron, copper, molybdenum, silver, calcium, and sodium showed higher concentrations with the samples designated as different.

Plant Weight: Four COPCs and 6 other geophysical parameters showed no significant difference in the chemistry (Table 5-5). Five COPCs and three other parameters showed significantly greater concentrations in samples designated as similar to the reference envelope. Barium, mercury, thallium, zinc, arsenic, boron, copper, molybdenum, silver, calcium, nitrogen, and sodium showed higher concentrations with the samples designated as different.

The results of the second run on a subset of parameters with their maximums removed are shown in Table 5-6 are as follows:

> Five of 11 COPCs and 4 of 7 other parameters showed no significant difference in the chemistry. Nitrogen showed significantly greater concentrations in samples designated as similar to reference envelope. Barium, mercury, zinc, boron, copper, molybdenum, calcium, and sodium showed higher concentrations with the samples designated as different.

Invertebrate Survival: Eleven COPCs and 9 other geophysical parameters showed no significant difference in the chemistry (Table 5-10). Zinc, vanadium, tin, and percent sand showed significantly greater concentrations in samples designated as similar to the reference envelope. Seven COPCs and two other parameters showed higher concentrations with the samples designated as different.

The results of the second run on a subset of parameters with their maxes removed are shown in Table 5-11as follows:

Chromium and molybdenum showed no significant difference in the concentration between groups. Five COPCs (barium, copper, lead, arsenic, and nickel), percent silt/clay and potassium showed higher concentrations with the samples designated as different.

Invertebrate Reproduction: Invertebrate Reproduction results are found in Table 5-10. No significant differences were observed between concentrations of samples designated as similar to the reference envelope and those designated as different for any of the chemical and non-chemical parameters analyzed.

6.2.2 Spearman's Rank Correlation

The Spearman's Rank Correlation analysis conducted on the 2011 data provides an indication of whether there is a significant correlation between soil concentrations measured and the biological responses observed. Separate statistical analyses were performed relative to each biological measure with the following results (Tables 5-5, 5-6, 5-10 and 5-11):

Plant Germination: For the 3 COPCs (Mercury, selenium, vanadium) and phosphorous that demonstrated significantly higher concentrations in samples designated as different, only vanadium concentrations showed a positive correlation with germination (Table 5-5). Three COPCs and 9 other analytes showed no significant correlation, while 16 chemicals and 3 other analytes showed a reverse relationship whereby the correlation is associated with greater germination with greater concentrations. Of these reverse relationships, only magnesium and potassium were associated with significant differences in concentration as noted in the Wilcoxon's Rank Sum tests, which could signal that deficiencies in these essential nutrients limits plant germination at the site.

Results of the second run of this statistical test are in Table 5-6. For mercury, selenium, and TOC that demonstrated significantly higher concentrations in samples designated as different, no significant correlation was observed. No correlation was found with 5 of the 7 non chemical analytes. Eight COPCs and 2 other analytes showed a reverse relationship whereby the correlation is associated with greater germination with greater concentrations. As with the first run including the maximums, only magnesium and potassium were associated with significant differences which could signal that deficiencies in these essential nutrients could limit plant germination at the site.

Plant Height: For the 7 COPCs (Barium, mercury, zinc, boron, copper, molybdenum, silver) and sodium that demonstrated significantly higher concentrations in samples designated as different, concentrations of all parameters showed a positive correlation with height (Table 5-5). Six COPCs and 4 other analytes showed no significant correlation, while 5 COPCs and 4 other analytes showed a reverse relationship whereby the correlation is associated with greater plant height with greater concentrations. Of these reverse relationships, only nitrogen was associated with a significant difference in concentration as noted in the Wilcoxon's Rank Sum tests, which could signal a deficiency in nitrogen limits plant height at the site.

Results of the second run of this statistical test are in Table 5-6. All six COPCs (Mercury, zinc, boron, copper, molybdenum, silver), calcium, and sodium that demonstrated significantly higher concentrations in samples designated as different, showed significant correlation. No correlation was found with arsenic, selenium, and 3 of the 7 other parameters. Vanadium, TOC, and nitrogen showed a reverse relationship whereby the correlation is associated with greater plant height with greater concentrations. As with the first run including the maximums, only the reverse relationship of nitrogen was associated with a significant difference which could signal a deficiency that limits plant height at the site.

Plant Weight: For the 9 COPCs (Barium, mercury, thallium, zinc, arsenic, boron, copper, molybdenum, silver) and calcium and sodium that demonstrated significantly higher concentrations in samples

designated as different, concentrations of all parameters showed a positive correlation with weight (Table 5-5). Four COPCs and 6 other analytes showed no significant correlation, while 5 chemicals and 3 other analytes showed a reverse relationship whereby the correlation is associated with greater plant weight with greater concentrations. Of these reverse relationships, only nitrogen was associated with significant differences in concentration as noted in the Wilcoxon's Rank Sum tests, which could signal that deficiencies in nitrogen limits plant weight at the site.

Results of the second run of this statistical test are in Table 5-6. All six COPCs (Barium, mercury, zinc, boron, copper, molybdenum), calcium, and sodium that demonstrated significantly higher concentrations in samples designated as different, showed significant correlation. No correlation was found with selenium and 3 of the 7 other parameters. Vanadium, TOC, and nitrogen showed a reverse relationship whereby the correlation is associated with greater plant weight with greater concentrations. As with the first run including the maximums, only nitrogen was associated with a significant difference which could signal that a deficiency in nitrogen limits plant weight at the site.

Invertebrate Survival: For the 3 COPCs and phosphorous that demonstrated significantly higher concentrations in samples designated as different, only vanadium concentrations showed a positive correlation with survival (Table 5-10). Eight COPCs and 6 other analytes showed no significant correlation, while percent sand showed a reverse relationship whereby the correlation is associated with greater survival with greater concentrations. Results of the second run of this statistical test are in Table 5-11. Significant correlation was observed in all cases.

Invertebrate Reproduction: Since there is no difference in concentrations of samples designated as similar to the reference envelop and those designated as different, the maximum concentrations tested represent a NOEC for this biological measurement. Correlation analysis was performed anyway because of the automated nature of the Software used (Tables 5-10 and 5-11). Results showed a significant correlation with selenium, calcium, nitrogen, and sodium. A reverse relationship was determined for silver.

6.2.3 Regression Analysis

The results of the regression analysis are presented below with separate discussions for each measurement endpoint (e.g., weight, or survival).

Plant Germination: No significant regression with germination and soil concentration was observed for 11 of 21 COPCs and 7 of 12 other parameters measured (Table 5-7). Of the regressions determined to be significant ($p<0.05$), the goodness of fit (r^2) was less than 0.1 for 8 COPCs and 4 other parameters, suggesting a poor goodness of fit. The highest r^2 observed was 0.334 for vanadium, and only three regressions had an r^2 above 0.2, the threshold used in the establishment of EcoSSLs. Slopes of the statistically significant regressions were mostly biologically insignificant (orders of magnitude below 1), indicating there is little difference in biological response from low and high concentrations. The overall interpretation of the regressions suggests that differences in biological response are not due to the parameters measured.

The regressions were used to determine the concentration at which a 20 percent difference from the reference envelope could be expected, constituting an EC20. Vanadium was the only significant regression with an acceptable goodness of fit for which an EC20 was determined. The vanadium EC20 is 90.74 mg/kg.

Plant Height: Regressions with height and soil concentrations did not differ substantially from those for germination in that ultimately, differences in biological response are not likely due to the parameters measured (Table 5-7). No significant regression with height and soil concentration was obtained for 7 of

21 COPCs and 2 of 12 other parameters measured. Of the regressions determined to be statistically significant ($p<0.05$), the goodness of fit (r^2) was less than 0.1 for 12 COPCs and 4 other parameters, suggesting a poor goodness of fit. The highest r^2 observed was 0.386 for nitrogen, and only six regressions had an r^2 above 0.2, the threshold used in the establishment of EcoSSLs. As with germination regressions, slopes of the statistically significant regressions were similar to those for weight and mostly biologically insignificant, though higher values were observed than those for germination.

The regressions were used to determine the concentration at which a 20 percent difference from the reference envelope could be expected, constituting an EC20. Mercury was the only statistically significant regression with an acceptable goodness of fit for which an EC20 was determined. The mercury EC20 is 0.13 mg/kg.

Plant Weight: Regressions with weight and soil concentrations did not differ substantially from those for germination in that ultimately, differences in biological response are not likely due to the parameters measured (Table 5-7). No statistically significant regression with height and soil concentration was obtained for 8 of 21 COPCs and 2 of 12 other parameters measured. Of the regressions determined to be statistically significant ($p<0.05$), the goodness of fit (r^2) was less than 0.1 for 12 COPCs and 6 other parameters, suggesting a poor goodness of fit. The highest r^2 observed was 0.19 for nitrogen, and none of the regressions had an r^2 above 0.2, the threshold used in the establishment of EcoSSLs. Slopes of the statistically significant regressions were similar to those for height and mostly biologically insignificant, though higher values were observed than with germination.

The regressions were used to determine the concentration at which a 20 percent difference from the reference envelope could be expected, constituting an EC20. There was no statistical significant regression for chemicals with an acceptable goodness of fit for which an EC20 could be determined.

Invertebrate Survival and Reproduction: No statistically significant regression with survival and soil concentration was obtained for 7 of 21 COPCs and 6 of 12 other parameters measured (Table 5-12). Of the regressions determined to be statistically significant ($p<0.05$), the goodness of fit (r^2) was less than 0.1 for all regressions, suggesting a poor goodness of fit. The highest r^2 observed was 0.09 for molybdenum. Slopes of the statistically significant regressions were mostly biologically insignificant (orders of magnitude below 1), indicating there is little difference in biological response from low and high concentrations. With reproduction regressions, only 4 were significant, and the goodness of fit was poor at <0.02. The overall interpretation of the regressions suggests that differences in biological response are not due to the parameters measured.

There was no statistically significant regression for chemicals with an acceptable goodness of fit for which an EC20 could be determined for invertebrate survival or reproduction (Table 5-12).

6.3 NOECs from the 2011 Study

NOECs were calculated for 14 of 21 chemicals for plants and 15 of 21 chemicals for invertebrates. These NOECs are found in Tables 5-8 for plants and 5-13 for invertebrates.

6.4 Recommended PRGs

Final recommended Hanford Site-specific PRGs for plants and soil invertebrates are presented in Table 6-3. These values represent the integration of NOECs from the 2011 study, NOECs from the RCBRA bioassays, EcoSSLs, arsenic and lead SSLs from Ecology (Ecology Publication 11-03-006), uranium SSLs from Sheppard et al. (2005), soil ecological indicator concentrations from Ecology (WAC 340-173 Table 749-3), values published by ORNL (ES/ER/TM-85/R3 and ES/ER/TM-126/R2) and site-specific

background. Multiple values were evaluated for each analyte/receptor combination and the highest value with the lowest uncertainty/highest confidence (as described by the original authors) was identified as the final recommended PRG. Details of the selection of the final PRGs are presented in Tables 5-8 and 5-13 for plants and soil invertebrates respectively.

Several of the final recommended PRGs are unbound NOECs (antimony, arsenic, barium [invertebrates], boron, cadmium [plants], chromium, copper [invertebrates], lead [plants], manganese, mercury [invertebrates], molybdenum [invertebrates], selenium [plants], silver [invertebrates], thallium [invertebrates], tin, vanadium [invertebrates], zinc [invertebrates]). There is uncertainty associated with these values because the value provides no information regarding at what concentration effects will, occur. Presumably effects will occur above the NOEC but whether effects occur at concentrations slightly above or at magnitudes of order above is unknown. Having a distribution of observations across a range of concentrations can help to ascertain where effects will begin to occur (e.g., a LOEC). Such a distribution was the intent of the sampling design described in Section 2. However, the results showed no clear pattern of response with increasing concentration (e.g., no statistically significant difference) but were instead indicative of what appears to be natural variation. Therefore, the highest concentrations tested are NOECs because no effects were observed at or below these concentrations. Given the uncertainty with these numbers, some caution should be used in the risk decisions made where concentrations exceed these NOECs.

6.4.1 Antimony

The recommended PRG for antimony for both plants and invertebrates of 842 mg/kg represents a NOEC that resulted from the 2011 study. Previous site-specific bioassay work in the River Corridor resulted in NOECs for plants and invertebrates of 0.685 mg/kg and 6.1 mg/kg respectively. These are much lower because the sample locations for the study did not have any areas with concentrations as high as those selected for the 2011 study. The plant PRG recommendation in the RCBRA was a value of 5 mg/kg, derived from the WAC ecological soil indicator concentration which was based on the ORNL recommendation. The RCBRA invertebrate PRG of 78 mg/kg was based on the EcoSSL. The 2011 study showed no significant regression between responses measured in either the plant or the invertebrate bioassays with antimony concentrations in soil. Thus, the highest concentration tested of 842 mg/kg was considered a NOEC and is recommended as the PRG for both plants and invertebrates.

6.4.2 Arsenic

The recommended PRG for arsenic for both plants and invertebrates of 128 mg/kg represents a NOEC that resulted from a study conducted by Ecology (Ecology Publication-11-03-006) on samples from the Old Orchards area. The upper end of the concentration range from the Ecology study of 128 mg/kg exceeds that of 60 mg/kg in the study presented in the RCBRA (DOE/RL-2007-21, Volume 1) and the 2011 field study on the Central Plateau with a maximum concentration tested of 14.8 mg/kg. Since no observed significant effects were attributable to arsenic in any of the site-specific studies (RCBRA, Ecology, or 2011 study) the maximum tested concentration of 128 mg/kg published as a NOEC in Ecology Publication-11-03-006 is recommended as the PRG for both plants and invertebrates.

6.4.3 Barium

For plants the value of 500 mg/kg represents the WAC ecological indicator concentration as recommendation in ORNL. The Hanford background is 132 mg/kg. There is no EcoSSL for plants for barium. No threshold was recommended from the current study. Although a weak correlation was observed between effects and concentration, subsequent regression analysis showed significant relationships with low r^2 values (<0.035). This means that 3.5 percent or less of the variation in observed effects is explained by barium concentrations in soil. The site specific NOEC in the RCBRA was 314

mg/kg, the highest concentration tested. Though the RCBRA study established that no relationship exists between concentrations of barium in soil and biological response, the concentration range tested did not reach a range of interest because the highest tested concentration was below both background and the value recommended by ORNL. Since the RCBRA showed no significant relationship between barium concentrations in soil and biological response in bioassays, the value of 500 mg/kg from WAC is recommended as the PRG for plants.

For invertebrates the value of 358 mg/kg represents the NOEC presented in the RCBRA. There are no values published in WAC or by ORNL. The EcoSSL for invertebrates for barium is 330 mg/kg. No threshold was recommended from the current study. Although a weak correlation was observed between effects and concentration, subsequent regression analysis showed significant relationships with low r^2 values (<0.045). This means that 4.5 percent or less of the variation in observed effects is explained by barium concentrations in soil. The site specific NOEC in the RCBRA was 358 mg/kg, the highest concentration tested. The Hanford background is 132 mg/kg. Since the RCBRA showed no significant relationship between barium concentrations in soil and biological response in bioassays at a concentration higher than the EcoSSL, the RCBRA NOEC value of 358 mg/kg is recommended as the PRG for invertebrates.

6.4.4 Beryllium

The recommended PRG for beryllium for plants of 10 mg/kg represents the ORNL (ES/ER/TM-85/R3) value. The RCBRA did not recommend a PRG for beryllium protective of plants. The Hanford background is 1.51 mg/kg. There is no EcoSSL for beryllium for plants. The WAC ecological indicator concentration is 10 mg/kg which is based upon the ORNL plant benchmark (identified as being of low confidence by the ORNL authors). Though the 2011 site-specific study established that no relationship exists between concentrations of beryllium in soil and biological response, the concentration range tested did not reach a range of interest because the highest tested concentration was below both background and the value recommended by ORNL. Therefore, without sufficient site-specific data to enhance the PRG selection, the recommendation from ORNL of 10 mg/kg is the recommended PRG for plants.

The recommended PRG for beryllium for invertebrates of 40 mg/kg represents the EcoSSL for invertebrates. In this case, there is neither a recommendation from ORNL, nor a value in WAC. With the EcoSSL having moderate to high confidence and being above background, it is preferred as a PRG over the background value. As with the bioassay study of plants, the 2011 study was unable to reach a range of interest relative to thresholds for invertebrates, thus the EcoSSL of 40 mg/kg is recommended as the invertebrate PRG.

6.4.5 Boron

For plants, the recommended PRG of 29.6 mg/kg represents the NOEC presented in the RCBRA. The Hanford background is 3.89 mg/kg. The WAC ecological indicator concentration is 10 mg/kg which is based upon the ORNL plant benchmark (identified as being of low confidence by the ORNL authors). There is no EcoSSL for plants for boron. The site specific NOEC in the RCBRA was 29.6 mg/kg, the highest concentration tested. The concentrations for samples in the 2011study were lower, ranging from 0.93 mg/kg to15.5 mg/kg in the waste site samples. The scatter plots in Appendix C would be more indicative of boron deficiency than toxicity and this was supported by the statistical tests as shown in tables 5-5, 5-6, and 5-7.. Since the RCBRA showed no significant relationship between boron concentrations in soil and biological response in bioassays at a concentration higher than the WAC value and background, the RCBRA NOEC of 29.6 mg/kg is recommended as the PRG for plants.

For invertebrates, the recommended PRG of 28.6 mg/kg represents a NOEC presented in the RCBRA. The Hanford background is 3.89 mg/kg. There are no published values in WAC or by ORNL. There is no

EcoSSL for invertebrates for boron. The site specific NOEC in the RCBRA was 28.6 mg/kg, the highest concentration tested. The concentrations for samples in the 2011study were lower, ranging from 0.93 mg/kg to15.5 mg/kg in the waste site samples however, no threshold was recommended from the current study. Although a weak correlation was observed between survival (but not reproduction) and concentration, subsequent regression analysis showed significant relationships with low r^2 values (0.045). This means that 4.5 percent of the variation in observed effects is explained by boron concentrations in soil. Since the RCBRA specific study showed no significant relationship between boron concentrations in soil and biological response at a concentration higher than background, the highest concentration tested of 28.6 mg/kg is recommended as the PRG for invertebrates.

6.4.6 Cadmium

For plants, the recommended PRG of 9.84 mg/kg represents a NOEC that resulted from the 2011 study in the Central Plateau. Previous site-specific bioassay work in the River Corridor resulted in NOECs for plants of 2.7 mg/kg . The PRG recommended in the RCBRA are a value of 4 mg/kg. . This is a WAC ecological soil indicator concentrations based on ORNL values of moderate to high confidence and is equally weighted with the EcoSSL. Thus, the WAC value (the lower of values of equal confidence) was selected in the RCBRA over the EcoSSLs of 32. The 2011 study showed no significant relationship between cadmium concentrations in soil and biological response in plant bioassays. Thus, the highest concentration tested of 9.84 mg/kg was considered a NOEC and is recommended as the PRG plants.

For invertebrates, soil concentrations at Hanford were not obtained at a level high enough to reach the 20 mg/kg concentration recommend as a screening level in ES/ER/TM-126/R2 and adopted in WAC. Though the EcoSSL for invertebrates is 140 mg/kg, the approach within the RCBRA was to select the lower of the EcoSSL and WAC soil indicator when confidence was equal. The moderate confidence assigned to this value of 20 mg/kg based on 18 different studies, was similar to that of the EcoSSLs which were assumed to have a moderate to high confidence. To remain consistent with the RCBRA, the recommended PRG of 20 mg/kg for terrestrial invertebrates remains.

6.4.7 Chromium

The recommended PRG for chromium for plants of 259 mg/kg represents a NOEC that resulted from the 2011 study conducted in the Central Plateau. There is no EcoSSL for chromium for plants. The Hanford background is 18.5 mg/kg. The value for WAC is 42 mg/kg based upon the state wide background and the value for ORNL is a low confidence value of 1.0 mg/kg. The previous site-specific bioassay work presented in the RCBRA resulted in a plant NOEC of 39.3 mg/kg. Since the RCBRA bioassay study was unable to achieve a range of interest, the RCBRA recommended the statewide background value. The 2011 study was able to collect samples at concentrations higher than those measured in the RCBRA bioassay work and statewide background resulting in a higher no-effect concentration. Both the RCBRA and 2011 studies have shown that there is no significant relationship between chromium and biological response in the plant bioassays conducted. Thus, the highest concentration tested from the 2011 study of 259 mg/kg is recommended as the PRG for plants.

The recommended PRG for chromium for invertebrates of 149 mg/kg represents the NOEC presented in the RCBRA. There is no EcoSSL for chromium for invertebrates. The Hanford background is 18.5 mg/kg. The value for WAC is 42 mg/kg based upon the state wide background and the value for ORNL is a low confidence value of 0.4 mg/kg. The previous site-specific bioassay work presented in the RCBRA resulted in a plant NOEC of 149 mg/kg, which was also the recommended RCBRA PRG. The 2011 study recommends a no effect concentration up to 44.8 mg/kg but analysis is not fully complete. Both the RCBRA and 2011 studies have shown that there is no significant relationship between chromium and

biological response in the invertebrate bioassays conducted. Thus, the highest concentration tested from the RCBRA of 149 mg/kg is recommended as the PRG for invertebrates.

6.4.8 Cobalt

The recommended PRG for cobalt for both plants and invertebrates of 15.7 mg/kg represents the background concentration for Hanford (DOE/RL-92-24, *Hanford Site Background: Part 1, Soil Background for Nonradioactive Analytes, Rev. 4, 2 vols.*). For plants, the previously recommended PRG from the RCBRA was 13 mg/kg from the EcoSSL and no PRG was recommended for invertebrates. Site-specific bioassay work presented in the RCBRA and in the 2011 study on the Central Plateau have both shown no significant relationship with cobalt and bioassay response. The studies have resulted in plant NOECs for the RCBRA and 2011 study of 11.2 mg/kg and 12.4 mg/kg respectively while the invertebrate NOECs for the RCBRA and 2011 study of 12.2 mg/kg and 12.4 mg/kg respectively. All of these values are below the range of interest and the Hanford background thus the background concentration of 15.7 is recommended as the PRG for both plants and invertebrates.

6.4.9 Copper

The recommended PRG for copper for plants of 70 mg/kg represents the EPA's EcoSSL for plants. The upper end of the concentration range from the Ecology study of 58 mg/kg exceeded that of 53.6 mg/kg presented in the RCBRA (DOE/RL-2007-21, Volume 1) but not the 2011 field study on the Central Plateau with a maximum concentration tested of 596 mg/kg. Several samples from the 2011 study in the Central Plateau had concentrations higher than those tested by Ecology and showed no effects, however, no threshold was recommended from the current study. Although a weak correlation was observed between effects and concentration, subsequent regression analysis showed significant relationships with low r^2 values (<0.025). This means that 2.5 percent or less of the variation in observed effects is explained by copper concentrations in soil.. The previously recommended PRG from the RCBRA was 70 mg/kg because the confidence given this value is equal to that of given to the value of 100 mg/kg published in WAC and ORNL so the lower of values of equal confidence was selected. Since the highest concentration tested in the recent study published by Ecology (Ecology Publication-11-03-006), a NOEC with no upper bound, is below an already published value of moderate to high confidence, the original recommendation from the RCBRA of 70 mg/kg remains the recommended PRG for plants.

The recommended PRG for copper for invertebrates of 58 mg/kg represents a NOEC that resulted from a study conducted by Ecology (Ecology Publication-11-03-006) on samples from the Old Orchards area. The upper end of the concentration range from the Ecology study of 58 mg/kg exceeded that of 45.6 mg/kg presented in the RCBRA but not the 2011 field study on the Central Plateau with a maximum concentration tested of 596 mg/kg. The previously recommended PRG from the RCBRA was 50 mg/kg, the value recommended ORNL and cited in WAC. While several samples from the 2011 study in the Central Plateau with concentrations higher than those tested by Ecology did show no effects, however, no threshold was recommended from the current study. Although a weak correlation was observed between effects and concentration, subsequent regression analysis showed significant relationships with low r^2 values (<0.08). This means that 8 percent or less of the variation in observed effects is explained by copper concentrations in soil. .. Since the value published by Ecology represents a value at which no effects were observed at a concentration higher than the value in WAC, the higher value of 58 mg/kg from Ecology Publication-11-03-006 is recommended as the PRG for invertebrates.

6.4.10 Lead

The recommended PRG for lead for plants of 9090 mg/kg represents the NOEC that resulted from the 2011 study conducted in the Central Plateau (Note that in addition to this 9090 mg/kg concentration, no effects on plant germination were observed in any of the 14 samples with lead concentrations ranging

from 1000 mg/kg to 7970 mg/kg). The EcoSSL is 120 mg/kg and the value for WAC is 50 mg/kg based upon the recommendation by ORNL. The previous site-specific bioassay work presented in the RCBRA resulted in a plant NOEC of 125 mg/kg, which was the PRG recommended in the RCBRA. The 2011 study was able to collect samples at concentrations higher than those measured in the RCBRA bioassay work and resulted in a higher no-effect concentration. Both studies have shown that there is no significant relationship between lead and biological response in the plant bioassays conducted. Thus, the highest concentration tested from the 2011 study of 9090 mg/kg is recommended as the PRG for plants. The lowest wildlife PRG of 156 mg lead/kg soil is lower than the site specific value of 390 mg/kg determined by Ecology (Publication No 11-03-006) and lower than not all, but a number of the literature values presented in CHPRC-00784. From a risk management perspective, the wildlife PRGs for lead, which are all of high confidence and which are lower than this plant value, would be expected to drive risk decisions. Given the number of high concentrations in the test range of the 2011 study and the value of the other PRGs available for wildlife, the plant value from the current study of 9090 mg/kg was selected as the final PRG.

The recommended PRG for lead for invertebrates of 1700 mg/kg represents the 2011EPA's EcoSSL for invertebrates which was also the previously recommended PRG from the RCBRA. The RCBRA site-specific study was not able to reach a range of interest (up to and above the EcoSSL) and published a NOEC of 116 mg/kg, the highest concentration tested. The 2011 study was able to reach concentrations as high as 9090 mg/kg, with no effects noted at the second highest concentration of 7970 mg/kg. However, no threshold was recommended from the current study. Although a weak correlation was observed between effects and concentration, subsequent regression analysis showed significant relationships with low r^2 values (<0.034). This means that 3.4 percent or less of the variation in observed effects is explained by lead concentrations in soil. The site background concentration is 10.2 mg/kg. The ecological indicator concentration in WAC is 500 mg/kg and is based upon a recommendation in ORNL. However, ORNL authors gave the value of 500 mg/kg a low confidence while the EcoSSL was given moderate to high confidence. Given that the RCBRA site-specific 2011 study was not able to reach a range of interest (up to and above the EcoSSL) and did not show a significant relationship between lead and biological response in invertebrate bioassays, the EcoSSL of 1700 mg/kg is recommended as the PRG for invertebrates.

6.4.11 Manganese

The recommended PRG for manganese for both plants and invertebrates of 1260 mg/kg represents a NOEC that resulted from the 2011 study conducted in the Central Plateau. Previous site-specific bioassay work presented in the RCBRA has resulted in plant and invertebrate NOECs of 558 mg/kg and 570 mg/kg respectively. The 2011 study was able to collect samples at concentrations higher than those measured in the RCBRA bioassay work and resulted in higher no-effect concentrations. Both studies have shown that there is no significant relationship between manganese and biological response in the plant or invertebrate bioassays conducted. Thus, the highest concentration tested from the 2011 study of 1260 mg/kg is recommended as the PRG for both plants and invertebrates.

6.4.12 Mercury

The recommended PRG for mercury for plants of 0.3 mg/kg represents the recommendation in ORNL (ES/ER/TM-85/R3). The RCBRA published a NOEC of 0.126 mg/kg at the highest concentration tested and therefore selected the ORNL value as the PRG. No threshold was recommended from the current study. Although a weak correlation was observed between effects and concentration, subsequent regression analysis showed significant relationships with low r^2 values (<0.25). This means that 25 percent or less of the variation in observed effects is explained by mercury concentrations in soil. . Since

the previous study was not able to collect samples above the site background, the recommended PRG from the RCBRA of 0.3 mg/kg is still recommended for plants.

The recommended PRG for mercury for invertebrates of 12.5 mg/kg represents a NOEC that resulted from the 2011 study conducted in the Central Plateau. The previous site-specific bioassay work presented in the RCBRA resulted in an invertebrate NOEC of 0.136 mg/kg. The 2011 study was able to collect samples at concentrations higher than those measured in the RCBRA bioassay work and resulted in a higher no-effect concentration. Both studies have shown that there is no significant relationship between mercury and biological response in the invertebrate bioassays conducted. Thus, the highest concentration tested from the 2011 study of 12.5 mg/kg is recommended as the PRG for invertebrates.

6.4.13 Molybdenum

The recommended PRG for molybdenum for plants of 2 mg/kg represents the recommendation in ORNL (ES/ER/TM-85/R3). The site background concentration is 0.47 mg/kg. The RCBRA published a NOEC of 1.2 mg/kg but this value did not result from a range of interest. While samples from the 2011 study in the Central Plateau with concentrations higher than the ORNL value and RCBRA study did show no effects, no threshold was recommended from the current study. Although a weak correlation was observed between effects and concentration, subsequent regression analysis showed significant relationships with low r^2 values (<0.02). This means that 2 percent or less of the variation in observed effects is explained by molybdenum concentrations in soil. The PRG from the RCBRA of 2 mg/kg is still recommended for plants.

The recommended PRG for molybdenum for invertebrates of 28 mg/kg represents a NOEC that resulted from the 2011 study conducted in the Central Plateau. There are no published screening values for the effects of molybdenum on terrestrial invertebrates. The site background concentration is 0.47 mg/kg. The RCBRA published a NOEC of 1.09 mg/kg. The 2011 NOEC was set at 28 mg/kg because there is no significant difference in the concentration of samples with similar response to the reference envelope and those with responses that differed from the reference envelope up to 28 mg/kg. Given that neither of the site-specific studies showed a significant relationship between molybdenum concentrations in soil and biological response in invertebrates, the highest concentration tested of 28 mg/kg is recommended as the PRG for invertebrates.

6.4.14 Nickel

The recommended PRG for nickel for plants of 38 mg/kg represents the EPA's EcoSSL for plants which was also the previously recommended PRG from the RCBRA. The site background concentration is 19.1 mg/kg. The ecological indicator concentration in WAC is 30 mg/kg and is based upon a recommendation in ORNL. However, ORNL authors gave the value of 30 mg/kg a low confidence while the EcoSSL was given moderate to high confidence. Given the greater confidence, the EcoSSL was selected for the RCBRA PRG. The RCBRA published a NOEC of 24.8 mg/kg with no upward bound, while the 2011 study resulted in a NOEC of 27.4 mg/kg. Neither the 2011 nor the RCBRA field study was able to obtain samples within the range of interest (greater than the EcoSSL). Given that neither of the site-specific studies showed significant relationship between nickel concentrations in soil and biological response in plants and the EcoSSL is greater than the site-specific NOECs, the EcoSSL of 38 mg/kg is recommended as the PRG for plants.

The recommended PRG for nickel for invertebrates of 280 mg/kg represents the EPA's EcoSSL for invertebrates which was also the previously recommended PRG from the RCBRA. The site background concentration is 19.1 mg/kg. The ecological indicator concentration in WAC is 200 mg/kg and is based upon a recommendation in ORNL. However, ORNL authors gave the value of 200 mg/kg a low confidence while the EcoSSL was given moderate to high confidence. Given the greater confidence the

EcoSSL was selected for the RCBRA PRG. The RCBRA published a NOEC of 24.8 mg/kg, the highest concentration tested. As shown on the scatter plot in Appendix D, the 2011 study didn't show any effect at the highest concentration tested (25.3 mg/kg). Given that neither of the site-specific studies has been able to test samples up to the concentration in the EcoSSL and neither has shown significant relationship between nickel and biological response in invertebrate bioassays, the EcoSSL of 280 mg/kg is recommended as the PRG for invertebrates.

6.4.15 Selenium

The recommended PRG for selenium for plants of 2.02 mg/kg represents NOEC that resulted from the 2011 study conducted in the Central Plateau. The EcoSSL is 0.52 mg/kg and the WAC value is 1 mg/kg based upon the recommendation by ORNL. The previous site-specific bioassay work presented in the RCBRA resulted in a plant NOEC of 1.2 mg/kg which was the PRG recommended in the RCBRA. The 2011 study was able to collect samples at concentrations higher than those measured in the RCBRA bioassay work and resulted in a higher no-effect concentration. Both studies have shown that there is no significant relationship between selenium and biological response in the plant bioassays conducted. Thus, the highest concentration tested from the 2011 study of 2.02 mg/kg is recommended as the PRG for plants.

The recommended PRG for selenium for invertebrates of 4.1 mg/kg represents the EPA's EcoSSL for invertebrates which was also the previously recommended PRG from the RCBRA. The site background concentration is 0.78 mg/kg. The ecological indicator concentration in WAC is 70 mg/kg and is based upon a recommendation in ORNL. However, ORNL authors gave the value of 70 mg/kg a low confidence while the EcoSSL was given moderate to high confidence. Given the greater confidence the EcoSSL was selected for the RCBRA PRG. The RCBRA published a NOEC of 0.973 mg/kg with no upward bound, while the 2011 study resulted in a NOEC of 2.02 mg/kg. The 2011 study was not able to obtain samples within the range of interest (greater than the EcoSSL). Given that neither of the site-specific studies showed significant relationship between selenium concentrations in soil and biological response in invertebrates and the EcoSSL is greater than the site-specific NOECs, the EcoSSL of 4.1 mg/kg is recommended as the PRG for invertebrates.

6.4.16 Silver

The recommended PRG for silver for plants of 560 mg/kg represents the EPA's EcoSSL for plants which was also the previously recommended PRG from the RCBRA. A site-specific NOEC for plants was published in the RCBRA but only at 0.12 mg/kg. Neither the previous site specific investigation in the RCBRA, not the 2011 study in the Central Plateau have been able to obtain soils with silver concentrations within the range of interest (close to the EcoSSL). Thus, the EcoSSL of 560 mg/kg remains the recommended PRG for plants.

The recommended PRG for silver for invertebrates of 2.99 mg/kg represents a NOEC that resulted from the 2011 study conducted in the Central Plateau. There are no published screening values for the effects of silver on terrestrial invertebrates. The site background concentration is 0.167 mg/kg. The RCBRA published a NOEC of 0.344 mg/kg, while the 2011 study resulted in a NOEC of 2.99 mg/kg. Given that neither of the site-specific studies showed significant relationship between silver concentrations in soil and biological response in invertebrates, the highest concentration tested of 2.99 mg/kg is recommended as the PRG for invertebrates.

6.4.17 Thallium

The recommended thallium PRG for plants of 1 mg/kg represents the WAC ecological indicator concentration. The recommended thallium PRG for invertebrates of 0.459 mg/kg is from the 2011 study

conducted in the Central Plateau. Screening values for the effects of thallium in soil on plants and invertebrates are limited and concentrations of thallium in most areas within Hanford are low so no PRGs were recommended in the RCBRA. WAC has a value of 1 mg/kg for plants based on the ORNL recommendation, but the confidence in the value is not high. The 2011 study did not reach a range of interest relative to plants since the maximum tested concentration was only 0.459 mg/kg, thus the WAC value of 1 mg/kg is recommended as the PRG for plants. For invertebrates, the range did exceed background which was the only value available against which to establish a range of interest. Therefore, the NOEC concentration from the 2011 study of 0.459 mg/kg for invertebrates is recommended as the PRGs for thallium.

6.4.18 Tin

The recommended PRG for tin for both plants and invertebrates of 838 mg/kg represents a NOEC that resulted from the 2011 study conducted in the Central Plateau. Previous site-specific bioassay work presented in the RCBRA has resulted in plant and invertebrate NOECs of 14.2 mg/kg and 19 mg/kg respectively. The 2011 study was able to collect samples at concentrations higher than those measured in the RCBRA bioassay work and resulted in higher no-effect concentrations. Both studies have shown that there is no significant relationship between tin and biological response in the plant or invertebrate bioassays conducted. Thus, the highest concentration tested from the 2011 study of 838 mg/kg is recommended as the PRG for both plants and invertebrates.

6.4.19 Uranium

The recommended PRGs for uranium are 250 mg/kg for plants and 100 mg/kg for invertebrates based upon a review of uranium toxicity studies by Sheppard et al. (2005). Previous site-specific bioassay work presented in the RCBRA has resulted in plant and invertebrate NOECs of 8.1 mg/kg and 4.53mg/kg respectively. The 2011 study was not able to obtain samples with concentrations above 1.37 mg/kg. Statistical analysis in the present study determined that there is no significant relationship between uranium and biological response up to the concentration tested, but these concentrations are far below previously established site-specific NOECs and orders of magnitude below those suggested by Sheppard et al. (2005). The values recommended by Sheppard et al. (2005) are predicted no effect concentrations (PNECs), thresholds used in the European Union that includes safety factors that make these values sufficiently conservative. Ecology previously recommended the use of these values published by Sheppard et al. (2005). Since the range of concentrations included in the site-specific studies to date have not reached the levels recommended by Sheppard et al., the values form Sheppard et al. of 250 mg/kg for plants and 100 mg/kg for invertebrates remain the recommended PRGs.

6.4.20 Vanadium

The recommended PRG for vanadium for plants of 89.4 mg/kg represents a NOEC from the 2011 study. The previous site-specific bioassay work presented in the RCBRA resulted in an invertebrate NOEC of 84.7 mg/kg, which was recommended as a PRG. The 2011 NOEC was set at 89.4 mg/kg because there is no significant difference in the concentration of samples with similar response to the reference envelope and those with responses that differed from the reference envelope up to 89.4 mg/kg. No threshold was recommended from the current study. No correlation was observed between effects and concentration (Table 5-6). Regression analysis showed significant relationships with low r^2 values (<0.34). This means that 34 percent or less of the variation in observed effects is explained by vanadium concentrations in soil. This is supported in that the site background is 85.1 mg/kg and the RCBRA had observed no adverse effects up to 84.7 mg/kg. Therefore a value of 89.4 mg/kg, based on the results of the 2011 study, is recommended as the PRG for plants.

The recommended PRG for vanadium for invertebrates of 116 mg/kg represents a NOEC that resulted from the 2011 study conducted in the Central Plateau. The previous site-specific bioassay work presented in the RCBRA resulted in an invertebrate NOEC of 84.7 mg/kg. The 2011 study was able to collect samples at concentrations higher than those measured in the RCBRA bioassay work and resulted in a higher no-effect concentration. Both studies have shown that there is no significant relationship between vanadium and biological response in the invertebrate bioassays conducted. Thus, the highest concentration tested from the 2011 study of 116 mg/kg is recommended as the PRG for invertebrates.

6.4.21 Zinc

The recommended PRG for zinc for plants of 621 mg/kg represents a NOEC presented in the RCBRA. This site-specific NOEC is greater than available literature values (WAC [86 mg/kg]; ORNL [50 mg/kg]; and EcoSSL [160 mg/kg]) and background (67.8 mg/kg). While several samples from the 2011 study in the Central Plateau showed no effects at concentrations higher (880 mg/kg) than those tested in the RCBRA, no threshold was recommended from the current study. Although a weak correlation was observed between effects and concentration, subsequent regression analysis showed significant relationships with low r^2 values (<0.061). This means that 6.1 percent or less of the variation in observed effects is explained by zinc concentrations in soil. Therefore, the original recommendation from the RCBRA of 621 mg/kg remains the recommended PRG for plants.

The recommended PRG for zinc for invertebrates of 8980 mg/kg represents a NOEC that resulted from the 2011 study conducted in the Central Plateau. The previous site-specific bioassay work presented in the RCBRA resulted in an invertebrate NOEC of 393 mg/kg. This site-specific NOEC is greater than available literature values (WAC [200 mg/kg]; ORNL [100 mg/kg]; and EcoSSL [120 mg/kg]) and background (67.8 mg/kg). The 2011 study was able to collect samples at concentrations higher than the published values and those measured in the RCBRA bioassay work and resulted in a higher no-effect concentration. Both studies have shown that there is no significant relationship between zinc and biological response in the invertebrate bioassays conducted. While the final number is high relative to other values cited, the lowest wildlife PRGs for zinc of 856 mg/kg as well as several other wildlife PRGs, all with high confidence assigned, are lower than the invertebrate value of 8980 mg/kg. Thus, the highest concentration tested from the 2011 study of 8980 mg/kg is recommended as the PRG for invertebrates.

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Figures

PRG Development for Plants and Invertebrates

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Figure 2-1. Hanford Specific PRG Development for Plants and Invertebrates – Initial Data Processing

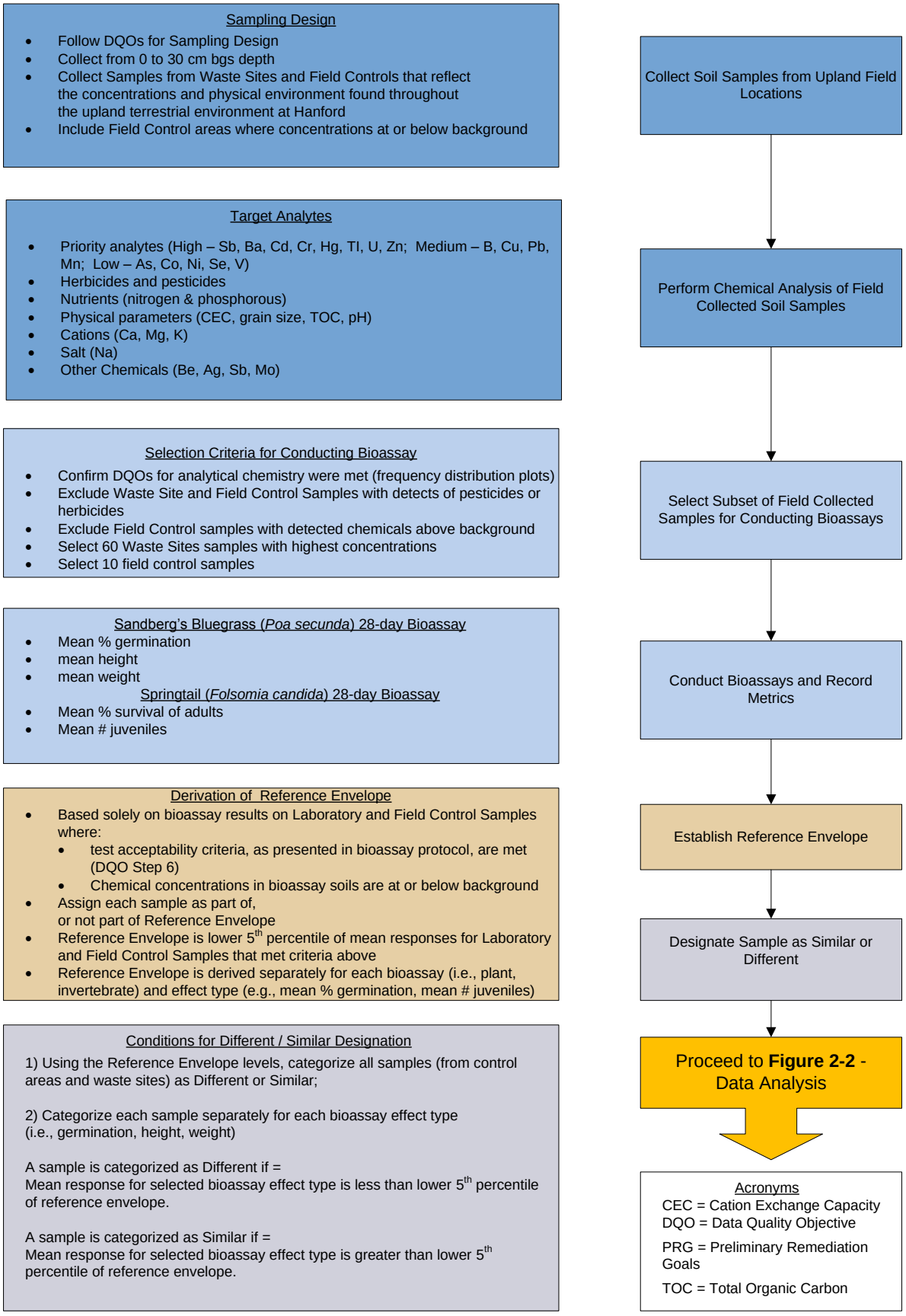


Figure 2-2. Hanford Specific PRG Development for Plants and Invertebrates – Data Analysis

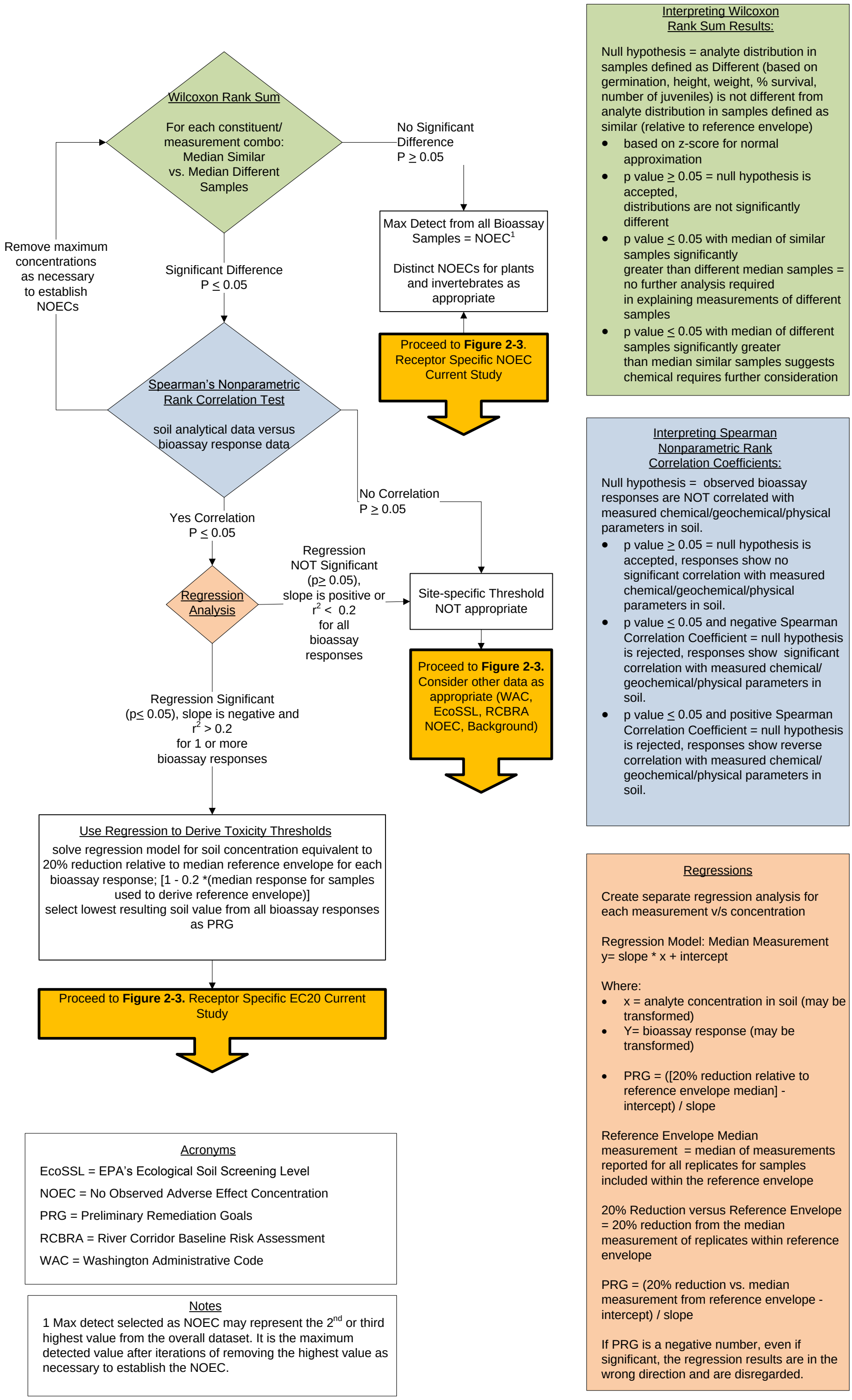
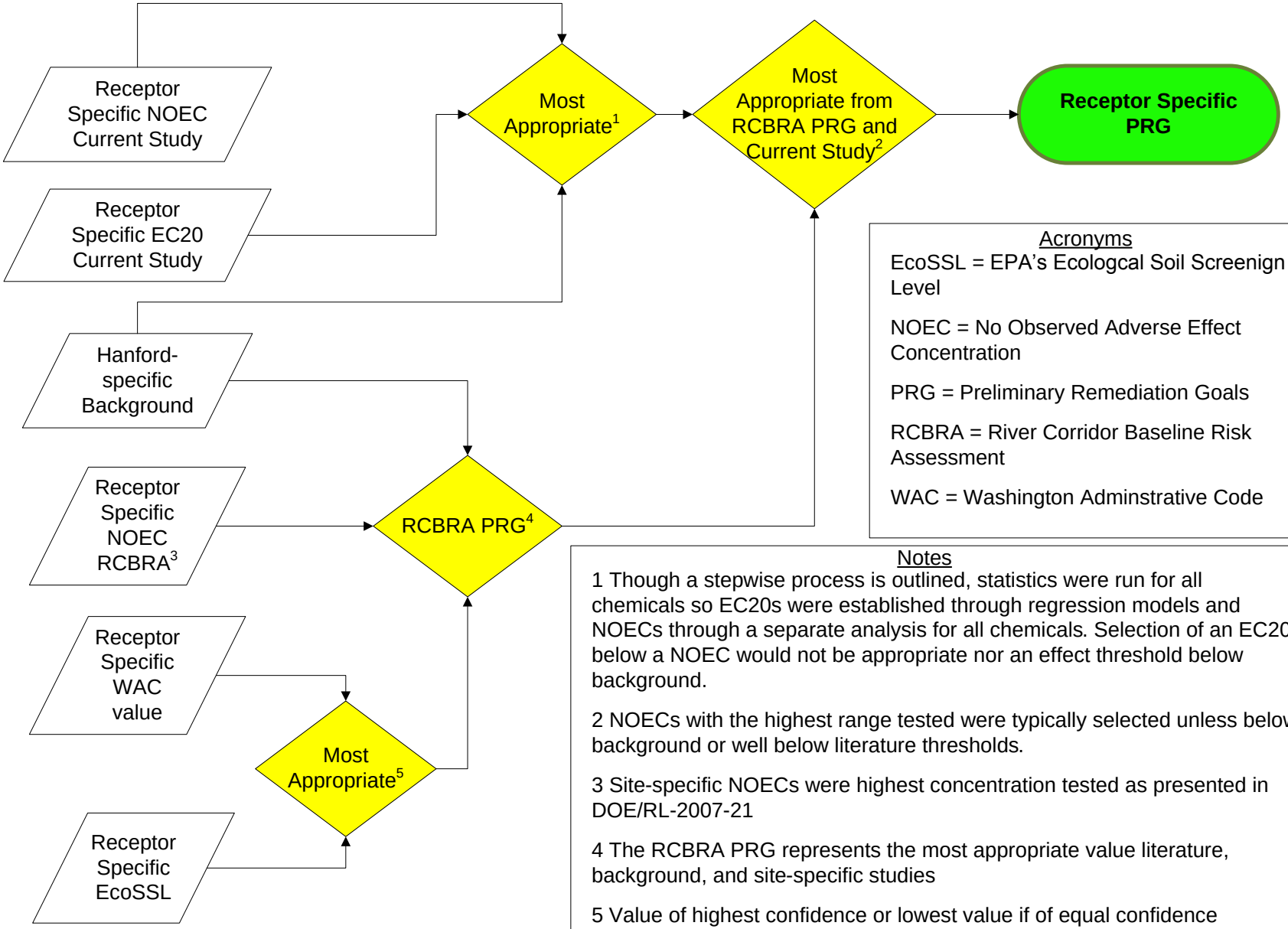


Figure 2-3. Hanford Specific PRG Development for Plants and Invertebrates – Final PRG Recommendations



Acronyms

EcoSSL = EPA's Ecologcal Soil Screenign Level

NOEC = No Observed Adverse Effect Concentration

PRG = Preliminary Remediation Goals

RCBRA = River Corridor Baseline Risk Assessment

WAC = Washington Adminstrative Code

Notes

1 Though a stepwise process is outlined, statistics were run for all chemicals so EC20s were established through regression models and NOECs through a separate analysis for all chemicals. Selection of an EC20 below a NOEC would not be appropriate nor an effect threshold below background.

2 NOECs with the highest range tested were typically selected unless below background or well below literature thresholds.

3 Site-specific NOECs were highest concentration tested as presented in DOE/RL-2007-21

4 The RCBRA PRG represents the most appropriate value literature, background, and site-specific studies

5 Value of highest confidence or lowest value if of equal confidence

Tables

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Table 2-1. Analytes of Interest for Sampling Design

Plants		Invertebrates	
Antimony	Manganese	Arsenic	Uranium
Arsenic	Mercury	Barium	Vanadium
Boron	Nickel	Boron	Zinc
Cadmium	Selenium	Chromium	
Chromium	Thallium	Lead	
Cobalt	Uranium	Manganese	
Copper	Vanadium	Mercury	
Lead	Zinc	Nickel	

Table 2-2. Analyte Prioritization

High Priority	Medium Priority	Low Priority
Antimony	Boron	Arsenic
Barium	Copper	Cobalt
Cadmium*	Lead	Nickel
Chromium	Manganese	Selenium
Mercury		Vanadium
Thallium*		
Uranium*		
Zinc		

* Uranium is a high priority for the River Corridor, especially in the 300 Area. However, no sites have been identified in the Outer Area or River Corridor that have a suitable range of uranium (i.e., up to 250 mg/kg). In addition, lack of detection also helped guide the prioritization. For example, thallium was identified as an analyte of interest but few site measurements were available to guide site selection for this analyte. A similar situation exists for cadmium.

Tale 2-3. Comparison of Central Plateau Outer Area and River Corridor Waste Site Analytical Results (for Bioassay Site Selection)

	Criteria (mg/kg)											Statistics (mg/kg)											
Constituent	Background	Hanford Site-Specific Plant Bioassay from RCBRA (confidence)	Hanford Site-Specific Invertebrate Bioassay from RCBRA (confidence)	Tier 1 Wildlife	Tier II Wildlife	MTCA Method B Direct Contact for HH	Lowest Wildlife SSL	Lowest Plant SSL	Lowest Invert SSL	Priority	Area	Max	99th	98th	95th	90th	75th	50th	25th	10th	5th	Min	Sample Count
Antimony	0.132	0.685 Low	6.1 Moderate-high	6 Grasshopper mouse	92 Deer mouse	32	0.27	5	78	High	Outer Area	2,100	186.3	38.53	10.22	**3.35**	**1.1875**	**0.505**	**0.2925**	**0.07735**	**0.047325**	**0.0368**	166
										Low	River Corridor	266	6.1	**3.584**	**1.63**	**1.1**	**0.793**	**0.52**	**0.39**	**0.296**	**0.26**	**0.1**	955
Arsenic	6.47	19.3 Moderate-high	12.2 Moderate-high	190 Deer mouse	127 Deer mouse	20	43	10	60	Low	Outer Area	131	13.58	10.888	6.676	**5.262**	**3.75**	**2.88**	**2.35**	**1.82**	**1.58**	**0.881**	957
										Low	River Corridor	100	24.884	15.6	8.61	**6.3**	**3.8**	**2.8**	**2.2**	**1.7**	**1.4**	**0.43**	5,174
Barium	132	314 Moderate	358 Moderate-high	1323 Killdeer	1687 Killdeer	16,000	102	500	330	High	Outer Area	4,760	195.2	150.4	**120**	**105**	**89.6**	**76.5**	**62.5**	**49.9**	**43.7**	**0.77**	981
										Low	River Corridor	9,420	326.04	207.08	**131**	**100**	**79.1**	**65**	**54.8**	**45.28**	**38.5**	**1.3**	4,949
Boron	3.892	29.6 Moderate-high	28.6 Moderate-high	133 Pocket mouse	32 Pocket mouse	16,000	--	0.5	--	Mod	Outer Area	105	47.467	43.924	40.605	35.8	28.35	14.3	8.59	5.268	**2.1**	**0.51**	520
										Low	River Corridor	497	26.569	15.2	7.225	3.9	**2.3**	**1.5**	**1**	**0.7**	**0.5753**	**0.19**	3,344
Cadmium	0.5632	2.7 Moderate-high	2.54 Moderate-high	2 Killdeer	29 Killdeer	40	0.36	4	20	High	Outer Area	28	7.39	4.09	2.685	1.19	**0.3935**	**0.15**	**0.11**	**0.07**	**0.0535**	**0.0116**	511
										Mod	River Corridor	55	2.4	1.84	1.1	**0.56**	**0.2**	**0.118**	**0.075**	**0.053**	**0.047**	**0.01**	2,776
Chromium	18.5	39.3 Low	149 Moderate-high	38 Killdeer	109 Killdeer	120,000	26	1	0.4	High	Outer Area	815	93.96	46.34	21.86	**14.86**	**10.4**	**8.07**	**6.055**	**4.028**	**3.026**	**1.43**	1,003
										High	River Corridor	23,000	152	75.754	30.3	19.1	**13**	**10**	**7.9**	**6.2**	**5.1**	**0.12**	5,998
Cobalt	15.7	11.2 Low	12.2 Moderate	111 Killdeer	484 Killdeer	24	120	13	--	Low	Outer Area	18	**13.217**	**12.6**	**11**	**9.884**	**8.6425**	**7.6**	**6.42**	**5.666**	**5.149**	**2.83**	584
										Low	River Corridor	34	**12.8**	**11.4**	**10.2**	**9.4**	**8.2**	**7**	**5.81**	**5**	**4.5**	**0.28**	4,458
Copper	22	53.6 Moderate-high	45.6 Moderate-high	107 Killdeer	193 Killdeer	3,200	28	70	50	Mod	Outer Area	4,080	170	77.82	39.9	22.5	**16.5**	**13.7**	**11.5**	**9.7**	**8.93**	**0.729**	841
										Low	River Corridor	82,900	71.216	46.016	29.57	22.5	**16.8**	**14.1**	**12.4**	**10.9**	**10**	**0.13**	4,347
Lead	10.2	125 Moderate-high	116 Moderate-high	36 Killdeer	156 Killdeer	250	11	50	500	Mod	Outer Area	335,000	555.5	238.8	81.4	21.3	**7.7**	**5.3**	**3.93**	**2.87**	**2.4**	**1.3**	971
										Low	River Corridor	52,800	164.44	93.244	46.71	24.7	**8.67**	**4.9**	**3.5**	**2.618**	**2.3**	**0.25**	6,079
Manganese	512	558 Moderate	570 Moderate	5,798 Deer mouse	3,322 Pocket mouse	11,200	1500	220	450	Mod	Outer Area	8,460	913.28	741.64	**431.4**	**396.6**	**365**	**326**	**286**	**261**	**247.8**	**134**	213
										Mod	River Corridor	33,400	561.04	**506.08**	**409**	**375**	**332**	**282**	**259**	**224**	**203**	**3.2**	4,449
Mercury	0.01312	0.126 Moderate	0.136 Moderate	2 Deer mouse	1.6 Deer mouse	24	5	0.3	0.1	Low	Outer Area	86	30.564	10.796	4.3	0.964	**0.245**	**0.07**	**0.0274**	**0.0107**	**0.008571**	**0.00514**	175
										High	River Corridor	252	13.65	5.168	1.3	0.5	**0.11**	**0.034**	**0.017**	**0.0092**	**0.0075**	**0.0044**	2,011
Nickel	19.1	24.8 Moderate	24.8 Moderate	33 Grasshopper mouse	247 Deer mouse	1,600	130	30	200	Low	Outer Area	268	35.744	20.988	16.21	13.2	**10.6**	**9.2**	**7.855**	**6.566**	**5.188**	**0.95**	879
										Low	River Corridor	142	42.18	22.628	15.6	13.1	**11.2**	**9.93**	**8.8**	**7.9**	**7.202**	**1.6**	1,485
Selenium	0.782	1.2 Low	0.973 Low	2 Deer mouse	1.4 Deer mouse	400	0.3	0.52	70	Low	Outer Area	5	2.4666	2.0824	1.716	1.536	1.2	0.92	**0.64**	**0.45**	**0.38**	**0.197**	635
										Low	River Corridor	11	6.112	4.316	2.57	1.68	1.1	**0.76**	**0.4955**	**0.3368**	**0.29**	**0.204**	243
Thallium	0.1852	Not detected Not applicable	Not detected Not applicable	9 Deer mouse	6.2 Deer mouse	--	--	1	--	High	Outer Area	5	3.0072	1.4	1.3	0.98	0.63	**0.17**	**0.11**	**0.08436**	**0.06104**	**0.0192**	285
										High	River Corridor	5	4.06	3.12	2.4	1.8	1.6	1.2	0.9	0.503	0.452	0.37	61
Uranium	3.213	8.1 Moderate	4.53 Moderate	786 Deer mouse	22 Badger	240	--		--	Low	Outer Area	87	15.056	8.9	**1.948**	**0.8764**	**0.54**	**0.43**	**0.35**	**0.2824**	**0.2594**	**0.14**	637
										High	River Corridor	2,610	565.25	206.1	64.625	31.1	5.4175	**3.1**	**2.2**	**1.5**	**1.4**	**1.1**	106
Vanadium	85.1	84.7 Moderate	84.7 Moderate	31 Killdeer	43 Killdeer	400	7.8	2	--	Low	Outer Area	**104**	**87.375**	**84.08**	**77.2**	**70.2**	**59.4**	**48.05**	**37.225**	**23.2**	**19.1**	**4.08**	806
										Low	River Corridor	128	87.142	**81.9**	**74.1**	**68.2**	**57.7**	**47.1**	**39**	**31.3**	**27.3**	**0.09**	4,430
Zinc	67.8	621 Moderate-high	393 Moderate-high	68 Killdeer	856 Killdeer	24,000	46	50	120	High	Outer Area	9,420	760.1	311.96	144.3	83.72	**53.375**	**43.95**	**36.3**	**29.2**	**25.1**	**10.2**	958
										Mod	River Corridor	28,600	349	282.38	137	71.1	**49.5**	**42.3**	**36.7**	**31.7**	**28.8**	**0.84**	4,332

Notes:

Values shown for the Hanford-specific plant and soil invertebrate bioassays are no observed effect concentrations (NOECs) based on studies conducted as part of the River Corridor Baseline Risk Assessment (RCBRA).

Arsenic value for MTCA Method B for direct contact for protection of human health is the cleanup level for the Interim Action Records of Decision for the River Corridor. The formula value for Method B for arsenic is 0.7 mg/kg.

Gold highlight in columns B-J indicate major considerations in determining priority contaminants for bioassays

purple - cleanup values suggested in SSL that are higher than background or RCBRA bioassay results

[1] All background values are Hanford-specific 90th percentiles from DOE/RL 92 24, 2001 unless otherwise stated.

[2] Hanford-specific 90th percentile from ECF HANFORD 11 0038.

[3] Not a Hanford Site-specific background value; source of value is DOE/RL-96-17, Remedial Design Report/Remedial Action Work Plan for the 100 Area (uranium).

underline bold = below background

Yellow highlight = below RCBRA bioassay

Green highlight = above Direct Contact MTCA B

priority column - red=high, -yellow=moderate, - blue=low

Acronyms:

RCBRA = River Corridor Baseline Risk Assessment (DOE/RL-2007-21, 2008)

SSL = soil screening level (EPA's Ecological Soil Screening Levels and Ecology's Ecological Soil Indicator Concentrations (WAC 173-340-900, Table 749-3)

MTCA B = Model Toxics Control Act soil preliminary remediation goals established using Method B standards (WAC 173-340-740, "Model Toxics Control Act—Cleanup, Unrestricted land use soil cleanup standards").

Table 3-1 Analytical chemistry data for soils used for plant and soil invertebrate bioassays for upland locations at the Hanford Site

Analyte	Priority	CASNo	AnalGrp	SampleID	LocationID	WasteSite	Conc	Units	Qualifer	qual	grp
Antimony	High	7440-36-0	Inorganic	B2BVM9	Control 1	600-218	0.31	mg/kg	U	ND	low
Antimony	High	7440-36-0	Inorganic	B2BVP2	Control 13	OCSA	0.32	mg/kg	U	ND	low
Antimony	High	7440-36-0	Inorganic	B2BVP4	Control 15	OCSA	0.31	mg/kg	U	ND	low
Antimony	High	7440-36-0	Inorganic	B2BVP5	Control 16	OCSA	0.31	mg/kg	U	ND	low
Antimony	High	7440-36-0	Inorganic	B2BVP6	Control 17	OCSA	0.31	mg/kg	U	ND	low
Antimony	High	7440-36-0	Inorganic	B2BVP7	Control 18	OCSA	0.31	mg/kg	U	ND	low
Antimony	High	7440-36-0	Inorganic	B2BVN0	Control 2	600-218	0.459	mg/kg		DET	low
Antimony	High	7440-36-0	Inorganic	B2BVP9	Control 20	OCSA	0.32	mg/kg	U	ND	low
Antimony	High	7440-36-0	Inorganic	B2BVN2	Control 4	600-220	0.31	mg/kg	U	ND	low
Antimony	High	7440-36-0	Inorganic	B2BVN6	Control 8	600-228	0.31	mg/kg	U	ND	low
Antimony	High	7440-36-0	Inorganic	B2BVN8	Control 9D	600-228	0.31	mg/kg	U	ND	low
Antimony	High	7440-36-0	Inorganic	B2D0D8	Lab Soil	None	0.38	mg/kg	U	ND	low
Antimony	High	7440-36-0	Inorganic	B2BY78	Target 11-1	OCSA	0.3	mg/kg	U	ND	low
Antimony	High	7440-36-0	Inorganic	B2BY83	Target 12-1	OCSA	0.789	mg/kg	B	DET	low
Antimony	High	7440-36-0	Inorganic	B2BY84	Target 12-2	OCSA	0.649	mg/kg	B	DET	low
Antimony	High	7440-36-0	Inorganic	B2BY85	Target 12-3	OCSA	0.711	mg/kg	B	DET	low
Antimony	High	7440-36-0	Inorganic	B2BY86	Target 12-4	OCSA	1.06	mg/kg	B	DET	low
Antimony	High	7440-36-0	Inorganic	B2BY87	Target 12-4D	OCSA	1.41	mg/kg	B	DET	low
Antimony	High	7440-36-0	Inorganic	B2BY88	Target 12-5	OCSA	1.75	mg/kg	B	DET	low
Antimony	High	7440-36-0	Inorganic	B2BY89	Target 13-1	OCSA	33.6	mg/kg		DET	low
Antimony	High	7440-36-0	Inorganic	B2BY90	Target 13-2	OCSA	16.7	mg/kg		DET	low
Antimony	High	7440-36-0	Inorganic	B2BY91	Target 13-3	OCSA	38.3	mg/kg		DET	med
Antimony	High	7440-36-0	Inorganic	B2BY92	Target 13-4	OCSA	6.27	mg/kg		DET	low
Antimony	High	7440-36-0	Inorganic	B2BY93	Target 13-5	OCSA	117	mg/kg		DET	med
Antimony	High	7440-36-0	Inorganic	B2BY94	Target 14-1	OCSA	37.5	mg/kg		DET	low
Antimony	High	7440-36-0	Inorganic	B2BY95	Target 14-2	OCSA	35.5	mg/kg		DET	low
Antimony	High	7440-36-0	Inorganic	B2BY96	Target 14-3	OCSA	9.95	mg/kg		DET	low
Antimony	High	7440-36-0	Inorganic	B2BY97	Target 14-4	OCSA	39.9	mg/kg		DET	med
Antimony	High	7440-36-0	Inorganic	B2BY98	Target 14-5	OCSA	9.09	mg/kg		DET	low
Antimony	High	7440-36-0	Inorganic	B2BYB5	Target 16-1	OCSA	119	mg/kg	N	DET	med
Antimony	High	7440-36-0	Inorganic	B2BYB6	Target 16-2	OCSA	293	mg/kg	N	DET	hi
Antimony	High	7440-36-0	Inorganic	B2BYB7	Target 16-3	OCSA	283	mg/kg	N	DET	hi
Antimony	High	7440-36-0	Inorganic	B2BYB8	Target 16-4	OCSA	823	mg/kg	N	DET	hi
Antimony	High	7440-36-0	Inorganic	B2BYB9	Target 16-5	OCSA	842	mg/kg	N	DET	hi
Antimony	High	7440-36-0	Inorganic	B2BYC0	Target 17-1	OCSA	12.6	mg/kg	N	DET	low
Antimony	High	7440-36-0	Inorganic	B2BYC1	Target 17-2	OCSA	3.39	mg/kg	N	DET	low
Antimony	High	7440-36-0	Inorganic	B2BYC2	Target 17-3	OCSA	2.12	mg/kg	N	DET	low
Antimony	High	7440-36-0	Inorganic	B2BYC3	Target 17-4	OCSA	2.77	mg/kg	N	DET	low
Antimony	High	7440-36-0	Inorganic	B2BYC4	Target 17-5	OCSA	167	mg/kg	N	DET	med
Antimony	High	7440-36-0	Inorganic	B2BYC5	Target 18-1	OCSA	2.5	mg/kg	N	DET	low
Antimony	High	7440-36-0	Inorganic	B2BYC6	Target 18-2	OCSA	2.98	mg/kg	N	DET	low
Antimony	High	7440-36-0	Inorganic	B2BYC7	Target 18-3	OCSA	1.59	mg/kg	N	DET	low
Antimony	High	7440-36-0	Inorganic	B2BYC8	Target 18-3D	OCSA	1.65	mg/kg	N	DET	low
Antimony	High	7440-36-0	Inorganic	B2BYC9	Target 18-4	OCSA	0.52	mg/kg	N	DET	low
Antimony	High	7440-36-0	Inorganic	B2BYD0	Target 18-5	OCSA	14.8	mg/kg	N	DET	low
Antimony	High	7440-36-0	Inorganic	B2BYD4	Target 19-4	OCSA	0.445	mg/kg		DET	low
Antimony	High	7440-36-0	Inorganic	B2BYD6	Target 20-1	OCSA	1.49	mg/kg	N	DET	low
Antimony	High	7440-36-0	Inorganic	B2BYD7	Target 20-2	OCSA	0.796	mg/kg	N	DET	low
Antimony	High	7440-36-0	Inorganic	B2BYD8	Target 20-3	OCSA	0.894	mg/kg	N	DET	low
Antimony	High	7440-36-0	Inorganic	B2BYD9	Target 20-4	OCSA	119	mg/kg	N	DET	med
Antimony	High	7440-36-0	Inorganic	B2BYF1	Target 21-1	OCSA	0.3	mg/kg	U	ND	low
Antimony	High	7440-36-0	Inorganic	B2BYF2	Target 21-2	OCSA	0.3	mg/kg	U	ND	low
Antimony	High	7440-36-0	Inorganic	B2BYF3	Target 21-3	OCSA	0.32	mg/kg	U	ND	low
Antimony	High	7440-36-0	Inorganic	B2BYF4	Target 21-4	OCSA	0.32	mg/kg	U	ND	low
Antimony	High	7440-36-0	Inorganic	B2BYF5	Target 21-5	OCSA	0.31	mg/kg	U	ND	low
Antimony	High	7440-36-0	Inorganic	B2BYF6	Target 22-1	OCSA	0.408	mg/kg		DET	low
Antimony	High	7440-36-0	Inorganic	B2BYF7	Target 22-2	OCSA	1.31	mg/kg		DET	low
Antimony	High	7440-36-0	Inorganic	B2BYF8	Target 22-3	OCSA	1.36	mg/kg		DET	low
Antimony	High	7440-36-0	Inorganic	B2BYF9	Target 22-4	OCSA	0.333	mg/kg		DET	low
Antimony	High	7440-36-0	Inorganic	B2BYH0	Target 22-4D	OCSA	0.34	mg/kg	U	ND	low
Antimony	High	7440-36-0	Inorganic	B2BYH1	Target 22-5	OCSA	4.83	mg/kg		DET	low
Antimony	High	7440-36-0	Inorganic	B2BYH2	Target 23-1	OCSA	0.31	mg/kg	U	ND	low
Antimony	High	7440-36-0	Inorganic	B2BYH3	Target 23-2	OCSA	0.32	mg/kg	U	ND	low
Antimony	High	7440-36-0	Inorganic	B2BYH4	Target 23-3	OCSA	0.3	mg/kg	U	ND	low
Antimony	High	7440-36-0	Inorganic	B2BXT3	Target 24-1	120-KW-1	0.3	mg/kg	U	ND	low
Antimony	High	7440-36-0	Inorganic	B2BXT5	Target 24-2	120-KW-1	0.31	mg/kg	U	ND	low
Antimony	High	7440-36-0	Inorganic	B2BXT6	Target 24-3	120-KW-1	0.31	mg/kg	U	ND	low
Antimony	High	7440-36-0	Inorganic	B2BXT8	Target 24-5	120-KW-1	0.29	mg/kg	U	ND	low
Antimony	High	7440-36-0	Inorganic	B2BP63	Target 6-5	600-228	0.33	mg/kg	U	ND	low
Antimony	High	7440-36-0	Inorganic	B2C126	Target 7-1	600-281	15.3	mg/kg		DET	low
Antimony	High	7440-36-0	Inorganic	B2C134	Target 8-3	600-281	3.75	mg/kg		DET	low
Barium	High	7440-39-3	Inorganic	B2BVM9	Control 1	600-218	90.1	mg/kg		DET	low
Barium	High	7440-39-3	Inorganic	B2BVP2	Control 13	OCSA	80.7	mg/kg		DET	low
Barium	High	7440-39-3	Inorganic	B2BVP4	Control 15	OCSA	84.7	mg/kg		DET	low
Barium	High	7440-39-3	Inorganic	B2BVP5	Control 16	OCSA	84.8	mg/kg		DET	low
Barium	High	7440-39-3	Inorganic	B2BVP6	Control 17	OCSA	83.6	mg/kg		DET	low
Barium	High	7440-39-3	Inorganic	B2BVP7	Control 18	OCSA	85	mg/kg		DET	low
Barium	High	7440-39-3	Inorganic	B2BVN0	Control 2	600-218	98.3	mg/kg		DET	low
Barium	High	7440-39-3	Inorganic	B2BVP9	Control 20	OCSA	85.3	mg/kg		DET	low
Barium	High	7440-39-3	Inorganic	B2BVN2	Control 4	600-220	83	mg/kg		DET	low
Barium	High	7440-39-3	Inorganic	B2BVN6	Control 8	600-228	79	mg/kg		DET	low
Barium	High	7440-39-3	Inorganic	B2BVN8	Control 9D	600-228	89.8	mg/kg		DET	low
Barium	High	7440-39-3	Inorganic	B2D0D8	Lab Soil	None	75.5	mg/kg		DET	low
Barium	High	7440-39-3	Inorganic	B2BY78	Target 11-1	OCSA	71.3	mg/kg		DET	low
Barium	High	7440-39-3	Inorganic	B2BY83	Target 12-1	OCSA	104	mg/kg		DET	low
Barium	High	7440-39-3	Inorganic	B2BY84	Target 12-2	OCSA	93.7	mg/kg		DET	low
Barium	High	7440-39-3	Inorganic	B2BY85	Target 12-3	OCSA	87.8	mg/kg		DET	low
Barium	High	7440-39-3	Inorganic	B2BY86	Target 12-4	OCSA	115	mg/kg		DET	low
Barium	High	7440-39-3	Inorganic	B2BY87	Target 12-4D	OCSA	123	mg/kg		DET	low
Barium	High	7440-39-3	Inorganic	B2BY88	Target 12-5	OCSA	90.2	mg/kg		DET	low
Barium	High	7440-39-3	Inorganic	B2BY89	Target 13-1	OCSA	113	mg/kg		DET	low
Barium	High	7440-39-3	Inorganic	B2BY90	Target 13-2	OCSA	135	mg/kg		DET	low
Barium	High	7440-39-3	Inorganic	B2BY91	Target 13-3	OCSA	90.9	mg/kg		DET	low
Barium	High	7440-39-3	Inorganic	B2BY92	Target 13-4	OCSA	113	mg/kg		DET	low
Barium	High	7440-39-3	Inorganic	B2BY93	Target 13-5	OCSA	108	mg/kg		DET	low
Barium	High	7440-39-3	Inorganic	B2BY94	Target 14-1	OCSA	117	mg/kg		DET	low
Barium	High	7440-39-3	Inorganic	B2BY95	Target 14-2	OCSA	130	mg/kg		DET	low

Table 3-1 Analytical chemistry data for soils used for plant and soil invertebrate bioassays for upland locations at the Hanford Site

Analyte	Priority	CASNo	AnalGrp	SampleID	LocationID	WasteSite	Conc	Units	Qualifer	qual	grp
Barium	High	7440-39-3	Inorganic	B2BY96	Target 14-3	OCSA	108	mg/kg		DET	low
Barium	High	7440-39-3	Inorganic	B2BY97	Target 14-4	OCSA	180	mg/kg		DET	low
Barium	High	7440-39-3	Inorganic	B2BY98	Target 14-5	OCSA	135	mg/kg		DET	low
Barium	High	7440-39-3	Inorganic	B2BYB5	Target 16-1	OCSA	108	mg/kg		DET	low
Barium	High	7440-39-3	Inorganic	B2BYB6	Target 16-2	OCSA	566	mg/kg		DET	med
Barium	High	7440-39-3	Inorganic	B2BYB7	Target 16-3	OCSA	411	mg/kg		DET	med
Barium	High	7440-39-3	Inorganic	B2BYB8	Target 16-4	OCSA	199	mg/kg		DET	low
Barium	High	7440-39-3	Inorganic	B2BYB9	Target 16-5	OCSA	189	mg/kg		DET	low
Barium	High	7440-39-3	Inorganic	B2BYC0	Target 17-1	OCSA	426	mg/kg		DET	med
Barium	High	7440-39-3	Inorganic	B2BYC1	Target 17-2	OCSA	131	mg/kg		DET	low
Barium	High	7440-39-3	Inorganic	B2BYC2	Target 17-3	OCSA	181	mg/kg		DET	low
Barium	High	7440-39-3	Inorganic	B2BYC3	Target 17-4	OCSA	309	mg/kg		DET	low
Barium	High	7440-39-3	Inorganic	B2BYC4	Target 17-5	OCSA	716	mg/kg		DET	med
Barium	High	7440-39-3	Inorganic	B2BYC5	Target 18-1	OCSA	220	mg/kg		DET	low
Barium	High	7440-39-3	Inorganic	B2BYC6	Target 18-2	OCSA	212	mg/kg		DET	low
Barium	High	7440-39-3	Inorganic	B2BYC7	Target 18-3	OCSA	355	mg/kg		DET	med
Barium	High	7440-39-3	Inorganic	B2BYC8	Target 18-3D	OCSA	379	mg/kg		DET	med
Barium	High	7440-39-3	Inorganic	B2BYC9	Target 18-4	OCSA	98.1	mg/kg		DET	low
Barium	High	7440-39-3	Inorganic	B2BYD0	Target 18-5	OCSA	344	mg/kg		DET	med
Barium	High	7440-39-3	Inorganic	B2BYD4	Target 19-4	OCSA	85.3	mg/kg		DET	low
Barium	High	7440-39-3	Inorganic	B2BYD6	Target 20-1	OCSA	358	mg/kg		DET	med
Barium	High	7440-39-3	Inorganic	B2BYD7	Target 20-2	OCSA	174	mg/kg		DET	low
Barium	High	7440-39-3	Inorganic	B2BYD8	Target 20-3	OCSA	181	mg/kg		DET	low
Barium	High	7440-39-3	Inorganic	B2BYD9	Target 20-4	OCSA	108	mg/kg		DET	low
Barium	High	7440-39-3	Inorganic	B2BYF1	Target 21-1	OCSA	69.5	mg/kg		DET	low
Barium	High	7440-39-3	Inorganic	B2BYF2	Target 21-2	OCSA	77.2	mg/kg		DET	low
Barium	High	7440-39-3	Inorganic	B2BYF3	Target 21-3	OCSA	64.4	mg/kg		DET	low
Barium	High	7440-39-3	Inorganic	B2BYF4	Target 21-4	OCSA	65	mg/kg		DET	low
Barium	High	7440-39-3	Inorganic	B2BYF5	Target 21-5	OCSA	67.8	mg/kg		DET	low
Barium	High	7440-39-3	Inorganic	B2BYF6	Target 22-1	OCSA	107	mg/kg		DET	low
Barium	High	7440-39-3	Inorganic	B2BYF7	Target 22-2	OCSA	221	mg/kg		DET	low
Barium	High	7440-39-3	Inorganic	B2BYF8	Target 22-3	OCSA	171	mg/kg		DET	low
Barium	High	7440-39-3	Inorganic	B2BYF9	Target 22-4	OCSA	130	mg/kg		DET	low
Barium	High	7440-39-3	Inorganic	B2BYH0	Target 22-4D	OCSA	124	mg/kg		DET	low
Barium	High	7440-39-3	Inorganic	B2BYH1	Target 22-5	OCSA	4520	mg/kg		DET	hi
Barium	High	7440-39-3	Inorganic	B2BYH2	Target 23-1	OCSA	59.4	mg/kg		DET	low
Barium	High	7440-39-3	Inorganic	B2BYH3	Target 23-2	OCSA	80.2	mg/kg		DET	low
Barium	High	7440-39-3	Inorganic	B2BYH4	Target 23-3	OCSA	74.3	mg/kg		DET	low
Barium	High	7440-39-3	Inorganic	B2BXT3	Target 24-1	120-KW-1	56.8	mg/kg		DET	low
Barium	High	7440-39-3	Inorganic	B2BXT5	Target 24-2	120-KW-1	100	mg/kg		DET	low
Barium	High	7440-39-3	Inorganic	B2BXT6	Target 24-3	120-KW-1	105	mg/kg		DET	low
Barium	High	7440-39-3	Inorganic	B2BXT8	Target 24-5	120-KW-1	57.6	mg/kg		DET	low
Barium	High	7440-39-3	Inorganic	B2BP63	Target 6-5	600-228	94.5	mg/kg		DET	low
Barium	High	7440-39-3	Inorganic	B2C126	Target 7-1	600-281	95.1	mg/kg		DET	low
Barium	High	7440-39-3	Inorganic	B2C134	Target 8-3	600-281	79.1	mg/kg	N	DET	low
Cadmium	High	7440-43-9	Inorganic	B2BVM9	Control 1	600-218	0.106	mg/kg		DET	low
Cadmium	High	7440-43-9	Inorganic	B2BVP2	Control 13	OCSA	0.11	mg/kg	U	ND	low
Cadmium	High	7440-43-9	Inorganic	B2BVP4	Control 15	OCSA	0.107	mg/kg	B	DET	low
Cadmium	High	7440-43-9	Inorganic	B2BVP5	Control 16	OCSA	0.1	mg/kg	U	ND	low
Cadmium	High	7440-43-9	Inorganic	B2BVP6	Control 17	OCSA	0.102	mg/kg	B	DET	low
Cadmium	High	7440-43-9	Inorganic	B2BVP7	Control 18	OCSA	0.105	mg/kg	B	DET	low
Cadmium	High	7440-43-9	Inorganic	B2BVN0	Control 2	600-218	0.11	mg/kg	U	ND	low
Cadmium	High	7440-43-9	Inorganic	B2BVP9	Control 20	OCSA	0.11	mg/kg	U	ND	low
Cadmium	High	7440-43-9	Inorganic	B2BVN2	Control 4	600-220	0.1	mg/kg	U	ND	low
Cadmium	High	7440-43-9	Inorganic	B2BVN6	Control 8	600-228	0.1	mg/kg	U	ND	low
Cadmium	High	7440-43-9	Inorganic	B2BVN8	Control 9D	600-228	0.1	mg/kg	U	ND	low
Cadmium	High	7440-43-9	Inorganic	B2D0D8	Lab Soil	None	0.13	mg/kg	U	ND	low
Cadmium	High	7440-43-9	Inorganic	B2BY78	Target 11-1	OCSA	0.231	mg/kg	B	DET	low
Cadmium	High	7440-43-9	Inorganic	B2BY83	Target 12-1	OCSA	2.78	mg/kg		DET	low
Cadmium	High	7440-43-9	Inorganic	B2BY84	Target 12-2	OCSA	2.75	mg/kg		DET	low
Cadmium	High	7440-43-9	Inorganic	B2BY85	Target 12-3	OCSA	3.37	mg/kg		DET	low
Cadmium	High	7440-43-9	Inorganic	B2BY86	Target 12-4	OCSA	8.64	mg/kg		DET	med
Cadmium	High	7440-43-9	Inorganic	B2BY87	Target 12-4D	OCSA	9.85	mg/kg		DET	med
Cadmium	High	7440-43-9	Inorganic	B2BY88	Target 12-5	OCSA	2.6	mg/kg		DET	low
Cadmium	High	7440-43-9	Inorganic	B2BY89	Target 13-1	OCSA	4.85	mg/kg		DET	med
Cadmium	High	7440-43-9	Inorganic	B2BY90	Target 13-2	OCSA	8.19	mg/kg		DET	med
Cadmium	High	7440-43-9	Inorganic	B2BY91	Target 13-3	OCSA	0.443	mg/kg	B	DET	low
Cadmium	High	7440-43-9	Inorganic	B2BY92	Target 13-4	OCSA	2.31	mg/kg		DET	low
Cadmium	High	7440-43-9	Inorganic	B2BY93	Target 13-5	OCSA	1.06	mg/kg		DET	low
Cadmium	High	7440-43-9	Inorganic	B2BY94	Target 14-1	OCSA	2.66	mg/kg		DET	low
Cadmium	High	7440-43-9	Inorganic	B2BY95	Target 14-2	OCSA	4.39	mg/kg		DET	med
Cadmium	High	7440-43-9	Inorganic	B2BY96	Target 14-3	OCSA	2.46	mg/kg		DET	low
Cadmium	High	7440-43-9	Inorganic	B2BY97	Target 14-4	OCSA	4.34	mg/kg		DET	med
Cadmium	High	7440-43-9	Inorganic	B2BY98	Target 14-5	OCSA	1.6	mg/kg		DET	low
Cadmium	High	7440-43-9	Inorganic	B2BYB5	Target 16-1	OCSA	1.26	mg/kg		DET	low
Cadmium	High	7440-43-9	Inorganic	B2BYB6	Target 16-2	OCSA	2.44	mg/kg		DET	low
Cadmium	High	7440-43-9	Inorganic	B2BYB7	Target 16-3	OCSA	4.17	mg/kg		DET	med
Cadmium	High	7440-43-9	Inorganic	B2BYB8	Target 16-4	OCSA	5.6	mg/kg		DET	med
Cadmium	High	7440-43-9	Inorganic	B2BYB9	Target 16-5	OCSA	8.32	mg/kg		DET	med
Cadmium	High	7440-43-9	Inorganic	B2BYC0	Target 17-1	OCSA	7.59	mg/kg		DET	med
Cadmium	High	7440-43-9	Inorganic	B2BYC1	Target 17-2	OCSA	0.647	mg/kg		DET	low
Cadmium	High	7440-43-9	Inorganic	B2BYC2	Target 17-3	OCSA	0.255	mg/kg		DET	low
Cadmium	High	7440-43-9	Inorganic	B2BYC3	Target 17-4	OCSA	0.375	mg/kg		DET	low
Cadmium	High	7440-43-9	Inorganic	B2BYC4	Target 17-5	OCSA	2.36	mg/kg		DET	low
Cadmium	High	7440-43-9	Inorganic	B2BYC5	Target 18-1	OCSA	2.49	mg/kg		DET	low
Cadmium	High	7440-43-9	Inorganic	B2BYC6	Target 18-2	OCSA	2.09	mg/kg		DET	low
Cadmium	High	7440-43-9	Inorganic	B2BYC7	Target 18-3	OCSA	0.873	mg/kg		DET	low
Cadmium	High	7440-43-9	Inorganic	B2BYC8	Target 18-3D	OCSA	1.04	mg/kg		DET	low
Cadmium	High	7440-43-9	Inorganic	B2BYC9	Target 18-4	OCSA	0.166	mg/kg		DET	low
Cadmium	High	7440-43-9	Inorganic	B2BYD0	Target 18-5	OCSA	2.18	mg/kg		DET	low
Cadmium	High	7440-43-9	Inorganic	B2BYD4	Target 19-4	OCSA	0.119	mg/kg		DET	low
Cadmium	High	7440-43-9	Inorganic	B2BYD6	Target 20-1	OCSA	0.726	mg/kg		DET	low
Cadmium	High	7440-43-9	Inorganic	B2BYD7	Target 20-2	OCSA	0.891	mg/kg		DET	low
Cadmium	High	7440-43-9	Inorganic	B2BYD8	Target 20-3	OCSA	0.859	mg/kg		DET	low
Cadmium	High	7440-43-9	Inorganic	B2BYD9	Target 20-4	OCSA	1.26	mg/kg		DET	low
Cadmium	High	7440-43-9	Inorganic	B2BYF1	Target 21-1	OCSA	1.57	mg/kg		DET	low
Cadmium	High	7440-43-9	Inorganic	B2BYF2	Target 21-2	OCSA	0.11	mg/kg		DET	low

Table 3-1 Analytical chemistry data for soils used for plant and soil invertebrate bioassays for upland locations at the Hanford Site

Analyte	Priority	CASNo	AnalGrp	SampleID	LocationID	WasteSite	Conc	Units	Qualifer	qual	grp
Cadmium	High	7440-43-9	Inorganic	B2BYF3	Target 21-3	OCSA	0.11	mg/kg	U	ND	low
Cadmium	High	7440-43-9	Inorganic	B2BYF4	Target 21-4	OCSA	0.11	mg/kg	U	ND	low
Cadmium	High	7440-43-9	Inorganic	B2BYF5	Target 21-5	OCSA	0.1	mg/kg	U	ND	low
Cadmium	High	7440-43-9	Inorganic	B2BYF6	Target 22-1	OCSA	0.11	mg/kg	U	ND	low
Cadmium	High	7440-43-9	Inorganic	B2BYF7	Target 22-2	OCSA	0.156	mg/kg		DET	low
Cadmium	High	7440-43-9	Inorganic	B2BYF8	Target 22-3	OCSA	0.309	mg/kg		DET	low
Cadmium	High	7440-43-9	Inorganic	B2BYF9	Target 22-4	OCSA	0.1	mg/kg	U	ND	low
Cadmium	High	7440-43-9	Inorganic	B2BYH0	Target 22-4D	OCSA	0.11	mg/kg	U	ND	low
Cadmium	High	7440-43-9	Inorganic	B2BYH1	Target 22-5	OCSA	0.394	mg/kg		DET	low
Cadmium	High	7440-43-9	Inorganic	B2BYH2	Target 23-1	OCSA	0.1	mg/kg	U	ND	low
Cadmium	High	7440-43-9	Inorganic	B2BYH3	Target 23-2	OCSA	0.114	mg/kg		DET	low
Cadmium	High	7440-43-9	Inorganic	B2BYH4	Target 23-3	OCSA	0.1	mg/kg	U	ND	low
Cadmium	High	7440-43-9	Inorganic	B2BXT3	Target 24-1	120-KW-1	0.1	mg/kg	U	ND	low
Cadmium	High	7440-43-9	Inorganic	B2BXT5	Target 24-2	120-KW-1	0.1	mg/kg	U	ND	low
Cadmium	High	7440-43-9	Inorganic	B2BXT6	Target 24-3	120-KW-1	0.1	mg/kg	U	ND	low
Cadmium	High	7440-43-9	Inorganic	B2BXT8	Target 24-5	120-KW-1	0.096	mg/kg	U	ND	low
Cadmium	High	7440-43-9	Inorganic	B2BP63	Target 6-5	600-228	0.11	mg/kg	U	ND	low
Cadmium	High	7440-43-9	Inorganic	B2C126	Target 7-1	600-281	0.116	mg/kg	B	DET	low
Cadmium	High	7440-43-9	Inorganic	B2C134	Target 8-3	600-281	0.151	mg/kg	B	DET	low
Chromium	High	7440-47-3	Inorganic	B2BVM9	Control 1	600-218	9.56	mg/kg		DET	low
Chromium	High	7440-47-3	Inorganic	B2BVP2	Control 13	OCSA	9.66	mg/kg		DET	low
Chromium	High	7440-47-3	Inorganic	B2BVP4	Control 15	OCSA	11.1	mg/kg		DET	low
Chromium	High	7440-47-3	Inorganic	B2BVP5	Control 16	OCSA	8.98	mg/kg		DET	low
Chromium	High	7440-47-3	Inorganic	B2BVP6	Control 17	OCSA	8.69	mg/kg		DET	low
Chromium	High	7440-47-3	Inorganic	B2BVP7	Control 18	OCSA	9.72	mg/kg		DET	low
Chromium	High	7440-47-3	Inorganic	B2BVN0	Control 2	600-218	16.7	mg/kg		DET	low
Chromium	High	7440-47-3	Inorganic	B2BVP9	Control 20	OCSA	8.54	mg/kg		DET	low
Chromium	High	7440-47-3	Inorganic	B2BVN2	Control 4	600-220	10.4	mg/kg		DET	low
Chromium	High	7440-47-3	Inorganic	B2BVN6	Control 8	600-228	7.37	mg/kg		DET	low
Chromium	High	7440-47-3	Inorganic	B2BVN8	Control 9D	600-228	9.09	mg/kg		DET	low
Chromium	High	7440-47-3	Inorganic	B2D0D8	Lab Soil	None	3.26	mg/kg	B	DET	low
Chromium	High	7440-47-3	Inorganic	B2BY78	Target 11-1	OCSA	9.34	mg/kg		DET	low
Chromium	High	7440-47-3	Inorganic	B2BY83	Target 12-1	OCSA	11.9	mg/kg		DET	low
Chromium	High	7440-47-3	Inorganic	B2BY84	Target 12-2	OCSA	10.2	mg/kg		DET	low
Chromium	High	7440-47-3	Inorganic	B2BY85	Target 12-3	OCSA	11.1	mg/kg		DET	low
Chromium	High	7440-47-3	Inorganic	B2BY86	Target 12-4	OCSA	10.1	mg/kg		DET	low
Chromium	High	7440-47-3	Inorganic	B2BY87	Target 12-4D	OCSA	10.1	mg/kg		DET	low
Chromium	High	7440-47-3	Inorganic	B2BY88	Target 12-5	OCSA	10.9	mg/kg		DET	low
Chromium	High	7440-47-3	Inorganic	B2BY89	Target 13-1	OCSA	29.8	mg/kg		DET	low
Chromium	High	7440-47-3	Inorganic	B2BY90	Target 13-2	OCSA	34.8	mg/kg		DET	med
Chromium	High	7440-47-3	Inorganic	B2BY91	Target 13-3	OCSA	8.24	mg/kg		DET	low
Chromium	High	7440-47-3	Inorganic	B2BY92	Target 13-4	OCSA	16.4	mg/kg		DET	low
Chromium	High	7440-47-3	Inorganic	B2BY93	Target 13-5	OCSA	11.7	mg/kg		DET	low
Chromium	High	7440-47-3	Inorganic	B2BY94	Target 14-1	OCSA	13.2	mg/kg		DET	low
Chromium	High	7440-47-3	Inorganic	B2BY95	Target 14-2	OCSA	23.3	mg/kg		DET	low
Chromium	High	7440-47-3	Inorganic	B2BY96	Target 14-3	OCSA	13.7	mg/kg		DET	low
Chromium	High	7440-47-3	Inorganic	B2BY97	Target 14-4	OCSA	14	mg/kg		DET	low
Chromium	High	7440-47-3	Inorganic	B2BY98	Target 14-5	OCSA	13.7	mg/kg		DET	low
Chromium	High	7440-47-3	Inorganic	B2BYB5	Target 16-1	OCSA	13	mg/kg		DET	low
Chromium	High	7440-47-3	Inorganic	B2BYB6	Target 16-2	OCSA	14.7	mg/kg		DET	low
Chromium	High	7440-47-3	Inorganic	B2BYB7	Target 16-3	OCSA	44.8	mg/kg		DET	med
Chromium	High	7440-47-3	Inorganic	B2BYB8	Target 16-4	OCSA	22.2	mg/kg		DET	low
Chromium	High	7440-47-3	Inorganic	B2BYB9	Target 16-5	OCSA	17.5	mg/kg		DET	low
Chromium	High	7440-47-3	Inorganic	B2BYC0	Target 17-1	OCSA	15.7	mg/kg		DET	low
Chromium	High	7440-47-3	Inorganic	B2BYC1	Target 17-2	OCSA	11.5	mg/kg		DET	low
Chromium	High	7440-47-3	Inorganic	B2BYC2	Target 17-3	OCSA	10.3	mg/kg		DET	low
Chromium	High	7440-47-3	Inorganic	B2BYC3	Target 17-4	OCSA	14.1	mg/kg		DET	low
Chromium	High	7440-47-3	Inorganic	B2BYC4	Target 17-5	OCSA	23.7	mg/kg		DET	low
Chromium	High	7440-47-3	Inorganic	B2BYC5	Target 18-1	OCSA	31	mg/kg		DET	med
Chromium	High	7440-47-3	Inorganic	B2BYC6	Target 18-2	OCSA	20.9	mg/kg		DET	low
Chromium	High	7440-47-3	Inorganic	B2BYC7	Target 18-3	OCSA	15.5	mg/kg		DET	low
Chromium	High	7440-47-3	Inorganic	B2BYC8	Target 18-3D	OCSA	17.1	mg/kg		DET	low
Chromium	High	7440-47-3	Inorganic	B2BYC9	Target 18-4	OCSA	9.03	mg/kg		DET	low
Chromium	High	7440-47-3	Inorganic	B2BYD0	Target 18-5	OCSA	259	mg/kg		DET	hi
Chromium	High	7440-47-3	Inorganic	B2BYD4	Target 19-4	OCSA	16.1	mg/kg		DET	low
Chromium	High	7440-47-3	Inorganic	B2BYD6	Target 20-1	OCSA	16.3	mg/kg		DET	low
Chromium	High	7440-47-3	Inorganic	B2BYD7	Target 20-2	OCSA	18.6	mg/kg		DET	low
Chromium	High	7440-47-3	Inorganic	B2BYD8	Target 20-3	OCSA	15.9	mg/kg		DET	low
Chromium	High	7440-47-3	Inorganic	B2BYD9	Target 20-4	OCSA	13	mg/kg		DET	low
Chromium	High	7440-47-3	Inorganic	B2BYF1	Target 21-1	OCSA	9.94	mg/kg		DET	low
Chromium	High	7440-47-3	Inorganic	B2BYF2	Target 21-2	OCSA	9.62	mg/kg		DET	low
Chromium	High	7440-47-3	Inorganic	B2BYF3	Target 21-3	OCSA	10.5	mg/kg		DET	low
Chromium	High	7440-47-3	Inorganic	B2BYF4	Target 21-4	OCSA	7.84	mg/kg		DET	low
Chromium	High	7440-47-3	Inorganic	B2BYF5	Target 21-5	OCSA	8.48	mg/kg		DET	low
Chromium	High	7440-47-3	Inorganic	B2BYF6	Target 22-1	OCSA	10.8	mg/kg		DET	low
Chromium	High	7440-47-3	Inorganic	B2BYF7	Target 22-2	OCSA	14.5	mg/kg		DET	low
Chromium	High	7440-47-3	Inorganic	B2BYF8	Target 22-3	OCSA	17.4	mg/kg		DET	low
Chromium	High	7440-47-3	Inorganic	B2BYF9	Target 22-4	OCSA	12.7	mg/kg		DET	low
Chromium	High	7440-47-3	Inorganic	B2BYH0	Target 22-4D	OCSA	10.6	mg/kg		DET	low
Chromium	High	7440-47-3	Inorganic	B2BYH1	Target 22-5	OCSA	17.9	mg/kg		DET	low
Chromium	High	7440-47-3	Inorganic	B2BYH2	Target 23-1	OCSA	7.49	mg/kg		DET	low
Chromium	High	7440-47-3	Inorganic	B2BYH3	Target 23-2	OCSA	9.85	mg/kg		DET	low
Chromium	High	7440-47-3	Inorganic	B2BYH4	Target 23-3	OCSA	8.29	mg/kg		DET	low
Chromium	High	7440-47-3	Inorganic	B2BXT3	Target 24-1	120-KW-1	7.58	mg/kg		DET	low
Chromium	High	7440-47-3	Inorganic	B2BXT5	Target 24-2	120-KW-1	3.71	mg/kg	B	DET	low
Chromium	High	7440-47-3	Inorganic	B2BXT6	Target 24-3	120-KW-1	2.82	mg/kg	B	DET	low
Chromium	High	7440-47-3	Inorganic	B2BXT8	Target 24-5	120-KW-1	9.01	mg/kg		DET	low
Chromium	High	7440-47-3	Inorganic	B2BP63	Target 6-5	600-228	10.1	mg/kg		DET	low
Chromium	High	7440-47-3	Inorganic	B2C126	Target 7-1	600-281	13.3	mg/kg	N	DET	low
Chromium	High	7440-47-3	Inorganic	B2C134	Target 8-3	600-281	16.3	mg/kg		DET	low
Mercury	High	7439-97-6	Inorganic	B2BVM9	Control 1	600-218	0.052	mg/kg	U	ND	low
Mercury	High	7439-97-6	Inorganic	B2BVP2	Control 13	OCSA	0.053	mg/kg	U	ND	low
Mercury	High	7439-97-6	Inorganic	B2BVP4	Control 15	OCSA	0.051	mg/kg	U	ND	low
Mercury	High	7439-97-6	Inorganic	B2BVP5	Control 16	OCSA	0.056	mg/kg	B	DET	low
Mercury	High	7439-97-6	Inorganic	B2BVP6	Control 17	OCSA	0.051	mg/kg	U	ND	low
Mercury	High	7439-97-6	Inorganic	B2BVP7	Control 18	OCSA	0.051	mg/kg	U	ND	low
Mercury	High	7439-97-6	Inorganic	B2BVN0	Control 2	600-218	0.053	mg/kg	U	ND	low

Table 3-1 Analytical chemistry data for soils used for plant and soil invertebrate bioassays for upland locations at the Hanford Site

Analyte	Priority	CASNo	AnalGrp	SampleID	LocationID	WasteSite	Conc	Units	Qualifer	qual	grp
Mercury	High	7439-97-6	Inorganic	B2BVP9	Control 20	OCSA	0.053	mg/kg	U	ND	low
Mercury	High	7439-97-6	Inorganic	B2BVN2	Control 4	600-220	0.0651	mg/kg	B	DET	low
Mercury	High	7439-97-6	Inorganic	B2BVN6	Control 8	600-228	0.052	mg/kg	U	ND	low
Mercury	High	7439-97-6	Inorganic	B2BVN8	Control 9D	600-228	0.051	mg/kg	U	ND	low
Mercury	High	7439-97-6	Inorganic	B2D0D8	Lab Soil	None	0.063	mg/kg	U	ND	low
Mercury	High	7439-97-6	Inorganic	B2BY78	Target 11-1	OCSA	0.05	mg/kg	U	ND	low
Mercury	High	7439-97-6	Inorganic	B2BY83	Target 12-1	OCSA	0.05	mg/kg	U	ND	low
Mercury	High	7439-97-6	Inorganic	B2BY84	Target 12-2	OCSA	0.049	mg/kg	U	ND	low
Mercury	High	7439-97-6	Inorganic	B2BY85	Target 12-3	OCSA	0.05	mg/kg	U	ND	low
Mercury	High	7439-97-6	Inorganic	B2BY86	Target 12-4	OCSA	0.051	mg/kg	U	ND	low
Mercury	High	7439-97-6	Inorganic	B2BY87	Target 12-4D	OCSA	0.048	mg/kg	U	ND	low
Mercury	High	7439-97-6	Inorganic	B2BY88	Target 12-5	OCSA	0.048	mg/kg	U	ND	low
Mercury	High	7439-97-6	Inorganic	B2BY89	Target 13-1	OCSA	0.05	mg/kg	U	ND	low
Mercury	High	7439-97-6	Inorganic	B2BY90	Target 13-2	OCSA	0.0682	mg/kg	B	DET	low
Mercury	High	7439-97-6	Inorganic	B2BY91	Target 13-3	OCSA	0.049	mg/kg	U	ND	low
Mercury	High	7439-97-6	Inorganic	B2BY92	Target 13-4	OCSA	0.05	mg/kg	U	ND	low
Mercury	High	7439-97-6	Inorganic	B2BY93	Target 13-5	OCSA	0.05	mg/kg	U	ND	low
Mercury	High	7439-97-6	Inorganic	B2BY94	Target 14-1	OCSA	0.051	mg/kg	U	ND	low
Mercury	High	7439-97-6	Inorganic	B2BY95	Target 14-2	OCSA	0.049	mg/kg	U	ND	low
Mercury	High	7439-97-6	Inorganic	B2BY96	Target 14-3	OCSA	0.052	mg/kg	U	ND	low
Mercury	High	7439-97-6	Inorganic	B2BY97	Target 14-4	OCSA	0.051	mg/kg	U	ND	low
Mercury	High	7439-97-6	Inorganic	B2BY98	Target 14-5	OCSA	0.048	mg/kg	U	ND	low
Mercury	High	7439-97-6	Inorganic	B2BYB5	Target 16-1	OCSA	0.054	mg/kg	U	ND	low
Mercury	High	7439-97-6	Inorganic	B2BYB6	Target 16-2	OCSA	0.053	mg/kg	U	ND	low
Mercury	High	7439-97-6	Inorganic	B2BYB7	Target 16-3	OCSA	0.178	mg/kg		DET	low
Mercury	High	7439-97-6	Inorganic	B2BYB8	Target 16-4	OCSA	0.053	mg/kg	U	ND	low
Mercury	High	7439-97-6	Inorganic	B2BYB9	Target 16-5	OCSA	0.0528	mg/kg		DET	low
Mercury	High	7439-97-6	Inorganic	B2BYC0	Target 17-1	OCSA	0.172	mg/kg		DET	low
Mercury	High	7439-97-6	Inorganic	B2BYC1	Target 17-2	OCSA	0.054	mg/kg	U	ND	low
Mercury	High	7439-97-6	Inorganic	B2BYC2	Target 17-3	OCSA	0.052	mg/kg	U	ND	low
Mercury	High	7439-97-6	Inorganic	B2BYC3	Target 17-4	OCSA	0.053	mg/kg	U	ND	low
Mercury	High	7439-97-6	Inorganic	B2BYC4	Target 17-5	OCSA	0.055	mg/kg	U	ND	low
Mercury	High	7439-97-6	Inorganic	B2BYC5	Target 18-1	OCSA	0.0585	mg/kg		DET	low
Mercury	High	7439-97-6	Inorganic	B2BYC6	Target 18-2	OCSA	0.0617	mg/kg		DET	low
Mercury	High	7439-97-6	Inorganic	B2BYC7	Target 18-3	OCSA	0.07	mg/kg	U	ND	low
Mercury	High	7439-97-6	Inorganic	B2BYC8	Target 18-3D	OCSA	0.053	mg/kg	U	ND	low
Mercury	High	7439-97-6	Inorganic	B2BYC9	Target 18-4	OCSA	0.053	mg/kg	U	ND	low
Mercury	High	7439-97-6	Inorganic	B2BYD0	Target 18-5	OCSA	0.053	mg/kg	U	ND	low
Mercury	High	7439-97-6	Inorganic	B2BYD4	Target 19-4	OCSA	0.053	mg/kg	U	ND	low
Mercury	High	7439-97-6	Inorganic	B2BYD6	Target 20-1	OCSA	0.0666	mg/kg		DET	low
Mercury	High	7439-97-6	Inorganic	B2BYD7	Target 20-2	OCSA	0.068	mg/kg		DET	low
Mercury	High	7439-97-6	Inorganic	B2BYD8	Target 20-3	OCSA	0.0804	mg/kg		DET	low
Mercury	High	7439-97-6	Inorganic	B2BYD9	Target 20-4	OCSA	0.054	mg/kg	U	ND	low
Mercury	High	7439-97-6	Inorganic	B2BYF1	Target 21-1	OCSA	0.05	mg/kg	U	ND	low
Mercury	High	7439-97-6	Inorganic	B2BYF2	Target 21-2	OCSA	0.05	mg/kg	U	ND	low
Mercury	High	7439-97-6	Inorganic	B2BYF3	Target 21-3	OCSA	0.054	mg/kg	U	ND	low
Mercury	High	7439-97-6	Inorganic	B2BYF4	Target 21-4	OCSA	0.053	mg/kg	U	ND	low
Mercury	High	7439-97-6	Inorganic	B2BYF5	Target 21-5	OCSA	0.052	mg/kg	U	ND	low
Mercury	High	7439-97-6	Inorganic	B2BYF6	Target 22-1	OCSA	0.053	mg/kg	U	ND	low
Mercury	High	7439-97-6	Inorganic	B2BYF7	Target 22-2	OCSA	0.054	mg/kg	U	ND	low
Mercury	High	7439-97-6	Inorganic	B2BYF8	Target 22-3	OCSA	0.052	mg/kg	U	ND	low
Mercury	High	7439-97-6	Inorganic	B2BYF9	Target 22-4	OCSA	0.052	mg/kg	U	ND	low
Mercury	High	7439-97-6	Inorganic	B2BYH0	Target 22-4D	OCSA	0.06	mg/kg	U	ND	low
Mercury	High	7439-97-6	Inorganic	B2BYH1	Target 22-5	OCSA	0.053	mg/kg	U	ND	low
Mercury	High	7439-97-6	Inorganic	B2BYH2	Target 23-1	OCSA	0.052	mg/kg	U	ND	low
Mercury	High	7439-97-6	Inorganic	B2BYH3	Target 23-2	OCSA	0.054	mg/kg	U	ND	low
Mercury	High	7439-97-6	Inorganic	B2BYH4	Target 23-3	OCSA	0.051	mg/kg	U	ND	low
Mercury	High	7439-97-6	Inorganic	B2BXT3	Target 24-1	120-KW-1	1.65	mg/kg		DET	med
Mercury	High	7439-97-6	Inorganic	B2BXT5	Target 24-2	120-KW-1	12.5	mg/kg		DET	med
Mercury	High	7439-97-6	Inorganic	B2BXT6	Target 24-3	120-KW-1	12.3	mg/kg		DET	med
Mercury	High	7439-97-6	Inorganic	B2BXT8	Target 24-5	120-KW-1	0.0734	mg/kg	B	DET	low
Mercury	High	7439-97-6	Inorganic	B2BP63	Target 6-5	600-228	0.055	mg/kg	U	ND	low
Mercury	High	7439-97-6	Inorganic	B2C126	Target 7-1	600-281	0.05	mg/kg	U	ND	low
Mercury	High	7439-97-6	Inorganic	B2C134	Target 8-3	600-281	0.054	mg/kg	U	ND	low
Thallium	High	7440-28-0	Inorganic	B2BVM9	Control 1	600-218	0.1	mg/kg	U	ND	low
Thallium	High	7440-28-0	Inorganic	B2BVP2	Control 13	OCSA	0.11	mg/kg	U	ND	low
Thallium	High	7440-28-0	Inorganic	B2BVP4	Control 15	OCSA	0.1	mg/kg	U	ND	low
Thallium	High	7440-28-0	Inorganic	B2BVP5	Control 16	OCSA	0.1	mg/kg	U	ND	low
Thallium	High	7440-28-0	Inorganic	B2BVP6	Control 17	OCSA	0.1	mg/kg	U	ND	low
Thallium	High	7440-28-0	Inorganic	B2BVP7	Control 18	OCSA	0.1	mg/kg	U	ND	low
Thallium	High	7440-28-0	Inorganic	B2BVN0	Control 2	600-218	0.11	mg/kg	U	ND	low
Thallium	High	7440-28-0	Inorganic	B2BVP9	Control 20	OCSA	0.11	mg/kg	U	ND	low
Thallium	High	7440-28-0	Inorganic	B2BVN2	Control 4	600-220	0.12	mg/kg	B	DET	low
Thallium	High	7440-28-0	Inorganic	B2BVN6	Control 8	600-228	0.1	mg/kg	U	ND	low
Thallium	High	7440-28-0	Inorganic	B2BVN8	Control 9D	600-228	0.1	mg/kg	U	ND	low
Thallium	High	7440-28-0	Inorganic	B2D0D8	Lab Soil	None	0.13	mg/kg	U	ND	low
Thallium	High	7440-28-0	Inorganic	B2BY78	Target 11-1	OCSA	0.117	mg/kg	B	DET	low
Thallium	High	7440-28-0	Inorganic	B2BY83	Target 12-1	OCSA	0.1	mg/kg	U	ND	low
Thallium	High	7440-28-0	Inorganic	B2BY84	Target 12-2	OCSA	0.098	mg/kg	U	ND	low
Thallium	High	7440-28-0	Inorganic	B2BY85	Target 12-3	OCSA	0.1	mg/kg	U	ND	low
Thallium	High	7440-28-0	Inorganic	B2BY86	Target 12-4	OCSA	0.1	mg/kg	U	ND	low
Thallium	High	7440-28-0	Inorganic	B2BY87	Target 12-4D	OCSA	0.096	mg/kg	U	ND	low
Thallium	High	7440-28-0	Inorganic	B2BY88	Target 12-5	OCSA	0.096	mg/kg	U	ND	low
Thallium	High	7440-28-0	Inorganic	B2BY89	Target 13-1	OCSA	0.116	mg/kg	B	DET	low
Thallium	High	7440-28-0	Inorganic	B2BY90	Target 13-2	OCSA	0.1	mg/kg	U	ND	low
Thallium	High	7440-28-0	Inorganic	B2BY91	Target 13-3	OCSA	0.1	mg/kg	B	DET	low
Thallium	High	7440-28-0	Inorganic	B2BY92	Target 13-4	OCSA	0.102	mg/kg	B	DET	low
Thallium	High	7440-28-0	Inorganic	B2BY93	Target 13-5	OCSA	0.15	mg/kg	B	DET	low
Thallium	High	7440-28-0	Inorganic	B2BY94	Target 14-1	OCSA	0.1	mg/kg	U	ND	low
Thallium	High	7440-28-0	Inorganic	B2BY95	Target 14-2	OCSA	0.098	mg/kg	U	ND	low
Thallium	High	7440-28-0	Inorganic	B2BY96	Target 14-3	OCSA	0.1	mg/kg	U	ND	low
Thallium	High	7440-28-0	Inorganic	B2BY97	Target 14-4	OCSA	0.101	mg/kg	B	DET	low
Thallium	High	7440-28-0	Inorganic	B2BY98	Target 14-5	OCSA	0.096	mg/kg	U	ND	low
Thallium	High	7440-28-0	Inorganic	B2BYB5	Target 16-1	OCSA	0.161	mg/kg		DET	low
Thallium	High	7440-28-0	Inorganic	B2BYB6	Target 16-2	OCSA	0.241	mg/kg		DET	low
Thallium	High	7440-28-0	Inorganic	B2BYB7	Target 16-3	OCSA	0.263	mg/kg		DET	low
Thallium	High	7440-28-0	Inorganic	B2BYB8	Target 16-4	OCSA	0.352	mg/kg		DET	low

Table 3-1 Analytical chemistry data for soils used for plant and soil invertebrate bioassays for upland locations at the Hanford Site

Analyte	Priority	CASNo	AnalGrp	SampleID	LocationID	WasteSite	Conc	Units	Qualifer	qual	grp
Thallium	High	7440-28-0	Inorganic	B2BYB9	Target 16-5	OCSA	0.459	mg/kg		DET	low
Thallium	High	7440-28-0	Inorganic	B2BYC0	Target 17-1	OCSA	0.11	mg/kg	U	ND	low
Thallium	High	7440-28-0	Inorganic	B2BYC1	Target 17-2	OCSA	0.11	mg/kg	U	ND	low
Thallium	High	7440-28-0	Inorganic	B2BYC2	Target 17-3	OCSA	0.1	mg/kg	U	ND	low
Thallium	High	7440-28-0	Inorganic	B2BYC3	Target 17-4	OCSA	0.11	mg/kg	U	ND	low
Thallium	High	7440-28-0	Inorganic	B2BYC4	Target 17-5	OCSA	0.118	mg/kg		DET	low
Thallium	High	7440-28-0	Inorganic	B2BYC5	Target 18-1	OCSA	0.11	mg/kg	U	ND	low
Thallium	High	7440-28-0	Inorganic	B2BYC6	Target 18-2	OCSA	0.11	mg/kg	U	ND	low
Thallium	High	7440-28-0	Inorganic	B2BYC7	Target 18-3	OCSA	0.14	mg/kg	U	ND	low
Thallium	High	7440-28-0	Inorganic	B2BYC8	Target 18-3D	OCSA	0.11	mg/kg	U	ND	low
Thallium	High	7440-28-0	Inorganic	B2BYC9	Target 18-4	OCSA	0.11	mg/kg	U	ND	low
Thallium	High	7440-28-0	Inorganic	B2BYD0	Target 18-5	OCSA	0.11	mg/kg	U	ND	low
Thallium	High	7440-28-0	Inorganic	B2BYD4	Target 19-4	OCSA	0.11	mg/kg	U	ND	low
Thallium	High	7440-28-0	Inorganic	B2BYD6	Target 20-1	OCSA	0.11	mg/kg	U	ND	low
Thallium	High	7440-28-0	Inorganic	B2BYD7	Target 20-2	OCSA	0.11	mg/kg	U	ND	low
Thallium	High	7440-28-0	Inorganic	B2BYD8	Target 20-3	OCSA	0.11	mg/kg	U	ND	low
Thallium	High	7440-28-0	Inorganic	B2BYD9	Target 20-4	OCSA	0.161	mg/kg		DET	low
Thallium	High	7440-28-0	Inorganic	B2BYF1	Target 21-1	OCSA	0.1	mg/kg	U	ND	low
Thallium	High	7440-28-0	Inorganic	B2BYF2	Target 21-2	OCSA	0.1	mg/kg	U	ND	low
Thallium	High	7440-28-0	Inorganic	B2BYF3	Target 21-3	OCSA	0.11	mg/kg	U	ND	low
Thallium	High	7440-28-0	Inorganic	B2BYF4	Target 21-4	OCSA	0.11	mg/kg	U	ND	low
Thallium	High	7440-28-0	Inorganic	B2BYF5	Target 21-5	OCSA	0.103	mg/kg	U	ND	low
Thallium	High	7440-28-0	Inorganic	B2BYF6	Target 22-1	OCSA	0.11	mg/kg	U	ND	low
Thallium	High	7440-28-0	Inorganic	B2BYF7	Target 22-2	OCSA	0.11	mg/kg	U	ND	low
Thallium	High	7440-28-0	Inorganic	B2BYF8	Target 22-3	OCSA	0.135	mg/kg	U	ND	low
Thallium	High	7440-28-0	Inorganic	B2BYF9	Target 22-4	OCSA	0.1	mg/kg	U	ND	low
Thallium	High	7440-28-0	Inorganic	B2BYH0	Target 22-4D	OCSA	0.11	mg/kg	U	ND	low
Thallium	High	7440-28-0	Inorganic	B2BYH1	Target 22-5	OCSA	0.114	mg/kg	U	ND	low
Thallium	High	7440-28-0	Inorganic	B2BYH2	Target 23-1	OCSA	0.1	mg/kg	U	ND	low
Thallium	High	7440-28-0	Inorganic	B2BYH3	Target 23-2	OCSA	0.11	mg/kg	U	ND	low
Thallium	High	7440-28-0	Inorganic	B2BYH4	Target 23-3	OCSA	0.1	mg/kg	U	ND	low
Thallium	High	7440-28-0	Inorganic	B2BXT3	Target 24-1	120-KW-1	0.1	mg/kg	U	ND	low
Thallium	High	7440-28-0	Inorganic	B2BXT5	Target 24-2	120-KW-1	0.1	mg/kg	U	ND	low
Thallium	High	7440-28-0	Inorganic	B2BXT6	Target 24-3	120-KW-1	0.1	mg/kg	U	ND	low
Thallium	High	7440-28-0	Inorganic	B2BXT8	Target 24-5	120-KW-1	0.096	mg/kg	U	ND	low
Thallium	High	7440-28-0	Inorganic	B2BP63	Target 6-5	600-228	0.11	mg/kg	U	ND	low
Thallium	High	7440-28-0	Inorganic	B2C126	Target 7-1	600-281	0.11	mg/kg	B	DET	low
Thallium	High	7440-28-0	Inorganic	B2C134	Target 8-3	600-281	0.11	mg/kg	U	ND	low
Uranium	High	7440-61-1	Inorganic	B2BVM9	Control 1	600-218	0.414	mg/kg		DET	low
Uranium	High	7440-61-1	Inorganic	B2BVP2	Control 13	OCSA	0.373	mg/kg	B	DET	low
Uranium	High	7440-61-1	Inorganic	B2BVP4	Control 15	OCSA	0.462	mg/kg	B	DET	low
Uranium	High	7440-61-1	Inorganic	B2BVP5	Control 16	OCSA	0.392	mg/kg	B	DET	low
Uranium	High	7440-61-1	Inorganic	B2BVP6	Control 17	OCSA	0.335	mg/kg	B	DET	low
Uranium	High	7440-61-1	Inorganic	B2BVP7	Control 18	OCSA	0.476	mg/kg	B	DET	low
Uranium	High	7440-61-1	Inorganic	B2BVN0	Control 2	600-218	0.543	mg/kg		DET	low
Uranium	High	7440-61-1	Inorganic	B2BVP9	Control 20	OCSA	0.331	mg/kg	B	DET	low
Uranium	High	7440-61-1	Inorganic	B2BVN2	Control 4	600-220	0.413	mg/kg	B	DET	low
Uranium	High	7440-61-1	Inorganic	B2BVN6	Control 8	600-228	0.359	mg/kg	B	DET	low
Uranium	High	7440-61-1	Inorganic	B2BVN8	Control 9D	600-228	0.402	mg/kg	B	DET	low
Uranium	High	7440-61-1	Inorganic	B2D0D8	Lab Soil	None	4.76	mg/kg		DET	low
Uranium	High	7440-61-1	Inorganic	B2BY78	Target 11-1	OCSA	0.617	mg/kg		DET	low
Uranium	High	7440-61-1	Inorganic	B2BY83	Target 12-1	OCSA	0.509	mg/kg		DET	low
Uranium	High	7440-61-1	Inorganic	B2BY84	Target 12-2	OCSA	0.517	mg/kg		DET	low
Uranium	High	7440-61-1	Inorganic	B2BY85	Target 12-3	OCSA	0.474	mg/kg	B	DET	low
Uranium	High	7440-61-1	Inorganic	B2BY86	Target 12-4	OCSA	0.502	mg/kg	B	DET	low
Uranium	High	7440-61-1	Inorganic	B2BY87	Target 12-4D	OCSA	0.454	mg/kg	B	DET	low
Uranium	High	7440-61-1	Inorganic	B2BY88	Target 12-5	OCSA	0.772	mg/kg		DET	low
Uranium	High	7440-61-1	Inorganic	B2BY89	Target 13-1	OCSA	0.474	mg/kg	B	DET	low
Uranium	High	7440-61-1	Inorganic	B2BY90	Target 13-2	OCSA	0.79	mg/kg		DET	low
Uranium	High	7440-61-1	Inorganic	B2BY91	Target 13-3	OCSA	0.5	mg/kg		DET	low
Uranium	High	7440-61-1	Inorganic	B2BY92	Target 13-4	OCSA	0.492	mg/kg	B	DET	low
Uranium	High	7440-61-1	Inorganic	B2BY93	Target 13-5	OCSA	0.436	mg/kg	B	DET	low
Uranium	High	7440-61-1	Inorganic	B2BY94	Target 14-1	OCSA	0.537	mg/kg		DET	low
Uranium	High	7440-61-1	Inorganic	B2BY95	Target 14-2	OCSA	0.485	mg/kg	B	DET	low
Uranium	High	7440-61-1	Inorganic	B2BY96	Target 14-3	OCSA	0.466	mg/kg	B	DET	low
Uranium	High	7440-61-1	Inorganic	B2BY97	Target 14-4	OCSA	0.506	mg/kg	B	DET	low
Uranium	High	7440-61-1	Inorganic	B2BY98	Target 14-5	OCSA	0.567	mg/kg		DET	low
Uranium	High	7440-61-1	Inorganic	B2BYB5	Target 16-1	OCSA	0.515	mg/kg		DET	low
Uranium	High	7440-61-1	Inorganic	B2BYB6	Target 16-2	OCSA	0.473	mg/kg		DET	low
Uranium	High	7440-61-1	Inorganic	B2BYB7	Target 16-3	OCSA	0.439	mg/kg		DET	low
Uranium	High	7440-61-1	Inorganic	B2BYB8	Target 16-4	OCSA	1.15	mg/kg		DET	low
Uranium	High	7440-61-1	Inorganic	B2BYB9	Target 16-5	OCSA	0.412	mg/kg		DET	low
Uranium	High	7440-61-1	Inorganic	B2BYC0	Target 17-1	OCSA	0.474	mg/kg		DET	low
Uranium	High	7440-61-1	Inorganic	B2BYC1	Target 17-2	OCSA	0.869	mg/kg		DET	low
Uranium	High	7440-61-1	Inorganic	B2BYC2	Target 17-3	OCSA	0.736	mg/kg		DET	low
Uranium	High	7440-61-1	Inorganic	B2BYC3	Target 17-4	OCSA	0.453	mg/kg		DET	low
Uranium	High	7440-61-1	Inorganic	B2BYC4	Target 17-5	OCSA	0.43	mg/kg		DET	low
Uranium	High	7440-61-1	Inorganic	B2BYC5	Target 18-1	OCSA	0.466	mg/kg		DET	low
Uranium	High	7440-61-1	Inorganic	B2BYC6	Target 18-2	OCSA	0.391	mg/kg		DET	low
Uranium	High	7440-61-1	Inorganic	B2BYC7	Target 18-3	OCSA	0.728	mg/kg		DET	low
Uranium	High	7440-61-1	Inorganic	B2BYC8	Target 18-3D	OCSA	0.69	mg/kg		DET	low
Uranium	High	7440-61-1	Inorganic	B2BYC9	Target 18-4	OCSA	0.55	mg/kg		DET	low
Uranium	High	7440-61-1	Inorganic	B2BYD0	Target 18-5	OCSA	0.955	mg/kg		DET	low
Uranium	High	7440-61-1	Inorganic	B2BYD4	Target 19-4	OCSA	0.441	mg/kg		DET	low
Uranium	High	7440-61-1	Inorganic	B2BYD6	Target 20-1	OCSA	0.842	mg/kg		DET	low
Uranium	High	7440-61-1	Inorganic	B2BYD7	Target 20-2	OCSA	0.599	mg/kg		DET	low
Uranium	High	7440-61-1	Inorganic	B2BYD8	Target 20-3	OCSA	0.651	mg/kg		DET	low
Uranium	High	7440-61-1	Inorganic	B2BYD9	Target 20-4	OCSA	0.515	mg/kg		DET	low
Uranium	High	7440-61-1	Inorganic	B2BYF1	Target 21-1	OCSA	0.491	mg/kg		DET	low
Uranium	High	7440-61-1	Inorganic	B2BYF2	Target 21-2	OCSA	0.425	mg/kg		DET	low
Uranium	High	7440-61-1	Inorganic	B2BYF3	Target 21-3	OCSA	0.527	mg/kg		DET	low
Uranium	High	7440-61-1	Inorganic	B2BYF4	Target 21-4	OCSA	0.545	mg/kg		DET	low
Uranium	High	7440-61-1	Inorganic	B2BYF5	Target 21-5	OCSA	0.464	mg/kg		DET	low
Uranium	High	7440-61-1	Inorganic	B2BYF6	Target 22-1	OCSA	0.572	mg/kg		DET	low
Uranium	High	7440-61-1	Inorganic	B2BYF7	Target 22-2	OCSA	0.514	mg/kg		DET	low
Uranium	High	7440-61-1	Inorganic	B2BYF8	Target 22-3	OCSA	0.619	mg/kg		DET	low
Uranium	High	7440-61-1	Inorganic	B2BYF9	Target 22-4	OCSA	0.641	mg/kg		DET	low

Table 3-1 Analytical chemistry data for soils used for plant and soil invertebrate bioassays for upland locations at the Hanford Site

Analyte	Priority	CASNo	AnalGrp	SampleID	LocationID	WasteSite	Conc	Units	Qualifer	qual	grp
Uranium	High	7440-61-1	Inorganic	B2BYH0	Target 22-4D	OCSA	0.69	mg/kg		DET	low
Uranium	High	7440-61-1	Inorganic	B2BYH1	Target 22-5	OCSA	0.813	mg/kg		DET	low
Uranium	High	7440-61-1	Inorganic	B2BYH2	Target 23-1	OCSA	0.638	mg/kg		DET	low
Uranium	High	7440-61-1	Inorganic	B2BYH3	Target 23-2	OCSA	0.636	mg/kg		DET	low
Uranium	High	7440-61-1	Inorganic	B2BYH4	Target 23-3	OCSA	1.37	mg/kg		DET	low
Uranium	High	7440-61-1	Inorganic	B2BXT3	Target 24-1	120-KW-1	0.474	mg/kg	B	DET	low
Uranium	High	7440-61-1	Inorganic	B2BXT5	Target 24-2	120-KW-1	0.243	mg/kg	B	DET	low
Uranium	High	7440-61-1	Inorganic	B2BXT6	Target 24-3	120-KW-1	0.219	mg/kg	B	DET	low
Uranium	High	7440-61-1	Inorganic	B2BXT8	Target 24-5	120-KW-1	0.612	mg/kg		DET	low
Uranium	High	7440-61-1	Inorganic	B2BP63	Target 6-5	600-228	0.432	mg/kg	B	DET	low
Uranium	High	7440-61-1	Inorganic	B2C126	Target 7-1	600-281	0.44	mg/kg	B	DET	low
Uranium	High	7440-61-1	Inorganic	B2C134	Target 8-3	600-281	0.41	mg/kg	B	DET	low
Zinc	High	7440-66-6	Inorganic	B2BVM9	Control 1	600-218	46.1	mg/kg		DET	low
Zinc	High	7440-66-6	Inorganic	B2BVP2	Control 13	OCSA	40.5	mg/kg		DET	low
Zinc	High	7440-66-6	Inorganic	B2BVP4	Control 15	OCSA	44.1	mg/kg		DET	low
Zinc	High	7440-66-6	Inorganic	B2BVP5	Control 16	OCSA	39.5	mg/kg		DET	low
Zinc	High	7440-66-6	Inorganic	B2BVP6	Control 17	OCSA	40.1	mg/kg		DET	low
Zinc	High	7440-66-6	Inorganic	B2BVP7	Control 18	OCSA	40.1	mg/kg		DET	low
Zinc	High	7440-66-6	Inorganic	B2BVN0	Control 2	600-218	52.5	mg/kg		DET	low
Zinc	High	7440-66-6	Inorganic	B2BVP9	Control 20	OCSA	38.5	mg/kg		DET	low
Zinc	High	7440-66-6	Inorganic	B2BVN2	Control 4	600-220	41.6	mg/kg		DET	low
Zinc	High	7440-66-6	Inorganic	B2BVN6	Control 8	600-228	44.1	mg/kg		DET	low
Zinc	High	7440-66-6	Inorganic	B2BVN8	Control 9D	600-228	45.7	mg/kg		DET	low
Zinc	High	7440-66-6	Inorganic	B2D0D8	Lab Soil	None	4.08	mg/kg	B	DET	low
Zinc	High	7440-66-6	Inorganic	B2BY78	Target 11-1	OCSA	48.7	mg/kg		DET	low
Zinc	High	7440-66-6	Inorganic	B2BY83	Target 12-1	OCSA	57.1	mg/kg		DET	low
Zinc	High	7440-66-6	Inorganic	B2BY84	Target 12-2	OCSA	57.2	mg/kg		DET	low
Zinc	High	7440-66-6	Inorganic	B2BY85	Target 12-3	OCSA	48.9	mg/kg		DET	low
Zinc	High	7440-66-6	Inorganic	B2BY86	Target 12-4	OCSA	69.8	mg/kg		DET	low
Zinc	High	7440-66-6	Inorganic	B2BY87	Target 12-4D	OCSA	69	mg/kg		DET	low
Zinc	High	7440-66-6	Inorganic	B2BY88	Target 12-5	OCSA	51.8	mg/kg		DET	low
Zinc	High	7440-66-6	Inorganic	B2BY89	Target 13-1	OCSA	121	mg/kg		DET	low
Zinc	High	7440-66-6	Inorganic	B2BY90	Target 13-2	OCSA	114	mg/kg		DET	low
Zinc	High	7440-66-6	Inorganic	B2BY91	Target 13-3	OCSA	56.1	mg/kg		DET	low
Zinc	High	7440-66-6	Inorganic	B2BY92	Target 13-4	OCSA	72.8	mg/kg		DET	low
Zinc	High	7440-66-6	Inorganic	B2BY93	Target 13-5	OCSA	63.5	mg/kg		DET	low
Zinc	High	7440-66-6	Inorganic	B2BY94	Target 14-1	OCSA	97.1	mg/kg		DET	low
Zinc	High	7440-66-6	Inorganic	B2BY95	Target 14-2	OCSA	90.5	mg/kg		DET	low
Zinc	High	7440-66-6	Inorganic	B2BY96	Target 14-3	OCSA	73.9	mg/kg		DET	low
Zinc	High	7440-66-6	Inorganic	B2BY97	Target 14-4	OCSA	106	mg/kg		DET	low
Zinc	High	7440-66-6	Inorganic	B2BY98	Target 14-5	OCSA	71.2	mg/kg		DET	low
Zinc	High	7440-66-6	Inorganic	B2BYB5	Target 16-1	OCSA	183	mg/kg	N	DET	med
Zinc	High	7440-66-6	Inorganic	B2BYB6	Target 16-2	OCSA	646	mg/kg	N	DET	med
Zinc	High	7440-66-6	Inorganic	B2BYB7	Target 16-3	OCSA	1890	mg/kg	N	DET	hi
Zinc	High	7440-66-6	Inorganic	B2BYB8	Target 16-4	OCSA	404	mg/kg	N	DET	med
Zinc	High	7440-66-6	Inorganic	B2BYB9	Target 16-5	OCSA	537	mg/kg	N	DET	med
Zinc	High	7440-66-6	Inorganic	B2BYC0	Target 17-1	OCSA	1680	mg/kg	N	DET	hi
Zinc	High	7440-66-6	Inorganic	B2BYC1	Target 17-2	OCSA	109	mg/kg	N	DET	low
Zinc	High	7440-66-6	Inorganic	B2BYC2	Target 17-3	OCSA	95.2	mg/kg	N	DET	low
Zinc	High	7440-66-6	Inorganic	B2BYC3	Target 17-4	OCSA	243	mg/kg	N	DET	med
Zinc	High	7440-66-6	Inorganic	B2BYC4	Target 17-5	OCSA	549	mg/kg	N	DET	med
Zinc	High	7440-66-6	Inorganic	B2BYC5	Target 18-1	OCSA	725	mg/kg	N	DET	med
Zinc	High	7440-66-6	Inorganic	B2BYC6	Target 18-2	OCSA	338	mg/kg	N	DET	med
Zinc	High	7440-66-6	Inorganic	B2BYC7	Target 18-3	OCSA	327	mg/kg	N	DET	med
Zinc	High	7440-66-6	Inorganic	B2BYC8	Target 18-3D	OCSA	382	mg/kg	N	DET	med
Zinc	High	7440-66-6	Inorganic	B2BYC9	Target 18-4	OCSA	49.4	mg/kg	N	DET	low
Zinc	High	7440-66-6	Inorganic	B2BYD0	Target 18-5	OCSA	370	mg/kg	N	DET	med
Zinc	High	7440-66-6	Inorganic	B2BYD4	Target 19-4	OCSA	50.4	mg/kg		DET	low
Zinc	High	7440-66-6	Inorganic	B2BYD6	Target 20-1	OCSA	194	mg/kg	N	DET	med
Zinc	High	7440-66-6	Inorganic	B2BYD7	Target 20-2	OCSA	157	mg/kg	N	DET	med
Zinc	High	7440-66-6	Inorganic	B2BYD8	Target 20-3	OCSA	179	mg/kg	N	DET	med
Zinc	High	7440-66-6	Inorganic	B2BYD9	Target 20-4	OCSA	183	mg/kg	N	DET	med
Zinc	High	7440-66-6	Inorganic	B2BYF1	Target 21-1	OCSA	2620	mg/kg		DET	hi
Zinc	High	7440-66-6	Inorganic	B2BYF2	Target 21-2	OCSA	399	mg/kg		DET	med
Zinc	High	7440-66-6	Inorganic	B2BYF3	Target 21-3	OCSA	49.1	mg/kg		DET	low
Zinc	High	7440-66-6	Inorganic	B2BYF4	Target 21-4	OCSA	55.6	mg/kg		DET	low
Zinc	High	7440-66-6	Inorganic	B2BYF5	Target 21-5	OCSA	51.7	mg/kg		DET	low
Zinc	High	7440-66-6	Inorganic	B2BYF6	Target 22-1	OCSA	155	mg/kg		DET	med
Zinc	High	7440-66-6	Inorganic	B2BYF7	Target 22-2	OCSA	880	mg/kg		DET	hi
Zinc	High	7440-66-6	Inorganic	B2BYF8	Target 22-3	OCSA	670	mg/kg		DET	med
Zinc	High	7440-66-6	Inorganic	B2BYF9	Target 22-4	OCSA	148	mg/kg		DET	med
Zinc	High	7440-66-6	Inorganic	B2BYH0	Target 22-4D	OCSA	119	mg/kg		DET	low
Zinc	High	7440-66-6	Inorganic	B2BYH1	Target 22-5	OCSA	8980	mg/kg		DET	hi
Zinc	High	7440-66-6	Inorganic	B2BYH2	Target 23-1	OCSA	55.4	mg/kg		DET	low
Zinc	High	7440-66-6	Inorganic	B2BYH3	Target 23-2	OCSA	51	mg/kg		DET	low
Zinc	High	7440-66-6	Inorganic	B2BYH4	Target 23-3	OCSA	56.3	mg/kg		DET	low
Zinc	High	7440-66-6	Inorganic	B2BXT3	Target 24-1	120-KW-1	36.6	mg/kg		DET	low
Zinc	High	7440-66-6	Inorganic	B2BXT5	Target 24-2	120-KW-1	15.8	mg/kg		DET	low
Zinc	High	7440-66-6	Inorganic	B2BXT6	Target 24-3	120-KW-1	9.18	mg/kg		DET	low
Zinc	High	7440-66-6	Inorganic	B2BXT8	Target 24-5	120-KW-1	43.9	mg/kg		DET	low
Zinc	High	7440-66-6	Inorganic	B2BP63	Target 6-5	600-228	56.6	mg/kg		DET	low
Zinc	High	7440-66-6	Inorganic	B2C126	Target 7-1	600-281	60.2	mg/kg		DET	low
Zinc	High	7440-66-6	Inorganic	B2C134	Target 8-3	600-281	109	mg/kg	N	DET	low
Boron	Medium	7440-42-8	Inorganic	B2BVM9	Control 1	600-218	1.56	mg/kg	B	DET	low
Boron	Medium	7440-42-8	Inorganic	B2BVP2	Control 13	OCSA	2.57	mg/kg	B	DET	low
Boron	Medium	7440-42-8	Inorganic	B2BVP4	Control 15	OCSA	3.96	mg/kg	B	DET	low
Boron	Medium	7440-42-8	Inorganic	B2BVP5	Control 16	OCSA	2.2	mg/kg	B	DET	low
Boron	Medium	7440-42-8	Inorganic	B2BVP6	Control 17	OCSA	2.79	mg/kg	B	DET	low
Boron	Medium	7440-42-8	Inorganic	B2BVP7	Control 18	OCSA	1.94	mg/kg	B	DET	low
Boron	Medium	7440-42-8	Inorganic	B2BVN0	Control 2	600-218		mg/kg			
Boron	Medium	7440-42-8	Inorganic	B2BVP9	Control 20	OCSA		mg/kg			
Boron	Medium	7440-42-8	Inorganic	B2BVN2	Control 4	600-220		mg/kg			
Boron	Medium	7440-42-8	Inorganic	B2BVN6	Control 8	600-228	2.34	mg/kg	B	DET	low
Boron	Medium	7440-42-8	Inorganic	B2BVN8	Control 9D	600-228	1.78	mg/kg		DET	low
Boron	Medium	7440-42-8	Inorganic	B2D0D8	Lab Soil	None		mg/kg			
Boron	Medium	7440-42-8	Inorganic	B2BY78	Target 11-1	OCSA	2.19	mg/kg	J	ND	low
Boron	Medium	7440-42-8	Inorganic	B2BY83	Target 12-1	OCSA	3.04	mg/kg	J	ND	low

Table 3-1 Analytical chemistry data for soils used for plant and soil invertebrate bioassays for upland locations at the Hanford Site

Analyte	Priority	CASNo	AnalGrp	SampleID	LocationID	WasteSite	Conc	Units	Qualifer	qual	grp
Boron	Medium	7440-42-8	Inorganic	B2BY84	Target 12-2	OCSA	2.16	mg/kg	J	ND	low
Boron	Medium	7440-42-8	Inorganic	B2BY85	Target 12-3	OCSA	1.93	mg/kg	J	ND	low
Boron	Medium	7440-42-8	Inorganic	B2BY86	Target 12-4	OCSA	4.76	mg/kg	J	ND	low
Boron	Medium	7440-42-8	Inorganic	B2BY87	Target 12-4D	OCSA	4.55	mg/kg	J	ND	low
Boron	Medium	7440-42-8	Inorganic	B2BY88	Target 12-5	OCSA	4.26	mg/kg	J	ND	low
Boron	Medium	7440-42-8	Inorganic	B2BY89	Target 13-1	OCSA	5.24	mg/kg	J	ND	low
Boron	Medium	7440-42-8	Inorganic	B2BY90	Target 13-2	OCSA	7.95	mg/kg	J	DET	med
Boron	Medium	7440-42-8	Inorganic	B2BY91	Target 13-3	OCSA	2.14	mg/kg	J	ND	low
Boron	Medium	7440-42-8	Inorganic	B2BY92	Target 13-4	OCSA	3.82	mg/kg	J	ND	low
Boron	Medium	7440-42-8	Inorganic	B2BY93	Target 13-5	OCSA	3.68	mg/kg	J	ND	low
Boron	Medium	7440-42-8	Inorganic	B2BY94	Target 14-1	OCSA	3.18	mg/kg	J	DET	low
Boron	Medium	7440-42-8	Inorganic	B2BY95	Target 14-2	OCSA	4.2	mg/kg	J	ND	low
Boron	Medium	7440-42-8	Inorganic	B2BY96	Target 14-3	OCSA	6.23	mg/kg	J	ND	low
Boron	Medium	7440-42-8	Inorganic	B2BY97	Target 14-4	OCSA	10.3	mg/kg	J	DET	med
Boron	Medium	7440-42-8	Inorganic	B2BY98	Target 14-5	OCSA	5.32	mg/kg	J	ND	low
Boron	Medium	7440-42-8	Inorganic	B2BYB5	Target 16-1	OCSA	3.93	mg/kg	J	ND	low
Boron	Medium	7440-42-8	Inorganic	B2BYB6	Target 16-2	OCSA	7.11	mg/kg	J	ND	med
Boron	Medium	7440-42-8	Inorganic	B2BYB7	Target 16-3	OCSA	7.93	mg/kg	J	ND	med
Boron	Medium	7440-42-8	Inorganic	B2BYB8	Target 16-4	OCSA	4.29	mg/kg	J	ND	low
Boron	Medium	7440-42-8	Inorganic	B2BYB9	Target 16-5	OCSA	7.2	mg/kg	J	ND	med
Boron	Medium	7440-42-8	Inorganic	B2BYC0	Target 17-1	OCSA	15.5	mg/kg	J	ND	med
Boron	Medium	7440-42-8	Inorganic	B2BYC1	Target 17-2	OCSA	4.42	mg/kg	J	ND	low
Boron	Medium	7440-42-8	Inorganic	B2BYC2	Target 17-3	OCSA	4.65	mg/kg	J	ND	low
Boron	Medium	7440-42-8	Inorganic	B2BYC3	Target 17-4	OCSA	6.11	mg/kg	J	ND	low
Boron	Medium	7440-42-8	Inorganic	B2BYC4	Target 17-5	OCSA	12.8	mg/kg	J	ND	med
Boron	Medium	7440-42-8	Inorganic	B2BYC5	Target 18-1	OCSA	12.3	mg/kg	J	ND	med
Boron	Medium	7440-42-8	Inorganic	B2BYC6	Target 18-2	OCSA	14.2	mg/kg	J	ND	med
Boron	Medium	7440-42-8	Inorganic	B2BYC7	Target 18-3	OCSA	5.32	mg/kg	J	ND	low
Boron	Medium	7440-42-8	Inorganic	B2BYC8	Target 18-3D	OCSA	4.41	mg/kg	J	ND	low
Boron	Medium	7440-42-8	Inorganic	B2BYC9	Target 18-4	OCSA	2.23	mg/kg	J	ND	low
Boron	Medium	7440-42-8	Inorganic	B2BYD0	Target 18-5	OCSA	14.7	mg/kg	J	ND	med
Boron	Medium	7440-42-8	Inorganic	B2BYD4	Target 19-4	OCSA	3.48	mg/kg	J	ND	low
Boron	Medium	7440-42-8	Inorganic	B2BYD6	Target 20-1	OCSA	12.6	mg/kg	J	ND	med
Boron	Medium	7440-42-8	Inorganic	B2BYD7	Target 20-2	OCSA	10.1	mg/kg	J	ND	med
Boron	Medium	7440-42-8	Inorganic	B2BYD8	Target 20-3	OCSA	10.2	mg/kg	J	ND	med
Boron	Medium	7440-42-8	Inorganic	B2BYD9	Target 20-4	OCSA	7.43	mg/kg	J	ND	med
Boron	Medium	7440-42-8	Inorganic	B2BYF1	Target 21-1	OCSA	3.82	mg/kg	J	ND	low
Boron	Medium	7440-42-8	Inorganic	B2BYF2	Target 21-2	OCSA	2.15	mg/kg	J	ND	low
Boron	Medium	7440-42-8	Inorganic	B2BYF3	Target 21-3	OCSA	1.23	mg/kg	J	ND	low
Boron	Medium	7440-42-8	Inorganic	B2BYF4	Target 21-4	OCSA	1.88	mg/kg	J	ND	low
Boron	Medium	7440-42-8	Inorganic	B2BYF5	Target 21-5	OCSA	1.54	mg/kg	J	ND	low
Boron	Medium	7440-42-8	Inorganic	B2BYF6	Target 22-1	OCSA	3.65	mg/kg	J	ND	low
Boron	Medium	7440-42-8	Inorganic	B2BYF7	Target 22-2	OCSA	4.34	mg/kg	J	ND	low
Boron	Medium	7440-42-8	Inorganic	B2BYF8	Target 22-3	OCSA	5.87	mg/kg	J	ND	low
Boron	Medium	7440-42-8	Inorganic	B2BYF9	Target 22-4	OCSA	4.23	mg/kg	J	ND	low
Boron	Medium	7440-42-8	Inorganic	B2BYH0	Target 22-4D	OCSA	3.72	mg/kg	J	ND	low
Boron	Medium	7440-42-8	Inorganic	B2BYH1	Target 22-5	OCSA	12.4	mg/kg	J	ND	med
Boron	Medium	7440-42-8	Inorganic	B2BYH2	Target 23-1	OCSA	2.59	mg/kg	J	ND	low
Boron	Medium	7440-42-8	Inorganic	B2BYH3	Target 23-2	OCSA	2.4	mg/kg	J	ND	low
Boron	Medium	7440-42-8	Inorganic	B2BYH4	Target 23-3	OCSA	3.45	mg/kg	J	ND	low
Boron	Medium	7440-42-8	Inorganic	B2BXT3	Target 24-1	120-KW-1	1.07	mg/kg	J	DET	low
Boron	Medium	7440-42-8	Inorganic	B2BXT5	Target 24-2	120-KW-1	1.11	mg/kg	J	DET	low
Boron	Medium	7440-42-8	Inorganic	B2BXT6	Target 24-3	120-KW-1	0.939	mg/kg	J	DET	low
Boron	Medium	7440-42-8	Inorganic	B2BXT8	Target 24-5	120-KW-1	0.934	mg/kg	J	DET	low
Boron	Medium	7440-42-8	Inorganic	B2BP63	Target 6-5	600-228	4.26	mg/kg	J	DET	low
Boron	Medium	7440-42-8	Inorganic	B2C126	Target 7-1	600-281	2.3	mg/kg	J	DET	low
Boron	Medium	7440-42-8	Inorganic	B2C134	Target 8-3	600-281	12.9	mg/kg	J	DET	med
Copper	Medium	7440-50-8	Inorganic	B2BVM9	Control 1	600-218	11.4	mg/kg		DET	low
Copper	Medium	7440-50-8	Inorganic	B2BVP2	Control 13	OCSA	12.8	mg/kg		DET	low
Copper	Medium	7440-50-8	Inorganic	B2BVP4	Control 15	OCSA	18.3	mg/kg		DET	low
Copper	Medium	7440-50-8	Inorganic	B2BVP5	Control 16	OCSA	13.8	mg/kg		DET	low
Copper	Medium	7440-50-8	Inorganic	B2BVP6	Control 17	OCSA	12.2	mg/kg		DET	low
Copper	Medium	7440-50-8	Inorganic	B2BVP7	Control 18	OCSA	13.5	mg/kg		DET	low
Copper	Medium	7440-50-8	Inorganic	B2BVN0	Control 2	600-218	14.7	mg/kg		DET	low
Copper	Medium	7440-50-8	Inorganic	B2BVP9	Control 20	OCSA	12.3	mg/kg		DET	low
Copper	Medium	7440-50-8	Inorganic	B2BVN2	Control 4	600-220	11.3	mg/kg		DET	low
Copper	Medium	7440-50-8	Inorganic	B2BVN6	Control 8	600-228	10.2	mg/kg		DET	low
Copper	Medium	7440-50-8	Inorganic	B2BVN8	Control 9D	600-228	13	mg/kg		DET	low
Copper	Medium	7440-50-8	Inorganic	B2D0D8	Lab Soil	None	1.4	mg/kg		DET	low
Copper	Medium	7440-50-8	Inorganic	B2BY78	Target 11-1	OCSA	17.9	mg/kg		DET	low
Copper	Medium	7440-50-8	Inorganic	B2BY83	Target 12-1	OCSA	23.6	mg/kg		DET	low
Copper	Medium	7440-50-8	Inorganic	B2BY84	Target 12-2	OCSA	38.6	mg/kg		DET	low
Copper	Medium	7440-50-8	Inorganic	B2BY85	Target 12-3	OCSA	27	mg/kg		DET	low
Copper	Medium	7440-50-8	Inorganic	B2BY86	Target 12-4	OCSA	31.9	mg/kg		DET	low
Copper	Medium	7440-50-8	Inorganic	B2BY87	Target 12-4D	OCSA	30.6	mg/kg		DET	low
Copper	Medium	7440-50-8	Inorganic	B2BY88	Target 12-5	OCSA	21.7	mg/kg		DET	low
Copper	Medium	7440-50-8	Inorganic	B2BY89	Target 13-1	OCSA	50.1	mg/kg		DET	med
Copper	Medium	7440-50-8	Inorganic	B2BY90	Target 13-2	OCSA	56.9	mg/kg		DET	med
Copper	Medium	7440-50-8	Inorganic	B2BY91	Target 13-3	OCSA	21.8	mg/kg		DET	low
Copper	Medium	7440-50-8	Inorganic	B2BY92	Target 13-4	OCSA	29.5	mg/kg		DET	low
Copper	Medium	7440-50-8	Inorganic	B2BY93	Target 13-5	OCSA	25.3	mg/kg		DET	low
Copper	Medium	7440-50-8	Inorganic	B2BY94	Target 14-1	OCSA	54	mg/kg		DET	med
Copper	Medium	7440-50-8	Inorganic	B2BY95	Target 14-2	OCSA	54.1	mg/kg		DET	med
Copper	Medium	7440-50-8	Inorganic	B2BY96	Target 14-3	OCSA	39.5	mg/kg		DET	low
Copper	Medium	7440-50-8	Inorganic	B2BY97	Target 14-4	OCSA	71.8	mg/kg		DET	med
Copper	Medium	7440-50-8	Inorganic	B2BY98	Target 14-5	OCSA	35.3	mg/kg		DET	low
Copper	Medium	7440-50-8	Inorganic	B2BYB5	Target 16-1	OCSA	62.4	mg/kg	N	DET	med
Copper	Medium	7440-50-8	Inorganic	B2BYB6	Target 16-2	OCSA	183	mg/kg	N	DET	hi
Copper	Medium	7440-50-8	Inorganic	B2BYB7	Target 16-3	OCSA	596	mg/kg	N	DET	hi
Copper	Medium	7440-50-8	Inorganic	B2BYB8	Target 16-4	OCSA	280	mg/kg	N	DET	hi
Copper	Medium	7440-50-8	Inorganic	B2BYB9	Target 16-5	OCSA	120	mg/kg	N	DET	med
Copper	Medium	7440-50-8	Inorganic	B2BYC0	Target 17-1	OCSA	99.5	mg/kg	N	DET	med
Copper	Medium	7440-50-8	Inorganic	B2BYC1	Target 17-2	OCSA	63.5	mg/kg	N	DET	med
Copper	Medium	7440-50-8	Inorganic	B2BYC2	Target 17-3	OCSA	28.4	mg/kg	N	DET	low
Copper	Medium	7440-50-8	Inorganic	B2BYC3	Target 17-4	OCSA	93.8	mg/kg	N	DET	med
Copper	Medium	7440-50-8	Inorganic	B2BYC4	Target 17-5	OCSA	256	mg/kg	N	DET	hi
Copper	Medium	7440-50-8	Inorganic	B2BYC5	Target 18-1	OCSA	142	mg/kg	N	DET	med

Table 3-1 Analytical chemistry data for soils used for plant and soil invertebrate bioassays for upland locations at the Hanford Site

Analyte	Priority	CASNo	AnalGrp	SampleID	LocationID	WasteSite	Conc	Units	Qualifer	qual	grp
Copper	Medium	7440-50-8	Inorganic	B2BYC6	Target 18-2	OCSA	182	mg/kg	N	DET	hi
Copper	Medium	7440-50-8	Inorganic	B2BYC7	Target 18-3	OCSA	118	mg/kg	N	DET	med
Copper	Medium	7440-50-8	Inorganic	B2BYC8	Target 18-3D	OCSA	167	mg/kg	N	DET	med
Copper	Medium	7440-50-8	Inorganic	B2BYC9	Target 18-4	OCSA	18.9	mg/kg	N	DET	low
Copper	Medium	7440-50-8	Inorganic	B2BYD0	Target 18-5	OCSA	260	mg/kg	N	DET	hi
Copper	Medium	7440-50-8	Inorganic	B2BYD4	Target 19-4	OCSA	23.1	mg/kg		DET	low
Copper	Medium	7440-50-8	Inorganic	B2BYD6	Target 20-1	OCSA	41.5	mg/kg	N	DET	low
Copper	Medium	7440-50-8	Inorganic	B2BYD7	Target 20-2	OCSA	32.1	mg/kg	N	DET	low
Copper	Medium	7440-50-8	Inorganic	B2BYD8	Target 20-3	OCSA	34.7	mg/kg	N	DET	low
Copper	Medium	7440-50-8	Inorganic	B2BYD9	Target 20-4	OCSA	62.4	mg/kg	N	DET	med
Copper	Medium	7440-50-8	Inorganic	B2BYF1	Target 21-1	OCSA	41.1	mg/kg		DET	low
Copper	Medium	7440-50-8	Inorganic	B2BYF2	Target 21-2	OCSA	17	mg/kg		DET	low
Copper	Medium	7440-50-8	Inorganic	B2BYF3	Target 21-3	OCSA	15	mg/kg		DET	low
Copper	Medium	7440-50-8	Inorganic	B2BYF4	Target 21-4	OCSA	12.8	mg/kg		DET	low
Copper	Medium	7440-50-8	Inorganic	B2BYF5	Target 21-5	OCSA	14.8	mg/kg		DET	low
Copper	Medium	7440-50-8	Inorganic	B2BYF6	Target 22-1	OCSA	15.3	mg/kg		DET	low
Copper	Medium	7440-50-8	Inorganic	B2BYF7	Target 22-2	OCSA	23.1	mg/kg		DET	low
Copper	Medium	7440-50-8	Inorganic	B2BYF8	Target 22-3	OCSA	30.3	mg/kg		DET	low
Copper	Medium	7440-50-8	Inorganic	B2BYF9	Target 22-4	OCSA	289	mg/kg		DET	hi
Copper	Medium	7440-50-8	Inorganic	B2BYH0	Target 22-4D	OCSA	198	mg/kg		DET	hi
Copper	Medium	7440-50-8	Inorganic	B2BYH1	Target 22-5	OCSA	28.2	mg/kg		DET	low
Copper	Medium	7440-50-8	Inorganic	B2BYH2	Target 23-1	OCSA	20.9	mg/kg		DET	low
Copper	Medium	7440-50-8	Inorganic	B2BYH3	Target 23-2	OCSA	18	mg/kg		DET	low
Copper	Medium	7440-50-8	Inorganic	B2BYH4	Target 23-3	OCSA	22.2	mg/kg		DET	low
Copper	Medium	7440-50-8	Inorganic	B2BXT3	Target 24-1	120-KW-1	16.8	mg/kg		DET	low
Copper	Medium	7440-50-8	Inorganic	B2BXT5	Target 24-2	120-KW-1	6.07	mg/kg		DET	low
Copper	Medium	7440-50-8	Inorganic	B2BXT6	Target 24-3	120-KW-1	3.95	mg/kg		DET	low
Copper	Medium	7440-50-8	Inorganic	B2BXT8	Target 24-5	120-KW-1	21.1	mg/kg		DET	low
Copper	Medium	7440-50-8	Inorganic	B2BP63	Target 6-5	600-228	18.7	mg/kg		DET	low
Copper	Medium	7440-50-8	Inorganic	B2C126	Target 7-1	600-281	27.7	mg/kg		DET	low
Copper	Medium	7440-50-8	Inorganic	B2C134	Target 8-3	600-281	225	mg/kg	N	DET	hi
Lead	Medium	7439-92-1	Inorganic	B2BVM9	Control 1	600-218	5.94	mg/kg		DET	low
Lead	Medium	7439-92-1	Inorganic	B2BVP2	Control 13	OCSA	6.79	mg/kg		DET	low
Lead	Medium	7439-92-1	Inorganic	B2BVP4	Control 15	OCSA	6.71	mg/kg		DET	low
Lead	Medium	7439-92-1	Inorganic	B2BVP5	Control 16	OCSA	6.02	mg/kg		DET	low
Lead	Medium	7439-92-1	Inorganic	B2BVP6	Control 17	OCSA	6.19	mg/kg		DET	low
Lead	Medium	7439-92-1	Inorganic	B2BVP7	Control 18	OCSA	5.57	mg/kg		DET	low
Lead	Medium	7439-92-1	Inorganic	B2BVN0	Control 2	600-218	18.2	mg/kg		DET	low
Lead	Medium	7439-92-1	Inorganic	B2BVP9	Control 20	OCSA	5.37	mg/kg		DET	low
Lead	Medium	7439-92-1	Inorganic	B2BVN2	Control 4	600-220	5.1	mg/kg		DET	low
Lead	Medium	7439-92-1	Inorganic	B2BVN6	Control 8	600-228	4	mg/kg		DET	low
Lead	Medium	7439-92-1	Inorganic	B2BVN8	Control 9D	600-228	5.65	mg/kg		DET	low
Lead	Medium	7439-92-1	Inorganic	B2D0D8	Lab Soil	None	6.68	mg/kg		DET	low
Lead	Medium	7439-92-1	Inorganic	B2BY78	Target 11-1	OCSA	228	mg/kg		DET	med
Lead	Medium	7439-92-1	Inorganic	B2BY83	Target 12-1	OCSA	81.5	mg/kg		DET	low
Lead	Medium	7439-92-1	Inorganic	B2BY84	Target 12-2	OCSA	68.3	mg/kg		DET	low
Lead	Medium	7439-92-1	Inorganic	B2BY85	Target 12-3	OCSA	142	mg/kg		DET	med
Lead	Medium	7439-92-1	Inorganic	B2BY86	Target 12-4	OCSA	193	mg/kg		DET	med
Lead	Medium	7439-92-1	Inorganic	B2BY87	Target 12-4D	OCSA	195	mg/kg		DET	med
Lead	Medium	7439-92-1	Inorganic	B2BY88	Target 12-5	OCSA	112	mg/kg		DET	low
Lead	Medium	7439-92-1	Inorganic	B2BY89	Target 13-1	OCSA	2900	mg/kg		DET	hi
Lead	Medium	7439-92-1	Inorganic	B2BY90	Target 13-2	OCSA	1540	mg/kg		DET	hi
Lead	Medium	7439-92-1	Inorganic	B2BY91	Target 13-3	OCSA	1650	mg/kg		DET	hi
Lead	Medium	7439-92-1	Inorganic	B2BY92	Target 13-4	OCSA	896	mg/kg		DET	hi
Lead	Medium	7439-92-1	Inorganic	B2BY93	Target 13-5	OCSA	7970	mg/kg		DET	hi
Lead	Medium	7439-92-1	Inorganic	B2BY94	Target 14-1	OCSA	2070	mg/kg		DET	hi
Lead	Medium	7439-92-1	Inorganic	B2BY95	Target 14-2	OCSA	2090	mg/kg		DET	hi
Lead	Medium	7439-92-1	Inorganic	B2BY96	Target 14-3	OCSA	1060	mg/kg		DET	hi
Lead	Medium	7439-92-1	Inorganic	B2BY97	Target 14-4	OCSA	3580	mg/kg		DET	hi
Lead	Medium	7439-92-1	Inorganic	B2BY98	Target 14-5	OCSA	842	mg/kg		DET	hi
Lead	Medium	7439-92-1	Inorganic	B2BYB5	Target 16-1	OCSA	4220	mg/kg		DET	hi
Lead	Medium	7439-92-1	Inorganic	B2BYB6	Target 16-2	OCSA	9090	mg/kg		DET	hi
Lead	Medium	7439-92-1	Inorganic	B2BYB7	Target 16-3	OCSA	0.11	mg/kg	U	ND	low
Lead	Medium	7439-92-1	Inorganic	B2BYB8	Target 16-4	OCSA	0.11	mg/kg	U	ND	low
Lead	Medium	7439-92-1	Inorganic	B2BYB9	Target 16-5	OCSA	0.1	mg/kg	U	ND	low
Lead	Medium	7439-92-1	Inorganic	B2BYC0	Target 17-1	OCSA	802	mg/kg		DET	hi
Lead	Medium	7439-92-1	Inorganic	B2BYC1	Target 17-2	OCSA	300	mg/kg		DET	med
Lead	Medium	7439-92-1	Inorganic	B2BYC2	Target 17-3	OCSA	145	mg/kg		DET	med
Lead	Medium	7439-92-1	Inorganic	B2BYC3	Target 17-4	OCSA	411	mg/kg		DET	med
Lead	Medium	7439-92-1	Inorganic	B2BYC4	Target 17-5	OCSA	3840	mg/kg		DET	hi
Lead	Medium	7439-92-1	Inorganic	B2BYC5	Target 18-1	OCSA	3170	mg/kg		DET	hi
Lead	Medium	7439-92-1	Inorganic	B2BYC6	Target 18-2	OCSA	411	mg/kg		DET	med
Lead	Medium	7439-92-1	Inorganic	B2BYC7	Target 18-3	OCSA	316	mg/kg		DET	med
Lead	Medium	7439-92-1	Inorganic	B2BYC8	Target 18-3D	OCSA	340	mg/kg		DET	med
Lead	Medium	7439-92-1	Inorganic	B2BYC9	Target 18-4	OCSA	24.1	mg/kg		DET	low
Lead	Medium	7439-92-1	Inorganic	B2BYD0	Target 18-5	OCSA	1710	mg/kg		DET	hi
Lead	Medium	7439-92-1	Inorganic	B2BYD4	Target 19-4	OCSA	11.1	mg/kg	U	ND	low
Lead	Medium	7439-92-1	Inorganic	B2BYD6	Target 20-1	OCSA	77.8	mg/kg		DET	low
Lead	Medium	7439-92-1	Inorganic	B2BYD7	Target 20-2	OCSA	26.7	mg/kg		DET	low
Lead	Medium	7439-92-1	Inorganic	B2BYD8	Target 20-3	OCSA	30	mg/kg		DET	low
Lead	Medium	7439-92-1	Inorganic	B2BYD9	Target 20-4	OCSA	4220	mg/kg		DET	hi
Lead	Medium	7439-92-1	Inorganic	B2BYF1	Target 21-1	OCSA	50.6	mg/kg		DET	low
Lead	Medium	7439-92-1	Inorganic	B2BYF2	Target 21-2	OCSA	10.4	mg/kg		DET	low
Lead	Medium	7439-92-1	Inorganic	B2BYF3	Target 21-3	OCSA	4.89	mg/kg		DET	low
Lead	Medium	7439-92-1	Inorganic	B2BYF4	Target 21-4	OCSA	4.91	mg/kg		DET	low
Lead	Medium	7439-92-1	Inorganic	B2BYF5	Target 21-5	OCSA	5.26	mg/kg		DET	low
Lead	Medium	7439-92-1	Inorganic	B2BYF6	Target 22-1	OCSA	43.8	mg/kg		DET	low
Lead	Medium	7439-92-1	Inorganic	B2BYF7	Target 22-2	OCSA	518	mg/kg		DET	hi
Lead	Medium	7439-92-1	Inorganic	B2BYF8	Target 22-3	OCSA	1080	mg/kg		DET	hi
Lead	Medium	7439-92-1	Inorganic	B2BYF9	Target 22-4	OCSA	38	mg/kg		DET	low
Lead	Medium	7439-92-1	Inorganic	B2BYH0	Target 22-4D	OCSA	42	mg/kg	U	ND	low
Lead	Medium	7439-92-1	Inorganic	B2BYH1	Target 22-5	OCSA	353	mg/kg		DET	med
Lead	Medium	7439-92-1	Inorganic	B2BYH2	Target 23-1	OCSA	5	mg/kg		DET	low
Lead	Medium	7439-92-1	Inorganic	B2BYH3	Target 23-2	OCSA	6.67	mg/kg		DET	low
Lead	Medium	7439-92-1	Inorganic	B2BYH4	Target 23-3	OCSA	7.02	mg/kg		DET	low
Lead	Medium	7439-92-1	Inorganic	B2BXT3	Target 24-1	120-KW-1	2.19	mg/kg		DET	low
Lead	Medium	7439-92-1	Inorganic	B2BXT5	Target 24-2	120-KW-1	3.32	mg/kg		DET	low

Table 3-1 Analytical chemistry data for soils used for plant and soil invertebrate bioassays for upland locations at the Hanford Site

Analyte	Priority	CASNo	AnalGrp	SampleID	LocationID	WasteSite	Conc	Units	Qualifer	qual	grp
Lead	Medium	7439-92-1	Inorganic	B2BXT6	Target 24-3	120-KW-1	3.15	mg/kg		DET	low
Lead	Medium	7439-92-1	Inorganic	B2BXT8	Target 24-5	120-KW-1	2.44	mg/kg		DET	low
Lead	Medium	7439-92-1	Inorganic	B2BP63	Target 6-5	600-228	87.2	mg/kg		DET	low
Lead	Medium	7439-92-1	Inorganic	B2C126	Target 7-1	600-281	13.2	mg/kg		DET	low
Lead	Medium	7439-92-1	Inorganic	B2C134	Target 8-3	600-281	77.4	mg/kg		DET	low
Manganese	Medium	7439-95-4	Inorganic	B2BVM9	Control 1	600-218	411	mg/kg		DET	low
Manganese	Medium	7439-95-4	Inorganic	B2BVP2	Control 13	OCSA	325	mg/kg		DET	low
Manganese	Medium	7439-95-4	Inorganic	B2BVP4	Control 15	OCSA	345	mg/kg		DET	low
Manganese	Medium	7439-95-4	Inorganic	B2BVP5	Control 16	OCSA	323	mg/kg		DET	low
Manganese	Medium	7439-95-4	Inorganic	B2BVP6	Control 17	OCSA	329	mg/kg		DET	low
Manganese	Medium	7439-95-4	Inorganic	B2BVP7	Control 18	OCSA	330	mg/kg		DET	low
Manganese	Medium	7439-95-4	Inorganic	B2BVN0	Control 2	600-218	436	mg/kg		DET	low
Manganese	Medium	7439-95-4	Inorganic	B2BVP9	Control 20	OCSA	327	mg/kg		DET	low
Manganese	Medium	7439-95-4	Inorganic	B2BVN2	Control 4	600-220	361	mg/kg		DET	low
Manganese	Medium	7439-95-4	Inorganic	B2BVN6	Control 8	600-228	348	mg/kg		DET	low
Manganese	Medium	7439-95-4	Inorganic	B2BVN8	Control 9D	600-228	372	mg/kg		DET	low
Manganese	Medium	7439-96-5	Inorganic	B2D0D8	Lab Soil	None	24.3	mg/kg		DET	low
Manganese	Medium	7439-95-4	Inorganic	B2BY78	Target 11-1	OCSA	321	mg/kg		DET	low
Manganese	Medium	7439-95-4	Inorganic	B2BY83	Target 12-1	OCSA	333	mg/kg		DET	low
Manganese	Medium	7439-95-4	Inorganic	B2BY84	Target 12-2	OCSA	266	mg/kg		DET	low
Manganese	Medium	7439-95-4	Inorganic	B2BY85	Target 12-3	OCSA	351	mg/kg		DET	low
Manganese	Medium	7439-95-4	Inorganic	B2BY86	Target 12-4	OCSA	312	mg/kg		DET	low
Manganese	Medium	7439-95-4	Inorganic	B2BY87	Target 12-4D	OCSA	288	mg/kg		DET	low
Manganese	Medium	7439-95-4	Inorganic	B2BY88	Target 12-5	OCSA	310	mg/kg		DET	low
Manganese	Medium	7439-95-4	Inorganic	B2BY89	Target 13-1	OCSA	325	mg/kg		DET	low
Manganese	Medium	7439-95-4	Inorganic	B2BY90	Target 13-2	OCSA	296	mg/kg		DET	low
Manganese	Medium	7439-95-4	Inorganic	B2BY91	Target 13-3	OCSA	383	mg/kg		DET	low
Manganese	Medium	7439-95-4	Inorganic	B2BY92	Target 13-4	OCSA	368	mg/kg		DET	low
Manganese	Medium	7439-95-4	Inorganic	B2BY93	Target 13-5	OCSA	324	mg/kg		DET	low
Manganese	Medium	7439-95-4	Inorganic	B2BY94	Target 14-1	OCSA	369	mg/kg		DET	low
Manganese	Medium	7439-95-4	Inorganic	B2BY95	Target 14-2	OCSA	319	mg/kg		DET	low
Manganese	Medium	7439-95-4	Inorganic	B2BY96	Target 14-3	OCSA	312	mg/kg		DET	low
Manganese	Medium	7439-95-4	Inorganic	B2BY97	Target 14-4	OCSA	284	mg/kg		DET	low
Manganese	Medium	7439-95-4	Inorganic	B2BY98	Target 14-5	OCSA	343	mg/kg		DET	low
Manganese	Medium	7439-95-4	Inorganic	B2BYB5	Target 16-1	OCSA	342	mg/kg	N	DET	low
Manganese	Medium	7439-95-4	Inorganic	B2BYB6	Target 16-2	OCSA	350	mg/kg	N	DET	low
Manganese	Medium	7439-95-4	Inorganic	B2BYB7	Target 16-3	OCSA	431	mg/kg	N	DET	low
Manganese	Medium	7439-95-4	Inorganic	B2BYB8	Target 16-4	OCSA	326	mg/kg	N	DET	low
Manganese	Medium	7439-95-4	Inorganic	B2BYB9	Target 16-5	OCSA	323	mg/kg	N	DET	low
Manganese	Medium	7439-95-4	Inorganic	B2BYC0	Target 17-1	OCSA	1260	mg/kg	N	DET	hi
Manganese	Medium	7439-95-4	Inorganic	B2BYC1	Target 17-2	OCSA	364	mg/kg	N	DET	low
Manganese	Medium	7439-95-4	Inorganic	B2BYC2	Target 17-3	OCSA	547	mg/kg	N	DET	low
Manganese	Medium	7439-95-4	Inorganic	B2BYC3	Target 17-4	OCSA	356	mg/kg	N	DET	low
Manganese	Medium	7439-95-4	Inorganic	B2BYC4	Target 17-5	OCSA	438	mg/kg	N	DET	low
Manganese	Medium	7439-95-4	Inorganic	B2BYC5	Target 18-1	OCSA	661	mg/kg	N	DET	low
Manganese	Medium	7439-95-4	Inorganic	B2BYC6	Target 18-2	OCSA	436	mg/kg	N	DET	low
Manganese	Medium	7439-95-4	Inorganic	B2BYC7	Target 18-3	OCSA	849	mg/kg	N	DET	med
Manganese	Medium	7439-95-4	Inorganic	B2BYC8	Target 18-3D	OCSA	398	mg/kg	N	DET	low
Manganese	Medium	7439-95-4	Inorganic	B2BYC9	Target 18-4	OCSA	358	mg/kg	N	DET	low
Manganese	Medium	7439-95-4	Inorganic	B2BYD0	Target 18-5	OCSA	498	mg/kg	N	DET	low
Manganese	Medium	7439-95-4	Inorganic	B2BYD4	Target 19-4	OCSA	680	mg/kg	N	DET	low
Manganese	Medium	7439-95-4	Inorganic	B2BYD6	Target 20-1	OCSA	349	mg/kg	N	DET	low
Manganese	Medium	7439-95-4	Inorganic	B2BYD7	Target 20-2	OCSA	345	mg/kg	N	DET	low
Manganese	Medium	7439-95-4	Inorganic	B2BYD8	Target 20-3	OCSA	415	mg/kg	N	DET	low
Manganese	Medium	7439-95-4	Inorganic	B2BYD9	Target 20-4	OCSA	342	mg/kg	N	DET	low
Manganese	Medium	7439-95-4	Inorganic	B2BYF1	Target 21-1	OCSA	1020	mg/kg	N	DET	hi
Manganese	Medium	7439-95-4	Inorganic	B2BYF2	Target 21-2	OCSA	380	mg/kg	N	DET	low
Manganese	Medium	7439-95-4	Inorganic	B2BYF3	Target 21-3	OCSA	359	mg/kg	N	DET	low
Manganese	Medium	7439-95-4	Inorganic	B2BYF4	Target 21-4	OCSA	411	mg/kg	N	DET	low
Manganese	Medium	7439-95-4	Inorganic	B2BYF5	Target 21-5	OCSA	338	mg/kg	N	DET	low
Manganese	Medium	7439-95-4	Inorganic	B2BYF6	Target 22-1	OCSA	379	mg/kg	N	DET	low
Manganese	Medium	7439-95-4	Inorganic	B2BYF7	Target 22-2	OCSA	656	mg/kg	N	DET	low
Manganese	Medium	7439-95-4	Inorganic	B2BYF8	Target 22-3	OCSA	518	mg/kg	N	DET	low
Manganese	Medium	7439-95-4	Inorganic	B2BYF9	Target 22-4	OCSA	373	mg/kg	N	DET	low
Manganese	Medium	7439-95-4	Inorganic	B2BYH0	Target 22-4D	OCSA	395	mg/kg	N	DET	low
Manganese	Medium	7439-95-4	Inorganic	B2BYH1	Target 22-5	OCSA	451	mg/kg	N	DET	low
Manganese	Medium	7439-95-4	Inorganic	B2BYH2	Target 23-1	OCSA	559	mg/kg	N	DET	low
Manganese	Medium	7439-95-4	Inorganic	B2BYH3	Target 23-2	OCSA	467	mg/kg	N	DET	low
Manganese	Medium	7439-95-4	Inorganic	B2BYH4	Target 23-3	OCSA	506	mg/kg	N	DET	low
Manganese	Medium	7439-95-4	Inorganic	B2BXT3	Target 24-1	120-KW-1	182	mg/kg	N	DET	low
Manganese	Medium	7439-95-4	Inorganic	B2BXT5	Target 24-2	120-KW-1	87.6	mg/kg	N	DET	low
Manganese	Medium	7439-95-4	Inorganic	B2BXT6	Target 24-3	120-KW-1	62.3	mg/kg	N	DET	low
Manganese	Medium	7439-95-4	Inorganic	B2BXT8	Target 24-5	120-KW-1	242	mg/kg	N	DET	low
Manganese	Medium	7439-95-4	Inorganic	B2BP63	Target 6-5	600-228	369	mg/kg		DET	low
Manganese	Medium	7439-95-4	Inorganic	B2C126	Target 7-1	600-281	396	mg/kg	N	DET	low
Manganese	Medium	7439-95-4	Inorganic	B2C134	Target 8-3	600-281	310	mg/kg	N	DET	low
Arsenic	Low	7440-38-2	Inorganic	B2BVM9	Control 1	600-218	2.96	mg/kg		DET	low
Arsenic	Low	7440-38-2	Inorganic	B2BVP2	Control 13	OCSA	3.09	mg/kg	B	DET	low
Arsenic	Low	7440-38-2	Inorganic	B2BVP4	Control 15	OCSA	3.35	mg/kg	B	DET	low
Arsenic	Low	7440-38-2	Inorganic	B2BVP5	Control 16	OCSA	4.04	mg/kg	B	DET	low
Arsenic	Low	7440-38-2	Inorganic	B2BVP6	Control 17	OCSA	3.2	mg/kg	B	DET	low
Arsenic	Low	7440-38-2	Inorganic	B2BVP7	Control 18	OCSA	3.27	mg/kg	B	DET	low
Arsenic	Low	7440-38-2	Inorganic	B2BVN0	Control 2	600-218	3.2	mg/kg		DET	low
Arsenic	Low	7440-38-2	Inorganic	B2BVP9	Control 20	OCSA	3.09	mg/kg	B	DET	low
Arsenic	Low	7440-38-2	Inorganic	B2BVN2	Control 4	600-220	3.46	mg/kg	B	DET	low
Arsenic	Low	7440-38-2	Inorganic	B2BVN6	Control 8	600-228	2.33	mg/kg	B	DET	low
Arsenic	Low	7440-38-2	Inorganic	B2BVN8	Control 9D	600-228	3.78	mg/kg	B	DET	low
Arsenic	Low	7440-38-2	Inorganic	B2D0D8	Lab Soil	None	0.5	mg/kg	U	ND	low
Arsenic	Low	7440-38-2	Inorganic	B2BY78	Target 11-1	OCSA	3.25	mg/kg	B	DET	low
Arsenic	Low	7440-38-2	Inorganic	B2BY83	Target 12-1	OCSA	4.14	mg/kg		DET	low
Arsenic	Low	7440-38-2	Inorganic	B2BY84	Target 12-2	OCSA	3.51	mg/kg	B	DET	low
Arsenic	Low	7440-38-2	Inorganic	B2BY85	Target 12-3	OCSA	3.59	mg/kg	B	DET	low
Arsenic	Low	7440-38-2	Inorganic	B2BY86	Target 12-4	OCSA	3.53	mg/kg	B	DET	low
Arsenic	Low	7440-38-2	Inorganic	B2BY87	Target 12-4D	OCSA	3.54	mg/kg	B	DET	low
Arsenic	Low	7440-38-2	Inorganic	B2BY88	Target 12-5	OCSA	3.38	mg/kg	B	DET	low
Arsenic	Low	7440-38-2	Inorganic	B2BY89	Target 13-1	OCSA	4.03	mg/kg		DET	low
Arsenic	Low	7440-38-2	Inorganic	B2BY90	Target 13-2	OCSA	3.88	mg/kg	B	DET	low

Table 3-1 Analytical chemistry data for soils used for plant and soil invertebrate bioassays for upland locations at the Hanford Site

Analyte	Priority	CASNo	AnalGrp	SampleID	LocationID	WasteSite	Conc	Units	Qualifer	qual	grp
Arsenic	Low	7440-38-2	Inorganic	B2BY91	Target 13-3	OCSA	4.27	mg/kg		DET	low
Arsenic	Low	7440-38-2	Inorganic	B2BY92	Target 13-4	OCSA	3.82	mg/kg	B	DET	low
Arsenic	Low	7440-38-2	Inorganic	B2BY93	Target 13-5	OCSA	4.7	mg/kg		DET	low
Arsenic	Low	7440-38-2	Inorganic	B2BY94	Target 14-1	OCSA	4.47	mg/kg		DET	low
Arsenic	Low	7440-38-2	Inorganic	B2BY95	Target 14-2	OCSA	3.93	mg/kg		DET	low
Arsenic	Low	7440-38-2	Inorganic	B2BY96	Target 14-3	OCSA	3.76	mg/kg	B	DET	low
Arsenic	Low	7440-38-2	Inorganic	B2BY97	Target 14-4	OCSA	4.72	mg/kg		DET	low
Arsenic	Low	7440-38-2	Inorganic	B2BY98	Target 14-5	OCSA	4.16	mg/kg		DET	low
Arsenic	Low	7440-38-2	Inorganic	B2BYB5	Target 16-1	OCSA	7.95	mg/kg		DET	low
Arsenic	Low	7440-38-2	Inorganic	B2BYB6	Target 16-2	OCSA	11.4	mg/kg		DET	low
Arsenic	Low	7440-38-2	Inorganic	B2BYB7	Target 16-3	OCSA	10	mg/kg		DET	low
Arsenic	Low	7440-38-2	Inorganic	B2BYB8	Target 16-4	OCSA	14.8	mg/kg		DET	low
Arsenic	Low	7440-38-2	Inorganic	B2BYB9	Target 16-5	OCSA	16.4	mg/kg		DET	low
Arsenic	Low	7440-38-2	Inorganic	B2BYC0	Target 17-1	OCSA	5.22	mg/kg		DET	low
Arsenic	Low	7440-38-2	Inorganic	B2BYC1	Target 17-2	OCSA	4.28	mg/kg		DET	low
Arsenic	Low	7440-38-2	Inorganic	B2BYC2	Target 17-3	OCSA	4.5	mg/kg		DET	low
Arsenic	Low	7440-38-2	Inorganic	B2BYC3	Target 17-4	OCSA	4.22	mg/kg		DET	low
Arsenic	Low	7440-38-2	Inorganic	B2BYC4	Target 17-5	OCSA	8.01	mg/kg		DET	low
Arsenic	Low	7440-38-2	Inorganic	B2BYC5	Target 18-1	OCSA	7.61	mg/kg		DET	low
Arsenic	Low	7440-38-2	Inorganic	B2BYC6	Target 18-2	OCSA	4.83	mg/kg		DET	low
Arsenic	Low	7440-38-2	Inorganic	B2BYC7	Target 18-3	OCSA	6.11	mg/kg		DET	low
Arsenic	Low	7440-38-2	Inorganic	B2BYC8	Target 18-3D	OCSA	6.61	mg/kg		DET	low
Arsenic	Low	7440-38-2	Inorganic	B2BYC9	Target 18-4	OCSA	3.63	mg/kg		DET	low
Arsenic	Low	7440-38-2	Inorganic	B2BYD0	Target 18-5	OCSA	6.9	mg/kg		DET	low
Arsenic	Low	7440-38-2	Inorganic	B2BYD4	Target 19-4	OCSA	4.97	mg/kg		DET	low
Arsenic	Low	7440-38-2	Inorganic	B2BYD6	Target 20-1	OCSA	5.95	mg/kg		DET	low
Arsenic	Low	7440-38-2	Inorganic	B2BYD7	Target 20-2	OCSA	4.51	mg/kg		DET	low
Arsenic	Low	7440-38-2	Inorganic	B2BYD8	Target 20-3	OCSA	4.88	mg/kg		DET	low
Arsenic	Low	7440-38-2	Inorganic	B2BYD9	Target 20-4	OCSA	7.95	mg/kg		DET	low
Arsenic	Low	7440-38-2	Inorganic	B2BYF1	Target 21-1	OCSA	4.03	mg/kg		DET	low
Arsenic	Low	7440-38-2	Inorganic	B2BYF2	Target 21-2	OCSA	4.01	mg/kg		DET	low
Arsenic	Low	7440-38-2	Inorganic	B2BYF3	Target 21-3	OCSA	3.02	mg/kg		DET	low
Arsenic	Low	7440-38-2	Inorganic	B2BYF4	Target 21-4	OCSA	3.06	mg/kg		DET	low
Arsenic	Low	7440-38-2	Inorganic	B2BYF5	Target 21-5	OCSA	3.12	mg/kg		DET	low
Arsenic	Low	7440-38-2	Inorganic	B2BYF6	Target 22-1	OCSA	4.31	mg/kg		DET	low
Arsenic	Low	7440-38-2	Inorganic	B2BYF7	Target 22-2	OCSA	4.16	mg/kg		DET	low
Arsenic	Low	7440-38-2	Inorganic	B2BYF8	Target 22-3	OCSA	6.59	mg/kg		DET	low
Arsenic	Low	7440-38-2	Inorganic	B2BYF9	Target 22-4	OCSA	5.63	mg/kg		DET	low
Arsenic	Low	7440-38-2	Inorganic	B2BYH0	Target 22-4D	OCSA	4.05	mg/kg		DET	low
Arsenic	Low	7440-38-2	Inorganic	B2BYH1	Target 22-5	OCSA	6.96	mg/kg		DET	low
Arsenic	Low	7440-38-2	Inorganic	B2BYH2	Target 23-1	OCSA	2.17	mg/kg		DET	low
Arsenic	Low	7440-38-2	Inorganic	B2BYH3	Target 23-2	OCSA	4.29	mg/kg		DET	low
Arsenic	Low	7440-38-2	Inorganic	B2BYH4	Target 23-3	OCSA	2.83	mg/kg		DET	low
Arsenic	Low	7440-38-2	Inorganic	B2BXT3	Target 24-1	120-KW-1	1.65	mg/kg	B	DET	low
Arsenic	Low	7440-38-2	Inorganic	B2BXT5	Target 24-2	120-KW-1	1.25	mg/kg	B	DET	low
Arsenic	Low	7440-38-2	Inorganic	B2BXT6	Target 24-3	120-KW-1	1.09	mg/kg	B	DET	low
Arsenic	Low	7440-38-2	Inorganic	B2BXT8	Target 24-5	120-KW-1	2.28	mg/kg	B	DET	low
Arsenic	Low	7440-38-2	Inorganic	B2BP63	Target 6-5	600-228	3.71	mg/kg	B	DET	low
Arsenic	Low	7440-38-2	Inorganic	B2C126	Target 7-1	600-281	2.84	mg/kg	B	DET	low
Arsenic	Low	7440-38-2	Inorganic	B2C134	Target 8-3	600-281	2.88	mg/kg	B	DET	low
Cobalt	Low	7440-48-4	Inorganic	B2BVM9	Control 1	600-218	8.74	mg/kg		DET	low
Cobalt	Low	7440-48-4	Inorganic	B2BVP2	Control 13	OCSA	7.02	mg/kg		DET	low
Cobalt	Low	7440-48-4	Inorganic	B2BVP4	Control 15	OCSA	7.9	mg/kg		DET	low
Cobalt	Low	7440-48-4	Inorganic	B2BVP5	Control 16	OCSA	7.26	mg/kg		DET	low
Cobalt	Low	7440-48-4	Inorganic	B2BVP6	Control 17	OCSA	7.43	mg/kg		DET	low
Cobalt	Low	7440-48-4	Inorganic	B2BVP7	Control 18	OCSA	7.47	mg/kg		DET	low
Cobalt	Low	7440-48-4	Inorganic	B2BVN0	Control 2	600-218	9.76	mg/kg		DET	low
Cobalt	Low	7440-48-4	Inorganic	B2BVP9	Control 20	OCSA	7.12	mg/kg		DET	low
Cobalt	Low	7440-48-4	Inorganic	B2BVN2	Control 4	600-220	7.8	mg/kg		DET	low
Cobalt	Low	7440-48-4	Inorganic	B2BVN6	Control 8	600-228	7.66	mg/kg		DET	low
Cobalt	Low	7440-48-4	Inorganic	B2BVN8	Control 9D	600-228	8.64	mg/kg		DET	low
Cobalt	Low	7440-48-4	Inorganic	B2D0D8	Lab Soil	None	0.272	mg/kg	B	DET	low
Cobalt	Low	7440-48-4	Inorganic	B2BY78	Target 11-1	OCSA	8.01	mg/kg		DET	low
Cobalt	Low	7440-48-4	Inorganic	B2BY83	Target 12-1	OCSA	8.01	mg/kg		DET	low
Cobalt	Low	7440-48-4	Inorganic	B2BY84	Target 12-2	OCSA	7.47	mg/kg		DET	low
Cobalt	Low	7440-48-4	Inorganic	B2BY85	Target 12-3	OCSA	8.09	mg/kg		DET	low
Cobalt	Low	7440-48-4	Inorganic	B2BY86	Target 12-4	OCSA	7.59	mg/kg		DET	low
Cobalt	Low	7440-48-4	Inorganic	B2BY87	Target 12-4D	OCSA	7.18	mg/kg		DET	low
Cobalt	Low	7440-48-4	Inorganic	B2BY88	Target 12-5	OCSA	7.53	mg/kg		DET	low
Cobalt	Low	7440-48-4	Inorganic	B2BY89	Target 13-1	OCSA	8.64	mg/kg		DET	low
Cobalt	Low	7440-48-4	Inorganic	B2BY90	Target 13-2	OCSA	8.34	mg/kg		DET	low
Cobalt	Low	7440-48-4	Inorganic	B2BY91	Target 13-3	OCSA	10.2	mg/kg		DET	low
Cobalt	Low	7440-48-4	Inorganic	B2BY92	Target 13-4	OCSA	8.82	mg/kg		DET	low
Cobalt	Low	7440-48-4	Inorganic	B2BY93	Target 13-5	OCSA	7.95	mg/kg		DET	low
Cobalt	Low	7440-48-4	Inorganic	B2BY94	Target 14-1	OCSA	9.64	mg/kg		DET	low
Cobalt	Low	7440-48-4	Inorganic	B2BY95	Target 14-2	OCSA	8.37	mg/kg		DET	low
Cobalt	Low	7440-48-4	Inorganic	B2BY96	Target 14-3	OCSA	7.74	mg/kg		DET	low
Cobalt	Low	7440-48-4	Inorganic	B2BY97	Target 14-4	OCSA	7.42	mg/kg		DET	low
Cobalt	Low	7440-48-4	Inorganic	B2BY98	Target 14-5	OCSA	9.06	mg/kg		DET	low
Cobalt	Low	7440-48-4	Inorganic	B2BYB5	Target 16-1	OCSA	7.46	mg/kg		DET	low
Cobalt	Low	7440-48-4	Inorganic	B2BYB6	Target 16-2	OCSA	8.39	mg/kg		DET	low
Cobalt	Low	7440-48-4	Inorganic	B2BYB7	Target 16-3	OCSA	8.34	mg/kg		DET	low
Cobalt	Low	7440-48-4	Inorganic	B2BYB8	Target 16-4	OCSA	7.48	mg/kg		DET	low
Cobalt	Low	7440-48-4	Inorganic	B2BYB9	Target 16-5	OCSA	7.32	mg/kg		DET	low
Cobalt	Low	7440-48-4	Inorganic	B2BYC0	Target 17-1	OCSA	7.7	mg/kg		DET	low
Cobalt	Low	7440-48-4	Inorganic	B2BYC1	Target 17-2	OCSA	7.53	mg/kg		DET	low
Cobalt	Low	7440-48-4	Inorganic	B2BYC2	Target 17-3	OCSA	7.35	mg/kg		DET	low
Cobalt	Low	7440-48-4	Inorganic	B2BYC3	Target 17-4	OCSA	7.84	mg/kg		DET	low
Cobalt	Low	7440-48-4	Inorganic	B2BYC4	Target 17-5	OCSA	8.6	mg/kg		DET	low
Cobalt	Low	7440-48-4	Inorganic	B2BYC5	Target 18-1	OCSA	10.4	mg/kg		DET	low
Cobalt	Low	7440-48-4	Inorganic	B2BYC6	Target 18-2	OCSA	9.19	mg/kg		DET	low
Cobalt	Low	7440-48-4	Inorganic	B2BYC7	Target 18-3	OCSA	11.1	mg/kg		DET	low
Cobalt	Low	7440-48-4	Inorganic	B2BYC8	Target 18-3D	OCSA	9.01	mg/kg		DET	low
Cobalt	Low	7440-48-4	Inorganic	B2BYC9	Target 18-4	OCSA	8.08	mg/kg		DET	low
Cobalt	Low	7440-48-4	Inorganic	B2BYD0	Target 18-5	OCSA	9.5	mg/kg		DET	low
Cobalt	Low	7440-48-4	Inorganic	B2BYD4	Target 19-4	OCSA	8.6	mg/kg		DET	low
Cobalt	Low	7440-48-4	Inorganic	B2BYD6	Target 20-1	OCSA	7.41	mg/kg		DET	low

Table 3-1 Analytical chemistry data for soils used for plant and soil invertebrate bioassays for upland locations at the Hanford Site

Analyte	Priority	CASNo	AnalGrp	SampleID	LocationID	WasteSite	Conc	Units	Qualifer	qual	grp
Cobalt	Low	7440-48-4	Inorganic	B2BYD7	Target 20-2	OCSA	7.83	mg/kg		DET	low
Cobalt	Low	7440-48-4	Inorganic	B2BYD8	Target 20-3	OCSA	8.61	mg/kg		DET	low
Cobalt	Low	7440-48-4	Inorganic	B2BYD9	Target 20-4	OCSA	7.46	mg/kg		DET	low
Cobalt	Low	7440-48-4	Inorganic	B2BYF1	Target 21-1	OCSA	7.61	mg/kg		DET	low
Cobalt	Low	7440-48-4	Inorganic	B2BYF2	Target 21-2	OCSA	7.28	mg/kg		DET	low
Cobalt	Low	7440-48-4	Inorganic	B2BYF3	Target 21-3	OCSA	7.69	mg/kg		DET	low
Cobalt	Low	7440-48-4	Inorganic	B2BYF4	Target 21-4	OCSA	8.02	mg/kg		DET	low
Cobalt	Low	7440-48-4	Inorganic	B2BYF5	Target 21-5	OCSA	7.11	mg/kg		DET	low
Cobalt	Low	7440-48-4	Inorganic	B2BYF6	Target 22-1	OCSA	8.01	mg/kg		DET	low
Cobalt	Low	7440-48-4	Inorganic	B2BYF7	Target 22-2	OCSA	9.09	mg/kg		DET	low
Cobalt	Low	7440-48-4	Inorganic	B2BYF8	Target 22-3	OCSA	9.27	mg/kg		DET	low
Cobalt	Low	7440-48-4	Inorganic	B2BYF9	Target 22-4	OCSA	7.78	mg/kg		DET	low
Cobalt	Low	7440-48-4	Inorganic	B2BYH0	Target 22-4D	OCSA	8.05	mg/kg		DET	low
Cobalt	Low	7440-48-4	Inorganic	B2BYH1	Target 22-5	OCSA	10.3	mg/kg		DET	low
Cobalt	Low	7440-48-4	Inorganic	B2BYH2	Target 23-1	OCSA	12.4	mg/kg		DET	low
Cobalt	Low	7440-48-4	Inorganic	B2BYH3	Target 23-2	OCSA	10.1	mg/kg		DET	low
Cobalt	Low	7440-48-4	Inorganic	B2BYH4	Target 23-3	OCSA	11.9	mg/kg		DET	low
Cobalt	Low	7440-48-4	Inorganic	B2BXT3	Target 24-1	120-KW-1	5.7	mg/kg		DET	low
Cobalt	Low	7440-48-4	Inorganic	B2BXT5	Target 24-2	120-KW-1	2.63	mg/kg		DET	low
Cobalt	Low	7440-48-4	Inorganic	B2BXT6	Target 24-3	120-KW-1	1.68	mg/kg		DET	low
Cobalt	Low	7440-48-4	Inorganic	B2BXT8	Target 24-5	120-KW-1	7	mg/kg		DET	low
Cobalt	Low	7440-48-4	Inorganic	B2BP63	Target 6-5	600-228	8.15	mg/kg		DET	low
Cobalt	Low	7440-48-4	Inorganic	B2C126	Target 7-1	600-281	7.84	mg/kg		DET	low
Cobalt	Low	7440-48-4	Inorganic	B2C134	Target 8-3	600-281	6.47	mg/kg		DET	low
Nickel	Low	7440-02-0	Inorganic	B2BVM9	Control 1	600-218	9.67	mg/kg		DET	low
Nickel	Low	7440-02-0	Inorganic	B2BVP2	Control 13	OCSA	9.92	mg/kg		DET	low
Nickel	Low	7440-02-0	Inorganic	B2BVP4	Control 15	OCSA	12.2	mg/kg		DET	low
Nickel	Low	7440-02-0	Inorganic	B2BVP5	Control 16	OCSA	9.81	mg/kg		DET	low
Nickel	Low	7440-02-0	Inorganic	B2BVP6	Control 17	OCSA	9.34	mg/kg		DET	low
Nickel	Low	7440-02-0	Inorganic	B2BVP7	Control 18	OCSA	10.4	mg/kg		DET	low
Nickel	Low	7440-02-0	Inorganic	B2BVN0	Control 2	600-218	12.5	mg/kg		DET	low
Nickel	Low	7440-02-0	Inorganic	B2BVP9	Control 20	OCSA	9.59	mg/kg		DET	low
Nickel	Low	7440-02-0	Inorganic	B2BVN2	Control 4	600-220	10.5	mg/kg		DET	low
Nickel	Low	7440-02-0	Inorganic	B2BVN6	Control 8	600-228	8.35	mg/kg		DET	low
Nickel	Low	7440-02-0	Inorganic	B2BVN8	Control 9D	600-228	10.2	mg/kg		DET	low
Nickel	Low	7440-02-0	Inorganic	B2D0D8	Lab Soil	None	1.09	mg/kg	B	DET	low
Nickel	Low	7440-02-0	Inorganic	B2BY78	Target 11-1	OCSA	9.87	mg/kg		DET	low
Nickel	Low	7440-02-0	Inorganic	B2BY83	Target 12-1	OCSA	10.6	mg/kg		DET	low
Nickel	Low	7440-02-0	Inorganic	B2BY84	Target 12-2	OCSA	9.6	mg/kg		DET	low
Nickel	Low	7440-02-0	Inorganic	B2BY85	Target 12-3	OCSA	11.6	mg/kg		DET	low
Nickel	Low	7440-02-0	Inorganic	B2BY86	Target 12-4	OCSA	10.2	mg/kg		DET	low
Nickel	Low	7440-02-0	Inorganic	B2BY87	Target 12-4D	OCSA	10.1	mg/kg		DET	low
Nickel	Low	7440-02-0	Inorganic	B2BY88	Target 12-5	OCSA	9.89	mg/kg		DET	low
Nickel	Low	7440-02-0	Inorganic	B2BY89	Target 13-1	OCSA	22.5	mg/kg		DET	low
Nickel	Low	7440-02-0	Inorganic	B2BY90	Target 13-2	OCSA	16.6	mg/kg		DET	low
Nickel	Low	7440-02-0	Inorganic	B2BY91	Target 13-3	OCSA	9.74	mg/kg		DET	low
Nickel	Low	7440-02-0	Inorganic	B2BY92	Target 13-4	OCSA	11.3	mg/kg		DET	low
Nickel	Low	7440-02-0	Inorganic	B2BY93	Target 13-5	OCSA	10.7	mg/kg		DET	low
Nickel	Low	7440-02-0	Inorganic	B2BY94	Target 14-1	OCSA	10.8	mg/kg		DET	low
Nickel	Low	7440-02-0	Inorganic	B2BY95	Target 14-2	OCSA	10.9	mg/kg		DET	low
Nickel	Low	7440-02-0	Inorganic	B2BY96	Target 14-3	OCSA	10.3	mg/kg		DET	low
Nickel	Low	7440-02-0	Inorganic	B2BY97	Target 14-4	OCSA	10.9	mg/kg		DET	low
Nickel	Low	7440-02-0	Inorganic	B2BY98	Target 14-5	OCSA	11.7	mg/kg		DET	low
Nickel	Low	7440-02-0	Inorganic	B2BYB5	Target 16-1	OCSA	11.2	mg/kg		DET	low
Nickel	Low	7440-02-0	Inorganic	B2BYB6	Target 16-2	OCSA	17.8	mg/kg		DET	low
Nickel	Low	7440-02-0	Inorganic	B2BYB7	Target 16-3	OCSA	18.6	mg/kg		DET	low
Nickel	Low	7440-02-0	Inorganic	B2BYB8	Target 16-4	OCSA	15.2	mg/kg		DET	low
Nickel	Low	7440-02-0	Inorganic	B2BYB9	Target 16-5	OCSA	13	mg/kg		DET	low
Nickel	Low	7440-02-0	Inorganic	B2BYC0	Target 17-1	OCSA	15	mg/kg		DET	low
Nickel	Low	7440-02-0	Inorganic	B2BYC1	Target 17-2	OCSA	11.3	mg/kg		DET	low
Nickel	Low	7440-02-0	Inorganic	B2BYC2	Target 17-3	OCSA	10.9	mg/kg		DET	low
Nickel	Low	7440-02-0	Inorganic	B2BYC3	Target 17-4	OCSA	15	mg/kg		DET	low
Nickel	Low	7440-02-0	Inorganic	B2BYC4	Target 17-5	OCSA	17.9	mg/kg		DET	low
Nickel	Low	7440-02-0	Inorganic	B2BYC5	Target 18-1	OCSA	27.4	mg/kg		DET	low
Nickel	Low	7440-02-0	Inorganic	B2BYC6	Target 18-2	OCSA	21	mg/kg		DET	low
Nickel	Low	7440-02-0	Inorganic	B2BYC7	Target 18-3	OCSA	19.2	mg/kg		DET	low
Nickel	Low	7440-02-0	Inorganic	B2BYC8	Target 18-3D	OCSA	18	mg/kg		DET	low
Nickel	Low	7440-02-0	Inorganic	B2BYC9	Target 18-4	OCSA	9.43	mg/kg		DET	low
Nickel	Low	7440-02-0	Inorganic	B2BYD0	Target 18-5	OCSA	19.5	mg/kg		DET	low
Nickel	Low	7440-02-0	Inorganic	B2BYD4	Target 19-4	OCSA	15.6	mg/kg		DET	low
Nickel	Low	7440-02-0	Inorganic	B2BYD6	Target 20-1	OCSA	18.1	mg/kg		DET	low
Nickel	Low	7440-02-0	Inorganic	B2BYD7	Target 20-2	OCSA	19.1	mg/kg		DET	low
Nickel	Low	7440-02-0	Inorganic	B2BYD8	Target 20-3	OCSA	17.2	mg/kg		DET	low
Nickel	Low	7440-02-0	Inorganic	B2BYD9	Target 20-4	OCSA	11.2	mg/kg		DET	low
Nickel	Low	7440-02-0	Inorganic	B2BYF1	Target 21-1	OCSA	9.91	mg/kg		DET	low
Nickel	Low	7440-02-0	Inorganic	B2BYF2	Target 21-2	OCSA	10.1	mg/kg		DET	low
Nickel	Low	7440-02-0	Inorganic	B2BYF3	Target 21-3	OCSA	10.4	mg/kg		DET	low
Nickel	Low	7440-02-0	Inorganic	B2BYF4	Target 21-4	OCSA	8.54	mg/kg		DET	low
Nickel	Low	7440-02-0	Inorganic	B2BYF5	Target 21-5	OCSA	9.17	mg/kg		DET	low
Nickel	Low	7440-02-0	Inorganic	B2BYF6	Target 22-1	OCSA	10.9	mg/kg		DET	low
Nickel	Low	7440-02-0	Inorganic	B2BYF7	Target 22-2	OCSA	25.3	mg/kg		DET	low
Nickel	Low	7440-02-0	Inorganic	B2BYF8	Target 22-3	OCSA	18	mg/kg		DET	low
Nickel	Low	7440-02-0	Inorganic	B2BYF9	Target 22-4	OCSA	12.6	mg/kg		DET	low
Nickel	Low	7440-02-0	Inorganic	B2BYH0	Target 22-4D	OCSA	11.1	mg/kg		DET	low
Nickel	Low	7440-02-0	Inorganic	B2BYH1	Target 22-5	OCSA	17.5	mg/kg		DET	low
Nickel	Low	7440-02-0	Inorganic	B2BYH2	Target 23-1	OCSA	16.7	mg/kg		DET	low
Nickel	Low	7440-02-0	Inorganic	B2BYH3	Target 23-2	OCSA	13.2	mg/kg		DET	low
Nickel	Low	7440-02-0	Inorganic	B2BYH4	Target 23-3	OCSA	15	mg/kg		DET	low
Nickel	Low	7440-02-0	Inorganic	B2BXT3	Target 24-1	120-KW-1	3.6	mg/kg		DET	low
Nickel	Low	7440-02-0	Inorganic	B2BXT5	Target 24-2	120-KW-1	1.93	mg/kg	B	DET	low
Nickel	Low	7440-02-0	Inorganic	B2BXT6	Target 24-3	120-KW-1	1.18	mg/kg	B	DET	low
Nickel	Low	7440-02-0	Inorganic	B2BXT8	Target 24-5	120-KW-1	4.94	mg/kg		DET	low
Nickel	Low	7440-02-0	Inorganic	B2BP63	Target 6-5	600-228	10	mg/kg		DET	low
Nickel	Low	7440-02-0	Inorganic	B2C126	Target 7-1	600-281	13.5	mg/kg	N	DET	low
Nickel	Low	7440-02-0	Inorganic	B2C134	Target 8-3	600-281	12.1	mg/kg		DET	low
Selenium	Low	7782-49-2	Inorganic	B2BVM9	Control 1	600-218	1.16	mg/kg		DET	low
Selenium	Low	7782-49-2	Inorganic	B2BVP2	Control 13	OCSA	0.853	mg/kg	B	DET	low

Table 3-1 Analytical chemistry data for soils used for plant and soil invertebrate bioassays for upland locations at the Hanford Site

Analyte	Priority	CASNo	AnalGrp	SampleID	LocationID	WasteSite	Conc	Units	Qualifer	qual	grp
Selenium	Low	7782-49-2	Inorganic	B2BVP4	Control 15	OCSA	1.1	mg/kg	B	DET	low
Selenium	Low	7782-49-2	Inorganic	B2BVP5	Control 16	OCSA	1.18	mg/kg	B	DET	low
Selenium	Low	7782-49-2	Inorganic	B2BVP6	Control 17	OCSA	1.1	mg/kg	B	DET	low
Selenium	Low	7782-49-2	Inorganic	B2BVP7	Control 18	OCSA	1.36	mg/kg	B	DET	low
Selenium	Low	7782-49-2	Inorganic	B2BVN0	Control 2	600-218	1.25	mg/kg		DET	low
Selenium	Low	7782-49-2	Inorganic	B2BVP9	Control 20	OCSA	0.887	mg/kg	B	DET	low
Selenium	Low	7782-49-2	Inorganic	B2BVN2	Control 4	600-220	0.618	mg/kg	B	DET	low
Selenium	Low	7782-49-2	Inorganic	B2BVN6	Control 8	600-228	0.922	mg/kg	B	DET	low
Selenium	Low	7782-49-2	Inorganic	B2BVN8	Control 9D	600-228	1.16	mg/kg	B	DET	low
Selenium	Low	7782-49-2	Inorganic	B2D0D8	Lab Soil	None	0.455	mg/kg	B	DET	low
Selenium	Low	7782-49-2	Inorganic	B2BY78	Target 11-1	OCSA	1.6	mg/kg	B	DET	low
Selenium	Low	7782-49-2	Inorganic	B2BY83	Target 12-1	OCSA	1.18	mg/kg	B	DET	low
Selenium	Low	7782-49-2	Inorganic	B2BY84	Target 12-2	OCSA	1.26	mg/kg	B	DET	low
Selenium	Low	7782-49-2	Inorganic	B2BY85	Target 12-3	OCSA	1.37	mg/kg	B	DET	low
Selenium	Low	7782-49-2	Inorganic	B2BY86	Target 12-4	OCSA	1.25	mg/kg	B	DET	low
Selenium	Low	7782-49-2	Inorganic	B2BY87	Target 12-4D	OCSA	1.34	mg/kg	B	DET	low
Selenium	Low	7782-49-2	Inorganic	B2BY88	Target 12-5	OCSA	1.17	mg/kg	B	DET	low
Selenium	Low	7782-49-2	Inorganic	B2BY89	Target 13-1	OCSA	1.18	mg/kg	B	DET	low
Selenium	Low	7782-49-2	Inorganic	B2BY90	Target 13-2	OCSA	1.2	mg/kg	B	DET	low
Selenium	Low	7782-49-2	Inorganic	B2BY91	Target 13-3	OCSA	1.89	mg/kg	B	DET	low
Selenium	Low	7782-49-2	Inorganic	B2BY92	Target 13-4	OCSA	1.48	mg/kg	B	DET	low
Selenium	Low	7782-49-2	Inorganic	B2BY93	Target 13-5	OCSA	1.33	mg/kg	B	DET	low
Selenium	Low	7782-49-2	Inorganic	B2BY94	Target 14-1	OCSA	1.07	mg/kg	B	DET	low
Selenium	Low	7782-49-2	Inorganic	B2BY95	Target 14-2	OCSA	0.953	mg/kg	B	DET	low
Selenium	Low	7782-49-2	Inorganic	B2BY96	Target 14-3	OCSA	1.45	mg/kg	B	DET	low
Selenium	Low	7782-49-2	Inorganic	B2BY97	Target 14-4	OCSA	1.91	mg/kg	B	DET	low
Selenium	Low	7782-49-2	Inorganic	B2BY98	Target 14-5	OCSA	1.44	mg/kg	B	DET	low
Selenium	Low	7782-49-2	Inorganic	B2BYB5	Target 16-1	OCSA	1.24	mg/kg		DET	low
Selenium	Low	7782-49-2	Inorganic	B2BYB6	Target 16-2	OCSA	1.33	mg/kg		DET	low
Selenium	Low	7782-49-2	Inorganic	B2BYB7	Target 16-3	OCSA	0.883	mg/kg		DET	low
Selenium	Low	7782-49-2	Inorganic	B2BYB8	Target 16-4	OCSA	0.896	mg/kg		DET	low
Selenium	Low	7782-49-2	Inorganic	B2BYB9	Target 16-5	OCSA	1.34	mg/kg		DET	low
Selenium	Low	7782-49-2	Inorganic	B2BYC0	Target 17-1	OCSA	1.52	mg/kg		DET	low
Selenium	Low	7782-49-2	Inorganic	B2BYC1	Target 17-2	OCSA	1.38	mg/kg		DET	low
Selenium	Low	7782-49-2	Inorganic	B2BYC2	Target 17-3	OCSA	0.864	mg/kg		DET	low
Selenium	Low	7782-49-2	Inorganic	B2BYC3	Target 17-4	OCSA	1.12	mg/kg		DET	low
Selenium	Low	7782-49-2	Inorganic	B2BYC4	Target 17-5	OCSA	1.37	mg/kg		DET	low
Selenium	Low	7782-49-2	Inorganic	B2BYC5	Target 18-1	OCSA	0.877	mg/kg		DET	low
Selenium	Low	7782-49-2	Inorganic	B2BYC6	Target 18-2	OCSA	2.02	mg/kg		DET	low
Selenium	Low	7782-49-2	Inorganic	B2BYC7	Target 18-3	OCSA	1.54	mg/kg		DET	low
Selenium	Low	7782-49-2	Inorganic	B2BYC8	Target 18-3D	OCSA	1.05	mg/kg		DET	low
Selenium	Low	7782-49-2	Inorganic	B2BYC9	Target 18-4	OCSA	1.4	mg/kg		DET	low
Selenium	Low	7782-49-2	Inorganic	B2BYD0	Target 18-5	OCSA	1.17	mg/kg		DET	low
Selenium	Low	7782-49-2	Inorganic	B2BYD4	Target 19-4	OCSA	1.33	mg/kg		DET	low
Selenium	Low	7782-49-2	Inorganic	B2BYD6	Target 20-1	OCSA	1.41	mg/kg		DET	low
Selenium	Low	7782-49-2	Inorganic	B2BYD7	Target 20-2	OCSA	1.28	mg/kg		DET	low
Selenium	Low	7782-49-2	Inorganic	B2BYD8	Target 20-3	OCSA	1.09	mg/kg		DET	low
Selenium	Low	7782-49-2	Inorganic	B2BYD9	Target 20-4	OCSA	1.24	mg/kg		DET	low
Selenium	Low	7782-49-2	Inorganic	B2BYF1	Target 21-1	OCSA	0.817	mg/kg		DET	low
Selenium	Low	7782-49-2	Inorganic	B2BYF2	Target 21-2	OCSA	1	mg/kg		DET	low
Selenium	Low	7782-49-2	Inorganic	B2BYF3	Target 21-3	OCSA	1.25	mg/kg		DET	low
Selenium	Low	7782-49-2	Inorganic	B2BYF4	Target 21-4	OCSA	0.881	mg/kg		DET	low
Selenium	Low	7782-49-2	Inorganic	B2BYF5	Target 21-5	OCSA	1.39	mg/kg		DET	low
Selenium	Low	7782-49-2	Inorganic	B2BYF6	Target 22-1	OCSA	1.05	mg/kg		DET	low
Selenium	Low	7782-49-2	Inorganic	B2BYF7	Target 22-2	OCSA	1.06	mg/kg		DET	low
Selenium	Low	7782-49-2	Inorganic	B2BYF8	Target 22-3	OCSA	1.18	mg/kg		DET	low
Selenium	Low	7782-49-2	Inorganic	B2BYF9	Target 22-4	OCSA	1.08	mg/kg		DET	low
Selenium	Low	7782-49-2	Inorganic	B2BYH0	Target 22-4D	OCSA	0.94	mg/kg		DET	low
Selenium	Low	7782-49-2	Inorganic	B2BYH1	Target 22-5	OCSA	1.36	mg/kg		DET	low
Selenium	Low	7782-49-2	Inorganic	B2BYH2	Target 23-1	OCSA	1.41	mg/kg		DET	low
Selenium	Low	7782-49-2	Inorganic	B2BYH3	Target 23-2	OCSA	1.31	mg/kg		DET	low
Selenium	Low	7782-49-2	Inorganic	B2BYH4	Target 23-3	OCSA	1.37	mg/kg		DET	low
Selenium	Low	7782-49-2	Inorganic	B2BXT3	Target 24-1	120-KW-1	1.39	mg/kg	B	DET	low
Selenium	Low	7782-49-2	Inorganic	B2BXT5	Target 24-2	120-KW-1	1.83	mg/kg	B	DET	low
Selenium	Low	7782-49-2	Inorganic	B2BXT6	Target 24-3	120-KW-1	1.28	mg/kg	B	DET	low
Selenium	Low	7782-49-2	Inorganic	B2BXT8	Target 24-5	120-KW-1	1.98	mg/kg	B	DET	low
Selenium	Low	7782-49-2	Inorganic	B2BP63	Target 6-5	600-228	1.38	mg/kg	B	DET	low
Selenium	Low	7782-49-2	Inorganic	B2C126	Target 7-1	600-281	1.25	mg/kg	B	DET	low
Selenium	Low	7782-49-2	Inorganic	B2C134	Target 8-3	600-281	0.697	mg/kg	B	DET	low
Vanadium	Low	7440-62-2	Inorganic	B2BVM9	Control 1	600-218	60.3	mg/kg		DET	low
Vanadium	Low	7440-62-2	Inorganic	B2BVP2	Control 13	OCSA	43.1	mg/kg		DET	low
Vanadium	Low	7440-62-2	Inorganic	B2BVP4	Control 15	OCSA	51.6	mg/kg		DET	low
Vanadium	Low	7440-62-2	Inorganic	B2BVP5	Control 16	OCSA	47.2	mg/kg		DET	low
Vanadium	Low	7440-62-2	Inorganic	B2BVP6	Control 17	OCSA	48.5	mg/kg		DET	low
Vanadium	Low	7440-62-2	Inorganic	B2BVP7	Control 18	OCSA	49.8	mg/kg		DET	low
Vanadium	Low	7440-62-2	Inorganic	B2BVN0	Control 2	600-218	65.1	mg/kg		DET	low
Vanadium	Low	7440-62-2	Inorganic	B2BVP9	Control 20	OCSA	44.8	mg/kg		DET	low
Vanadium	Low	7440-62-2	Inorganic	B2BVN2	Control 4	600-220	52.6	mg/kg		DET	low
Vanadium	Low	7440-62-2	Inorganic	B2BVN6	Control 8	600-228	58.7	mg/kg		DET	low
Vanadium	Low	7440-62-2	Inorganic	B2BVN8	Control 9D	600-228	59.1	mg/kg		DET	low
Vanadium	Low	7440-62-2	Inorganic	B2D0D8	Lab Soil	None	2.27	mg/kg	B	DET	low
Vanadium	Low	7440-62-2	Inorganic	B2BY78	Target 11-1	OCSA	57.5	mg/kg		DET	low
Vanadium	Low	7440-62-2	Inorganic	B2BY83	Target 12-1	OCSA	55.1	mg/kg		DET	low
Vanadium	Low	7440-62-2	Inorganic	B2BY84	Target 12-2	OCSA	51.1	mg/kg		DET	low
Vanadium	Low	7440-62-2	Inorganic	B2BY85	Target 12-3	OCSA	51.8	mg/kg		DET	low
Vanadium	Low	7440-62-2	Inorganic	B2BY86	Target 12-4	OCSA	52.9	mg/kg		DET	low
Vanadium	Low	7440-62-2	Inorganic	B2BY87	Target 12-4D	OCSA	47.8	mg/kg		DET	low
Vanadium	Low	7440-62-2	Inorganic	B2BY88	Target 12-5	OCSA	50.8	mg/kg		DET	low
Vanadium	Low	7440-62-2	Inorganic	B2BY89	Target 13-1	OCSA	54.8	mg/kg		DET	low
Vanadium	Low	7440-62-2	Inorganic	B2BY90	Target 13-2	OCSA	51.6	mg/kg		DET	low
Vanadium	Low	7440-62-2	Inorganic	B2BY91	Target 13-3	OCSA	72.9	mg/kg		DET	low
Vanadium	Low	7440-62-2	Inorganic	B2BY92	Target 13-4	OCSA	62.3	mg/kg		DET	low
Vanadium	Low	7440-62-2	Inorganic	B2BY93	Target 13-5	OCSA	55.4	mg/kg		DET	low
Vanadium	Low	7440-62-2	Inorganic	B2BY94	Target 14-1	OCSA	68.7	mg/kg		DET	low
Vanadium	Low	7440-62-2	Inorganic	B2BY95	Target 14-2	OCSA	53.7	mg/kg		DET	low
Vanadium	Low	7440-62-2	Inorganic	B2BY96	Target 14-3	OCSA	50.6	mg/kg		DET	low
Vanadium	Low	7440-62-2	Inorganic	B2BY97	Target 14-4	OCSA	56.5	mg/kg		DET	low

Table 3-1 Analytical chemistry data for soils used for plant and soil invertebrate bioassays for upland locations at the Hanford Site

Analyte	Priority	CASNo	AnalGrp	SampleID	LocationID	WasteSite	Conc	Units	Qualifer	qual	grp
Vanadium	Low	7440-62-2	Inorganic	B2BY98	Target 14-5	OCSA	64.9	mg/kg		DET	low
Vanadium	Low	7440-62-2	Inorganic	B2BYB5	Target 16-1	OCSA	43.6	mg/kg		DET	low
Vanadium	Low	7440-62-2	Inorganic	B2BYB6	Target 16-2	OCSA	46.1	mg/kg		DET	low
Vanadium	Low	7440-62-2	Inorganic	B2BYB7	Target 16-3	OCSA	52.9	mg/kg		DET	low
Vanadium	Low	7440-62-2	Inorganic	B2BYB8	Target 16-4	OCSA	47.1	mg/kg		DET	low
Vanadium	Low	7440-62-2	Inorganic	B2BYB9	Target 16-5	OCSA	44	mg/kg		DET	low
Vanadium	Low	7440-62-2	Inorganic	B2BYC0	Target 17-1	OCSA	38.4	mg/kg		DET	low
Vanadium	Low	7440-62-2	Inorganic	B2BYC1	Target 17-2	OCSA	44	mg/kg		DET	low
Vanadium	Low	7440-62-2	Inorganic	B2BYC2	Target 17-3	OCSA	44.2	mg/kg		DET	low
Vanadium	Low	7440-62-2	Inorganic	B2BYC3	Target 17-4	OCSA	46.4	mg/kg		DET	low
Vanadium	Low	7440-62-2	Inorganic	B2BYC4	Target 17-5	OCSA	48.1	mg/kg		DET	low
Vanadium	Low	7440-62-2	Inorganic	B2BYC5	Target 18-1	OCSA	53.9	mg/kg		DET	low
Vanadium	Low	7440-62-2	Inorganic	B2BYC6	Target 18-2	OCSA	49.4	mg/kg		DET	low
Vanadium	Low	7440-62-2	Inorganic	B2BYC7	Target 18-3	OCSA	64.2	mg/kg		DET	low
Vanadium	Low	7440-62-2	Inorganic	B2BYC8	Target 18-3D	OCSA	54.4	mg/kg		DET	low
Vanadium	Low	7440-62-2	Inorganic	B2BYC9	Target 18-4	OCSA	48.8	mg/kg		DET	low
Vanadium	Low	7440-62-2	Inorganic	B2BYD0	Target 18-5	OCSA	45.8	mg/kg		DET	low
Vanadium	Low	7440-62-2	Inorganic	B2BYD4	Target 19-4	OCSA	55.2	mg/kg		DET	low
Vanadium	Low	7440-62-2	Inorganic	B2BYD6	Target 20-1	OCSA	45.5	mg/kg		DET	low
Vanadium	Low	7440-62-2	Inorganic	B2BYD7	Target 20-2	OCSA	48.2	mg/kg		DET	low
Vanadium	Low	7440-62-2	Inorganic	B2BYD8	Target 20-3	OCSA	49.2	mg/kg		DET	low
Vanadium	Low	7440-62-2	Inorganic	B2BYD9	Target 20-4	OCSA	43.6	mg/kg		DET	low
Vanadium	Low	7440-62-2	Inorganic	B2BYF1	Target 21-1	OCSA	43.5	mg/kg		DET	low
Vanadium	Low	7440-62-2	Inorganic	B2BYF2	Target 21-2	OCSA	47.7	mg/kg		DET	low
Vanadium	Low	7440-62-2	Inorganic	B2BYF3	Target 21-3	OCSA	57.8	mg/kg		DET	low
Vanadium	Low	7440-62-2	Inorganic	B2BYF4	Target 21-4	OCSA	43.1	mg/kg		DET	low
Vanadium	Low	7440-62-2	Inorganic	B2BYF5	Target 21-5	OCSA	46.6	mg/kg		DET	low
Vanadium	Low	7440-62-2	Inorganic	B2BYF6	Target 22-1	OCSA	51.4	mg/kg		DET	low
Vanadium	Low	7440-62-2	Inorganic	B2BYF7	Target 22-2	OCSA	49.6	mg/kg		DET	low
Vanadium	Low	7440-62-2	Inorganic	B2BYF8	Target 22-3	OCSA	50	mg/kg		DET	low
Vanadium	Low	7440-62-2	Inorganic	B2BYF9	Target 22-4	OCSA	48	mg/kg		DET	low
Vanadium	Low	7440-62-2	Inorganic	B2BYH0	Target 22-4D	OCSA	45.6	mg/kg		DET	low
Vanadium	Low	7440-62-2	Inorganic	B2BYH1	Target 22-5	OCSA	45.9	mg/kg		DET	low
Vanadium	Low	7440-62-2	Inorganic	B2BYH2	Target 23-1	OCSA	59.8	mg/kg		DET	low
Vanadium	Low	7440-62-2	Inorganic	B2BYH3	Target 23-2	OCSA	58.1	mg/kg		DET	low
Vanadium	Low	7440-62-2	Inorganic	B2BYH4	Target 23-3	OCSA	59.4	mg/kg		DET	low
Vanadium	Low	7440-62-2	Inorganic	B2BXT3	Target 24-1	120-KW-1	116	mg/kg		DET	hi
Vanadium	Low	7440-62-2	Inorganic	B2BXT5	Target 24-2	120-KW-1	89.4	mg/kg		DET	low
Vanadium	Low	7440-62-2	Inorganic	B2BXT6	Target 24-3	120-KW-1	72.1	mg/kg		DET	low
Vanadium	Low	7440-62-2	Inorganic	B2BXT8	Target 24-5	120-KW-1	115	mg/kg		DET	hi
Vanadium	Low	7440-62-2	Inorganic	B2BP63	Target 6-5	600-228	63.4	mg/kg		DET	low
Vanadium	Low	7440-62-2	Inorganic	B2C126	Target 7-1	600-281	44.4	mg/kg		DET	low
Vanadium	Low	7440-62-2	Inorganic	B2C134	Target 8-3	600-281	33.4	mg/kg		DET	low
Beryllium	Other	7440-41-7	Inorganic	B2BVM9	Control 1	600-218	0.339	mg/kg		DET	
Beryllium	Other	7440-41-7	Inorganic	B2BVP2	Control 13	OCSA	0.273	mg/kg	B	DET	
Beryllium	Other	7440-41-7	Inorganic	B2BVP4	Control 15	OCSA	0.419	mg/kg	B	DET	
Beryllium	Other	7440-41-7	Inorganic	B2BVP5	Control 16	OCSA	0.29	mg/kg	B	DET	
Beryllium	Other	7440-41-7	Inorganic	B2BVP6	Control 17	OCSA	0.314	mg/kg	B	DET	
Beryllium	Other	7440-41-7	Inorganic	B2BVP7	Control 18	OCSA	0.389	mg/kg	B	DET	
Beryllium	Other	7440-41-7	Inorganic	B2BVN0	Control 2	600-218	0.387	mg/kg		DET	
Beryllium	Other	7440-41-7	Inorganic	B2BVP9	Control 20	OCSA	0.259	mg/kg	B	DET	
Beryllium	Other	7440-41-7	Inorganic	B2BVN2	Control 4	600-220	0.273	mg/kg	B	DET	
Beryllium	Other	7440-41-7	Inorganic	B2BVN6	Control 8	600-228	0.283	mg/kg	B	DET	
Beryllium	Other	7440-41-7	Inorganic	B2BVN8	Control 9D	600-228	0.272	mg/kg	B	DET	
Beryllium	Other	7440-41-7	Inorganic	B2D0D8	Lab Soil	None	0.178	mg/kg	B	DET	
Beryllium	Other	7440-41-7	Inorganic	B2BY78	Target 11-1	OCSA	0.328	mg/kg	B	DET	
Beryllium	Other	7440-41-7	Inorganic	B2BY83	Target 12-1	OCSA	0.338	mg/kg	B	DET	
Beryllium	Other	7440-41-7	Inorganic	B2BY84	Target 12-2	OCSA	0.324	mg/kg	B	DET	
Beryllium	Other	7440-41-7	Inorganic	B2BY85	Target 12-3	OCSA	0.298	mg/kg	B	DET	
Beryllium	Other	7440-41-7	Inorganic	B2BY86	Target 12-4	OCSA	0.333	mg/kg	B	DET	
Beryllium	Other	7440-41-7	Inorganic	B2BY87	Target 12-4D	OCSA	0.288	mg/kg	B	DET	
Beryllium	Other	7440-41-7	Inorganic	B2BY88	Target 12-5	OCSA	0.357	mg/kg	B	DET	
Beryllium	Other	7440-41-7	Inorganic	B2BY89	Target 13-1	OCSA	0.372	mg/kg	B	DET	
Beryllium	Other	7440-41-7	Inorganic	B2BY90	Target 13-2	OCSA	0.242	mg/kg	B	DET	
Beryllium	Other	7440-41-7	Inorganic	B2BY91	Target 13-3	OCSA	0.384	mg/kg	B	DET	
Beryllium	Other	7440-41-7	Inorganic	B2BY92	Target 13-4	OCSA	0.358	mg/kg	B	DET	
Beryllium	Other	7440-41-7	Inorganic	B2BY93	Target 13-5	OCSA	0.293	mg/kg	B	DET	
Beryllium	Other	7440-41-7	Inorganic	B2BY94	Target 14-1	OCSA	0.355	mg/kg	B	DET	
Beryllium	Other	7440-41-7	Inorganic	B2BY95	Target 14-2	OCSA	0.346	mg/kg	B	DET	
Beryllium	Other	7440-41-7	Inorganic	B2BY96	Target 14-3	OCSA	0.349	mg/kg	B	DET	
Beryllium	Other	7440-41-7	Inorganic	B2BY97	Target 14-4	OCSA	0.3	mg/kg	B	DET	
Beryllium	Other	7440-41-7	Inorganic	B2BY98	Target 14-5	OCSA	0.364	mg/kg	B	DET	
Beryllium	Other	7440-41-7	Inorganic	B2BYB5	Target 16-1	OCSA	0.357	mg/kg		DET	
Beryllium	Other	7440-41-7	Inorganic	B2BYB6	Target 16-2	OCSA	0.261	mg/kg		DET	
Beryllium	Other	7440-41-7	Inorganic	B2BYB7	Target 16-3	OCSA	0.406	mg/kg		DET	
Beryllium	Other	7440-41-7	Inorganic	B2BYB8	Target 16-4	OCSA	0.353	mg/kg		DET	
Beryllium	Other	7440-41-7	Inorganic	B2BYB9	Target 16-5	OCSA	0.311	mg/kg		DET	
Beryllium	Other	7440-41-7	Inorganic	B2BYC0	Target 17-1	OCSA	0.356	mg/kg		DET	
Beryllium	Other	7440-41-7	Inorganic	B2BYC1	Target 17-2	OCSA	0.291	mg/kg		DET	
Beryllium	Other	7440-41-7	Inorganic	B2BYC2	Target 17-3	OCSA	0.341	mg/kg		DET	
Beryllium	Other	7440-41-7	Inorganic	B2BYC3	Target 17-4	OCSA	0.279	mg/kg		DET	
Beryllium	Other	7440-41-7	Inorganic	B2BYC4	Target 17-5	OCSA	0.304	mg/kg		DET	
Beryllium	Other	7440-41-7	Inorganic	B2BYC5	Target 18-1	OCSA	0.487	mg/kg		DET	
Beryllium	Other	7440-41-7	Inorganic	B2BYC6	Target 18-2	OCSA	0.273	mg/kg		DET	
Beryllium	Other	7440-41-7	Inorganic	B2BYC7	Target 18-3	OCSA	0.409	mg/kg		DET	
Beryllium	Other	7440-41-7	Inorganic	B2BYC8	Target 18-3D	OCSA	0.432	mg/kg		DET	
Beryllium	Other	7440-41-7	Inorganic	B2BYC9	Target 18-4	OCSA	0.317	mg/kg		DET	
Beryllium	Other	7440-41-7	Inorganic	B2BYD0	Target 18-5	OCSA	0.46	mg/kg		DET	
Beryllium	Other	7440-41-7	Inorganic	B2BYD4	Target 19-4	OCSA	0.273	mg/kg		DET	
Beryllium	Other	7440-41-7	Inorganic	B2BYD6	Target 20-1	OCSA	0.538	mg/kg		DET	
Beryllium	Other	7440-41-7	Inorganic	B2BYD7	Target 20-2	OCSA	0.4	mg/kg		DET	
Beryllium	Other	7440-41-7	Inorganic	B2BYD8	Target 20-3	OCSA	0.41	mg/kg		DET	
Beryllium	Other	7440-41-7	Inorganic	B2BYD9	Target 20-4	OCSA	0.357	mg/kg		DET	
Beryllium	Other	7440-41-7	Inorganic	B2BYF1	Target 21-1	OCSA	0.284	mg/kg		DET	
Beryllium	Other	7440-41-7	Inorganic	B2BYF2	Target 21-2	OCSA	0.307	mg/kg		DET	
Beryllium	Other	7440-41-7	Inorganic	B2BYF3	Target 21-3	OCSA	0.268	mg/kg		DET	
Beryllium	Other	7440-41-7	Inorganic	B2BYF4	Target 21-4	OCSA	0.314	mg/kg		DET	

Table 3-1 Analytical chemistry data for soils used for plant and soil invertebrate bioassays for upland locations at the Hanford Site

Analyte	Priority	CASNo	AnalGrp	SampleID	LocationID	WasteSite	Conc	Units	Qualifer	qual	grp
Beryllium	Other	7440-41-7	Inorganic	B2BYF5	Target 21-5	OCSA	0.34	mg/kg		DET	
Beryllium	Other	7440-41-7	Inorganic	B2BYF6	Target 22-1	OCSA	0.342	mg/kg		DET	
Beryllium	Other	7440-41-7	Inorganic	B2BYF7	Target 22-2	OCSA	0.384	mg/kg		DET	
Beryllium	Other	7440-41-7	Inorganic	B2BYF8	Target 22-3	OCSA	0.565	mg/kg		DET	
Beryllium	Other	7440-41-7	Inorganic	B2BYF9	Target 22-4	OCSA	0.293	mg/kg		DET	
Beryllium	Other	7440-41-7	Inorganic	B2BYH0	Target 22-4D	OCSA	0.36	mg/kg		DET	
Beryllium	Other	7440-41-7	Inorganic	B2BYH1	Target 22-5	OCSA	0.41	mg/kg		DET	
Beryllium	Other	7440-41-7	Inorganic	B2BYH2	Target 23-1	OCSA	0.48	mg/kg		DET	
Beryllium	Other	7440-41-7	Inorganic	B2BYH3	Target 23-2	OCSA	0.455	mg/kg		DET	
Beryllium	Other	7440-41-7	Inorganic	B2BYH4	Target 23-3	OCSA	0.47	mg/kg		DET	
Beryllium	Other	7440-41-7	Inorganic	B2BXT3	Target 24-1	120-KW-1	0.202	mg/kg	B	DET	
Beryllium	Other	7440-41-7	Inorganic	B2BXT5	Target 24-2	120-KW-1	0.1	mg/kg	U	ND	
Beryllium	Other	7440-41-7	Inorganic	B2BXT6	Target 24-3	120-KW-1	0.1	mg/kg	U	ND	
Beryllium	Other	7440-41-7	Inorganic	B2BXT8	Target 24-5	120-KW-1	0.253	mg/kg	B	DET	
Beryllium	Other	7440-41-7	Inorganic	B2BP63	Target 6-5	600-228	0.333	mg/kg	B	DET	
Beryllium	Other	7440-41-7	Inorganic	B2C126	Target 7-1	600-281	0.339	mg/kg	B	DET	
Beryllium	Other	7440-41-7	Inorganic	B2C134	Target 8-3	600-281	0.323	mg/kg	B	DET	
Calcium	Other	7440-70-2	Nutrient	B2BVM9	Control 1	600-218	3660	mg/kg		DET	
Calcium	Other	7440-70-2	Nutrient	B2BVP2	Control 13	OCSA	5720	mg/kg	N	DET	
Calcium	Other	7440-70-2	Nutrient	B2BVP4	Control 15	OCSA	7790	mg/kg	N	DET	
Calcium	Other	7440-70-2	Nutrient	B2BVP5	Control 16	OCSA	6010	mg/kg	N	DET	
Calcium	Other	7440-70-2	Nutrient	B2BVP6	Control 17	OCSA	6950	mg/kg	N	DET	
Calcium	Other	7440-70-2	Nutrient	B2BVP7	Control 18	OCSA	5290	mg/kg	N	DET	
Calcium	Other	7440-70-2	Nutrient	B2BVN0	Control 2	600-218	4410	mg/kg		DET	
Calcium	Other	7440-70-2	Nutrient	B2BVP9	Control 20	OCSA	3460	mg/kg	N	DET	
Calcium	Other	7440-70-2	Nutrient	B2BVN2	Control 4	600-220	6570	mg/kg		DET	
Calcium	Other	7440-70-2	Nutrient	B2BVN6	Control 8	600-228	3860	mg/kg		DET	
Calcium	Other	7440-70-2	Nutrient	B2BVN8	Control 9D	600-228	7850	mg/kg		DET	
Calcium	Other	7440-70-2	Nutrient	B2D0D8	Lab Soil	None	3530	mg/kg		DET	
Calcium	Other	7440-70-2	Nutrient	B2BY78	Target 11-1	OCSA	3830	mg/kg		DET	
Calcium	Other	7440-70-2	Nutrient	B2BY83	Target 12-1	OCSA	3800	mg/kg		DET	
Calcium	Other	7440-70-2	Nutrient	B2BY84	Target 12-2	OCSA	3300	mg/kg		DET	
Calcium	Other	7440-70-2	Nutrient	B2BY85	Target 12-3	OCSA	3260	mg/kg		DET	
Calcium	Other	7440-70-2	Nutrient	B2BY86	Target 12-4	OCSA	3020	mg/kg		DET	
Calcium	Other	7440-70-2	Nutrient	B2BY87	Target 12-4D	OCSA	3990	mg/kg		DET	
Calcium	Other	7440-70-2	Nutrient	B2BY88	Target 12-5	OCSA	4230	mg/kg		DET	
Calcium	Other	7440-70-2	Nutrient	B2BY89	Target 13-1	OCSA	5640	mg/kg		DET	
Calcium	Other	7440-70-2	Nutrient	B2BY90	Target 13-2	OCSA	6860	mg/kg		DET	
Calcium	Other	7440-70-2	Nutrient	B2BY91	Target 13-3	OCSA	6110	mg/kg		DET	
Calcium	Other	7440-70-2	Nutrient	B2BY92	Target 13-4	OCSA	5050	mg/kg		DET	
Calcium	Other	7440-70-2	Nutrient	B2BY93	Target 13-5	OCSA	5570	mg/kg		DET	
Calcium	Other	7440-70-2	Nutrient	B2BY94	Target 14-1	OCSA	5890	mg/kg		DET	
Calcium	Other	7440-70-2	Nutrient	B2BY95	Target 14-2	OCSA	5610	mg/kg		DET	
Calcium	Other	7440-70-2	Nutrient	B2BY96	Target 14-3	OCSA	6070	mg/kg		DET	
Calcium	Other	7440-70-2	Nutrient	B2BY97	Target 14-4	OCSA	8210	mg/kg		DET	
Calcium	Other	7440-70-2	Nutrient	B2BY98	Target 14-5	OCSA	6080	mg/kg		DET	
Calcium	Other	7440-70-2	Nutrient	B2BYB5	Target 16-1	OCSA	9130	mg/kg	D	DET	
Calcium	Other	7440-70-2	Nutrient	B2BYB6	Target 16-2	OCSA	11300	mg/kg	D	DET	
Calcium	Other	7440-70-2	Nutrient	B2BYB7	Target 16-3	OCSA	6930	mg/kg	D	DET	
Calcium	Other	7440-70-2	Nutrient	B2BYB8	Target 16-4	OCSA	5840	mg/kg	D	DET	
Calcium	Other	7440-70-2	Nutrient	B2BYB9	Target 16-5	OCSA	9270	mg/kg	D	DET	
Calcium	Other	7440-70-2	Nutrient	B2BYC0	Target 17-1	OCSA	11100	mg/kg	D	DET	
Calcium	Other	7440-70-2	Nutrient	B2BYC1	Target 17-2	OCSA	13100	mg/kg	D	DET	
Calcium	Other	7440-70-2	Nutrient	B2BYC2	Target 17-3	OCSA	9890	mg/kg	D	DET	
Calcium	Other	7440-70-2	Nutrient	B2BYC3	Target 17-4	OCSA	10800	mg/kg	D	DET	
Calcium	Other	7440-70-2	Nutrient	B2BYC4	Target 17-5	OCSA	10600	mg/kg	D	DET	
Calcium	Other	7440-70-2	Nutrient	B2BYC5	Target 18-1	OCSA	10100	mg/kg	D	DET	
Calcium	Other	7440-70-2	Nutrient	B2BYC6	Target 18-2	OCSA	7810	mg/kg	D	DET	
Calcium	Other	7440-70-2	Nutrient	B2BYC7	Target 18-3	OCSA	10300	mg/kg	D	DET	
Calcium	Other	7440-70-2	Nutrient	B2BYC8	Target 18-3D	OCSA	7030	mg/kg	D	DET	
Calcium	Other	7440-70-2	Nutrient	B2BYC9	Target 18-4	OCSA	9690	mg/kg	D	DET	
Calcium	Other	7440-70-2	Nutrient	B2BYD0	Target 18-5	OCSA	11600	mg/kg	D	DET	
Calcium	Other	7440-70-2	Nutrient	B2BYD4	Target 19-4	OCSA	11500	mg/kg	D	DET	
Calcium	Other	7440-70-2	Nutrient	B2BYD6	Target 20-1	OCSA	19800	mg/kg	D	DET	
Calcium	Other	7440-70-2	Nutrient	B2BYD7	Target 20-2	OCSA	12300	mg/kg	D	DET	
Calcium	Other	7440-70-2	Nutrient	B2BYD8	Target 20-3	OCSA	15800	mg/kg	D	DET	
Calcium	Other	7440-70-2	Nutrient	B2BYD9	Target 20-4	OCSA	8920	mg/kg	D	DET	
Calcium	Other	7440-70-2	Nutrient	B2BYF1	Target 21-1	OCSA	7990	mg/kg	D	DET	
Calcium	Other	7440-70-2	Nutrient	B2BYF2	Target 21-2	OCSA	10200	mg/kg	D	DET	
Calcium	Other	7440-70-2	Nutrient	B2BYF3	Target 21-3	OCSA	7740	mg/kg	D	DET	
Calcium	Other	7440-70-2	Nutrient	B2BYF4	Target 21-4	OCSA	5610	mg/kg	D	DET	
Calcium	Other	7440-70-2	Nutrient	B2BYF5	Target 21-5	OCSA	6900	mg/kg	D	DET	
Calcium	Other	7440-70-2	Nutrient	B2BYF6	Target 22-1	OCSA	9190	mg/kg	D	DET	
Calcium	Other	7440-70-2	Nutrient	B2BYF7	Target 22-2	OCSA	8730	mg/kg	D	DET	
Calcium	Other	7440-70-2	Nutrient	B2BYF8	Target 22-3	OCSA	9610	mg/kg	D	DET	
Calcium	Other	7440-70-2	Nutrient	B2BYF9	Target 22-4	OCSA	11400	mg/kg	D	DET	
Calcium	Other	7440-70-2	Nutrient	B2BYH0	Target 22-4D	OCSA	8970	mg/kg	D	DET	
Calcium	Other	7440-70-2	Nutrient	B2BYH1	Target 22-5	OCSA	11800	mg/kg	D	DET	
Calcium	Other	7440-70-2	Nutrient	B2BYH2	Target 23-1	OCSA	8850	mg/kg	D	DET	
Calcium	Other	7440-70-2	Nutrient	B2BYH3	Target 23-2	OCSA	7350	mg/kg	D	DET	
Calcium	Other	7440-70-2	Nutrient	B2BYH4	Target 23-3	OCSA	7570	mg/kg	D	DET	
Calcium	Other	7440-70-2	Nutrient	B2BXT3	Target 24-1	120-KW-1	9270	mg/kg		DET	
Calcium	Other	7440-70-2	Nutrient	B2BXT5	Target 24-2	120-KW-1	21400	mg/kg		DET	
Calcium	Other	7440-70-2	Nutrient	B2BXT6	Target 24-3	120-KW-1	20800	mg/kg		DET	
Calcium	Other	7440-70-2	Nutrient	B2BXT8	Target 24-5	120-KW-1	10600	mg/kg		DET	
Calcium	Other	7440-70-2	Nutrient	B2BP63	Target 6-5	600-228	7370	mg/kg		DET	
Calcium	Other	7440-70-2	Nutrient	B2C126	Target 7-1	600-281	3390	mg/kg		DET	
Calcium	Other	7440-70-2	Nutrient	B2C134	Target 8-3	600-281	4160	mg/kg		DET	
Magnesium	Other	7439-95-4	Nutrient	B2BVM9	Control 1	600-218	4380	mg/kg		DET	
Magnesium	Other	7439-95-4	Nutrient	B2BVP2	Control 13	OCSA	4840	mg/kg	N	DET	
Magnesium	Other	7439-95-4	Nutrient	B2BVP4	Control 15	OCSA	4750	mg/kg	N	DET	
Magnesium	Other	7439-95-4	Nutrient	B2BVP5	Control 16	OCSA	4380	mg/kg	N	DET	
Magnesium	Other	7439-95-4	Nutrient	B2BVP6	Control 17	OCSA	4510	mg/kg	N	DET	
Magnesium	Other	7439-95-4	Nutrient	B2BVP7	Control 18	OCSA	4250	mg/kg	N	DET	
Magnesium	Other	7439-95-4	Nutrient	B2BVN0	Control 2	600-218	4890	mg/kg		DET	
Magnesium	Other	7439-95-4	Nutrient	B2BVP9	Control 20	OCSA	3960	mg/kg	N	DET	
Magnesium	Other	7439-95-4	Nutrient	B2BVN2	Control 4	600-220	4270	mg/kg		DET	

Table 3-1 Analytical chemistry data for soils used for plant and soil invertebrate bioassays for upland locations at the Hanford Site

Analyte	Priority	CASNo	AnalGrp	SampleID	LocationID	WasteSite	Conc	Units	Qualifer	qual	grp
Magnesium	Other	7439-95-4	Nutrient	B2BVN6	Control 8	600-228	4520	mg/kg		DET	
Magnesium	Other	7439-95-4	Nutrient	B2BVN8	Control 9D	600-228	5450	mg/kg		DET	
Magnesium	Other	7439-95-4	Nutrient	B2D0D8	Lab Soil	None	250	mg/kg		DET	
Magnesium	Other	7439-95-4	Nutrient	B2BY78	Target 11-1	OCSA	3470	mg/kg		DET	
Magnesium	Other	7439-95-4	Nutrient	B2BY83	Target 12-1	OCSA	3940	mg/kg		DET	
Magnesium	Other	7439-95-4	Nutrient	B2BY84	Target 12-2	OCSA	3790	mg/kg		DET	
Magnesium	Other	7439-95-4	Nutrient	B2BY85	Target 12-3	OCSA	3680	mg/kg		DET	
Magnesium	Other	7439-95-4	Nutrient	B2BY86	Target 12-4	OCSA	2910	mg/kg		DET	
Magnesium	Other	7439-95-4	Nutrient	B2BY87	Target 12-4D	OCSA	4160	mg/kg		DET	
Magnesium	Other	7439-95-4	Nutrient	B2BY88	Target 12-5	OCSA	4260	mg/kg		DET	
Magnesium	Other	7439-95-4	Nutrient	B2BY89	Target 13-1	OCSA	4160	mg/kg		DET	
Magnesium	Other	7439-95-4	Nutrient	B2BY90	Target 13-2	OCSA	4030	mg/kg		DET	
Magnesium	Other	7439-95-4	Nutrient	B2BY91	Target 13-3	OCSA	4850	mg/kg		DET	
Magnesium	Other	7439-95-4	Nutrient	B2BY92	Target 13-4	OCSA	4050	mg/kg		DET	
Magnesium	Other	7439-95-4	Nutrient	B2BY93	Target 13-5	OCSA	3780	mg/kg		DET	
Magnesium	Other	7439-95-4	Nutrient	B2BY94	Target 14-1	OCSA	3760	mg/kg		DET	
Magnesium	Other	7439-95-4	Nutrient	B2BY95	Target 14-2	OCSA	3860	mg/kg		DET	
Magnesium	Other	7439-95-4	Nutrient	B2BY96	Target 14-3	OCSA	4070	mg/kg		DET	
Magnesium	Other	7439-95-4	Nutrient	B2BY97	Target 14-4	OCSA	3990	mg/kg		DET	
Magnesium	Other	7439-95-4	Nutrient	B2BY98	Target 14-5	OCSA	4100	mg/kg		DET	
Magnesium	Other	7439-95-4	Nutrient	B2BYB5	Target 16-1	OCSA	4770	mg/kg	D	DET	
Magnesium	Other	7439-95-4	Nutrient	B2BYB6	Target 16-2	OCSA	4480	mg/kg	D	DET	
Magnesium	Other	7439-95-4	Nutrient	B2BYB7	Target 16-3	OCSA	5410	mg/kg	D	DET	
Magnesium	Other	7439-95-4	Nutrient	B2BYB8	Target 16-4	OCSA	4350	mg/kg	D	DET	
Magnesium	Other	7439-95-4	Nutrient	B2BYB9	Target 16-5	OCSA	4850	mg/kg	D	DET	
Magnesium	Other	7439-95-4	Nutrient	B2BYC0	Target 17-1	OCSA	4970	mg/kg	D	DET	
Magnesium	Other	7439-95-4	Nutrient	B2BYC1	Target 17-2	OCSA	4890	mg/kg	D	DET	
Magnesium	Other	7439-95-4	Nutrient	B2BYC2	Target 17-3	OCSA	4650	mg/kg	D	DET	
Magnesium	Other	7439-95-4	Nutrient	B2BYC3	Target 17-4	OCSA	3890	mg/kg	D	DET	
Magnesium	Other	7439-95-4	Nutrient	B2BYC4	Target 17-5	OCSA	4530	mg/kg	D	DET	
Magnesium	Other	7439-95-4	Nutrient	B2BYC5	Target 18-1	OCSA	5410	mg/kg	D	DET	
Magnesium	Other	7439-95-4	Nutrient	B2BYC6	Target 18-2	OCSA	5730	mg/kg	D	DET	
Magnesium	Other	7439-95-4	Nutrient	B2BYC7	Target 18-3	OCSA	6740	mg/kg	D	DET	
Magnesium	Other	7439-95-4	Nutrient	B2BYC8	Target 18-3D	OCSA	4400	mg/kg	D	DET	
Magnesium	Other	7439-95-4	Nutrient	B2BYC9	Target 18-4	OCSA	4430	mg/kg	D	DET	
Magnesium	Other	7439-95-4	Nutrient	B2BYD0	Target 18-5	OCSA	4550	mg/kg	D	DET	
Magnesium	Other	7439-95-4	Nutrient	B2BYD4	Target 19-4	OCSA	5000	mg/kg	D	DET	
Magnesium	Other	7439-95-4	Nutrient	B2BYD6	Target 20-1	OCSA	5740	mg/kg	D	DET	
Magnesium	Other	7439-95-4	Nutrient	B2BYD7	Target 20-2	OCSA	4900	mg/kg	D	DET	
Magnesium	Other	7439-95-4	Nutrient	B2BYD8	Target 20-3	OCSA	4400	mg/kg	D	DET	
Magnesium	Other	7439-95-4	Nutrient	B2BYD9	Target 20-4	OCSA	4570	mg/kg	D	DET	
Magnesium	Other	7439-95-4	Nutrient	B2BYF1	Target 21-1	OCSA	6100	mg/kg	D	DET	
Magnesium	Other	7439-95-4	Nutrient	B2BYF2	Target 21-2	OCSA	5360	mg/kg	D	DET	
Magnesium	Other	7439-95-4	Nutrient	B2BYF3	Target 21-3	OCSA	5620	mg/kg	D	DET	
Magnesium	Other	7439-95-4	Nutrient	B2BYF4	Target 21-4	OCSA	4640	mg/kg	D	DET	
Magnesium	Other	7439-95-4	Nutrient	B2BYF5	Target 21-5	OCSA	4690	mg/kg	D	DET	
Magnesium	Other	7439-95-4	Nutrient	B2BYF6	Target 22-1	OCSA	5640	mg/kg	D	DET	
Magnesium	Other	7439-95-4	Nutrient	B2BYF7	Target 22-2	OCSA	5110	mg/kg	D	DET	
Magnesium	Other	7439-95-4	Nutrient	B2BYF8	Target 22-3	OCSA	5340	mg/kg	D	DET	
Magnesium	Other	7439-95-4	Nutrient	B2BYF9	Target 22-4	OCSA	6010	mg/kg	D	DET	
Magnesium	Other	7439-95-4	Nutrient	B2BYH0	Target 22-4D	OCSA	5370	mg/kg	D	DET	
Magnesium	Other	7439-95-4	Nutrient	B2BYH1	Target 22-5	OCSA	6220	mg/kg	D	DET	
Magnesium	Other	7439-95-4	Nutrient	B2BYH2	Target 23-1	OCSA	10900	mg/kg	D	DET	
Magnesium	Other	7439-95-4	Nutrient	B2BYH3	Target 23-2	OCSA	6810	mg/kg	D	DET	
Magnesium	Other	7439-95-4	Nutrient	B2BYH4	Target 23-3	OCSA	8400	mg/kg	D	DET	
Magnesium	Other	7439-95-4	Nutrient	B2BXT3	Target 24-1	120-KW-1	2760	mg/kg		DET	
Magnesium	Other	7439-95-4	Nutrient	B2BXT5	Target 24-2	120-KW-1	1290	mg/kg		DET	
Magnesium	Other	7439-95-4	Nutrient	B2BXT6	Target 24-3	120-KW-1	954	mg/kg		DET	
Magnesium	Other	7439-95-4	Nutrient	B2BXT8	Target 24-5	120-KW-1	2960	mg/kg		DET	
Magnesium	Other	7439-95-4	Nutrient	B2BP63	Target 6-5	600-228	3700	mg/kg		DET	
Magnesium	Other	7439-95-4	Nutrient	B2C126	Target 7-1	600-281	4140	mg/kg		DET	
Magnesium	Other	7439-95-4	Nutrient	B2C134	Target 8-3	600-281	4550	mg/kg		DET	
Molybdenum	Other	7439-98-7	Inorganic	B2BVM9	Control 1	600-218	0.339	mg/kg		DET	
Molybdenum	Other	7439-98-7	Inorganic	B2BVP2	Control 13	OCSA	0.371	mg/kg	B	DET	
Molybdenum	Other	7439-98-7	Inorganic	B2BVP4	Control 15	OCSA	0.425	mg/kg	B	DET	
Molybdenum	Other	7439-98-7	Inorganic	B2BVP5	Control 16	OCSA	0.319	mg/kg	B	DET	
Molybdenum	Other	7439-98-7	Inorganic	B2BVP6	Control 17	OCSA	0.336	mg/kg	B	DET	
Molybdenum	Other	7439-98-7	Inorganic	B2BVP7	Control 18	OCSA	0.334	mg/kg	B	DET	
Molybdenum	Other	7439-98-7	Inorganic	B2BVN0	Control 2	600-218	0.385	mg/kg		DET	
Molybdenum	Other	7439-98-7	Inorganic	B2BVP9	Control 20	OCSA	0.325	mg/kg	B	DET	
Molybdenum	Other	7439-98-7	Inorganic	B2BVN2	Control 4	600-220	0.371	mg/kg	B	DET	
Molybdenum	Other	7439-98-7	Inorganic	B2BVN6	Control 8	600-228	0.371	mg/kg	B	DET	
Molybdenum	Other	7439-98-7	Inorganic	B2BVN8	Control 9D	600-228	0.34	mg/kg	B	DET	
Molybdenum	Other	7439-98-7	Inorganic	B2D0D8	Lab Soil	None	0.208	mg/kg	B	DET	
Molybdenum	Other	7439-98-7	Inorganic	B2BY78	Target 11-1	OCSA	0.466	mg/kg	B	DET	
Molybdenum	Other	7439-98-7	Inorganic	B2BY83	Target 12-1	OCSA	0.464	mg/kg	B	DET	
Molybdenum	Other	7439-98-7	Inorganic	B2BY84	Target 12-2	OCSA	0.416	mg/kg	B	DET	
Molybdenum	Other	7439-98-7	Inorganic	B2BY85	Target 12-3	OCSA	0.55	mg/kg	B	DET	
Molybdenum	Other	7439-98-7	Inorganic	B2BY86	Target 12-4	OCSA	0.51	mg/kg	B	DET	
Molybdenum	Other	7439-98-7	Inorganic	B2BY87	Target 12-4D	OCSA	0.604	mg/kg	B	DET	
Molybdenum	Other	7439-98-7	Inorganic	B2BY88	Target 12-5	OCSA	0.398	mg/kg	B	DET	
Molybdenum	Other	7439-98-7	Inorganic	B2BY89	Target 13-1	OCSA	0.598	mg/kg	B	DET	
Molybdenum	Other	7439-98-7	Inorganic	B2BY90	Target 13-2	OCSA	0.73	mg/kg	B	DET	
Molybdenum	Other	7439-98-7	Inorganic	B2BY91	Target 13-3	OCSA	0.53	mg/kg	B	DET	
Molybdenum	Other	7439-98-7	Inorganic	B2BY92	Target 13-4	OCSA	0.953	mg/kg	B	DET	
Molybdenum	Other	7439-98-7	Inorganic	B2BY93	Target 13-5	OCSA	0.455	mg/kg	B	DET	
Molybdenum	Other	7439-98-7	Inorganic	B2BY94	Target 14-1	OCSA	0.735	mg/kg	B	DET	
Molybdenum	Other	7439-98-7	Inorganic	B2BY95	Target 14-2	OCSA	0.564	mg/kg	B	DET	
Molybdenum	Other	7439-98-7	Inorganic	B2BY96	Target 14-3	OCSA	0.576	mg/kg	B	DET	
Molybdenum	Other	7439-98-7	Inorganic	B2BY97	Target 14-4	OCSA	0.963	mg/kg	B	DET	
Molybdenum	Other	7439-98-7	Inorganic	B2BY98	Target 14-5	OCSA	0.633	mg/kg	B	DET	
Molybdenum	Other	7439-98-7	Inorganic	B2BYB5	Target 16-1	OCSA	0.897	mg/kg		DET	
Molybdenum	Other	7439-98-7	Inorganic	B2BYB6	Target 16-2	OCSA	1.47	mg/kg		DET	
Molybdenum	Other	7439-98-7	Inorganic	B2BYB7	Target 16-3	OCSA	28	mg/kg		DET	
Molybdenum	Other	7439-98-7	Inorganic	B2BYB8	Target 16-4	OCSA	5.81	mg/kg		DET	
Molybdenum	Other	7439-98-7	Inorganic	B2BYB9	Target 16-5	OCSA	1.44	mg/kg		DET	
Molybdenum	Other	7439-98-7	Inorganic	B2BYC0	Target 17-1	OCSA	2.57	mg/kg		DET	

Table 3-1 Analytical chemistry data for soils used for plant and soil invertebrate bioassays for upland locations at the Hanford Site

Analyte	Priority	CASNo	AnalGrp	SampleID	LocationID	WasteSite	Conc	Units	Qualifer	qual	grp
Molybdenum	Other	7439-98-7	Inorganic	B2BYC1	Target 17-2	OCSA	0.624	mg/kg		DET	
Molybdenum	Other	7439-98-7	Inorganic	B2BYC2	Target 17-3	OCSA	0.536	mg/kg		DET	
Molybdenum	Other	7439-98-7	Inorganic	B2BYC3	Target 17-4	OCSA	0.902	mg/kg		DET	
Molybdenum	Other	7439-98-7	Inorganic	B2BYC4	Target 17-5	OCSA	3.3	mg/kg		DET	
Molybdenum	Other	7439-98-7	Inorganic	B2BYC5	Target 18-1	OCSA	5.91	mg/kg		DET	
Molybdenum	Other	7439-98-7	Inorganic	B2BYC6	Target 18-2	OCSA	2.22	mg/kg		DET	
Molybdenum	Other	7439-98-7	Inorganic	B2BYC7	Target 18-3	OCSA	1.42	mg/kg		DET	
Molybdenum	Other	7439-98-7	Inorganic	B2BYC8	Target 18-3D	OCSA	2.21	mg/kg		DET	
Molybdenum	Other	7439-98-7	Inorganic	B2BYC9	Target 18-4	OCSA	0.605	mg/kg		DET	
Molybdenum	Other	7439-98-7	Inorganic	B2BYD0	Target 18-5	OCSA	46.3	mg/kg		DET	
Molybdenum	Other	7439-98-7	Inorganic	B2BYD4	Target 19-4	OCSA	1.12	mg/kg		DET	
Molybdenum	Other	7439-98-7	Inorganic	B2BYD6	Target 20-1	OCSA	1.16	mg/kg		DET	
Molybdenum	Other	7439-98-7	Inorganic	B2BYD7	Target 20-2	OCSA	0.645	mg/kg		DET	
Molybdenum	Other	7439-98-7	Inorganic	B2BYD8	Target 20-3	OCSA	0.899	mg/kg		DET	
Molybdenum	Other	7439-98-7	Inorganic	B2BYD9	Target 20-4	OCSA	0.897	mg/kg		DET	
Molybdenum	Other	7439-98-7	Inorganic	B2BYF1	Target 21-1	OCSA	0.537	mg/kg		DET	
Molybdenum	Other	7439-98-7	Inorganic	B2BYF2	Target 21-2	OCSA	0.339	mg/kg		DET	
Molybdenum	Other	7439-98-7	Inorganic	B2BYF3	Target 21-3	OCSA	0.299	mg/kg		DET	
Molybdenum	Other	7439-98-7	Inorganic	B2BYF4	Target 21-4	OCSA	0.299	mg/kg		DET	
Molybdenum	Other	7439-98-7	Inorganic	B2BYF5	Target 21-5	OCSA	0.292	mg/kg		DET	
Molybdenum	Other	7439-98-7	Inorganic	B2BYF6	Target 22-1	OCSA	0.543	mg/kg		DET	
Molybdenum	Other	7439-98-7	Inorganic	B2BYF7	Target 22-2	OCSA	0.778	mg/kg		DET	
Molybdenum	Other	7439-98-7	Inorganic	B2BYF8	Target 22-3	OCSA	2.02	mg/kg		DET	
Molybdenum	Other	7439-98-7	Inorganic	B2BYF9	Target 22-4	OCSA	0.727	mg/kg		DET	
Molybdenum	Other	7439-98-7	Inorganic	B2BYH0	Target 22-4D	OCSA	0.5	mg/kg		DET	
Molybdenum	Other	7439-98-7	Inorganic	B2BYH1	Target 22-5	OCSA	1.6	mg/kg		DET	
Molybdenum	Other	7439-98-7	Inorganic	B2BYH2	Target 23-1	OCSA	0.396	mg/kg		DET	
Molybdenum	Other	7439-98-7	Inorganic	B2BYH3	Target 23-2	OCSA	0.718	mg/kg		DET	
Molybdenum	Other	7439-98-7	Inorganic	B2BYH4	Target 23-3	OCSA	0.429	mg/kg		DET	
Molybdenum	Other	7439-98-7	Inorganic	B2BXT3	Target 24-1	120-KW-1	0.429	mg/kg	B	DET	
Molybdenum	Other	7439-98-7	Inorganic	B2BXT5	Target 24-2	120-KW-1	0.411	mg/kg	B	DET	
Molybdenum	Other	7439-98-7	Inorganic	B2BXT6	Target 24-3	120-KW-1	0.35	mg/kg	B	DET	
Molybdenum	Other	7439-98-7	Inorganic	B2BXT8	Target 24-5	120-KW-1	0.51	mg/kg	B	DET	
Molybdenum	Other	7439-98-7	Inorganic	B2BP63	Target 6-5	600-228	0.37	mg/kg	B	DET	
Molybdenum	Other	7439-98-7	Inorganic	B2C126	Target 7-1	600-281	0.36	mg/kg	BC	DET	
Molybdenum	Other	7439-98-7	Inorganic	B2C134	Target 8-3	600-281	0.39	mg/kg	B	DET	
Potassium	Other	9/7/7440	Nutrient	B2BVM9	Control 1	600-218	2030	mg/kg		DET	
Potassium	Other	9/7/7440	Nutrient	B2BVP2	Control 13	OCSA	2480	mg/kg	N	DET	
Potassium	Other	9/7/7440	Nutrient	B2BVP4	Control 15	OCSA	2150	mg/kg	N	DET	
Potassium	Other	9/7/7440	Nutrient	B2BVP5	Control 16	OCSA	1900	mg/kg	N	DET	
Potassium	Other	9/7/7440	Nutrient	B2BVP6	Control 17	OCSA	1830	mg/kg	N	DET	
Potassium	Other	9/7/7440	Nutrient	B2BVP7	Control 18	OCSA	1950	mg/kg	N	DET	
Potassium	Other	9/7/7440	Nutrient	B2BVN0	Control 2	600-218	2270	mg/kg		DET	
Potassium	Other	9/7/7440	Nutrient	B2BVP9	Control 20	OCSA	1800	mg/kg	N	DET	
Potassium	Other	9/7/7440	Nutrient	B2BVN2	Control 4	600-220	1590	mg/kg		DET	
Potassium	Other	9/7/7440	Nutrient	B2BVN6	Control 8	600-228	1950	mg/kg		DET	
Potassium	Other	9/7/7440	Nutrient	B2BVN8	Control 9D	600-228	1740	mg/kg		DET	
Potassium	Other	9/7/7440	Nutrient	B2D0D8	Lab Soil	None	138	mg/kg		DET	
Potassium	Other	9/7/7440	Nutrient	B2BY78	Target 11-1	OCSA	1280	mg/kg		DET	
Potassium	Other	9/7/7440	Nutrient	B2BY83	Target 12-1	OCSA	1720	mg/kg		DET	
Potassium	Other	9/7/7440	Nutrient	B2BY84	Target 12-2	OCSA	1540	mg/kg		DET	
Potassium	Other	9/7/7440	Nutrient	B2BY85	Target 12-3	OCSA	1500	mg/kg		DET	
Potassium	Other	9/7/7440	Nutrient	B2BY86	Target 12-4	OCSA	1340	mg/kg		DET	
Potassium	Other	9/7/7440	Nutrient	B2BY87	Target 12-4D	OCSA	1800	mg/kg		DET	
Potassium	Other	9/7/7440	Nutrient	B2BY88	Target 12-5	OCSA	1910	mg/kg		DET	
Potassium	Other	9/7/7440	Nutrient	B2BY89	Target 13-1	OCSA	1800	mg/kg		DET	
Potassium	Other	9/7/7440	Nutrient	B2BY90	Target 13-2	OCSA	1760	mg/kg		DET	
Potassium	Other	9/7/7440	Nutrient	B2BY91	Target 13-3	OCSA	1520	mg/kg		DET	
Potassium	Other	9/7/7440	Nutrient	B2BY92	Target 13-4	OCSA	1600	mg/kg		DET	
Potassium	Other	9/7/7440	Nutrient	B2BY93	Target 13-5	OCSA	1430	mg/kg		DET	
Potassium	Other	9/7/7440	Nutrient	B2BY94	Target 14-1	OCSA	1160	mg/kg		DET	
Potassium	Other	9/7/7440	Nutrient	B2BY95	Target 14-2	OCSA	1410	mg/kg		DET	
Potassium	Other	9/7/7440	Nutrient	B2BY96	Target 14-3	OCSA	1810	mg/kg		DET	
Potassium	Other	9/7/7440	Nutrient	B2BY97	Target 14-4	OCSA	1240	mg/kg		DET	
Potassium	Other	9/7/7440	Nutrient	B2BY98	Target 14-5	OCSA	1300	mg/kg		DET	
Potassium	Other	9/7/7440	Nutrient	B2BYB5	Target 16-1	OCSA	2040	mg/kg	D	DET	
Potassium	Other	9/7/7440	Nutrient	B2BYB6	Target 16-2	OCSA	1770	mg/kg	D	DET	
Potassium	Other	9/7/7440	Nutrient	B2BYB7	Target 16-3	OCSA	2460	mg/kg	D	DET	
Potassium	Other	9/7/7440	Nutrient	B2BYB8	Target 16-4	OCSA	1860	mg/kg	D	DET	
Potassium	Other	9/7/7440	Nutrient	B2BYB9	Target 16-5	OCSA	2170	mg/kg	D	DET	
Potassium	Other	9/7/7440	Nutrient	B2BYC0	Target 17-1	OCSA	2200	mg/kg	D	DET	
Potassium	Other	9/7/7440	Nutrient	B2BYC1	Target 17-2	OCSA	1860	mg/kg	D	DET	
Potassium	Other	9/7/7440	Nutrient	B2BYC2	Target 17-3	OCSA	1810	mg/kg	D	DET	
Potassium	Other	9/7/7440	Nutrient	B2BYC3	Target 17-4	OCSA	1660	mg/kg	D	DET	
Potassium	Other	9/7/7440	Nutrient	B2BYC4	Target 17-5	OCSA	1920	mg/kg	D	DET	
Potassium	Other	9/7/7440	Nutrient	B2BYC5	Target 18-1	OCSA	1960	mg/kg	D	DET	
Potassium	Other	9/7/7440	Nutrient	B2BYC6	Target 18-2	OCSA	1870	mg/kg	D	DET	
Potassium	Other	9/7/7440	Nutrient	B2BYC7	Target 18-3	OCSA	2320	mg/kg	D	DET	
Potassium	Other	9/7/7440	Nutrient	B2BYC8	Target 18-3D	OCSA	1690	mg/kg	D	DET	
Potassium	Other	9/7/7440	Nutrient	B2BYC9	Target 18-4	OCSA	1760	mg/kg	D	DET	
Potassium	Other	9/7/7440	Nutrient	B2BYD0	Target 18-5	OCSA	2210	mg/kg	D	DET	
Potassium	Other	9/7/7440	Nutrient	B2BYD4	Target 19-4	OCSA	2070	mg/kg	D	DET	
Potassium	Other	9/7/7440	Nutrient	B2BYD6	Target 20-1	OCSA	1540	mg/kg	D	DET	
Potassium	Other	9/7/7440	Nutrient	B2BYD7	Target 20-2	OCSA	1970	mg/kg	D	DET	
Potassium	Other	9/7/7440	Nutrient	B2BYD8	Target 20-3	OCSA	1380	mg/kg	D	DET	
Potassium	Other	9/7/7440	Nutrient	B2BYD9	Target 20-4	OCSA	1930	mg/kg	D	DET	
Potassium	Other	9/7/7440	Nutrient	B2BYF1	Target 21-1	OCSA	1750	mg/kg	D	DET	
Potassium	Other	9/7/7440	Nutrient	B2BYF2	Target 21-2	OCSA	1760	mg/kg	D	DET	
Potassium	Other	9/7/7440	Nutrient	B2BYF3	Target 21-3	OCSA	1590	mg/kg	D	DET	
Potassium	Other	9/7/7440	Nutrient	B2BYF4	Target 21-4	OCSA	1730	mg/kg	D	DET	
Potassium	Other	9/7/7440	Nutrient	B2BYF5	Target 21-5	OCSA	1750	mg/kg	D	DET	
Potassium	Other	9/7/7440	Nutrient	B2BYF6	Target 22-1	OCSA	2170	mg/kg	D	DET	
Potassium	Other	9/7/7440	Nutrient	B2BYF7	Target 22-2	OCSA	2190	mg/kg	D	DET	
Potassium	Other	9/7/7440	Nutrient	B2BYF8	Target 22-3	OCSA	2190	mg/kg	D	DET	
Potassium	Other	9/7/7440	Nutrient	B2BYF9	Target 22-4	OCSA	2380	mg/kg	D	DET	
Potassium	Other	9/7/7440	Nutrient	B2BYH0	Target 22-4D	OCSA	2260	mg/kg	D	DET	
Potassium	Other	9/7/7440	Nutrient	B2BYH1	Target 22-5	OCSA	2040	mg/kg	D	DET	

Table 3-1 Analytical chemistry data for soils used for plant and soil invertebrate bioassays for upland locations at the Hanford Site

Analyte	Priority	CASNo	AnalGrp	SampleID	LocationID	WasteSite	Conc	Units	Qualifer	qual	grp
Potassium	Other	9/7/7440	Nutrient	B2BYH2	Target 23-1	OCSA	2090	mg/kg	D	DET	
Potassium	Other	9/7/7440	Nutrient	B2BYH3	Target 23-2	OCSA	2160	mg/kg	D	DET	
Potassium	Other	9/7/7440	Nutrient	B2BYH4	Target 23-3	OCSA	2300	mg/kg	D	DET	
Potassium	Other	9/7/7440	Nutrient	B2BXT3	Target 24-1	120-KW-1	1030	mg/kg		DET	
Potassium	Other	9/7/7440	Nutrient	B2BXT5	Target 24-2	120-KW-1	1480	mg/kg		DET	
Potassium	Other	9/7/7440	Nutrient	B2BXT6	Target 24-3	120-KW-1	1440	mg/kg		DET	
Potassium	Other	9/7/7440	Nutrient	B2BXT8	Target 24-5	120-KW-1	1270	mg/kg		DET	
Potassium	Other	9/7/7440	Nutrient	B2BP63	Target 6-5	600-228	1440	mg/kg		DET	
Potassium	Other	9/7/7440	Nutrient	B2C126	Target 7-1	600-281	2160	mg/kg		DET	
Potassium	Other	9/7/7440	Nutrient	B2C134	Target 8-3	600-281	1940	mg/kg		DET	
Silver	Other	7440-22-4	Inorganic	B2BVM9	Control 1	600-218	0.1	mg/kg	U	ND	
Silver	Other	7440-22-4	Inorganic	B2BVP2	Control 13	OCSA	0.11	mg/kg	U	ND	
Silver	Other	7440-22-4	Inorganic	B2BVP4	Control 15	OCSA	0.1	mg/kg	U	ND	
Silver	Other	7440-22-4	Inorganic	B2BVP5	Control 16	OCSA	0.1	mg/kg	U	ND	
Silver	Other	7440-22-4	Inorganic	B2BVP6	Control 17	OCSA	0.1	mg/kg	U	ND	
Silver	Other	7440-22-4	Inorganic	B2BVP7	Control 18	OCSA	0.1	mg/kg	U	ND	
Silver	Other	7440-22-4	Inorganic	B2BVN0	Control 2	600-218	0.11	mg/kg	U	ND	
Silver	Other	7440-22-4	Inorganic	B2BVP9	Control 20	OCSA	0.11	mg/kg	U	ND	
Silver	Other	7440-22-4	Inorganic	B2BVN2	Control 4	600-220	0.1	mg/kg	U	ND	
Silver	Other	7440-22-4	Inorganic	B2BVN6	Control 8	600-228	0.1	mg/kg	U	ND	
Silver	Other	7440-22-4	Inorganic	B2BVN8	Control 9D	600-228	0.1	mg/kg	U	ND	
Silver	Other	7440-22-4	Inorganic	B2D0D8	Lab Soil	None	0.13	mg/kg	U	ND	
Silver	Other	7440-22-4	Inorganic	B2BY78	Target 11-1	OCSA	0.099	mg/kg	U	ND	
Silver	Other	7440-22-4	Inorganic	B2BY83	Target 12-1	OCSA	0.1	mg/kg	U	ND	
Silver	Other	7440-22-4	Inorganic	B2BY84	Target 12-2	OCSA	0.098	mg/kg	U	ND	
Silver	Other	7440-22-4	Inorganic	B2BY85	Target 12-3	OCSA	0.1	mg/kg	U	ND	
Silver	Other	7440-22-4	Inorganic	B2BY86	Target 12-4	OCSA	0.1	mg/kg	U	ND	
Silver	Other	7440-22-4	Inorganic	B2BY87	Target 12-4D	OCSA	0.096	mg/kg	U	ND	
Silver	Other	7440-22-4	Inorganic	B2BY88	Target 12-5	OCSA	0.096	mg/kg	U	ND	
Silver	Other	7440-22-4	Inorganic	B2BY89	Target 13-1	OCSA	0.12	mg/kg	B	DET	
Silver	Other	7440-22-4	Inorganic	B2BY90	Target 13-2	OCSA	0.1	mg/kg	U	ND	
Silver	Other	7440-22-4	Inorganic	B2BY91	Target 13-3	OCSA	0.098	mg/kg	U	ND	
Silver	Other	7440-22-4	Inorganic	B2BY92	Target 13-4	OCSA	0.1	mg/kg	U	ND	
Silver	Other	7440-22-4	Inorganic	B2BY93	Target 13-5	OCSA	0.198	mg/kg	B	DET	
Silver	Other	7440-22-4	Inorganic	B2BY94	Target 14-1	OCSA	0.116	mg/kg	B	DET	
Silver	Other	7440-22-4	Inorganic	B2BY95	Target 14-2	OCSA	0.111	mg/kg	B	DET	
Silver	Other	7440-22-4	Inorganic	B2BY96	Target 14-3	OCSA	0.1	mg/kg	U	ND	
Silver	Other	7440-22-4	Inorganic	B2BY97	Target 14-4	OCSA	0.34	mg/kg	B	DET	
Silver	Other	7440-22-4	Inorganic	B2BY98	Target 14-5	OCSA	0.096	mg/kg	U	ND	
Silver	Other	7440-22-4	Inorganic	B2BYB5	Target 16-1	OCSA	0.665	mg/kg		DET	
Silver	Other	7440-22-4	Inorganic	B2BYB6	Target 16-2	OCSA	0.967	mg/kg		DET	
Silver	Other	7440-22-4	Inorganic	B2BYB7	Target 16-3	OCSA	1.84	mg/kg		DET	
Silver	Other	7440-22-4	Inorganic	B2BYB8	Target 16-4	OCSA	2.99	mg/kg		DET	
Silver	Other	7440-22-4	Inorganic	B2BYB9	Target 16-5	OCSA	1.92	mg/kg		DET	
Silver	Other	7440-22-4	Inorganic	B2BYC0	Target 17-1	OCSA	0.342	mg/kg		DET	
Silver	Other	7440-22-4	Inorganic	B2BYC1	Target 17-2	OCSA	0.11	mg/kg	U	ND	
Silver	Other	7440-22-4	Inorganic	B2BYC2	Target 17-3	OCSA	0.109	mg/kg		DET	
Silver	Other	7440-22-4	Inorganic	B2BYC3	Target 17-4	OCSA	0.161	mg/kg		DET	
Silver	Other	7440-22-4	Inorganic	B2BYC4	Target 17-5	OCSA	0.535	mg/kg		DET	
Silver	Other	7440-22-4	Inorganic	B2BYC5	Target 18-1	OCSA	1.06	mg/kg		DET	
Silver	Other	7440-22-4	Inorganic	B2BYC6	Target 18-2	OCSA	0.385	mg/kg		DET	
Silver	Other	7440-22-4	Inorganic	B2BYC7	Target 18-3	OCSA	0.342	mg/kg		DET	
Silver	Other	7440-22-4	Inorganic	B2BYC8	Target 18-3D	OCSA	0.317	mg/kg		DET	
Silver	Other	7440-22-4	Inorganic	B2BYC9	Target 18-4	OCSA	0.327	mg/kg		DET	
Silver	Other	7440-22-4	Inorganic	B2BYD0	Target 18-5	OCSA	0.0816	mg/kg		DET	
Silver	Other	7440-22-4	Inorganic	B2BYD4	Target 19-4	OCSA	0.11	mg/kg	U	ND	
Silver	Other	7440-22-4	Inorganic	B2BYD6	Target 20-1	OCSA	0.112	mg/kg		DET	
Silver	Other	7440-22-4	Inorganic	B2BYD7	Target 20-2	OCSA	0.11	mg/kg	U	ND	
Silver	Other	7440-22-4	Inorganic	B2BYD8	Target 20-3	OCSA	0.11	mg/kg	U	ND	
Silver	Other	7440-22-4	Inorganic	B2BYD9	Target 20-4	OCSA	0.665	mg/kg		DET	
Silver	Other	7440-22-4	Inorganic	B2BYF1	Target 21-1	OCSA	0.1	mg/kg	U	ND	
Silver	Other	7440-22-4	Inorganic	B2BYF2	Target 21-2	OCSA	0.01	mg/kg	U	ND	
Silver	Other	7440-22-4	Inorganic	B2BYF3	Target 21-3	OCSA	0.11	mg/kg	U	ND	
Silver	Other	7440-22-4	Inorganic	B2BYF4	Target 21-4	OCSA	0.11	mg/kg	U	ND	
Silver	Other	7440-22-4	Inorganic	B2BYF5	Target 21-5	OCSA	0.1	mg/kg	U	ND	
Silver	Other	7440-22-4	Inorganic	B2BYF6	Target 22-1	OCSA	0.11	mg/kg	U	ND	
Silver	Other	7440-22-4	Inorganic	B2BYF7	Target 22-2	OCSA	0.11	mg/kg	U	ND	
Silver	Other	7440-22-4	Inorganic	B2BYF8	Target 22-3	OCSA	0.1	mg/kg	U	ND	
Silver	Other	7440-22-4	Inorganic	B2BYF9	Target 22-4	OCSA	0.1	mg/kg	U	ND	
Silver	Other	7440-22-4	Inorganic	B2BYH0	Target 22-4D	OCSA	0.11	mg/kg	U	ND	
Silver	Other	7440-22-4	Inorganic	B2BYH1	Target 22-5	OCSA	0.11	mg/kg	U	ND	
Silver	Other	7440-22-4	Inorganic	B2BYH2	Target 23-1	OCSA	0.1	mg/kg	U	ND	
Silver	Other	7440-22-4	Inorganic	B2BYH3	Target 23-2	OCSA	0.11	mg/kg	U	ND	
Silver	Other	7440-22-4	Inorganic	B2BYH4	Target 23-3	OCSA	0.1	mg/kg	U	ND	
Silver	Other	7440-22-4	Inorganic	B2BXT3	Target 24-1	120-KW-1	0.1	mg/kg	U	ND	
Silver	Other	7440-22-4	Inorganic	B2BXT5	Target 24-2	120-KW-1	0.1	mg/kg	U	ND	
Silver	Other	7440-22-4	Inorganic	B2BXT6	Target 24-3	120-KW-1	0.1	mg/kg	U	ND	
Silver	Other	7440-22-4	Inorganic	B2BXT8	Target 24-5	120-KW-1	0.096	mg/kg	U	ND	
Silver	Other	7440-22-4	Inorganic	B2BP63	Target 6-5	600-228	0.11	mg/kg	U	ND	
Silver	Other	7440-22-4	Inorganic	B2C126	Target 7-1	600-281	0.1	mg/kg	U	ND	
Silver	Other	7440-22-4	Inorganic	B2C134	Target 8-3	600-281	0.11	mg/kg	U	ND	
Sodium	Other	7440-23-5	Inorganic	B2BVM9	Control 1	600-218	224	mg/kg	N	DET	
Sodium	Other	7440-23-5	Inorganic	B2BVP2	Control 13	OCSA	215	mg/kg		DET	
Sodium	Other	7440-23-5	Inorganic	B2BVP4	Control 15	OCSA	247	mg/kg		DET	
Sodium	Other	7440-23-5	Inorganic	B2BVP5	Control 16	OCSA	228	mg/kg		DET	
Sodium	Other	7440-23-5	Inorganic	B2BVP6	Control 17	OCSA	225	mg/kg		DET	
Sodium	Other	7440-23-5	Inorganic	B2BVP7	Control 18	OCSA	219	mg/kg		DET	
Sodium	Other	7440-23-5	Inorganic	B2BVN0	Control 2	600-218	255	mg/kg	N	DET	
Sodium	Other	7440-23-5	Inorganic	B2BVP9	Control 20	OCSA	204	mg/kg		DET	
Sodium	Other	7440-23-5	Inorganic	B2BVN2	Control 4	600-220	189	mg/kg		DET	
Sodium	Other	7440-23-5	Inorganic	B2BVN6	Control 8	600-228	230	mg/kg		DET	
Sodium	Other	7440-23-5	Inorganic	B2BVN8	Control 9D	600-228	253	mg/kg	N	DET	
Sodium	Other	7440-23-5	Inorganic	B2D0D8	Lab Soil	None	38.5	mg/kg	CN	DET	
Sodium	Other	7440-23-5	Inorganic	B2BY78	Target 11-1	OCSA	243	mg/kg	N	DET	
Sodium	Other	7440-23-5	Inorganic	B2BY83	Target 12-1	OCSA	218	mg/kg	N	DET	
Sodium	Other	7440-23-5	Inorganic	B2BY84	Target 12-2	OCSA	190	mg/kg	N	DET	
Sodium	Other	7440-23-5	Inorganic	B2BY85	Target 12-3	OCSA	199	mg/kg	N	DET	

Table 3-1 Analytical chemistry data for soils used for plant and soil invertebrate bioassays for upland locations at the Hanford Site

Analyte	Priority	CASNo	AnalGrp	SampleID	LocationID	WasteSite	Conc	Units	Qualifer	qual	grp
Sodium	Other	7440-23-5	Inorganic	B2BY86	Target 12-4	OCSA	157	mg/kg	N	DET	
Sodium	Other	7440-23-5	Inorganic	B2BY87	Target 12-4D	OCSA	221	mg/kg	N	DET	
Sodium	Other	7440-23-5	Inorganic	B2BY88	Target 12-5	OCSA	234	mg/kg	N	DET	
Sodium	Other	7440-23-5	Inorganic	B2BY89	Target 13-1	OCSA	239	mg/kg	N	DET	
Sodium	Other	7440-23-5	Inorganic	B2BY90	Target 13-2	OCSA	274	mg/kg	N	DET	
Sodium	Other	7440-23-5	Inorganic	B2BY91	Target 13-3	OCSA	316	mg/kg	N	DET	
Sodium	Other	7440-23-5	Inorganic	B2BY92	Target 13-4	OCSA	234	mg/kg	N	DET	
Sodium	Other	7440-23-5	Inorganic	B2BY93	Target 13-5	OCSA	234	mg/kg	N	DET	
Sodium	Other	7440-23-5	Inorganic	B2BY94	Target 14-1	OCSA	242	mg/kg	N	DET	
Sodium	Other	7440-23-5	Inorganic	B2BY95	Target 14-2	OCSA	236	mg/kg	N	DET	
Sodium	Other	7440-23-5	Inorganic	B2BY96	Target 14-3	OCSA	263	mg/kg	N	DET	
Sodium	Other	7440-23-5	Inorganic	B2BY97	Target 14-4	OCSA	295	mg/kg	N	DET	
Sodium	Other	7440-23-5	Inorganic	B2BY98	Target 14-5	OCSA	280	mg/kg	N	DET	
Sodium	Other	7440-23-5	Inorganic	B2BYB5	Target 16-1	OCSA	325	mg/kg	DN	DET	
Sodium	Other	7440-23-5	Inorganic	B2BYB6	Target 16-2	OCSA	384	mg/kg	DN	DET	
Sodium	Other	7440-23-5	Inorganic	B2BYB7	Target 16-3	OCSA	385	mg/kg	DN	DET	
Sodium	Other	7440-23-5	Inorganic	B2BYB8	Target 16-4	OCSA	335	mg/kg	DN	DET	
Sodium	Other	7440-23-5	Inorganic	B2BYB9	Target 16-5	OCSA	431	mg/kg	DN	DET	
Sodium	Other	7440-23-5	Inorganic	B2BYC0	Target 17-1	OCSA	748	mg/kg	DN	DET	
Sodium	Other	7440-23-5	Inorganic	B2BYC1	Target 17-2	OCSA	330	mg/kg	DN	DET	
Sodium	Other	7440-23-5	Inorganic	B2BYC2	Target 17-3	OCSA	333	mg/kg	DN	DET	
Sodium	Other	7440-23-5	Inorganic	B2BYC3	Target 17-4	OCSA	461	mg/kg	DN	DET	
Sodium	Other	7440-23-5	Inorganic	B2BYC4	Target 17-5	OCSA	498	mg/kg	DN	DET	
Sodium	Other	7440-23-5	Inorganic	B2BYC5	Target 18-1	OCSA	441	mg/kg	DN	DET	
Sodium	Other	7440-23-5	Inorganic	B2BYC6	Target 18-2	OCSA	407	mg/kg	DN	DET	
Sodium	Other	7440-23-5	Inorganic	B2BYC7	Target 18-3	OCSA	452	mg/kg	DN	DET	
Sodium	Other	7440-23-5	Inorganic	B2BYC8	Target 18-3D	OCSA	303	mg/kg	DN	DET	
Sodium	Other	7440-23-5	Inorganic	B2BYC9	Target 18-4	OCSA	255	mg/kg	DN	DET	
Sodium	Other	7440-23-5	Inorganic	B2BYD0	Target 18-5	OCSA	526	mg/kg	DN	DET	
Sodium	Other	7440-23-5	Inorganic	B2BYD4	Target 19-4	OCSA	470	mg/kg	DN	DET	
Sodium	Other	7440-23-5	Inorganic	B2BYD6	Target 20-1	OCSA	314	mg/kg	DN	DET	
Sodium	Other	7440-23-5	Inorganic	B2BYD7	Target 20-2	OCSA	269	mg/kg	DN	DET	
Sodium	Other	7440-23-5	Inorganic	B2BYD8	Target 20-3	OCSA	261	mg/kg	DN	DET	
Sodium	Other	7440-23-5	Inorganic	B2BYD9	Target 20-4	OCSA	283	mg/kg	DN	DET	
Sodium	Other	7440-23-5	Inorganic	B2BYF1	Target 21-1	OCSA	402	mg/kg	DN	DET	
Sodium	Other	7440-23-5	Inorganic	B2BYF2	Target 21-2	OCSA	387	mg/kg	DN	DET	
Sodium	Other	7440-23-5	Inorganic	B2BYF3	Target 21-3	OCSA	332	mg/kg	DN	DET	
Sodium	Other	7440-23-5	Inorganic	B2BYF4	Target 21-4	OCSA	410	mg/kg	DN	DET	
Sodium	Other	7440-23-5	Inorganic	B2BYF5	Target 21-5	OCSA	371	mg/kg	DN	DET	
Sodium	Other	7440-23-5	Inorganic	B2BYF6	Target 22-1	OCSA	459	mg/kg	DN	DET	
Sodium	Other	7440-23-5	Inorganic	B2BYF7	Target 22-2	OCSA	456	mg/kg	DN	DET	
Sodium	Other	7440-23-5	Inorganic	B2BYF8	Target 22-3	OCSA	577	mg/kg	DN	DET	
Sodium	Other	7440-23-5	Inorganic	B2BYF9	Target 22-4	OCSA	518	mg/kg	DN	DET	
Sodium	Other	7440-23-5	Inorganic	B2BYH0	Target 22-4D	OCSA	536	mg/kg	DN	DET	
Sodium	Other	7440-23-5	Inorganic	B2BYH1	Target 22-5	OCSA	614	mg/kg	DN	DET	
Sodium	Other	7440-23-5	Inorganic	B2BYH2	Target 23-1	OCSA	522	mg/kg	DN	DET	
Sodium	Other	7440-23-5	Inorganic	B2BYH3	Target 23-2	OCSA	455	mg/kg	DN	DET	
Sodium	Other	7440-23-5	Inorganic	B2BYH4	Target 23-3	OCSA	531	mg/kg	DN	DET	
Sodium	Other	7440-23-5	Inorganic	B2BXT3	Target 24-1	120-KW-1	1050	mg/kg		DET	
Sodium	Other	7440-23-5	Inorganic	B2BXT5	Target 24-2	120-KW-1	3160	mg/kg		DET	
Sodium	Other	7440-23-5	Inorganic	B2BXT6	Target 24-3	120-KW-1	2770	mg/kg		DET	
Sodium	Other	7440-23-5	Inorganic	B2BXT8	Target 24-5	120-KW-1	835	mg/kg		DET	
Sodium	Other	7440-23-5	Inorganic	B2BP63	Target 6-5	600-228	368	mg/kg		DET	
Sodium	Other	7440-23-5	Inorganic	B2C126	Target 7-1	600-281	219	mg/kg	C	DET	
Sodium	Other	7440-23-5	Inorganic	B2C134	Target 8-3	600-281	246	mg/kg	C	DET	
Tin	Other	7440-31-5	Inorganic	B2BVM9	Control 1	600-218	0.408	mg/kg		DET	
Tin	Other	7440-31-5	Inorganic	B2BVP2	Control 13	OCSA	0.448	mg/kg	B	DET	
Tin	Other	7440-31-5	Inorganic	B2BVP4	Control 15	OCSA	0.464	mg/kg	B	DET	
Tin	Other	7440-31-5	Inorganic	B2BVP5	Control 16	OCSA	0.39	mg/kg	B	DET	
Tin	Other	7440-31-5	Inorganic	B2BVP6	Control 17	OCSA	0.364	mg/kg	B	DET	
Tin	Other	7440-31-5	Inorganic	B2BVP7	Control 18	OCSA	0.402	mg/kg	B	DET	
Tin	Other	7440-31-5	Inorganic	B2BVN0	Control 2	600-218	0.484	mg/kg		DET	
Tin	Other	7440-31-5	Inorganic	B2BVP9	Control 20	OCSA	0.348	mg/kg	B	DET	
Tin	Other	7440-31-5	Inorganic	B2BVN2	Control 4	600-220	0.404	mg/kg	B	DET	
Tin	Other	7440-31-5	Inorganic	B2BVN6	Control 8	600-228	0.355	mg/kg	B	DET	
Tin	Other	7440-31-5	Inorganic	B2BVN8	Control 9D	600-228	0.398	mg/kg	B	DET	
Tin	Other	7440-31-5	Inorganic	B2D0D8	Lab Soil	None	0.165	mg/kg	B	DET	
Tin	Other	7440-31-5	Inorganic	B2BY78	Target 11-1	OCSA	1.47	mg/kg		DET	
Tin	Other	7440-31-5	Inorganic	B2BY83	Target 12-1	OCSA	8.13	mg/kg		DET	
Tin	Other	7440-31-5	Inorganic	B2BY84	Target 12-2	OCSA	3.28	mg/kg		DET	
Tin	Other	7440-31-5	Inorganic	B2BY85	Target 12-3	OCSA	2.3	mg/kg		DET	
Tin	Other	7440-31-5	Inorganic	B2BY86	Target 12-4	OCSA	7.03	mg/kg		DET	
Tin	Other	7440-31-5	Inorganic	B2BY87	Target 12-4D	OCSA	9.04	mg/kg		DET	
Tin	Other	7440-31-5	Inorganic	B2BY88	Target 12-5	OCSA	6.52	mg/kg		DET	
Tin	Other	7440-31-5	Inorganic	B2BY89	Target 13-1	OCSA	22.7	mg/kg		DET	
Tin	Other	7440-31-5	Inorganic	B2BY90	Target 13-2	OCSA	35.9	mg/kg		DET	
Tin	Other	7440-31-5	Inorganic	B2BY91	Target 13-3	OCSA	8.16	mg/kg		DET	
Tin	Other	7440-31-5	Inorganic	B2BY92	Target 13-4	OCSA	18.1	mg/kg		DET	
Tin	Other	7440-31-5	Inorganic	B2BY93	Target 13-5	OCSA	20.3	mg/kg		DET	
Tin	Other	7440-31-5	Inorganic	B2BY94	Target 14-1	OCSA	23.7	mg/kg		DET	
Tin	Other	7440-31-5	Inorganic	B2BY95	Target 14-2	OCSA	35.4	mg/kg		DET	
Tin	Other	7440-31-5	Inorganic	B2BY96	Target 14-3	OCSA	14.7	mg/kg		DET	
Tin	Other	7440-31-5	Inorganic	B2BY97	Target 14-4	OCSA	40	mg/kg		DET	
Tin	Other	7440-31-5	Inorganic	B2BY98	Target 14-5	OCSA	18	mg/kg		DET	
Tin	Other	7440-31-5	Inorganic	B2BYB5	Target 16-1	OCSA	54.8	mg/kg		DET	
Tin	Other	7440-31-5	Inorganic	B2BYB6	Target 16-2	OCSA	195	mg/kg		DET	
Tin	Other	7440-31-5	Inorganic	B2BYB7	Target 16-3	OCSA	131	mg/kg		DET	
Tin	Other	7440-31-5	Inorganic	B2BYB8	Target 16-4	OCSA	838	mg/kg		DET	
Tin	Other	7440-31-5	Inorganic	B2BYB9	Target 16-5	OCSA	525	mg/kg		DET	
Tin	Other	7440-31-5	Inorganic	B2BYC0	Target 17-1	OCSA	26.8	mg/kg		DET	
Tin	Other	7440-31-5	Inorganic	B2BYC1	Target 17-2	OCSA	4.07	mg/kg		DET	
Tin	Other	7440-31-5	Inorganic	B2BYC2	Target 17-3	OCSA	4.7	mg/kg		DET	
Tin	Other	7440-31-5	Inorganic	B2BYC3	Target 17-4	OCSA	4.37	mg/kg		DET	
Tin	Other	7440-31-5	Inorganic	B2BYC4	Target 17-5	OCSA	56.1	mg/kg		DET	
Tin	Other	7440-31-5	Inorganic	B2BYC5	Target 18-1	OCSA	71	mg/kg		DET	
Tin	Other	7440-31-5	Inorganic	B2BYC6	Target 18-2	OCSA	27.6	mg/kg		DET	
Tin	Other	7440-31-5	Inorganic	B2BYC7	Target 18-3	OCSA	27.9	mg/kg		DET	

Table 3-1 Analytical chemistry data for soils used for plant and soil invertebrate bioassays for upland locations at the Hanford Site

Analyte	Priority	CASNo	AnalGrp	SampleID	LocationID	WasteSite	Conc	Units	Qualifer	qual	grp
Tin	Other	7440-31-5	Inorganic	B2BYC8	Target 18-3D	OCSA	134	mg/kg		DET	
Tin	Other	7440-31-5	Inorganic	B2BYC9	Target 18-4	OCSA	1.65	mg/kg		DET	
Tin	Other	7440-31-5	Inorganic	B2BYD0	Target 18-5	OCSA	76.9	mg/kg		DET	
Tin	Other	7440-31-5	Inorganic	B2BYD4	Target 19-4	OCSA	1.34	mg/kg		DET	
Tin	Other	7440-31-5	Inorganic	B2BYD6	Target 20-1	OCSA	3.01	mg/kg		DET	
Tin	Other	7440-31-5	Inorganic	B2BYD7	Target 20-2	OCSA	1.45	mg/kg		DET	
Tin	Other	7440-31-5	Inorganic	B2BYD8	Target 20-3	OCSA	2.047	mg/kg		DET	
Tin	Other	7440-31-5	Inorganic	B2BYD9	Target 20-4	OCSA	54.8	mg/kg		DET	
Tin	Other	7440-31-5	Inorganic	B2BYF1	Target 21-1	OCSA	5.87	mg/kg		DET	
Tin	Other	7440-31-5	Inorganic	B2BYF2	Target 21-2	OCSA	0.904	mg/kg		DET	
Tin	Other	7440-31-5	Inorganic	B2BYF3	Target 21-3	OCSA	0.477	mg/kg		DET	
Tin	Other	7440-31-5	Inorganic	B2BYF4	Target 21-4	OCSA	0.399	mg/kg		DET	
Tin	Other	7440-31-5	Inorganic	B2BYF5	Target 21-5	OCSA	0.465	mg/kg		DET	
Tin	Other	7440-31-5	Inorganic	B2BYF6	Target 22-1	OCSA	2.54	mg/kg		DET	
Tin	Other	7440-31-5	Inorganic	B2BYF7	Target 22-2	OCSA	1.62	mg/kg		DET	
Tin	Other	7440-31-5	Inorganic	B2BYF8	Target 22-3	OCSA	34.7	mg/kg		DET	
Tin	Other	7440-31-5	Inorganic	B2BYF9	Target 22-4	OCSA	4.39	mg/kg		DET	
Tin	Other	7440-31-5	Inorganic	B2BYH0	Target 22-4D	OCSA	1.63	mg/kg		DET	
Tin	Other	7440-31-5	Inorganic	B2BYH1	Target 22-5	OCSA	2.71	mg/kg		DET	
Tin	Other	7440-31-5	Inorganic	B2BYH2	Target 23-1	OCSA	0.593	mg/kg		DET	
Tin	Other	7440-31-5	Inorganic	B2BYH3	Target 23-2	OCSA	0.515	mg/kg		DET	
Tin	Other	7440-31-5	Inorganic	B2BYH4	Target 23-3	OCSA	0.557	mg/kg		DET	
Tin	Other	7440-31-5	Inorganic	B2BXT3	Target 24-1	120-KW-1	0.46	mg/kg	B	DET	
Tin	Other	7440-31-5	Inorganic	B2BXT5	Target 24-2	120-KW-1	0.475	mg/kg	B	DET	
Tin	Other	7440-31-5	Inorganic	B2BXT6	Target 24-3	120-KW-1	0.339	mg/kg	B	DET	
Tin	Other	7440-31-5	Inorganic	B2BXT8	Target 24-5	120-KW-1	0.501	mg/kg		DET	
Tin	Other	7440-31-5	Inorganic	B2BP63	Target 6-5	600-228	0.448	mg/kg	B	DET	
Tin	Other	7440-31-5	Inorganic	B2C126	Target 7-1	600-281	0.524	mg/kg		DET	
Tin	Other	7440-31-5	Inorganic	B2C134	Target 8-3	600-281	1.53	mg/kg		DET	
Nitrogen, Kjeldahl total	Other		Nuturient	B2BW15	Control 1	600-218	291	mg/kg	ND	DET	
Nitrogen, Kjeldahl total	Other	NA	Nuturient	B2BW28	Control 13	OCSA	643	mg/kg	DN	DET	
Nitrogen, Kjeldahl total	Other	NA	Nuturient	B2BW30	Control 15	OCSA	570	mg/kg	DN	DET	
Nitrogen, Kjeldahl total	Other	NA	Nuturient	B2BW31	Control 16	OCSA	439	mg/kg	DN	DET	
Nitrogen, Kjeldahl total	Other	NA	Nuturient	B2BW32	Control 17	OCSA	974	mg/kg	DN	DET	
Nitrogen, Kjeldahl total	Other	NA	Nuturient	B2BW33	Control 18	OCSA	378	mg/kg	DN	DET	
Nitrogen, Kjeldahl total	Other		Nuturient	B2BW16	Control 2	600-218	251	mg/kg	ND	DET	
Nitrogen, Kjeldahl total	Other	NA	Nuturient	B2BW35	Control 20	OCSA	289	mg/kg	DN	DET	
Nitrogen, Kjeldahl total	Other	NA	Nuturient	B2BW18	Control 4	600-220	219	mg/kg	ND	DET	
Nitrogen, Kjeldahl total	Other	NA	Nuturient	B2BW22	Control 8	600-228	216	mg/kg	ND	DET	
Nitrogen, Kjeldahl total	Other	NA	Nuturient	B2BW24	Control 9D	600-228	188	mg/kg	ND	DET	
Nitrogen, Kjeldahl total	Other		Nuturient	Lab Co	Lab Soil	None	833	mg/kg		DET	
Nitrogen, Kjeldahl total	Other	NA	Nuturient	B2C0B0	Target 11-1	OCSA	689	mg/kg	ND	DET	
Nitrogen, Kjeldahl total	Other	NA	Nuturient	B2C0B5	Target 12-1	OCSA	175	mg/kg	ND	DET	
Nitrogen, Kjeldahl total	Other	NA	Nuturient	B2C0B6	Target 12-2	OCSA	325	mg/kg	ND	DET	
Nitrogen, Kjeldahl total	Other	NA	Nuturient	B2C0B7	Target 12-3	OCSA	350	mg/kg	ND	DET	
Nitrogen, Kjeldahl total	Other	NA	Nuturient	B2C0B8	Target 12-4	OCSA	592	mg/kg	ND	DET	
Nitrogen, Kjeldahl total	Other	NA	Nuturient	B2C0B9	Target 12-4D	OCSA	607	mg/kg	ND	DET	
Nitrogen, Kjeldahl total	Other	NA	Nuturient	B2C0C0	Target 12-5	OCSA	548	mg/kg	ND	DET	
Nitrogen, Kjeldahl total	Other	NA	Nuturient	B2C0C1	Target 13-1	OCSA	735	mg/kg	ND	DET	
Nitrogen, Kjeldahl total	Other	NA	Nuturient	B2C0C2	Target 13-2	OCSA	551	mg/kg	ND	DET	
Nitrogen, Kjeldahl total	Other	NA	Nuturient	B2C0C3	Target 13-3	OCSA	646	mg/kg	ND	DET	
Nitrogen, Kjeldahl total	Other	NA	Nuturient	B2C0C4	Target 13-4	OCSA	882	mg/kg	ND	DET	
Nitrogen, Kjeldahl total	Other	NA	Nuturient	B2C0C5	Target 13-5	OCSA	907	mg/kg	ND	DET	
Nitrogen, Kjeldahl total	Other	NA	Nuturient	B2C0C6	Target 14-1	OCSA	434	mg/kg	ND	DET	
Nitrogen, Kjeldahl total	Other	NA	Nuturient	B2C0C7	Target 14-2	OCSA	644	mg/kg	ND	DET	
Nitrogen, Kjeldahl total	Other	NA	Nuturient	B2C0C8	Target 14-3	OCSA	820	mg/kg	ND	DET	
Nitrogen, Kjeldahl total	Other	NA	Nuturient	B2C0C9	Target 14-4	OCSA	539	mg/kg	N,D	DET	
Nitrogen, Kjeldahl total	Other	NA	Nuturient	B2C0D0	Target 14-5	OCSA	581	mg/kg	N,D	DET	
Nitrogen, Kjeldahl total	Other	NA	Nuturient	B2C0D7	Target 16-1	OCSA	307	mg/kg	ND	DET	
Nitrogen, Kjeldahl total	Other	NA	Nuturient	B2C0D8	Target 16-2	OCSA	745	mg/kg		DET	
Nitrogen, Kjeldahl total	Other	NA	Nuturient	B2C0D9	Target 16-3	OCSA	1010	mg/kg	ND	DET	
Nitrogen, Kjeldahl total	Other	NA	Nuturient	B2C0F0	Target 16-4	OCSA	483	mg/kg	DN	DET	
Nitrogen, Kjeldahl total	Other	NA	Nuturient	B2C0F1	Target 16-5	OCSA	562	mg/kg	DN	DET	
Nitrogen, Kjeldahl total	Other	NA	Nuturient	B2C0F2	Target 17-1	OCSA	415	mg/kg	DN	DET	
Nitrogen, Kjeldahl total	Other	NA	Nuturient	B2C0F3	Target 17-2	OCSA	396	mg/kg	DN	DET	
Nitrogen, Kjeldahl total	Other	NA	Nuturient	B2C0F4	Target 17-3	OCSA	448	mg/kg	DN	DET	
Nitrogen, Kjeldahl total	Other	NA	Nuturient	B2C0F5	Target 17-4	OCSA	326	mg/kg	DN	DET	
Nitrogen, Kjeldahl total	Other	NA	Nuturient	B2C0F6	Target 17-5	OCSA	416	mg/kg	DN	DET	
Nitrogen, Kjeldahl total	Other	NA	Nuturient	B2C0F7	Target 18-1	OCSA	514	mg/kg	DN	DET	
Nitrogen, Kjeldahl total	Other	NA	Nuturient	B2C0F8	Target 18-2	OCSA	388	mg/kg	DN	DET	
Nitrogen, Kjeldahl total	Other	NA	Nuturient	B2C0F9	Target 18-3	OCSA	397	mg/kg	DN	DET	
Nitrogen, Kjeldahl total	Other	NA	Nuturient	B2C0H0	Target 18-3D	OCSA	423	mg/kg	DN	DET	
Nitrogen, Kjeldahl total	Other	NA	Nuturient	B2C0H1	Target 18-4	OCSA	459	mg/kg	DN	DET	
Nitrogen, Kjeldahl total	Other	NA	Nuturient	B2C0H2	Target 18-5	OCSA	621	mg/kg	DN	DET	
Nitrogen, Kjeldahl total	Other	NA	Nuturient	B2C0H6	Target 19-4	OCSA	528	mg/kg	DN	DET	
Nitrogen, Kjeldahl total	Other	NA	Nuturient	B2C0H8	Target 20-1	OCSA	513	mg/kg	DN	DET	
Nitrogen, Kjeldahl total	Other	NA	Nuturient	B2C0H9	Target 20-2	OCSA	464	mg/kg	DN	DET	
Nitrogen, Kjeldahl total	Other	NA	Nuturient	B2C0J0	Target 20-3	OCSA	441	mg/kg		DET	
Nitrogen, Kjeldahl total	Other	NA	Nuturient	B2C0J1	Target 20-4	OCSA	605	mg/kg		DET	
Nitrogen, Kjeldahl total	Other	NA	Nuturient	B2C0J3	Target 21-1	OCSA	217	mg/kg	DN	DET	
Nitrogen, Kjeldahl total	Other	NA	Nuturient	B2C0J4	Target 21-2	OCSA	308	mg/kg	DN	DET	
Nitrogen, Kjeldahl total	Other	NA	Nuturient	B2C0J5	Target 21-3	OCSA	124	mg/kg	DN	DET	
Nitrogen, Kjeldahl total	Other	NA	Nuturient	B2C0J6	Target 21-4	OCSA	132	mg/kg	DN	DET	
Nitrogen, Kjeldahl total	Other	NA	Nuturient	B2C0J7	Target 21-5	OCSA	211	mg/kg	DN	DET	
Nitrogen, Kjeldahl total	Other	NA	Nuturient	B2C0J8	Target 22-1	OCSA	263	mg/kg	DN	DET	
Nitrogen, Kjeldahl total	Other	NA	Nuturient	B2C0J9	Target 22-2	OCSA	667	mg/kg	DN	DET	
Nitrogen, Kjeldahl total	Other	NA	Nuturient	B2C0K0	Target 22-3	OCSA	350	mg/kg	DN	DET	
Nitrogen, Kjeldahl total	Other	NA	Nuturient	B2C0K1	Target 22-4	OCSA	223	mg/kg	DN	DET	
Nitrogen, Kjeldahl total	Other	NA	Nuturient	B2C0K2	Target 22-4D	OCSA	174	mg/kg	DN	DET	
Nitrogen, Kjeldahl total	Other	NA	Nuturient	B2C0K3	Target 22-5	OCSA	568	mg/kg	DN	DET	
Nitrogen, Kjeldahl total	Other		Nuturient	B2C0K4	Target 23-1	OCSA	226	mg/kg	DN	DET	
Nitrogen, Kjeldahl total	Other	NA	Nuturient	B2C0K5	Target 23-2	OCSA	447	mg/kg	DN	DET	
Nitrogen, Kjeldahl total	Other	NA	Nuturient	B2C0K6	Target 23-3	OCSA	539	mg/kg	DN	DET	
Nitrogen, Kjeldahl total	Other	NA	Nuturient	B2BXX5	Target 24-1	120-KW-1	14.3	mg/kg	N	DET	
Nitrogen, Kjeldahl total	Other	NA	Nuturient	B2BXX7	Target 24-2	120-KW-1	20.9	mg/kg	N	DET	
Nitrogen, Kjeldahl total	Other	NA	Nuturient	B2BXX8	Target 24-3	120-KW-1	31.2	mg/kg	N	DET	
Nitrogen, Kjeldahl total	Other	NA	Nuturient	B2BXY0	Target 24-5	120-KW-1	18.1	mg/kg	N	DET	

Table 3-1 Analytical chemistry data for soils used for plant and soil invertebrate bioassays for upland locations at the Hanford Site

Analyte	Priority	CASNo	AnalGrp	SampleID	LocationID	WasteSite	Conc	Units	Qualifer	qual	grp
Nitrogen, Kjeldahl total	Other	NA	Nuturient	B2BP89	Target 6-5	600-228	130	mg/kg	ND	DET	
Nitrogen, Kjeldahl total	Other	NA	Nuturient	B2C1C4	Target 7-1	600-281	195	mg/kg	DN	DET	
Nitrogen, Kjeldahl total	Other	NA	Nuturient	B2C1D2	Target 8-3	600-281	173	mg/kg	ND	DET	
Phosphorus	Other	7723-14-0	Nutrient	B2BVM9	Control 1	600-218	953	mg/kg		DET	
Phosphorus	Other	7723-14-0	Nutrient	B2BVP2	Control 13	OCSA	830	mg/kg	N	DET	
Phosphorus	Other	7723-14-0	Nutrient	B2BVP4	Control 15	OCSA	870	mg/kg	N	DET	
Phosphorus	Other	7723-14-0	Nutrient	B2BVP5	Control 16	OCSA	886	mg/kg	N	DET	
Phosphorus	Other	7723-14-0	Nutrient	B2BVP6	Control 17	OCSA	809	mg/kg	N	DET	
Phosphorus	Other	7723-14-0	Nutrient	B2BVP7	Control 18	OCSA	929	mg/kg	N	DET	
Phosphorus	Other	7723-14-0	Nutrient	B2BVN0	Control 2	600-218	855	mg/kg		DET	
Phosphorus	Other	7723-14-0	Nutrient	B2BVP9	Control 20	OCSA	788	mg/kg	N	DET	
Phosphorus	Other	7723-14-0	Nutrient	B2BVN2	Control 4	600-220	687	mg/kg		DET	
Phosphorus	Other	7723-14-0	Nutrient	B2BVN6	Control 8	600-228	1110	mg/kg		DET	
Phosphorus	Other	7723-14-0	Nutrient	B2BVN8	Control 9D	600-228	1010	mg/kg		DET	
Phosphorus	Other	7723-14-0	Nutrient	B2D0D8	Lab Soil	None	186	mg/kg	N	DET	
Phosphorus	Other	7723-14-0	Nutrient	B2BY78	Target 11-1	OCSA	689	mg/kg	MN	DET	
Phosphorus	Other	7723-14-0	Nutrient	B2BY83	Target 12-1	OCSA	762	mg/kg	MN	DET	
Phosphorus	Other	7723-14-0	Nutrient	B2BY84	Target 12-2	OCSA	766	mg/kg	MN	DET	
Phosphorus	Other	7723-14-0	Nutrient	B2BY85	Target 12-3	OCSA	719	mg/kg	MN	DET	
Phosphorus	Other	7723-14-0	Nutrient	B2BY86	Target 12-4	OCSA	602	mg/kg	MN	DET	
Phosphorus	Other	7723-14-0	Nutrient	B2BY87	Target 12-4D	OCSA	794	mg/kg	MN	DET	
Phosphorus	Other	7723-14-0	Nutrient	B2BY88	Target 12-5	OCSA	847	mg/kg	MN	DET	
Phosphorus	Other	7723-14-0	Nutrient	B2BY89	Target 13-1	OCSA	853	mg/kg	MN	DET	
Phosphorus	Other	7723-14-0	Nutrient	B2BY90	Target 13-2	OCSA	895	mg/kg	MN	DET	
Phosphorus	Other	7723-14-0	Nutrient	B2BY91	Target 13-3	OCSA	1300	mg/kg	MN	DET	
Phosphorus	Other	7723-14-0	Nutrient	B2BY92	Target 13-4	OCSA	863	mg/kg	MN	DET	
Phosphorus	Other	7723-14-0	Nutrient	B2BY93	Target 13-5	OCSA	796	mg/kg	MN	DET	
Phosphorus	Other	7723-14-0	Nutrient	B2BY94	Target 14-1	OCSA	913	mg/kg	MN	DET	
Phosphorus	Other	7723-14-0	Nutrient	B2BY95	Target 14-2	OCSA	858	mg/kg	MN	DET	
Phosphorus	Other	7723-14-0	Nutrient	B2BY96	Target 14-3	OCSA	833	mg/kg	MN	DET	
Phosphorus	Other	7723-14-0	Nutrient	B2BY97	Target 14-4	OCSA	997	mg/kg	MN	DET	
Phosphorus	Other	7723-14-0	Nutrient	B2BY98	Target 14-5	OCSA	924	mg/kg	MN	DET	
Phosphorus	Other	7723-14-0	Nutrient	B2BYB5	Target 16-1	OCSA	874	mg/kg	D	DET	
Phosphorus	Other	7723-14-0	Nutrient	B2BYB6	Target 16-2	OCSA	786	mg/kg	D	DET	
Phosphorus	Other	7723-14-0	Nutrient	B2BYB7	Target 16-3	OCSA	1080	mg/kg	D	DET	
Phosphorus	Other	7723-14-0	Nutrient	B2BYB8	Target 16-4	OCSA	902	mg/kg	D	DET	
Phosphorus	Other	7723-14-0	Nutrient	B2BYB9	Target 16-5	OCSA	984	mg/kg	D	DET	
Phosphorus	Other	7723-14-0	Nutrient	B2BYC0	Target 17-1	OCSA	934	mg/kg	D	DET	
Phosphorus	Other	7723-14-0	Nutrient	B2BYC1	Target 17-2	OCSA	983	mg/kg	D	DET	
Phosphorus	Other	7723-14-0	Nutrient	B2C0F4	Target 17-3	OCSA	878	mg/kg	D	DET	
Phosphorus	Other	7723-14-0	Nutrient	B2BYC3	Target 17-4	OCSA	689	mg/kg	D	DET	
Phosphorus	Other	7723-14-0	Nutrient	B2BYC4	Target 17-5	OCSA	797	mg/kg	D	DET	
Phosphorus	Other	7723-14-0	Nutrient	B2BYC5	Target 18-1	OCSA	1100	mg/kg	D	DET	
Phosphorus	Other	7723-14-0	Nutrient	B2BYC6	Target 18-2	OCSA	903	mg/kg	D	DET	
Phosphorus	Other	7723-14-0	Nutrient	B2BYC7	Target 18-3	OCSA	1380	mg/kg	D	DET	
Phosphorus	Other	7723-14-0	Nutrient	B2BYC8	Target 18-3D	OCSA	879	mg/kg	D	DET	
Phosphorus	Other	7723-14-0	Nutrient	B2BYC9	Target 18-4	OCSA	985	mg/kg	D	DET	
Phosphorus	Other	7723-14-0	Nutrient	B2BYD0	Target 18-5	OCSA	996	mg/kg	D	DET	
Phosphorus	Other	7723-14-0	Nutrient	B2BYD4	Target 19-4	OCSA	864	mg/kg	D	DET	
Phosphorus	Other	7723-14-0	Nutrient	B2BYD6	Target 20-1	OCSA	933	mg/kg	D	DET	
Phosphorus	Other	7723-14-0	Nutrient	B2BYD7	Target 20-2	OCSA	850	mg/kg	D	DET	
Phosphorus	Other	7723-14-0	Nutrient	B2BYD8	Target 20-3	OCSA	1030	mg/kg	D	DET	
Phosphorus	Other	7723-14-0	Nutrient	B2BYD9	Target 20-4	OCSA	813	mg/kg	D	DET	
Phosphorus	Other	7723-14-0	Nutrient	B2BYF1	Target 21-1	OCSA	761	mg/kg	D	DET	
Phosphorus	Other	7723-14-0	Nutrient	B2BYF2	Target 21-2	OCSA	822	mg/kg	D	DET	
Phosphorus	Other	7723-14-0	Nutrient	B2BYF3	Target 21-3	OCSA	779	mg/kg	D	DET	
Phosphorus	Other	7723-14-0	Nutrient	B2BYF4	Target 21-4	OCSA	782	mg/kg	D	DET	
Phosphorus	Other	7723-14-0	Nutrient	B2BYF5	Target 21-5	OCSA	810	mg/kg	D	DET	
Phosphorus	Other	7723-14-0	Nutrient	B2BYF6	Target 22-1	OCSA	787	mg/kg	D	DET	
Phosphorus	Other	7723-14-0	Nutrient	B2BYF7	Target 22-2	OCSA	865	mg/kg	D	DET	
Phosphorus	Other	7723-14-0	Nutrient	B2BYF8	Target 22-3	OCSA	704	mg/kg	D	DET	
Phosphorus	Other	7723-14-0	Nutrient	B2BYF9	Target 22-4	OCSA	738	mg/kg	D	DET	
Phosphorus	Other	7723-14-0	Nutrient	B2BYH0	Target 22-4D	OCSA	701	mg/kg	D	DET	
Phosphorus	Other	7723-14-0	Nutrient	B2BYH1	Target 22-5	OCSA	872	mg/kg	D	DET	
Phosphorus	Other	7723-14-0	Nutrient	B2BYH2	Target 23-1	OCSA	1580	mg/kg	D	DET	
Phosphorus	Other	7723-14-0	Nutrient	B2BYH3	Target 23-2	OCSA	1090	mg/kg	D	DET	
Phosphorus	Other	7723-14-0	Nutrient	B2BYH4	Target 23-3	OCSA	1510	mg/kg	D	DET	
Phosphorus	Other	7723-14-0	Nutrient	B2BXT3	Target 24-1	120-KW-1	1980	mg/kg		DET	
Phosphorus	Other	7723-14-0	Nutrient	B2BXT5	Target 24-2	120-KW-1	941	mg/kg		DET	
Phosphorus	Other	7723-14-0	Nutrient	B2BXT6	Target 24-3	120-KW-1	788	mg/kg		DET	
Phosphorus	Other	7723-14-0	Nutrient	B2BXT8	Target 24-5	120-KW-1	2230	mg/kg		DET	
Phosphorus	Other	7723-14-0	Nutrient	B2BP63	Target 6-5	600-228	912	mg/kg		DET	
Phosphorus	Other	7723-14-0	Nutrient	B2C126	Target 7-1	600-281	650	mg/kg		DET	
Phosphorus	Other	7723-14-0	Nutrient	B2C134	Target 8-3	600-281	569	mg/kg		DET	
TOC	Other	TOC	Nutrient	B2BW15	Control 1	600-218	2600	mg/kg		DET	
TOC	Other	TOC	Nutrient	B2BW28	Control 13	OCSA	6090	mg/kg		DET	
TOC	Other	TOC	Nutrient	B2BW30	Control 15	OCSA	5660	mg/kg		DET	
TOC	Other	TOC	Nutrient	B2BW31	Control 16	OCSA	5380	mg/kg		DET	
TOC	Other	TOC	Nutrient	B2BW32	Control 17	OCSA	6250	mg/kg		DET	
TOC	Other	TOC	Nutrient	B2BW33	Control 18	OCSA	3320	mg/kg		DET	
TOC	Other	TOC	Nutrient	B2BW16	Control 2	600-218	1950	mg/kg		DET	
TOC	Other	TOC	Nutrient	B2BW35	Control 20	OCSA	2250	mg/kg		DET	
TOC	Other	TOC	Nutrient	B2BW18	Control 4	600-220	1490	mg/kg		DET	
TOC	Other	TOC	Nutrient	B2BW22	Control 8	600-228	1960	mg/kg		DET	
TOC	Other	TOC	Nutrient	B2BW24	Control 9D	600-228	1830	mg/kg		DET	
TOC	Other	TOC	Nutrient	Lab Co	Lab Soil	None	48200	mg/kg		DET	
TOC	Other	TOC	Nutrient	B2C0B0	Target 11-1	OCSA	10500	mg/kg	D	DET	
TOC	Other	TOC	Nutrient	B2C0B5	Target 12-1	OCSA	8010	mg/kg	D	DET	
TOC	Other	TOC	Nutrient	B2C0B6	Target 12-2	OCSA	9590	mg/kg	D	DET	
TOC	Other	TOC	Nutrient	B2C0B7	Target 12-3	OCSA	8840	mg/kg	D	DET	
TOC	Other	TOC	Nutrient	B2C0B8	Target 12-4	OCSA	13300	mg/kg	D	DET	
TOC	Other	TOC	Nutrient	B2C0B9	Target 12-4D	OCSA	44900	mg/kg	D	DET	
TOC	Other	TOC	Nutrient	B2C0C0	Target 12-5	OCSA	12800	mg/kg	D	DET	
TOC	Other	TOC	Nutrient	B2C0C1	Target 13-1	OCSA	34400	mg/kg	N	DET	
TOC	Other	TOC	Nutrient	B2C0C2	Target 13-2	OCSA	68500	mg/kg	N	DET	
TOC	Other	TOC	Nutrient	B2C0C3	Target 13-3	OCSA	9130	mg/kg	N	DET	
TOC	Other	TOC	Nutrient	B2C0C4	Target 13-4	OCSA	30400	mg/kg		DET	

Table 3-1 Analytical chemistry data for soils used for plant and soil invertebrate bioassays for upland locations at the Hanford Site

Analyte	Priority	CASNo	AnalGrp	SampleID	LocationID	WasteSite	Conc	Units	Qualifer	qual	grp
TOC	Other	TOC	Nutrient	B2C0C5	Target 13-5	OCSA	18100	mg/kg	D	DET	
TOC	Other	TOC	Nutrient	B2C0C6	Target 14-1	OCSA	42100	mg/kg	D	DET	
TOC	Other	TOC	Nutrient	B2C0C7	Target 14-2	OCSA	59200	mg/kg	D	DET	
TOC	Other	TOC	Nutrient	B2C0C8	Target 14-3	OCSA	52400	mg/kg	D	DET	
TOC	Other	TOC	Nutrient	B2C0C9	Target 14-4	OCSA	97600	mg/kg		DET	
TOC	Other	TOC	Nutrient	B2C0D0	Target 14-5	OCSA	46500	mg/kg	D	DET	
TOC	Other	TOC	Nutrient	B2C0D7	Target 16-1	OCSA	16600	mg/kg	D	DET	
TOC	Other	TOC	Nutrient	B2C0D8	Target 16-2	OCSA	14700	mg/kg	D	DET	
TOC	Other	TOC	Nutrient	B2C0D9	Target 16-3	OCSA	11000	mg/kg	D	DET	
TOC	Other	TOC	Nutrient	B2C0F0	Target 16-4	OCSA	8900	mg/kg	D	DET	
TOC	Other	TOC	Nutrient	B2C0F1	Target 16-5	OCSA	7020	mg/kg	D	DET	
TOC	Other	TOC	Nutrient	B2C0F2	Target 17-1	OCSA	9810	mg/kg	D	DET	
TOC	Other	TOC	Nutrient	B2C0F3	Target 17-2	OCSA	6510	mg/kg	D	DET	
TOC	Other	TOC	Nutrient	B2C0F4	Target 17-3	OCSA	6630	mg/kg	D	DET	
TOC	Other	TOC	Nutrient	B2C0F5	Target 17-4	OCSA	4710	mg/kg	D	DET	
TOC	Other	TOC	Nutrient	B2C0F6	Target 17-5	OCSA	16400	mg/kg	D	DET	
TOC	Other	TOC	Nutrient	B2C0F7	Target 18-1	OCSA	19600	mg/kg	D	DET	
TOC	Other	TOC	Nutrient	B2C0F8	Target 18-2	OCSA	12600	mg/kg	D	DET	
TOC	Other	TOC	Nutrient	B2C0F9	Target 18-3	OCSA	8020	mg/kg	D	DET	
TOC	Other	TOC	Nutrient	B2C0H0	Target 18-3D	OCSA	8500	mg/kg	D	DET	
TOC	Other	TOC	Nutrient	B2C0H1	Target 18-4	OCSA	4470	mg/kg		DET	
TOC	Other	TOC	Nutrient	B2C0H2	Target 18-5	OCSA	19200	mg/kg	D	DET	
TOC	Other	TOC	Nutrient	B2C0H6	Target 19-4	OCSA	7920	mg/kg	D	DET	
TOC	Other	TOC	Nutrient	B2C0H8	Target 20-1	OCSA	87000	mg/kg	D	DET	
TOC	Other	TOC	Nutrient	B2C0H9	Target 20-2	OCSA	54900	mg/kg	D	DET	
TOC	Other	TOC	Nutrient	B2C0J0	Target 20-3	OCSA	99400	mg/kg	D	DET	
TOC	Other	TOC	Nutrient	B2C0J1	Target 20-4	OCSA	24800	mg/kg	D	DET	
TOC	Other	TOC	Nutrient	B2C0J3	Target 21-1	OCSA	3980	mg/kg	D	DET	
TOC	Other	TOC	Nutrient	B2C0J4	Target 21-2	OCSA	4230	mg/kg	D	DET	
TOC	Other	TOC	Nutrient	B2C0J5	Target 21-3	OCSA	87.8	mg/kg	D	DET	
TOC	Other	TOC	Nutrient	B2C0J6	Target 21-4	OCSA	1860	mg/kg	D	DET	
TOC	Other	TOC	Nutrient	B2C0J7	Target 21-5	OCSA	3540	mg/kg	D	DET	
TOC	Other	TOC	Nutrient	B2C0J8	Target 22-1	OCSA	4680	mg/kg	D	DET	
TOC	Other	TOC	Nutrient	B2C0J9	Target 22-2	OCSA	15100	mg/kg	D	DET	
TOC	Other	TOC	Nutrient	B2C0K0	Target 22-3	OCSA	9190	mg/kg	D	DET	
TOC	Other	TOC	Nutrient	B2C0K1	Target 22-4	OCSA	4840	mg/kg	D	DET	
TOC	Other	TOC	Nutrient	B2C0K2	Target 22-4D	OCSA	2210	mg/kg	D	DET	
TOC	Other	TOC	Nutrient	B2C0K3	Target 22-5	OCSA	19800	mg/kg	D	DET	
TOC	Other	TOC	Nutrient	B2C0K4	Target 23-1	OCSA	5680	mg/kg	D	DET	
TOC	Other	TOC	Nutrient	B2C0K5	Target 23-2	OCSA	4860	mg/kg	D	DET	
TOC	Other	TOC	Nutrient	B2C0K6	Target 23-3	OCSA	6330	mg/kg	D	DET	
TOC	Other	TOC	Nutrient	B2BXX5	Target 24-1	120-KW-1	91.8	mg/kg	B	DET	
TOC	Other	TOC	Nutrient	B2BXX7	Target 24-2	120-KW-1	58.4	mg/kg	B	DET	
TOC	Other	TOC	Nutrient	B2BXX8	Target 24-3	120-KW-1	91.7	mg/kg	B	DET	
TOC	Other	TOC	Nutrient	B2BXY0	Target 24-5	120-KW-1	87.3	mg/kg	B	DET	
TOC	Other	TOC	Nutrient	B2BP89	Target 6-5	600-228	849	mg/kg		DET	
TOC	Other	TOC	Nutrient	B2C1C4	Target 7-1	600-281	3650	mg/kg		DET	
TOC	Other	TOC	Nutrient	B2C1D2	Target 8-3	600-281	2980	mg/kg		DET	
CEC	Other	CEC	Physical	B2BVY1	Control 1	600-218	9.42	mEQ/100g		DET	
CEC	Other	CEC	Physical	B2BW04	Control 13	OCSA	9.21	mEQ/100g		DET	
CEC	Other	CEC	Physical	B2BW06	Control 15	OCSA	11.1	mEQ/100g		DET	
CEC	Other	CEC	Physical	B2BW07	Control 16	OCSA	9.06	mEQ/100g		DET	
CEC	Other	CEC	Physical	B2BW08	Control 17	OCSA	9.68	mEQ/100g		DET	
CEC	Other	CEC	Physical	B2BW09	Control 18	OCSA	8.72	mEQ/100g		DET	
CEC	Other	CEC	Physical	B2BVY2	Control 2	600-218	9.58	mEQ/100g		DET	
CEC	Other	CEC	Physical	B2BW11	Control 20	OCSA	8.49	mEQ/100g		DET	
CEC	Other	CEC	Physical	B2BVY4	Control 4	600-220	8.14	mEQ/100g		DET	
CEC	Other	CEC	Physical	B2BVY8	Control 8	600-228	7.27	mEQ/100g		DET	
CEC	Other	CEC	Physical	B2BW00	Control 9D	600-228	8.66	mEQ/100g		DET	
CEC	Other	CEC	Physical	B2D0F0	Lab Soil	None	21.76	mEQ/100g		DET	
CEC	Other	CEC	Physical	B2C027	Target 11-1	OCSA	13.88	mEQ/100g		DET	
CEC	Other	CEC	Physical	B2C032	Target 12-1	OCSA	13.88	mEQ/100g		DET	
CEC	Other	CEC	Physical	B2C033	Target 12-2	OCSA	10.65	mEQ/100g		DET	
CEC	Other	CEC	Physical	B2C034	Target 12-3	OCSA	10.29	mEQ/100g		DET	
CEC	Other	CEC	Physical	B2C035	Target 12-4	OCSA	13.92	mEQ/100g		DET	
CEC	Other	CEC	Physical	B2C036	Target 12-4D	OCSA	13.12	mEQ/100g		DET	
CEC	Other	CEC	Physical	B2C037	Target 12-5	OCSA	12.68	mEQ/100g		DET	
CEC	Other	CEC	Physical	B2C038	Target 13-1	OCSA	18.23	mEQ/100g		DET	
CEC	Other	CEC	Physical	B2C039	Target 13-2	OCSA	21.89	mEQ/100g		DET	
CEC	Other	CEC	Physical	B2C040	Target 13-3	OCSA	15.87	mEQ/100g		DET	
CEC	Other	CEC	Physical	B2C041	Target 13-4	OCSA	18.39	mEQ/100g		DET	
CEC	Other	CEC	Physical	B2C042	Target 13-5	OCSA	15.33	mEQ/100g		DET	
CEC	Other	CEC	Physical	B2C043	Target 14-1	OCSA	24.83	mEQ/100g		DET	
CEC	Other	CEC	Physical	B2C044	Target 14-2	OCSA	20.19	mEQ/100g		DET	
CEC	Other	CEC	Physical	B2C045	Target 14-3	OCSA	22.28	mEQ/100g		DET	
CEC	Other	CEC	Physical	B2C046	Target 14-4	OCSA	21.6	mEQ/100g		DET	
CEC	Other	CEC	Physical	B2C047	Target 14-5	OCSA	20.81	mEQ/100g		DET	
CEC	Other	CEC	Physical	B2C054	Target 16-1	OCSA	12.09	mEQ/100g		DET	
CEC	Other	CEC	Physical	B2C055	Target 16-2	OCSA	14.63	mEQ/100g		DET	
CEC	Other	CEC	Physical	B2C056	Target 16-3	OCSA	12.36	mEQ/100g		DET	
CEC	Other	CEC	Physical	B2C057	Target 16-4	OCSA	11.51	mEQ/100g		DET	
CEC	Other	CEC	Physical	B2C058	Target 16-5	OCSA	10.57	mEQ/100g		DET	
CEC	Other	CEC	Physical	B2C059	Target 17-1	OCSA	11.76	mEQ/100g		DET	
CEC	Other	CEC	Physical	B2C060	Target 17-2	OCSA	12.42	mEQ/100g		DET	
CEC	Other	CEC	Physical	B2C061	Target 17-3	OCSA	12.63	mEQ/100g		DET	
CEC	Other	CEC	Physical	B2C062	Target 17-4	OCSA	9.54	mEQ/100g		DET	
CEC	Other	CEC	Physical	B2C063	Target 17-5	OCSA	14.38	mEQ/100g		DET	
CEC	Other	CEC	Physical	B2C064	Target 18-1	OCSA	15.42	mEQ/100g		DET	
CEC	Other	CEC	Physical	B2C065	Target 18-2	OCSA	13.09	mEQ/100g		DET	
CEC	Other	CEC	Physical	B2C066	Target 18-3	OCSA	12.32	mEQ/100g		DET	
CEC	Other	CEC	Physical	B2C067	Target 18-3D	OCSA	12.89	mEQ/100g		DET	
CEC	Other	CEC	Physical	B2C068	Target 18-4	OCSA	11.63	mEQ/100g		DET	
CEC	Other	CEC	Physical	B2C069	Target 18-5	OCSA	17.18	mEQ/100g		DET	
CEC	Other	CEC	Physical	B2C073	Target 19-4	OCSA	13.62	mEQ/100g		DET	
CEC	Other	CEC	Physical	B2C075	Target 20-1	OCSA	31.57	mEQ/100g		DET	
CEC	Other	CEC	Physical	B2C076	Target 20-2	OCSA	20.59	mEQ/100g		DET	
CEC	Other	CEC	Physical	B2C077	Target 20-3	OCSA	28.33	mEQ/100g		DET	

Table 3-1 Analytical chemistry data for soils used for plant and soil invertebrate bioassays for upland locations at the Hanford Site

Analyte	Priority	CASNo	AnalGrp	SampleID	LocationID	WasteSite	Conc	Units	Qualifer	qual	grp
CEC	Other	CEC	Physical	B2C078	Target 20-4	OCSA	14.45	mEQ/100g		DET	
CEC	Other	CEC	Physical	B2C080	Target 21-1	OCSA	10.75	mEQ/100g		DET	
CEC	Other	CEC	Physical	B2C081	Target 21-2	OCSA	12.4	mEQ/100g		DET	
CEC	Other	CEC	Physical	B2C082	Target 21-3	OCSA	11.31	mEQ/100g		DET	
CEC	Other	CEC	Physical	B2C083	Target 21-4	OCSA	10.71	mEQ/100g		DET	
CEC	Other	CEC	Physical	B2C084	Target 21-5	OCSA	10.9	mEQ/100g		DET	
CEC	Other	CEC	Physical	B2C085	Target 22-1	OCSA	11.34	mEQ/100g		DET	
CEC	Other	CEC	Physical	B2C086	Target 22-2	OCSA	14.13	mEQ/100g		DET	
CEC	Other	CEC	Physical	B2C087	Target 22-3	OCSA	13.25	mEQ/100g		DET	
CEC	Other	CEC	Physical	B2C088	Target 22-4	OCSA	12.22	mEQ/100g		DET	
CEC	Other	CEC	Physical	B2C089	Target 22-4D	OCSA	12.25	mEQ/100g		DET	
CEC	Other	CEC	Physical	B2C090	Target 22-5	OCSA	16.62	mEQ/100g		DET	
CEC	Other	CEC	Physical	B2C091	Target 23-1	OCSA	28.47	mEQ/100g		DET	
CEC	Other	CEC	Physical	B2C092	Target 23-2	OCSA	13.83	mEQ/100g		DET	
CEC	Other	CEC	Physical	B2C093	Target 23-3	OCSA	19.13	mEQ/100g		DET	
CEC	Other	CEC	Physical	B2BXW7	Target 24-1	120-KW-1	11.67	mEQ/100g		DET	
CEC	Other	CEC	Physical	B2BXW9	Target 24-2	120-KW-1	11.97	mEQ/100g		DET	
CEC	Other	CEC	Physical	B2BXX0	Target 24-3	120-KW-1	15.11	mEQ/100g		DET	
CEC	Other	CEC	Physical	B2BXX2	Target 24-5	120-KW-1	10.79	mEQ/100g		DET	
CEC	Other	CEC	Physical	B2BP76	Target 6-5	600-228	7.05	mEQ/100g		DET	
CEC	Other	CEC	Physical	B2C191	Target 7-1	600-281	8.55	mEQ/100g		DET	
CEC	Other	CEC	Physical	B2C199	Target 8-3	600-281	5.28	mEQ/100g		DET	
% Gravel	Other	% Gravel	Physical	B2BVY1	Control 1	600-218	4.7	%		DET	
% Gravel	Other	% Gravel	Physical	B2BW04	Control 13	OCSA	0	%		DET	
% Gravel	Other	% Gravel	Physical	B2BW06	Control 15	OCSA	2.2	%		DET	
% Gravel	Other	% Gravel	Physical	B2BW07	Control 16	OCSA	0	%		DET	
% Gravel	Other	% Gravel	Physical	B2BW08	Control 17	OCSA	0.9	%		DET	
% Gravel	Other	% Gravel	Physical	B2BW09	Control 18	OCSA	0	%		DET	
% Gravel	Other	% Gravel	Physical	B2BVY2	Control 2	600-218	4.4	%		DET	
% Gravel	Other	% Gravel	Physical	B2BW11	Control 20	OCSA	2.4	%		DET	
% Gravel	Other	% Gravel	Physical	B2BVY4	Control 4	600-220	0	%		DET	
% Gravel	Other	% Gravel	Physical	B2BVY8	Control 8	600-228	0	%		DET	
% Gravel	Other	% Gravel	Physical	B2BW00	Control 9D	600-228	2.1	%		DET	
% Gravel	Other	% Gravel	Physical	B2D0F0	Lab Soil	None	0	%		DET	
% Gravel	Other	% Gravel	Physical	B2C027	Target 11-1	OCSA	0.5	%		DET	
% Gravel	Other	% Gravel	Physical	B2C032	Target 12-1	OCSA	1	%		DET	
% Gravel	Other	% Gravel	Physical	B2C033	Target 12-2	OCSA	0	%		DET	
% Gravel	Other	% Gravel	Physical	B2C034	Target 12-3	OCSA	0	%		DET	
% Gravel	Other	% Gravel	Physical	B2C035	Target 12-4	OCSA	0	%		DET	
% Gravel	Other	% Gravel	Physical	B2C036	Target 12-4D	OCSA	0	%		DET	
% Gravel	Other	% Gravel	Physical	B2C037	Target 12-5	OCSA	1.5	%		DET	
% Gravel	Other	% Gravel	Physical	B2C038	Target 13-1	OCSA	0	%		DET	
% Gravel	Other	% Gravel	Physical	B2C039	Target 13-2	OCSA	0	%		DET	
% Gravel	Other	% Gravel	Physical	B2C040	Target 13-3	OCSA	0	%		DET	
% Gravel	Other	% Gravel	Physical	B2C041	Target 13-4	OCSA	0.1	%		DET	
% Gravel	Other	% Gravel	Physical	B2C042	Target 13-5	OCSA	0	%		DET	
% Gravel	Other	% Gravel	Physical	B2C043	Target 14-1	OCSA	0	%		DET	
% Gravel	Other	% Gravel	Physical	B2C044	Target 14-2	OCSA	0.2	%		DET	
% Gravel	Other	% Gravel	Physical	B2C045	Target 14-3	OCSA	0.3	%		DET	
% Gravel	Other	% Gravel	Physical	B2C046	Target 14-4	OCSA	0	%		DET	
% Gravel	Other	% Gravel	Physical	B2C047	Target 14-5	OCSA	0	%		DET	
% Gravel	Other	% Gravel	Physical	B2C054	Target 16-1	OCSA	0	%		DET	
% Gravel	Other	% Gravel	Physical	B2C055	Target 16-2	OCSA	1.7	%		DET	
% Gravel	Other	% Gravel	Physical	B2C056	Target 16-3	OCSA	0	%		DET	
% Gravel	Other	% Gravel	Physical	B2C057	Target 16-4	OCSA	3.4	%		DET	
% Gravel	Other	% Gravel	Physical	B2C058	Target 16-5	OCSA	6.6	%		DET	
% Gravel	Other	% Gravel	Physical	B2C059	Target 17-1	OCSA	1.2	%		DET	
% Gravel	Other	% Gravel	Physical	B2C060	Target 17-2	OCSA	5.6	%		DET	
% Gravel	Other	% Gravel	Physical	B2C061	Target 17-3	OCSA	0.4	%		DET	
% Gravel	Other	% Gravel	Physical	B2C062	Target 17-4	OCSA	6.3	%		DET	
% Gravel	Other	% Gravel	Physical	B2C063	Target 17-5	OCSA	6.1	%		DET	
% Gravel	Other	% Gravel	Physical	B2C064	Target 18-1	OCSA	4.9	%		DET	
% Gravel	Other	% Gravel	Physical	B2C065	Target 18-2	OCSA	4.2	%		DET	
% Gravel	Other	% Gravel	Physical	B2C066	Target 18-3	OCSA	0	%		DET	
% Gravel	Other	% Gravel	Physical	B2C067	Target 18-3D	OCSA	0	%		DET	
% Gravel	Other	% Gravel	Physical	B2C068	Target 18-4	OCSA	0	%		DET	
% Gravel	Other	% Gravel	Physical	B2C069	Target 18-5	OCSA	5.7	%		DET	
% Gravel	Other	% Gravel	Physical	B2C073	Target 19-4	OCSA	0	%		DET	
% Gravel	Other	% Gravel	Physical	B2C075	Target 20-1	OCSA	0.1	%		DET	
% Gravel	Other	% Gravel	Physical	B2C076	Target 20-2	OCSA	0	%		DET	
% Gravel	Other	% Gravel	Physical	B2C077	Target 20-3	OCSA	0.3	%		DET	
% Gravel	Other	% Gravel	Physical	B2C078	Target 20-4	OCSA	0.6	%		DET	
% Gravel	Other	% Gravel	Physical	B2C080	Target 21-1	OCSA	0	%		DET	
% Gravel	Other	% Gravel	Physical	B2C081	Target 21-2	OCSA	0.3	%		DET	
% Gravel	Other	% Gravel	Physical	B2C082	Target 21-3	OCSA	0.1	%		DET	
% Gravel	Other	% Gravel	Physical	B2C083	Target 21-4	OCSA	0	%		DET	
% Gravel	Other	% Gravel	Physical	B2C084	Target 21-5	OCSA	0	%		DET	
% Gravel	Other	% Gravel	Physical	B2C085	Target 22-1	OCSA	0.1	%		DET	
% Gravel	Other	% Gravel	Physical	B2C086	Target 22-2	OCSA	0.4	%		DET	
% Gravel	Other	% Gravel	Physical	B2C087	Target 22-3	OCSA	0	%		DET	
% Gravel	Other	% Gravel	Physical	B2C088	Target 22-4	OCSA	0	%		DET	
% Gravel	Other	% Gravel	Physical	B2C089	Target 22-4D	OCSA	0	%		DET	
% Gravel	Other	% Gravel	Physical	B2C090	Target 22-5	OCSA	0	%		DET	
% Gravel	Other	% Gravel	Physical	B2C091	Target 23-1	OCSA	0.1	%		DET	
% Gravel	Other	% Gravel	Physical	B2C092	Target 23-2	OCSA	2.6	%		DET	
% Gravel	Other	% Gravel	Physical	B2C093	Target 23-3	OCSA	0	%		DET	
% Gravel	Other	% Gravel	Physical	B2BXW7	Target 24-1	120-KW-1	0.1	%		DET	
% Gravel	Other	% Gravel	Physical	B2BXW9	Target 24-2	120-KW-1	0	%		DET	
% Gravel	Other	% Gravel	Physical	B2BXX0	Target 24-3	120-KW-1	0	%		DET	
% Gravel	Other	% Gravel	Physical	B2BXX2	Target 24-5	120-KW-1	0	%		DET	
% Gravel	Other	% Gravel	Physical	B2BP76	Target 6-5	600-228	0.1	%		DET	
% Gravel	Other	% Gravel	Physical	B2C191	Target 7-1	600-281	0.4	%		DET	
% Gravel	Other	% Gravel	Physical	B2C199	Target 8-3	600-281	1.9	%		DET	
% Sand	Other	% Sand	Physical	B2BVY1	Control 1	600-218	68.7	%		DET	
% Sand	Other	% Sand	Physical	B2BW04	Control 13	OCSA	64.3	%		DET	
% Sand	Other	% Sand	Physical	B2BW06	Control 15	OCSA	65.8	%		DET	
% Sand	Other	% Sand	Physical	B2BW07	Control 16	OCSA	64.8	%		DET	

Table 3-1 Analytical chemistry data for soils used for plant and soil invertebrate bioassays for upland locations at the Hanford Site

Analyte	Priority	CASNo	AnalGrp	SampleID	LocationID	WasteSite	Conc	Units	Qualifer	qual	grp
% Sand	Other	% Sand	Physical	B2BW08	Control 17	OCSA	65.1	%		DET	
% Sand	Other	% Sand	Physical	B2BW09	Control 18	OCSA	61.1	%		DET	
% Sand	Other	% Sand	Physical	B2BVY2	Control 2	600-218	65.5	%		DET	
% Sand	Other	% Sand	Physical	B2BW11	Control 20	OCSA	63.5	%		DET	
% Sand	Other	% Sand	Physical	B2BVY4	Control 4	600-220	83.1	%		DET	
% Sand	Other	% Sand	Physical	B2BVY8	Control 8	600-228	83.5	%		DET	
% Sand	Other	% Sand	Physical	B2BW00	Control 9D	600-228	75	%		DET	
% Sand	Other	% Sand	Physical	B2D0F0	Lab Soil	None	86.4	%		DET	
% Sand	Other	% Sand	Physical	B2C027	Target 11-1	OCSA	79.5	%		DET	
% Sand	Other	% Sand	Physical	B2C032	Target 12-1	OCSA	66.1	%		DET	
% Sand	Other	% Sand	Physical	B2C033	Target 12-2	OCSA	64.1	%		DET	
% Sand	Other	% Sand	Physical	B2C034	Target 12-3	OCSA	63.9	%		DET	
% Sand	Other	% Sand	Physical	B2C035	Target 12-4	OCSA	62.8	%		DET	
% Sand	Other	% Sand	Physical	B2C036	Target 12-4D	OCSA	64.3	%		DET	
% Sand	Other	% Sand	Physical	B2C037	Target 12-5	OCSA	63.4	%		DET	
% Sand	Other	% Sand	Physical	B2C038	Target 13-1	OCSA	72.3	%		DET	
% Sand	Other	% Sand	Physical	B2C039	Target 13-2	OCSA	75.5	%		DET	
% Sand	Other	% Sand	Physical	B2C040	Target 13-3	OCSA	76.8	%		DET	
% Sand	Other	% Sand	Physical	B2C041	Target 13-4	OCSA	70.5	%		DET	
% Sand	Other	% Sand	Physical	B2C042	Target 13-5	OCSA	67.6	%		DET	
% Sand	Other	% Sand	Physical	B2C043	Target 14-1	OCSA	81.4	%		DET	
% Sand	Other	% Sand	Physical	B2C044	Target 14-2	OCSA	78.1	%		DET	
% Sand	Other	% Sand	Physical	B2C045	Target 14-3	OCSA	72.7	%		DET	
% Sand	Other	% Sand	Physical	B2C046	Target 14-4	OCSA	79.2	%		DET	
% Sand	Other	% Sand	Physical	B2C047	Target 14-5	OCSA	77.4	%		DET	
% Sand	Other	% Sand	Physical	B2C054	Target 16-1	OCSA	68.8	%		DET	
% Sand	Other	% Sand	Physical	B2C055	Target 16-2	OCSA	68.7	%		DET	
% Sand	Other	% Sand	Physical	B2C056	Target 16-3	OCSA	67.5	%		DET	
% Sand	Other	% Sand	Physical	B2C057	Target 16-4	OCSA	67.8	%		DET	
% Sand	Other	% Sand	Physical	B2C058	Target 16-5	OCSA	70.2	%		DET	
% Sand	Other	% Sand	Physical	B2C059	Target 17-1	OCSA	60.9	%		DET	
% Sand	Other	% Sand	Physical	B2C060	Target 17-2	OCSA	54.7	%		DET	
% Sand	Other	% Sand	Physical	B2C061	Target 17-3	OCSA	60.4	%		DET	
% Sand	Other	% Sand	Physical	B2C062	Target 17-4	OCSA	58.6	%		DET	
% Sand	Other	% Sand	Physical	B2C063	Target 17-5	OCSA	58.7	%		DET	
% Sand	Other	% Sand	Physical	B2C064	Target 18-1	OCSA	69.7	%		DET	
% Sand	Other	% Sand	Physical	B2C065	Target 18-2	OCSA	68.7	%		DET	
% Sand	Other	% Sand	Physical	B2C066	Target 18-3	OCSA	73.7	%		DET	
% Sand	Other	% Sand	Physical	B2C067	Target 18-3D	OCSA	71.9	%		DET	
% Sand	Other	% Sand	Physical	B2C068	Target 18-4	OCSA	70.4	%		DET	
% Sand	Other	% Sand	Physical	B2C069	Target 18-5	OCSA	72.8	%		DET	
% Sand	Other	% Sand	Physical	B2C073	Target 19-4	OCSA	66.9	%		DET	
% Sand	Other	% Sand	Physical	B2C075	Target 20-1	OCSA	78.5	%		DET	
% Sand	Other	% Sand	Physical	B2C076	Target 20-2	OCSA	75	%		DET	
% Sand	Other	% Sand	Physical	B2C077	Target 20-3	OCSA	74.2	%		DET	
% Sand	Other	% Sand	Physical	B2C078	Target 20-4	OCSA	68.2	%		DET	
% Sand	Other	% Sand	Physical	B2C080	Target 21-1	OCSA	80.1	%		DET	
% Sand	Other	% Sand	Physical	B2C081	Target 21-2	OCSA	70.3	%		DET	
% Sand	Other	% Sand	Physical	B2C082	Target 21-3	OCSA	85.2	%		DET	
% Sand	Other	% Sand	Physical	B2C083	Target 21-4	OCSA	78.2	%		DET	
% Sand	Other	% Sand	Physical	B2C084	Target 21-5	OCSA	76.7	%		DET	
% Sand	Other	% Sand	Physical	B2C085	Target 22-1	OCSA	65.8	%		DET	
% Sand	Other	% Sand	Physical	B2C086	Target 22-2	OCSA	83.8	%		DET	
% Sand	Other	% Sand	Physical	B2C087	Target 22-3	OCSA	73.6	%		DET	
% Sand	Other	% Sand	Physical	B2C088	Target 22-4	OCSA	68.7	%		DET	
% Sand	Other	% Sand	Physical	B2C089	Target 22-4D	OCSA	66.8	%		DET	
% Sand	Other	% Sand	Physical	B2C090	Target 22-5	OCSA	71.4	%		DET	
% Sand	Other	% Sand	Physical	B2C091	Target 23-1	OCSA	77.1	%		DET	
% Sand	Other	% Sand	Physical	B2C092	Target 23-2	OCSA	68.6	%		DET	
% Sand	Other	% Sand	Physical	B2C093	Target 23-3	OCSA	75.6	%		DET	
% Sand	Other	% Sand	Physical	B2BXW7	Target 24-1	120-KW-1	96.5	%		DET	
% Sand	Other	% Sand	Physical	B2BXW9	Target 24-2	120-KW-1	84	%		DET	
% Sand	Other	% Sand	Physical	B2BXX0	Target 24-3	120-KW-1	87.9	%		DET	
% Sand	Other	% Sand	Physical	B2BXX2	Target 24-5	120-KW-1	97	%		DET	
% Sand	Other	% Sand	Physical	B2BP76	Target 6-5	600-228	77.3	%		DET	
% Sand	Other	% Sand	Physical	B2C191	Target 7-1	600-281	71.1	%		DET	
% Sand	Other	% Sand	Physical	B2C199	Target 8-3	600-281	91	%		DET	
% Silt/Clay	Other	% Silt/Clay	Physical	B2BVY1	Control 1	600-218	26.6	%		DET	
% Silt/Clay	Other	% Silt/Clay	Physical	B2BW04	Control 13	OCSA	35.7	%		DET	
% Silt/Clay	Other	% Silt/Clay	Physical	B2BW06	Control 15	OCSA	32	%		DET	
% Silt/Clay	Other	% Silt/Clay	Physical	B2BW07	Control 16	OCSA	35.2	%		DET	
% Silt/Clay	Other	% Silt/Clay	Physical	B2BW08	Control 17	OCSA	34	%		DET	
% Silt/Clay	Other	% Silt/Clay	Physical	B2BW09	Control 18	OCSA	38.9	%		DET	
% Silt/Clay	Other	% Silt/Clay	Physical	B2BVY2	Control 2	600-218	30.1	%		DET	
% Silt/Clay	Other	% Silt/Clay	Physical	B2BW11	Control 20	OCSA	34.1	%		DET	
% Silt/Clay	Other	% Silt/Clay	Physical	B2BVY4	Control 4	600-220	16.9	%		DET	
% Silt/Clay	Other	% Silt/Clay	Physical	B2BVY8	Control 8	600-228	16.5	%		DET	
% Silt/Clay	Other	% Silt/Clay	Physical	B2BW00	Control 9D	600-228	22.9	%		DET	
% Silt/Clay	Other	% Silt/Clay	Physical	B2D0F0	Lab Soil	None	13.6	%		DET	
% Silt/Clay	Other	% Silt/Clay	Physical	B2C027	Target 11-1	OCSA	20	%		DET	
% Silt/Clay	Other	% Silt/Clay	Physical	B2C032	Target 12-1	OCSA	32.9	%		DET	
% Silt/Clay	Other	% Silt/Clay	Physical	B2C033	Target 12-2	OCSA	35.9	%		DET	
% Silt/Clay	Other	% Silt/Clay	Physical	B2C034	Target 12-3	OCSA	36.1	%		DET	
% Silt/Clay	Other	% Silt/Clay	Physical	B2C035	Target 12-4	OCSA	37.2	%		DET	
% Silt/Clay	Other	% Silt/Clay	Physical	B2C036	Target 12-4D	OCSA	35.7	%		DET	
% Silt/Clay	Other	% Silt/Clay	Physical	B2C037	Target 12-5	OCSA	35.1	%		DET	
% Silt/Clay	Other	% Silt/Clay	Physical	B2C038	Target 13-1	OCSA	27.7	%		DET	
% Silt/Clay	Other	% Silt/Clay	Physical	B2C039	Target 13-2	OCSA	24.5	%		DET	
% Silt/Clay	Other	% Silt/Clay	Physical	B2C040	Target 13-3	OCSA	23.2	%		DET	
% Silt/Clay	Other	% Silt/Clay	Physical	B2C041	Target 13-4	OCSA	29.4	%	N	DET	
% Silt/Clay	Other	% Silt/Clay	Physical	B2C042	Target 13-5	OCSA	32.4	%		DET	
% Silt/Clay	Other	% Silt/Clay	Physical	B2C043	Target 14-1	OCSA	18.6	%		DET	
% Silt/Clay	Other	% Silt/Clay	Physical	B2C044	Target 14-2	OCSA	21.7	%		DET	
% Silt/Clay	Other	% Silt/Clay	Physical	B2C045	Target 14-3	OCSA	27.1	%		DET	
% Silt/Clay	Other	% Silt/Clay	Physical	B2C046	Target 14-4	OCSA	20.8	%		DET	
% Silt/Clay	Other	% Silt/Clay	Physical	B2C047	Target 14-5	OCSA	22.6	%		DET	
% Silt/Clay	Other	% Silt/Clay	Physical	B2C054	Target 16-1	OCSA	31.2	%		DET	

Table 3-1 Analytical chemistry data for soils used for plant and soil invertebrate bioassays for upland locations at the Hanford Site

Analyte	Priority	CASNo	AnalGrp	SampleID	LocationID	WasteSite	Conc	Units	Qualifer	qual	grp
% Silt/Clay	Other	% Silt/Clay	Physical	B2C055	Target 16-2	OCSA	29.6	%		DET	
% Silt/Clay	Other	% Silt/Clay	Physical	B2C056	Target 16-3	OCSA	32.5	%		DET	
% Silt/Clay	Other	% Silt/Clay	Physical	B2C057	Target 16-4	OCSA	28.8	%		DET	
% Silt/Clay	Other	% Silt/Clay	Physical	B2C058	Target 16-5	OCSA	23.2	%		DET	
% Silt/Clay	Other	% Silt/Clay	Physical	B2C059	Target 17-1	OCSA	37.9	%		DET	
% Silt/Clay	Other	% Silt/Clay	Physical	B2C060	Target 17-2	OCSA	39.7	%		DET	
% Silt/Clay	Other	% Silt/Clay	Physical	B2C061	Target 17-3	OCSA	39.3	%		DET	
% Silt/Clay	Other	% Silt/Clay	Physical	B2C062	Target 17-4	OCSA	35.1	%		DET	
% Silt/Clay	Other	% Silt/Clay	Physical	B2C063	Target 17-5	OCSA	35.2	%		DET	
% Silt/Clay	Other	% Silt/Clay	Physical	B2C064	Target 18-1	OCSA	25.5	%		DET	
% Silt/Clay	Other	% Silt/Clay	Physical	B2C065	Target 18-2	OCSA	27.1	%		DET	
% Silt/Clay	Other	% Silt/Clay	Physical	B2C066	Target 18-3	OCSA	26.3	%		DET	
% Silt/Clay	Other	% Silt/Clay	Physical	B2C067	Target 18-3D	OCSA	28.1	%		DET	
% Silt/Clay	Other	% Silt/Clay	Physical	B2C068	Target 18-4	OCSA	29.5	%		DET	
% Silt/Clay	Other	% Silt/Clay	Physical	B2C069	Target 18-5	OCSA	21.4	%		DET	
% Silt/Clay	Other	% Silt/Clay	Physical	B2C073	Target 19-4	OCSA	33.1	%		DET	
% Silt/Clay	Other	% Silt/Clay	Physical	B2C075	Target 20-1	OCSA	21.4	%		DET	
% Silt/Clay	Other	% Silt/Clay	Physical	B2C076	Target 20-2	OCSA	25	%		DET	
% Silt/Clay	Other	% Silt/Clay	Physical	B2C077	Target 20-3	OCSA	25.5	%		DET	
% Silt/Clay	Other	% Silt/Clay	Physical	B2C078	Target 20-4	OCSA	31.2	%		DET	
% Silt/Clay	Other	% Silt/Clay	Physical	B2C080	Target 21-1	OCSA	19.9	%		DET	
% Silt/Clay	Other	% Silt/Clay	Physical	B2C081	Target 21-2	OCSA	29.4	%		DET	
% Silt/Clay	Other	% Silt/Clay	Physical	B2C082	Target 21-3	OCSA	14.7	%		DET	
% Silt/Clay	Other	% Silt/Clay	Physical	B2C083	Target 21-4	OCSA	21.8	%		DET	
% Silt/Clay	Other	% Silt/Clay	Physical	B2C084	Target 21-5	OCSA	23.3	%		DET	
% Silt/Clay	Other	% Silt/Clay	Physical	B2C085	Target 22-1	OCSA	34.1	%		DET	
% Silt/Clay	Other	% Silt/Clay	Physical	B2C086	Target 22-2	OCSA	15.8	%		DET	
% Silt/Clay	Other	% Silt/Clay	Physical	B2C087	Target 22-3	OCSA	26.4	%		DET	
% Silt/Clay	Other	% Silt/Clay	Physical	B2C088	Target 22-4	OCSA	31.3	%		DET	
% Silt/Clay	Other	% Silt/Clay	Physical	B2C089	Target 22-4D	OCSA	33.2	%		DET	
% Silt/Clay	Other	% Silt/Clay	Physical	B2C090	Target 22-5	OCSA	28.6	%		DET	
% Silt/Clay	Other	% Silt/Clay	Physical	B2C091	Target 23-1	OCSA	22.8	%		DET	
% Silt/Clay	Other	% Silt/Clay	Physical	B2C092	Target 23-2	OCSA	28.8	%		DET	
% Silt/Clay	Other	% Silt/Clay	Physical	B2C093	Target 23-3	OCSA	24.4	%		DET	
% Silt/Clay	Other	% Silt/Clay	Physical	B2BXW7	Target 24-1	120-KW-1	3.4	%		DET	
% Silt/Clay	Other	% Silt/Clay	Physical	B2BXW9	Target 24-2	120-KW-1	16.1	%		DET	
% Silt/Clay	Other	% Silt/Clay	Physical	B2BXX0	Target 24-3	120-KW-1	12.1	%		DET	
% Silt/Clay	Other	% Silt/Clay	Physical	B2BXX2	Target 24-5	120-KW-1	3	%		DET	
% Silt/Clay	Other	% Silt/Clay	Physical	B2BP76	Target 6-5	600-228	22.5	%		DET	
% Silt/Clay	Other	% Silt/Clay	Physical	B2C191	Target 7-1	600-281	28.5	%		DET	
% Silt/Clay	Other	% Silt/Clay	Physical	B2C199	Target 8-3	600-281	7.1	%		DET	
pH	Other	pH	Physical	B2BVM9	Control 1	600-218	7.25	S.U.		DET	
pH	Other	pH	Physical	B2BVP2	Control 13	OCSA	8.52	S.U.		DET	
pH	Other	pH	Physical	B2BVP4	Control 15	OCSA	8.44	S.U.		DET	
pH	Other	pH	Physical	B2BVP5	Control 16	OCSA	8.41	S.U.		DET	
pH	Other	pH	Physical	B2BVP6	Control 17	OCSA	8.55	S.U.		DET	
pH	Other	pH	Physical	B2BVP7	Control 18	OCSA	8.56	S.U.		DET	
pH	Other	pH	Physical	B2BVN0	Control 2	600-218	7.67	S.U.		DET	
pH	Other	pH	Physical	B2BVP9	Control 20	OCSA	7.15	S.U.		DET	
pH	Other	pH	Physical	B2BVN2	Control 4	600-220	8.56	S.U.		DET	
pH	Other	pH	Physical	B2BVN6	Control 8	600-228	7.38	S.U.		DET	
pH	Other	pH	Physical	B2BVN8	Control 9D	600-228	8.74	S.U.		DET	
pH	Other	PH	Physical	B2D0D8	Lab Soil	None	7.07	S.U.		DET	
pH	Other	pH	Physical	B2BY78	Target 11-1	OCSA	6.89	S.U.		DET	
pH	Other	pH	Physical	B2BY83	Target 12-1	OCSA	6.2	S.U.		DET	
pH	Other	pH	Physical	B2BY84	Target 12-2	OCSA	5.81	S.U.		DET	
pH	Other	pH	Physical	B2BY85	Target 12-3	OCSA	6.51	S.U.		DET	
pH	Other	pH	Physical	B2BY86	Target 12-4	OCSA	6.72	S.U.		DET	
pH	Other	pH	Physical	B2BY87	Target 12-4D	OCSA	6.65	S.U.		DET	
pH	Other	pH	Physical	B2BY88	Target 12-5	OCSA	6.88	S.U.		DET	
pH	Other	pH	Physical	B2BY89	Target 13-1	OCSA	7.22	S.U.		DET	
pH	Other	pH	Physical	B2BY90	Target 13-2	OCSA	7.71	S.U.		DET	
pH	Other	pH	Physical	B2BY91	Target 13-3	OCSA	7.73	S.U.		DET	
pH	Other	pH	Physical	B2BY92	Target 13-4	OCSA	7.42	S.U.		DET	
pH	Other	pH	Physical	B2BY93	Target 13-5	OCSA	7.74	S.U.		DET	
pH	Other	pH	Physical	B2BY94	Target 14-1	OCSA	7.86	S.U.		DET	
pH	Other	pH	Physical	B2BY95	Target 14-2	OCSA	6.38	S.U.		DET	
pH	Other	pH	Physical	B2BY96	Target 14-3	OCSA	6.04	S.U.		DET	
pH	Other	pH	Physical	B2BY97	Target 14-4	OCSA	7.49	S.U.		DET	
pH	Other	pH	Physical	B2BY98	Target 14-5	OCSA	7.59	S.U.		DET	
pH	Other	pH	Physical	B2BYB5	Target 16-1	OCSA	8.19	S.U.		DET	
pH	Other	pH	Physical	B2BYB6	Target 16-2	OCSA	8.06	S.U.		DET	
pH	Other	pH	Physical	B2BYB7	Target 16-3	OCSA	8	S.U.		DET	
pH	Other	pH	Physical	B2BYB8	Target 16-4	OCSA	8.01	S.U.		DET	
pH	Other	pH	Physical	B2BYB9	Target 16-5	OCSA	8.06	S.U.		DET	
pH	Other	pH	Physical	B2BYC0	Target 17-1	OCSA	7.92	S.U.		DET	
pH	Other	pH	Physical	B2BYC1	Target 17-2	OCSA	8.12	S.U.		DET	
pH	Other	pH	Physical	B2BYC2	Target 17-3	OCSA	8.05	S.U.		DET	
pH	Other	pH	Physical	B2BYC3	Target 17-4	OCSA	7.99	S.U.		DET	
pH	Other	pH	Physical	B2BYC4	Target 17-5	OCSA	8.22	S.U.		DET	
pH	Other	pH	Physical	B2BYC5	Target 18-1	OCSA	7.94	S.U.		DET	
pH	Other	pH	Physical	B2BYC6	Target 18-2	OCSA	8.04	S.U.		DET	
pH	Other	pH	Physical	B2BYC7	Target 18-3	OCSA	8.15	S.U.		DET	
pH	Other	pH	Physical	B2BYC8	Target 18-3D	OCSA	8.24	S.U.		DET	
pH	Other	pH	Physical	B2BYC9	Target 18-4	OCSA	7.96	S.U.		DET	
pH	Other	pH	Physical	B2BYD0	Target 18-5	OCSA	8.21	S.U.		DET	
pH	Other	pH	Physical	B2BYD4	Target 19-4	OCSA	8.28	S.U.		DET	
pH	Other	pH	Physical	B2BYD6	Target 20-1	OCSA	8.04	S.U.		DET	
pH	Other	pH	Physical	B2BYD7	Target 20-2	OCSA	8.18	S.U.		DET	
pH	Other	pH	Physical	B2BYD8	Target 20-3	OCSA	8.11	S.U.		DET	
pH	Other	pH	Physical	B2BYD9	Target 20-4	OCSA	8.24	S.U.		DET	
pH	Other	pH	Physical	B2BYF1	Target 21-1	OCSA	8.16	S.U.		DET	
pH	Other	pH	Physical	B2BYF2	Target 21-2	OCSA	8.19	S.U.		DET	
pH	Other	pH	Physical	B2BYF3	Target 21-3	OCSA	8.19	S.U.		DET	
pH	Other	pH	Physical	B2BYF4	Target 21-4	OCSA	8.36	S.U.		DET	
pH	Other	pH	Physical	B2BYF5	Target 21-5	OCSA	8.36	S.U.		DET	
pH	Other	pH	Physical	B2BYF6	Target 22-1	OCSA	7.69	S.U.		DET	

Table 3-1 Analytical chemistry data for soils used for plant and soil invertebrate bioassays for upland locations at the Hanford Site

Analyte	Priority	CASNo	AnalGrp	SampleID	LocationID	WasteSite	Conc	Units	Qualifer	qual	grp
pH	Other	pH	Physical	B2BYF7	Target 22-2	OCSA	7.93	S.U.		DET	
pH	Other	pH	Physical	B2BYF8	Target 22-3	OCSA	8.06	S.U.		DET	
pH	Other	pH	Physical	B2BYF9	Target 22-4	OCSA	8.24	S.U.		DET	
pH	Other	pH	Physical	B2BYH0	Target 22-4D	OCSA	8.28	S.U.		DET	
pH	Other	pH	Physical	B2BYH1	Target 22-5	OCSA	7.87	S.U.		DET	
pH	Other	pH	Physical	B2BYH2	Target 23-1	OCSA	8.05	S.U.		DET	
pH	Other	pH	Physical	B2BYH3	Target 23-2	OCSA	8.17	S.U.		DET	
pH	Other	pH	Physical	B2BYH4	Target 23-3	OCSA	7.94	S.U.		DET	
pH	Other	pH	Physical	B2BXT3	Target 24-1	120-KW-1	4.13	S.U.		DET	
pH	Other	pH	Physical	B2BXT5	Target 24-2	120-KW-1	5.09	S.U.		DET	
pH	Other	pH	Physical	B2BXT6	Target 24-3	120-KW-1	5.02	S.U.		DET	
pH	Other	pH	Physical	B2BXT8	Target 24-5	120-KW-1	4.21	S.U.		DET	
pH	Other	pH	Physical	B2BP63	Target 6-5	600-228	8.39	S.U.		DET	
pH	Other	pH	Physical	B2C126	Target 7-1	600-281	7.05	S.U.		DET	
pH	Other	pH	Physical	B2C134	Target 8-3	600-281	7.69	S.U.		DET	
4,4'-DDD	Other	72-54-8	Organic	B2BW15	Control 1	600-218	0.00009	mg/kg	U	ND	
4,4'-DDD	Other	72-54-8	Organic	B2BW28	Control 13	OCSA	0.000087	mg/kg	U	ND	
4,4'-DDD	Other	72-54-8	Organic	B2BW30	Control 15	OCSA	0.000088	mg/kg	U	ND	
4,4'-DDD	Other	72-54-8	Organic	B2BW31	Control 16	OCSA	0.000088	mg/kg	U	ND	
4,4'-DDD	Other	72-54-8	Organic	B2BW32	Control 17	OCSA	0.000087	mg/kg	U	ND	
4,4'-DDD	Other	72-54-8	Organic	B2BW33	Control 18	OCSA	0.000088	mg/kg	U	ND	
4,4'-DDD	Other	72-54-8	Organic	B2BW16	Control 2	600-218	0.000089	mg/kg		DET	
4,4'-DDD	Other	72-54-8	Organic	B2BW35	Control 20	OCSA	0.000088	mg/kg	U	ND	
4,4'-DDD	Other	72-54-8	Organic	B2BW18	Control 4	600-220	0.000088	mg/kg	U	ND	
4,4'-DDD	Other	72-54-8	Organic	B2BW22	Control 8	600-228	0.000087	mg/kg	U	ND	
4,4'-DDD	Other	72-54-8	Organic	B2BW24	Control 9D	600-228	0.000087	mg/kg	U	ND	
4,4'-DDD	Other	72-54-8	Organic	B2C0B0	Target 11-1	OCSA	0.000085	mg/kg	U	ND	
4,4'-DDD	Other	72-54-8	Organic	B2C0B5	Target 12-1	OCSA	0.000087	mg/kg	U	ND	
4,4'-DDD	Other	72-54-8	Organic	B2C0B6	Target 12-2	OCSA	0.000084	mg/kg	U	ND	
4,4'-DDD	Other	72-54-8	Organic	B2C0B7	Target 12-3	OCSA	9.60E-08	mg/kg	U	ND	
4,4'-DDD	Other	72-54-8	Organic	B2C0B8	Target 12-4	OCSA	0.000086	mg/kg	U	ND	
4,4'-DDD	Other	72-54-8	Organic	B2C0B9	Target 12-4D	OCSA	0.000086	mg/kg	U	ND	
4,4'-DDD	Other	72-54-8	Organic	B2C0C0	Target 12-5	OCSA	0.000094	mg/kg	U	ND	
4,4'-DDD	Other	72-54-8	Organic	B2C0C1	Target 13-1	OCSA	0.000087	mg/kg	U	ND	
4,4'-DDD	Other	72-54-8	Organic	B2C0C2	Target 13-2	OCSA	0.000088	mg/kg	U	ND	
4,4'-DDD	Other	72-54-8	Organic	B2C0C3	Target 13-3	OCSA	0.000085	mg/kg	U	ND	
4,4'-DDD	Other	72-54-8	Organic	B2C0C4	Target 13-4	OCSA	0.000088	mg/kg	U	ND	
4,4'-DDD	Other	72-54-8	Organic	B2C0C5	Target 13-5	OCSA	0.000087	mg/kg	U	ND	
4,4'-DDD	Other	72-54-8	Organic	B2C0C6	Target 14-1	OCSA	0.000086	mg/kg	U	ND	
4,4'-DDD	Other	72-54-8	Organic	B2C0C7	Target 14-2	OCSA	0.000086	mg/kg	U	ND	
4,4'-DDD	Other	72-54-8	Organic	B2C0C8	Target 14-3	OCSA	0.000088	mg/kg	U	ND	
4,4'-DDD	Other	72-54-8	Organic	B2C0C9	Target 14-4	OCSA	0.000089	mg/kg	U	ND	
4,4'-DDD	Other	72-54-8	Organic	B2C0D0	Target 14-5	OCSA	0.000086	mg/kg	U	ND	
4,4'-DDD	Other	72-54-8	Organic	B2C0D7	Target 16-1	OCSA	0.000089	mg/kg	U	ND	
4,4'-DDD	Other	72-54-8	Organic	B2C0D8	Target 16-2	OCSA	0.000091	mg/kg	U	ND	
4,4'-DDD	Other	72-54-8	Organic	B2C0D9	Target 16-3	OCSA	0.000089	mg/kg	U	ND	
4,4'-DDD	Other	72-54-8	Organic	B2C0F0	Target 16-4	OCSA	0.000089	mg/kg	U	ND	
4,4'-DDD	Other	72-54-8	Organic	B2C0F1	Target 16-5	OCSA	0.000089	mg/kg	U	ND	
4,4'-DDD	Other	72-54-8	Organic	B2C0F2	Target 17-1	OCSA	0.000091	mg/kg	U	ND	
4,4'-DDD	Other	72-54-8	Organic	B2C0F3	Target 17-2	OCSA	0.000089	mg/kg	U	ND	
4,4'-DDD	Other	72-54-8	Organic	B2C0F4	Target 17-3	OCSA	0.00009	mg/kg	U	ND	
4,4'-DDD	Other	72-54-8	Organic	B2C0F5	Target 17-4	OCSA	0.000089	mg/kg	U	ND	
4,4'-DDD	Other	72-54-8	Organic	B2C0F6	Target 17-5	OCSA	0.000092	mg/kg	U	ND	
4,4'-DDD	Other	72-54-8	Organic	B2C0F7	Target 18-1	OCSA	9.00E-08	mg/kg	U	ND	
4,4'-DDD	Other	72-54-8	Organic	B2C0F8	Target 18-2	OCSA	0.000089	mg/kg	U	ND	
4,4'-DDD	Other	72-54-8	Organic	B2C0F9	Target 18-3	OCSA	0.000089	mg/kg	U	ND	
4,4'-DDD	Other	72-54-8	Organic	B2C0H0	Target 18-3D	OCSA	0.000089	mg/kg	U	ND	
4,4'-DDD	Other	72-54-8	Organic	B2C0H1	Target 18-4	OCSA	0.00009	mg/kg	U	ND	
4,4'-DDD	Other	72-54-8	Organic	B2C0H2	Target 18-5	OCSA	0.000091	mg/kg	U	ND	
4,4'-DDD	Other	72-54-8	Organic	B2C0H6	Target 19-4	OCSA	0.000088	mg/kg	U	ND	
4,4'-DDD	Other	72-54-8	Organic	B2C0H8	Target 20-1	OCSA	0.0019	mg/kg	UD	ND	
4,4'-DDD	Other	72-54-8	Organic	B2C0H9	Target 20-2	OCSA	0.00089	mg/kg	UD	ND	
4,4'-DDD	Other	72-54-8	Organic	B2C0J0	Target 20-3	OCSA	1.80E-06	mg/kg	UD	ND	
4,4'-DDD	Other	72-54-8	Organic	B2C0J1	Target 20-4	OCSA	0.000088	mg/kg	U	ND	
4,4'-DDD	Other	72-54-8	Organic	B2C0J3	Target 21-1	OCSA	0.000088	mg/kg	U	ND	
4,4'-DDD	Other	72-54-8	Organic	B2C0J4	Target 21-2	OCSA	0.00009	mg/kg	U	ND	
4,4'-DDD	Other	72-54-8	Organic	B2C0J5	Target 21-3	OCSA	0.000086	mg/kg	U	ND	
4,4'-DDD	Other	72-54-8	Organic	B2C0J6	Target 21-4	OCSA	0.000087	mg/kg	U	ND	
4,4'-DDD	Other	72-54-8	Organic	B2C0J7	Target 21-5	OCSA	0.000088	mg/kg	U	ND	
4,4'-DDD	Other	72-54-8	Organic	B2C0J8	Target 22-1	OCSA	0.000089	mg/kg	U	ND	
4,4'-DDD	Other	72-54-8	Organic	B2C0J9	Target 22-2	OCSA	0.00044	mg/kg	UD	ND	
4,4'-DDD	Other	72-54-8	Organic	B2C0K0	Target 22-3	OCSA	0.00009	mg/kg	U	ND	
4,4'-DDD	Other	72-54-8	Organic	B2C0K1	Target 22-4	OCSA	0.000091	mg/kg	U	ND	
4,4'-DDD	Other	72-54-8	Organic	B2C0K2	Target 22-4D	OCSA	0.00009	mg/kg	U	ND	
4,4'-DDD	Other	72-54-8	Organic	B2C0K3	Target 22-5	OCSA	0.000093	mg/kg	U	ND	
4,4'-DDD	Other	72-54-8	Organic	B2C0K4	Target 23-1	OCSA	0.000089	mg/kg	U	ND	
4,4'-DDD	Other	72-54-8	Organic	B2C0K5	Target 23-2	OCSA	0.000089	mg/kg	U	ND	
4,4'-DDD	Other	72-54-8	Organic	B2C0K6	Target 23-3	OCSA	0.000089	mg/kg	U	ND	
4,4'-DDD	Other	72-54-8	Organic	B2BXX5	Target 24-1	120-KW-1	0.000088	mg/kg	U	ND	
4,4'-DDD	Other	72-54-8	Organic	B2BXX7	Target 24-2	120-KW-1	0.000092	mg/kg	U	ND	
4,4'-DDD	Other	72-54-8	Organic	B2BXX8	Target 24-3	120-KW-1	0.000092	mg/kg	U	ND	
4,4'-DDD	Other	72-54-8	Organic	B2BXY0	Target 24-5	120-KW-1	0.000087	mg/kg	U	ND	
4,4'-DDD	Other	72-54-8	Organic	B2BP89	Target 6-5	600-228	0.000087	mg/kg	U	ND	
4,4'-DDD	Other	72-54-8	Organic	B2C1C4	Target 7-1	600-281	0.000088	mg/kg	U	ND	
4,4'-DDD	Other	72-54-8	Organic	B2C1D2	Target 8-3	600-281	0.000087	mg/kg	U	ND	
4,4'-DDE	Other	72-55-9	Organic	B2BW15	Control 1	600-218	0.00043	mg/kg	U	ND	
4,4'-DDE	Other	72-55-9	Organic	B2BW28	Control 13	OCSA	0.00042	mg/kg	U	ND	
4,4'-DDE	Other	72-55-9	Organic	B2BW30	Control 15	OCSA	0.00042	mg/kg	U	ND	
4,4'-DDE	Other	72-55-9	Organic	B2BW31	Control 16	OCSA	0.00042	mg/kg	U	ND	
4,4'-DDE	Other	72-55-9	Organic	B2BW32	Control 17	OCSA	0.00041	mg/kg	U	ND	
4,4'-DDE	Other	72-55-9	Organic	B2BW33	Control 18	OCSA	0.00042	mg/kg	U	ND	
4,4'-DDE	Other	72-55-9	Organic	B2BW16	Control 2	600-218	0.00042	mg/kg	U	ND	
4,4'-DDE	Other	72-55-9	Organic	B2BW35	Control 20	OCSA	0.00042	mg/kg	U	ND	
4,4'-DDE	Other	72-55-9	Organic	B2BW18	Control 4	600-220	0.00042	mg/kg	U	ND	
4,4'-DDE	Other	72-55-9	Organic	B2BW22	Control 8	600-228	0.00041	mg/kg	U	ND	
4,4'-DDE	Other	72-55-9	Organic	B2BW24	Control 9D	600-228	0.00042	mg/kg	U	ND	
4,4'-DDE	Other	72-55-9	Organic	B2C0B0	Target 11-1	OCSA	0.00041	mg/kg	U	ND	

Table 3-1 Analytical chemistry data for soils used for plant and soil invertebrate bioassays for upland locations at the Hanford Site

Analyte	Priority	CASNo	AnalGrp	SampleID	LocationID	WasteSite	Conc	Units	Qualifer	qual	grp
4,4'-DDE	Other	72-55-9	Organic	B2C0B5	Target 12-1	OCSA	0.00041	mg/kg	U	ND	
4,4'-DDE	Other	72-55-9	Organic	B2C0B6	Target 12-2	OCSA	0.0004	mg/kg	U	ND	
4,4'-DDE	Other	72-55-9	Organic	B2C0B7	Target 12-3	OCSA	0.00045	mg/kg	U	ND	
4,4'-DDE	Other	72-55-9	Organic	B2C0B8	Target 12-4	OCSA	0.00041	mg/kg	U	ND	
4,4'-DDE	Other	72-55-9	Organic	B2C0B9	Target 12-4D	OCSA	0.00041	mg/kg	U	ND	
4,4'-DDE	Other	72-55-9	Organic	B2C0C0	Target 12-5	OCSA	0.00045	mg/kg	U	ND	
4,4'-DDE	Other	72-55-9	Organic	B2C0C1	Target 13-1	OCSA	0.00042	mg/kg	U	ND	
4,4'-DDE	Other	72-55-9	Organic	B2C0C2	Target 13-2	OCSA	0.00042	mg/kg	U	ND	
4,4'-DDE	Other	72-55-9	Organic	B2C0C3	Target 13-3	OCSA	0.00041	mg/kg	U	ND	
4,4'-DDE	Other	72-55-9	Organic	B2C0C4	Target 13-4	OCSA	0.00042	mg/kg	U	ND	
4,4'-DDE	Other	72-55-9	Organic	B2C0C5	Target 13-5	OCSA	0.00041	mg/kg	U	ND	
4,4'-DDE	Other	72-55-9	Organic	B2C0C6	Target 14-1	OCSA	0.00041	mg/kg	U	ND	
4,4'-DDE	Other	72-55-9	Organic	B2C0C7	Target 14-2	OCSA	0.00041	mg/kg	U	ND	
4,4'-DDE	Other	72-55-9	Organic	B2C0C8	Target 14-3	OCSA	0.00042	mg/kg	U	ND	
4,4'-DDE	Other	72-55-9	Organic	B2C0C9	Target 14-4	OCSA	0.00042	mg/kg	U	ND	
4,4'-DDE	Other	72-55-9	Organic	B2C0D0	Target 14-5	OCSA	0.00041	mg/kg	U	ND	
4,4'-DDE	Other	72-55-9	Organic	B2C0D7	Target 16-1	OCSA	0.00043	mg/kg	U	ND	
4,4'-DDE	Other	72-55-9	Organic	B2C0D8	Target 16-2	OCSA	0.00043	mg/kg	U	ND	
4,4'-DDE	Other	72-55-9	Organic	B2C0D9	Target 16-3	OCSA	0.00042	mg/kg	U	ND	
4,4'-DDE	Other	72-55-9	Organic	B2C0F0	Target 16-4	OCSA	0.00042	mg/kg	U	ND	
4,4'-DDE	Other	72-55-9	Organic	B2C0F1	Target 16-5	OCSA	0.00042	mg/kg	U	ND	
4,4'-DDE	Other	72-55-9	Organic	B2C0F2	Target 17-1	OCSA	0.00043	mg/kg	U	ND	
4,4'-DDE	Other	72-55-9	Organic	B2C0F3	Target 17-2	OCSA	0.00043	mg/kg	U	ND	
4,4'-DDE	Other	72-55-9	Organic	B2C0F4	Target 17-3	OCSA	0.00043	mg/kg	U	ND	
4,4'-DDE	Other	72-55-9	Organic	B2C0F5	Target 17-4	OCSA	0.00043	mg/kg	U	ND	
4,4'-DDE	Other	72-55-9	Organic	B2C0F6	Target 17-5	OCSA	0.00044	mg/kg	U	ND	
4,4'-DDE	Other	72-55-9	Organic	B2C0F7	Target 18-1	OCSA	0.00043	mg/kg	U	ND	
4,4'-DDE	Other	72-55-9	Organic	B2C0F8	Target 18-2	OCSA	0.00042	mg/kg	U	ND	
4,4'-DDE	Other	72-55-9	Organic	B2C0F9	Target 18-3	OCSA	0.00042	mg/kg	U	ND	
4,4'-DDE	Other	72-55-9	Organic	B2C0H0	Target 18-3D	OCSA	0.00042	mg/kg	U	ND	
4,4'-DDE	Other	72-55-9	Organic	B2C0H1	Target 18-4	OCSA	0.00043	mg/kg	U	ND	
4,4'-DDE	Other	72-55-9	Organic	B2C0H2	Target 18-5	OCSA	0.00043	mg/kg	U	ND	
4,4'-DDE	Other	72-55-9	Organic	B2C0H6	Target 19-4	OCSA	0.00042	mg/kg	U	ND	
4,4'-DDE	Other	72-55-9	Organic	B2C0H8	Target 20-1	OCSA	0.0088	mg/kg	UD	ND	
4,4'-DDE	Other	72-55-9	Organic	B2C0H9	Target 20-2	OCSA	0.0042	mg/kg	UD	ND	
4,4'-DDE	Other	72-55-9	Organic	B2C0J0	Target 20-3	OCSA	0.0088	mg/kg	UD	ND	
4,4'-DDE	Other	72-55-9	Organic	B2C0J1	Target 20-4	OCSA	0.00042	mg/kg	U	ND	
4,4'-DDE	Other	72-55-9	Organic	B2C0J3	Target 21-1	OCSA	0.00042	mg/kg	U	ND	
4,4'-DDE	Other	72-55-9	Organic	B2C0J4	Target 21-2	OCSA	0.00043	mg/kg	U	ND	
4,4'-DDE	Other	72-55-9	Organic	B2C0J5	Target 21-3	OCSA	0.00041	mg/kg	U	ND	
4,4'-DDE	Other	72-55-9	Organic	B2C0J6	Target 21-4	OCSA	0.00042	mg/kg	U	ND	
4,4'-DDE	Other	72-55-9	Organic	B2C0J7	Target 21-5	OCSA	0.00042	mg/kg	U	ND	
4,4'-DDE	Other	72-55-9	Organic	B2C0J8	Target 22-1	OCSA	0.00042	mg/kg	U	ND	
4,4'-DDE	Other	72-55-9	Organic	B2C0J9	Target 22-2	OCSA	0.0021	mg/kg	UD	ND	
4,4'-DDE	Other	72-55-9	Organic	B2C0K0	Target 22-3	OCSA	0.00043	mg/kg	U	ND	
4,4'-DDE	Other	72-55-9	Organic	B2C0K1	Target 22-4	OCSA	0.00043	mg/kg	U	ND	
4,4'-DDE	Other	72-55-9	Organic	B2C0K2	Target 22-4D	OCSA	0.00043	mg/kg	U	ND	
4,4'-DDE	Other	72-55-9	Organic	B2C0K3	Target 22-5	OCSA	0.00044	mg/kg	U	ND	
4,4'-DDE	Other	72-55-9	Organic	B2C0K4	Target 23-1	OCSA	0.00043	mg/kg	U	ND	
4,4'-DDE	Other	72-55-9	Organic	B2C0K5	Target 23-2	OCSA	0.00042	mg/kg	U	ND	
4,4'-DDE	Other	72-55-9	Organic	B2C0K6	Target 23-3	OCSA	0.00042	mg/kg	U	ND	
4,4'-DDE	Other	72-55-9	Organic	B2BXX5	Target 24-1	120-KW-1	0.00042	mg/kg	U	ND	
4,4'-DDE	Other	72-55-9	Organic	B2BXX7	Target 24-2	120-KW-1	0.00044	mg/kg	U	ND	
4,4'-DDE	Other	72-55-9	Organic	B2BXX8	Target 24-3	120-KW-1	0.00044	mg/kg	U	ND	
4,4'-DDE	Other	72-55-9	Organic	B2BXY0	Target 24-5	120-KW-1	0.00041	mg/kg	U	ND	
4,4'-DDE	Other	72-55-9	Organic	B2BP89	Target 6-5	600-228	0.00042	mg/kg	U	ND	
4,4'-DDE	Other	72-55-9	Organic	B2C1C4	Target 7-1	600-281	0.00042	mg/kg	U	ND	
4,4'-DDE	Other	72-55-9	Organic	B2C1D2	Target 8-3	600-281	0.00041	mg/kg	U	ND	
4,4'-DDT	Other	50-29-3	Organic	B2BW15	Control 1	600-218	0.00069	mg/kg	U	ND	
4,4'-DDT	Other	50-29-3	Organic	B2BW28	Control 13	OCSA	0.00067	mg/kg	U	ND	
4,4'-DDT	Other	50-29-3	Organic	B2BW30	Control 15	OCSA	0.00067	mg/kg	U	ND	
4,4'-DDT	Other	50-29-3	Organic	B2BW31	Control 16	OCSA	0.00067	mg/kg	U	ND	
4,4'-DDT	Other	50-29-3	Organic	B2BW32	Control 17	OCSA	0.00067	mg/kg	U	ND	
4,4'-DDT	Other	50-29-3	Organic	B2BW33	Control 18	OCSA	0.00068	mg/kg	U	ND	
4,4'-DDT	Other	50-29-3	Organic	B2BW16	Control 2	600-218	0.00068	mg/kg	U	ND	
4,4'-DDT	Other	50-29-3	Organic	B2BW35	Control 20	OCSA	0.00068	mg/kg	U	ND	
4,4'-DDT	Other	50-29-3	Organic	B2BW18	Control 4	600-220	0.00067	mg/kg	U	ND	
4,4'-DDT	Other	50-29-3	Organic	B2BW22	Control 8	600-228	0.00067	mg/kg	U	ND	
4,4'-DDT	Other	50-29-3	Organic	B2BW24	Control 9D	600-228	0.00067	mg/kg	U	ND	
4,4'-DDT	Other	50-29-3	Organic	B2C0B0	Target 11-1	OCSA	0.00065	mg/kg	U	ND	
4,4'-DDT	Other	50-29-3	Organic	B2C0B5	Target 12-1	OCSA	0.00066	mg/kg	U	ND	
4,4'-DDT	Other	50-29-3	Organic	B2C0B6	Target 12-2	OCSA	0.00064	mg/kg	U	ND	
4,4'-DDT	Other	50-29-3	Organic	B2C0B7	Target 12-3	OCSA	0.00073	mg/kg	U	ND	
4,4'-DDT	Other	50-29-3	Organic	B2C0B8	Target 12-4	OCSA	0.00066	mg/kg	U	ND	
4,4'-DDT	Other	50-29-3	Organic	B2C0B9	Target 12-4D	OCSA	0.00066	mg/kg	U	ND	
4,4'-DDT	Other	50-29-3	Organic	B2C0C0	Target 12-5	OCSA	0.00072	mg/kg	U	ND	
4,4'-DDT	Other	50-29-3	Organic	B2C0C1	Target 13-1	OCSA	0.00067	mg/kg	U	ND	
4,4'-DDT	Other	50-29-3	Organic	B2C0C2	Target 13-2	OCSA	0.00067	mg/kg	U	ND	
4,4'-DDT	Other	50-29-3	Organic	B2C0C3	Target 13-3	OCSA	0.00065	mg/kg	U	ND	
4,4'-DDT	Other	50-29-3	Organic	B2C0C4	Target 13-4	OCSA	0.00067	mg/kg	U	ND	
4,4'-DDT	Other	50-29-3	Organic	B2C0C5	Target 13-5	OCSA	0.00067	mg/kg	U	ND	
4,4'-DDT	Other	50-29-3	Organic	B2C0C6	Target 14-1	OCSA	0.00066	mg/kg	U	ND	
4,4'-DDT	Other	50-29-3	Organic	B2C0C7	Target 14-2	OCSA	0.00066	mg/kg	U	ND	
4,4'-DDT	Other	50-29-3	Organic	B2C0C8	Target 14-3	OCSA	0.00067	mg/kg	U	ND	
4,4'-DDT	Other	50-29-3	Organic	B2C0C9	Target 14-4	OCSA	0.00068	mg/kg	U	ND	
4,4'-DDT	Other	50-29-3	Organic	B2C0D0	Target 14-5	OCSA	0.00066	mg/kg	U	ND	
4,4'-DDT	Other	50-29-3	Organic	B2C0D7	Target 16-1	OCSA	0.00068	mg/kg	U	ND	
4,4'-DDT	Other	50-29-3	Organic	B2C0D8	Target 16-2	OCSA	0.0007	mg/kg	U	ND	
4,4'-DDT	Other	50-29-3	Organic	B2C0D9	Target 16-3	OCSA	0.00068	mg/kg	U	ND	
4,4'-DDT	Other	50-29-3	Organic	B2C0F0	Target 16-4	OCSA	0.00068	mg/kg	U	ND	
4,4'-DDT	Other	50-29-3	Organic	B2C0F1	Target 16-5	OCSA	0.00068	mg/kg	U	ND	
4,4'-DDT	Other	50-29-3	Organic	B2C0F2	Target 17-1	OCSA	0.0007	mg/kg	U	ND	
4,4'-DDT	Other	50-29-3	Organic	B2C0F3	Target 17-2	OCSA	0.00068	mg/kg	U	ND	
4,4'-DDT	Other	50-29-3	Organic	B2C0F4	Target 17-3	OCSA	0.00069	mg/kg	U	ND	
4,4'-DDT	Other	50-29-3	Organic	B2C0F5	Target 17-4	OCSA	0.00068	mg/kg	U	ND	
4,4'-DDT	Other	50-29-3	Organic	B2C0F6	Target 17-5	OCSA	0.0007	mg/kg	U	ND	
4,4'-DDT	Other	50-29-3	Organic	B2C0F7	Target 18-1	OCSA	0.00069	mg/kg	U	ND	

Table 3-1 Analytical chemistry data for soils used for plant and soil invertebrate bioassays for upland locations at the Hanford Site

Analyte	Priority	CASNo	AnalGrp	SampleID	LocationID	WasteSite	Conc	Units	Qualifer	qual	grp
4,4'-DDT	Other	50-29-3	Organic	B2C0F8	Target 18-2	OCSA	0.00068	mg/kg	U	ND	
4,4'-DDT	Other	50-29-3	Organic	B2C0F9	Target 18-3	OCSA	0.00068	mg/kg	U	ND	
4,4'-DDT	Other	50-29-3	Organic	B2C0H0	Target 18-3D	OCSA	0.00068	mg/kg	U	ND	
4,4'-DDT	Other	50-29-3	Organic	B2C0H1	Target 18-4	OCSA	0.00069	mg/kg	U	ND	
4,4'-DDT	Other	50-29-3	Organic	B2C0H2	Target 18-5	OCSA	0.00069	mg/kg	U	ND	
4,4'-DDT	Other	50-29-3	Organic	B2C0H6	Target 19-4	OCSA	0.00067	mg/kg	U	ND	
4,4'-DDT	Other	50-29-3	Organic	B2C0H8	Target 20-1	OCSA	0.014	mg/kg	UD	ND	
4,4'-DDT	Other	50-29-3	Organic	B2C0H9	Target 20-2	OCSA	0.0068	mg/kg	UD	ND	
4,4'-DDT	Other	50-29-3	Organic	B2C0J0	Target 20-3	OCSA	0.014	mg/kg	UD	ND	
4,4'-DDT	Other	50-29-3	Organic	B2C0J1	Target 20-4	OCSA	0.00068	mg/kg	U	ND	
4,4'-DDT	Other	50-29-3	Organic	B2C0J3	Target 21-1	OCSA	0.00068	mg/kg	U	ND	
4,4'-DDT	Other	50-29-3	Organic	B2C0J4	Target 21-2	OCSA	0.00069	mg/kg	U	ND	
4,4'-DDT	Other	50-29-3	Organic	B2C0J5	Target 21-3	OCSA	0.00066	mg/kg	U	ND	
4,4'-DDT	Other	50-29-3	Organic	B2C0J6	Target 21-4	OCSA	0.00067	mg/kg	U	ND	
4,4'-DDT	Other	50-29-3	Organic	B2C0J7	Target 21-5	OCSA	0.00068	mg/kg	U	ND	
4,4'-DDT	Other	50-29-3	Organic	B2C0J8	Target 22-1	OCSA	0.00068	mg/kg	U	ND	
4,4'-DDT	Other	50-29-3	Organic	B2C0J9	Target 22-2	OCSA	0.0034	mg/kg	UD	ND	
4,4'-DDT	Other	50-29-3	Organic	B2C0K0	Target 22-3	OCSA	0.00069	mg/kg	U	ND	
4,4'-DDT	Other	50-29-3	Organic	B2C0K1	Target 22-4	OCSA	0.00069	mg/kg	U	ND	
4,4'-DDT	Other	50-29-3	Organic	B2C0K2	Target 22-4D	OCSA	0.00069	mg/kg	U	ND	
4,4'-DDT	Other	50-29-3	Organic	B2C0K3	Target 22-5	OCSA	0.00071	mg/kg	U	ND	
4,4'-DDT	Other	50-29-3	Organic	B2C0K4	Target 23-1	OCSA	0.00068	mg/kg	U	ND	
4,4'-DDT	Other	50-29-3	Organic	B2C0K5	Target 23-2	OCSA	0.00068	mg/kg	U	ND	
4,4'-DDT	Other	50-29-3	Organic	B2C0K6	Target 23-3	OCSA	0.00068	mg/kg	U	ND	
4,4'-DDT	Other	50-29-3	Organic	B2BXX5	Target 24-1	120-KW-1	0.00068	mg/kg	U	ND	
4,4'-DDT	Other	50-29-3	Organic	B2BXX7	Target 24-2	120-KW-1	0.00071	mg/kg	U	ND	
4,4'-DDT	Other	50-29-3	Organic	B2BXX8	Target 24-3	120-KW-1	0.0007	mg/kg	U	ND	
4,4'-DDT	Other	50-29-3	Organic	B2BXY0	Target 24-5	120-KW-1	0.00066	mg/kg	U	ND	
4,4'-DDT	Other	50-29-3	Organic	B2BP89	Target 6-5	600-228	0.00067	mg/kg	U	ND	
4,4'-DDT	Other	50-29-3	Organic	B2C1C4	Target 7-1	600-281	0.00068	mg/kg	U	ND	
4,4'-DDT	Other	50-29-3	Organic	B2C1D2	Target 8-3	600-281	0.00066	mg/kg	U	ND	
4,6-Dinitro-2-methylphenol	Other	534-52-1	Organic	B2BW15	Control 1	600-218	0.36	mg/kg	U	ND	
4,6-Dinitro-2-methylphenol	Other	534-52-1	Organic	B2BW28	Control 13	OCSA	0.35	mg/kg	U	ND	
4,6-Dinitro-2-methylphenol	Other	534-52-1	Organic	B2BW30	Control 15	OCSA	0.35	mg/kg	U	ND	
4,6-Dinitro-2-methylphenol	Other	534-52-1	Organic	B2BW31	Control 16	OCSA	0.35	mg/kg	U	ND	
4,6-Dinitro-2-methylphenol	Other	534-52-1	Organic	B2BW32	Control 17	OCSA	0.35	mg/kg	U	ND	
4,6-Dinitro-2-methylphenol	Other	534-52-1	Organic	B2BW33	Control 18	OCSA	0.35	mg/kg	U	ND	
4,6-Dinitro-2-methylphenol	Other	534-52-1	Organic	B2BW16	Control 2	600-218	0.36	mg/kg	U	ND	
4,6-Dinitro-2-methylphenol	Other	534-52-1	Organic	B2BW35	Control 20	OCSA	0.36	mg/kg	U	ND	
4,6-Dinitro-2-methylphenol	Other	534-52-1	Organic	B2BW18	Control 4	600-220	0.35	mg/kg	U	ND	
4,6-Dinitro-2-methylphenol	Other	534-52-1	Organic	B2BW22	Control 8	600-228	0.35	mg/kg	U	ND	
4,6-Dinitro-2-methylphenol	Other	534-52-1	Organic	B2BW24	Control 9D	600-228	0.35	mg/kg	U	ND	
4,6-Dinitro-2-methylphenol	Other	534-52-1	Organic	B2C0B0	Target 11-1	OCSA	0.34	mg/kg	U	ND	
4,6-Dinitro-2-methylphenol	Other	534-52-1	Organic	B2C0B5	Target 12-1	OCSA	0.35	mg/kg	U	ND	
4,6-Dinitro-2-methylphenol	Other	534-52-1	Organic	B2C0B6	Target 12-2	OCSA	0.34	mg/kg	U	ND	
4,6-Dinitro-2-methylphenol	Other	534-52-1	Organic	B2C0B7	Target 12-3	OCSA	0.38	mg/kg	U	ND	
4,6-Dinitro-2-methylphenol	Other	534-52-1	Organic	B2C0B8	Target 12-4	OCSA	0.35	mg/kg	U	ND	
4,6-Dinitro-2-methylphenol	Other	534-52-1	Organic	B2C0B9	Target 12-4D	OCSA	0.35	mg/kg	U	ND	
4,6-Dinitro-2-methylphenol	Other	534-52-1	Organic	B2C0C0	Target 12-5	OCSA	0.38	mg/kg	U	ND	
4,6-Dinitro-2-methylphenol	Other	534-52-1	Organic	B2C0C1	Target 13-1	OCSA	0.35	mg/kg	U	ND	
4,6-Dinitro-2-methylphenol	Other	534-52-1	Organic	B2C0C2	Target 13-2	OCSA	0.35	mg/kg	U	ND	
4,6-Dinitro-2-methylphenol	Other	534-52-1	Organic	B2C0C3	Target 13-3	OCSA	0.34	mg/kg	U	ND	
4,6-Dinitro-2-methylphenol	Other	534-52-1	Organic	B2C0C4	Target 13-4	OCSA	0.35	mg/kg	U	ND	
4,6-Dinitro-2-methylphenol	Other	534-52-1	Organic	B2C0C5	Target 13-5	OCSA	0.35	mg/kg	U	ND	
4,6-Dinitro-2-methylphenol	Other	534-52-1	Organic	B2C0C6	Target 14-1	OCSA	0.35	mg/kg	U	ND	
4,6-Dinitro-2-methylphenol	Other	534-52-1	Organic	B2C0C7	Target 14-2	OCSA	0.34	mg/kg	U	ND	
4,6-Dinitro-2-methylphenol	Other	534-52-1	Organic	B2C0C8	Target 14-3	OCSA	0.35	mg/kg	U	ND	
4,6-Dinitro-2-methylphenol	Other	534-52-1	Organic	B2C0C9	Target 14-4	OCSA	0.36	mg/kg	U	ND	
4,6-Dinitro-2-methylphenol	Other	534-52-1	Organic	B2C0D0	Target 14-5	OCSA	0.35	mg/kg	U	ND	
4,6-Dinitro-2-methylphenol	Other	534-52-1	Organic	B2C0D7	Target 16-1	OCSA	0.36	mg/kg	U	ND	
4,6-Dinitro-2-methylphenol	Other	534-52-1	Organic	B2C0D8	Target 16-2	OCSA	0.37	mg/kg	U	ND	
4,6-Dinitro-2-methylphenol	Other	534-52-1	Organic	B2C0D9	Target 16-3	OCSA	0.36	mg/kg	U	ND	
4,6-Dinitro-2-methylphenol	Other	534-52-1	Organic	B2C0F0	Target 16-4	OCSA	0.36	mg/kg	U	ND	
4,6-Dinitro-2-methylphenol	Other	534-52-1	Organic	B2C0F1	Target 16-5	OCSA	0.36	mg/kg	U	ND	
4,6-Dinitro-2-methylphenol	Other	534-52-1	Organic	B2C0F2	Target 17-1	OCSA	0.37	mg/kg	U	ND	
4,6-Dinitro-2-methylphenol	Other	534-52-1	Organic	B2C0F3	Target 17-2	OCSA	0.36	mg/kg	U	ND	
4,6-Dinitro-2-methylphenol	Other	534-52-1	Organic	B2C0F4	Target 17-3	OCSA	0.36	mg/kg	U	ND	
4,6-Dinitro-2-methylphenol	Other	534-52-1	Organic	B2C0F5	Target 17-4	OCSA	0.36	mg/kg	U	ND	
4,6-Dinitro-2-methylphenol	Other	534-52-1	Organic	B2C0F6	Target 17-5	OCSA	0.37	mg/kg	U	ND	
4,6-Dinitro-2-methylphenol	Other	534-52-1	Organic	B2C0F7	Target 18-1	OCSA	0.36	mg/kg	U	ND	
4,6-Dinitro-2-methylphenol	Other	534-52-1	Organic	B2C0F8	Target 18-2	OCSA	0.36	mg/kg	U	ND	
4,6-Dinitro-2-methylphenol	Other	534-52-1	Organic	B2C0F9	Target 18-3	OCSA	0.36	mg/kg	U	ND	
4,6-Dinitro-2-methylphenol	Other	534-52-1	Organic	B2C0H0	Target 18-3D	OCSA	0.36	mg/kg	U	ND	
4,6-Dinitro-2-methylphenol	Other	534-52-1	Organic	B2C0H1	Target 18-4	OCSA	0.36	mg/kg	U	ND	
4,6-Dinitro-2-methylphenol	Other	534-52-1	Organic	B2C0H2	Target 18-5	OCSA	0.37	mg/kg	U	ND	
4,6-Dinitro-2-methylphenol	Other	534-52-1	Organic	B2C0H6	Target 19-4	OCSA	0.35	mg/kg	U	ND	
4,6-Dinitro-2-methylphenol	Other	534-52-1	Organic	B2C0H8	Target 20-1	OCSA	0.37	mg/kg	U	ND	
4,6-Dinitro-2-methylphenol	Other	534-52-1	Organic	B2C0H9	Target 20-2	OCSA	0.36	mg/kg	U	ND	
4,6-Dinitro-2-methylphenol	Other	534-52-1	Organic	B2C0J0	Target 20-3	OCSA	0.37	mg/kg	U	ND	
4,6-Dinitro-2-methylphenol	Other	534-52-1	Organic	B2C0J1	Target 20-4	OCSA	0.36	mg/kg	U	ND	
4,6-Dinitro-2-methylphenol	Other	534-52-1	Organic	B2C0J3	Target 21-1	OCSA	0.36	mg/kg	U	ND	
4,6-Dinitro-2-methylphenol	Other	534-52-1	Organic	B2C0J4	Target 21-2	OCSA	0.36	mg/kg	U	ND	
4,6-Dinitro-2-methylphenol	Other	534-52-1	Organic	B2C0J5	Target 21-3	OCSA	0.35	mg/kg	U	ND	
4,6-Dinitro-2-methylphenol	Other	534-52-1	Organic	B2C0J6	Target 21-4	OCSA	0.35	mg/kg	U	ND	
4,6-Dinitro-2-methylphenol	Other	534-52-1	Organic	B2C0J7	Target 21-5	OCSA	0.36	mg/kg	U	ND	
4,6-Dinitro-2-methylphenol	Other	534-52-1	Organic	B2C0J8	Target 22-1	OCSA	0.36	mg/kg	U	ND	
4,6-Dinitro-2-methylphenol	Other	534-52-1	Organic	B2C0J9	Target 22-2	OCSA	0.36	mg/kg	U	ND	
4,6-Dinitro-2-methylphenol	Other	534-52-1	Organic	B2C0K0	Target 22-3	OCSA	0.36	mg/kg	U	ND	
4,6-Dinitro-2-methylphenol	Other	534-52-1	Organic	B2C0K1	Target 22-4	OCSA	0.36	mg/kg	U	ND	
4,6-Dinitro-2-methylphenol	Other	534-52-1	Organic	B2C0K2	Target 22-4D	OCSA	0.36	mg/kg	U	ND	
4,6-Dinitro-2-methylphenol	Other	534-52-1	Organic	B2C0K3	Target 22-5	OCSA	0.37	mg/kg	U	ND	
4,6-Dinitro-2-methylphenol	Other	534-52-1	Organic	B2C0K4	Target 23-1	OCSA	0.36	mg/kg	U	ND	
4,6-Dinitro-2-methylphenol	Other	534-52-1	Organic	B2C0K5	Target 23-2	OCSA	0.36	mg/kg	U	ND	
4,6-Dinitro-2-methylphenol	Other	534-52-1	Organic	B2C0K6	Target 23-3	OCSA	0.36	mg/kg	U	ND	
4,6-Dinitro-2-methylphenol	Other	534-52-1	Organic	B2BXX5	Target 24-1	120-KW-1	0.36	mg/kg	U	ND	
4,6-Dinitro-2-methylphenol	Other	534-52-1	Organic	B2BXX7	Target 24-2	120-KW-1	0.37	mg/kg	U	ND	
4,6-Dinitro-2-methylphenol	Other	534-52-1	Organic	B2BXX8	Target 24-3	120-KW-1	0.37	mg/kg	U	ND	

Table 3-1 Analytical chemistry data for soils used for plant and soil invertebrate bioassays for upland locations at the Hanford Site

Analyte	Priority	CASNo	AnalGrp	SampleID	LocationID	WasteSite	Conc	Units	Qualifer	qual	grp
4,6-Dinitro-2-methylphenol	Other	534-52-1	Organic	B2BXY0	Target 24-5	120-KW-1	0.35	mg/kg	U	ND	
4,6-Dinitro-2-methylphenol	Other	534-52-1	Organic	B2BP89	Target 6-5	600-228	0.35	mg/kg	U	ND	
4,6-Dinitro-2-methylphenol	Other	534-52-1	Organic	B2C1C4	Target 7-1	600-281	0.36	mg/kg	U	ND	
4,6-Dinitro-2-methylphenol	Other	534-52-1	Organic	B2C1D2	Target 8-3	600-281	0.35	mg/kg	U	ND	
Alpha-BHC	Other	319-84-6	Organic	B2BW15	Control 1	600-218	0.00015	mg/kg	U	ND	
Alpha-BHC	Other	319-84-6	Organic	B2BW28	Control 13	OCSA	0.00014	mg/kg	U	ND	
Alpha-BHC	Other	319-84-6	Organic	B2BW30	Control 15	OCSA	0.00014	mg/kg	U	ND	
Alpha-BHC	Other	319-84-6	Organic	B2BW31	Control 16	OCSA	0.00014	mg/kg	U	ND	
Alpha-BHC	Other	319-84-6	Organic	B2BW32	Control 17	OCSA	0.00014	mg/kg	U	ND	
Alpha-BHC	Other	319-84-6	Organic	B2BW33	Control 18	OCSA	0.00014	mg/kg	U	ND	
Alpha-BHC	Other	319-84-6	Organic	B2BW16	Control 2	600-218	0.00014	mg/kg	U	ND	
Alpha-BHC	Other	319-84-6	Organic	B2BW35	Control 20	OCSA	0.00014	mg/kg	U	ND	
Alpha-BHC	Other	319-84-6	Organic	B2BW18	Control 4	600-220	0.00014	mg/kg	U	ND	
Alpha-BHC	Other	319-84-6	Organic	B2BW22	Control 8	600-228	0.00014	mg/kg	U	ND	
Alpha-BHC	Other	319-84-6	Organic	B2BW24	Control 9D	600-228	0.00014	mg/kg	U	ND	
Alpha-BHC	Other	319-84-6	Organic	B2C0B0	Target 11-1	OCSA	0.00014	mg/kg	U	ND	
Alpha-BHC	Other	319-84-6	Organic	B2C0B5	Target 12-1	OCSA	0.00014	mg/kg	U	ND	
Alpha-BHC	Other	319-84-6	Organic	B2C0B6	Target 12-2	OCSA	0.00014	mg/kg	U	ND	
Alpha-BHC	Other	319-84-6	Organic	B2C0B7	Target 12-3	OCSA	0.00016	mg/kg	U	ND	
Alpha-BHC	Other	319-84-6	Organic	B2C0B8	Target 12-4	OCSA	0.00014	mg/kg	U	ND	
Alpha-BHC	Other	319-84-6	Organic	B2C0B9	Target 12-4D	OCSA	0.00014	mg/kg	U	ND	
Alpha-BHC	Other	319-84-6	Organic	B2C0C0	Target 12-5	OCSA	0.00015	mg/kg	U	ND	
Alpha-BHC	Other	319-84-6	Organic	B2C0C1	Target 13-1	OCSA	0.00014	mg/kg	U	ND	
Alpha-BHC	Other	319-84-6	Organic	B2C0C2	Target 13-2	OCSA	0.00014	mg/kg	U	ND	
Alpha-BHC	Other	319-84-6	Organic	B2C0C3	Target 13-3	OCSA	0.00014	mg/kg	U	ND	
Alpha-BHC	Other	319-84-6	Organic	B2C0C4	Target 13-4	OCSA	0.00014	mg/kg	U	ND	
Alpha-BHC	Other	319-84-6	Organic	B2C0C5	Target 13-5	OCSA	0.00014	mg/kg	U	ND	
Alpha-BHC	Other	319-84-6	Organic	B2C0C6	Target 14-1	OCSA	0.00014	mg/kg	U	ND	
Alpha-BHC	Other	319-84-6	Organic	B2C0C7	Target 14-2	OCSA	0.00014	mg/kg	U	ND	
Alpha-BHC	Other	319-84-6	Organic	B2C0C8	Target 14-3	OCSA	0.00014	mg/kg	U	ND	
Alpha-BHC	Other	319-84-6	Organic	B2C0C9	Target 14-4	OCSA	0.00014	mg/kg	U	ND	
Alpha-BHC	Other	319-84-6	Organic	B2C0D0	Target 14-5	OCSA	0.00014	mg/kg	U	ND	
Alpha-BHC	Other	319-84-6	Organic	B2C0D7	Target 16-1	OCSA	0.00014	mg/kg	U	ND	
Alpha-BHC	Other	319-84-6	Organic	B2C0D8	Target 16-2	OCSA	0.00015	mg/kg	U	ND	
Alpha-BHC	Other	319-84-6	Organic	B2C0D9	Target 16-3	OCSA	0.00014	mg/kg	U	ND	
Alpha-BHC	Other	319-84-6	Organic	B2C0F0	Target 16-4	OCSA	0.00014	mg/kg	U	ND	
Alpha-BHC	Other	319-84-6	Organic	B2C0F1	Target 16-5	OCSA	0.00014	mg/kg	U	ND	
Alpha-BHC	Other	319-84-6	Organic	B2C0F2	Target 17-1	OCSA	0.00015	mg/kg	U	ND	
Alpha-BHC	Other	319-84-6	Organic	B2C0F3	Target 17-2	OCSA	0.00015	mg/kg	U	ND	
Alpha-BHC	Other	319-84-6	Organic	B2C0F4	Target 17-3	OCSA	0.00015	mg/kg	U	ND	
Alpha-BHC	Other	319-84-6	Organic	B2C0F5	Target 17-4	OCSA	0.00015	mg/kg	U	ND	
Alpha-BHC	Other	319-84-6	Organic	B2C0F6	Target 17-5	OCSA	0.00015	mg/kg	U	ND	
Alpha-BHC	Other	319-84-6	Organic	B2C0F7	Target 18-1	OCSA	0.00015	mg/kg	U	ND	
Alpha-BHC	Other	319-84-6	Organic	B2C0F8	Target 18-2	OCSA	0.00014	mg/kg	U	ND	
Alpha-BHC	Other	319-84-6	Organic	B2C0F9	Target 18-3	OCSA	0.00014	mg/kg	U	ND	
Alpha-BHC	Other	319-84-6	Organic	B2C0H0	Target 18-3D	OCSA	0.00014	mg/kg	U	ND	
Alpha-BHC	Other	319-84-6	Organic	B2C0H1	Target 18-4	OCSA	0.00015	mg/kg	U	ND	
Alpha-BHC	Other	319-84-6	Organic	B2C0H2	Target 18-5	OCSA	0.00015	mg/kg	U	ND	
Alpha-BHC	Other	319-84-6	Organic	B2C0H6	Target 19-4	OCSA	0.00014	mg/kg	U	ND	
Alpha-BHC	Other	319-84-6	Organic	B2C0H8	Target 20-1	OCSA	0.003	mg/kg	UD	ND	
Alpha-BHC	Other	319-84-6	Organic	B2C0H9	Target 20-2	OCSA	0.0014	mg/kg	UD	ND	
Alpha-BHC	Other	319-84-6	Organic	B2C0J0	Target 20-3	OCSA	0.003	mg/kg	UD	ND	
Alpha-BHC	Other	319-84-6	Organic	B2C0J1	Target 20-4	OCSA	0.00014	mg/kg	U	ND	
Alpha-BHC	Other	319-84-6	Organic	B2C0J3	Target 21-1	OCSA	0.00014	mg/kg	U	ND	
Alpha-BHC	Other	319-84-6	Organic	B2C0J4	Target 21-2	OCSA	0.00015	mg/kg	U	ND	
Alpha-BHC	Other	319-84-6	Organic	B2C0J5	Target 21-3	OCSA	0.00014	mg/kg	U	ND	
Alpha-BHC	Other	319-84-6	Organic	B2C0J6	Target 21-4	OCSA	0.00014	mg/kg	U	ND	
Alpha-BHC	Other	319-84-6	Organic	B2C0J7	Target 21-5	OCSA	0.00014	mg/kg	U	ND	
Alpha-BHC	Other	319-84-6	Organic	B2C0J8	Target 22-1	OCSA	0.00014	mg/kg	U	ND	
Alpha-BHC	Other	319-84-6	Organic	B2C0J9	Target 22-2	OCSA	0.00072	mg/kg	UD	ND	
Alpha-BHC	Other	319-84-6	Organic	B2C0K0	Target 22-3	OCSA	0.00015	mg/kg	U	ND	
Alpha-BHC	Other	319-84-6	Organic	B2C0K1	Target 22-4	OCSA	0.00015	mg/kg	U	ND	
Alpha-BHC	Other	319-84-6	Organic	B2C0K2	Target 22-4D	OCSA	0.00015	mg/kg	U	ND	
Alpha-BHC	Other	319-84-6	Organic	B2C0K3	Target 22-5	OCSA	0.00015	mg/kg	U	ND	
Alpha-BHC	Other	319-84-6	Organic	B2C0K4	Target 23-1	OCSA	0.00015	mg/kg	U	ND	
Alpha-BHC	Other	319-84-6	Organic	B2C0K5	Target 23-2	OCSA	0.00014	mg/kg	U	ND	
Alpha-BHC	Other	319-84-6	Organic	B2C0K6	Target 23-3	OCSA	0.00014	mg/kg	U	ND	
Alpha-BHC	Other	319-84-6	Organic	B2BXX5	Target 24-1	120-KW-1	0.00014	mg/kg	U	ND	
Alpha-BHC	Other	319-84-6	Organic	B2BXX7	Target 24-2	120-KW-1	0.00015	mg/kg	U	ND	
Alpha-BHC	Other	319-84-6	Organic	B2BXX8	Target 24-3	120-KW-1	0.00015	mg/kg	U	ND	
Alpha-BHC	Other	319-84-6	Organic	B2BXY0	Target 24-5	120-KW-1	0.00014	mg/kg	U	ND	
Alpha-BHC	Other	319-84-6	Organic	B2BP89	Target 6-5	600-228	0.00014	mg/kg	U	ND	
Alpha-BHC	Other	319-84-6	Organic	B2C1C4	Target 7-1	600-281	0.00014	mg/kg	U	ND	
Alpha-BHC	Other	319-84-6	Organic	B2C1D2	Target 8-3	600-281	0.00014	mg/kg	U	ND	
Alpha-Chlordane	Other	5103-71-9	Organic	B2BW15	Control 1	600-218	0.00062	mg/kg	U	ND	
Alpha-Chlordane	Other	5103-71-9	Organic	B2BW28	Control 13	OCSA	0.0006	mg/kg	U	ND	
Alpha-Chlordane	Other	5103-71-9	Organic	B2BW30	Control 15	OCSA	0.00061	mg/kg	U	ND	
Alpha-Chlordane	Other	5103-71-9	Organic	B2BW31	Control 16	OCSA	0.00061	mg/kg	U	ND	
Alpha-Chlordane	Other	5103-71-9	Organic	B2BW32	Control 17	OCSA	0.0006	mg/kg	U	ND	
Alpha-Chlordane	Other	5103-71-9	Organic	B2BW33	Control 18	OCSA	0.00061	mg/kg	U	ND	
Alpha-Chlordane	Other	5103-71-9	Organic	B2BW16	Control 2	600-218	0.00062	mg/kg	U	ND	
Alpha-Chlordane	Other	5103-71-9	Organic	B2BW35	Control 20	OCSA	0.00061	mg/kg	U	ND	
Alpha-Chlordane	Other	5103-71-9	Organic	B2BW18	Control 4	600-220	0.00061	mg/kg	U	ND	
Alpha-Chlordane	Other	5103-71-9	Organic	B2BW22	Control 8	600-228	0.0006	mg/kg	U	ND	
Alpha-Chlordane	Other	5103-71-9	Organic	B2BW24	Control 9D	600-228	0.0006	mg/kg	U	ND	
Alpha-Chlordane	Other	5103-71-9	Organic	B2C0B0	Target 11-1	OCSA	0.00059	mg/kg	U	ND	
Alpha-Chlordane	Other	5103-71-9	Organic	B2C0B5	Target 12-1	OCSA	0.0006	mg/kg	U	ND	
Alpha-Chlordane	Other	5103-71-9	Organic	B2C0B6	Target 12-2	OCSA	0.00058	mg/kg	U	ND	
Alpha-Chlordane	Other	5103-71-9	Organic	B2C0B7	Target 12-3	OCSA	0.00066	mg/kg	U	ND	
Alpha-Chlordane	Other	5103-71-9	Organic	B2C0B8	Target 12-4	OCSA	0.00059	mg/kg	U	ND	
Alpha-Chlordane	Other	5103-71-9	Organic	B2C0B9	Target 12-4D	OCSA	0.00059	mg/kg	U	ND	
Alpha-Chlordane	Other	5103-71-9	Organic	B2C0C0	Target 12-5	OCSA	0.00065	mg/kg	U	ND	
Alpha-Chlordane	Other	5103-71-9	Organic	B2C0C1	Target 13-1	OCSA	0.0006	mg/kg	U	ND	
Alpha-Chlordane	Other	5103-71-9	Organic	B2C0C2	Target 13-2	OCSA	0.00061	mg/kg	U	ND	
Alpha-Chlordane	Other	5103-71-9	Organic	B2C0C3	Target 13-3	OCSA	0.00059	mg/kg	U	ND	
Alpha-Chlordane	Other	5103-71-9	Organic	B2C0C4	Target 13-4	OCSA	0.00061	mg/kg	U	ND	
Alpha-Chlordane	Other	5103-71-9	Organic	B2C0C5	Target 13-5	OCSA	0.0006	mg/kg	U	ND	

Table 3-1 Analytical chemistry data for soils used for plant and soil invertebrate bioassays for upland locations at the Hanford Site

Analyte	Priority	CASNo	AnalGrp	SampleID	LocationID	WasteSite	Conc	Units	Qualifer	qual	grp
Alpha-Chlordane	Other	5103-71-9	Organic	B2C0C6	Target 14-1	OCSA	0.0006	mg/kg	U	ND	
Alpha-Chlordane	Other	5103-71-9	Organic	B2C0C7	Target 14-2	OCSA	0.00059	mg/kg	U	ND	
Alpha-Chlordane	Other	5103-71-9	Organic	B2C0C8	Target 14-3	OCSA	0.00061	mg/kg	U	ND	
Alpha-Chlordane	Other	5103-71-9	Organic	B2C0C9	Target 14-4	OCSA	0.00062	mg/kg	U	ND	
Alpha-Chlordane	Other	5103-71-9	Organic	B2C0D0	Target 14-5	OCSA	0.0006	mg/kg	U	ND	
Alpha-Chlordane	Other	5103-71-9	Organic	B2C0D7	Target 16-1	OCSA	0.00062	mg/kg	U	ND	
Alpha-Chlordane	Other	5103-71-9	Organic	B2C0D8	Target 16-2	OCSA	0.00063	mg/kg	U	ND	
Alpha-Chlordane	Other	5103-71-9	Organic	B2C0D9	Target 16-3	OCSA	0.00062	mg/kg	U	ND	
Alpha-Chlordane	Other	5103-71-9	Organic	B2C0F0	Target 16-4	OCSA	0.00061	mg/kg	U	ND	
Alpha-Chlordane	Other	5103-71-9	Organic	B2C0F1	Target 16-5	OCSA	0.00061	mg/kg	U	ND	
Alpha-Chlordane	Other	5103-71-9	Organic	B2C0F2	Target 17-1	OCSA	0.00063	mg/kg	U	ND	
Alpha-Chlordane	Other	5103-71-9	Organic	B2C0F3	Target 17-2	OCSA	0.00062	mg/kg	U	ND	
Alpha-Chlordane	Other	5103-71-9	Organic	B2C0F4	Target 17-3	OCSA	0.00062	mg/kg	U	ND	
Alpha-Chlordane	Other	5103-71-9	Organic	B2C0F5	Target 17-4	OCSA	0.00062	mg/kg	U	ND	
Alpha-Chlordane	Other	5103-71-9	Organic	B2C0F6	Target 17-5	OCSA	0.00063	mg/kg	U	ND	
Alpha-Chlordane	Other	5103-71-9	Organic	B2C0F7	Target 18-1	OCSA	0.00062	mg/kg	U	ND	
Alpha-Chlordane	Other	5103-71-9	Organic	B2C0F8	Target 18-2	OCSA	0.00062	mg/kg	U	ND	
Alpha-Chlordane	Other	5103-71-9	Organic	B2C0F9	Target 18-3	OCSA	0.00061	mg/kg	U	ND	
Alpha-Chlordane	Other	5103-71-9	Organic	B2C0H0	Target 18-3D	OCSA	0.00061	mg/kg	U	ND	
Alpha-Chlordane	Other	5103-71-9	Organic	B2C0H1	Target 18-4	OCSA	0.00062	mg/kg	U	ND	
Alpha-Chlordane	Other	5103-71-9	Organic	B2C0H2	Target 18-5	OCSA	0.00063	mg/kg	U	ND	
Alpha-Chlordane	Other	5103-71-9	Organic	B2C0H6	Target 19-4	OCSA	0.00061	mg/kg	U	ND	
Alpha-Chlordane	Other	5103-71-9	Organic	B2C0H8	Target 20-1	OCSA	0.013	mg/kg	UD	ND	
Alpha-Chlordane	Other	5103-71-9	Organic	B2C0H9	Target 20-2	OCSA	0.0062	mg/kg	UD	ND	
Alpha-Chlordane	Other	5103-71-9	Organic	B2C0J0	Target 20-3	OCSA	0.013	mg/kg	UD	ND	
Alpha-Chlordane	Other	5103-71-9	Organic	B2C0J1	Target 20-4	OCSA	0.00061	mg/kg	U	ND	
Alpha-Chlordane	Other	5103-71-9	Organic	B2C0J3	Target 21-1	OCSA	0.00061	mg/kg	U	ND	
Alpha-Chlordane	Other	5103-71-9	Organic	B2C0J4	Target 21-2	OCSA	0.00062	mg/kg	U	ND	
Alpha-Chlordane	Other	5103-71-9	Organic	B2C0J5	Target 21-3	OCSA	0.00059	mg/kg	U	ND	
Alpha-Chlordane	Other	5103-71-9	Organic	B2C0J6	Target 21-4	OCSA	0.0006	mg/kg	U	ND	
Alpha-Chlordane	Other	5103-71-9	Organic	B2C0J7	Target 21-5	OCSA	0.00061	mg/kg	U	ND	
Alpha-Chlordane	Other	5103-71-9	Organic	B2C0J8	Target 22-1	OCSA	0.00061	mg/kg	U	ND	
Alpha-Chlordane	Other	5103-71-9	Organic	B2C0J9	Target 22-2	OCSA	0.0031	mg/kg	UD	ND	
Alpha-Chlordane	Other	5103-71-9	Organic	B2C0K0	Target 22-3	OCSA	0.00062	mg/kg	U	ND	
Alpha-Chlordane	Other	5103-71-9	Organic	B2C0K1	Target 22-4	OCSA	0.00063	mg/kg	U	ND	
Alpha-Chlordane	Other	5103-71-9	Organic	B2C0K2	Target 22-4D	OCSA	0.00062	mg/kg	U	ND	
Alpha-Chlordane	Other	5103-71-9	Organic	B2C0K3	Target 22-5	OCSA	0.00064	mg/kg	U	ND	
Alpha-Chlordane	Other	5103-71-9	Organic	B2C0K4	Target 23-1	OCSA	0.00062	mg/kg	U	ND	
Alpha-Chlordane	Other	5103-71-9	Organic	B2C0K5	Target 23-2	OCSA	0.00061	mg/kg	U	ND	
Alpha-Chlordane	Other	5103-71-9	Organic	B2C0K6	Target 23-3	OCSA	0.00062	mg/kg	U	ND	
Alpha-Chlordane	Other	5103-71-9	Organic	B2BXX5	Target 24-1	120-KW-1	0.00061	mg/kg	U	ND	
Alpha-Chlordane	Other	5103-71-9	Organic	B2BXX7	Target 24-2	120-KW-1	0.00064	mg/kg	U	ND	
Alpha-Chlordane	Other	5103-71-9	Organic	B2BXX8	Target 24-3	120-KW-1	0.00063	mg/kg	U	ND	
Alpha-Chlordane	Other	5103-71-9	Organic	B2BXY0	Target 24-5	120-KW-1	0.0006	mg/kg	U	ND	
Alpha-Chlordane	Other	5103-71-9	Organic	B2BP89	Target 6-5	600-228	0.0006	mg/kg	U	ND	
Alpha-Chlordane	Other	5103-71-9	Organic	B2C1C4	Target 7-1	600-281	0.00061	mg/kg	U	ND	
Alpha-Chlordane	Other	5103-71-9	Organic	B2C1D2	Target 8-3	600-281	0.0006	mg/kg	U	ND	
beta-BHC	Other	319-85-7	Organic	B2BW15	Control 1	600-218	0.00033	mg/kg	U	ND	
beta-BHC	Other	319-85-7	Organic	B2BW28	Control 13	OCSA	0.00032	mg/kg	U	ND	
beta-BHC	Other	319-85-7	Organic	B2BW30	Control 15	OCSA	0.00032	mg/kg	U	ND	
beta-BHC	Other	319-85-7	Organic	B2BW31	Control 16	OCSA	0.00032	mg/kg	U	ND	
beta-BHC	Other	319-85-7	Organic	B2BW32	Control 17	OCSA	0.00032	mg/kg	U	ND	
beta-BHC	Other	319-85-7	Organic	B2BW33	Control 18	OCSA	0.00032	mg/kg	U	ND	
beta-BHC	Other	319-85-7	Organic	B2BW16	Control 2	600-218	0.0033	mg/kg	U	ND	
beta-BHC	Other	319-85-7	Organic	B2BW35	Control 20	OCSA	0.00032	mg/kg	U	ND	
beta-BHC	Other	319-85-7	Organic	B2BW18	Control 4	600-220	0.00032	mg/kg	U	ND	
beta-BHC	Other	319-85-7	Organic	B2BW22	Control 8	600-228	0.00032	mg/kg	U	ND	
beta-BHC	Other	319-85-7	Organic	B2BW24	Control 9D	600-228	0.016	mg/kg	U	ND	
beta-BHC	Other	319-85-7	Organic	B2C0B0	Target 11-1	OCSA	0.00031	mg/kg	U	ND	
beta-BHC	Other	319-85-7	Organic	B2C0B5	Target 12-1	OCSA	0.00032	mg/kg	U	ND	
beta-BHC	Other	319-85-7	Organic	B2C0B6	Target 12-2	OCSA	0.00031	mg/kg	U	ND	
beta-BHC	Other	319-85-7	Organic	B2C0B7	Target 12-3	OCSA	0.00035	mg/kg	U	ND	
beta-BHC	Other	319-85-7	Organic	B2C0B8	Target 12-4	OCSA	0.00031	mg/kg	U	ND	
beta-BHC	Other	319-85-7	Organic	B2C0B9	Target 12-4D	OCSA	0.00031	mg/kg	U	ND	
beta-BHC	Other	319-85-7	Organic	B2C0C0	Target 12-5	OCSA	0.00034	mg/kg	U	ND	
beta-BHC	Other	319-85-7	Organic	B2C0C1	Target 13-1	OCSA	0.00032	mg/kg	U	ND	
beta-BHC	Other	319-85-7	Organic	B2C0C2	Target 13-2	OCSA	0.00032	mg/kg	U	ND	
beta-BHC	Other	319-85-7	Organic	B2C0C3	Target 13-3	OCSA	0.00031	mg/kg	U	ND	
beta-BHC	Other	319-85-7	Organic	B2C0C4	Target 13-4	OCSA	0.00032	mg/kg	U	ND	
beta-BHC	Other	319-85-7	Organic	B2C0C5	Target 13-5	OCSA	0.00032	mg/kg	U	ND	
beta-BHC	Other	319-85-7	Organic	B2C0C6	Target 14-1	OCSA	0.00032	mg/kg	U	ND	
beta-BHC	Other	319-85-7	Organic	B2C0C7	Target 14-2	OCSA	0.00031	mg/kg	U	ND	
beta-BHC	Other	319-85-7	Organic	B2C0C8	Target 14-3	OCSA	0.00032	mg/kg	U	ND	
beta-BHC	Other	319-85-7	Organic	B2C0C9	Target 14-4	OCSA	0.00033	mg/kg	U	ND	
beta-BHC	Other	319-85-7	Organic	B2C0D0	Target 14-5	OCSA	0.00032	mg/kg	U	ND	
beta-BHC	Other	319-85-7	Organic	B2C0D7	Target 16-1	OCSA	0.00033	mg/kg	U	ND	
beta-BHC	Other	319-85-7	Organic	B2C0D8	Target 16-2	OCSA	0.00033	mg/kg	U	ND	
beta-BHC	Other	319-85-7	Organic	B2C0D9	Target 16-3	OCSA	0.00033	mg/kg	U	ND	
beta-BHC	Other	319-85-7	Organic	B2C0F0	Target 16-4	OCSA	0.00032	mg/kg	U	ND	
beta-BHC	Other	319-85-7	Organic	B2C0F1	Target 16-5	OCSA	0.00032	mg/kg	U	ND	
beta-BHC	Other	319-85-7	Organic	B2C0F2	Target 17-1	OCSA	0.00033	mg/kg	U	ND	
beta-BHC	Other	319-85-7	Organic	B2C0F3	Target 17-2	OCSA	0.00033	mg/kg	U	ND	
beta-BHC	Other	319-85-7	Organic	B2C0F4	Target 17-3	OCSA	0.00033	mg/kg	U	ND	
beta-BHC	Other	319-85-7	Organic	B2C0F5	Target 17-4	OCSA	0.00033	mg/kg	U	ND	
beta-BHC	Other	319-85-7	Organic	B2C0F6	Target 17-5	OCSA	0.00034	mg/kg	U	ND	
beta-BHC	Other	319-85-7	Organic	B2C0F7	Target 18-1	OCSA	0.00033	mg/kg	U	ND	
beta-BHC	Other	319-85-7	Organic	B2C0F8	Target 18-2	OCSA	0.00033	mg/kg	U	ND	
beta-BHC	Other	319-85-7	Organic	B2C0F9	Target 18-3	OCSA	0.00032	mg/kg	U	ND	
beta-BHC	Other	319-85-7	Organic	B2C0H0	Target 18-3D	OCSA	0.00032	mg/kg	U	ND	
beta-BHC	Other	319-85-7	Organic	B2C0H1	Target 18-4	OCSA	0.00033	mg/kg	U	ND	
beta-BHC	Other	319-85-7	Organic	B2C0H2	Target 18-5	OCSA	0.00033	mg/kg	U	ND	
beta-BHC	Other	319-85-7	Organic	B2C0H6	Target 19-4	OCSA	0.00032	mg/kg	U	ND	
beta-BHC	Other	319-85-7	Organic	B2C0H8	Target 20-1	OCSA	0.0068	mg/kg	UD	ND	
beta-BHC	Other	319-85-7	Organic	B2C0H9	Target 20-2	OCSA	0.0033	mg/kg	UD	ND	
beta-BHC	Other	319-85-7	Organic	B2C0J0	Target 20-3	OCSA	0.0068	mg/kg	UD	ND	
beta-BHC	Other	319-85-7	Organic	B2C0J1	Target 20-4	OCSA	0.00032	mg/kg	U	ND	
beta-BHC	Other	319-85-7	Organic	B2C0J3	Target 21-1	OCSA	0.00032	mg/kg	U	ND	

Table 3-1 Analytical chemistry data for soils used for plant and soil invertebrate bioassays for upland locations at the Hanford Site

Analyte	Priority	CASNo	AnalGrp	SampleID	LocationID	WasteSite	Conc	Units	Qualifer	qual	grp
beta-BHC	Other	319-85-7	Organic	B2C0J4	Target 21-2	OCSA	0.00033	mg/kg	U	ND	
beta-BHC	Other	319-85-7	Organic	B2C0J5	Target 21-3	OCSA	0.00031	mg/kg	U	ND	
beta-BHC	Other	319-85-7	Organic	B2C0J6	Target 21-4	OCSA	0.00032	mg/kg	U	ND	
beta-BHC	Other	319-85-7	Organic	B2C0J7	Target 21-5	OCSA	0.00032	mg/kg	U	ND	
beta-BHC	Other	319-85-7	Organic	B2C0J8	Target 22-1	OCSA	0.00032	mg/kg	U	ND	
beta-BHC	Other	319-85-7	Organic	B2C0J9	Target 22-2	OCSA	0.0016	mg/kg	UD	ND	
beta-BHC	Other	319-85-7	Organic	B2C0K0	Target 22-3	OCSA	0.00033	mg/kg	U	ND	
beta-BHC	Other	319-85-7	Organic	B2C0K1	Target 22-4	OCSA	0.00033	mg/kg	U	ND	
beta-BHC	Other	319-85-7	Organic	B2C0K2	Target 22-4D	OCSA	0.00033	mg/kg	U	ND	
beta-BHC	Other	319-85-7	Organic	B2C0K3	Target 22-5	OCSA	0.00034	mg/kg	U	ND	
beta-BHC	Other	319-85-7	Organic	B2C0K4	Target 23-1	OCSA	0.00033	mg/kg	U	ND	
beta-BHC	Other	319-85-7	Organic	B2C0K5	Target 23-2	OCSA	0.00033	mg/kg	U	ND	
beta-BHC	Other	319-85-7	Organic	B2C0K6	Target 23-3	OCSA	0.00033	mg/kg	U	ND	
beta-BHC	Other	319-85-7	Organic	B2BXX5	Target 24-1	120-KW-1	0.00032	mg/kg	U	ND	
beta-BHC	Other	319-85-7	Organic	B2BXX7	Target 24-2	120-KW-1	0.00034	mg/kg	U	ND	
beta-BHC	Other	319-85-7	Organic	B2BXX8	Target 24-3	120-KW-1	0.00034	mg/kg	U	ND	
beta-BHC	Other	319-85-7	Organic	B2BXY0	Target 24-5	120-KW-1	0.00032	mg/kg	U	ND	
beta-BHC	Other	319-85-7	Organic	B2BP89	Target 6-5	600-228	0.00032	mg/kg	U	ND	
beta-BHC	Other	319-85-7	Organic	B2C1C4	Target 7-1	600-281	0.00032	mg/kg	U	ND	
beta-BHC	Other	319-85-7	Organic	B2C1D2	Target 8-3	600-281	0.00032	mg/kg	U	ND	
Delta-BHC	Other	319-86-8	Organic	B2BW15	Control 1	600-218	0.00026	mg/kg	U	ND	
Delta-BHC	Other	319-86-8	Organic	B2BW28	Control 13	OCSA	0.00026	mg/kg	U	ND	
Delta-BHC	Other	319-86-8	Organic	B2BW30	Control 15	OCSA	0.00026	mg/kg	U	ND	
Delta-BHC	Other	319-86-8	Organic	B2BW31	Control 16	OCSA	0.00026	mg/kg	U	ND	
Delta-BHC	Other	319-86-8	Organic	B2BW32	Control 17	OCSA	0.00026	mg/kg	U	ND	
Delta-BHC	Other	319-86-8	Organic	B2BW33	Control 18	OCSA	0.00026	mg/kg	U	ND	
Delta-BHC	Other	319-86-8	Organic	B2BW16	Control 2	600-218	0.00026	mg/kg	U	ND	
Delta-BHC	Other	319-86-8	Organic	B2BW35	Control 20	OCSA	0.00026	mg/kg	U	ND	
Delta-BHC	Other	319-86-8	Organic	B2BW18	Control 4	600-220	0.00026	mg/kg	U	ND	
Delta-BHC	Other	319-86-8	Organic	B2BW22	Control 8	600-228	0.00026	mg/kg	U	ND	
Delta-BHC	Other	319-86-8	Organic	B2BW24	Control 9D	600-228	0.00032	mg/kg	U	ND	
Delta-BHC	Other	319-86-8	Organic	B2C0B0	Target 11-1	OCSA	0.00025	mg/kg	U	ND	
Delta-BHC	Other	319-86-8	Organic	B2C0B5	Target 12-1	OCSA	0.00026	mg/kg	U	ND	
Delta-BHC	Other	319-86-8	Organic	B2C0B6	Target 12-2	OCSA	0.00025	mg/kg	U	ND	
Delta-BHC	Other	319-86-8	Organic	B2C0B7	Target 12-3	OCSA	0.00028	mg/kg	U	ND	
Delta-BHC	Other	319-86-8	Organic	B2C0B8	Target 12-4	OCSA	0.00025	mg/kg	U	ND	
Delta-BHC	Other	319-86-8	Organic	B2C0B9	Target 12-4D	OCSA	0.00025	mg/kg	U	ND	
Delta-BHC	Other	319-86-8	Organic	B2C0C0	Target 12-5	OCSA	0.00028	mg/kg	U	ND	
Delta-BHC	Other	319-86-8	Organic	B2C0C1	Target 13-1	OCSA	0.00026	mg/kg	U	ND	
Delta-BHC	Other	319-86-8	Organic	B2C0C2	Target 13-2	OCSA	0.00026	mg/kg	U	ND	
Delta-BHC	Other	319-86-8	Organic	B2C0C3	Target 13-3	OCSA	0.00025	mg/kg	U	ND	
Delta-BHC	Other	319-86-8	Organic	B2C0C4	Target 13-4	OCSA	0.00026	mg/kg	U	ND	
Delta-BHC	Other	319-86-8	Organic	B2C0C5	Target 13-5	OCSA	0.00026	mg/kg	U	ND	
Delta-BHC	Other	319-86-8	Organic	B2C0C6	Target 14-1	OCSA	0.00025	mg/kg	U	ND	
Delta-BHC	Other	319-86-8	Organic	B2C0C7	Target 14-2	OCSA	0.00025	mg/kg	U	ND	
Delta-BHC	Other	319-86-8	Organic	B2C0C8	Target 14-3	OCSA	0.00026	mg/kg	U	ND	
Delta-BHC	Other	319-86-8	Organic	B2C0C9	Target 14-4	OCSA	0.00026	mg/kg	U	ND	
Delta-BHC	Other	319-86-8	Organic	B2C0D0	Target 14-5	OCSA	0.00025	mg/kg	U	ND	
Delta-BHC	Other	319-86-8	Organic	B2C0D7	Target 16-1	OCSA	0.00026	mg/kg	U	ND	
Delta-BHC	Other	319-86-8	Organic	B2C0D8	Target 16-2	OCSA	0.00027	mg/kg	U	ND	
Delta-BHC	Other	319-86-8	Organic	B2C0D9	Target 16-3	OCSA	0.00026	mg/kg	U	ND	
Delta-BHC	Other	319-86-8	Organic	B2C0F0	Target 16-4	OCSA	0.00026	mg/kg	U	ND	
Delta-BHC	Other	319-86-8	Organic	B2C0F1	Target 16-5	OCSA	0.00026	mg/kg	U	ND	
Delta-BHC	Other	319-86-8	Organic	B2C0F2	Target 17-1	OCSA	0.00027	mg/kg	U	ND	
Delta-BHC	Other	319-86-8	Organic	B2C0F3	Target 17-2	OCSA	0.00026	mg/kg	U	ND	
Delta-BHC	Other	319-86-8	Organic	B2C0F4	Target 17-3	OCSA	0.00027	mg/kg	U	ND	
Delta-BHC	Other	319-86-8	Organic	B2C0F5	Target 17-4	OCSA	0.00026	mg/kg	U	ND	
Delta-BHC	Other	319-86-8	Organic	B2C0F6	Target 17-5	OCSA	0.00027	mg/kg	U	ND	
Delta-BHC	Other	319-86-8	Organic	B2C0F7	Target 18-1	OCSA	0.00027	mg/kg	U	ND	
Delta-BHC	Other	319-86-8	Organic	B2C0F8	Target 18-2	OCSA	0.00026	mg/kg	U	ND	
Delta-BHC	Other	319-86-8	Organic	B2C0F9	Target 18-3	OCSA	0.00026	mg/kg	U	ND	
Delta-BHC	Other	319-86-8	Organic	B2C0H0	Target 18-3D	OCSA	0.00026	mg/kg	U	ND	
Delta-BHC	Other	319-86-8	Organic	B2C0H1	Target 18-4	OCSA	0.00026	mg/kg	U	ND	
Delta-BHC	Other	319-86-8	Organic	B2C0H2	Target 18-5	OCSA	0.00027	mg/kg	U	ND	
Delta-BHC	Other	319-86-8	Organic	B2C0H6	Target 19-4	OCSA	0.00026	mg/kg	U	ND	
Delta-BHC	Other	319-86-8	Organic	B2C0H8	Target 20-1	OCSA	0.0055	mg/kg	UD	ND	
Delta-BHC	Other	319-86-8	Organic	B2C0H9	Target 20-2	OCSA	0.0026	mg/kg	UD	ND	
Delta-BHC	Other	319-86-8	Organic	B2C0J0	Target 20-3	OCSA	0.0055	mg/kg	UD	ND	
Delta-BHC	Other	319-86-8	Organic	B2C0J1	Target 20-4	OCSA	0.00026	mg/kg	U	ND	
Delta-BHC	Other	319-86-8	Organic	B2C0J3	Target 21-1	OCSA	0.00026	mg/kg	U	ND	
Delta-BHC	Other	319-86-8	Organic	B2C0J4	Target 21-2	OCSA	0.00026	mg/kg	U	ND	
Delta-BHC	Other	319-86-8	Organic	B2C0J5	Target 21-3	OCSA	0.00025	mg/kg	U	ND	
Delta-BHC	Other	319-86-8	Organic	B2C0J6	Target 21-4	OCSA	0.00026	mg/kg	U	ND	
Delta-BHC	Other	319-86-8	Organic	B2C0J7	Target 21-5	OCSA	0.00026	mg/kg	U	ND	
Delta-BHC	Other	319-86-8	Organic	B2C0J8	Target 22-1	OCSA	0.00026	mg/kg	U	ND	
Delta-BHC	Other	319-86-8	Organic	B2C0J9	Target 22-2	OCSA	0.0013	mg/kg	UD	ND	
Delta-BHC	Other	319-86-8	Organic	B2C0K0	Target 22-3	OCSA	0.00026	mg/kg	U	ND	
Delta-BHC	Other	319-86-8	Organic	B2C0K1	Target 22-4	OCSA	0.00027	mg/kg	U	ND	
Delta-BHC	Other	319-86-8	Organic	B2C0K2	Target 22-4D	OCSA	0.00026	mg/kg	U	ND	
Delta-BHC	Other	319-86-8	Organic	B2C0K3	Target 22-5	OCSA	0.00027	mg/kg	U	ND	
Delta-BHC	Other	319-86-8	Organic	B2C0K4	Target 23-1	OCSA	0.00026	mg/kg	U	ND	
Delta-BHC	Other	319-86-8	Organic	B2C0K5	Target 23-2	OCSA	0.00026	mg/kg	U	ND	
Delta-BHC	Other	319-86-8	Organic	B2C0K6	Target 23-3	OCSA	0.00026	mg/kg	U	ND	
Delta-BHC	Other	319-86-8	Organic	B2BXX5	Target 24-1	120-KW-1	0.00026	mg/kg	U	ND	
Delta-BHC	Other	319-86-8	Organic	B2BXX7	Target 24-2	120-KW-1	0.00027	mg/kg	U	ND	
Delta-BHC	Other	319-86-8	Organic	B2BXX8	Target 24-3	120-KW-1	0.00027	mg/kg	U	ND	
Delta-BHC	Other	319-86-8	Organic	B2BXY0	Target 24-5	120-KW-1	0.00026	mg/kg	U	ND	
Delta-BHC	Other	319-86-8	Organic	B2BP89	Target 6-5	600-228	0.00026	mg/kg	U	ND	
Delta-BHC	Other	319-86-8	Organic	B2C1C4	Target 7-1	600-281	0.00026	mg/kg	U	ND	
Delta-BHC	Other	319-86-8	Organic	B2C1D2	Target 8-3	600-281	0.00026	mg/kg	U	ND	
Dichloroprop	Other	120-36-5	Organic	B2BW15	Control 1	600-218	0.085	mg/kg	U	ND	
Dichloroprop	Other	120-36-5	Organic	B2BW28	Control 13	OCSA	0.083	mg/kg	U	ND	
Dichloroprop	Other	120-36-5	Organic	B2BW30	Control 15	OCSA	0.084	mg/kg	U	ND	
Dichloroprop	Other	120-36-5	Organic	B2BW31	Control 16	OCSA	0.084	mg/kg	U	ND	
Dichloroprop	Other	120-36-5	Organic	B2BW32	Control 17	OCSA	0.083	mg/kg	U	ND	
Dichloroprop	Other	120-36-5	Organic	B2BW33	Control 18	OCSA	0.084	mg/kg	U	ND	
Dichloroprop	Other	120-36-5	Organic	B2BW16	Control 2	600-218	0.085	mg/kg	U	ND	

Table 3-1 Analytical chemistry data for soils used for plant and soil invertebrate bioassays for upland locations at the Hanford Site

Analyte	Priority	CASNo	AnalGrp	SampleID	LocationID	WasteSite	Conc	Units	Qualifer	qual	grp
Dichloroprop	Other	120-36-5	Organic	B2BW35	Control 20	OCSA	0.084	mg/kg	U	ND	
Dichloroprop	Other	120-36-5	Organic	B2BW18	Control 4	600-220	0.084	mg/kg	U	ND	
Dichloroprop	Other	120-36-5	Organic	B2BW22	Control 8	600-228	0.083	mg/kg	U	ND	
Dichloroprop	Other	120-36-5	Organic	B2BW24	Control 9D	600-228	0.00026	mg/kg	U	ND	
Dichloroprop	Other	120-36-5	Organic	B2C0B0	Target 11-1	OCSA	0.081	mg/kg	U	ND	
Dichloroprop	Other	120-36-5	Organic	B2C0B5	Target 12-1	OCSA	0.083	mg/kg	U	ND	
Dichloroprop	Other	120-36-5	Organic	B2C0B6	Target 12-2	OCSA	0.08	mg/kg	U	ND	
Dichloroprop	Other	120-36-5	Organic	B2C0B7	Target 12-3	OCSA	0.091	mg/kg	U	ND	
Dichloroprop	Other	120-36-5	Organic	B2C0B8	Target 12-4	OCSA	0.082	mg/kg	U	ND	
Dichloroprop	Other	120-36-5	Organic	B2C0B9	Target 12-4D	OCSA	0.082	mg/kg	U	ND	
Dichloroprop	Other	120-36-5	Organic	B2C0C0	Target 12-5	OCSA	0.089	mg/kg	U	ND	
Dichloroprop	Other	120-36-5	Organic	B2C0C1	Target 13-1	OCSA	0.083	mg/kg	U	ND	
Dichloroprop	Other	120-36-5	Organic	B2C0C2	Target 13-2	OCSA	0.084	mg/kg	U	ND	
Dichloroprop	Other	120-36-5	Organic	B2C0C3	Target 13-3	OCSA	0.081	mg/kg	U	ND	
Dichloroprop	Other	120-36-5	Organic	B2C0C4	Target 13-4	OCSA	0.083	mg/kg	U	ND	
Dichloroprop	Other	120-36-5	Organic	B2C0C5	Target 13-5	OCSA	0.083	mg/kg	U	ND	
Dichloroprop	Other	120-36-5	Organic	B2C0C6	Target 14-1	OCSA	0.082	mg/kg	U	ND	
Dichloroprop	Other	120-36-5	Organic	B2C0C7	Target 14-2	OCSA	0.082	mg/kg	U	ND	
Dichloroprop	Other	120-36-5	Organic	B2C0C8	Target 14-3	OCSA	0.084	mg/kg	U	ND	
Dichloroprop	Other	120-36-5	Organic	B2C0C9	Target 14-4	OCSA	0.085	mg/kg	U	ND	
Dichloroprop	Other	120-36-5	Organic	B2C0D0	Target 14-5	OCSA	0.082	mg/kg	U	ND	
Dichloroprop	Other	120-36-5	Organic	B2C0D7	Target 16-1	OCSA	0.085	mg/kg	U	ND	
Dichloroprop	Other	120-36-5	Organic	B2C0D8	Target 16-2	OCSA	0.087	mg/kg	U	ND	
Dichloroprop	Other	120-36-5	Organic	B2C0D9	Target 16-3	OCSA	0.085	mg/kg	U	ND	
Dichloroprop	Other	120-36-5	Organic	B2C0F0	Target 16-4	OCSA	0.084	mg/kg	U	ND	
Dichloroprop	Other	120-36-5	Organic	B2C0F1	Target 16-5	OCSA	0.085	mg/kg	U	ND	
Dichloroprop	Other	120-36-5	Organic	B2C0F2	Target 17-1	OCSA	0.087	mg/kg	U	ND	
Dichloroprop	Other	120-36-5	Organic	B2C0F3	Target 17-2	OCSA	0.085	mg/kg	U	ND	
Dichloroprop	Other	120-36-5	Organic	B2C0F4	Target 17-3	OCSA	0.086	mg/kg	U	ND	
Dichloroprop	Other	120-36-5	Organic	B2C0F5	Target 17-4	OCSA	0.085	mg/kg	U	ND	
Dichloroprop	Other	120-36-5	Organic	B2C0F6	Target 17-5	OCSA	0.087	mg/kg	U	ND	
Dichloroprop	Other	120-36-5	Organic	B2C0F7	Target 18-1	OCSA	0.086	mg/kg	U	ND	
Dichloroprop	Other	120-36-5	Organic	B2C0F8	Target 18-2	OCSA	0.085	mg/kg	U	ND	
Dichloroprop	Other	120-36-5	Organic	B2C0F9	Target 18-3	OCSA	0.085	mg/kg	U	ND	
Dichloroprop	Other	120-36-5	Organic	B2C0H0	Target 18-3D	OCSA	0.084	mg/kg	U	ND	
Dichloroprop	Other	120-36-5	Organic	B2C0H1	Target 18-4	OCSA	0.085	mg/kg	U	ND	
Dichloroprop	Other	120-36-5	Organic	B2C0H2	Target 18-5	OCSA	0.086	mg/kg	U	ND	
Dichloroprop	Other	120-36-5	Organic	B2C0H6	Target 19-4	OCSA	0.084	mg/kg	U	ND	
Dichloroprop	Other	120-36-5	Organic	B2C0H8	Target 20-1	OCSA	0.088	mg/kg	U	ND	
Dichloroprop	Other	120-36-5	Organic	B2C0H9	Target 20-2	OCSA	0.085	mg/kg	U	ND	
Dichloroprop	Other	120-36-5	Organic	B2C0J0	Target 20-3	OCSA	0.088	mg/kg	U	ND	
Dichloroprop	Other	120-36-5	Organic	B2C0J1	Target 20-4	OCSA	0.084	mg/kg	U	ND	
Dichloroprop	Other	120-36-5	Organic	B2C0J3	Target 21-1	OCSA	0.084	mg/kg	U	ND	
Dichloroprop	Other	120-36-5	Organic	B2C0J4	Target 21-2	OCSA	0.085	mg/kg	U	ND	
Dichloroprop	Other	120-36-5	Organic	B2C0J5	Target 21-3	OCSA	0.082	mg/kg	U	ND	
Dichloroprop	Other	120-36-5	Organic	B2C0J6	Target 21-4	OCSA	0.083	mg/kg	U	ND	
Dichloroprop	Other	120-36-5	Organic	B2C0J7	Target 21-5	OCSA	0.084	mg/kg	U	ND	
Dichloroprop	Other	120-36-5	Organic	B2C0J8	Target 22-1	OCSA	0.085	mg/kg	U	ND	
Dichloroprop	Other	120-36-5	Organic	B2C0J9	Target 22-2	OCSA	0.084	mg/kg	U	ND	
Dichloroprop	Other	120-36-5	Organic	B2C0K0	Target 22-3	OCSA	0.086	mg/kg	U	ND	
Dichloroprop	Other	120-36-5	Organic	B2C0K1	Target 22-4	OCSA	0.086	mg/kg	U	ND	
Dichloroprop	Other	120-36-5	Organic	B2C0K2	Target 22-4D	OCSA	0.085	mg/kg	U	ND	
Dichloroprop	Other	120-36-5	Organic	B2C0K3	Target 22-5	OCSA	0.088	mg/kg	U	ND	
Dichloroprop	Other	120-36-5	Organic	B2C0K4	Target 23-1	OCSA	0.085	mg/kg	U	ND	
Dichloroprop	Other	120-36-5	Organic	B2C0K5	Target 23-2	OCSA	0.085	mg/kg	U	ND	
Dichloroprop	Other	120-36-5	Organic	B2C0K6	Target 23-3	OCSA	0.085	mg/kg	U	ND	
Dichloroprop	Other	120-36-5	Organic	B2BXX5	Target 24-1	120-KW-1	0.084	mg/kg	U	ND	
Dichloroprop	Other	120-36-5	Organic	B2BXX7	Target 24-2	120-KW-1	0.088	mg/kg	U	ND	
Dichloroprop	Other	120-36-5	Organic	B2BXX8	Target 24-3	120-KW-1	0.087	mg/kg	U	ND	
Dichloroprop	Other	120-36-5	Organic	B2BXY0	Target 24-5	120-KW-1	0.083	mg/kg	U	ND	
Dichloroprop	Other	120-36-5	Organic	B2BP89	Target 6-5	600-228	0.083	mg/kg	U	ND	
Dichloroprop	Other	120-36-5	Organic	B2C1C4	Target 7-1	600-281	0.084	mg/kg	U	ND	
Dichloroprop	Other	120-36-5	Organic	B2C1D2	Target 8-3	600-281	0.083	mg/kg	U	ND	
Dieldrin	Other	60-57-1	Organic	B2BW15	Control 1	600-218	0.00024	mg/kg	U	ND	
Dieldrin	Other	60-57-1	Organic	B2BW28	Control 13	OCSA	0.00023	mg/kg	U	ND	
Dieldrin	Other	60-57-1	Organic	B2BW30	Control 15	OCSA	0.00023	mg/kg	U	ND	
Dieldrin	Other	60-57-1	Organic	B2BW31	Control 16	OCSA	0.00023	mg/kg	U	ND	
Dieldrin	Other	60-57-1	Organic	B2BW32	Control 17	OCSA	0.00023	mg/kg	U	ND	
Dieldrin	Other	60-57-1	Organic	B2BW33	Control 18	OCSA	0.00023	mg/kg	U	ND	
Dieldrin	Other	60-57-1	Organic	B2BW16	Control 2	600-218	0.00023	mg/kg	U	ND	
Dieldrin	Other	60-57-1	Organic	B2BW35	Control 20	OCSA	0.00023	mg/kg	U	ND	
Dieldrin	Other	60-57-1	Organic	B2BW18	Control 4	600-220	0.00023	mg/kg	U	ND	
Dieldrin	Other	60-57-1	Organic	B2BW22	Control 8	600-228	0.00023	mg/kg	U	ND	
Dieldrin	Other	60-57-1	Organic	B2BW24	Control 9D	600-228	0.083	mg/kg	U	ND	
Dieldrin	Other	60-57-1	Organic	B2C0B0	Target 11-1	OCSA	0.00022	mg/kg	U	ND	
Dieldrin	Other	60-57-1	Organic	B2C0B5	Target 12-1	OCSA	0.00023	mg/kg	U	ND	
Dieldrin	Other	60-57-1	Organic	B2C0B6	Target 12-2	OCSA	0.00022	mg/kg	U	ND	
Dieldrin	Other	60-57-1	Organic	B2C0B7	Target 12-3	OCSA	0.00025	mg/kg	U	ND	
Dieldrin	Other	60-57-1	Organic	B2C0B8	Target 12-4	OCSA	0.00023	mg/kg	U	ND	
Dieldrin	Other	60-57-1	Organic	B2C0B9	Target 12-4D	OCSA	0.00023	mg/kg	U	ND	
Dieldrin	Other	60-57-1	Organic	B2C0C0	Target 12-5	OCSA	0.00025	mg/kg	U	ND	
Dieldrin	Other	60-57-1	Organic	B2C0C1	Target 13-1	OCSA	0.00023	mg/kg	U	ND	
Dieldrin	Other	60-57-1	Organic	B2C0C2	Target 13-2	OCSA	0.00023	mg/kg	U	ND	
Dieldrin	Other	60-57-1	Organic	B2C0C3	Target 13-3	OCSA	0.00022	mg/kg	U	ND	
Dieldrin	Other	60-57-1	Organic	B2C0C4	Target 13-4	OCSA	0.00023	mg/kg	U	ND	
Dieldrin	Other	60-57-1	Organic	B2C0C5	Target 13-5	OCSA	0.00023	mg/kg	U	ND	
Dieldrin	Other	60-57-1	Organic	B2C0C6	Target 14-1	OCSA	0.00023	mg/kg	U	ND	
Dieldrin	Other	60-57-1	Organic	B2C0C7	Target 14-2	OCSA	0.00022	mg/kg	U	ND	
Dieldrin	Other	60-57-1	Organic	B2C0C8	Target 14-3	OCSA	0.00023	mg/kg	U	ND	
Dieldrin	Other	60-57-1	Organic	B2C0C9	Target 14-4	OCSA	0.00023	mg/kg	U	ND	
Dieldrin	Other	60-57-1	Organic	B2C0D0	Target 14-5	OCSA	0.00023	mg/kg	U	ND	
Dieldrin	Other	60-57-1	Organic	B2C0D7	Target 16-1	OCSA	0.00023	mg/kg	U	ND	
Dieldrin	Other	60-57-1	Organic	B2C0D8	Target 16-2	OCSA	0.00024	mg/kg	U	ND	
Dieldrin	Other	60-57-1	Organic	B2C0D9	Target 16-3	OCSA	0.00023	mg/kg	U	ND	
Dieldrin	Other	60-57-1	Organic	B2C0F0	Target 16-4	OCSA	0.00023	mg/kg	U	ND	
Dieldrin	Other	60-57-1	Organic	B2C0F1	Target 16-5	OCSA	0.00023	mg/kg	U	ND	
Dieldrin	Other	60-57-1	Organic	B2C0F2	Target 17-1	OCSA	0.00024	mg/kg	U	ND	

Table 3-1 Analytical chemistry data for soils used for plant and soil invertebrate bioassays for upland locations at the Hanford Site

Analyte	Priority	CASNo	AnalGrp	SampleID	LocationID	WasteSite	Conc	Units	Qualifer	qual	grp
Dieldrin	Other	60-57-1	Organic	B2C0F3	Target 17-2	OCSA	0.00023	mg/kg	U	ND	
Dieldrin	Other	60-57-1	Organic	B2C0F4	Target 17-3	OCSA	0.00024	mg/kg	U	ND	
Dieldrin	Other	60-57-1	Organic	B2C0F5	Target 17-4	OCSA	0.00023	mg/kg	U	ND	
Dieldrin	Other	60-57-1	Organic	B2C0F6	Target 17-5	OCSA	0.00024	mg/kg	U	ND	
Dieldrin	Other	60-57-1	Organic	B2C0F7	Target 18-1	OCSA	0.00024	mg/kg	U	ND	
Dieldrin	Other	60-57-1	Organic	B2C0F8	Target 18-2	OCSA	0.00023	mg/kg	U	ND	
Dieldrin	Other	60-57-1	Organic	B2C0F9	Target 18-3	OCSA	0.00023	mg/kg	U	ND	
Dieldrin	Other	60-57-1	Organic	B2C0H0	Target 18-3D	OCSA	0.00023	mg/kg	U	ND	
Dieldrin	Other	60-57-1	Organic	B2C0H1	Target 18-4	OCSA	0.00024	mg/kg	U	ND	
Dieldrin	Other	60-57-1	Organic	B2C0H2	Target 18-5	OCSA	0.00024	mg/kg	U	ND	
Dieldrin	Other	60-57-1	Organic	B2C0H6	Target 19-4	OCSA	0.00023	mg/kg	U	ND	
Dieldrin	Other	60-57-1	Organic	B2C0H8	Target 20-1	OCSA	0.0049	mg/kg	UD	ND	
Dieldrin	Other	60-57-1	Organic	B2C0H9	Target 20-2	OCSA	0.0023	mg/kg	UD	ND	
Dieldrin	Other	60-57-1	Organic	B2C0J0	Target 20-3	OCSA	0.0048	mg/kg	UD	ND	
Dieldrin	Other	60-57-1	Organic	B2C0J1	Target 20-4	OCSA	0.00023	mg/kg	U	ND	
Dieldrin	Other	60-57-1	Organic	B2C0J3	Target 21-1	OCSA	0.00023	mg/kg	U	ND	
Dieldrin	Other	60-57-1	Organic	B2C0J4	Target 21-2	OCSA	0.00024	mg/kg	U	ND	
Dieldrin	Other	60-57-1	Organic	B2C0J5	Target 21-3	OCSA	0.00023	mg/kg	U	ND	
Dieldrin	Other	60-57-1	Organic	B2C0J6	Target 21-4	OCSA	0.00023	mg/kg	U	ND	
Dieldrin	Other	60-57-1	Organic	B2C0J7	Target 21-5	OCSA	0.00023	mg/kg	U	ND	
Dieldrin	Other	60-57-1	Organic	B2C0J8	Target 22-1	OCSA	0.00023	mg/kg	U	ND	
Dieldrin	Other	60-57-1	Organic	B2C0J9	Target 22-2	OCSA	0.0012	mg/kg	UD	ND	
Dieldrin	Other	60-57-1	Organic	B2C0K0	Target 22-3	OCSA	0.00024	mg/kg	U	ND	
Dieldrin	Other	60-57-1	Organic	B2C0K1	Target 22-4	OCSA	0.00024	mg/kg	U	ND	
Dieldrin	Other	60-57-1	Organic	B2C0K2	Target 22-4D	OCSA	0.00024	mg/kg	U	ND	
Dieldrin	Other	60-57-1	Organic	B2C0K3	Target 22-5	OCSA	0.00024	mg/kg	U	ND	
Dieldrin	Other	60-57-1	Organic	B2C0K4	Target 23-1	OCSA	0.00023	mg/kg	U	ND	
Dieldrin	Other	60-57-1	Organic	B2C0K5	Target 23-2	OCSA	0.00023	mg/kg	U	ND	
Dieldrin	Other	60-57-1	Organic	B2C0K6	Target 23-3	OCSA	0.00023	mg/kg	U	ND	
Dieldrin	Other	60-57-1	Organic	B2BXX5	Target 24-1	120-KW-1	0.00023	mg/kg	U	ND	
Dieldrin	Other	60-57-1	Organic	B2BXX7	Target 24-2	120-KW-1	0.00024	mg/kg	U	ND	
Dieldrin	Other	60-57-1	Organic	B2BXX8	Target 24-3	120-KW-1	0.00024	mg/kg	U	ND	
Dieldrin	Other	60-57-1	Organic	B2BXY0	Target 24-5	120-KW-1	0.00023	mg/kg	U	ND	
Dieldrin	Other	60-57-1	Organic	B2BP89	Target 6-5	600-228	0.00023	mg/kg	U	ND	
Dieldrin	Other	60-57-1	Organic	B2C1C4	Target 7-1	600-281	0.00023	mg/kg	U	ND	
Dieldrin	Other	60-57-1	Organic	B2C1D2	Target 8-3	600-281	0.00023	mg/kg	U	ND	
Dinoseb	Other	88-85-7	Organic	B2BW15	Control 1	600-218	0.015	mg/kg	U	ND	
Dinoseb	Other	88-85-7	Organic	B2BW28	Control 13	OCSA	0.014	mg/kg	U	ND	
Dinoseb	Other	88-85-7	Organic	B2BW30	Control 15	OCSA	0.015	mg/kg	U	ND	
Dinoseb	Other	88-85-7	Organic	B2BW31	Control 16	OCSA	0.015	mg/kg	U	ND	
Dinoseb	Other	88-85-7	Organic	B2BW32	Control 17	OCSA	0.014	mg/kg	U	ND	
Dinoseb	Other	88-85-7	Organic	B2BW33	Control 18	OCSA	0.015	mg/kg	U	ND	
Dinoseb	Other	88-85-7	Organic	B2BW16	Control 2	600-218	0.015	mg/kg	U	ND	
Dinoseb	Other	88-85-7	Organic	B2BW35	Control 20	OCSA	0.015	mg/kg	U	ND	
Dinoseb	Other	88-85-7	Organic	B2BW18	Control 4	600-220	0.015	mg/kg	U	ND	
Dinoseb	Other	88-85-7	Organic	B2BW22	Control 8	600-228	0.014	mg/kg	U	ND	
Dinoseb	Other	88-85-7	Organic	B2BW24	Control 9D	600-228	0.00023	mg/kg	U	ND	
Dinoseb	Other	88-85-7	Organic	B2C0B0	Target 11-1	OCSA	0.014	mg/kg	U	ND	
Dinoseb	Other	88-85-7	Organic	B2C0B5	Target 12-1	OCSA	0.014	mg/kg	U	ND	
Dinoseb	Other	88-85-7	Organic	B2C0B6	Target 12-2	OCSA	0.014	mg/kg	U	ND	
Dinoseb	Other	88-85-7	Organic	B2C0B7	Target 12-3	OCSA	0.016	mg/kg	U	ND	
Dinoseb	Other	88-85-7	Organic	B2C0B8	Target 12-4	OCSA	0.014	mg/kg	U	ND	
Dinoseb	Other	88-85-7	Organic	B2C0B9	Target 12-4D	OCSA	0.014	mg/kg	U	ND	
Dinoseb	Other	88-85-7	Organic	B2C0C0	Target 12-5	OCSA	0.016	mg/kg	U	ND	
Dinoseb	Other	88-85-7	Organic	B2C0C1	Target 13-1	OCSA	0.015	mg/kg	U	ND	
Dinoseb	Other	88-85-7	Organic	B2C0C2	Target 13-2	OCSA	0.015	mg/kg	U	ND	
Dinoseb	Other	88-85-7	Organic	B2C0C3	Target 13-3	OCSA	0.014	mg/kg	U	ND	
Dinoseb	Other	88-85-7	Organic	B2C0C4	Target 13-4	OCSA	0.015	mg/kg	U	ND	
Dinoseb	Other	88-85-7	Organic	B2C0C5	Target 13-5	OCSA	0.014	mg/kg	U	ND	
Dinoseb	Other	88-85-7	Organic	B2C0C6	Target 14-1	OCSA	0.014	mg/kg	U	ND	
Dinoseb	Other	88-85-7	Organic	B2C0C7	Target 14-2	OCSA	0.014	mg/kg	U	ND	
Dinoseb	Other	88-85-7	Organic	B2C0C8	Target 14-3	OCSA	0.015	mg/kg	U	ND	
Dinoseb	Other	88-85-7	Organic	B2C0C9	Target 14-4	OCSA	0.015	mg/kg	U	ND	
Dinoseb	Other	88-85-7	Organic	B2C0D0	Target 14-5	OCSA	0.014	mg/kg	U	ND	
Dinoseb	Other	88-85-7	Organic	B2C0D7	Target 16-1	OCSA	0.015	mg/kg	U	ND	
Dinoseb	Other	88-85-7	Organic	B2C0D8	Target 16-2	OCSA	0.015	mg/kg	U	ND	
Dinoseb	Other	88-85-7	Organic	B2C0D9	Target 16-3	OCSA	0.015	mg/kg	U	ND	
Dinoseb	Other	88-85-7	Organic	B2C0F0	Target 16-4	OCSA	0.015	mg/kg	U	ND	
Dinoseb	Other	88-85-7	Organic	B2C0F1	Target 16-5	OCSA	0.015	mg/kg	U	ND	
Dinoseb	Other	88-85-7	Organic	B2C0F2	Target 17-1	OCSA	0.015	mg/kg	U	ND	
Dinoseb	Other	88-85-7	Organic	B2C0F3	Target 17-2	OCSA	0.015	mg/kg	U	ND	
Dinoseb	Other	88-85-7	Organic	B2C0F4	Target 17-3	OCSA	0.015	mg/kg	U	ND	
Dinoseb	Other	88-85-7	Organic	B2C0F5	Target 17-4	OCSA	0.015	mg/kg	U	ND	
Dinoseb	Other	88-85-7	Organic	B2C0F6	Target 17-5	OCSA	0.015	mg/kg	U	ND	
Dinoseb	Other	88-85-7	Organic	B2C0F7	Target 18-1	OCSA	0.015	mg/kg	U	ND	
Dinoseb	Other	88-85-7	Organic	B2C0F8	Target 18-2	OCSA	0.015	mg/kg	U	ND	
Dinoseb	Other	88-85-7	Organic	B2C0F9	Target 18-3	OCSA	0.015	mg/kg	U	ND	
Dinoseb	Other	88-85-7	Organic	B2C0H0	Target 18-3D	OCSA	0.015	mg/kg	U	ND	
Dinoseb	Other	88-85-7	Organic	B2C0H1	Target 18-4	OCSA	0.015	mg/kg	U	ND	
Dinoseb	Other	88-85-7	Organic	B2C0H2	Target 18-5	OCSA	0.015	mg/kg	U	ND	
Dinoseb	Other	88-85-7	Organic	B2C0H6	Target 19-4	OCSA	0.015	mg/kg	U	ND	
Dinoseb	Other	88-85-7	Organic	B2C0H8	Target 20-1	OCSA	0.015	mg/kg	U	ND	
Dinoseb	Other	88-85-7	Organic	B2C0H9	Target 20-2	OCSA	0.015	mg/kg	U	ND	
Dinoseb	Other	88-85-7	Organic	B2C0J0	Target 20-3	OCSA	0.015	mg/kg	U	ND	
Dinoseb	Other	88-85-7	Organic	B2C0J1	Target 20-4	OCSA	0.015	mg/kg	U	ND	
Dinoseb	Other	88-85-7	Organic	B2C0J3	Target 21-1	OCSA	0.015	mg/kg	U	ND	
Dinoseb	Other	88-85-7	Organic	B2C0J4	Target 21-2	OCSA	0.015	mg/kg	U	ND	
Dinoseb	Other	88-85-7	Organic	B2C0J5	Target 21-3	OCSA	0.014	mg/kg	U	ND	
Dinoseb	Other	88-85-7	Organic	B2C0J6	Target 21-4	OCSA	0.014	mg/kg	U	ND	
Dinoseb	Other	88-85-7	Organic	B2C0J7	Target 21-5	OCSA	0.015	mg/kg	U	ND	
Dinoseb	Other	88-85-7	Organic	B2C0J8	Target 22-1	OCSA	0.015	mg/kg	U	ND	
Dinoseb	Other	88-85-7	Organic	B2C0J9	Target 22-2	OCSA	0.015	mg/kg	U	ND	
Dinoseb	Other	88-85-7	Organic	B2C0K0	Target 22-3	OCSA	0.015	mg/kg	U	ND	
Dinoseb	Other	88-85-7	Organic	B2C0K1	Target 22-4	OCSA	0.015	mg/kg	U	ND	
Dinoseb	Other	88-85-7	Organic	B2C0K2	Target 22-4D	OCSA	0.015	mg/kg	U	ND	
Dinoseb	Other	88-85-7	Organic	B2C0K3	Target 22-5	OCSA	0.015	mg/kg	U	ND	
Dinoseb	Other	88-85-7	Organic	B2C0K4	Target 23-1	OCSA	0.015	mg/kg	U	ND	

Table 3-1 Analytical chemistry data for soils used for plant and soil invertebrate bioassays for upland locations at the Hanford Site

Analyte	Priority	CASNo	AnalGrp	SampleID	LocationID	WasteSite	Conc	Units	Qualifer	qual	grp
Dinoseb	Other	88-85-7	Organic	B2C0K5	Target 23-2	OCSA	0.015	mg/kg	U	ND	
Dinoseb	Other	88-85-7	Organic	B2C0K6	Target 23-3	OCSA	0.015	mg/kg	U	ND	
Dinoseb	Other	88-85-7	Organic	B2BXX5	Target 24-1	120-KW-1	0.015	mg/kg	U	ND	
Dinoseb	Other	88-85-7	Organic	B2BXX7	Target 24-2	120-KW-1	0.015	mg/kg	U	ND	
Dinoseb	Other	88-85-7	Organic	B2BXX8	Target 24-3	120-KW-1	0.015	mg/kg	U	ND	
Dinoseb	Other	88-85-7	Organic	B2BXY0	Target 24-5	120-KW-1	0.014	mg/kg	U	ND	
Dinoseb	Other	88-85-7	Organic	B2BP89	Target 6-5	600-228	0.014	mg/kg	U	ND	
Dinoseb	Other	88-85-7	Organic	B2C1C4	Target 7-1	600-281	0.015	mg/kg	U	ND	
Dinoseb	Other	88-85-7	Organic	B2C1D2	Target 8-3	600-281	0.014	mg/kg	U	ND	
Endosulfan I	Other	959-98-8	Organic	B2BW15	Control 1	600-218	0.00062	mg/kg	U	ND	
Endosulfan I	Other	959-98-8	Organic	B2BW28	Control 13	OCSA	0.00061	mg/kg	U	ND	
Endosulfan I	Other	959-98-8	Organic	B2BW30	Control 15	OCSA	0.00061	mg/kg	U	ND	
Endosulfan I	Other	959-98-8	Organic	B2BW31	Control 16	OCSA	0.00061	mg/kg	U	ND	
Endosulfan I	Other	959-98-8	Organic	B2BW32	Control 17	OCSA	0.0006	mg/kg	U	ND	
Endosulfan I	Other	959-98-8	Organic	B2BW33	Control 18	OCSA	0.00061	mg/kg	U	ND	
Endosulfan I	Other	959-98-8	Organic	B2BW16	Control 2	600-218	0.00062	mg/kg	U	ND	
Endosulfan I	Other	959-98-8	Organic	B2BW35	Control 20	OCSA	0.00061	mg/kg	U	ND	
Endosulfan I	Other	959-98-8	Organic	B2BW18	Control 4	600-220	0.00061	mg/kg	U	ND	
Endosulfan I	Other	959-98-8	Organic	B2BW22	Control 8	600-228	0.00061	mg/kg	U	ND	
Endosulfan I	Other	959-98-8	Organic	B2BW24	Control 9D	600-228	0.014	mg/kg	U	ND	
Endosulfan I	Other	959-98-8	Organic	B2C0B0	Target 11-1	OCSA	0.00059	mg/kg	U	ND	
Endosulfan I	Other	959-98-8	Organic	B2C0B5	Target 12-1	OCSA	0.0006	mg/kg	U	ND	
Endosulfan I	Other	959-98-8	Organic	B2C0B6	Target 12-2	OCSA	0.00058	mg/kg	U	ND	
Endosulfan I	Other	959-98-8	Organic	B2C0B7	Target 12-3	OCSA	0.00066	mg/kg	U	ND	
Endosulfan I	Other	959-98-8	Organic	B2C0B8	Target 12-4	OCSA	0.0006	mg/kg	U	ND	
Endosulfan I	Other	959-98-8	Organic	B2C0B9	Target 12-4D	OCSA	0.0006	mg/kg	U	ND	
Endosulfan I	Other	959-98-8	Organic	B2C0C0	Target 12-5	OCSA	0.00065	mg/kg	U	ND	
Endosulfan I	Other	959-98-8	Organic	B2C0C1	Target 13-1	OCSA	0.00061	mg/kg	U	ND	
Endosulfan I	Other	959-98-8	Organic	B2C0C2	Target 13-2	OCSA	0.00061	mg/kg	U	ND	
Endosulfan I	Other	959-98-8	Organic	B2C0C3	Target 13-3	OCSA	0.00059	mg/kg	U	ND	
Endosulfan I	Other	959-98-8	Organic	B2C0C4	Target 13-4	OCSA	0.00061	mg/kg	U	ND	
Endosulfan I	Other	959-98-8	Organic	B2C0C5	Target 13-5	OCSA	0.00061	mg/kg	U	ND	
Endosulfan I	Other	959-98-8	Organic	B2C0C6	Target 14-1	OCSA	0.0006	mg/kg	U	ND	
Endosulfan I	Other	959-98-8	Organic	B2C0C7	Target 14-2	OCSA	0.00059	mg/kg	U	ND	
Endosulfan I	Other	959-98-8	Organic	B2C0C8	Target 14-3	OCSA	0.00061	mg/kg	U	ND	
Endosulfan I	Other	959-98-8	Organic	B2C0C9	Target 14-4	OCSA	0.00062	mg/kg	U	ND	
Endosulfan I	Other	959-98-8	Organic	B2C0D0	Target 14-5	OCSA	0.0006	mg/kg	U	ND	
Endosulfan I	Other	959-98-8	Organic	B2C0D7	Target 16-1	OCSA	0.00062	mg/kg	U	ND	
Endosulfan I	Other	959-98-8	Organic	B2C0D8	Target 16-2	OCSA	0.00063	mg/kg	U	ND	
Endosulfan I	Other	959-98-8	Organic	B2C0D9	Target 16-3	OCSA	0.00062	mg/kg	U	ND	
Endosulfan I	Other	959-98-8	Organic	B2C0F0	Target 16-4	OCSA	0.00062	mg/kg	U	ND	
Endosulfan I	Other	959-98-8	Organic	B2C0F1	Target 16-5	OCSA	0.00062	mg/kg	U	ND	
Endosulfan I	Other	959-98-8	Organic	B2C0F2	Target 17-1	OCSA	0.00063	mg/kg	U	ND	
Endosulfan I	Other	959-98-8	Organic	B2C0F3	Target 17-2	OCSA	0.00062	mg/kg	U	ND	
Endosulfan I	Other	959-98-8	Organic	B2C0F4	Target 17-3	OCSA	0.00063	mg/kg	U	ND	
Endosulfan I	Other	959-98-8	Organic	B2C0F5	Target 17-4	OCSA	0.00062	mg/kg	U	ND	
Endosulfan I	Other	959-98-8	Organic	B2C0F6	Target 17-5	OCSA	0.00064	mg/kg	U	ND	
Endosulfan I	Other	959-98-8	Organic	B2C0F7	Target 18-1	OCSA	0.00063	mg/kg	U	ND	
Endosulfan I	Other	959-98-8	Organic	B2C0F8	Target 18-2	OCSA	0.00062	mg/kg	U	ND	
Endosulfan I	Other	959-98-8	Organic	B2C0F9	Target 18-3	OCSA	0.00062	mg/kg	U	ND	
Endosulfan I	Other	959-98-8	Organic	B2C0H0	Target 18-3D	OCSA	0.00062	mg/kg	U	ND	
Endosulfan I	Other	959-98-8	Organic	B2C0H1	Target 18-4	OCSA	0.00062	mg/kg	U	ND	
Endosulfan I	Other	959-98-8	Organic	B2C0H2	Target 18-5	OCSA	0.00063	mg/kg	U	ND	
Endosulfan I	Other	959-98-8	Organic	B2C0H6	Target 19-4	OCSA	0.00061	mg/kg	U	ND	
Endosulfan I	Other	959-98-8	Organic	B2C0H8	Target 20-1	OCSA	0.013	mg/kg	UD	ND	
Endosulfan I	Other	959-98-8	Organic	B2C0H9	Target 20-2	OCSA	0.0062	mg/kg	UD	ND	
Endosulfan I	Other	959-98-8	Organic	B2C0J0	Target 20-3	OCSA	0.013	mg/kg	UD	ND	
Endosulfan I	Other	959-98-8	Organic	B2C0J1	Target 20-4	OCSA	0.00062	mg/kg	U	ND	
Endosulfan I	Other	959-98-8	Organic	B2C0J3	Target 21-1	OCSA	0.00061	mg/kg	U	ND	
Endosulfan I	Other	959-98-8	Organic	B2C0J4	Target 21-2	OCSA	0.00062	mg/kg	U	ND	
Endosulfan I	Other	959-98-8	Organic	B2C0J5	Target 21-3	OCSA	0.0006	mg/kg	U	ND	
Endosulfan I	Other	959-98-8	Organic	B2C0J6	Target 21-4	OCSA	0.00061	mg/kg	U	ND	
Endosulfan I	Other	959-98-8	Organic	B2C0J7	Target 21-5	OCSA	0.00061	mg/kg	U	ND	
Endosulfan I	Other	959-98-8	Organic	B2C0J8	Target 22-1	OCSA	0.00062	mg/kg	U	ND	
Endosulfan I	Other	959-98-8	Organic	B2C0J9	Target 22-2	OCSA	0.0031	mg/kg	UD	ND	
Endosulfan I	Other	959-98-8	Organic	B2C0K0	Target 22-3	OCSA	0.00062	mg/kg	U	ND	
Endosulfan I	Other	959-98-8	Organic	B2C0K1	Target 22-4	OCSA	0.00063	mg/kg	U	ND	
Endosulfan I	Other	959-98-8	Organic	B2C0K2	Target 22-4D	OCSA	0.00062	mg/kg	U	ND	
Endosulfan I	Other	959-98-8	Organic	B2C0K3	Target 22-5	OCSA	0.00065	mg/kg	U	ND	
Endosulfan I	Other	959-98-8	Organic	B2C0K4	Target 23-1	OCSA	0.00062	mg/kg	U	ND	
Endosulfan I	Other	959-98-8	Organic	B2C0K5	Target 23-2	OCSA	0.00062	mg/kg	U	ND	
Endosulfan I	Other	959-98-8	Organic	B2C0K6	Target 23-3	OCSA	0.00062	mg/kg	U	ND	
Endosulfan I	Other	959-98-8	Organic	B2BXX5	Target 24-1	120-KW-1	0.00061	mg/kg	U	ND	
Endosulfan I	Other	959-98-8	Organic	B2BXX7	Target 24-2	120-KW-1	0.00064	mg/kg	U	ND	
Endosulfan I	Other	959-98-8	Organic	B2BXX8	Target 24-3	120-KW-1	0.00064	mg/kg	U	ND	
Endosulfan I	Other	959-98-8	Organic	B2BXY0	Target 24-5	120-KW-1	0.0006	mg/kg	U	ND	
Endosulfan I	Other	959-98-8	Organic	B2BP89	Target 6-5	600-228	0.00061	mg/kg	U	ND	
Endosulfan I	Other	959-98-8	Organic	B2C1C4	Target 7-1	600-281	0.00061	mg/kg	U	ND	
Endosulfan I	Other	959-98-8	Organic	B2C1D2	Target 8-3	600-281	0.0006	mg/kg	U	ND	
Endosulfan II	Other	33213-65-9	Organic	B2BW15	Control 1	600-218	0.00026	mg/kg	U	ND	
Endosulfan II	Other	33213-65-9	Organic	B2BW28	Control 13	OCSA	0.00025	mg/kg	U	ND	
Endosulfan II	Other	33213-65-9	Organic	B2BW30	Control 15	OCSA	0.00025	mg/kg	U	ND	
Endosulfan II	Other	33213-65-9	Organic	B2BW31	Control 16	OCSA	0.00025	mg/kg	U	ND	
Endosulfan II	Other	33213-65-9	Organic	B2BW32	Control 17	OCSA	0.00025	mg/kg	U	ND	
Endosulfan II	Other	33213-65-9	Organic	B2BW33	Control 18	OCSA	0.00025	mg/kg	U	ND	
Endosulfan II	Other	33213-65-9	Organic	B2BW16	Control 2	600-218	0.00026	mg/kg	U	ND	
Endosulfan II	Other	33213-65-9	Organic	B2BW35	Control 20	OCSA	0.00025	mg/kg	U	ND	
Endosulfan II	Other	33213-65-9	Organic	B2BW18	Control 4	600-220	0.00025	mg/kg	U	ND	
Endosulfan II	Other	33213-65-9	Organic	B2BW22	Control 8	600-228	0.00025	mg/kg	U	ND	
Endosulfan II	Other	33213-65-9	Organic	B2BW24	Control 9D	600-228	0.00061	mg/kg	U	ND	
Endosulfan II	Other	33213-65-9	Organic	B2C0B0	Target 11-1	OCSA	0.00024	mg/kg	U	ND	
Endosulfan II	Other	33213-65-9	Organic	B2C0B5	Target 12-1	OCSA	0.00025	mg/kg	U	ND	
Endosulfan II	Other	33213-65-9	Organic	B2C0B6	Target 12-2	OCSA	0.00024	mg/kg	U	ND	
Endosulfan II	Other	33213-65-9	Organic	B2C0B7	Target 12-3	OCSA	0.00027	mg/kg	U	ND	
Endosulfan II	Other	33213-65-9	Organic	B2C0B8	Target 12-4	OCSA	0.00025	mg/kg	U	ND	
Endosulfan II	Other	33213-65-9	Organic	B2C0B9	Target 12-4D	OCSA	0.00025	mg/kg	U	ND	
Endosulfan II	Other	33213-65-9	Organic	B2C0C0	Target 12-5	OCSA	0.00027	mg/kg	U	ND	

Table 3-1 Analytical chemistry data for soils used for plant and soil invertebrate bioassays for upland locations at the Hanford Site

Analyte	Priority	CASNo	AnalGrp	SampleID	LocationID	WasteSite	Conc	Units	Qualifer	qual	grp
Endosulfan II	Other	33213-65-9	Organic	B2C0C1	Target 13-1	OCSA	0.00025	mg/kg	U	ND	
Endosulfan II	Other	33213-65-9	Organic	B2C0C2	Target 13-2	OCSA	0.00025	mg/kg	U	ND	
Endosulfan II	Other	33213-65-9	Organic	B2C0C3	Target 13-3	OCSA	0.00024	mg/kg	U	ND	
Endosulfan II	Other	33213-65-9	Organic	B2C0C4	Target 13-4	OCSA	0.00025	mg/kg	U	ND	
Endosulfan II	Other	33213-65-9	Organic	B2C0C5	Target 13-5	OCSA	0.00025	mg/kg	U	ND	
Endosulfan II	Other	33213-65-9	Organic	B2C0C6	Target 14-1	OCSA	0.00025	mg/kg	U	ND	
Endosulfan II	Other	33213-65-9	Organic	B2C0C7	Target 14-2	OCSA	0.00025	mg/kg	U	ND	
Endosulfan II	Other	33213-65-9	Organic	B2C0C8	Target 14-3	OCSA	0.00025	mg/kg	U	ND	
Endosulfan II	Other	33213-65-9	Organic	B2C0C9	Target 14-4	OCSA	0.00026	mg/kg	U	ND	
Endosulfan II	Other	33213-65-9	Organic	B2C0D0	Target 14-5	OCSA	0.00025	mg/kg	U	ND	
Endosulfan II	Other	33213-65-9	Organic	B2C0D7	Target 16-1	OCSA	0.00026	mg/kg	U	ND	
Endosulfan II	Other	33213-65-9	Organic	B2C0D8	Target 16-2	OCSA	0.00026	mg/kg	U	ND	
Endosulfan II	Other	33213-65-9	Organic	B2C0D9	Target 16-3	OCSA	0.00026	mg/kg	U	ND	
Endosulfan II	Other	33213-65-9	Organic	B2C0F0	Target 16-4	OCSA	0.00025	mg/kg	U	ND	
Endosulfan II	Other	33213-65-9	Organic	B2C0F1	Target 16-5	OCSA	0.00025	mg/kg	U	ND	
Endosulfan II	Other	33213-65-9	Organic	B2C0F2	Target 17-1	OCSA	0.00026	mg/kg	U	ND	
Endosulfan II	Other	33213-65-9	Organic	B2C0F3	Target 17-2	OCSA	0.00026	mg/kg	U	ND	
Endosulfan II	Other	33213-65-9	Organic	B2C0F4	Target 17-3	OCSA	0.00026	mg/kg	U	ND	
Endosulfan II	Other	33213-65-9	Organic	B2C0F5	Target 17-4	OCSA	0.00026	mg/kg	U	ND	
Endosulfan II	Other	33213-65-9	Organic	B2C0F6	Target 17-5	OCSA	0.00026	mg/kg	U	ND	
Endosulfan II	Other	33213-65-9	Organic	B2C0F7	Target 18-1	OCSA	0.00026	mg/kg	U	ND	
Endosulfan II	Other	33213-65-9	Organic	B2C0F8	Target 18-2	OCSA	0.00026	mg/kg	U	ND	
Endosulfan II	Other	33213-65-9	Organic	B2C0F9	Target 18-3	OCSA	0.00025	mg/kg	U	ND	
Endosulfan II	Other	33213-65-9	Organic	B2C0H0	Target 18-3D	OCSA	0.00025	mg/kg	U	ND	
Endosulfan II	Other	33213-65-9	Organic	B2C0H1	Target 18-4	OCSA	0.00026	mg/kg	U	ND	
Endosulfan II	Other	33213-65-9	Organic	B2C0H2	Target 18-5	OCSA	0.00026	mg/kg	U	ND	
Endosulfan II	Other	33213-65-9	Organic	B2C0H6	Target 19-4	OCSA	0.00025	mg/kg	U	ND	
Endosulfan II	Other	33213-65-9	Organic	B2C0H8	Target 20-1	OCSA	0.0053	mg/kg	UD	ND	
Endosulfan II	Other	33213-65-9	Organic	B2C0H9	Target 20-2	OCSA	0.0026	mg/kg	UD	ND	
Endosulfan II	Other	33213-65-9	Organic	B2C0J0	Target 20-3	OCSA	0.0053	mg/kg	UD	ND	
Endosulfan II	Other	33213-65-9	Organic	B2C0J1	Target 20-4	OCSA	0.00025	mg/kg	U	ND	
Endosulfan II	Other	33213-65-9	Organic	B2C0J3	Target 21-1	OCSA	0.00025	mg/kg	U	ND	
Endosulfan II	Other	33213-65-9	Organic	B2C0J4	Target 21-2	OCSA	0.00026	mg/kg	U	ND	
Endosulfan II	Other	33213-65-9	Organic	B2C0J5	Target 21-3	OCSA	0.00025	mg/kg	U	ND	
Endosulfan II	Other	33213-65-9	Organic	B2C0J6	Target 21-4	OCSA	0.00025	mg/kg	U	ND	
Endosulfan II	Other	33213-65-9	Organic	B2C0J7	Target 21-5	OCSA	0.00025	mg/kg	U	ND	
Endosulfan II	Other	33213-65-9	Organic	B2C0J8	Target 22-1	OCSA	0.00025	mg/kg	U	ND	
Endosulfan II	Other	33213-65-9	Organic	B2C0J9	Target 22-2	OCSA	0.0013	mg/kg	UD	ND	
Endosulfan II	Other	33213-65-9	Organic	B2C0K0	Target 22-3	OCSA	0.00026	mg/kg	U	ND	
Endosulfan II	Other	33213-65-9	Organic	B2C0K1	Target 22-4	OCSA	0.00026	mg/kg	U	ND	
Endosulfan II	Other	33213-65-9	Organic	B2C0K2	Target 22-4D	OCSA	0.00026	mg/kg	U	ND	
Endosulfan II	Other	33213-65-9	Organic	B2C0K3	Target 22-5	OCSA	0.00027	mg/kg	U	ND	
Endosulfan II	Other	33213-65-9	Organic	B2C0K4	Target 23-1	OCSA	0.00026	mg/kg	U	ND	
Endosulfan II	Other	33213-65-9	Organic	B2C0K5	Target 23-2	OCSA	0.00025	mg/kg	U	ND	
Endosulfan II	Other	33213-65-9	Organic	B2C0K6	Target 23-3	OCSA	0.00026	mg/kg	U	ND	
Endosulfan II	Other	33213-65-9	Organic	B2BXX5	Target 24-1	120-KW-1	0.00025	mg/kg	U	ND	
Endosulfan II	Other	33213-65-9	Organic	B2BXX7	Target 24-2	120-KW-1	0.00026	mg/kg	U	ND	
Endosulfan II	Other	33213-65-9	Organic	B2BXX8	Target 24-3	120-KW-1	0.00026	mg/kg	U	ND	
Endosulfan II	Other	33213-65-9	Organic	B2BXY0	Target 24-5	120-KW-1	0.00025	mg/kg	U	ND	
Endosulfan II	Other	33213-65-9	Organic	B2BP89	Target 6-5	600-228	0.00025	mg/kg	U	ND	
Endosulfan II	Other	33213-65-9	Organic	B2C1C4	Target 7-1	600-281	0.00025	mg/kg	U	ND	
Endosulfan II	Other	33213-65-9	Organic	B2C1D2	Target 8-3	600-281	0.00025	mg/kg	U	ND	
Endosulfan sulfate	Other	1031-07-8	Organic	B2BW15	Control 1	600-218	0.00027	mg/kg	U	ND	
Endosulfan sulfate	Other	1031-07-8	Organic	B2BW28	Control 13	OCSA	0.00027	mg/kg	U	ND	
Endosulfan sulfate	Other	1031-07-8	Organic	B2BW30	Control 15	OCSA	0.00027	mg/kg	U	ND	
Endosulfan sulfate	Other	1031-07-8	Organic	B2BW31	Control 16	OCSA	0.00027	mg/kg	U	ND	
Endosulfan sulfate	Other	1031-07-8	Organic	B2BW32	Control 17	OCSA	0.00026	mg/kg	U	ND	
Endosulfan sulfate	Other	1031-07-8	Organic	B2BW33	Control 18	OCSA	0.00027	mg/kg	U	ND	
Endosulfan sulfate	Other	1031-07-8	Organic	B2BW16	Control 2	600-218	0.00027	mg/kg	U	ND	
Endosulfan sulfate	Other	1031-07-8	Organic	B2BW35	Control 20	OCSA	0.00027	mg/kg	U	ND	
Endosulfan sulfate	Other	1031-07-8	Organic	B2BW18	Control 4	600-220	0.00027	mg/kg	U	ND	
Endosulfan sulfate	Other	1031-07-8	Organic	B2BW22	Control 8	600-228	0.00026	mg/kg	U	ND	
Endosulfan sulfate	Other	1031-07-8	Organic	B2BW24	Control 9D	600-228	0.00025	mg/kg	U	ND	
Endosulfan sulfate	Other	1031-07-8	Organic	B2C0B0	Target 11-1	OCSA	0.00026	mg/kg	U	ND	
Endosulfan sulfate	Other	1031-07-8	Organic	B2C0B5	Target 12-1	OCSA	0.00026	mg/kg	U	ND	
Endosulfan sulfate	Other	1031-07-8	Organic	B2C0B6	Target 12-2	OCSA	0.00025	mg/kg	U	ND	
Endosulfan sulfate	Other	1031-07-8	Organic	B2C0B7	Target 12-3	OCSA	0.00029	mg/kg	U	ND	
Endosulfan sulfate	Other	1031-07-8	Organic	B2C0B8	Target 12-4	OCSA	0.00026	mg/kg	U	ND	
Endosulfan sulfate	Other	1031-07-8	Organic	B2C0B9	Target 12-4D	OCSA	0.00026	mg/kg	U	ND	
Endosulfan sulfate	Other	1031-07-8	Organic	B2C0C0	Target 12-5	OCSA	0.00028	mg/kg	U	ND	
Endosulfan sulfate	Other	1031-07-8	Organic	B2C0C1	Target 13-1	OCSA	0.00027	mg/kg	U	ND	
Endosulfan sulfate	Other	1031-07-8	Organic	B2C0C2	Target 13-2	OCSA	0.00027	mg/kg	U	ND	
Endosulfan sulfate	Other	1031-07-8	Organic	B2C0C3	Target 13-3	OCSA	0.00026	mg/kg	U	ND	
Endosulfan sulfate	Other	1031-07-8	Organic	B2C0C4	Target 13-4	OCSA	0.00027	mg/kg	U	ND	
Endosulfan sulfate	Other	1031-07-8	Organic	B2C0C5	Target 13-5	OCSA	0.00026	mg/kg	U	ND	
Endosulfan sulfate	Other	1031-07-8	Organic	B2C0C6	Target 14-1	OCSA	0.00026	mg/kg	U	ND	
Endosulfan sulfate	Other	1031-07-8	Organic	B2C0C7	Target 14-2	OCSA	0.00026	mg/kg	U	ND	
Endosulfan sulfate	Other	1031-07-8	Organic	B2C0C8	Target 14-3	OCSA	0.00027	mg/kg	U	ND	
Endosulfan sulfate	Other	1031-07-8	Organic	B2C0C9	Target 14-4	OCSA	0.00027	mg/kg	U	ND	
Endosulfan sulfate	Other	1031-07-8	Organic	B2C0D0	Target 14-5	OCSA	0.00026	mg/kg	U	ND	
Endosulfan sulfate	Other	1031-07-8	Organic	B2C0D7	Target 16-1	OCSA	0.00027	mg/kg	U	ND	
Endosulfan sulfate	Other	1031-07-8	Organic	B2C0D8	Target 16-2	OCSA	0.00028	mg/kg	U	ND	
Endosulfan sulfate	Other	1031-07-8	Organic	B2C0D9	Target 16-3	OCSA	0.00027	mg/kg	U	ND	
Endosulfan sulfate	Other	1031-07-8	Organic	B2C0F0	Target 16-4	OCSA	0.00027	mg/kg	U	ND	
Endosulfan sulfate	Other	1031-07-8	Organic	B2C0F1	Target 16-5	OCSA	0.00027	mg/kg	U	ND	
Endosulfan sulfate	Other	1031-07-8	Organic	B2C0F2	Target 17-1	OCSA	0.00028	mg/kg	U	ND	
Endosulfan sulfate	Other	1031-07-8	Organic	B2C0F3	Target 17-2	OCSA	0.00027	mg/kg	U	ND	
Endosulfan sulfate	Other	1031-07-8	Organic	B2C0F4	Target 17-3	OCSA	0.00027	mg/kg	U	ND	
Endosulfan sulfate	Other	1031-07-8	Organic	B2C0F5	Target 17-4	OCSA	0.00027	mg/kg	U	ND	
Endosulfan sulfate	Other	1031-07-8	Organic	B2C0F6	Target 17-5	OCSA	0.00028	mg/kg	U	ND	
Endosulfan sulfate	Other	1031-07-8	Organic	B2C0F7	Target 18-1	OCSA	0.00027	mg/kg	U	ND	
Endosulfan sulfate	Other	1031-07-8	Organic	B2C0F8	Target 18-2	OCSA	0.00027	mg/kg	U	ND	
Endosulfan sulfate	Other	1031-07-8	Organic	B2C0F9	Target 18-3	OCSA	0.00027	mg/kg	U	ND	
Endosulfan sulfate	Other	1031-07-8	Organic	B2C0H0	Target 18-3D	OCSA	0.00027	mg/kg	U	ND	
Endosulfan sulfate	Other	1031-07-8	Organic	B2C0H1	Target 18-4	OCSA	0.00027	mg/kg	U	ND	
Endosulfan sulfate	Other	1031-07-8	Organic	B2C0H2	Target 18-5	OCSA	0.00028	mg/kg	U	ND	
Endosulfan sulfate	Other	1031-07-8	Organic	B2C0H6	Target 19-4	OCSA	0.00027	mg/kg	U	ND	

Table 3-1 Analytical chemistry data for soils used for plant and soil invertebrate bioassays for upland locations at the Hanford Site

Analyte	Priority	CASNo	AnalGrp	SampleID	LocationID	WasteSite	Conc	Units	Qualifer	qual	grp
Endosulfan sulfate	Other	1031-07-8	Organic	B2C0H8	Target 20-1	OCSA	0.0056	mg/kg	UD	ND	
Endosulfan sulfate	Other	1031-07-8	Organic	B2C0H9	Target 20-2	OCSA	0.0027	mg/kg	UD	ND	
Endosulfan sulfate	Other	1031-07-8	Organic	B2C0J0	Target 20-3	OCSA	0.0056	mg/kg	UD	ND	
Endosulfan sulfate	Other	1031-07-8	Organic	B2C0J1	Target 20-4	OCSA	0.00027	mg/kg	U	ND	
Endosulfan sulfate	Other	1031-07-8	Organic	B2C0J3	Target 21-1	OCSA	0.00027	mg/kg	U	ND	
Endosulfan sulfate	Other	1031-07-8	Organic	B2C0J4	Target 21-2	OCSA	0.00027	mg/kg	U	ND	
Endosulfan sulfate	Other	1031-07-8	Organic	B2C0J5	Target 21-3	OCSA	0.00026	mg/kg	U	ND	
Endosulfan sulfate	Other	1031-07-8	Organic	B2C0J6	Target 21-4	OCSA	0.00027	mg/kg	U	ND	
Endosulfan sulfate	Other	1031-07-8	Organic	B2C0J7	Target 21-5	OCSA	0.00027	mg/kg	U	ND	
Endosulfan sulfate	Other	1031-07-8	Organic	B2C0J8	Target 22-1	OCSA	0.00027	mg/kg	U	ND	
Endosulfan sulfate	Other	1031-07-8	Organic	B2C0J9	Target 22-2	OCSA	0.0013	mg/kg	UD	ND	
Endosulfan sulfate	Other	1031-07-8	Organic	B2C0K0	Target 22-3	OCSA	0.00027	mg/kg	U	ND	
Endosulfan sulfate	Other	1031-07-8	Organic	B2C0K1	Target 22-4	OCSA	0.00027	mg/kg	U	ND	
Endosulfan sulfate	Other	1031-07-8	Organic	B2C0K2	Target 22-4D	OCSA	0.00027	mg/kg	U	ND	
Endosulfan sulfate	Other	1031-07-8	Organic	B2C0K3	Target 22-5	OCSA	0.00028	mg/kg	U	ND	
Endosulfan sulfate	Other	1031-07-8	Organic	B2C0K4	Target 23-1	OCSA	0.00027	mg/kg	U	ND	
Endosulfan sulfate	Other	1031-07-8	Organic	B2C0K5	Target 23-2	OCSA	0.00027	mg/kg	U	ND	
Endosulfan sulfate	Other	1031-07-8	Organic	B2C0K6	Target 23-3	OCSA	0.00027	mg/kg	U	ND	
Endosulfan sulfate	Other	1031-07-8	Organic	B2BXX5	Target 24-1	120-KW-1	0.00027	mg/kg	U	ND	
Endosulfan sulfate	Other	1031-07-8	Organic	B2BXX7	Target 24-2	120-KW-1	0.00028	mg/kg	U	ND	
Endosulfan sulfate	Other	1031-07-8	Organic	B2BXX8	Target 24-3	120-KW-1	0.00028	mg/kg	U	ND	
Endosulfan sulfate	Other	1031-07-8	Organic	B2BXY0	Target 24-5	120-KW-1	0.00026	mg/kg	U	ND	
Endosulfan sulfate	Other	1031-07-8	Organic	B2BP89	Target 6-5	600-228	0.00027	mg/kg	U	ND	
Endosulfan sulfate	Other	1031-07-8	Organic	B2C1C4	Target 7-1	600-281	0.00027	mg/kg	U	ND	
Endosulfan sulfate	Other	1031-07-8	Organic	B2C1D2	Target 8-3	600-281	0.00026	mg/kg	U	ND	
Endrin	Other	72-20-8	Organic	B2BW15	Control 1	600-218	0.00015	mg/kg	U	ND	
Endrin	Other	72-20-8	Organic	B2BW28	Control 13	OCSA	0.00014	mg/kg	UN	ND	
Endrin	Other	72-20-8	Organic	B2BW30	Control 15	OCSA	0.00015	mg/kg	UN	ND	
Endrin	Other	72-20-8	Organic	B2BW31	Control 16	OCSA	0.00015	mg/kg	UN	ND	
Endrin	Other	72-20-8	Organic	B2BW32	Control 17	OCSA	0.00014	mg/kg	UN	ND	
Endrin	Other	72-20-8	Organic	B2BW33	Control 18	OCSA	0.00015	mg/kg	UN	ND	
Endrin	Other	72-20-8	Organic	B2BW16	Control 2	600-218	0.00015	mg/kg	U	ND	
Endrin	Other	72-20-8	Organic	B2BW35	Control 20	OCSA	0.00015	mg/kg	UN	ND	
Endrin	Other	72-20-8	Organic	B2BW18	Control 4	600-220	0.00015	mg/kg	U	ND	
Endrin	Other	72-20-8	Organic	B2BW22	Control 8	600-228	0.00014	mg/kg	U	ND	
Endrin	Other	72-20-8	Organic	B2BW24	Control 9D	600-228	0.00027	mg/kg	U	ND	
Endrin	Other	72-20-8	Organic	B2C0B0	Target 11-1	OCSA	0.00014	mg/kg	U	ND	
Endrin	Other	72-20-8	Organic	B2C0B5	Target 12-1	OCSA	0.00014	mg/kg	U	ND	
Endrin	Other	72-20-8	Organic	B2C0B6	Target 12-2	OCSA	0.00014	mg/kg	U	ND	
Endrin	Other	72-20-8	Organic	B2C0B7	Target 12-3	OCSA	0.00016	mg/kg	U	ND	
Endrin	Other	72-20-8	Organic	B2C0B8	Target 12-4	OCSA	0.00014	mg/kg	U	ND	
Endrin	Other	72-20-8	Organic	B2C0B9	Target 12-4D	OCSA	0.00014	mg/kg	U	ND	
Endrin	Other	72-20-8	Organic	B2C0C0	Target 12-5	OCSA	0.00016	mg/kg	U	ND	
Endrin	Other	72-20-8	Organic	B2C0C1	Target 13-1	OCSA	0.00015	mg/kg	U	ND	
Endrin	Other	72-20-8	Organic	B2C0C2	Target 13-2	OCSA	0.00015	mg/kg	U	ND	
Endrin	Other	72-20-8	Organic	B2C0C3	Target 13-3	OCSA	0.00014	mg/kg	U	ND	
Endrin	Other	72-20-8	Organic	B2C0C4	Target 13-4	OCSA	0.00015	mg/kg	U	ND	
Endrin	Other	72-20-8	Organic	B2C0C5	Target 13-5	OCSA	0.00014	mg/kg	U	ND	
Endrin	Other	72-20-8	Organic	B2C0C6	Target 14-1	OCSA	0.00014	mg/kg	U	ND	
Endrin	Other	72-20-8	Organic	B2C0C7	Target 14-2	OCSA	0.00014	mg/kg	U	ND	
Endrin	Other	72-20-8	Organic	B2C0C8	Target 14-3	OCSA	0.00015	mg/kg	U	ND	
Endrin	Other	72-20-8	Organic	B2C0C9	Target 14-4	OCSA	0.00015	mg/kg	U	ND	
Endrin	Other	72-20-8	Organic	B2C0D0	Target 14-5	OCSA	0.00014	mg/kg	U	ND	
Endrin	Other	72-20-8	Organic	B2C0D7	Target 16-1	OCSA	0.00015	mg/kg	UN	ND	
Endrin	Other	72-20-8	Organic	B2C0D8	Target 16-2	OCSA	0.00015	mg/kg	UN	ND	
Endrin	Other	72-20-8	Organic	B2C0D9	Target 16-3	OCSA	0.00015	mg/kg	UN	ND	
Endrin	Other	72-20-8	Organic	B2C0F0	Target 16-4	OCSA	0.00015	mg/kg	UN	ND	
Endrin	Other	72-20-8	Organic	B2C0F1	Target 16-5	OCSA	0.00015	mg/kg	UN	ND	
Endrin	Other	72-20-8	Organic	B2C0F2	Target 17-1	OCSA	0.00015	mg/kg	UN	ND	
Endrin	Other	72-20-8	Organic	B2C0F3	Target 17-2	OCSA	0.00015	mg/kg	UN	ND	
Endrin	Other	72-20-8	Organic	B2C0F4	Target 17-3	OCSA	0.00015	mg/kg	UN	ND	
Endrin	Other	72-20-8	Organic	B2C0F5	Target 17-4	OCSA	0.00015	mg/kg	UN	ND	
Endrin	Other	72-20-8	Organic	B2C0F6	Target 17-5	OCSA	0.00015	mg/kg	UN	ND	
Endrin	Other	72-20-8	Organic	B2C0F7	Target 18-1	OCSA	0.00015	mg/kg	UN	ND	
Endrin	Other	72-20-8	Organic	B2C0F8	Target 18-2	OCSA	0.00015	mg/kg	UN	ND	
Endrin	Other	72-20-8	Organic	B2C0F9	Target 18-3	OCSA	0.00015	mg/kg	UN	ND	
Endrin	Other	72-20-8	Organic	B2C0H0	Target 18-3D	OCSA	0.00015	mg/kg	UN	ND	
Endrin	Other	72-20-8	Organic	B2C0H1	Target 18-4	OCSA	0.00015	mg/kg	UN	ND	
Endrin	Other	72-20-8	Organic	B2C0H2	Target 18-5	OCSA	0.00015	mg/kg	UN	ND	
Endrin	Other	72-20-8	Organic	B2C0H6	Target 19-4	OCSA	0.00015	mg/kg	U	ND	
Endrin	Other	72-20-8	Organic	B2C0H8	Target 20-1	OCSA	0.0031	mg/kg	UDN	ND	
Endrin	Other	72-20-8	Organic	B2C0H9	Target 20-2	OCSA	0.0015	mg/kg	UDN	ND	
Endrin	Other	72-20-8	Organic	B2C0J0	Target 20-3	OCSA	0.0031	mg/kg	UDN	ND	
Endrin	Other	72-20-8	Organic	B2C0J1	Target 20-4	OCSA	0.00015	mg/kg	UN	ND	
Endrin	Other	72-20-8	Organic	B2C0J3	Target 21-1	OCSA	0.00015	mg/kg	U	ND	
Endrin	Other	72-20-8	Organic	B2C0J4	Target 21-2	OCSA	0.00015	mg/kg	U	ND	
Endrin	Other	72-20-8	Organic	B2C0J5	Target 21-3	OCSA	0.00014	mg/kg	U	ND	
Endrin	Other	72-20-8	Organic	B2C0J6	Target 21-4	OCSA	0.00014	mg/kg	U	ND	
Endrin	Other	72-20-8	Organic	B2C0J7	Target 21-5	OCSA	0.00015	mg/kg	U	ND	
Endrin	Other	72-20-8	Organic	B2C0J8	Target 22-1	OCSA	0.00015	mg/kg	U	ND	
Endrin	Other	72-20-8	Organic	B2C0J9	Target 22-2	OCSA	0.00073	mg/kg	UD	ND	
Endrin	Other	72-20-8	Organic	B2C0K0	Target 22-3	OCSA	0.00015	mg/kg	U	ND	
Endrin	Other	72-20-8	Organic	B2C0K1	Target 22-4	OCSA	0.00015	mg/kg	U	ND	
Endrin	Other	72-20-8	Organic	B2C0K2	Target 22-4D	OCSA	0.00015	mg/kg	U	ND	
Endrin	Other	72-20-8	Organic	B2C0K3	Target 22-5	OCSA	0.00015	mg/kg	U	ND	
Endrin	Other	72-20-8	Organic	B2C0K4	Target 23-1	OCSA	0.00015	mg/kg	U	ND	
Endrin	Other	72-20-8	Organic	B2C0K5	Target 23-2	OCSA	0.00015	mg/kg	U	ND	
Endrin	Other	72-20-8	Organic	B2C0K6	Target 23-3	OCSA	0.00015	mg/kg	U	ND	
Endrin	Other	72-20-8	Organic	B2BXX5	Target 24-1	120-KW-1	0.00015	mg/kg	U	ND	
Endrin	Other	72-20-8	Organic	B2BXX7	Target 24-2	120-KW-1	0.00015	mg/kg	U	ND	
Endrin	Other	72-20-8	Organic	B2BXX8	Target 24-3	120-KW-1	0.00015	mg/kg	U	ND	
Endrin	Other	72-20-8	Organic	B2BXY0	Target 24-5	120-KW-1	0.00014	mg/kg	U	ND	
Endrin	Other	72-20-8	Organic	B2BP89	Target 6-5	600-228	0.00014	mg/kg	UN	ND	
Endrin	Other	72-20-8	Organic	B2C1C4	Target 7-1	600-281	0.00015	mg/kg	U	ND	
Endrin	Other	72-20-8	Organic	B2C1D2	Target 8-3	600-281	0.00014	mg/kg	U	ND	
Endrin aldehyde	Other	7421-93-4	Organic	B2BW15	Control 1	600-218	0.00043	mg/kg	U	ND	
Endrin aldehyde	Other	7421-93-4	Organic	B2BW28	Control 13	OCSA	0.00041	mg/kg	U	ND	

Table 3-1 Analytical chemistry data for soils used for plant and soil invertebrate bioassays for upland locations at the Hanford Site

Analyte	Priority	CASNo	AnalGrp	SampleID	LocationID	WasteSite	Conc	Units	Qualifer	qual	grp
Endrin aldehyde	Other	7421-93-4	Organic	B2BW30	Control 15	OCSA	0.00042	mg/kg	U	ND	
Endrin aldehyde	Other	7421-93-4	Organic	B2BW31	Control 16	OCSA	0.00042	mg/kg	U	ND	
Endrin aldehyde	Other	7421-93-4	Organic	B2BW32	Control 17	OCSA	0.00041	mg/kg	U	ND	
Endrin aldehyde	Other	7421-93-4	Organic	B2BW33	Control 18	OCSA	0.00042	mg/kg	U	ND	
Endrin aldehyde	Other	7421-93-4	Organic	B2BW16	Control 2	600-218	0.00042	mg/kg	U	ND	
Endrin aldehyde	Other	7421-93-4	Organic	B2BW35	Control 20	OCSA	0.00042	mg/kg	U	ND	
Endrin aldehyde	Other	7421-93-4	Organic	B2BW18	Control 4	600-220	0.00042	mg/kg	U	ND	
Endrin aldehyde	Other	7421-93-4	Organic	B2BW22	Control 8	600-228	0.00041	mg/kg	U	ND	
Endrin aldehyde	Other	7421-93-4	Organic	B2BW24	Control 9D	600-228	0.00041	mg/kg	U	ND	
Endrin aldehyde	Other	7421-93-4	Organic	B2C0B0	Target 11-1	OCSA	0.0004	mg/kg	U	ND	
Endrin aldehyde	Other	7421-93-4	Organic	B2C0B5	Target 12-1	OCSA	0.00041	mg/kg	U	ND	
Endrin aldehyde	Other	7421-93-4	Organic	B2C0B6	Target 12-2	OCSA	0.0004	mg/kg	U	ND	
Endrin aldehyde	Other	7421-93-4	Organic	B2C0B7	Target 12-3	OCSA	0.00045	mg/kg	U	ND	
Endrin aldehyde	Other	7421-93-4	Organic	B2C0B8	Target 12-4	OCSA	0.00041	mg/kg	U	ND	
Endrin aldehyde	Other	7421-93-4	Organic	B2C0B9	Target 12-4D	OCSA	0.00041	mg/kg	U	ND	
Endrin aldehyde	Other	7421-93-4	Organic	B2C0C0	Target 12-5	OCSA	0.00045	mg/kg	U	ND	
Endrin aldehyde	Other	7421-93-4	Organic	B2C0C1	Target 13-1	OCSA	0.00041	mg/kg	U	ND	
Endrin aldehyde	Other	7421-93-4	Organic	B2C0C2	Target 13-2	OCSA	0.00042	mg/kg	U	ND	
Endrin aldehyde	Other	7421-93-4	Organic	B2C0C3	Target 13-3	OCSA	0.0004	mg/kg	U	ND	
Endrin aldehyde	Other	7421-93-4	Organic	B2C0C4	Target 13-4	OCSA	0.00042	mg/kg	U	ND	
Endrin aldehyde	Other	7421-93-4	Organic	B2C0C5	Target 13-5	OCSA	0.00041	mg/kg	U	ND	
Endrin aldehyde	Other	7421-93-4	Organic	B2C0C6	Target 14-1	OCSA	0.00041	mg/kg	U	ND	
Endrin aldehyde	Other	7421-93-4	Organic	B2C0C7	Target 14-2	OCSA	0.00041	mg/kg	U	ND	
Endrin aldehyde	Other	7421-93-4	Organic	B2C0C8	Target 14-3	OCSA	0.00042	mg/kg	U	ND	
Endrin aldehyde	Other	7421-93-4	Organic	B2C0C9	Target 14-4	OCSA	0.00042	mg/kg	U	ND	
Endrin aldehyde	Other	7421-93-4	Organic	B2C0D0	Target 14-5	OCSA	0.00041	mg/kg	U	ND	
Endrin aldehyde	Other	7421-93-4	Organic	B2C0D7	Target 16-1	OCSA	0.00042	mg/kg	U	ND	
Endrin aldehyde	Other	7421-93-4	Organic	B2C0D8	Target 16-2	OCSA	0.00043	mg/kg	U	ND	
Endrin aldehyde	Other	7421-93-4	Organic	B2C0D9	Target 16-3	OCSA	0.00042	mg/kg	U	ND	
Endrin aldehyde	Other	7421-93-4	Organic	B2C0F0	Target 16-4	OCSA	0.00042	mg/kg	U	ND	
Endrin aldehyde	Other	7421-93-4	Organic	B2C0F1	Target 16-5	OCSA	0.00042	mg/kg	U	ND	
Endrin aldehyde	Other	7421-93-4	Organic	B2C0F2	Target 17-1	OCSA	0.00043	mg/kg	U	ND	
Endrin aldehyde	Other	7421-93-4	Organic	B2C0F3	Target 17-2	OCSA	0.00042	mg/kg	U	ND	
Endrin aldehyde	Other	7421-93-4	Organic	B2C0F4	Target 17-3	OCSA	0.00043	mg/kg	U	ND	
Endrin aldehyde	Other	7421-93-4	Organic	B2C0F5	Target 17-4	OCSA	0.00042	mg/kg	U	ND	
Endrin aldehyde	Other	7421-93-4	Organic	B2C0F6	Target 17-5	OCSA	0.00043	mg/kg	U	ND	
Endrin aldehyde	Other	7421-93-4	Organic	B2C0F7	Target 18-1	OCSA	0.00043	mg/kg	U	ND	
Endrin aldehyde	Other	7421-93-4	Organic	B2C0F8	Target 18-2	OCSA	0.00042	mg/kg	U	ND	
Endrin aldehyde	Other	7421-93-4	Organic	B2C0F9	Target 18-3	OCSA	0.00042	mg/kg	U	ND	
Endrin aldehyde	Other	7421-93-4	Organic	B2C0H0	Target 18-3D	OCSA	0.00042	mg/kg	U	ND	
Endrin aldehyde	Other	7421-93-4	Organic	B2C0H1	Target 18-4	OCSA	0.00043	mg/kg	U	ND	
Endrin aldehyde	Other	7421-93-4	Organic	B2C0H2	Target 18-5	OCSA	0.00043	mg/kg	U	ND	
Endrin aldehyde	Other	7421-93-4	Organic	B2C0H6	Target 19-4	OCSA	0.00042	mg/kg	U	ND	
Endrin aldehyde	Other	7421-93-4	Organic	B2C0H8	Target 20-1	OCSA	0.0088	mg/kg	UD	ND	
Endrin aldehyde	Other	7421-93-4	Organic	B2C0H9	Target 20-2	OCSA	0.0042	mg/kg	UD	ND	
Endrin aldehyde	Other	7421-93-4	Organic	B2C0J0	Target 20-3	OCSA	0.0088	mg/kg	UD	ND	
Endrin aldehyde	Other	7421-93-4	Organic	B2C0J1	Target 20-4	OCSA	0.00042	mg/kg	U	ND	
Endrin aldehyde	Other	7421-93-4	Organic	B2C0J3	Target 21-1	OCSA	0.00042	mg/kg	U	ND	
Endrin aldehyde	Other	7421-93-4	Organic	B2C0J4	Target 21-2	OCSA	0.00043	mg/kg	U	ND	
Endrin aldehyde	Other	7421-93-4	Organic	B2C0J5	Target 21-3	OCSA	0.00041	mg/kg	U	ND	
Endrin aldehyde	Other	7421-93-4	Organic	B2C0J6	Target 21-4	OCSA	0.00041	mg/kg	U	ND	
Endrin aldehyde	Other	7421-93-4	Organic	B2C0J7	Target 21-5	OCSA	0.00042	mg/kg	U	ND	
Endrin aldehyde	Other	7421-93-4	Organic	B2C0J8	Target 22-1	OCSA	0.00042	mg/kg	U	ND	
Endrin aldehyde	Other	7421-93-4	Organic	B2C0J9	Target 22-2	OCSA	0.0021	mg/kg	UD	ND	
Endrin aldehyde	Other	7421-93-4	Organic	B2C0K0	Target 22-3	OCSA	0.00043	mg/kg	U	ND	
Endrin aldehyde	Other	7421-93-4	Organic	B2C0K1	Target 22-4	OCSA	0.00043	mg/kg	U	ND	
Endrin aldehyde	Other	7421-93-4	Organic	B2C0K2	Target 22-4D	OCSA	0.00043	mg/kg	U	ND	
Endrin aldehyde	Other	7421-93-4	Organic	B2C0K3	Target 22-5	OCSA	0.00044	mg/kg	U	ND	
Endrin aldehyde	Other	7421-93-4	Organic	B2C0K4	Target 23-1	OCSA	0.00042	mg/kg	U	ND	
Endrin aldehyde	Other	7421-93-4	Organic	B2C0K5	Target 23-2	OCSA	0.00042	mg/kg	U	ND	
Endrin aldehyde	Other	7421-93-4	Organic	B2C0K6	Target 23-3	OCSA	0.00042	mg/kg	U	ND	
Endrin aldehyde	Other	7421-93-4	Organic	B2BXX5	Target 24-1	120-KW-1	0.00042	mg/kg	U	ND	
Endrin aldehyde	Other	7421-93-4	Organic	B2BXX7	Target 24-2	120-KW-1	0.00044	mg/kg	U	ND	
Endrin aldehyde	Other	7421-93-4	Organic	B2BXX8	Target 24-3	120-KW-1	0.00044	mg/kg	U	ND	
Endrin aldehyde	Other	7421-93-4	Organic	B2BXY0	Target 24-5	120-KW-1	0.00041	mg/kg	U	ND	
Endrin aldehyde	Other	7421-93-4	Organic	B2BP89	Target 6-5	600-228	0.00041	mg/kg	U	ND	
Endrin aldehyde	Other	7421-93-4	Organic	B2C1C4	Target 7-1	600-281	0.00042	mg/kg	U	ND	
Endrin aldehyde	Other	7421-93-4	Organic	B2C1D2	Target 8-3	600-281	0.00041	mg/kg	U	ND	
Endrin ketone	Other	53494-70-5	Organic	B2BW15	Control 1	600-218	0.00032	mg/kg	U	ND	
Endrin ketone	Other	53494-70-5	Organic	B2BW28	Control 13	OCSA	0.00032	mg/kg	U	ND	
Endrin ketone	Other	53494-70-5	Organic	B2BW30	Control 15	OCSA	0.00032	mg/kg	U	ND	
Endrin ketone	Other	53494-70-5	Organic	B2BW31	Control 16	OCSA	0.00032	mg/kg	U	ND	
Endrin ketone	Other	53494-70-5	Organic	B2BW32	Control 17	OCSA	0.00031	mg/kg	U	ND	
Endrin ketone	Other	53494-70-5	Organic	B2BW33	Control 18	OCSA	0.00032	mg/kg	U	ND	
Endrin ketone	Other	53494-70-5	Organic	B2BW16	Control 2	600-218	0.00032	mg/kg	U	ND	
Endrin ketone	Other	53494-70-5	Organic	B2BW35	Control 20	OCSA	0.00032	mg/kg	U	ND	
Endrin ketone	Other	53494-70-5	Organic	B2BW18	Control 4	600-220	0.00032	mg/kg	U	ND	
Endrin ketone	Other	53494-70-5	Organic	B2BW22	Control 8	600-228	0.00032	mg/kg	U	ND	
Endrin ketone	Other	53494-70-5	Organic	B2BW24	Control 9D	600-228	0.00032	mg/kg	U	ND	
Endrin ketone	Other	53494-70-5	Organic	B2C0B0	Target 11-1	OCSA	0.00031	mg/kg	U	ND	
Endrin ketone	Other	53494-70-5	Organic	B2C0B5	Target 12-1	OCSA	0.00031	mg/kg	U	ND	
Endrin ketone	Other	53494-70-5	Organic	B2C0B6	Target 12-2	OCSA	0.0003	mg/kg	U	ND	
Endrin ketone	Other	53494-70-5	Organic	B2C0B7	Target 12-3	OCSA	0.00035	mg/kg	U	ND	
Endrin ketone	Other	53494-70-5	Organic	B2C0B8	Target 12-4	OCSA	0.00031	mg/kg	U	ND	
Endrin ketone	Other	53494-70-5	Organic	B2C0B9	Target 12-4D	OCSA	0.00031	mg/kg	U	ND	
Endrin ketone	Other	53494-70-5	Organic	B2C0C0	Target 12-5	OCSA	0.00034	mg/kg	U	ND	
Endrin ketone	Other	53494-70-5	Organic	B2C0C1	Target 13-1	OCSA	0.00032	mg/kg	U	ND	
Endrin ketone	Other	53494-70-5	Organic	B2C0C2	Target 13-2	OCSA	0.00032	mg/kg	U	ND	
Endrin ketone	Other	53494-70-5	Organic	B2C0C3	Target 13-3	OCSA	0.00031	mg/kg	U	ND	
Endrin ketone	Other	53494-70-5	Organic	B2C0C4	Target 13-4	OCSA	0.00032	mg/kg	U	ND	
Endrin ketone	Other	53494-70-5	Organic	B2C0C5	Target 13-5	OCSA	0.00032	mg/kg	U	ND	
Endrin ketone	Other	53494-70-5	Organic	B2C0C6	Target 14-1	OCSA	0.00031	mg/kg	U	ND	
Endrin ketone	Other	53494-70-5	Organic	B2C0C7	Target 14-2	OCSA	0.00031	mg/kg	U	ND	
Endrin ketone	Other	53494-70-5	Organic	B2C0C8	Target 14-3	OCSA	0.00032	mg/kg	U	ND	
Endrin ketone	Other	53494-70-5	Organic	B2C0C9	Target 14-4	OCSA	0.00032	mg/kg	U	ND	
Endrin ketone	Other	53494-70-5	Organic	B2C0D0	Target 14-5	OCSA	0.00031	mg/kg	U	ND	
Endrin ketone	Other	53494-70-5	Organic	B2C0D7	Target 16-1	OCSA	0.00032	mg/kg	UN	ND	

Table 3-1 Analytical chemistry data for soils used for plant and soil invertebrate bioassays for upland locations at the Hanford Site

Analyte	Priority	CASNo	AnalGrp	SampleID	LocationID	WasteSite	Conc	Units	Qualifer	qual	grp
Endrin ketone	Other	53494-70-5	Organic	B2C0D8	Target 16-2	OCSA	0.00033	mg/kg	UN	ND	
Endrin ketone	Other	53494-70-5	Organic	B2C0D9	Target 16-3	OCSA	0.00032	mg/kg	UN	ND	
Endrin ketone	Other	53494-70-5	Organic	B2C0F0	Target 16-4	OCSA	0.00032	mg/kg	UN	ND	
Endrin ketone	Other	53494-70-5	Organic	B2C0F1	Target 16-5	OCSA	0.00032	mg/kg	UN	ND	
Endrin ketone	Other	53494-70-5	Organic	B2C0F2	Target 17-1	OCSA	0.00033	mg/kg	UN	ND	
Endrin ketone	Other	53494-70-5	Organic	B2C0F3	Target 17-2	OCSA	0.00032	mg/kg	UN	ND	
Endrin ketone	Other	53494-70-5	Organic	B2C0F4	Target 17-3	OCSA	0.00033	mg/kg	UN	ND	
Endrin ketone	Other	53494-70-5	Organic	B2C0F5	Target 17-4	OCSA	0.00032	mg/kg	UN	ND	
Endrin ketone	Other	53494-70-5	Organic	B2C0F6	Target 17-5	OCSA	0.00033	mg/kg	UN	ND	
Endrin ketone	Other	53494-70-5	Organic	B2C0F7	Target 18-1	OCSA	0.00033	mg/kg	UN	ND	
Endrin ketone	Other	53494-70-5	Organic	B2C0F8	Target 18-2	OCSA	0.00032	mg/kg	UN	ND	
Endrin ketone	Other	53494-70-5	Organic	B2C0F9	Target 18-3	OCSA	0.00032	mg/kg	UN	ND	
Endrin ketone	Other	53494-70-5	Organic	B2C0H0	Target 18-3D	OCSA	0.00032	mg/kg	UN	ND	
Endrin ketone	Other	53494-70-5	Organic	B2C0H1	Target 18-4	OCSA	0.00032	mg/kg	UN	ND	
Endrin ketone	Other	53494-70-5	Organic	B2C0H2	Target 18-5	OCSA	0.00033	mg/kg	UN	ND	
Endrin ketone	Other	53494-70-5	Organic	B2C0H6	Target 19-4	OCSA	0.00032	mg/kg	U	ND	
Endrin ketone	Other	53494-70-5	Organic	B2C0H8	Target 20-1	OCSA	0.0067	mg/kg	UDN	ND	
Endrin ketone	Other	53494-70-5	Organic	B2C0H9	Target 20-2	OCSA	0.0032	mg/kg	UDN	ND	
Endrin ketone	Other	53494-70-5	Organic	B2C0J0	Target 20-3	OCSA	0.0067	mg/kg	UDN	ND	
Endrin ketone	Other	53494-70-5	Organic	B2C0J1	Target 20-4	OCSA	0.00032	mg/kg	UN	ND	
Endrin ketone	Other	53494-70-5	Organic	B2C0J3	Target 21-1	OCSA	0.00032	mg/kg	U	ND	
Endrin ketone	Other	53494-70-5	Organic	B2C0J4	Target 21-2	OCSA	0.00032	mg/kg	U	ND	
Endrin ketone	Other	53494-70-5	Organic	B2C0J5	Target 21-3	OCSA	0.00031	mg/kg	U	ND	
Endrin ketone	Other	53494-70-5	Organic	B2C0J6	Target 21-4	OCSA	0.00032	mg/kg	U	ND	
Endrin ketone	Other	53494-70-5	Organic	B2C0J7	Target 21-5	OCSA	0.00032	mg/kg	U	ND	
Endrin ketone	Other	53494-70-5	Organic	B2C0J8	Target 22-1	OCSA	0.00032	mg/kg	U	ND	
Endrin ketone	Other	53494-70-5	Organic	B2C0J9	Target 22-2	OCSA	0.0016	mg/kg	UD	ND	
Endrin ketone	Other	53494-70-5	Organic	B2C0K0	Target 22-3	OCSA	0.00033	mg/kg	U	ND	
Endrin ketone	Other	53494-70-5	Organic	B2C0K1	Target 22-4	OCSA	0.00033	mg/kg	U	ND	
Endrin ketone	Other	53494-70-5	Organic	B2C0K2	Target 22-4D	OCSA	0.00032	mg/kg	U	ND	
Endrin ketone	Other	53494-70-5	Organic	B2C0K3	Target 22-5	OCSA	0.00034	mg/kg	U	ND	
Endrin ketone	Other	53494-70-5	Organic	B2C0K4	Target 23-1	OCSA	0.00032	mg/kg	U	ND	
Endrin ketone	Other	53494-70-5	Organic	B2C0K5	Target 23-2	OCSA	0.00032	mg/kg	U	ND	
Endrin ketone	Other	53494-70-5	Organic	B2C0K6	Target 23-3	OCSA	0.00032	mg/kg	U	ND	
Endrin ketone	Other	53494-70-5	Organic	B2BXX5	Target 24-1	120-KW-1	0.00032	mg/kg	U	ND	
Endrin ketone	Other	53494-70-5	Organic	B2BXX7	Target 24-2	120-KW-1	0.00033	mg/kg	U	ND	
Endrin ketone	Other	53494-70-5	Organic	B2BXX8	Target 24-3	120-KW-1	0.00033	mg/kg	U	ND	
Endrin ketone	Other	53494-70-5	Organic	B2BXY0	Target 24-5	120-KW-1	0.00031	mg/kg	U	ND	
Endrin ketone	Other	53494-70-5	Organic	B2BP89	Target 6-5	600-228	0.00032	mg/kg	U	ND	
Endrin ketone	Other	53494-70-5	Organic	B2C1C4	Target 7-1	600-281	0.00032	mg/kg	U	ND	
Endrin ketone	Other	53494-70-5	Organic	B2C1D2	Target 8-3	600-281	0.00031	mg/kg	U	ND	
Heptachlor	Other	76-44-8	Organic	B2BW15	Control 1	600-218	0.0001	mg/kg	U	ND	
Heptachlor	Other	76-44-8	Organic	B2BW28	Control 13	OCSA	0.0001	mg/kg	U	ND	
Heptachlor	Other	76-44-8	Organic	B2BW30	Control 15	OCSA	0.0001	mg/kg	U	ND	
Heptachlor	Other	76-44-8	Organic	B2BW31	Control 16	OCSA	0.0001	mg/kg	U	ND	
Heptachlor	Other	76-44-8	Organic	B2BW32	Control 17	OCSA	0.0001	mg/kg	U	ND	
Heptachlor	Other	76-44-8	Organic	B2BW33	Control 18	OCSA	0.0001	mg/kg	U	ND	
Heptachlor	Other	76-44-8	Organic	B2BW16	Control 2	600-218	0.0001	mg/kg	U	ND	
Heptachlor	Other	76-44-8	Organic	B2BW35	Control 20	OCSA	0.0001	mg/kg	U	ND	
Heptachlor	Other	76-44-8	Organic	B2BW18	Control 4	600-220	0.0001	mg/kg	U	ND	
Heptachlor	Other	76-44-8	Organic	B2BW22	Control 8	600-228	0.0001	mg/kg	U	ND	
Heptachlor	Other	76-44-8	Organic	B2BW24	Control 9D	600-228	0.00018	mg/kg	U	ND	
Heptachlor	Other	76-44-8	Organic	B2C0B0	Target 11-1	OCSA	0.000099	mg/kg	U	ND	
Heptachlor	Other	76-44-8	Organic	B2C0B5	Target 12-1	OCSA	0.0001	mg/kg	U	ND	
Heptachlor	Other	76-44-8	Organic	B2C0B6	Target 12-2	OCSA	0.000097	mg/kg	U	ND	
Heptachlor	Other	76-44-8	Organic	B2C0B7	Target 12-3	OCSA	0.00011	mg/kg	U	ND	
Heptachlor	Other	76-44-8	Organic	B2C0B8	Target 12-4	OCSA	0.0001	mg/kg	U	ND	
Heptachlor	Other	76-44-8	Organic	B2C0B9	Target 12-4D	OCSA	0.0001	mg/kg	U	ND	
Heptachlor	Other	76-44-8	Organic	B2C0C0	Target 12-5	OCSA	0.00011	mg/kg	U	ND	
Heptachlor	Other	76-44-8	Organic	B2C0C1	Target 13-1	OCSA	0.0001	mg/kg	U	ND	
Heptachlor	Other	76-44-8	Organic	B2C0C2	Target 13-2	OCSA	0.0001	mg/kg	U	ND	
Heptachlor	Other	76-44-8	Organic	B2C0C3	Target 13-3	OCSA	0.000099	mg/kg	U	ND	
Heptachlor	Other	76-44-8	Organic	B2C0C4	Target 13-4	OCSA	0.0001	mg/kg	U	ND	
Heptachlor	Other	76-44-8	Organic	B2C0C5	Target 13-5	OCSA	0.0001	mg/kg	U	ND	
Heptachlor	Other	76-44-8	Organic	B2C0C6	Target 14-1	OCSA	0.0001	mg/kg	U	ND	
Heptachlor	Other	76-44-8	Organic	B2C0C7	Target 14-2	OCSA	0.000099	mg/kg	U	ND	
Heptachlor	Other	76-44-8	Organic	B2C0C8	Target 14-3	OCSA	0.0001	mg/kg	U	ND	
Heptachlor	Other	76-44-8	Organic	B2C0C9	Target 14-4	OCSA	0.0001	mg/kg	U	ND	
Heptachlor	Other	76-44-8	Organic	B2C0D0	Target 14-5	OCSA	0.0001	mg/kg	U	ND	
Heptachlor	Other	76-44-8	Organic	B2C0D7	Target 16-1	OCSA	0.0001	mg/kg	U	ND	
Heptachlor	Other	76-44-8	Organic	B2C0D8	Target 16-2	OCSA	0.00011	mg/kg	U	ND	
Heptachlor	Other	76-44-8	Organic	B2C0D9	Target 16-3	OCSA	0.0001	mg/kg	U	ND	
Heptachlor	Other	76-44-8	Organic	B2C0F0	Target 16-4	OCSA	0.0001	mg/kg	U	ND	
Heptachlor	Other	76-44-8	Organic	B2C0F1	Target 16-5	OCSA	0.0001	mg/kg	U	ND	
Heptachlor	Other	76-44-8	Organic	B2C0F2	Target 17-1	OCSA	0.00011	mg/kg	U	ND	
Heptachlor	Other	76-44-8	Organic	B2C0F3	Target 17-2	OCSA	0.0001	mg/kg	U	ND	
Heptachlor	Other	76-44-8	Organic	B2C0F4	Target 17-3	OCSA	0.0001	mg/kg	U	ND	
Heptachlor	Other	76-44-8	Organic	B2C0F5	Target 17-4	OCSA	0.0001	mg/kg	U	ND	
Heptachlor	Other	76-44-8	Organic	B2C0F6	Target 17-5	OCSA	0.00011	mg/kg	U	ND	
Heptachlor	Other	76-44-8	Organic	B2C0F7	Target 18-1	OCSA	0.0001	mg/kg	U	ND	
Heptachlor	Other	76-44-8	Organic	B2C0F8	Target 18-2	OCSA	0.0001	mg/kg	U	ND	
Heptachlor	Other	76-44-8	Organic	B2C0F9	Target 18-3	OCSA	0.0001	mg/kg	U	ND	
Heptachlor	Other	76-44-8	Organic	B2C0H0	Target 18-3D	OCSA	0.0001	mg/kg	U	ND	
Heptachlor	Other	76-44-8	Organic	B2C0H1	Target 18-4	OCSA	0.0001	mg/kg	U	ND	
Heptachlor	Other	76-44-8	Organic	B2C0H2	Target 18-5	OCSA	0.00011	mg/kg	U	ND	
Heptachlor	Other	76-44-8	Organic	B2C0H6	Target 19-4	OCSA	0.0001	mg/kg	UN	ND	
Heptachlor	Other	76-44-8	Organic	B2C0H8	Target 20-1	OCSA	0.0022	mg/kg	UD	ND	
Heptachlor	Other	76-44-8	Organic	B2C0H9	Target 20-2	OCSA	0.001	mg/kg	UD	ND	
Heptachlor	Other	76-44-8	Organic	B2C0J0	Target 20-3	OCSA	0.0021	mg/kg	UD	ND	
Heptachlor	Other	76-44-8	Organic	B2C0J1	Target 20-4	OCSA	0.0001	mg/kg	U	ND	
Heptachlor	Other	76-44-8	Organic	B2C0J3	Target 21-1	OCSA	0.0001	mg/kg	UN	ND	
Heptachlor	Other	76-44-8	Organic	B2C0J4	Target 21-2	OCSA	0.0001	mg/kg	UN	ND	
Heptachlor	Other	76-44-8	Organic	B2C0J5	Target 21-3	OCSA	0.0001	mg/kg	UN	ND	
Heptachlor	Other	76-44-8	Organic	B2C0J6	Target 21-4	OCSA	0.0001	mg/kg	UN	ND	
Heptachlor	Other	76-44-8	Organic	B2C0J7	Target 21-5	OCSA	0.0001	mg/kg	UN	ND	
Heptachlor	Other	76-44-8	Organic	B2C0J8	Target 22-1	OCSA	0.0001	mg/kg	UN	ND	
Heptachlor	Other	76-44-8	Organic	B2C0J9	Target 22-2	OCSA	0.00051	mg/kg	UDN	ND	

Table 3-1 Analytical chemistry data for soils used for plant and soil invertebrate bioassays for upland locations at the Hanford Site

Analyte	Priority	CASNo	AnalGrp	SampleID	LocationID	WasteSite	Conc	Units	Qualifer	qual	grp
Heptachlor	Other	76-44-8	Organic	B2C0K0	Target 22-3	OCSA	0.0001	mg/kg	UN	ND	
Heptachlor	Other	76-44-8	Organic	B2C0K1	Target 22-4	OCSA	0.0001	mg/kg	UN	ND	
Heptachlor	Other	76-44-8	Organic	B2C0K2	Target 22-4D	OCSA	0.0001	mg/kg	UN	ND	
Heptachlor	Other	76-44-8	Organic	B2C0K3	Target 22-5	OCSA	0.00011	mg/kg	UN	ND	
Heptachlor	Other	76-44-8	Organic	B2C0K4	Target 23-1	OCSA	0.0001	mg/kg	UN	ND	
Heptachlor	Other	76-44-8	Organic	B2C0K5	Target 23-2	OCSA	0.0001	mg/kg	UN	ND	
Heptachlor	Other	76-44-8	Organic	B2C0K6	Target 23-3	OCSA	0.0001	mg/kg	UN	ND	
Heptachlor	Other	76-44-8	Organic	B2BXX5	Target 24-1	120-KW-1	0.0001	mg/kg	U	ND	
Heptachlor	Other	76-44-8	Organic	B2BXX7	Target 24-2	120-KW-1	0.00011	mg/kg	U	ND	
Heptachlor	Other	76-44-8	Organic	B2BXX8	Target 24-3	120-KW-1	0.00011	mg/kg	U	ND	
Heptachlor	Other	76-44-8	Organic	B2BXY0	Target 24-5	120-KW-1	0.0001	mg/kg	U	ND	
Heptachlor	Other	76-44-8	Organic	B2BP89	Target 6-5	600-228	0.0001	mg/kg	U	ND	
Heptachlor	Other	76-44-8	Organic	B2C1C4	Target 7-1	600-281	0.0001	mg/kg	U	ND	
Heptachlor	Other	76-44-8	Organic	B2C1D2	Target 8-3	600-281	0.0001	mg/kg	U	ND	
Heptachlor epoxide	Other	1024-57-3	Organic	B2BW15	Control 1	600-218	0.00047	mg/kg	U	ND	
Heptachlor epoxide	Other	1024-57-3	Organic	B2BW28	Control 13	OCSA	0.00046	mg/kg	U	ND	
Heptachlor epoxide	Other	1024-57-3	Organic	B2BW30	Control 15	OCSA	0.00046	mg/kg	U	ND	
Heptachlor epoxide	Other	1024-57-3	Organic	B2BW31	Control 16	OCSA	0.00046	mg/kg	U	ND	
Heptachlor epoxide	Other	1024-57-3	Organic	B2BW32	Control 17	OCSA	0.00045	mg/kg	U	ND	
Heptachlor epoxide	Other	1024-57-3	Organic	B2BW33	Control 18	OCSA	0.00046	mg/kg	U	ND	
Heptachlor epoxide	Other	1024-57-3	Organic	B2BW16	Control 2	600-218	0.00047	mg/kg	U	ND	
Heptachlor epoxide	Other	1024-57-3	Organic	B2BW35	Control 20	OCSA	0.00046	mg/kg	U	ND	
Heptachlor epoxide	Other	1024-57-3	Organic	B2BW18	Control 4	600-220	0.00046	mg/kg	U	ND	
Heptachlor epoxide	Other	1024-57-3	Organic	B2BW22	Control 8	600-228	0.00046	mg/kg	U	ND	
Heptachlor epoxide	Other	1024-57-3	Organic	B2BW24	Control 9D	600-228	0.00046	mg/kg	U	ND	
Heptachlor epoxide	Other	1024-57-3	Organic	B2C0B0	Target 11-1	OCSA	0.00045	mg/kg	U	ND	
Heptachlor epoxide	Other	1024-57-3	Organic	B2C0B5	Target 12-1	OCSA	0.00045	mg/kg	U	ND	
Heptachlor epoxide	Other	1024-57-3	Organic	B2C0B6	Target 12-2	OCSA	0.00044	mg/kg	U	ND	
Heptachlor epoxide	Other	1024-57-3	Organic	B2C0B7	Target 12-3	OCSA	0.0005	mg/kg	U	ND	
Heptachlor epoxide	Other	1024-57-3	Organic	B2C0B8	Target 12-4	OCSA	0.00045	mg/kg	U	ND	
Heptachlor epoxide	Other	1024-57-3	Organic	B2C0B9	Target 12-4D	OCSA	0.00045	mg/kg	U	ND	
Heptachlor epoxide	Other	1024-57-3	Organic	B2C0C0	Target 12-5	OCSA	0.00049	mg/kg	U	ND	
Heptachlor epoxide	Other	1024-57-3	Organic	B2C0C1	Target 13-1	OCSA	0.00046	mg/kg	U	ND	
Heptachlor epoxide	Other	1024-57-3	Organic	B2C0C2	Target 13-2	OCSA	0.00046	mg/kg	U	ND	
Heptachlor epoxide	Other	1024-57-3	Organic	B2C0C3	Target 13-3	OCSA	0.00045	mg/kg	U	ND	
Heptachlor epoxide	Other	1024-57-3	Organic	B2C0C4	Target 13-4	OCSA	0.00046	mg/kg	U	ND	
Heptachlor epoxide	Other	1024-57-3	Organic	B2C0C5	Target 13-5	OCSA	0.00046	mg/kg	U	ND	
Heptachlor epoxide	Other	1024-57-3	Organic	B2C0C6	Target 14-1	OCSA	0.00045	mg/kg	U	ND	
Heptachlor epoxide	Other	1024-57-3	Organic	B2C0C7	Target 14-2	OCSA	0.00045	mg/kg	U	ND	
Heptachlor epoxide	Other	1024-57-3	Organic	B2C0C8	Target 14-3	OCSA	0.00046	mg/kg	U	ND	
Heptachlor epoxide	Other	1024-57-3	Organic	B2C0C9	Target 14-4	OCSA	0.00047	mg/kg	U	ND	
Heptachlor epoxide	Other	1024-57-3	Organic	B2C0D0	Target 14-5	OCSA	0.00045	mg/kg	U	ND	
Heptachlor epoxide	Other	1024-57-3	Organic	B2C0D7	Target 16-1	OCSA	0.00047	mg/kg	U	ND	
Heptachlor epoxide	Other	1024-57-3	Organic	B2C0D8	Target 16-2	OCSA	0.00048	mg/kg	U	ND	
Heptachlor epoxide	Other	1024-57-3	Organic	B2C0D9	Target 16-3	OCSA	0.00047	mg/kg	U	ND	
Heptachlor epoxide	Other	1024-57-3	Organic	B2C0F0	Target 16-4	OCSA	0.00046	mg/kg	U	ND	
Heptachlor epoxide	Other	1024-57-3	Organic	B2C0F1	Target 16-5	OCSA	0.00046	mg/kg	U	ND	
Heptachlor epoxide	Other	1024-57-3	Organic	B2C0F2	Target 17-1	OCSA	0.00048	mg/kg	U	ND	
Heptachlor epoxide	Other	1024-57-3	Organic	B2C0F3	Target 17-2	OCSA	0.00047	mg/kg	U	ND	
Heptachlor epoxide	Other	1024-57-3	Organic	B2C0F4	Target 17-3	OCSA	0.00047	mg/kg	U	ND	
Heptachlor epoxide	Other	1024-57-3	Organic	B2C0F5	Target 17-4	OCSA	0.00047	mg/kg	U	ND	
Heptachlor epoxide	Other	1024-57-3	Organic	B2C0F6	Target 17-5	OCSA	0.00048	mg/kg	U	ND	
Heptachlor epoxide	Other	1024-57-3	Organic	B2C0F7	Target 18-1	OCSA	0.00047	mg/kg	U	ND	
Heptachlor epoxide	Other	1024-57-3	Organic	B2C0F8	Target 18-2	OCSA	0.00047	mg/kg	U	ND	
Heptachlor epoxide	Other	1024-57-3	Organic	B2C0F9	Target 18-3	OCSA	0.00046	mg/kg	U	ND	
Heptachlor epoxide	Other	1024-57-3	Organic	B2C0H0	Target 18-3D	OCSA	0.00046	mg/kg	U	ND	
Heptachlor epoxide	Other	1024-57-3	Organic	B2C0H1	Target 18-4	OCSA	0.00047	mg/kg	U	ND	
Heptachlor epoxide	Other	1024-57-3	Organic	B2C0H2	Target 18-5	OCSA	0.00047	mg/kg	U	ND	
Heptachlor epoxide	Other	1024-57-3	Organic	B2C0H6	Target 19-4	OCSA	0.00046	mg/kg	U	ND	
Heptachlor epoxide	Other	1024-57-3	Organic	B2C0H8	Target 20-1	OCSA	0.0097	mg/kg	UD	ND	
Heptachlor epoxide	Other	1024-57-3	Organic	B2C0H9	Target 20-2	OCSA	0.0047	mg/kg	UD	ND	
Heptachlor epoxide	Other	1024-57-3	Organic	B2C0J0	Target 20-3	OCSA	0.0097	mg/kg	UD	ND	
Heptachlor epoxide	Other	1024-57-3	Organic	B2C0J1	Target 20-4	OCSA	0.00046	mg/kg	U	ND	
Heptachlor epoxide	Other	1024-57-3	Organic	B2C0J3	Target 21-1	OCSA	0.00046	mg/kg	U	ND	
Heptachlor epoxide	Other	1024-57-3	Organic	B2C0J4	Target 21-2	OCSA	0.00047	mg/kg	U	ND	
Heptachlor epoxide	Other	1024-57-3	Organic	B2C0J5	Target 21-3	OCSA	0.00045	mg/kg	U	ND	
Heptachlor epoxide	Other	1024-57-3	Organic	B2C0J6	Target 21-4	OCSA	0.00046	mg/kg	U	ND	
Heptachlor epoxide	Other	1024-57-3	Organic	B2C0J7	Target 21-5	OCSA	0.00046	mg/kg	U	ND	
Heptachlor epoxide	Other	1024-57-3	Organic	B2C0J8	Target 22-1	OCSA	0.00046	mg/kg	U	ND	
Heptachlor epoxide	Other	1024-57-3	Organic	B2C0J9	Target 22-2	OCSA	0.0023	mg/kg	UD	ND	
Heptachlor epoxide	Other	1024-57-3	Organic	B2C0K0	Target 22-3	OCSA	0.00047	mg/kg	U	ND	
Heptachlor epoxide	Other	1024-57-3	Organic	B2C0K1	Target 22-4	OCSA	0.00047	mg/kg	U	ND	
Heptachlor epoxide	Other	1024-57-3	Organic	B2C0K2	Target 22-4D	OCSA	0.00047	mg/kg	U	ND	
Heptachlor epoxide	Other	1024-57-3	Organic	B2C0K3	Target 22-5	OCSA	0.00049	mg/kg	U	ND	
Heptachlor epoxide	Other	1024-57-3	Organic	B2C0K4	Target 23-1	OCSA	0.00047	mg/kg	U	ND	
Heptachlor epoxide	Other	1024-57-3	Organic	B2C0K5	Target 23-2	OCSA	0.00047	mg/kg	U	ND	
Heptachlor epoxide	Other	1024-57-3	Organic	B2C0K6	Target 23-3	OCSA	0.00047	mg/kg	U	ND	
Heptachlor epoxide	Other	1024-57-3	Organic	B2BXX5	Target 24-1	120-KW-1	0.00046	mg/kg	U	ND	
Heptachlor epoxide	Other	1024-57-3	Organic	B2BXX7	Target 24-2	120-KW-1	0.00048	mg/kg	U	ND	
Heptachlor epoxide	Other	1024-57-3	Organic	B2BXX8	Target 24-3	120-KW-1	0.00048	mg/kg	U	ND	
Heptachlor epoxide	Other	1024-57-3	Organic	B2BXY0	Target 24-5	120-KW-1	0.00045	mg/kg	U	ND	
Heptachlor epoxide	Other	1024-57-3	Organic	B2BP89	Target 6-5	600-228	0.00046	mg/kg	U	ND	
Heptachlor epoxide	Other	1024-57-3	Organic	B2C1C4	Target 7-1	600-281	0.00046	mg/kg	U	ND	
Heptachlor epoxide	Other	1024-57-3	Organic	B2C1D2	Target 8-3	600-281	0.00045	mg/kg	U	ND	
Hexachlorobenzene	Other	118-74-1	Organic	B2BW15	Control 1	600-218	0.036	mg/kg	U	ND	
Hexachlorobenzene	Other	118-74-1	Organic	B2BW28	Control 13	OCSA	0.035	mg/kg	U	ND	
Hexachlorobenzene	Other	118-74-1	Organic	B2BW30	Control 15	OCSA	0.036	mg/kg	U	ND	
Hexachlorobenzene	Other	118-74-1	Organic	B2BW31	Control 16	OCSA	0.036	mg/kg	U	ND	
Hexachlorobenzene	Other	118-74-1	Organic	B2BW32	Control 17	OCSA	0.035	mg/kg	U	ND	
Hexachlorobenzene	Other	118-74-1	Organic	B2BW33	Control 18	OCSA	0.036	mg/kg	U	ND	
Hexachlorobenzene	Other	118-74-1	Organic	B2BW16	Control 2	600-218	0.00078	mg/kg	U	ND	
Hexachlorobenzene	Other	118-74-1	Organic	B2BW35	Control 20	OCSA	0.036	mg/kg	U	ND	
Hexachlorobenzene	Other	118-74-1	Organic	B2BW18	Control 4	600-220	0.036	mg/kg	U	ND	
Hexachlorobenzene	Other	118-74-1	Organic	B2BW22	Control 8	600-228	0.035	mg/kg	U	ND	
Hexachlorobenzene	Other	118-74-1	Organic	B2BW24	Control 9D	600-228	0.0001	mg/kg	U	ND	
Hexachlorobenzene	Other	118-74-1	Organic	B2C0B0	Target 11-1	OCSA	0.035	mg/kg	U	ND	
Hexachlorobenzene	Other	118-74-1	Organic	B2C0B5	Target 12-1	OCSA	0.035	mg/kg	U	ND	

Table 3-1 Analytical chemistry data for soils used for plant and soil invertebrate bioassays for upland locations at the Hanford Site

Analyte	Priority	CASNo	AnalGrp	SampleID	LocationID	WasteSite	Conc	Units	Qualifer	qual	grp
Hexachlorobenzene	Other	118-74-1	Organic	B2C0B6	Target 12-2	OCSA	0.034	mg/kg	U	ND	
Hexachlorobenzene	Other	118-74-1	Organic	B2C0B7	Target 12-3	OCSA	0.039	mg/kg	U	ND	
Hexachlorobenzene	Other	118-74-1	Organic	B2C0B8	Target 12-4	OCSA	0.035	mg/kg	U	ND	
Hexachlorobenzene	Other	118-74-1	Organic	B2C0B9	Target 12-4D	OCSA	0.035	mg/kg	U	ND	
Hexachlorobenzene	Other	118-74-1	Organic	B2C0C0	Target 12-5	OCSA	0.038	mg/kg	U	ND	
Hexachlorobenzene	Other	118-74-1	Organic	B2C0C1	Target 13-1	OCSA	0.036	mg/kg	U	ND	
Hexachlorobenzene	Other	118-74-1	Organic	B2C0C2	Target 13-2	OCSA	0.036	mg/kg	U	ND	
Hexachlorobenzene	Other	118-74-1	Organic	B2C0C3	Target 13-3	OCSA	0.035	mg/kg	U	ND	
Hexachlorobenzene	Other	118-74-1	Organic	B2C0C4	Target 13-4	OCSA	0.036	mg/kg	U	ND	
Hexachlorobenzene	Other	118-74-1	Organic	B2C0C5	Target 13-5	OCSA	0.035	mg/kg	U	ND	
Hexachlorobenzene	Other	118-74-1	Organic	B2C0C6	Target 14-1	OCSA	0.035	mg/kg	U	ND	
Hexachlorobenzene	Other	118-74-1	Organic	B2C0C7	Target 14-2	OCSA	0.035	mg/kg	U	ND	
Hexachlorobenzene	Other	118-74-1	Organic	B2C0C8	Target 14-3	OCSA	0.036	mg/kg	U	ND	
Hexachlorobenzene	Other	118-74-1	Organic	B2C0C9	Target 14-4	OCSA	0.036	mg/kg	U	ND	
Hexachlorobenzene	Other	118-74-1	Organic	B2C0D0	Target 14-5	OCSA	0.035	mg/kg	U	ND	
Hexachlorobenzene	Other	118-74-1	Organic	B2C0D7	Target 16-1	OCSA	0.036	mg/kg	U	ND	
Hexachlorobenzene	Other	118-74-1	Organic	B2C0D8	Target 16-2	OCSA	0.037	mg/kg	U	ND	
Hexachlorobenzene	Other	118-74-1	Organic	B2C0D9	Target 16-3	OCSA	0.036	mg/kg	U	ND	
Hexachlorobenzene	Other	118-74-1	Organic	B2C0F0	Target 16-4	OCSA	0.036	mg/kg	U	ND	
Hexachlorobenzene	Other	118-74-1	Organic	B2C0F1	Target 16-5	OCSA	0.036	mg/kg	U	ND	
Hexachlorobenzene	Other	118-74-1	Organic	B2C0F2	Target 17-1	OCSA	0.037	mg/kg	U	ND	
Hexachlorobenzene	Other	118-74-1	Organic	B2C0F3	Target 17-2	OCSA	0.036	mg/kg	U	ND	
Hexachlorobenzene	Other	118-74-1	Organic	B2C0F4	Target 17-3	OCSA	0.037	mg/kg	U	ND	
Hexachlorobenzene	Other	118-74-1	Organic	B2C0F5	Target 17-4	OCSA	0.036	mg/kg	U	ND	
Hexachlorobenzene	Other	118-74-1	Organic	B2C0F6	Target 17-5	OCSA	0.037	mg/kg	U	ND	
Hexachlorobenzene	Other	118-74-1	Organic	B2C0F7	Target 18-1	OCSA	0.037	mg/kg	U	ND	
Hexachlorobenzene	Other	118-74-1	Organic	B2C0F8	Target 18-2	OCSA	0.036	mg/kg	U	ND	
Hexachlorobenzene	Other	118-74-1	Organic	B2C0F9	Target 18-3	OCSA	0.036	mg/kg	U	ND	
Hexachlorobenzene	Other	118-74-1	Organic	B2C0H0	Target 18-3D	OCSA	0.036	mg/kg	U	ND	
Hexachlorobenzene	Other	118-74-1	Organic	B2C0H1	Target 18-4	OCSA	0.036	mg/kg	U	ND	
Hexachlorobenzene	Other	118-74-1	Organic	B2C0H2	Target 18-5	OCSA	0.037	mg/kg	U	ND	
Hexachlorobenzene	Other	118-74-1	Organic	B2C0H6	Target 19-4	OCSA	0.036	mg/kg	U	ND	
Hexachlorobenzene	Other	118-74-1	Organic	B2C0H8	Target 20-1	OCSA	0.038	mg/kg	U	ND	
Hexachlorobenzene	Other	118-74-1	Organic	B2C0H9	Target 20-2	OCSA	0.036	mg/kg	U	ND	
Hexachlorobenzene	Other	118-74-1	Organic	B2C0J0	Target 20-3	OCSA	0.038	mg/kg	U	ND	
Hexachlorobenzene	Other	118-74-1	Organic	B2C0J1	Target 20-4	OCSA	0.036	mg/kg	U	ND	
Hexachlorobenzene	Other	118-74-1	Organic	B2C0J3	Target 21-1	OCSA	0.036	mg/kg	U	ND	
Hexachlorobenzene	Other	118-74-1	Organic	B2C0J4	Target 21-2	OCSA	0.036	mg/kg	U	ND	
Hexachlorobenzene	Other	118-74-1	Organic	B2C0J5	Target 21-3	OCSA	0.035	mg/kg	U	ND	
Hexachlorobenzene	Other	118-74-1	Organic	B2C0J6	Target 21-4	OCSA	0.035	mg/kg	U	ND	
Hexachlorobenzene	Other	118-74-1	Organic	B2C0J7	Target 21-5	OCSA	0.036	mg/kg	U	ND	
Hexachlorobenzene	Other	118-74-1	Organic	B2C0J8	Target 22-1	OCSA	0.036	mg/kg	U	ND	
Hexachlorobenzene	Other	118-74-1	Organic	B2C0J9	Target 22-2	OCSA	0.036	mg/kg	U	ND	
Hexachlorobenzene	Other	118-74-1	Organic	B2C0K0	Target 22-3	OCSA	0.036	mg/kg	U	ND	
Hexachlorobenzene	Other	118-74-1	Organic	B2C0K1	Target 22-4	OCSA	0.037	mg/kg	U	ND	
Hexachlorobenzene	Other	118-74-1	Organic	B2C0K2	Target 22-4D	OCSA	0.036	mg/kg	U	ND	
Hexachlorobenzene	Other	118-74-1	Organic	B2C0K3	Target 22-5	OCSA	0.038	mg/kg	U	ND	
Hexachlorobenzene	Other	118-74-1	Organic	B2C0K4	Target 23-1	OCSA	0.036	mg/kg	U	ND	
Hexachlorobenzene	Other	118-74-1	Organic	B2C0K5	Target 23-2	OCSA	0.036	mg/kg	U	ND	
Hexachlorobenzene	Other	118-74-1	Organic	B2C0K6	Target 23-3	OCSA	0.036	mg/kg	U	ND	
Hexachlorobenzene	Other	118-74-1	Organic	B2BXX5	Target 24-1	120-KW-1	0.036	mg/kg	U	ND	
Hexachlorobenzene	Other	118-74-1	Organic	B2BXX7	Target 24-2	120-KW-1	0.037	mg/kg	U	ND	
Hexachlorobenzene	Other	118-74-1	Organic	B2BXX8	Target 24-3	120-KW-1	0.037	mg/kg	U	ND	
Hexachlorobenzene	Other	118-74-1	Organic	B2BXY0	Target 24-5	120-KW-1	0.035	mg/kg	U	ND	
Hexachlorobenzene	Other	118-74-1	Organic	B2BP89	Target 6-5	600-228	0.035	mg/kg	U	ND	
Hexachlorobenzene	Other	118-74-1	Organic	B2C1C4	Target 7-1	600-281	0.036	mg/kg	U	ND	
Hexachlorobenzene	Other	118-74-1	Organic	B2C1D2	Target 8-3	600-281	0.035	mg/kg	U	ND	
Lindane	Other	58-89-9	Organic	B2BW15	Control 1	600-218	0.00018	mg/kg	U	ND	
Lindane	Other	58-89-9	Organic	B2BW28	Control 13	OCSA	0.00018	mg/kg	U	ND	
Lindane	Other	58-89-9	Organic	B2BW30	Control 15	OCSA	0.00018	mg/kg	U	ND	
Lindane	Other	58-89-9	Organic	B2BW31	Control 16	OCSA	0.00018	mg/kg	U	ND	
Lindane	Other	58-89-9	Organic	B2BW32	Control 17	OCSA	0.00018	mg/kg	U	ND	
Lindane	Other	58-89-9	Organic	B2BW33	Control 18	OCSA	0.00018	mg/kg	U	ND	
Lindane	Other	58-89-9	Organic	B2BW16	Control 2	600-218	0.00018	mg/kg	U	ND	
Lindane	Other	58-89-9	Organic	B2BW35	Control 20	OCSA	0.00018	mg/kg	U	ND	
Lindane	Other	58-89-9	Organic	B2BW18	Control 4	600-220	0.00018	mg/kg	U	ND	
Lindane	Other	58-89-9	Organic	B2BW22	Control 8	600-228	0.00018	mg/kg	U	ND	
Lindane	Other	58-89-9	Organic	B2BW24	Control 9D	600-228	0.00014	mg/kg	U	ND	
Lindane	Other	58-89-9	Organic	B2C0B0	Target 11-1	OCSA	0.00017	mg/kg	U	ND	
Lindane	Other	58-89-9	Organic	B2C0B5	Target 12-1	OCSA	0.00018	mg/kg	U	ND	
Lindane	Other	58-89-9	Organic	B2C0B6	Target 12-2	OCSA	0.00017	mg/kg	U	ND	
Lindane	Other	58-89-9	Organic	B2C0B7	Target 12-3	OCSA	0.0002	mg/kg	U	ND	
Lindane	Other	58-89-9	Organic	B2C0B8	Target 12-4	OCSA	0.00018	mg/kg	U	ND	
Lindane	Other	58-89-9	Organic	B2C0B9	Target 12-4D	OCSA	0.00018	mg/kg	U	ND	
Lindane	Other	58-89-9	Organic	B2C0C0	Target 12-5	OCSA	0.00019	mg/kg	U	ND	
Lindane	Other	58-89-9	Organic	B2C0C1	Target 13-1	OCSA	0.00018	mg/kg	U	ND	
Lindane	Other	58-89-9	Organic	B2C0C2	Target 13-2	OCSA	0.00018	mg/kg	U	ND	
Lindane	Other	58-89-9	Organic	B2C0C3	Target 13-3	OCSA	0.00017	mg/kg	U	ND	
Lindane	Other	58-89-9	Organic	B2C0C4	Target 13-4	OCSA	0.00018	mg/kg	U	ND	
Lindane	Other	58-89-9	Organic	B2C0C5	Target 13-5	OCSA	0.00018	mg/kg	U	ND	
Lindane	Other	58-89-9	Organic	B2C0C6	Target 14-1	OCSA	0.00018	mg/kg	U	ND	
Lindane	Other	58-89-9	Organic	B2C0C7	Target 14-2	OCSA	0.00018	mg/kg	U	ND	
Lindane	Other	58-89-9	Organic	B2C0C8	Target 14-3	OCSA	0.00018	mg/kg	U	ND	
Lindane	Other	58-89-9	Organic	B2C0C9	Target 14-4	OCSA	0.00018	mg/kg	U	ND	
Lindane	Other	58-89-9	Organic	B2C0D0	Target 14-5	OCSA	0.00018	mg/kg	U	ND	
Lindane	Other	58-89-9	Organic	B2C0D7	Target 16-1	OCSA	0.00018	mg/kg	U	ND	
Lindane	Other	58-89-9	Organic	B2C0D8	Target 16-2	OCSA	0.00019	mg/kg	U	ND	
Lindane	Other	58-89-9	Organic	B2C0D9	Target 16-3	OCSA	0.00018	mg/kg	U	ND	
Lindane	Other	58-89-9	Organic	B2C0F0	Target 16-4	OCSA	0.00018	mg/kg	U	ND	
Lindane	Other	58-89-9	Organic	B2C0F1	Target 16-5	OCSA	0.00018	mg/kg	U	ND	
Lindane	Other	58-89-9	Organic	B2C0F2	Target 17-1	OCSA	0.00019	mg/kg	U	ND	
Lindane	Other	58-89-9	Organic	B2C0F3	Target 17-2	OCSA	0.00018	mg/kg	U	ND	
Lindane	Other	58-89-9	Organic	B2C0F4	Target 17-3	OCSA	0.00018	mg/kg	U	ND	
Lindane	Other	58-89-9	Organic	B2C0F5	Target 17-4	OCSA	0.00018	mg/kg	U	ND	
Lindane	Other	58-89-9	Organic	B2C0F6	Target 17-5	OCSA	0.00019	mg/kg	U	ND	
Lindane	Other	58-89-9	Organic	B2C0F7	Target 18-1	OCSA	0.00018	mg/kg	U	ND	
Lindane	Other	58-89-9	Organic	B2C0F8	Target 18-2	OCSA	0.00018	mg/kg	U	ND	

Table 3-1 Analytical chemistry data for soils used for plant and soil invertebrate bioassays for upland locations at the Hanford Site

Analyte	Priority	CASNo	AnalGrp	SampleID	LocationID	WasteSite	Conc	Units	Qualifer	qual	grp
Lindane	Other	58-89-9	Organic	B2C0F9	Target 18-3	OCSA	0.00018	mg/kg	U	ND	
Lindane	Other	58-89-9	Organic	B2C0H0	Target 18-3D	OCSA	0.00018	mg/kg	U	ND	
Lindane	Other	58-89-9	Organic	B2C0H1	Target 18-4	OCSA	0.00018	mg/kg	U	ND	
Lindane	Other	58-89-9	Organic	B2C0H2	Target 18-5	OCSA	0.00019	mg/kg	U	ND	
Lindane	Other	58-89-9	Organic	B2C0H6	Target 19-4	OCSA	0.00018	mg/kg	U	ND	
Lindane	Other	58-89-9	Organic	B2C0H8	Target 20-1	OCSA	0.0038	mg/kg	UD	ND	
Lindane	Other	58-89-9	Organic	B2C0H9	Target 20-2	OCSA	0.0018	mg/kg	UD	ND	
Lindane	Other	58-89-9	Organic	B2C0J0	Target 20-3	OCSA	0.0038	mg/kg	UD	ND	
Lindane	Other	58-89-9	Organic	B2C0J1	Target 20-4	OCSA	0.00018	mg/kg	U	ND	
Lindane	Other	58-89-9	Organic	B2C0J3	Target 21-1	OCSA	0.00018	mg/kg	U	ND	
Lindane	Other	58-89-9	Organic	B2C0J4	Target 21-2	OCSA	0.00018	mg/kg	U	ND	
Lindane	Other	58-89-9	Organic	B2C0J5	Target 21-3	OCSA	0.00018	mg/kg	U	ND	
Lindane	Other	58-89-9	Organic	B2C0J6	Target 21-4	OCSA	0.00018	mg/kg	U	ND	
Lindane	Other	58-89-9	Organic	B2C0J7	Target 21-5	OCSA	0.00018	mg/kg	U	ND	
Lindane	Other	58-89-9	Organic	B2C0J8	Target 22-1	OCSA	0.00018	mg/kg	U	ND	
Lindane	Other	58-89-9	Organic	B2C0J9	Target 22-2	OCSA	0.00091	mg/kg	UD	ND	
Lindane	Other	58-89-9	Organic	B2C0K0	Target 22-3	OCSA	0.00018	mg/kg	U	ND	
Lindane	Other	58-89-9	Organic	B2C0K1	Target 22-4	OCSA	0.00019	mg/kg	U	ND	
Lindane	Other	58-89-9	Organic	B2C0K2	Target 22-4D	OCSA	0.00018	mg/kg	U	ND	
Lindane	Other	58-89-9	Organic	B2C0K3	Target 22-5	OCSA	0.00019	mg/kg	U	ND	
Lindane	Other	58-89-9	Organic	B2C0K4	Target 23-1	OCSA	0.00018	mg/kg	U	ND	
Lindane	Other	58-89-9	Organic	B2C0K5	Target 23-2	OCSA	0.00018	mg/kg	U	ND	
Lindane	Other	58-89-9	Organic	B2C0K6	Target 23-3	OCSA	0.00018	mg/kg	U	ND	
Lindane	Other	58-89-9	Organic	B2BXX5	Target 24-1	120-KW-1	0.00018	mg/kg	U	ND	
Lindane	Other	58-89-9	Organic	B2BXX7	Target 24-2	120-KW-1	0.00019	mg/kg	U	ND	
Lindane	Other	58-89-9	Organic	B2BXX8	Target 24-3	120-KW-1	0.00019	mg/kg	U	ND	
Lindane	Other	58-89-9	Organic	B2BXY0	Target 24-5	120-KW-1	0.00018	mg/kg	U	ND	
Lindane	Other	58-89-9	Organic	B2BP89	Target 6-5	600-228	0.00018	mg/kg	U	ND	
Lindane	Other	58-89-9	Organic	B2C1C4	Target 7-1	600-281	0.00018	mg/kg	U	ND	
Lindane	Other	58-89-9	Organic	B2C1D2	Target 8-3	600-281	0.00018	mg/kg	U	ND	
Methoxychlor	Other	72-43-5	Organic	B2BW15	Control 1	600-218	0.00079	mg/kg	U	ND	
Methoxychlor	Other	72-43-5	Organic	B2BW28	Control 13	OCSA	0.00077	mg/kg	UN	ND	
Methoxychlor	Other	72-43-5	Organic	B2BW30	Control 15	OCSA	0.00077	mg/kg	UN	ND	
Methoxychlor	Other	72-43-5	Organic	B2BW31	Control 16	OCSA	0.00077	mg/kg	UN	ND	
Methoxychlor	Other	72-43-5	Organic	B2BW32	Control 17	OCSA	0.00076	mg/kg	UN	ND	
Methoxychlor	Other	72-43-5	Organic	B2BW33	Control 18	OCSA	0.00077	mg/kg	UN	ND	
Methoxychlor	Other	72-43-5	Organic	B2BW16	Control 2	600-218	0.036	mg/kg	U	ND	
Methoxychlor	Other	72-43-5	Organic	B2BW35	Control 20	OCSA	0.00078	mg/kg	UN	ND	
Methoxychlor	Other	72-43-5	Organic	B2BW18	Control 4	600-220	0.00077	mg/kg	U	ND	
Methoxychlor	Other	72-43-5	Organic	B2BW22	Control 8	600-228	0.00076	mg/kg	U	ND	
Methoxychlor	Other	72-43-5	Organic	B2BW24	Control 9D	600-228	0.035	mg/kg	U	ND	
Methoxychlor	Other	72-43-5	Organic	B2C0B0	Target 11-1	OCSA	0.00075	mg/kg	U	ND	
Methoxychlor	Other	72-43-5	Organic	B2C0B5	Target 12-1	OCSA	0.00076	mg/kg	U	ND	
Methoxychlor	Other	72-43-5	Organic	B2C0B6	Target 12-2	OCSA	0.00073	mg/kg	U	ND	
Methoxychlor	Other	72-43-5	Organic	B2C0B7	Target 12-3	OCSA	0.00084	mg/kg	U	ND	
Methoxychlor	Other	72-43-5	Organic	B2C0B8	Target 12-4	OCSA	0.00075	mg/kg	U	ND	
Methoxychlor	Other	72-43-5	Organic	B2C0B9	Target 12-4D	OCSA	0.00075	mg/kg	U	ND	
Methoxychlor	Other	72-43-5	Organic	B2C0C0	Target 12-5	OCSA	0.00082	mg/kg	U	ND	
Methoxychlor	Other	72-43-5	Organic	B2C0C1	Target 13-1	OCSA	0.00077	mg/kg	U	ND	
Methoxychlor	Other	72-43-5	Organic	B2C0C2	Target 13-2	OCSA	0.00077	mg/kg	U	ND	
Methoxychlor	Other	72-43-5	Organic	B2C0C3	Target 13-3	OCSA	0.00075	mg/kg	U	ND	
Methoxychlor	Other	72-43-5	Organic	B2C0C4	Target 13-4	OCSA	0.00077	mg/kg	U	ND	
Methoxychlor	Other	72-43-5	Organic	B2C0C5	Target 13-5	OCSA	0.00076	mg/kg	U	ND	
Methoxychlor	Other	72-43-5	Organic	B2C0C6	Target 14-1	OCSA	0.00076	mg/kg	U	ND	
Methoxychlor	Other	72-43-5	Organic	B2C0C7	Target 14-2	OCSA	0.00075	mg/kg	U	ND	
Methoxychlor	Other	72-43-5	Organic	B2C0C8	Target 14-3	OCSA	0.00077	mg/kg	U	ND	
Methoxychlor	Other	72-43-5	Organic	B2C0C9	Target 14-4	OCSA	0.00078	mg/kg	U	ND	
Methoxychlor	Other	72-43-5	Organic	B2C0D0	Target 14-5	OCSA	0	mg/kg	U	ND	
Methoxychlor	Other	72-43-5	Organic	B2C0D7	Target 16-1	OCSA	0.00078	mg/kg	U	ND	
Methoxychlor	Other	72-43-5	Organic	B2C0D8	Target 16-2	OCSA	0.0008	mg/kg	U	ND	
Methoxychlor	Other	72-43-5	Organic	B2C0D9	Target 16-3	OCSA	0.00078	mg/kg	U	ND	
Methoxychlor	Other	72-43-5	Organic	B2C0F0	Target 16-4	OCSA	0	mg/kg	U	ND	
Methoxychlor	Other	72-43-5	Organic	B2C0F1	Target 16-5	OCSA	0.00078	mg/kg	U	ND	
Methoxychlor	Other	72-43-5	Organic	B2C0F2	Target 17-1	OCSA	0.0008	mg/kg	U	ND	
Methoxychlor	Other	72-43-5	Organic	B2C0F3	Target 17-2	OCSA	0.00078	mg/kg	U	ND	
Methoxychlor	Other	72-43-5	Organic	B2C0F4	Target 17-3	OCSA	0.00079	mg/kg	U	ND	
Methoxychlor	Other	72-43-5	Organic	B2C0F5	Target 17-4	OCSA	0.00078	mg/kg	U	ND	
Methoxychlor	Other	72-43-5	Organic	B2C0F6	Target 17-5	OCSA	0.0008	mg/kg	U	ND	
Methoxychlor	Other	72-43-5	Organic	B2C0F7	Target 18-1	OCSA	0.00079	mg/kg	U	ND	
Methoxychlor	Other	72-43-5	Organic	B2C0F8	Target 18-2	OCSA	0.00078	mg/kg	U	ND	
Methoxychlor	Other	72-43-5	Organic	B2C0F9	Target 18-3	OCSA	0.00078	mg/kg	U	ND	
Methoxychlor	Other	72-43-5	Organic	B2C0H0	Target 18-3D	OCSA	0.00078	mg/kg	U	ND	
Methoxychlor	Other	72-43-5	Organic	B2C0H1	Target 18-4	OCSA	0.00079	mg/kg	U	ND	
Methoxychlor	Other	72-43-5	Organic	B2C0H2	Target 18-5	OCSA	0.0008	mg/kg	U	ND	
Methoxychlor	Other	72-43-5	Organic	B2C0H6	Target 19-4	OCSA	0.00077	mg/kg	U	ND	
Methoxychlor	Other	72-43-5	Organic	B2C0H8	Target 20-1	OCSA	0.016	mg/kg	UD	ND	
Methoxychlor	Other	72-43-5	Organic	B2C0H9	Target 20-2	OCSA	0.0078	mg/kg	UD	ND	
Methoxychlor	Other	72-43-5	Organic	B2C0J0	Target 20-3	OCSA	0.016	mg/kg	UD	ND	
Methoxychlor	Other	72-43-5	Organic	B2C0J1	Target 20-4	OCSA	0.00078	mg/kg	U	ND	
Methoxychlor	Other	72-43-5	Organic	B2C0J3	Target 21-1	OCSA	0.00077	mg/kg	U	ND	
Methoxychlor	Other	72-43-5	Organic	B2C0J4	Target 21-2	OCSA	0.00079	mg/kg	U	ND	
Methoxychlor	Other	72-43-5	Organic	B2C0J5	Target 21-3	OCSA	0.00075	mg/kg	U	ND	
Methoxychlor	Other	72-43-5	Organic	B2C0J6	Target 21-4	OCSA	0.00077	mg/kg	U	ND	
Methoxychlor	Other	72-43-5	Organic	B2C0J7	Target 21-5	OCSA	0.00078	mg/kg	U	ND	
Methoxychlor	Other	72-43-5	Organic	B2C0J8	Target 22-1	OCSA	0.00078	mg/kg	U	ND	
Methoxychlor	Other	72-43-5	Organic	B2C0J9	Target 22-2	OCSA	0.0039	mg/kg	UD	ND	
Methoxychlor	Other	72-43-5	Organic	B2C0K0	Target 22-3	OCSA	0.00079	mg/kg	U	ND	
Methoxychlor	Other	72-43-5	Organic	B2C0K1	Target 22-4	OCSA	0.00079	mg/kg	U	ND	
Methoxychlor	Other	72-43-5	Organic	B2C0K2	Target 22-4D	OCSA	0.00079	mg/kg	U	ND	
Methoxychlor	Other	72-43-5	Organic	B2C0K3	Target 22-5	OCSA	0.00081	mg/kg	U	ND	
Methoxychlor	Other	72-43-5	Organic	B2C0K4	Target 23-1	OCSA	0.00078	mg/kg	U	ND	
Methoxychlor	Other	72-43-5	Organic	B2C0K5	Target 23-2	OCSA	0.00078	mg/kg	U	ND	
Methoxychlor	Other	72-43-5	Organic	B2C0K6	Target 23-3	OCSA	0.00078	mg/kg	U	ND	
Methoxychlor	Other	72-43-5	Organic	B2BXX5	Target 24-1	120-KW-1	0.00078	mg/kg	U	ND	
Methoxychlor	Other	72-43-5	Organic	B2BXX7	Target 24-2	120-KW-1	0.00081	mg/kg	U	ND	
Methoxychlor	Other	72-43-5	Organic	B2BXX8	Target 24-3	120-KW-1	0.0008	mg/kg	U	ND	
Methoxychlor	Other	72-43-5	Organic	B2BXY0	Target 24-5	120-KW-1	0.00076	mg/kg	U	ND	

Table 3-1 Analytical chemistry data for soils used for plant and soil invertebrate bioassays for upland locations at the Hanford Site

Analyte	Priority	CASNo	AnalGrp	SampleID	LocationID	WasteSite	Conc	Units	Qualifer	qual	grp
Methoxychlor	Other	72-43-5	Organic	B2BP89	Target 6-5	600-228	0.00077	mg/kg	UN	ND	
Methoxychlor	Other	72-43-5	Organic	B2C1C4	Target 7-1	600-281	0.00077	mg/kg	U	ND	
Methoxychlor	Other	72-43-5	Organic	B2C1D2	Target 8-3	600-281	0.00076	mg/kg	U	ND	
PCNB	Other	82-68-8	Organic	B2BW15	Control 1	600-218	0.036	mg/kg	U	ND	
PCNB	Other	82-68-8	Organic	B2BW28	Control 13	OCSA	0.035	mg/kg	U	ND	
PCNB	Other	82-68-8	Organic	B2BW30	Control 15	OCSA	0.036	mg/kg	U	ND	
PCNB	Other	82-68-8	Organic	B2BW31	Control 16	OCSA	0.036	mg/kg	U	ND	
PCNB	Other	82-68-8	Organic	B2BW32	Control 17	OCSA	0.035	mg/kg	U	ND	
PCNB	Other	82-68-8	Organic	B2BW33	Control 18	OCSA	0.036	mg/kg	U	ND	
PCNB	Other	82-68-8	Organic	B2BW16	Control 2	600-218	0.036	mg/kg	U	ND	
PCNB	Other	82-68-8	Organic	B2BW35	Control 20	OCSA	0.036	mg/kg	U	ND	
PCNB	Other	82-68-8	Organic	B2BW18	Control 4	600-220	0.036	mg/kg	U	ND	
PCNB	Other	82-68-8	Organic	B2BW22	Control 8	600-228	0.035	mg/kg	U	ND	
PCNB	Other	82-68-8	Organic	B2BW24	Control 9D	600-228	0.00077	mg/kg	U	ND	
PCNB	Other	82-68-8	Organic	B2C0B0	Target 11-1	OCSA	0.035	mg/kg	U	ND	
PCNB	Other	82-68-8	Organic	B2C0B5	Target 12-1	OCSA	0.035	mg/kg	U	ND	
PCNB	Other	82-68-8	Organic	B2C0B6	Target 12-2	OCSA	0.034	mg/kg	U	ND	
PCNB	Other	82-68-8	Organic	B2C0B7	Target 12-3	OCSA	0.039	mg/kg	U	ND	
PCNB	Other	82-68-8	Organic	B2C0B8	Target 12-4	OCSA	0.035	mg/kg	U	ND	
PCNB	Other	82-68-8	Organic	B2C0B9	Target 12-4D	OCSA	0.035	mg/kg	U	ND	
PCNB	Other	82-68-8	Organic	B2C0C0	Target 12-5	OCSA	0.038	mg/kg	U	ND	
PCNB	Other	82-68-8	Organic	B2C0C1	Target 13-1	OCSA	0.036	mg/kg	U	ND	
PCNB	Other	82-68-8	Organic	B2C0C2	Target 13-2	OCSA	0.036	mg/kg	U	ND	
PCNB	Other	82-68-8	Organic	B2C0C3	Target 13-3	OCSA	0.035	mg/kg	U	ND	
PCNB	Other	82-68-8	Organic	B2C0C4	Target 13-4	OCSA	0.036	mg/kg	U	ND	
PCNB	Other	82-68-8	Organic	B2C0C5	Target 13-5	OCSA	0.035	mg/kg	U	ND	
PCNB	Other	82-68-8	Organic	B2C0C6	Target 14-1	OCSA	0.035	mg/kg	U	ND	
PCNB	Other	82-68-8	Organic	B2C0C7	Target 14-2	OCSA	0.035	mg/kg	U	ND	
PCNB	Other	82-68-8	Organic	B2C0C8	Target 14-3	OCSA	0.036	mg/kg	U	ND	
PCNB	Other	82-68-8	Organic	B2C0C9	Target 14-4	OCSA	0.036	mg/kg	U	ND	
PCNB	Other	82-68-8	Organic	B2C0D0	Target 14-5	OCSA	0.035	mg/kg	U	ND	
PCNB	Other	82-68-8	Organic	B2C0D7	Target 16-1	OCSA	0.036	mg/kg	U	ND	
PCNB	Other	82-68-8	Organic	B2C0D8	Target 16-2	OCSA	0.037	mg/kg	U	ND	
PCNB	Other	82-68-8	Organic	B2C0D9	Target 16-3	OCSA	0.036	mg/kg	U	ND	
PCNB	Other	82-68-8	Organic	B2C0F0	Target 16-4	OCSA	0.036	mg/kg	U	ND	
PCNB	Other	82-68-8	Organic	B2C0F1	Target 16-5	OCSA	0.036	mg/kg	U	ND	
PCNB	Other	82-68-8	Organic	B2C0F2	Target 17-1	OCSA	0.037	mg/kg	U	ND	
PCNB	Other	82-68-8	Organic	B2C0F3	Target 17-2	OCSA	0.036	mg/kg	U	ND	
PCNB	Other	82-68-8	Organic	B2C0F4	Target 17-3	OCSA	0.037	mg/kg	U	ND	
PCNB	Other	82-68-8	Organic	B2C0F5	Target 17-4	OCSA	0.036	mg/kg	U	ND	
PCNB	Other	82-68-8	Organic	B2C0F6	Target 17-5	OCSA	0.037	mg/kg	U	ND	
PCNB	Other	82-68-8	Organic	B2C0F7	Target 18-1	OCSA	0.037	mg/kg	U	ND	
PCNB	Other	82-68-8	Organic	B2C0F8	Target 18-2	OCSA	0.036	mg/kg	U	ND	
PCNB	Other	82-68-8	Organic	B2C0F9	Target 18-3	OCSA	0.036	mg/kg	U	ND	
PCNB	Other	82-68-8	Organic	B2C0H0	Target 18-3D	OCSA	0.036	mg/kg	U	ND	
PCNB	Other	82-68-8	Organic	B2C0H1	Target 18-4	OCSA	0.036	mg/kg	U	ND	
PCNB	Other	82-68-8	Organic	B2C0H2	Target 18-5	OCSA	0.037	mg/kg	U	ND	
PCNB	Other	82-68-8	Organic	B2C0H6	Target 19-4	OCSA	0.036	mg/kg	U	ND	
PCNB	Other	82-68-8	Organic	B2C0H8	Target 20-1	OCSA	0.038	mg/kg	U	ND	
PCNB	Other	82-68-8	Organic	B2C0H9	Target 20-2	OCSA	0.036	mg/kg	U	ND	
PCNB	Other	82-68-8	Organic	B2C0J0	Target 20-3	OCSA	0.038	mg/kg	U	ND	
PCNB	Other	82-68-8	Organic	B2C0J1	Target 20-4	OCSA	0.036	mg/kg	U	ND	
PCNB	Other	82-68-8	Organic	B2C0J3	Target 21-1	OCSA	0.036	mg/kg	U	ND	
PCNB	Other	82-68-8	Organic	B2C0J4	Target 21-2	OCSA	0.036	mg/kg	U	ND	
PCNB	Other	82-68-8	Organic	B2C0J5	Target 21-3	OCSA	0.035	mg/kg	U	ND	
PCNB	Other	82-68-8	Organic	B2C0J6	Target 21-4	OCSA	0.035	mg/kg	U	ND	
PCNB	Other	82-68-8	Organic	B2C0J7	Target 21-5	OCSA	0.036	mg/kg	U	ND	
PCNB	Other	82-68-8	Organic	B2C0J8	Target 22-1	OCSA	0.036	mg/kg	U	ND	
PCNB	Other	82-68-8	Organic	B2C0J9	Target 22-2	OCSA	0.036	mg/kg	U	ND	
PCNB	Other	82-68-8	Organic	B2C0K0	Target 22-3	OCSA	0.036	mg/kg	U	ND	
PCNB	Other	82-68-8	Organic	B2C0K1	Target 22-4	OCSA	0.037	mg/kg	U	ND	
PCNB	Other	82-68-8	Organic	B2C0K2	Target 22-4D	OCSA	0.036	mg/kg	U	ND	
PCNB	Other	82-68-8	Organic	B2C0K3	Target 22-5	OCSA	0.038	mg/kg	U	ND	
PCNB	Other	82-68-8	Organic	B2C0K4	Target 23-1	OCSA	0.036	mg/kg	U	ND	
PCNB	Other	82-68-8	Organic	B2C0K5	Target 23-2	OCSA	0.036	mg/kg	U	ND	
PCNB	Other	82-68-8	Organic	B2C0K6	Target 23-3	OCSA	0.036	mg/kg	U	ND	
PCNB	Other	82-68-8	Organic	B2BXX5	Target 24-1	120-KW-1	0.036	mg/kg	U	ND	
PCNB	Other	82-68-8	Organic	B2BXX7	Target 24-2	120-KW-1	0.037	mg/kg	U	ND	
PCNB	Other	82-68-8	Organic	B2BXX8	Target 24-3	120-KW-1	0.037	mg/kg	U	ND	
PCNB	Other	82-68-8	Organic	B2BXY0	Target 24-5	120-KW-1	0.035	mg/kg	U	ND	
PCNB	Other	82-68-8	Organic	B2BP89	Target 6-5	600-228	0.035	mg/kg	U	ND	
PCNB	Other	82-68-8	Organic	B2C1C4	Target 7-1	600-281	0.036	mg/kg	U	ND	
PCNB	Other	82-68-8	Organic	B2C1D2	Target 8-3	600-281	0.035	mg/kg	U	ND	
Pentachlorophenol	Other	87-86-5	Organic	B2BW15	Control 1	600-218	0.36	mg/kg	U	ND	
Pentachlorophenol	Other	87-86-5	Organic	B2BW28	Control 13	OCSA	0.35	mg/kg	U	ND	
Pentachlorophenol	Other	87-86-5	Organic	B2BW30	Control 15	OCSA	0.35	mg/kg	U	ND	
Pentachlorophenol	Other	87-86-5	Organic	B2BW31	Control 16	OCSA	0.35	mg/kg	U	ND	
Pentachlorophenol	Other	87-86-5	Organic	B2BW32	Control 17	OCSA	0.35	mg/kg	U	ND	
Pentachlorophenol	Other	87-86-5	Organic	B2BW33	Control 18	OCSA	0.35	mg/kg	U	ND	
Pentachlorophenol	Other	87-86-5	Organic	B2BW16	Control 2	600-218	0.36	mg/kg	U	ND	
Pentachlorophenol	Other	87-86-5	Organic	B2BW35	Control 20	OCSA	0.36	mg/kg	U	ND	
Pentachlorophenol	Other	87-86-5	Organic	B2BW18	Control 4	600-220	0.35	mg/kg	U	ND	
Pentachlorophenol	Other	87-86-5	Organic	B2BW22	Control 8	600-228	0.35	mg/kg	U	ND	
Pentachlorophenol	Other	87-86-5	Organic	B2BW24	Control 9D	600-228	0.035	mg/kg	U	ND	
Pentachlorophenol	Other	87-86-5	Organic	B2C0B0	Target 11-1	OCSA	0.34	mg/kg	U	ND	
Pentachlorophenol	Other	87-86-5	Organic	B2C0B5	Target 12-1	OCSA	0.35	mg/kg	U	ND	
Pentachlorophenol	Other	87-86-5	Organic	B2C0B6	Target 12-2	OCSA	0.34	mg/kg	U	ND	
Pentachlorophenol	Other	87-86-5	Organic	B2C0B7	Target 12-3	OCSA	0.38	mg/kg	U	ND	
Pentachlorophenol	Other	87-86-5	Organic	B2C0B8	Target 12-4	OCSA	0.35	mg/kg	U	ND	
Pentachlorophenol	Other	87-86-5	Organic	B2C0B9	Target 12-4D	OCSA	0.35	mg/kg	U	ND	
Pentachlorophenol	Other	87-86-5	Organic	B2C0C0	Target 12-5	OCSA	0.38	mg/kg	U	ND	
Pentachlorophenol	Other	87-86-5	Organic	B2C0C1	Target 13-1	OCSA	0.35	mg/kg	U	ND	
Pentachlorophenol	Other	87-86-5	Organic	B2C0C2	Target 13-2	OCSA	0.35	mg/kg	U	ND	
Pentachlorophenol	Other	87-86-5	Organic	B2C0C3	Target 13-3	OCSA	0.34	mg/kg	U	ND	
Pentachlorophenol	Other	87-86-5	Organic	B2C0C4	Target 13-4	OCSA	0.35	mg/kg	U	ND	
Pentachlorophenol	Other	87-86-5	Organic	B2C0C5	Target 13-5	OCSA	0.35	mg/kg	U	ND	
Pentachlorophenol	Other	87-86-5	Organic	B2C0C6	Target 14-1	OCSA	0.35	mg/kg	U	ND	

Table 3-1 Analytical chemistry data for soils used for plant and soil invertebrate bioassays for upland locations at the Hanford Site

Analyte	Priority	CASNo	AnalGrp	SampleID	LocationID	WasteSite	Conc	Units	Qualifer	qual	grp
Pentachlorophenol	Other	87-86-5	Organic	B2C0C7	Target 14-2	OCSA	0.34	mg/kg	U	ND	
Pentachlorophenol	Other	87-86-5	Organic	B2C0C8	Target 14-3	OCSA	0.35	mg/kg	U	ND	
Pentachlorophenol	Other	87-86-5	Organic	B2C0C9	Target 14-4	OCSA	0.36	mg/kg	U	ND	
Pentachlorophenol	Other	87-86-5	Organic	B2C0D0	Target 14-5	OCSA	0.35	mg/kg	U	ND	
Pentachlorophenol	Other	87-86-5	Organic	B2C0D7	Target 16-1	OCSA	0.36	mg/kg	U	ND	
Pentachlorophenol	Other	87-86-5	Organic	B2C0D8	Target 16-2	OCSA	0.37	mg/kg	U	ND	
Pentachlorophenol	Other	87-86-5	Organic	B2C0D9	Target 16-3	OCSA	0.36	mg/kg	U	ND	
Pentachlorophenol	Other	87-86-5	Organic	B2C0F0	Target 16-4	OCSA	0.36	mg/kg	U	ND	
Pentachlorophenol	Other	87-86-5	Organic	B2C0F1	Target 16-5	OCSA	0.36	mg/kg	U	ND	
Pentachlorophenol	Other	87-86-5	Organic	B2C0F2	Target 17-1	OCSA	0.37	mg/kg	U	ND	
Pentachlorophenol	Other	87-86-5	Organic	B2C0F3	Target 17-2	OCSA	0.36	mg/kg	U	ND	
Pentachlorophenol	Other	87-86-5	Organic	B2C0F4	Target 17-3	OCSA	0.36	mg/kg	U	ND	
Pentachlorophenol	Other	87-86-5	Organic	B2C0F5	Target 17-4	OCSA	0.36	mg/kg	U	ND	
Pentachlorophenol	Other	87-86-5	Organic	B2C0F6	Target 17-5	OCSA	0.37	mg/kg	U	ND	
Pentachlorophenol	Other	87-86-5	Organic	B2C0F7	Target 18-1	OCSA	0.36	mg/kg	U	ND	
Pentachlorophenol	Other	87-86-5	Organic	B2C0F8	Target 18-2	OCSA	0.36	mg/kg	U	ND	
Pentachlorophenol	Other	87-86-5	Organic	B2C0F9	Target 18-3	OCSA	0.36	mg/kg	U	ND	
Pentachlorophenol	Other	87-86-5	Organic	B2C0H0	Target 18-3D	OCSA	0.36	mg/kg	U	ND	
Pentachlorophenol	Other	87-86-5	Organic	B2C0H1	Target 18-4	OCSA	0.36	mg/kg	U	ND	
Pentachlorophenol	Other	87-86-5	Organic	B2C0H2	Target 18-5	OCSA	0.37	mg/kg	U	ND	
Pentachlorophenol	Other	87-86-5	Organic	B2C0H6	Target 19-4	OCSA	0.35	mg/kg	U	ND	
Pentachlorophenol	Other	87-86-5	Organic	B2C0H8	Target 20-1	OCSA	0.37	mg/kg	U	ND	
Pentachlorophenol	Other	87-86-5	Organic	B2C0H9	Target 20-2	OCSA	0.36	mg/kg	U	ND	
Pentachlorophenol	Other	87-86-5	Organic	B2C0J0	Target 20-3	OCSA	0.37	mg/kg	U	ND	
Pentachlorophenol	Other	87-86-5	Organic	B2C0J1	Target 20-4	OCSA	0.36	mg/kg	U	ND	
Pentachlorophenol	Other	87-86-5	Organic	B2C0J3	Target 21-1	OCSA	0.36	mg/kg	U	ND	
Pentachlorophenol	Other	87-86-5	Organic	B2C0J4	Target 21-2	OCSA	0.36	mg/kg	U	ND	
Pentachlorophenol	Other	87-86-5	Organic	B2C0J5	Target 21-3	OCSA	0.35	mg/kg	U	ND	
Pentachlorophenol	Other	87-86-5	Organic	B2C0J6	Target 21-4	OCSA	0.35	mg/kg	U	ND	
Pentachlorophenol	Other	87-86-5	Organic	B2C0J7	Target 21-5	OCSA	0.36	mg/kg	U	ND	
Pentachlorophenol	Other	87-86-5	Organic	B2C0J8	Target 22-1	OCSA	0.36	mg/kg	U	ND	
Pentachlorophenol	Other	87-86-5	Organic	B2C0J9	Target 22-2	OCSA	0.36	mg/kg	U	ND	
Pentachlorophenol	Other	87-86-5	Organic	B2C0K0	Target 22-3	OCSA	0.36	mg/kg	U	ND	
Pentachlorophenol	Other	87-86-5	Organic	B2C0K1	Target 22-4	OCSA	0.36	mg/kg	U	ND	
Pentachlorophenol	Other	87-86-5	Organic	B2C0K2	Target 22-4D	OCSA	0.36	mg/kg	U	ND	
Pentachlorophenol	Other	87-86-5	Organic	B2C0K3	Target 22-5	OCSA	0.37	mg/kg	U	ND	
Pentachlorophenol	Other	87-86-5	Organic	B2C0K4	Target 23-1	OCSA	0.36	mg/kg	U	ND	
Pentachlorophenol	Other	87-86-5	Organic	B2C0K5	Target 23-2	OCSA	0.36	mg/kg	U	ND	
Pentachlorophenol	Other	87-86-5	Organic	B2C0K6	Target 23-3	OCSA	0.36	mg/kg	U	ND	
Pentachlorophenol	Other	87-86-5	Organic	B2BXX5	Target 24-1	120-KW-1	0.36	mg/kg	U	ND	
Pentachlorophenol	Other	87-86-5	Organic	B2BXX7	Target 24-2	120-KW-1	0.37	mg/kg	U	ND	
Pentachlorophenol	Other	87-86-5	Organic	B2BXX8	Target 24-3	120-KW-1	0.37	mg/kg	U	ND	
Pentachlorophenol	Other	87-86-5	Organic	B2BXY0	Target 24-5	120-KW-1	0.35	mg/kg	U	ND	
Pentachlorophenol	Other	87-86-5	Organic	B2BP89	Target 6-5	600-228	0.35	mg/kg	U	ND	
Pentachlorophenol	Other	87-86-5	Organic	B2C1C4	Target 7-1	600-281	0.36	mg/kg	U	ND	
Pentachlorophenol	Other	87-86-5	Organic	B2C1D2	Target 8-3	600-281	0.35	mg/kg	U	ND	
Toxaphene	Other	8001-35-2	Organic	B2BW15	Control 1	600-218	0.017	mg/kg	U	ND	
Toxaphene	Other	8001-35-2	Organic	B2BW28	Control 13	OCSA	0.016	mg/kg	U	ND	
Toxaphene	Other	8001-35-2	Organic	B2BW30	Control 15	OCSA	0.016	mg/kg	U	ND	
Toxaphene	Other	8001-35-2	Organic	B2BW31	Control 16	OCSA	0.016	mg/kg	U	ND	
Toxaphene	Other	8001-35-2	Organic	B2BW32	Control 17	OCSA	0.016	mg/kg	U	ND	
Toxaphene	Other	8001-35-2	Organic	B2BW33	Control 18	OCSA	0.016	mg/kg	U	ND	
Toxaphene	Other	8001-35-2	Organic	B2BW16	Control 2	600-218	0.016	mg/kg	U	ND	
Toxaphene	Other	8001-35-2	Organic	B2BW35	Control 20	OCSA	0.016	mg/kg	U	ND	
Toxaphene	Other	8001-35-2	Organic	B2BW18	Control 4	600-220	0.016	mg/kg	U	ND	
Toxaphene	Other	8001-35-2	Organic	B2BW22	Control 8	600-228	0.016	mg/kg	U	ND	
Toxaphene	Other	8001-35-2	Organic	B2BW24	Control 9D	600-228	0.35	mg/kg	U	ND	
Toxaphene	Other	8001-35-2	Organic	B2C0B0	Target 11-1	OCSA	0.016	mg/kg	U	ND	
Toxaphene	Other	8001-35-2	Organic	B2C0B5	Target 12-1	OCSA	0.016	mg/kg	U	ND	
Toxaphene	Other	8001-35-2	Organic	B2C0B6	Target 12-2	OCSA	0.015	mg/kg	U	ND	
Toxaphene	Other	8001-35-2	Organic	B2C0B7	Target 12-3	OCSA	0.018	mg/kg	U	ND	
Toxaphene	Other	8001-35-2	Organic	B2C0B8	Target 12-4	OCSA	0.016	mg/kg	U	ND	
Toxaphene	Other	8001-35-2	Organic	B2C0B9	Target 12-4D	OCSA	0.016	mg/kg	U	ND	
Toxaphene	Other	8001-35-2	Organic	B2C0C0	Target 12-5	OCSA	0.017	mg/kg	U	ND	
Toxaphene	Other	8001-35-2	Organic	B2C0C1	Target 13-1	OCSA	0.016	mg/kg	U	ND	
Toxaphene	Other	8001-35-2	Organic	B2C0C2	Target 13-2	OCSA	0.016	mg/kg	U	ND	
Toxaphene	Other	8001-35-2	Organic	B2C0C3	Target 13-3	OCSA	0.016	mg/kg	U	ND	
Toxaphene	Other	8001-35-2	Organic	B2C0C4	Target 13-4	OCSA	0.016	mg/kg	U	ND	
Toxaphene	Other	8001-35-2	Organic	B2C0C5	Target 13-5	OCSA	0.016	mg/kg	U	ND	
Toxaphene	Other	8001-35-2	Organic	B2C0C6	Target 14-1	OCSA	0.016	mg/kg	U	ND	
Toxaphene	Other	8001-35-2	Organic	B2C0C7	Target 14-2	OCSA	0.016	mg/kg	U	ND	
Toxaphene	Other	8001-35-2	Organic	B2C0C8	Target 14-3	OCSA	0.016	mg/kg	U	ND	
Toxaphene	Other	8001-35-2	Organic	B2C0C9	Target 14-4	OCSA	0.017	mg/kg	U	ND	
Toxaphene	Other	8001-35-2	Organic	B2C0D0	Target 14-5	OCSA	0.016	mg/kg	U	ND	
Toxaphene	Other	8001-35-2	Organic	B2C0D7	Target 16-1	OCSA	0.017	mg/kg	U	ND	
Toxaphene	Other	8001-35-2	Organic	B2C0D8	Target 16-2	OCSA	0.017	mg/kg	U	ND	
Toxaphene	Other	8001-35-2	Organic	B2C0D9	Target 16-3	OCSA	0.016	mg/kg	U	ND	
Toxaphene	Other	8001-35-2	Organic	B2C0F0	Target 16-4	OCSA	0.016	mg/kg	U	ND	
Toxaphene	Other	8001-35-2	Organic	B2C0F1	Target 16-5	OCSA	0.016	mg/kg	U	ND	
Toxaphene	Other	8001-35-2	Organic	B2C0F2	Target 17-1	OCSA	0.017	mg/kg	U	ND	
Toxaphene	Other	8001-35-2	Organic	B2C0F3	Target 17-2	OCSA	0.017	mg/kg	U	ND	
Toxaphene	Other	8001-35-2	Organic	B2C0F4	Target 17-3	OCSA	0.017	mg/kg	U	ND	
Toxaphene	Other	8001-35-2	Organic	B2C0F5	Target 17-4	OCSA	0.017	mg/kg	U	ND	
Toxaphene	Other	8001-35-2	Organic	B2C0F6	Target 17-5	OCSA	0.017	mg/kg	U	ND	
Toxaphene	Other	8001-35-2	Organic	B2C0F7	Target 18-1	OCSA	0.017	mg/kg	U	ND	
Toxaphene	Other	8001-35-2	Organic	B2C0F8	Target 18-2	OCSA	0.017	mg/kg	U	ND	
Toxaphene	Other	8001-35-2	Organic	B2C0F9	Target 18-3	OCSA	0.016	mg/kg	U	ND	
Toxaphene	Other	8001-35-2	Organic	B2C0H0	Target 18-3D	OCSA	0.016	mg/kg	U	ND	
Toxaphene	Other	8001-35-2	Organic	B2C0H1	Target 18-4	OCSA	0.017	mg/kg	U	ND	
Toxaphene	Other	8001-35-2	Organic	B2C0H2	Target 18-5	OCSA	0.017	mg/kg	U	ND	
Toxaphene	Other	8001-35-2	Organic	B2C0H6	Target 19-4	OCSA	0.016	mg/kg	U	ND	
Toxaphene	Other	8001-35-2	Organic	B2C0H8	Target 20-1	OCSA	0.34	mg/kg	UD	ND	
Toxaphene	Other	8001-35-2	Organic	B2C0H9	Target 20-2	OCSA	0.17	mg/kg	UD	ND	
Toxaphene	Other	8001-35-2	Organic	B2C0J0	Target 20-3	OCSA	0.34	mg/kg	UD	ND	
Toxaphene	Other	8001-35-2	Organic	B2C0J1	Target 20-4	OCSA	0.016	mg/kg	U	ND	
Toxaphene	Other	8001-35-2	Organic	B2C0J3	Target 21-1	OCSA	0.016	mg/kg	U	ND	
Toxaphene	Other	8001-35-2	Organic	B2C0J4	Target 21-2	OCSA	0.017	mg/kg	U	ND	

Table 3-1 Analytical chemistry data for soils used for plant and soil invertebrate bioassays for upland locations at the Hanford Site

Analyte	Priority	CASNo	AnalGrp	SampleID	LocationID	WasteSite	Conc	Units	Qualifer	qual	grp
Toxaphene	Other	8001-35-2	Organic	B2C0J5	Target 21-3	OCSA	0.016	mg/kg	U	ND	
Toxaphene	Other	8001-35-2	Organic	B2C0J6	Target 21-4	OCSA	0.016	mg/kg	U	ND	
Toxaphene	Other	8001-35-2	Organic	B2C0J7	Target 21-5	OCSA	0.016	mg/kg	U	ND	
Toxaphene	Other	8001-35-2	Organic	B2C0J8	Target 22-1	OCSA	0.016	mg/kg	U	ND	
Toxaphene	Other	8001-35-2	Organic	B2C0J9	Target 22-2	OCSA	0.082	mg/kg	UD	ND	
Toxaphene	Other	8001-35-2	Organic	B2C0K0	Target 22-3	OCSA	0.017	mg/kg	U	ND	
Toxaphene	Other	8001-35-2	Organic	B2C0K1	Target 22-4	OCSA	0.017	mg/kg	U	ND	
Toxaphene	Other	8001-35-2	Organic	B2C0K2	Target 22-4D	OCSA	0.017	mg/kg	U	ND	
Toxaphene	Other	8001-35-2	Organic	B2C0K3	Target 22-5	OCSA	0.017	mg/kg	U	ND	
Toxaphene	Other	8001-35-2	Organic	B2C0K4	Target 23-1	OCSA	0.017	mg/kg	U	ND	
Toxaphene	Other	8001-35-2	Organic	B2C0K5	Target 23-2	OCSA	0.016	mg/kg	U	ND	
Toxaphene	Other	8001-35-2	Organic	B2C0K6	Target 23-3	OCSA	0.016	mg/kg	U	ND	
Toxaphene	Other	8001-35-2	Organic	B2BXX5	Target 24-1	120-KW-1	0.016	mg/kg	U	ND	
Toxaphene	Other	8001-35-2	Organic	B2BXX7	Target 24-2	120-KW-1	0.017	mg/kg	U	ND	
Toxaphene	Other	8001-35-2	Organic	B2BXX8	Target 24-3	120-KW-1	0.017	mg/kg	U	ND	
Toxaphene	Other	8001-35-2	Organic	B2BXY0	Target 24-5	120-KW-1	0.016	mg/kg	U	ND	
Toxaphene	Other	8001-35-2	Organic	B2BP89	Target 6-5	600-228	0.016	mg/kg	U	ND	
Toxaphene	Other	8001-35-2	Organic	B2C1C4	Target 7-1	600-281	0.016	mg/kg	U	ND	
Toxaphene	Other	8001-35-2	Organic	B2C1D2	Target 8-3	600-281	0.016	mg/kg	U	ND	
trans-Chlordane	Other	5103-74-2	Organic	B2BW15	Control 1	600-218	0.00017	mg/kg	U	ND	
trans-Chlordane	Other	5103-74-2	Organic	B2BW28	Control 13	OCSA	0.00017	mg/kg	U	ND	
trans-Chlordane	Other	5103-74-2	Organic	B2BW30	Control 15	OCSA	0.00017	mg/kg	U	ND	
trans-Chlordane	Other	5103-74-2	Organic	B2BW31	Control 16	OCSA	0.00017	mg/kg	U	ND	
trans-Chlordane	Other	5103-74-2	Organic	B2BW32	Control 17	OCSA	0.00017	mg/kg	U	ND	
trans-Chlordane	Other	5103-74-2	Organic	B2BW33	Control 18	OCSA	0.00017	mg/kg	U	ND	
trans-Chlordane	Other	5103-74-2	Organic	B2BW16	Control 2	600-218	0.0017	mg/kg	U	ND	
trans-Chlordane	Other	5103-74-2	Organic	B2BW35	Control 20	OCSA	0.00017	mg/kg	U	ND	
trans-Chlordane	Other	5103-74-2	Organic	B2BW18	Control 4	600-220	0.00017	mg/kg	U	ND	
trans-Chlordane	Other	5103-74-2	Organic	B2BW22	Control 8	600-228	0.00017	mg/kg	U	ND	
trans-Chlordane	Other	5103-74-2	Organic	B2BW24	Control 9D	600-228	0.00017	mg/kg	U	ND	
trans-Chlordane	Other	5103-74-2	Organic	B2C0B0	Target 11-1	OCSA	0.00016	mg/kg	U	ND	
trans-Chlordane	Other	5103-74-2	Organic	B2C0B5	Target 12-1	OCSA	0.00017	mg/kg	U	ND	
trans-Chlordane	Other	5103-74-2	Organic	B2C0B6	Target 12-2	OCSA	0.00016	mg/kg	U	ND	
trans-Chlordane	Other	5103-74-2	Organic	B2C0B7	Target 12-3	OCSA	0.00018	mg/kg	U	ND	
trans-Chlordane	Other	5103-74-2	Organic	B2C0B8	Target 12-4	OCSA	0.00017	mg/kg	U	ND	
trans-Chlordane	Other	5103-74-2	Organic	B2C0B9	Target 12-4D	OCSA	0.00017	mg/kg	U	ND	
trans-Chlordane	Other	5103-74-2	Organic	B2C0C0	Target 12-5	OCSA	0.00018	mg/kg	U	ND	
trans-Chlordane	Other	5103-74-2	Organic	B2C0C1	Target 13-1	OCSA	0.00017	mg/kg	U	ND	
trans-Chlordane	Other	5103-74-2	Organic	B2C0C2	Target 13-2	OCSA	0.00017	mg/kg	U	ND	
trans-Chlordane	Other	5103-74-2	Organic	B2C0C3	Target 13-3	OCSA	0.00016	mg/kg	U	ND	
trans-Chlordane	Other	5103-74-2	Organic	B2C0C4	Target 13-4	OCSA	0.00017	mg/kg	U	ND	
trans-Chlordane	Other	5103-74-2	Organic	B2C0C5	Target 13-5	OCSA	0.00017	mg/kg	U	ND	
trans-Chlordane	Other	5103-74-2	Organic	B2C0C6	Target 14-1	OCSA	0.00017	mg/kg	U	ND	
trans-Chlordane	Other	5103-74-2	Organic	B2C0C7	Target 14-2	OCSA	0.00016	mg/kg	U	ND	
trans-Chlordane	Other	5103-74-2	Organic	B2C0C8	Target 14-3	OCSA	0.00017	mg/kg	U	ND	
trans-Chlordane	Other	5103-74-2	Organic	B2C0C9	Target 14-4	OCSA	0.00017	mg/kg	U	ND	
trans-Chlordane	Other	5103-74-2	Organic	B2C0D0	Target 14-5	OCSA	0.00017	mg/kg	U	ND	
trans-Chlordane	Other	5103-74-2	Organic	B2C0D7	Target 16-1	OCSA	0.00017	mg/kg	U	ND	
trans-Chlordane	Other	5103-74-2	Organic	B2C0D8	Target 16-2	OCSA	0.00018	mg/kg	U	ND	
trans-Chlordane	Other	5103-74-2	Organic	B2C0D9	Target 16-3	OCSA	0.00017	mg/kg	U	ND	
trans-Chlordane	Other	5103-74-2	Organic	B2C0F0	Target 16-4	OCSA	0.00017	mg/kg	U	ND	
trans-Chlordane	Other	5103-74-2	Organic	B2C0F1	Target 16-5	OCSA	0.00017	mg/kg	U	ND	
trans-Chlordane	Other	5103-74-2	Organic	B2C0F2	Target 17-1	OCSA	0.00018	mg/kg	U	ND	
trans-Chlordane	Other	5103-74-2	Organic	B2C0F3	Target 17-2	OCSA	0.00017	mg/kg	U	ND	
trans-Chlordane	Other	5103-74-2	Organic	B2C0F4	Target 17-3	OCSA	0.00017	mg/kg	U	ND	
trans-Chlordane	Other	5103-74-2	Organic	B2C0F5	Target 17-4	OCSA	0.00017	mg/kg	U	ND	
trans-Chlordane	Other	5103-74-2	Organic	B2C0F6	Target 17-5	OCSA	0.00018	mg/kg	U	ND	
trans-Chlordane	Other	5103-74-2	Organic	B2C0F7	Target 18-1	OCSA	0.00017	mg/kg	U	ND	
trans-Chlordane	Other	5103-74-2	Organic	B2C0F8	Target 18-2	OCSA	0.00017	mg/kg	U	ND	
trans-Chlordane	Other	5103-74-2	Organic	B2C0F9	Target 18-3	OCSA	0.00017	mg/kg	U	ND	
trans-Chlordane	Other	5103-74-2	Organic	B2C0H0	Target 18-3D	OCSA	0.00017	mg/kg	U	ND	
trans-Chlordane	Other	5103-74-2	Organic	B2C0H1	Target 18-4	OCSA	0.00017	mg/kg	U	ND	
trans-Chlordane	Other	5103-74-2	Organic	B2C0H2	Target 18-5	OCSA	0.00017	mg/kg	U	ND	
trans-Chlordane	Other	5103-74-2	Organic	B2C0H6	Target 19-4	OCSA	0.00017	mg/kg	U	ND	
trans-Chlordane	Other	5103-74-2	Organic	B2C0H8	Target 20-1	OCSA	0.0036	mg/kg	UD	ND	
trans-Chlordane	Other	5103-74-2	Organic	B2C0H9	Target 20-2	OCSA	0.0017	mg/kg	UD	ND	
trans-Chlordane	Other	5103-74-2	Organic	B2C0J0	Target 20-3	OCSA	0.0036	mg/kg	UD	ND	
trans-Chlordane	Other	5103-74-2	Organic	B2C0J1	Target 20-4	OCSA	0.00017	mg/kg	U	ND	
trans-Chlordane	Other	5103-74-2	Organic	B2C0J3	Target 21-1	OCSA	0.00017	mg/kg	U	ND	
trans-Chlordane	Other	5103-74-2	Organic	B2C0J4	Target 21-2	OCSA	0.00017	mg/kg	U	ND	
trans-Chlordane	Other	5103-74-2	Organic	B2C0J5	Target 21-3	OCSA	0.00017	mg/kg	U	ND	
trans-Chlordane	Other	5103-74-2	Organic	B2C0J6	Target 21-4	OCSA	0.00017	mg/kg	U	ND	
trans-Chlordane	Other	5103-74-2	Organic	B2C0J7	Target 21-5	OCSA	0.00017	mg/kg	U	ND	
trans-Chlordane	Other	5103-74-2	Organic	B2C0J8	Target 22-1	OCSA	0.00017	mg/kg	U	ND	
trans-Chlordane	Other	5103-74-2	Organic	B2C0J9	Target 22-2	OCSA	0.00085	mg/kg	UD	ND	
trans-Chlordane	Other	5103-74-2	Organic	B2C0K0	Target 22-3	OCSA	0.00017	mg/kg	U	ND	
trans-Chlordane	Other	5103-74-2	Organic	B2C0K1	Target 22-4	OCSA	0.00017	mg/kg	U	ND	
trans-Chlordane	Other	5103-74-2	Organic	B2C0K2	Target 22-4D	OCSA	0.00017	mg/kg	U	ND	
trans-Chlordane	Other	5103-74-2	Organic	B2C0K3	Target 22-5	OCSA	0.00018	mg/kg	U	ND	
trans-Chlordane	Other	5103-74-2	Organic	B2C0K4	Target 23-1	OCSA	0.00017	mg/kg	U	ND	
trans-Chlordane	Other	5103-74-2	Organic	B2C0K5	Target 23-2	OCSA	0.00017	mg/kg	U	ND	
trans-Chlordane	Other	5103-74-2	Organic	B2C0K6	Target 23-3	OCSA	0.00017	mg/kg	U	ND	
trans-Chlordane	Other	5103-74-2	Organic	B2BXX5	Target 24-1	120-KW-1	0.00017	mg/kg	U	ND	
trans-Chlordane	Other	5103-74-2	Organic	B2BXX7	Target 24-2	120-KW-1	0.00018	mg/kg	U	ND	
trans-Chlordane	Other	5103-74-2	Organic	B2BXX8	Target 24-3	120-KW-1	0.00018	mg/kg	U	ND	
trans-Chlordane	Other	5103-74-2	Organic	B2BXY0	Target 24-5	120-KW-1	0.00017	mg/kg	U	ND	
trans-Chlordane	Other	5103-74-2	Organic	B2BP89	Target 6-5	600-228	0.00017	mg/kg	U	ND	
trans-Chlordane	Other	5103-74-2	Organic	B2C1C4	Target 7-1	600-281	0.00017	mg/kg	U	ND	
trans-Chlordane	Other	5103-74-2	Organic	B2C1D2	Target 8-3	600-281	0.00017	mg/kg	U	ND	

Table 3-2. Raw results for 14-day germination tests on Sandberg's Bluegrass exposed to Hanford Site soils.

SampleID	Test Group	LocationID	Replicate	Number of Seeds	Number Germinating	Proportion of Seeds Germinating
NA	April 1-15	Lab Soil-1	A	40	36	0.90
NA	April 1-15	Lab Soil-1	B	40	35	0.88
NA	April 1-15	Lab Soil-1	C	40	31	0.78
B2BVR9	April 1-15	Control 4	A	40	37	0.93
B2BVR9	April 1-15	Control 4	B	40	33	0.83
B2BVR9	April 1-15	Control 4	C	40	39	0.98
B2BVT7	April 1-15	Control 8	A	40	37	0.93
B2BVT7	April 1-15	Control 8	B	40	33	0.83
B2BVT7	April 1-15	Control 8	C	40	33	0.83
B2BVV1	April 1-15	Control 9D	A	40	40	1.00
B2BVV1	April 1-15	Control 9D	B	40	35	0.88
B2BVV1	April 1-15	Control 9D	C	40	35	0.88
B2BVV9	April 1-15	Control 13	A	40	35	0.88
B2BVV9	April 1-15	Control 13	B	40	34	0.85
B2BVV9	April 1-15	Control 13	C	40	38	0.95
B2BVW3	April 1-15	Control 15	A	40	31	0.78
B2BVW3	April 1-15	Control 15	B	40	32	0.80
B2BVW3	April 1-15	Control 15	C	40	33	0.83
B2C165	April 1-15	Target 8-3	A	40	34	0.85
B2C165	April 1-15	Target 8-3	B	40	32	0.80
B2C165	April 1-15	Target 8-3	C	40	36	0.90
B2BYK1	April 1-15	Target 12-1	A	40	32	0.80
B2BYK1	April 1-15	Target 12-1	B	40	32	0.80
B2BYK1	April 1-15	Target 12-1	C	40	35	0.88
B2BYK3	April 1-15	Target 12-2	A	40	34	0.85
B2BYK3	April 1-15	Target 12-2	B	40	36	0.90
B2BYK3	April 1-15	Target 12-2	C	40	37	0.93
B2BYL5	April 1-15	Target 13-2	A	40	35	0.88
B2BYL5	April 1-15	Target 13-2	B	40	35	0.88
B2BYL5	April 1-15	Target 13-2	C	40	32	0.80
B2BYM3	April 1-15	Target 14-1	A	40	33	0.83
B2BYM3	April 1-15	Target 14-1	B	40	36	0.90
B2BYM3	April 1-15	Target 14-1	C	40	35	0.88
B2BYM7	April 1-15	Target 14-3	A	40	36	0.90
B2BYM7	April 1-15	Target 14-3	B	40	38	0.95
B2BYM7	April 1-15	Target 14-3	C	40	35	0.88
B2BYM9	April 1-15	Target 14-4	A	40	30	0.75
B2BYM9	April 1-15	Target 14-4	B	40	31	0.78
B2BYM9	April 1-15	Target 14-4	C	40	30	0.75
B2BYK7	April 1-15	Target 12-4	A	40	33	0.83
B2BYK7	April 1-15	Target 12-4	B	40	33	0.83
B2BYK7	April 1-15	Target 12-4	C	40	36	0.90
B2BYK9	April 1-15	Target 12-4D	A	40	32	0.80
B2BYK9	April 1-15	Target 12-4D	B	40	32	0.80
B2BYK9	April 1-15	Target 12-4D	C	40	37	0.93
B2BYL7	April 1-15	Target 13-3	A	40	38	0.95
B2BYL7	April 1-15	Target 13-3	B	40	37	0.93
B2BYL7	April 1-15	Target 13-3	C	40	33	0.83
B2BYP9	April 1-15	Target 16-3	A	40	33	0.83
B2BYP9	April 1-15	Target 16-3	B	40	36	0.90
B2BYP9	April 1-15	Target 16-3	C	40	36	0.90
B2BYR5	April 1-15	Target 17-1	A	40	37	0.93
B2BYR5	April 1-15	Target 17-1	B	40	35	0.88
B2BYR5	April 1-15	Target 17-1	C	40	38	0.95
B2BYR7	April 1-15	Target 17-2	A	40	34	0.85
B2BYR7	April 1-15	Target 17-2	B	40	33	0.83
B2BYR7	April 1-15	Target 17-2	C	40	32	0.80
B2BYT5	April 1-15	Target 18-1	A	40	34	0.85
B2BYT5	April 1-15	Target 18-1	B	40	35	0.88

Table 3-2. Raw results for 14-day germination tests on Sandberg's Bluegrass exposed to Hanford Site soils.

SampleID	Test Group	LocationID	Replicate	Number of Seeds	Number Germinating	Proportion of Seeds Germinating
B2BYT5	April 1-15	Target 18-1	C	40	34	0.85
B2BYT7	April 1-15	Target 18-2	A	40	36	0.90
B2BYT7	April 1-15	Target 18-2	B	40	34	0.85
B2BYT7	April 1-15	Target 18-2	C	40	36	0.90
B2BYT9	April 1-15	Target 18-3	A	40	33	0.83
B2BYT9	April 1-15	Target 18-3	B	40	35	0.88
B2BYT9	April 1-15	Target 18-3	C	40	34	0.85
B2BXV1	April 1-15	Target 24-1	A	40	11	0.28
B2BXV1	April 1-15	Target 24-1	B	40	9	0.23
B2BXV1	April 1-15	Target 24-1	C	40	11	0.28
B2BXV5	April 1-15	Target 24-2	A	40	33	0.83
B2BXV5	April 1-15	Target 24-2	B	40	27	0.68
B2BXV5	April 1-15	Target 24-2	C	40	29	0.73
B2BXV7	April 1-15	Target 24-3	A	40	28	0.70
B2BXV7	April 1-15	Target 24-3	B	40	35	0.88
B2BXV7	April 1-15	Target 24-3	C	40	32	0.80
B2BXW1	April 1-15	Target 24-5	A	40	12	0.30
B2BXW1	April 1-15	Target 24-5	B	40	9	0.23
B2BXW1	April 1-15	Target 24-5	C	40	19	0.48
B2C149	April 1-15	Target 7-1	A	40	29	0.73
B2C149	April 1-15	Target 7-1	B	40	31	0.78
B2C149	April 1-15	Target 7-1	C	40	39	0.98
B2BPC2	April 1-15	Target 6-5	A	40	38	0.95
B2BPC2	April 1-15	Target 6-5	B	40	35	0.88
B2BPC2	April 1-15	Target 6-5	C	40	33	0.83
B2BYY7	April 1-15	Target 22-1	A	40	36	0.90
B2BYY7	April 1-15	Target 22-1	B	40	36	0.90
B2BYY7	April 1-15	Target 22-1	C	40	34	0.85
B2BYY9	April 1-15	Target 22-2	A	40	34	0.85
B2BYY9	April 1-15	Target 22-2	B	40	35	0.88
B2BYY9	April 1-15	Target 22-2	C	40	35	0.88
B2C001	April 1-15	Target 22-3	A	40	37	0.93
B2C001	April 1-15	Target 22-3	B	40	34	0.85
B2C001	April 1-15	Target 22-3	C	40	38	0.95
B2C003	April 1-15	Target 22-4	A	40	33	0.83
B2C003	April 1-15	Target 22-4	B	40	37	0.93
B2C003	April 1-15	Target 22-4	C	40	34	0.85
B2C005	April 1-15	Target 22-4D	A	40	32	0.80
B2C005	April 1-15	Target 22-4D	B	40	32	0.80
B2C005	April 1-15	Target 22-4D	C	40	39	0.98
B2C007	April 1-15	Target 22-5	A	40	38	0.95
B2C007	April 1-15	Target 22-5	B	40	39	0.98
B2C007	April 1-15	Target 22-5	C	40	31	0.78
B2C009	April 1-15	Target 23-1	A	40	34	0.85
B2C009	April 1-15	Target 23-1	B	40	33	0.83
B2C009	April 1-15	Target 23-1	C	40	33	0.83
B2C011	April 1-15	Target 23-2	A	40	36	0.90
B2C011	April 1-15	Target 23-2	B	40	36	0.90
B2C011	April 1-15	Target 23-2	C	40	35	0.88
NA	April 15-29	Lab Soil-2	A	40	33	0.83
NA	April 15-29	Lab Soil-2	B	40	36	0.90
NA	April 15-29	Lab Soil-2	C	40	32	0.80
B2BVR6	April 15-29	Control 2	A	40	32	0.80
B2BVR6	April 15-29	Control 2	B	40	38	0.95
B2BVR6	April 15-29	Control 2	C	40	32	0.80
B2BVR3	April 15-29	Control 1	A	40	30	0.75
B2BVR3	April 15-29	Control 1	B	40	37	0.93
B2BVR3	April 15-29	Control 1	C	40	36	0.90
B2BVW5	April 15-29	Control 16	A	40	29	0.73

Table 3-2. Raw results for 14-day germination tests on Sandberg's Bluegrass exposed to Hanford Site soils.

SampleID	Test Group	LocationID	Replicate	Number of Seeds	Number Germinating	Proportion of Seeds Germinating
B2BVW5	April 15-29	Control 16	B	40	26	0.65
B2BVW5	April 15-29	Control 16	C	40	32	0.80
B2BVW7	April 15-29	Control 17	A	40	28	0.70
B2BVW7	April 15-29	Control 17	B	40	37	0.93
B2BVW7	April 15-29	Control 17	C	40	29	0.73
B2BVW9	April 15-29	Control 18	A	40	30	0.75
B2BVW9	April 15-29	Control 18	B	40	32	0.80
B2BVW9	April 15-29	Control 18	C	40	35	0.88
B2BVX3	April 15-29	Control 20	A	40	31	0.78
B2BVX3	April 15-29	Control 20	B	40	35	0.88
B2BVX3	April 15-29	Control 20	C	40	39	0.98
B2C013	April 15-29	Target 23-3	A	40	36	0.90
B2C013	April 15-29	Target 23-3	B	40	34	0.85
B2C013	April 15-29	Target 23-3	C	40	34	0.85
B2BYW3	April 15-29	Target 19-4	A	40	36	0.90
B2BYW3	April 15-29	Target 19-4	B	40	37	0.93
B2BYW3	April 15-29	Target 19-4	C	40	37	0.93
B2BYX7	April 15-29	Target 21-1	A	40	29	0.73
B2BYX7	April 15-29	Target 21-1	B	40	35	0.88
B2BYX7	April 15-29	Target 21-1	C	40	36	0.90
B2BYX9	April 15-29	Target 21-2	A	40	35	0.88
B2BYX9	April 15-29	Target 21-2	B	40	36	0.90
B2BYX9	April 15-29	Target 21-2	C	40	32	0.80
B2BYY1	April 15-29	Target 21-3	A	40	35	0.88
B2BYY1	April 15-29	Target 21-3	B	40	34	0.85
B2BYY1	April 15-29	Target 21-3	C	40	37	0.93
B2BYY3	April 15-29	Target 21-4	A	40	35	0.88
B2BYY3	April 15-29	Target 21-4	B	40	32	0.80
B2BYY3	April 15-29	Target 21-4	C	40	31	0.78
B2BYY5	April 15-29	Target 21-5	A	40	38	0.95
B2BYY5	April 15-29	Target 21-5	B	40	34	0.85
B2BYY5	April 15-29	Target 21-5	C	40	35	0.88
B2BYP7	April 15-29	Target 16-2	A	40	39	0.98
B2BYP7	April 15-29	Target 16-2	B	40	33	0.83
B2BYP7	April 15-29	Target 16-2	C	40	35	0.88
B2BYR1	April 15-29	Target 16-4	A	40	34	0.85
B2BYR1	April 15-29	Target 16-4	B	40	37	0.93
B2BYR1	April 15-29	Target 16-4	C	40	36	0.90
B2BYR3	April 15-29	Target 16-5	A	40	35	0.88
B2BYR3	April 15-29	Target 16-5	B	40	34	0.85
B2BYR3	April 15-29	Target 16-5	C	40	37	0.93
B2BYT1	April 15-29	Target 17-4	A	40	33	0.83
B2BYT1	April 15-29	Target 17-4	B	40	33	0.83
B2BYT1	April 15-29	Target 17-4	C	40	36	0.90
B2BYT3	April 15-29	Target 17-5	A	40	36	0.90
B2BYT3	April 15-29	Target 17-5	B	40	34	0.85
B2BYT3	April 15-29	Target 17-5	C	40	36	0.90
B2BYV1	April 15-29	Target 18-3D	A	40	34	0.85
B2BYV1	April 15-29	Target 18-3D	B	40	36	0.90
B2BYV1	April 15-29	Target 18-3D	C	40	37	0.93
B2BYV3	April 15-29	Target 18-4	A	40	35	0.88
B2BYV3	April 15-29	Target 18-4	B	40	32	0.80
B2BYV3	April 15-29	Target 18-4	C	40	37	0.93
B2BYV5	April 15-29	Target 18-5	A	40	33	0.83
B2BYV5	April 15-29	Target 18-5	B	40	31	0.78
B2BYV5	April 15-29	Target 18-5	C	40	34	0.85
B2BYX3	April 15-29	Target 20-4	A	40	36	0.90
B2BYX3	April 15-29	Target 20-4	B	40	39	0.98
B2BYX3	April 15-29	Target 20-4	C	40	30	0.75

Table 3-2. Raw results for 14-day germination tests on Sandberg's Bluegrass exposed to Hanford Site soils.

SampleID	Test Group	LocationID	Replicate	Number of Seeds	Number Germinating	Proportion of Seeds Germinating
B2BYR9	April 15-29	Target 17-3	A	40	33	0.83
B2BYR9	April 15-29	Target 17-3	B	40	34	0.85
B2BYR9	April 15-29	Target 17-3	C	40	38	0.95
B2BYP5	April 15-29	Target 16-1	A	40	38	0.95
B2BYP5	April 15-29	Target 16-1	B	40	36	0.90
B2BYP5	April 15-29	Target 16-1	C	40	36	0.90
B2BYW7	April 15-29	Target 20-1	A	40	36	0.90
B2BYW7	April 15-29	Target 20-1	B	40	34	0.85
B2BYW7	April 15-29	Target 20-1	C	40	32	0.80
B2BYW9	April 15-29	Target 20-2	A	40	37	0.93
B2BYW9	April 15-29	Target 20-2	B	40	39	0.98
B2BYW9	April 15-29	Target 20-2	C	40	37	0.93
B2BYX1	April 15-29	Target 20-3	A	40	33	0.83
B2BYX1	April 15-29	Target 20-3	B	40	32	0.80
B2BYX1	April 15-29	Target 20-3	C	40	38	0.95
B2BYJ1	April 15-29	Target 11-1	A	40	31	0.78
B2BYJ1	April 15-29	Target 11-1	B	40	33	0.83
B2BYJ1	April 15-29	Target 11-1	C	40	32	0.80
B2BYK5	April 15-29	Target 12-3	A	40	35	0.88
B2BYK5	April 15-29	Target 12-3	B	40	34	0.85
B2BYK5	April 15-29	Target 12-3	C	40	32	0.80
B2BYL1	April 15-29	Target 12-5	A	40	33	0.83
B2BYL1	April 15-29	Target 12-5	B	40	31	0.78
B2BYL1	April 15-29	Target 12-5	C	40	32	0.80
B2BYL3	April 15-29	Target 13-1	A	40	35	0.88
B2BYL3	April 15-29	Target 13-1	B	40	32	0.80
B2BYL3	April 15-29	Target 13-1	C	40	35	0.88
B2BYL9	April 15-29	Target 13-4	A	40	37	0.93
B2BYL9	April 15-29	Target 13-4	B	40	30	0.75
B2BYL9	April 15-29	Target 13-4	C	40	32	0.80
B2BYM1	April 15-29	Target 13-5	A	40	38	0.95
B2BYM1	April 15-29	Target 13-5	B	40	39	0.98
B2BYM1	April 15-29	Target 13-5	C	40	29	0.73
B2BYM5	April 15-29	Target 14-2	A	40	36	0.90
B2BYM5	April 15-29	Target 14-2	B	40	32	0.80
B2BYM5	April 15-29	Target 14-2	C	40	35	0.88
B2BYN1	April 15-29	Target 14-5	A	40	34	0.85
B2BYN1	April 15-29	Target 14-5	B	40	32	0.80
B2BYN1	April 15-29	Target 14-5	C	40	33	0.83

Table 3-3. Raw results for 28-day growth tests on Sandberg's Bluegrass exposed to Hanford Site soils.

SampleID	LocationID	Replicate	Number of Plants	average height (mm)	average weight (mg)
NA	Lab Soil1	1	4	54.4	2.02
NA	Lab Soil1	2	5	71.0	1.99
NA	Lab Soil1	3	4	73.0	2.15
NA	Lab Soil1	4	4	63.3	1.71
NA	Lab Soil1	5	5	74.6	2.12
B2BVR3	Control 1	1	3	80.7	2.03
B2BVR3	Control 1	2	4	59.3	1.06
B2BVR3	Control 1	3	5	58.4	1.21
B2BVR3	Control 1	4	5	64.0	1.15
B2BVR3	Control 1	5	5	59.2	1.28
B2BVV9	Control 13	1	5	71.0	1.33
B2BVV9	Control 13	2	5	66.4	1.54
B2BVV9	Control 13	3	4	78.3	1.83
B2BVV9	Control 13	4	4	59.8	1.69
B2BVV9	Control 13	5	3	73.3	2.17
B2BVW3	Control 15	1	5	101.4	2.15
B2BVW3	Control 15	2	5	88.8	2.23
B2BVW3	Control 15	3	4	85.8	1.88
B2BVW3	Control 15	4	5	69.8	1.10
B2BVW3	Control 15	5	4	74.5	1.68
B2BVW5	Control 16	1	5	69.8	1.35
B2BVW5	Control 16	2	2	67.5	0.81
B2BVW5	Control 16	3	5	78.8	1.36
B2BVW5	Control 16	4	4	79.8	1.94
B2BVW5	Control 16	5	2	50.0	0.75
B2BVW7	Control 17	1	4	57.5	0.61
B2BVW7	Control 17	2	5	54.0	0.69
B2BVW7	Control 17	3	4	80.0	1.10
B2BVW7	Control 17	4	3	56.3	1.21
B2BVW7	Control 17	5	2	53.3	0.84
B2BVW9	Control 18	1	4	56.0	0.62
B2BVW9	Control 18	2	2	80.0	1.06
B2BVW9	Control 18	3	3	63.3	1.56
B2BVW9	Control 18	4	4	73.2	1.12
B2BVW9	Control 18	5	4	76.8	1.29
B2BVR6	Control 2	1	5	61.6	1.11
B2BVR6	Control 2	2	5	62.4	1.24
B2BVR6	Control 2	3	5	62.8	1.10
B2BVR6	Control 2	4	5	60.8	1.29
B2BVR6	Control 2	5	5	54.8	1.02
B2BVX3	Control 20	1	5	77.4	1.09
B2BVX3	Control 20	2	4	61.8	1.13
B2BVX3	Control 20	3	5	66.0	0.95
B2BVX3	Control 20	4	4	73.8	1.23
B2BVX3	Control 20	5	3	73.0	1.33
B2BVR9	Control 4	1	4	70.5	1.15
B2BVR9	Control 4	2	5	62.0	1.16
B2BVR9	Control 4	3	5	64.0	0.90
B2BVR9	Control 4	4	4	69.8	1.10
B2BVR9	Control 4	5	3	57.7	0.84
B2BVT7	Control 8	1	3	72.3	1.34
B2BVT7	Control 8	2	4	66.3	1.20
B2BVT7	Control 8	3	5	76.2	1.32
B2BVT7	Control 8	4	4	79.3	1.42
B2BVT7	Control 8	5	4	82.3	1.37
B2BVV1	Control 9D	1	4	56.0	0.82
B2BVV1	Control 9D	2	4	49.8	0.73

Table 3-3. Raw results for 28-day growth tests on Sandberg's Bluegrass exposed to Hanford Site soils.

SampleID	LocationID	Replicate	Number of Plants	average height (mm)	average weight (mg)
B2BVV1	Control 9D	3	4	62.8	0.82
B2BVV1	Control 9D	4	4	54.2	1.07
B2BVV1	Control 9D	5	4	47.0	0.49
B2BYJ1	Target 11-1	1	4	69.0	1.12
B2BYJ1	Target 11-1	2	3	81.5	2.26
B2BYJ1	Target 11-1	3	5	84.4	1.40
B2BYJ1	Target 11-1	4	3	80.3	2.41
B2BYJ1	Target 11-1	5	4	90.8	2.16
B2BYK1	Target 12-1	1	4	68.5	1.09
B2BYK1	Target 12-1	2	5	68.2	1.14
B2BYK1	Target 12-1	3	4	79.0	0.62
B2BYK1	Target 12-1	4	3	62.0	1.48
B2BYK1	Target 12-1	5	4	63.4	1.49
B2BYK3	Target 12-2	1	5	71.0	0.93
B2BYK3	Target 12-2	2	2	59.5	1.20
B2BYK3	Target 12-2	3	4	77.3	1.47
B2BYK3	Target 12-2	4	4	70.0	1.09
B2BYK3	Target 12-2	5	2	80.5	1.42
B2BYK5	Target 12-3	1	4	66.8	1.34
B2BYK5	Target 12-3	2	5	69.2	1.50
B2BYK5	Target 12-3	3	5	59.0	1.60
B2BYK5	Target 12-3	4	1	58.5	1.71
B2BYK5	Target 12-3	5	4	70.5	1.70
B2BYK7	Target 12-4	1	4	68.0	0.88
B2BYK7	Target 12-4	2	5	57.4	1.03
B2BYK7	Target 12-4	3	5	83.2	1.85
B2BYK7	Target 12-4	4	4	72.3	1.24
B2BYK7	Target 12-4	5	5	76.3	0.95
B2BYK9	Target 12-4D	1	5	73.0	1.61
B2BYK9	Target 12-4D	2	3	81.7	1.55
B2BYK9	Target 12-4D	3	5	65.6	1.05
B2BYK9	Target 12-4D	4	5	66.0	0.81
B2BYK9	Target 12-4D	5	5	66.8	1.05
B2BYL1	Target 12-5	1	5	52.4	0.80
B2BYL1	Target 12-5	2	5	69.4	1.58
B2BYL1	Target 12-5	3	3	60.3	0.95
B2BYL1	Target 12-5	4	5	71.6	1.46
B2BYL1	Target 12-5	5	5	66.5	0.79
B2BYL3	Target 13-1	1	4	59.2	1.11
B2BYL3	Target 13-1	2	5	62.6	1.39
B2BYL3	Target 13-1	3	3	78.0	1.72
B2BYL3	Target 13-1	4	4	62.3	1.35
B2BYL3	Target 13-1	5	5	72.8	1.45
B2BYL5	Target 13-2	1	3	54.2	0.99
B2BYL5	Target 13-2	2	4	58.8	1.16
B2BYL5	Target 13-2	3	4	55.8	0.81
B2BYL5	Target 13-2	4	5	77.0	1.42
B2BYL5	Target 13-2	5	4	60.3	1.06
B2BYL7	Target 13-3	1	5	81.6	1.24
B2BYL7	Target 13-3	2	5	76.5	1.04
B2BYL7	Target 13-3	3	5	66.4	0.98
B2BYL7	Target 13-3	4	5	87.0	1.66
B2BYL7	Target 13-3	5	5	79.8	1.06
B2BYL9	Target 13-4	1	1	70.0	6.46
B2BYL9	Target 13-4	2	5	61.3	0.54
B2BYL9	Target 13-4	3	5	62.0	1.04
B2BYL9	Target 13-4	4	5	69.8	1.43

Table 3-3. Raw results for 28-day growth tests on Sandberg's Bluegrass exposed to Hanford Site soils.

SampleID	LocationID	Replicate	Number of Plants	average height (mm)	average weight (mg)
B2BYL9	Target 13-4	5	5	68.8	1.27
B2BYM1	Target 13-5	1	4	68.0	1.14
B2BYM1	Target 13-5	2	4	74.8	1.59
B2BYM1	Target 13-5	3	4	71.5	1.21
B2BYM1	Target 13-5	4	5	62.0	1.27
B2BYM1	Target 13-5	5	4	70.3	1.39
B2BYM3	Target 14-1	1	5	84.0	2.07
B2BYM3	Target 14-1	2	5	78.8	1.52
B2BYM3	Target 14-1	3	4	85.0	1.89
B2BYM3	Target 14-1	4	3	80.0	1.35
B2BYM3	Target 14-1	5	3	61.3	1.42
B2BYM5	Target 14-2	1	3	61.0	1.46
B2BYM5	Target 14-2	2	5	67.0	1.38
B2BYM5	Target 14-2	3	4	67.0	2.13
B2BYM5	Target 14-2	4	4	67.8	1.44
B2BYM5	Target 14-2	5	3	41.7	1.18
B2BYM7	Target 14-3	1	5	80.2	1.58
B2BYM7	Target 14-3	2	4	68.5	1.31
B2BYM7	Target 14-3	3	4	67.8	0.93
B2BYM7	Target 14-3	4	5	78.4	1.42
B2BYM7	Target 14-3	5	4	87.5	2.28
B2BYM9	Target 14-4	1	3	72.7	1.62
B2BYM9	Target 14-4	2	5	59.2	1.02
B2BYM9	Target 14-4	3	3	63.7	0.94
B2BYM9	Target 14-4	4	5	64.4	1.31
B2BYM9	Target 14-4	5	5	74.8	1.32
B2BYN1	Target 14-5	1	2	59.0	1.18
B2BYN1	Target 14-5	2	4	78.3	1.81
B2BYN1	Target 14-5	3	5	84.8	1.87
B2BYN1	Target 14-5	4	5	65.8	1.41
B2BYN1	Target 14-5	5	2	95.5	2.77
B2BYP5	Target 16-1	1	5	47.8	0.74
B2BYP5	Target 16-1	2	5	50.6	0.67
B2BYP5	Target 16-1	3	3	59.3	0.72
B2BYP5	Target 16-1	4	5	61.4	0.79
B2BYP5	Target 16-1	5	5	52.4	0.86
B2BYP7	Target 16-2	1	5	59.2	0.92
B2BYP7	Target 16-2	2	4	55.5	0.60
B2BYP7	Target 16-2	3	4	45.3	0.65
B2BYP7	Target 16-2	4	5	46.4	0.64
B2BYP7	Target 16-2	5	4	44.0	0.64
B2BYP9	Target 16-3	1	2	44.0	0.13
B2BYP9	Target 16-3	2	3	39.3	0.42
B2BYP9	Target 16-3	3	3	45.0	0.42
B2BYP9	Target 16-3	4	4	54.3	0.56
B2BYP9	Target 16-3	5	2	41.0	0.52
B2BYR1	Target 16-4	1	5	46.8	0.56
B2BYR1	Target 16-4	2	4	53.8	0.80
B2BYR1	Target 16-4	3	4	56.5	0.81
B2BYR1	Target 16-4	4	5	51.4	0.84
B2BYR1	Target 16-4	5	4	39.8	0.48
B2BYR3	Target 16-5	1	5	43.8	0.50
B2BYR3	Target 16-5	2	4	48.5	0.56
B2BYR3	Target 16-5	3	4	49.5	0.69
B2BYR3	Target 16-5	4	3	44.0	0.73
B2BYR3	Target 16-5	5	5	50.2	0.60
B2BYR5	Target 17-1	1	5	56.8	0.75

Table 3-3. Raw results for 28-day growth tests on Sandberg's Bluegrass exposed to Hanford Site soils.

SampleID	LocationID	Replicate	Number of Plants	average height (mm)	average weight (mg)
B2BYR5	Target 17-1	2	5	54.6	0.56
B2BYR5	Target 17-1	3	5	41.0	0.41
B2BYR5	Target 17-1	4	5	43.8	0.58
B2BYR5	Target 17-1	5	2	36.0	0.53
B2BYR7	Target 17-2	1	4	45.5	0.63
B2BYR7	Target 17-2	2	2	59.7	1.16
B2BYR7	Target 17-2	3	5	59.0	0.87
B2BYR7	Target 17-2	4	4	61.5	1.07
B2BYR7	Target 17-2	5	2	81.5	1.22
B2BYR9	Target 17-3	1	3	57.0	1.19
B2BYR9	Target 17-3	2	5	70.6	1.02
B2BYR9	Target 17-3	3	4	64.3	1.01
B2BYR9	Target 17-3	4	5	71.8	1.14
B2BYR9	Target 17-3	5	5	56.6	0.92
B2BYT1	Target 17-4	1	2	54.5	0.82
B2BYT1	Target 17-4	2	4	45.8	0.60
B2BYT1	Target 17-4	3	5	59.0	0.83
B2BYT1	Target 17-4	4	4	46.8	0.52
B2BYT1	Target 17-4	5	4	56.8	0.94
B2BYT3	Target 17-5	1	5	62.8	0.80
B2BYT3	Target 17-5	2	5	57.4	1.07
B2BYT3	Target 17-5	3	5	65.0	1.10
B2BYT3	Target 17-5	4	5	66.6	0.90
B2BYT3	Target 17-5	5	4	61.5	0.69
B2BYT5	Target 18-1	1	5	46.6	0.65
B2BYT5	Target 18-1	2	2	60.0	0.54
B2BYT5	Target 18-1	3	5	51.0	0.57
B2BYT5	Target 18-1	4	4	45.8	0.65
B2BYT5	Target 18-1	5	4	46.4	0.66
B2BYT7	Target 18-2	1	5	57.6	0.76
B2BYT7	Target 18-2	2	4	52.5	0.72
B2BYT7	Target 18-2	3	5	46.2	0.46
B2BYT7	Target 18-2	4	5	45.6	0.59
B2BYT7	Target 18-2	5	5	54.3	0.59
B2BYT9	Target 18-3	1	4	47.0	0.58
B2BYT9	Target 18-3	2	4	56.8	1.22
B2BYT9	Target 18-3	3	2	36.3	0.68
B2BYT9	Target 18-3	4	4	54.2	0.84
B2BYT9	Target 18-3	5	5	49.0	0.84
B2BYV1	Target 18-3D	1	4	44.3	0.50
B2BYV1	Target 18-3D	2	4	62.5	0.99
B2BYV1	Target 18-3D	3	5	64.6	0.84
B2BYV1	Target 18-3D	4	2	81.0	0.81
B2BYV1	Target 18-3D	5	3	59.0	0.80
B2BYV3	Target 18-4	1	5	72.8	1.46
B2BYV3	Target 18-4	2	4	66.3	0.95
B2BYV3	Target 18-4	3	4	67.8	1.14
B2BYV3	Target 18-4	4	4	72.5	1.51
B2BYV3	Target 18-4	5	5	52.0	0.83
B2BYV5	Target 18-5	1	4	68.5	1.32
B2BYV5	Target 18-5	2	3	72.3	0.81
B2BYV5	Target 18-5	3	4	68.3	0.82
B2BYV5	Target 18-5	4	2	43.5	0.31
B2BYV5	Target 18-5	5	4	64.0	0.82
B2BYW3	Target 19-4	1	3	69.0	1.50
B2BYW3	Target 19-4	2	5	69.6	1.33
B2BYW3	Target 19-4	3	4	67.8	1.54

Table 3-3. Raw results for 28-day growth tests on Sandberg's Bluegrass exposed to Hanford Site soils.

SampleID	LocationID	Replicate	Number of Plants	average height (mm)	average weight (mg)
B2BYW3	Target 19-4	4	3	74.0	1.41
B2BYW3	Target 19-4	5	4	70.8	1.24
B2BYW7	Target 20-1	1	4	68.8	1.70
B2BYW7	Target 20-1	2	5	66.4	1.35
B2BYW7	Target 20-1	3	4	58.3	1.13
B2BYW7	Target 20-1	4	3	69.7	1.71
B2BYW7	Target 20-1	5	4	67.3	1.85
B2BYW9	Target 20-2	1	5	68.6	1.27
B2BYW9	Target 20-2	2	5	74.2	1.46
B2BYW9	Target 20-2	3	3	73.0	1.27
B2BYW9	Target 20-2	4	5	60.8	1.32
B2BYW9	Target 20-2	5	4	67.0	1.71
B2BYX1	Target 20-3	1	2	52.0	1.17
B2BYX1	Target 20-3	2	4	43.6	1.09
B2BYX1	Target 20-3	3	4	52.3	0.77
B2BYX1	Target 20-3	4	4	55.0	0.91
B2BYX1	Target 20-3	5	3	53.7	1.18
B2BYX3	Target 20-4	1	5	71.2	1.45
B2BYX3	Target 20-4	2	4	59.0	1.07
B2BYX3	Target 20-4	3	4	62.3	1.31
B2BYX3	Target 20-4	4	5	69.6	1.53
B2BYX3	Target 20-4	5	3	49.5	1.45
B2BYX7	Target 21-1	1	4	45.5	0.52
B2BYX7	Target 21-1	2	5	50.4	0.53
B2BYX7	Target 21-1	3	5	51.8	0.61
B2BYX7	Target 21-1	4	4	39.0	0.45
B2BYX7	Target 21-1	5	5	40.6	0.43
B2BYX9	Target 21-2	1	2	59.0	1.34
B2BYX9	Target 21-2	2	5	60.4	0.95
B2BYX9	Target 21-2	3	2	47.0	0.76
B2BYX9	Target 21-2	4	4	68.3	1.05
B2BYX9	Target 21-2	5	4	70.0	0.75
B2BYY1	Target 21-3	1	4	58.8	1.01
B2BYY1	Target 21-3	2	5	53.0	0.73
B2BYY1	Target 21-3	3	3	65.0	1.25
B2BYY1	Target 21-3	4	5	57.2	1.00
B2BYY1	Target 21-3	5	5	58.4	0.99
B2BYY3	Target 21-4	1	5	61.2	0.92
B2BYY3	Target 21-4	2	4	69.8	1.26
B2BYY3	Target 21-4	3	5	62.2	1.39
B2BYY3	Target 21-4	4	4	54.0	1.21
B2BYY3	Target 21-4	5	5	59.6	0.98
B2BYY5	Target 21-5	1	5	51.8	0.76
B2BYY5	Target 21-5	2	5	60.8	1.09
B2BYY5	Target 21-5	3	4	57.5	0.88
B2BYY5	Target 21-5	4	5	62.0	0.95
B2BYY5	Target 21-5	5	5	57.8	1.01
B2BYY7	Target 22-1	1	3	57.0	0.68
B2BYY7	Target 22-1	2	3	71.3	1.26
B2BYY7	Target 22-1	3	3	57.8	1.07
B2BYY7	Target 22-1	4	4	76.7	0.97
B2BYY7	Target 22-1	5	5	61.0	1.34
B2BYY9	Target 22-2	1	4	68.8	1.68
B2BYY9	Target 22-2	2	4	79.8	1.52
B2BYY9	Target 22-2	3	4	78.3	1.09
B2BYY9	Target 22-2	4	4	89.0	2.08
B2BYY9	Target 22-2	5	5	71.6	1.43

Table 3-3. Raw results for 28-day growth tests on Sandberg's Bluegrass exposed to Hanford Site soils.

SampleID	LocationID	Replicate	Number of Plants	average height (mm)	average weight (mg)
B2C001	Target 22-3	1	4	80.0	1.59
B2C001	Target 22-3	2	3	72.3	1.35
B2C001	Target 22-3	3	3	70.8	1.78
B2C001	Target 22-3	4	4	77.3	1.48
B2C001	Target 22-3	5	4	63.5	0.90
B2C003	Target 22-4	1	4	47.3	0.56
B2C003	Target 22-4	2	5	56.4	0.86
B2C003	Target 22-4	3	4	46.5	0.44
B2C003	Target 22-4	4	4	55.8	0.69
B2C003	Target 22-4	5	4	53.7	0.49
B2C005	Target 22-4D	1	1	39.5	0.65
B2C005	Target 22-4D	2	5	46.4	0.61
B2C005	Target 22-4D	3	3	39.8	0.49
B2C005	Target 22-4D	4	3	59.8	0.94
B2C005	Target 22-4D	5	1	46.0	1.27
B2C007	Target 22-5	1	4	45.3	0.61
B2C007	Target 22-5	2	2	44.0	0.52
B2C007	Target 22-5	3	4	49.8	0.72
B2C007	Target 22-5	4	4	51.0	0.59
B2C007	Target 22-5	5	4	49.5	0.85
B2C009	Target 23-1	1	5	91.6	1.85
B2C009	Target 23-1	2	4	93.0	2.68
B2C009	Target 23-1	3	4	83.5	1.68
B2C009	Target 23-1	4	5	92.2	2.31
B2C009	Target 23-1	5	3	79.3	2.27
B2C011	Target 23-2	1	5	77.7	1.89
B2C011	Target 23-2	2	3	84.7	2.09
B2C011	Target 23-2	3	5	73.6	1.34
B2C011	Target 23-2	4	5	79.6	1.74
B2C011	Target 23-2	5	5	78.8	1.66
B2C013	Target 23-3	1	5	71.4	1.60
B2C013	Target 23-3	2	4	54.3	0.92
B2C013	Target 23-3	3	3	72.0	1.93
B2C013	Target 23-3	4	5	79.0	1.86
B2C013	Target 23-3	5	5	72.8	1.60
B2BXV1	Target 24-1	1	0	0.0	0.00
B2BXV1	Target 24-1	2	1	0.0	0.00
B2BXV1	Target 24-1	3	0	0.0	0.00
B2BXV1	Target 24-1	4	0	0.0	0.00
B2BXV1	Target 24-1	5	0	0.0	0.00
B2BXV5	Target 24-2	1	4	27.8	0.24
B2BXV5	Target 24-2	2	3	39.7	0.42
B2BXV5	Target 24-2	3	5	35.2	0.39
B2BXV5	Target 24-2	4	1	0.0	0.00
B2BXV5	Target 24-2	5	4	31.3	0.27
B2BXV7	Target 24-3	1	5	35.8	0.52
B2BXV7	Target 24-3	2	3	38.0	0.46
B2BXV7	Target 24-3	3	3	40.0	0.43
B2BXV7	Target 24-3	4	4	27.5	0.44
B2BXV7	Target 24-3	5	3	32.0	0.20
B2BXW1	Target 24-5	1	0	0.0	0.00
B2BXW1	Target 24-5	2	0	0.0	0.00
B2BXW1	Target 24-5	3	1	0.0	0.00
B2BXW1	Target 24-5	4	1	15.0	0.60
B2BXW1	Target 24-5	5	1	0.0	0.00
B2BPC2	Target 6-5	1	5	57.0	0.84
B2BPC2	Target 6-5	2	4	52.8	0.67

Table 3-3. Raw results for 28-day growth tests on Sandberg's Bluegrass exposed to Hanford Site soils.

SampleID	LocationID	Replicate	Number of Plants	average height (mm)	average weight (mg)
B2BPC2	Target 6-5	3	4	54.5	0.70
B2BPC2	Target 6-5	4	5	58.6	0.68
B2BPC2	Target 6-5	5	4	64.0	0.88
B2C149	Target 7-1	1	4	40.8	0.53
B2C149	Target 7-1	2	5	39.0	0.48
B2C149	Target 7-1	3	4	34.0	0.33
B2C149	Target 7-1	4	5	36.2	0.33
B2C149	Target 7-1	5	5	34.6	0.34
B2C165	Target 8-3	1	3	25.7	0.13
B2C165	Target 8-3	2	2	35.5	0.24
B2C165	Target 8-3	3	4	29.3	0.58
B2C165	Target 8-3	4	4	34.8	0.24
B2C165	Target 8-3	5	2	48.0	0.44

Table 3-4. Raw results for 28-day Survival and Reproduction tests on Springtails (*Folsomia candida*) exposed to Hanford Site soils.

HEIS_ID	LocationID	Replicate	Adult Survival (proportion)	Reproduction (Number of Juveniles)	Test Batch
NA	Lab-1	A	0.80	159	1
NA	Lab-1	B	1.00	370	1
NA	Lab-1	C	0.90	263	1
NA	Lab-1	D	0.90	342	1
NA	Lab-1	E	1.00	323	1
B2BVT0	Control 4	A	0.80	207	1
B2BVT0	Control 4	B	1.00	260	1
B2BVT0	Control 4	C	0.80	167	1
B2BVT0	Control 4	D	0.90	169	1
B2BVT0	Control 4	E	0.90	49	1
B2BVT8	Control 8	A	0.60	142	1
B2BVT8	Control 8	B	0.90	218	1
B2BVT8	Control 8	C	0.80	208	1
B2BVT8	Control 8	D	0.70	125	1
B2BVT8	Control 8	E	0.90	118	1
B2C166	Target 8-3	A	0.70	78	1
B2C166	Target 8-3	B	0.70	146	1
B2C166	Target 8-3	C	0.80	193	1
B2C166	Target 8-3	D	1.00	356	1
B2C166	Target 8-3	E	0.80	188	1
B2BYK2	Target 12-1	A	0.90	284	1
B2BYK2	Target 12-1	B	0.90	433	1
B2BYK2	Target 12-1	C	1.00	419	1
B2BYK2	Target 12-1	D	0.70	30	1
B2BYK2	Target 12-1	E	0.60	291	1
B2BYK4	Target 12-2	A	0.90	196	1
B2BYK4	Target 12-2	B	0.80	160	1
B2BYK4	Target 12-2	C	0.80	183	1
B2BYK4	Target 12-2	D	1.00	146	1
B2BYK4	Target 12-2	E	0.90	98	1
B2BYL6	Target 13-2	A	0.70	149	1
B2BYL6	Target 13-2	B	0.70	79	1
B2BYL6	Target 13-2	C	0.60	139	1
B2BYL6	Target 13-2	D	0.80	139	1
B2BYL6	Target 13-2	E	0.70	96	1
B2BYM4	Target 14-1	A	1.00	246	1
B2BYM4	Target 14-1	B	0.90	182	1
B2BYM4	Target 14-1	C	0.80	155	1
B2BYM4	Target 14-1	D	0.90	154	1
B2BYM4	Target 14-1	E	0.80	164	1
B2BYM8	Target 14-3	A	0.90	264	1
B2BYM8	Target 14-3	B	0.90	120	1
B2BYM8	Target 14-3	C	0.60	179	1
B2BYM8	Target 14-3	D	0.70	182	1
B2BYM8	Target 14-3	E	0.70	97	1
B2BYN0	Target 14-4	A	1.00	238	1
B2BYN0	Target 14-4	B	0.70	146	1
B2BYN0	Target 14-4	C	0.90	293	1
B2BYN0	Target 14-4	D	1.00	353	1
B2BYN0	Target 14-4	E	0.80	182	1
B2BYK8	Target 12-4	A	0.80	123	1
B2BYK8	Target 12-4	B	1.00	178	1
B2BYK8	Target 12-4	C	0.90	171	1
B2BYK8	Target 12-4	D	0.50	89	1
B2BYK8	Target 12-4	E	0.40	91	1
B2BYL0	Target 12-4D	A	0.50	167	1
B2BYL0	Target 12-4D	B	0.50	124	1
B2BYL0	Target 12-4D	C	1.00	116	1
B2BYL0	Target 12-4D	D	0.90	167	1
B2BYL0	Target 12-4D	E	0.60	94	1
B2BYL8	Target 13-3	A	0.70	54	1
B2BYL8	Target 13-3	B	0.60	171	1
B2BYL8	Target 13-3	C	1.00	186	1
B2BYL8	Target 13-3	D	0.80	77	1
B2BYL8	Target 13-3	E	0.60	46	1
B2BYR0	Target 16-3	A	0.80	68	1
B2BYR0	Target 16-3	B	0.70	168	1
B2BYR0	Target 16-3	C	0.90	102	1
B2BYR0	Target 16-3	D	0.60	80	1
B2BYR0	Target 16-3	E	0.60	73	1
B2BYR6	Target 17-1	A	0.80	146	1
B2BYR6	Target 17-1	B	0.50	24	1
B2BYR6	Target 17-1	C	0.50	62	1
B2BYR6	Target 17-1	D	0.90	148	1
B2BYR6	Target 17-1	E	0.70	86	1
B2BYR8	Target 17-2	A	0.40	69	1
B2BYR8	Target 17-2	B	0.50	271	1
B2BYR8	Target 17-2	C	1.00	334	1
B2BYR8	Target 17-2	D	0.70	89	1
B2BYR8	Target 17-2	E	0.70	63	1
B2BYT6	Target 18-1	A	0.70	32	1
B2BYT6	Target 18-1	B	0.70	114	1
B2BYT6	Target 18-1	C	0.80	234	1
B2BYT6	Target 18-1	D	0.70	212	1
B2BYT6	Target 18-1	E	0.90	229	1
B2BYT8	Target 18-2	A	0.50	90	1
B2BYT8	Target 18-2	B	0.70	175	1
B2BYT8	Target 18-2	C	0.70	83	1
B2BYT8	Target 18-2	D	0.90	191	1
B2BYT8	Target 18-2	E	0.60	175	1
B2BYV0	Target 18-3	A	0.80	53	1
B2BYV0	Target 18-3	B	0.60	192	1
B2BYV0	Target 18-3	C	0.90	74	1
B2BYV0	Target 18-3	D	0.50	34	1
B2BYV0	Target 18-3	E	0.80	160	1
B2BXV2	Target 24-1	A	0.90	25	1
B2BXV2	Target 24-1	B	0.60	31	1

Table 3-4. Raw results for 28-day Survival and Reproduction tests on Springtails (*Folsomia candida*) exposed to Hanford Site soils.

HEIS_ID	LocationID	Replicate	Adult Survival (proportion)	Reproduction (Number of Juveniles)	Test Batch
B2BXV2	Target 24-1	C	0.80	103	1
B2BXV2	Target 24-1	D	0.80	28	1
B2BXV2	Target 24-1	E	0.60	31	1
B2BXV6	Target 24-2	A	0.80	96	1
B2BXV6	Target 24-2	B	0.90	175	1
B2BXV6	Target 24-2	C	1.00	134	1
B2BXV6	Target 24-2	D	1.00	47	1
B2BXV6	Target 24-2	E	0.80	53	1
NA	Lab-2	A	1.00	162	2
NA	Lab-2	B	1.00	227	2
NA	Lab-2	C	0.90	95	2
NA	Lab-2	D	1.00	105	2
NA	Lab-2	E	0.80	85	2
B2BVV2	Control 9D	A	0.90	170	2
B2BVV2	Control 9D	B	0.50	193	2
B2BVV2	Control 9D	C	1.00	106	2
B2BVV2	Control 9D	D	1.00	158	2
B2BVV2	Control 9D	E	1.00	182	2
B2BVW0	Control 13	A	0.70	160	2
B2BVW0	Control 13	B	0.50	93	2
B2BVW0	Control 13	C	0.80	321	2
B2BVW0	Control 13	D	0.80	141	2
B2BVW0	Control 13	E	0.70	58	2
B2BXV8	Target 24-3	A	0.60	101	2
B2BXV8	Target 24-3	B	0.90	166	2
B2BXV8	Target 24-3	C	0.80	206	2
B2BXV8	Target 24-3	D	0.90	91	2
B2BXV8	Target 24-3	E	0.80	74	2
B2BXW2	Target 24-5	A	0.90	184	2
B2BXW2	Target 24-5	B	0.90	102	2
B2BXW2	Target 24-5	C	0.90	104	2
B2BXW2	Target 24-5	D	0.80	265	2
B2BXW2	Target 24-5	E	0.90	124	2
B2C150	Target 7-1	A	0.90	519	2
B2C150	Target 7-1	B	0.50	170	2
B2C150	Target 7-1	C	0.70	349	2
B2C150	Target 7-1	D	0.70	387	2
B2C150	Target 7-1	E	0.60	209	2
B2BPC3	Target 6-5	A	0.90	93	2
B2BPC3	Target 6-5	B	0.90	121	2
B2BPC3	Target 6-5	C	0.80	195	2
B2BPC3	Target 6-5	D	0.80	83	2
B2BPC3	Target 6-5	E	0.90	212	2
B2BYY8	Target 22-1	A	0.80	151	2
B2BYY8	Target 22-1	B	0.90	145	2
B2BYY8	Target 22-1	C	0.60	150	2
B2BYY8	Target 22-1	D	0.60	63	2
B2BYY8	Target 22-1	E	0.50	75	2
B2C000	Target 22-2	A	0.90	170	2
B2C000	Target 22-2	B	0.80	120	2
B2C000	Target 22-2	C	0.60	128	2
B2C000	Target 22-2	D	1.00	307	2
B2C000	Target 22-2	E	0.90	154	2
B2C002	Target 22-3	A	0.40	107	2
B2C002	Target 22-3	B	0.60	162	2
B2C002	Target 22-3	C	0.80	165	2
B2C002	Target 22-3	D	0.40	72	2
B2C002	Target 22-3	E	0.50	102	2
B2C004	Target 22-4	A	0.80	83	2
B2C004	Target 22-4	B	0.80	114	2
B2C004	Target 22-4	C	0.60	89	2
B2C004	Target 22-4	D	0.30	27	2
B2C004	Target 22-4	E	0.40	66	2
B2C006	Target 22-4D	A	0.80	129	2
B2C006	Target 22-4D	B	0.90	138	2
B2C006	Target 22-4D	C	0.80	115	2
B2C006	Target 22-4D	D	0.50	109	2
B2C006	Target 22-4D	E	0.40	61	2
B2C008	Target 22-5	A	0.70	169	2
B2C008	Target 22-5	B	0.80	180	2
B2C008	Target 22-5	C	0.50	131	2
B2C008	Target 22-5	D	0.90	133	2
B2C008	Target 22-5	E	0.90	103	2
B2C010	Target 23-1	A	1.00	125	2
B2C010	Target 23-1	B	1.00	160	2
B2C010	Target 23-1	C	0.60	114	2
B2C010	Target 23-1	D	0.60	44	2
B2C010	Target 23-1	E	1.00	219	2
B2C012	Target 23-2	A	1.00	204	2
B2C012	Target 23-2	B	0.80	142	2
B2C012	Target 23-2	C	0.80	130	2
B2C012	Target 23-2	D	0.90	125	2
B2C012	Target 23-2	E	0.80	129	2
B2C014	Target 23-3	A	0.90	200	2
B2C014	Target 23-3	B	0.70	216	2
B2C014	Target 23-3	C	0.70	111	2
B2C014	Target 23-3	D	0.90	134	2
B2C014	Target 23-3	E	0.60	94	2
B2BYW4	Target 19-4	A	0.80	76	2
B2BYW4	Target 19-4	B	0.80	97	2
B2BYW4	Target 19-4	C	0.80	115	2
B2BYW4	Target 19-4	D	0.80	15	2
B2BYW4	Target 19-4	E	1.00	192	2
B2BYX8	Target 21-1	A	0.80	163	2
B2BYX8	Target 21-1	B	0.80	197	2
B2BYX8	Target 21-1	C	0.90	190	2
B2BYX8	Target 21-1	D	1.00	205	2

Table 3-4. Raw results for 28-day Survival and Reproduction tests on Springtails (*Folsomia candida*) exposed to Hanford Site soils.

HEIS_ID	LocationID	Replicate	Adult Survival (proportion)	Reproduction (Number of Juveniles)	Test Batch
B2BYX8	Target 21-1	E	0.70	130	2
B2BYY0	Target 21-2	A	0.80	149	2
B2BYY0	Target 21-2	B	1.00	185	2
B2BYY0	Target 21-2	C	0.60	105	2
B2BYY0	Target 21-2	D	0.90	78	2
B2BYY0	Target 21-2	E	1.00	89	2
B2BYY2	Target 21-3	A	0.90	139	2
B2BYY2	Target 21-3	B	0.80	153	2
B2BYY2	Target 21-3	C	0.90	307	2
B2BYY2	Target 21-3	D	1.00	88	2
B2BYY2	Target 21-3	E	0.90	98	2
B2BYY4	Target 21-4	A	0.80	111	2
B2BYY4	Target 21-4	B	0.80	130	2
B2BYY4	Target 21-4	C	1.00	194	2
B2BYY4	Target 21-4	D	0.90	94	2
B2BYY4	Target 21-4	E	0.80	149	2
B2BYY6	Target 21-5	A	1.00	89	2
B2BYY6	Target 21-5	B	0.90	119	2
B2BYY6	Target 21-5	C	0.90	107	2
B2BYY6	Target 21-5	D	1.00	146	2
B2BYY6	Target 21-5	E	1.00	104	2
B2BYP8	Target 16-2	A	0.70	120	2
B2BYP8	Target 16-2	B	0.50	182	2
B2BYP8	Target 16-2	C	0.90	145	2
B2BYP8	Target 16-2	D	0.70	57	2
B2BYP8	Target 16-2	E	0.70	85	2
B2BYR2	Target 16-4	A	0.60	182	2
B2BYR2	Target 16-4	B	1.00	270	2
B2BYR2	Target 16-4	C	0.60	95	2
B2BYR2	Target 16-4	D	0.80	86	2
B2BYR2	Target 16-4	E	0.70	68	2
NA	Lab-3	A	1.00	115	3
NA	Lab-3	B	1.00	54	3
NA	Lab-3	C	0.70	85	3
NA	Lab-3	D	0.80	162	3
NA	Lab-3	E	0.80	74	3
B2BVW4	Control 15	A	0.90	140	3
B2BVW4	Control 15	B	1.00	122	3
B2BVW4	Control 15	C	1.00	181	3
B2BVW4	Control 15	D	0.90	114	3
B2BVW4	Control 15	E	0.80	66	3
B2BVW6	Control 16	A	0.70	99	3
B2BVW6	Control 16	B	0.70	107	3
B2BVW6	Control 16	C	0.90	198	3
B2BVW6	Control 16	D	0.80	136	3
B2BVW6	Control 16	E	0.60	133	3
B2BVW8	Control 17	A	0.80	39	3
B2BVW8	Control 17	B	0.70	50	3
B2BVW8	Control 17	C	0.80	102	3
B2BVW8	Control 17	D	0.70	61	3
B2BVW8	Control 17	E	0.50	59	3
B2BVX0	Control 18	A	0.80	125	3
B2BVX0	Control 18	B	0.90	230	3
B2BVX0	Control 18	C	0.90	105	3
B2BVX0	Control 18	D	0.70	127	3
B2BVX0	Control 18	E	0.70	156	3
B2BVX4	Control 20	A	0.80	102	3
B2BVX4	Control 20	B	1.00	107	3
B2BVX4	Control 20	C	0.82	172	3
B2BVX4	Control 20	D	1.00	121	3
B2BVX4	Control 20	E	1.00	174	3
B2BYR4	Target 16-5	A	0.70	167	3
B2BYR4	Target 16-5	B	0.90	316	3
B2BYR4	Target 16-5	C	0.90	175	3
B2BYR4	Target 16-5	D	0.80	203	3
B2BYR4	Target 16-5	E	0.90	70	3
B2BYT2	Target 17-4	A	0.50	16	3
B2BYT2	Target 17-4	B	0.50	135	3
B2BYT2	Target 17-4	C	0.80	183	3
B2BYT2	Target 17-4	D	1.00	168	3
B2BYT2	Target 17-4	E	0.70	49	3
B2BYT4	Target 17-5	A	0.90	269	3
B2BYT4	Target 17-5	B	0.80	209	3
B2BYT4	Target 17-5	C	0.90	213	3
B2BYT4	Target 17-5	D	0.90	226	3
B2BYT4	Target 17-5	E	0.90	139	3
B2BYV2	Target 18-3D	A	0.90	260	3
B2BYV2	Target 18-3D	B	0.50	115	3
B2BYV2	Target 18-3D	C	0.20	280	3
B2BYV2	Target 18-3D	D	0.40	230	3
B2BYV2	Target 18-3D	E	0.50	130	3
B2BYV4	Target 18-4	A	0.70	63	3
B2BYV4	Target 18-4	B	0.80	124	3
B2BYV4	Target 18-4	C	1.00	95	3
B2BYV4	Target 18-4	D	0.80	140	3
B2BYV4	Target 18-4	E	0.90	97	3
B2BYV6	Target 18-5	A	0.20	103	3
B2BYV6	Target 18-5	B	0.70	69	3
B2BYV6	Target 18-5	C	0.80	94	3
B2BYV6	Target 18-5	D	0.00	0	3
B2BYV6	Target 18-5	E	0.30	30	3
B2BYX4	Target 20-4	A	0.70	145	3
B2BYX4	Target 20-4	B	0.60	138	3
B2BYX4	Target 20-4	C	0.90	197	3
B2BYX4	Target 20-4	D	0.80	333	3
B2BYX4	Target 20-4	E	0.60	117	3
B2BYT0	Target 17-3	A	0.90	193	3

Table 3-4. Raw results for 28-day Survival and Reproduction tests on Springtails (*Folsomia candida*) exposed to Hanford Site soils.

HEIS_ID	LocationID	Replicate	Adult Survival (proportion)	Reproduction (Number of Juveniles)	Test Batch
B2BYT0	Target 17-3	B	0.40	151	3
B2BYT0	Target 17-3	C	1.00	255	3
B2BYT0	Target 17-3	D	1.00	99	3
B2BYT0	Target 17-3	E	0.90	111	3
B2BYP6	Target 16-1	A	1.00	167	3
B2BYP6	Target 16-1	B	1.00	146	3
B2BYP6	Target 16-1	C	1.00	403	3
B2BYP6	Target 16-1	D	1.00	287	3
B2BYP6	Target 16-1	E	1.00	366	3
B2BYW8	Target 20-1	A	0.80	126	3
B2BYW8	Target 20-1	B	0.70	123	3
B2BYW8	Target 20-1	C	1.00	167	3
B2BYW8	Target 20-1	D	0.80	139	3
B2BYW8	Target 20-1	E	0.70	125	3
B2BYX0	Target 20-2	A	0.70	112	3
B2BYX0	Target 20-2	B	0.70	92	3
B2BYX0	Target 20-2	C	0.80	140	3
B2BYX0	Target 20-2	D	0.70	101	3
B2BYX0	Target 20-2	E	0.80	95	3
B2BYX2	Target 20-3	A	0.80	187	3
B2BYX2	Target 20-3	B	1.00	174	3
B2BYX2	Target 20-3	C	0.90	104	3
B2BYX2	Target 20-3	D	0.70	210	3
B2BYX2	Target 20-3	E	1.00	177	3
B2BYJ2	Target 11-1	A	0.90	140	3
B2BYJ2	Target 11-1	B	0.70	128	3
B2BYJ2	Target 11-1	C	0.90	91	3
B2BYJ2	Target 11-1	D	0.70	59	3
B2BYJ2	Target 11-1	E	0.40	63	3
B2BYK6	Target 12-3	A	0.60	52	3
B2BYK6	Target 12-3	B	0.90	95	3
B2BYK6	Target 12-3	C	0.70	150	3
B2BYK6	Target 12-3	D	0.80	77	3
B2BYK6	Target 12-3	E	0.90	81	3
B2BYL2	Target 12-5	A	0.80	145	3
B2BYL2	Target 12-5	B	0.40	152	3
B2BYL2	Target 12-5	C	0.90	73	3
B2BYL2	Target 12-5	D	1.00	190	3
B2BYL2	Target 12-5	E	0.50	66	3
B2BYL4	Target 13-1	A	0.70	91	3
B2BYL4	Target 13-1	B	0.60	90	3
B2BYL4	Target 13-1	C	0.80	93	3
B2BYL4	Target 13-1	D	0.70	131	3
B2BYL4	Target 13-1	E	0.80	132	3
B2BYM0	Target 13-4	A	0.90	83	3
B2BYM0	Target 13-4	B	0.50	74	3
B2BYM0	Target 13-4	C	0.80	77	3
B2BYM0	Target 13-4	D	1.00	131	3
B2BYM0	Target 13-4	E	0.90	103	3
NA	Lab-4	A	0.80	85	4
NA	Lab-4	B	0.80	197	4
NA	Lab-4	C	1.00	99	4
NA	Lab-4	D	0.60	49	4
NA	Lab-4	E	0.70	63	4
B2BVR5	Control 2	A	0.90	86	4
B2BVR5	Control 2	B	1.00	163	4
B2BVR5	Control 2	C	0.90	276	4
B2BVR5	Control 2	D	0.90	274	4
B2BVR5	Control 2	E	0.80	116	4
B2BVR4	Control 1	A	0.70	155	4
B2BVR4	Control 1	B	0.90	162	4
B2BVR4	Control 1	C	1.00	206	4
B2BVR4	Control 1	D	0.90	176	4
B2BVR4	Control 1	E	0.90	190	4
B2BYM6	Target 14-2	A	0.90	122	4
B2BYM6	Target 14-2	B	0.90	156	4
B2BYM6	Target 14-2	C	1.00	183	4
B2BYM6	Target 14-2	D	0.90	145	4
B2BYM6	Target 14-2	E	1.00	197	4
B2BYN2	Target 14-5	A	0.80	117	4
B2BYN2	Target 14-5	B	0.60	71	4
B2BYN2	Target 14-5	C	0.70	125	4
B2BYN2	Target 14-5	D	0.80	193	4
B2BYN2	Target 14-5	E	0.70	158	4
B2BYM2	Target 13-5	A	0.90	116	4
B2BYM2	Target 13-5	B	0.30	56	4
B2BYM2	Target 13-5	C	1.00	186	4
B2BYM2	Target 13-5	D	0.50	115	4
B2BYM2	Target 13-5	E	0.40	92	4

Table 3-5. Literature and site-specific data used to design and interpret plant and soil invertebrate bioassay data for the Hanford Site

Contaminant	Background and Screening Level Concentrations in Soil (mg/kg)									Concentration ranges (mg/kg)			Explanation for determining soil concentration ranges
	Background	EcoSSL-Plant	MTCA/ORNL-Plant[a]	EcoSSL-Invert	MTCA/ORNL-Invert[a]	Lowest Wildlife EcoSSL	Hanford-specific Plant Bioassay from RCBRA[b]	Hanford-specific Invertebrate Bioassay from RCBRA[b]	Unrestricted Land use MTCA Method B[c]	Low	Mid	High	
Antimony	0.13	---	5	78	---	0.27	0.685	6.1	32.0	5.2 to 38	38 to 186	186 to >2100	Low range: from background 98th percentile of OA data Mid range: 98th percentile OA to 99th percentile OA High range: 99th percentile OA to OA max
Arsenic	6.47	18	10	---	60	43	19.3	12.2	0.7	6.5 to 18	18 to 100	100 to > 131	Low range: from background to EcoSSL plant Mid range: from EcoSSL plant to RC Max High range: from RC max to OA max
Barium	132	---	500	330	---	102	314	358	16000.0	132 to 330	330 to 2,000	2,000 to > 4,760	Low range: from background to the invert EcoSSL Mid range: from invert EcoSSL to highest of plant LOEC in EcoSSL data set High range: highest of plant LOEC in EcoSSL data set to max OA
Boron	3.89	---	0.5	---	---	---	29.6	28.6	16000.0	3.62 to 7.2	7.2 to 30	30 to > 105	Low range: from background to 95th percentil from the OA data. Mid range: from the 95th percentil to the max dose tested from RCBRA. High range: from RCBRA bioassay to Max OA
Cadmium	0.563	32	4	140	20	0.36	2.7	2.54	40.0	1 to 4	4 to 20	20 to >40	Low range: between background and the lowest plant benchmark; Mid range: between ORNL plant and ORNL invert High range: ORNL invert and MTCA method B
Chromium	18.5	---	1	---	0.4	26	39.3	149	120000.0	18.5 to 30	30 to 150	150 to >815	Low range: background to RCBRA 95th percentile Mid range: RCBRA 95th percentile to 99th percentile High range: RCBRA 99th percentile to OA max
Cobalt	15.7	13	20	---	---	120	11.2	12.2	24.0	<15.7	not applicable	not applicable	Maximum concentrations (18 mg/kg in Outer Area and 33.9 in River Corridor) are not substantially different from background, and would not provide a useful for defining concentration gradient. Low range: background to ORNL plant
Copper	22	70	100	80	50	28	53.6	45.6	3200.0	22-50	50-170	170-4080	Low range: background to RCBRA bioassay Mid range: RCBRA bioassay to OA 99th percentile. High range: from OA 99th percentile to the OA max
Lead	10.2	120	50	1700	500	11	125	116	250.0	10 to 120	120 to 500	> 500	Low range: between background and the EcoSSL plant/RCBRA max bioassay Mid range: from the EcoSSL plant/RCBRA max bioassay to approximately the 95th percentile in the OA/ORNL invert/median of plant LOECs from ORNL/ES/ER-TM-85/R3 High range: above 95th percentile in the OA/ORNL invert/median of plant LOECs; protection of human health risk will be more of an issue above 2,000 mg/kg.

Table 3-5. Literature and site-specific data used to design and interpret plant and soil invertebrate bioassay data for the Hanford Site

Contaminant	Background and Screening Level Concentrations in Soil (mg/kg)									Concentration ranges (mg/kg)			Explanation for determining soil concentration ranges
	Background	EcoSSL-Plant	MTCA/ORNL-Plant[a]	EcoSSL-Invert	MTCA/ORNL-Invert[a]	Lowest Wildlife EcoSSL	Hanford-specific Plant Bioassay from RCBRA[b]	Hanford-specific Invertebrate Bioassay from RCBRA[b]	Unrestricted Land use MTCA Method B[c]	Low	Mid	High	
Manganese	512	220	500	450	---	1500	558	570	11200.0	512 to 750	750 to 1000	1000 to >8400	Ranges not particulary useful as concentration range above screening levels is tight Low range: from background to 98th percentile of OA data Mid range: 98th percentile OA to just above 99th percentile for OA High range: 99th percentile OA to approximate OA max
Mercury	0.013	---	0.3	---	0.1	5	0.126	0.136	24.0	0.33 to 1.3	1.3 to 13.7	13.7 to 250	Mildly useful for OA, useful for RC Low range: background to RC 95th percentile Mid range: 95th to 99th percentiles RC High range: 99th percentile RC to approximate RC max
Nickel	19.1	38	30	280	200	130	24.8	24.8	1600.0	19.1 to 30	30 to 280	not applicable	Low range: from background to plant ORNL Mid range: from plant ORNL to invert EcoSSL also the max OA conc) High range: not applicable - concentration range bounded by low- and mid-ranges
Selenium	0.78	0.52	1	---	70	0.3	1.2	0.973	400.0	0.78 to 2.5	2.5 to 4.3	4.3 to 11	Range of data is tight Low range: background to 99th percentile OA Mid range: 99th percentile OA to approximate 98th percentile RC High range: 98th percentile RC to approximate RC max
Thallium	0.185	---	1	---	---	---	Not detected	Not detected	--	1 to 2.4	2.4 to 4	4 to >5	All ranges based on data distribution. Data distribution is tight. Low range: ORNL plant value to 95th percentile in RC Mid range: 95th to 99th percentile in RC High range: 99th percentile in RC to approximate site Max
Uranium	3.21	250	5	---	---	---	8.1	4.53	240.0	3.21 to 100	100 to 250	250 to 2610	High uranium concentrations are limited in the OA and RC. Low range: background to Sheppard et al. 2005 lowest Mid range: Based on ranges of benchmarks in Sheppard et al., 2005 High range: Sheppard et al. 2005 high benchmark to RC max concentration
Vanadium	85.1	---	2	---	---	7.8	84.7	84.7	400.0	85 to 100	100 to 115	115 to 130	Most ecological levels are close to background concentrations in soil. Low range: background to arbitrary number below site max based on site data distribution Mid range: arbitrary numbers below site max based on site data distribution High range: arbitrary number based on site data distribution to site max
Zinc	67.8	160	50	120	200	46	621	393	24000.0	67 to 145	145 to 760	760 to 9420	Low range: background to maximum tested RCRA biossay Mid range: maximum tested RCRA biossay to just below 99th percentile OA High range: 99th percentile OA to a high value that is obtainable in the field

Table 3-5. Literature and site-specific data used to design and interpret plant and soil invertebrate bioassay data for the Hanford Site

Contaminant	Background and Screening Level Concentrations in Soil (mg/kg)									Concentration ranges (mg/kg)			Explanation for determining soil concentration ranges
	Background	EcoSSL-Plant	MTCA/ORNL-Plant[a]	EcoSSL-Invert	MTCA/ORNL-Invert[a]	Lowest Wildlife EcoSSL	Hanford-specific Plant Bioassay from RCBRA[b]	Hanford-specific Invertebrate Bioassay from RCBRA[b]	Unrestricted Land use MTCA Method B[c]	Low	Mid	High	

Sources for background values:

DOE/RL-92-24: arsenic, barium, chromium, cobalt, copper, lead, manganese, nickel, vanadium, zinc, 90th percentile of the log-normal distribution

PNNL-18577: boron, thallium, 90th percentile of the log-normal distribution

Antimony, mercury, and selenium values represents maximum background concentration through analysis of 50% of Hanford Site background data. Though above background, deteciton limits were below ecological screneing levels and maximum background concentrations.

DOE/RL-96-17: uranium.

Additional Notes:

a - MTCA/ORNL are soil screening levels published as Soil indicator Concentraitons in WAC 173-340, the original sources are ORNL documents listed below.

b - Values shown for the Hanford-specific plant and soil invertebrate bioassays are no observed effect concentrations (NOECs) based on studies conducted as part of the River Corridor Baseline Risk Assessment (RCBRA).

c - MTCA B are direct contact soil preliminary remediation goals established using Method B standards (WAC 173-340-740).

Acronyms:

EcoSSL - EPA's Ecological Soil Screening Levels (http://www.epa.gov/ecotox/ecossl/)

LOEC = lowest observed adverse effect level

MTCA = Model Toxics Control Act published by the Washington State Department of Ecology (Ecology) as WAC 173-340.

OA - Central Plateau Outer Area

ORNL - Oak Ridge National Laboratory ecological benchmark for plants and soil invertebrates (ORNL/ES/ER/TM-85/R3 for plants and ORNL/ES/ER/TM-126/R2 for soil invertebrates)

RC - River Corridor

--- means value is not available

Table 5-1. Negative fieldControl Samples Compared to Background

Analyte	Background	Control 1		Control 2		Control 4		Control 8		Control 9D		Control 13		Control 15		Control 16		Control 17		Control 18		Control 20	
		bio field control 1		bio field control 11		bio field control 2		bio field control 3		bio field control 4		bio field control 5		bio field control 6		bio field control 7		bio field control 8		bio field control 9		bio field control 10	
Antimony	0.385	0.31	U	0.459		0.31	U	0.31	U	0.31	U	0.32	U	0.31	U	0.31	U	0.31	U	0.31	U	0.32	U
Barium	132	90.1		98.3		83		79		89.8		80.7		84.7		84.8		83.6		85		85.3	
Cadmium	0.563	0.106		0.11	U	0.1	U	0.1	U	0.1	U	0.11	U	0.107	B	0.1	U	0.102	B	0.105	B	0.11	U
Chromium	18.5	9.56		16.7		10.4		7.37		9.09		9.66		11.1		8.98		8.69		9.72		8.54	
Mercury	0.51	0.052	U	0.053	U	0.0651	B	0.052	U	0.051	U	0.053	U	0.051	U	0.056	B	0.051	U	0.051	U	0.053	U
Thallium	0.185	0.1	U	0.11	U	0.12	B	0.1	U	0.1	U	0.11	U	0.1	U	0.1	U	0.1	U	0.1	U	0.11	U
Uranium	3.21	0.414		0.543		0.413	B	0.359	B	0.402	B	0.373	B	0.462	B	0.392	B	0.335	B	0.476	B	0.331	B
Zinc	67.8	46.1		52.5		41.60		44.1		45.7		40.5		44.1		39.5		40.1		40.1		38.5	
Boron	3.89	1.56	B	NA		1.66	B	2.34	B	1.78		2.57	B	3.96[a]	B	2.2	B	2.79	B	1.94	B	2.01	B
Copper	22	11.4		14.7		11.3		10.2		13		12.8		18.3		13.8		12.2		13.5		12.3	
Lead	10.2	5.94		18.2		5.1		4		5.65		6.79		6.71		6.02		6.19		5.57		5.37	
Manganese	512	411		436		361		348		372		325		345		323		329		330		327	
Arsenic	6.47	2.96		3.2		3.46	B	2.33	B	3.78	B	3.09	B	3.35	B	4.04	B	3.2	B	3.27	B	3.09	B
Cobalt	15.7	8.74		9.76		7.8		7.66		8.64		7.02		7.9		7.26		7.43		7.47		7.12	
Nickel	19.1	9.67		12.5		10.5		8.35		10.2		9.92		12.2		9.81		9.34		10.4		9.59	
Selenium	1.7	1.16		1.25		0.618	B	0.922	B	1.16	B	0.853	B	1.1	B	1.18	B	1.1	B	1.36	B	0.887	B
Vanadium	85.1	60.3		65.1		52.6		58.7		59.1		43.1		51.6		47.2		48.5		49.8		44.8	
pH	NA	7.25		7.67		8.56		7.38		8.74		8.52		8.44		8.41		8.55		8.56		7.15	
CEC		9.42				8.14		7.27		8.66		9.21		11.1		9.06		9.68		8.72		8.49	
% Gravel		4.7		4.4		0		0		2.1		0		2.2		0		0.9		0		2.4	
% Sand		68.7		65.5		83.1		83.5		75		64.3		65.8		64.8		65.1		61.1		63.5	
% Silt/Clay		26.6		30.1		16.9		16.5		22.9		35.7		32		35.2		34		38.9		34.1	
TOC		2600		1950		1490		1960		1830		6090		5660		5380		6250		3320		2250	
Insecticides		U		U		U		U		U		U		U		U		U		U		U	
herbicides		U		U		U		U		U		U		U		U		U		U		U	
Beryllium	1.51	0.339		0.387		0.273	B	0.283	B	0.272	B	0.273	B	0.419	B	0.29	B	0.314	B	0.389	B	0.259	B
Calcium	17200	3660		4410		6570		3860		7850		5720	N	7790	N	6010	N	6950	N	5290	N	3460	N
Magnesium	7060	4380		4890		4270		4520		5450		4840	N	4750	N	4380	N	4510	N	4250	N	3960	N
Molybdenum	0.47	0.339		0.385		0.371	B	0.371	B	0.34	B	0.371	B	0.425	B	0.319	B	0.336	B	0.334	B	0.325	B
Nitrogen, Kjeldahl total	NA	291	ND	251	ND	219	ND	216	ND	188	ND	643	DN	570	DN	439	DN	974	DN	378	DN	289	DN
Phosphorus	NA	953		855		687		1110		1010		830	N	870	N	886	N	809	N	929	N	788	N
Potassium	2150	2030		2270		1590		1950		1740		2480	N	2150	N	1900	N	1830	N	1950	N	1800	N
Silver	0.167	0.1	U	0.11	U	0.1	U	0.1	U	0.1	U	0.11	U	0.1	U	0.1	U	0.1	U	0.1	U	0.11	U
Sodium	690	224	N	255	N	189		230		253	N	215		247		228		225		219		204	
Tin	NA	0.408		0.484		0.404	B	0.355	B	0.398	B	0.448	B	0.464	B	0.39	B	0.364	B	0.402	B	0.348	B

Acronyms:

B = below or equal to MDL

N = spike recovery outside control limits

NA = not available

U = non detect

D = result was taken form the analysis of a dilution

control site concentration above background

Source of Background Values:

DOE/RL-92-24: arsenic, barium, chromium, cobalt, copper, lead, manganese, nickel, vanadium, zinc, 90th percentile of the log-normal distribution

ECF-HANFORD-11-0038: boron, cadmium, molybdenuum, silver, thallium, 90th percentile of the log-normal distribution

DOE/RL-96-17: uranium.

Antimony, mercury, and selenium values represents maximum background concentration through analysis of 50% of Hanford Site background data. Though above background, deteciton limits were below ecological screneing levels and maximum background concentrations.

Notes:

All values are in mg/mkg unless otherwise stated

[a] max detect of Boron through analysis of 50% of Hanford Site background data = 1.8 mg/kg

Table 5-2. Summary statistics, and derivation and application of the reference envelope for germination Sandberg's Bluegrass in Hanford Sites soils

	Germination Summary Statistics					
LocationID	**n**	**Mean**	**Standard Deviation**	**Minimum**	**Maximum**	**Designation**
Lab Soil-1	3	0.85	0.06	0.78	0.9	Similar
Lab Soil-2	3	0.84	0.05	0.8	0.9	Similar
Control 1	3	0.86	0.10	0.75	0.93	Similar
Control 2	3	0.85	0.09	0.8	0.95	Similar
Control 4	3	0.91	0.08	0.83	0.98	Similar
Control 8	3	0.86	0.06	0.83	0.93	Similar
Control 9D	3	0.92	0.07	0.88	1	Similar
Control 13	3	0.89	0.05	0.85	0.95	Similar
Control 15	3	0.80	0.03	0.78	0.83	Similar
Control 16	3	0.73	0.08	0.65	0.8	Different
Control 17	3	0.79	0.13	0.7	0.93	Similar
Control 18	3	0.81	0.07	0.75	0.88	Similar
Control 20	3	0.88	0.10	0.78	0.98	Similar
maximum - Control 2 and Control 18 excluded					0.920	
median - Control 2 and Control 18 excluded					0.860	
minimum - Control 2 and Control 18 excluded					0.730	
5th percentile - Control 2 and Control 18 excluded					0.760	
Target 11-1	3	0.80	0.03	0.78	0.83	Similar
Target 12-1	3	0.83	0.05	0.8	0.88	Similar
Target 12-2	3	0.89	0.04	0.85	0.93	Similar
Target 12-3	3	0.84	0.04	0.8	0.88	Similar
Target 12-4	3	0.85	0.04	0.83	0.9	Similar
Target 12-4D	3	0.84	0.08	0.8	0.93	Similar
Target 12-5	3	0.80	0.03	0.78	0.83	Similar
Target 13-1	3	0.85	0.05	0.8	0.88	Similar
Target 13-2	3	0.85	0.05	0.8	0.88	Similar
Target 13-3	3	0.90	0.06	0.83	0.95	Similar
Target 13-4	3	0.83	0.09	0.75	0.93	Similar
Target 13-5	3	0.89	0.14	0.73	0.98	Similar
Target 14-1	3	0.87	0.04	0.83	0.9	Similar
Target 14-2	3	0.86	0.05	0.8	0.9	Similar
Target 14-3	3	0.91	0.04	0.88	0.95	Similar
Target 14-4	3	0.76	0.02	0.75	0.78	Similar
Target 14-5	3	0.83	0.03	0.8	0.85	Similar
Target 16-1	3	0.92	0.03	0.9	0.95	Similar
Target 16-2	3	0.90	0.08	0.83	0.98	Similar
Target 16-3	3	0.88	0.04	0.83	0.9	Similar
Target 16-4	3	0.89	0.04	0.85	0.93	Similar
Target 16-5	3	0.89	0.04	0.85	0.93	Similar
Target 17-1	3	0.92	0.04	0.88	0.95	Similar
Target 17-2	3	0.83	0.03	0.8	0.85	Similar
Target 17-3	3	0.88	0.06	0.83	0.95	Similar
Target 17-4	3	0.85	0.04	0.83	0.9	Similar
Target 17-5	3	0.88	0.03	0.85	0.9	Similar
Target 18-1	3	0.86	0.02	0.85	0.88	Similar
Target 18-2	3	0.88	0.03	0.85	0.9	Similar
Target 18-3	3	0.85	0.03	0.83	0.88	Similar
Target 18-3D	3	0.89	0.04	0.85	0.93	Similar
Target 18-4	3	0.87	0.07	0.8	0.93	Similar
Target 18-5	3	0.82	0.04	0.78	0.85	Similar
Target 19-4	3	0.92	0.02	0.9	0.93	Similar
Target 20-1	3	0.85	0.05	0.8	0.9	Similar
Target 20-2	3	0.95	0.03	0.93	0.98	Similar
Target 20-3	3	0.86	0.08	0.8	0.95	Similar
Target 20-4	3	0.88	0.12	0.75	0.98	Similar
Target 21-1	3	0.84	0.09	0.73	0.9	Similar
Target 21-2	3	0.86	0.05	0.8	0.9	Similar

Table 5-2. Summary statistics, and derivation and application of the reference envelope for germination Sandberg's Bluegrass in Hanford Sites soils

	Germination Summary Statistics					
LocationID	**n**	**Mean**	**Standard Deviation**	**Minimum**	**Maximum**	**Designation**
Target 21-3	3	0.89	0.04	0.85	0.93	Similar
Target 21-4	3	0.82	0.05	0.78	0.88	Similar
Target 21-5	3	0.89	0.05	0.85	0.95	Similar
Target 22-1	3	0.88	0.03	0.85	0.9	Similar
Target 22-2	3	0.87	0.02	0.85	0.88	Similar
Target 22-3	3	0.91	0.05	0.85	0.95	Similar
Target 22-4	3	0.87	0.05	0.83	0.93	Similar
Target 22-4D	3	0.86	0.10	0.8	0.98	Similar
Target 22-5	3	0.90	0.11	0.78	0.98	Similar
Target 23-1	3	0.84	0.01	0.83	0.85	Similar
Target 23-2	3	0.89	0.01	0.88	0.9	Similar
Target 23-3	3	0.87	0.03	0.85	0.9	Similar
Target 24-1	3	0.26	0.03	0.23	0.28	Different
Target 24-2	3	0.75	0.08	0.68	0.83	Different
Target 24-3	3	0.79	0.09	0.7	0.88	Similar
Target 24-5	3	0.34	0.13	0.23	0.48	Different
Target 6-5	3	0.89	0.06	0.83	0.95	Similar
Target 7-1	3	0.83	0.13	0.73	0.98	Similar
Target 8-3	3	0.85	0.05	0.8	0.9	Similar

Notes:

Field Controls 2 and 18 were rejected from the reference envelope due to detected concentrations of one or more analytes above background

Table 5-3. Summary Statistics, and derivation and application of the reference envelope for Sandberg's Bluegrass growth (weight) in Hanford Sites Soils

	Growth (weight mg) Summary Statistics					
LocationID	**n**	**Mean**	**Standard Deviation**	**Minimum**	**Maximum**	**Designation**
Lab Soil1	5	1.998	0.174	2.15	1.71	Similar
Control 1	5	1.346	0.391	2.03	1.06	Similar
Control 2	5	1.152	0.110	1.29	1.02	Similar
Control 4	5	1.030	0.149	1.16	0.84	Similar
Control 8	5	1.330	0.082	1.42	1.2	Similar
Control 9D	5	0.786	0.208	1.07	0.49	Different
Control 13	5	1.712	0.316	2.17	1.33	Similar
Control 15	5	1.808	0.452	2.23	1.1	Similar
Control 16	5	1.242	0.485	1.94	0.75	Similar
Control 17	5	0.890	0.259	1.21	0.61	Similar
Control 18	5	1.130	0.345	1.56	0.62	Similar
Control 20	5	1.146	0.144	1.33	0.95	Similar
maximum - Control 2 and Control 18 excluded					1.998	
median - Control 2 and Control 18 excluded					1.286	
minimum - Control 2 and Control 18 excluded					0.786	
5th percentile - Control 2 and Control 18 excluded					0.8328	
Target 11-1	5	1.870	0.573	2.41	1.12	Similar
Target 12-1	5	1.164	0.356	1.49	0.62	Similar
Target 12-2	5	1.222	0.226	1.47	0.93	Similar
Target 12-3	5	1.570	0.154	1.71	1.34	Similar
Target 12-4	5	1.190	0.393	1.85	0.88	Similar
Target 12-4D	5	1.214	0.349	1.61	0.81	Similar
Target 12-5	5	1.116	0.377	1.58	0.79	Similar
Target 13-1	5	1.404	0.219	1.72	1.11	Similar
Target 13-2	5	1.088	0.225	1.42	0.81	Similar
Target 13-3	5	1.196	0.277	1.66	0.98	Similar
Target 13-4	5	2.148	2.434	6.46	0.54	Similar
Target 13-5	5	1.320	0.177	1.59	1.14	Similar
Target 14-1	5	1.650	0.314	2.07	1.35	Similar
Target 14-2	5	1.518	0.360	2.13	1.18	Similar
Target 14-3	5	1.504	0.496	2.28	0.93	Similar
Target 14-4	5	1.242	0.271	1.62	0.94	Similar
Target 14-5	5	1.808	0.609	2.77	1.18	Similar
Target 16-1	5	0.756	0.072	0.86	0.67	Different
Target 16-2	5	0.690	0.130	0.92	0.6	Different
Target 16-3	5	0.410	0.168	0.56	0.13	Different
Target 16-4	5	0.698	0.166	0.84	0.48	Different
Target 16-5	5	0.616	0.094	0.73	0.5	Different
Target 17-1	5	0.566	0.122	0.75	0.41	Different
Target 17-2	5	0.990	0.241	1.22	0.63	Similar
Target 17-3	5	1.056	0.108	1.19	0.92	Similar
Target 17-4	5	0.742	0.175	0.94	0.52	Different
Target 17-5	5	0.912	0.175	1.1	0.69	Similar
Target 18-1	5	0.614	0.055	0.66	0.54	Different
Target 18-2	5	0.624	0.119	0.76	0.46	Different
Target 18-3	5	0.832	0.244	1.22	0.58	Different
Target 18-3D	5	0.788	0.178	0.99	0.5	Different
Target 18-4	5	1.178	0.302	1.51	0.83	Similar
Target 18-5	5	0.816	0.357	1.32	0.31	Different
Target 19-4	5	1.404	0.123	1.54	1.24	Similar
Target 20-1	5	1.548	0.298	1.85	1.13	Similar
Target 20-2	5	1.406	0.187	1.71	1.27	Similar
Target 20-3	5	1.024	0.179	1.18	0.77	Similar
Target 20-4	5	1.362	0.181	1.53	1.07	Similar
Target 21-1	5	0.508	0.072	0.61	0.43	Different
Target 21-2	5	0.970	0.243	1.34	0.75	Similar
Target 21-3	5	0.996	0.184	1.25	0.73	Similar

Table 5-3. Summary Statistics, and derivation and application of the reference envelope for Sandberg's Bluegrass growth (weight) in Hanford Sites Soils

	Growth (weight mg) Summary Statistics					
LocationID	**n**	**Mean**	**Standard Deviation**	**Minimum**	**Maximum**	**Designation**
Target 21-4	5	1.152	0.197	1.39	0.92	Similar
Target 21-5	5	0.938	0.126	1.09	0.76	Similar
Target 22-1	5	1.064	0.260	1.34	0.68	Similar
Target 22-2	5	1.560	0.362	2.08	1.09	Similar
Target 22-3	5	1.420	0.331	1.78	0.9	Similar
Target 22-4	5	0.608	0.169	0.86	0.44	Different
Target 22-4D	5	0.792	0.314	1.27	0.49	Different
Target 22-5	5	0.658	0.129	0.85	0.52	Different
Target 23-1	5	2.158	0.397	2.68	1.68	Similar
Target 23-2	5	1.744	0.279	2.09	1.34	Similar
Target 23-3	5	1.582	0.399	1.93	0.92	Similar
Target 24-1	5	0.000	0.000	0	0	Different
Target 24-2	5	0.264	0.166	0.42	0	Different
Target 24-3	5	0.410	0.122	0.52	0.2	Different
Target 24-5	5	0.120	0.268	0.6	0	Different
Target 6-5	5	0.754	0.098	0.88	0.67	Different
Target 7-1	5	0.402	0.096	0.53	0.33	Different
Target 8-3	5	0.326	0.181	0.58	0.13	Different

Notes:

Field Controls 2 and 18 were rejected from the reference envelope due to detected concentrations of one or more analytes above background

Table 5-4. Summary Statistics , and derivation and application of the reference envelope for Sandberg's Bluegrass growth (height) in Hanford Sites Soils

	Growth (height cm) Summary Statistics					
LocationID	**n**	**Mean**	**Standard Deviation**	**Minimum**	**Maximum**	**Designation**
Lab Soil1	5	67.26	8.39	54.4	74.6	Similar
Control 1	5	64.32	9.42	58.4	80.7	Similar
Control 2	5	60.480	3.267	54.8	62.8	Similar
Control 4	5	64.80	5.39	57.7	70.5	Similar
Control 8	5	75.28	6.24	66.3	82.3	Similar
Control 9D	5	53.96	6.09	47	62.8	Different
Control 13	5	69.76	7.03	59.8	78.3	Similar
Control 15	5	84.06	12.46	69.8	101.4	Similar
Control 16	5	69.18	12.00	50	79.8	Similar
Control 17	5	60.22	11.19	53.3	80	Similar
Control 18	5	69.860	9.966	56	80	Similar
Control 20	5	70.40	6.34	61.8	77.4	Similar
maximum - Control 2 and Control 18 excluded					84.060	
median - Control 2 and Control 18 excluded					68.220	
minimum - Control 2 and Control 18 excluded					53.960	
5th percentile - Control 2 and Control 18 excluded					56.777	
Target 11-1	5	81.20	7.94	69	90.8	Similar
Target 12-1	5	68.22	6.67	62	79	Similar
Target 12-2	5	71.66	8.08	59.5	80.5	Similar
Target 12-3	5	64.80	5.68	58.5	70.5	Similar
Target 12-4	5	71.44	9.64	57.4	83.2	Similar
Target 12-4D	5	70.62	6.88	65.6	81.7	Similar
Target 12-5	5	64.04	7.77	52.4	71.6	Similar
Target 13-1	5	66.98	8.01	59.2	78	Similar
Target 13-2	5	61.22	9.14	54.2	77	Similar
Target 13-3	5	78.26	7.64	66.4	87	Similar
Target 13-4	5	66.38	4.35	61.3	70	Similar
Target 13-5	5	69.32	4.77	62	74.8	Similar
Target 14-1	5	77.82	9.60	61.3	85	Similar
Target 14-2	5	60.90	11.08	41.7	67.8	Similar
Target 14-3	5	76.48	8.34	67.8	87.5	Similar
Target 14-4	5	66.96	6.55	59.2	74.8	Similar
Target 14-5	5	76.68	14.61	59	95.5	Similar
Target 16-1	5	54.30	5.81	47.8	61.4	Different
Target 16-2	5	50.08	6.82	44	59.2	Different
Target 16-3	5	44.72	5.82	39.3	54.3	Different
Target 16-4	5	49.66	6.56	39.8	56.5	Different
Target 16-5	5	47.20	3.07	43.8	50.2	Different
Target 17-1	5	46.44	8.94	36	56.8	Different
Target 17-2	5	61.44	12.90	45.5	81.5	Similar
Target 17-3	5	64.06	7.22	56.6	71.8	Similar
Target 17-4	5	52.58	5.96	45.8	59	Different
Target 17-5	5	62.66	3.54	57.4	66.6	Similar
Target 18-1	5	49.96	5.98	45.8	60	Different
Target 18-2	5	51.24	5.21	45.6	57.6	Different
Target 18-3	5	48.66	7.95	36.3	56.8	Different
Target 18-3D	5	62.28	13.13	44.3	81	Similar
Target 18-4	5	66.28	8.48	52	72.8	Similar
Target 18-5	5	63.32	11.46	43.5	72.3	Similar
Target 19-4	5	70.24	2.36	67.8	74	Similar
Target 20-1	5	66.10	4.54	58.3	69.7	Similar
Target 20-2	5	68.72	5.34	60.8	74.2	Similar
Target 20-3	5	51.32	4.48	43.6	55	Different
Target 20-4	5	62.32	8.76	49.5	71.2	Similar
Target 21-1	5	45.46	5.70	39	51.8	Different

Table 5-4. Summary Statistics , and derivation and application of the reference envelope for Sandberg's Bluegrass growth (height) in Hanford Sites Soils

	Growth (height cm) Summary Statistics					
LocationID	**n**	**Mean**	**Standard Deviation**	**Minimum**	**Maximum**	**Designation**
Target 21-2	5	60.94	9.15	47	70	Similar
Target 21-3	5	58.48	4.31	53	65	Similar
Target 21-4	5	61.36	5.68	54	69.8	Similar
Target 21-5	5	57.98	3.95	51.8	62	Similar
Target 22-1	5	64.76	8.78	57	76.7	Similar
Target 22-2	5	77.50	7.88	68.8	89	Similar
Target 22-3	5	72.78	6.38	63.5	80	Similar
Target 22-4	5	51.94	4.72	46.5	56.4	Different
Target 22-4D	5	46.30	8.23	39.5	59.8	Different
Target 22-5	5	47.92	3.07	44	51	Different
Target 23-1	5	87.92	6.15	79.3	93	Similar
Target 23-2	5	78.88	3.99	73.6	84.7	Similar
Target 23-3	5	69.90	9.24	54.3	79	Similar
Target 24-1	5	0.00	0.00	0	0	Different
Target 24-2	5	26.80	15.62	0	39.7	Different
Target 24-3	5	34.66	4.98	27.5	40	Different
Target 24-5	5	3.00	6.71	0	15	Different
Target 6-5	5	57.38	4.32	52.8	64	Similar
Target 7-1	5	36.92	2.91	34	40.8	Different
Target 8-3	5	34.66	8.48	25.7	48	Different

Notes:

Field Controls 2 and 18 were rejected from the reference envelope due to detected concentrations of one or more analytes above background

Table 5-5. Summary statistics, results of Wilcoxon's Rank Sum test comparisons of analyte concentrations in soils identified as "Different" or "Similar" based on reference envelopes, and nonparametric Spearman's Rank Correlations between plant bioassay responses and analyte concentrations in bioassay soils

Analyte		Germination																																							
		Summary Statistics by Reference Envelope Designation								2-tailed Wilcoxon Rank Sum Tests		Spearman Correlation Analysis			Height																							Weight										
Priority	Analyte	Designation relative to Reference Envelope[a]	Number of Detects	Number of Samples	Mean	Standard Deviation	Minimum	Median	Maximum	p-value from 2-tailed Wilcoxon Rank Sum Test[b]	Conclusion	Spearman Correlation Coefficient	p-value	Conclusion	Designation relative to Reference Envelope[a]	Number of Detects	Number of Samples	Mean	Standard Deviation	Minimum	Median	Maximum	p-value from 2-tailed Wilcoxon Rank Sum Test[b]	Conclusion	Spearman Correlation Coefficient	p-value	Conclusion	Designation relative to Reference Envelope[a]	Number of Detects	Number of Samples	Mean	Standard Deviation	Minimum	Median	Maximum	p-value from 2-tailed Wilcoxon Rank Sum Test[b]	Conclusion	Spearman Correlation Coefficient	p-value	Conclusion
High	Antimony	"Similar"	45	67	45.96	150.18	0.3	1.31	842	0.0045	"Similar" significantly greater	0.214	<.0015	reverse	"Similar"	30	49	13.69	33.59	0.3	0.711	167	0.3155	NS	-0.064	0.227	NS	"Similar"	29	47	13.94	34.26	0.3	0.711	167	0.2444	NS	-0.065	0.222	NS
		"Different"	0	4	0.30	0.01	0.29	0.305	0.31						"Different"	15	22	109.53	249.08	0.29	2.635	842						"Different"	16	24	101.07	239.74	0.29	2.635	842					
High	Barium	"Similar"	67	67	220.97	547.41	59.4	108	4520	0.0273	"Similar" significantly greater	0.192	<.0045	reverse	"Similar"	49	49	132.68	110.52	59.4	98.1	716	0.0295	**"Different" significantly greater**	-0.163	0.002	**Significant**	"Similar"	47	47	124.78	102.04	59.4	98.1	716	0.0125	**"Different" significantly greater**	-0.183	0.0005	**Significant**
		"Different"	4	4	74.80	21.25	56.8	71.2	100						"Different"	22	22	391.04	932.48	56.8	155.5	4520						"Different"	24	24	384.98	892.12	56.8	159.5	4520					
High	Cadmium	"Similar"	50	67	1.69	2.39	0.1	0.443	9.85	0.0024	"Similar" significantly greater	0.143	0.036	reverse	"Similar"	35	49	1.53	2.32	0.1	0.255	9.85	0.9702	NS	0.048	0.367	NS	"Similar"	34	47	1.54	2.35	0.1	0.255	9.85	1	NS	0.051	0.335	NS
		"Different"		4	0.10	0.00	0.096	0.1	0.1						"Different"	15	22	1.77	2.48	0.096	0.6265	8.32						"Different"	16	24	1.73	2.39	0.096	0.6335	8.32					
High	Chromium	"Similar"	67	67	17.54	30.74	2.82	11.9	259	0.0073	"Similar" significantly greater	0.212	0.0018	reverse	"Similar"	49	49	17.67	35.65	3.26	10.8	259	0.1581	NS	-0.136	0.01	Significant	"Similar"	47	47	12.67	5.78	3.26	10.8	34.8	0.0811	NS	-0.107	0.044	Significant
		"Different"	4	4	7.32	2.50	3.71	8.28	9.01						"Different"	22	22	15.38	9.01	2.82	14.4	44.8						"Different"	24	24	25.36	50.52	2.82	14.4	259					
High	Mercury	"Similar"	11	67	0.24	1.50	0.048	0.053	12.3	0.0038	"Different" significantly greater	0.021	0.7645	NS	"Similar"	5	49	0.05	0.00	0.048	0.052	0.0682	0.0006	**"Different" significantly greater**	-0.416	<.0001	**Significant**	"Similar"	6	47	0.05	0.01	0.048	0.052	0.0804	0.0011	**"Different" significantly greater**	-0.352	<.0001	**Significant**
		"Different"	4	4	3.57	6.00	0.056	0.8617	12.5						"Different"	10	22	1.26	3.62	0.05	0.05625	12.5						"Different"	9	24	1.16	3.48	0.05	0.054	12.5					
High	Thallium	"Similar"	15	67	0.12	0.06	0.096	0.11	0.459	0.0243	"Similar" significantly greater	0.278	<.0001	reverse	"Similar"	9	49	0.11	0.01	0.096	0.103	0.161	0.0717	NS	-0.159	0.003	Significant	"Similar"	9	47	0.11	0.01	0.096	0.102	0.161	0.0482	**"Different" significantly greater**	-0.109	0.041	**Significant**
		"Different"		4	0.10	0.00	0.096	0.1	0.1						"Different"	6	22	0.15	0.10	0.096	0.11	0.459						"Different"	6	24	0.15	0.09	0.096	0.11	0.459					
High	Uranium	"Similar"	67	67	0.61	0.55	0.219	0.502	4.76	0.1947	NS	-0.013	0.8447	NS	"Similar"	49	49	0.64	0.63	0.331	0.509	4.76	0.2905	NS	0.128	0.016	reverse	"Similar"	47	47	0.64	0.64	0.331	0.509	4.76	0.3847	NS	0.207	<.0001	reverse
		"Different"	4	4	0.43	0.15	0.243	0.433	0.612						"Different"	22	22	0.53	0.20	0.219	0.4735	1.15						"Different"	24	24	0.54	0.21	0.219	0.4735	1.15					
High	Zinc	"Similar"	67	67	380.93	1156.17	4.08	73.9	8980	0.0029	"Similar" significantly greater	0.262	<.0001	reverse	"Similar"	49	49	128.95	173.17	4.08	57.1	880	0.0079	**"Different" significantly greater**	-0.207	<.0001	**Significant**	"Similar"	47	47	121.04	168.86	4.08	57.1	880	0.004	**"Different" significantly greater**	-0.232	<.0001	**Significant**
		"Different"	4	4	33.95	12.47	15.8	38.05	43.9						"Different"	22	22	879.06	1935.83	9.18	213	8980						"Different"	24	24	832.04	1857.25	9.18	285	8980					
Low	Arsenic	"Similar"	66	67	4.75	2.67	0.5	4.03	16.4	0.0211	"Similar" significantly greater	0.293	<.0001	reverse	"Similar"	48	49	4.04	1.37	0.5	3.82	8.01	0.0806	NS	-0.078	0.143	NS	"Similar"	46	47	3.94	1.28	0.5	3.82	8.01	0.043	**"Different" significantly greater**	-0.118	0.026	**Significant**
		"Different"	4	4	2.31	1.23	1.25	1.965	4.04						"Different"	22	22	5.90	4.12	1.09	4.855	16.4						"Different"	24	24	5.93	3.96	1.09	5.025	16.4					
Low	Cobalt	"Similar"	67	67	8.12	1.71	0.272	8.01	12.4	0.0029	"Similar" significantly greater	0.189	0.005	reverse	"Similar"	49	49	8.14	1.62	0.272	8.01	12.4	0.4862	NS	0.212	<.0001	reverse	"Similar"	47	47	8.10	1.64	0.272	7.95	12.4	0.8458	NS	0.205	0.0001	reverse
		"Different"	4	4	5.65	2.12	2.63	6.35	7.26						"Different"	22	22	7.62	2.17	1.68	7.81	11.1						"Different"	24	24	7.73	2.12	1.68	7.84	11.1					
Low	Nickel	"Similar"	67	67	12.95	4.68	1.09	11.2	27.4	0.0049	"Similar" significantly greater	0.224	<.0009	reverse	"Similar"	49	49	12.22	4.20	1.09	10.8	25.3	0.1372	NS	-0.036	0.503	NS	"Similar"	47	47	12.10	4.11	1.09	10.8	25.3	0.091	NS	-0.009	0.865	NS
		"Different"	4	4	5.07	3.39	1.93	4.27	9.81						"Different"	22	22	13.14	6.38	1.18	13.25	27.4						"Different"	24	24	13.31	6.30	1.18	13.25	27.4					
Medium	Boron	"Similar"	63	63	5.34	3.78	0.939	4.23	15.5	0.0032	"Similar" significantly greater	0.193	0.006	reverse	"Similar"	45	45	4.50	3.16	1.23	3.68	14.7	0.2321	NS	-0.066	0.23	NS	"Similar"	43	43	4.40	2.95	1.23	3.65	12.8	0.1579	NS	-0.067	0.222	NS
		"Different"	4	4	1.33	0.59	0.934	1.09	2.2						"Different"	22	22	6.33	4.68	0.934	4.81	15.5						"Different"	24	24	6.35	4.77	0.934	4.35	15.5					
Medium	Copper	"Similar"	67	67	69.34	97.96	1.4	29.5	596	0.0373	"Similar" significantly greater	0.148	0.029	reverse	"Similar"	49	49	39.23	52.24	1.4	23.1	260	0.023	**"Different" significantly greater**	-0.0232	<.0001	**Significant**	"Similar"	47	47	32.16	37.05	1.4	23.1	256	0.0006	**"Different" significantly greater**	-0.252	<.0001	**Significant**
		"Different"	4	4	14.44	6.33	6.07	15.3	21.1						"Different"	22	22	126.42	137.74	3.95	96.65	596						"Different"	24	24	133.01	135.15	3.95	108.75	596					
Medium	Lead	"Similar"	62	67	853.57	1746.63	0.1	77.8	9090	0.0063	"Similar" significantly greater	0.134	0.048	reverse	"Similar"	48	49	778.82	1505.11	4	81.5	7970	0.2475	NS	0.176	0.0009	reverse	"Similar"	46	47	767.13	1530.51	4	68.3	7970	0.5761	NS	0.155	0.003	reverse
		"Different"	4	4	3.49	1.75	2.19	2.88	6.02						"Different"	18	22	865.51	2129.42	0.1	40	9090						"Different"	20	24	881.19	2044.23	0.1	64	9090					
Medium	Manganese	"Similar"	67	67	404.92	177.39	24.3	359	1260	0.0041	"Similar" significantly greater	0.257	<.0001	reverse	"Similar"	49	49	373.97	103.02	24.3	349	680	0.4823	NS	0.005	0.931	NS	"Similar"	47	47	371.79	103.72	24.3	348	680	0.3015	NS	-0.029	0.581	Significant
		"Different"	4	4	208.65	99.25	87.6	212	323						"Different"	22	22	438.18	282.82	62.3	372.5	1260						"Different"	24	24	437.08	271.00	62.3	372.5	1260					
Low	Selenium	"Similar"	67	67	1.21	0.28	0.455	1.24	2.02	0.0473	"Different" significantly greater	-0.101	0.139	NS	"Similar"	49	49	1.22	0.26	0.455	1.25	1.91	0.9504	NS	0.03	0.569	NS	"Similar"	47	47	1.22	0.27	0.455	1.25	1.91	1	NS	0.005	0.931	NS
		"Different"	4	4	1.60	0.37	1.18	1.61	1.98						"Different"	22	22	1.26	0.36	0.697	1.245	2.02						"Different"	24	24	1.26	0.35	0.697	1.245	2.02					
Low	Vanadium	"Similar"	67	67	51.15	9.80	2.27	50.6	72.9	0.0291	**"Different" significantly greater**	-0.146	0.032	**Significant**	"Similar"	49	49	51.98	10.01	2.27	51.6	72.9	0.2684	NS	0.144	0.007	reverse	"Similar"	47	47	51.76	10.04	2.27	51.4	72.9	0.4224	NS	0.108	0.041	reverse
		"Different"	4	4	91.90	32.24	47.2	102.2	116						"Different"	22	22	56.71	22.44	33.4	47.55	116						"Different"	24	24	56.75	21.56	33.4	47.55	116					
Other	Beryllium	"Similar"	66	67	0.34	0.08	0.1	0.339	0.565	0.0048	"Similar" significantly greater	0.128	0.061	NS	"Similar"	49	49	0.35	0.07	0.178	0.339	0.565	0.2183	NS	0.24	<.0001	reverse	"Similar"	47	47	0.34	0.07	0.178	0.339	0.565	0.4084	NS	0.237	<.0001	reverse
		"Different"	3	4	0.21	0.08	0.1	0.2275	0.29						"Different"	20	22	0.31	0.10	0.1	0.317	0.487						"Different"	22	24	0.32	0.10	0.1	0.328	0.487					
Other	Molybdenum	"Similar"	67	67	2.00	6.50	0.208	0.564	46.3	0.1378	NS	0.187	0.006	reverse	"Similar"	49	49	1.59	6.54	0.208	0.53	46.3	0.017	**"Different" significantly greater**	-0.113	0.033	**Significant**	"Similar"	47	47	0.63	0.50	0.208	0.53	3.3	0.0086	**"Different" significantly greater**	-0.136	0.01	**Significant**
		"Different"	4	4	0.42	0.08	0.319	0.42	0.51						"Different"	22	22	2.62	5.88	0.34	0.898	28						"Different"	24	24	4.40	10.55	0.34	0.8995	46.3					
Other	Silver	"Similar"	22	67	0.27	0.49	0.01	0.11	2.99	0.0566	NS	0.254	<.0002	reverse	"Similar"	12	49	0.14	0.11	0.01	0.1	0.665	0.0183	**"Different" significantly greater**	-0.219	<.0001	**Significant**	"Similar"	10	47	0.14	0.11	0.01	0.1	0.665	0.0309	**"Different" significantly greater**	-0.12	0.023	**Significant**
		"Different"		4	0.10	0.00	0.096	0.1	0.1						"Different"	10	22	0.54	0.77	0.096	0.11	2.99						"Different"	12	24	0.51	0.75	0.0816	0.11	2.99					
Other	Tin	"Similar"	67	67	38.52	121.99	0.165	3.28	838	0.031	"Similar" significantly greater	0.168	0.013	reverse	"Similar"	49	49	13.47	24.67	0.165	2.3	134	0.1572	NS	-0.079	0.143	Significant	"Similar"	47	47	9.59	14.69	0.165	2.047	56.1	0.0571	NS	-0.121	0.022	Significant
		"Different"	4	4	0.46	0.05	0.39	0.4675	0.501						"Different"	22	22	87.38	204.18	0.339	4.38	838						"Different"	24	24	88.82	195.38	0.339	5.13	838					
Other	% Gravel	"Similar"	67	67	1.10	1.88	0	0.1	6.6	0.1792	NS	0.009	0.8884	NS	"Similar"	49	49	0.82	1.66	0	0	6.1	0.3104	NS	-0.106	0.046	Significant	"Similar"	47	47	0.74	1.52	0	0	6.1	0.2733	NS	-0.135	0.011	Significant
		"Different"	4	4	0.03	0.05	0	0	0.1						"Different"	22	22	1.50	2.17	0	0.2	6.6						"Different"	24	24	1.61	2.28	0	0.1	6.6					
Other	% Sand	"Similar"	67	67	71.54	7.65	54.7	70.4	91	0.0597	NS	-0.12	0.077	NS	"Similar"	49	49	71.37	7.62	54.7	70.5	86.4	0.3478	NS	-0.113	0.034	Significant	"Similar"	47	47	71.26	7.74	54.7	70.4	86.4	0.2608	NS	-0.043	0.421	NS
		"Different"	4	4	85.58	15.10	64.8	90.25	97						"Different"	22	22	74.47	10.58	58.6	70.65	97						"Different"	24	24	74.42	10.15	58.6	71.25	97					
Other	% Silt/Clay	"Similar"	67	67	27.37	7.15	7.1	28.1	39.7	0.0766	NS	0.13	0.057	NS	"Similar"	49	49	27.80	7.09	13.6	28.1	39.7	0.223	NS	0.139	0.009	reverse	"Similar"	47	47	28.00	7.14	13.6	28.8	39.7	0.1197	NS	0.077	0.149	NS
		"Different"	4	4	14.43	15.13	3	9.75	35.2						"Different"	22	22	24.04	9.92	3	26.7	37.9						"Different"	24	24	23.97	9.53	3	26.7	37.9					
Other	CEC	"Similar"	67	67	14.12	5.31	5.28	12.68	31.57	0.1446	NS	0.02	0.7557	NS	"Similar"	49	49	14.57	5.50	7.05	13.25	31.57	0.1373	NS	0.25	<.0001	reverse	"Similar"	47	47	15.01	5.84	7.27	13.62	31.57	0.0482	"Similar" significantly greater	0.322	<.0001	reverse
		"Different"	4	4	10.87	1.31	9.06	11.23	11.97						"Different"	22	22	12.52	4.32	5.28	12.03	28.33						"Different"	24	24	11.85	2.82	5.28	12.03	17.18					
Other	Calcium	"Similar"	67	67	7851.49	3604.50	3020	7370	20800	0.1516	NS	0.054	0.4294	NS	"Similar"	49	49	7088.16	3187.80	3020	6570	19800	0.0007	"Similar" significantly greater	-0.339	<.0001	Significant	"Similar"	47	47	7172.77	3435.43	3020	6110	19800	0.0013	**"Different" significantly greater**	-0.329	<.0001	**Significant**
		"Different"	4	4	11820.00	6671.42	6010	9935	21400						"Different"	22	22	#######	4411.40	3390	9685	21400						"Different"	24	24	9842.08	4140.83	3390	9270	21400					
Other	Magnesium	"Similar"	67	67	4703.64	1370.25	250	4550	10900	0.0118	**"Similar" significantly greater**	0.27	<.0001	**reverse**	"Similar"	49	49	4606.73	1406.71	250	4430	10900	0.223	NS	-0.028	0.599	NS	"Similar"	47	47	4627.23	1430.56	250	4430	10900	0.3716	NS	-0.032	0.542	NS
		"Different"	4	4	2847.50	1264.21	1290	2860	4380						"Different"	22	22	4582.00	1491.68	954	4810	6740						"Different"	24	24	4543.92	1436.66	954	4660	6740					
Other	Nitrogen, Kjeldahl total	"Similar"	67	67	452.48	222.39	31.2	441	1010	0.0122	"Similar" significantly greater	0.088	0.1979	NS	"Similar"	49	49	477.51	213.29	124	459	974	0.0127	**"Similar" significantly greater**	0.359	<.0001	**reverse**	"Similar"	47	47	482.23	210.57	124	459	974	0.0101	**"Similar" significantly greater**	0.38	<.0001	**reverse**
		"Different"	4	4	123.08	210.63	14.3	19.5	439						"Different"	22	22	336.84	250.96	14.3	316.5	1010						"Different"	24	24	339.31	250.44	14.3	316.5	1010					
Other	Phosphorus	"Similar"	67	67	877.58	201.80	186	858	1580	0.0211	"Different" significantly greater	-0.077	0.2612	NS	"Similar"	49	49	876.18	205.40	186	855	1580	0.3608	NS	-0.024	0.65	NS	"Similar"	47	47	876.09	210.24	186	853	1580	0.2875	NS	-0.049	0.361	NS
		"Different"	4	4	1509.25	695.81	886	1460.5	2230						"Different"	22	22	995.55	402.66	569	902.5	2230						"Different"	24	24	985.79	385.72	569	902.5	2230					
Other	Potassium	"Similar"	67	67	1818.48	377.07	138	1810	2480	0.0447	**"Similar" significantly greater**	0.207	0.0023	**reverse**	"Similar"	49	49	1762.00	386.34	138	1800	2480	0.263	NS	-0.024	0.658	NS	"Similar"	47	47	1752.72	390.00	138	1800	2480	0.1871	NS	-0.056	0.294	NS
		"Different"	4	4	1420.00	369.05	1030	1375	1900						"Different"	22	22	1871.82	380.77	1030	1905	2460						"Different"	24	24	1880.83	369.18	1030	1905	2460					
Other	Sodium	"Similar"	67	67	369.53	324.17	38.5	303	2770	0.0533	NS	0.014	0.8321	NS	"Similar"	49	49	302.01	114.00	38.5	263	577	0.0001	**"Different" significantly greater**	-0.37	<.0001	**Significant**	"Similar"	47	47	294.95	111.18	38.5	255	577	<0.0001	**"Different" significantly greater**	-0.394	<.0001	**Significant**
		"Different"	4	4	1318.25	1276.22	228	942.5	3160						"Different"	22	22	692.41	764.74	219	436	3160						"Different"	24	24	673.71	733.41	219	436	3160					
Other	TOC	"Similar"	67	67	17768.93	23121.39	87.8	8500	99400	0.0063	"Similar" significantly	0.12	0.079	NS	"Similar"	49	49	#######	23481.06	87.8	8500	97600	0.1186	NS	0.268	<.0001	reverse	"Similar"	47	47	21595.91	26447.86	87.8	8840	99400	0.0394	"Similar" significantly	0.334	<.0001	reverse

Table 5-5. Summary statistics, results of Wilcoxon's Rank Sum test comparisons of analyte concentrations in soils identified as "Different" or "Similar" based on reference envelopes, and nonparametric Spearman's Rank Correlations between plant bioassay responses and analyte concentrations in bioassay soils

Analyte		Germination												Height												Weight											
		Summary Statistics by Reference Envelope Designation							2-tailed Wilcoxon Rank Sum Tests		Spearman Correlation Analysis			Summary Statistics by Reference Envelope Designation							2-tailed Wilcoxon Rank Sum Tests		Spearman Correlation Analysis			Summary Statistics by Reference Envelope Designation							2-tailed Wilcoxon Rank Sum Tests		Spearman Correlation Analysis		
Priority	Analyte	Designation relative to Reference Envelope[a]	Number of Detects	Number of Samples	Mean	Standard Deviation	Minimum	Median	Maximum	p-value from 2-tailed Wilcoxon Rank Sum	Conclusion	Spearman Correlation Coefficient	p-value	Conclusion	Designation relative to Reference Envelope[a]	Number of Detects	Number of Samples	Mean	Standard Deviation	Minimum	Median	Maximum	p-value from 2-tailed Wilcoxon Rank Sum	Conclusion	Spearman Correlation Coefficient	p-value	Conclusion	Designation relative to Reference Envelope[a]	Number of Detects	Number of Samples	Mean	Standard Deviation	Minimum	Median	Maximum	p-value from 2-tailed Wilcoxon Rank Sum	Conclusion	Spearman Correlation Coefficient	p-value	Conclusion
Other	TOC	"Different"	4	4	1404.38	2650.46	58.4	89.55	5380	0.0005	significantly greater	0.12	0.079	NS	"Different"	22	22	#######	20613.06	58.4	5930	99400	0.1106	NS	0.168	<0.0001	reverse	"Different"	24	24	7547.01	6604.36	58.4	5930	19800	0.0354	significantly greater	0.554	<0.0001	reverse
Other	pH	"Similar"	67	67	7.74	0.73	5.02	8	8.74	0.0745	NS	0.211	0.002	reverse	"Similar"	49	49	7.70	0.72	5.81	7.94	8.56	0.7606	NS	0.016	0.757	NS	"Similar"	47	47	7.67	0.72	5.81	7.93	8.56	0.6838	NS	-0.015	0.784	NS
		"Different"	4	4	5.46	2.01	4.13	4.65	8.41						"Different"	22	22	7.41	1.39	4.13	8.005	8.74						"Different"	24	24	7.49	1.36	4.13	8.025	8.74					

Notes:

a Designation assigned in comparison to 5th percentile of reference envelope

Interpreting Wilcoxon Rank Sum Results for Chemicals:

[b] based on z-score for normal approximation

Null hypothesis = median response (germination, height, weight) of "Similar" samples = median response of "Different" .

NS = p value > 0.05 = null hypothesis is accepted, median responses are not significantly "Different". The max from all results becomes the NOEC.

"Similar" significantly greater = p value < 0.05 with median of "Similar" samples significantly greater than "Different" samples suggests chemical (except nutrients) requires no further consideration with respect to influencing the "Different" response observed (relative to reference envelope). The max from all results becomes the NOEC.

"Different" significantly greater = p value < 0.05 with median of "Different" samples significantly greater than "Similar" samples suggests chemical (except nutrients) requires further consideration with respect to influencing the "Different" response observed (relative to reference envelope). Correlation analysis should be reviewed.

Interpreting Wilcoxon Rank Sum Results for Nutrients and cations (calcium, potassium, sodium, phosphorus, nitrogen):

Null hypothesis = median response (germination, height, weight) of "Similar" samples = median response of "Different" .

NS = p value > 0.05 = null hypothesis is accepted, median responses are not significantly "Different".

"Different" significantly greater = p value < 0.05 with median of "Different" samples significantly greater than "Similar" samples may suggest chemical requires no further consideration with respect to influencing the "Different" response observed (relative to reference envelope), assuming concentrations are also below toxicity thresholds. Correlation analysis should be reviewed.

"Similar" significantly greater = p value < 0.05 with median of "Similar" samples significantly greater than "Different" samples suggests chemical requires further consideration with respect to influencing the "Different" response observed (relative to reference envelope), assuming concentrations are also below thresholds for recommended minimum levels. Correlation analysis should be reviewed.

Interpreting Spearman Correlation Coefficients:

null hypothesis = observed responses are NOT correlated with measured chemical/geochemical/physical parameters.

NS = p-value > 0.05 = null hypothesis is accepted, responses show no significant correlation with measured chemical/geochemical/physical parameters.

Significant = p-value < 0.05 and negative Spearman Correlation Coefficient = null hypothesis is rejected, responses show significant correlation with measured chemical/geochemical/physical parameters and samples designated as "Different" are significantly greater. Regression analysis should be performed.

Reverse = p-value < 0.05 and positive Spearman Correlation Coefficient = null hypothesis is rejected, responses show reverse correlation with measured chemical/geochemical/physical parameters and samples designated as "Similar" are significantly greater. Regression analysis should be performed.

Table 5-6. Summary statistics, results of Wilcoxon's Rank Sum test comparisons of analyte concentrations in soils identified as "Different" or "Similar" based on reference envelopes, and nonparametric Spearman's Rank Correlations between plant bioassay responses and analyte concentrations in bioassay soils after removing maximum values

Analyte		Germination													Height												Weight										
		Median by Reference Envelope Designation								2-tailed Wilcoxon Rank Sum Tests		Spearman Correlation Analysis			Median by Reference Envelope Designation							2-tailed Wilcoxon Rank Sum Tests		Spearman Correlation Analysis			Median by Reference Envelope Designation							2-tailed Wilcoxon Rank Sum Tests		Spearman Correlation Analysis		
Priority	Analyte	Designation relative to Reference Envelope[a]	Number of Detects	Number of Samples	Mean	Standard Deviation	Minimum	Median	Maximum	p-value	Conclusion	Spearman Correlation Coefficient	p-value	Conclusion	Designation relative to Reference Envelope[a]	Number of Detects	Number of Samples	Mean	Standard Deviation	Minimum	Median	Maximum	p-value	Conclusion	Spearman Correlation Coefficient	p-value	Conclusion	Designation relative to Reference Envelope[a]	Number of Detects	Number of Samples	Mean	Standard Deviation	Minimum	Median	Maximum	p-value	Conclusion	Spearman Correlation Coefficient	p-value	Conclusion
High	Barium	"Similar"	66	66	155.83	125.01	59.4	108	716	0.0286	"Similar" significantly greater	0.192	<.0045	Reverse	"Similar"	49	49	132.68	110.52	59.4	98.1	716	0.0537	NS	-0.163	0.002	Significant	"Similar"	47	47	124.78	102.04	59.4	98.1	716	0.0228	"Different" significantly greater	-0.183	0.0005	Significant
		"Different"	4	4	74.80	21.25	56.8	71.2	100						"Different"	21	21	194.42	141.35	56.8	130	566						"Different"	23	23	205.19	145.10	56.8	130	566					
High	Mercury	"Similar"	11	67	0.24	1.50	0.048	0.053	12.3	0.0167	"Different" significantly greater	0.021	0.7645	NS	"Similar"	5	49	0.05	0.00	0.048	0.052	0.0682	0.0013	"Different" significantly greater	-0.416	<.0001	Significant	"Similar"	6	47	0.05	0.01	0.048	0.052	0.0804	0.0022	"Different" significantly greater	-0.352	<.0001	Significant
		"Different"	3	3	0.59	0.92	0.056	0.0734	1.65						"Different"	9	21	0.73	2.67	0.05	0.054	12.3						"Different"	8	23	0.67	2.56	0.05	0.054	12.3					
High	Thallium	"Similar"	14	66	0.12	0.04	0.096	0.11	0.352	0.0253	"Similar" significantly greater	0.278	<.0001	Reverse	"Similar"	9	49	0.11	0.01	0.096	0.103	0.161	0.1252	NS	-0.159	0.003	Significant	"Similar"	9	47	0.11	0.01	0.096	0.102	0.161	0.0836	NS	-0.109	0.041	Significant
		"Different"		4	0.10	0.00	0.096	0.1	0.1						"Different"	5	21	0.14	0.07	0.096	0.11	0.352						"Different"	5	23	0.13	0.06	0.096	0.11	0.352					
High	Zinc	"Similar"	66	66	250.64	449.95	4.08	73.35	2620	0.0029	"Similar" significantly greater	0.262	<.0001	Reverse	"Similar"	49	49	128.95	173.17	4.08	57.1	880	0.0154	"Different" significantly greater	-0.207	<.0001	Significant	"Similar"	47	47	121.04	168.86	4.08	57.1	880	0.0077	"Different" significantly greater	-0.232	<.0001	Significant
		"Different"	4	4	33.95	12.47	15.8	38.05	43.9						"Different"	21	21	493.30	705.20	9.18	183	2620						"Different"	23	23	477.78	676.22	9.18	243	2620					
Low	Arsenic	"Similar"	65	66	4.58	2.27	0.5	4.03	14.8	0.022	"Similar" significantly greater	0.293	<.0001	Reverse	"Similar"	48	49	4.04	1.37	0.5	3.82	8.01	0.1371	NS	-0.078	0.143	NS	"Similar"	46	47	3.94	1.28	0.5	3.82	8.01	0.0738	NS	-0.118	0.026	Significant
		"Different"	4	4	2.31	1.23	1.25	1.965	4.04						"Different"	21	21	5.40	3.47	1.09	4.83	14.8						"Different"	23	23	5.47	3.35	1.09	4.83	14.8					
Low	Selenium	"Similar"	66	66	1.20	0.26	0.455	1.24	1.91	0.0391	"Different" significantly greater	-0.101	0.139	NS	"Similar"	49	49	1.22	0.26	0.455	1.25	1.91	0.7053	NS	0.03	0.569	NS	"Similar"	47	47	1.22	0.27	0.455	1.25	1.91	0.7736	NS	0.005	0.931	NS
		"Different"	4	4	1.60	0.37	1.18	1.61	1.98						"Different"	21	21	1.22	0.33	0.697	1.24	1.98						"Different"	23	23	1.22	0.31	0.697	1.24	1.98					
Low	Vanadium	"Similar"	67	67	51.15	9.80	2.27	50.6	72.9	0.1174	NS	-0.146	0.032	Significant	"Similar"	49	49	51.98	10.01	2.27	51.6	72.9	0.1458	NS	0.144	0.007	Reverse	"Similar"	47	47	51.76	10.04	2.27	51.4	72.9	0.2631	NS	0.108	0.041	Reverse
		"Different"	3	3	83.87	34.24	47.2	89.4	115						"Different"	21	21	53.89	18.57	33.4	47.1	115						"Different"	23	23	54.17	17.87	33.4	47.1	115					
Medium	Copper	"Similar"	66	66	61.36	73.56	1.4	28.95	289	0.0392	"Similar" significantly greater	0.148	0.029	Reverse	"Similar"	49	49	39.23	52.24	1.4	23.1	260	0.0047	"Different" significantly greater	-0.0232	<.0001	Significant	"Similar"	47	47	32.16	37.05	1.4	23.1	256	0.0012	"Different" significantly greater	-0.252	<.0001	Significant
		"Different"	4	4	14.44	6.33	6.07	15.3	21.1						"Different"	21	21	104.06	91.50	3.95	93.8	289						"Different"	23	23	112.88	94.48	3.95	99.5	289					
Other - chemical	Molybdenum	"Similar"	66	66	1.33	3.50	0.208	0.557	28	0.1457	NS	0.187	0.006	Reverse	"Similar"	48	48	0.66	0.55	0.208	0.52	3.3	0.0102	"Different" significantly greater	-0.113	0.033	Significant	"Similar"	47	47	0.63	0.50	0.208	0.53	3.3	0.0161	"Different" significantly greater	-0.136	0.01	Significant
		"Different"	4	4	0.42	0.08	0.319	0.42	0.51						"Different"	22	22	2.62	5.88	0.34	0.898	28						"Different"	23	23	2.58	5.75	0.34	0.897	28					
Other - chemical	Silver	"Similar"	21	66	0.23	0.35	0.01	0.11	1.92	0.0595	NS	0.254	<.0002	Reverse	"Similar"	12	49	0.14	0.11	0.01	0.1	0.665	0.0346	"Different" significantly greater	-0.219	<.0001	Significant	"Similar"	10	47	0.14	0.11	0.01	0.1	0.665	0.0548	NS	-0.12	0.023	Significant
		"Different"		4	0.10	0.00	0.096	0.1	0.1						"Different"	9	21	0.42	0.56	0.096	0.11	1.92						"Different"	11	23	0.41	0.54	0.0816	0.11	1.92					
Other - physical	TOC	"Similar"	67	67	17769	23121.39	87.8	8500	99400	0.0309	"Different" significantly greater	0.12	0.079	NS	"Similar"	49	49	19268.5	23481.06	87.8	8500	97600	0.1998	NS	0.268	<.0001	Reverse	"Similar"	47	47	21595.91	26447.86	87.8	8840	99400	0.0679	NS	0.334	<.0001	Reverse
		"Different"	3	3	1853.0	3054.44	87.3	91.8	5380						"Different"	21	21	11996.2	20960.47	87.3	7020	99400						"Different"	23	23	7872.60	6552.89	87.3	7020	19800					
Other - cation	Calcium	"Similar"	67	67	7851.5	3604.50	3020	7370	20800	0.4865	NS	0.054	0.4294	NS	"Similar"	49	49	7088.16	3187.80	3020	6570	19800	0.0015	"Different" significantly greater	-0.339	<.0001	Significant	"Similar"	47	47	7172.77	3435.43	3020	6110	19800	0.0026	"Different" significantly greater	-0.329	<.0001	Significant
		"Different"	3	3	8626.7	2361.66	6010	9270	10600						"Different"	21	21	9743.33	3734.75	3390	9270	20800						"Different"	23	23	9339.57	3404.38	3390	9270	20800					
Other - cation	Magnesium	"Similar"	66	66	4771.1	1263.61	954	4550	10900	0.0092	"Similar" significantly greater	0.27	<.0001	Reverse	"Similar"	48	48	4697.50	1268.33	2910	4470	10900	0.271	NS	-0.028	0.599	NS	"Similar"	46	46	4722.39	1287.22	2910	4470	10900	0.4467	NS	-0.032	0.542	NS
		"Different"	4	4	2847.5	1264.21	1290	2860	4380						"Different"	22	22	4582.00	1491.68	954	4810	6740						"Different"	24	24	4543.92	1436.66	954	4660	6740					
Other - cation	Potassium	"Similar"	66	66	1843.9	316.65	1160	1820	2480	0.0368	"Similar" significantly greater	0.207	0.0023	Reverse	"Similar"	48	48	1795.83	308.46	1160	1800	2480	0.3175	NS	-0.024	0.658	NS	"Similar"	46	46	1787.83	310.29	1160	1800	2480	0.2324	NS	-0.056	0.294	NS
		"Different"	4	4	1420.0	369.05	1030	1375	1900						"Different"	22	22	1871.82	380.77	1030	1905	2460						"Different"	24	24	1880.83	369.18	1030	1905	2460					
Other - nutrient	Nitrogen, Kjeldahl total	"Similar"	67	67	452.48	222.39	31.2	441	1010	0.052	NS	0.088	0.1979	NS	"Similar"	49	49	477.51	213.29	124	459	974	0.0241	"Similar" significantly greater	0.359	<.0001	Reverse	"Similar"	47	47	482.23	210.57	124	459	974	0.0187	"Similar" significantly greater	0.38	<.0001	Reverse
		"Different"	3	3	159.33	242.20	18.1	20.9	439						"Different"	21	21	352.20	246.34	18.1	326	1010						"Different"	23	23	353.44	246.09	18.1	326	1010					
Other - nutrient	Phosphorus	"Similar"	67	67	877.58	201.80	186	858	1580	0.0871	NS	-0.077	0.2612	NS	"Similar"	49	49	876.18	205.40	186	855	1580	0.53	NS	-0.024	0.65	NS	"Similar"	47	47	876.09	210.24	186	853	1580	0.4236	NS	-0.049	0.361	NS
		"Different"	3	3	1269.0	616.36	886	941	1980						"Different"	21	21	936.76	300.71	569	902	1980						"Different"	23	23	931.70	286.57	569	902	1980					
Other - salt	Sodium	"Similar"	67	67	369.53	324.17	38.5	303	2770	0.202	NS	0.014	0.8321	NS	"Similar"	49	49	302.01	114.00	38.5	263	577	0.0003	"Different" significantly greater	-0.37	<.0001	Significant	"Similar"	47	47	294.95	111.18	38.5	255	577	<0.0001	"Different" significantly greater	-0.394	<.0001	Significant
		"Different"	3	3	704.33	426.29	228	835	1050						"Different"	21	21	574.90	543.25	219	431	2770						"Different"	23	23	565.61	518.78	219	431	2770					

Notes:

a Designation assigned in comparison to 5th percentile of reference envelope

Interpreting Wilcoxon Rank Sum Results for Chemicals:

[b] based on z-score for normal approximation

Null hypothesis = median response (germination, height, weight) of "Similar" samples = median response of "Different" .

NS = p value > 0.05 = null hypothesis is accepted, median responses are not significantly "Different". The max from all results becomes the NOEC.

"Similar" significantly greater = p value < 0.05 with median of "Similar" samples significantly greater than "Different" samples suggests chemical (except nutrients) requires no further consideration with respect to influencing the "Different" response observed (relative to reference envelope). The max from all results becomes the NOEC.

"Different" significantly greater = p value < 0.05 with median of "Different" samples significantly greater than "Similar" samples suggests chemical (except nutrients) requires further consideration with respect to influencing the "Different" response observed (relative to reference envelope). Correlation analysis should be reviewed.

Interpreting Wilcoxon Rank Sum Results for Nutrients and cations (calcium, potassium, sodium, phosphorus, nitrogen):

Null hypothesis = median response (germination, height, weight) of "Similar" samples = median response of "Different".

NS = p value > 0.05 = null hypothesis is accepted, median responses are not significantly "Different".

"Different" significantly greater = p value < 0.05 with median of "Different" samples significantly greater than "Similar" samples may suggest chemical requires no further consideration with respect to influencing the "Different" response observed (relative to reference envelope), assuming concentrations are also below toxicity thresholds. Correlation analysis should be reviewed.

"Similar" significantly greater = p value < 0.05 with median of "Similar" samples significantly greater than "Different" samples suggests chemical requires further consideration with respect to influencing the "Different" response observed (relative to reference envelope), assuming concentrations are also below thresholds for recommended minimum levels. Correlation analysis should be reviewed.

Interpreting Spearman Correlation Coefficients:

null hypothesis = observed responses are NOT correlated with measured chemical/geochemical/physical parameters.

NS = p-value > 0.05 = null hypothesis is accepted, responses show no significant correlation with measured chemical/geochemical/physical parameters.

Significant = p-value < 0.05 and negative Spearman Correlation Coefficient = null hypothesis is rejected, responses show significant correlation with measured chemical/geochemical/physical parameters and samples designated as "Different" are significantly greater. Regression analysis should be performed.

Reverse = p-value < 0.05 and positive Spearman Correlation Coefficient = null hypothesis is rejected, responses show reverse correlation with measured chemical/geochemical/physical parameters and samples designated as "Similar" are significantly greater. Regression analysis should be performed.

Table 5-7. Summary of Results of Linear Regression Models for Soil Concentration and Plant Bioassays Measurements

Priority	Analyte	Germination										Height										Weight									
		Regression of untransformed soil concentrations and the median-scaled *Germination*							PRG Development			Regression of natural log transformed soil concentrations and the median-scaled *Height*							PRG Development			Regression of natural log transformed soil concentrations and the median-scaled *Weight*							PRG Development		
		Intercept	Slope	Root Mean Square Error	N	p-value	R^2	Conclusion	Reference Envelope Median *Germination (86%)*	20% reduction vs. Reference Envelope	PRG Soil Conc. equal to 20% effect	Intercept	Slope	Root Mean Square Error	N	p-value	R^2	Conclusion	Reference Envelope Median *Height (68.22 mm)*	20% reduction vs. Reference Envelope	PRG Soil Conc. equal to 20% effect	Intercept	Slope	Root Mean Square Error	N	p-value	R^2	Conclusion	Reference Envelope Median *Weight (1.197 mg)*	20% reduction vs. Reference Envelope	PRG Soil Conc. equal to 20% effect
High	Antimony	0.977	0.00010	0.1317	216	0.11383	0.012	no significant regression	1	0.80	NA	0.885	-0.004	0.2513	355	0.4799	0.001	no significant regression	1	0.80	NA	0.861	-0.019	0.4546	355	0.0729	0.0091	no significant regression	1	0.8	NA
High	Barium	0.976	0.00003	0.1318	216	0.14111	0.010	no significant regression	1	0.80	NA	1.033	-0.031	0.2505	355	0.0991	0.008	no significant regression	1	0.8	NA	1.427	-0.119	0.4487	355	0.0004	0.0345	r2<0.1	1	0.8	191.49
High	Cadmium	0.972	0.006	0.1317	216	0.12518	0.011	no significant regression	1	0.80	NA	0.890	0.012	0.2508	355	0.1554	0.006	no significant regression	1	0.8	NA	0.848	0.003	0.4566	355	0.8509	0.0001	no significant regression	1	0.8	NA
High	Chromium	0.980	0.00008	0.1324	216	0.78242	0.000	no significant regression	1	0.80	NA	0.843	0.015	0.2513	355	0.4979	0.001	no significant regression	1	0.8	NA	0.995	-0.059	0.4553	355	0.1525	0.0058	no significant regression	1	0.8	NA
High	Mercury	0.986	-0.011	0.1306	216	0.01449	0.028	r2<0.1	1	0.80	17.28	0.548	-0.124	0.2188	355	<0.0001	0.243	4th highest	1	0.8	**0.13**	0.433	-0.154	0.4300	355	<0.0001	0.1134	5th highest	1	0.8	0.09
High	Thallium	0.942	0.325	0.1312	216	0.04318	0.019	r2<0.1	1	0.80	NT	0.595	-0.133	0.2488	355	0.0054	0.022	r2<0.1	1	0.8	0.21	0.244	-0.278	0.4500	355	0.0013	0.0289	r2<0.1	1	0.8	0.14
High	Uranium	0.980	0.003	0.1324	216	0.81227	0.000	no significant regression	1	0.80	NA	0.935	0.086	0.2492	355	0.0103	0.019	r2<0.1	1	0.8	0.21	1.009	0.261	0.4445	355	<0.0001	0.0523	r2<0.1	1	0.8	0.45
High	Zinc	0.977	0.000012	0.1317	216	0.12973	0.011	no significant regression	1	0.80	NA	0.990	-0.023	0.2497	355	0.0261	0.014	r2<0.1	1	0.8	3888.10	1.257	-0.087	0.4425	355	<0.0001	0.0609	r2<0.1	1	0.8	187.26
Medium	Boron	0.938	0.0080	0.1319	201	0.00130	0.051	r2<0.1	1	0.80	NT	0.821	0.041	0.2554	335	0.0378	0.013	r2<0.1	1	0.8	NT	0.845	-0.008	0.4611	335	0.8291	0.0001	no significant regression	1	0.8	NA
Medium	Copper	0.971	0.0002	0.1315	216	0.08712	0.014	no significant regression	1	0.80	NA	1.009	-0.036	0.2484	355	0.0029	0.025	r2<0.1	1	0.8	337.32	1.243	-0.112	0.4395	355	<0.0001	0.0735	r2<0.1	1	0.8	51.92
Medium	Lead	0.974	0.000009	0.1315	216	0.09111	0.013	no significant regression	1	0.80	NA	0.795	0.021	0.2447	355	<0.0001	0.053	r2<0.1	1	0.8	1.27	0.743	0.025	0.4515	355	0.0046	0.0225	r2<0.1	1	0.8	9.88
Medium	Manganese	0.917	0.00017	0.1289	216	0.00063	0.053	r2<0.1	1	0.80	NT	0.400	0.082	0.2479	355	0.0014	0.029	r2<0.1	1	0.8	130.82	0.891	-0.008	0.4566	355	0.8703	0.0001	no significant regression	1	0.8	NA
Low	Arsenic	0.925	0.012	0.1282	216	0.00018	0.064	r2<0.1	1	0.80	NT	0.835	0.033	0.2509	355	0.1880	0.005	no significant regression	1	0.8	NA	0.997	-0.108	0.4531	355	0.0191	0.0155	r2<0.1	1	0.8	6.20
Low	Cobalt	0.876	0.013	0.1297	216	0.00268	0.041	r2<0.1	1	0.80	NT	0.688	0.096	0.2473	355	0.0006	0.033	r2<0.1	1	0.8	3.20	0.812	0.017	0.4566	355	0.7418	0.0003	no significant regression	1	0.8	NA
Low	Nickel	0.876	0.009	0.1251	216	<0.0001	0.108	6th highest	1	0.80	NT	0.572	0.128	0.2411	355	<0.0001	0.081	r2<0.1	1	0.8	5.92	0.674	0.071	0.4549	355	0.1011	0.0076	no significant regression	1	0.8	NA
Low	Selenium	1.108	-0.104	0.1286	216	0.00038	0.058	r2<0.1	1	0.80	2.97	0.895	-0.072	0.2508	355	0.1689	0.005	no significant regression	1	0.8	NA	0.861	-0.087	0.4561	355	0.3618	0.0024	no significant regression	1	0.8	NA
Low	Vanadium	1.234	-0.005	0.1081	216	<0.0001	0.334	highest r squared	1	0.80	**90.74**	1.309	-0.109	0.2472	355	0.0005	0.034	r2<0.1	1	0.8	107.34	1.664	-0.208	0.4480	355	0.0002	0.0376	r2<0.1	1	0.8	63.12
Other-chemical	Beryllium	0.845	0.408	0.1280	216	<0.0001	0.066	r2<0.1	1	0.80	NT	1.278	0.351	0.2303	355	<0.0001	0.161	7th highest	1	0.8	0.26	1.334	0.433	0.4394	355	<0.0001	0.0742	r2<0.1	1	0.8	0.29
Other-chemical	Molybdenum	0.981	0.0004	0.1324	216	0.78355	0.000	no significant regression	1	0.80	NA	0.873	-0.027	0.2501	355	0.0485	0.011	r2<0.1	1	0.8	14.27	0.815	-0.095	0.4474	355	0.0001	0.0401	r2<0.1	1	0.8	1.17
Other-chemical	Silver	0.973	0.034	0.1315	216	0.08098	0.014	no significant regression	1	0.80	NA	0.786	-0.050	0.2476	355	0.0010	0.030	r2<0.1	1	0.8	0.76	0.628	-0.114	0.4456	355	<0.0001	0.0476	r2<0.1	1	0.8	0.22
Other-chemical	Tin	0.977	0.00011	0.1317	216	0.13486	0.010	no significant regression	1	0.80	NA	0.882	-0.0002	0.2515	355	0.9777	0.000	no significant regression	1	0.8	NA	0.876	-0.022	0.4543	355	0.0556	0.0103	no significant regression	1	0.8	NA
Other- physical	% Gravel	0.976	0.006	0.1320	216	0.23918	0.006	no significant regression	1	0.80	NA	0.874	-0.004	0.2500	355	0.7264	0.001	no significant regression	1	0.8	NA	0.827	-0.076	0.5014	355	0.0034	0.0472	r2<0.1	1	0.8	1.43
Other- physical	% Sand	1.427	-0.006	0.1210	216	<0.0001	0.165	5th highest	1	0.80	102.11	3.762	-0.674	0.2388	355	<0.0001	0.098	r2<0.1	1	0.8	81.12	2.355	-0.353	0.4548	355	0.0891	0.0082	no significant regression	1	0.8	NA
Other- physical	% Silt/Clay	0.806	0.007	0.1206	216	<0.0001	0.171	4th highest	1	0.80	NT	-0.036	0.286	0.2130	355	<0.0001	0.283	2nd highest	1	0.8	**18.53**	0.052	0.248	0.4418	355	<0.0001	0.0641	r2<0.1	1	0.8	20.48
Other- physical	CEC	0.959	0.002	0.1322	216	0.35260	0.004	no significant regression	1	0.80	NA	0.401	0.187	0.2432	355	<0.0001	0.065	r2<0.1	1	0.8	8.46	-0.359	0.468	0.4274	355	<0.0001	0.1238	4th highest	1	0.8	11.89
Other- physical	TOC	0.974	0.0000005	0.1320	216	0.23800	0.007	no significant regression	1	0.80	NA	0.204	0.077	0.2183	355	<0.0001	0.247	3rd highest	1	0.8	**2365.06**	-0.147	0.112	0.4184	355	<0.0001	0.1606	3rd highest	1	0.8	4566.34
Other- physical	pH	0.386	0.078	0.1083	216	<0.0001	0.331	2nd highest	1	0.80	5.28	-0.656	0.762	0.2238	355	<0.0001	0.208	6th highest	1	0.8	**6.76**	-0.388	0.611	0.4473	355	<0.0001	0.0407	r2<0.1	1	0.8	6.99
Other-cation	Calcium	1.004	-0.000003	0.1320	216	0.22690	0.007	no significant regression	1	0.80	NA	2.445	-0.176	0.2384	355	<0.0001	0.101	8th highest	1	0.8	11609.58	3.305	-0.276	0.4390	355	<0.0001	0.0760	r2<0.1	1	0.8	8604.46
Other-cation	Magnesium	0.883	0.00002	0.1283	216	0.00025	0.061	r2<0.1	1	0.80	NT	-0.004	0.106	0.2466	355	0.0002	0.039	r2<0.1	1	0.8	1976.53	0.656	0.023	0.4565	355	0.6616	0.0005	no significant regression	1	0.8	NA
Other-cation	Potassium	0.832	0.00008	0.1274	216	<0.0001	0.074	r2<0.1	1	0.80	NT	0.672	0.028	0.2513	355	0.4530	0.002	no significant regression	1	0.8	NA	2.291	-0.194	0.4514	355	0.0042	0.0230	r2<0.1	1	0.8	2187.69
Other-nutrient	Nitrogen, Kjeldahl total	0.918	0.00014	0.1280	216	<0.0001	0.066	r2<0.1	1	0.80	NT	-0.178	0.182	0.1971	355	<0.0001	0.386	highest r2	1	0.8	**218.27**	-0.519	0.234	0.4100	355	<0.0001	0.1939	highest r2	1	0.8	281.39
Other-nutrient	Phosphorus	1.206	-0.0002	0.1104	216	<0.0001	0.305	3rd highest	1	0.80	1633.70	2.205	-0.195	0.2447	355	<0.0001	0.053	r2<0.1	1	0.8	1332.17	2.641	-0.265	0.4498	355	0.0011	0.0298	r2<0.1	1	0.8	1041.98
Other-salt	Sodium	1.013	-0.00007	0.1279	216	<0.0001	0.067	r2<0.1	1	0.80	2867.67	2.080	-0.206	0.2202	355	<0.0001	0.233	5th highest	1	0.8	**501.00**	2.729	-0.324	0.4149	355	<0.0001	0.1745	2nd highest	1	0.8	388.09

Table 5-7. Summary of Results of Linear Regression Models for Soil Concentration and Plant Bioassays Measurements

Priority	Analyte	Germination										Height										Weight									
		Regression of untransformed soil concentrations and the median-scaled *Germination*							PRG Development			Regression of natural log transformed soil concentrations and the median-scaled *Height*							PRG Development			Regression of natural log transformed soil concentrations and the median-scaled *Weight*							PRG Development		
		Intercept	Slope	Root Mean Square Error	N	p-value	R^2	Conclusion	Reference Envelope Median *Germination (86%)*	20% reduction vs. Reference Envelope	PRG Soil Conc. equal to 20% effect	Intercept	Slope	Root Mean Square Error	N	p-value	R^2	Conclusion	Reference Envelope Median *Height (68.22 mm)*	20% reduction vs. Reference Envelope	PRG Soil Conc. equal to 20% effect	Intercept	Slope	Root Mean Square Error	N	p-value	R^2	Conclusion	Reference Envelope Median *Weight (1.197 mg)*	20% reduction vs. Reference Envelope	PRG Soil Conc. equal to 20% effect

Notes:

Regression Model: (*Scaled Percent Germination*) = slope * soil + intercept
Scaled percent germination = Percent germination scaled relative to the median percent germination for the reference envelope samples
Reference Envelope Median *Germination* = median of *percent germination* reported for all replicates for samples included within the reference envelope
20% Reduction versus Reference Envelope = 20% reduction from the median *percent germination* of replicates within reference envelope
PRG = (20% reduction vs. median *Percent Germination* from reference envelope - intercept) / slope
p-value < 0.05 is significant
R^2 value less than 0.2 not considered sufficient

Acronyms:

NA = P-value was > 0.05 indicating relationship between chemistry and median measure (germination, height, weight) is not significant and therefore PRG was not developed
NT = dose response relationships indicates increasing measures relative to reference envelope (germination, height, weight) and thus is not indicative of toxicity

Notes:

Regression Model: (scaled *Height*) = slope * ln(soil) + intercept
Scaled Height = height scaled relative to the median height for the reference envelope samples
Reference Envelope *Height* = median of *Height* reported for all replicates for samples included within the reference envelope
20% Reduction versus Reference Envelope = 20% reduction from the median *Height* of replicates within reference envelope
PRG = $e^{((\text{natural log of 20\% reduction vs. median}\textit{Height}\text{ from reference envelope - intercept}) / \text{slope})}$
p-value < 0.05 is significant
R^2 value less than 0.2 not considered sufficient

Notes:

Regression Model: (*Scaled Weight*) = slope * ln(soil) + intercept
Scaled Weight = weight scaled relative to the median weight for the reference envelope samples
Reference Envelope *Weight* = median of *Weight* reported for all replicates for samples included within the reference envelope
20% Reduction versus Reference Envelope = 20% reduction from the median *Weight* of replicates within reference envelope
PRG = $e^{((\text{natural log of 20\% reduction vs. median}\textit{Weight}\text{ from reference envelope - intercept}) / \text{slope})}$
p-value < 0.05 is significant
R^2 value less than 0.2 not considered sufficient

Table 5-8. Summary of Site-Specific Plant Toxicity Thresholds for the Hanford Site

		Existing Ecological Risk-Based Values for Plants							Results and Conclusions from Current Study					Integrated Recommendations		
Priority	**Analyte**	**WAC (mg/kg)**	**ORNL (mg/kg)**	**EPA's EcoSSL (mg/kg)**	**Hanford-specific Plant Bioassay NOEC from RCBRA (mg/kg)**	**Background (mg/kg)**	**PRG Recommended in RCBRA (mg/kg)**	**Confidence Level of RCBRA Plant PRG**	**NOEC from Current Study (mg/kg)**	**NOEC Basis Current Study**	**Value Removed (mg/kg)**	**Conclusion from Current Study**	**Confidence Level of NOEC from Current Study**	**Final Recommended NOEC (mg/kg) - all sources**	**Basis for Final Recommended NOEC - all sources**	**Confidence Level of Final NOEC - all sources**
High	Antimony	5	5	NA	0.685	0.13	5	low	842	Max Detect	NA	Non-toxic: 1) no distinct difference in concentrations associated with toxic samples (significant difference in biological measures from reference envelope) versus non toxic samples (no significant difference in biological measures from reference envelope) 2) 20 samples within target range 3) data set represents broad range of concentrations	high: confident in non-toxic conclusion and high range represented	842	Current Study	high
High	Barium	500	500	NA	314	132	500	low	NA	NA	NA	1) concentration in toxic samples significantly greater than non toxic samples; 2) correlation between chemistry and one or more measured endpoints (percent survival, number of juveniles); 3) significant regression with soil concentration (p<= 0.05) and percent survival but poor goodness of fit (R2 < 0.1) 4) 22 samples within target range 5) data set represents broad range of concentrations 6) Only six samples above previously established NOEC from RCBRA and highest two concentrations were not designated as toxic	Not applicable since no threshold was established in this study.	500	ORNL-value (ES/ER/TM-85/R3)	low
High	Cadmium	4	4	32	2.7	0.563	4	high	9.84	Max Detect	NA	Non-toxic: 1) no distinct difference in concentrations associated with toxic samples (significant difference in biological measures from reference envelope) versus non toxic samples (no significant difference in biological measures from reference envelope) 2) 28 samples within target range 3) data set does not represent highest target range; range not broad	high: confident in non-toxic conclusion but NOEC could be higher	9.84	Current Study	high
High	Chromium	42	1	NA	39.3	18.5	42	low	259	Max Detect	NA	Non-toxic: 1) no distinct difference in concentrations associated with toxic samples (significant difference in biological measures from reference envelope) versus non toxic samples (no significant difference in biological measures from reference envelope) 2) 10 samples within target range 3) data set does not represent medium or high target ranges; range not broad	high: confident in non-toxic conclusion but NOEC could be higher	259	Current Study	high
High	Mercury	0.3	0.3	NA	0.126	0.013	0.3	low	NA	NA	NA	1) concentration in toxic samples significantly greater than non toxic samples; 2) correlation between chemistry and one or more measured endpoints (growth, height, weight); 3) significant regression with soil concentration and all measures but poor goodness of fit (R2 < 0.1) for germination and resulting PRGs for height and weight are below background 4) only 4 samples within target ranges; range not broad	Not applicable since no threshold was established in this study.	0.3	ORNL-value (ES/ER/TM-85/R3)	low
High	Thallium	1	1	NA	NA	0.185	NV	NA	0.352	2nd Highest Detect	0.459	Non-toxic up to level of 0.352 mg/kg: 1) no distinct difference in concentrations associated with toxic samples (significant difference in biological measures from reference envelope) versus non toxic samples (no significant difference in biological measures from reference envelope) 2) all samples below target range; range not broad	high: range of samples insufficient	1	ORNL-value (ES/ER/TM-85/R3)	low
High	Uranium	5	5	NA	8.1	3.21	250	moderate	1.37	Max Detect	NA	Non-toxic : 1) no distinct difference in concentrations associated with toxic samples (significant difference in biological measures from reference envelope) versus non toxic samples (no significant difference in biological measures from reference envelope) 2) all samples below target range; range not broad	high: range of samples insufficient	250	Sheppard et al., 2005	moderate
High	Zinc	86	50	160	621	67.8	621	moderate-high	NA	NA	NA	1) concentration in toxic samples significantly greater than non toxic samples; 2) correlation between chemistry and one or more measured endpoints (growth, height, weight); 3) significant regression with soil concentration and height and weight but poor goodness of fit (R2 < 0.1) 4) 38 samples within target range 5) data set represents broad range of concentrations	Not applicable since no threshold was established in this study.	621	RCBRA, site-specific NOEC	moderate-high
Medium	Boron	0.5	0.5	NA	29.6	3.89	29.6	moderate-high	15.5	Max Detect	NA	Non-toxic: 1) concentration in toxic samples significantly less than non toxic samples and reverse correlation for germination; 2) no distinct difference in concentrations associated with toxic samples (significant difference in biological measures from reference envelope) versus non toxic samples (no significant difference in biological measures from reference envelope) for height and weight. 3) data set represents moderate range of concentrations	high: confident in non-toxic conclusion but only medium range represented	29.6	RCBRA, site-specific NOEC	moderate-high

Table 5-8. Summary of Site-Specific Plant Toxicity Thresholds for the Hanford Site

		Existing Ecological Risk-Based Values for Plants							Results and Conclusions from Current Study					Integrated Recommendations		
Priority	**Analyte**	**WAC (mg/kg)**	**ORNL (mg/kg)**	**EPA's EcoSSL (mg/kg)**	**Hanford-specific Plant Bioassay NOEC from RCBRA (mg/kg)**	**Background (mg/kg)**	**PRG Recommended in RCBRA (mg/kg)**	**Confidence Level of RCBRA Plant PRG**	**NOEC from Current Study (mg/kg)**	**NOEC Basis Current Study**	**Value Removed (mg/kg)**	**Conclusion from Current Study**	**Confidence Level of NOEC from Current Study**	**Final Recommended NOEC (mg/kg) - all sources**	**Basis for Final Recommended NOEC - all sources**	**Confidence Level of Final NOEC - all sources**
Medium	Copper	100	100	70	53.6	22	70	moderate-high	NA	NA	NA	1) concentration in toxic samples significantly greater than non toxic samples; 2) correlation between chemistry and one or more measured endpoints (growth, height, weight); 3) significant regression with soil concentration and height and weight but poor goodness of fit (R2 < 0.1) 4) 43 samples within target range 5) data set represents broad range of concentrations	Not applicable since no threshold was established in this study.	70	EcoSSL (OSWER Directive 9285.7-68)	moderate-high
Medium	Lead	50	50	120	125	10.2	125	moderate-high	9090	Max Detect	NA	Non-toxic: 1) no distinct difference in concentrations associated with toxic samples (significant difference in biological measures from reference envelope) versus non toxic samples (no significant difference in biological measures from reference envelope) 2) 46 samples within target range 3) data set represents broad range of concentrations	high: confident in non-toxic conclusion and high range represented	9090	Current Study	high
Medium	Manganese	1100	500	220	558	512	558	moderate	1260	Max Detect	NA	Non-toxic: 1) no distinct difference in concentrations associated with toxic samples (significant difference in biological measures from reference envelope) versus non toxic samples (no significant difference in biological measures from reference envelope) 2) 9 samples within target range 3) data set represents broad range of concentrations	high: confident in non-toxic conclusion and high range represented	1260	Current Study	high
Low	Arsenic	10	10	18	19.3	6.47	19.3	moderate-high	14.8	2nd Highest Detect	16.4	Non-toxic up to 14.8 mg/kg: 1) no distinct difference in concentrations associated with toxic samples (significant difference in biological measures from reference envelope) versus non toxic samples (no significant difference in biological measures from reference envelope) 2) 12 samples within target range 3) data set does not represent medium or high target ranges; range not broad	high: confident in non-toxic conclusion and effects were observed within sampled range	128	Ecology Publication No. 11-03-006	high
Low	Cobalt	20	20	13	11.2	15.7	13	moderate-high	12.4	Max Detect	NA	Non-toxic: 1) no distinct difference in concentrations associated with toxic samples (significant difference in biological measures from reference envelope) versus non toxic samples (no significant difference in biological measures from reference envelope) 2) 60 samples within target range 3) data set does not represent medium or high target ranges; range not broad	high: confident in non-toxic conclusion but NOEC could be higher	15.7	Background (DOE/RL-92-24)	low
Low	Nickel	30	30	38	24.8	19.1	38	moderate-high	27.4	Max Detect	NA	Non-toxic: 1) no distinct difference in concentrations associated with toxic samples (significant difference in biological measures from reference envelope) versus non toxic samples (no significant difference in biological measures from reference envelope) 2) 10 samples within target range 3) data set does not represent medium or high target ranges; range not broad	high: confident in non-toxic conclusion but NOEC could be higher	38	EcoSSL (OSWER Directive 9285.7-76)	moderate-high
Low	Selenium	1	1	0.52	1.2	0.78	1.2	low	2.02	Max Detect	NA	Non-toxic: 1) no distinct difference in concentrations associated with toxic samples (significant difference in biological measures from reference envelope) versus non toxic samples (no significant difference in biological measures from reference envelope) 2) 59 samples within target range 3) data set does not represent medium or high target ranges; range not broad	high: confident in non-toxic conclusion but NOEC could be higher	2.02	Current Study	high
Low	Vanadium	2	2	NA	84.7	85.1	84.7	low	89.4	3rd Highest Detect	127	Non-toxic up to 89.4 mg/kg: 1) no distinct difference in concentrations associated with toxic samples (significant difference in biological measures from reference envelope) versus non toxic samples (no significant difference in biological measures from reference envelope) 2) 5 samples within target range 3) data set does not represent target ranges; range not broad	high: range of data is poor but effects were observed within sampled range	89.4	Current Study	high

Table 5-8. Summary of Site-Specific Plant Toxicity Thresholds for the Hanford Site

		Existing Ecological Risk-Based Values for Plants							Results and Conclusions from Current Study					Integrated Recommendations		
Priority	**Analyte**	**WAC (mg/kg)**	**ORNL (mg/kg)**	**EPA's EcoSSL (mg/kg)**	**Hanford-specific Plant Bioassay NOEC from RCBRA (mg/kg)**	**Background (mg/kg)**	**PRG Recommended in RCBRA (mg/kg)**	**Confidence Level of RCBRA Plant PRG**	**NOEC from Current Study (mg/kg)**	**NOEC Basis Current Study**	**Value Removed (mg/kg)**	**Conclusion from Current Study**	**Confidence Level of NOEC from Current Study**	**Final Recommended NOEC (mg/kg) - all sources**	**Basis for Final Recommended NOEC - all sources**	**Confidence Level of Final NOEC - all sources**
Other-chemical	Beryllium	10	10	NA	NA	1.51	NV	NA	0.565	Max Detect	NA	Not Toxic: 1) no distinct difference in concentrations associated with toxic samples (significant difference in biological measures from reference envelope) versus non toxic samples (no significant difference in biological measures from reference envelope) 2) not a priority analyte so target ranges not established 3) range not broad 4) First Wilcoxon Rank Sum test indicated V concentrations significantly greater in toxic as compared to non-toxic samples. Difference not significant after exclusion of sample with maximum V concentration (116 mg/kg). Because 2nd highest V concentration (115 mg/kg) was virtually identical to the maximum concentration, it was also excluded. The third highest concentration (89.4 mg/kg) was therefore identified as the NOEC. Note that this value is consistent with the EC20 calculated for germination (90.7 mg/kg; Table 5-7)	high: confident in non-toxic conclusion but NOEC could be higher	10	ORNL-value (ES/ER/TM-85/R3)	low
Other-chemical	Molybdenum	2	2	NA	1.2	0.47	2	low	NA	NA	NA	1) concentration in toxic samples significantly greater than non toxic samples; 2) correlation between chemistry and one or more measured endpoints (growth, height, weight); 3) significant regression with soil concentration and height and weight but poor goodness of fit (R2 < 0.1) 4) not a priority analyte so target ranges not established 5) range is broad	Not applicable since no threshold was established in this study.	2	ORNL-value (ES/ER/TM-85/R3)	low
Other-chemical	Silver	2	2	560	0.12	0.167	560	moderate-high	NA	NA	NA	1) concentration in toxic samples significantly greater than non toxic samples; 2) correlation between chemistry and height; 3) significant regression with soil concentration and height and weight but poor goodness of fit (R2 < 0.1) 4) not a priority analyte so target ranges not established 5) range not broad	Not applicable since no threshold was established in this study.	560	EcoSSL (OSWER Directive 9285.7-77)	moderate-high
Other-chemical	Tin	50	50	NA	14.2	NA	50	low	838	Max Detect	NA	Non-toxic: 1) no distinct difference in concentrations associated with toxic samples (significant difference in biological measures from reference envelope) versus non toxic samples (no significant difference in biological measures from reference envelope) 2) not a priority analyte so target ranges not established 3) range not broad	high: confident in non-toxic conclusion; NOEC could be higher	838	Current Study	high
Other - physical	CEC						NV		31.57	Highest	NA	Non-toxic		31.57	Current Study	
Other - cation	Calcium						NV		21400	Highest	NA	concentration in toxic samples significantly greater than non toxic samples; correlation between chemistry and one or more measured endpoints (growth, height, weight)			Current Study	
Other - cation	Magnesium						NV				NA	Potentially limiting Germination			Current Study	
Other - cation	Potassium						NV				NA	Potentially limiting Germination			Current Study	
Other - nutrient	Nitrogen, Kjeldahl total						NV					Potentially limiting Growth			Current Study	
Other - nutrient	Phosphorus						NV		2230	Max Detect	NA	Non-toxic		2230	Current Study	
Other - salt	Sodium						NV		3160	Highest	NA	concentration in toxic samples significantly greater than non toxic samples; correlation between chemistry and one or more measured endpoints (growth, height, weight)			Current Study	

Acronyms:

EcoSSL = Ecological Soil Screening Level
ORNL = Oak Ridge National Laboratories
NA - not applicable or not available
NOEC = no observed effect concentration
NV = no value
PRG = preliminary remediation goal
RCBRA = River Corridor Baseline Risk Assessment (DOE/RL-2007-21)

Table 5-9. Summary statistics of invertebrate bioassay responses, and the derivation and application of reference envelopes for adult survival and reproduction.

Batch	ASL Sample ID	Client Sample ID (HEIS ID for ASL)	Sample Location	Average %Adult Survival	Average No. of Juveniles	Designation - Survival	Designation - # Juveniles
1	Batch Control 1	NA	NA	92.0%	291.4	Similar	Similar
1	B252323	B2BVT0	Control 4	88.0%	170.4	Similar	Similar
1	B252331	B2BVT8	Control 8	78.0%	162.2	Similar	Similar
1	B252206	B2C166	Target 8-3	80.0%	192.2	Similar	Similar
1	B252226	B2BYK2	Target 12-1	82.0%	291.4	Similar	Similar
1	B252228	B2BYK4	Target 12-2	88.0%	156.6	Similar	Similar
1	B252229	B2BYL6	Target 13-2	70.0%	120.4	Different	Different
1	B252231	B2BYM4	Target 14-1	88.0%	180.2	Similar	Similar
1	B252234	B2BYM8	Target 14-3	76.0%	168.4	Similar	Similar
1	B252236	B2BYN0	Target 14-4	88.0%	242.4	Similar	Similar
1	B252238	B2BYK8	Target 12-4	72.0%	130.4	Similar	Similar
1	B252239	B2BYL0	Target 12-4D	70.0%	133.6	Different	Similar
1	B252241	B2BYL8	Target 13-3	74.0%	106.8	Similar	Different
1	B252243	B2BYR0	Target 16-3	72.0%	98.2	Similar	Different
1	B252246	B2BYR6	Target 17-1	68.0%	93.2	Different	Different
1	B252248	B2BYR8	Target 17-2	66.0%	165.2	Different	Similar
1	B252250	B2BYT6	Target 18-1	76.0%	164.2	Similar	Similar
1	B252252	B2BYT8	Target 18-2	68.0%	142.8	Different	Similar
1	B252254	B2BYV0	Target 18-3	72.0%	102.6	Similar	Different
1	B252257	B2BXV2	Target 24-1	74.0%	43.6	Similar	Different
1	B252261	B2BXV6	Target 24-2	90.0%	101	Similar	Different
2	Batch Control 2	NA	NA	94.0%	134.8	Similar	Similar
2	B252335	B2BVV2	Control 9D	88.0%	161.8	Similar	Similar
2	B252343	B2BVW0	Control 13	70.0%	154.6	Different	Similar
2	B252263	B2BXV8	Target 24-3	80.0%	127.6	Similar	Different
2	B252266	B2BXW2	Target 24-5	88.0%	155.8	Similar	Similar
2	B252268	B2C150	Target 7-1	68.0%	326.8	Different	Similar
2	B252303	B2BPC3	Target 6-5	86.0%	140.8	Similar	Similar
2	B252377	B2BYY8	Target 22-1	68.0%	116.8	Different	Different
2	B252379	B2C000	Target 22-2	84.0%	175.8	Similar	Similar
2	B252381	B2C002	Target 22-3	54.0%	121.6	Different	Different
2	B252383	B2C004	Target 22-4	58.0%	75.8	Different	Different
2	B252385	B2C006	Target 22-4D	68.0%	110.4	Different	Different
2	B252387	B2C008	Target 22-5	76.0%	143.2	Similar	Similar
2	B252389	B2C010	Target 23-1	84.0%	132.4	Similar	Similar
2	B252391	B2C012	Target 23-2	86.0%	146	Similar	Similar
2	B252393	B2C014	Target 23-3	76.0%	151	Similar	Similar
2	B252402	B2BYW4	Target 19-4	84.0%	99	Similar	Different
2	B252404	B2BYX8	Target 21-1	84.0%	177	Similar	Similar
2	B252405	B2BYY0	Target 21-2	86.0%	121.2	Similar	Different
2	B252408	B2BYY2	Target 21-3	90.0%	157	Similar	Similar
2	B252410	B2BYY4	Target 21-4	86.0%	135.6	Similar	Similar
2	B252412	B2BYY6	Target 21-5	96.0%	113	Similar	Different
2	B252414	B2BYP8	Target 16-2	70.0%	117.8	Different	Different
2	B252416	B2BYR2	Target 16-4	74.0%	140.2	Similar	Similar

Table 5-9. Summary statistics of invertebrate bioassay responses, and the derivation and application of reference envelopes for adult survival and reproduction.

Batch	ASL Sample ID	Client Sample ID (HEIS ID for ASL)	Sample Location	Average %Adult Survival	Average No. of Juveniles	Designation - Survival	Designation - # Juveniles
3	Batch Control 3	NA	NA	86.0%	98	Similar	Different
3	B252347	B2BVW4	Control 15	92.0%	124.6	Similar	Different
3	B252349	B2BVW6	Control 16	74.0%	134.6	Similar	Similar
3	B252351	B2BVW8	Control 17	70.0%	62.2	Different	Different
3	B252353	B2BVX0	Control 18	80.0%	148.6	Similar	Similar
3	B252357	B2BVX4	Control 20	92.4%	135.2	Similar	Similar
3	B252418	B2BYR4	Target 16-5	84.0%	186.2	Similar	Similar
3	B252420	B2BYT2	Target 17-4	70.0%	110.2	Different	Different
3	B252422	B2BYT4	Target 17-5	88.0%	211.2	Similar	Similar
3	B252423	B2BYV2	Target 18-3D	50.0%	203	Different	Similar
3	B252425	B2BYV4	Target 18-4	84.0%	103.8	Similar	Different
3	B252427	B2BYV6	Target 18-5	40.0%	59.2	Different	Different
3	B252429	B2BYX4	Target 20-4	72.0%	186	Similar	Similar
3	B252444	B2BYT0	Target 17-3	92.0%	161.8	Similar	Similar
3	B252448	B2BYP6	Target 16-1	100.0%	273.8	Similar	Similar
3	B252449	B2BYW8	Target 20-1	80.0%	136	Similar	Similar
3	B252451	B2BYX0	Target 20-2	74.0%	108	Similar	Different
3	B252453	B2BYX2	Target 20-3	88.0%	170.4	Similar	Similar
3	B252463	B2BYJ2	Target 11-1	72.0%	96.2	Similar	Different
3	B252468	B2BYK6	Target 12-3	78.0%	91	Similar	Different
3	B252470	B2BYL2	Target 12-5	72.0%	125.2	Similar	Different
3	B252471	B2BYL4	Target 13-1	72.0%	107.4	Similar	Different
3	B252473	B2BYM0	Target 13-4	82.0%	93.6	Similar	Different
4	Batch Control 4	NA	NA	78.0%	98.6	Similar	Different
4	B252459	B2BVR5	Control 2	90.0%	183	Similar	Similar
4	B252462	B2BVR4	Control 1	88.0%	177.8	Similar	Similar
4	B252477	B2BYM6	Target 14-2	94.0%	160.6	Similar	Similar
4	B252480	B2BYN2	Target 14-5	72.0%	132.8	Similar	Similar
4	B252475	B2BYM2	Target 13-5	62.0%	113	Different	Different

Summary Stats for Reference Envelope			With Original Data
	max	94%	291
	median	88%	158.20
	min	70%	124.6
	5th percentile	71.8%	129

Notes:

1. Reference Envelope established by identifying samples with chemical concentrations below background and meeting test acceptability criteria.

2. Test Acceptability Criteria = 70 percent survival of adults in control soil and 80 percent in artificial soil, and average reproduction of ≥ 100 juveniles for springtails in control soil

3. Field Controls 2 and 18 were rejected from the reference envelope for both measurements due to detected concentrations of one or more analytes above background

4. Reference Envelope Samples for Original Data included: Batch Control 1, Batch Control 2, Control 4, Control 8, Control 9D, Control 13, Control 1, Control 15, Control 16, Control 20

Table 5-10. Summary statistics, results of Wilcoxon's Rank Sum test comparisons of analyte concentrations in soils identified as "Different" or "Similar" based on reference envelopes, and nonparametric Spearman's Rank Correlations between soil invertebrate bioassay responses and analyte concentrations in bioassay soils

Analyte		Percent Survival of Adults at 28 days													Number of Juveniles at 28 days												
		Summary Statistics by Reference Envelope Designation								2-tailed Wilcoxon Rank Sum Tests		Spearman Correlation Analysis			Summary Statistics by Reference Envelope Designation								2-tailed Wilcoxon Rank Sum Tests		Spearman Correlation Analysis		
Priority	Analyte	Designation relative to Reference Envelope[a]	Number of Detects	Number of Samples	Mean	Standard Deviation	Minimum	Median	Maximum	p-value from 2-tailed Wilcoxon Rank Sum Tests[b]	Conclusion	Spearman Correlation Coefficient	p-value	Conclusion	Designation relative to Reference Envelope[a]	Number of Detects	Number of Samples	Mean	Standard Deviation	Minimum	Median	Maximum	p-value from 2-tailed Wilcoxon Rank Sum Tests[b]	Conclusion	Spearman Correlation Coefficient	p-value	Conclusion
High	Antimony	"Similar"	31	57	45.56	158.76	0.29	0.52	842	0.074	NS	-0.159	0.002	significant	"Similar"	26	44	51.19	176.00	0.29	0.977	842	0.8512	NS	0.100	0.055	NS
		"Different"	14	17	28.51	73.59	0.31	2.77	293						"Different"	19	30	27.65	74.28	0.3	0.6155	293					
High	Barium	"Similar"	57	57	207.12	591.34	56.8	93.7	4520	0.004	"Different" significantly greater	-0.233	<0.0001	significant	"Similar"	44	44	238.52	670.14	57.6	101.15	4520	0.7453	NS	0.030	0.559	NS
		"Different"	17	17	207.32	143.89	80.7	131	566						"Different"	30	30	161.19	130.81	56.8	106	566					
High	Cadmium	"Similar"	37	57	1.36	2.00	0.096	0.166	8.64	0.402	NS	-0.137	0.008	significant	"Similar"	29	44	1.61	2.42	0.096	0.3245	9.85	0.8555	NS	0.067	0.198	NS
		"Different"	13	17	2.14	3.18	0.1	0.647	9.85						"Different"	21	30	1.45	2.20	0.1	0.27	8.19					
High	Chromium	"Similar"	57	57	12.65	7.35	2.82	10.4	44.8	0.046	"Different" significantly greater	-0.208	<0.0001	significant	"Similar"	44	44	12.82	5.45	3.26	11	31	0.9956	NS	0.060	0.248	NS
		"Different"	17	17	28.99	59.59	8.69	13.3	259						"Different"	30	30	21.66	45.74	2.82	11.1	259					
High	Mercury	"Similar"	12	57	0.52	2.30	0.048	0.053	12.5	0.954	NS	0.009	0.850	NS	"Similar"	8	44	0.05	0.01	0.048	0.053	0.0804	0.666	NS	-0.062	0.232	NS
		"Different"	3	17	0.06	0.03	0.048	0.053	0.172						"Different"	7	30	0.94	3.13	0.048	0.053	12.5					
High	Thallium	"Similar"	12	57	0.12	0.06	0.096	0.11	0.459	0.363	NS	-0.068	0.194	NS	"Similar"	8	44	0.12	0.07	0.096	0.11	0.459	0.4663	NS	0.004	0.934	NS
		"Different"	3	17	0.12	0.03	0.096	0.11	0.241						"Different"	7	30	0.12	0.04	0.096	0.11	0.263					
High	Uranium	"Similar"	57	57	0.83	1.10	0.219	0.506	4.76	0.944	NS	-0.056	0.286	NS	"Similar"	44	44	0.75	0.91	0.331	0.5115	4.76	0.9298	NS	-0.040	0.442	NS
		"Different"	17	17	0.57	0.18	0.335	0.474	0.955						"Different"	30	30	0.81	1.08	0.219	0.483	4.76					
High	Zinc	"Similar"	57	57	358.29	1242.03	4.08	56.3	8980	0.017	"Similar" significantly greater	-0.221	<0.0001	significant	"Similar"	44	44	408.72	1387.09	4.08	69.4	8980	0.8905	NS	0.077	0.138	NS
		"Different"	17	17	308.66	405.10	40.1	148	1680						"Different"	30	30	256.21	451.00	4.08	68.15	1890					
Medium	Boron	"Similar"	50	50	4.68	3.54	0.93	3.82	12.9	0.048	"Different" significantly greater	-0.216	<0.0001	significant	"Similar"	39	39	5.31	3.88	0.93	4.26	14.2	0.5417	NS	0.064	0.245	NS
		"Different"	17	17	6.34	4.32	2.3	4.42	15.5						"Different"	28	28	4.81	3.70	0.94	3.77	15.5					
Medium	Copper	"Similar"	57	57	51.95	93.35	1.4	22.2	596	0.008	"Different" significantly greater	-0.250	<0.0001	significant	"Similar"	44	44	54.75	68.08	1.4	28.3	280	0.9649	NS	0.037	0.483	NS
		"Different"	17	17	102.76	91.89	12.2	63.5	289						"Different"	30	30	76.64	124.45	1.4	24.2	596					
Medium	Lead	"Similar"	53	57	582.89	1172.26	0.1	24.1	4220	0.012	"Different" significantly greater	-0.174	0.001	significant	"Similar"	42	44	639.55	1244.67	0.1	59.45	4220	0.5857	NS	0.068	0.192	NS
		"Different"	16	17	1411.70	2738.18	6.19	340	9090						"Different"	27	30	969.45	2176.32	0.11	42.9	9090					
Medium	Manganese	"Similar"	57	57	364.07	178.94	24.3	345	1020	0.232	NS	-0.091	0.079	NS	"Similar"	44	44	381.70	153.61	24.3	354	1020	0.6636	NS	0.038	0.471	NS
		"Different"	17	17	428.53	223.23	288	373	1260						"Different"	30	30	374.75	237.04	24.3	350.5	1260					
Low	Arsenic	"Similar"	53	57	4.28	2.91	0.5	3.76	16.4	0.045	"Different" significantly greater	-0.204	<0.0001	significant	"Similar"	42	44	4.59	2.98	0.5	3.855	16.4	0.83	NS	0.032	0.545	NS
		"Different"	17	17	5.02	2.06	2.84	4.31	11.4						"Different"	28	30	4.24	2.38	0.5	4.02	11.4					
Low	Cobalt	"Similar"	57	57	7.53	2.63	0.272	7.8	12.4	0.496	NS	-0.143	0.006	significant	"Similar"	44	44	7.93	2.11	0.272	7.715	12.4	0.9956	NS	0.018	0.727	NS
		"Different"	17	17	8.12	0.74	7.02	7.95	9.5						"Different"	30	30	7.28	2.63	0.272	7.98	11.1					
Low	Nickel	"Similar"	57	57	11.42	5.62	1.09	10.6	27.4	0.028	"Different" significantly greater	-0.244	<0.0001	significant	"Similar"	44	44	12.22	5.01	1.09	10.9	27.4	0.9956	NS	0.028	0.588	NS
		"Different"	17	17	14.14	3.76	9.34	13.5	21						"Different"	30	30	11.79	5.88	1.09	11.2	22.5					
Low	Selenium	"Similar"	57	57	1.19	0.35	0.455	1.25	1.98	0.867	NS	-0.064	0.222	NS	"Similar"	44	44	1.17	0.34	0.455	1.24	2.02	0.327	NS	-0.102	0.050	Significant
		"Different"	17	17	1.23	0.26	0.853	1.18	2.02						"Different"	30	30	1.23	0.32	0.455	1.24	1.89					
Low	Vanadium	"Similar"	57	57	52.48	20.12	2.27	51.8	116	0.028	"Similar" significantly greater	0.030	0.565	NS	"Similar"	44	44	50.61	16.12	2.27	49.7	115	0.5159	NS	-0.053	0.311	NS
		"Different"	17	17	47.66	4.23	38.4	47.8	55.4						"Different"	30	30	52.48	20.37	2.27	51.1	116					
Other - chemical	Beryllium	"Similar"	55	57	0.33	0.09	0.1	0.338	0.538	0.546	NS	-0.119	0.022	significant	"Similar"	44	44	0.34	0.08	0.178	0.3355	0.538	0.6048	NS	0.041	0.429	NS
		"Different"	17	17	0.33	0.08	0.242	0.293	0.565						"Different"	28	30	0.32	0.10	0.1	0.3225	0.565					
Other - chemical	Molybdenum	"Similar"	57	57	1.28	3.76	0.208	0.51	28	0.033	"Different" significantly greater	-0.246	<0.0001	significant	"Similar"	44	44	0.95	1.24	0.208	0.523	5.91	0.5266	NS	-0.019	0.721	NS
		"Different"	17	17	3.70	11.00	0.336	0.727	46.3						"Different"	30	30	3.15	9.56	0.208	0.5465	46.3					
Other - chemical	Silver	"Similar"	15	57	0.27	0.52	0.01	0.11	2.99	0.728	NS	0.019	0.716	NS	"Similar"	13	44	0.29	0.53	0.096	0.11	2.99	0.3983	NS	0.112	0.032	reverse
		"Different"	7	17	0.21	0.22	0.0816	0.11	0.967						"Different"	9	30	0.22	0.35	0.01	0.1	1.84					
Other - chemical	Tin	"Similar"	57	57	35.17	129.88	0.165	1.53	838	0.028	"Similar" significantly greater	-0.225	<0.0001	significant	"Similar"	44	44	44.41	146.93	0.165	2.3785	838	0.737	NS	0.046	0.374	NS
		"Different"	17	17	34.03	54.05	0.364	9.04	195						"Different"	30	30	20.96	42.88	0.165	2.42	195					

Table 5-10. Summary statistics, results of Wilcoxon's Rank Sum test comparisons of analyte concentrations in soils identified as "Different" or "Similar" based on reference envelopes, and nonparametric Spearman's Rank Correlations between soil invertebrate bioassay responses and analyte concentrations in bioassay soils

Analyte		Percent Survival of Adults at 28 days													Number of Juveniles at 28 days												
		Summary Statistics by Reference Envelope Designation								2-tailed Wilcoxon Rank Sum Tests		Spearman Correlation Analysis			Summary Statistics by Reference Envelope Designation								2-tailed Wilcoxon Rank Sum Tests		Spearman Correlation Analysis		
Priority	Analyte	Designation relative to Reference Envelope[a]	Number of Detects	Number of Samples	Mean	Standard Deviation	Minimum	Median	Maximum	p-value from 2-tailed Wilcoxon Rank Sum Tests[b]	Conclusion	Spearman Correlation Coefficient	p-value	Conclusion	Designation relative to Reference Envelope[a]	Number of Detects	Number of Samples	Mean	Standard Deviation	Minimum	Median	Maximum	p-value from 2-tailed Wilcoxon Rank Sum Tests[b]	Conclusion	Spearman Correlation Coefficient	p-value	Conclusion
Other - physical	% Gravel	"Similar"	57	57	0.83	1.63	0	0	6.6	0.391	NS	0.010	0.842	NS	"Similar"	44	44	1.20	1.96	0	0.1	6.6	0.1865	NS	0.079	0.128	NS
		"Different"	17	17	1.54	2.32	0	0.1	6.3						"Different"	30	30	0.69	1.56	0	0	6.3					
Other - physical	% Sand	"Similar"	57	57	74.66	9.07	58.7	74.2	97	0.003	"Similar" significantly greater	0.135	0.009	reverse	"Similar"	44	44	73.10	9.19	54.7	71.65	97	0.7246	NS	0.039	0.456	NS
		"Different"	17	17	67.01	5.47	54.7	67.6	75.5						"Different"	30	30	72.60	8.75	58.6	70.45	96.5					
Other - physical	% Silt/Clay	"Similar"	57	57	24.51	8.62	3	25	39.3	0.002	"Different" significantly greater	-0.144	0.006	significant	"Similar"	44	44	25.70	8.57	3	26.05	39.7	0.4948	NS	-0.057	0.273	NS
		"Different"	17	17	31.45	4.96	21.4	32.4	39.7						"Different"	30	30	26.71	8.32	3.4	29.4	37.9					
Other - physical	CEC	"Similar"	57	57	14.68	5.78	5.28	12.68	31.57	0.504	NS	-0.049	0.343	NS	"Similar"	44	44	14.30	6.27	5.28	12.76	31.57	0.4089	NS	-0.025	0.636	NS
		"Different"	17	17	12.84	3.23	8.55	12.42	21.89						"Different"	30	30	14.19	3.68	9.54	12.54	21.89					
Other - physical	TOC	"Similar"	57	57	19233.26	24681.73	58.4	8020	99400	0.8471	NS	-0.092	0.077	NS	"Similar"	44	44	19911.23	26219.76	87.3	7515	99400	0.9429	NS	0.036	0.487	NS
		"Different"	17	17	14378.82	17178.82	2210	8500	68500						"Different"	30	30	15488.06	17844.59	58.4	8985	68500					
Other - physical	pH	"Similar"	57	57	7.48	1.05	4.13	7.93	8.74	0.131	NS	-0.037	0.480	NS	"Similar"	44	44	7.65	0.89	4.21	7.975	8.74	0.7287	NS	-0.009	0.867	NS
		"Different"	17	17	7.95	0.48	6.65	8.06	8.55						"Different"	30	30	7.50	1.08	4.13	7.94	8.55					
Other - cation	Calcium	"Similar"	57	57	7711.05	4162.81	3020	6930	21400	0.1429	NS	-0.088	0.092	NS	"Similar"	44	44	7234.32	3463.73	3020	6800	19800	0.0659	NS	-0.109	0.037	Significant
		"Different"	17	17	8493.53	2866.76	3390	8970	13100						"Different"	30	30	8853.67	4344.11	3260	9080	21400					
Other - cation	Magnesium	"Similar"	57	57	4325.51	1824.71	250	4400	10900	0.247	NS	-0.103	0.048	significant	"Similar"	44	44	4624.09	1657.88	250	4460	10900	0.601	NS	0.008	0.874	NS
		"Different"	17	17	4748.82	678.27	3780	4550	6010						"Different"	30	30	4127.47	1592.82	250	4495	6740					
Other - cation	Potassium	"Similar"	57	57	1652.84	526.24	138	1760	2460	0.013	"Different" significantly greater	-0.195	0.000	significant	"Similar"	44	44	1727.18	466.19	138	1810	2480	0.762	NS	-0.015	0.778	NS
		"Different"	17	17	1983.53	292.08	1430	1870	2480						"Different"	30	30	1731.20	555.82	138	1765	2460					
Other - nutrient	Nitrogen, Kjeldahl total	"Similar"	57	57	440.46	243.72	14.3	447	1010	0.639	NS	-0.129	0.013	significant	"Similar"	44	44	414.30	202.87	18.1	428.5	833	0.1508	NS	-0.118	0.023	Significant
		"Different"	17	17	482.41	239.23	174	415	974						"Different"	30	30	502.61	285.05	14.3	496	1010					
Other - nutrient	Phosphorus	"Similar"	57	57	903.84	350.95	186	865	2230	0.122	NS	-0.002	0.969	NS	"Similar"	44	44	898.75	314.43	186	876	2230	0.2661	NS	-0.007	0.889	NS
		"Different"	17	17	816.12	103.20	650	796	996						"Different"	30	30	861.60	315.82	186	834.5	1980					
Other - salt	Sodium	"Similar"	57	57	412.46	521.75	38.5	280	3160	0.197	NS	-0.114	0.028	significant	"Similar"	44	44	314.70	145.03	38.5	281.5	835	0.0839	NS	-0.125	0.016	Significant
		"Different"	17	17	390.41	156.94	215	384	748						"Different"	30	30	543.33	690.02	38.5	377.5	3160					

Notes

a Designation assigned in comparison to 5th percentile of reference envelope

Interpretting Wilcoxan Rank Sum Results:

[b] based on z-score for normal approximation

Null hypothesis = median response (survival, reproduction) of "Similar" samples = median response of "Different" .

NS = p value > 0.05 = null hypothesis is accepted, median responses are not significantly "Different". The max from all results becomes the NOEC.
"Similar" significantly greater = p value < 0.05 with median of "Similar" samples significantly greater than "Different" samples suggests chemical (except nutrients) requires no further consideration with respect to influencing the "Different" response observed (relative to reference envelope). The max from all results becomes the NOEC.
"Different" signifcantly greater = p value < 0.05 with median of "Different" samples significantly greater than "Similar" samples suggests chemical (except nutrients) requires further consideration with respect to influencing the "Different" response observed (relative to reference envelope). Correlation analysis should be reviewed.

Interpreting Spearman Correlation Coefficients:

null hypothesis = observed responses are NOT correlated with measured chemical/geochemical/physical parameters.

NS = p-value > 0.05 = null hypothesis is accepted, responses show no significant correlation with measured chemical/geochemical/physical parameters.

Significant = p-value < 0.05 and negative Spearman Correlation Coefficient = null hypothesis is rejected, responses show significant correlation with measured chemical/geochemical/physical parameters and samples designated as "Different" are significantly greater. Regression analysis should be performed.

Reverse = p-value < 0.05 and positive Spearman Correlation Coefficient = null hypothesis is rejected, responses show reverse correlation with measured chemical/geochemical/physical parameters and samples designated as "Similar" are significantly greater. Regression analysis should be performed.

Table 5-11. Summary statistics, results of Wilcoxon's Rank Sum test comparisons of analyte concentrations in soils identified as "Different" or "Similar" based on reference envelopes, and nonparametric Spearman's Rank Correlations between soil invertebrate survival bioassay responses and analyte concentrations in bioassay soils after removing maximum values

		Percent Survival of Adults at 28 days												
		Summary Statistics by Reference Envelope Designation								2-tailed Wilcoxon Rank Sum		Spearman Correlation Analysis		
Priority	Analyte	Designation relative to Reference Envelope[a]	Number of Detects	Number of Samples	Mean	Standard Deviation	Minimum	Median	Maximum	p-value from 2-tailed Wilcoxon Rank Sum Tests[b]	Conclusion	Spearman Correlation Coefficient	p-value	Conclusion
High	Barium	"Similar"	56	56	130.11	108.66	56.8	92.3	716	0.0022	"Different" significantly greater	-0.234	<0.0001	significant
High	Barium	"Different"	17	17	207.32	143.89	80.7	131	566					
High	Chromium	"Similar"	57	57	12.65	7.35	2.82	10.4	44.8	0.0916	NS	-0.185	0.0004	significant
High	Chromium	"Different"	16	16	14.61	6.31	8.69	13	34.8					
Medium	Boron	"Similar"	50	50	4.68	3.54	0.93	3.82	12.9	0.0923	NS	-0.207	0.0002	significant
Medium	Boron	"Different"	16	16	5.77	3.73	2.3	4.42	14.7					
Medium	Copper	"Similar"	56	56	42.23	58.27	1.4	22	280	0.0048	"Different" significantly greater	-0.244	<0.0001	significant
Medium	Copper	"Different"	17	17	102.76	91.89	12.2	63.5	289					
Medium	Lead	"Similar"	53	57	582.89	1172.26	0.1	24.1	4220	0.0264	"Different" significantly greater	-0.163	0.002	significant
Medium	Lead	"Different"	15	16	931.81	1954.84	6.19	320	7970					
Low	Arsenic	"Similar"	52	56	4.06	2.43	0.5	3.735	14.8	0.0318	"Different" significantly greater	-0.216	<0.0001	significant
Low	Arsenic	"Different"	17	17	5.02	2.06	2.84	4.31	11.4					
Low	Nickel	"Similar"	56	56	11.14	5.23	1.09	10.55	25.3	0.0195	"Different" significantly greater	-0.242	<0.0001	significant
Low	Nickel	"Different"	17	17	14.14	3.76	9.34	13.5	21					
Other - physical	% Silt/Clay	"Similar"	57	57	24.51	8.62	3	25	39.3	0.0057	"Different" significantly greater	-0.132	0.011	significant
		"Different"	16	16	30.94	4.63	21.4	31.85	37.9					
Other - chemical	Molybdenum	"Similar"	57	57	1.28	3.76	0.208	0.51	28	0.0667	NS	-0.225	<0.0001	significant
		"Different"	16	16	1.04	0.78	0.336	0.6755	2.57					
Other - cation	Potassium	"Similar"	57	57	1652.84	526.24	138	1760	2460	0.0273	"Different" significantly greater	-0.185	0.011	significant
		"Different"	16	16	1952.50	271.18	1430	1865	2380					

Notes

a Designation assigned in comparison to 5th percentile of reference envelope

Interpreting Wilcoxon Rank Sum Results:

[b] based on z-score for normal approximation

Null hypothesis = median response ((survival, reproduction) of "Similar" samples = median response of "Different" .

NS = p value > 0.05 = null hypothesis is accepted, median responses are not significantly "Different". The max from all results becomes the NOEC.

"Different" significantly greater = p value < 0.05 with median of "Different" samples significantly greater than "Similar" samples suggests chemical (except nutrients) requires further consideration with respect to influencing the "Different" response observed (relative to reference envelope). Correlation analysis should be reviewed.

Interpreting Spearman Correlation Coefficients:

null hypothesis = observed responses are NOT correlated with measured chemical/geochemical/physical parameters.

NS = p-value > 0.05 = null hypothesis is accepted, responses show no significant correlation with measured chemical/geochemical/physical parameters.

Significant = p-value < 0.05 and negative Spearman Correlation Coefficient = null hypothesis is rejected, responses show significant correlation with measured chemical/geochemical/physical parameters and samples designated as "Different" are significantly greater. Regression analysis should be performed.

Table 5-12. Summary of regression analyses for bioassay responses and analyte concentrations in soil invertebrate bioassay soils

Analyte	Analyte	Regression of natural log transformed soil concentrations and the median-scaled survival							PRG Development			Regression of natural log transformed soil concentrations and the median-scaled reproduction							PRG Development		
		Intercept	Slope	Root Mean Square Error	N	p-value	R^2	Conclusion	Reference Envelope Median *Survival (%)*	20% reduction vs. Reference Envelope	PRG Soil Conc. equal to 20% effect	Intercept	Slope	Root Mean Square Error	N	p-value	r^2	Conclusion	Scaled Reference Envelope Median *Survival (%)*	20% reduction vs. Reference Envelope	PRG Soil Conc. equal to 20% effect
High	Antimony	0.899	-0.011	0.1959	370	0.019	0.015	r2<0.1	1	0.8	10628.86	0.894	0.027	0.4775	370	0.01	0.02	4th highest	1	0.8	0.03
High	Barium	1.170	-0.057	0.1932	370	0.000	0.042	r2<0.1	1	0.8	627.91	0.936	-0.005	0.4814	370	0.89	0.0001	no significant regression	1	0.8	NA
High	Cadmium	0.878	-0.019	0.1950	370	0.003	0.024	r2<0.1	1	0.8	54.60	0.923	0.015	0.4809	370	0.35	0.002	no significant regression	1	0.8	NA
High	Chromium	1.113	-0.089	0.1890	370	0.000	0.083	2nd highest	1	0.8	33.37	0.989	-0.031	0.4810	370	0.43	0.002	no significant regression	1	0.8	NA
High	Mercury	0.911	0.007	0.1973	370	0.491	0.001	no significant regression	1	0.8	NA	0.722	-0.071	0.4764	370	0.01	0.02	2nd highest	1	0.8	0.33
High	Thallium	0.825	-0.031	0.1972	370	0.409	0.002	no significant regression	1	0.8	NA	1.056	0.067	0.4811	370	0.47	0.001	no significant regression	1	0.8	NA
High	Uranium	0.895	0.005	0.1974	370	0.761	0.000	no significant regression	1	0.8	NA	0.921	0.015	0.4813	370	0.72	0.0003	no significant regression	1	0.8	NA
High	Zinc	1.027	-0.030	0.1928	370	0.0000	0.046	r2<0.1	1	0.8	2132.69	0.909	0.001	0.4814	370	0.96	0.00001	no significant regression	1	0.8	NA
Medium	Boron	0.958	-0.057	0.1956	335	0.0001	0.045	r2<0.1	1	0.8	15.99	0.858	0.033	0.4730	335	0.36	0.003	no significant regression	1	0.8	NA
Medium	Copper	1.041	-0.044	0.1896	370	0.0000	0.077	3rd highest	1	0.8	245.60	0.917	-0.001	0.4814	370	0.95	0.00001	no significant regression	1	0.8	NA
Medium	Lead	0.945	-0.013	0.1940	370	0.0004	0.034	r2<0.1	1	0.8	60158.19	0.874	0.010	0.4807	370	0.30	0.003	no significant regression	1	0.8	NA
Medium	Manganese	1.119	-0.039	0.1952	370	0.005	0.022	r2<0.1	1	0.8	3245.55	0.963	-0.009	0.4814	370	0.80	0.0002	no significant regression	1	0.8	NA
Low	Arsenic	0.969	-0.059	0.1935	370	0.000	0.039	r2<0.1	1	0.8	17.65	0.890	0.018	0.4813	370	0.64	0.001	no significant regression	1	0.8	NA
Low	Cobalt	0.959	-0.036	0.1953	370	0.005	0.021	r2<0.1	1	0.8	85.46	0.935	-0.012	0.4813	370	0.71	0.0004	no significant regression	1	0.8	NA
Low	Nickel	1.023	-0.057	0.1932	370	0.000	0.042	r2<0.1	1	0.8	51.34	0.889	0.010	0.4814	370	0.77	0.0002	no significant regression	1	0.8	NA
Low	Selenium	0.901	-0.065	0.1963	370	0.046	0.011	no significant regression	1	0.8	NA	0.929	-0.117	0.4800	370	0.14	0.01	no significant regression	1	0.8	NA
Low	Vanadium	0.986	-0.025	0.1965	370	0.072	0.009	no significant regression	1	0.8	NA	1.079	-0.044	0.4803	370	0.19	0.005	no significant regression	1	0.8	NA
Other - chemical	Beryllium	0.773	-0.103	0.1949	370	0.002	0.025	r2<0.1	1	0.8	0.77	0.990	0.067	0.4810	370	0.41	0.002	no significant regression	1	0.8	NA
Other - chemical	Molybdenum	0.868	-0.061	0.1883	370	0.000	0.090	highest r2	1	0.8	3.07	0.896	-0.043	0.4796	370	0.09	0.01	no significant regression	1	0.8	NA
Other - chemical	Silver	0.869	-0.012	0.1971	370	0.326	0.003	no significant regression	1	0.8	NA	1.018	0.055	0.4791	370	0.06	0.01	no significant regression	1	0.8	NA
Other - chemical	Tin	0.920	-0.023	0.1911	370	0.000	0.062	4th highest	1	0.8	185.95	0.901	0.009	0.4810	370	0.43	0.002	no significant regression	1	0.8	NA
Other - cation	Calcium	1.162	-0.031	0.1969	370	0.164	0.005	no significant regression	1	0.8	NA	2.237	-0.149	0.4763	370	0.01	0.02	highest r2	1	0.8	15045.59
Other - cation	Magnesium	1.199	-0.037	0.1955	370	0.008	0.019	r2<0.1	1	0.8	44603.35	1.000	-0.011	0.4814	370	0.76	0.0003	no significant regression	1	0.8	NA
Other - cation	Potassium	1.278	-0.053	0.1948	370	0.002	0.026	r2<0.1	1	0.8	8884.59	1.052	-0.019	0.4813	370	0.65	0.001	no significant regression	1	0.8	NA

Table 5-12. Summary of regression analyses for bioassay responses and analyte concentrations in soil invertebrate bioassay soils

Analyte	Analyte	Regression of natural log transformed soil concentrations and the median-scaled survival							PRG Development			Regression of natural log transformed soil concentrations and the median-scaled reproduction							PRG Development		
		Intercept	Slope	Root Mean Square Error	N	p-value	R^2	Conclusion	Reference Envelope Median *Survival (%)*	20% reduction vs. Reference Envelope	PRG Soil Conc. equal to 20% effect	Intercept	Slope	Root Mean Square Error	N	p-value	r^2	Conclusion	Scaled Reference Envelope Median *Survival (%)*	20% reduction vs. Reference Envelope	PRG Soil Conc. equal to 20% effect
Other - nutrient	Nitrogen, Kjeldahl total	1.054	-0.028	0.1959	370	0.020	0.015	r2<0.1	1	0.8	9777.05	0.927	-0.002	0.4814	370	0.93	0.00002	no significant regression	1	0.8	NA
Other - nutrient	Phosphorus	1.124	-0.035	0.1968	370	0.155	0.005	no significant regression	1	0.8	NA	1.580	-0.099	0.4796	370	0.09	0.01	no significant regression	1	0.8	NA
Other - salt	Sodium	1.064	-0.030	0.1962	370	0.035	0.012	r2<0.1	1	0.8	6513.92	1.464	-0.096	0.4764	370	0.01	0.02	3rd highest	1	0.8	994.58
Other - physical	% Gravel	0.895	-0.017	0.2000	370	0.102	0.015	no significant regression	1	0.8	NA	0.947	0.029	0.5264	370	0.28	0.01	no significant regression	1	0.8	NA
Other- physical	% Sand	-0.200	0.255	0.1950	370	0.003	0.024	r2<0.1	1	0.8	50.52	0.809	0.024	0.4814	370	0.91	0.00004	no significant regression	1	0.8	NA
Other- physical	% Silt/Clay	1.067	-0.055	0.1957	370	0.011	0.017	r2<0.1	1	0.8	126.55	0.861	0.016	0.4814	370	0.76	0.0003	no significant regression	1	0.8	NA
Other- physical	CEC	0.902	-0.004	0.1974	370	0.893	0.000	no significant regression	1	0.8	NA	1.033	-0.046	0.4811	370	0.52	0.001	no significant regression	1	0.8	NA
Other - physical	TOC	0.989	-0.011	0.1966	370	0.081	0.008	no significant regression	1	0.8	NA	0.706	0.023	0.4799	370	0.13	0.01	no significant regression	1	0.8	NA
Other- physical	pH	1.106	-0.106	0.1968	370	0.126	0.006	no significant regression	1	0.8	NA	0.708	0.102	0.4812	370	0.55	0.001	no significant regression	1	0.8	NA

Notes:

Regression Model: (Scaled % Survival) = slope * ln(soil) + intercept

Scaled % survival = % *survival* scaled relative to the median % *survival* for the reference envelope samples

Reference Envelope % *survival* = median of % *survival* reported for all replicates for samples included within the reference envelope

20% Reduction versus Reference Envelope = 20% reduction from the median % *survival* of replicates within reference envelope

PRG = e ((scaled 20% reduction vs. median % *survival* from ref envelope - intercept) / slope)

p-value> 0.05 is not significant

R^2 value less than 0.2 not considered sufficier

Notes:

Regression Model: (Scaled reproduction) = slope * ln(soil) + intercept

Scaled reproduction = *number of juveniles* scaled relative to the median *number of juveniles* for the reference envelope samples

Reference Envelope % *survival* = median of % *survival* reported for all replicates for samples included within the reference envelope

20% Reduction versus Reference Envelope = median % *survival* of replicates within reference envelope is scaled to 1.0 and this is reduced b 20% to 0.8

PRG = e ((20% reduction vs. scaled median % *survival* from ref envelope - intercept) / slope)

p-value> 0.05 is not significant

R^2 value less than 0.2 not considered sufficier

Table 5-13. Summary of Site-Specific Invertebrate Toxicity Thresholds for the Hanford Site

		Existing Ecological Risk-Based Values for Invertebrates							Results and Conclusions from Current Study					Integrated Recommendations		
Priority	**Analyte**	**WAC (mg/kg)**	**ORNL (mg/kg)**	**EPA's EcoSSL (mg/kg)**	**Hanford-specific Invertebrate Bioassay NOEC from RCBRA (mg/kg)**	**Background (mg/kg)**	**PRG Recommended in RCBRA (mg/kg)**	**Confidence Level of RCBRA Invertebrate PRG**	**NOEC from Current Study (mg/kg)**	**NOEC Basis Current Study**	**Value Removed (mg/kg)**	**Conclusion from Current Study**	**Confidence Level of NOEC from Current Study**	**Final Recommended NOEC (mg/kg) - all sources**	**Basis for Final Recommended NOEC - all sources**	**Confidence Level of Final NOEC - all sources**
High	Antimony	NA	NA	78	6.1	0.13	78	moderate-high	842	Max Detect	NA	Non-toxic: 1) no distinct difference in concentrations associated with toxic samples (significant difference in biological measures from reference envelope) versus non toxic samples (no significant difference in biological measures from reference envelope) 2) 20 samples within target range 3) data set represents broad range of concentrations	high: confident in non-toxic conclusion and high range represented	842	Current Study	high
High	Barium	NA	NA	330	358	132	358	moderate-high	NA	NA	NA	1) concentration in toxic samples significantly greater than non toxic samples; 2) correlation between chemistry and one or more measured endpoints (percent survival, number of juveniles); 3) significant regression with soil concentration and percent survival but poor goodness of fit (R2 < 0.1) 4) 22 samples within target range 5) data set represents broad range of concentrations	Not applicable since no threshold was established in this study.	358	RCBRA, site-specific NOEC	moderate-high
High	Cadmium	20	20	140	2.54	0.563	20	moderate	9.84	Max Detect	NA	Non-toxic: 1) no distinct difference in concentrations associated with toxic samples (significant difference in biological measures from reference envelope) versus non toxic samples (no significant difference in biological measures from reference envelope) 2) 28 samples within target range 3) data set does not represent highest target range; range not broad	high: confident in non-toxic conclusion but NOEC could be higher	20	ORNL value (ES/ER/TM-126/R2)	moderate
High	Chromium	42	0.4	NA	149	18.5	149	moderate-high	44.8	2nd Highest Detect	259	Non-toxic up to level of 44.8 mg/kg: 1) no distinct difference in concentrations associated with toxic samples (significant difference in biological measures from reference envelope) versus non toxic samples (no significant difference in biological measures from reference envelope) 2) 10 samples within target range 3) data set does not represent medium or high target ranges; range not broad	high: confident in non-toxic conclusion and effects were observed within sampled range	149	RCBRA, site-specific NOEC	moderate-high
High	Mercury	0.1	0.1	NA	0.136	0.013	0.33	low	12.5	Max Detect	NA	Non-toxic: 1) no distinct difference in concentrations associated with toxic samples (significant difference in biological measures from reference envelope) versus non toxic samples (no significant difference in biological measures from reference envelope) 2) only 4 samples within target ranges; range not broad	high: confident in non-toxic conclusion and high range represented	12.5	Current Study	high
High	Thallium	NA	NA	NA	Not detected	0.185	NV	NA	0.459	Max Detect	NA	Non-toxic : 1) no distinct difference in concentrations associated with toxic samples (significant difference in biological measures from reference envelope) versus non toxic samples (no significant difference in biological measures from reference envelope) 2) all samples below target range; range not broad	high: range of samples insufficient	0.459	Current Study	high
High	Uranium	NA	NA	NA	4.53	3.21	100	moderate	1.37	Max Detect	NA	Non-toxic : 1) no distinct difference in concentrations associated with toxic samples (significant difference in biological measures from reference envelope) versus non toxic samples (no significant difference in biological measures from reference envelope) 2) all samples below target range; range not broad	high: range of samples insufficient	100	Sheppard et al., 2005	moderate
High	Zinc	200	100	120	393	67.8	393	moderate-high	8980	Max Detect	NA	Non-toxic: 1) no distinct difference in concentrations associated with toxic samples (significant difference in biological measures from reference envelope) versus non toxic samples (no significant difference in biological measures from reference envelope) 2) 38 samples within target range 3) data set represents broad range of concentrations	high: confident in non-toxic conclusion and high range represented	8980	Current Study	high
Medium	Boron	NA	NA	NA	28.6	3.89	NV	NA	NA	NA	NA	1) concentration in toxic samples significantly greater than non toxic samples; 2) correlation between chemistry and one or more measured endpoints (percent survival, number of juveniles); 3) significant regression with soil concentration and percent survival but poor goodness of fit (R2 < 0.1) 4) data set represents moderate range of concentrations	Not applicable since no threshold was established in this study.	28.6	RCBRA, site-specific NOEC	moderate-high
Medium	Copper	50	50	80	45.6	22	50	moderate	NA	NA	NA	1) concentration in toxic samples significantly greater than non toxic samples; 2) correlation between chemistry and one or more measured endpoints (percent survival, number of juveniles); 3) significant regression with soil concentration and percent survival but poor goodness of fit (R2 < 0.1) 4) data set represents broad range of concentrations	Not applicable since no threshold was established in this study.	58	Ecology Publication No. 11-03-006	high
Medium	Lead	500	500	1700	116	10.2	1700	moderate-high	NA	NA	NA	1) concentration in toxic samples significantly greater than non toxic samples; 2) correlation between chemistry and one or more measured endpoints (percent survival, number of juveniles); 3) significant regression with soil concentration and percent survival but poor goodness of fit (R2 < 0.1) 4) 46 samples within target range 5) data set represents broad range of concentrations	Not applicable since no threshold was established in this study.	1700	EcoSSL (OSWER Directive 9285.7-70)	moderate-high

Table 5-13. Summary of Site-Specific Invertebrate Toxicity Thresholds for the Hanford Site

		Existing Ecological Risk-Based Values for Invertebrates								Results and Conclusions from Current Study						Integrated Recommendations		
Priority	**Analyte**	**WAC (mg/kg)**	**ORNL (mg/kg)**	**EPA's EcoSSL (mg/kg)**	**Hanford-specific Invertebrate Bioassay NOEC from RCBRA (mg/kg)**	**Background (mg/kg)**	**PRG Recommended in RCBRA (mg/kg)**	**Confidence Level of RCBRA Invertebrate PRG**		**NOEC from Current Study (mg/kg)**	**NOEC Basis Current Study**	**Value Removed (mg/kg)**	**Conclusion from Current Study**	**Confidence Level of NOEC from Current Study**		**Final Recommended NOEC (mg/kg) - all sources**	**Basis for Final Recommended NOEC - all sources**	**Confidence Level of Final NOEC - all sources**
Medium	Manganese	NA	NA	450	570	512	570	moderate		1260	Max Detect	NA	Non-toxic: 1) no distinct difference in concentrations associated with toxic samples (significant difference in biological measures from reference envelope) versus non toxic samples (no significant difference in biological measures from reference envelope) 2) 9 samples within target range 3) data set represents broad range of concentrations	high: confident in non-toxic conclusion and high range represented		1260	Current Study	high
Low	Arsenic	60	60	NA	12.2	6.47	60	low		NA	NA	NA	1) concentration in toxic samples significantly greater than non toxic samples; 2) correlation between chemistry and one or more measured endpoints (percent survival, number of juveniles); 3) significant regression with soil concentration and percent survival but poor goodness of fit (R2 < 0.1) 4) 12 samples within target range 5) data set does not represent medium or high target ranges; range not broad	Not applicable since no threshold was established in this study.		128	Ecology Publication No. 11-03-006	high
Low	Cobalt	NA	NA	NA	12.2	15.7	NV	NA		12.4	Max Detect	NA	Non-toxic: 1) no distinct difference in concentrations associated with toxic samples (significant difference in biological measures from reference envelope) versus non toxic samples (no significant difference in biological measures from reference envelope) 2) 60 samples within target range 3) data set does not represent medium or high target ranges; range not broad	high: confident in non-toxic conclusion but NOEC could be higher		15.7	Background (DOE/RL-92-24)	low
Low	Nickel	200	200	280	24.8	19.1	280	moderate-high		NA	NA	NA	1) concentration in toxic samples significantly greater than non toxic samples; 2) correlation between chemistry and one or more measured endpoints (percent survival, number of juveniles); 3) significant regression with soil concentration and percent survival but poor goodness of fit (R2 < 0.1) 4) 10 samples within target range 5) data set does not represent medium or high target ranges; range not broad	Not applicable since no threshold was established in this study.		280	EcoSSL (OSWER Directive 9285.7-76)	moderate-high
Low	Selenium	70	70	4.1	0.973	0.78	4.1	moderate-high		2.02	Max Detect	NA	Non-toxic: 1) no distinct difference in concentrations associated with toxic samples (significant difference in biological measures from reference envelope) versus non toxic samples (no significant difference in biological measures from reference envelope) 2) 59 samples within target range 3) data set does not represent medium or high target ranges; range not broad	high: confident in non-toxic conclusion but NOEC could be higher		4.1	EcoSSL (OSWER Directive 9285.7-72)	moderate-high
Low	Vanadium	NA	NA	NA	84.7	85.1	NV	NA		116	Max Detect	NA	Non-toxic : 1) no distinct difference in concentrations associated with toxic samples (significant difference in biological measures from reference envelope) versus non toxic samples (no significant difference in biological measures from reference envelope) 2) 5 samples within target range 3) data set does not represent target ranges; range not broad	high: confident in non-toxic conclusion but NOEC could be higher		116	Current Study	high
Other-chemical	Beryllium	NA	NA	40	NA	1.51	NV	NA		0.565	Max Detect	NA	Non-toxic: 1) no distinct difference in concentrations associated with toxic samples (significant difference in biological measures from reference envelope) versus non toxic samples (no significant difference in biological measures from reference envelope) 2) not a priority analyte so target ranges not established 3) range not broad	high: confident in non-toxic conclusion but NOEC could be higher		40	EcoSSL (OSWER Directive 9285.7-64)	moderate-high
Other-chemical	Molybdenum	NA	NA	NA	1.09	0.47	NV	NA		28	2nd Highest Detect	46.3	Non-toxic: 1) no distinct difference in concentrations associated with toxic samples (significant difference in biological measures from reference envelope) versus non toxic samples (no significant difference in biological measures from reference envelope) 2) not a priority analyte so target ranges not established 3) range is broad	high: confident in non-toxic conclusion and effects were observed within sampled range		28	Current Study	high
Other-chemical	Silver	NA	NA	NA	0.344	0.167	NV	NA		2.99	Max Detect	NA	Non-toxic: 1) no distinct difference in concentrations associated with toxic samples (significant difference in biological measures from reference envelope) versus non toxic samples (no significant difference in biological measures from reference envelope) 2) not a priority analyte so target ranges not established 3) range not broad	high: confident in non-toxic conclusion but NOEC could be higher		2.99	Current Study	high
Other-chemical	Tin	NA	NA	NA	19	NA	NV	NA		838	Max Detect	NA	Non-toxic: 1) no distinct difference in concentrations associated with toxic samples (significant difference in biological measures from reference envelope) versus non toxic samples (no significant difference in biological measures from reference envelope) 2) not a priority analyte so target ranges not established 3) range is broad	high: confident in non-toxic conclusion; NOEC could be higher		838	Current Study	high

Acronyms:

EcoSSL = Ecological Soil Screening Level
ORNL = Oak Ridge National Laboratories
NA - not applicable or not available
NOEC = no observed effect concentration
NV = no value
PRG = preliminary remediation goal
RCBRA = River Corridor Baseline Risk Assessment (DOE/RL-2007-21)

Table 6-1. Evaluation of Chemistry Data for the Selection of Samples for Performing Bioassays

Analyte	Target Concentration Ranges			Lowest RCBRA Eco PRG	100 area Max	Background	Waste Site 600-218											
							Target 1-1	Target 1-2	Target 1-2D	Target 1-3	Target 1-4	Target 2-1	Target 2-2	Target 2-3	Target 2-4	Target 2-5	Control 1	Control 2	Control 3
																	bio field control 1	bio field control 11	
	Low	Mid	High				B2BV77	B2BV78	B2BV79	B2BV80	B2BV81	B2BV83	B2BV84	B2BV85	B2BV86	B2BV87	B2BVM9	B2BVN0	B2BVN1
High Priority Analytes																			
Antimony	5.2 to 38	38 to 186	186 to >2100	5	9.3	0.385	0.31 U	0.32 U	0.31 U	0.33 U	0.47	0.3 U	0.31 U	0.489	0.31 U	0.32 U	0.31 U	0.459	0.31 U
Barium	132 to 330	330 to 2000	2000 to > 4,760	358	1300	132	89.1	95	80.6	86.8	90.8	95.4	95.1	83	93.6	95.6	90.1	98.3	91.3
Cadmium	1 to 4	4 to 20	20 to >40	4	13.2	0.563	0.155 B	0.113 B	0.131	0.11 U	0.112	0.112	0.184	0.13	0.1 U	0.133	0.106	0.11 U	0.1 U
Chromium	18.5 to 30	30 to 150	150 to >815	42	204	18.5	9.96	10.3	9.14	9.59	11.1	10.3	10.7	10	9.95	11.2	9.56	16.7	11.3
Mercury	0.33 to 1.3	1.3 to 13.7	13.7 to 250	0.136	17.1	0.013	0.052 U	0.054 U	0.052 U	0.0847	0.053 U	0.051 U	0.052 U	0.053 U	0.052 U	0.053 U	0.052 U	0.053 U	0.052 U
Thallium	1 to 2.4	2.4 to 4	4 to >5	NA		0.185	0.13 B	0.131 B	0.1 U	0.11 U	0.11 U	0.1 U	0.1 U	0.11 U	0.1 U	0.11 U	0.1 U	0.11 U	0.1 U
Uranium	3.21 to 100	100 to 250	250 to 2610	40.3		3.21	0.411 B	1.16	0.5	0.376	0.514	0.487	0.385	0.407	0.517	0.408	0.414	0.543	0.462
Zinc	67 to 145	145 to 760	760 to 9420	393	1310	67.8	44.80	44.70	43.60	44.00	50.00	47.60	73.90	56.00	57.40	46.30	46.1	52.5	47.3
Medium Priority Analytes																			
Boron	3.62 to 7.2	7.2 to 30	30 to > 105	29.6	66.4	3.62	25.1	20.1 B	24.2	23.4	24	22.2	17.1 B	20.9 B	19.7 B	20.9 B	17.6 B	23.1	18.9 B
Copper	22 to 50	50 to 170	170 to 4080	50	552	22	12.4	12.4	12.1	14.8	15.7	14.1	14.5	15.4	15.1	14.4	11.4	14.7	14.5
Lead	10 to 120	120 to 500	500 to > 501	125	214	10.2	6.08	6.46	5.82	6.87	8.37	9.84	29.8	22.9	10.1	12.4	5.94	18.2	9.97
Manganese	512 to 750	750 to 1000	1000 to >8400	558		512	384	381	353	364	400	380	398	351	379	387	411	436	405
Low Priority Analytes																			
Arsenic	6.5 to 18	18 to 100	100 to > 131	19.3		6.47	3.22 B	3.13 B	2.88	3.29	4.14	3.55	3.62	3.09	3.66	3.34	2.96	3.2	3.1
Cobalt	0 to 15.69	NA to NA	NA to NA	13		15.7	8.37	9.4	7.69	8.23	9.07	8.62	8.83	8.02	8.52	8.51	8.74	9.76	8.86
Nickel	19.1 to 30	30 to 280	NA to NA	38		19.1	10.1	10.8	9.69	9.73	11.6	11.9	11.4	9.93	10.6	10.7	9.67	12.5	11.9
Selenium	0.78 to 2.5	2.5 to 4.3	4.3 to 11	1.2	1.8	1.7	**1.28** B	**1.21** B	**1.23**	**1.51**	**1.28**	**1.51**	**1.29**	0.781	**1.38**	**1.24**	1.16	**1.25**	0.914
Vanadium	85 to 100	100 to 115	115 to 130	43.2	106	85.1	**58.4**	**57.5**	**60.9**	**56.2**	**60**	**58.6**	**58.6**	**52.2**	**54**	**54.4**	**60.3**	**65.1**	**57.8**
Additional Analytes																			
pH	0 to 6.5	6.5 to 9	9 to 14	NA		NA	8.56	8.58	8.6	8.61	8.58	8.61	8.42	7.86	8.51	8.39	7.25	7.67	8.26
						HEIS ID	B2BVD0	B2BVD1	B2BVD2	B2BVD3	B2BVD4	B2BVD6	B2BVD7	B2BVD8	B2BVD9	B2BVF0	B2BVY1	B2BVY2	B2BVY3
CEC				10															
% Gravel							0	6.1	4.4	8.4	0	4.7	3.2	0.4	5.6	1.3	4.7	4.4	0
% Sand							65.4	61.8	62.9	61.9	65.1	63.2	66.5	69	64.4	67	68.7	65.5	72.1
% Silt/Clay							34.6	32.2	32.7	29.7	34.9	32.1	30.3	30.5	30	31.7	26.6	30.1	27.9
						HEIS ID	B2BVF3	B2BVF4	B2BVF5	B2BVF6	B2BVF7	B2BVF9	B2BVH0	B2BVH1	B2BVH2	B2BVH3	B2BW15	B2BW16	B2BW17
TOC							2050	2620	2610	2970	3850	1920	1660	7180	2220	2990	2600	1950	5940
Insecticides							ND	**Yes**	ND	**Yes**	**Yes**	ND	**Yes**	**Yes**	**Yes**	**Yes**	ND	ND	**Yes**
herbicides							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Beryllium				NA		1.51	0.376 B	0.329 B	0.34	0.3	0.406	0.32	0.312	0.269	0.372	0.414	0.339	0.387	0.344
Calcium				1000		17200	5610	4660	4720	6020	8480	4930	4760	4500	5060	4210	3660	4410	5510
Magnesium				60		7060	5130	4800	5060	5980	5520	5300	4960	4660	5310	5020	4380	4890	4860
Molybdenum				2	4.5	0.47	0.387 B	0.612 B	0.405	0.371	0.407	0.346	0.415	0.361	0.342	0.325	0.339	0.385	0.373
Nitrogen, Kjeldahl total				NA		NA	285 ND	250 ND	302 ND	323 ND	532 ND	285 ND	239 ND	755 ND	336 ND	364 ND	291 ND	251 ND	488 ND
Phosphorus				10		NA	1080	990	1010	1060	1010	906	843	849	899	885	953	855	937
Potassium				150		2150	2330	2270	2440	2610	2220	2440	2150	2400	2450	2620	2030	2270	2390
Silver				560		0.167	0.1 U	0.11 U	0.1 U	0.11 U	0.11 U	0.1 U	0.1 U	0.11 U	0.1 U	0.11 U	0.1 U	0.11 U	0.1 U
Sodium				NA		690	276 N	258 N	271 N	302 N	270 N	265 N	241 N	250 N	263 N	239 N	224 N	255 N	237 N
Tin				50		NA	0.438 B	0.567	0.416	0.387	0.446	0.434	0.436	0.436	0.451	0.409	0.408	0.484	0.429

Acronyms:

B = below or equal to MDL

E = interference

M = duplicate precision criteria not met

N = outside limits of spike recovery

NA = not available

U = non detect

D = reported at secondary dilution factor

high concentration range

medium concentration range

low concentration range

control site concentration above background

Source of Background Values:

DOE/RL-92-24: arsenic, barium, chromium, cobalt, copper, lead, manganese, nickel, vanadium, zinc, 90th percentile of the log-normal distribution

PNNL-18577: boron, thallium, 90th percentile of the log-normal distribution

Antimony, mercury, and selenium values represents maximum background concentration through analysis of 50% of Hanford Site background data. Though above background, deteciton limits were below ecological screneing levels and maximum background concentrations.

DOE/RL-96-17: uranium.

Notes:

All values are in mg/mkg unless otherwise stated

The RCBRA PRGs represent the lowest of PRGs for plants, invertebrates, birds, and mammals. **Bold values** exceed RCBRA PRGs

Table 6-1. Evaluation of Chemistry Data for the Selection of Samples for Performing Bioassays

Analyte	Target Concentration Ranges			Lowest RCBRA Eco PRG	100 area Max	Background	Waste Site 600-220																																			
							Target 3-1		Target 3-2		Target 3-3		Target 3-3D		Target 3-4		Target 4-1		Target 4-2		Target 4-3		Target 4-4		Target 4-5		Control 4		Control 5		Control 6		Control 7	
																											bio field control 2							
	Low	Mid	High				B2BP40		B2BP41		B2BP42		B2BP43		B2BP44		B2BP46		B2BP47		B2BP48		B2BP49		B2BP50		B2BVN2		B2V2N3		B2V2N4		B2V2N5	
High Priority Analytes																																										
Antimony	5.2 to 38	38 to 186	186 to >2100	5	9.3	0.385	0.31	U	0.305	B	0.3	U	0.3	U	0.29	U	0.451	B	0.32	U	2.75	B	0.34	B	0.379	B	0.31	U	0.35	U	0.29	U	0.3	U
Barium	132 to 330	330 to 2000	2000 to > 4,760	358	1300	132	92.9		96.6		99.5		91.4		87.7		86.3		72.2		73.3		77		80.5		83		95.2		89.7		91.9	
Cadmium	1 to 4	4 to 20	20 to >40	4	13.2	0.563	0.153	B	0.648	B	0.099	U	0.1	U	0.098	U	0.786	B	0.158	B	0.144	B	0.616	B	0.892	B	0.1	U	0.12	U	0.098	U	0.099	U
Chromium	18.5 to 30	30 to 150	150 to >815	42	204	18.5	9.96		16		11.7		11.1		10.5		13.3		9.82		9.32		11		10.1		10.4		11		10.9		11	
Mercury	0.33 to 1.3	1.3 to 13.7	13.7 to 250	0.136	17.1	0.013	0.052	U	**0.154**	B	0.05	U	0.05	U	0.049	U	**0.568**		0.0671	B	0.0623	B	**0.138**	B	0.0733	B	0.0651	B	0.058	U	0.049	U	0.05	U
Thallium	1 to 2.4	2.4 to 4	4 to >5	NA		0.185	0.125	B	0.118	B	0.115	B	0.103	B	0.098	U	0.11	U	0.11	U	0.1	U	0.11	U	0.1	U	0.12	B	0.124	B	0.101	B	0.099	U
Uranium	3.21 to 100	100 to 250	250 to 2610	40.3		3.21	0.448	B	0.457	B	0.522		0.481	B	0.439	B	0.336	B	0.336	B	0.365	B	0.334	B	0.33	B	0.413	B	0.398	B	0.624		0.413	B
Zinc	67 to 145	145 to 760	760 to 9420	393	1310	67.8	95.30		331.00		42.70		44.10		40.60		77.50		43.50		40.80		78.00		54.00		41.60		43.90		42.50		39.90	
Medium Priority Analytes																																										
Boron	3.62 to 7.2	7.2 to 30	30 to > 105	29.6	66.4	3.62	7.99	B	6.33	B	6.29	B	7.76	B	9.26	B	23.9		10	B	9.9	B	13.1	B	13.2	B	8.62	B	10.3	B	10.2	B	10.5	B
Copper	22 to 50	50 to 170	170 to 4080	50	552	22	12.5		15		12.4		12.4		12		15.5		11.5		12		12.1		14.2		11.3		10.5		12.9		10.2	
Lead	10 to 120	120 to 500	500 to > 501	125	214	10.2	10.4		32.6		5.89		6.21		6.59		28.6		13.5		18.6		88.4		20.4		5.1		5.32		5.6		5.02	
Manganese	512 to 750	750 to 1000	1000 to >8400	558		512	392	N	418	N	382	N	376	N	343	N	346		313		331		335		328		361		403		410		374	
Low Priority Analytes																																										
Arsenic	6.5 to 18	18 to 100	100 to > 131	19.3		6.47	3.7	B	3.9		4.26		4.17		3.57	B	3.53	B	2.7	B	2.91	B	3.31	B	2.75	B	3.46	B	3.26	B	3.23	B	3.44	B
Cobalt	0 to 15.69	NA to NA	NA to NA	13		15.7	8.2		8		7.92		8.02		7.32		7.16		6.64		7.1		7.27		6.82		7.8		9		8.87		8.03	
Nickel	19.1 to 30	30 to 280	NA to NA	38		19.1	10.2		10.8		11.2		11		10.6		16		9.95		11.2		9.83		10.2		10.5		11.1		11.7		11.2	
Selenium	0.78 to 2.5	2.5 to 4.3	4.3 to 11	1.2	1.8	1.7	1.19	B	0.979	B	1.06	B	1.03	B	1.1	B	0.565	B	0.576	B	0.585	B	0.685	B	0.701	B	0.618	B	1.03	B	0.97	B	1.03	B
Vanadium	85 to 100	100 to 115	115 to 130	43.2	106	85.1	**50.2**		**50.3**		**48.4**		**50.5**		**46.7**		**43.7**		42.7		**44.1**		42.3		**43.7**		**52.6**		**53.1**		**53.7**		**47.9**	
Additional Analytes																																										
pH	0 to 6.5	6.5 to 9	9 to 14	NA		NA	8.3		8.14		8.51		8.56		8.63		8.15		8.94		8.94		8.11		7.89		8.56		8.62		8.6		8.92	
						HEIS ID	B2BP01		B2BP02		B2BP03		B2BP04		B2BP05		B2BP07		B2BP08		B2BP09		B2BP10		B2BP11		B2BVY4		B2BVY5		B2BVY6		B2BVY7	
CEC				10			10		11.23		10.18		10.33		10.09		9.38		9		8.39		8.89		7.87		8.14		6.7		8.53		8.24	
% Gravel							0.6		0.3		0		0		0.1		0		2.6		0.6		3		2.7		0		0.1		0		0	
% Sand							83.6		82.2		82.6		80.5		86.3		84.9		84.9		85.7		82.9		83.1		83.1		82.7		81.7		84.9	
% Silt/Clay							15.8		17.5		17.4		19.5		13.7		15.1		12.5		13.7		14.1		14.2		16.9		17.2		18.3		15.1	
						HEIS ID	B2BP14		B2BP15		B2BP16		B2BP17		B2BP18		B2BP20		B2BP21		B2BP22		B2BP23		B2BP24		B2BW18		B2BW19		B2BW20		B2BW21	
TOC							3530	N	3070	N	1850	N	1710	N	1450	N	17300	ND	46600	ND	6480	N	7560	ND	9780	N	1490		1610		2420		1890	
Insecticides							**Yes**		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**		ND		**Yes**		**Yes**		**Yes**	
herbicides							ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Beryllium				NA		1.51	0.276	B	0.289	B	0.32	B	0.364	B	0.312	B	0.221	B	0.261	B	0.265	B	0.244	B	0.227	B	0.273	B	0.311	B	0.406	B	0.411	B
Calcium				1000		17200	9310		11100		11000		9440		12600		6370		4620		4640		5390		5460		6570		4070		4100		7200	
Magnesium				60		7060	4410		4370		5280		4710		4710		4270		3780		4220		4070		4170		4270		4750		4620		5110	
Molybdenum				2	4.5	0.47	0.464	B	0.384	B	0.304	B	0.284	B	0.316	B	0.908	B	0.353	B	0.275	B	0.273	B	0.288	B	0.371	B	0.488	B	0.348	B	0.282	B
Nitrogen, Kjeldahl total				NA		NA	0.087	U	0.088	U	0.12	U	0.088	U	0.088	U	0.087	U	0.087	U	4.2		0.087	U	4.5		219	ND	188	ND	277	ND	199	ND
Phosphorus				10		NA	789		623		654		620		635		701		733		661		675		710		687		837		791		730	
Potassium				150		2150	1680		1380		1870		1760		1440		1400		1310		1360		1370		1390		1590		2230		2150		2510	
Silver				560		0.167	0.1	U	0.096	U	0.099	U	0.1	U	0.098	U	0.11	U	0.11	U	0.1	U	0.11	U	0.1	U	0.1	U	0.12	U	0.098	U	0.099	U
Sodium				NA		690	170		185		163		153		172		254		182		192		215		233		189		215		201		199	
Tin				50		NA	0.75		0.643		0.427	B	0.481	B	0.414	B	1.02		0.334	B	0.354	B	0.426	B	0.364	B	0.404	B	0.415	B	0.415	B	0.364	B

Acronyms:

B = below or equal to MDL

E = interference

M = duplicate precision criteria not met

N = outside limits of spike recovery

NA = not available

U = non detect

D = reported at secondary dilution factor

high concentration range

medium concentration range

low concentration range

control site concentration above background

Source of Background Values:

DOE/RL-92-24: arsenic, barium, chromium, cobalt, copper, lead, manganese, nickel, vanadium, zinc, 90th percentile of the log-normal distribution

PNNL-18577: boron, thallium, 90th percentile of the log-normal distribution

Antimony, mercury, and selenium values represents maximum background concentration through analysis of 50% of Hanford Site background data. Though above background, deteciton limits were below ecological screneing levels and maximum background concentrations.

DOE/RL-96-17: uranium.

Notes:

All values are in mg/mkg unless otherwise stated

The RCBRA PRGs represent the lowest of PRGs for plants, invertebrates, birds, and mammals. **Bold values** exceed RCBRA PRGs

Table 6-1. Evaluation of Chemistry Data for the Selection of Samples for Performing Bioassays

Analyte	Target Concentration Ranges			Lowest RCBRA Eco PRG	100 area Max	Background	Waste Site 600-228																													
							Target 5-1		Target 5-2		Target 5-3		Target 5-1Du		Control 8		Control 9		Control 9D		Control 10		Target 6-1		Target 6-2		Target 6-3		Target 6-4		Target 6-5	
															bio field control 3				bio field control 4												bio waste sample 1	
	Low	Mid	High				B2BP53		B2BP54		B2BP55		B2BP57		B2BVN6		B2BVN7		B2BVN8		B2BVN9		B2BP59		B2BP60		B2BP61		B2BP62		B2BP63	
High Priority Analytes																																				
Antimony	5.2 to 38	38 to 186	186 to >2100	5	9.3	0.385	**16.4**		1.91	B	1.44	B	**86.5**		0.31	U	0.32	U	0.31	U	0.31	U	0.383	B	0.323	B	0.604	B	0.3	U	0.33	U
Barium	132 to 330	330 to 2000	2000 to > 4,760	358	1300	132	86.7		78.1		89.9		90.4		79		93.8		89.8		97.8		206		143		164		74.1		94.5	
Cadmium	1 to 4	4 to 20	20 to >40	4	13.2	0.563	0.265	B	0.673	B	0.142	B	0.445	B	0.1	U	0.11	U	0.1	U	0.1	U	0.251	B	0.567	B	0.227	B	0.1	U	0.11	U
Chromium	18.5 to 30	30 to 150	150 to >815	42	204	18.5	9.75		8.19		9.16		12.5		7.37		9.85		9.09		9.97		8.79		9.24		10.3		7.89		10.1	
Mercury	0.33 to 1.3	1.3 to 13.7	13.7 to 250	0.136	17.1	0.013	0.053	U	0.052	U	0.052	U	0.051	U	0.052	U	0.053	U	0.051	U	0.051	U	0.054	U	0.052	U	0.053	U	0.051	U	0.055	U
Thallium	1 to 2.4	2.4 to 4	4 to >5	NA		0.185	0.121	B	0.1	U	0.1	U	0.106	B	0.1	U	0.11	U	0.1	U	0.1	U	0.11	U	0.1	U	0.11	U	0.1	U	0.11	U
Uranium	3.21 to 100	100 to 250	250 to 2610	40.3		3.21	0.397	B	0.407	B	0.405	B	0.639		0.359	B	0.393	B	0.402	B	0.549		0.708		0.327	B	0.401	B	0.598		0.432	B
Zinc	67 to 145	145 to 760	760 to 9420	393	1310	67.8	50.90		47.60		52.30		63.60		44.1		46.5		45.7		49.1		295.00		124.00		124.00		54.80		56.60	
Medium Priority Analytes																																				
Boron	3.62 to 7.2	7.2 to 30	30 to > 105	29.6	66.4	3.62	12.3	B	11	B	10.4	B	15.1	B	12	B	26.4		27.7		24.7		19.8	B	17.6	B	23.3		11	B	**37.1**	
Copper	22 to 50	50 to 170	170 to 4080	50	552	22	21.5		11.8		14.1		34.9		10.2		13.3		13		15.2		38.5		26.8		39.6		45.7		18.7	
Lead	10 to 120	120 to 500	500 to > 501	125	214	10.2	**1020**		59		84.1		**3470**		4		6.54		5.65		5.79		**1080**		75.7		**442**		33.1		87.2	
Manganese	512 to 750	750 to 1000	1000 to >8400	558		512	357		351		399		370		348		379		372		413		328		322		337		339		369	
Low Priority Analytes																																				
Arsenic	6.5 to 18	18 to 100	100 to > 131	19.3		6.47	4.78		3.08	B	3.9	B	9.15		2.33	B	3.88	B	3.78	B	3.39	B	2.93	B	2.53	B	3.09	B	3.18	B	3.71	B
Cobalt	0 to 15.69	NA to NA	NA to NA	13		15.7	9.74		8.42		8.89		11.7		7.66		8.97		8.64		9.11		7.48		7.61		7.83		7.91		8.15	
Nickel	19.1 to 30	30 to 280	NA to NA	38		19.1	11.3		9.24		11.4		14.3		8.35		10.9		10.2		10.7		9.01		10.6		10.6		9.05		10	
Selenium	0.78 to 2.5	2.5 to 4.3	4.3 to 11	1.2	1.8	1.7	**1.44**	B	**1.53**	B	**1.23**	B	0.992	B	0.922	B	**1.37**	B	1.16	B	**1.37**	B	**1.42**	B	**1.31**	B	**1.34**	B	**1.29**	B	**1.38**	B
Vanadium	85 to 100	100 to 115	115 to 130	43.2	106	85.1	**63**		**66.5**		**63.4**		**61.9**		**58.7**		**63.8**		**59.1**		**56**		**59.4**		**62.6**		**58.1**		**61**		**63.4**	
Additional Analytes																																				
pH	0 to 6.5	6.5 to 9	9 to 14	NA		NA	8.51		8.89		8.81		8.42		7.38		8.68		8.74		7.58		7.64		7.77		7.58		8.74		8.39	
						HEIS ID	B2BP66		B2BP67		B2BP68		B2BP70		B2BVY8		B2BVY9		B2BW00		B2BW01		B2BP72		B2BP73		B2BP74		B2BP75		B2BP76	
CEC				10			8.32		8.36		7.68		8.67		7.27		9.16		8.66		10.13		7.42		6.34		6.94		6.6		7.05	
% Gravel							1		0.9		0.9		1		0		1.4		2.1		6.2		1.3		0.3		0.8		0.1		0.1	
% Sand							79.6		82		80.3		78.8		83.5		74.4		75		65.4		86.4		90.7		85.6		86.7		77.3	
% Silt/Clay							19.4		17.1		18.8		20.2		16.5		24.1		22.9		28.4		12.3		9		13.6		13.2		22.5	
						HEIS ID	B2BP79		B2BP80		B2BP81		B2BP83		B2BW22		B2BW23		B2BW24		B2BW25		B2BP85		B2BP86		B2BP87		B2BP88		B2BP89	
TOC							1730		1810		1540		1270		1960		1680		1830		5180		5210		3250		2910		1330		849	
Insecticides							**Yes**		**Yes**		**Yes**		**Yes**		ND		ND		ND		ND		**Yes**		**Yes**		**Yes**		**Yes**			
herbicides							ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND			
Beryllium				NA		1.51	0.266	B	0.209	B	0.32	B	0.314	B	0.283	B	0.36	B	0.272	B	0.471	B	0.27	B	0.279	B	0.246	B	0.289	B	0.333	B
Calcium				1000		17200	9650		8670		7890		8020		3860		7470		7850		4730		14300		10300		11800		6180		7370	
Magnesium				60		7060	4970		4640		4650		4670		4520		5150		5450		5170		4270		3220		4370		4320		3700	
Molybdenum				2	4.5	0.47	1.05	B	0.425	B	0.379	B	0.951	B	0.371	B	0.444	B	0.34	B	0.336	B	0.769	B	0.563	B	0.919	B	0.338	B	0.37	B
Nitrogen, Kjeldahl total				NA		NA	332	ND	249	ND	198	ND	226	ND	216	ND	196	ND	188	ND	257	ND	445	ND	266	ND	498	ND	134	ND	130	N
Phosphorus				10		NA	946		970		1000		991		1110		978		1010		931		1110		2080		1110		962		912	
Potassium				150		2150	1720		1780		1720		1690		1950		1720		1740		2130		1630		1230		1760		1450		1440	
Silver				560		0.167	0.53	B	0.1	U	0.1	U	2.45		0.1	U	0.11	U	0.1	U	0.1	U	0.11	U	0.1	U	0.11	U	0.1	U	0.11	U
Sodium				NA		690	215		233		209		234		230		248	N	253	N	262	N	356		840		492		242		368	
Tin				50		NA	1.15		0.44	B	0.471	B	2.5		0.355	B	0.43	B	0.398	B	0.471	B	0.559		0.554		0.974		0.399	B	0.448	B

Acronyms:

B = below or equal to MDL

E = interference

M = duplicate precision criteria not met

N = outside limits of spike recovery

NA = not available

U = non detect

D = reported at secondary dilution factor

high concentration range

medium concentration range

low concentration range

control site concentration above background

Source of Background Values:

DOE/RL-92-24: arsenic, barium, chromium, cobalt, copper, lead, manganese, nickel, vanadium, zinc, 90th percentile of the log-normal distribution

PNNL-18577: boron, thallium, 90th percentile of the log-normal distribution

Antimony, mercury, and selenium values represents maximum background concentration through analysis of 50% of Hanford Site background data. Though above background, detection limits were below ecological screening levels and maximum background concentrations.

DOE/RL-96-17: uranium.

Notes:

All values are in mg/mkg unless otherwise stated

The RCBRA PRGs represent the lowest of PRGs for plants, invertebrates, birds, and mammals.

Bold values exceed RCBRA PRGs

Table 6-1. Evaluation of Chemistry Data for the Selection of Samples for Performing Bioassays

Analyte	Target Concentration Ranges			Lowest RCBRA Eco PRG	100 area Max	Background	Waste Site 120-KW-1					
							Target 24-1	Target 24-1 D	Target 24-2	Target 24-3	Target 24-4	Target 24-5
							bio waste sample 2		bio waste sample 4	bio waste sample 5		bio waste sample 6
	Low	Mid	High				B2BXT3	B2BXT4	B2BXT5	B2BXT6	B2BXT7	B2BXT8
High Priority Analytes												
Antimony	5.2 to 38	38 to 186	186 to >2100	5	9.3	0.385	0.3 U	0.3 U	0.31 U	0.31 U	0.29 U	0.29 U
Barium	132 to 330	330 to 2000	2000 to > 4,760	358	1300	132	56.8	53.1	100	105	55.7	57.6
Cadmium	1 to 4	4 to 20	20 to >40	4	13.2	0.563	0.1 U	0.1 U	0.1 U	0.1 U	0.095 U	0.096 U
Chromium	18.5 to 30	30 to 150	150 to >815	42	204	18.5	7.58	10.9	3.71 B	2.82 B	9.35	9.01
Mercury	0.33 to 1.3	1.3 to 13.7	13.7 to 250	0.136	17.1	0.013	**1.65**	**0.722**	**12.5**	**12.3**	0.108 B	0.0734 B
Thallium	1 to 2.4	2.4 to 4	4 to >5	NA		0.185	0.1 U	0.1 U	0.1 U	0.1 U	0.095 U	0.096 U
Uranium	3.21 to 100	100 to 250	250 to 2610	40.3		3.21	0.474 B	0.48 B	0.243 B	0.219 B	0.583	0.612
Zinc	67 to 145	145 to 760	760 to 9420	393	1310	67.8	36.60	39.10	15.80	9.18	45.80	43.90
Medium Priority Analytes												
Boron	3.62 to 7.2	7.2 to 30	30 to > 105	29.6	66.4	3.62	17.6 B	16.1 B	13.7 B	11.1 B	17.3 B	18.2 B
Copper	22 to 50	50 to 170	170 to 4080	50	552	22	16.8	18.3	6.07	3.95	22	21.1
Lead	10 to 120	120 to 500	500 to > 501	125	214	10.2	2.19	2.08	3.32	3.15	2.39	2.44
Manganese	512 to 750	750 to 1000	1000 to >8400	558		512	182 N	181 N	87.6 N	62.3 N	230 N	242 N
Low Priority Analytes												
Arsenic	6.5 to 18	18 to 100	100 to > 131	19.3		6.47	1.65 B	1.64 B	1.25 B	1.09 B	1.91 B	2.28 B
Cobalt	0 to 15.69	NA to NA	NA to NA	13		15.7	5.7	5.46	2.63	1.68	7.01	7
Nickel	19.1 to 30	30 to 280	NA to NA	38		19.1	3.6	3.22	1.93 B	1.18 B	5.16	4.94
Selenium	0.78 to 2.5	2.5 to 4.3	4.3 to 11	1.2	1.8	1.7	**1.39** B	**1.3** B	**1.83** B	**1.28** B	**1.31** B	**1.98** B
Vanadium	85 to 100	100 to 115	115 to 130	43.2	106	85.1	**116**	**127**	**89.4**	**72.1**	**112**	**115**
Additional Analytes												
pH	0 to 6.5	6.5 to 9	9 to 14	NA		NA	4.13	4.17	5.09	5.02	4.22	4.21
						HEIS ID	B2BXW7	B2BXW8	B2BXW9	B2BXX0	B2BXX1	B2BXX2
CEC				10			11.67	11.05	11.97	15.11	11.13	10.79
% Gravel							0.1	0	0	0	0	0
% Sand							96.5	96.6	84	87.9	97.5	97
% Silt/Clay							3.4	3.4	16.1	12.1	2.5	3
						HEIS ID	B2BXX5	B2BXX6	B2BXX7	B2BXX8	B2BXX9	B2BXY0
TOC							91.8 B	116	58.4 B	91.7 B	33.4 U	87.3 B
Insecticides							ND	ND	ND	ND	ND	ND
herbicides							ND	ND	ND	ND	ND	ND
Beryllium				NA		1.51	0.202 B	0.203 B	0.1 U	0.1 U	0.162 B	0.253 B
Calcium				1000		17200	9270	7790	21400	20800	10200	10600
Magnesium				60		7060	2760	2830	1290	954	3130	2960
Molybdenum				2	4.5	0.47	0.429 B	0.451 B	0.411 B	0.35 B	0.627 B	0.51 B
Nitrogen, Kjeldahl total				NA		NA	14.3 N	7.4 BN	20.9 N	31.2 N	16.6 N	18.1 N
Phosphorus				10		NA	1980	1890	941	788	2100	2230
Potassium				150		2150	1030	790	1480	1440	828	1270
Silver				560		0.167	0.1 U	0.1 U	0.1 U	0.1 U	0.095 U	0.096 U
Sodium				NA		690	1050	959	3160	2770	831	835
Tin				50		NA	0.46 B	0.487 B	0.475 B	0.339 B	0.523	0.501

Acronyms:

B = below or equal to MDL

E = interference

M = duplicate precision criteria not met

N = outside limits of spike recovery

NA = not available

U = non detect

D = reported at secondary dilution factor

high concentration range

medium concentration range

low concentration range

control site concentration above background

Source of Background Values:

DOE/RL-92-24: arsenic, barium, chromium, cobalt, copper, lead, manganese, nickel, vanadium, zinc, 90th percentile of the log-normal distribution

PNNL-18577: boron, thallium, 90th percentile of the log-normal distribution

Antimony, mercury, and selenium values represents maximum background concentration through analysis of 50% of Hanford Site background data. Though above background, detection limits were below ecological screening levels and maximum background concentrations.

DOE/RL-96-17: uranium.

Notes:

All values are in mg/mkg unless otherwise stated

The RCBRA PRGs represent the lowest of PRGs for plants, invertebrates, birds, and mammals. **Bold values** exceed RCBRA PRGs

Table 6-1. Evaluation of Chemistry Data for the Selection of Samples for Performing Bioassays

Analyte	Target Concentration Ranges			Lowest RCBRA Eco PRG	100 area Max	Background	Waste Site 281															
							Target 7-1	Target 7-2	Target 7-3	Target 7-4	Target 7-5	Target 8-1	Target 8-1D	Target 8-2	Target 8-3	Target 8-4	Target 8-5	Target 9-1	Target 9-2	Target 9-3	Target 9-4	Target 9-5
							bio waste sample 7								bio waste sample 8							
	Low	Mid	High				B2C126	B2C127	B2C128	B2C129	B2C130	B2C131	B2C132	B2C133	B2C134	B2C135	B2C136	B2C137	B2C138	B2C139	B2C140	B2C141
High Priority Analytes																						
Antimony	5.2 to 38	38 to 186	186 to >2100	5	9.3	0.385	**15.3**	**6.2**	**10.1**	**14.3**	4.51	0.448 B	1.26 B	0.668 B	3.75	**25.4**	0.446 B	0.31 U	0.33 U	0.32 U	0.3 U	0.32 U
Barium	132 to 330	330 to 2000	2000 to > 4,760	358	1300	132	95.1	93.5	88.1	93.4	88.3	63.7	70.7	70.9	79.1 N	68.5 N	68.1 N	87.4 N	107 N	96 N	78.6 N	86.9 N
Cadmium	1 to 4	4 to 20	20 to >40	4	13.2	0.563	0.116 B	0.125 B	0.11 U	0.109 B	0.094 U	0.129 B	0.218 B	0.143 B	0.151 B	0.1 U	0.109 B	0.119 B	0.11 U	0.139 B	0.099 U	0.11 U
Chromium	18.5 to 30	30 to 150	150 to >815	42	204	18.5	13.3 N	13.9 N	13.3 N	13 N	12.9 N	14.6 N	28.7 N	14.1 N	16.3	12.6	10.6	14.5	14.7	15.4	12.6	16.1
Mercury	0.33 to 1.3	1.3 to 13.7	13.7 to 250	0.136	17.1	0.013	0.05 U	0.051 U	0.053 U	0.048 U	0.047 U	0.049 U	0.047 U	0.049 U	0.054 U	0.052 U	0.052 U	0.052 U	0.055 U	0.054 U	0.05 U	0.054 U
Thallium	1 to 2.4	2.4 to 4	4 to >5	NA		0.185	0.11 B	0.116 B	0.11 U	0.107 B	0.106 B	0.098 U	0.094 U	0.097 U	0.11 U	0.1 U	0.101 B	0.127 B	0.148 B	0.125 B	0.105 B	0.11 U
Uranium	3.21 to 100	100 to 250	250 to 2610	40.3		3.21	0.44 B	0.996	0.719	0.454 B	0.458 B	0.486 B	0.435 B	0.424 B	0.41 B	0.36 B	0.335 B	0.426 B	0.432 B	0.461 B	0.42 B	0.449 B
Zinc	67 to 145	145 to 760	760 to 9420	393	1310	67.8	60.20	47.50	42.70	48.30	42.60	71.60	129.00	61.40	109.00 N	58.20 N	46.10 N	46.60 N	48.50 N	49.30 N	41.70 N	43.20 N
Medium Priority Analytes																						
Boron	3.62 to 7.2	7.2 to 30	30 to > 105	29.6	66.4	3.62	4.99 BEX	4.62 BEX	5.26 BEX	4.43 BEX	5.1 BEX	5.17 BEX	5.59 BEX	4.3 U	23.6 EX	4.75 BEX	10.2 BEX	4.4 U	5.01 BEX	4.4 U	4.4 U	4.5 U
Copper	22 to 50	50 to 170	170 to 4080	50	552	22	27.7	16.4	19.4	18.3	13.2	17.1	49	**66.8**	**225** N	**212** N	**65** N	12.4 N	12.9 N	13.4 N	11.9 N	11.9 N
Lead	10 to 120	120 to 500	500 to > 501	125	214	10.2	13.2	13.6	8.64	6.79	6.01	25.8	81.3	20.7	77.4	22.8	14.7	7.38	6.85	7.75	5.56	6.1
Manganese	512 to 750	750 to 1000	1000 to >8400	558		512	396 N	365 N	351 N	363 N	346 N	298 N	354 N	297 N	310 N	260 N	346 N	355 N	386 N	376 N	326 N	344 N
Low Priority Analytes																						
Arsenic	6.5 to 18	18 to 100	100 to > 131	19.3		6.47	2.84 B	4.06 B	3.38 B	3.29 B	2.94 B	3.45 B	4.79	4.25	2.88 B	3.57 B	2.48 B	4.21	3.33 B	3.61 B	2.8 B	2.98 B
Cobalt	0 to 15.69	NA to NA	NA to NA	13		15.7	7.84	7.49	7.03	7.39	7.32	6.3	7.82	6.11	6.47	5.48	6.17	7.02	7.64	7.61	6.46	6.91
Nickel	19.1 to 30	30 to 280	NA to NA	38		19.1	13.5 N	13 N	11.7 N	11.9 N	11.1 N	12.5 N	**50.5** N	12.1 N	12.1	11.1	10.1	13.1	13.3	13.9	11.5	14.9
Selenium	0.78 to 2.5	2.5 to 4.3	4.3 to 11	1.2	1.8	1.7	**1.25** B	**1.25** B	0.979 B	**1.42** B	0.939 B	**1.27** B	0.78 B	**1.46** B	0.697 B	1.14 B	0.708 B	0.941 B	**1.21** B	1.18 B	1.09 B	1.11 B
Vanadium	85 to 100	100 to 115	115 to 130	43.2	106	85.1	**44.4**	**45.8**	38.7	**46.1**	**44.4**	40.6	38.4	33.8	33.4	29.3	35.1	35.2	40.6	39.5	32.1	35.5
Additional Analytes																						
pH	0 to 6.5	6.5 to 9	9 to 14	NA		NA	7.05	7.35	7.05	7.21	7.29	7.36	7.14	7.02	7.69	7.4	7.25	6.94	6.99	6.86	6.67	6.89
						HEIS ID	B2C191	B2C192	B2C193	B2C194	B2C195	B2C196	B2C197	B2C1W7	B2C199	B2C1B0	B2C1B1	B2C1B2	B2C1B3	B2C1B4	B2C1B5	B2C1B6
CEC				10			8.55	8.34	7.48	8.45	7.54	4.76	4.57	5.6	5.28	5.69	6.75	8.71	8.29	6.35	7.91	6.72
% Gravel							0.4	1.8	0.2	0.5	0.3	3.8	0.9	0.1	1.9	0.7	1.1	2.2	0.1	0.1	0.8	0
% Sand							71.1	70.4	69.3	76	70	92.2	94	91.6	91	93.9	89.1	77.4	64.6	69.7	85.6	73.4
% Silt/Clay							28.5	27.8	30.5	23.4	29.7	4	5.1	8.3	7.1	5.4	9.8	20.4	35.3	30.2	13.5	26.6
						HEIS ID	B2C1C4	B2C1C5	B2C1C6	B2C1C7	B2C1C8	B2C1C9	B2C1D0	B2C1W8	B2C1D2	B2C1D3	B2C1D4	B2C1D5	B2C1D6	B2C1D7	B2C1D8	B2C1D9
TOC							3650	2090	2160	1740	1100	649	1250	2430	2980	1790	1440	1640	2660	3810	990	3110
Insecticides							ND	ND	ND	ND	ND	**Yes**	**Yes**	**Yes**	ND	**Yes**	**Yes**	ND	ND	ND	**Yes**	ND
herbicides							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Beryllium				NA		1.51	0.339 B	0.302 B	0.442 B	0.333 B	0.269 B	0.19 B	0.172 B	0.278 B	0.323 B	0.306 B	0.238 B	0.298 B	0.373 B	0.379 B	0.255 B	0.284 B
Calcium				1000		17200	3390	3660	3440	3580	3490	3110	4690	3480	4160	3910	3660	3180	3770	3950	3560	3160
Magnesium				60		7060	4140	4210	4630	4310	4620	4690	4310	4310	4550	4200	4100	4720	5090	4660	4620	5050
Molybdenum				2	4.5	0.47	0.36 BC	0.369 BC	0.268 BC	0.33 BC	0.362 BC	0.29 BC	**10.5** C	0.392 BC	0.39 B	0.411 B	0.253 B	0.339 B	0.304 B	0.27 B	0.273 B	0.21 B
Nitrogen, Kjeldahl total				NA		NA	195 DN	163 DN	256 DN	141 DN	162 DN	133 DN	68.2 N	143 DN	173 ND	114 ND	138 ND	177 ND	305 ND	293 ND	133 ND	353 ND
Phosphorus				10		NA	650	627	621	658	612	605	636	571	569	537	546	573	774	628	582	578
Potassium				150		2150	2160	2020	2230	2060	2210	2220	1510	1600	1940	1600	1690	2230	2760	2370	1970	2320
Silver				560		0.167	0.1 U	0.1 U	0.11 U	0.096 U	0.094 U	0.098 U	0.094 U	0.097 U	0.11 U	0.1 U	0.1 U	0.1 U	0.11 U	0.11 U	0.099 U	0.11 U
Sodium				NA		690	219 C	200 C	223 C	201 C	207 C	206 C	168 C	169 C	246 C	168 C	180 C	144 C	186 C	187 C	148 C	151 C
Tin				50		NA	0.524	0.423 B	0.356 B	0.418 B	0.404 B	0.309 B	2.02	0.39 B	1.53	0.612	0.322 B	0.42 B	0.54 B	0.388 B	0.309 B	0.358 B

Acronyms:

B = below or equal to MDL

E = interference

M = duplicate precision criteria not met

N = outside limits of spike recovery

NA = not available

U = non detect

D = reported at secondary dilution factor

high concentration range

medium concentration range

low concentration range

control site concentration above background

Source of Background Values:

DOE/RL-92-24: arsenic, barium, chromium, cobalt, copper, lead, manganese, nickel, vanadium, zinc, 90th percentile of the log-normal distribution

PNNL-18577: boron, thallium, 90th percentile of the log-normal distribution

Antimony, mercury, and selenium values represents maximum background concentration through analysis of 50% of Hanford Site background data. Though above background, detection limits were below ecological screening levels and maximum background concentrations.

DOE/RL-96-17: uranium.

Notes:

All values are in mg/mkg unless otherwise stated

The RCBRA PRGs represent the lowest of PRGs for plants, invertebrates, birds, and mammals. **Bold values** exceed RCBRA PRGs

Table 6-1. Evaluation of Chemistry Data for the Selection of Samples for Performing Bioassays

Analyte	Target Concentration Ranges			Lowest RCBRA Eco PRG	100 area Max	Background	Waste Site 281					Waste Site OCSA										
							Target 10-1	Target 10-2	Target 10-3	Target 10-4	Target 10-5	Target 11-1	Target 11-2	Target 11-3	Target 12-1	Target 12-2	Target 12-3	Target 12-4	Target 12-4D	Target 12-5	Target 13-1
												bio waste sample 9			bio waste sample 10	bio waste sample 11	bio waste sample 12	bio waste sample 13	bio waste sample 14	bio waste sample 15	bio waste sample 16
	Low	Mid	High				B2C142	B2C143	B2C144	B2C145	B2C146	B2BY78	B2BY79	B2BY80	B2BY83	B2BY84	B2BY85	B2BY86	B2BY87	B2BY88	B2BY89
High Priority Analytes																					
Antimony	5.2 to 38	38 to 186	186 to >2100	5	9.3	0.385	0.31 U	0.3 U	0.31 U	0.31 U	0.3 U	0.3 U	0.29 U	0.31 U	0.789 B	0.649 B	0.711 B	1.06 B	1.41 B	1.75 B	**33.6**
Barium	132 to 330	330 to 2000	2000 to > 4,760	358	1300	132	74.4 N	67.4 N	85.5 N	75.6 N	76.1 N	71.3	79.7	88.7	104	93.7	87.8	115	123	90.2	113
Cadmium	1 to 4	4 to 20	20 to >40	4	13.2	0.563	0.1 U	0.099 U	0.1 U	0.1 U	0.099 U	0.231 B	0.224 B	0.229 B	2.78	2.75	3.37	**8.64**	**9.85**	2.6	**4.85**
Chromium	18.5 to 30	30 to 150	150 to >815	42	204	18.5	14.3	16.1	18.6	14	15	9.34	9.43	10.8	11.9	10.2	11.1	10.1	10.1	10.9	29.8
Mercury	0.33 to 1.3	1.3 to 13.7	13.7 to 250	0.136	17.1	0.013	0.052 U	0.05 U	0.052 U	0.052 U	0.049 U	0.05 U	0.048 U	0.051 U	0.05 U	0.049 U	0.05 U	0.051 U	0.048 U	0.048 U	0.05 U
Thallium	1 to 2.4	2.4 to 4	4 to >5	NA		0.185	0.1 U	0.099 U	0.118 B	0.101 B	0.106 B	0.117 B	0.113 B	0.114 B	0.1 U	0.098 U	0.1 U	0.1 U	0.096 U	0.096 U	0.116 B
Uranium	3.21 to 100	100 to 250	250 to 2610	40.3		3.21	0.507 B	0.504	0.447 B	0.434 B	0.402 B	0.617	0.511	0.494 B	0.509	0.517	0.474 B	0.502 B	0.454 B	0.772	0.474 B
Zinc	67 to 145	145 to 760	760 to 9420	393	1310	67.8	39.90 N	36.20 N	54.70 N	39.30 N	51.30 N	48.70	45.30	49.10	57.10	57.20	48.90	69.80	69.00	51.80	121.00
Medium Priority Analytes																					
Boron	3.62 to 7.2	7.2 to 30	30 to > 105	29.6	66.4	3.62	4.3 U	6.21 BEX	5.8 BEX	5.85 BEX	5.91 BEX	4.2 U	4.2 U	4.3 U	4.3 U	4.1 U	4.3 U	4.3 U	4.3 U	4.4 U	4.4 U
Copper	22 to 50	50 to 170	170 to 4080	50	552	22	11.9 N	11.6 N	12.5 N	12.4 N	10.9 N	17.9	14.9	21.7	23.6	38.6	27	31.9	30.6	21.7	**50.1**
Lead	10 to 120	120 to 500	500 to > 501	125	214	10.2	5.77	4.92	6.89	5.58	5.72	**228**	86.5	30.6	81.5	68.3	**142**	**193**	**195**	112	**2900**
Manganese	512 to 750	750 to 1000	1000 to >8400	558		512	333 N	281 N	360 N	313 N	311 N	321	314	336	333	266	351	312	288	310	325
Low Priority Analytes																					
Arsenic	6.5 to 18	18 to 100	100 to > 131	19.3		6.47	3.31 B	2.91 B	3.65 B	3.2 B	3.26 B	3.25 B	3.07 B	3.34 B	4.14	3.51 B	3.59 B	3.53 B	3.54 B	3.38 B	4.03
Cobalt	0 to 15.69	NA to NA	NA to NA	13		15.7	6.99	5.87	7.34	7.4	6.77	8.01	8.05	8.67	8.01	7.47	8.09	7.59	7.18	7.53	8.64
Nickel	19.1 to 30	30 to 280	NA to NA	38		19.1	12.6	11.2	13.9	12.3	12.4	9.87	9.82	11.1	10.6	9.6	11.6	10.2	10.1	9.89	22.5
Selenium	0.78 to 2.5	2.5 to 4.3	4.3 to 11	1.2	1.8	1.7	0.683 B	**1.52** B	0.813 B	**1.21** B	0.869 B	**1.6** B	0.926 B	1.2 B	1.18 B	**1.26** B	**1.37** B	**1.25** B	**1.34** B	1.17 B	1.18 B
Vanadium	85 to 100	100 to 115	115 to 130	43.2	106	85.1	36	29.4	36.9	33.3	30.1	**57.5**	**53.8**	**57.8**	**55.1**	**51.1**	**51.8**	**52.9**	**47.8**	**50.8**	**54.8**
Additional Analytes																					
pH	0 to 6.5	6.5 to 9	9 to 14	NA		NA	7.23	7.1	7.45	7.14	7.59	6.89	7.87	7.75	6.2	5.81	6.51	6.72	6.65	6.88	7.22
						HEIS ID	B2C1B7	B2C1B8	B2C1B9	B2C1C0	B2C1C1	B2C027	B2C028	B2C029	B2C032	B2C033	B2C034	B2C035	B2C036	B2C037	B2C038
CEC				10			6.9	6.86	6.68	5.59		13.88	16.16	13.49	13.88	10.65	10.29	13.92	13.12	12.68	18.23
% Gravel							0.7	0.6	1.5	0.5	0.1	0.5	0	0.6	1	0	0	0	0	1.5	0
% Sand							85.4	84.6	89.4	89.3	90.4	79.5	70.8	68	66.1	64.1	63.9	62.8	64.3	63.4	72.3
% Silt/Clay							13.9	14.8	9.1	10.2	9.5	20	29.2	31.4	32.9	35.9	36.1	37.2	35.7	35.1	27.7
						HEIS ID	B2C1F0	B2C1F1	B2C1F2	B2C1F3	B2C1F4	B2C0B0	B2C0B1	B2C0B2	B2C0B5	B2C0B6	B2C0B7	B2C0B8	B2C0B9	B2C0C0	B2C0C1
TOC							1270	1270	1250	1420	931						10500				
Insecticides							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
herbicides							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Beryllium				NA		1.51	0.207 B	0.416 B	0.258 B	0.311 B	0.306 B	0.328 B	0.287 B	0.365 B	0.338 B	0.324 B	0.298 B	0.333 B	0.288 B	0.357 B	0.372 B
Calcium				1000		17200	2920	3060	3400	3150	3440	3830	4500	4030	3800	3300	3260	3020	3990	4230	5640
Magnesium				60		7060	4470	4740	5040	4890	4630	3470	3660	3390	3940	3790	3680	2910	4160	4260	4160
Molybdenum				2	4.5	0.47	0.245 B	0.212 B	0.239 B	0.326 B	0.221 B	0.466 B	0.425 B	0.446 B	0.464 B	0.416 B	0.55 B	0.51 B	0.604 B	0.398 B	0.598 B
Nitrogen, Kjeldahl total				NA		NA	164 ND	152 ND	176 DN	174 DN	144 DN										
Phosphorus				10		NA	579	640	585	568	563	689 MN	762 MN	689 MN	762 MN	766 MN	719 MN	602 MN	794 MN	847 MN	853 MN
Potassium				150		2150	2260	2430	2030	2220	1920	1280	1580	1410	1720	1540	1500	1340	1800	1910	1800
Silver				560		0.167	0.1 U	0.099 U	0.1 U	0.1 U	0.099 U	0.099 U	0.096 U	0.1 U	0.1 U	0.098 U	0.1 U	0.1 U	0.096 U	0.096 U	0.12 B
Sodium				NA		690	128 C	181 CN	160 CN	157 CN	164 CN	243 N	212 N	210 N	218 N	190 N	199 N	157 N	221 N	234 N	239 N
Tin				50		NA	0.339 B	0.3 B	0.441 B	0.337 B	0.322 B	1.47	1.02	1.78	8.13	3.28	2.3	7.03	9.04	6.52	22.7

Acronyms:

B = below or equal to MDL

E = interference

M = duplicate precision criteria not met

N = outside limits of spike recovery

NA = not available

U = non detect

D = reported at secondary dilution factor

high concentration range

medium concentration range

low concentration range

control site concentration above background

Source of Background Values:

DOE/RL-92-24: arsenic, barium, chromium, cobalt, copper, lead, manganese, nickel, vanadium, zinc, 90th percentile of the log-normal distribution

PNNL-18577: boron, thallium, 90th percentile of the log-normal distribution

Antimony, mercury, and selenium values represents maximum background concentration through analysis of 50% of Hanford Site background data. Though above background, detection limits were below ecological screening levels and maximum background concentrations.

DOE/RL-96-17: uranium.

Notes:

All values are in mg/mkg unless otherwise stated

The RCBRA PRGs represent the lowest of PRGs for plants, invertebrates, birds, and mammals. **Bold values** exceed RCBRA PRGs

Table 6-1. Evaluation of Chemistry Data for the Selection of Samples for Performing Bioassays

| Analyte | Target Concentration Ranges | | | Lowest RCBRA Eco PRG | 100 area Max | Background | Waste Site OCSA | | |

Table 6-1. Evaluation of Chemistry Data for the Selection of Samples for Performing Bioassays

Analyte	Target Concentration Ranges Low			Mid			High			Lowest RCBRA Eco PRG	100 area Max	Background	Target 16-1 bio waste sample 26 B2BYB5		Target 16-2 bio waste sample 27 B2BYB6		Target 16-3 bio waste sample 28 B2BYB7		Target 16-4 bio waste sample 29 B2BYB8		Target 16-5 bio waste sample 30 B2BYB9		Target 17-1 bio waste sample 31 B2BYC0		Target 17-2 bio waste sample 32 B2BYC1		Target 17-3 bio waste sample 33 B2BYC2		Target 17-4 bio waste sample 34 B2BYC3		Target 17-5 bio waste sample 35 B2BYC4		Target 18-1 bio waste sample 36 B2BYC5		Target 18-2 bio waste sample 37 B2BYC6		Target 18-3 bio waste sample 38 B2BYC7	
High Priority Analytes																																								
Antimony	5.2	to	38	38	to	186	186	to	>2100	5	9.3	0.385	**119**	N	**293**	N	**283**	N	**823**	N	**842**	N	**12.6**	N	3.39	N	2.12	N	2.77	N	**167**	N	2.5	N	2.98	N	1.59	N
Barium	132	to	330	330	to	2000	2000	to	> 4,760	358	1300	132	108		**566**		**411**		199		189		**426**		131		181		309		**716**		220		212		355	
Cadmium	1	to	4	4	to	20	20	to	>40	4	13.2	0.563	1.26		2.44		**4.17**		**5.6**		**8.32**		**7.59**		0.647		0.255		0.375		2.36		2.49		2.09		0.873	
Chromium	18.5	to	30	30	to	150	150	to	>815	42	204	18.5	13		14.7		**44.8**		22.2		17.5		15.7		11.5		10.3		14.1		23.7		31		20.9		15.5	
Mercury	0.33	to	1.3	1.3	to	13.7	13.7	to	250	0.136	17.1	0.013	0.054	U	0.053	U	**0.178**		0.053	U	0.0528		**0.172**		0.054	U	0.052	U	0.053	U	0.055	U	0.0585		0.0617		0.07	U
Thallium	1	to	2.4	2.4	to	4	4	to	>5	NA		0.185	0.161		0.241		0.263		0.352		0.459		0.11	U	0.11	U	0.1	U	0.11	U	0.118		0.11	U	0.11	U	0.14	U
Uranium	3.21	to	100	100	to	250	250	to	2610	40.3		3.21	0.515		0.473		0.439		1.15		0.412		0.474		0.869		0.736		0.453		0.43		0.466		0.391		0.728	
Zinc	67	to	145	145	to	760	760	to	9420	393	1310	67.8	183.00	N	**646.00**	N	**1890.00**	N	**404.00**	N	**537.00**	N	**1680.00**	N	109.00	N	95.20	N	243.00	N	**549.00**	N	**725.00**	N	338.00	N	327.00	N
Medium Priority Analytes																																								
Boron	3.62	to	7.2	7.2	to	30	30	to	> 105	29.6	66.4	3.62	**45**	UD	**45**	UD	**45**	UD	**45**	UD	**44**	UD	**45**	UD	**46**	UD	**45**	UD	**45**	UD	**46**	UD	**46**	UD	**45**	UD	**58**	UD
Copper	22	to	50	50	to	170	170	to	4080	50	552	22	**62.4**	N	**183**	N	**596**	N	**280**	N	**120**	N	**99.5**	N	**63.5**	N	28.4	N	**93.8**	N	**256**	N	**142**	N	**182**	N	**118**	N
Lead	10	to	120	120	to	500	500	to	> 501	125	214	10.2	**4220**		**9090**		0.11	U	0.11	U	0.1	U	**802**		**300**		**145**		**411**		**3840**		**3170**		**411**		**316**	
Manganese	512	to	750	750	to	1000	1000	to	>8400	558		512	342	N	350	N	431	N	326	N	323	N	**1260**	N	364	N	547	N	356	N	438	N	**661**	N	436	N	**849**	N
Low Priority Analytes																																								
Arsenic	6.5	to	18	18	to	100	100	to	> 131	19.3		6.47	7.95		11.4		10		14.8		16.4		5.22		4.28		4.5		4.22		8.01		7.61		4.83		6.11	
Cobalt	0	to	15.69	NA	to	NA	NA	to	NA	13		15.7	7.46		8.39		8.34		7.48		7.32		7.7		7.53		7.35		7.84		8.6		10.4		9.19		11.1	
Nickel	19.1	to	30	30	to	280	NA	to	NA	38		19.1	11.2		17.8		18.6		15.2		13		15		11.3		10.9		15		17.9		27.4		21		19.2	
Selenium	0.78	to	2.5	2.5	to	4.3	4.3	to	11	1.2	1.8	1.7	**1.24**		**1.33**		0.883		0.896		**1.34**		**1.52**		**1.38**		0.864		1.12		**1.37**		0.877		**2.02**		**1.54**	
Vanadium	85	to	100	100	to	115	115	to	130	43.2	106	85.1	**43.6**		**46.1**		**52.9**		**47.1**		**44**		38.4		**44**		**44.2**		**46.4**		**48.1**		**53.9**		**49.4**		**64.2**	
Additional Analytes																																								
pH	0	to	6.5	6.5	to	9	9	to	14	NA		NA																												
												HEIS ID	B2C054		B2C055		B2C056		B2C057		B2C058		B2C059		B2C060		B2C061		B2C062		B2C063		B2C064		B2C065		B2C066	
CEC										10																														
% Gravel													0		1.7		0		3.4		6.6		1.2		5.6		0.4		6.3		6.1		4.9		4.2		0	
% Sand													68.8		68.7		67.5		67.8		70.2		60.9		54.7		60.4		58.6		58.7		69.7		68.7		73.7	
% Silt/Clay													31.2		29.6		32.5		28.8		23.2		37.9		39.7		39.3		35.1		35.2		25.5		27.1		26.3	
												HEIS ID	B2C0D7		B2C0D8		B2C0D9		B2C0F0		B2C0F1		B2C0F2		B2C0F3		B2C0F4		B2C0F5		B2C0F6		B2C0F7		B2C0F8		B2C0F9	
TOC																																								
Insecticides													ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
herbicides													ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Beryllium										NA		1.51	0.357		0.261		0.406		0.353		0.311		0.356		0.291		0.341		0.279		0.304		0.487		0.273		0.409	
Calcium										1000		17200	9130	D	11300	D	6930	D	5840	D	9270	D	11100	D	13100	D	9890	D	10800	D	10600	D	10100	D	7810	D	10300	D
Magnesium										60		7060	4770	D	4480	D	5410	D	4350	D	4850	D	4970	D	4890	D	4650	D	3890	D	4530	D	5410	D	5730	D	6740	D
Molybdenum										2	4.5	0.47	0.897		1.47		**28**		**5.81**		1.44		**2.57**		0.624		0.536		0.902		**3.3**		**5.91**		**2.22**		1.42	
Nitrogen, Kjeldahl total										NA		NA																												
Phosphorus										10		NA	874	D	786	D	1080	D	902	D	984	D	934	D	983	D	878	D	689	D	797	D	1100	D	903	D	1380	D
Potassium										150		2150	2040	D	1770	D	2460	D	1860	D	2170	D	2200	D	1860	D	1810	D	1660	D	1920	D	1960	D	1870	D	2320	D
Silver										560		0.167	0.665		0.967		1.84		2.99		1.92		0.342		0.11	U	0.109		0.161		0.535		1.06		0.385		0.342	
Sodium										NA		690	325	DN	384	DN	385	DN	335	DN	431	DN	748	DN	330	DN	333	DN	461	DN	498	DN	441	DN	407	DN	452	DN
Tin										50		NA	**54.8**		**195**		**131**		**838**		**525**		26.8		4.07		4.7		4.37		**56.1**		**71**		27.6		27.9	

Acronyms:

B = below or equal to MDL

E = interference

M = duplicate precision criteria not met

N = outside limits of spike recovery

NA = not available

U = non detect

D = reported at secondary dilution factor

high concentration range

medium concentration range

low concentration range

control site concentration above background

Source of Background Values:

DOE/RL-92-24: arsenic, barium, chromium, cobalt, copper, lead, manganese, nickel, vanadium, zinc, 90th percentile of the log-normal distribution

PNNL-18577: boron, thallium, 90th percentile of the log-normal distribution

Antimony, mercury, and selenium values represents maximum background concentration through analysis of 50% of Hanford Site background data. Though above background, detection limits were below ecological screening levels and maximum background concentrations.

DOE/RL-96-17: uranium.

Notes:

All values are in mg/mkg unless otherwise stated

The RCBRA PRGs represent the lowest of PRGs for plants, invertebrates, birds, and mammals. **Bold values** exceed RCBRA PRGs

Table 6-1. Evaluation of Chemistry Data for the Selection of Samples for Performing Bioassays

Analyte	Target Concentration Ranges			Lowest RCBRA Eco PRG	100 area Max	Background	Waste Site OCSA																													
							Target 18-3D		Target 18-4		target 18-5		Target 19-1		Target 19-2		Target 19-3		Target 19-4		Target 20-1		Target 20-2		Target 20-3		Target 20-4		Target 21-1		Target 21-2	
							bio waste sample 39		bio waste sample 40		bio waste sample 41								bio waste sample 42		bio waste sample 43		bio waste sample 44		bio waste sample 45		bio waste sample 46		bio waste sample 47		bio waste sample 48	
	Low	Mid	High				B2BYC8		B2BYC9		B2BYD0		B2BYD1		B2BYD2		B2BYD3		B2BYD4		B2BYD6		B2BYD7		B2BYD8		B2BYD9		B2BYF1		B2BYF2	
High Priority Analytes																																				
Antimony	5.2 to 38	38 to 186	186 to >2100	5	9.3	0.385	1.65	N	0.52	N	**14.8**	N	1.31		0.949		0.974		0.445		1.49	N	0.796	N	0.894	N	**119**	N	0.3	U	0.3	U
Barium	132 to 330	330 to 2000	2000 to > 4,760	358	1300	132	**379**		98.1		344		100		87.4		85.4		85.3		358		174		181		108		69.5		77.2	
Cadmium	1 to 4	4 to 20	20 to >40	4	13.2	0.563	1.04		0.166		2.18		0.222		0.216		0.146		0.119		0.726		0.891		0.859		1.26		1.57		0.11	
Chromium	18.5 to 30	30 to 150	150 to >815	42	204	18.5	17.1		9.03		259		31.3		22.7		34.1		16.1		16.3		18.6		15.9		13		9.94		9.62	
Mercury	0.33 to 1.3	1.3 to 13.7	13.7 to 250	0.136	17.1	0.013	0.053	U	0.053	U	0.053	U	0.055	U	0.054	U	0.054	U	0.053	U	0.0666		0.068		0.0804		0.054	U	0.05	U	0.05	U
Thallium	1 to 2.4	2.4 to 4	4 to >5	NA		0.185	0.11	U	0.11	U	0.11	U	0.11	U	0.11	U	0.11	U	0.11	U	0.11	U	0.11	U	0.11	U	0.161		0.1	U	0.1	U
Uranium	3.21 to 100	100 to 250	250 to 2610	40.3		3.21	0.69		0.55		0.955		0.48		0.402		0.429		0.441		0.842		0.599		0.651		0.515		0.491		0.425	
Zinc	67 to 145	145 to 760	760 to 9420	393	1310	67.8	382.00	N	49.40	N	370.00	N	54.00		48.20		47.78		50.40		194.00	N	157.00	N	179.00	N	183.00	N	**2620**		**399**	
Medium Priority Analytes																																				
Boron	3.62 to 7.2	7.2 to 30	30 to > 105	29.6	66.4	3.62	**45**	UD	**45**	UD	**45**	UD	**45**	UD	**250**	UD	**44**	UD	**44**	UD	**47**	UD	**44**	UD	**46**	UD	**45**	UD	**44**	UD	**45**	UD
Copper	22 to 50	50 to 170	170 to 4080	50	552	22	**167**	N	18.9	N	**260**	N	**70**		**53.8**		**57.3**		23.1		41.5	N	32.1	N	34.7	N	**62.4**	N	41.1		17	
Lead	10 to 120	120 to 500	500 to > 501	125	214	10.2	**340**		24.1		**1710**		25.3		24.7		13.1	U	11.1	U	77.8		26.7		30		**4220**		50.6		10.4	
Manganese	512 to 750	750 to 1000	1000 to >8400	558		512	398	N	358	N	498	N	**561**	N	**639**	N	**691**	N	**680**	N	349	N	345	N	415	N	342	N	**1020**	N	380	N
Low Priority Analytes																																				
Arsenic	6.5 to 18	18 to 100	100 to > 131	19.3		6.47	6.61		3.63		6.9		7.93		6.5		7.24		4.97		5.95		4.51		4.88		7.95		4.03		4.01	
Cobalt	0 to 15.69	NA to NA	NA to NA	13		15.7	9.01		8.08		9.5		9.3		9.15		9.82		8.6		7.41		7.83		8.61		7.46		7.61		7.28	
Nickel	19.1 to 30	30 to 280	NA to NA	38		19.1	18		9.43		19.5		32.4		27.2		33.1		15.6		18.1		19.1		17.2		11.2		9.91		10.1	
Selenium	0.78 to 2.5	2.5 to 4.3	4.3 to 11	1.2	1.8	1.7	1.05		**1.4**		1.17		**1.3**		0.829		1.01		**1.33**		**1.41**		**1.28**		1.09		**1.24**		0.817		1	
Vanadium	85 to 100	100 to 115	115 to 130	43.2	106	85.1	**54.4**		**48.8**		**45.8**		**47**		**47.2**		**50.1**		**55.2**		**45.5**		**48.2**		**49.2**		**43.6**		**43.5**		**47.7**	
Additional Analytes																																				
pH	0 to 6.5	6.5 to 9	9 to 14	NA		NA																														
						HEIS ID	B2C067		B2C068		B2C069		B2C070		B2C071		B2C072		B2C073		B2C075		B2C076		B2C077		B2C078		B2C080		B2C081	
CEC				10																																
% Gravel							0		0		5.7		0		0.3		0		0		0.1		0		0.3		0.6		0		0.3	
% Sand							71.9		70.4		72.8		76.8		70.5		69.4		66.9		78.5		75		74.2		68.2		80.1		70.3	
% Silt/Clay							28.1		29.5		21.4		23.2		29.2		30.6		33.1		21.4		25		25.5		31.2		19.9		29.4	
						HEIS ID	B2C0H0		B2C0H1		B2C0H2		B2C0H3		B2C0H4		B2C0H5		B2C0H6		B2C0H8		B2C0H9		B2C0J0		B2C0J1		B2C0J3		B2C0J4	
TOC																																				
Insecticides							ND		ND		ND		**Yes**		**Yes**		**Yes**		ND		ND		ND		ND		ND		ND		ND	
herbicides							ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Beryllium				NA		1.51	0.432		0.317		0.46		0.33		0.248		0.273		0.273		0.538		0.4		0.41		0.357		0.284		0.307	
Calcium				1000		17200	7030	D	9690	D	11600	D	10200	D	11600	D	9600	D	11500	D	19800	D	12300	D	15800	D	8920	D	7990	D	10200	D
Magnesium				60		7060	4400	D	4430	D	4550	D	4980	D	5400	D	5040	D	5000	D	5740	D	4900	D	4400	D	4570	D	6100	D	5360	D
Molybdenum				2	4.5	0.47	**2.21**		0.605		**46.3**		**5.55**		**2.71**		**3.74**		1.12		1.16		0.645		0.899		0.897		0.537		0.339	
Nitrogen, Kjeldahl total				NA		NA																														
Phosphorus				10		NA	879	D	985	D	996	D	1040	D	1300	D	876	D	864	D	933	D	850	D	1030	D	813	D	761	D	822	D
Potassium				150		2150	1690	D	1760	D	2210	D	2820	D	3150	D	1880	D	2070	D	1540	D	1970	D	1380	D	1930	D	1750	D	1760	D
Silver				560		0.167	0.317		0.327		0.0816		0.1	U	0.11	U	0.869		0.11	U	0.112		0.11	U	0.11	U	0.665		0.1	U	0.01	U
Sodium				NA		690	303	DN	255	DN	526	DN	537	DN	996	DN	513	DN	470	DN	314	DN	269	DN	261	DN	283	DN	402	DN	387	DN
Tin				50		NA	**134**		1.65		**76.9**		6.7		5.25		5.66		1.34		3.01		1.45		2.047		**54.8**		5.87		0.904	

Acronyms:

B = below or equal to MDL

E = interference

M = duplicate precision criteria not met

N = outside limits of spike recovery

NA = not available

U = non detect

D = reported at secondary dilution factor

high concentration range

medium concentration range

low concentration range

control site concentration above background

Source of Background Values:

DOE/RL-92-24: arsenic, barium, chromium, cobalt, copper, lead, manganese, nickel, vanadium, zinc, 90th percentile of the log-normal distribution

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Antimony, mercury, and selenium values represents maximum background concentration through analysis of 50% of Hanford Site background data. Though above background, detection limits were below ecological screening levels and maximum background concentrations.

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Notes:

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The RCBRA PRGs represent the lowest of PRGs for plants, invertebrates, birds, and mammals. **Bold values** exceed RCBRA PRGs

Table 6-1. Evaluation of Chemistry Data for the Selection of Samples for Performing Bioassays

Analyte	Target Concentration Ranges			Lowest RCBRA Eco PRG	100 area Max	Background	Waste Site OCSA										
							Target 21-3	Target 21-4	Target 21-5	Target 22-1	Target 22-2	Target 22-3	Target 22-4	Target 22-4D	Target 22-5	Target 23-1	Target 23-2	Target 23-3
							bio waste sample 49	bio waste sample 50	bio waste sample 51	bio waste sample 52	bio waste sample 53	bio waste sample 54	bio waste sample 55	bio waste sample 56	bio waste sample 57	bio waste sample 58	bio waste sample 59	bio waste sample 60
	Low	Mid	High				B2BYF3	B2BYF4	B2BYF5	B2BYF6	B2BYF7	B2BYF8	B2BYF9	B2BYH0	B2BYH1	B2BYH2	B2BYH3	B2BYH4
High Priority Analytes																		
Antimony	5.2 to 38	38 to 186	186 to >2100	5	9.3	0.385	0.32 U	0.32 U	0.31 U	0.408	1.31	1.36	0.333	0.34 U	4.83	0.31 U	0.32 U	0.3 U
Barium	132 to 330	330 to 2000	2000 to > 4,760	358	1300	132	64.4	65	67.8	107	221	171	130	124	**4520**	59.4	80.2	74.3
Cadmium	1 to 4	4 to 20	20 to >40	4	13.2	0.563	0.11 U	0.11 U	0.1 U	0.11 U	0.156	0.309	0.1 U	0.11 U	0.394	0.1 U	0.114	0.1 U
Chromium	18.5 to 30	30 to 150	150 to >815	42	204	18.5	10.5	7.84	8.48	10.8	14.5	17.4	12.7	10.6	17.9	7.49	9.85	8.29
Mercury	0.33 to 1.3	1.3 to 13.7	13.7 to 250	0.136	17.1	0.013	0.054 U	0.053 U	0.052 U	0.053 U	0.054 U	0.052 U	0.052 U	0.056 U	0.053 U	0.052 U	0.054 U	0.051 U
Thallium	1 to 2.4	2.4 to 4	4 to >5	NA		0.185	0.11 U	0.11 U	0.103 U	0.11 U	,0.11 U	0.135 U	0.1 U	0.11 U	0.114 U	0.1 U	0.11 U	0.1 U
Uranium	3.21 to 100	100 to 250	250 to 2610	40.3		3.21	0.527	0.545	0.464	0.572	0.514	0.619	0.641	0.694	0.813	0.638	0.636	1.37
Zinc	67 to 145	145 to 760	760 to 9420	393	1310	67.8	49.10	55.60	51.70	155.00	**880.00**	**670.00**	148.00	119.00	**8980.00**	55.40	51.00	56.30
Medium Priority Analytes																		
Boron	3.62 to 7.2	7.2 to 30	30 to > 105	29.6	66.4	3.62	**43** UD	**44** UD	**44** UD	**44** UD	**44** UD	**44** UD	**46** UD	**45** UD	**46** UD	**45** UD	**45** UD	**45** UD
Copper	22 to 50	50 to 170	170 to 4080	50	552	22	15	12.8	14.8	15.3	23.1	30.3	**289**	**198**	28.2	20.9	18	22.2
Lead	10 to 120	120 to 500	500 to > 501	125	214	10.2	4.89	4.91	5.26	43.8	**518**	**1080**	38	42 U	**353**	5	6.67	7.02
Manganese	512 to 750	750 to 1000	1000 to >8400	558		512	359 N	411 N	338 N	379 N	**656** N	518 N	373 N	395 N	451 N	**559** N	467 N	506 N
Low Priority Analytes																		
Arsenic	6.5 to 18	18 to 100	100 to > 131	19.3		6.47	3.02	3.06	3.12	4.31	4.16	6.59	5.63	4.05	6.96	2.17	4.29	2.83
Cobalt	0 to 15.69	NA to NA	NA to NA	13		15.7	7.69	8.02	7.11	8.01	9.09	9.27	7.78	8.05	10.3	12.4	10.1	11.9
Nickel	19.1 to 30	30 to 280	NA to NA	38		19.1	10.4	8.54	9.17	10.9	25.3	18	12.6	11.1	17.5	16.7	13.2	15
Selenium	0.78 to 2.5	2.5 to 4.3	4.3 to 11	1.2	1.8	1.7	**1.25**	0.881	**1.39**	1.05	1.06	1.18	1.08	0.942	**1.36**	**1.41**	**1.31**	**1.37**
Vanadium	85 to 100	100 to 115	115 to 130	43.2	106	85.1	**57.8**	43.1	**46.6**	**51.4**	**49.6**	**50**	**48**	**45.6**	**45.9**	**59.8**	**58.1**	**59.4**
Additional Analytes																		
pH	0 to 6.5	6.5 to 9	9 to 14	NA		NA												
						HEIS ID	B2C082	B2C083	B2C084	B2C085	B2C086	B2C087	B2C088	B2C089	B2C090	B2C091	B2C092	B2C093
CEC				10														
% Gravel							0.1	0	0	0.1	0.4	0	0	0	0	0.1	2.6	0
% Sand							85.2	78.2	76.7	65.8	83.8	73.6	68.7	66.8	71.4	77.1	68.6	75.6
% Silt/Clay							14.7	21.8	23.3	34.1	15.8	26.4	31.3	33.2	28.6	22.8	28.8	24.4
						HEIS ID	B2C0J5	B2C0J6	B2C0J7	B2C0J8	B2C0J9	B2C0K0	B2C0K1	B2C0K2	B2C0K3	B2C0K4	B2C0K5	B2C0K6
TOC																		
Insecticides							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
herbicides							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Beryllium				NA		1.51	0.268	0.314	0.34	0.342	0.384	0.565	0.293	0.356	0.41	0.48	0.455	0.47
Calcium				1000		17200	7740 D	5610 D	6900 D	9190 D	8730 D	9610 D	11400 D	8970 D	11800 D	8850 D	7350 D	7570 D
Magnesium				60		7060	5620 D	4640 D	4690 D	5640 D	5110 D	5340 D	6010 D	5370 D	6220 D	10900 D	6810 D	8400 D
Molybdenum				2	4.5	0.47	0.299	0.299	0.292	0.543	0.778	**2.02**	0.727	0.502	1.6	0.396	0.718	0.429
Nitrogen, Kjeldahl total				NA		NA												
Phosphorus				10		NA	779 D	782 D	810 D	787 D	865 D	704 D	738 D	701 D	872 D	1580 D	1090 D	1510 D
Potassium				150		2150	1590 D	1730 D	1750 D	2170 D	21490 D	2190 D	2380 D	2260 D	2040 D	2090 D	2160 D	2300 D
Silver				560		0.167	0.11 U	0.11 U	0.1 U	0.11 U	0.11 U	0.1 U	0.1 U	0.11 U	0.11 U	0.1 U	0.11 U	0.1 U
Sodium				NA		690	332 DN	410 DN	371 DN	459 DN	456 DN	577 DN	518 DN	536 DN	614 DN	522 DN	455 DN	531 DN
Tin				50		NA	0.477	0.399	0.465	2.54	1.62	34.7	4.39	1.63	2.71	0.593	0.515	0.557

Acronyms:

B = below or equal to MDL

E = interference

M = duplicate precision criteria not met

N = outside limits of spike recovery

NA = not available

U = non detect

D = reported at secondary dilution factor

high concentration range

medium concentration range

low concentration range

control site concentration above background

Source of Background Values:

DOE/RL-92-24: arsenic, barium, chromium, cobalt, copper, lead, manganese, nickel, vanadium, zinc, 90th percentile of the log-normal distribution

PNNL-18577: boron, thallium, 90th percentile of the log-normal distribution

Antimony, mercury, and selenium values represents maximum background concentration through analysis of 50% of Hanford Site background data. Though above background, detection limits were below ecological screening levels and maximum background concentrations.

DOE/RL-96-17: uranium.

Notes:

All values are in mg/mkg unless otherwise stated

The RCBRA PRGs represent the lowest of PRGs for plants, invertebrates, birds, and mammals. **Bold values** exceed RCBRA PRGs

Table 6-1. Evaluation of Chemistry Data for the Selection of Samples for Performing Bioassays

Analyte	Target Concentration Ranges			Lowest RCBRA Eco PRG	100 area Max	Background	Waste Site OCSA																									
							Control 11		Control 12		Control 13		Control 14		Control 15		Control 16		Control 17		Control 18		Control 19		Control 20	
											bio field control 5				bio field control 6		bio field control 7		bio field control 8		bio field control 9				bio field control 10	
	Low	Mid	High				B2BVP0		B2BVP1		B2BVP2		B2BVP3		B2BVP4		B2BVP5		B2BVP6		B2BVP7		B2BVP8		B2BVP9	
High Priority Analytes																																
Antimony	5.2 to 38	38 to 186	186 to >2100	5	9.3	0.385	0.31	U	0.3	U	0.32	U	0.3	U	0.31	U	0.31	U	0.31	U	0.31	U	0.32	U	0.32	U
Barium	132 to 330	330 to 2000	2000 to > 4,760	358	1300	132	107		73.1		80.7		83.4		84.7		84.8		83.6		85		86		85.3	
Cadmium	1 to 4	4 to 20	20 to >40	4	13.2	0.563	0.1	U	0.2	B	0.11	U	0.177	B	0.107	B	0.1	U	0.102	B	0.105	B	0.11	U	0.11	U
Chromium	18.5 to 30	30 to 150	150 to >815	42	204	18.5	10.5		9.46		9.66		9.51		11.1		8.98		8.69		9.72		8.95		8.54	
Mercury	0.33 to 1.3	1.3 to 13.7	13.7 to 250	0.136	17.1	0.013	0.0588	B	0.051	U	0.053	U	0.05	U	0.051	U	0.056	B	0.051	U	0.051	U	0.053	U	0.053	U
Thallium	1 to 2.4	2.4 to 4	4 to >5	NA		0.185	0.123	B	0.1	U	0.11	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.11	U	0.11	U
Uranium	3.21 to 100	100 to 250	250 to 2610	40.3		3.21	0.501	B	0.422	B	0.373	B	0.374	B	0.462	B	0.392	B	0.335	B	0.476	B	0.348	B	0.331	B
Zinc	67 to 145	145 to 760	760 to 9420	393	1310	67.8	44.4		46.7		40.5		44.9		44.1		39.5		40.1		40.1		39		38.5	
Medium Priority Analytes																																
Boron	3.62 to 7.2	7.2 to 30	30 to > 105	29.6	66.4	3.62	27.4		16.6	B	18.5	B	19.9	B	20.1	B	18.6	B	18.4	B	21.6	B	18	B	17	B
Copper	22 to 50	50 to 170	170 to 4080	50	552	22	15.9		16		12.8		14.8		18.3		13.8		12.2		13.5		11.2		12.3	
Lead	10 to 120	120 to 500	500 to > 501	125	214	10.2	7.2		13.8		6.79		14.7		6.71		6.02		6.19		5.57		6.77		5.37	
Manganese	512 to 750	750 to 1000	1000 to >8400	558		512	397		328		325		331		345		323		329		330		321		327	
Low Priority Analytes																																
Arsenic	6.5 to 18	18 to 100	100 to > 131	19.3		6.47	5.04		3.08	B	3.09	B	3.29	B	3.35	B	4.04	B	3.2	B	3.27	B	2.8	B	3.09	B
Cobalt	0 to 15.69	NA to NA	NA to NA	13		15.7	8.4		7.99		7.02		7.44		7.9		7.26		7.43		7.47		7.07		7.12	
Nickel	19.1 to 30	30 to 280	NA to NA	38		19.1	11.2		10.4		9.92		10.3		12.2		9.81		9.34		10.4		9.59		9.59	
Selenium	0.78 to 2.5	2.5 to 4.3	4.3 to 11	1.2	1.8	1.7	**1.6**	B	**1.52**	B	0.853	B	**1.32**	B	1.1	B	1.18	B	1.1	B	**1.36**	B	**1.27**	B	0.887	B
Vanadium	85 to 100	100 to 115	115 to 130	43.2	106	85.1	**53.8**		**55.3**		43.1		**47**		**51.6**		**47.2**		**48.5**		**49.8**		**46.4**		**44.8**	
Additional Analytes																																
pH	0 to 6.5	6.5 to 9	9 to 14	NA		NA	8.36		8.27		8.52		7.9		8.44		8.41		8.55		8.56		7.45		7.15	
						HEIS ID	B2BW02		B2BW03		B2BW04		B2BW05		B2BW06		B2BW07		B2BW08		B2BW09		B2BW10		B2BW11	
CEC				10			10.97		9.83		9.21		11.86		11.1		9.06		9.68		8.72		8.11		8.49	
% Gravel							0		0.5		0		0		2.2		0		0.9		0		1.9		2.4	
% Sand							68.6		69.4		64.3		64		65.8		64.8		65.1		61.1		62.1		63.5	
% Silt/Clay							31.4		30.1		35.7		36		32		35.2		34		38.9		36		34.1	
						HEIS ID	B2BW26		B2BW27		B2BW28		B2BW29		B2BW30		B2BW31		B2BW32		B2BW33		B2BW34		B2BW35	
TOC							6950		9800		6090		9000	D	5660		5380		6250		3320		3430		2250	
Insecticides							ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
herbicides							ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Beryllium				NA		1.51	0.373	B	0.326	B	0.273	B	0.299	B	0.419	B	0.29	B	0.314	B	0.389	B	0.383	B	0.259	B
Calcium				1000		17200	21000	N	5840	N	5720	N	5080	N	7790	N	6010	N	6950	N	5290	N	3700	N	3460	N
Magnesium				60		7060	5300	N	4290	N	4840	N	4610	N	4750	N	4380	N	4510	N	4250	N	4020	N	3960	N
Molybdenum				2	4.5	0.47	0.432	B	0.518	B	0.371	B	0.457	B	0.425	B	0.319	B	0.336	B	0.334	B	0.284	B	0.325	B
Nitrogen, Kjeldahl total				NA		NA	709	DN	678	DN	643	DN	726	DN	570	DN	439	DN	974	DN	378	DN	314	DN	289	DN
Phosphorus				10		NA	1040	N	879	N	830	N	869	N	870	N	886	N	809	N	929	N	872	N	788	N
Potassium				150		2150	1660	N	1630	N	2480	N	1990	N	2150	N	1900	N	1830	N	1950	N	1980	N	1800	N
Silver				560		0.167	0.1	U	0.1	U	0.11	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.11	U	0.11	U
Sodium				NA		690	271		322		215		248		247		228		225		219		213		204	
Tin				50		NA	0.484	B	0.991		0.448	B	0.951		0.464	B	0.39	B	0.364	B	0.402	B	0.367	B	0.348	B

Acronyms:

B = below or equal to MDL

E = interference

M = duplicate precision criteria not met

N = outside limits of spike recovery

NA = not available

U = non detect

D = reported at secondary dilution factor

high concentration range

medium concentration range

low concentration range

control site concentration above background

Source of Background Values:

DOE/RL-92-24: arsenic, barium, chromium, cobalt, copper, lead, manganese, nickel, vanadium, zinc, 90th percentile of the log-normal distribution

PNNL-18577: boron, thallium, 90th percentile of the log-normal distribution

Antimony, mercury, and selenium values represents maximum background concentration through analysis of 50% of Hanford Site background data. Though above background, detection limits were below ecological screening levels and maximum background concentrations.

DOE/RL-96-17: uranium.

Notes:

All values are in mg/mkg unless otherwise stated

The RCBRA PRGs represent the lowest of PRGs for plants, invertebrates, birds, and mammals. **Bold values** exceed RCBRA PRGs

Table 6-2. Summryof Samples Selected for Performing Bioassays

Analyte	Target Concentration Ranges									Lowest RCBRA Eco PRG	Background	Total Numbers from all Samples				Total Numbers for Bioassays Samples Only				Decision Rules for Bioassay Selection
	Low			Mid			High					Within Low Range	Within Medium Range	Within High Range	> Lowest RCBRA PRG	Within Low Range	Within Medium Range	Within High Range	> Lowest RCBRA PRG	
High Priority Analytes																				
Antimony	5.2	to	38	38	to	186	186	to	>2100	5	5.2	15	7	4	26	10	6	4	20	**Field Controls**
Barium	132	to	330	330	to	2000	2000	to	> 4,760	358	132	16	9	6	13	13	8	1	7	-eliminated samples with detects of pesticides and/or
Cadmium	1	to	4	4	to	20	20	to	>40	4	1	18	10	0	10	18	10	0	10	herbicides
Chromium	18.5	to	30	30	to	150	150	to	>815	42	18.5	11	6	1	2	6	3	1	2	-selected sites with no exceedance of hanford specific
Mercury	0.33	to	1.3	1.3	to	13.7	13.7	to	250	0.136	0.013	2	3	0	9	1	3	0	6	background
Thallium	1	to	2.4	2.4	to	4	4	to	>5	NA	0.209	0	0	0		0	0	0		-from remainign sites, selected those wiyth lowest
Uranium	3.21	to	100	100	to	250	250	to	2610	40.3	3.21	0	0	0	0	0	0	0	0	concentrations of selenium (which were above sate
Zinc	67	to	145	145	to	760	760	to	9420	393	67.8	22	23	9	18	14	19	5	12	-one or two have levels of an essential nutrient above
Medium Priority Analytes																				background
Boron	3.62	to	7.2	7.2	to	30	30	to	> 105	29.6	3.62	39	41	39	39	17	7	36	36	
Copper	22	to	50	50	to	170	170	to	4080	50	22	27	19	10	29	20	14	9	23	**Waste Site Samples**
Lead	10	to	120	120	to	500	500	to	> 501	125	10.2	46	14	22	36	16	11	19	30	-eliminated samples with detects of pesticides and/or
Manganese	512	to	750	750	to	1000	1000	to	>8400	558	512	9	1	2	10	6	1	2	7	herbicides
Low Priority Analytes																				
Arsenic	6.5	to	18	18	to	100	100	to	> 131	19.3	6.47	16	0	0	0	12	0	0	0	-selected 5 sites with high range for mercury and vandium
Cobalt	0	to	15.69	NA	to	NA	NA	to	NA	13	15.7	119	0	0	0	60	0	0	0	form 120-KW-1
Nickel	19.1	to	30	30	to	280	NA	to	NA	38	19.1	8	3	0	1	7	0	0	0	-from remaining sites, eliminated those which do not have
Selenium	0.78	to	2.5	2.5	to	4.3	4.3	to	11	1.2	0.78	111	0	0	65	59	0	0	38	concentrations above targets (e.g., low levels of boron,
Vanadium	85	to	100	100	to	115	115	to	130	43.2	85.1	1	2	3	98	1	1	3	57	-the 60
Additional Analytes																				
pH	0	to	6.5	6.5	to	9	9	to	14	NA	NA	10	71	0		9	16	0		
CEC																				
% Gravel																				
% Sand																				
% Silt/Clay																				
TOC																				
Insecticides																				
herbicides																				
Beryllium										NA	1.51									
Calcium										NA	17200									
Magnesium										NA	7060									
Molybdenum										2	0.47				13				9	
Nitrogen, Kjeldahl total										NA	NA									
Phosphorus										NA	NA									
Potassium										NA	2150									
Silver										560	0.167				0				0	
Sodium										NA	690									
Tin										50	NA				10				10	

Source of Background Values:

DOE/RL-92-24: arsenic, barium, chromium, cobalt, copper, lead, manganese, mercury, nickel, vanadium, zinc, 90th percentile of the log-normal distribution

PNNL-18577: boron, thallium, 90th percentile of the log-normal distribution
Antimony, mercury, and selenium values represents maximum background concentration through analysis of 50% of Hanford Site background data. Though above background, detection limits were below ecological screening levels and maximum background concentrations.
DOE/RL-96-17: uranium.

Notes:

All values are in mg/mkg unless otherwise stated
The RCBRA PRGs represent the lowest of PRGs for plants, invertebrates, birds, and mammals.

high priority analytes
medium priority analytes
low priority analytes
additional analytes

Table 6-3. Final Recommended Soil Tier 2 PRGs for Plants and Invertebrates

Chemical	Plant (mg/kg)	Invertebrate (mg/kg)
Antimony	842 [a]	842 [a]
Arsenic	128 [b]	128 [b]
Barium	500 [c]	358 [d]
Beryllium	10 [e]	40 [f]
Boron	29.6 [d]	28.6 [d]
Cadmium	9.84 [a]	20 [d]
Chromium	259 [a]	149 [d]
Cobalt	15.7 [g]	15.7 [g]
Copper	70 [f]	58 [b]
Lead	9090 [a]	1700 [f]
Manganese	1260 [a]	1260 [a]
Mercury	0.3 [e]	12.5 [a]
Molybdenum	2 [e]	28 [a]
Nickel	38 [f]	280 [f]
Selenium	2.02 [a]	4.1 [f]
Silver	560 [f]	2.99 [a]
Thallium	1 [c]	0.459 [a]
Tin	838 [a]	838 [a]
Uranium	250 [h]	100 [h]
Vanadium	89.4 [a]	116 [a]
Zinc	621 [d]	8980 [a]

[a] NOEC from 2011 study
[b] NOEC from Ecology study
[c] WAC ecological indicator
[d] NOEC from RCBRA
[e] ORNL
[f] EcoSSL
[g] Hanford background
[h] Sheppard et al. (2005)

Appendix A

Cumulative Frequency Distributions

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High Priority Analytes

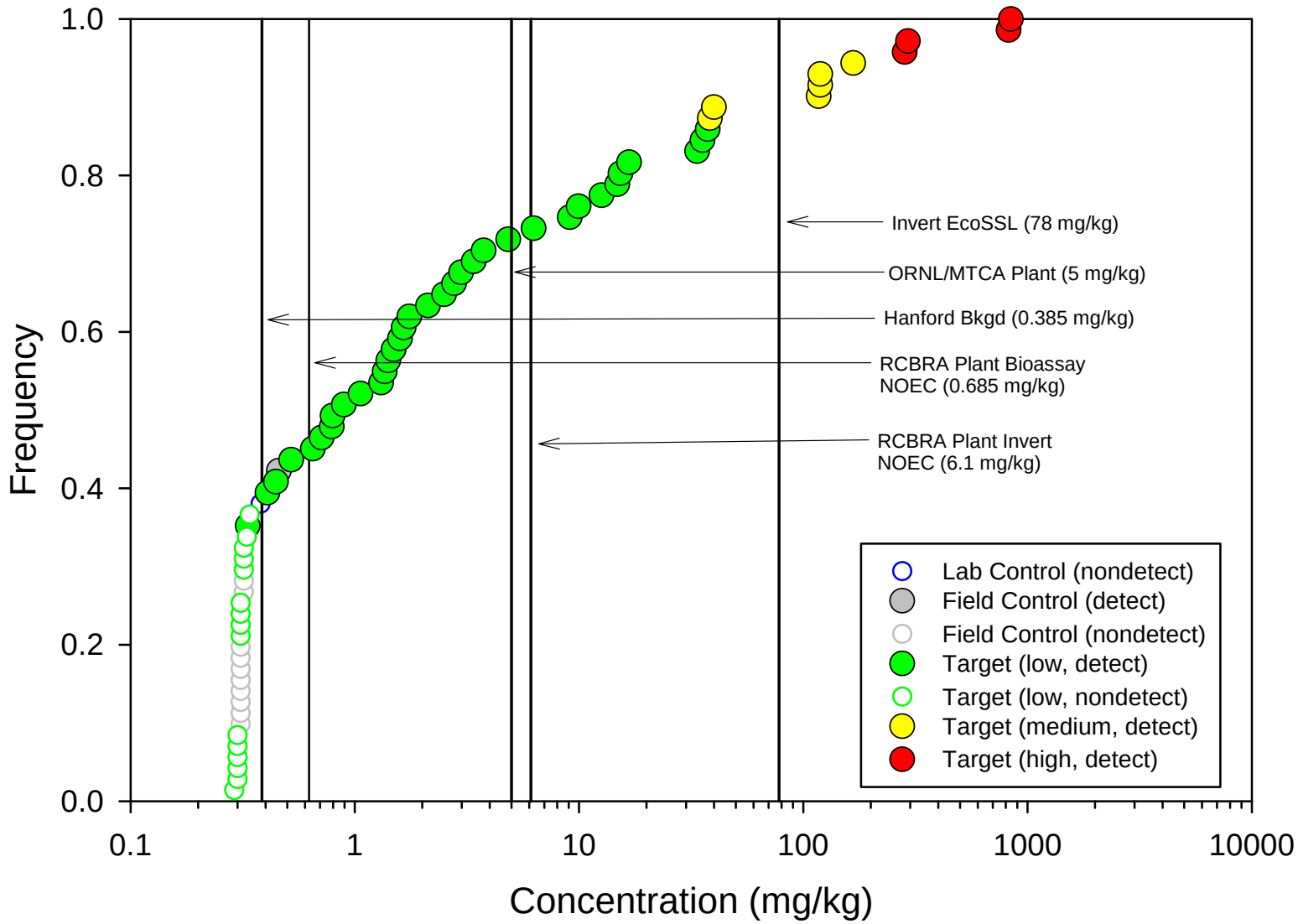

Figure A-1. Antimony

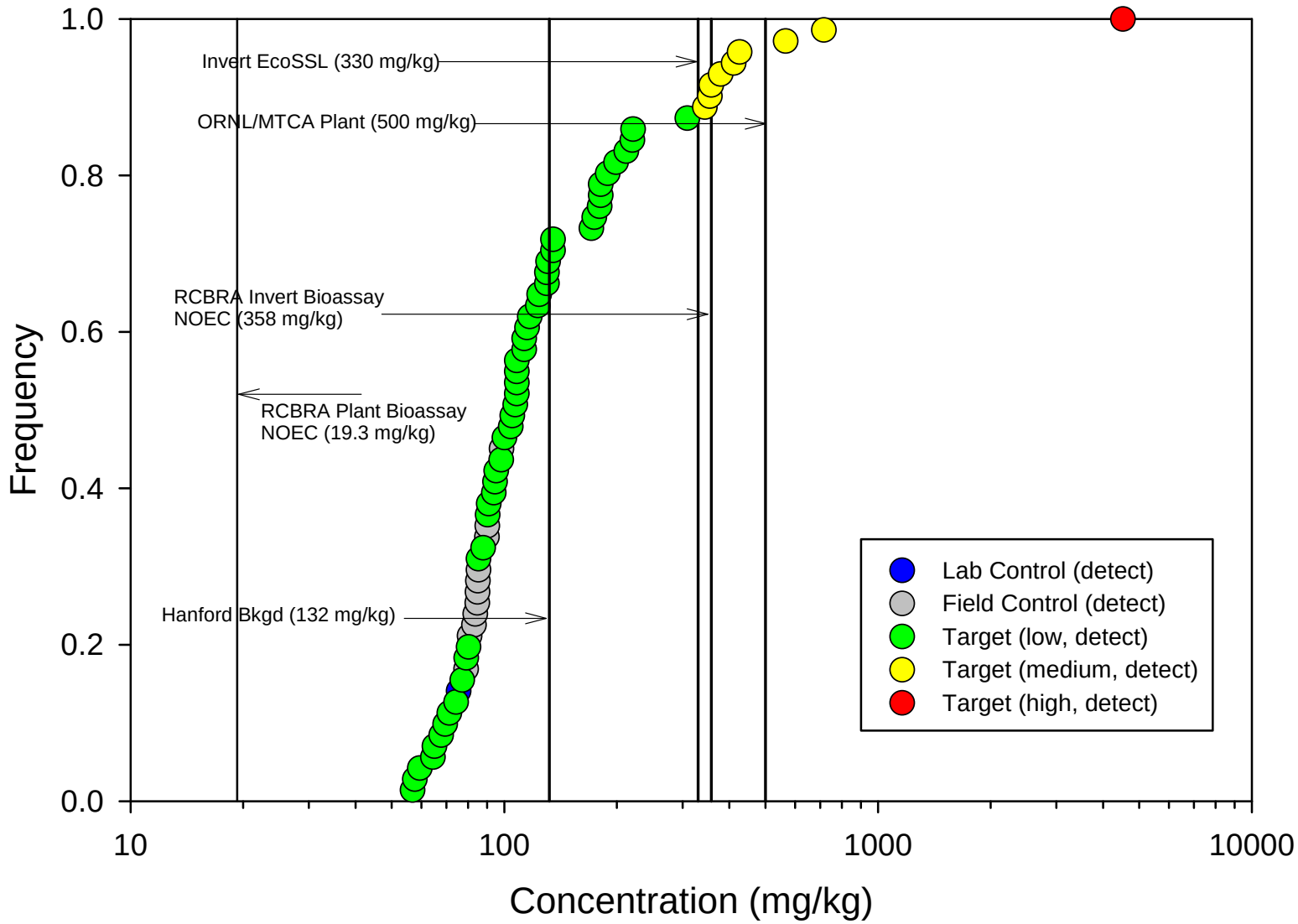

Figure A-2. Barium

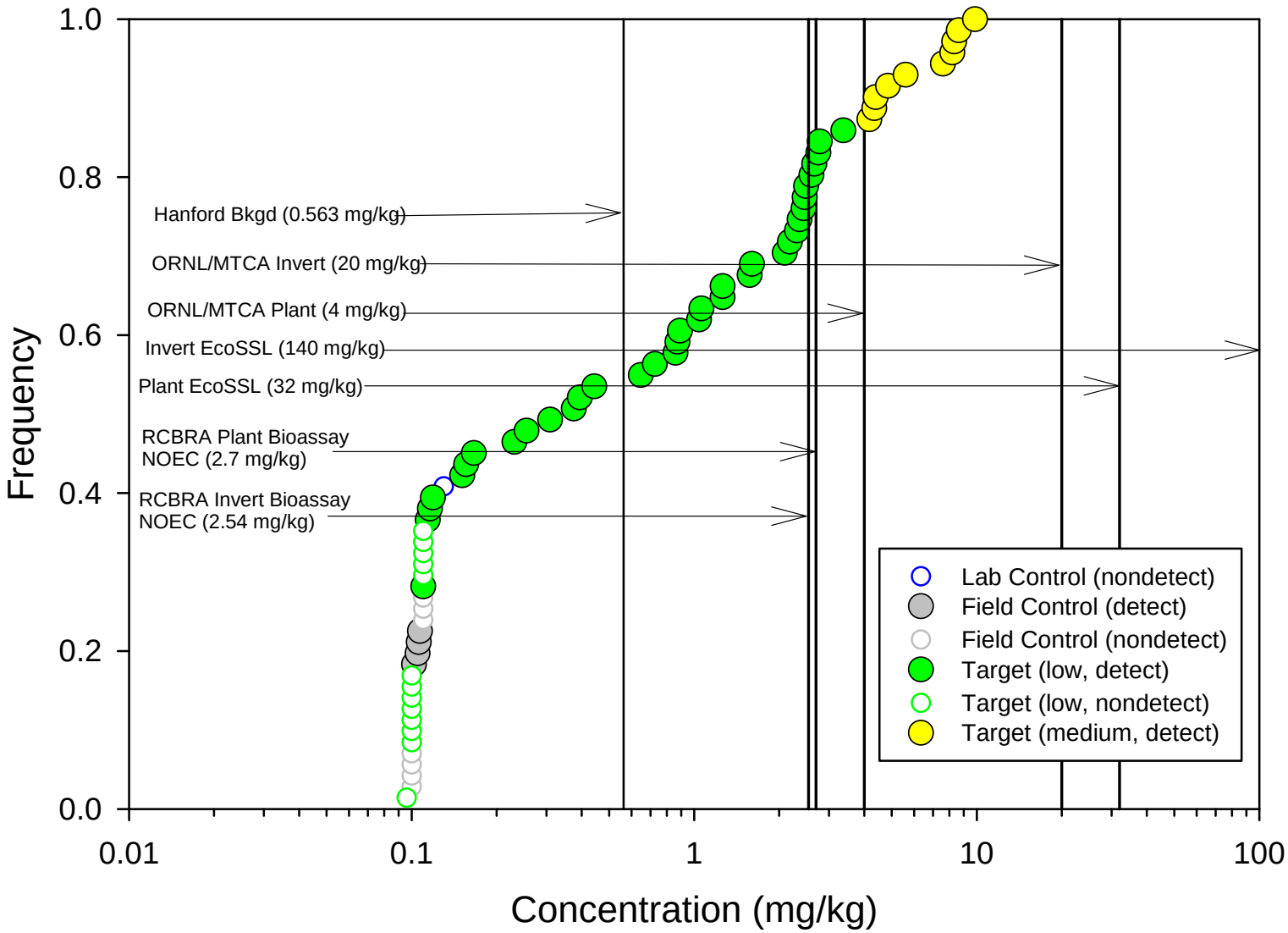

Figure A-3. Cadmium

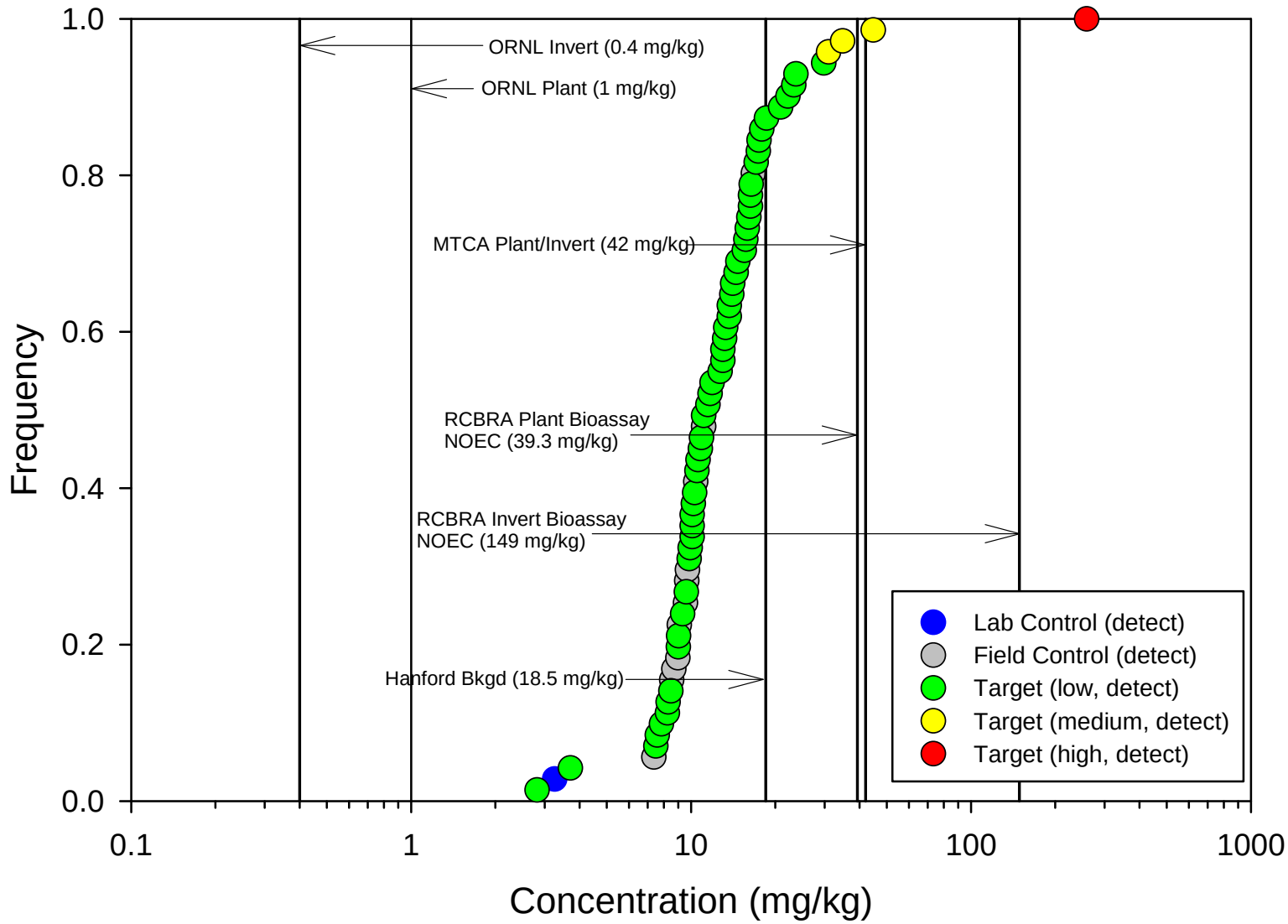

Figure A-4. Chromium

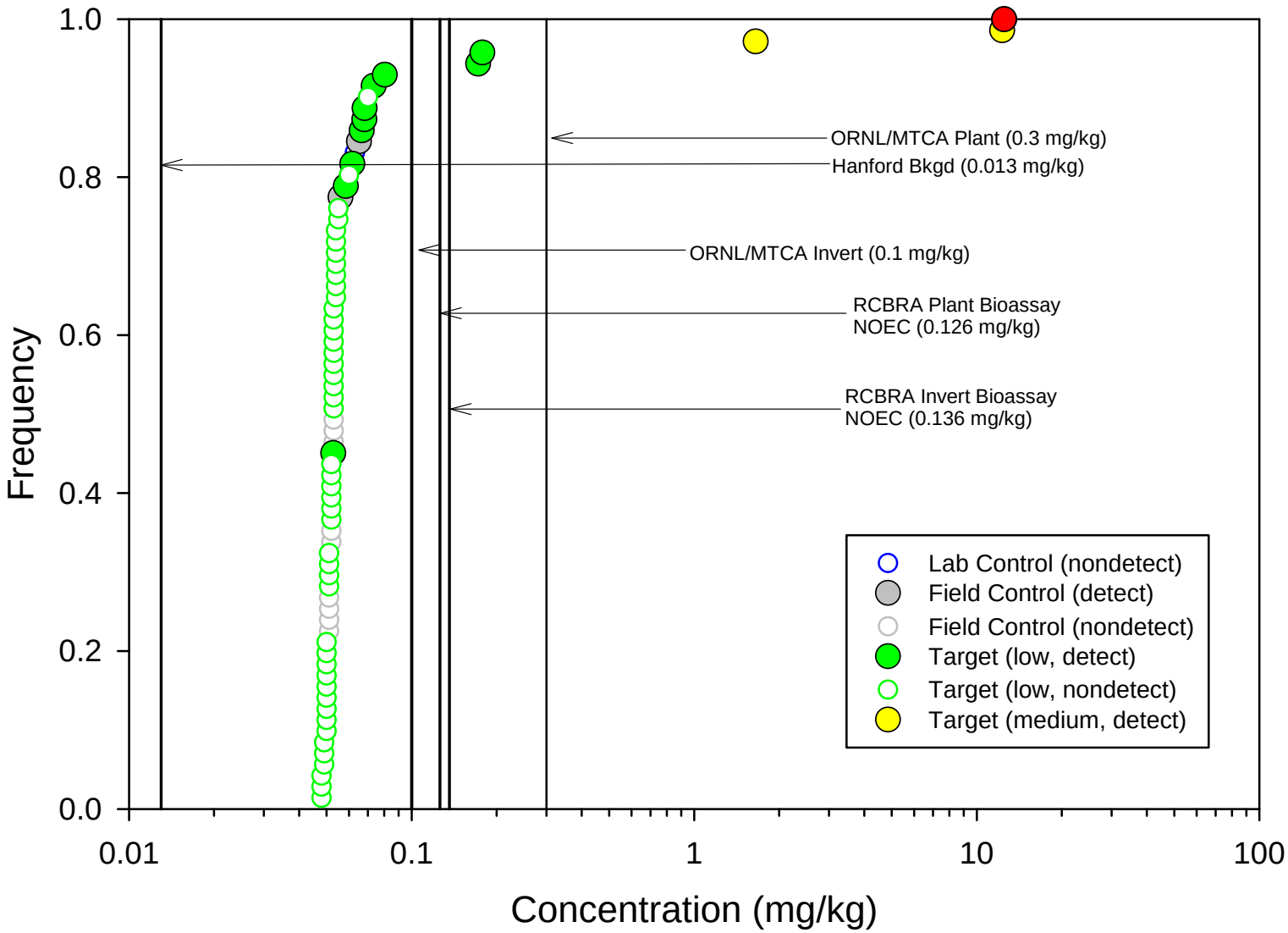

Figure A-5. Mercury

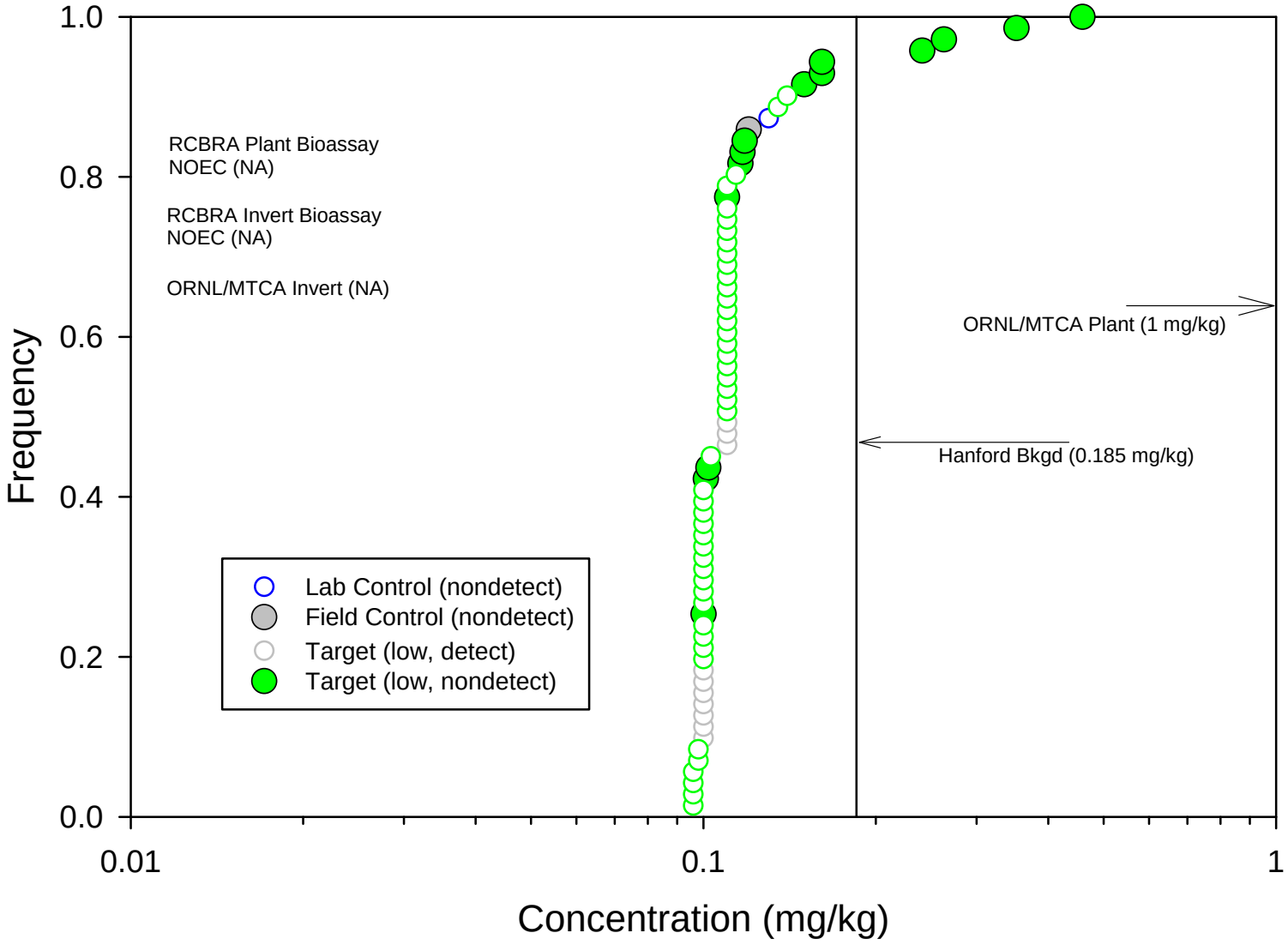

Figure A-6. Thallium

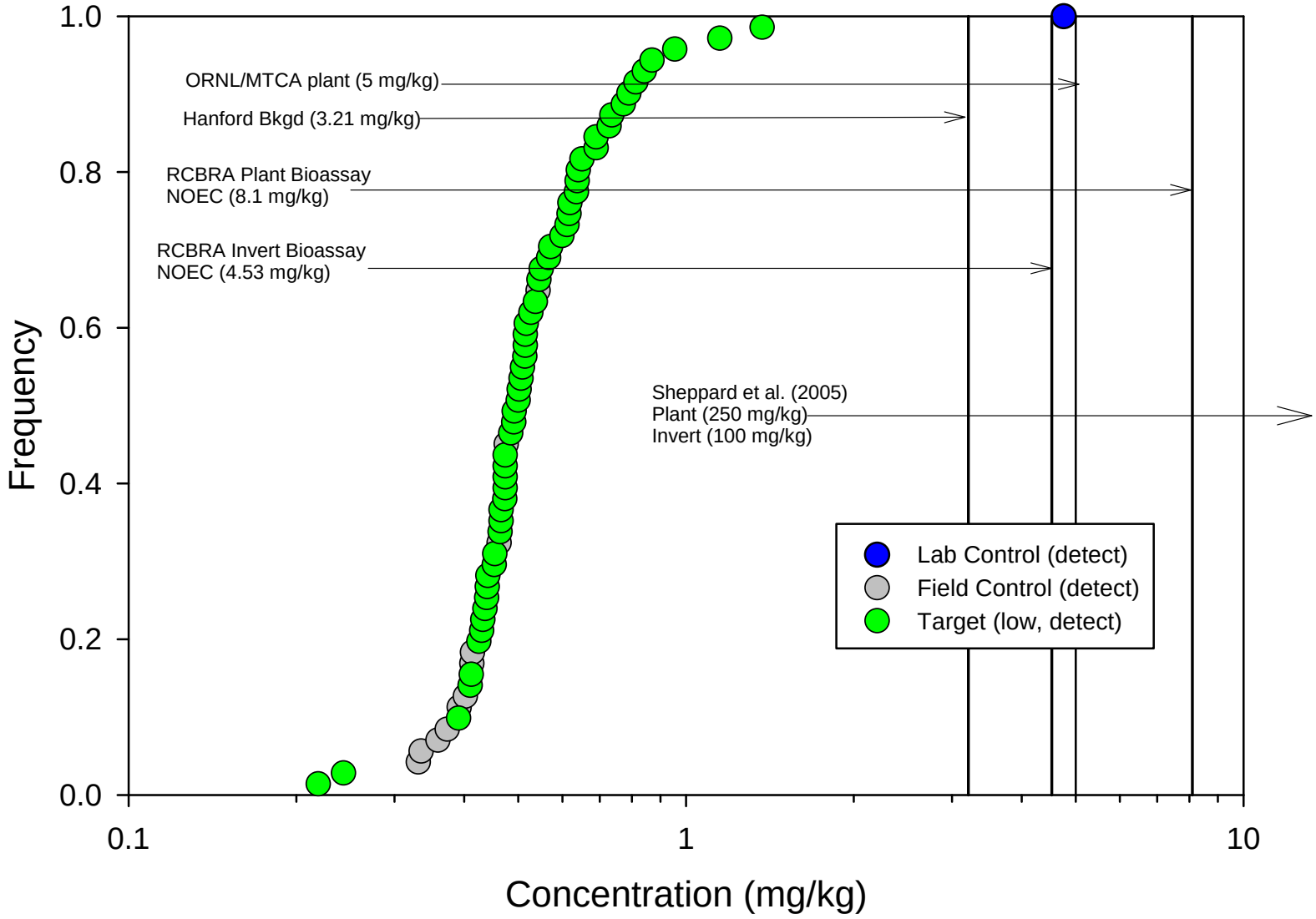

Figure A-7. Uranium

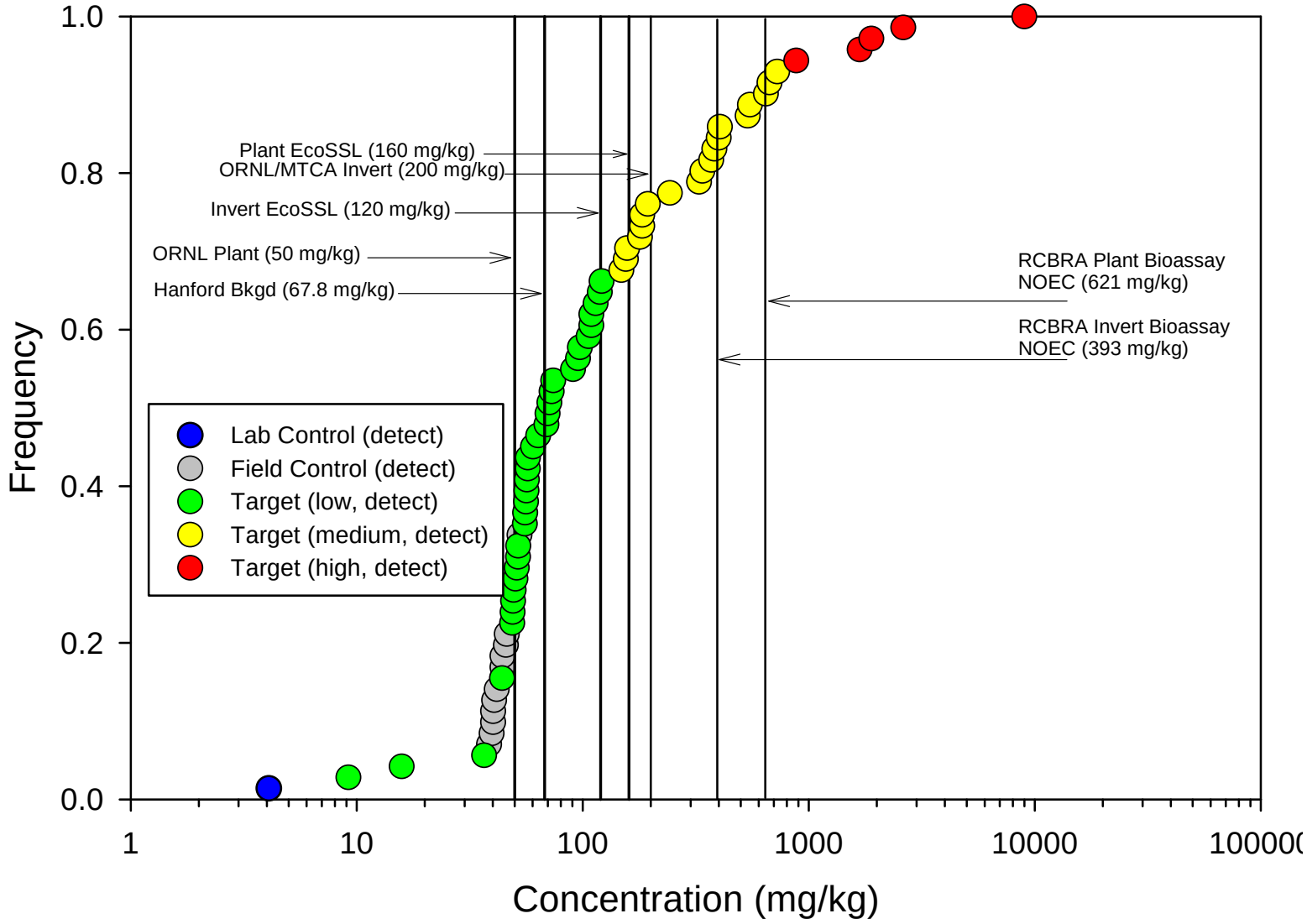

Figure A-8. **Zinc**

Medium Priority Analytes

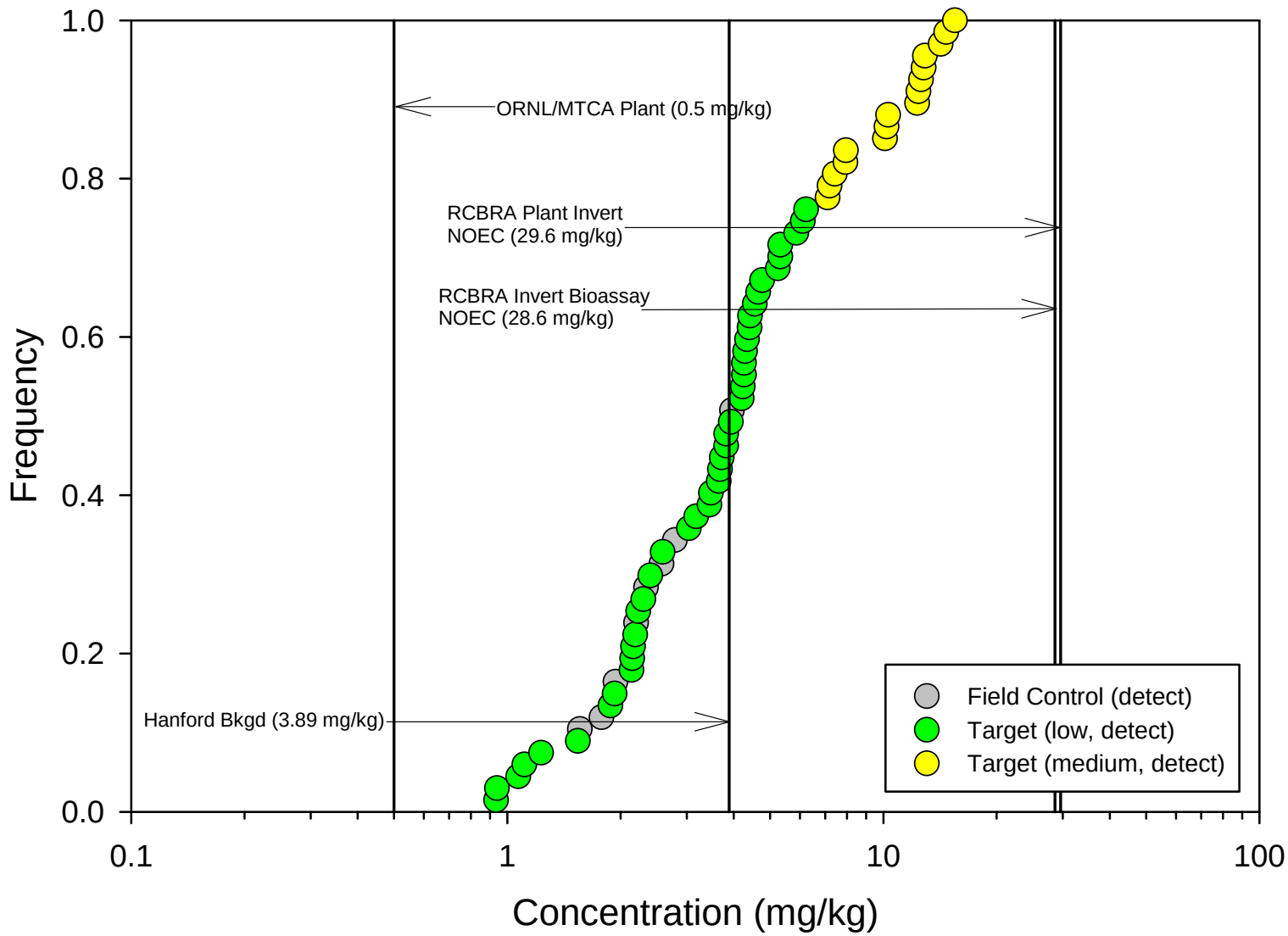

Figure A-9. Boron

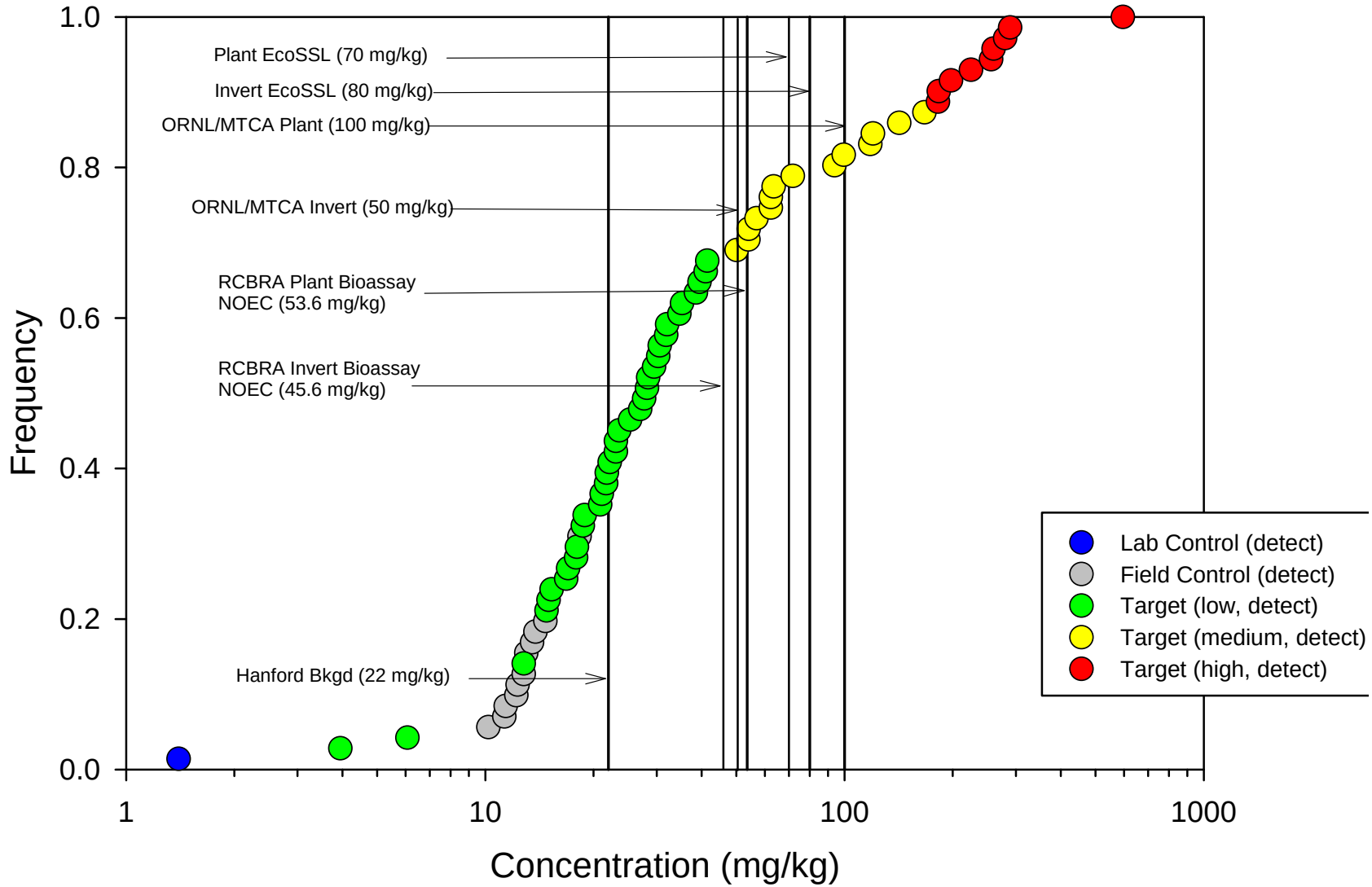

Figure A-10. Copper

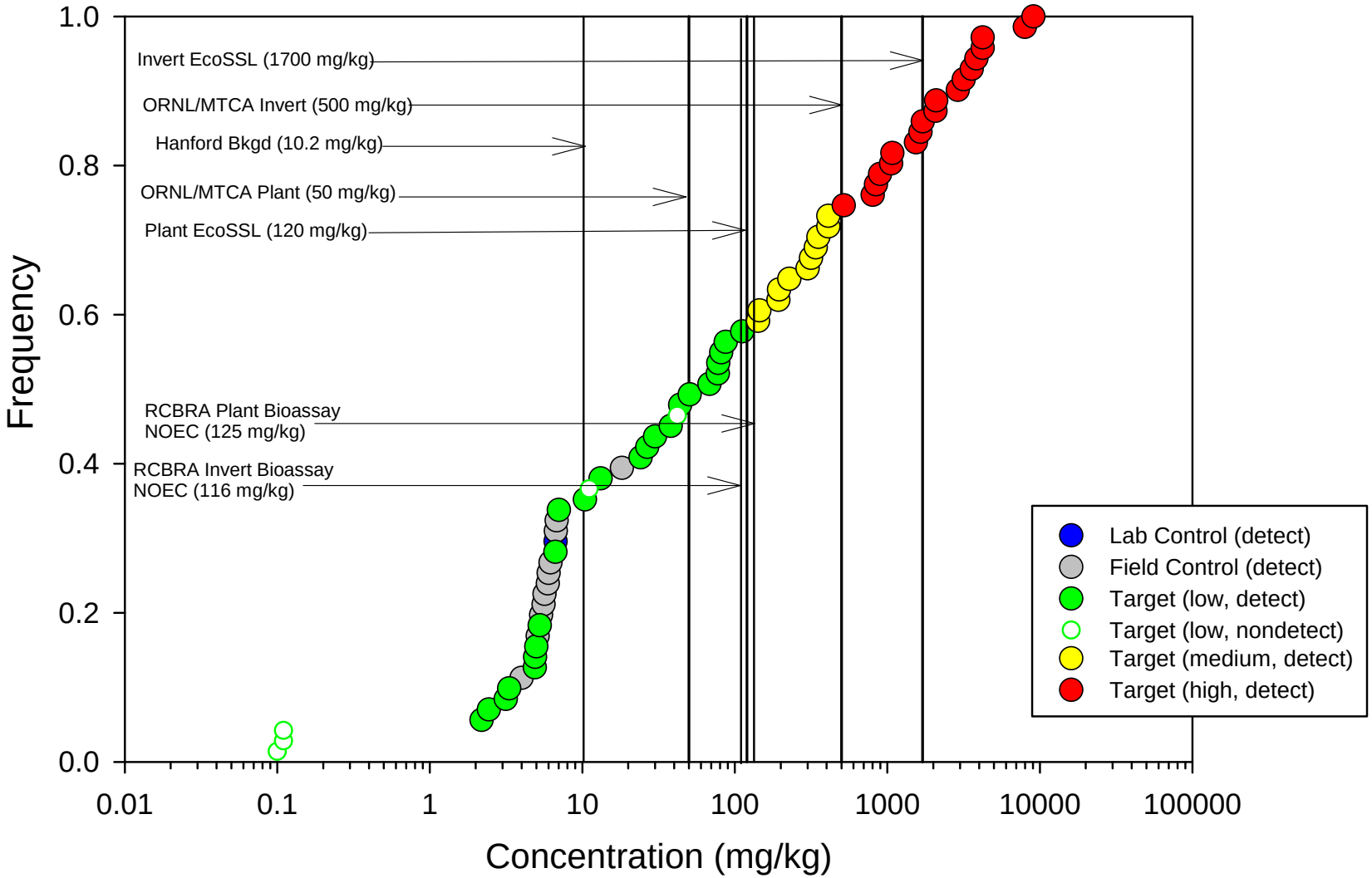

Figure A-11. Lead

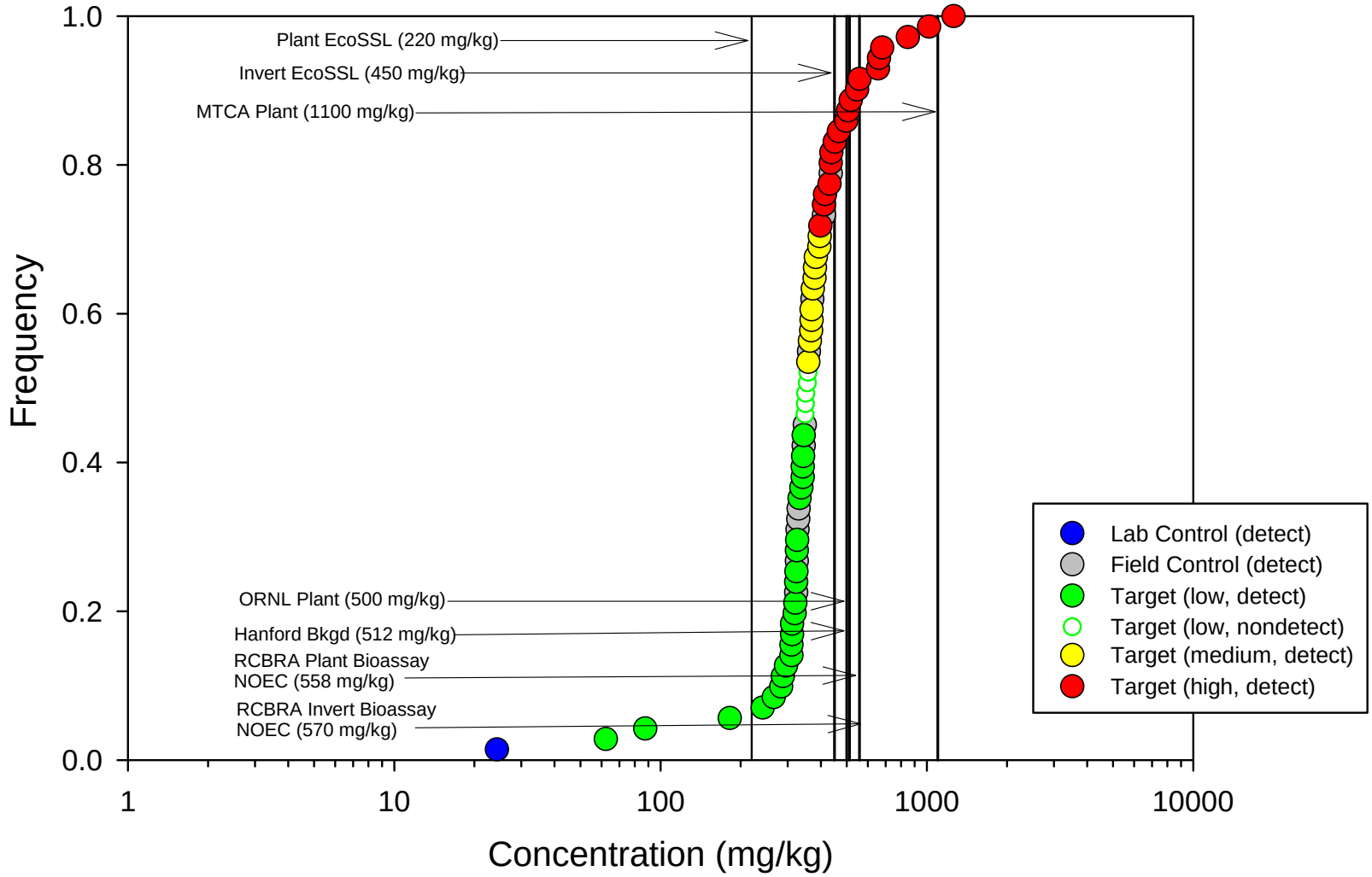

Figure A-12. Manganese

Low Priority Analytes

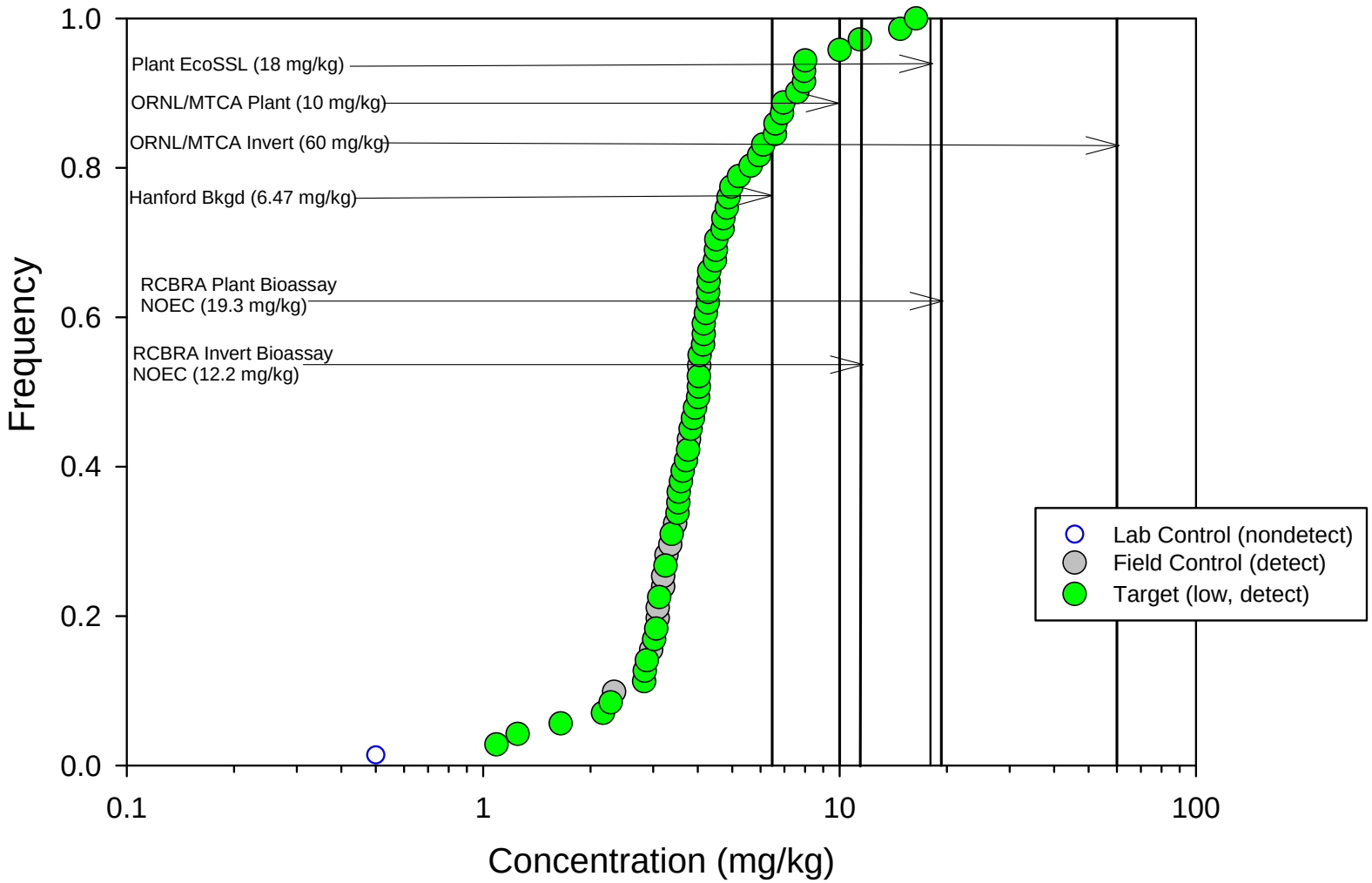

Figure A-13. Arsenic

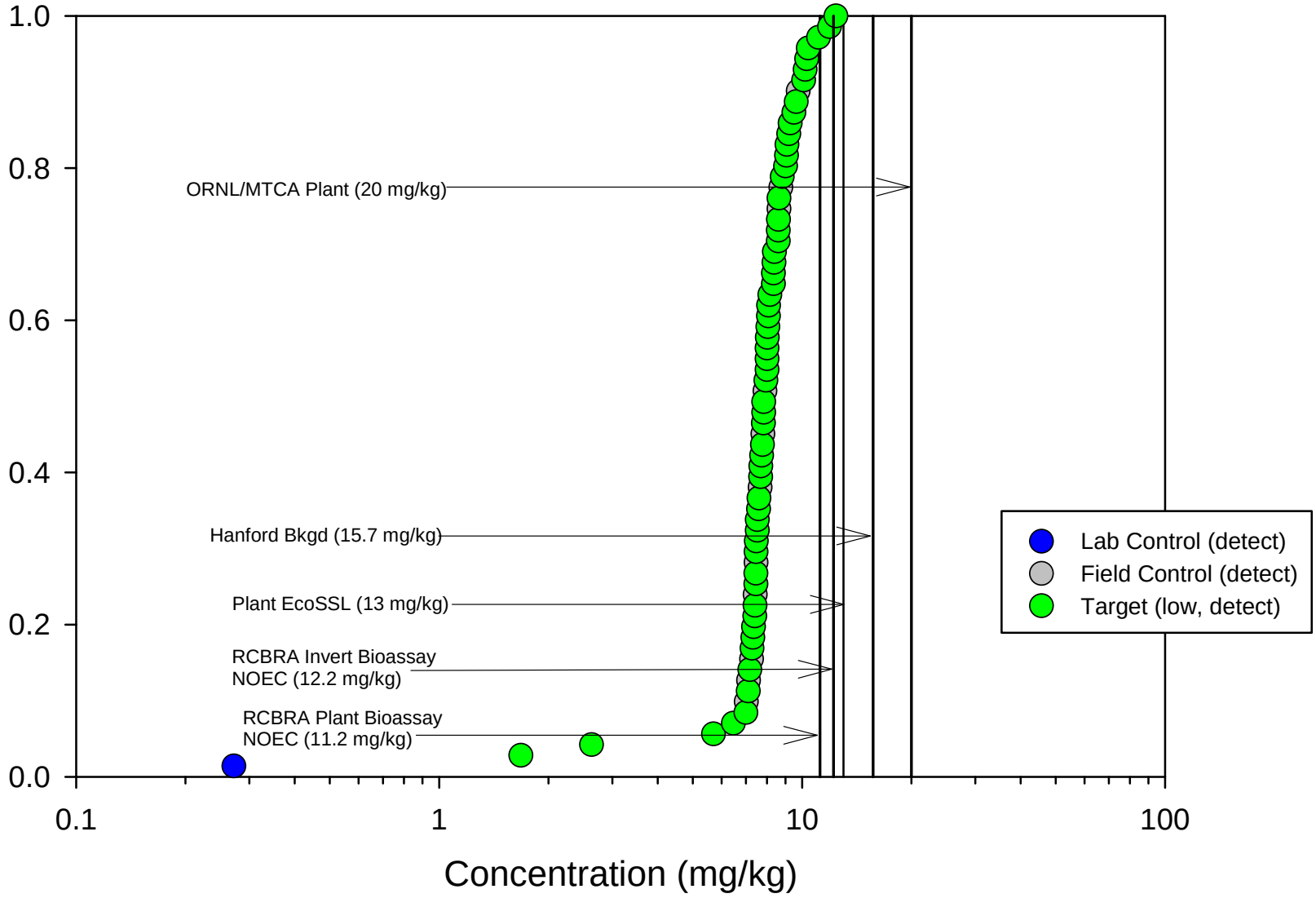

Figure A-14. Cobalt

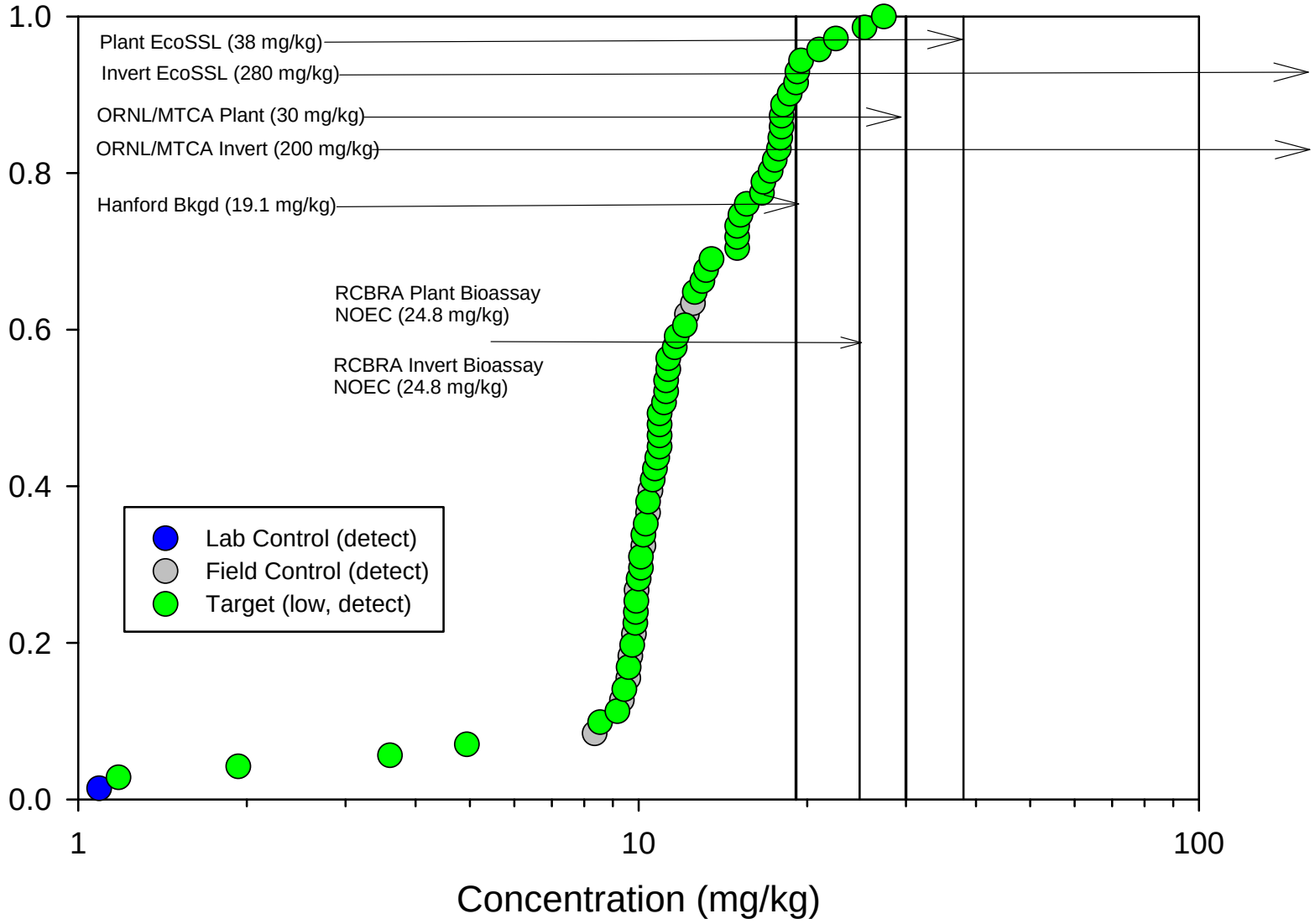

Figure A-15. Nickel

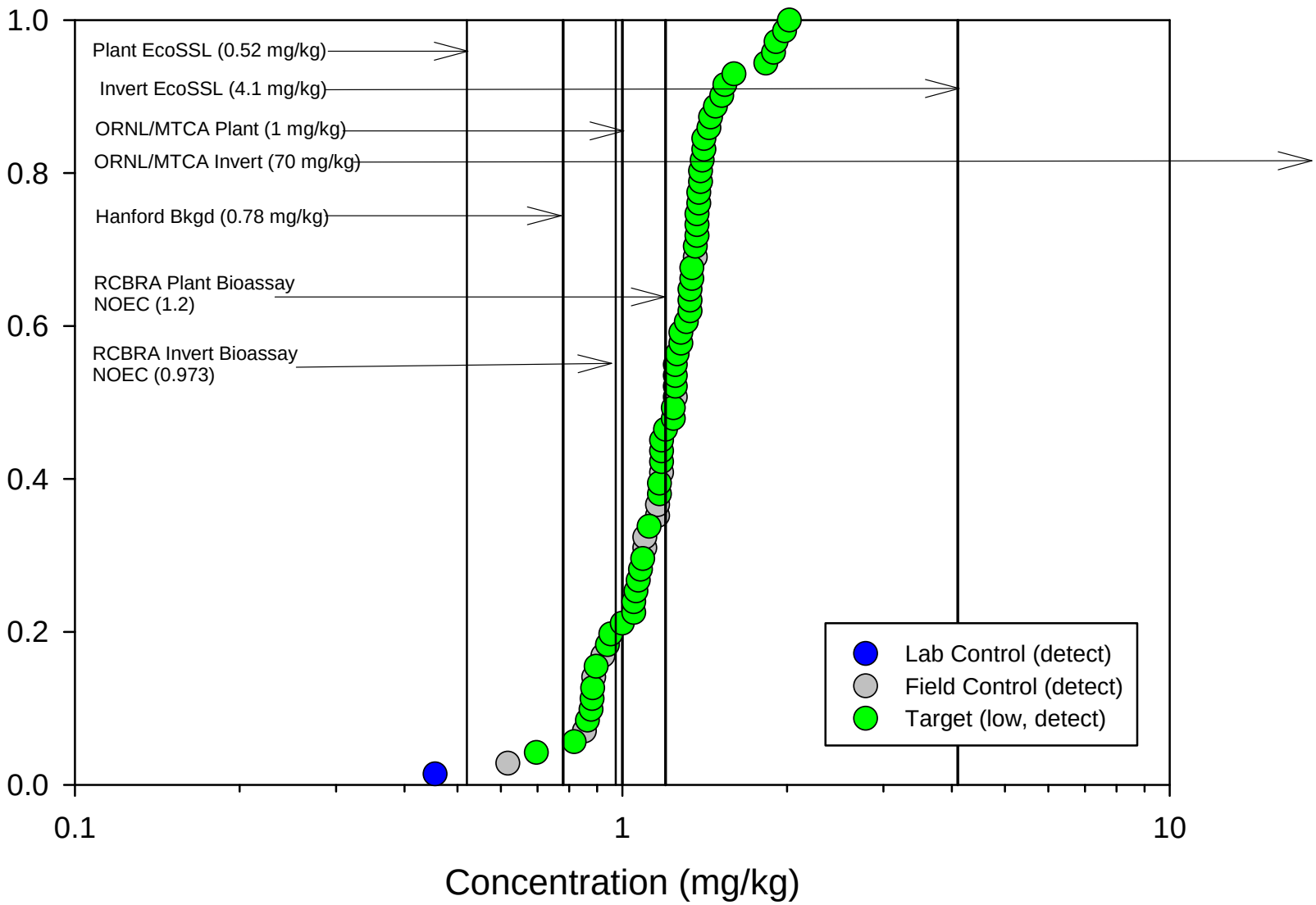

Figure A-16. Selenium

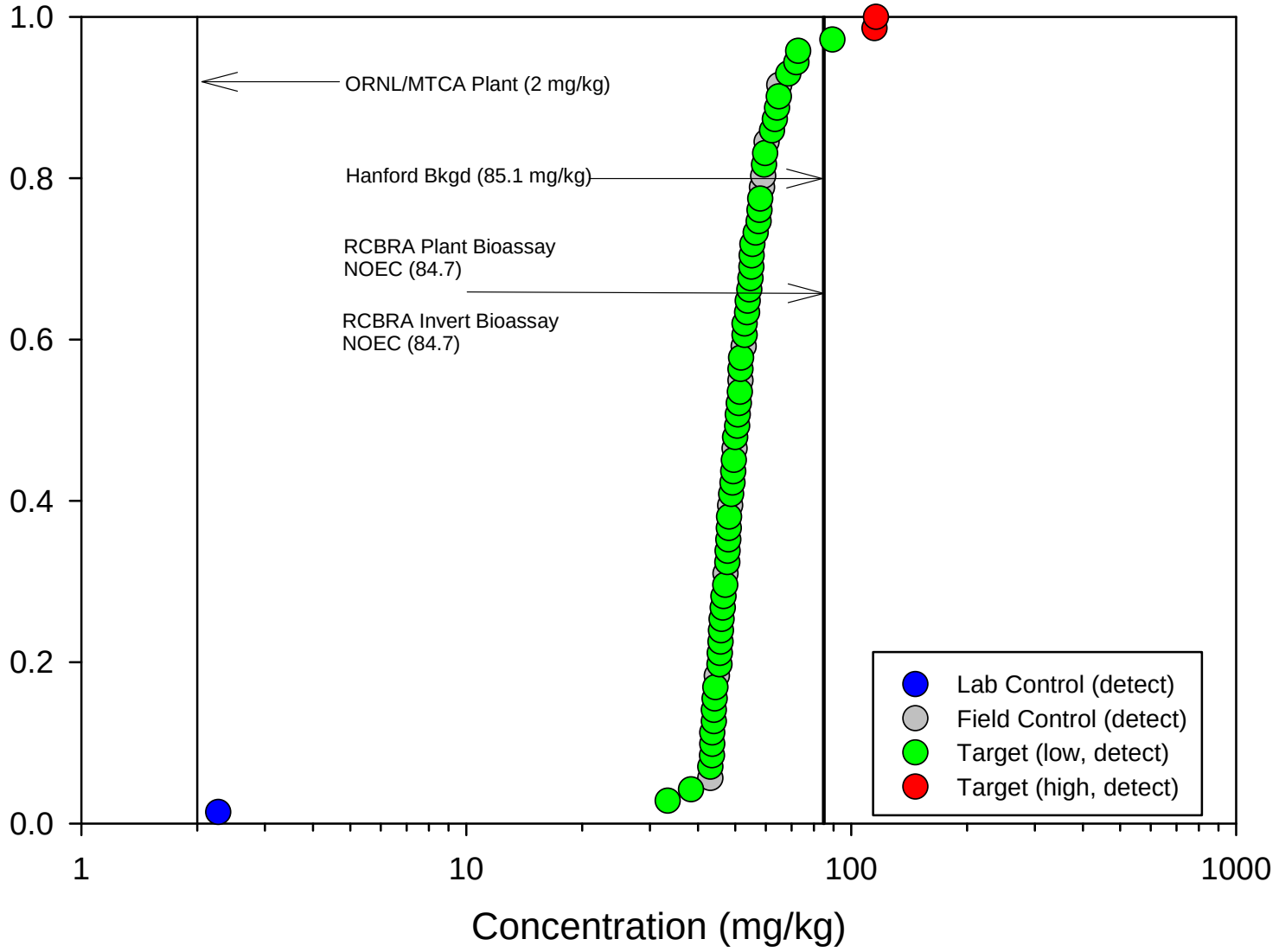

Figure A-17. Vanadium

Other Analytes

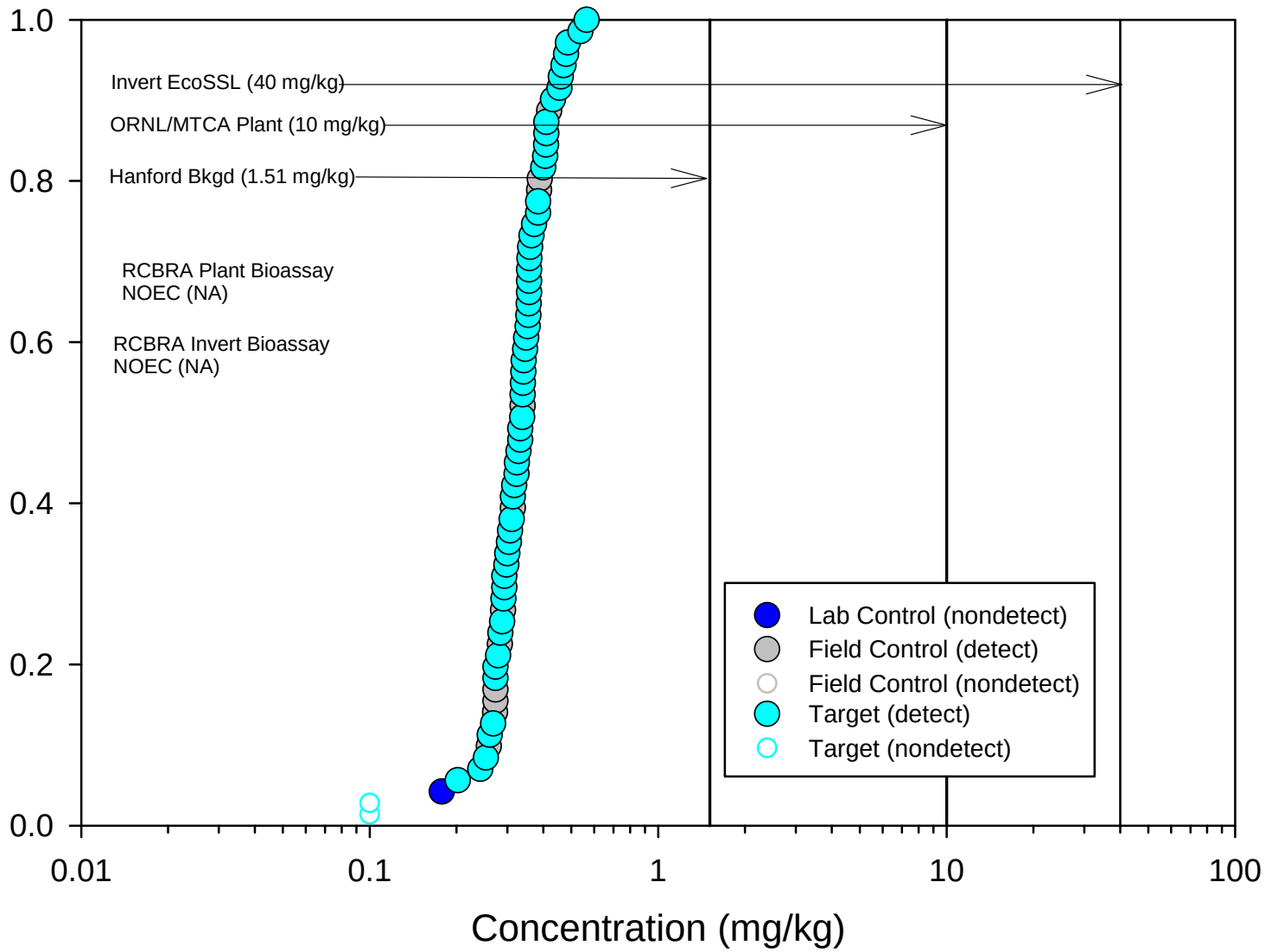

Figure A-18. Beryllium

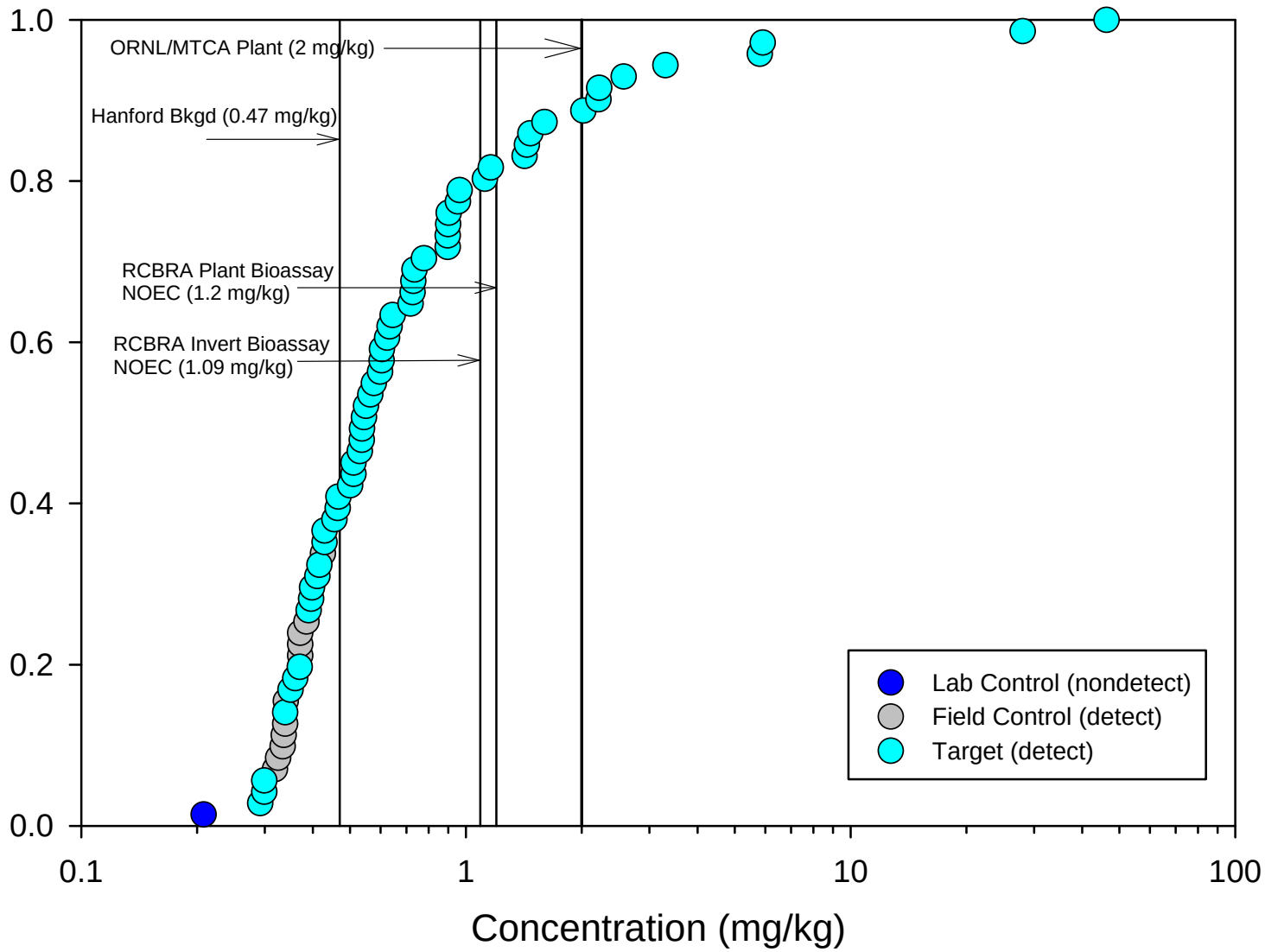

Figure A-19. Molybdenum

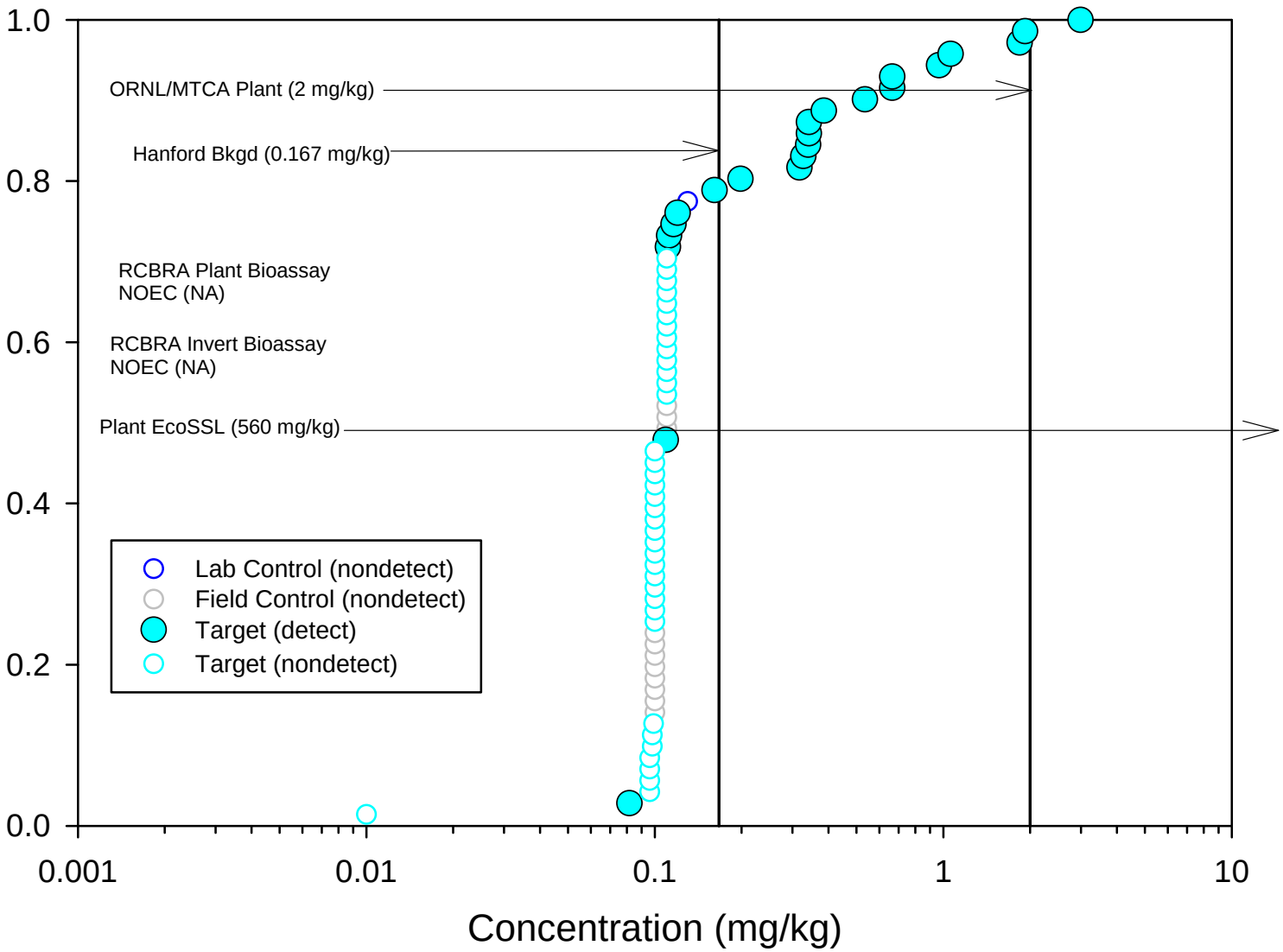

Figure A-20. Silver

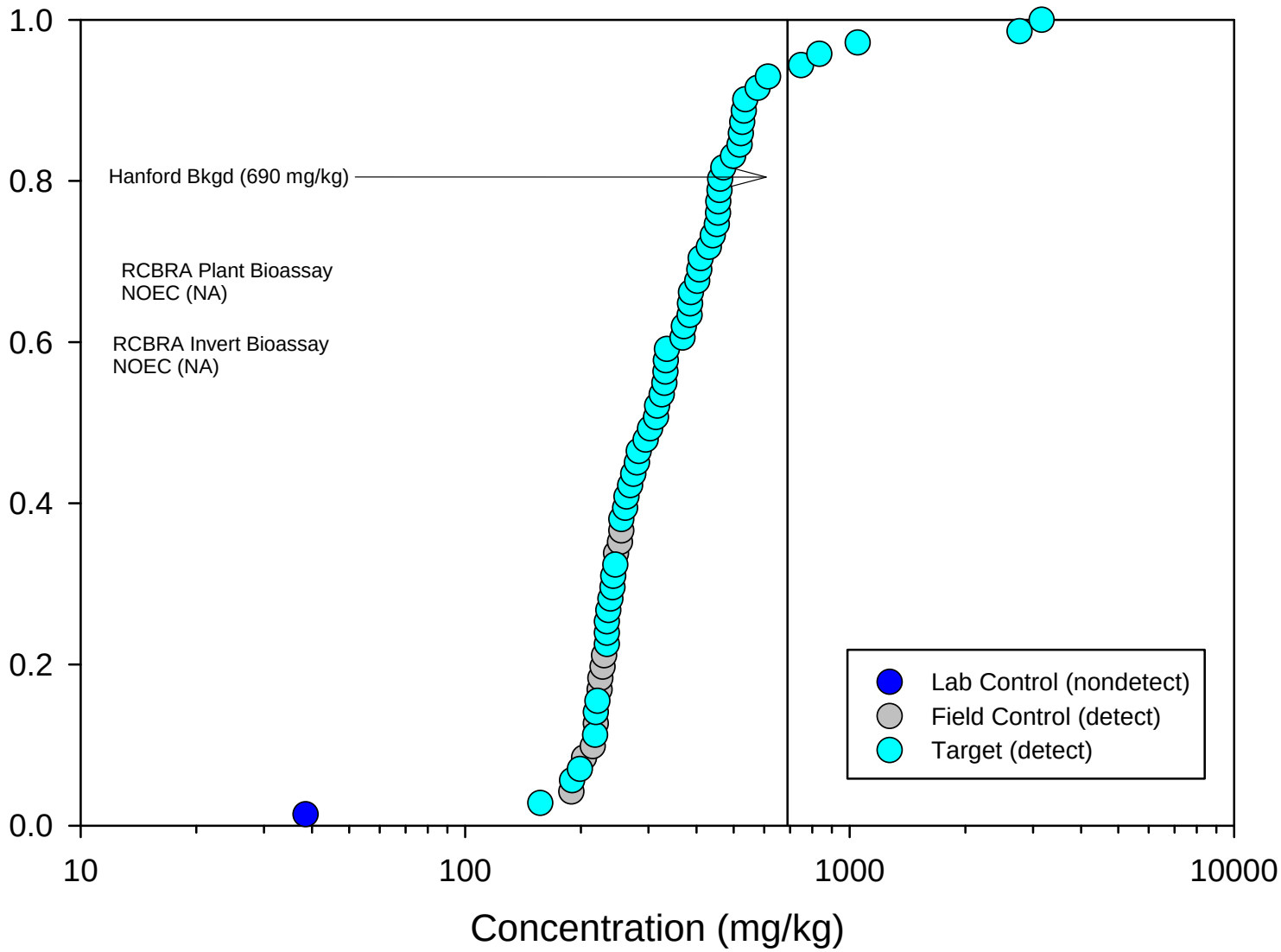

Figure A-21. Sodium

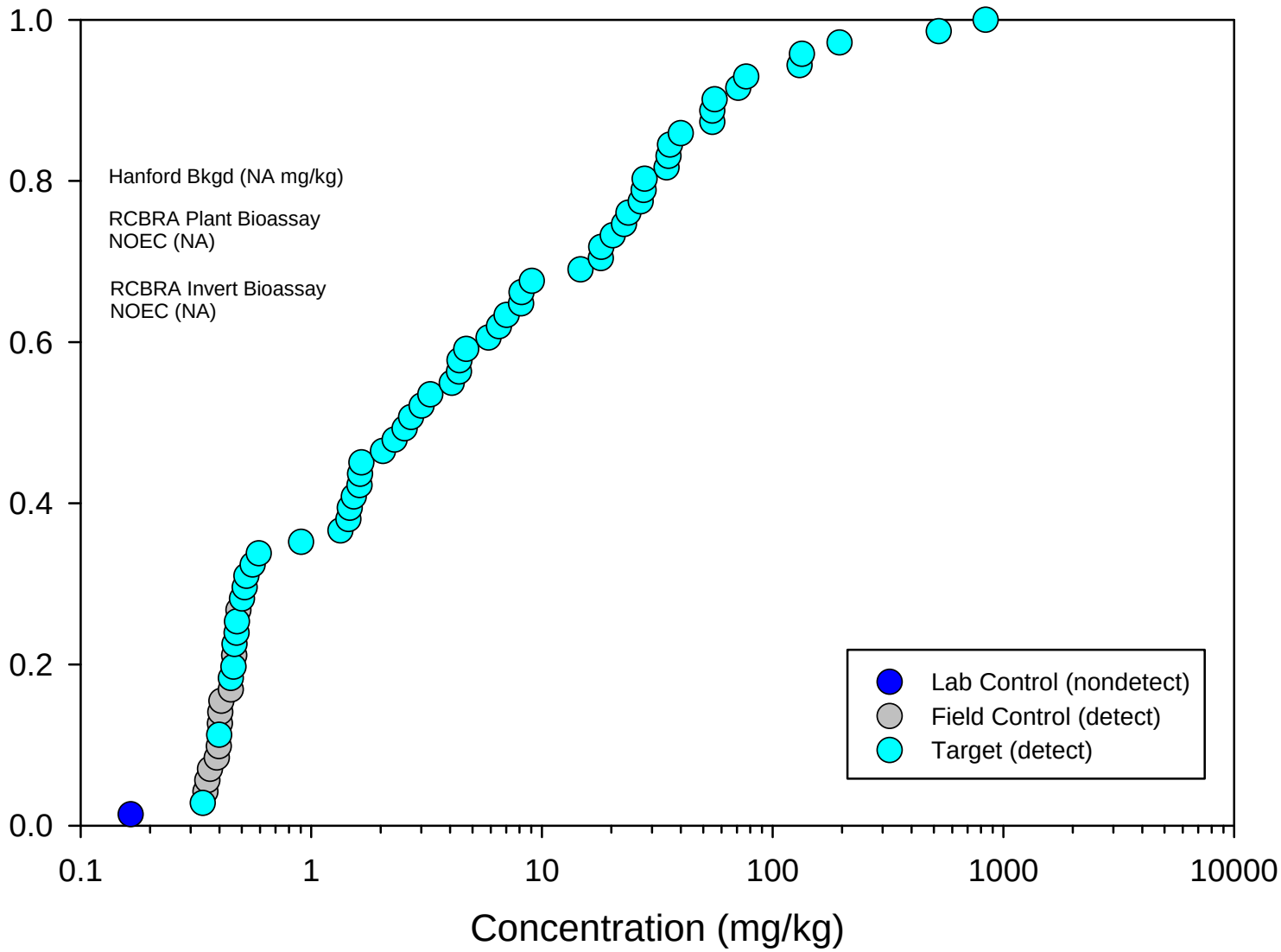

Figure A-22. Tin

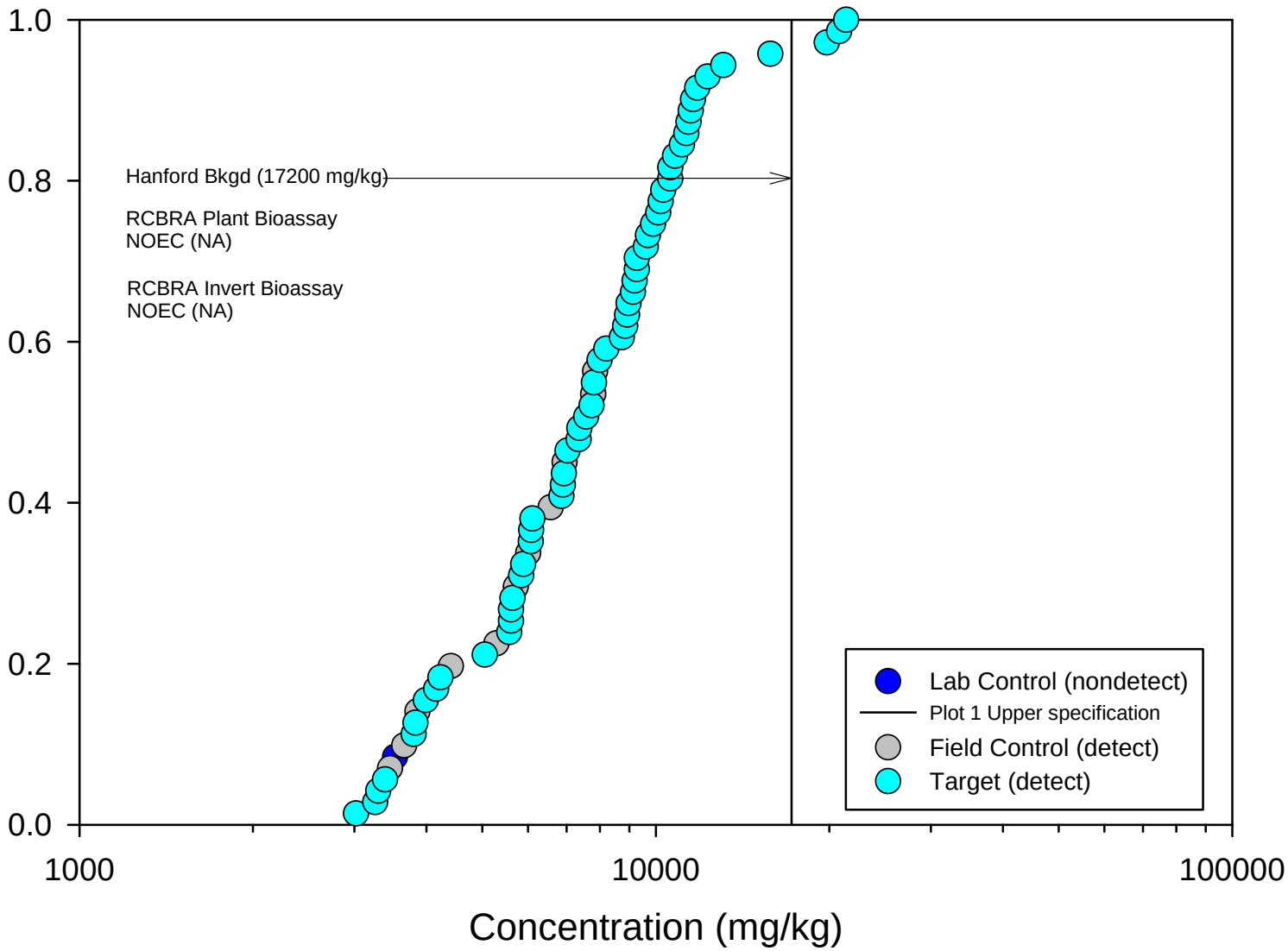

Figure A-23. Calcium

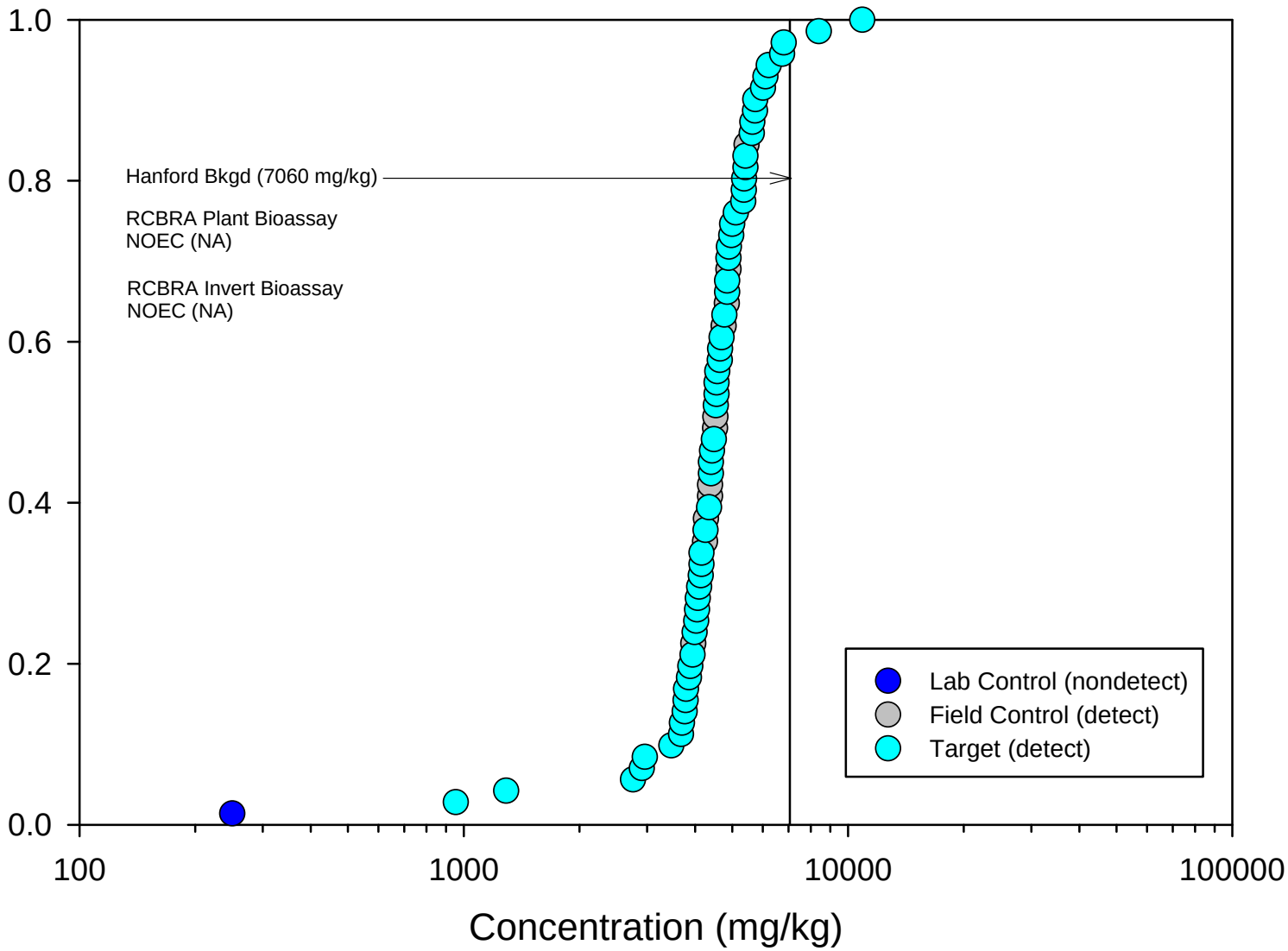

Figure A-24. Magnesium

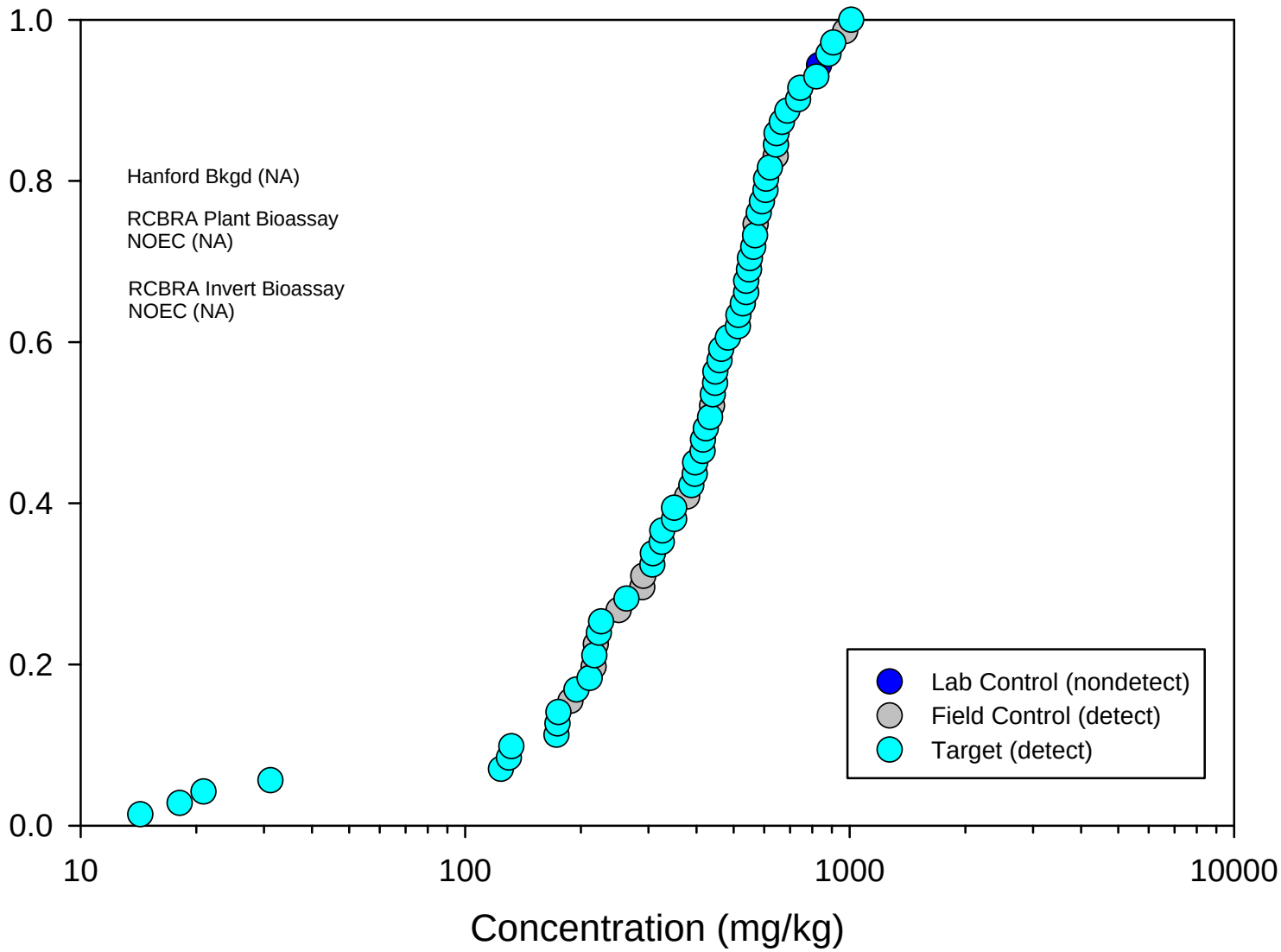

Figure A-25. Nitrogen

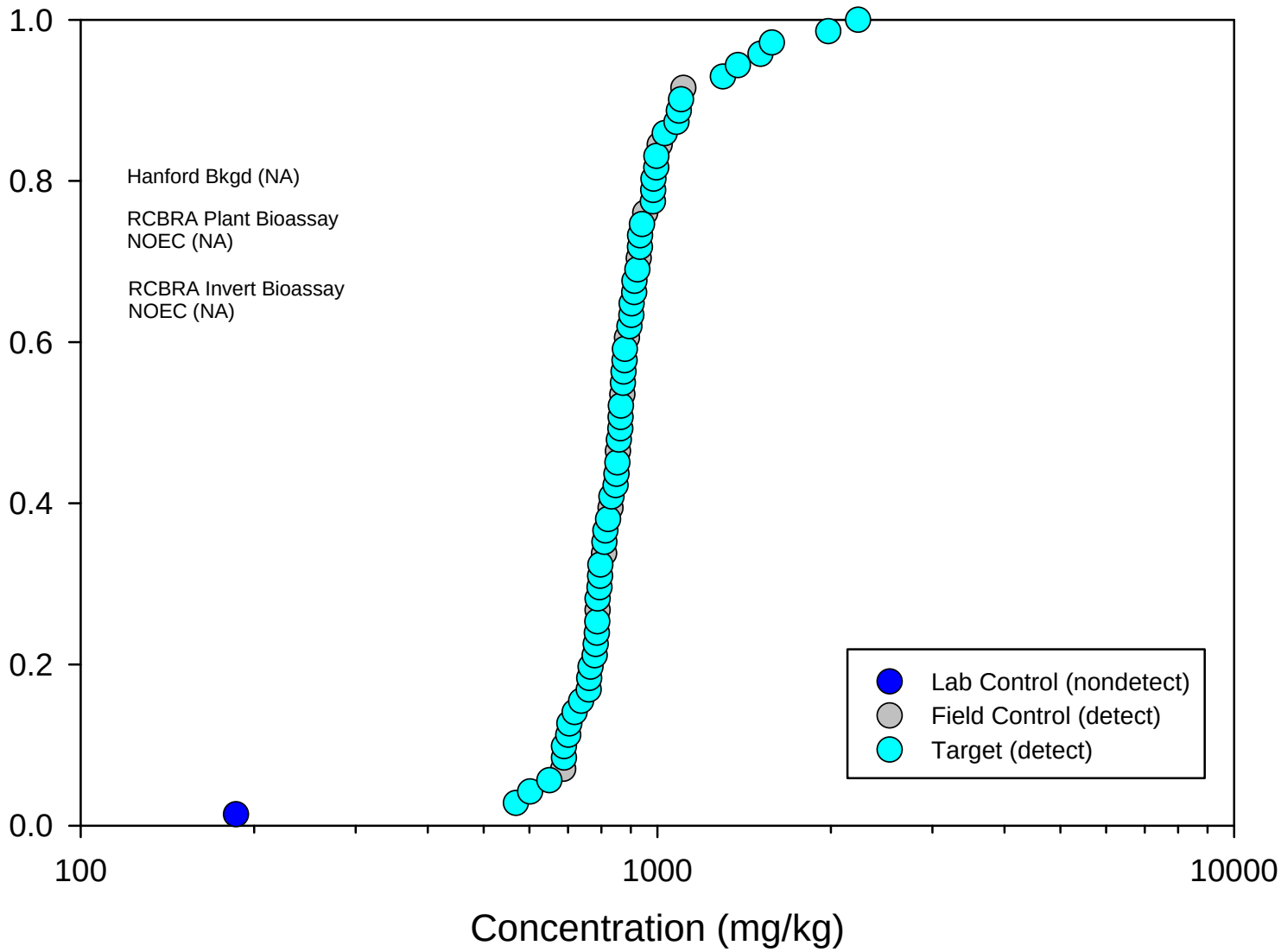

Figure A-26. Phosphorus

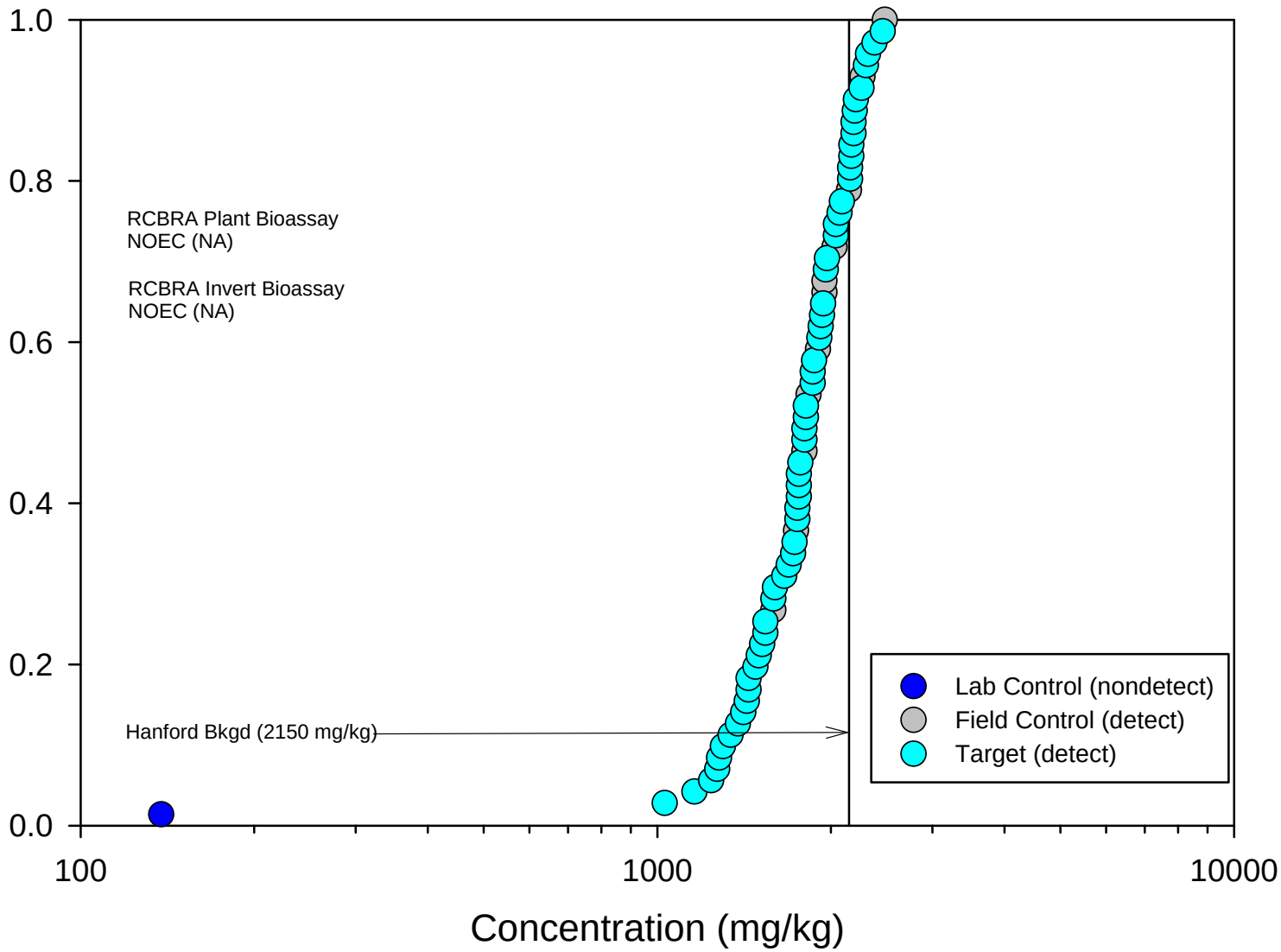

Figure A-27. Potassium

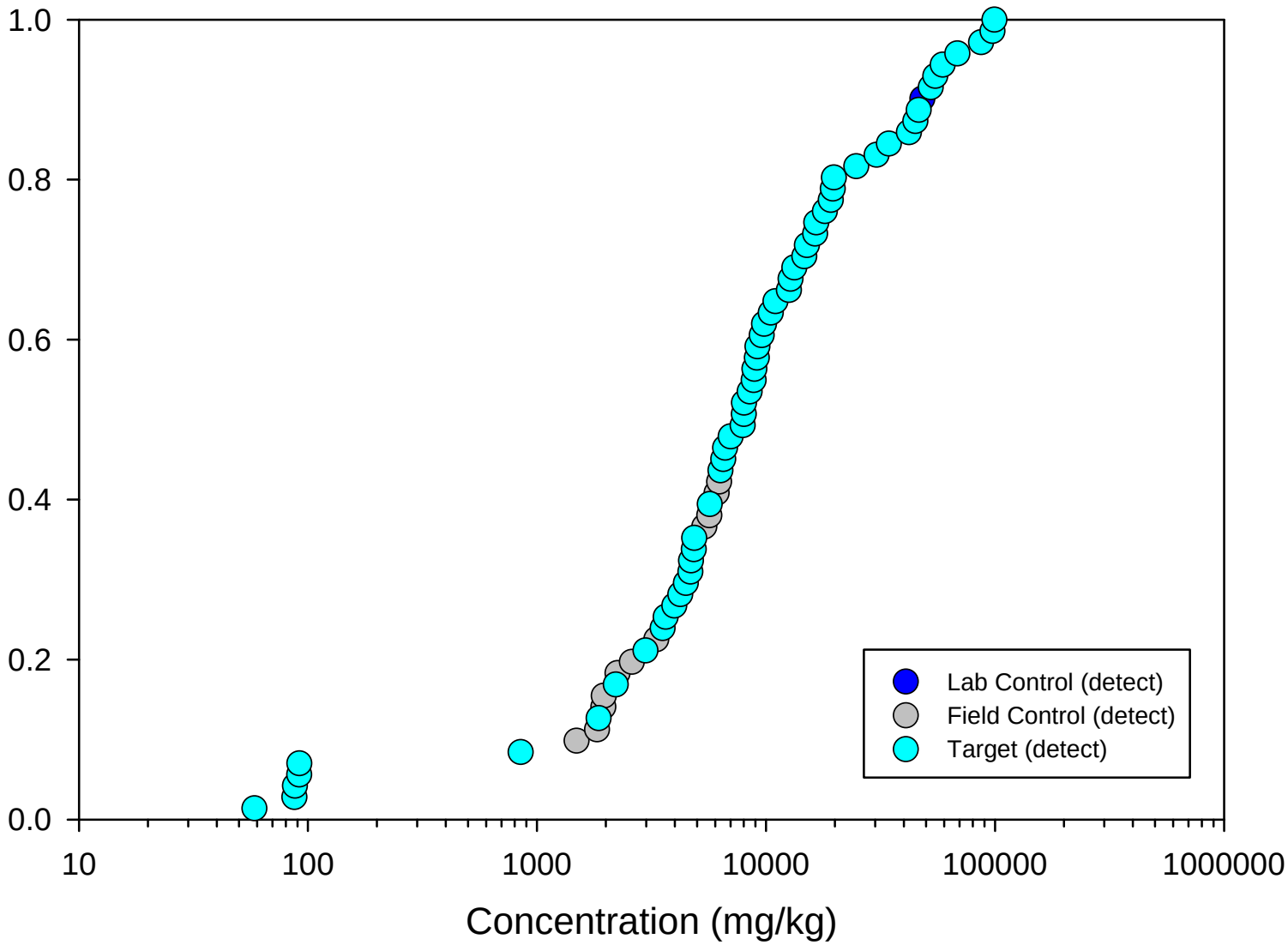

Figure A-28. TOC

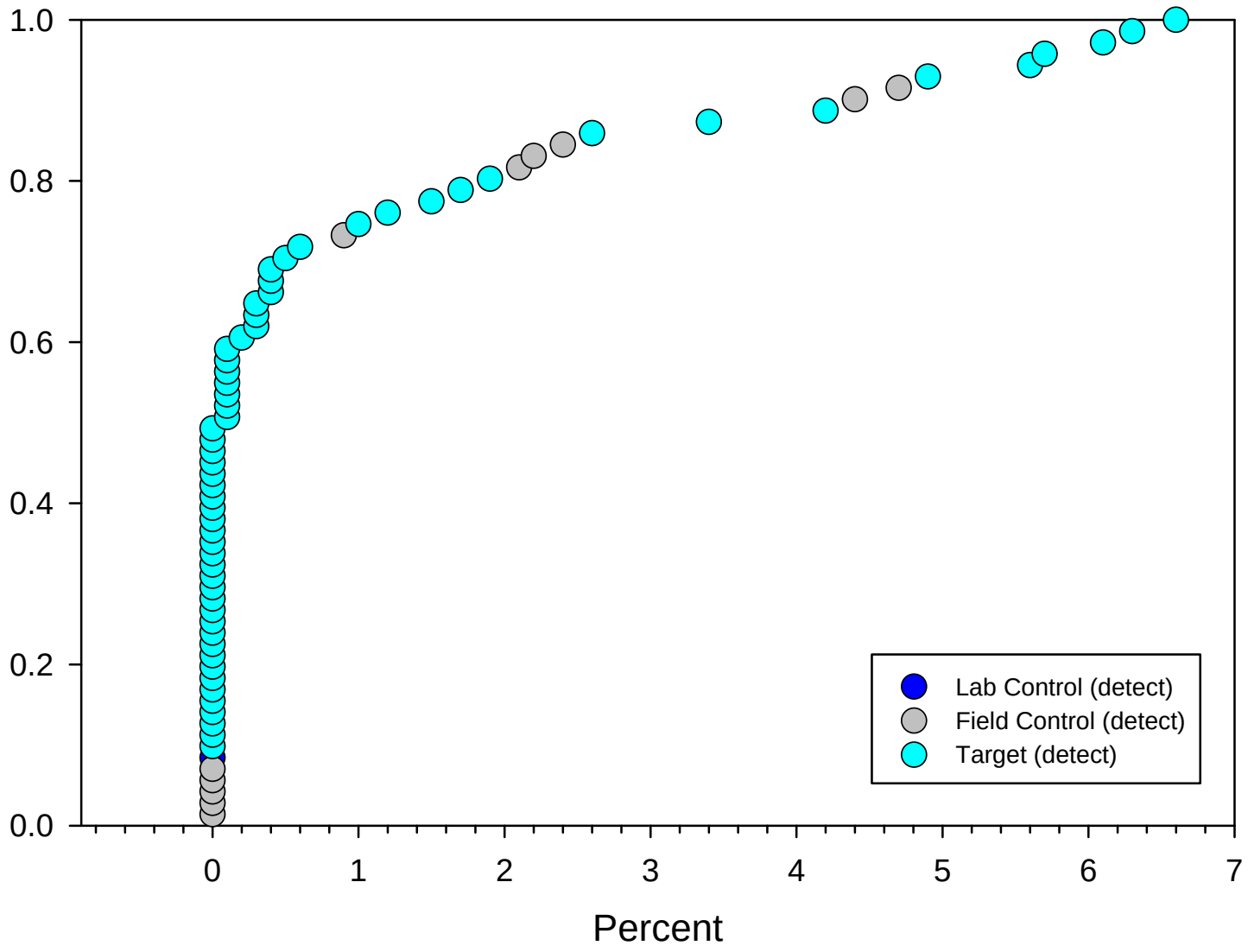

Figure A-29. Gravel

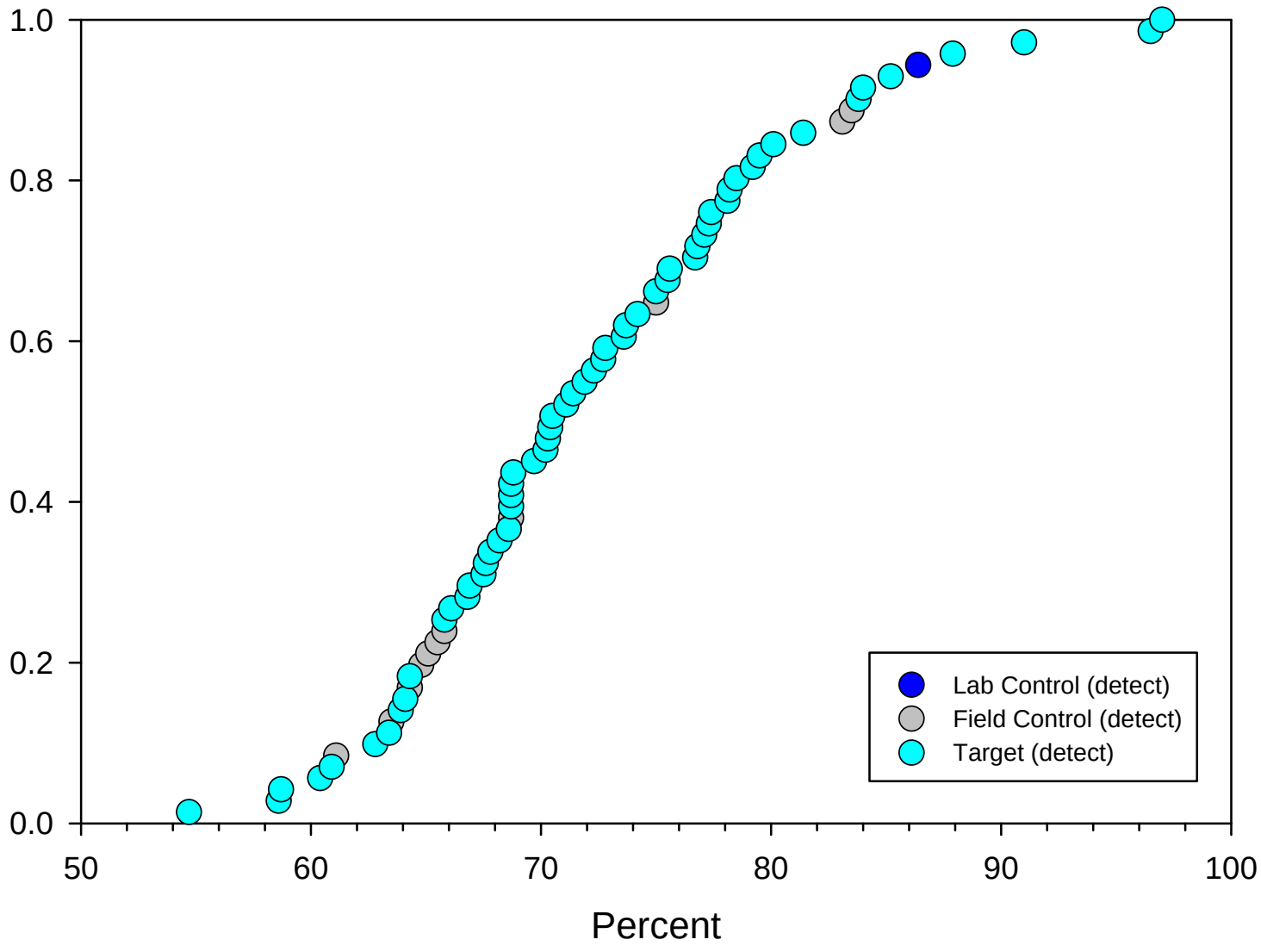

Figure A-30. Sand

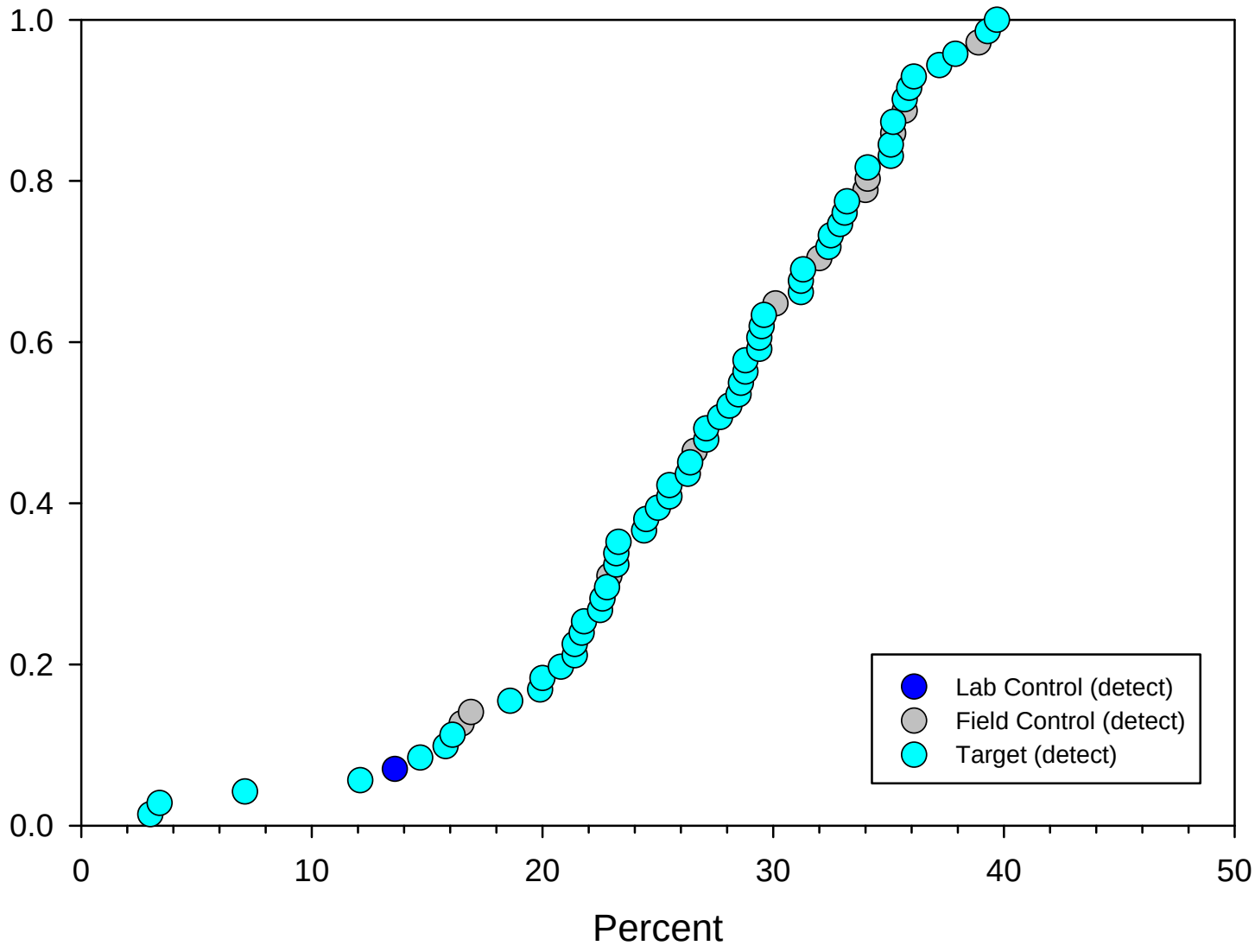

Figure A-31. Silt

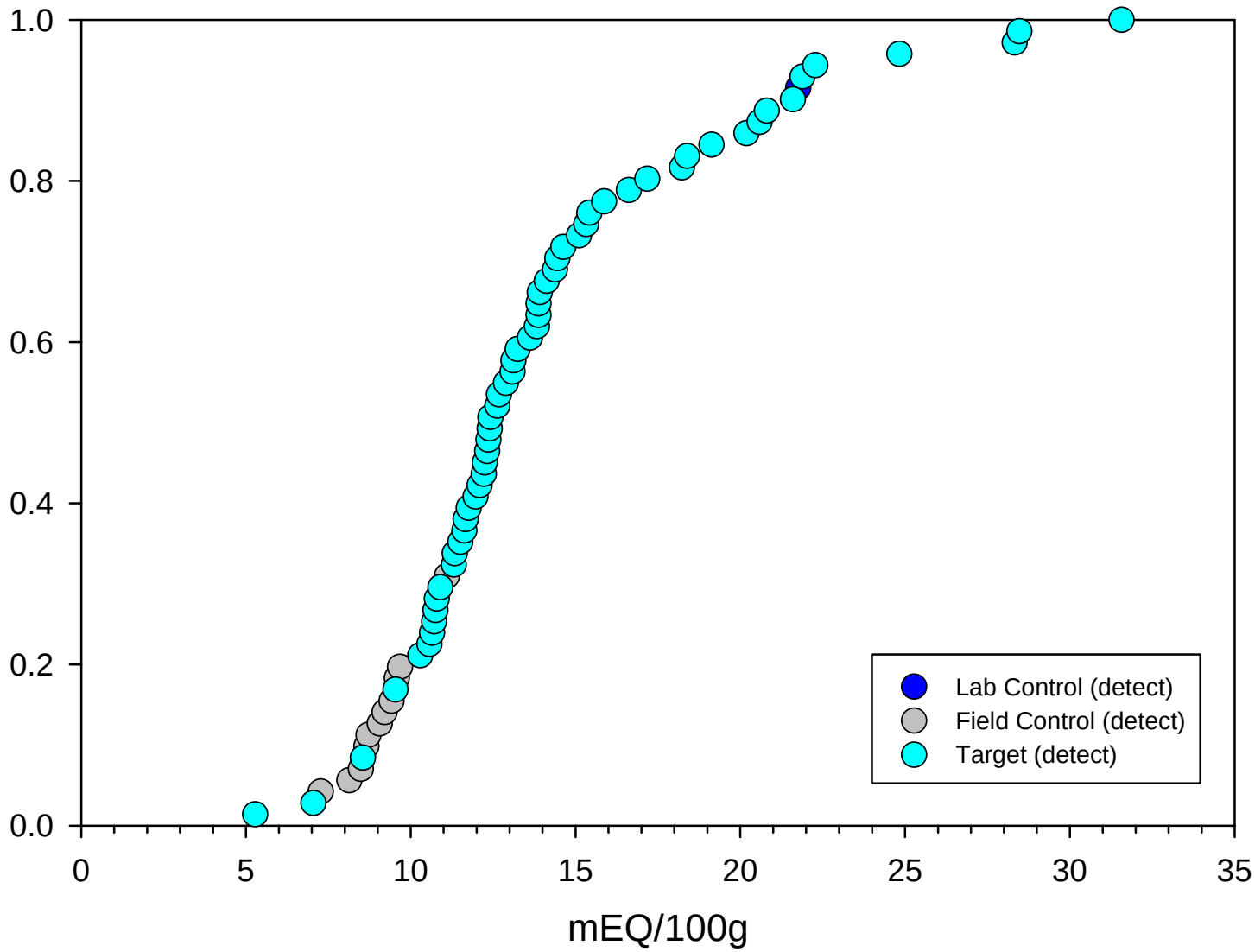

Figure A-32. CEC

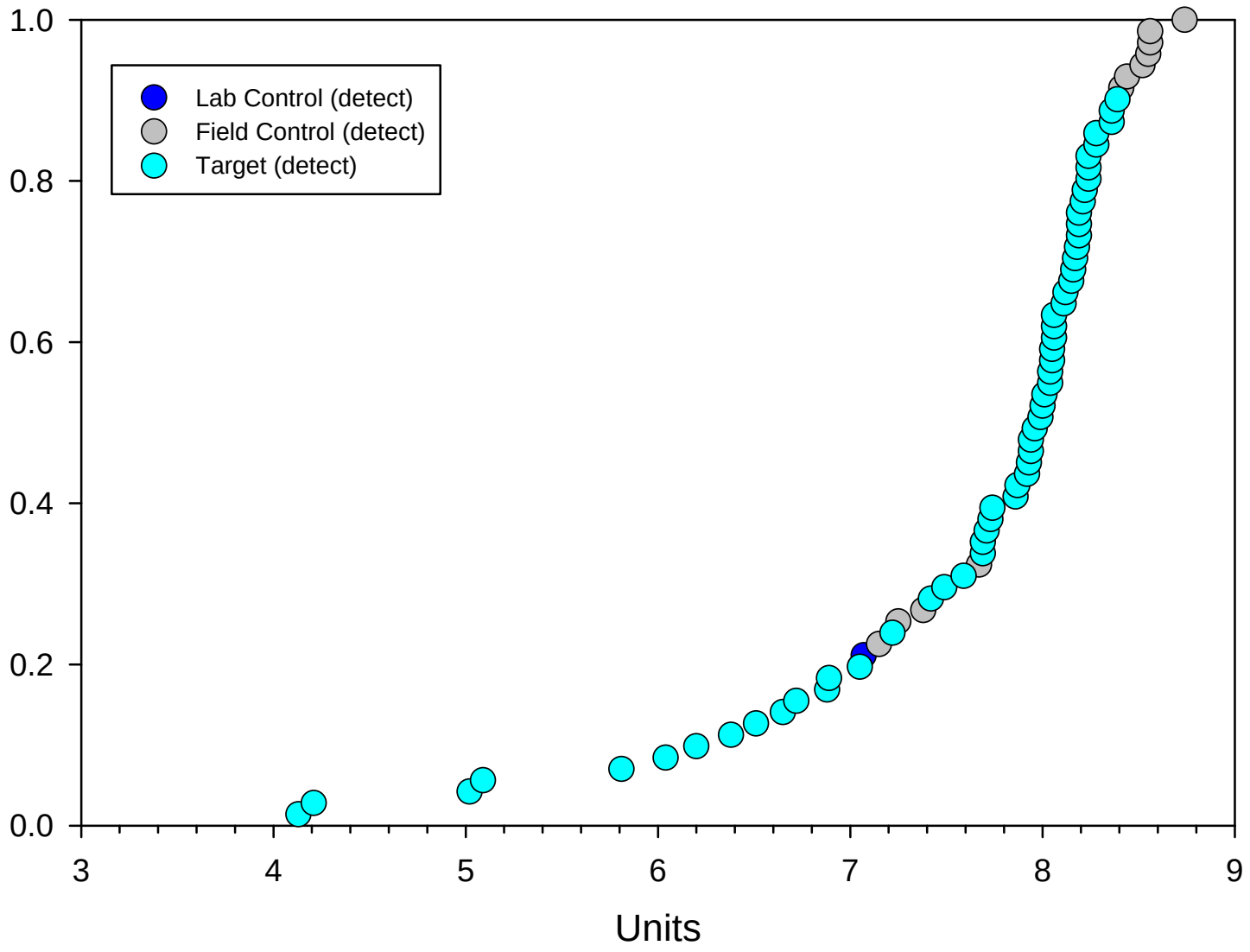

Figure A-33. pH

Appendix B

Nonparametric Spearman Correlations Between Analytes

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Nonparametric Spearman Correlations between analytes - high priority 12:43 Friday, May 27, 2011 2217

The CORR Procedure

8 With Variables:	Antimony	Barium	Cadmium	Chromium	Mercury
	Thallium	Uranium	Zinc		
33 Variables:	Antimony	Barium	Cadmium	Chromium	Mercury
	Thallium	Uranium	Zinc	Boron	Copper
	Lead	Manganese	Arsenic	Cobalt	Nickel
	Selenium	Vanadium	pH	CEC	__Gravel
	__Sand	__Silt_Clay	TOC	Beryllium	Molybdenum
	Nitrogen__Kjeldahl_total	Phosphorus	Silver	Sodium	Tin
	Calcium	Magnesium	Potassium		

Simple Statistics

Variable	N	Mean	Std Dev	Median	Minimum	Maximum
Antimony	71	43.38921	146.21563	0.89400	0.29000	842.00000
Barium	71	212.73239	532.64213	107.00000	56.80000	4520
Cadmium	71	1.60255	2.35156	0.37500	0.09600	9.85000
Chromium	71	16.96070	29.94992	11.50000	2.82000	259.00000
Mercury	71	0.42797	2.06161	0.05300	0.04800	12.50000
Thallium	71	0.12117	0.05665	0.11000	0.09600	0.45900
Uranium	71	0.60439	0.53377	0.50000	0.21900	4.76000
Zinc	71	361.37831	1126	71.20000	4.08000	8980
Boron	71	28.17845	18.11040	37.10000	4.10000	58.00000
Copper	71	66.25099	95.97832	28.20000	1.40000	596.00000
Lead	71	805.68296	1707	68.30000	0.10000	9090
Manganese	71	393.86197	179.35418	356.00000	24.30000	1260
Arsenic	71	4.61423	2.67074	4.03000	0.50000	16.40000
Cobalt	71	7.97763	1.80695	7.90000	0.27200	12.40000
Nickel	71	12.50944	4.94740	11.10000	1.09000	27.40000
Selenium	71	1.23061	0.29552	1.25000	0.45500	2.02000
Vanadium	71	53.44606	14.98876	50.80000	2.27000	116.00000
pH	71	7.60873	0.97898	7.99000	4.13000	8.74000
CEC	71	13.93859	5.22189	12.42000	5.28000	31.57000
__Gravel	71	1.03521	1.84438	0.10000	0	6.60000
__Sand	71	72.32958	8.68939	70.50000	54.70000	97.00000
__Silt_Clay	71	26.63662	8.19070	27.70000	3.00000	39.70000
TOC	71	16847	22777	8010	58.40000	99400
Beryllium	71	0.33580	0.08225	0.33800	0.10000	0.56500
Molybdenum	71	1.90846	6.32180	0.54300	0.20800	46.30000
Nitrogen__Kjeldahl_total	71	433.92254	233.20010	434.00000	14.30000	1010
Phosphorus	71	913.16901	284.01157	864.00000	186.00000	2230
Silver	71	0.26314	0.47334	0.11000	0.01000	2.99000
Sodium	71	422.97887	466.28010	314.00000	38.50000	3160
Tin	71	36.37386	118.78106	2.71000	0.16500	838.00000
Calcium	71	8075	3874	7570	3020	21400

Nonparametric Spearman Correlations between analytes - high priority 12:43 Friday, May 27, 2011 2218

The CORR Procedure

Simple Statistics

Variable	N	Mean	Std Dev	Median	Minimum	Maximum
Magnesium	71	4599	1423	4520	250.00000	10900
Potassium	71	1796	385.30366	1810	138.00000	2480

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

Antimony	Antimony		Tin		Cadmium		Barium		Chromium
		1.00000		0.82377		0.78324		0.74135	0.73612
				<.0001		<.0001		<.0001	<.0001
Barium	Barium		Molybdenum		Arsenic		Chromium		Zinc
		1.00000		0.81111		0.78629		0.76286	0.75108
				<.0001		<.0001		<.0001	<.0001
Cadmium	Cadmium		Tin		Antimony		TOC		Copper
		1.00000		0.82278		0.78324		0.75267	0.68030
				<.0001		<.0001		<.0001	<.0001
Chromium	Chromium		Nickel		Molybdenum		Copper		Barium
		1.00000		0.83009		0.77459		0.76873	0.76286
				<.0001		<.0001		<.0001	<.0001
Mercury	Mercury		Calcium		Boron		Sodium		Silver
		1.00000		0.54268		0.51962		0.45576	0.42755
				<.0001		<.0001		<.0001	0.0002
Thallium	Thallium		Silver		Arsenic		Boron		Nickel
		1.00000		0.72114		0.50540		0.45907	0.45741
				<.0001		<.0001		<.0001	<.0001
Uranium	Uranium		CEC		Beryllium		TOC		Molybdenum
		1.00000		0.48295		0.47515		0.35078	0.31326
				<.0001		<.0001		0.0027	0.0078
Zinc	Zinc		Copper		Arsenic		Tin		Molybdenum
		1.00000		0.81425		0.80114		0.78448	0.78186
				<.0001		<.0001		<.0001	<.0001

Nonparametric Spearman Correlations between analytes - high priority 12:43 Friday, May 27, 2011 2219

The CORR Procedure

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

Antimony	Copper	Arsenic	Molybdenum	TOC	Lead	
	0.73213	0.68328	0.67487	0.66749	0.64787	
	<.0001	<.0001	<.0001	<.0001	<.0001	
Barium	Antimony	Tin	Copper	Nickel	Cadmium	
	0.74135	0.73230	0.72463	0.68594	0.61778	
	<.0001	<.0001	<.0001	<.0001	<.0001	
Cadmium	Chromium	Molybdenum	Barium	Lead	Zinc	
	0.66170	0.63762	0.61778	0.61376	0.59458	
	<.0001	<.0001	<.0001	<.0001	<.0001	
Chromium	Zinc	Tin	Antimony	Arsenic	Cadmium	
	0.75066	0.74574	0.73612	0.71843	0.66170	
	<.0001	<.0001	<.0001	<.0001	<.0001	
Mercury	Thallium	Nitrogen__Kjeldahl_total	Phosphorus	Lead	__Silt_Clay	
	0.41374	-0.26720	0.23266	-0.22963	-0.22466	
	0.0003	0.0243	0.0509	0.0541	0.0596	
Thallium	Chromium	Zinc	Antimony	Mercury	Molybdenum	
	0.42702	0.42660	0.41531	0.41374	0.39629	
	0.0002	0.0002	0.0003	0.0003	0.0006	
Uranium	Nickel	Cobalt	Copper	Boron	Tin	
	0.30236	0.29457	0.28899	0.28644	0.28558	
	0.0104	0.0126	0.0145	0.0154	0.0158	
Zinc	Barium	Chromium	Nickel	Antimony	Cadmium	
	0.75108	0.75066	0.73232	0.63165	0.59458	
	<.0001	<.0001	<.0001	<.0001	<.0001	

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

Antimony	Zinc	Silver	Nickel	Nitrogen__Kjeldahl_total	Thallium	
	0.63165	0.54692	0.53681	0.49163	0.41531	
	<.0001	<.0001	<.0001	<.0001	0.0003	
Barium	TOC	Lead	Silver	CEC	Calcium	
	0.58483	0.55909	0.50634	0.39838	0.39744	
	<.0001	<.0001	<.0001	0.0006	0.0006	

Nonparametric Spearman Correlations between analytes - high priority 12:43 Friday, May 27, 2011 2220

The CORR Procedure

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

Cadmium	Arsenic	Nitrogen__Kjeldahl_total	CEC	Nickel	Silver	
	0.56687	0.52645	0.43208	0.41775	0.34278	
	<.0001	<.0001	0.0002	0.0003	0.0034	
Chromium	TOC	Lead	Silver	Thallium	Cobalt	
	0.58832	0.53338	0.47533	0.42702	0.40501	
	<.0001	<.0001	<.0001	0.0002	0.0005	
Mercury	Cadmium	Barium	__Sand	Molybdenum	pH	
	-0.22092	0.20099	0.19602	0.19562	0.18327	
	0.0641	0.0928	0.1014	0.1021	0.1261	
Thallium	Vanadium	Barium	pH	Copper	Tin	
	-0.36213	0.36184	0.32319	0.30086	0.29711	
	0.0019	0.0019	0.0060	0.0108	0.0119	
Uranium	Zinc	Arsenic	Magnesium	Lead	Manganese	
	0.28517	0.24067	0.21213	0.20969	0.20609	
	0.0159	0.0432	0.0757	0.0793	0.0847	
Zinc	Boron	Lead	TOC	Manganese	Silver	
	0.54165	0.54113	0.49582	0.47007	0.46247	
	<.0001	<.0001	<.0001	<.0001	<.0001	

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

Antimony	CEC	Beryllium	Vanadium	Cobalt	__Sand	
	0.39549	0.24395	-0.23842	0.22557	-0.21948	
	0.0006	0.0404	0.0453	0.0586	0.0659	
Barium	Boron	Nitrogen__Kjeldahl_total	Thallium	Beryllium	Cobalt	
	0.38636	0.37131	0.36184	0.32569	0.31711	
	0.0009	0.0014	0.0019	0.0056	0.0070	
Cadmium	pH	__Sand	__Silt_Clay	Mercury	Beryllium	
	-0.28460	-0.27545	0.25611	-0.22092	0.20014	
	0.0162	0.0201	0.0311	0.0641	0.0942	
Chromium	Beryllium	Nitrogen__Kjeldahl_total	CEC	Boron	Potassium	
	0.39453	0.36105	0.33011	0.28075	0.27938	
	0.0007	0.0020	0.0049	0.0177	0.0183	

Nonparametric Spearman Correlations between analytes - high priority 12:43 Friday, May 27, 2011 2221

The CORR Procedure

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

Mercury	Nickel	TOC	Magnesium	Potassium	Cobalt	
	0.17709	-0.15995	0.14209	0.13446	-0.12843	
	0.1396	0.1827	0.2372	0.2636	0.2858	
Thallium	Potassium	Manganese	Magnesium	Calcium	Nitrogen__Kjeldahl_total	
	0.29111	0.25667	0.25265	0.21237	0.18762	
	0.0138	0.0307	0.0335	0.0754	0.1172	
Uranium	Barium	Sodium	Chromium	Cadmium	Calcium	
	0.20174	0.20052	0.19878	0.18554	0.16619	
	0.0916	0.0936	0.0965	0.1213	0.1660	
Zinc	Magnesium	Thallium	Beryllium	Sodium	Calcium	
	0.43889	0.42660	0.42476	0.39511	0.39254	
	0.0001	0.0002	0.0002	0.0006	0.0007	

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

Antimony	__Silt_Clay	__Gravel	Uranium	pH	Boron	
	0.19412	0.18595	0.14532	-0.11596	0.08190	
	0.1048	0.1205	0.2266	0.3355	0.4971	
Barium	__Sand	Manganese	__Silt_Clay	Sodium	Uranium	
	-0.27979	0.25659	0.24266	0.23797	0.20174	
	0.0181	0.0308	0.0415	0.0457	0.0916	
Cadmium	Vanadium	Uranium	Sodium	Thallium	Cobalt	
	-0.18627	0.18554	-0.18315	0.17275	0.16968	
	0.1199	0.1213	0.1263	0.1497	0.1572	
Chromium	__Gravel	Manganese	Calcium	Uranium	Magnesium	
	0.26812	0.26559	0.20012	0.19878	0.19626	
	0.0238	0.0252	0.0943	0.0965	0.1009	
Mercury	Beryllium	Arsenic	Chromium	Tin	Vanadium	
	-0.12670	0.12221	0.10670	-0.10019	-0.09553	
	0.2924	0.3100	0.3758	0.4058	0.4281	
Thallium	__Gravel	Cadmium	Sodium	Lead	Cobalt	
	0.18165	0.17275	0.16643	0.14881	0.14821	
	0.1295	0.1497	0.1654	0.2155	0.2174	

Nonparametric Spearman Correlations between analytes - high priority 12:43 Friday, May 27, 2011 2222

The CORR Procedure

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

Uranium	Nitrogen__Kjeldahl_total	Antimony		Phosphorus		__Gravel		Thallium	
	0.14912		0.14532		0.12663		-0.11086		0.08141
	0.2145		0.2266		0.2927		0.3574		0.4997
Zinc	Vanadium	Cobalt		CEC		Potassium		Uranium	
	-0.35888		0.35147		0.33566		0.31847		0.28517
	0.0021		0.0027		0.0042		0.0068		0.0159

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

Antimony	Potassium	Selenium		Mercury		Calcium		Magnesium	
	0.07863		0.07008		-0.04511		0.03813		-0.03393
	0.5145		0.5614		0.7087		0.7522		0.7788
Barium	Mercury	Potassium		__Gravel		Vanadium		Magnesium	
	0.20099		0.19524		0.19013		-0.18800		0.12915
	0.0928		0.1028		0.1123		0.1164		0.2831
Cadmium	Magnesium	Calcium		Boron		__Gravel		Potassium	
	-0.15054		-0.14527		-0.12233		0.11038		-0.09340
	0.2102		0.2267		0.3095		0.3595		0.4385
Chromium	__Sand	Vanadium		__Silt_Clay		Sodium		Mercury	
	-0.17651		-0.16938		0.12400		0.11812		0.10670
	0.1409		0.1579		0.3029		0.3265		0.3758
Mercury	Manganese	Zinc		Copper		Antimony		__Gravel	
	0.09275		0.08592		0.06950		-0.04511		0.04311
	0.4417		0.4762		0.5647		0.7087		0.7211
Thallium	Beryllium	TOC		Phosphorus		Selenium		Uranium	
	0.14620		0.14504		-0.13533		-0.11010		0.08141
	0.2238		0.2275		0.2605		0.3607		0.4997
Uranium	__Sand	Vanadium		Selenium		Potassium		__Silt_Clay	
	0.07047		-0.06668		0.05387		0.04867		-0.03495
	0.5592		0.5806		0.6555		0.6869		0.7723
Zinc	Nitrogen__Kjeldahl_total	__Gravel		pH		__Sand		__Silt_Clay	
	0.24481		0.19581		0.14433		-0.13054		0.10912
	0.0396		0.1017		0.2298		0.2779		0.3650

Nonparametric Spearman Correlations between analytes - high priority 12:43 Friday, May 27, 2011 2223

The CORR Procedure

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

Antimony	Manganese	Phosphorus	Sodium
	0.03217	0.02259	-0.01580
	0.7900	0.8517	0.8960
Barium	Phosphorus	Selenium	pH
	0.11580	0.07112	0.00849
	0.3362	0.5556	0.9440
Cadmium	Selenium	Phosphorus	Manganese
	0.07127	-0.07004	-0.06101
	0.5548	0.5617	0.6133
Chromium	pH	Selenium	Phosphorus
	0.05950	-0.04272	0.01370
	0.6221	0.7235	0.9097
Mercury	CEC	Uranium	Selenium
	-0.02647	0.02137	-0.00336
	0.8266	0.8596	0.9778
Thallium	__Sand	__Silt_Clay	CEC
	-0.05166	0.01487	0.00784
	0.6688	0.9020	0.9483
Uranium	Mercury	pH	Silver
	0.02137	-0.01820	0.01649
	0.8596	0.8803	0.8914
Zinc	Mercury	Selenium	Phosphorus
	0.08592	-0.07769	0.02133
	0.4762	0.5196	0.8599

Nonparametric Spearman Correlations between analytes - medium priority 12:43 Friday, May 27, 2011 2224

The CORR Procedure

4 With Variables:	Boron	Copper	Lead	Manganese	
33 Variables:	Antimony	Barium	Cadmium	Chromium	Mercury
	Thallium	Uranium	Zinc	Boron	Copper
	Lead	Manganese	Arsenic	Cobalt	Nickel
	Selenium	Vanadium	pH	CEC	__Gravel
	__Sand	__Silt_Clay	TOC	Beryllium	Molybdenum
	Nitrogen__Kjeldahl_total	Phosphorus	Silver	Sodium	Tin
	Calcium	Magnesium	Potassium		

Simple Statistics

Variable	N	Mean	Std Dev	Median	Minimum	Maximum
Boron	71	28.17845	18.11040	37.10000	4.10000	58.00000
Copper	71	66.25099	95.97832	28.20000	1.40000	596.00000
Lead	71	805.68296	1707	68.30000	0.10000	9090
Manganese	71	393.86197	179.35418	356.00000	24.30000	1260
Antimony	71	43.38921	146.21563	0.89400	0.29000	842.00000
Barium	71	212.73239	532.64213	107.00000	56.80000	4520
Cadmium	71	1.60255	2.35156	0.37500	0.09600	9.85000
Chromium	71	16.96070	29.94992	11.50000	2.82000	259.00000
Mercury	71	0.42797	2.06161	0.05300	0.04800	12.50000
Thallium	71	0.12117	0.05665	0.11000	0.09600	0.45900
Uranium	71	0.60439	0.53377	0.50000	0.21900	4.76000
Zinc	71	361.37831	1126	71.20000	4.08000	8980
Arsenic	71	4.61423	2.67074	4.03000	0.50000	16.40000
Cobalt	71	7.97763	1.80695	7.90000	0.27200	12.40000
Nickel	71	12.50944	4.94740	11.10000	1.09000	27.40000
Selenium	71	1.23061	0.29552	1.25000	0.45500	2.02000
Vanadium	71	53.44606	14.98876	50.80000	2.27000	116.00000
pH	71	7.60873	0.97898	7.99000	4.13000	8.74000
CEC	71	13.93859	5.22189	12.42000	5.28000	31.57000
__Gravel	71	1.03521	1.84438	0.10000	0	6.60000
__Sand	71	72.32958	8.68939	70.50000	54.70000	97.00000
__Silt_Clay	71	26.63662	8.19070	27.70000	3.00000	39.70000
TOC	71	16847	22777	8010	58.40000	99400
Beryllium	71	0.33580	0.08225	0.33800	0.10000	0.56500
Molybdenum	71	1.90846	6.32180	0.54300	0.20800	46.30000
Nitrogen__Kjeldahl_total	71	433.92254	233.20010	434.00000	14.30000	1010
Phosphorus	71	913.16901	284.01157	864.00000	186.00000	2230
Silver	71	0.26314	0.47334	0.11000	0.01000	2.99000
Sodium	71	422.97887	466.28010	314.00000	38.50000	3160
Tin	71	36.37386	118.78106	2.71000	0.16500	838.00000
Calcium	71	8075	3874	7570	3020	21400
Magnesium	71	4599	1423	4520	250.00000	10900

Nonparametric Spearman Correlations between analytes - medium priority 12:43 Friday, May 27, 2011 2225

The CORR Procedure

Simple Statistics

Variable	N	Mean	Std Dev	Median	Minimum	Maximum
Potassium	71	1796	385.30366	1810	138.00000	2480

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

Boron	Boron	Calcium	Magnesium	Manganese	Sodium	
	1.00000	0.71273	0.70741	0.61688	0.61350	
		<.0001	<.0001	<.0001	<.0001	
Copper	Copper	Tin	Zinc	Molybdenum	Chromium	
	1.00000	0.86176	0.81425	0.80373	0.76873	
		<.0001	<.0001	<.0001	<.0001	
Lead	Lead	TOC	Tin	Antimony	Cadmium	
	1.00000	0.69329	0.67468	0.64787	0.61376	
		<.0001	<.0001	<.0001	<.0001	
Manganese	Manganese	Magnesium	Cobalt	Boron	Nickel	
	1.00000	0.71510	0.68715	0.61688	0.54476	
		<.0001	<.0001	<.0001	<.0001	

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

Boron	pH	Zinc	Nickel	Arsenic	Mercury	
	0.56715	0.54165	0.52900	0.52329	0.51962	
	<.0001	<.0001	<.0001	<.0001	<.0001	
Copper	Arsenic	Antimony	Barium	Nickel	Cadmium	
	0.73756	0.73213	0.72463	0.68613	0.68030	
	<.0001	<.0001	<.0001	<.0001	<.0001	
Lead	Copper	Barium	Molybdenum	Zinc	Chromium	
	0.56027	0.55909	0.54238	0.54113	0.53338	
	<.0001	<.0001	<.0001	<.0001	<.0001	
Manganese	Potassium	Beryllium	Zinc	pH	Sodium	
	0.51836	0.47978	0.47007	0.43715	0.41599	
	<.0001	<.0001	<.0001	0.0001	0.0003	

Nonparametric Spearman Correlations between analytes - medium priority 12:43 Friday, May 27, 2011 2226

The CORR Procedure

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

Boron	Potassium	Silver	Thallium	Molybdenum	Copper	
	0.50980	0.47984	0.45907	0.45182	0.38991	
	<.0001	<.0001	<.0001	<.0001	0.0008	
Copper	Lead	TOC	Silver	Boron	CEC	
	0.56027	0.52719	0.45466	0.38991	0.33527	
	<.0001	<.0001	<.0001	0.0008	0.0043	
Lead	Arsenic	CEC	Nitrogen__Kjeldahl_total	Nickel	Cobalt	
	0.52864	0.51950	0.46030	0.43109	0.38437	
	<.0001	<.0001	<.0001	0.0002	0.0009	
Manganese	Arsenic	Molybdenum	Calcium	Chromium	Thallium	
	0.39684	0.35362	0.33523	0.26559	0.25667	
	0.0006	0.0025	0.0043	0.0252	0.0307	

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

Boron	Barium	Vanadium	Beryllium	Phosphorus	Uranium	
	0.38636	-0.37011	0.31275	0.29331	0.28644	
	0.0009	0.0015	0.0079	0.0130	0.0154	
Copper	Beryllium	Thallium	Uranium	Vanadium	Calcium	
	0.30316	0.30086	0.28899	-0.28233	0.26944	
	0.0102	0.0108	0.0145	0.0171	0.0231	
Lead	Beryllium	Mercury	Silver	Uranium	__Silt_Clay	
	0.26992	-0.22963	0.22803	0.20969	0.18154	
	0.0228	0.0541	0.0558	0.0793	0.1297	
Manganese	Barium	Phosphorus	Copper	Uranium	Silver	
	0.25659	0.21650	0.20939	0.20609	0.18969	
	0.0308	0.0698	0.0797	0.0847	0.1131	

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

Boron	Chromium	__Gravel	Cobalt	Tin	__Sand	
	0.28075	0.26228	0.20637	0.19896	-0.14958	
	0.0177	0.0271	0.0842	0.0962	0.2131	

Nonparametric Spearman Correlations between analytes - medium priority 12:43 Friday, May 27, 2011 2227

The CORR Procedure

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

Copper	Sodium	Nitrogen__Kjeldahl_total	Cobalt	Manganese	Potassium
	0.26390	0.26073	0.24952	0.20939	0.20809
	0.0262	0.0281	0.0359	0.0797	0.0816
Lead	Selenium	__Sand	Thallium	Manganese	Phosphorus
	0.16793	-0.15878	0.14881	0.13969	-0.11385
	0.1616	0.1860	0.2155	0.2453	0.3445
Manganese	__Gravel	Tin	Lead	__Sand	__Silt_Clay
	0.18364	0.15080	0.13969	-0.13119	0.10468
	0.1253	0.2094	0.2453	0.2755	0.3850

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

Boron	Cadmium	Nitrogen__Kjeldahl_total	__Silt_Clay	Antimony	Selenium
	-0.12233	-0.12125	0.11509	0.08190	-0.06609
	0.3095	0.3138	0.3392	0.4971	0.5840
Copper	Magnesium	__Sand	__Gravel	__Silt_Clay	Mercury
	0.20205	-0.19554	0.17745	0.16950	0.06950
	0.0911	0.1022	0.1388	0.1576	0.5647
Lead	pH	Vanadium	Potassium	__Gravel	Calcium
	-0.09885	-0.09049	-0.06893	0.06477	0.06286
	0.4121	0.4530	0.5679	0.5915	0.6025
Manganese	Selenium	Mercury	Nitrogen__Kjeldahl_total	Cadmium	Vanadium
	-0.09640	0.09275	-0.06818	-0.06101	-0.04854
	0.4239	0.4417	0.5721	0.6133	0.6877

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

Boron	TOC	CEC	Lead	
	-0.04423	0.03570	-0.01123	
	0.7142	0.7676	0.9259	
Copper	pH	Phosphorus	Selenium	
	0.04902	0.04615	0.04015	
	0.6848	0.7024	0.7395	

Nonparametric Spearman Correlations between analytes - medium priority 12:43 Friday, May 27, 2011 2228

The CORR Procedure

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

Lead	Magnesium	Sodium	Boron	
	-0.04948	-0.02928	-0.01123	
	0.6820	0.8085	0.9259	
Manganese	TOC	CEC	Antimony	
	-0.04556	0.04276	0.03217	
	0.7060	0.7233	0.7900	

Nonparametric Spearman Correlations between analytes - low priority 12:43 Friday, May 27, 2011 2229

The CORR Procedure

5 With Variables:	Arsenic	Cobalt	Nickel	Selenium	Vanadium
33 Variables:	Antimony	Barium	Cadmium	Chromium	Mercury
	Thallium	Uranium	Zinc	Boron	Copper
	Lead	Manganese	Arsenic	Cobalt	Nickel
	Selenium	Vanadium	pH	CEC	__Gravel
	__Sand	__Silt_Clay	TOC	Beryllium	Molybdenum
	Nitrogen__Kjeldahl_total	Phosphorus	Silver	Sodium	Tin
	Calcium	Magnesium	Potassium		

Simple Statistics

Variable	N	Mean	Std Dev	Median	Minimum	Maximum
Arsenic	71	4.61423	2.67074	4.03000	0.50000	16.40000
Cobalt	71	7.97763	1.80695	7.90000	0.27200	12.40000
Nickel	71	12.50944	4.94740	11.10000	1.09000	27.40000
Selenium	71	1.23061	0.29552	1.25000	0.45500	2.02000
Vanadium	71	53.44606	14.98876	50.80000	2.27000	116.00000
Antimony	71	43.38921	146.21563	0.89400	0.29000	842.00000
Barium	71	212.73239	532.64213	107.00000	56.80000	4520
Cadmium	71	1.60255	2.35156	0.37500	0.09600	9.85000
Chromium	71	16.96070	29.94992	11.50000	2.82000	259.00000
Mercury	71	0.42797	2.06161	0.05300	0.04800	12.50000
Thallium	71	0.12117	0.05665	0.11000	0.09600	0.45900
Uranium	71	0.60439	0.53377	0.50000	0.21900	4.76000
Zinc	71	361.37831	1126	71.20000	4.08000	8980
Boron	71	28.17845	18.11040	37.10000	4.10000	58.00000
Copper	71	66.25099	95.97832	28.20000	1.40000	596.00000
Lead	71	805.68296	1707	68.30000	0.10000	9090
Manganese	71	393.86197	179.35418	356.00000	24.30000	1260
pH	71	7.60873	0.97898	7.99000	4.13000	8.74000
CEC	71	13.93859	5.22189	12.42000	5.28000	31.57000
__Gravel	71	1.03521	1.84438	0.10000	0	6.60000
__Sand	71	72.32958	8.68939	70.50000	54.70000	97.00000
__Silt_Clay	71	26.63662	8.19070	27.70000	3.00000	39.70000
TOC	71	16847	22777	8010	58.40000	99400
Beryllium	71	0.33580	0.08225	0.33800	0.10000	0.56500
Molybdenum	71	1.90846	6.32180	0.54300	0.20800	46.30000
Nitrogen__Kjeldahl_total	71	433.92254	233.20010	434.00000	14.30000	1010
Phosphorus	71	913.16901	284.01157	864.00000	186.00000	2230
Silver	71	0.26314	0.47334	0.11000	0.01000	2.99000
Sodium	71	422.97887	466.28010	314.00000	38.50000	3160
Tin	71	36.37386	118.78106	2.71000	0.16500	838.00000
Calcium	71	8075	3874	7570	3020	21400
Magnesium	71	4599	1423	4520	250.00000	10900

Nonparametric Spearman Correlations between analytes - low priority 12:43 Friday, May 27, 2011 2230

The CORR Procedure

Simple Statistics

Variable	N	Mean	Std Dev	Median	Minimum	Maximum
Potassium	71	1796	385.30366	1810	138.00000	2480

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

Arsenic	Arsenic	Molybdenum	Zinc	Barium	Tin	
	1.00000	0.84064	0.80114	0.78629	0.78173	
		<.0001	<.0001	<.0001	<.0001	
Cobalt	Cobalt	Manganese	Nickel	Beryllium	Molybdenum	
	1.00000	0.68715	0.59535	0.56207	0.41617	
		<.0001	<.0001	<.0001	0.0003	
Nickel	Nickel	Chromium	Molybdenum	Zinc	Copper	
	1.00000	0.83009	0.74826	0.73232	0.68613	
		<.0001	<.0001	<.0001	<.0001	
Selenium	Selenium	Vanadium	Phosphorus	CEC	pH	
	1.00000	0.37878	0.35553	0.25927	-0.24220	
		0.0011	0.0023	0.0290	0.0419	
Vanadium	Vanadium	Phosphorus	Selenium	Cobalt	Boron	
	1.00000	0.40774	0.37878	0.37350	-0.37011	
		0.0004	0.0011	0.0013	0.0015	

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

Arsenic	Copper	Chromium	Antimony	Nickel	Cadmium	
	0.73756	0.71843	0.68328	0.67699	0.56687	
	<.0001	<.0001	<.0001	<.0001	<.0001	
Cobalt	Chromium	Lead	Magnesium	Vanadium	CEC	
	0.40501	0.38437	0.38276	0.37350	0.35413	
	0.0005	0.0009	0.0010	0.0013	0.0024	
Nickel	Barium	Arsenic	Tin	Cobalt	Beryllium	
	0.68594	0.67699	0.59899	0.59535	0.55838	
	<.0001	<.0001	<.0001	<.0001	<.0001	

Nonparametric Spearman Correlations between analytes - low priority 12:43 Friday, May 27, 2011 2231

The CORR Procedure

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

Selenium	Sodium	Calcium	Potassium	Molybdenum	Lead	
	0.24208	0.20509	-0.18665	0.18389	0.16793	
	0.0420	0.0862	0.1191	0.1248	0.1616	
Vanadium	Thallium	Zinc	__Sand	__Silt_Clay	pH	
	-0.36213	-0.35888	0.34130	-0.34005	-0.33654	
	0.0019	0.0021	0.0036	0.0037	0.0041	

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

Arsenic	Silver	TOC	Lead	Boron	Thallium	
	0.55481	0.54026	0.52864	0.52329	0.50540	
	<.0001	<.0001	<.0001	<.0001	<.0001	
Cobalt	Zinc	Arsenic	Barium	Tin	Uranium	
	0.35147	0.33947	0.31711	0.31603	0.29457	
	0.0027	0.0038	0.0070	0.0073	0.0126	
Nickel	Manganese	Antimony	Boron	Magnesium	TOC	
	0.54476	0.53681	0.52900	0.48764	0.48137	
	<.0001	<.0001	<.0001	<.0001	<.0001	
Selenium	Tin	TOC	Silver	Cobalt	Thallium	
	0.12235	0.11944	-0.11533	0.11039	-0.11010	
	0.3094	0.3211	0.3382	0.3594	0.3607	
Vanadium	Potassium	Copper	Silver	Arsenic	Antimony	
	-0.30607	-0.28233	-0.28134	-0.26079	-0.23842	
	0.0094	0.0171	0.0175	0.0280	0.0453	

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

Arsenic	Calcium	Manganese	Beryllium	Magnesium	Nitrogen__Kjeldahl_total	
	0.44019	0.39684	0.37393	0.37329	0.36783	
	0.0001	0.0006	0.0013	0.0013	0.0016	
Cobalt	Phosphorus	Potassium	TOC	Copper	Antimony	
	0.28310	0.26439	0.25264	0.24952	0.22557	
	0.0167	0.0259	0.0335	0.0359	0.0586	

Nonparametric Spearman Correlations between analytes - low priority 12:43 Friday, May 27, 2011 2232

The CORR Procedure

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

Nickel	Potassium	Thallium	Silver	Lead	Cadmium	
	0.47627	0.45741	0.44917	0.43109	0.41775	
	<.0001	<.0001	<.0001	0.0002	0.0003	
Selenium	Manganese	Magnesium	Zinc	__Sand	__Gravel	
	-0.09640	-0.09139	-0.07769	0.07391	-0.07282	
	0.4239	0.4485	0.5196	0.5402	0.5462	
Vanadium	Magnesium	__Gravel	Barium	Cadmium	Chromium	
	-0.22505	-0.18866	-0.18800	-0.18627	-0.16938	
	0.0592	0.1151	0.1164	0.1199	0.1579	

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

Arsenic	Cobalt	CEC	pH	__Sand	Sodium	
	0.33947	0.33192	0.32496	-0.30747	0.29185	
	0.0038	0.0047	0.0057	0.0091	0.0135	
Cobalt	Nitrogen__Kjeldahl_total	Boron	Sodium	Cadmium	Thallium	
	0.21032	0.20637	0.19458	0.16968	0.14821	
	0.0783	0.0842	0.1039	0.1572	0.2174	
Nickel	CEC	Calcium	Sodium	Uranium	Nitrogen__Kjeldahl_total	
	0.38588	0.35107	0.30445	0.30236	0.30074	
	0.0009	0.0027	0.0098	0.0104	0.0108	
Selenium	Cadmium	Barium	Antimony	Boron	Uranium	
	0.07127	0.07112	0.07008	-0.06609	0.05387	
	0.5548	0.5556	0.5614	0.5840	0.6555	
Vanadium	CEC	TOC	Nickel	Tin	Nitrogen__Kjeldahl_total	
	0.15925	-0.15495	-0.12529	-0.11658	-0.11548	
	0.1847	0.1970	0.2978	0.3329	0.3375	

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

Arsenic	__Silt_Clay	Potassium	Vanadium	Uranium	__Gravel	
	0.27829	0.26748	-0.26079	0.24067	0.17316	
	0.0188	0.0241	0.0280	0.0432	0.1487	

Nonparametric Spearman Correlations between analytes - low priority 12:43 Friday, May 27, 2011 2233

The CORR Procedure

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

Cobalt	Mercury	Silver		pH		Selenium		__Gravel	
	-0.12843		0.11972		0.11963		0.11039		0.09675
	0.2858		0.3200		0.3204		0.3594		0.4222
Nickel	__Gravel	pH		Mercury		__Sand		Phosphorus	
	0.24987		0.22847		0.17709		-0.15983		0.15638
	0.0356		0.0553		0.1396		0.1831		0.1928
Selenium	__Silt_Clay	Chromium		Nitrogen__Kjeldahl_total		Copper		Beryllium	
	-0.04528		-0.04272		0.04018		0.04015		0.02623
	0.7077		0.7235		0.7394		0.7395		0.8281
Vanadium	Mercury	Molybdenum		Lead		Calcium		Sodium	
	-0.09553		-0.09233		-0.09049		-0.09038		0.06983
	0.4281		0.4438		0.4530		0.4535		0.5628

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

Arsenic	Phosphorus		Mercury		Selenium		
		0.15196		0.12221		0.00408	
		0.2058		0.3100		0.9730	
Cobalt	Calcium		__Silt_Clay		__Sand		
		0.05441		-0.03898		0.01138	
		0.6522		0.7469		0.9250	
Nickel	Vanadium		__Silt_Clay		Selenium		
		-0.12529		0.11854		0.01816	
		0.2978		0.3248		0.8805	
Selenium	Nickel		Arsenic		Mercury		
		0.01816		0.00408		-0.00336	
		0.8805		0.9730		0.9778	
Vanadium	Uranium		Manganese		Beryllium		
		-0.06668		-0.04854		0.04133	
		0.5806		0.6877		0.7322	

Nonparametric Spearman Correlations between analytes - others 12:43 Friday, May 27, 2011 2234

The CORR Procedure

16 With Variables:	pH	CEC	__Gravel	__Sand	__Silt_Clay
	TOC	Beryllium	Molybdenum	Nitrogen__Kjeldahl_total	Phosphorus
	Silver	Sodium	Tin	Calcium	Magnesium
	Potassium				
33 Variables:	Antimony	Barium	Cadmium	Chromium	Mercury
	Thallium	Uranium	Zinc	Boron	Copper
	Lead	Manganese	Arsenic	Cobalt	Nickel
	Selenium	Vanadium	pH	CEC	__Gravel
	__Sand	__Silt_Clay	TOC	Beryllium	Molybdenum
	Nitrogen__Kjeldahl_total	Phosphorus	Silver	Sodium	Tin
	Calcium	Magnesium	Potassium		

Simple Statistics

Variable	N	Mean	Std Dev	Median	Minimum	Maximum
pH	71	7.60873	0.97898	7.99000	4.13000	8.74000
CEC	71	13.93859	5.22189	12.42000	5.28000	31.57000
__Gravel	71	1.03521	1.84438	0.10000	0	6.60000
__Sand	71	72.32958	8.68939	70.50000	54.70000	97.00000
__Silt_Clay	71	26.63662	8.19070	27.70000	3.00000	39.70000
TOC	71	16847	22777	8010	58.40000	99400
Beryllium	71	0.33580	0.08225	0.33800	0.10000	0.56500
Molybdenum	71	1.90846	6.32180	0.54300	0.20800	46.30000
Nitrogen__Kjeldahl_total	71	433.92254	233.20010	434.00000	14.30000	1010
Phosphorus	71	913.16901	284.01157	864.00000	186.00000	2230
Silver	71	0.26314	0.47334	0.11000	0.01000	2.99000
Sodium	71	422.97887	466.28010	314.00000	38.50000	3160
Tin	71	36.37386	118.78106	2.71000	0.16500	838.00000
Calcium	71	8075	3874	7570	3020	21400
Magnesium	71	4599	1423	4520	250.00000	10900
Potassium	71	1796	385.30366	1810	138.00000	2480
Antimony	71	43.38921	146.21563	0.89400	0.29000	842.00000
Barium	71	212.73239	532.64213	107.00000	56.80000	4520
Cadmium	71	1.60255	2.35156	0.37500	0.09600	9.85000
Chromium	71	16.96070	29.94992	11.50000	2.82000	259.00000
Mercury	71	0.42797	2.06161	0.05300	0.04800	12.50000
Thallium	71	0.12117	0.05665	0.11000	0.09600	0.45900
Uranium	71	0.60439	0.53377	0.50000	0.21900	4.76000
Zinc	71	361.37831	1126	71.20000	4.08000	8980
Boron	71	28.17845	18.11040	37.10000	4.10000	58.00000
Copper	71	66.25099	95.97832	28.20000	1.40000	596.00000
Lead	71	805.68296	1707	68.30000	0.10000	9090
Manganese	71	393.86197	179.35418	356.00000	24.30000	1260
Arsenic	71	4.61423	2.67074	4.03000	0.50000	16.40000

Nonparametric Spearman Correlations between analytes - others 12:43 Friday, May 27, 2011 2235

The CORR Procedure

Simple Statistics

Variable	N	Mean	Std Dev	Median	Minimum	Maximum
Cobalt	71	7.97763	1.80695	7.90000	0.27200	12.40000
Nickel	71	12.50944	4.94740	11.10000	1.09000	27.40000
Selenium	71	1.23061	0.29552	1.25000	0.45500	2.02000
Vanadium	71	53.44606	14.98876	50.80000	2.27000	116.00000

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

pH	pH	1.00000	Boron	0.56715	Magnesium	0.55087	Manganese	0.43715
				<.0001		<.0001		0.0001
CEC	CEC	1.00000	TOC	0.77088	Nitrogen__Kjeldahl_total	0.53603	Lead	0.51950
				<.0001		<.0001		<.0001
__Gravel	__Gravel	1.00000	__Sand	-0.30564	Chromium	0.26812	Boron	0.26228
				0.0095		0.0238		0.0271
__Sand	__Sand	1.00000	__Silt_Clay	-0.97219	Potassium	-0.38510	Vanadium	0.34130
				<.0001		0.0009		0.0036
__Silt_Clay	__Silt_Clay	1.00000	__Sand	-0.97219	Potassium	0.34881	Vanadium	-0.34005
				<.0001		0.0029		0.0037
TOC	TOC	1.00000	CEC	0.77088	Nitrogen__Kjeldahl_total	0.75558	Cadmium	0.75267
				<.0001		<.0001		<.0001
Beryllium	Beryllium	1.00000	Cobalt	0.56207	Nickel	0.55838	Manganese	0.47978
				<.0001		<.0001		<.0001
Molybdenum	Molybdenum	1.00000	Arsenic	0.84064	Tin	0.83735	Barium	0.81111
				<.0001		<.0001		<.0001

Nonparametric Spearman Correlations between analytes - others 12:43 Friday, May 27, 2011 2236

The CORR Procedure

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

Nitrogen__Kjeldahl_total	Nitrogen__Kjeldahl_total	1.00000	TOC	0.75558	CEC	0.53603	Cadmium	0.52645
				<.0001		<.0001		<.0001
Phosphorus	Phosphorus	1.00000	Vanadium	0.40774	Selenium	0.35553	Calcium	0.33430
				0.0004		0.0023		0.0044
Silver	Silver	1.00000	Thallium	0.72114	Arsenic	0.55481	Antimony	0.54692
				<.0001		<.0001		<.0001
Sodium	Sodium	1.00000	Calcium	0.77461	Boron	0.61350	Mercury	0.45576
				<.0001		<.0001		<.0001
Tin	Tin	1.00000	Copper	0.86176	Molybdenum	0.83735	Antimony	0.82377
				<.0001		<.0001		<.0001
Calcium	Calcium	1.00000	Sodium	0.77461	Boron	0.71273	Mercury	0.54268
				<.0001		<.0001		<.0001
Magnesium	Magnesium	1.00000	Manganese	0.71510	Boron	0.70741	Potassium	0.69935
				<.0001		<.0001		<.0001
Potassium	Potassium	1.00000	Magnesium	0.69935	Manganese	0.51836	Boron	0.50980
				<.0001		<.0001		<.0001

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

pH	Potassium	0.37837	Vanadium	-0.33654	Arsenic	0.32496	Calcium	0.32483
		0.0011		0.0041		0.0057		0.0057
CEC	Uranium	0.48295	Molybdenum	0.47039	Tin	0.46812	Cadmium	0.43208
		<.0001		<.0001		<.0001		0.0002

Nonparametric Spearman Correlations between analytes - others 12:43 Friday, May 27, 2011 2237

The CORR Procedure

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

__Gravel	Nickel	Potassium		Zinc		Silver	
	0.24987		0.20861		0.19581		0.19134
	0.0356		0.0808		0.1017		0.1099
__Sand	Arsenic	__Gravel		Barium		Cadmium	
	-0.30747		-0.30564		-0.27979		-0.27545
	0.0091		0.0095		0.0181		0.0201
__Silt_Clay	Arsenic	Cadmium		Barium		Sodium	
	0.27829		0.25611		0.24266		-0.23905
	0.0188		0.0311		0.0415		0.0447
TOC	Lead	Antimony		Tin		Molybdenum	
	0.69329		0.66749		0.65393		0.60233
	<.0001		<.0001		<.0001		<.0001
Beryllium	Uranium	Zinc		Magnesium		Potassium	
	0.47515		0.42476		0.42440		0.40515
	<.0001		0.0002		0.0002		0.0005
Molybdenum	Copper	Zinc		Chromium		Nickel	
	0.80373		0.78186		0.77459		0.74826
	<.0001		<.0001		<.0001		<.0001
Nitrogen__Kjeldahl_total	Antimony	Lead		Tin		Molybdenum	
	0.49163		0.46030		0.43580		0.39537
	<.0001		<.0001		0.0001		0.0006
Phosphorus	Sodium	Boron		Beryllium		Cobalt	
	0.32700		0.29331		0.28764		0.28310
	0.0054		0.0130		0.0150		0.0167
Silver	Barium	Molybdenum		Boron		Chromium	
	0.50634		0.48724		0.47984		0.47533
	<.0001		<.0001		<.0001		<.0001
Sodium	Magnesium	Manganese		Molybdenum		Zinc	
	0.43649		0.41599		0.40763		0.39511
	0.0001		0.0003		0.0004		0.0006
Tin	Cadmium	Zinc		Arsenic		Chromium	
	0.82278		0.78448		0.78173		0.74574
	<.0001		<.0001		<.0001		<.0001

Nonparametric Spearman Correlations between analytes - others 12:43 Friday, May 27, 2011 2238

The CORR Procedure

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

Calcium	Molybdenum	Arsenic		Magnesium		Barium	
	0.46137		0.44019		0.41619		0.39744
	<.0001		0.0001		0.0003		0.0006
Magnesium	pH	Nickel		Zinc		Sodium	
	0.55087		0.48764		0.43889		0.43649
	<.0001		<.0001		0.0001		0.0001
Potassium	Nickel	Beryllium		__Sand		pH	
	0.47627		0.40515		-0.38510		0.37837
	<.0001		0.0005		0.0009		0.0011

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

pH	Thallium	Cadmium		Selenium		CEC	
	0.32319		-0.28460		-0.24220		-0.23487
	0.0060		0.0162		0.0419		0.0487
CEC	Barium	Antimony		Nickel		Beryllium	
	0.39838		0.39549		0.38588		0.36085
	0.0006		0.0006		0.0009		0.0020
__Gravel	Barium	Vanadium		Antimony		Manganese	
	0.19013		-0.18866		0.18595		0.18364
	0.1123		0.1151		0.1205		0.1253
__Sand	Antimony	CEC		Nitrogen__Kjeldahl_total		Sodium	
	-0.21948		0.21426		-0.21334		0.20796
	0.0659		0.0728		0.0740		0.0818
__Silt_Clay	Mercury	Nitrogen__Kjeldahl_total		Phosphorus		Antimony	
	-0.22466		0.21902		-0.20940		0.19412
	0.0596		0.0665		0.0797		0.1048
TOC	Chromium	Barium		Arsenic		Copper	
	0.58832		0.58483		0.54026		0.52719
	<.0001		<.0001		<.0001		<.0001
Beryllium	Chromium	Arsenic		Molybdenum		TOC	
	0.39453		0.37393		0.37327		0.36940
	0.0007		0.0013		0.0013		0.0015

Nonparametric Spearman Correlations between analytes - others 12:43 Friday, May 27, 2011 2239

The CORR Procedure

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

Molybdenum	Antimony	Cadmium		TOC		Lead	
	0.67487		0.63762		0.60233		0.54238
	<.0001		<.0001		<.0001		<.0001
Nitrogen__Kjeldahl_total	Barium	Arsenic		Chromium		Nickel	
	0.37131		0.36783		0.36105		0.30074
	0.0014		0.0016		0.0020		0.0108
Phosphorus	Molybdenum	Magnesium		Mercury		Manganese	
	0.26805		0.23543		0.23266		0.21650
	0.0238		0.0481		0.0509		0.0698
Silver	Zinc	Copper		Nickel		Mercury	
	0.46247		0.45466		0.44917		0.42755
	<.0001		<.0001		<.0001		0.0002
Sodium	Phosphorus	Nickel		Arsenic		Potassium	
	0.32700		0.30445		0.29185		0.27350
	0.0054		0.0098		0.0135		0.0210
Tin	Barium	Lead		TOC		Nickel	
	0.73230		0.67468		0.65393		0.59899
	<.0001		<.0001		<.0001		<.0001
Calcium	Zinc	Nickel		Manganese		Phosphorus	
	0.39254		0.35107		0.33523		0.33430
	0.0007		0.0027		0.0043		0.0044
Magnesium	Beryllium	Calcium		Cobalt		Arsenic	
	0.42440		0.41619		0.38276		0.37329
	0.0002		0.0003		0.0010		0.0013
Potassium	__Silt_Clay	Zinc		Vanadium		Thallium	
	0.34881		0.31847		-0.30607		0.29111
	0.0029		0.0068		0.0094		0.0138

Nonparametric Spearman Correlations between analytes - others 12:43 Friday, May 27, 2011 2240

The CORR Procedure

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

pH	Nickel	0.22847	Silver	0.21081	Mercury	0.18327	__Sand	-0.17275
		0.0553		0.0776		0.1261		0.1497
CEC	Cobalt	0.35413	Zinc	0.33566	Copper	0.33527	Arsenic	0.33192
		0.0024		0.0042		0.0043		0.0047
__Gravel	Thallium	0.18165	Copper	0.17745	Arsenic	0.17316	Molybdenum	0.15578
		0.1295		0.1388		0.1487		0.1945
__Sand	Mercury	0.19602	Copper	-0.19554	Tin	-0.19415	Chromium	-0.17651
		0.1014		0.1022		0.1047		0.1409
__Silt_Clay	Lead	0.18154	CEC	-0.17943	Tin	0.17129	Copper	0.16950
		0.1297		0.1343		0.1532		0.1576
TOC	Zinc	0.49582	Nickel	0.48137	Beryllium	0.36940	Uranium	0.35078
		<.0001		<.0001		0.0015		0.0027
Beryllium	CEC	0.36085	Tin	0.32830	Barium	0.32569	Boron	0.31275
		0.0020		0.0052		0.0056		0.0079
Molybdenum	Silver	0.48724	CEC	0.47039	Calcium	0.46137	Boron	0.45182
		<.0001		<.0001		<.0001		<.0001
Nitrogen__Kjeldahl_total	Beryllium	0.29036	Mercury	-0.26720	Copper	0.26073	Sodium	-0.25716
		0.0140		0.0243		0.0281		0.0304
Phosphorus	__Silt_Clay	-0.20940	CEC	0.18356	__Sand	0.16944	Nickel	0.15638
		0.0797		0.1254		0.1578		0.1928
Silver	Tin	0.42014	Cadmium	0.34278	Vanadium	-0.28134	TOC	0.25409
		0.0003		0.0034		0.0175		0.0325

Nonparametric Spearman Correlations between analytes - others 12:43 Friday, May 27, 2011 2241

The CORR Procedure

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

Sodium	Copper	Nitrogen__Kjeldahl_total		Selenium		__Silt_Clay	
	0.26390		-0.25716		0.24208		-0.23905
	0.0262		0.0304		0.0420		0.0447
Tin	CEC	Nitrogen__Kjeldahl_total		Silver		Beryllium	
	0.46812		0.43580		0.42014		0.32830
	<.0001		0.0001		0.0003		0.0052
Calcium	pH	Copper		CEC		Silver	
	0.32483		0.26944		0.25115		0.24062
	0.0057		0.0231		0.0346		0.0432
Magnesium	Molybdenum	Thallium		Phosphorus		Vanadium	
	0.25273		0.25265		0.23543		-0.22505
	0.0335		0.0335		0.0481		0.0592
Potassium	Chromium	Sodium		Arsenic		Cobalt	
	0.27938		0.27350		0.26748		0.26439
	0.0183		0.0210		0.0241		0.0259

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

pH	TOC	__Silt_Clay		Beryllium		Zinc	
	-0.17248		0.16679		0.16164		0.14433
	0.1503		0.1645		0.1781		0.2298
CEC	Chromium	Selenium		Calcium		pH	
	0.33011		0.25927		0.25115		-0.23487
	0.0049		0.0290		0.0346		0.0487
__Gravel	Tin	__Silt_Clay		Magnesium		CEC	
	0.13022		0.12980		0.12878		-0.11797
	0.2791		0.2806		0.2845		0.3272
__Sand	pH	Phosphorus		Nickel		Lead	
	-0.17275		0.16944		-0.15983		-0.15878
	0.1497		0.1578		0.1831		0.1860
__Silt_Clay	pH	__Gravel		Chromium		Nickel	
	0.16679		0.12980		0.12400		0.11854
	0.1645		0.2806		0.3029		0.3248

Nonparametric Spearman Correlations between analytes - others 12:43 Friday, May 27, 2011 2242

The CORR Procedure

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

TOC	Silver	Cobalt		Sodium		pH	
	0.25409		0.25264		-0.17980		-0.17248
	0.0325		0.0335		0.1335		0.1503
Beryllium	Copper	Nitrogen__Kjeldahl_total		Phosphorus		Lead	
	0.30316		0.29036		0.28764		0.26992
	0.0102		0.0140		0.0150		0.0228
Molybdenum	Cobalt	Sodium		Thallium		Nitrogen__Kjeldahl_total	
	0.41617		0.40763		0.39629		0.39537
	0.0003		0.0004		0.0006		0.0006
Nitrogen__Kjeldahl_total	Zinc	__Silt_Clay		__Sand		Cobalt	
	0.24481		0.21902		-0.21334		0.21032
	0.0396		0.0665		0.0740		0.0783
Phosphorus	Arsenic	Thallium		Uranium		Barium	
	0.15196		-0.13533		0.12663		0.11580
	0.2058		0.2605		0.2927		0.3362
Silver	Calcium	Lead		pH		Magnesium	
	0.24062		0.22803		0.21081		0.20729
	0.0432		0.0558		0.0776		0.0828
Sodium	Barium	__Sand		Uranium		Cobalt	
	0.23797		0.20796		0.20052		0.19458
	0.0457		0.0818		0.0936		0.1039
Tin	Cobalt	Thallium		Uranium		Boron	
	0.31603		0.29711		0.28558		0.19896
	0.0073		0.0119		0.0158		0.0962
Calcium	Thallium	Selenium		Chromium		Potassium	
	0.21237		0.20509		0.20012		0.17938
	0.0754		0.0862		0.0943		0.1344
Magnesium	Uranium	Silver		Copper		Chromium	
	0.21213		0.20729		0.20205		0.19626
	0.0757		0.0828		0.0911		0.1009
Potassium	Molybdenum	__Gravel		Copper		Barium	
	0.22111		0.20861		0.20809		0.19524
	0.0639		0.0808		0.0816		0.1028

Nonparametric Spearman Correlations between analytes - others 12:43 Friday, May 27, 2011 2243

The CORR Procedure

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

pH	Sodium	Cobalt		Antimony		Lead	
	0.13954		0.11963		-0.11596		-0.09885
	0.2458		0.3204		0.3355		0.4121
CEC	__Sand	Potassium		Phosphorus		__Silt_Clay	
	0.21426		-0.19304		0.18356		-0.17943
	0.0728		0.1068		0.1254		0.1343
__Gravel	Uranium	Cadmium		Cobalt		Calcium	
	-0.11086		0.11038		0.09675		0.08909
	0.3574		0.3595		0.4222		0.4600
__Sand	Molybdenum	Boron		Manganese		Silver	
	-0.14982		-0.14958		-0.13119		-0.13085
	0.2124		0.2131		0.2755		0.2767
__Silt_Clay	Calcium	Boron		Molybdenum		TOC	
	-0.11671		0.11509		0.11445		0.11124
	0.3324		0.3392		0.3419		0.3557
TOC	Mercury	Vanadium		Thallium		Selenium	
	-0.15995		-0.15495		0.14504		0.11944
	0.1827		0.1970		0.2275		0.3211
Beryllium	Antimony	Cadmium		pH		Thallium	
	0.24395		0.20014		0.16164		0.14620
	0.0404		0.0942		0.1781		0.2238
Molybdenum	Beryllium	Manganese		Uranium		Phosphorus	
	0.37327		0.35362		0.31326		0.26805
	0.0013		0.0025		0.0078		0.0238
Nitrogen__Kjeldahl_total	Thallium	Silver		Uranium		Calcium	
	0.18762		0.17772		0.14912		-0.12150
	0.1172		0.1381		0.2145		0.3128
Phosphorus	Lead	Potassium		Tin		Silver	
	-0.11385		0.10886		0.10145		0.09002
	0.3445		0.3661		0.3999		0.4553
Silver	__Gravel	Manganese		Nitrogen__Kjeldahl_total		Potassium	
	0.19134		0.18969		0.17772		0.17133
	0.1099		0.1131		0.1381		0.1531

Nonparametric Spearman Correlations between analytes - others 12:43 Friday, May 27, 2011 2244

The CORR Procedure

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

Sodium	Tin	Cadmium	TOC	CEC
	0.18826	-0.18315	-0.17980	0.17783
	0.1159	0.1263	0.1335	0.1379
Tin	__Sand	Sodium	Calcium	__Silt_Clay
	-0.19415	0.18826	0.17172	0.17129
	0.1047	0.1159	0.1522	0.1532
Calcium	Tin	Uranium	Cadmium	Nitrogen__Kjeldahl_total
	0.17172	0.16619	-0.14527	-0.12150
	0.1522	0.1660	0.2267	0.3128
Magnesium	Cadmium	Mercury	Barium	__Gravel
	-0.15054	0.14209	0.12915	0.12878
	0.2102	0.2372	0.2831	0.2845
Potassium	CEC	Selenium	Calcium	Silver
	-0.19304	-0.18665	0.17938	0.17133
	0.1068	0.1191	0.1344	0.1531

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

pH	Tin	Chromium	Copper	__Gravel
	-0.08809	0.05950	0.04902	0.04587
	0.4651	0.6221	0.6848	0.7040
CEC	Sodium	Vanadium	__Gravel	Silver
	0.17783	0.15925	-0.11797	0.10105
	0.1379	0.1847	0.3272	0.4017
__Gravel	Beryllium	Selenium	Sodium	Lead
	0.07630	-0.07282	0.06946	0.06477
	0.5271	0.5462	0.5649	0.5915
__Sand	Zinc	Calcium	Beryllium	Magnesium
	-0.13054	0.10553	-0.09300	-0.09170
	0.2779	0.3811	0.4405	0.4469
__Silt_Clay	Zinc	Manganese	Beryllium	Silver
	0.10912	0.10468	0.09224	0.08791
	0.3650	0.3850	0.4442	0.4660

Nonparametric Spearman Correlations between analytes - others 12:43 Friday, May 27, 2011 2245

The CORR Procedure

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

TOC	__Silt_Clay	0.11124	Potassium	-0.09353	__Sand	-0.08866	Magnesium	-0.05829
		0.3557		0.4379		0.4622		0.6292
Beryllium	Mercury	-0.12670	Sodium	0.12297	Silver	0.09457	__Sand	-0.09300
		0.2924		0.3069		0.4327		0.4405
Molybdenum	Magnesium	0.25273	Potassium	0.22111	Mercury	0.19562	Selenium	0.18389
		0.0335		0.0639		0.1021		0.1248
Nitrogen__Kjeldahl_total	Boron	-0.12125	Vanadium	-0.11548	Manganese	-0.06818	Phosphorus	0.05517
		0.3138		0.3375		0.5721		0.6477
Phosphorus	Cadmium	-0.07004	__Gravel	0.05890	Nitrogen__Kjeldahl_total	0.05517	Copper	0.04615
		0.5617		0.6256		0.6477		0.7024
Silver	Sodium	0.15933	__Sand	-0.13085	Cobalt	0.11972	Selenium	-0.11533
		0.1844		0.2767		0.3200		0.3382
Sodium	Thallium	0.16643	Silver	0.15933	pH	0.13954	Beryllium	0.12297
		0.1654		0.1844		0.2458		0.3069
Tin	Manganese	0.15080	__Gravel	0.13022	Selenium	0.12235	Vanadium	-0.11658
		0.2094		0.2791		0.3094		0.3329
Calcium	__Silt_Clay	-0.11671	__Sand	0.10553	Vanadium	-0.09038	__Gravel	0.08909
		0.3324		0.3811		0.4535		0.4600
Magnesium	Tin	0.09701	__Sand	-0.09170	Selenium	-0.09139	__Silt_Clay	0.08084
		0.4209		0.4469		0.4485		0.5028
Potassium	Mercury	0.13446	Phosphorus	0.10886	Tin	0.09708	TOC	-0.09353
		0.2636		0.3661		0.4206		0.4379

Nonparametric Spearman Correlations between analytes - others 12:43 Friday, May 27, 2011 2246

The CORR Procedure

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

pH	Phosphorus	Nitrogen__Kjeldahl_total	Uranium	Molybdenum
	0.04255	-0.03777	-0.01820	0.01670
	0.7246	0.7545	0.8803	0.8900
CEC	Manganese	Boron	Mercury	Magnesium
	0.04276	0.03570	-0.02647	0.01477
	0.7233	0.7676	0.8266	0.9027
__Gravel	Phosphorus	pH	Mercury	TOC
	0.05890	0.04587	0.04311	-0.03051
	0.6256	0.7040	0.7211	0.8006
__Sand	TOC	Selenium	Uranium	Thallium
	-0.08866	0.07391	0.07047	-0.05166
	0.4622	0.5402	0.5592	0.6688
__Silt_Clay	Magnesium	Selenium	Cobalt	Uranium
	0.08084	-0.04528	-0.03898	-0.03495
	0.5028	0.7077	0.7469	0.7723
TOC	Manganese	Boron	Phosphorus	__Gravel
	-0.04556	-0.04423	0.04381	-0.03051
	0.7060	0.7142	0.7168	0.8006
Beryllium	__Silt_Clay	__Gravel	Calcium	Vanadium
	0.09224	0.07630	0.07023	0.04133
	0.4442	0.5271	0.5606	0.7322
Molybdenum	__Gravel	__Sand	__Silt_Clay	Vanadium
	0.15578	-0.14982	0.11445	-0.09233
	0.1945	0.2124	0.3419	0.4438
Nitrogen__Kjeldahl_total	Potassium	Selenium	pH	Magnesium
	0.05441	0.04018	-0.03777	-0.03097
	0.6522	0.7394	0.7545	0.7976
Phosphorus	TOC	pH	Antimony	Zinc
	0.04381	0.04255	0.02259	0.02133
	0.7168	0.7246	0.8517	0.8599
Silver	CEC	Beryllium	Phosphorus	__Silt_Clay
	0.10105	0.09457	0.09002	0.08791
	0.4017	0.4327	0.4553	0.4660

Nonparametric Spearman Correlations between analytes - others 12:43 Friday, May 27, 2011 2247

The CORR Procedure

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

Sodium	Chromium	Vanadium		__Gravel		Lead	
	0.11812		0.06983		0.06946		-0.02928
	0.3265		0.5628		0.5649		0.8085
Tin	Phosphorus	Mercury		Potassium		Magnesium	
	0.10145		-0.10019		0.09708		0.09701
	0.3999		0.4058		0.4206		0.4209
Calcium	Beryllium	Lead		Cobalt		Antimony	
	0.07023		0.06286		0.05441		0.03813
	0.5606		0.6025		0.6522		0.7522
Magnesium	TOC	Lead		Antimony		Nitrogen__Kjeldahl_total	
	-0.05829		-0.04948		-0.03393		-0.03097
	0.6292		0.6820		0.7788		0.7976
Potassium	Cadmium	Antimony		Lead		Nitrogen__Kjeldahl_total	
	-0.09340		0.07863		-0.06893		0.05441
	0.4385		0.5145		0.5679		0.6522

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

pH	Barium	
		0.00849
		0.9440
CEC	Thallium	
		0.00784
		0.9483
__Gravel	Nitrogen__Kjeldahl_total	
		0.02993
		0.8043
__Sand	Cobalt	
		0.01138
		0.9250
__Silt_Clay	Thallium	
		0.01487
		0.9020

Nonparametric Spearman Correlations between analytes - others 12:43 Friday, May 27, 2011 2248

The CORR Procedure

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

TOC	Calcium	0.00320 0.9789
Beryllium	Selenium	0.02623 0.8281
Molybdenum	pH	0.01670 0.8900
Nitrogen__Kjeldahl_total	__Gravel	0.02993 0.8043
Phosphorus	Chromium	0.01370 0.9097
Silver	Uranium	0.01649 0.8914
Sodium	Antimony	-0.01580 0.8960
Tin	pH	-0.08809 0.4651
Calcium	TOC	0.00320 0.9789
Magnesium	CEC	0.01477 0.9027
Potassium	Uranium	0.04867 0.6869

Nonparametric Spearman Correlations between analytes - high priority 12:43 Friday, May 27, 2011 2249

The CORR Procedure

8 With Variables:	Antimony	Barium	Cadmium	Chromium	Mercury
	Thallium	Uranium	Zinc		
33 Variables:	Antimony	Barium	Cadmium	Chromium	Mercury
	Thallium	Uranium	Zinc	Boron	Copper
	Lead	Manganese	Arsenic	Cobalt	Nickel
	Selenium	Vanadium	pH	CEC	__Gravel
	__Sand	__Silt_Clay	TOC	Beryllium	Molybdenum
	Nitrogen__Kjeldahl_total	Phosphorus	Silver	Sodium	Tin
	Calcium	Magnesium	Potassium		

Simple Statistics

Variable	N	Mean	Std Dev	Median	Minimum	Maximum
Antimony	71	43.38921	146.21563	0.89400	0.29000	842.00000
Barium	71	212.73239	532.64213	107.00000	56.80000	4520
Cadmium	71	1.60255	2.35156	0.37500	0.09600	9.85000
Chromium	71	16.96070	29.94992	11.50000	2.82000	259.00000
Mercury	71	0.42797	2.06161	0.05300	0.04800	12.50000
Thallium	71	0.12117	0.05665	0.11000	0.09600	0.45900
Uranium	71	0.60439	0.53377	0.50000	0.21900	4.76000
Zinc	71	361.37831	1126	71.20000	4.08000	8980
Boron	71	28.17845	18.11040	37.10000	4.10000	58.00000
Copper	71	66.25099	95.97832	28.20000	1.40000	596.00000
Lead	71	805.68296	1707	68.30000	0.10000	9090
Manganese	71	393.86197	179.35418	356.00000	24.30000	1260
Arsenic	71	4.61423	2.67074	4.03000	0.50000	16.40000
Cobalt	71	7.97763	1.80695	7.90000	0.27200	12.40000
Nickel	71	12.50944	4.94740	11.10000	1.09000	27.40000
Selenium	71	1.23061	0.29552	1.25000	0.45500	2.02000
Vanadium	71	53.44606	14.98876	50.80000	2.27000	116.00000
pH	71	7.60873	0.97898	7.99000	4.13000	8.74000
CEC	71	13.93859	5.22189	12.42000	5.28000	31.57000
__Gravel	71	1.03521	1.84438	0.10000	0	6.60000
__Sand	71	72.32958	8.68939	70.50000	54.70000	97.00000
__Silt_Clay	71	26.63662	8.19070	27.70000	3.00000	39.70000
TOC	71	16847	22777	8010	58.40000	99400
Beryllium	71	0.33580	0.08225	0.33800	0.10000	0.56500
Molybdenum	71	1.90846	6.32180	0.54300	0.20800	46.30000
Nitrogen__Kjeldahl_total	71	433.92254	233.20010	434.00000	14.30000	1010
Phosphorus	71	913.16901	284.01157	864.00000	186.00000	2230
Silver	71	0.26314	0.47334	0.11000	0.01000	2.99000
Sodium	71	422.97887	466.28010	314.00000	38.50000	3160
Tin	71	36.37386	118.78106	2.71000	0.16500	838.00000
Calcium	71	8075	3874	7570	3020	21400

Nonparametric Spearman Correlations between analytes - high priority 12:43 Friday, May 27, 2011 2250

The CORR Procedure

Simple Statistics

Variable	N	Mean	Std Dev	Median	Minimum	Maximum
Magnesium	71	4599	1423	4520	250.00000	10900
Potassium	71	1796	385.30366	1810	138.00000	2480

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

Antimony	Antimony		Tin		Cadmium		Barium		Chromium
		1.00000		0.82377		0.78324		0.74135	0.73612
				<.0001		<.0001		<.0001	<.0001
Barium	Barium		Molybdenum		Arsenic		Chromium		Zinc
		1.00000		0.81111		0.78629		0.76286	0.75108
				<.0001		<.0001		<.0001	<.0001
Cadmium	Cadmium		Tin		Antimony		TOC		Copper
		1.00000		0.82278		0.78324		0.75267	0.68030
				<.0001		<.0001		<.0001	<.0001
Chromium	Chromium		Nickel		Molybdenum		Copper		Barium
		1.00000		0.83009		0.77459		0.76873	0.76286
				<.0001		<.0001		<.0001	<.0001
Mercury	Mercury		Calcium		Boron		Sodium		Silver
		1.00000		0.54268		0.51962		0.45576	0.42755
				<.0001		<.0001		<.0001	0.0002
Thallium	Thallium		Silver		Arsenic		Boron		Nickel
		1.00000		0.72114		0.50540		0.45907	0.45741
				<.0001		<.0001		<.0001	<.0001
Uranium	Uranium		CEC		Beryllium		TOC		Molybdenum
		1.00000		0.48295		0.47515		0.35078	0.31326
				<.0001		<.0001		0.0027	0.0078
Zinc	Zinc		Copper		Arsenic		Tin		Molybdenum
		1.00000		0.81425		0.80114		0.78448	0.78186
				<.0001		<.0001		<.0001	<.0001

Nonparametric Spearman Correlations between analytes - high priority 12:43 Friday, May 27, 2011 2251

The CORR Procedure

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

Antimony	Copper	Arsenic	Molybdenum	TOC	Lead	
	0.73213	0.68328	0.67487	0.66749	0.64787	
	<.0001	<.0001	<.0001	<.0001	<.0001	
Barium	Antimony	Tin	Copper	Nickel	Cadmium	
	0.74135	0.73230	0.72463	0.68594	0.61778	
	<.0001	<.0001	<.0001	<.0001	<.0001	
Cadmium	Chromium	Molybdenum	Barium	Lead	Zinc	
	0.66170	0.63762	0.61778	0.61376	0.59458	
	<.0001	<.0001	<.0001	<.0001	<.0001	
Chromium	Zinc	Tin	Antimony	Arsenic	Cadmium	
	0.75066	0.74574	0.73612	0.71843	0.66170	
	<.0001	<.0001	<.0001	<.0001	<.0001	
Mercury	Thallium	Nitrogen__Kjeldahl_total	Phosphorus	Lead	__Silt_Clay	
	0.41374	-0.26720	0.23266	-0.22963	-0.22466	
	0.0003	0.0243	0.0509	0.0541	0.0596	
Thallium	Chromium	Zinc	Antimony	Mercury	Molybdenum	
	0.42702	0.42660	0.41531	0.41374	0.39629	
	0.0002	0.0002	0.0003	0.0003	0.0006	
Uranium	Nickel	Cobalt	Copper	Boron	Tin	
	0.30236	0.29457	0.28899	0.28644	0.28558	
	0.0104	0.0126	0.0145	0.0154	0.0158	
Zinc	Barium	Chromium	Nickel	Antimony	Cadmium	
	0.75108	0.75066	0.73232	0.63165	0.59458	
	<.0001	<.0001	<.0001	<.0001	<.0001	

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

Antimony	Zinc	Silver	Nickel	Nitrogen__Kjeldahl_total	Thallium	
	0.63165	0.54692	0.53681	0.49163	0.41531	
	<.0001	<.0001	<.0001	<.0001	0.0003	
Barium	TOC	Lead	Silver	CEC	Calcium	
	0.58483	0.55909	0.50634	0.39838	0.39744	
	<.0001	<.0001	<.0001	0.0006	0.0006	

Nonparametric Spearman Correlations between analytes - high priority 12:43 Friday, May 27, 2011 2252

The CORR Procedure

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

Cadmium	Arsenic		Nitrogen__Kjeldahl_total		CEC		Nickel		Silver
		0.56687		0.52645		0.43208		0.41775	0.34278
		<.0001		<.0001		0.0002		0.0003	0.0034
Chromium	TOC		Lead		Silver		Thallium		Cobalt
		0.58832		0.53338		0.47533		0.42702	0.40501
		<.0001		<.0001		<.0001		0.0002	0.0005
Mercury	Cadmium		Barium		__Sand		Molybdenum		pH
		-0.22092		0.20099		0.19602		0.19562	0.18327
		0.0641		0.0928		0.1014		0.1021	0.1261
Thallium	Vanadium		Barium		pH		Copper		Tin
		-0.36213		0.36184		0.32319		0.30086	0.29711
		0.0019		0.0019		0.0060		0.0108	0.0119
Uranium	Zinc		Arsenic		Magnesium		Lead		Manganese
		0.28517		0.24067		0.21213		0.20969	0.20609
		0.0159		0.0432		0.0757		0.0793	0.0847
Zinc	Boron		Lead		TOC		Manganese		Silver
		0.54165		0.54113		0.49582		0.47007	0.46247
		<.0001		<.0001		<.0001		<.0001	<.0001

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

Antimony	CEC		Beryllium		Vanadium		Cobalt		__Sand
		0.39549		0.24395		-0.23842		0.22557	-0.21948
		0.0006		0.0404		0.0453		0.0586	0.0659
Barium	Boron		Nitrogen__Kjeldahl_total		Thallium		Beryllium		Cobalt
		0.38636		0.37131		0.36184		0.32569	0.31711
		0.0009		0.0014		0.0019		0.0056	0.0070
Cadmium	pH		__Sand		__Silt_Clay		Mercury		Beryllium
		-0.28460		-0.27545		0.25611		-0.22092	0.20014
		0.0162		0.0201		0.0311		0.0641	0.0942
Chromium	Beryllium		Nitrogen__Kjeldahl_total		CEC		Boron		Potassium
		0.39453		0.36105		0.33011		0.28075	0.27938
		0.0007		0.0020		0.0049		0.0177	0.0183

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The CORR Procedure

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

Mercury	Nickel	TOC	Magnesium	Potassium	Cobalt	
	0.17709	-0.15995	0.14209	0.13446	-0.12843	
	0.1396	0.1827	0.2372	0.2636	0.2858	
Thallium	Potassium	Manganese	Magnesium	Calcium	Nitrogen__Kjeldahl_total	
	0.29111	0.25667	0.25265	0.21237	0.18762	
	0.0138	0.0307	0.0335	0.0754	0.1172	
Uranium	Barium	Sodium	Chromium	Cadmium	Calcium	
	0.20174	0.20052	0.19878	0.18554	0.16619	
	0.0916	0.0936	0.0965	0.1213	0.1660	
Zinc	Magnesium	Thallium	Beryllium	Sodium	Calcium	
	0.43889	0.42660	0.42476	0.39511	0.39254	
	0.0001	0.0002	0.0002	0.0006	0.0007	

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

Antimony	__Silt_Clay	__Gravel	Uranium	pH	Boron	
	0.19412	0.18595	0.14532	-0.11596	0.08190	
	0.1048	0.1205	0.2266	0.3355	0.4971	
Barium	__Sand	Manganese	__Silt_Clay	Sodium	Uranium	
	-0.27979	0.25659	0.24266	0.23797	0.20174	
	0.0181	0.0308	0.0415	0.0457	0.0916	
Cadmium	Vanadium	Uranium	Sodium	Thallium	Cobalt	
	-0.18627	0.18554	-0.18315	0.17275	0.16968	
	0.1199	0.1213	0.1263	0.1497	0.1572	
Chromium	__Gravel	Manganese	Calcium	Uranium	Magnesium	
	0.26812	0.26559	0.20012	0.19878	0.19626	
	0.0238	0.0252	0.0943	0.0965	0.1009	
Mercury	Beryllium	Arsenic	Chromium	Tin	Vanadium	
	-0.12670	0.12221	0.10670	-0.10019	-0.09553	
	0.2924	0.3100	0.3758	0.4058	0.4281	
Thallium	__Gravel	Cadmium	Sodium	Lead	Cobalt	
	0.18165	0.17275	0.16643	0.14881	0.14821	
	0.1295	0.1497	0.1654	0.2155	0.2174	

Nonparametric Spearman Correlations between analytes - high priority 12:43 Friday, May 27, 2011 2254

The CORR Procedure

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

Uranium	Nitrogen__Kjeldahl_total	Antimony		Phosphorus		__Gravel		Thallium	
	0.14912		0.14532		0.12663		-0.11086		0.08141
	0.2145		0.2266		0.2927		0.3574		0.4997
Zinc	Vanadium	Cobalt		CEC		Potassium		Uranium	
	-0.35888		0.35147		0.33566		0.31847		0.28517
	0.0021		0.0027		0.0042		0.0068		0.0159

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

Antimony	Potassium	Selenium		Mercury		Calcium		Magnesium	
	0.07863		0.07008		-0.04511		0.03813		-0.03393
	0.5145		0.5614		0.7087		0.7522		0.7788
Barium	Mercury	Potassium		__Gravel		Vanadium		Magnesium	
	0.20099		0.19524		0.19013		-0.18800		0.12915
	0.0928		0.1028		0.1123		0.1164		0.2831
Cadmium	Magnesium	Calcium		Boron		__Gravel		Potassium	
	-0.15054		-0.14527		-0.12233		0.11038		-0.09340
	0.2102		0.2267		0.3095		0.3595		0.4385
Chromium	__Sand	Vanadium		__Silt_Clay		Sodium		Mercury	
	-0.17651		-0.16938		0.12400		0.11812		0.10670
	0.1409		0.1579		0.3029		0.3265		0.3758
Mercury	Manganese	Zinc		Copper		Antimony		__Gravel	
	0.09275		0.08592		0.06950		-0.04511		0.04311
	0.4417		0.4762		0.5647		0.7087		0.7211
Thallium	Beryllium	TOC		Phosphorus		Selenium		Uranium	
	0.14620		0.14504		-0.13533		-0.11010		0.08141
	0.2238		0.2275		0.2605		0.3607		0.4997
Uranium	__Sand	Vanadium		Selenium		Potassium		__Silt_Clay	
	0.07047		-0.06668		0.05387		0.04867		-0.03495
	0.5592		0.5806		0.6555		0.6869		0.7723
Zinc	Nitrogen__Kjeldahl_total	__Gravel		pH		__Sand		__Silt_Clay	
	0.24481		0.19581		0.14433		-0.13054		0.10912
	0.0396		0.1017		0.2298		0.2779		0.3650

Nonparametric Spearman Correlations between analytes - high priority 12:43 Friday, May 27, 2011 2255

The CORR Procedure

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

Antimony	Manganese	Phosphorus	Sodium
	0.03217	0.02259	-0.01580
	0.7900	0.8517	0.8960
Barium	Phosphorus	Selenium	pH
	0.11580	0.07112	0.00849
	0.3362	0.5556	0.9440
Cadmium	Selenium	Phosphorus	Manganese
	0.07127	-0.07004	-0.06101
	0.5548	0.5617	0.6133
Chromium	pH	Selenium	Phosphorus
	0.05950	-0.04272	0.01370
	0.6221	0.7235	0.9097
Mercury	CEC	Uranium	Selenium
	-0.02647	0.02137	-0.00336
	0.8266	0.8596	0.9778
Thallium	__Sand	__Silt_Clay	CEC
	-0.05166	0.01487	0.00784
	0.6688	0.9020	0.9483
Uranium	Mercury	pH	Silver
	0.02137	-0.01820	0.01649
	0.8596	0.8803	0.8914
Zinc	Mercury	Selenium	Phosphorus
	0.08592	-0.07769	0.02133
	0.4762	0.5196	0.8599

Nonparametric Spearman Correlations between analytes - medium priority 12:43 Friday, May 27, 2011 2256

The CORR Procedure

4 With Variables:	Boron	Copper	Lead	Manganese	
33 Variables:	Antimony	Barium	Cadmium	Chromium	Mercury
	Thallium	Uranium	Zinc	Boron	Copper
	Lead	Manganese	Arsenic	Cobalt	Nickel
	Selenium	Vanadium	pH	CEC	__Gravel
	__Sand	__Silt_Clay	TOC	Beryllium	Molybdenum
	Nitrogen__Kjeldahl_total	Phosphorus	Silver	Sodium	Tin
	Calcium	Magnesium	Potassium		

Simple Statistics

Variable	N	Mean	Std Dev	Median	Minimum	Maximum
Boron	71	28.17845	18.11040	37.10000	4.10000	58.00000
Copper	71	66.25099	95.97832	28.20000	1.40000	596.00000
Lead	71	805.68296	1707	68.30000	0.10000	9090
Manganese	71	393.86197	179.35418	356.00000	24.30000	1260
Antimony	71	43.38921	146.21563	0.89400	0.29000	842.00000
Barium	71	212.73239	532.64213	107.00000	56.80000	4520
Cadmium	71	1.60255	2.35156	0.37500	0.09600	9.85000
Chromium	71	16.96070	29.94992	11.50000	2.82000	259.00000
Mercury	71	0.42797	2.06161	0.05300	0.04800	12.50000
Thallium	71	0.12117	0.05665	0.11000	0.09600	0.45900
Uranium	71	0.60439	0.53377	0.50000	0.21900	4.76000
Zinc	71	361.37831	1126	71.20000	4.08000	8980
Arsenic	71	4.61423	2.67074	4.03000	0.50000	16.40000
Cobalt	71	7.97763	1.80695	7.90000	0.27200	12.40000
Nickel	71	12.50944	4.94740	11.10000	1.09000	27.40000
Selenium	71	1.23061	0.29552	1.25000	0.45500	2.02000
Vanadium	71	53.44606	14.98876	50.80000	2.27000	116.00000
pH	71	7.60873	0.97898	7.99000	4.13000	8.74000
CEC	71	13.93859	5.22189	12.42000	5.28000	31.57000
__Gravel	71	1.03521	1.84438	0.10000	0	6.60000
__Sand	71	72.32958	8.68939	70.50000	54.70000	97.00000
__Silt_Clay	71	26.63662	8.19070	27.70000	3.00000	39.70000
TOC	71	16847	22777	8010	58.40000	99400
Beryllium	71	0.33580	0.08225	0.33800	0.10000	0.56500
Molybdenum	71	1.90846	6.32180	0.54300	0.20800	46.30000
Nitrogen__Kjeldahl_total	71	433.92254	233.20010	434.00000	14.30000	1010
Phosphorus	71	913.16901	284.01157	864.00000	186.00000	2230
Silver	71	0.26314	0.47334	0.11000	0.01000	2.99000
Sodium	71	422.97887	466.28010	314.00000	38.50000	3160
Tin	71	36.37386	118.78106	2.71000	0.16500	838.00000
Calcium	71	8075	3874	7570	3020	21400
Magnesium	71	4599	1423	4520	250.00000	10900

Nonparametric Spearman Correlations between analytes - medium priority 12:43 Friday, May 27, 2011 2257

The CORR Procedure

Simple Statistics

Variable	N	Mean	Std Dev	Median	Minimum	Maximum
Potassium	71	1796	385.30366	1810	138.00000	2480

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

Boron	Boron	Calcium	Magnesium	Manganese	Sodium	
	1.00000	0.71273	0.70741	0.61688	0.61350	
		<.0001	<.0001	<.0001	<.0001	
Copper	Copper	Tin	Zinc	Molybdenum	Chromium	
	1.00000	0.86176	0.81425	0.80373	0.76873	
		<.0001	<.0001	<.0001	<.0001	
Lead	Lead	TOC	Tin	Antimony	Cadmium	
	1.00000	0.69329	0.67468	0.64787	0.61376	
		<.0001	<.0001	<.0001	<.0001	
Manganese	Manganese	Magnesium	Cobalt	Boron	Nickel	
	1.00000	0.71510	0.68715	0.61688	0.54476	
		<.0001	<.0001	<.0001	<.0001	

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

Boron	pH	Zinc	Nickel	Arsenic	Mercury	
	0.56715	0.54165	0.52900	0.52329	0.51962	
	<.0001	<.0001	<.0001	<.0001	<.0001	
Copper	Arsenic	Antimony	Barium	Nickel	Cadmium	
	0.73756	0.73213	0.72463	0.68613	0.68030	
	<.0001	<.0001	<.0001	<.0001	<.0001	
Lead	Copper	Barium	Molybdenum	Zinc	Chromium	
	0.56027	0.55909	0.54238	0.54113	0.53338	
	<.0001	<.0001	<.0001	<.0001	<.0001	
Manganese	Potassium	Beryllium	Zinc	pH	Sodium	
	0.51836	0.47978	0.47007	0.43715	0.41599	
	<.0001	<.0001	<.0001	0.0001	0.0003	

Nonparametric Spearman Correlations between analytes - medium priority 12:43 Friday, May 27, 2011 2258

The CORR Procedure

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

Boron	Potassium	Silver	Thallium	Molybdenum	Copper	
	0.50980	0.47984	0.45907	0.45182	0.38991	
	<.0001	<.0001	<.0001	<.0001	0.0008	
Copper	Lead	TOC	Silver	Boron	CEC	
	0.56027	0.52719	0.45466	0.38991	0.33527	
	<.0001	<.0001	<.0001	0.0008	0.0043	
Lead	Arsenic	CEC	Nitrogen__Kjeldahl_total	Nickel	Cobalt	
	0.52864	0.51950	0.46030	0.43109	0.38437	
	<.0001	<.0001	<.0001	0.0002	0.0009	
Manganese	Arsenic	Molybdenum	Calcium	Chromium	Thallium	
	0.39684	0.35362	0.33523	0.26559	0.25667	
	0.0006	0.0025	0.0043	0.0252	0.0307	

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

Boron	Barium	Vanadium	Beryllium	Phosphorus	Uranium	
	0.38636	-0.37011	0.31275	0.29331	0.28644	
	0.0009	0.0015	0.0079	0.0130	0.0154	
Copper	Beryllium	Thallium	Uranium	Vanadium	Calcium	
	0.30316	0.30086	0.28899	-0.28233	0.26944	
	0.0102	0.0108	0.0145	0.0171	0.0231	
Lead	Beryllium	Mercury	Silver	Uranium	__Silt_Clay	
	0.26992	-0.22963	0.22803	0.20969	0.18154	
	0.0228	0.0541	0.0558	0.0793	0.1297	
Manganese	Barium	Phosphorus	Copper	Uranium	Silver	
	0.25659	0.21650	0.20939	0.20609	0.18969	
	0.0308	0.0698	0.0797	0.0847	0.1131	

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

Boron	Chromium	__Gravel	Cobalt	Tin	__Sand	
	0.28075	0.26228	0.20637	0.19896	-0.14958	
	0.0177	0.0271	0.0842	0.0962	0.2131	

Nonparametric Spearman Correlations between analytes - medium priority 12:43 Friday, May 27, 2011 2259

The CORR Procedure

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

Copper	Sodium	Nitrogen__Kjeldahl_total	Cobalt	Manganese	Potassium
	0.26390	0.26073	0.24952	0.20939	0.20809
	0.0262	0.0281	0.0359	0.0797	0.0816
Lead	Selenium	__Sand	Thallium	Manganese	Phosphorus
	0.16793	-0.15878	0.14881	0.13969	-0.11385
	0.1616	0.1860	0.2155	0.2453	0.3445
Manganese	__Gravel	Tin	Lead	__Sand	__Silt_Clay
	0.18364	0.15080	0.13969	-0.13119	0.10468
	0.1253	0.2094	0.2453	0.2755	0.3850

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

Boron	Cadmium	Nitrogen__Kjeldahl_total	__Silt_Clay	Antimony	Selenium
	-0.12233	-0.12125	0.11509	0.08190	-0.06609
	0.3095	0.3138	0.3392	0.4971	0.5840
Copper	Magnesium	__Sand	__Gravel	__Silt_Clay	Mercury
	0.20205	-0.19554	0.17745	0.16950	0.06950
	0.0911	0.1022	0.1388	0.1576	0.5647
Lead	pH	Vanadium	Potassium	__Gravel	Calcium
	-0.09885	-0.09049	-0.06893	0.06477	0.06286
	0.4121	0.4530	0.5679	0.5915	0.6025
Manganese	Selenium	Mercury	Nitrogen__Kjeldahl_total	Cadmium	Vanadium
	-0.09640	0.09275	-0.06818	-0.06101	-0.04854
	0.4239	0.4417	0.5721	0.6133	0.6877

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

Boron	TOC	CEC	Lead	
	-0.04423	0.03570	-0.01123	
	0.7142	0.7676	0.9259	
Copper	pH	Phosphorus	Selenium	
	0.04902	0.04615	0.04015	
	0.6848	0.7024	0.7395	

Nonparametric Spearman Correlations between analytes - medium priority 12:43 Friday, May 27, 2011 2260

The CORR Procedure

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

Lead	Magnesium	Sodium	Boron	
	-0.04948	-0.02928	-0.01123	
	0.6820	0.8085	0.9259	
Manganese	TOC	CEC	Antimony	
	-0.04556	0.04276	0.03217	
	0.7060	0.7233	0.7900	

Nonparametric Spearman Correlations between analytes - low priority 12:43 Friday, May 27, 2011 2261

The CORR Procedure

5 With Variables:	Arsenic	Cobalt	Nickel	Selenium	Vanadium
33 Variables:	Antimony	Barium	Cadmium	Chromium	Mercury
	Thallium	Uranium	Zinc	Boron	Copper
	Lead	Manganese	Arsenic	Cobalt	Nickel
	Selenium	Vanadium	pH	CEC	__Gravel
	__Sand	__Silt_Clay	TOC	Beryllium	Molybdenum
	Nitrogen__Kjeldahl_total	Phosphorus	Silver	Sodium	Tin
	Calcium	Magnesium	Potassium		

Simple Statistics

Variable	N	Mean	Std Dev	Median	Minimum	Maximum
Arsenic	71	4.61423	2.67074	4.03000	0.50000	16.40000
Cobalt	71	7.97763	1.80695	7.90000	0.27200	12.40000
Nickel	71	12.50944	4.94740	11.10000	1.09000	27.40000
Selenium	71	1.23061	0.29552	1.25000	0.45500	2.02000
Vanadium	71	53.44606	14.98876	50.80000	2.27000	116.00000
Antimony	71	43.38921	146.21563	0.89400	0.29000	842.00000
Barium	71	212.73239	532.64213	107.00000	56.80000	4520
Cadmium	71	1.60255	2.35156	0.37500	0.09600	9.85000
Chromium	71	16.96070	29.94992	11.50000	2.82000	259.00000
Mercury	71	0.42797	2.06161	0.05300	0.04800	12.50000
Thallium	71	0.12117	0.05665	0.11000	0.09600	0.45900
Uranium	71	0.60439	0.53377	0.50000	0.21900	4.76000
Zinc	71	361.37831	1126	71.20000	4.08000	8980
Boron	71	28.17845	18.11040	37.10000	4.10000	58.00000
Copper	71	66.25099	95.97832	28.20000	1.40000	596.00000
Lead	71	805.68296	1707	68.30000	0.10000	9090
Manganese	71	393.86197	179.35418	356.00000	24.30000	1260
pH	71	7.60873	0.97898	7.99000	4.13000	8.74000
CEC	71	13.93859	5.22189	12.42000	5.28000	31.57000
__Gravel	71	1.03521	1.84438	0.10000	0	6.60000
__Sand	71	72.32958	8.68939	70.50000	54.70000	97.00000
__Silt_Clay	71	26.63662	8.19070	27.70000	3.00000	39.70000
TOC	71	16847	22777	8010	58.40000	99400
Beryllium	71	0.33580	0.08225	0.33800	0.10000	0.56500
Molybdenum	71	1.90846	6.32180	0.54300	0.20800	46.30000
Nitrogen__Kjeldahl_total	71	433.92254	233.20010	434.00000	14.30000	1010
Phosphorus	71	913.16901	284.01157	864.00000	186.00000	2230
Silver	71	0.26314	0.47334	0.11000	0.01000	2.99000
Sodium	71	422.97887	466.28010	314.00000	38.50000	3160
Tin	71	36.37386	118.78106	2.71000	0.16500	838.00000
Calcium	71	8075	3874	7570	3020	21400
Magnesium	71	4599	1423	4520	250.00000	10900

Nonparametric Spearman Correlations between analytes - low priority 12:43 Friday, May 27, 2011 2262

The CORR Procedure

Simple Statistics

Variable	N	Mean	Std Dev	Median	Minimum	Maximum
Potassium	71	1796	385.30366	1810	138.00000	2480

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

Arsenic	Arsenic	Molybdenum	Zinc	Barium	Tin	
	1.00000	0.84064	0.80114	0.78629	0.78173	
		<.0001	<.0001	<.0001	<.0001	
Cobalt	Cobalt	Manganese	Nickel	Beryllium	Molybdenum	
	1.00000	0.68715	0.59535	0.56207	0.41617	
		<.0001	<.0001	<.0001	0.0003	
Nickel	Nickel	Chromium	Molybdenum	Zinc	Copper	
	1.00000	0.83009	0.74826	0.73232	0.68613	
		<.0001	<.0001	<.0001	<.0001	
Selenium	Selenium	Vanadium	Phosphorus	CEC	pH	
	1.00000	0.37878	0.35553	0.25927	-0.24220	
		0.0011	0.0023	0.0290	0.0419	
Vanadium	Vanadium	Phosphorus	Selenium	Cobalt	Boron	
	1.00000	0.40774	0.37878	0.37350	-0.37011	
		0.0004	0.0011	0.0013	0.0015	

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

Arsenic	Copper	Chromium	Antimony	Nickel	Cadmium	
	0.73756	0.71843	0.68328	0.67699	0.56687	
	<.0001	<.0001	<.0001	<.0001	<.0001	
Cobalt	Chromium	Lead	Magnesium	Vanadium	CEC	
	0.40501	0.38437	0.38276	0.37350	0.35413	
	0.0005	0.0009	0.0010	0.0013	0.0024	
Nickel	Barium	Arsenic	Tin	Cobalt	Beryllium	
	0.68594	0.67699	0.59899	0.59535	0.55838	
	<.0001	<.0001	<.0001	<.0001	<.0001	

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The CORR Procedure

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

Selenium	Sodium	Calcium	Potassium	Molybdenum	Lead	
	0.24208	0.20509	-0.18665	0.18389	0.16793	
	0.0420	0.0862	0.1191	0.1248	0.1616	
Vanadium	Thallium	Zinc	__Sand	__Silt_Clay	pH	
	-0.36213	-0.35888	0.34130	-0.34005	-0.33654	
	0.0019	0.0021	0.0036	0.0037	0.0041	

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

Arsenic	Silver	TOC	Lead	Boron	Thallium	
	0.55481	0.54026	0.52864	0.52329	0.50540	
	<.0001	<.0001	<.0001	<.0001	<.0001	
Cobalt	Zinc	Arsenic	Barium	Tin	Uranium	
	0.35147	0.33947	0.31711	0.31603	0.29457	
	0.0027	0.0038	0.0070	0.0073	0.0126	
Nickel	Manganese	Antimony	Boron	Magnesium	TOC	
	0.54476	0.53681	0.52900	0.48764	0.48137	
	<.0001	<.0001	<.0001	<.0001	<.0001	
Selenium	Tin	TOC	Silver	Cobalt	Thallium	
	0.12235	0.11944	-0.11533	0.11039	-0.11010	
	0.3094	0.3211	0.3382	0.3594	0.3607	
Vanadium	Potassium	Copper	Silver	Arsenic	Antimony	
	-0.30607	-0.28233	-0.28134	-0.26079	-0.23842	
	0.0094	0.0171	0.0175	0.0280	0.0453	

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

Arsenic	Calcium	Manganese	Beryllium	Magnesium	Nitrogen__Kjeldahl_total	
	0.44019	0.39684	0.37393	0.37329	0.36783	
	0.0001	0.0006	0.0013	0.0013	0.0016	
Cobalt	Phosphorus	Potassium	TOC	Copper	Antimony	
	0.28310	0.26439	0.25264	0.24952	0.22557	
	0.0167	0.0259	0.0335	0.0359	0.0586	

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The CORR Procedure

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

Nickel	Potassium	Thallium	Silver	Lead	Cadmium	
	0.47627	0.45741	0.44917	0.43109	0.41775	
	<.0001	<.0001	<.0001	0.0002	0.0003	
Selenium	Manganese	Magnesium	Zinc	__Sand	__Gravel	
	-0.09640	-0.09139	-0.07769	0.07391	-0.07282	
	0.4239	0.4485	0.5196	0.5402	0.5462	
Vanadium	Magnesium	__Gravel	Barium	Cadmium	Chromium	
	-0.22505	-0.18866	-0.18800	-0.18627	-0.16938	
	0.0592	0.1151	0.1164	0.1199	0.1579	

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

Arsenic	Cobalt	CEC	pH	__Sand	Sodium	
	0.33947	0.33192	0.32496	-0.30747	0.29185	
	0.0038	0.0047	0.0057	0.0091	0.0135	
Cobalt	Nitrogen__Kjeldahl_total	Boron	Sodium	Cadmium	Thallium	
	0.21032	0.20637	0.19458	0.16968	0.14821	
	0.0783	0.0842	0.1039	0.1572	0.2174	
Nickel	CEC	Calcium	Sodium	Uranium	Nitrogen__Kjeldahl_total	
	0.38588	0.35107	0.30445	0.30236	0.30074	
	0.0009	0.0027	0.0098	0.0104	0.0108	
Selenium	Cadmium	Barium	Antimony	Boron	Uranium	
	0.07127	0.07112	0.07008	-0.06609	0.05387	
	0.5548	0.5556	0.5614	0.5840	0.6555	
Vanadium	CEC	TOC	Nickel	Tin	Nitrogen__Kjeldahl_total	
	0.15925	-0.15495	-0.12529	-0.11658	-0.11548	
	0.1847	0.1970	0.2978	0.3329	0.3375	

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

Arsenic	__Silt_Clay	Potassium	Vanadium	Uranium	__Gravel	
	0.27829	0.26748	-0.26079	0.24067	0.17316	
	0.0188	0.0241	0.0280	0.0432	0.1487	

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The CORR Procedure

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

Cobalt	Mercury	Silver		pH		Selenium		__Gravel	
	-0.12843		0.11972		0.11963		0.11039		0.09675
	0.2858		0.3200		0.3204		0.3594		0.4222
Nickel	__Gravel	pH		Mercury		__Sand		Phosphorus	
	0.24987		0.22847		0.17709		-0.15983		0.15638
	0.0356		0.0553		0.1396		0.1831		0.1928
Selenium	__Silt_Clay	Chromium		Nitrogen__Kjeldahl_total		Copper		Beryllium	
	-0.04528		-0.04272		0.04018		0.04015		0.02623
	0.7077		0.7235		0.7394		0.7395		0.8281
Vanadium	Mercury	Molybdenum		Lead		Calcium		Sodium	
	-0.09553		-0.09233		-0.09049		-0.09038		0.06983
	0.4281		0.4438		0.4530		0.4535		0.5628

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

Arsenic	Phosphorus		Mercury		Selenium		
		0.15196		0.12221		0.00408	
		0.2058		0.3100		0.9730	
Cobalt	Calcium		__Silt_Clay		__Sand		
		0.05441		-0.03898		0.01138	
		0.6522		0.7469		0.9250	
Nickel	Vanadium		__Silt_Clay		Selenium		
		-0.12529		0.11854		0.01816	
		0.2978		0.3248		0.8805	
Selenium	Nickel		Arsenic		Mercury		
		0.01816		0.00408		-0.00336	
		0.8805		0.9730		0.9778	
Vanadium	Uranium		Manganese		Beryllium		
		-0.06668		-0.04854		0.04133	
		0.5806		0.6877		0.7322	

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The CORR Procedure

16 With Variables:	pH	CEC	__Gravel	__Sand	__Silt_Clay
	TOC	Beryllium	Molybdenum	Nitrogen__Kjeldahl_total	Phosphorus
	Silver	Sodium	Tin	Calcium	Magnesium
	Potassium				
33 Variables:	Antimony	Barium	Cadmium	Chromium	Mercury
	Thallium	Uranium	Zinc	Boron	Copper
	Lead	Manganese	Arsenic	Cobalt	Nickel
	Selenium	Vanadium	pH	CEC	__Gravel
	__Sand	__Silt_Clay	TOC	Beryllium	Molybdenum
	Nitrogen__Kjeldahl_total	Phosphorus	Silver	Sodium	Tin
	Calcium	Magnesium	Potassium		

Simple Statistics

Variable	N	Mean	Std Dev	Median	Minimum	Maximum
pH	71	7.60873	0.97898	7.99000	4.13000	8.74000
CEC	71	13.93859	5.22189	12.42000	5.28000	31.57000
__Gravel	71	1.03521	1.84438	0.10000	0	6.60000
__Sand	71	72.32958	8.68939	70.50000	54.70000	97.00000
__Silt_Clay	71	26.63662	8.19070	27.70000	3.00000	39.70000
TOC	71	16847	22777	8010	58.40000	99400
Beryllium	71	0.33580	0.08225	0.33800	0.10000	0.56500
Molybdenum	71	1.90846	6.32180	0.54300	0.20800	46.30000
Nitrogen__Kjeldahl_total	71	433.92254	233.20010	434.00000	14.30000	1010
Phosphorus	71	913.16901	284.01157	864.00000	186.00000	2230
Silver	71	0.26314	0.47334	0.11000	0.01000	2.99000
Sodium	71	422.97887	466.28010	314.00000	38.50000	3160
Tin	71	36.37386	118.78106	2.71000	0.16500	838.00000
Calcium	71	8075	3874	7570	3020	21400
Magnesium	71	4599	1423	4520	250.00000	10900
Potassium	71	1796	385.30366	1810	138.00000	2480
Antimony	71	43.38921	146.21563	0.89400	0.29000	842.00000
Barium	71	212.73239	532.64213	107.00000	56.80000	4520
Cadmium	71	1.60255	2.35156	0.37500	0.09600	9.85000
Chromium	71	16.96070	29.94992	11.50000	2.82000	259.00000
Mercury	71	0.42797	2.06161	0.05300	0.04800	12.50000
Thallium	71	0.12117	0.05665	0.11000	0.09600	0.45900
Uranium	71	0.60439	0.53377	0.50000	0.21900	4.76000
Zinc	71	361.37831	1126	71.20000	4.08000	8980
Boron	71	28.17845	18.11040	37.10000	4.10000	58.00000
Copper	71	66.25099	95.97832	28.20000	1.40000	596.00000
Lead	71	805.68296	1707	68.30000	0.10000	9090
Manganese	71	393.86197	179.35418	356.00000	24.30000	1260
Arsenic	71	4.61423	2.67074	4.03000	0.50000	16.40000

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The CORR Procedure

Simple Statistics

Variable	N	Mean	Std Dev	Median	Minimum	Maximum
Cobalt	71	7.97763	1.80695	7.90000	0.27200	12.40000
Nickel	71	12.50944	4.94740	11.10000	1.09000	27.40000
Selenium	71	1.23061	0.29552	1.25000	0.45500	2.02000
Vanadium	71	53.44606	14.98876	50.80000	2.27000	116.00000

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

pH	pH	1.00000	Boron	0.56715	Magnesium	0.55087	Manganese	0.43715
				<.0001		<.0001		0.0001
CEC	CEC	1.00000	TOC	0.77088	Nitrogen__Kjeldahl_total	0.53603	Lead	0.51950
				<.0001		<.0001		<.0001
__Gravel	__Gravel	1.00000	__Sand	-0.30564	Chromium	0.26812	Boron	0.26228
				0.0095		0.0238		0.0271
__Sand	__Sand	1.00000	__Silt_Clay	-0.97219	Potassium	-0.38510	Vanadium	0.34130
				<.0001		0.0009		0.0036
__Silt_Clay	__Silt_Clay	1.00000	__Sand	-0.97219	Potassium	0.34881	Vanadium	-0.34005
				<.0001		0.0029		0.0037
TOC	TOC	1.00000	CEC	0.77088	Nitrogen__Kjeldahl_total	0.75558	Cadmium	0.75267
				<.0001		<.0001		<.0001
Beryllium	Beryllium	1.00000	Cobalt	0.56207	Nickel	0.55838	Manganese	0.47978
				<.0001		<.0001		<.0001
Molybdenum	Molybdenum	1.00000	Arsenic	0.84064	Tin	0.83735	Barium	0.81111
				<.0001		<.0001		<.0001

Nonparametric Spearman Correlations between analytes - others 12:43 Friday, May 27, 2011 2268

The CORR Procedure

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

Nitrogen__Kjeldahl_total	Nitrogen__Kjeldahl_total	1.00000	TOC	0.75558 <.0001	CEC	0.53603 <.0001	Cadmium	0.52645 <.0001
Phosphorus	Phosphorus	1.00000	Vanadium	0.40774 0.0004	Selenium	0.35553 0.0023	Calcium	0.33430 0.0044
Silver	Silver	1.00000	Thallium	0.72114 <.0001	Arsenic	0.55481 <.0001	Antimony	0.54692 <.0001
Sodium	Sodium	1.00000	Calcium	0.77461 <.0001	Boron	0.61350 <.0001	Mercury	0.45576 <.0001
Tin	Tin	1.00000	Copper	0.86176 <.0001	Molybdenum	0.83735 <.0001	Antimony	0.82377 <.0001
Calcium	Calcium	1.00000	Sodium	0.77461 <.0001	Boron	0.71273 <.0001	Mercury	0.54268 <.0001
Magnesium	Magnesium	1.00000	Manganese	0.71510 <.0001	Boron	0.70741 <.0001	Potassium	0.69935 <.0001
Potassium	Potassium	1.00000	Magnesium	0.69935 <.0001	Manganese	0.51836 <.0001	Boron	0.50980 <.0001

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

pH	Potassium	0.37837 0.0011	Vanadium	-0.33654 0.0041	Arsenic	0.32496 0.0057	Calcium	0.32483 0.0057
CEC	Uranium	0.48295 <.0001	Molybdenum	0.47039 <.0001	Tin	0.46812 <.0001	Cadmium	0.43208 0.0002

Nonparametric Spearman Correlations between analytes - others 12:43 Friday, May 27, 2011 2269

The CORR Procedure

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

__Gravel	Nickel	Potassium		Zinc		Silver	
	0.24987		0.20861		0.19581		0.19134
	0.0356		0.0808		0.1017		0.1099
__Sand	Arsenic	__Gravel		Barium		Cadmium	
	-0.30747		-0.30564		-0.27979		-0.27545
	0.0091		0.0095		0.0181		0.0201
__Silt_Clay	Arsenic	Cadmium		Barium		Sodium	
	0.27829		0.25611		0.24266		-0.23905
	0.0188		0.0311		0.0415		0.0447
TOC	Lead	Antimony		Tin		Molybdenum	
	0.69329		0.66749		0.65393		0.60233
	<.0001		<.0001		<.0001		<.0001
Beryllium	Uranium	Zinc		Magnesium		Potassium	
	0.47515		0.42476		0.42440		0.40515
	<.0001		0.0002		0.0002		0.0005
Molybdenum	Copper	Zinc		Chromium		Nickel	
	0.80373		0.78186		0.77459		0.74826
	<.0001		<.0001		<.0001		<.0001
Nitrogen__Kjeldahl_total	Antimony	Lead		Tin		Molybdenum	
	0.49163		0.46030		0.43580		0.39537
	<.0001		<.0001		0.0001		0.0006
Phosphorus	Sodium	Boron		Beryllium		Cobalt	
	0.32700		0.29331		0.28764		0.28310
	0.0054		0.0130		0.0150		0.0167
Silver	Barium	Molybdenum		Boron		Chromium	
	0.50634		0.48724		0.47984		0.47533
	<.0001		<.0001		<.0001		<.0001
Sodium	Magnesium	Manganese		Molybdenum		Zinc	
	0.43649		0.41599		0.40763		0.39511
	0.0001		0.0003		0.0004		0.0006
Tin	Cadmium	Zinc		Arsenic		Chromium	
	0.82278		0.78448		0.78173		0.74574
	<.0001		<.0001		<.0001		<.0001

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The CORR Procedure

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

Calcium	Molybdenum	Arsenic		Magnesium		Barium	
	0.46137		0.44019		0.41619		0.39744
	<.0001		0.0001		0.0003		0.0006
Magnesium	pH	Nickel		Zinc		Sodium	
	0.55087		0.48764		0.43889		0.43649
	<.0001		<.0001		0.0001		0.0001
Potassium	Nickel	Beryllium		__Sand		pH	
	0.47627		0.40515		-0.38510		0.37837
	<.0001		0.0005		0.0009		0.0011

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

pH	Thallium	Cadmium		Selenium		CEC	
	0.32319		-0.28460		-0.24220		-0.23487
	0.0060		0.0162		0.0419		0.0487
CEC	Barium	Antimony		Nickel		Beryllium	
	0.39838		0.39549		0.38588		0.36085
	0.0006		0.0006		0.0009		0.0020
__Gravel	Barium	Vanadium		Antimony		Manganese	
	0.19013		-0.18866		0.18595		0.18364
	0.1123		0.1151		0.1205		0.1253
__Sand	Antimony	CEC		Nitrogen__Kjeldahl_total		Sodium	
	-0.21948		0.21426		-0.21334		0.20796
	0.0659		0.0728		0.0740		0.0818
__Silt_Clay	Mercury	Nitrogen__Kjeldahl_total		Phosphorus		Antimony	
	-0.22466		0.21902		-0.20940		0.19412
	0.0596		0.0665		0.0797		0.1048
TOC	Chromium	Barium		Arsenic		Copper	
	0.58832		0.58483		0.54026		0.52719
	<.0001		<.0001		<.0001		<.0001
Beryllium	Chromium	Arsenic		Molybdenum		TOC	
	0.39453		0.37393		0.37327		0.36940
	0.0007		0.0013		0.0013		0.0015

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The CORR Procedure

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

Molybdenum	Antimony	Cadmium		TOC		Lead	
	0.67487		0.63762		0.60233		0.54238
	<.0001		<.0001		<.0001		<.0001
Nitrogen__Kjeldahl_total	Barium	Arsenic		Chromium		Nickel	
	0.37131		0.36783		0.36105		0.30074
	0.0014		0.0016		0.0020		0.0108
Phosphorus	Molybdenum	Magnesium		Mercury		Manganese	
	0.26805		0.23543		0.23266		0.21650
	0.0238		0.0481		0.0509		0.0698
Silver	Zinc	Copper		Nickel		Mercury	
	0.46247		0.45466		0.44917		0.42755
	<.0001		<.0001		<.0001		0.0002
Sodium	Phosphorus	Nickel		Arsenic		Potassium	
	0.32700		0.30445		0.29185		0.27350
	0.0054		0.0098		0.0135		0.0210
Tin	Barium	Lead		TOC		Nickel	
	0.73230		0.67468		0.65393		0.59899
	<.0001		<.0001		<.0001		<.0001
Calcium	Zinc	Nickel		Manganese		Phosphorus	
	0.39254		0.35107		0.33523		0.33430
	0.0007		0.0027		0.0043		0.0044
Magnesium	Beryllium	Calcium		Cobalt		Arsenic	
	0.42440		0.41619		0.38276		0.37329
	0.0002		0.0003		0.0010		0.0013
Potassium	__Silt_Clay	Zinc		Vanadium		Thallium	
	0.34881		0.31847		-0.30607		0.29111
	0.0029		0.0068		0.0094		0.0138

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The CORR Procedure

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

pH	Nickel	0.22847	Silver	0.21081	Mercury	0.18327	__Sand	-0.17275
		0.0553		0.0776		0.1261		0.1497
CEC	Cobalt	0.35413	Zinc	0.33566	Copper	0.33527	Arsenic	0.33192
		0.0024		0.0042		0.0043		0.0047
__Gravel	Thallium	0.18165	Copper	0.17745	Arsenic	0.17316	Molybdenum	0.15578
		0.1295		0.1388		0.1487		0.1945
__Sand	Mercury	0.19602	Copper	-0.19554	Tin	-0.19415	Chromium	-0.17651
		0.1014		0.1022		0.1047		0.1409
__Silt_Clay	Lead	0.18154	CEC	-0.17943	Tin	0.17129	Copper	0.16950
		0.1297		0.1343		0.1532		0.1576
TOC	Zinc	0.49582	Nickel	0.48137	Beryllium	0.36940	Uranium	0.35078
		<.0001		<.0001		0.0015		0.0027
Beryllium	CEC	0.36085	Tin	0.32830	Barium	0.32569	Boron	0.31275
		0.0020		0.0052		0.0056		0.0079
Molybdenum	Silver	0.48724	CEC	0.47039	Calcium	0.46137	Boron	0.45182
		<.0001		<.0001		<.0001		<.0001
Nitrogen__Kjeldahl_total	Beryllium	0.29036	Mercury	-0.26720	Copper	0.26073	Sodium	-0.25716
		0.0140		0.0243		0.0281		0.0304
Phosphorus	__Silt_Clay	-0.20940	CEC	0.18356	__Sand	0.16944	Nickel	0.15638
		0.0797		0.1254		0.1578		0.1928
Silver	Tin	0.42014	Cadmium	0.34278	Vanadium	-0.28134	TOC	0.25409
		0.0003		0.0034		0.0175		0.0325

Nonparametric Spearman Correlations between analytes - others 12:43 Friday, May 27, 2011 2273

The CORR Procedure

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

Sodium	Copper	Nitrogen__Kjeldahl_total		Selenium		__Silt_Clay	
	0.26390		-0.25716		0.24208		-0.23905
	0.0262		0.0304		0.0420		0.0447
Tin	CEC	Nitrogen__Kjeldahl_total		Silver		Beryllium	
	0.46812		0.43580		0.42014		0.32830
	<.0001		0.0001		0.0003		0.0052
Calcium	pH	Copper		CEC		Silver	
	0.32483		0.26944		0.25115		0.24062
	0.0057		0.0231		0.0346		0.0432
Magnesium	Molybdenum	Thallium		Phosphorus		Vanadium	
	0.25273		0.25265		0.23543		-0.22505
	0.0335		0.0335		0.0481		0.0592
Potassium	Chromium	Sodium		Arsenic		Cobalt	
	0.27938		0.27350		0.26748		0.26439
	0.0183		0.0210		0.0241		0.0259

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

pH	TOC	__Silt_Clay		Beryllium		Zinc	
	-0.17248		0.16679		0.16164		0.14433
	0.1503		0.1645		0.1781		0.2298
CEC	Chromium	Selenium		Calcium		pH	
	0.33011		0.25927		0.25115		-0.23487
	0.0049		0.0290		0.0346		0.0487
__Gravel	Tin	__Silt_Clay		Magnesium		CEC	
	0.13022		0.12980		0.12878		-0.11797
	0.2791		0.2806		0.2845		0.3272
__Sand	pH	Phosphorus		Nickel		Lead	
	-0.17275		0.16944		-0.15983		-0.15878
	0.1497		0.1578		0.1831		0.1860
__Silt_Clay	pH	__Gravel		Chromium		Nickel	
	0.16679		0.12980		0.12400		0.11854
	0.1645		0.2806		0.3029		0.3248

Nonparametric Spearman Correlations between analytes - others 12:43 Friday, May 27, 2011 2274

The CORR Procedure

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

TOC	Silver	Cobalt		Sodium		pH	
	0.25409		0.25264		-0.17980		-0.17248
	0.0325		0.0335		0.1335		0.1503
Beryllium	Copper	Nitrogen__Kjeldahl_total		Phosphorus		Lead	
	0.30316		0.29036		0.28764		0.26992
	0.0102		0.0140		0.0150		0.0228
Molybdenum	Cobalt	Sodium		Thallium		Nitrogen__Kjeldahl_total	
	0.41617		0.40763		0.39629		0.39537
	0.0003		0.0004		0.0006		0.0006
Nitrogen__Kjeldahl_total	Zinc	__Silt_Clay		__Sand		Cobalt	
	0.24481		0.21902		-0.21334		0.21032
	0.0396		0.0665		0.0740		0.0783
Phosphorus	Arsenic	Thallium		Uranium		Barium	
	0.15196		-0.13533		0.12663		0.11580
	0.2058		0.2605		0.2927		0.3362
Silver	Calcium	Lead		pH		Magnesium	
	0.24062		0.22803		0.21081		0.20729
	0.0432		0.0558		0.0776		0.0828
Sodium	Barium	__Sand		Uranium		Cobalt	
	0.23797		0.20796		0.20052		0.19458
	0.0457		0.0818		0.0936		0.1039
Tin	Cobalt	Thallium		Uranium		Boron	
	0.31603		0.29711		0.28558		0.19896
	0.0073		0.0119		0.0158		0.0962
Calcium	Thallium	Selenium		Chromium		Potassium	
	0.21237		0.20509		0.20012		0.17938
	0.0754		0.0862		0.0943		0.1344
Magnesium	Uranium	Silver		Copper		Chromium	
	0.21213		0.20729		0.20205		0.19626
	0.0757		0.0828		0.0911		0.1009
Potassium	Molybdenum	__Gravel		Copper		Barium	
	0.22111		0.20861		0.20809		0.19524
	0.0639		0.0808		0.0816		0.1028

Nonparametric Spearman Correlations between analytes - others 12:43 Friday, May 27, 2011 2275

The CORR Procedure

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

pH	Sodium	0.13954	0.2458	Cobalt	0.11963	0.3204	Antimony	-0.11596	0.3355	Lead	-0.09885	0.4121
CEC	__Sand	0.21426	0.0728	Potassium	-0.19304	0.1068	Phosphorus	0.18356	0.1254	__Silt_Clay	-0.17943	0.1343
__Gravel	Uranium	-0.11086	0.3574	Cadmium	0.11038	0.3595	Cobalt	0.09675	0.4222	Calcium	0.08909	0.4600
__Sand	Molybdenum	-0.14982	0.2124	Boron	-0.14958	0.2131	Manganese	-0.13119	0.2755	Silver	-0.13085	0.2767
__Silt_Clay	Calcium	-0.11671	0.3324	Boron	0.11509	0.3392	Molybdenum	0.11445	0.3419	TOC	0.11124	0.3557
TOC	Mercury	-0.15995	0.1827	Vanadium	-0.15495	0.1970	Thallium	0.14504	0.2275	Selenium	0.11944	0.3211
Beryllium	Antimony	0.24395	0.0404	Cadmium	0.20014	0.0942	pH	0.16164	0.1781	Thallium	0.14620	0.2238
Molybdenum	Beryllium	0.37327	0.0013	Manganese	0.35362	0.0025	Uranium	0.31326	0.0078	Phosphorus	0.26805	0.0238
Nitrogen__Kjeldahl_total	Thallium	0.18762	0.1172	Silver	0.17772	0.1381	Uranium	0.14912	0.2145	Calcium	-0.12150	0.3128
Phosphorus	Lead	-0.11385	0.3445	Potassium	0.10886	0.3661	Tin	0.10145	0.3999	Silver	0.09002	0.4553
Silver	__Gravel	0.19134	0.1099	Manganese	0.18969	0.1131	Nitrogen__Kjeldahl_total	0.17772	0.1381	Potassium	0.17133	0.1531

Nonparametric Spearman Correlations between analytes - others 12:43 Friday, May 27, 2011 2276

The CORR Procedure

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

Sodium	Tin	Cadmium	TOC	CEC
	0.18826	-0.18315	-0.17980	0.17783
	0.1159	0.1263	0.1335	0.1379
Tin	__Sand	Sodium	Calcium	__Silt_Clay
	-0.19415	0.18826	0.17172	0.17129
	0.1047	0.1159	0.1522	0.1532
Calcium	Tin	Uranium	Cadmium	Nitrogen__Kjeldahl_total
	0.17172	0.16619	-0.14527	-0.12150
	0.1522	0.1660	0.2267	0.3128
Magnesium	Cadmium	Mercury	Barium	__Gravel
	-0.15054	0.14209	0.12915	0.12878
	0.2102	0.2372	0.2831	0.2845
Potassium	CEC	Selenium	Calcium	Silver
	-0.19304	-0.18665	0.17938	0.17133
	0.1068	0.1191	0.1344	0.1531

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

pH	Tin	Chromium	Copper	__Gravel
	-0.08809	0.05950	0.04902	0.04587
	0.4651	0.6221	0.6848	0.7040
CEC	Sodium	Vanadium	__Gravel	Silver
	0.17783	0.15925	-0.11797	0.10105
	0.1379	0.1847	0.3272	0.4017
__Gravel	Beryllium	Selenium	Sodium	Lead
	0.07630	-0.07282	0.06946	0.06477
	0.5271	0.5462	0.5649	0.5915
__Sand	Zinc	Calcium	Beryllium	Magnesium
	-0.13054	0.10553	-0.09300	-0.09170
	0.2779	0.3811	0.4405	0.4469
__Silt_Clay	Zinc	Manganese	Beryllium	Silver
	0.10912	0.10468	0.09224	0.08791
	0.3650	0.3850	0.4442	0.4660

Nonparametric Spearman Correlations between analytes - others 12:43 Friday, May 27, 2011 2277

The CORR Procedure

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

TOC	__Silt_Clay	0.11124	Potassium	-0.09353	__Sand	-0.08866	Magnesium	-0.05829
		0.3557		0.4379		0.4622		0.6292
Beryllium	Mercury	-0.12670	Sodium	0.12297	Silver	0.09457	__Sand	-0.09300
		0.2924		0.3069		0.4327		0.4405
Molybdenum	Magnesium	0.25273	Potassium	0.22111	Mercury	0.19562	Selenium	0.18389
		0.0335		0.0639		0.1021		0.1248
Nitrogen__Kjeldahl_total	Boron	-0.12125	Vanadium	-0.11548	Manganese	-0.06818	Phosphorus	0.05517
		0.3138		0.3375		0.5721		0.6477
Phosphorus	Cadmium	-0.07004	__Gravel	0.05890	Nitrogen__Kjeldahl_total	0.05517	Copper	0.04615
		0.5617		0.6256		0.6477		0.7024
Silver	Sodium	0.15933	__Sand	-0.13085	Cobalt	0.11972	Selenium	-0.11533
		0.1844		0.2767		0.3200		0.3382
Sodium	Thallium	0.16643	Silver	0.15933	pH	0.13954	Beryllium	0.12297
		0.1654		0.1844		0.2458		0.3069
Tin	Manganese	0.15080	__Gravel	0.13022	Selenium	0.12235	Vanadium	-0.11658
		0.2094		0.2791		0.3094		0.3329
Calcium	__Silt_Clay	-0.11671	__Sand	0.10553	Vanadium	-0.09038	__Gravel	0.08909
		0.3324		0.3811		0.4535		0.4600
Magnesium	Tin	0.09701	__Sand	-0.09170	Selenium	-0.09139	__Silt_Clay	0.08084
		0.4209		0.4469		0.4485		0.5028
Potassium	Mercury	0.13446	Phosphorus	0.10886	Tin	0.09708	TOC	-0.09353
		0.2636		0.3661		0.4206		0.4379

Nonparametric Spearman Correlations between analytes - others 12:43 Friday, May 27, 2011 2278

The CORR Procedure

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

pH	Phosphorus	Nitrogen__Kjeldahl_total	Uranium	Molybdenum
	0.04255	-0.03777	-0.01820	0.01670
	0.7246	0.7545	0.8803	0.8900
CEC	Manganese	Boron	Mercury	Magnesium
	0.04276	0.03570	-0.02647	0.01477
	0.7233	0.7676	0.8266	0.9027
__Gravel	Phosphorus	pH	Mercury	TOC
	0.05890	0.04587	0.04311	-0.03051
	0.6256	0.7040	0.7211	0.8006
__Sand	TOC	Selenium	Uranium	Thallium
	-0.08866	0.07391	0.07047	-0.05166
	0.4622	0.5402	0.5592	0.6688
__Silt_Clay	Magnesium	Selenium	Cobalt	Uranium
	0.08084	-0.04528	-0.03898	-0.03495
	0.5028	0.7077	0.7469	0.7723
TOC	Manganese	Boron	Phosphorus	__Gravel
	-0.04556	-0.04423	0.04381	-0.03051
	0.7060	0.7142	0.7168	0.8006
Beryllium	__Silt_Clay	__Gravel	Calcium	Vanadium
	0.09224	0.07630	0.07023	0.04133
	0.4442	0.5271	0.5606	0.7322
Molybdenum	__Gravel	__Sand	__Silt_Clay	Vanadium
	0.15578	-0.14982	0.11445	-0.09233
	0.1945	0.2124	0.3419	0.4438
Nitrogen__Kjeldahl_total	Potassium	Selenium	pH	Magnesium
	0.05441	0.04018	-0.03777	-0.03097
	0.6522	0.7394	0.7545	0.7976
Phosphorus	TOC	pH	Antimony	Zinc
	0.04381	0.04255	0.02259	0.02133
	0.7168	0.7246	0.8517	0.8599
Silver	CEC	Beryllium	Phosphorus	__Silt_Clay
	0.10105	0.09457	0.09002	0.08791
	0.4017	0.4327	0.4553	0.4660

Nonparametric Spearman Correlations between analytes - others 12:43 Friday, May 27, 2011 2279

The CORR Procedure

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

Sodium	Chromium	Vanadium		__Gravel		Lead	
	0.11812		0.06983		0.06946		-0.02928
	0.3265		0.5628		0.5649		0.8085
Tin	Phosphorus	Mercury		Potassium		Magnesium	
	0.10145		-0.10019		0.09708		0.09701
	0.3999		0.4058		0.4206		0.4209
Calcium	Beryllium	Lead		Cobalt		Antimony	
	0.07023		0.06286		0.05441		0.03813
	0.5606		0.6025		0.6522		0.7522
Magnesium	TOC	Lead		Antimony		Nitrogen__Kjeldahl_total	
	-0.05829		-0.04948		-0.03393		-0.03097
	0.6292		0.6820		0.7788		0.7976
Potassium	Cadmium	Antimony		Lead		Nitrogen__Kjeldahl_total	
	-0.09340		0.07863		-0.06893		0.05441
	0.4385		0.5145		0.5679		0.6522

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

pH	Barium	
		0.00849
		0.9440
CEC	Thallium	
		0.00784
		0.9483
__Gravel	Nitrogen__Kjeldahl_total	
		0.02993
		0.8043
__Sand	Cobalt	
		0.01138
		0.9250
__Silt_Clay	Thallium	
		0.01487
		0.9020

Nonparametric Spearman Correlations between analytes - others 12:43 Friday, May 27, 2011 2280

The CORR Procedure

Spearman Correlation Coefficients, N = 71
Prob > |r| under H0: Rho=0

TOC	Calcium	0.00320 0.9789
Beryllium	Selenium	0.02623 0.8281
Molybdenum	pH	0.01670 0.8900
Nitrogen__Kjeldahl_total	__Gravel	0.02993 0.8043
Phosphorus	Chromium	0.01370 0.9097
Silver	Uranium	0.01649 0.8914
Sodium	Antimony	-0.01580 0.8960
Tin	pH	-0.08809 0.4651
Calcium	TOC	0.00320 0.9789
Magnesium	CEC	0.01477 0.9027
Potassium	Uranium	0.04867 0.6869

Appendix C

Dose Response Scatter Plots for Plants

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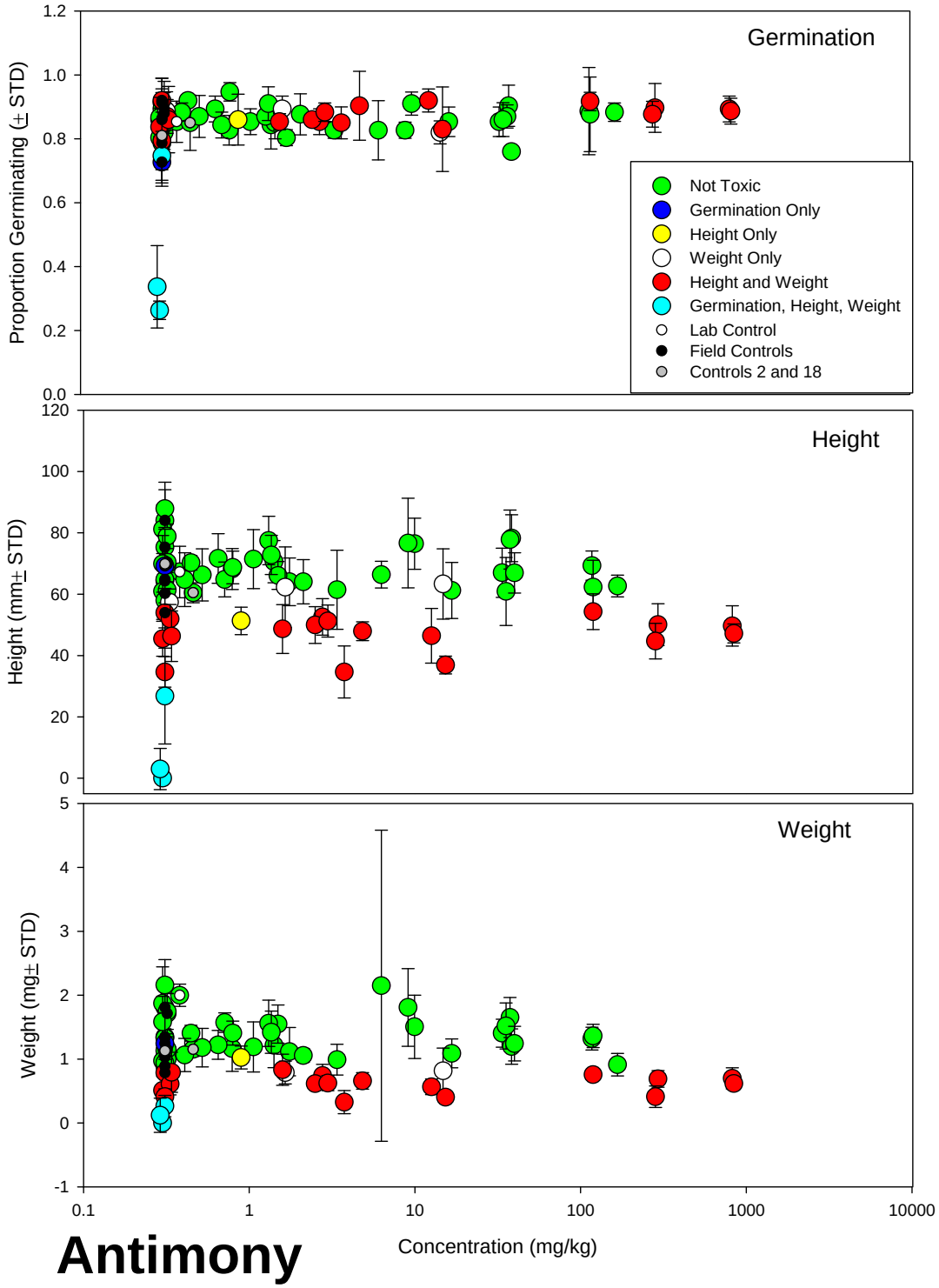


Figure C-1. Dose Response Scatter Plots for Plant Bioassays and Antimony Concentrations.

Not Toxic = Germination, height, and weight not reduced relative to the reference envelope.
Germination Only/Height Only/Weight Only = Only germination, or height, or weight reduced relative to the reference envelope.
Height and Weight = Height and weight reduced relative to the reference envelope.
Germination, Height, Weight = Germination, height, and weight all reduced relative to the reference envelope.

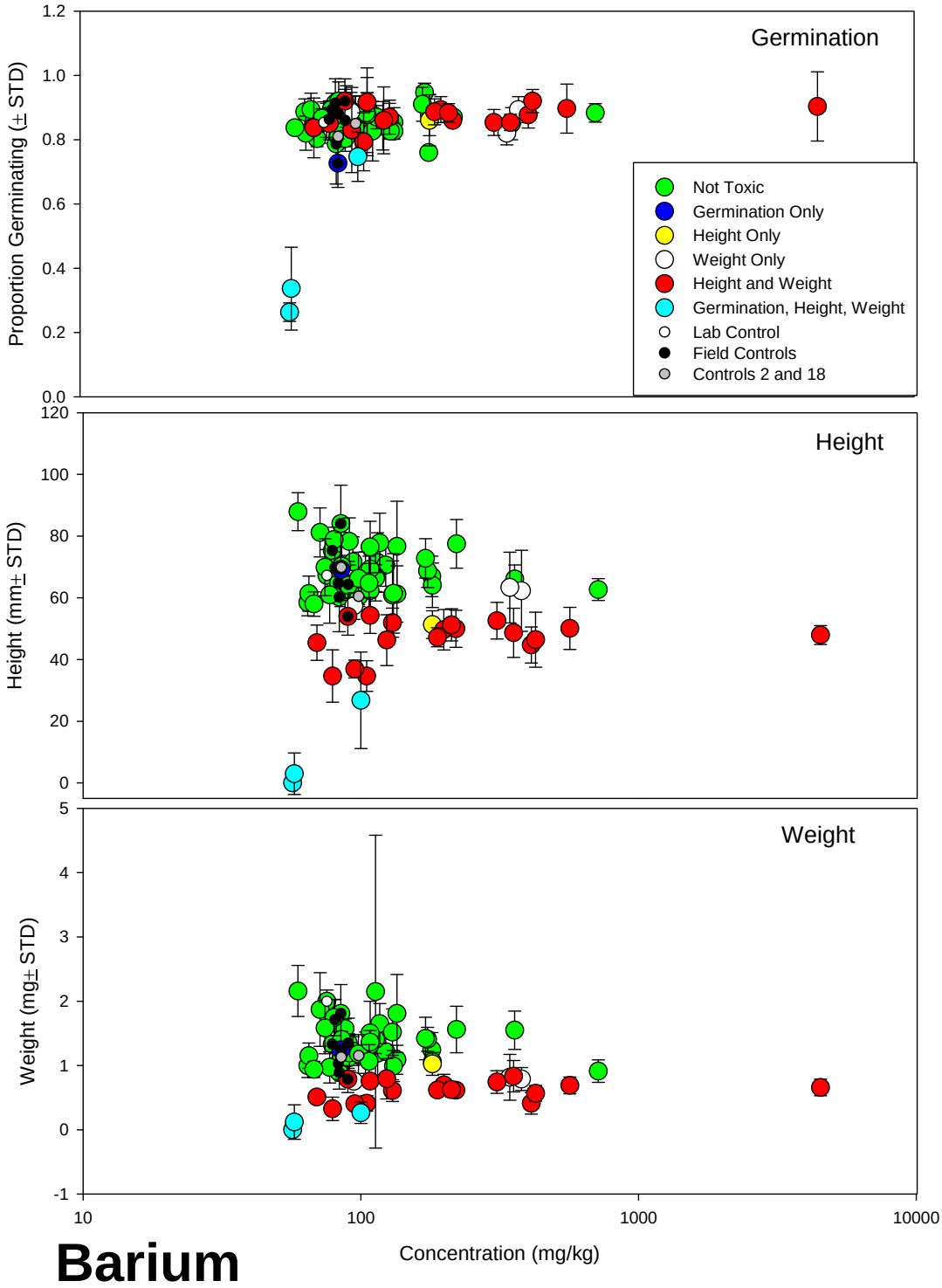
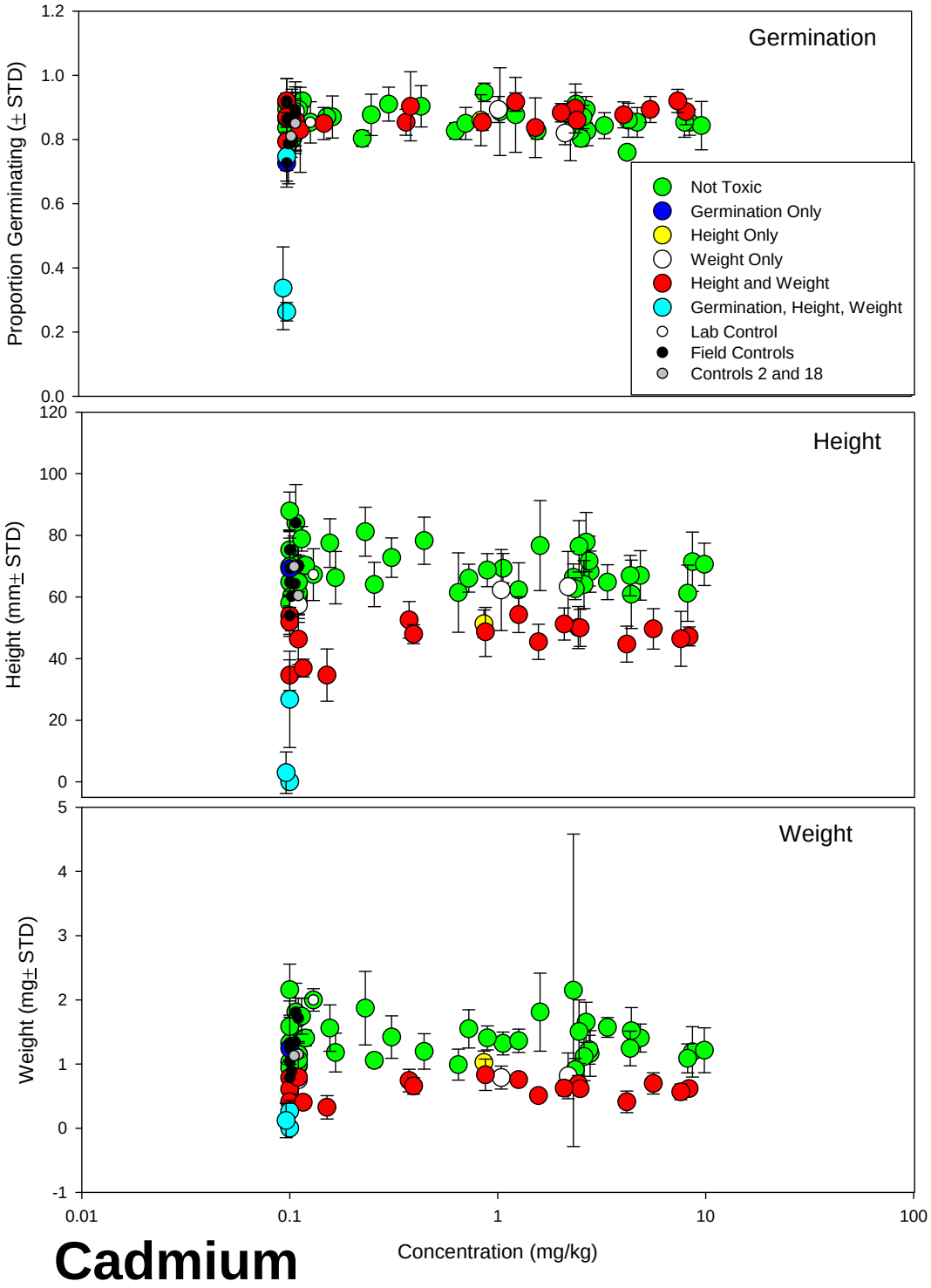


Figure C-2. Dose Response Scatter Plots for Plant Bioassays and Barium Concentrations.

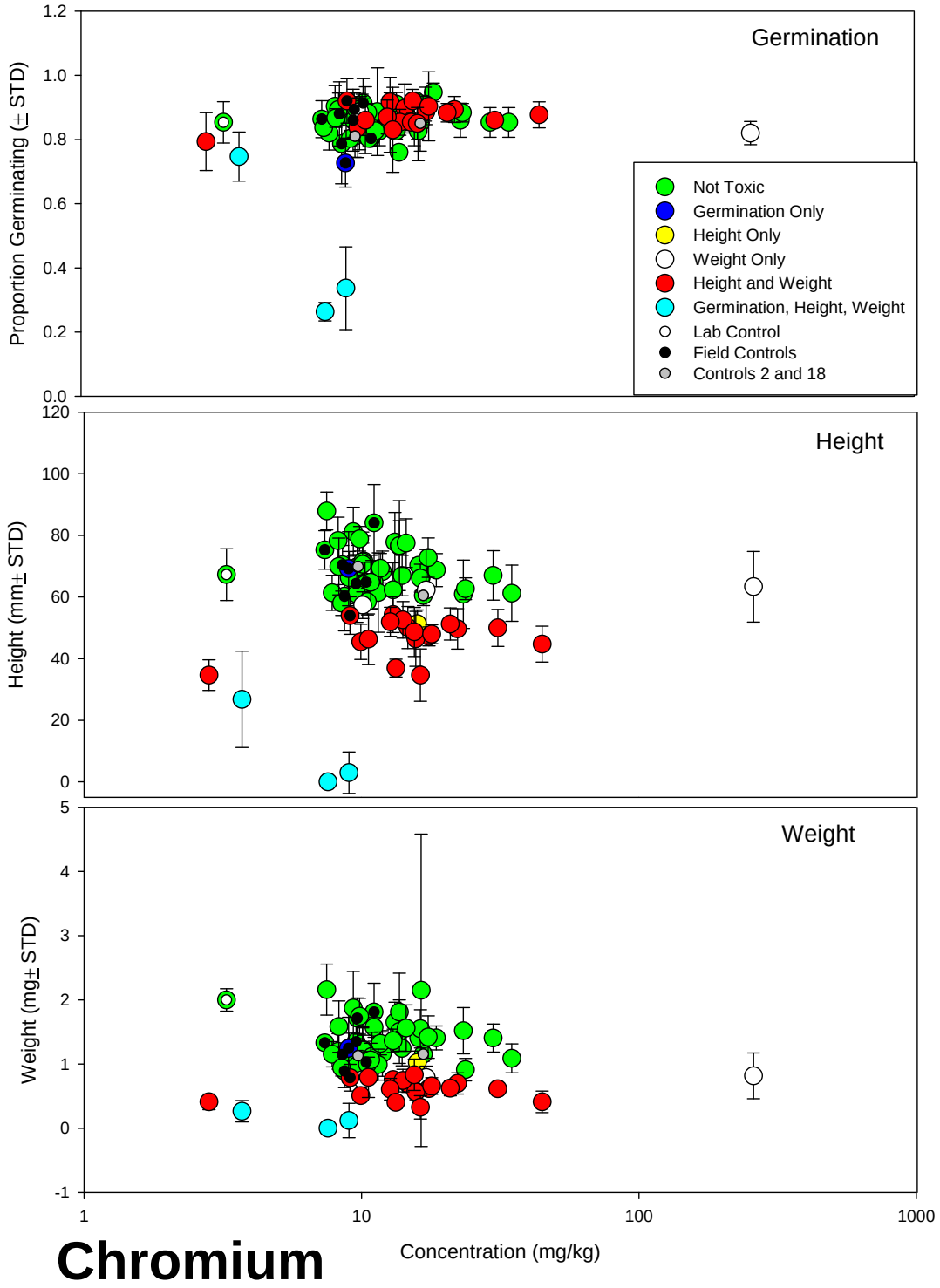
Not Toxic = Germination, height, and weight not reduced relative to the reference envelope.
Germination Only/Height Only/Weight Only = Only germination, or height, or weight reduced relative to the reference envelope.
Height and Weight = Height and weight reduced relative to the reference envelope.
Germination, Height, Weight = Germination, height, and weight all reduced relative to the reference envelope.



Cadmium

Figure C-3. Dose Response Scatter Plots for Plant Bioassays and Cadmium Concentrations.

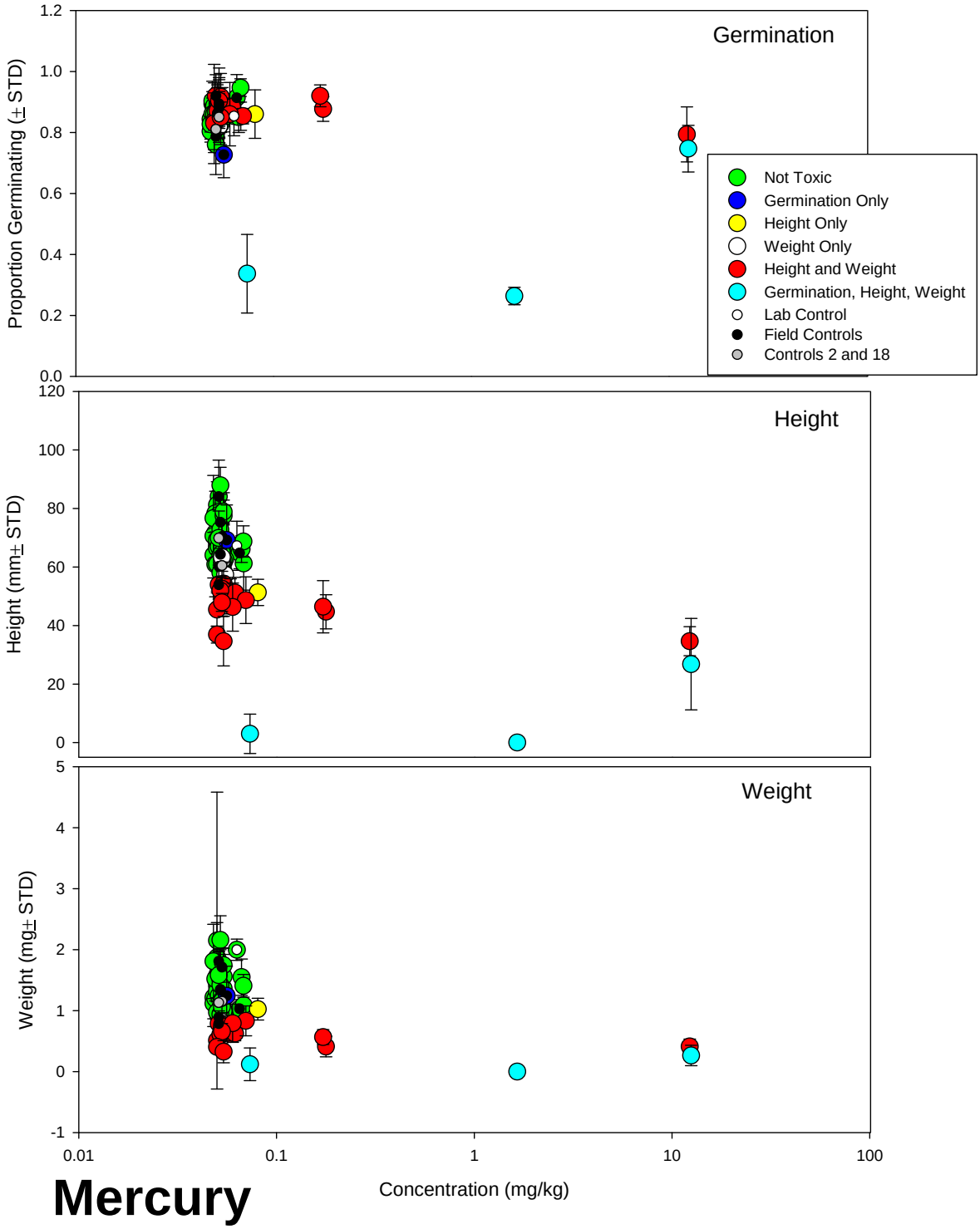
Not Toxic = Germination, height, and weight not reduced relative to the reference envelope.
Germination Only/Height Only/Weight Only = Only germination, or height, or weight reduced relative to the reference envelope.
Height and Weight = Height and weight reduced relative to the reference envelope.
Germination, Height, Weight = Germination, height, and weight all reduced relative to the reference envelope.



Chromium

Figure C-4. Dose Response Scatter Plots for Plant Bioassays and Chromium Concentrations.

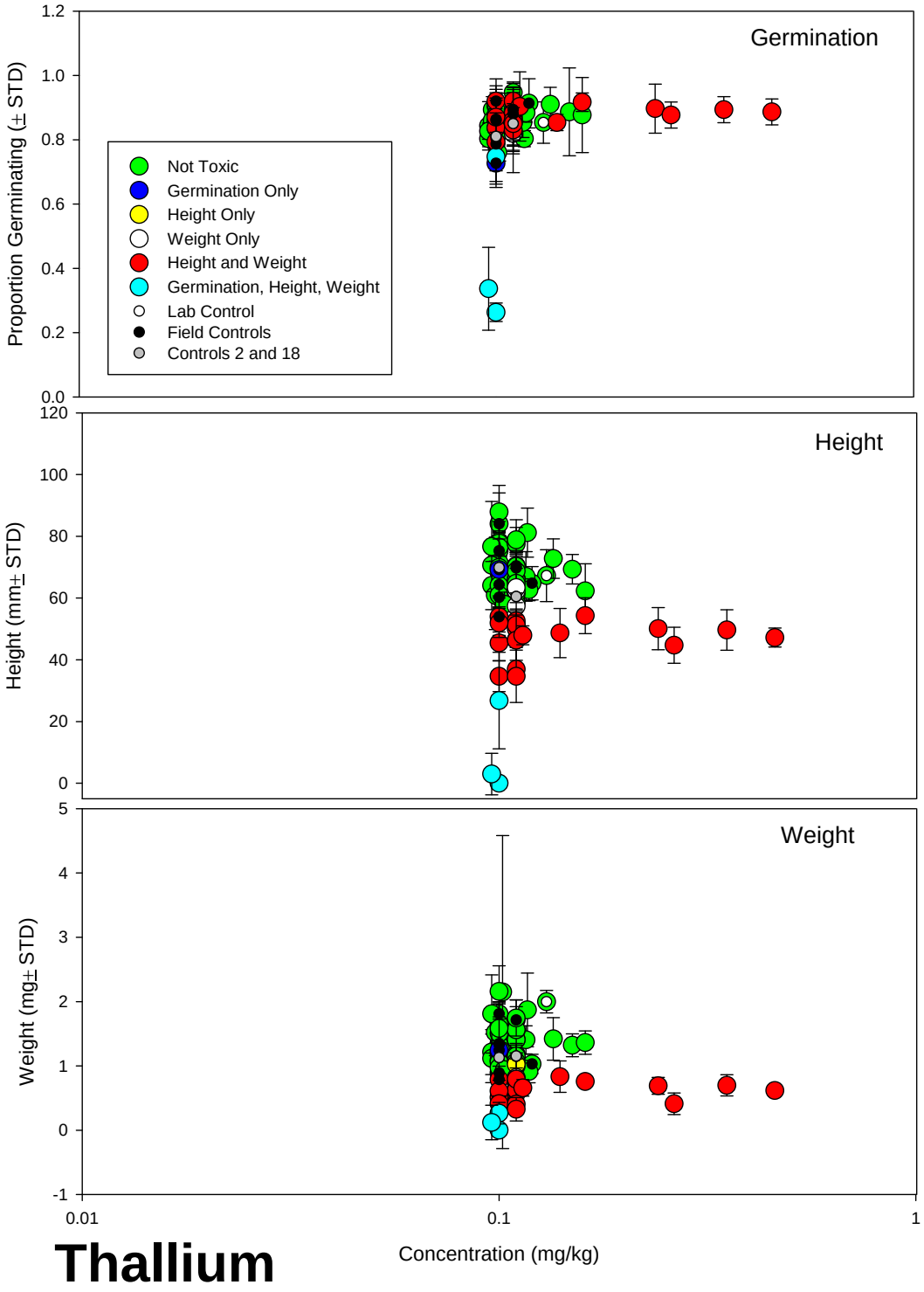
Not Toxic = Germination, height, and weight not reduced relative to the reference envelope.
Germination Only/Height Only/Weight Only = Only germination, or height, or weight reduced relative to the reference envelope.
Height and Weight = Height and weight reduced relative to the reference envelope.
Germination, Height, Weight = Germination, height, and weight all reduced relative to the reference envelope.



Mercury

Figure C-5. Dose Response Scatter Plots for Plant Bioassays and Mercury Concentrations.

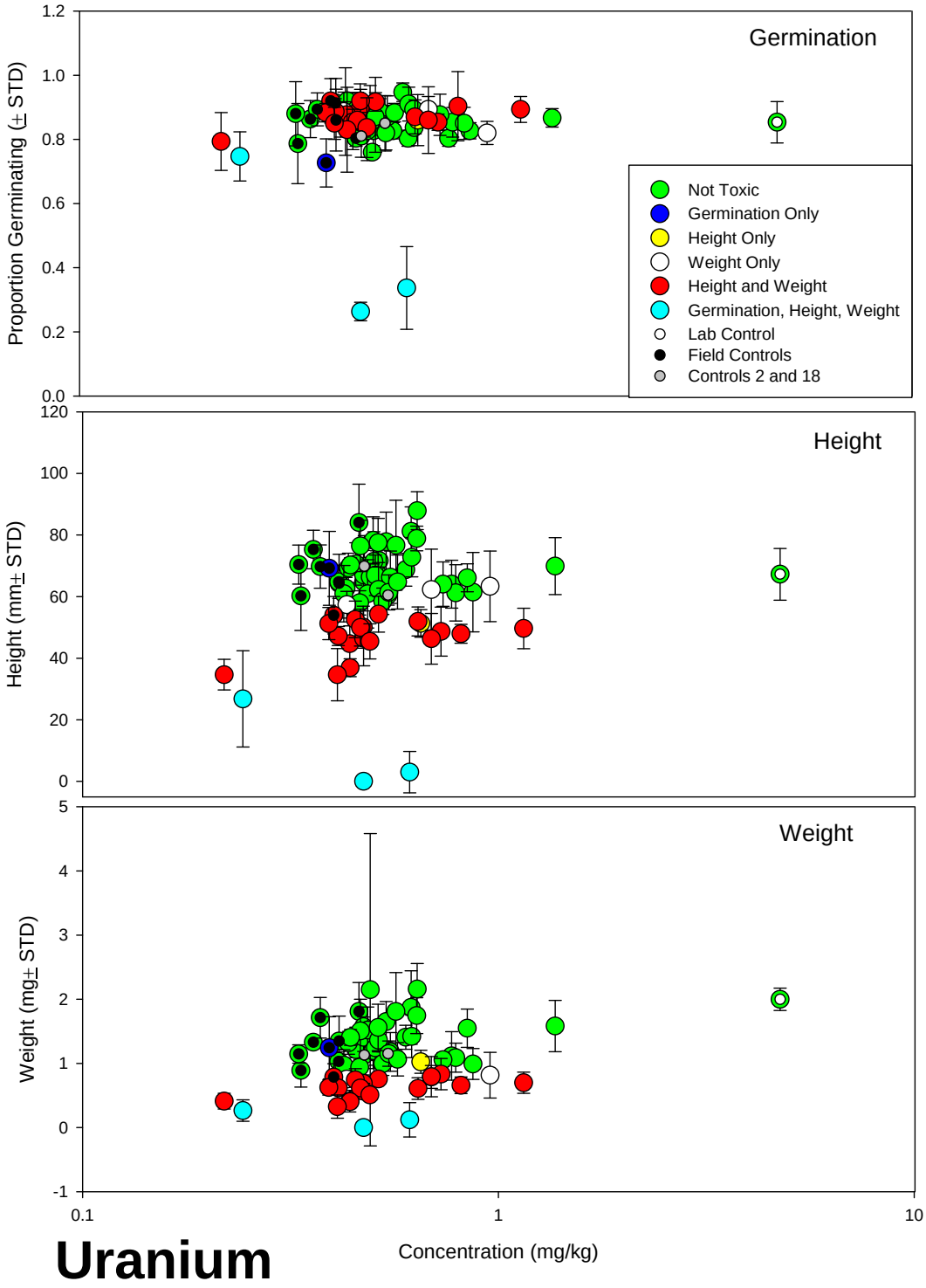
Not Toxic = Germination, height, and weight not reduced relative to the reference envelope.
Germination Only/Height Only/Weight Only = Only germination, or height, or weight reduced relative to the reference envelope.
Height and Weight = Height and weight reduced relative to the reference envelope.
Germination, Height, Weight = Germination, height, and weight all reduced relative to the reference envelope.



Thallium

Figure C-6. Dose Response Scatter Plots for Plant Bioassays and Thallium Concentrations.

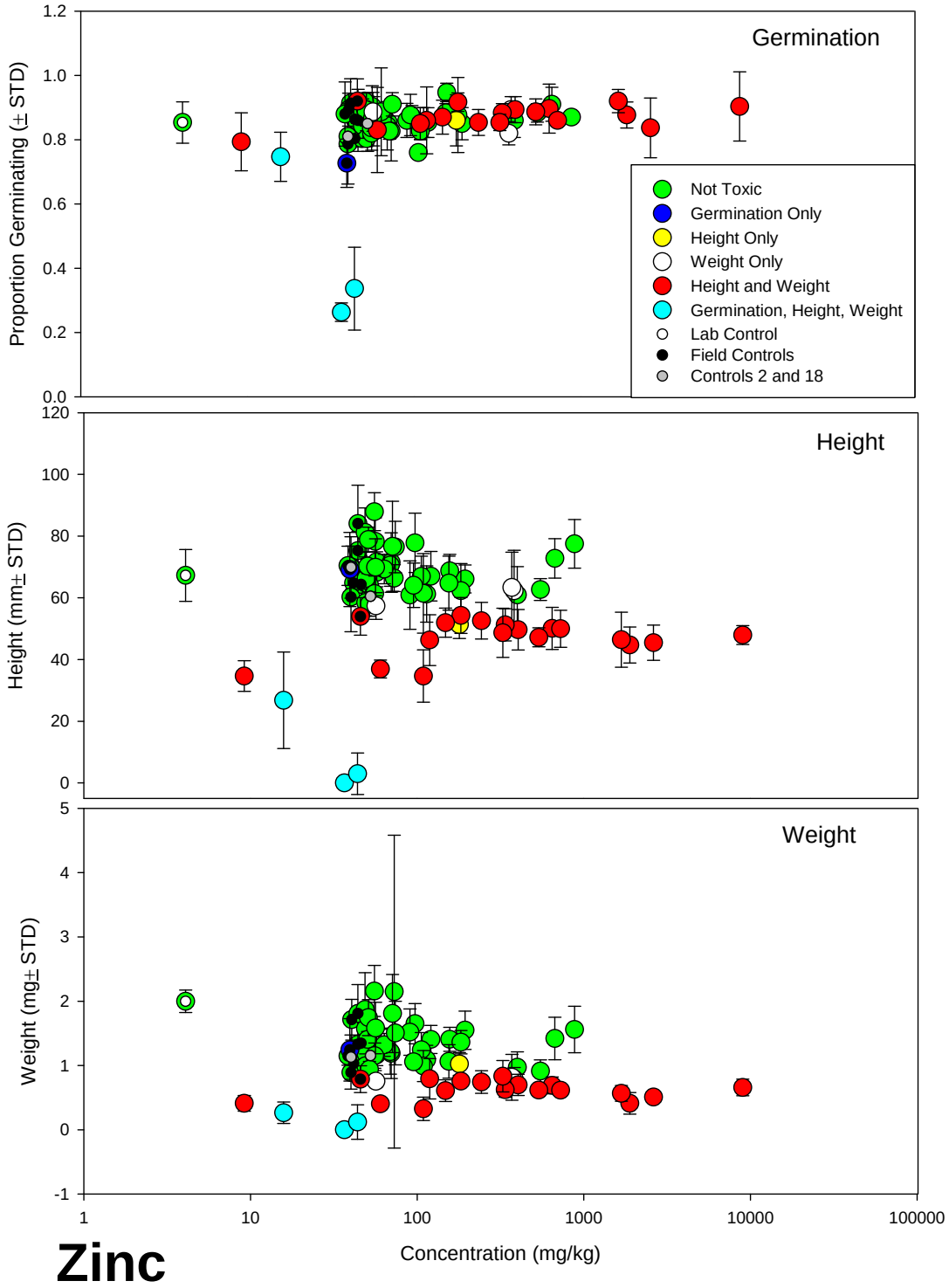
Not Toxic = Germination, height, and weight not reduced relative to the reference envelope.
Germination Only/Height Only/Weight Only = Only germination, or height, or weight reduced relative to the reference envelope.
Height and Weight = Height and weight reduced relative to the reference envelope.
Germination, Height, Weight = Germination, height, and weight all reduced relative to the reference envelope.



Uranium

Figure C-7. Dose Response Scatter Plots for Plant Bioassays and Uranium Concentrations.

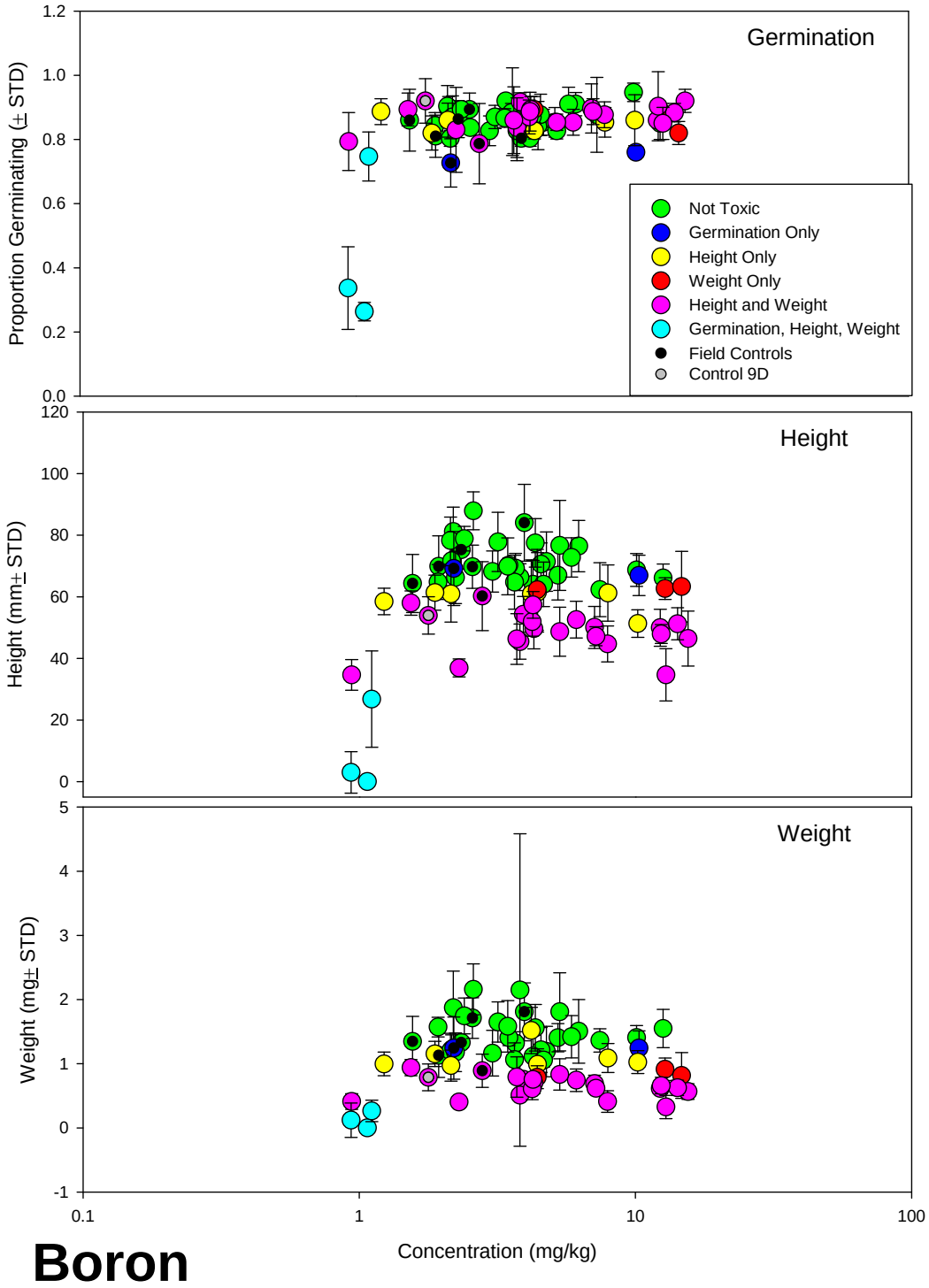
Not Toxic = Germination, height, and weight not reduced relative to the reference envelope.
Germination Only/Height Only/Weight Only = Only germination, or height, or weight reduced relative to the reference envelope.
Height and Weight = Height and weight reduced relative to the reference envelope.
Germination, Height, Weight = Germination, height, and weight all reduced relative to the reference envelope.



Zinc

Figure C-8. Dose Response Scatter Plots for Plant Bioassays and Zinc Concentrations.

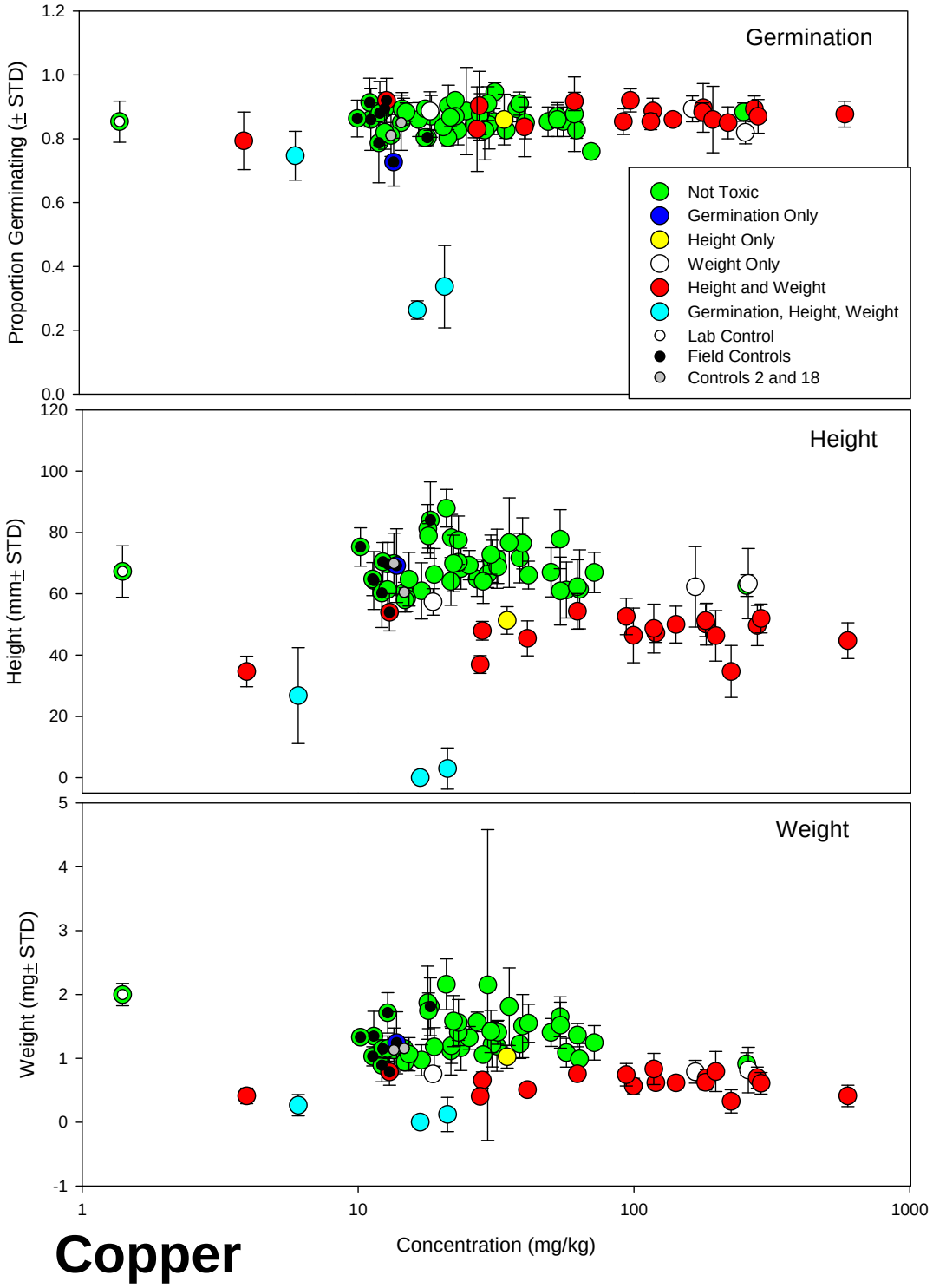
Not Toxic = Germination, height, and weight not reduced relative to the reference envelope.
Germination Only/Height Only/Weight Only = Only germination, or height, or weight reduced relative to the reference envelope.
Height and Weight = Height and weight reduced relative to the reference envelope.
Germination, Height, Weight = Germination, height, and weight all reduced relative to the reference envelope.



Boron

Figure C-9. Dose Response Scatter Plots for Plant Bioassays and Boron Concentrations.

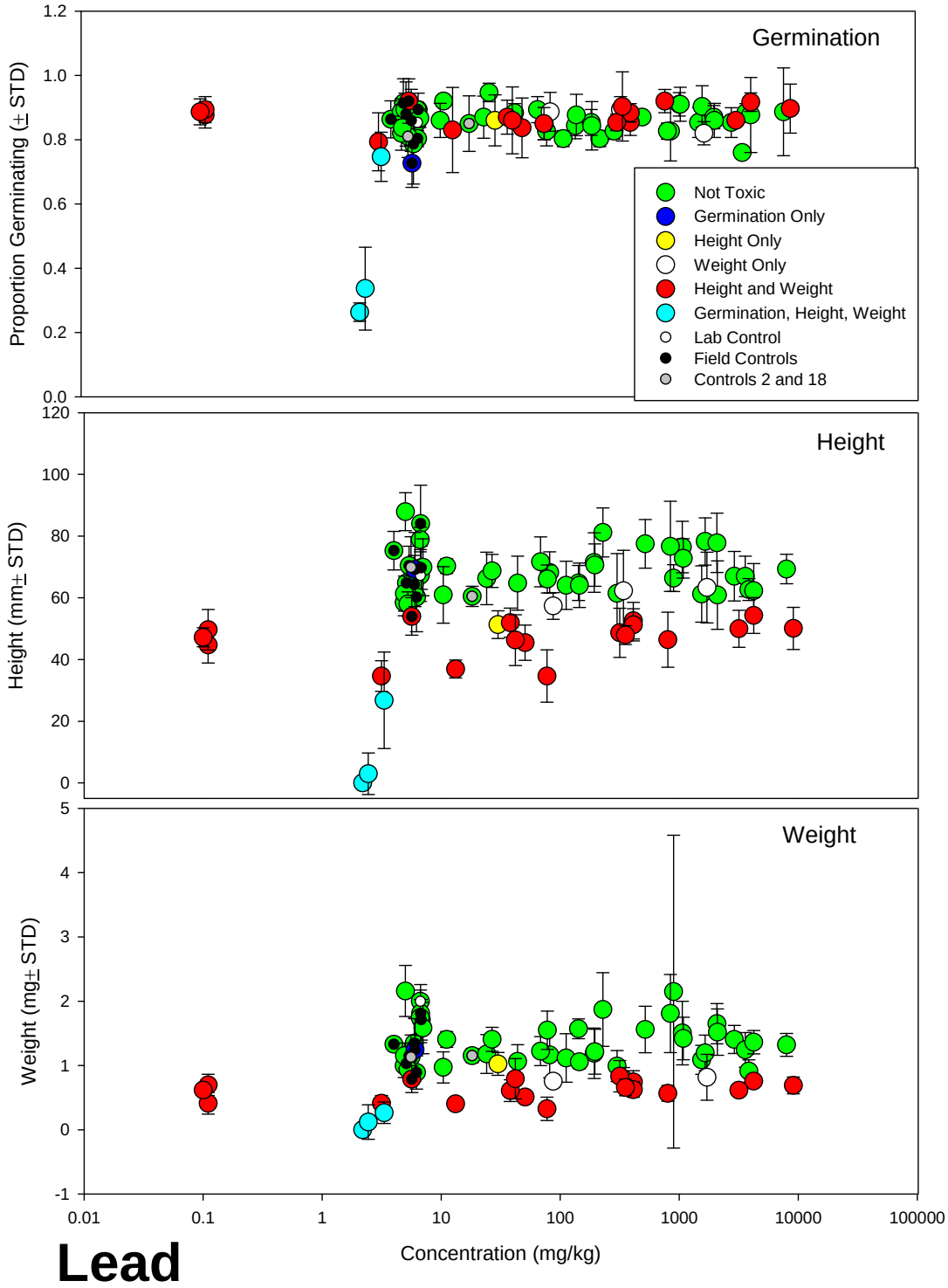
Not Toxic = Germination, height, and weight not reduced relative to the reference envelope.
Germination Only/Height Only/Weight Only = Only germination, or height, or weight reduced relative to the reference envelope.
Height and Weight = Height and weight reduced relative to the reference envelope.
Germination, Height, Weight = Germination, height, and weight all reduced relative to the reference envelope.



Copper

Figure C-10. Dose Response Scatter Plots for Plant Bioassays and Copper Concentrations.

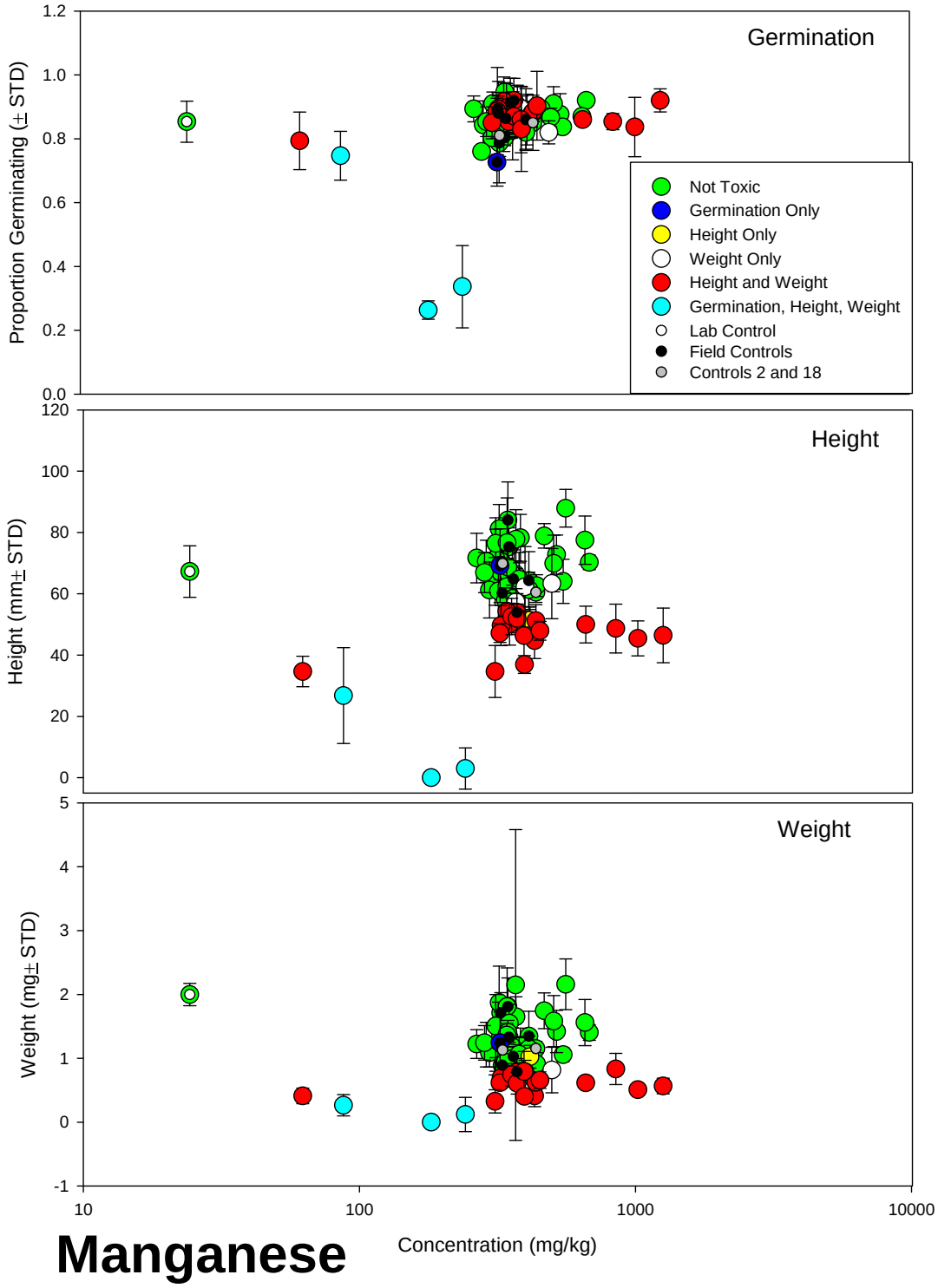
Not Toxic = Germination, height, and weight not reduced relative to the reference envelope.
Germination Only/Height Only/Weight Only = Only germination, or height, or weight reduced relative to the reference envelope.
Height and Weight = Height and weight reduced relative to the reference envelope.
Germination, Height, Weight = Germination, height, and weight all reduced relative to the reference envelope.



Lead

Figure C-11. Dose Response Scatter Plots for Plant Bioassays and Lead Concentrations.

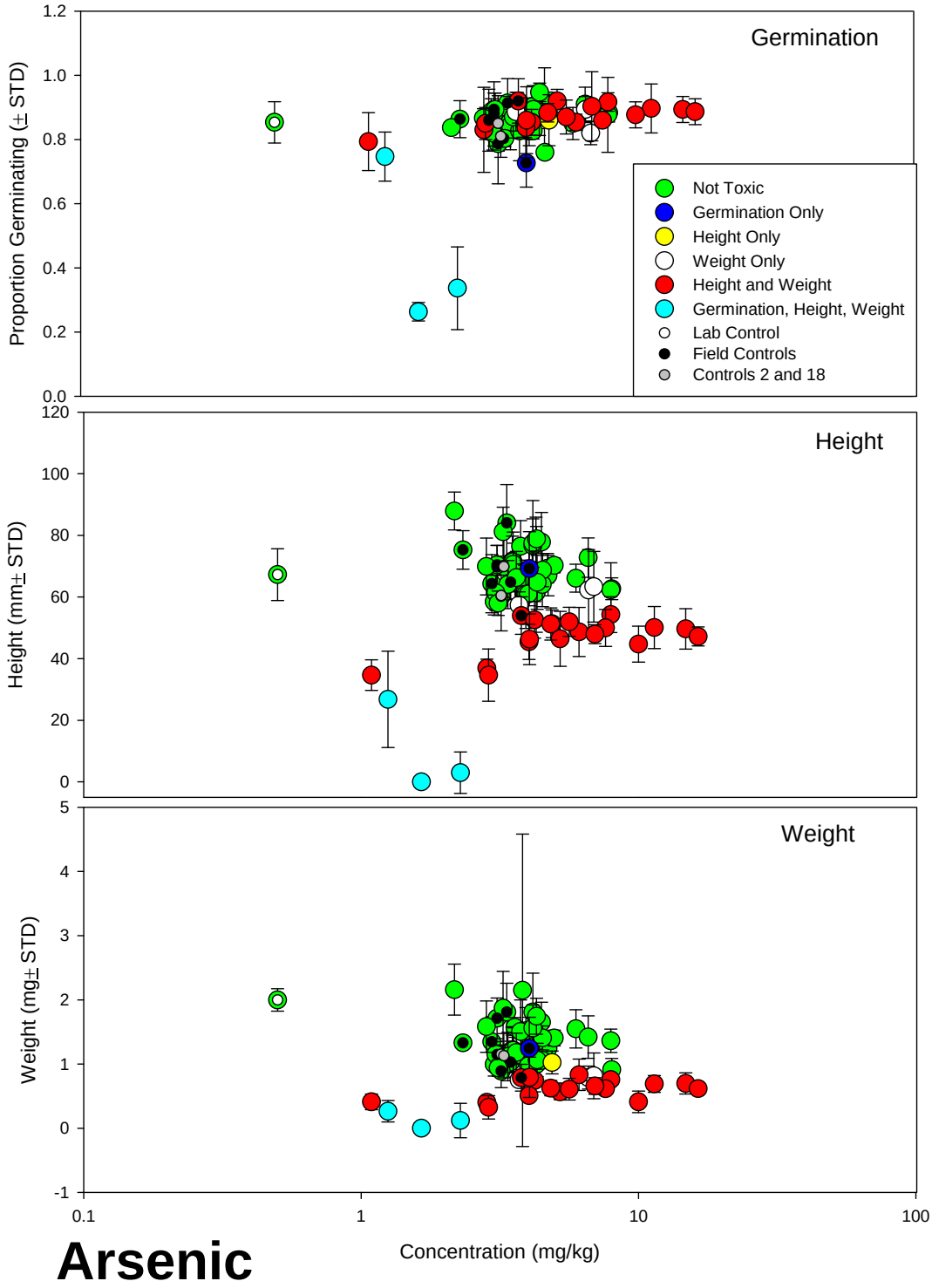
Not Toxic = Germination, height, and weight not reduced relative to the reference envelope.
Germination Only/Height Only/Weight Only = Only germination, or height, or weight reduced relative to the reference envelope.
Height and Weight = Height and weight reduced relative to the reference envelope.
Germination, Height, Weight = Germination, height, and weight all reduced relative to the reference envelope.



Manganese

Figure C-12. Dose Response Scatter Plots for Plant Bioassays and Manganese Concentrations.

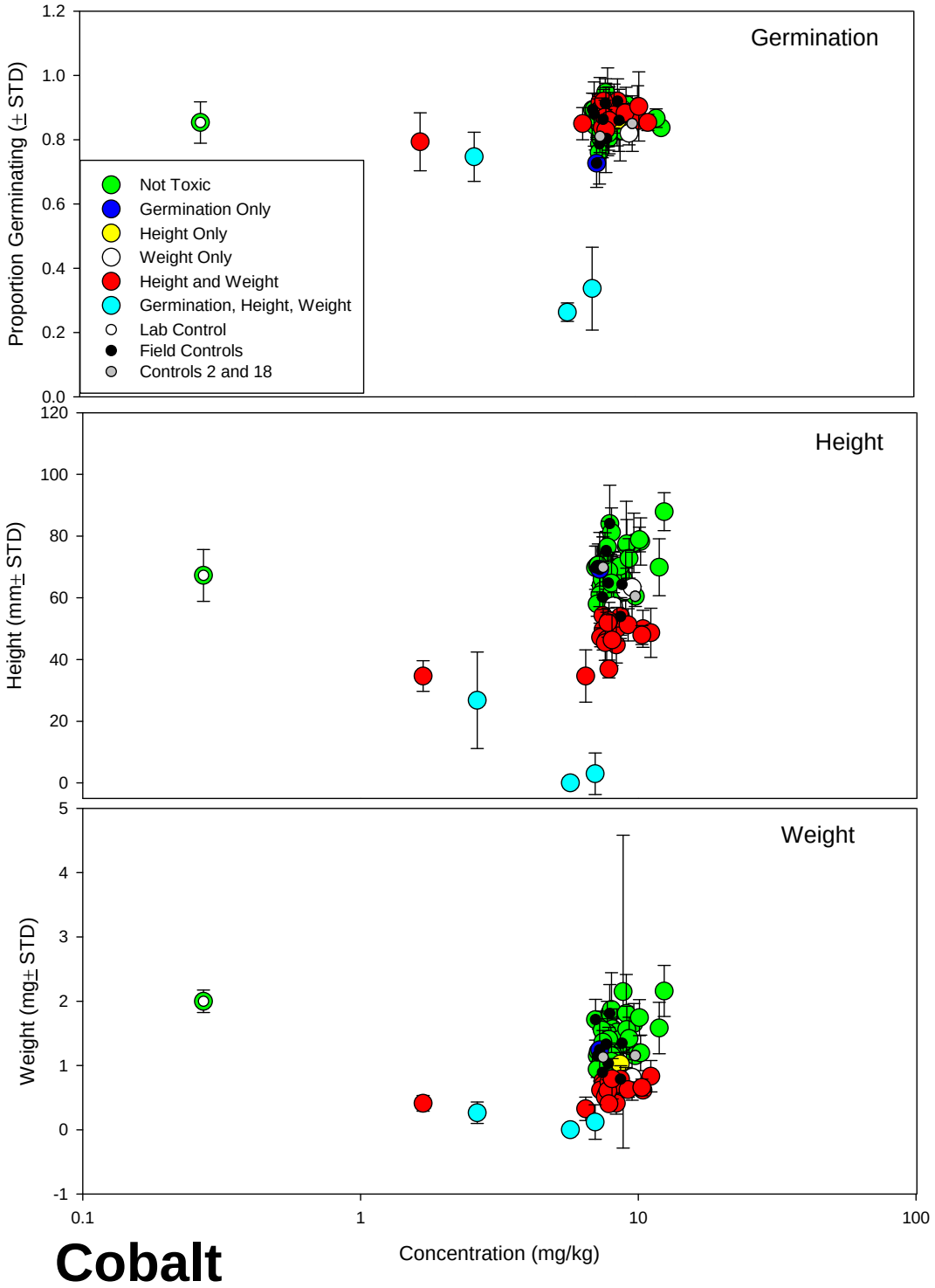
Not Toxic = Germination, height, and weight not reduced relative to the reference envelope.
Germination Only/Height Only/Weight Only = Only germination, or height, or weight reduced relative to the reference envelope.
Height and Weight = Height and weight reduced relative to the reference envelope.
Germination, Height, Weight = Germination, height, and weight all reduced relative to the reference envelope.



Arsenic

Figure C-13. Dose Response Scatter Plots for Plant Bioassays and Arsenic Concentrations.

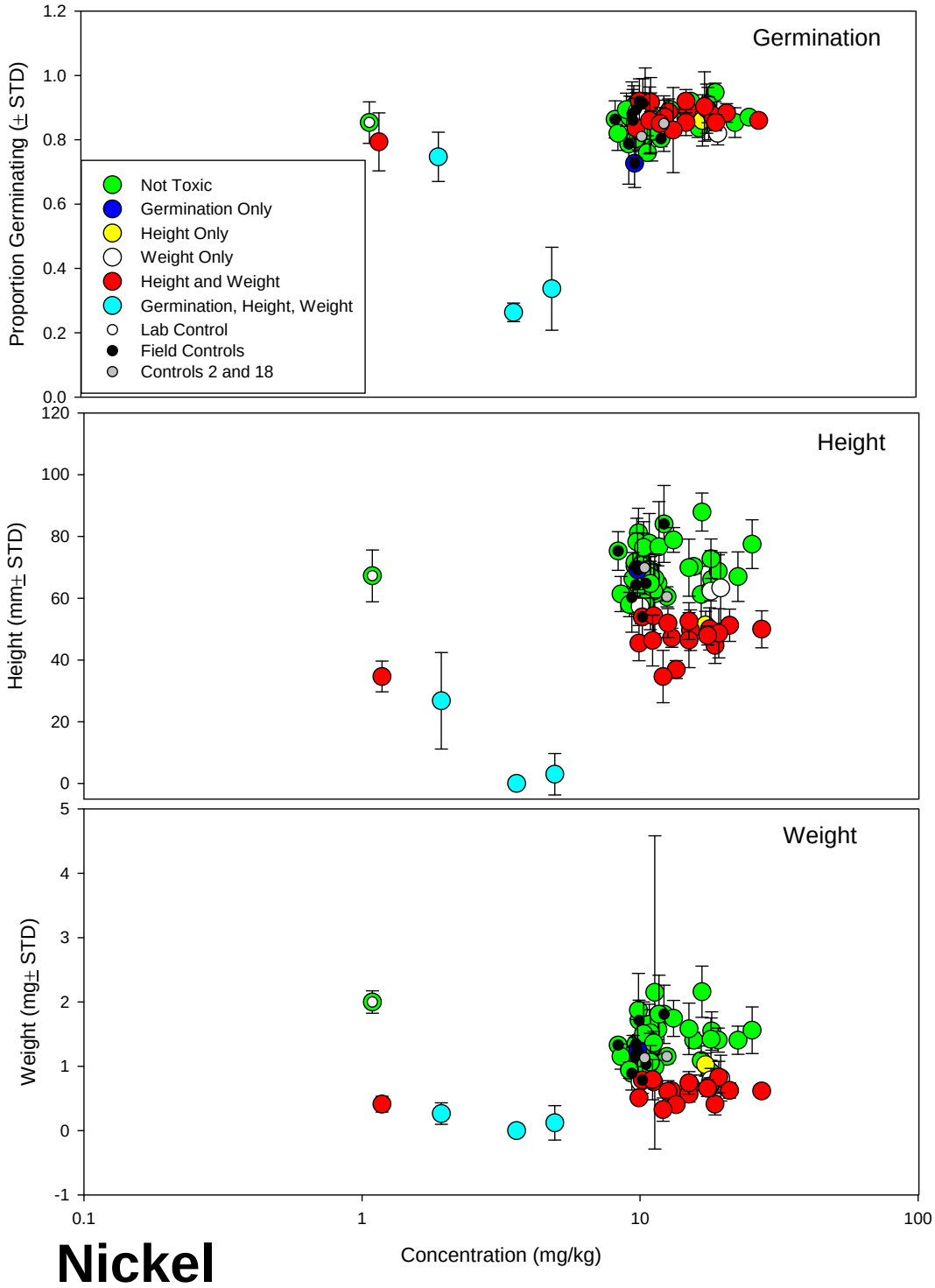
Not Toxic = Germination, height, and weight not reduced relative to the reference envelope.
Germination Only/Height Only/Weight Only = Only germination, or height, or weight reduced relative to the reference envelope.
Height and Weight = Height and weight reduced relative to the reference envelope.
Germination, Height, Weight = Germination, height, and weight all reduced relative to the reference envelope.



Cobalt

Figure C-14. Dose Response Scatter Plots for Plant Bioassays and Cobalt Concentrations.

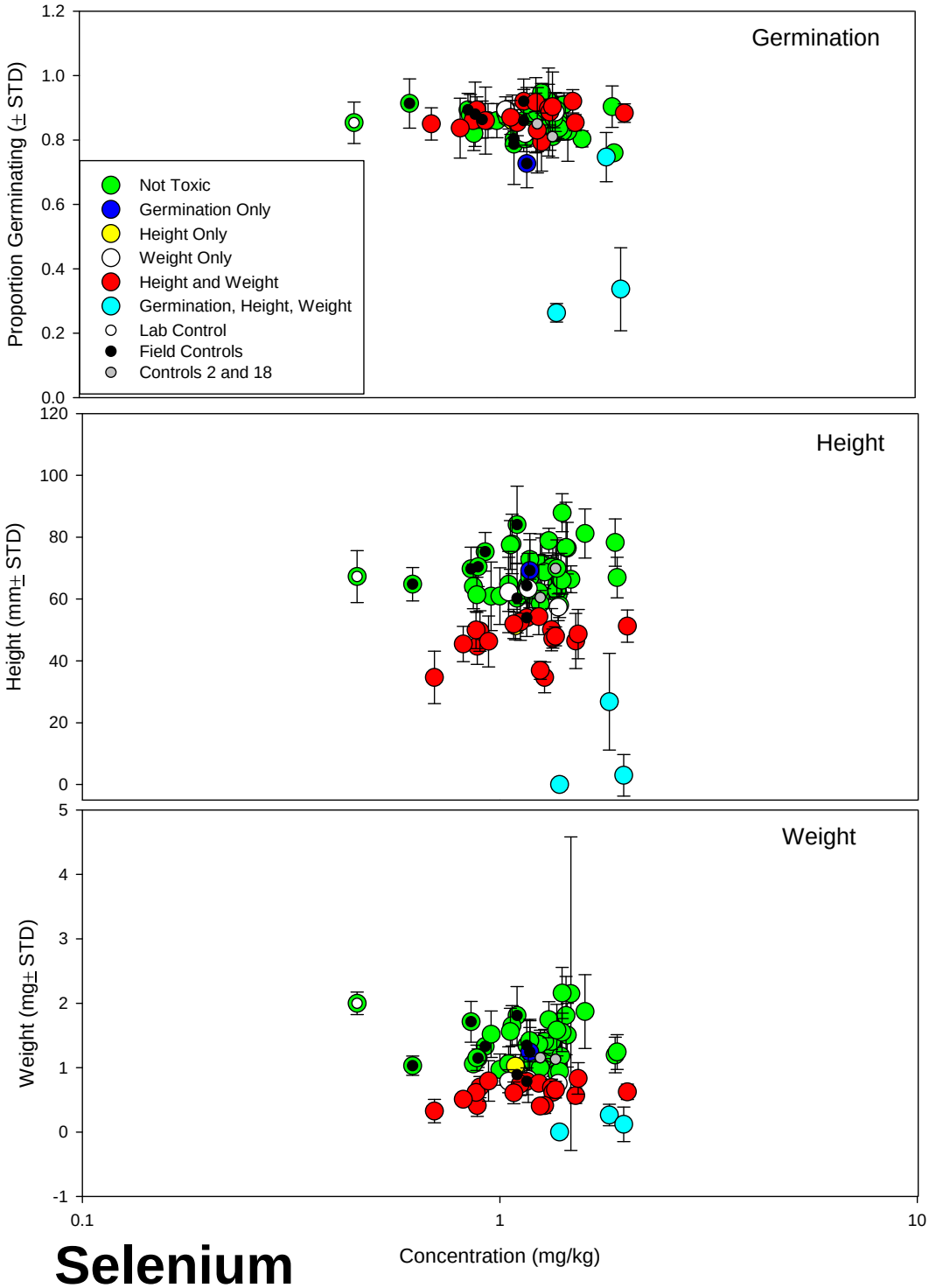
Not Toxic = Germination, height, and weight not reduced relative to the reference envelope.
Germination Only/Height Only/Weight Only = Only germination, or height, or weight reduced relative to the reference envelope.
Height and Weight = Height and weight reduced relative to the reference envelope.
Germination, Height, Weight = Germination, height, and weight all reduced relative to the reference envelope.



Nickel

Figure C-15. Dose Response Scatter Plots for Plant Bioassays and Nickel Concentrations.

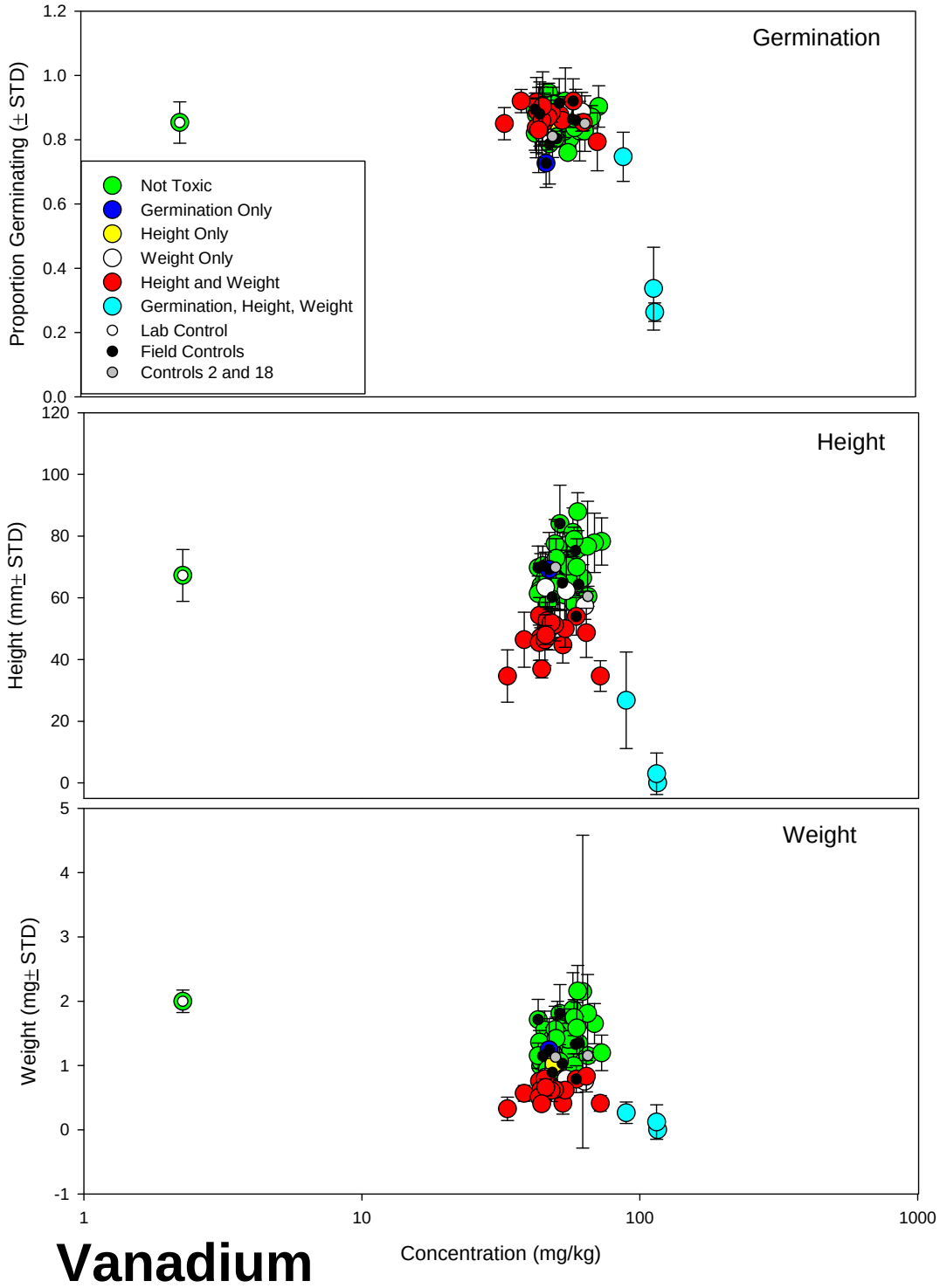
Not Toxic = Germination, height, and weight not reduced relative to the reference envelope.
Germination Only/Height Only/Weight Only = Only germination, or height, or weight reduced relative to the reference envelope.
Height and Weight = Height and weight reduced relative to the reference envelope.
Germination, Height, Weight = Germination, height, and weight all reduced relative to the reference envelope.



Selenium

Figure C-16. Dose Response Scatter Plots for Plant Bioassays and Selenium Concentrations.

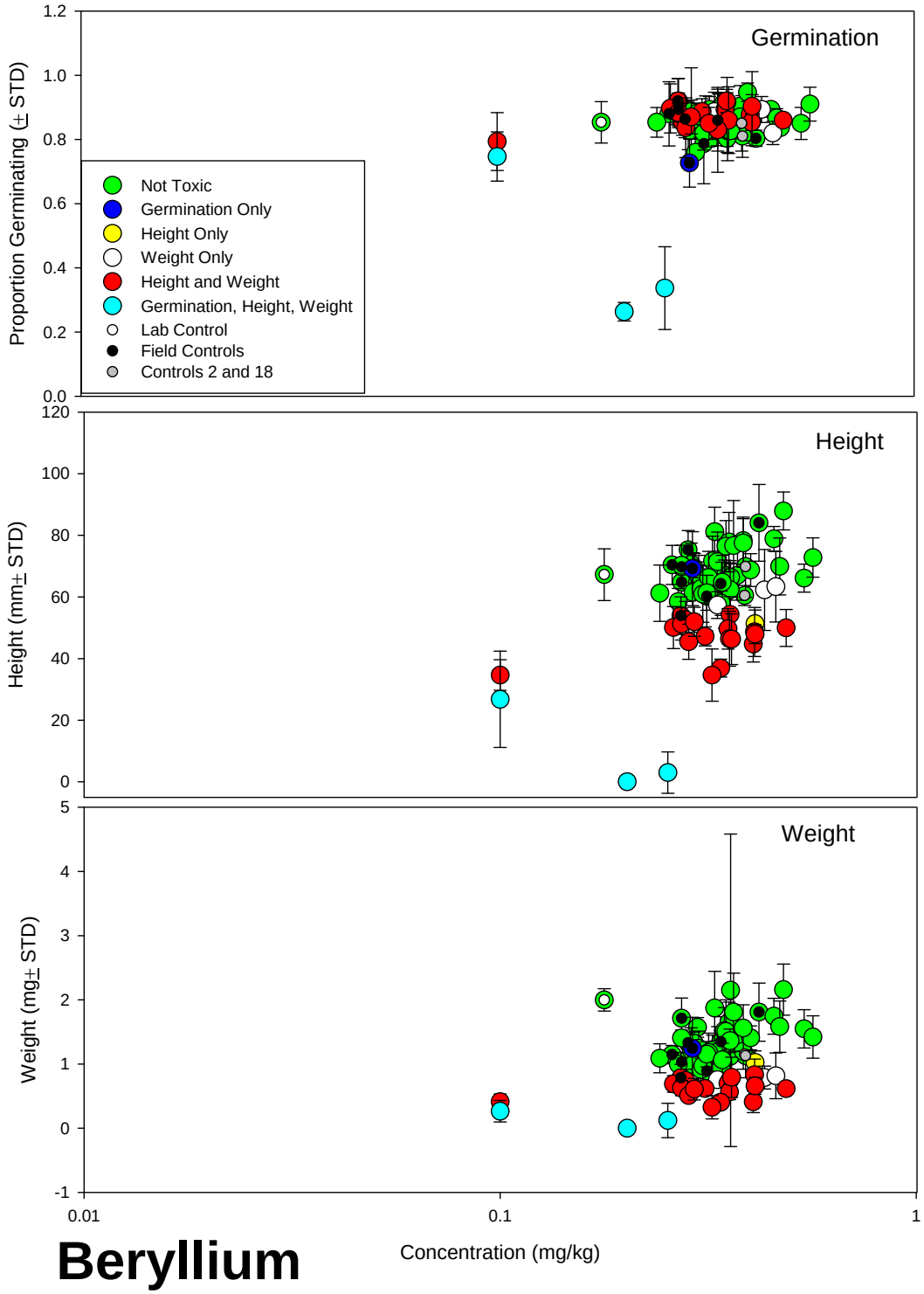
Not Toxic = Germination, height, and weight not reduced relative to the reference envelope.
Germination Only/Height Only/Weight Only = Only germination, or height, or weight reduced relative to the reference envelope.
Height and Weight = Height and weight reduced relative to the reference envelope.
Germination, Height, Weight = Germination, height, and weight all reduced relative to the reference envelope.



Vanadium

Figure C-17. Dose Response Scatter Plots for Plant Bioassays and Vanadium Concentrations.

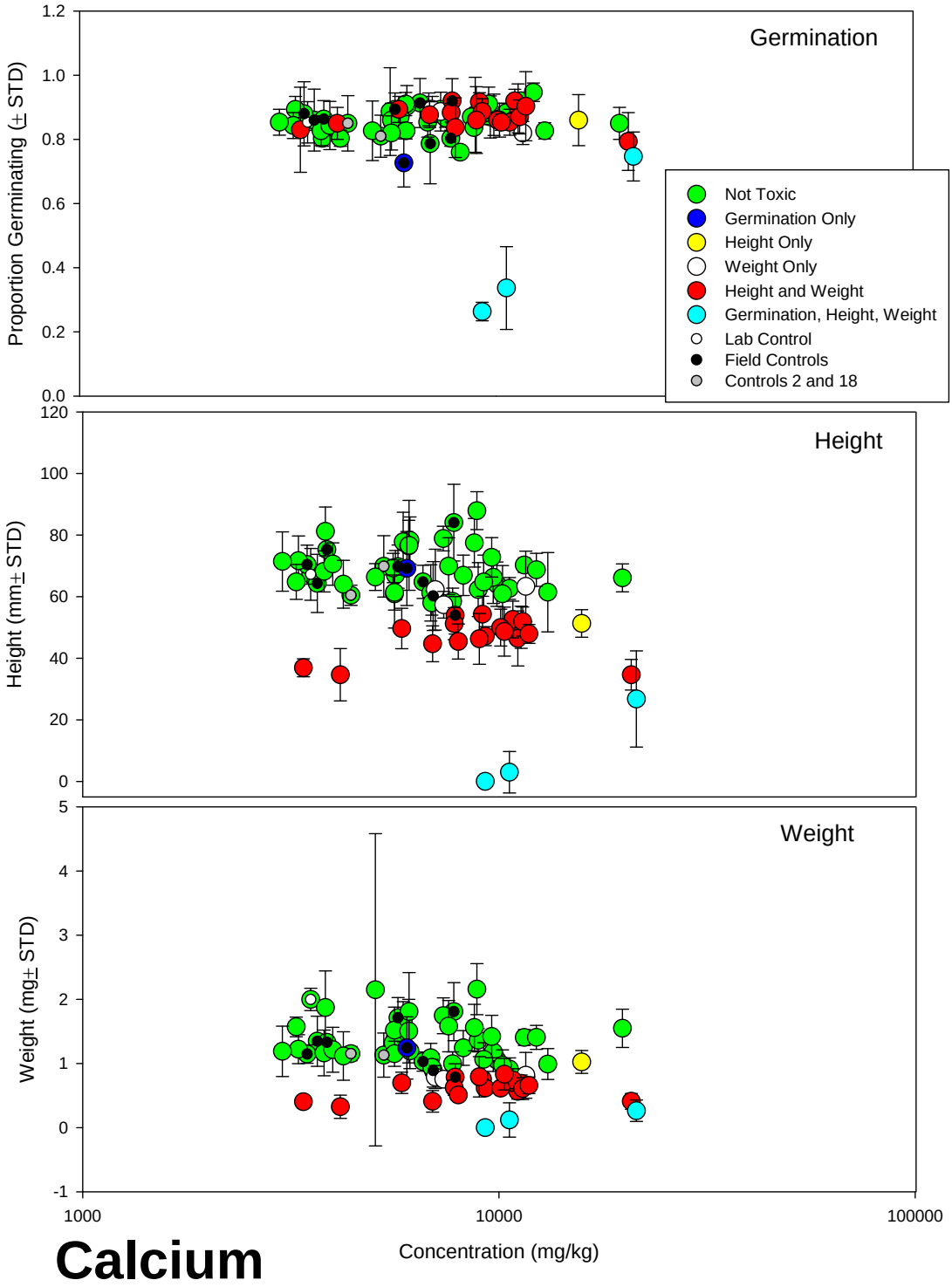
Not Toxic = Germination, height, and weight not reduced relative to the reference envelope.
Germination Only/Height Only/Weight Only = Only germination, or height, or weight reduced relative to the reference envelope.
Height and Weight = Height and weight reduced relative to the reference envelope.
Germination, Height, Weight = Germination, height, and weight all reduced relative to the reference envelope.



Beryllium

Figure C-18. Dose Response Scatter Plots for Plant Bioassays and Beryllium Concentrations.

Not Toxic = Germination, height, and weight not reduced relative to the reference envelope.
Germination Only/Height Only/Weight Only = Only germination, or height, or weight reduced relative to the reference envelope.
Height and Weight = Height and weight reduced relative to the reference envelope.
Germination, Height, Weight = Germination, height, and weight all reduced relative to the reference envelope.



Calcium

Figure C-19. Dose Response Scatter Plots for Plant Bioassays and Calcium Concentrations.

Not Toxic = Germination, height, and weight not reduced relative to the reference envelope.
Germination Only/Height Only/Weight Only = Only germination, or height, or weight reduced relative to the reference envelope.
Height and Weight = Height and weight reduced relative to the reference envelope.
Germination, Height, Weight = Germination, height, and weight all reduced relative to the reference envelope.

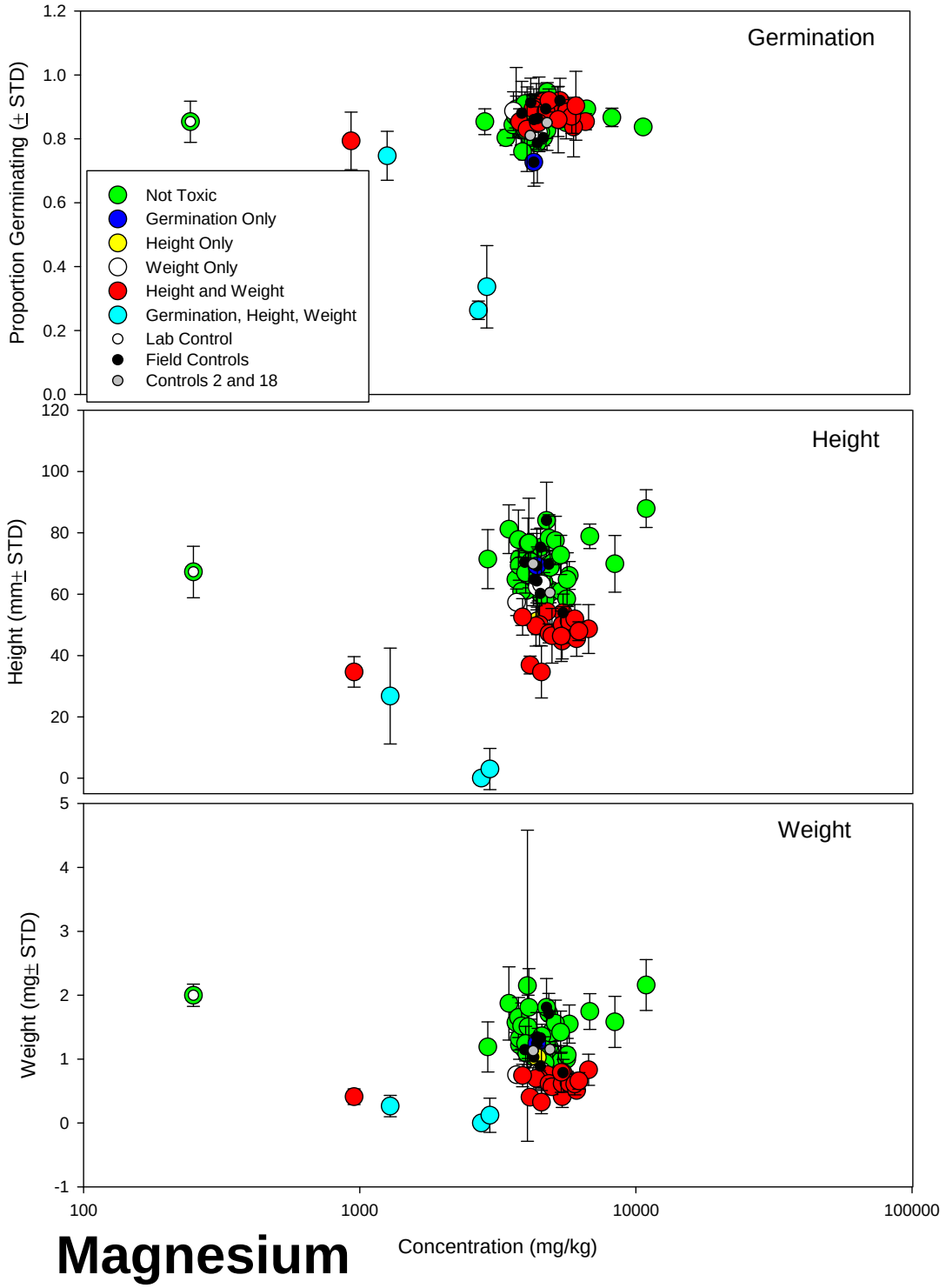
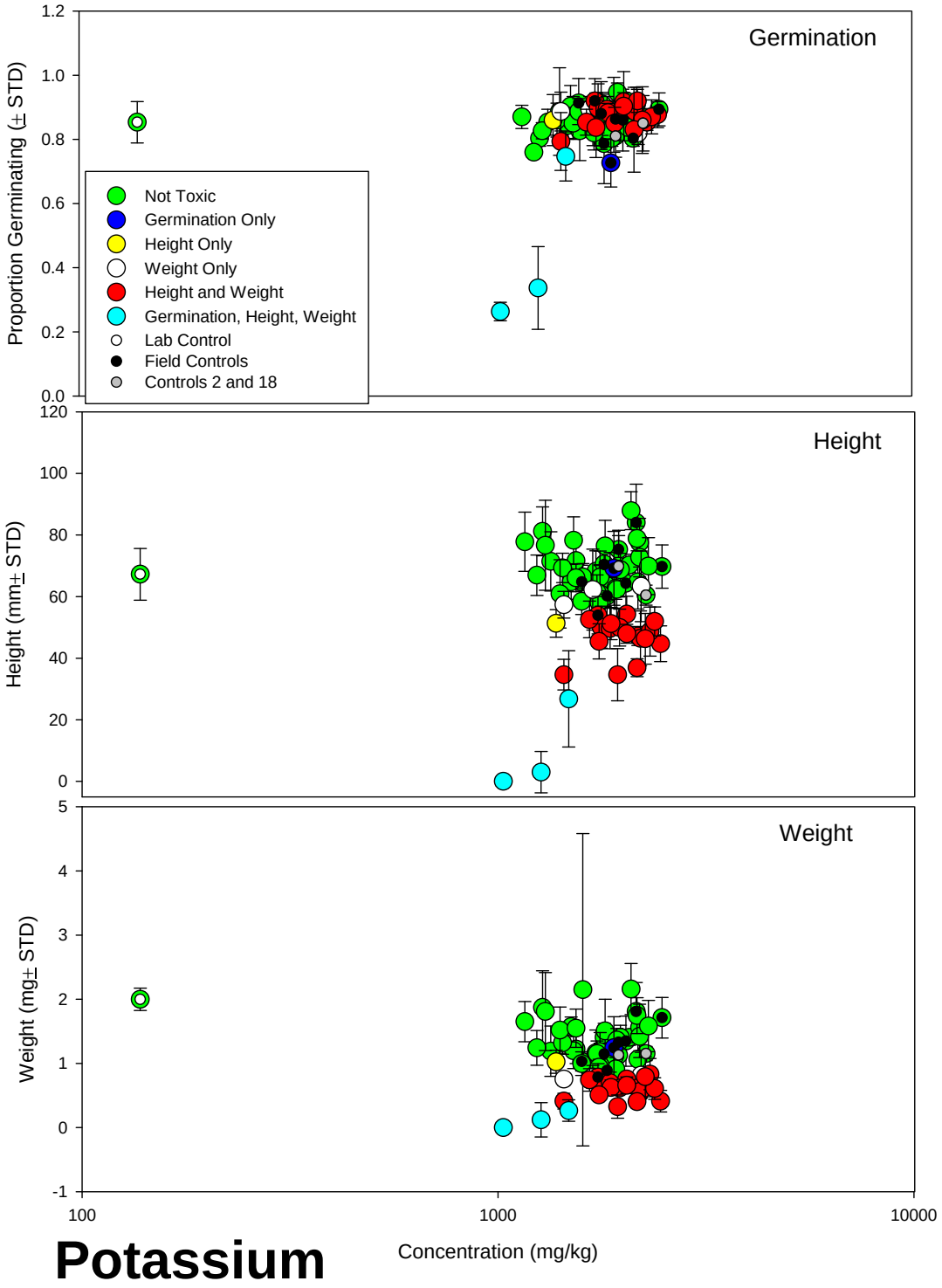


Figure C-20. Dose Response Scatter Plots for Plant Bioassays and Magnesium Concentrations.

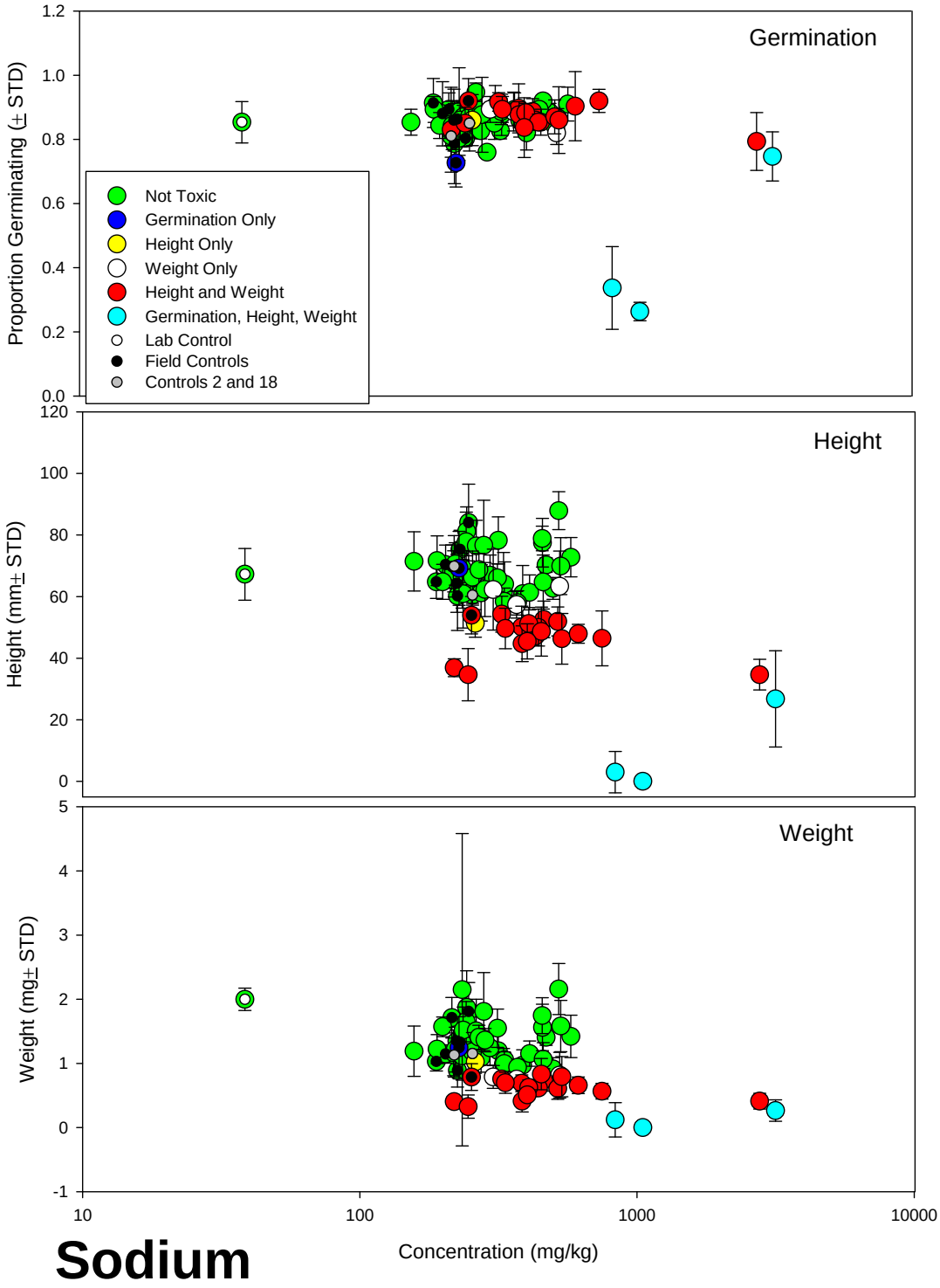
Not Toxic = Germination, height, and weight not reduced relative to the reference envelope.
Germination Only/Height Only/Weight Only = Only germination, or height, or weight reduced relative to the reference envelope.
Height and Weight = Height and weight reduced relative to the reference envelope.
Germination, Height, Weight = Germination, height, and weight all reduced relative to the reference envelope.



Potassium

Figure C-21. Dose Response Scatter Plots for Plant Bioassays and Potassium Concentrations.

Not Toxic = Germination, height, and weight not reduced relative to the reference envelope.
Germination Only/Height Only/Weight Only = Only germination, or height, or weight reduced relative to the reference envelope.
Height and Weight = Height and weight reduced relative to the reference envelope.
Germination, Height, Weight = Germination, height, and weight all reduced relative to the reference envelope.



Sodium

Figure C-22. Dose Response Scatter Plots for Plant Bioassays and Sodium Concentrations.

Not Toxic = Germination, height, and weight not reduced relative to the reference envelope.
Germination Only/Height Only/Weight Only = Only germination, or height, or weight reduced relative to the reference envelope.
Height and Weight = Height and weight reduced relative to the reference envelope.
Germination, Height, Weight = Germination, height, and weight all reduced relative to the reference envelope.

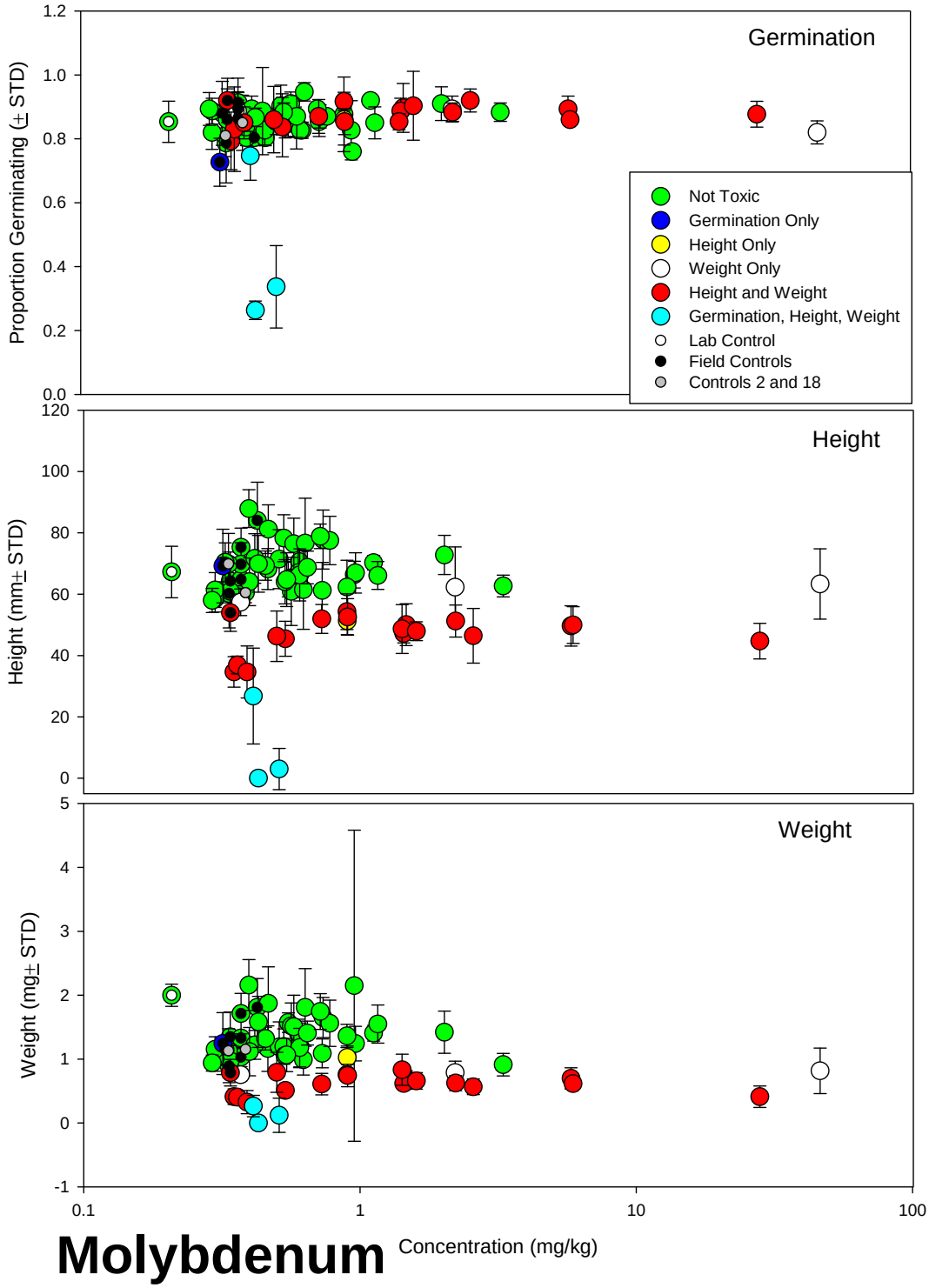
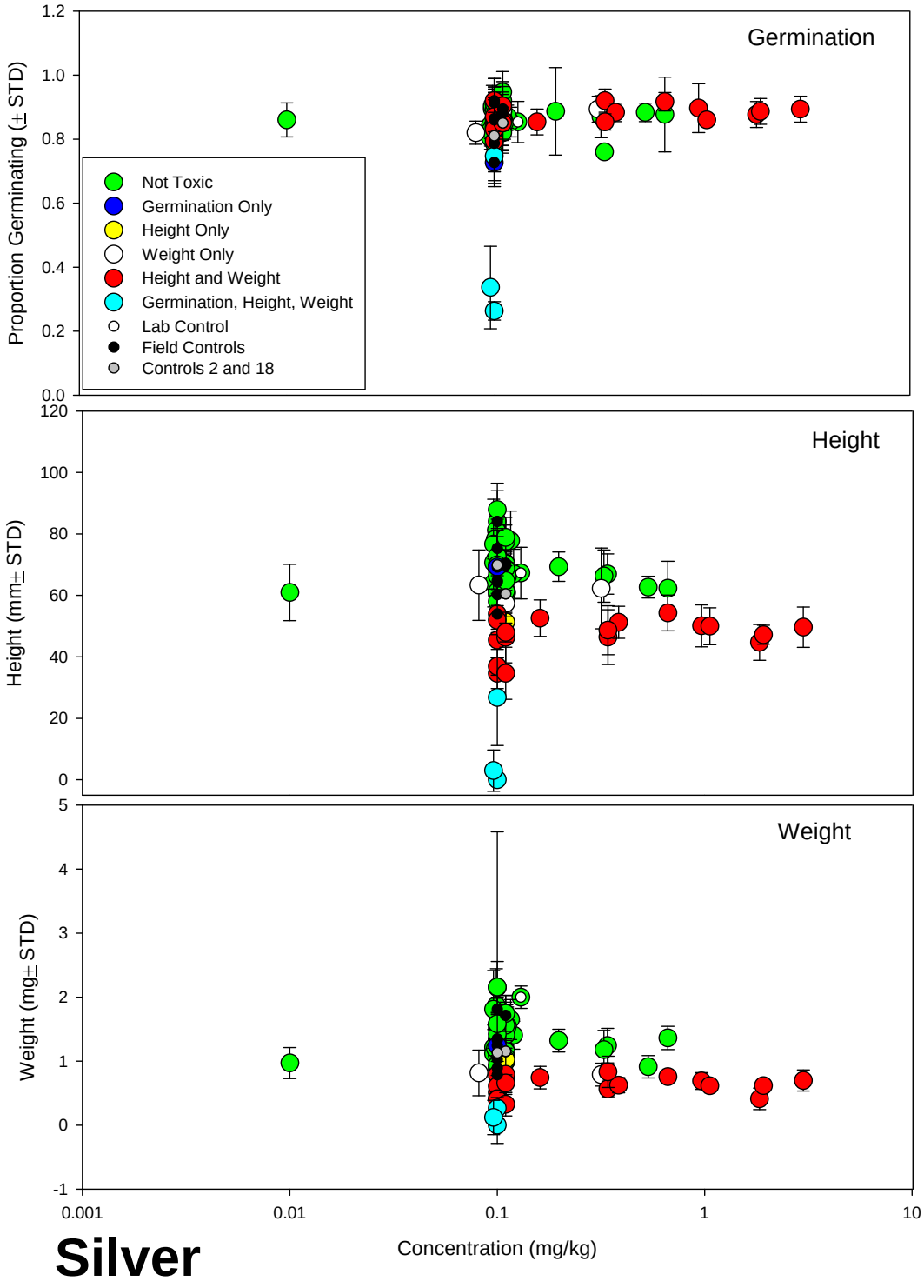


Figure C-23. Dose Response Scatter Plots for Plant Bioassays and Molybdenum Concentrations.

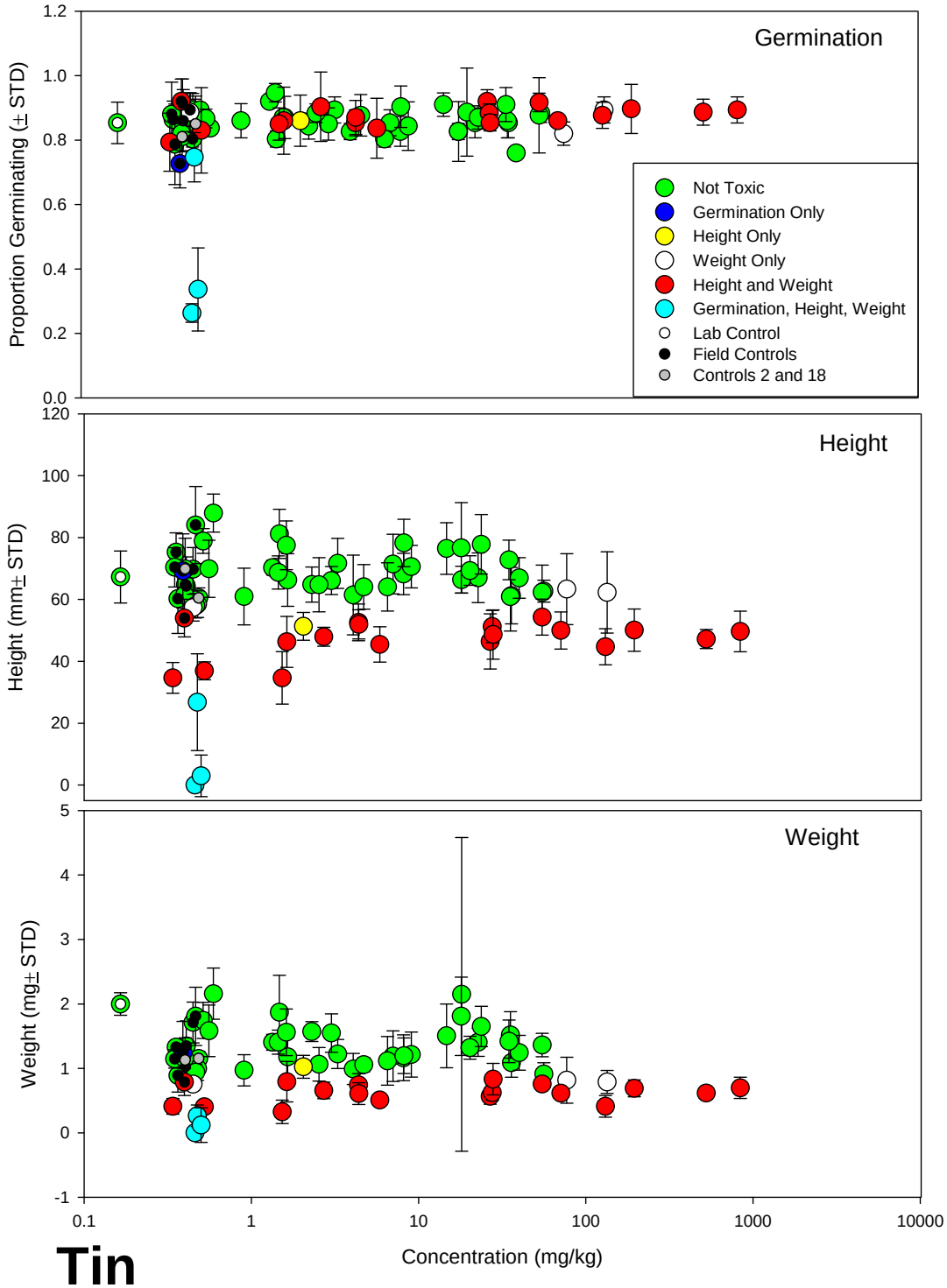
Not Toxic = Germination, height, and weight not reduced relative to the reference envelope.
Germination Only/Height Only/Weight Only = Only germination, or height, or weight reduced relative to the reference envelope.
Height and Weight = Height and weight reduced relative to the reference envelope.
Germination, Height, Weight = Germination, height, and weight all reduced relative to the reference envelope.



Silver

Figure C-24. Dose Response Scatter Plots for Plant Bioassays and Silver Concentrations.

Not Toxic = Germination, height, and weight not reduced relative to the reference envelope.
Germination Only/Height Only/Weight Only = Only germination, or height, or weight reduced relative to the reference envelope.
Height and Weight = Height and weight reduced relative to the reference envelope.
Germination, Height, Weight = Germination, height, and weight all reduced relative to the reference envelope.



Tin

Figure C-25. Dose Response Scatter Plots for Plant Bioassays and Tin Concentrations.

Not Toxic = Germination, height, and weight not reduced relative to the reference envelope.
Germination Only/Height Only/Weight Only = Only germination, or height, or weight reduced relative to the reference envelope.
Height and Weight = Height and weight reduced relative to the reference envelope.
Germination, Height, Weight = Germination, height, and weight all reduced relative to the reference envelope.

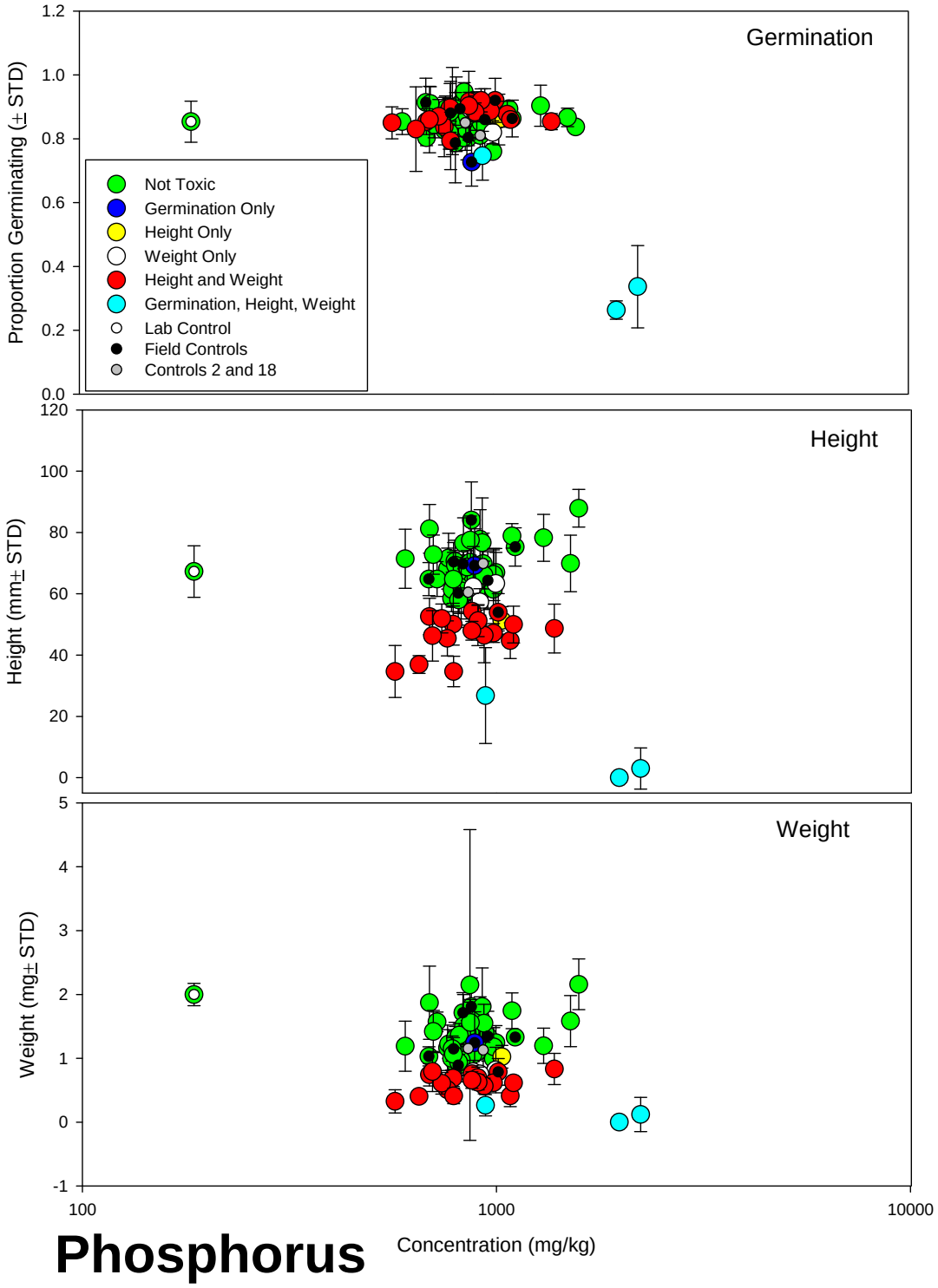
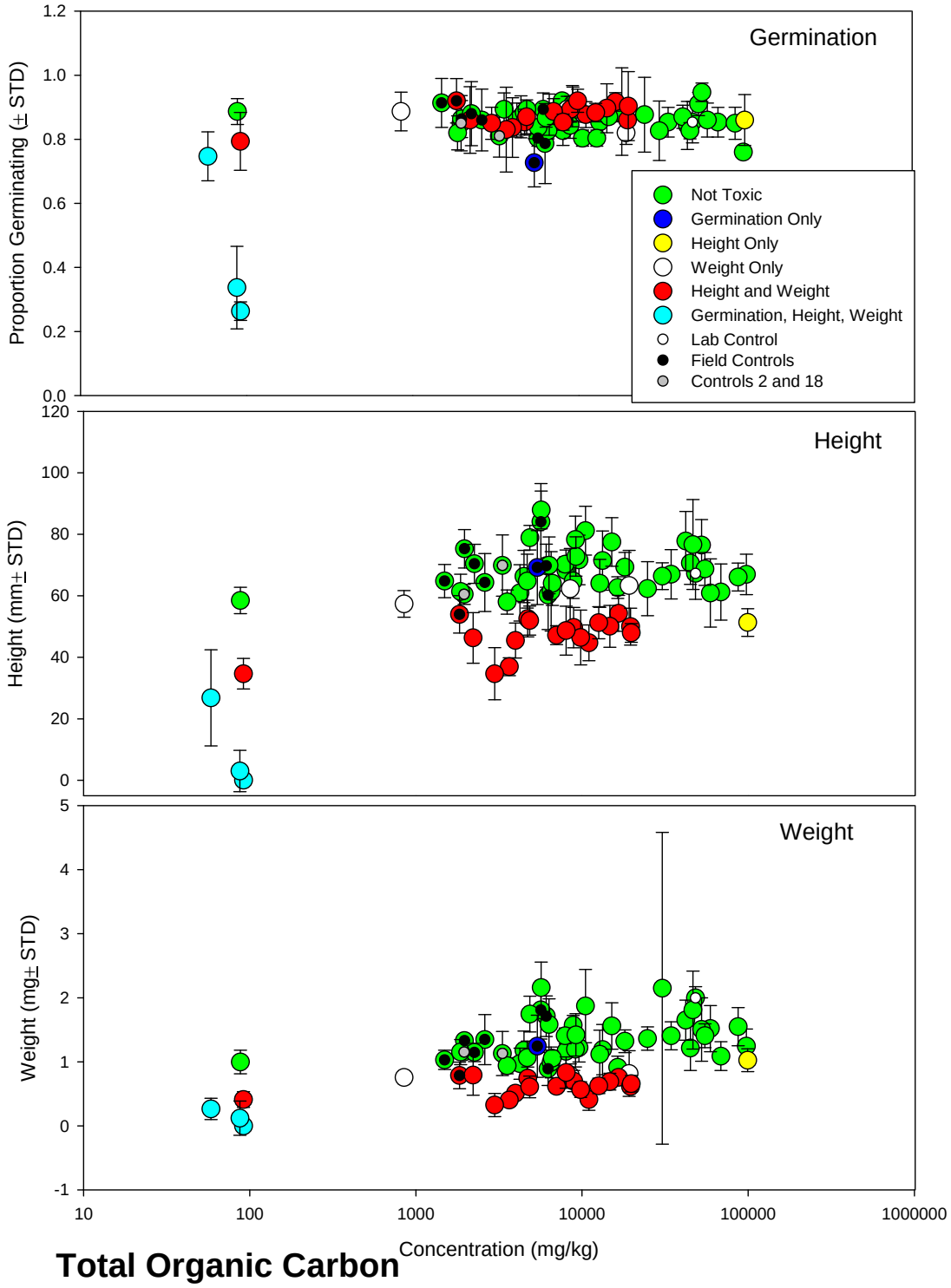


Figure C-26. Dose Response Scatter Plots for Plant Bioassays and Phosphorus Concentrations.

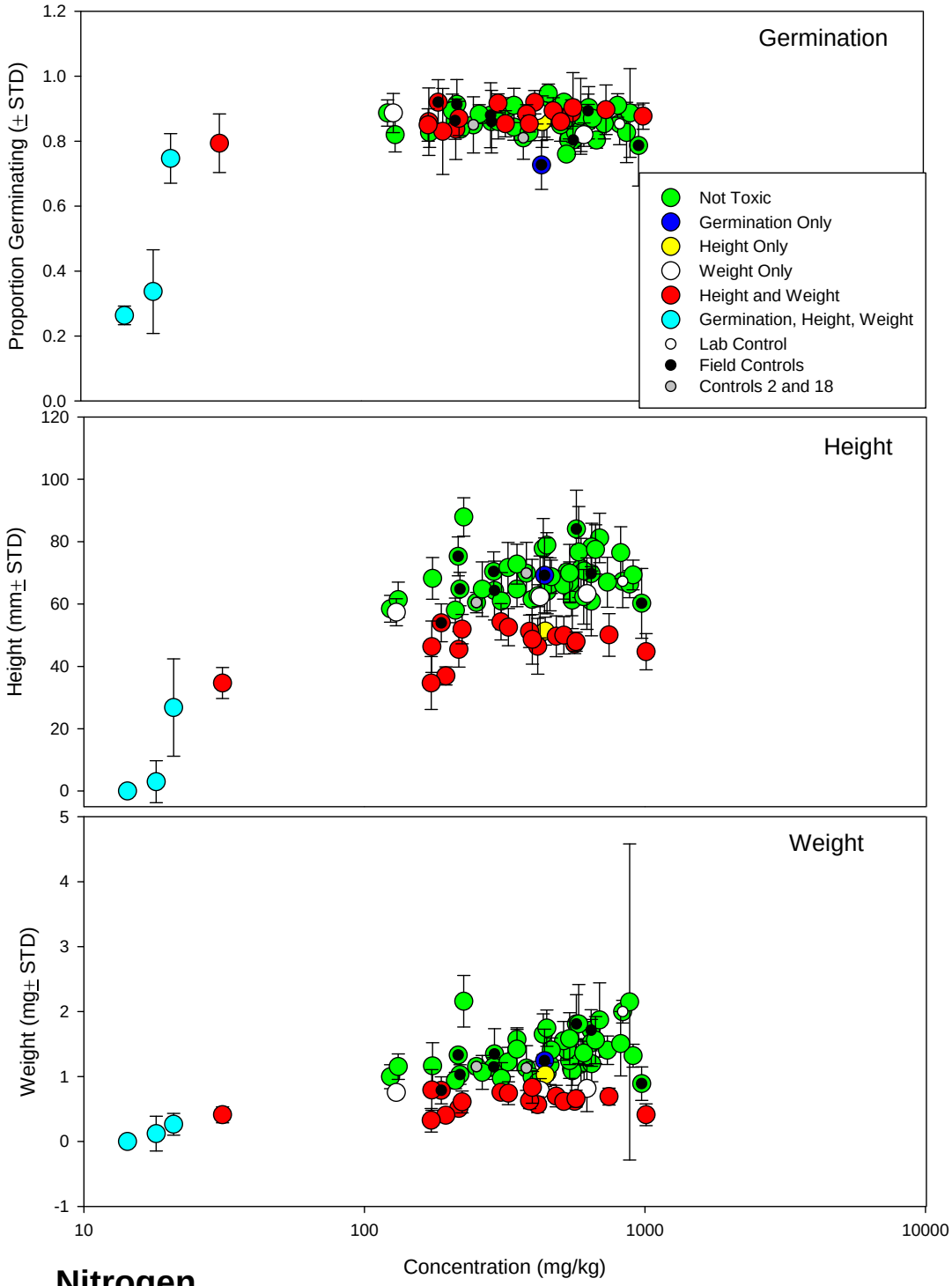
Not Toxic = Germination, height, and weight not reduced relative to the reference envelope.
Germination Only/Height Only/Weight Only = Only germination, or height, or weight reduced relative to the reference envelope.
Height and Weight = Height and weight reduced relative to the reference envelope.
Germination, Height, Weight = Germination, height, and weight all reduced relative to the reference envelope.



Total Organic Carbon

Figure C-27. Dose Response Scatter Plots for Plant Bioassays and Total Organic Carbon Concentrations.

Not Toxic = Germination, height, and weight not reduced relative to the reference envelope.
Germination Only/Height Only/Weight Only = Only germination, or height, or weight reduced relative to the reference envelope.
Height and Weight = Height and weight reduced relative to the reference envelope.
Germination, Height, Weight = Germination, height, and weight all reduced relative to the reference envelope.



Nitrogen

Figure C-28. Dose Response Scatter Plots for Plant Bioassays and Nitrogen Concentrations.

Not Toxic = Germination, height, and weight not reduced relative to the reference envelope.
Germination Only/Height Only/Weight Only = Only germination, or height, or weight reduced relative to the reference envelope.
Height and Weight = Height and weight reduced relative to the reference envelope.
Germination, Height, Weight = Germination, height, and weight all reduced relative to the reference envelope.

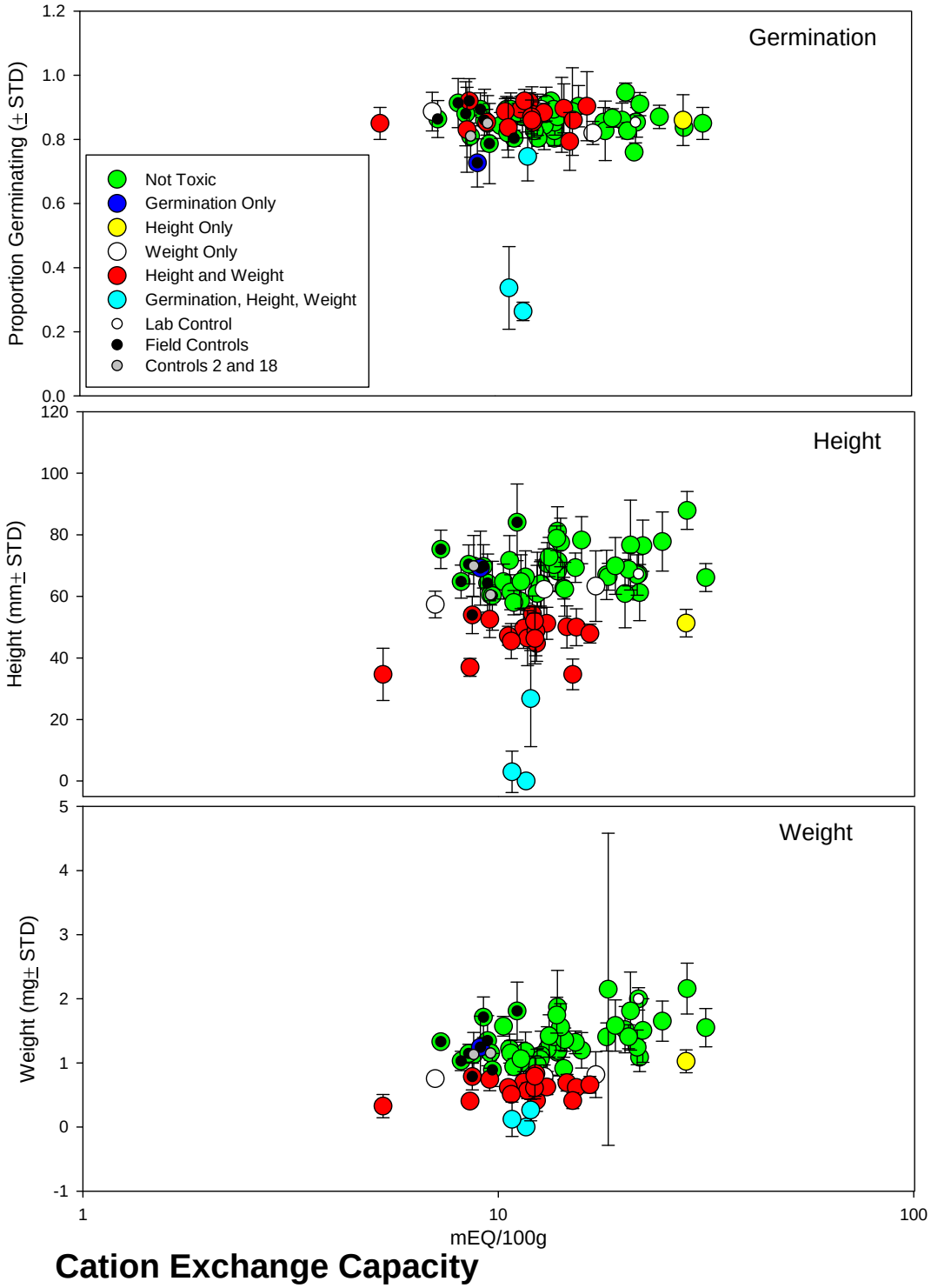


Figure C-29. Dose Response Scatter Plots for Plant Bioassays and Cation Exchange Capacity Measurements.

Not Toxic = Germination, height, and weight not reduced relative to the reference envelope.
Germination Only/Height Only/Weight Only = Only germination, or height, or weight reduced relative to the reference envelope.
Height and Weight = Height and weight reduced relative to the reference envelope.
Germination, Height, Weight = Germination, height, and weight all reduced relative to the reference envelope.

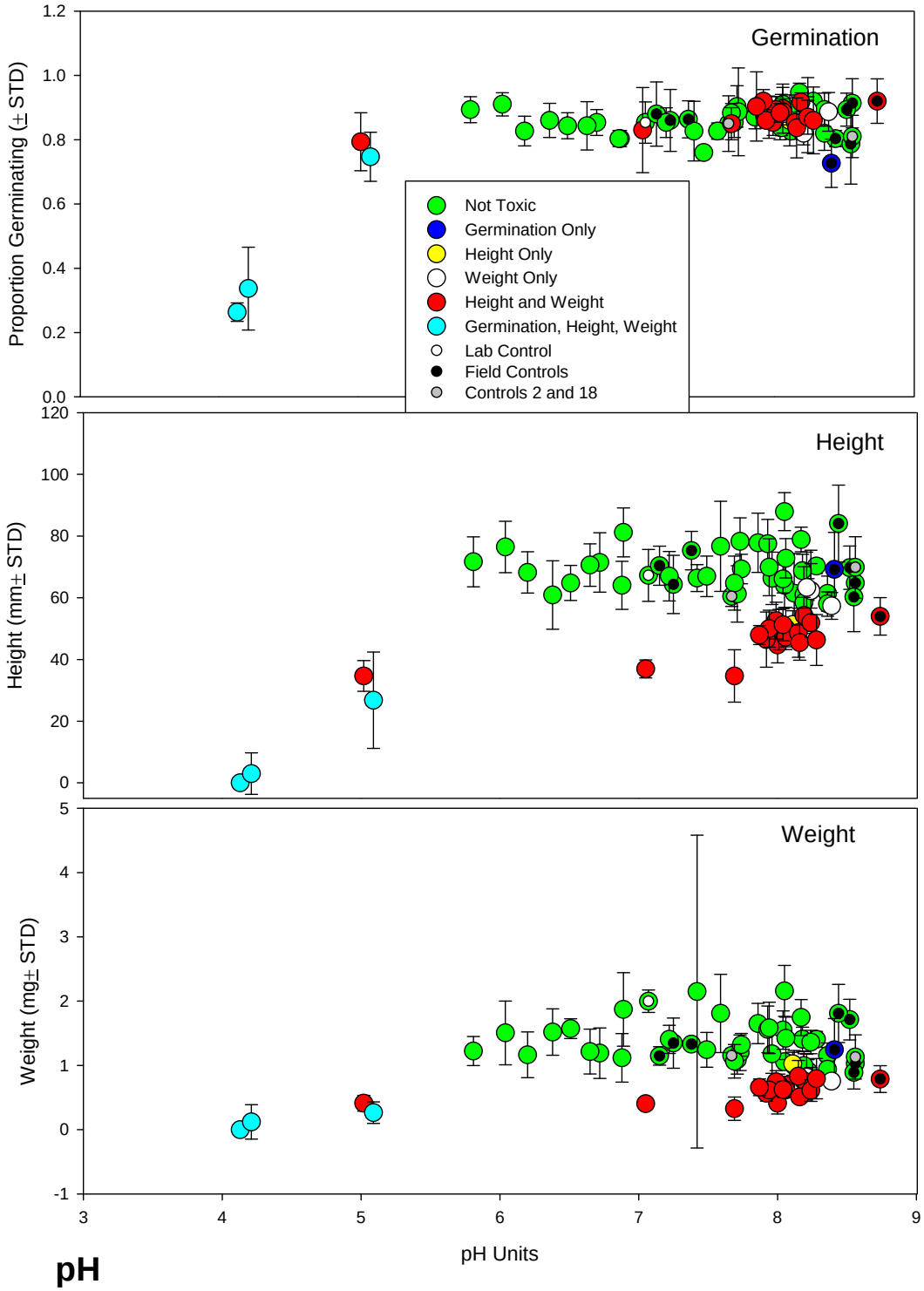


Figure C-30. Dose Response Scatter Plots for Plant Bioassays and pH Measurements.

Not Toxic = Germination, height, and weight not reduced relative to the reference envelope.
Germination Only/Height Only/Weight Only = Only germination, or height, or weight reduced relative to the reference envelope.
Height and Weight = Height and weight reduced relative to the reference envelope.
Germination, Height, Weight = Germination, height, and weight all reduced relative to the reference envelope.

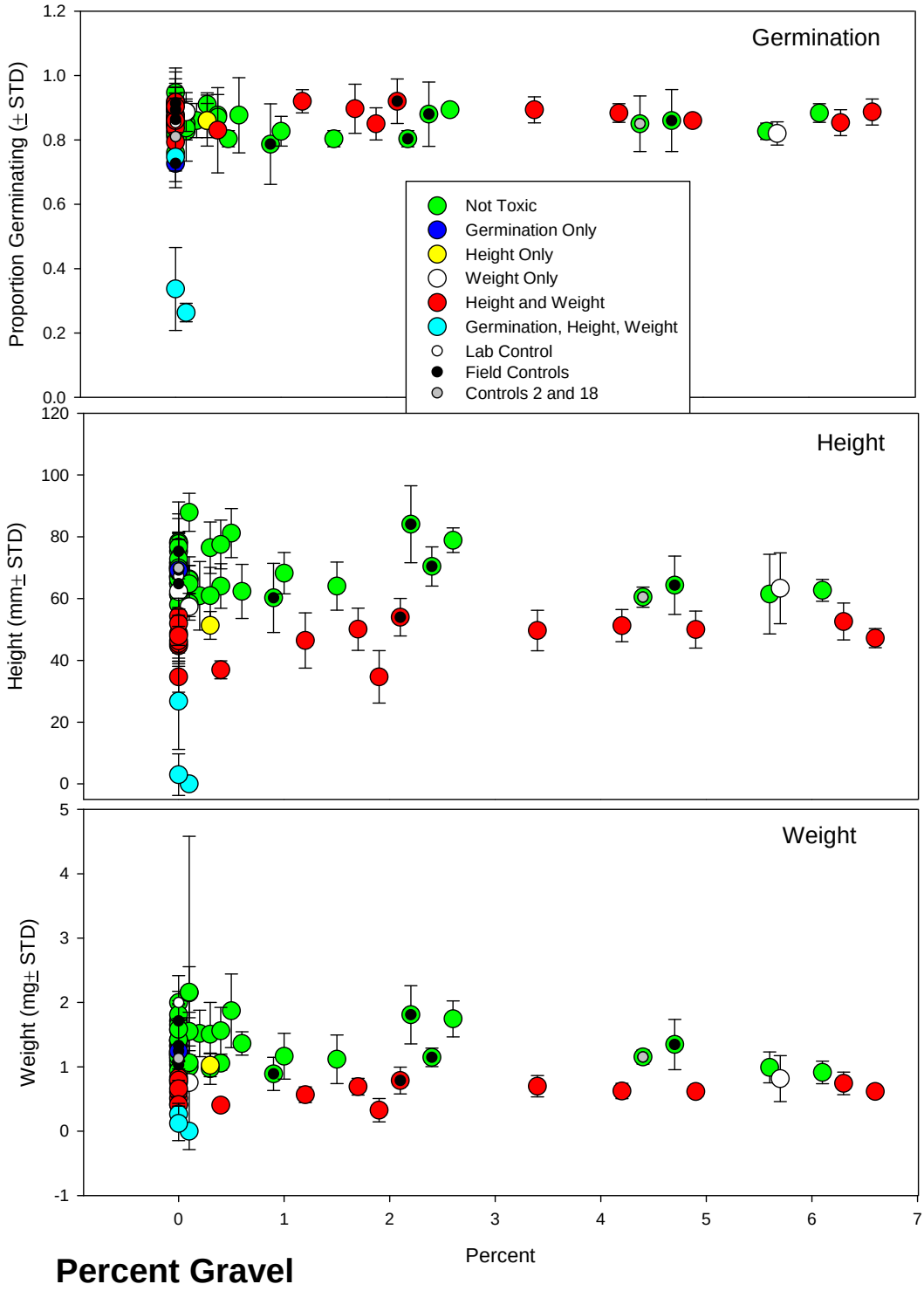


Figure C-31. Dose Response Scatter Plots for Plant Bioassays and Percent Gravel.

Not Toxic = Germination, height, and weight not reduced relative to the reference envelope.
Germination Only/Height Only/Weight Only = Only germination, or height, or weight reduced relative to the reference envelope.
Height and Weight = Height and weight reduced relative to the reference envelope.
Germination, Height, Weight = Germination, height, and weight all reduced relative to the reference envelope.

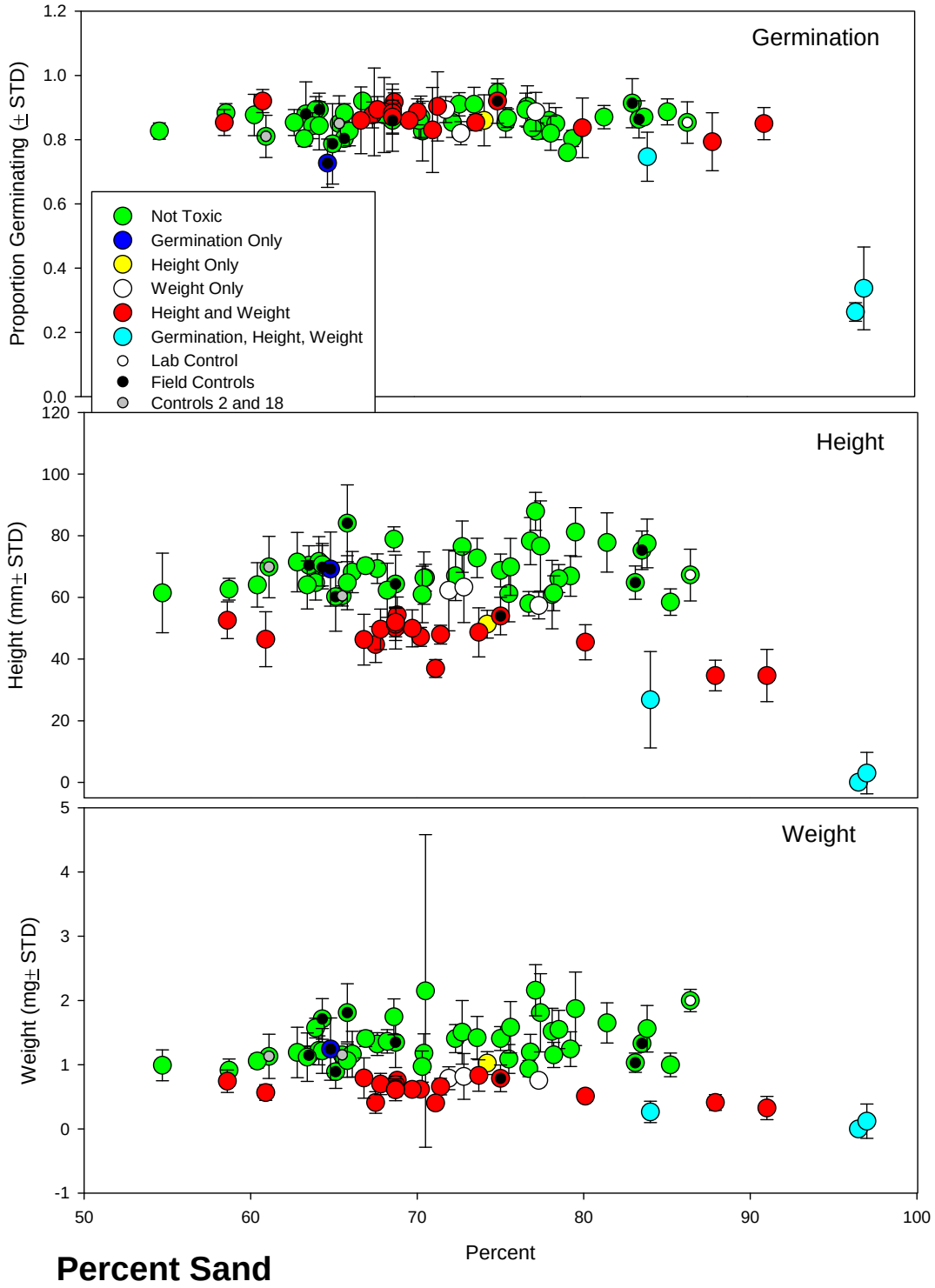


Figure C-32. Dose Response Scatter Plots for Plant Bioassays and Percent Sand.

Not Toxic = Germination, height, and weight not reduced relative to the reference envelope.
Germination Only/Height Only/Weight Only = Only germination, or height, or weight reduced relative to the reference envelope.
Height and Weight = Height and weight reduced relative to the reference envelope.
Germination, Height, Weight = Germination, height, and weight all reduced relative to the reference envelope.

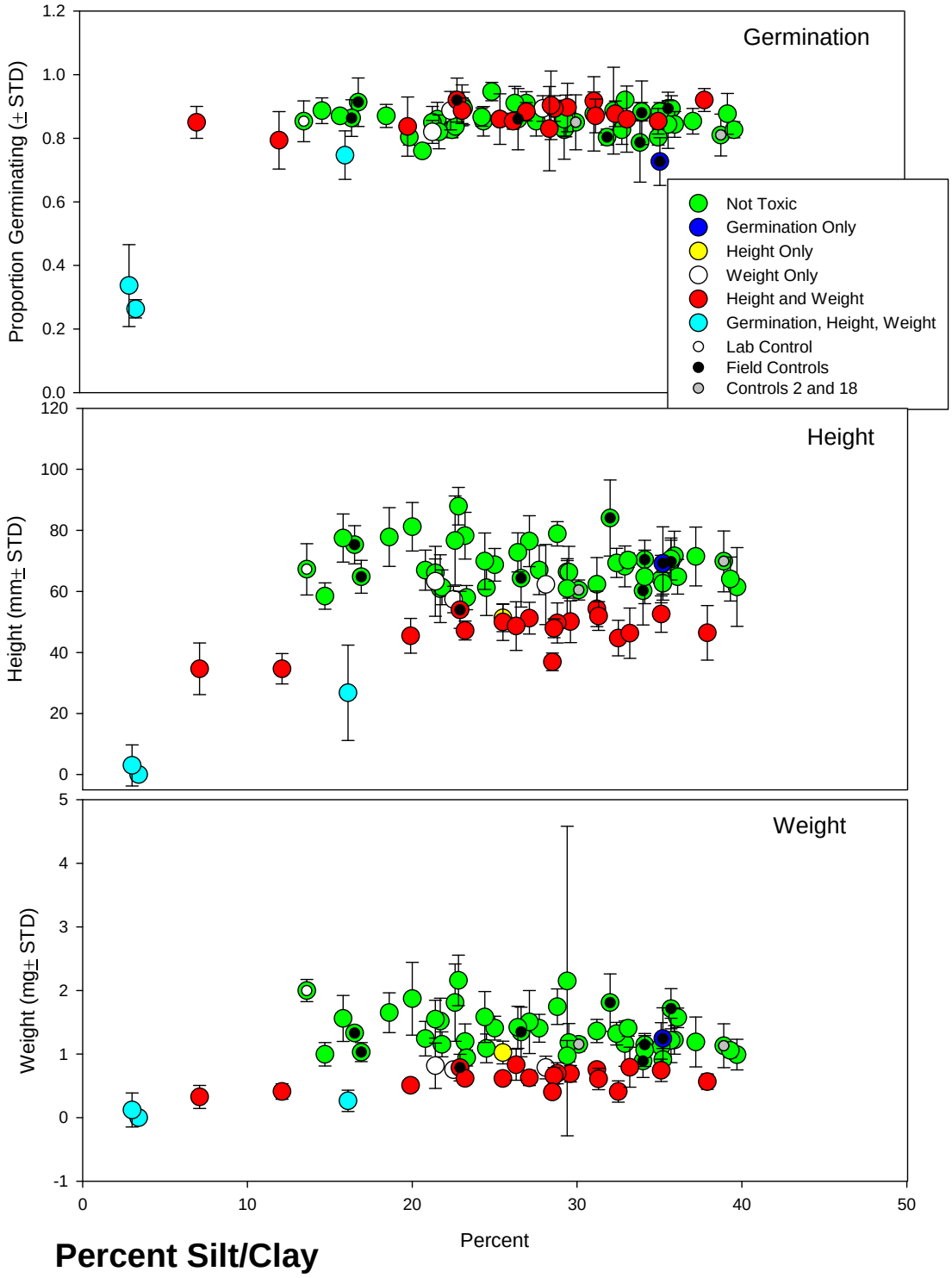


Figure C-33. Dose Response Scatter Plots for Plant Bioassays and Percent Silt/Clay.

Not Toxic = Germination, height, and weight not reduced relative to the reference envelope.
Germination Only/Height Only/Weight Only = Only germination, or height, or weight reduced relative to the reference envelope.
Height and Weight = Height and weight reduced relative to the reference envelope.
Germination, Height, Weight = Germination, height, and weight all reduced relative to the reference envelope.

Appendix D

Dose Response Scatter Plots for Invertebrates

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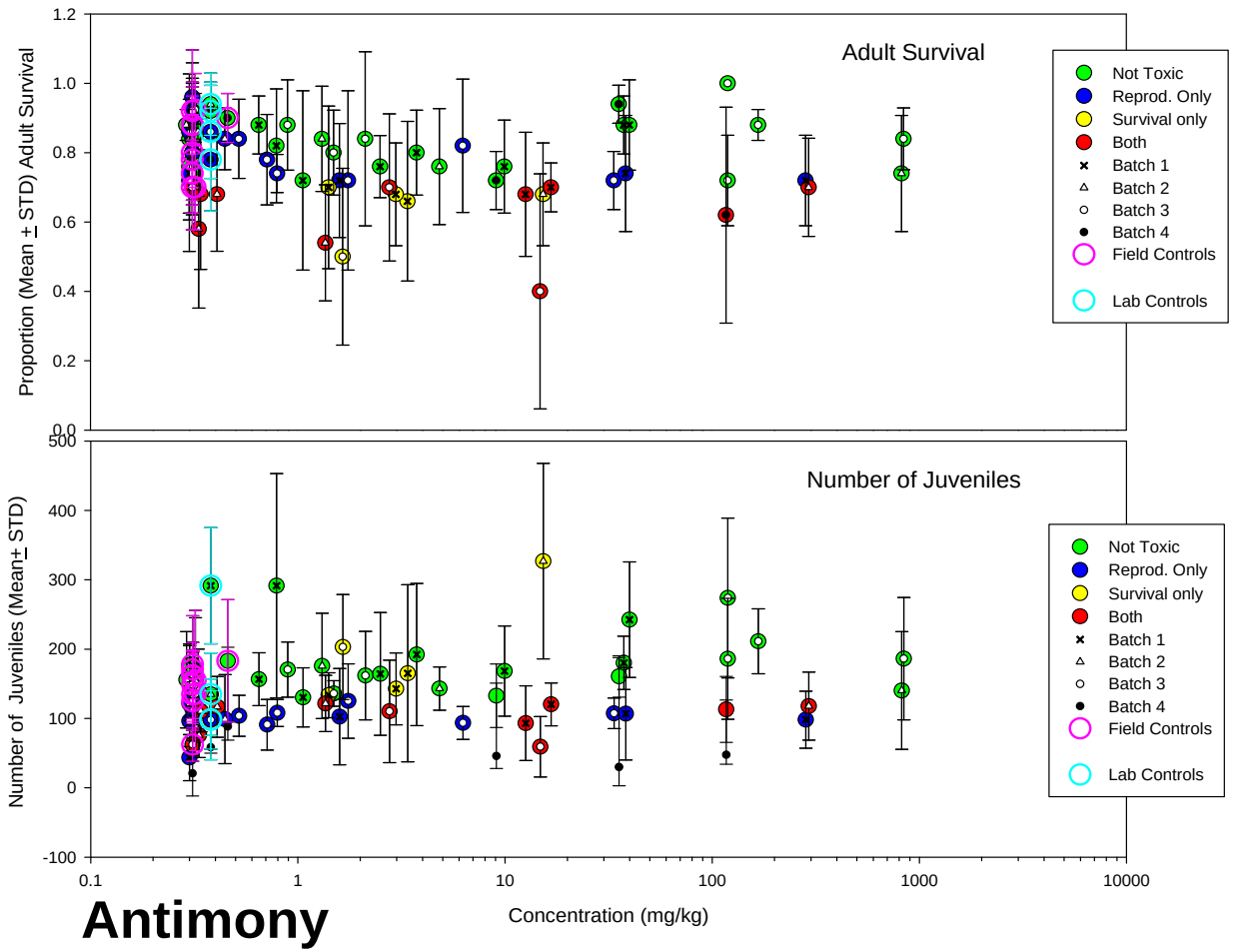
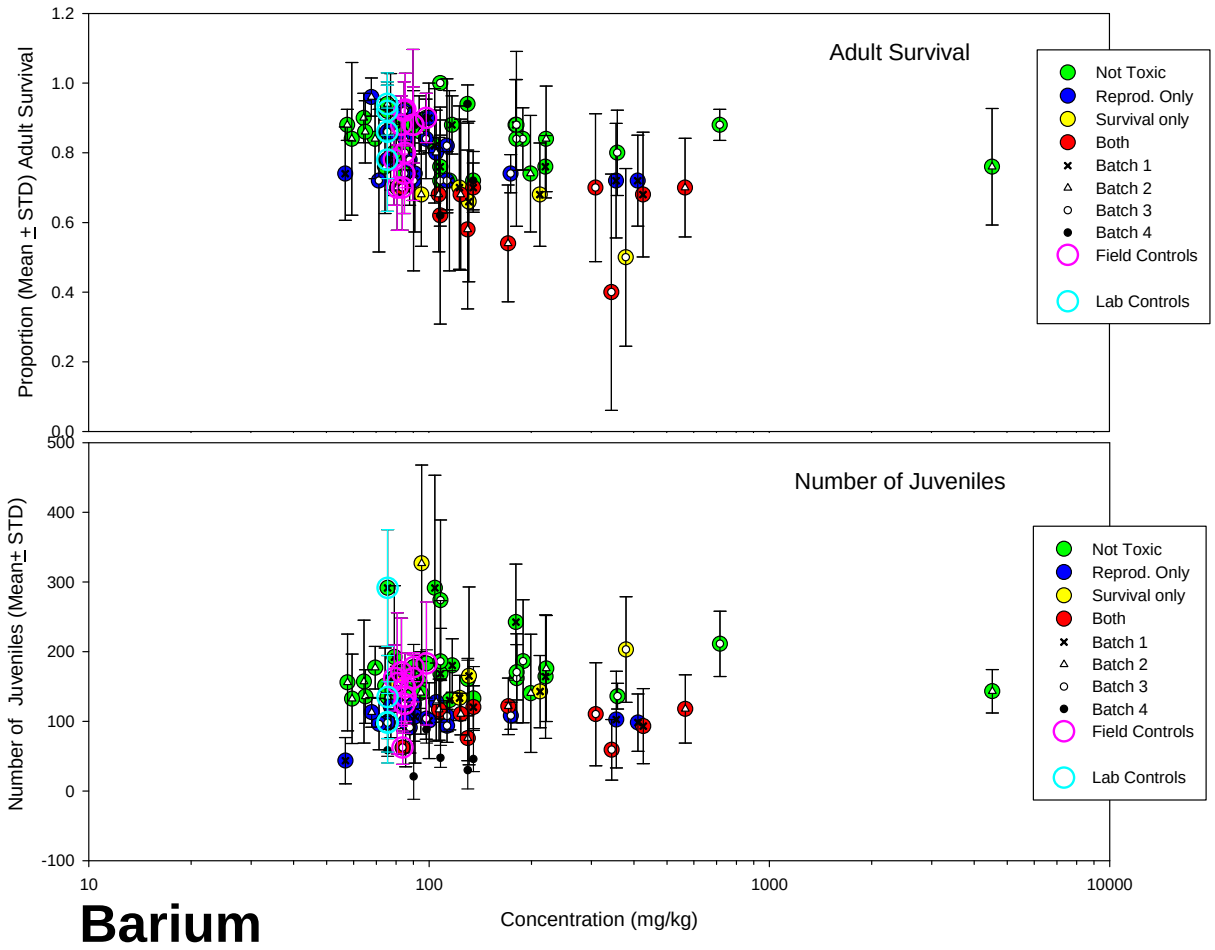


Figure D-1. Dose Response Scatter Plots for Invertebrate Bioassays and Antimony Concentrations.

Not Toxic = Survival and reproduction weight not reduced relative to the reference envelope.
Reprod. Only/Survival Only = Only reproduction or survival reduced relative to the reference envelope.
Both = Both reproduction and survival reduced relative to the reference envelope.



Barium

Figure D-2. Dose Response Scatter Plots for Invertebrate Bioassays and Barium Concentrations.

Not Toxic = Survival and reproduction weight not reduced relative to the reference envelope.
Reprod. Only/Survival Only = Only reproduction or survival reduced relative to the reference envelope.
Both = Both reproduction and survival reduced relative to the reference envelope.

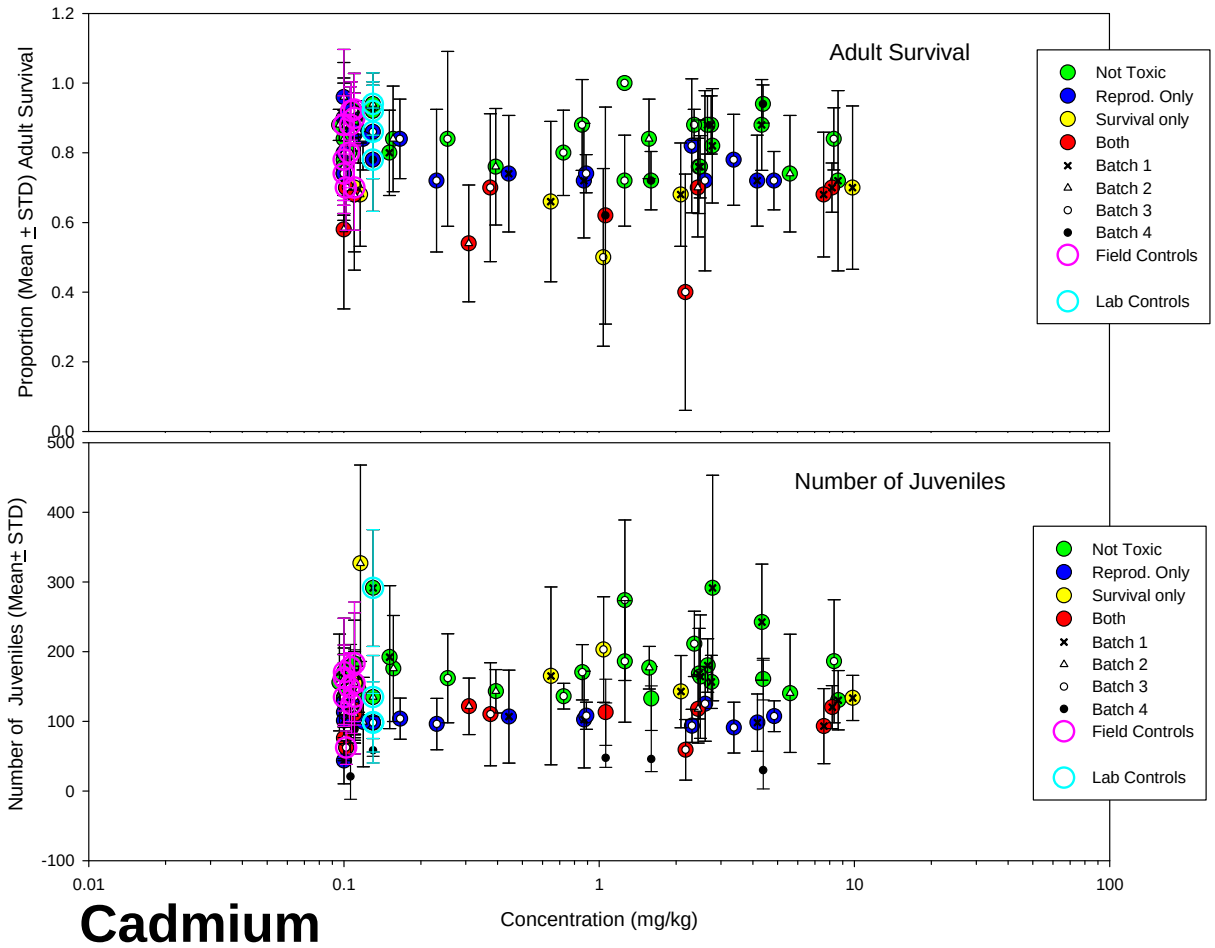


Figure D-3. Dose Response Scatter Plots for Invertebrate Bioassays and Cadmium Concentrations.

Not Toxic = Survival and reproduction weight not reduced relative to the reference envelope.
Reprod. Only/Survival Only = Only reproduction or survival reduced relative to the reference envelope.
Both = Both reproduction and survival reduced relative to the reference envelope.

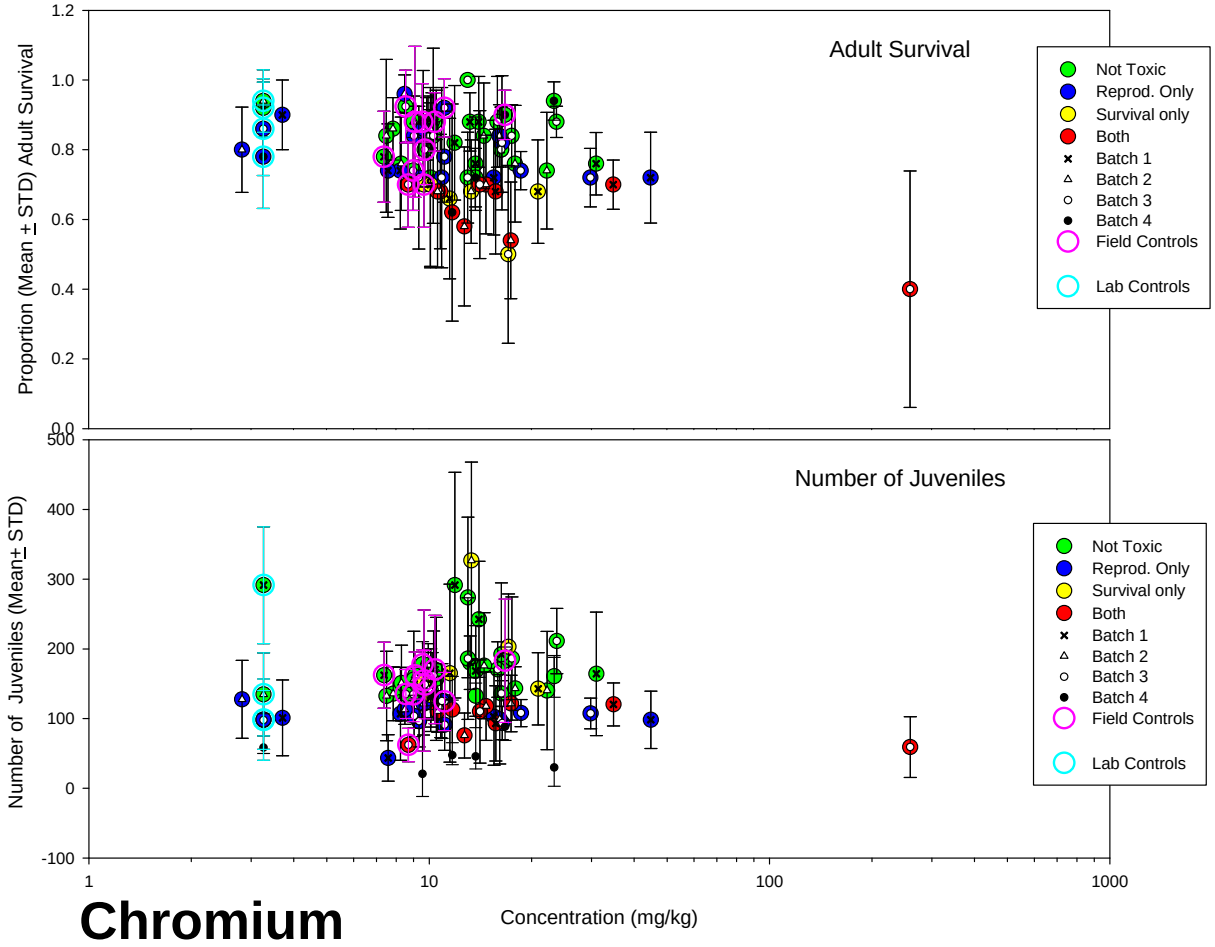


Figure D-4. Dose Response Scatter Plots for Invertebrate Bioassays and Chromium Concentrations.

Not Toxic = Survival and reproduction weight not reduced relative to the reference envelope.
Reprod. Only/Survival Only = Only reproduction or survival reduced relative to the reference envelope.
Both = Both reproduction and survival reduced relative to the reference envelope.

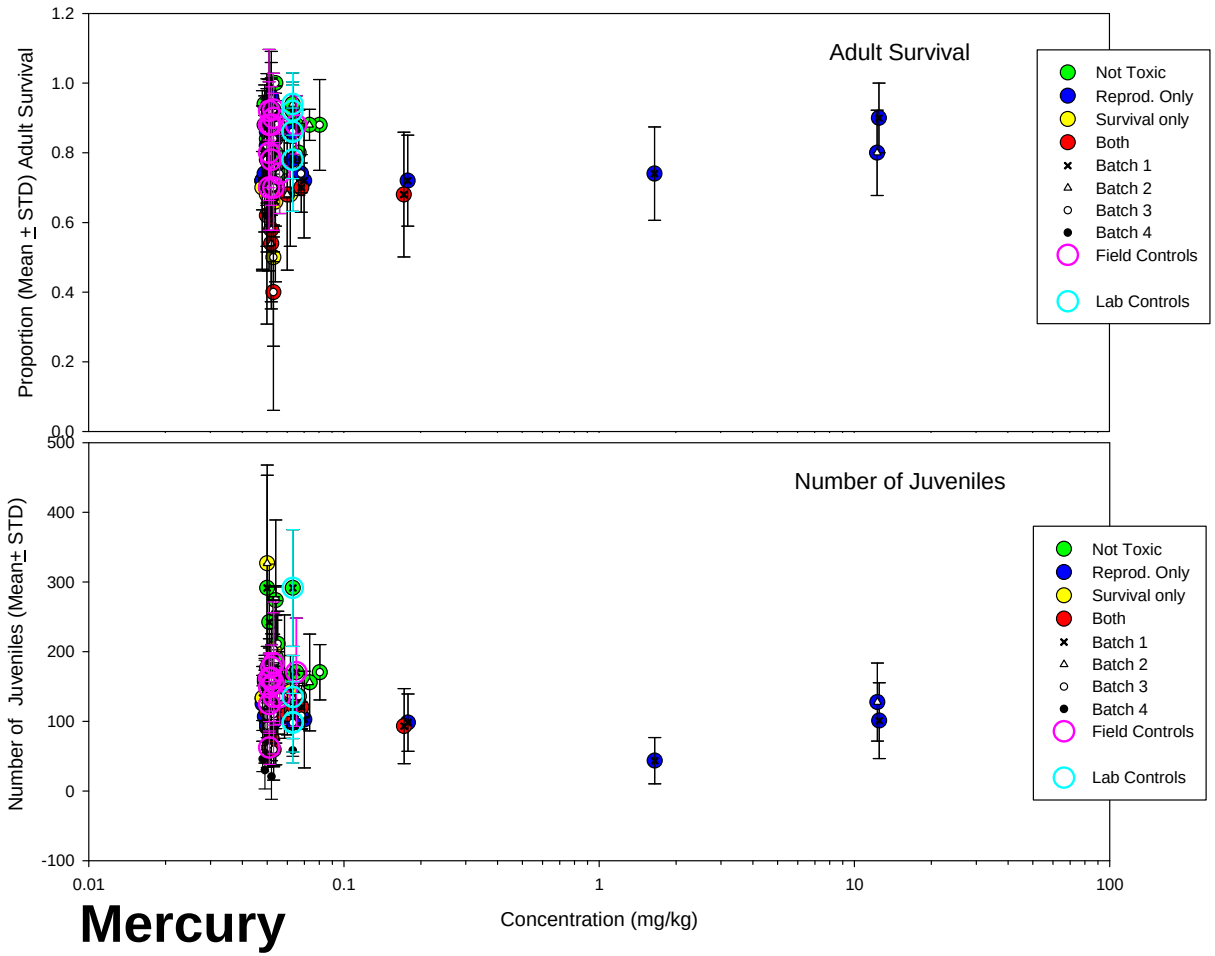
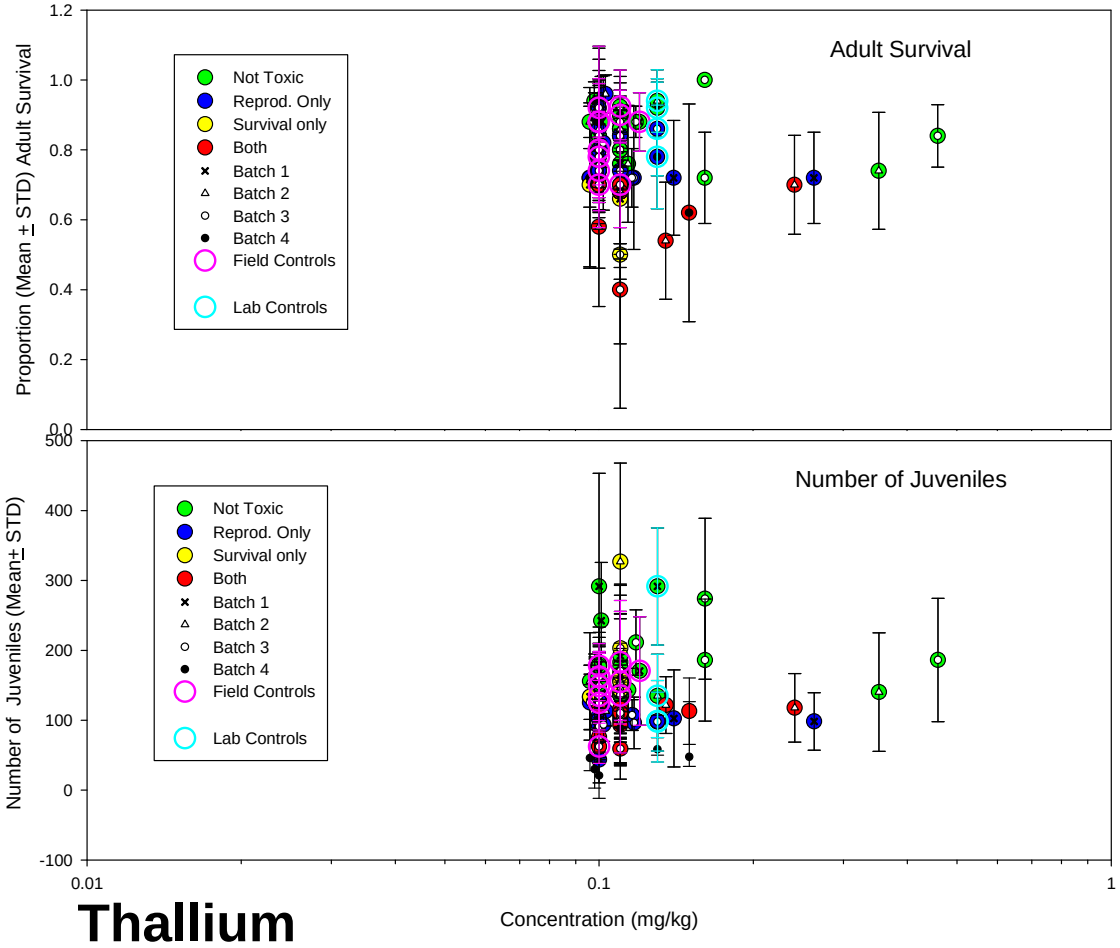


Figure D-5. Dose Response Scatter Plots for Invertebrate Bioassays and Mercury Concentrations.

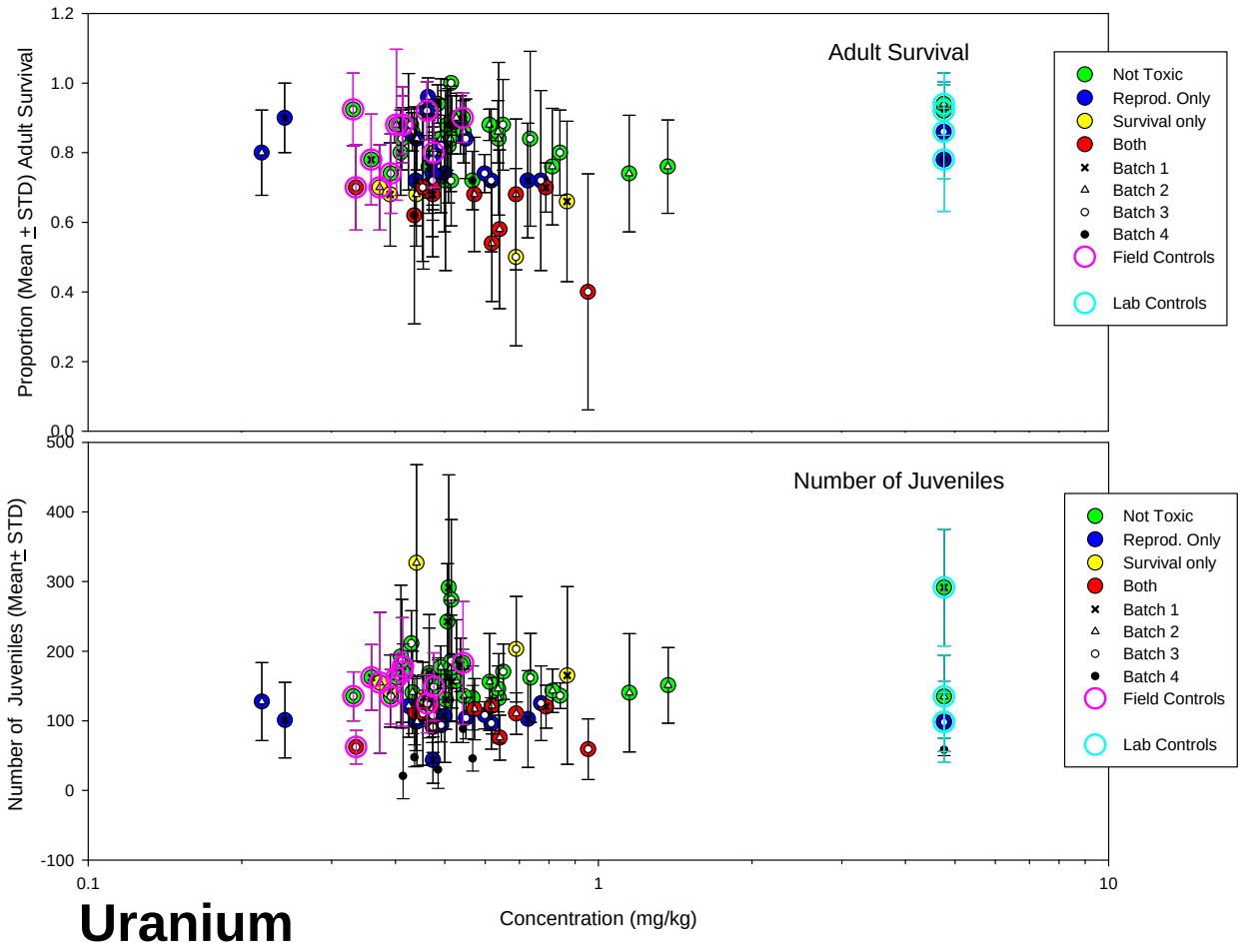
Not Toxic = Survival and reproduction weight not reduced relative to the reference envelope.
Reprod. Only/Survival Only = Only reproduction or survival reduced relative to the reference envelope.
Both = Both reproduction and survival reduced relative to the reference envelope.



Thallium

Figure D-6. Dose Response Scatter Plots for Invertebrate Bioassays and Thallium Concentrations.

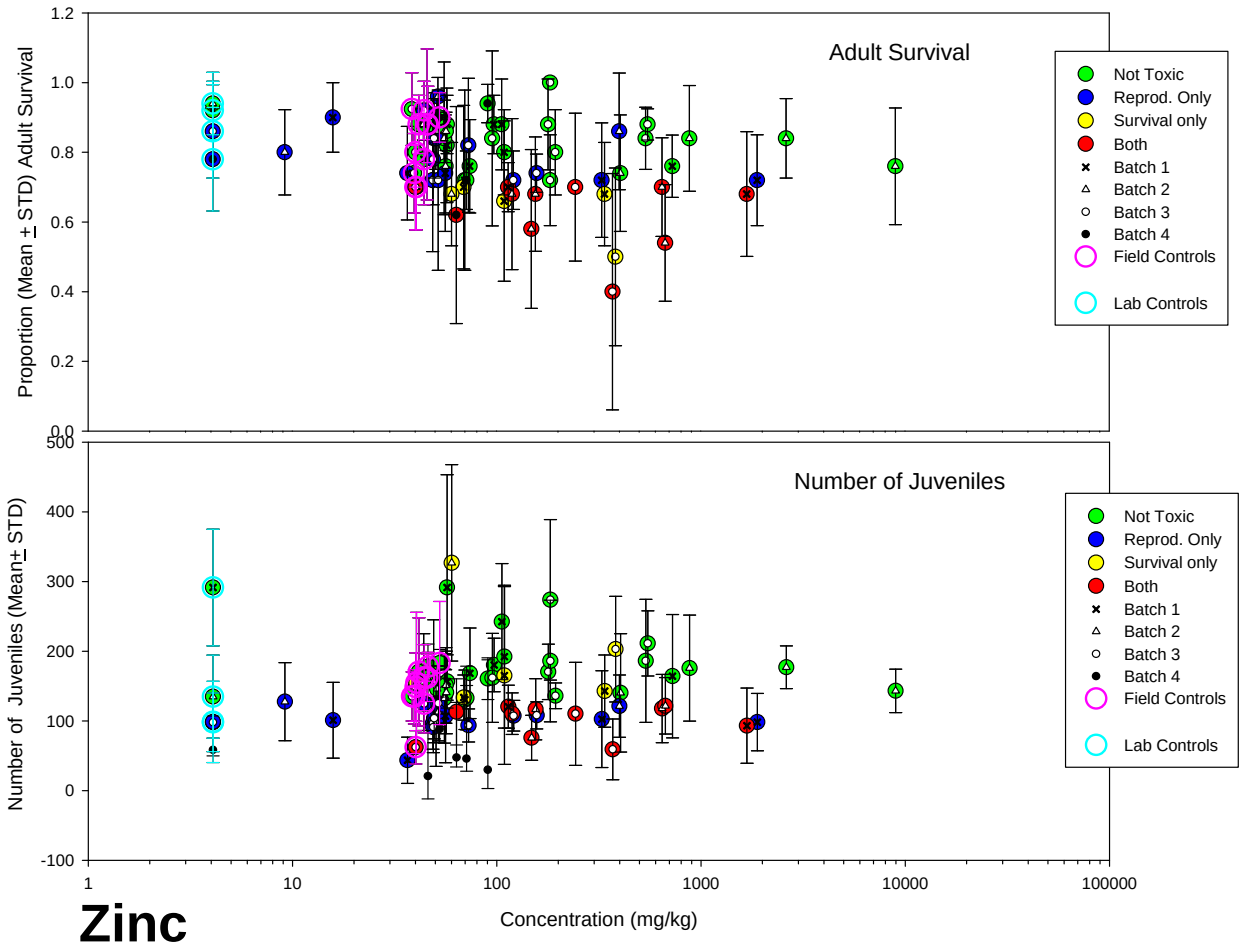
Not Toxic = Survival and reproduction weight not reduced relative to the reference envelope.
Reprod. Only/Survival Only = Only reproduction or survival reduced relative to the reference envelope.
Both = Both reproduction and survival reduced relative to the reference envelope.



Uranium

Figure D-7. Dose Response Scatter Plots for Invertebrate Bioassays and Uranium Concentrations.

Not Toxic = Survival and reproduction weight not reduced relative to the reference envelope.
Reprod. Only/Survival Only = Only reproduction or survival reduced relative to the reference envelope.
Both = Both reproduction and survival reduced relative to the reference envelope.



Zinc

Figure D-8. Dose Response Scatter Plots for Invertebrate Bioassays and Zinc Concentrations.

Not Toxic = Survival and reproduction weight not reduced relative to the reference envelope.
Reprod. Only/Survival Only = Only reproduction or survival reduced relative to the reference envelope.
Both = Both reproduction and survival reduced relative to the reference envelope.

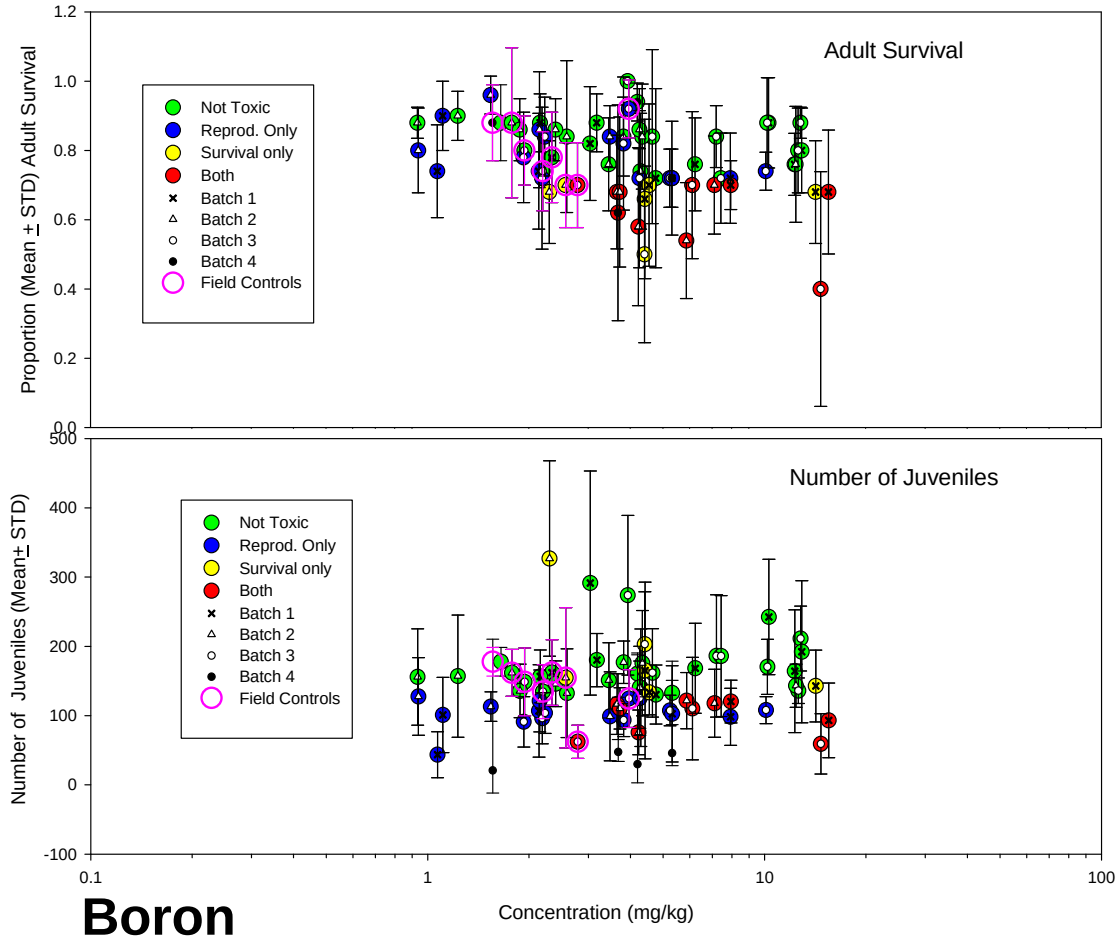
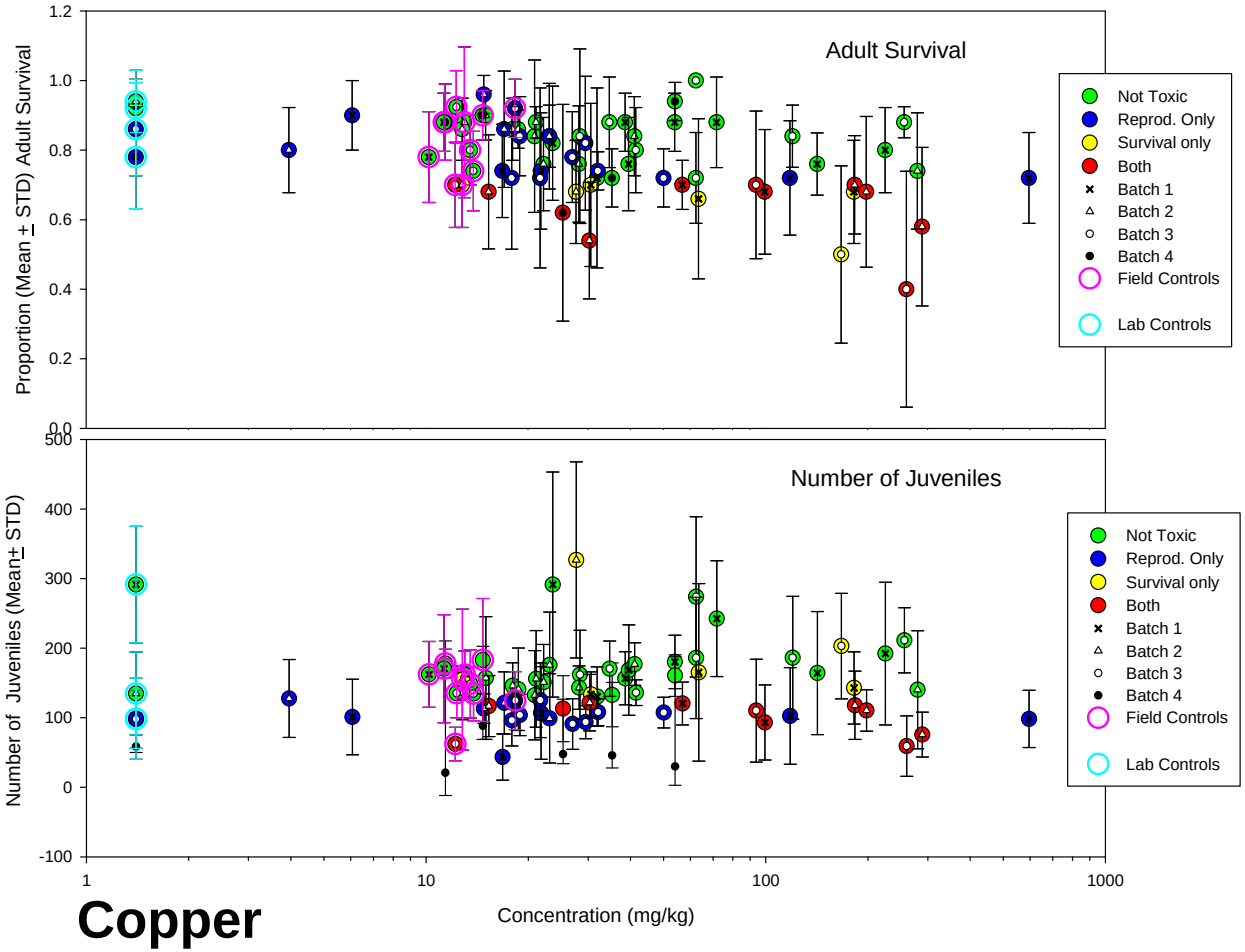


Figure D-9. Dose Response Scatter Plots for Invertebrate Bioassays and Boron Concentrations.

Not Toxic = Survival and reproduction weight not reduced relative to the reference envelope.
Reprod. Only/Survival Only = Only reproduction or survival reduced relative to the reference envelope.
Both = Both reproduction and survival reduced relative to the reference envelope.



Copper

Figure D-10. Dose Response Scatter Plots for Invertebrate Bioassays and Copper Concentrations.

Not Toxic = Survival and reproduction weight not reduced relative to the reference envelope.
Reprod. Only/Survival Only = Only reproduction or survival reduced relative to the reference envelope.
Both = Both reproduction and survival reduced relative to the reference envelope.

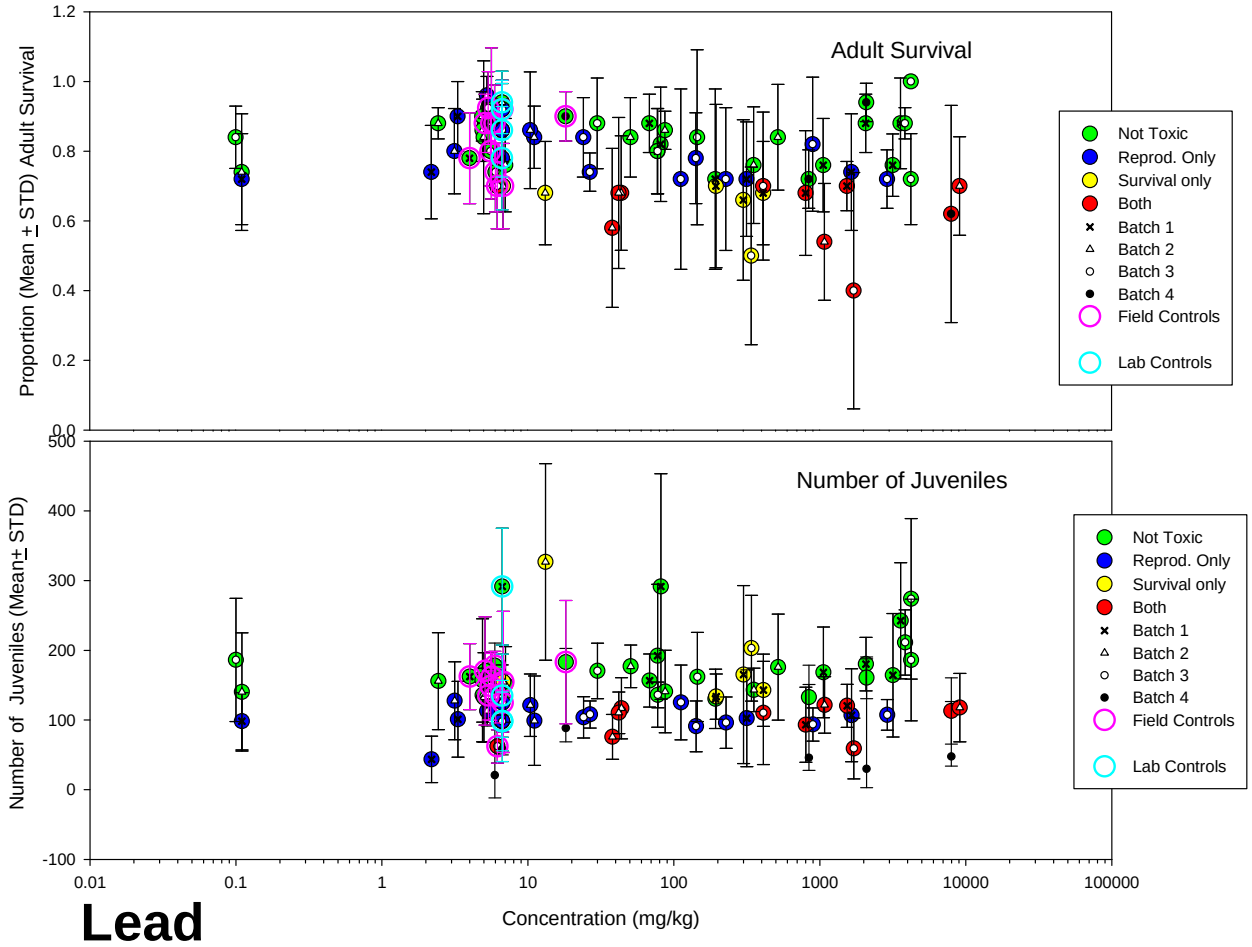
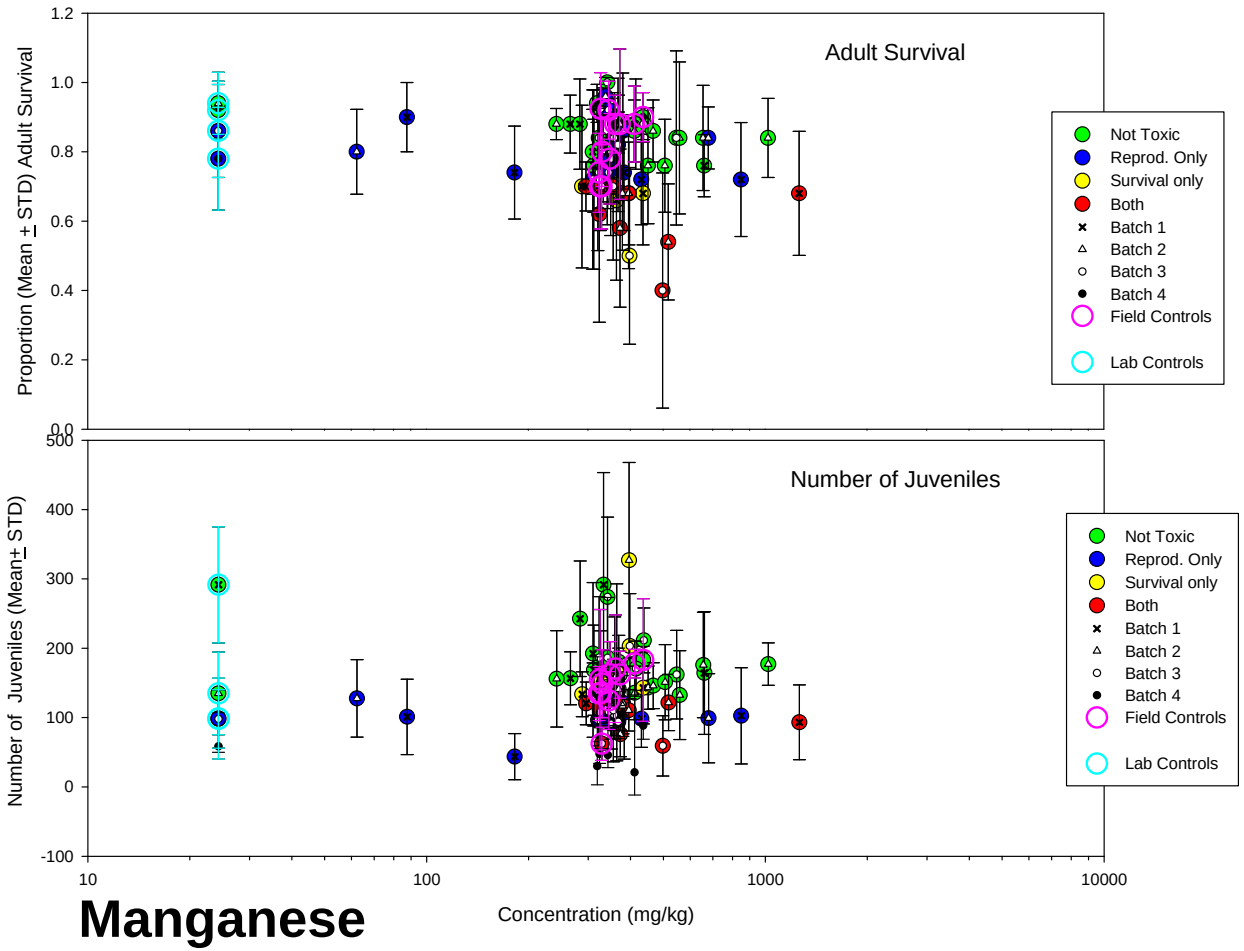


Figure D-11. Dose Response Scatter Plots for Invertebrate Bioassays and Lead Concentrations.

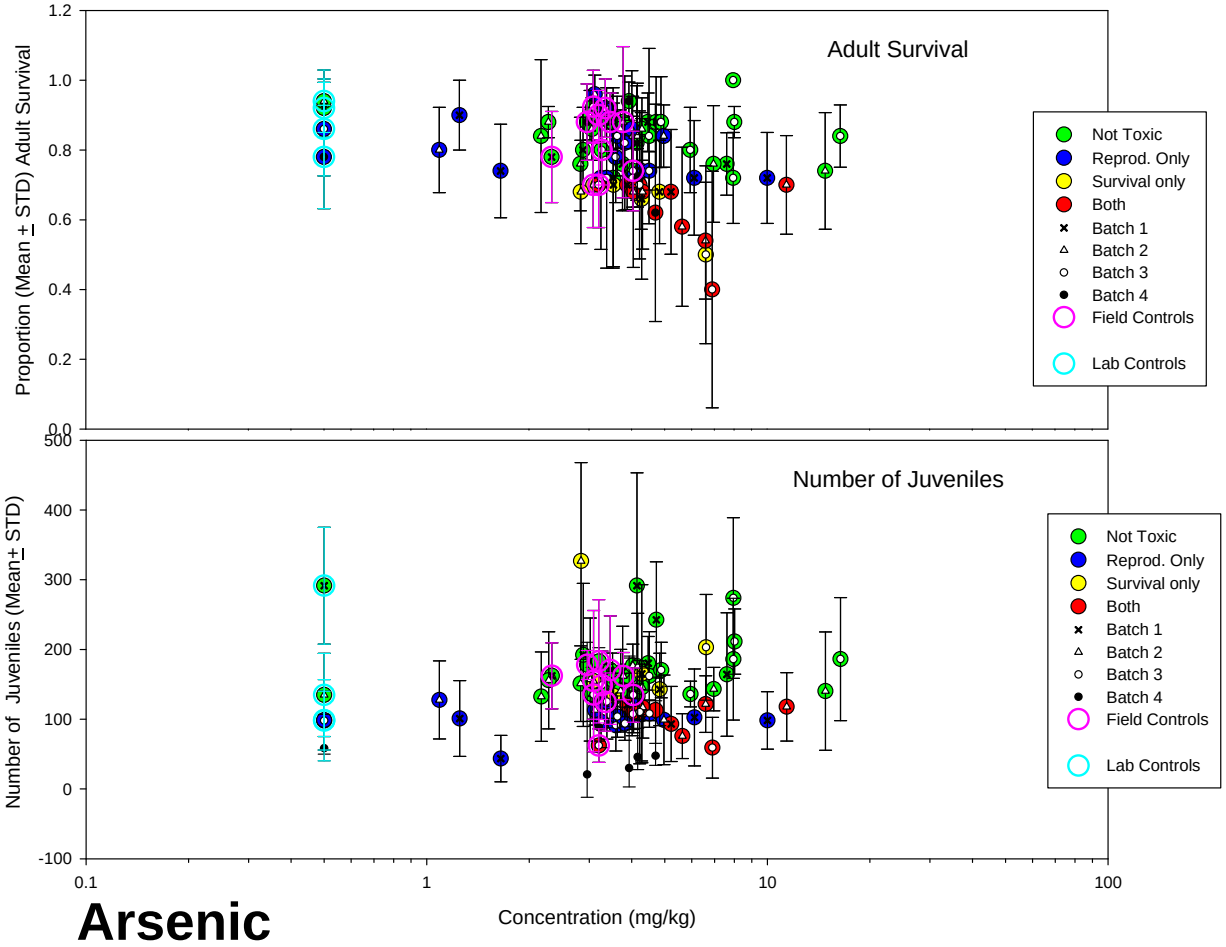
Not Toxic = Survival and reproduction weight not reduced relative to the reference envelope.
Reprod. Only/Survival Only = Only reproduction or survival reduced relative to the reference envelope.
Both = Both reproduction and survival reduced relative to the reference envelope.



Manganese

Figure D-12. Dose Response Scatter Plots for Invertebrate Bioassays and Manganese Concentrations.

Not Toxic = Survival and reproduction weight not reduced relative to the reference envelope.
Reprod. Only/Survival Only = Only reproduction or survival reduced relative to the reference envelope.
Both = Both reproduction and survival reduced relative to the reference envelope.



Arsenic

Figure D-13. Dose Response Scatter Plots for Invertebrate Bioassays and Arsenic Concentrations.

Not Toxic = Survival and reproduction weight not reduced relative to the reference envelope.
Reprod. Only/Survival Only = Only reproduction or survival reduced relative to the reference envelope.
Both = Both reproduction and survival reduced relative to the reference envelope.

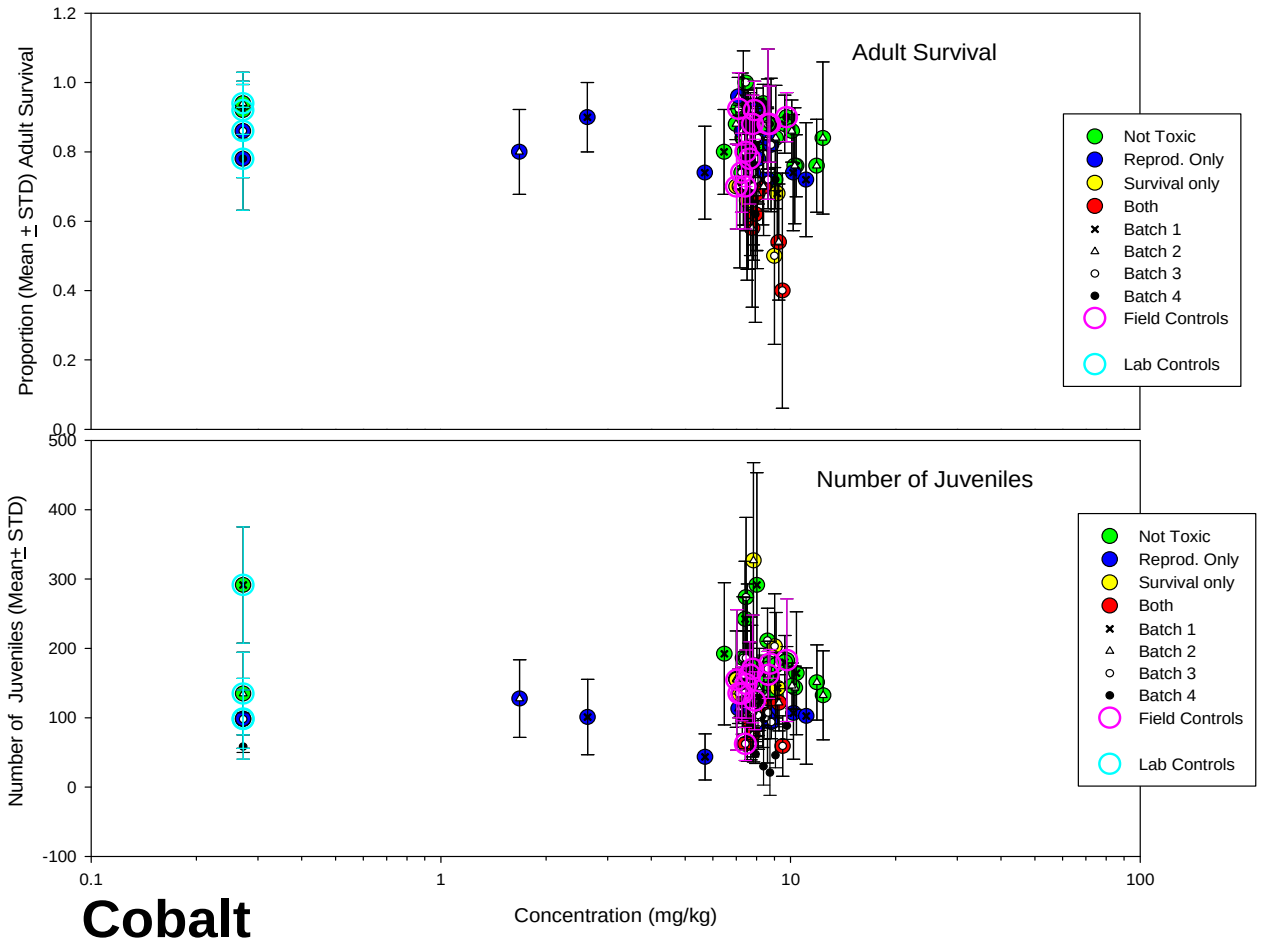
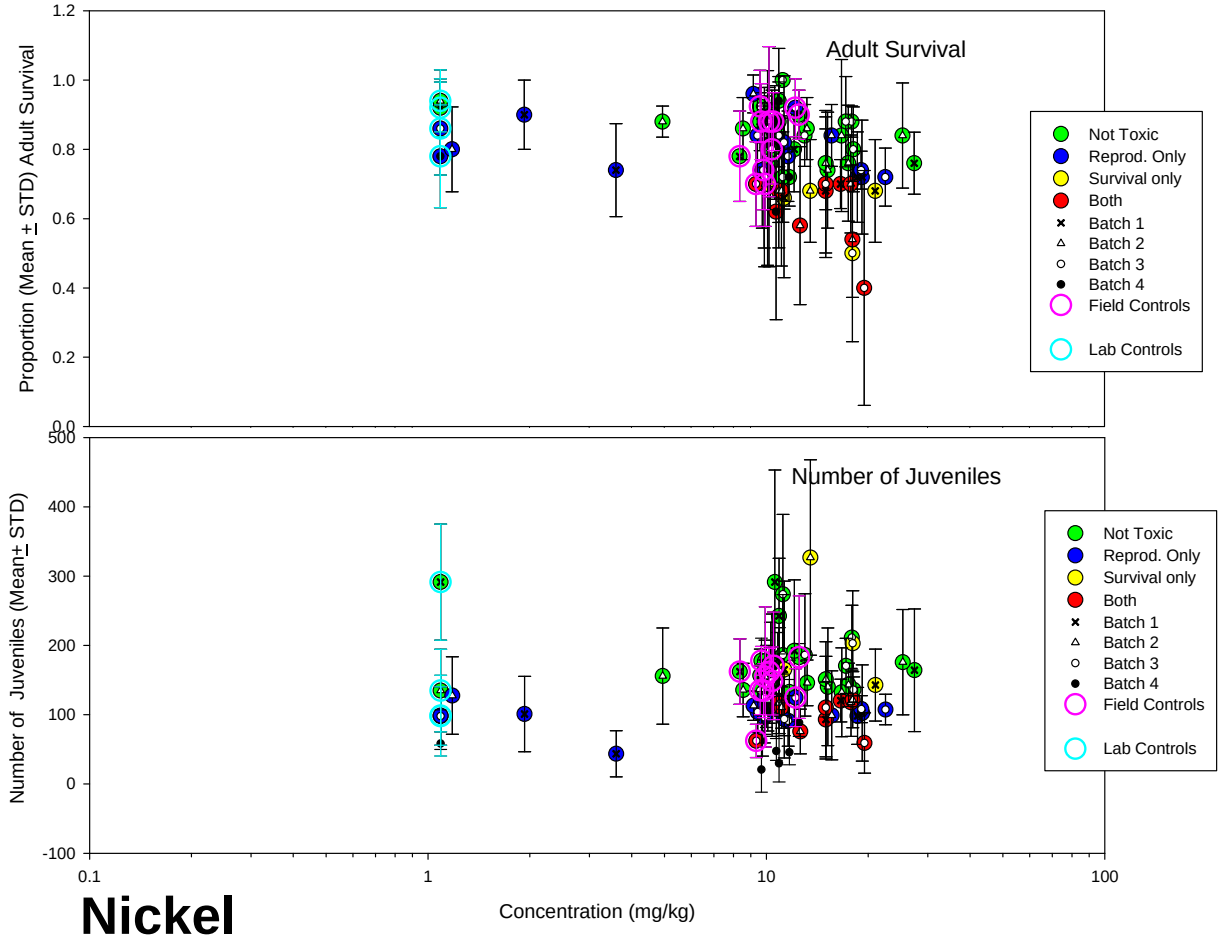


Figure D-14. Dose Response Scatter Plots for Invertebrate Bioassays and Cobalt Concentrations.

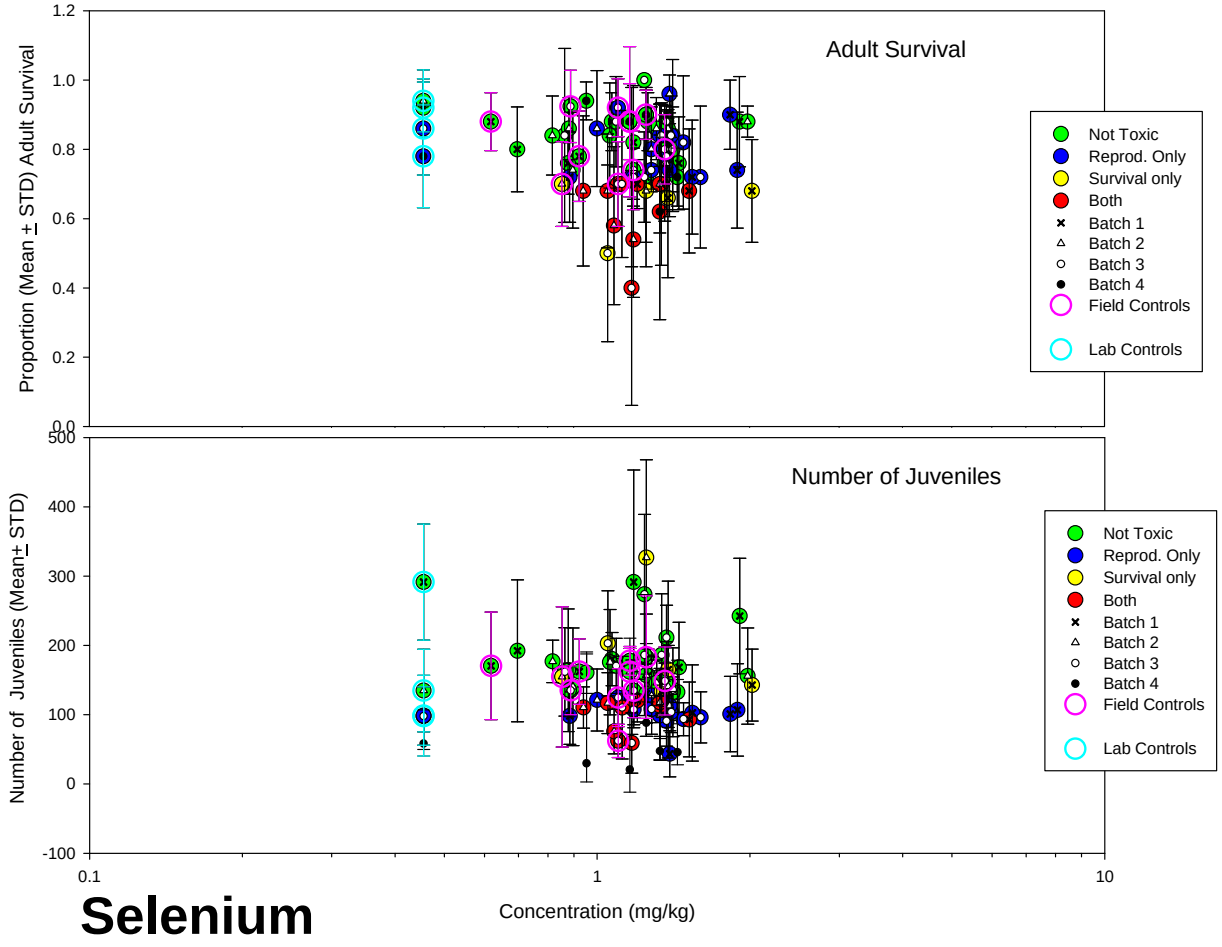
Not Toxic = Survival and reproduction weight not reduced relative to the reference envelope.
Reprod. Only/Survival Only = Only reproduction or survival reduced relative to the reference envelope.
Both = Both reproduction and survival reduced relative to the reference envelope.



Nickel

Figure D-15. Dose Response Scatter Plots for Invertebrate Bioassays and Nickel Concentrations.

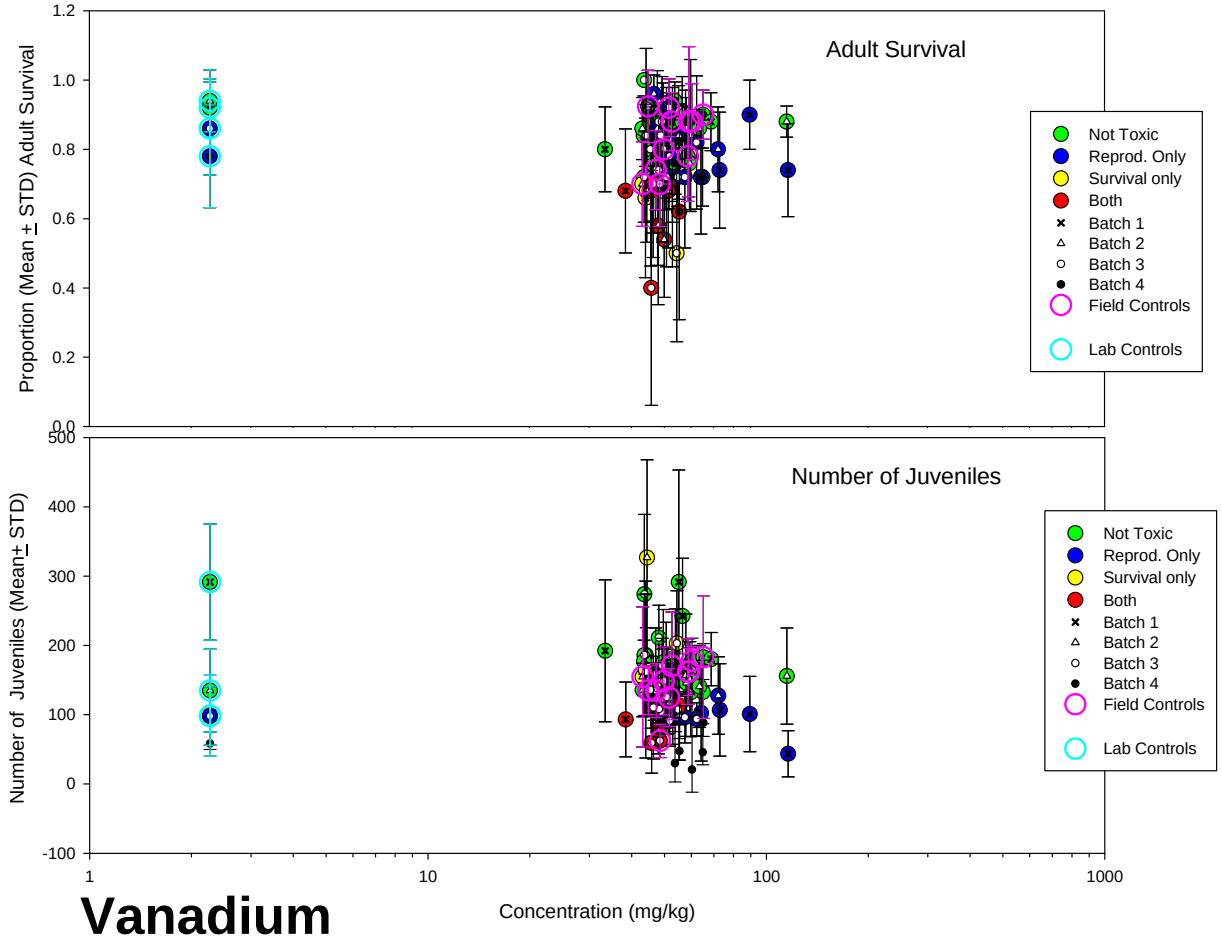
Not Toxic = Survival and reproduction weight not reduced relative to the reference envelope.
Reprod. Only/Survival Only = Only reproduction or survival reduced relative to the reference envelope.
Both = Both reproduction and survival reduced relative to the reference envelope.



Selenium

Figure D-16. Dose Response Scatter Plots for Invertebrate Bioassays and Selenium Concentrations.

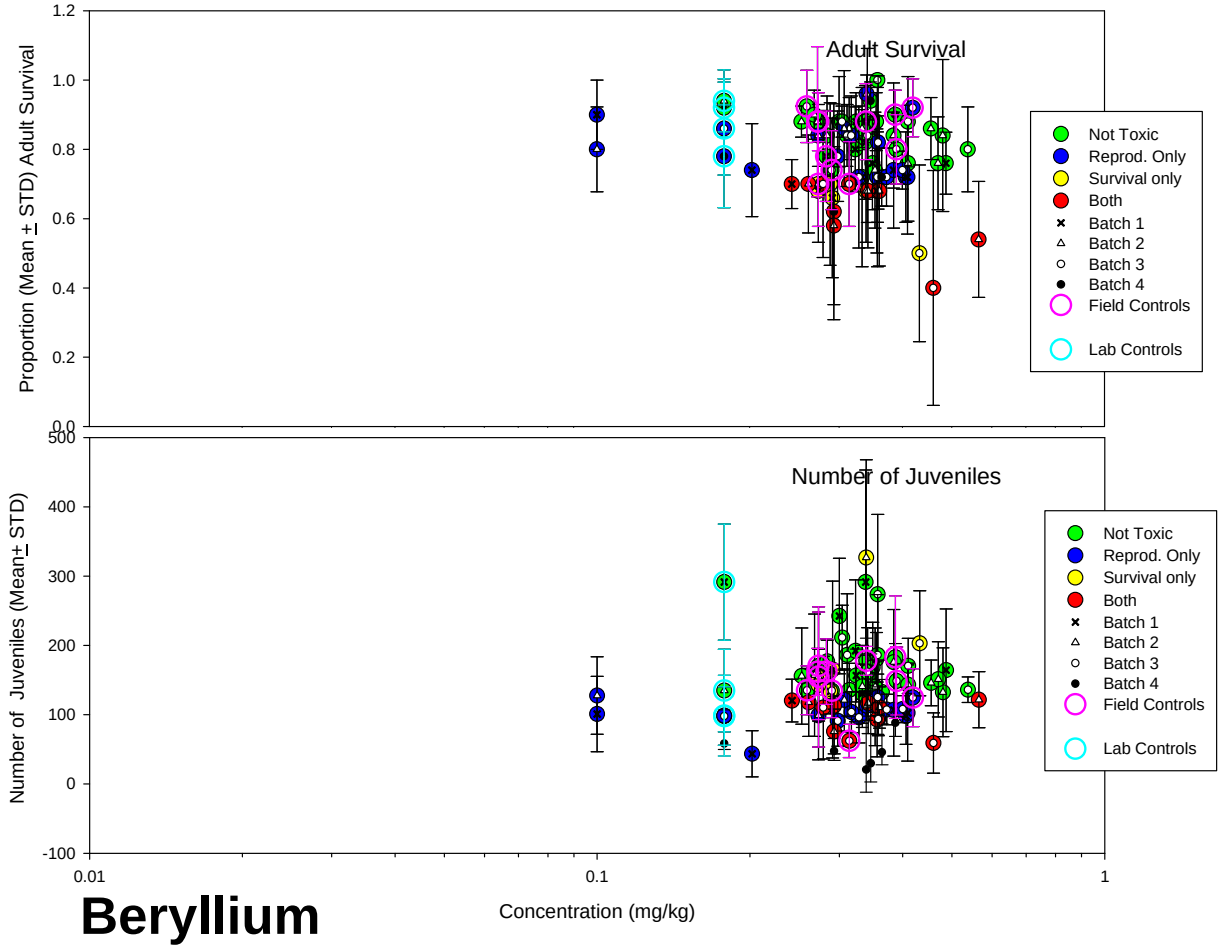
Not Toxic = Survival and reproduction weight not reduced relative to the reference envelope.
Reprod. Only/Survival Only = Only reproduction or survival reduced relative to the reference envelope.
Both = Both reproduction and survival reduced relative to the reference envelope.



Vanadium

Figure D-17. Dose Response Scatter Plots for Invertebrate Bioassays and Vanadium Concentrations.

Not Toxic = Survival and reproduction weight not reduced relative to the reference envelope.
Reprod. Only/Survival Only = Only reproduction or survival reduced relative to the reference envelope.
Both = Both reproduction and survival reduced relative to the reference envelope.



Beryllium

Figure D-18. Dose Response Scatter Plots for Invertebrate Bioassays and Beryllium Concentrations.

Not Toxic = Survival and reproduction weight not reduced relative to the reference envelope.
Reprod. Only/Survival Only = Only reproduction or survival reduced relative to the reference envelope.
Both = Both reproduction and survival reduced relative to the reference envelope.

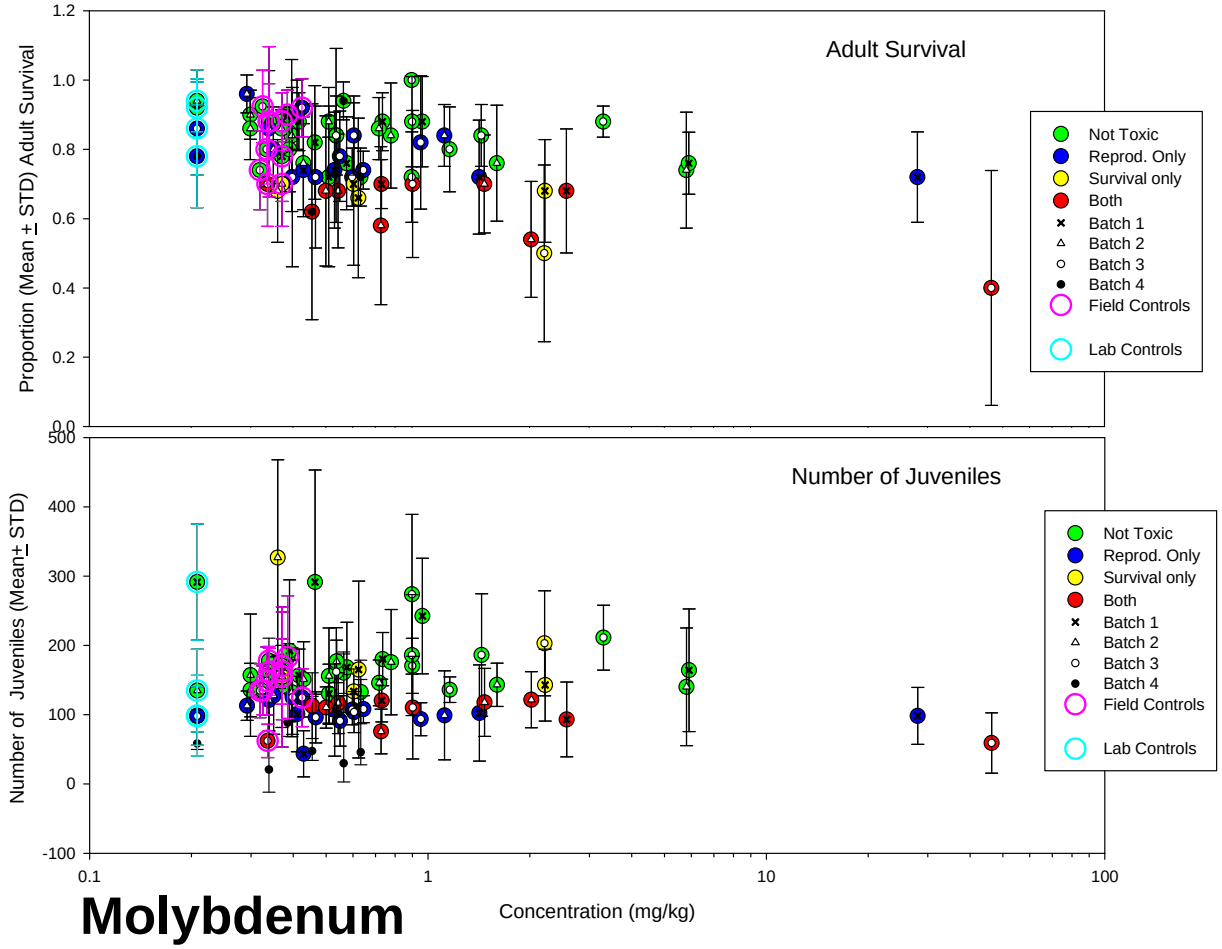
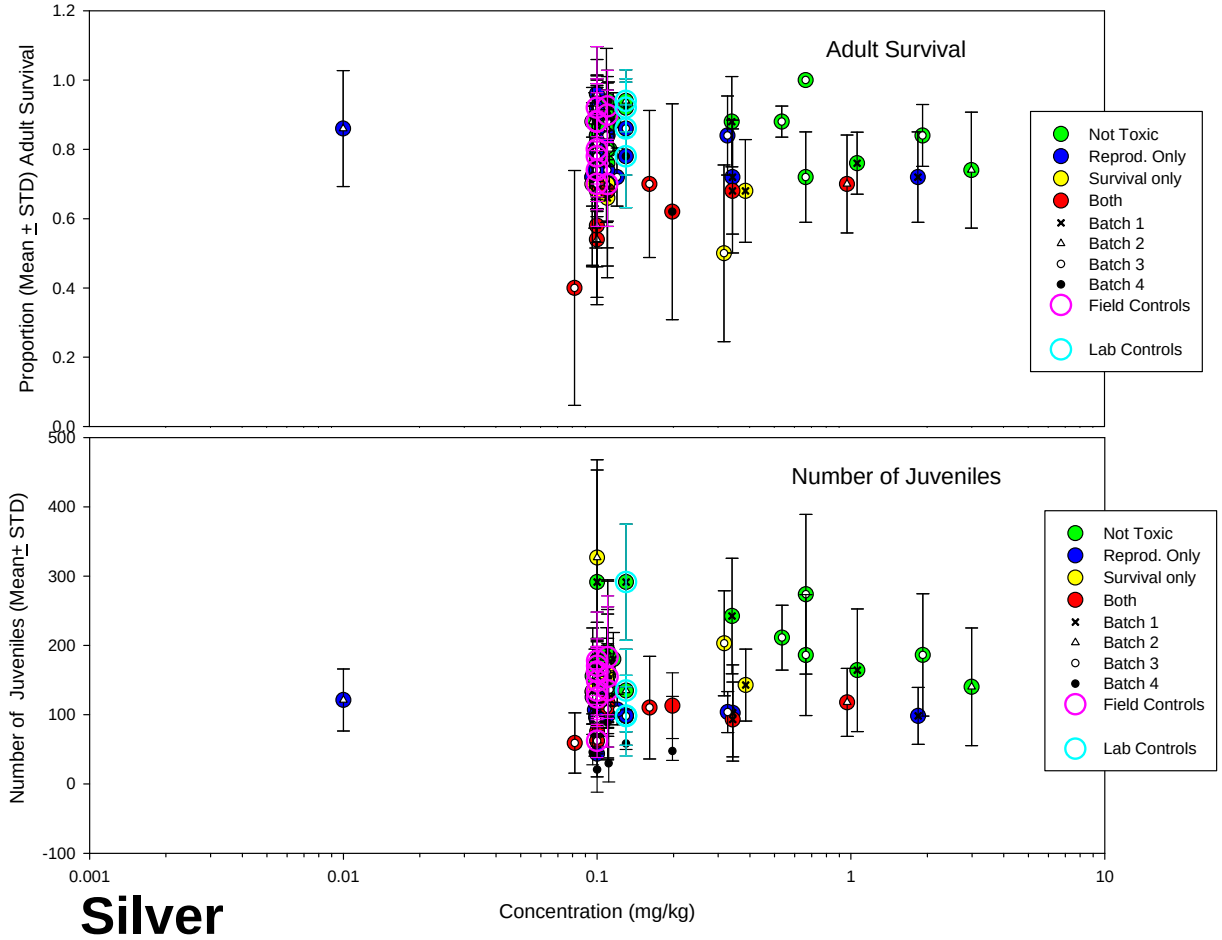


Figure D-19. Dose Response Scatter Plots for Invertebrate Bioassays and Molybdenum Concentrations.

Not Toxic = Survival and reproduction weight not reduced relative to the reference envelope.
Reprod. Only/Survival Only = Only reproduction or survival reduced relative to the reference envelope.
Both = Both reproduction and survival reduced relative to the reference envelope.



Silver

Figure D-20. Dose Response Scatter Plots for Invertebrate Bioassays and Silver Concentrations.

Not Toxic = Survival and reproduction weight not reduced relative to the reference envelope.
Reprod. Only/Survival Only = Only reproduction or survival reduced relative to the reference envelope.
Both = Both reproduction and survival reduced relative to the reference envelope.

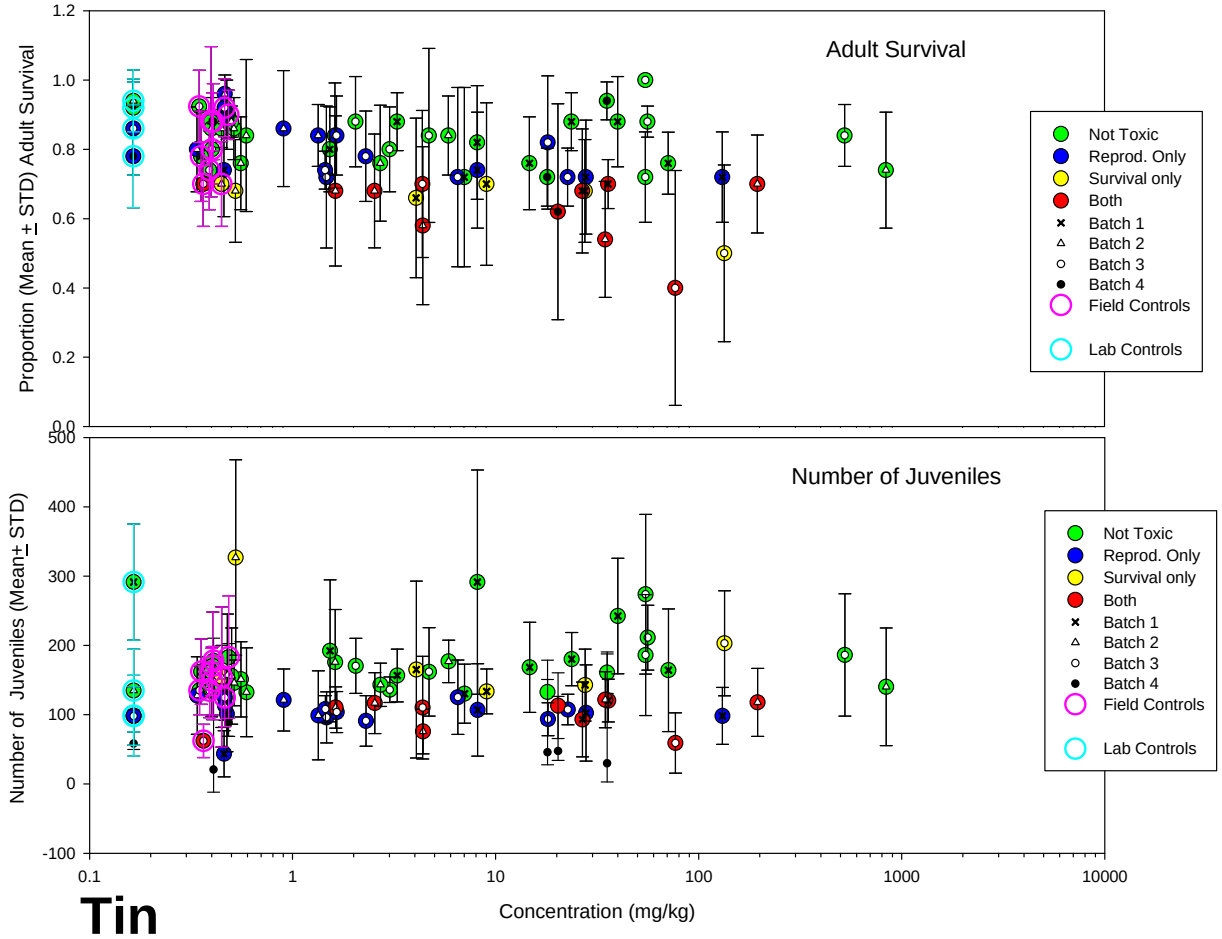
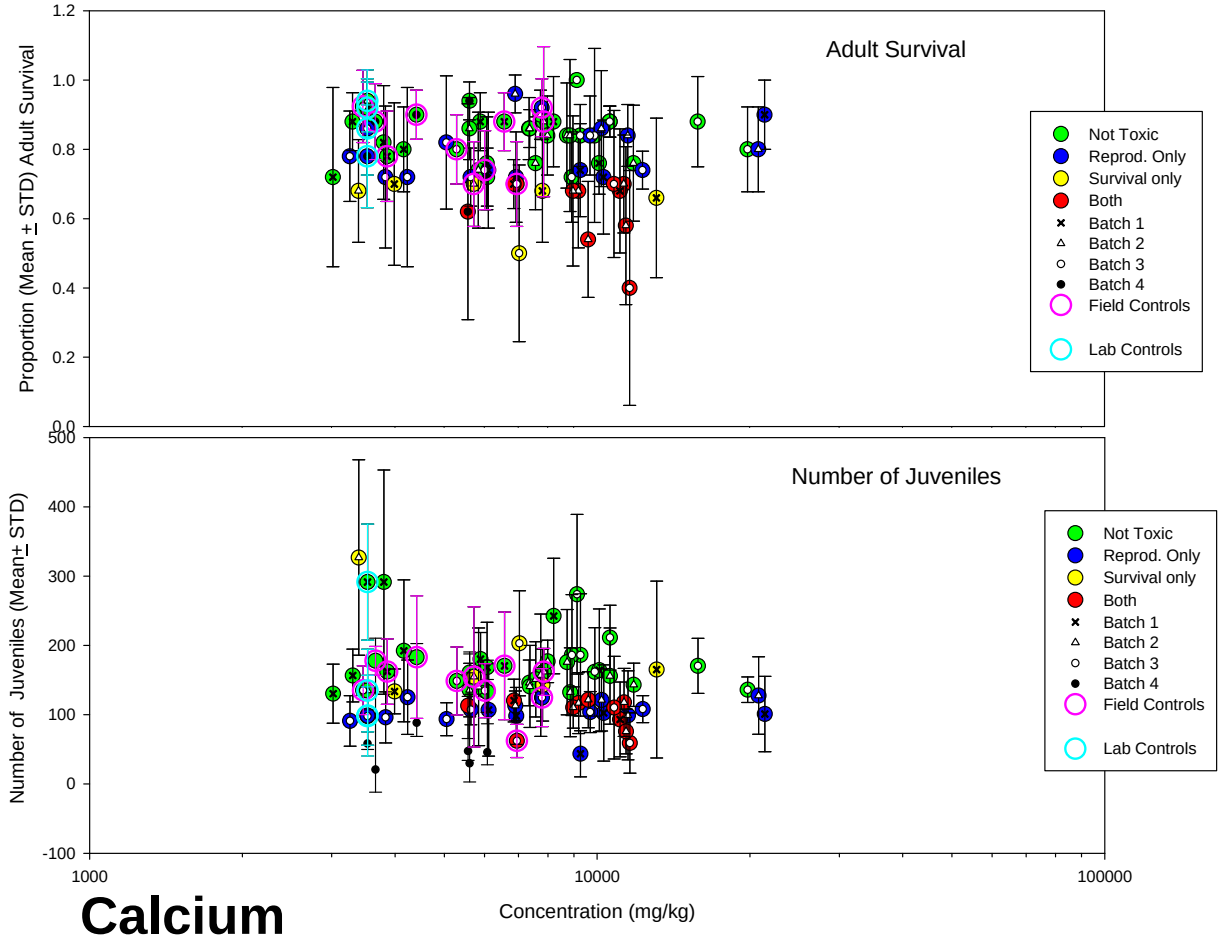


Figure D-21. Dose Response Scatter Plots for Invertebrate Bioassays and Tin Concentrations.

Not Toxic = Survival and reproduction weight not reduced relative to the reference envelope.
Reprod. Only/Survival Only = Only reproduction or survival reduced relative to the reference envelope.
Both = Both reproduction and survival reduced relative to the reference envelope.



Calcium

Figure D-22. Dose Response Scatter Plots for Invertebrate Bioassays and Calcium Concentrations.

Not Toxic = Survival and reproduction weight not reduced relative to the reference envelope.
Reprod. Only/Survival Only = Only reproduction or survival reduced relative to the reference envelope.
Both = Both reproduction and survival reduced relative to the reference envelope.

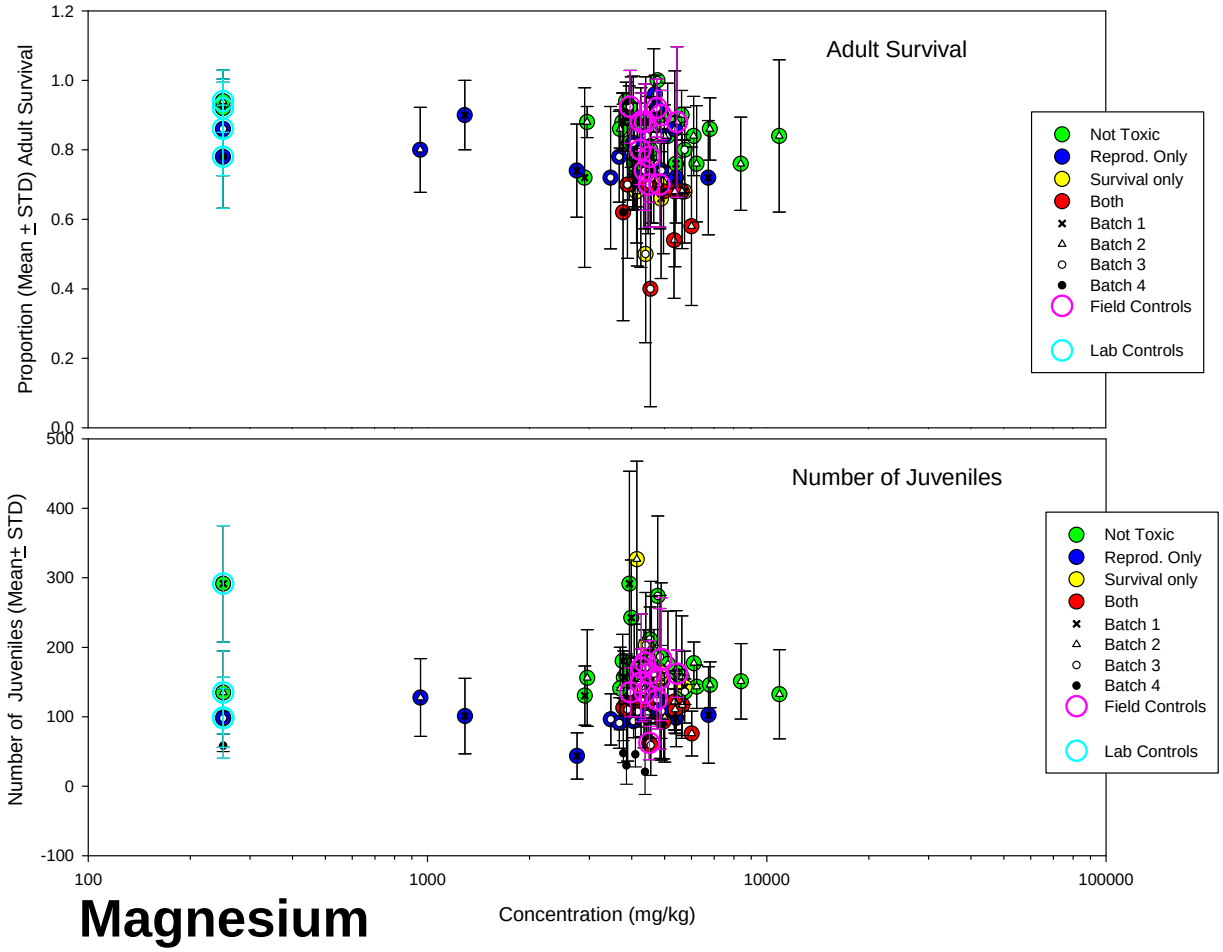


Figure D-23. Dose Response Scatter Plots for Invertebrate Bioassays and Magnesium Concentrations.

Not Toxic = Survival and reproduction weight not reduced relative to the reference envelope.
Reprod. Only/Survival Only = Only reproduction or survival reduced relative to the reference envelope.
Both = Both reproduction and survival reduced relative to the reference envelope.

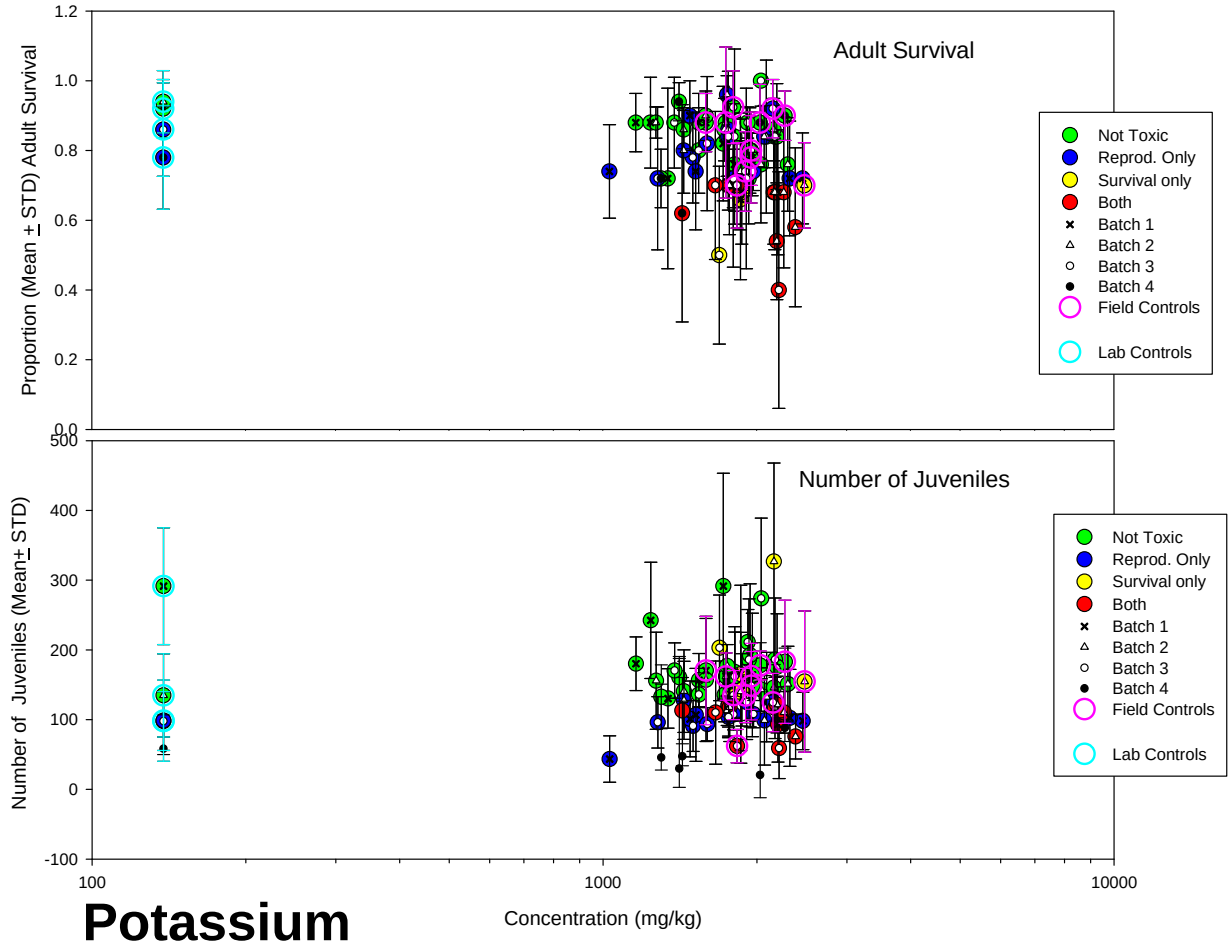


Figure D-24. Dose Response Scatter Plots for Invertebrate Bioassays and Potassium Concentrations.

Not Toxic = Survival and reproduction weight not reduced relative to the reference envelope.
Reprod. Only/Survival Only = Only reproduction or survival reduced relative to the reference envelope.
Both = Both reproduction and survival reduced relative to the reference envelope.

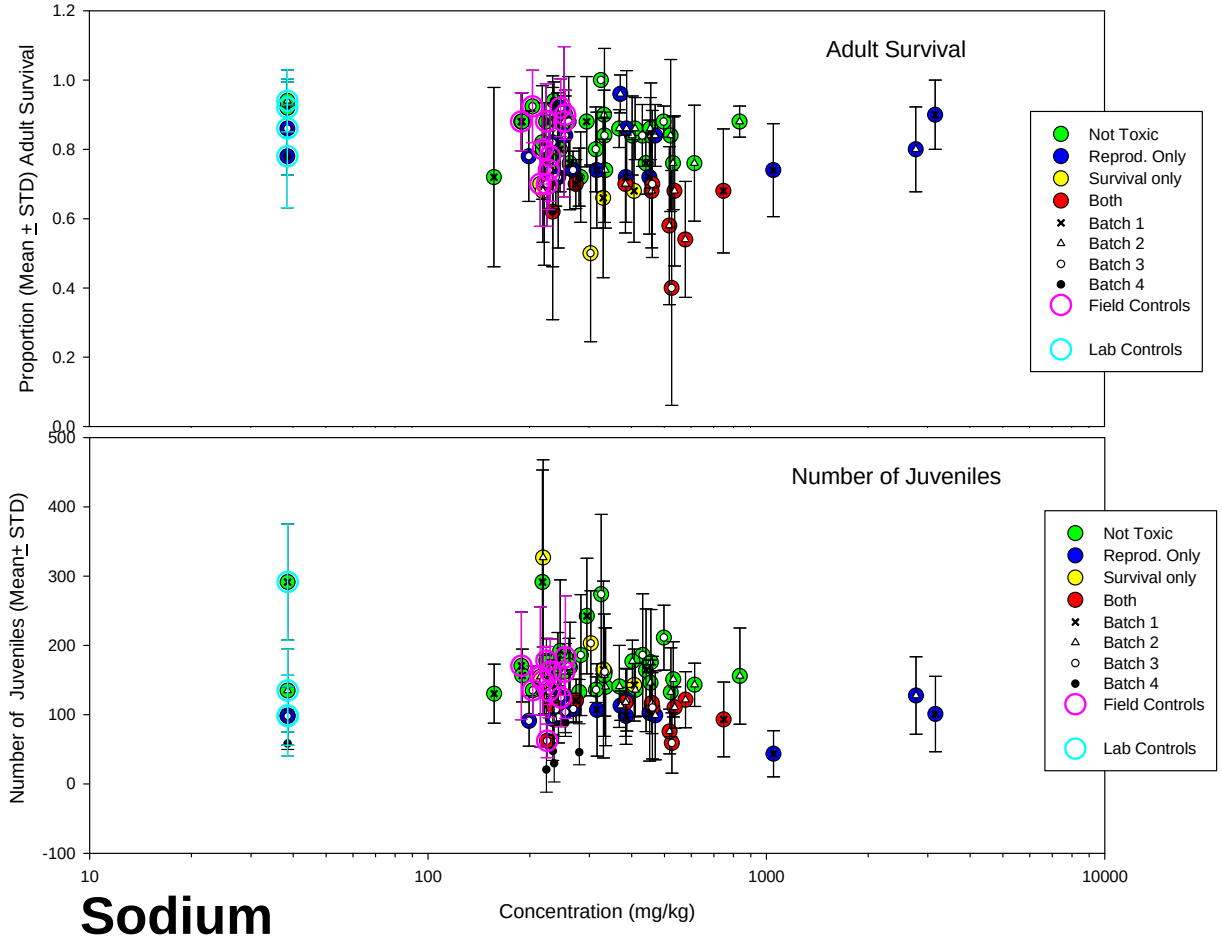


Figure D-25. Dose Response Scatter Plots for Invertebrate Bioassays and Sodium Concentrations.

Not Toxic = Survival and reproduction weight not reduced relative to the reference envelope.
Reprod. Only/Survival Only = Only reproduction or survival reduced relative to the reference envelope.
Both = Both reproduction and survival reduced relative to the reference envelope.

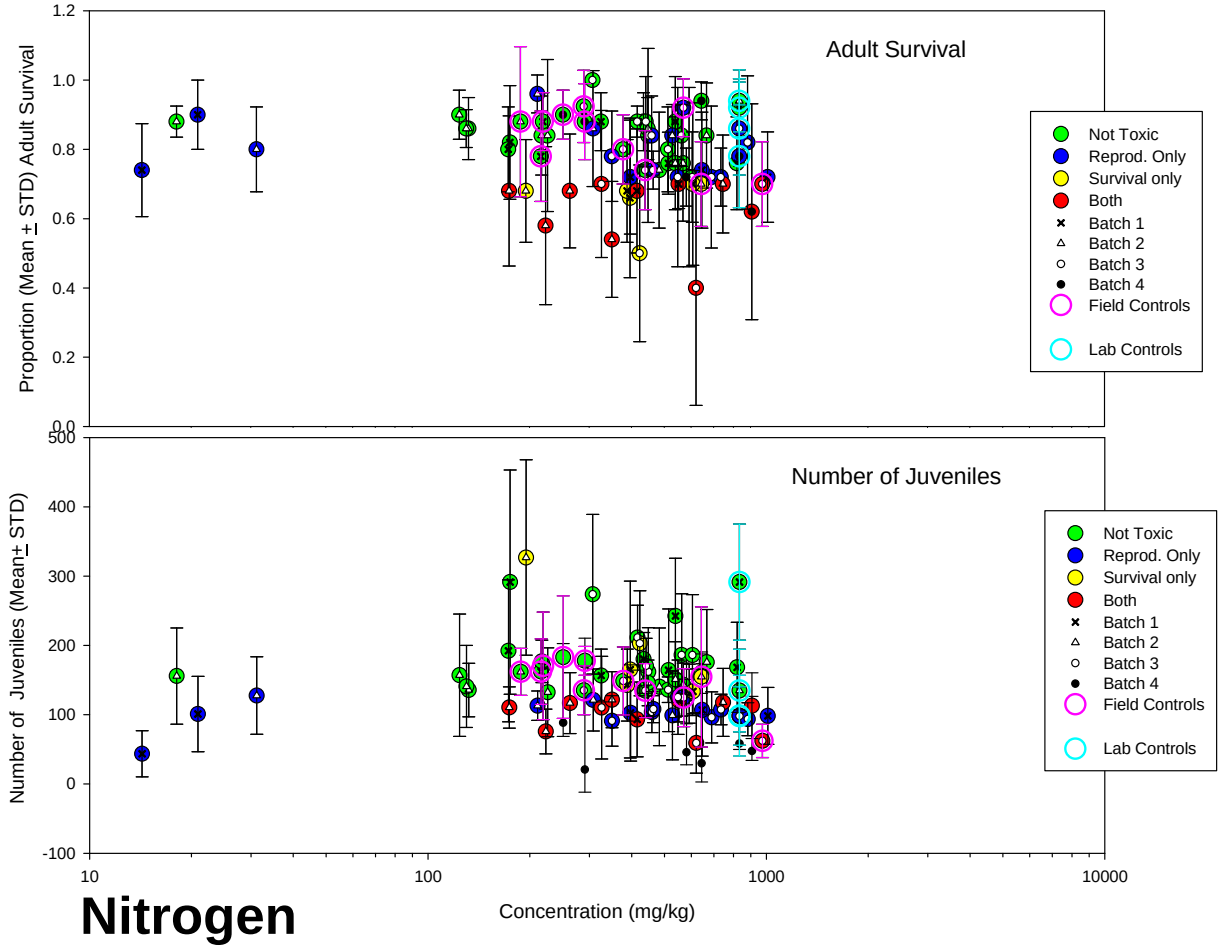


Figure D-26. Dose Response Scatter Plots for Invertebrate Bioassays and Nitrogen Concentrations.

Not Toxic = Survival and reproduction weight not reduced relative to the reference envelope.
Reprod. Only/Survival Only = Only reproduction or survival reduced relative to the reference envelope.
Both = Both reproduction and survival reduced relative to the reference envelope.

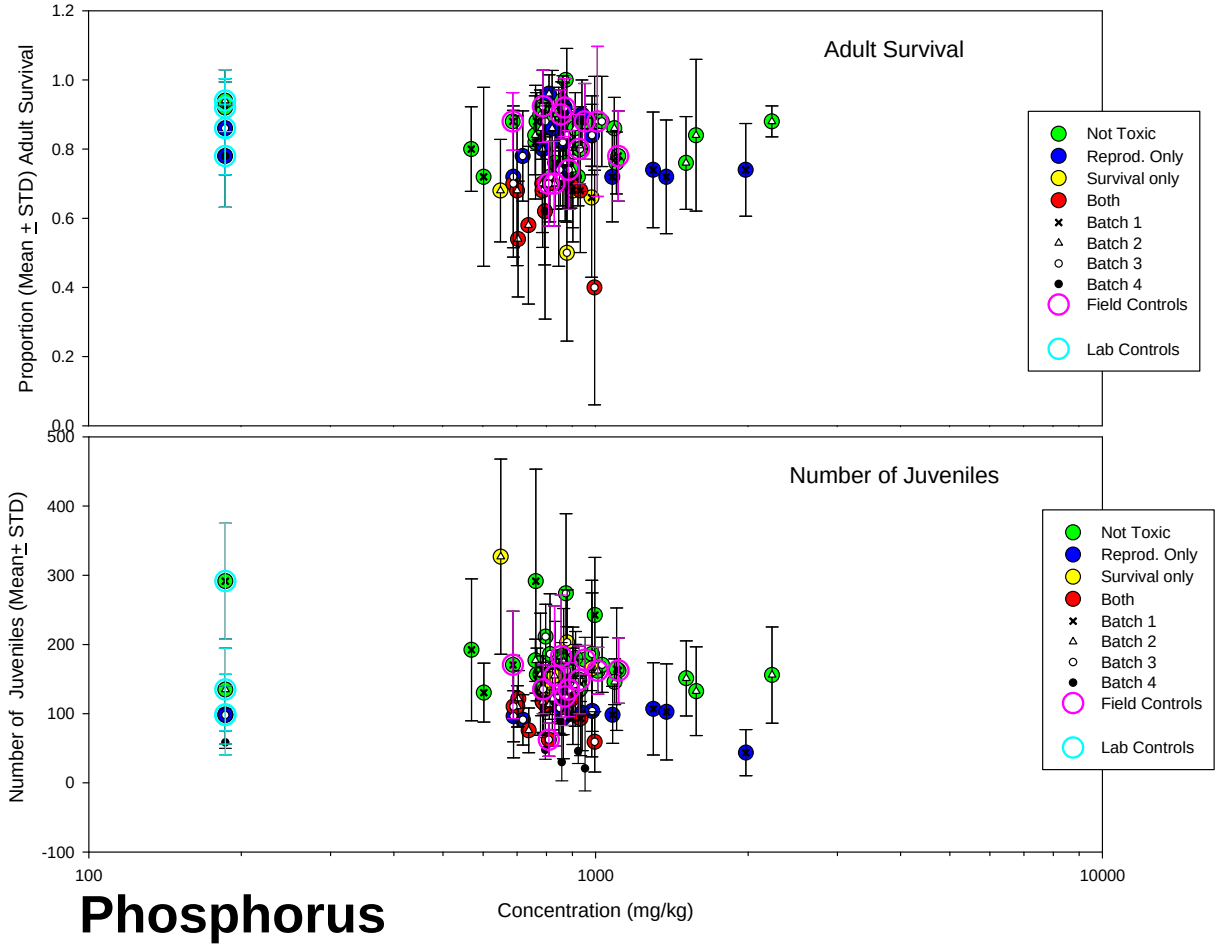
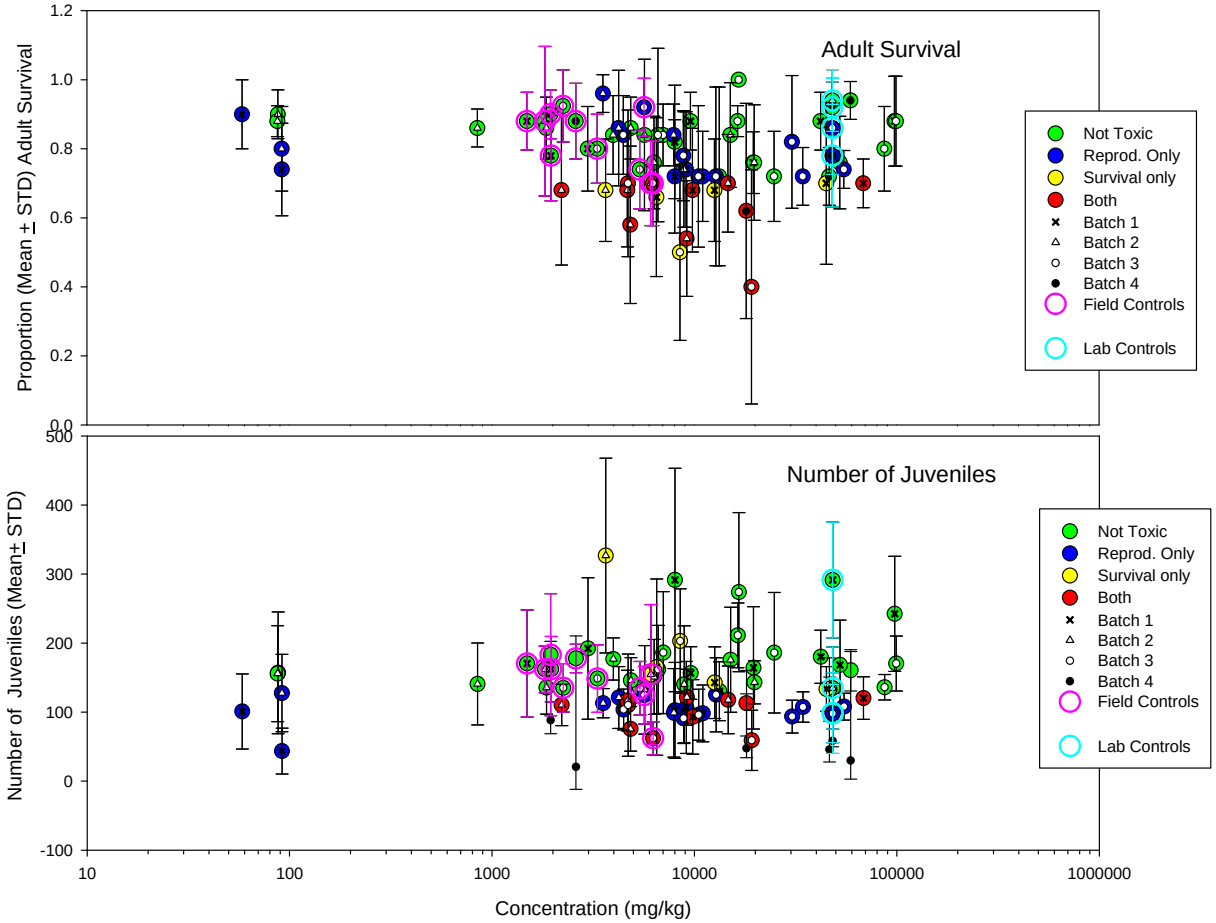


Figure D-27. Dose Response Scatter Plots for Invertebrate Bioassays and Phosphorus Concentrations.

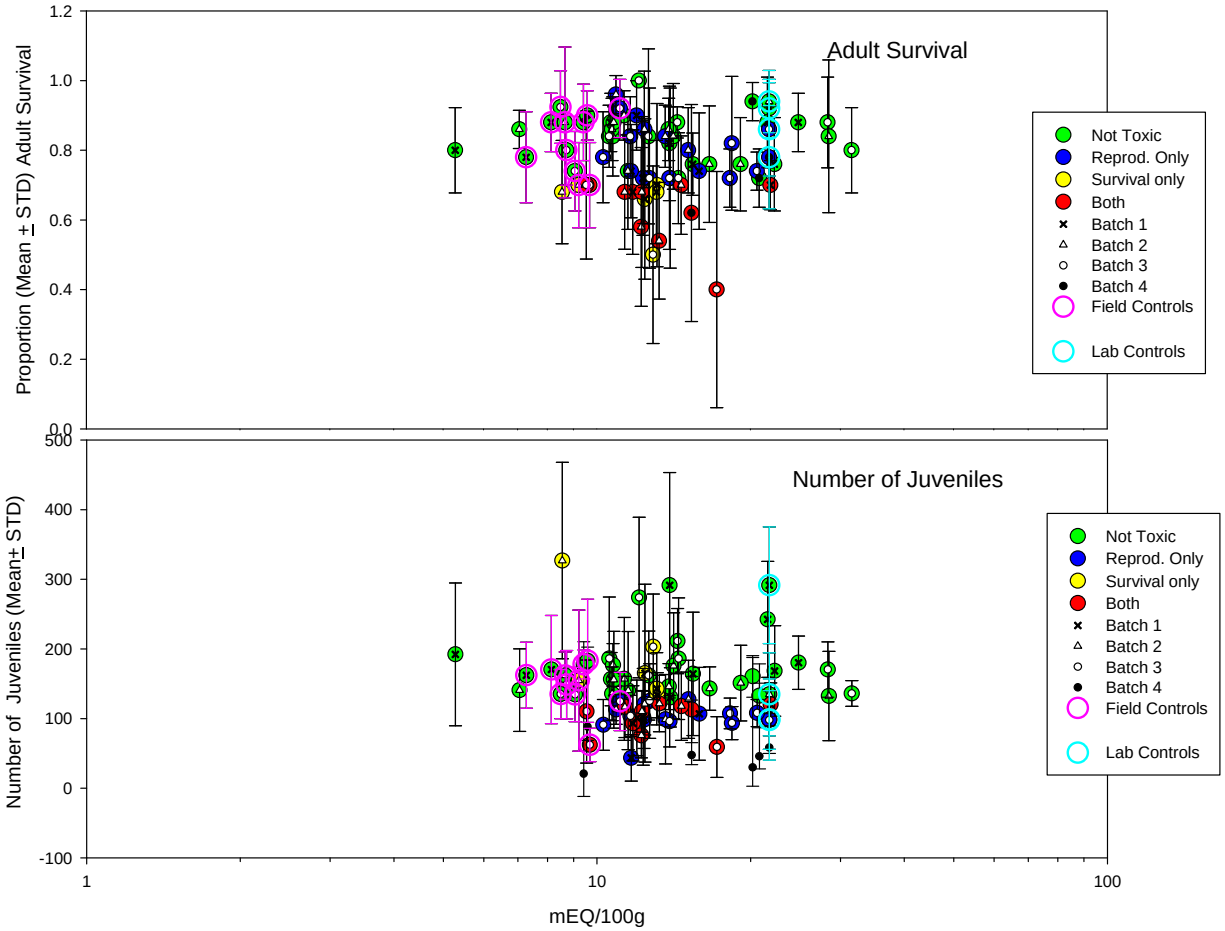
Not Toxic = Survival and reproduction weight not reduced relative to the reference envelope.
Reprod. Only/Survival Only = Only reproduction or survival reduced relative to the reference envelope.
Both = Both reproduction and survival reduced relative to the reference envelope.



Total Organic Carbon

Figure D-28. Dose Response Scatter Plots for Invertebrate Bioassays and Total Organic Carbon Concentrations.

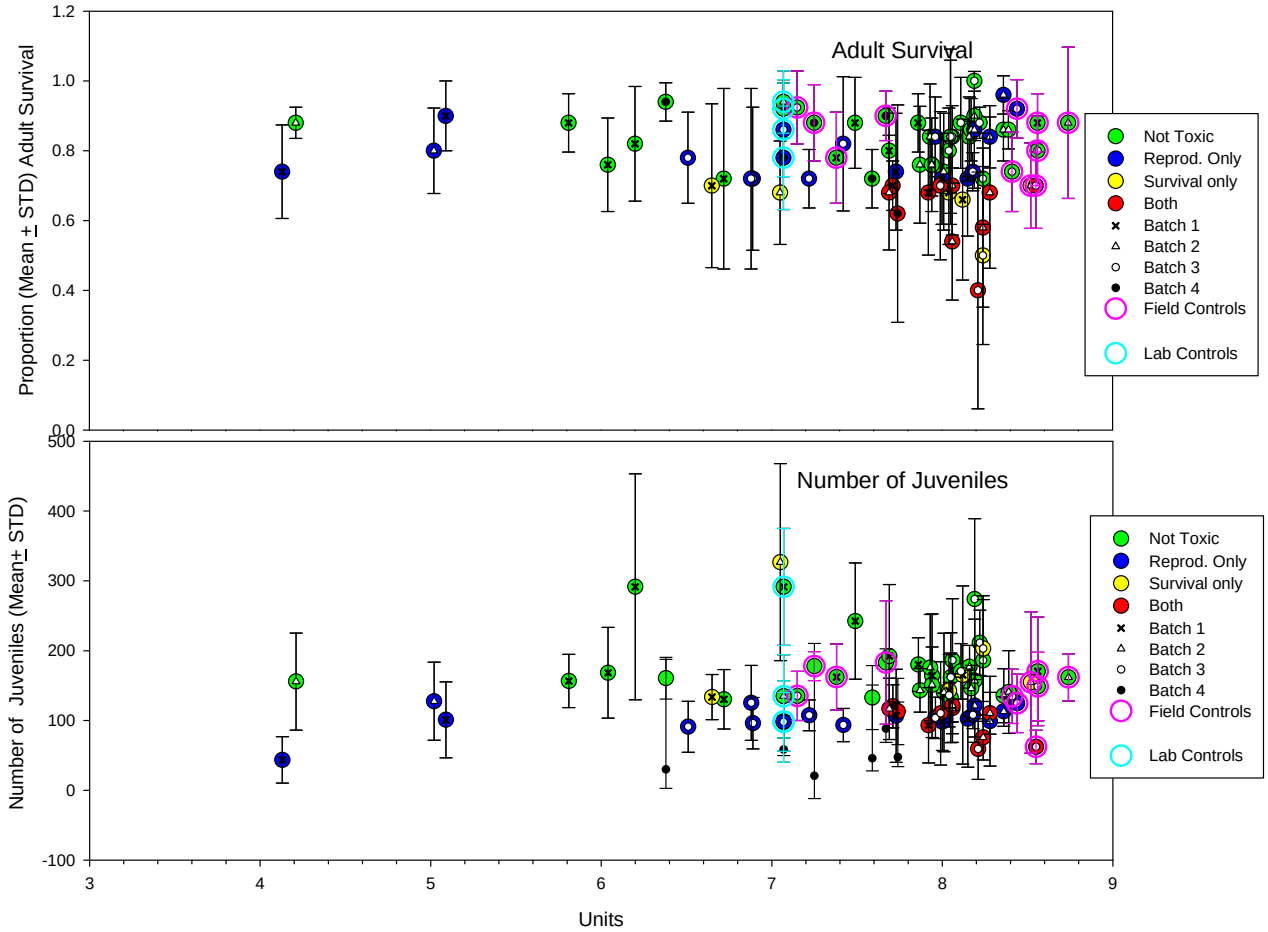
Not Toxic = Survival and reproduction weight not reduced relative to the reference envelope.
Reprod. Only/Survival Only = Only reproduction or survival reduced relative to the reference envelope.
Both = Both reproduction and survival reduced relative to the reference envelope.



Cation Exchange Capacity

Figure D-29. Dose Response Scatter Plots for Invertebrate Bioassays and Cation Exchange Capacity Measurements.

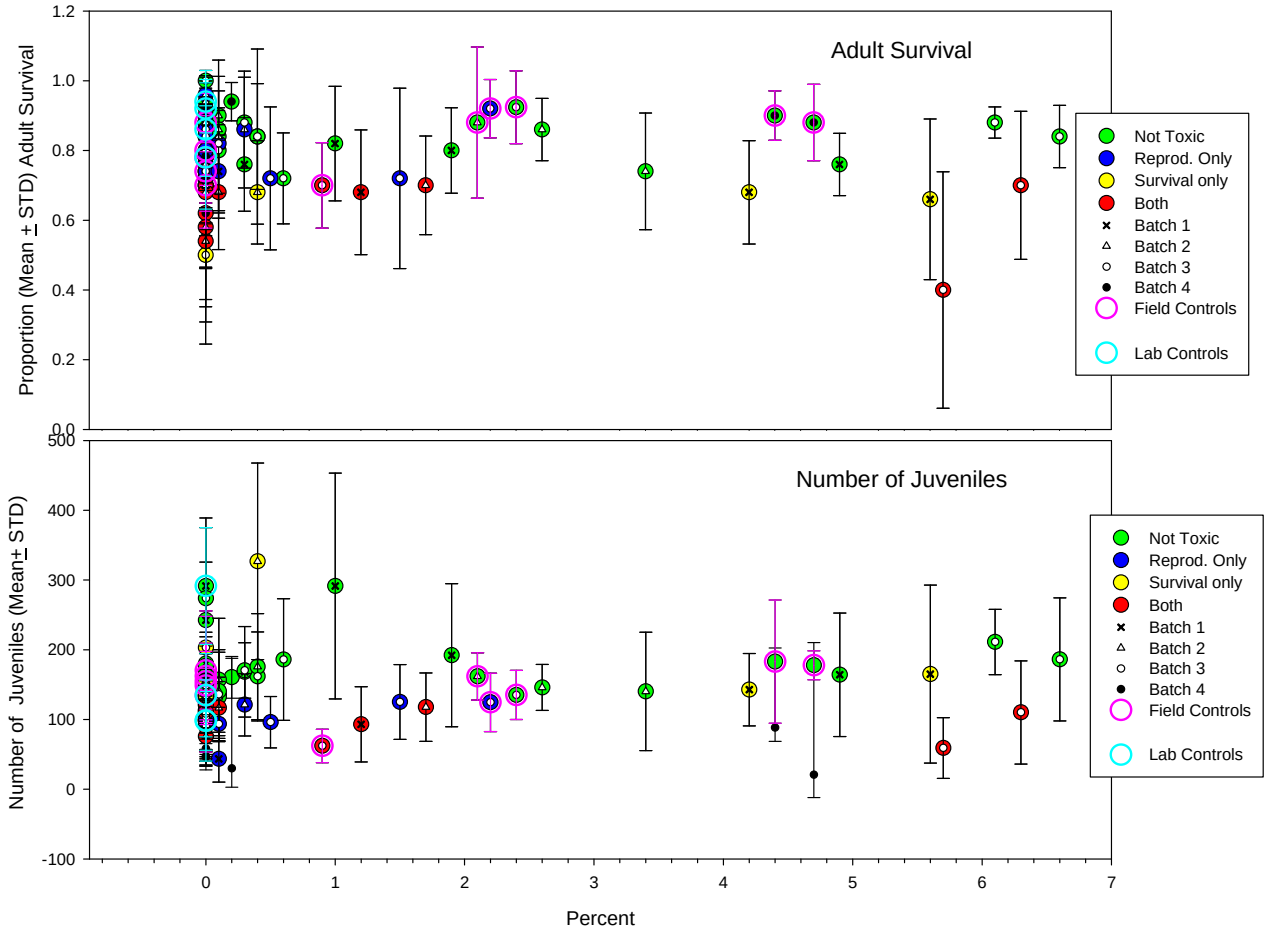
Not Toxic = Survival and reproduction weight not reduced relative to the reference envelope.
Reprod. Only/Survival Only = Only reproduction or survival reduced relative to the reference envelope.
Both = Both reproduction and survival reduced relative to the reference envelope.



pH

Figure D-30. Dose Response Scatter Plots for Invertebrate Bioassays and pH Measurements.

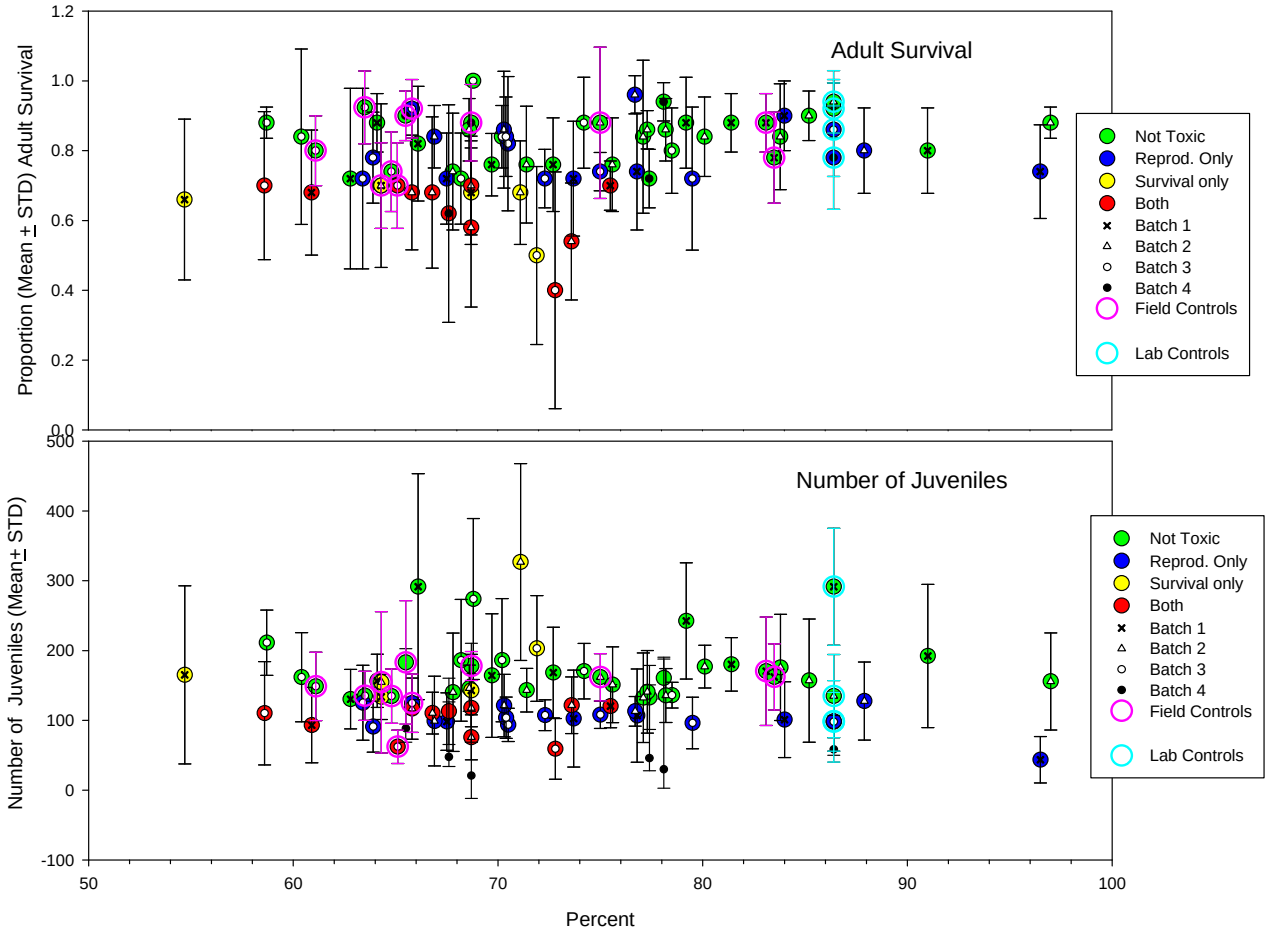
Not Toxic = Survival and reproduction weight not reduced relative to the reference envelope.
Reprod. Only/Survival Only = Only reproduction or survival reduced relative to the reference envelope.
Both = Both reproduction and survival reduced relative to the reference envelope.



Percent Gravel

Figure D-31. Dose Response Scatter Plots for Invertebrate Bioassays and Percent Gravel.

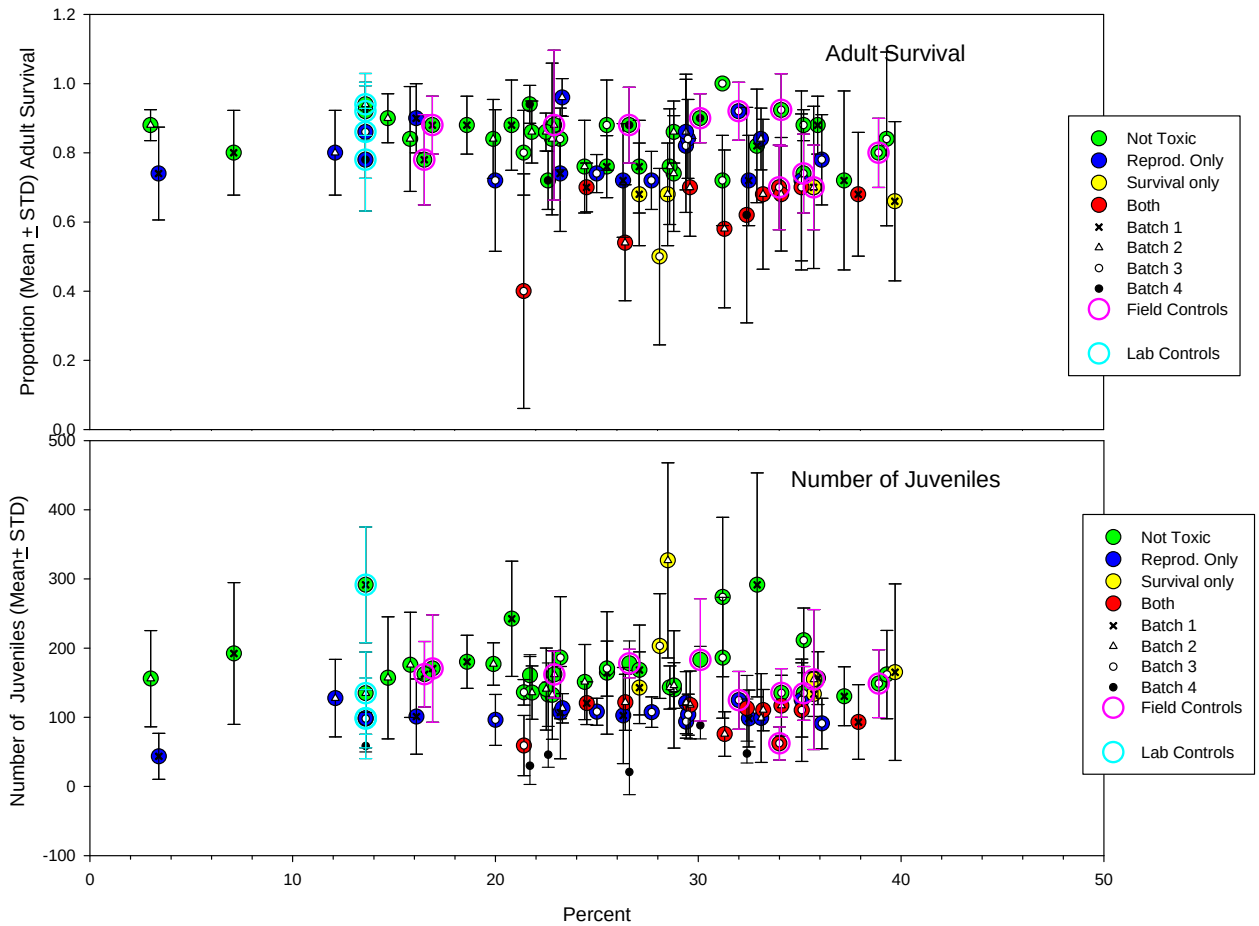
Not Toxic = Survival and reproduction weight not reduced relative to the reference envelope.
Reprod. Only/Survival Only = Only reproduction or survival reduced relative to the reference envelope.
Both = Both reproduction and survival reduced relative to the reference envelope.



Percent Sand

Figure D-32. Dose Response Scatter Plots for Invertebrate Bioassays and Percent Sand.

Not Toxic = Survival and reproduction weight not reduced relative to the reference envelope.
Reprod. Only/Survival Only = Only reproduction or survival reduced relative to the reference envelope.
Both = Both reproduction and survival reduced relative to the reference envelope.



Percent Silt/Clay

Figure D-33. Dose Response Scatter Plots for Invertebrate Bioassays and Percent Silt/Clay.

Not Toxic = Survival and reproduction weight not reduced relative to the reference envelope.
Reprod. Only/Survival Only = Only reproduction or survival reduced relative to the reference envelope.
Both = Both reproduction and survival reduced relative to the reference envelope.

Appendix E

Waste Site Histories for Sampling Areas

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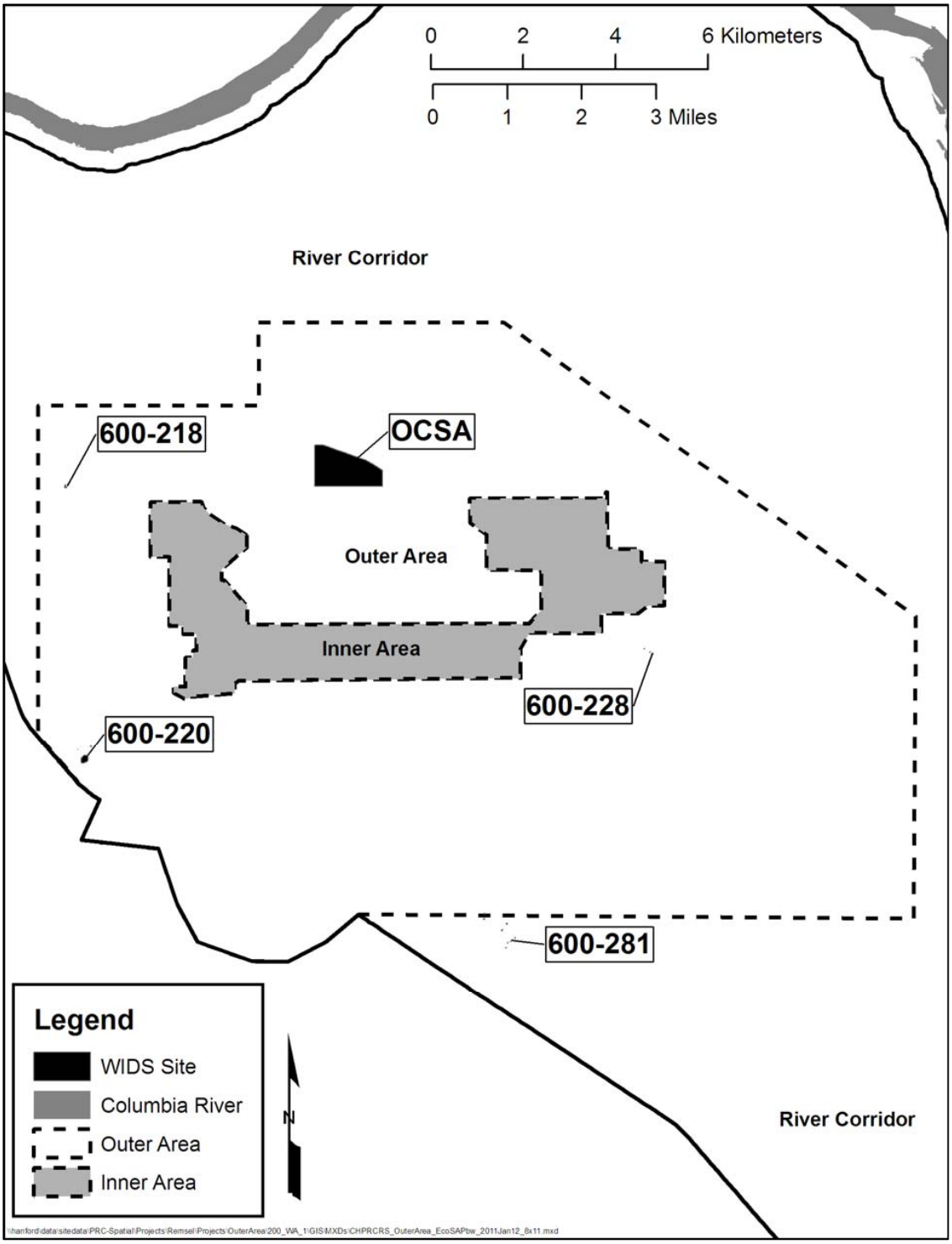

Figure 1-1. Central Plateau Outer Area Waste Sites Targeted for Sample Collection to Support PRG Development

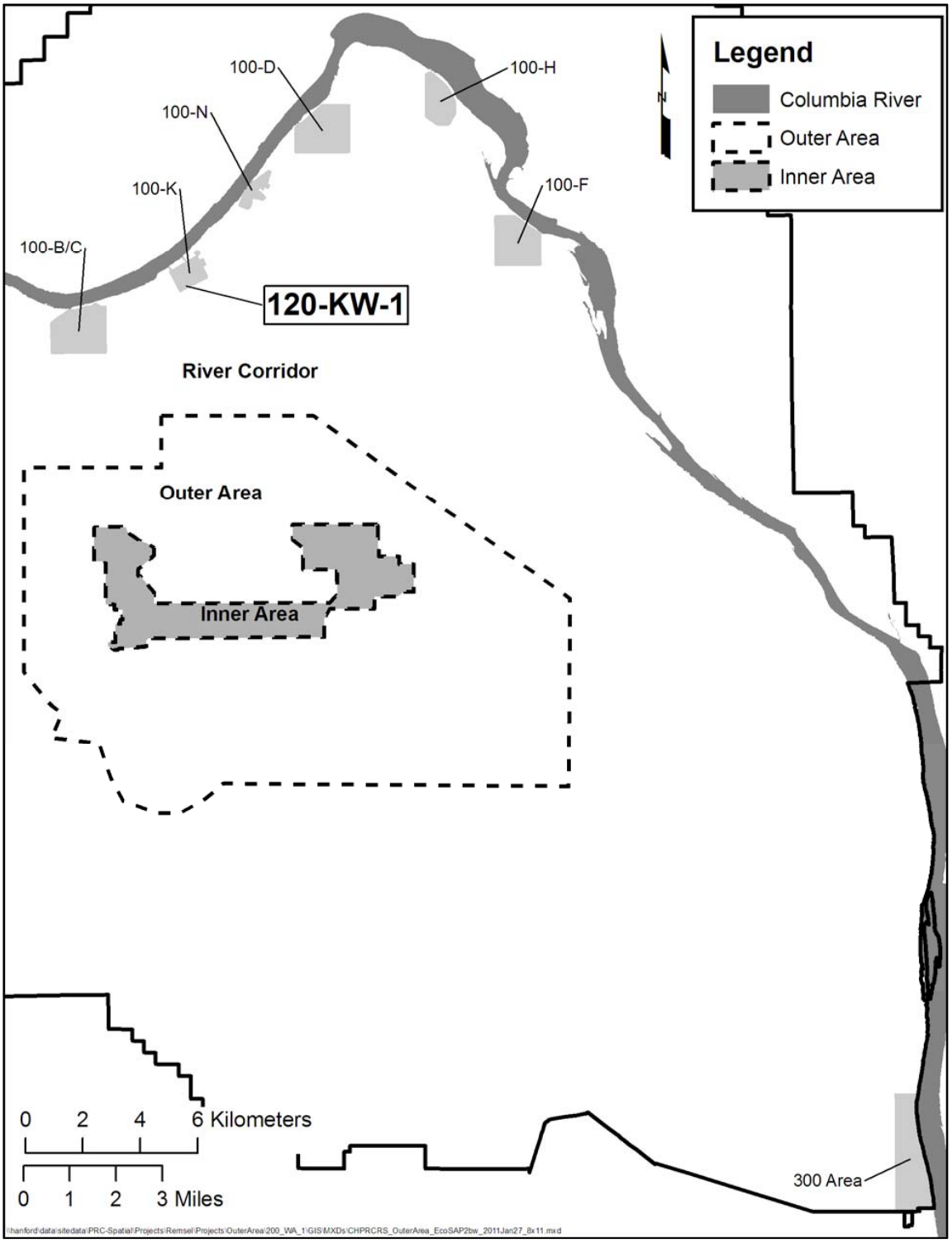

Figure 1-2. River Corridor Waste Site Targeted for Sample Collection to Support PRG Development

5/28/2014

Waste Information Data System
General Summary Report

Site Code: OCSA **Site Classification: Accepted** Page 1

Site Names: OCSA; Old Central Shop Area; Central Shop Area

Site Type: Foundation
Status: Inactive
Hanford Area: 600
OU/WMA: 200-OA-1

Start Date: 1/1/1945
End Date:
Pipe Type: Not Specified

Site Description:

The site consists of building foundations and scattered debris. The central shops had been surrounded by over 1.3 miles (2.1 kilometers) of fencing. The structures in the shop complex included offices, storage huts, boiler houses, warehouse and storage facilities as well as multiple shop facilities (automotive repair, sheet metal welding, paint, etc). There were also bulk fuel storage and a septic system. A site visit on 12/4/1997 observed pieces of lumber, corrugated metal, bricks, shingles, buckets, a barrel, office furniture, and wooden tables. There are two pits containing debris and nails.

Location Description:

The site is located in the 600 Area approximately half way between 200 East and West areas, south of Route 11A and north of Route 4S.

Process Description:

During Hanford construction the central shops were established as a staging area, repair shops, and specialized fabrications area. It was a central location for construction being conducted at 200 East, 200 West, 100-B, 100-D, and 100-F Areas. It included materials storage areas for construction materials and fuel storage. All facilities in the central shops area were considered temporary construction facilities and were identified as TC-29 Buildings. The sanitary sewer system consisted of a gravity feed septic tank system open trench and open settling ponds.
There were three fuel storage areas: One was associated with a gas station, and had kerosene as well as diesel and gasoline in 3,000-gallon storage tanks (also "white" in a 2,000 gallon tank). The second was a fuel storage yard, with six 25,000 gallon tanks and two 12,000 gallon tanks; the drawings show this as both "Gasoline storage area" on one side and "Fuel Oil storage" on the other. The third is one 100,000-gallon storage tank that was connected to a Boiler, which was likely the heat source for the area buildings.

Site Comment:

During May 2010 through October 2010 surface samples (0-12 inches) were collected at Old Central Shop Area (OSCA), as directed via sample instructions (GC-SI-2010-0017, 0024, 0025, 0031 and 0036). They were completed with the exception of some locations due to debris inhibiting access to those locations. Many surface samples collected exceeded applicable Removal Action Levels. This provided sufficient information to change the remedial alternative from Confirmatory Sampling/No Further Action (CS/NFA) to Remove Treat and Dispose (RTD). There were insufficient funds to perform the removal action. Therefore, the depth samples were not collected. This activity has been set aside for a future time when funding is available to further characterize the waste site. The analytical results are archived and are available in the HEIS database.Old Central Shop Area (OCSA) is a very large waste site. For characterization purposes it was divided into 9 zones. In the Sample Instructions, they are referred to as inspection zones (IZ). A summary of the areas that exceeded the Removal Action Levels includes: In IZ 2, ZPC 5 failed for lead; in IZ 4, ZPC 1 and ZPC 2 failed for metals, PAH and potentially TPH; in IZ 5, FS 3, ZPC 4, 7 and 8 failed for metals; In IZ 6, ZPC 10, 12 and 13 failed for metals; in IZ, ZPC 7 failed for arsenic and nitrate-N; in IZ 9, FS 1, 2 and 6 failed for metals and ZPC 1 and 2 failed for metals, nitrate-N and TPH.

Waste Information:

Type:	Sanitary Sewage	**Amount:**	
Category:	Nondangerous/nonradioactive	**Units:**	Not Specified
Physical State:	Solid and Liquid	**Reported Date:**	

Description:

The site contained a sanitary sewer system consisting of a tank(s), open trench, and settling ponds.

References:

1. Roger Carpenter, 11/25/1996, From the Desk of RW Carpenter to LA Dietz - Subject: Discovery Site, 100-D Reactor Cooling Water Effluent Underground Lines, FDO:11-25-96.

Type:	Demolition and Inert Waste	**Amount:**	
Category:	Nondangerous/nonradioactive	**Units:**	Not Specified
Physical State:	Solid	**Reported Date:**	

Description:

The site contains miscellaneous demolition debris and several foundations can be seen. There is also evidence of burning.

References:

1. Roger Carpenter, 11/25/1996, From the Desk of RW Carpenter to LA Dietz - Subject: Discovery Site, 100-D Reactor Cooling Water Effluent Underground Lines, FDO:11-25-96.

Dimensions:

Site Shape: Not Specified

Comments:

The Qmap area calculation tool estimates the mapped OCSA polygon to be 235 acres or 95 hectares.

Field Work:

Type: GPS Surveys
Begin Date: 6/9/1998
End Date: 6/9/1998
Purpose: Mapping

Comment:

A pit by the railroad tracks, some manholes and 2 small concrete pads were mapped.

Type: GPS Surveys
Begin Date: 12/2/1997
End Date: 1/7/1998
Purpose: Mapping

Regulatory Information:

Programmatic Responsibility

Site Code: **OCSA** **Site Classification: Accepted** Page 3

Responsible Contractor/Subcontractor:	CHPRC	CH2M HILL Plateau Remediation Company
Reclassifying Contractor/Subcontractor:	None	None
Responsible Project:	CPSM	Waste & Fuels Management Project - Central Plateau Surveillanc

Site Evaluation

Solid Waste Management Unit: Yes

TPA Waste Management Unit Type: Not Specified

Permitting

RCRA Part B Permit:	No	**TSD Number:**	
RCRA Part A Permit:	No	**Closure Plan:**	No
RCRA Permit Status:	Not Specified		
Septic Permit:	No	**216/218 Permit:**	
Inert LandFill:		**NPDES:**	
Air Operating Permit:	No	**State Waste Discharge Permit:**	
Air Operating Permit Number(s):			

Tri-Party Agreement

Lead Regulatory Agency: EPA

Unit Category: CERCLA Remedial/Removal Action

TPA Appendix: C

Remediation and Closure

Decision Document: None

Decision Document Status: None

Closure Document: None

Closure Type: Not Specified

Post Closure Requirments:

Images:

Pathname: //gisweb.rl.gov/widsimg/600/1237/1237_01.jpg **Date Taken:** 12/12/1997

Description:

This digital photo shows abandoned wooden vents and doors.

Pathname: //gisweb.rl.gov/widsimg/600/1237/1237_02.jpg **Date Taken:** 12/3/1997

Description:

This digital photo shows one of the ash piles found at this site.

Pathname: //gisweb.rl.gov/widsimg/600/1237/1237_03.jpg **Date Taken:** 12/3/1997

Description:

This digital photo shows one of the many foundations at this site.

Pathname: //gisweb.rl.gov/widsimg/600/1237/1237_04.jpg **Date Taken:** 12/3/1997
Description:
This is a french drain of red clay (approximately 24 inches in diameter) filled with rocks.

Pathname: //gisweb.rl.gov/widsimg/600/1237/1237_05.jpg **Date Taken:** 12/3/1997
Description:
Here's another foundation. This one has a metal strip down its length.

Pathname: //gisweb.rl.gov/widsimg/600/1237/1237_06.jpg **Date Taken:** 12/3/1997
Description:
This digital photo shows some of the interesting metal debris at this site.

Pathname: //gisweb.rl.gov/widsimg/600/1237/1237_07.jpg **Date Taken:** 12/3/1997
Description:
This digital photo shows the lower section of a 3-tiered foundation.

Pathname: //gisweb.rl.gov/widsimg/600/1237/1237_08.jpg **Date Taken:** 12/4/1997
Description:
Photo shows multiple small square concrete foundations.

Pathname: //gisweb.rl.gov/widsimg/600/1237/1237_09.jpg **Date Taken:** 12/4/1997
Description:
This digital photo shows some of the debris at this site.

Pathname: //gisweb.rl.gov/widsimg/600/1237/1237_10.jpg **Date Taken:** 12/12/1997
Description:
This digital photo shows a small foundation next to an ash pile.

Pathname: //gisweb.rl.gov/widsimg/600/1237/1237_11.jpg **Date Taken:** 12/12/1997
Description:
This digital photo shows another foundation that includes some abandoned office furniture.

Pathname: //gisweb.rl.gov/widsimg/600/1237/1237_12.jpg **Date Taken:** 12/12/1997
Description:
This digital photo shows one of the many wooden frames (approximately 2 feet by 2 feet) filled with rocks found around the OCSA.

Pathname: //gisweb.rl.gov/widsimg/600/1237/1237_13.jpg **Date Taken:** 12/12/1997
Description:
This shows some of the large wooden work benches abandoned at the site.

Pathname: //gisweb.rl.gov/widsimg/600/1237/1237_14.jpg **Date Taken:** 12/12/1997
Description:
Here's another digital photo of the gravel sorter.

Pathname: //gisweb.rl.gov/widsimg/600/1237/1237_15.jpg **Date Taken:** 12/26/1997

Description:

The photo shows a close-up of that pile of transite.

Pathname: //gisweb.rl.gov/widsimg/600/1237/1237_16.jpg **Date Taken:** 12/26/1997

Description:

This digital photo shows one of the piles of transite found at OCSA.

Pathname: //gisweb.rl.gov/widsimg/600/1237/1237_17.jpg **Date Taken:** 12/12/1997

Description:

This gravel sorter (?) is found in the westernmost pit at OCSA.

Pathname: //gisweb.rl.gov/widsimg/600/1237/1237_18.jpg **Date Taken:** 1/1/1944

Description:

Historical photo number P-1899 is an aerial photo of the Old Central Shops Area.

Pathname: //gisweb.rl.gov/widsimg/600/1237/1237_19.jpg **Date Taken:** 1/1/1944

Description:

Historical photo number P-1900 is an aerial photo of the Central Shop Area.

References:

1. 12/29/1988, Integration Meeting, between Operable Units Report, Action Plan, and WIDS group to determine site name changes.
2. F. A. Ruck III to N. A. Homan, 8/23/1988, Personal Communication: Written comments for blank SiteType fields.
3. M. S. Gerber, Manhattan Project Buildings and Facilities at the Hanford Site: a Construction History, WHC-MR-0425.
4. Roger Carpenter, 11/25/1996, From the Desk of RW Carpenter to LA Dietz - Subject: Discovery Site, 100-D Reactor Cooling Water Effluent Underground Lines, FDO:11-25-96.
5. K. A. Prosser, 6/20/1997, Field Logbook, EL-1388.
6. Kelly Whitley, 9/29/2011, OCSA Sampling Activities.

5/15/2014

Waste Information Data System
General Summary Report

Site Code: **120-KW-1** **Site Reclassification Status: Interim Closed Out** Page 1

Site Names: 120-KW-1; 183-KW Acid Neutralization Pit; 183-KW Filter Water Facility Dry Well; 100-K-17; 100-KW-1

Site Type: Sump
Status: Inactive
Hanford Area: 100K
OU/WMA: 100-KR-2

Start Date: 1/1/1955
End Date: 1/1/1970
Pipe Type: Not Specified

Site Description:

The site was an underground concrete structure used to neutralize acid waste prior to disposal. The "pit" was a concrete box with approximate dimensions of 2.5 m (8.5 ft) x 2.0 m (6.3 ft) x 1.5 m (5 ft), and was lined on the sides with acid proof bricks. The structure is divided into three sections by dividing brick weirs. Effluent released into the system was held up in a small chamber by the first weir. Effluent overflowed the first weir into a second small chamber and then overflowed the second weir into the third larger chamber. A 10.2-centimeter (4-inch) vitrified tile drain was located in the bottom of the third chamber and is believed to discharge to the process sewer (see Site Comment). The top of the pit was level with the surface and had a 7.6-centimeter (3-inch) plank cover that is posted with "Confined Space" and "Caution, Acid" warning signs. In August 2000, the area around the acid tanks was stabilized with gravel. The french drain and sump were backfilled. They are no longer visible. They are not marked or posted.

Location Description:

The site is located near the southeast corner of the 183.1-KW Headhouse, south of the 120-KW-3 Sulfuric Acid Tank and east of the 100-K-21 Sodium Silicate Tank Site.

Process Description:

The method of acid neutralization is not known. When two other acid neutralization pits (100-K-34 and 100-K-35) that were associated with the elevated day use tanks at 183-KE and 183-KW were opened, crushed limestone was visible. Limestone may also be at the 120-KW-1 site beneath the discarded sludge. From 1968 to 1971 commercial grade sulfuric acid was stored in the 183-KE/KW acid tanks. A heavy precipitate would accumulate in the bottom of the tanks. The tank sludge was periodically flushed from the tanks to adjacent drywells. When the K Reactors were shut down (1970-1971), the acid was removed from the tanks. Approximately 4950 kilograms (11,000 pounds) of sludge was washed out of the tanks into adjacent drainage trenches. The sludge was packaged into 55 gallon drums and sold to an off site vendor. Small amounts of sludge remained in the 183-KE/KW drywells. The drywell sludge was sampled in July 1985. The drywell at 183-KW exceeded the Washington State Department of Ecology Dangerous Waste Regulations limit for mercury. The dangerous waste limit for mercury was 0.2 parts per million. The sample collected in 1985 contained 0.387 parts per million of mercury.

Associated Structures:

The site was associated with the 183-KW Head House and the 183-KW Sulfuric Acid Tanks.

Site Comment:

The sump was backfilled and surface stabilized in August 2000. When the 100-K Area Technical Baseline Report was written, the authors could not locate a site that matched the documented description and location they had for the 120-KW-1 Site. They indicated that the site was probably one of two other neutralization units identified in the report. When a small drawing and site description in a letter from J. J. Dorian to B. W. Mathis dated November 4, 1985 was compared with various Hanford drawings including H-1-25117, H-1-25264, and H-1-25265, it was concluded that the 120-KW-1 Site was the same as one of the "Undocumented Acid Neutralization Pits" identified in Section 6.26 of the baseline report. R.W. Carpenter reported that when the

wooden cover was opened, it was discovered that the first two chambers were nearly filled with a sludge-like material. In September 2000, the engineer responsible for backfilling the sump stated that no sludge was noted during backfilling. According to the baseline report, the pit (as described in Section 6.26) "was constructed in such a way that small volumes of waste chemicals could be held up in a brick-lined compartment for neutralization and then flushed to a larger compartment within the structure, which then drained to the process sewer (Hanford Drawing H-1-25563)". By comparing the referenced drawing with H-1-25117, it is clear that the neutralization pit shown in H-1-25563 is the Caustic Neutralization Pit which was constructed similarly to the Acid Neutralization Pit. Drawing H-1-25265, which provides construction details for the neutralization pits, shows the structures as one large concrete chamber. No drawings could be found showing the layout of the brick weirs, but their presence was verified in the field. Drawing H-1-25563 does show that the Caustic Neutralization Pit discharged to the process sewer and it is reasonable to assume that the Acid Neutralization Pit did similarly. However, since no drawings showing the piping could be located and since the site has been called a dry well, discharge to the soil cannot be discounted.

Waste Information:

Type:	Chemicals	**Amount:**	
Category:	Hazardous/Dangerous	**Units:**	Not Specified
Physical State:	Solid and Liquid	**Reported Date:**	

Description:

The site received sulfuric acid for neutralization and acid sludge waste from the sulfuric acid storage tanks. The drywell sludge was sampled in 1985 and was analyzed for arsenic, barium, cadmium. Chromium, lead, mercury, silver and selenium. The sample taken from the 183-KW drywell contained elevated levels of mercury. The Washington State dangerous waste limit for mercury is 0.2 parts per million. The sample contained 0.387 parts per million of mercury. The other metals were below dangerous waste limitations.

References:

1. Dorian, J. J. to B. W. Mathis, 11/4/1985, UNC Memorandum: Removal of Sulfuric Acid Sludge from the 183 KW/KE Facilities.
2. General Electric, Chas. T. Main, Inc., 5/8/1953, HEAD HOUSE, CONC. YARD FOUNDATIONS PLAN, 100K WATER PLANT FACILITIES, H-1-25264.

Dimensions:

Length:	2.54	Meters	8.33	Feet
Width:	1.93	Meters	6.33	Feet
Depth/Height:	1.45	Meters	4.75	Feet
Site Shape:	Rectangle			

References:

1. General Electric, 8/6/1953, HEAD HOUSE CONCRETE YARD FOUNDATIONS - DETAILS, H-1-25265, Rev 3.

Field Work:

Type:	Site Walkdown
Begin Date:	3/25/1998
End Date:	3/25/1998
Purpose:	Surveillance

Type: Analytical Sampling
Begin Date: 7/12/1985
End Date: 7/12/1985
Purpose: Analysis of inorganic hazardous materials.

Comment:

On July 12, 1985, a sample of sludge was taken from the pit for analysis by the Hanford Environmental Health Foundation (HEHF). Concentrations of inorganic hazardous materials were as follows: 0.005 milligrams/kilogram arsenic, 13.8 milligrams/kilogram barium, <0.002 milligrams/kilogram cadmium, 0.03 milligrams/kilogram chromium, 0.026 milligrams/kilogram lead, 0.387 milligrams/kilogram mercury, 0.05 milligrams/kilogram silver, and 0.010 milligrams/kilograms selenium. The concentration of mercury is high enough for the waste to classify as Dangerous Waste per Washington Administrative Code (WAC) 173-303.

Type: GPS Surveys
Begin Date: 4/1/1998
End Date: 4/1/1998
Purpose: Mapping

Regulatory Information:

Programmatic Responsibility

Responsible Contractor/Subcontractor:	CHPRC	CH2M HILL Plateau Remediation Company
Reclassifying Contractor/Subcontractor:	None	None
Responsible Project:		Not Specified

Site Evaluation

Solid Waste Management Unit: Yes
TPA Waste Management Unit Type: Inactive Contaminated Structure

Permitting

RCRA Part B Permit:	No	**TSD Number:**	
RCRA Part A Permit:	No	**Closure Plan:**	No
RCRA Permit Status:	Not Specified		
Septic Permit:	No	**216/218 Permit:**	
Inert LandFill:		**NPDES:**	
Air Operating Permit:	No	**State Waste Discharge Permit:**	
Air Operating Permit Number(s):			

Tri-Party Agreement

Lead Regulatory Agency: EPA
Unit Category: CERCLA Remedial/Removal Action
TPA Appendix: C

Remediation and Closure

Decision Document: Interim Action Record of Decision, 100 Area Remaining Sites (1999)
Decision Document Status: Final
Closure Document: None

Closure Type: Not Specified

Post Closure Requirments:

Closure Group:

Closure Group Name: CG 120-KW-1, 120-KW-2, 120-KW-3, and 120-KW-4
Type: Interim
Reclassification Status: Prepared **Reclassified On:** 10/28/2011
Excavation Start Date: 5/1/10 **Excavation Completed Date:**

Remediation Action:

Waste Sites 120-KW-1, 120-KW-2, 120-KW-3 and 120-KW-4 were remediated to remove the remaining structures and associated contaminated soil between May 2010 and June 2011. The original remediation activity for was anticipated to end once excavation to a depth of 4.6 m (15 ft) was achieved. Excavation to support remediation of the yellow-colored contaminated soil, however, continued due to the ongoing detection of mercury contamination levels above the RAGs in the RDR/RAWP (DOE/RL-96-17). The final depth of the remediation was 14.2 meters (46.6 ft), which was located within the footprint of 120-KW-2. To support the deeper excavation, layback soil was accumulated in stockpiles (#7 and #9).
Stockpile #7 was started on April 19, 2011. No field quality control samples were collected; however the samples were analyzed for metals, hexavalent chromium and anions.
Stockpile #9 was started on May 17, 2011. No field quality control samples were collected however the samples were analyzed for metals, hexavalent chromium and anions.
Remediation south of the sedimentation basin (183.2-KW) at 100-KW was conducted as an area-wide remediation (100-K Area AA) to examine the soil underneath several co-located waste sites. Based on proximity and process, the remediation area was divided into 4 zones. The four waste sites included in this report comprise Zone 3.

Excavated Material:

Quantity: 70,557.00
Unit Type: Tons
Disposition: Environmental Restoration Disposal Facility

Cleanup Verification:

The verification sampling for the 120-KW-1, 120-KW-2, 120-KW-3 and 120-KW-4 Waste Sites and Stockpiles #7 and #9 began on July 5, 2011 and was completed on September 21, 2011 to support a determination that residual contaminant concentrations meet the cleanup criteria specified in the RDR/RAWP (DOE/RL-96-17).
The sample design for the excavation area was for one decision unit, a shallow zone, for the 100-K Area AA, Zone 3, Waste Sites 120-KW-1, 120-KW-2, 120-KW-3 and 120-KW-4. Although the depth is 14.2 m (46.6 ft), the shallow zone sampling design allows for one additional sample area composite sample per subunit, in comparison to a deep zone sampling design as specified in the SAP (DOE/RL-96-22). The shallow zone decision unit was then divided into smaller subunits based on surface area. The area was divided into two subunits. Each subunit was divided into four sample areas over the entire zone. In addition, the original footprint for each waste site was each sampled as one sample area. Four sample increments were collected from randomly selected nodes within each sample area and combined into a single composite sample for each sample area. Four focused samples were also collected due to staining of the soil. Stockpiles #7 and #9 were also sampled for use as backfill material for these waste sites.
100-K Area AA, Zone 3 Waste Sites 120-KW-1, 120-KW-2, 120-KW-3 and 120-KW-4 combined excavation; 12 soil composite samples were collected from the excavation footprint along with one equipment blank and one duplicate composite soil sample. In addition, 4 focused soil samples from stained areas were collected along

with one equipment blank and one duplicate focused sample.
Stockpile #7; 4 composite samples of soil were collected along with one equipment blank and one duplicate composite soil sample.
Stockpile #9; 8 composite samples of soil were collected along with one equipment blank and one duplicate composite soil sample.

Sampling:

Sampling Region:	Shallow zone
Constituent List:	Hexavalent Chromium, Metals, Mercury, Anions
Comments:	Composite samples

Institutional Controls:

None. No institutional controls to prevent uncontrolled drilling or excavation into the deep zone of the site are required.

Statement Of Protectiveness:

DOE/RL-2011-113 states: This RSVP demonstrates that the 120-KW-1, 120-KW-2, 120-KW-3 and 120-KW-4 Waste Sites meet the objectives to achieve "interim closed out" status as established in the RDR/RAWP for the 100 Area (DOE/RL-96-17) and the 100 Area Remaining Sites ROD (EPA/ROD/R10-99/039). The results of verification sampling show that residual contaminant concentrations do not preclude any future uses and allow for unrestricted use of soils. The results also demonstrate that residual contaminant concentrations are protective of groundwater and the Columbia River. Additionally, the sample results indicate suitability of the use of Stockpiles #7 and #9 as backfill material in the deep zone of the remedial excavation.

Total Cost: 5,492,348.00

Images:

Pathname: //gisweb.rl.gov/widsimg/100k/0157/0157_01.jpg **Date Taken:** 4/1/1998

Description:

Photo shows pit with rectangular cover.

References:

1. C.D. Sherman, 8/24/2000, Final Report for Interim Stabilization of 183-KE/KW Acid Tank Areas, BHI-01414.
2. CD Sherman, 8/31/2000, Current Description of the French Drains and Sumps at 183-KE and 183-KW Acid Tank Sites.
3. CR webb, 9/6/2000, Telephone conversation with Chris Sherman related to Sludge in the 120-KW-1 Backfilled Sump.
4. Dorian, J. J. to B. W. Mathis, 11/4/1985, UNC Memorandum: Removal of Sulfuric Acid Sludge from the 183 KW/KE Facilities.
5. Carpenter, RW and SL Cote, 1/1/1994, 100-K Area Technical Baseline Report, WHC-SD-EN-TI-239, Rev 0.
6. General Electric, 8/6/1953, HEAD HOUSE CONCRETE YARD FOUNDATIONS - DETAILS, H-1-25265, Rev 3.
7. General Electric, Chas. T. Main, Inc., 5/8/1953, HEAD HOUSE, CONC. YARD FOUNDATIONS PLAN, 100K WATER PLANT FACILITIES, H-1-25264.
8. General Electric, 6/14/1955, HEAD HOUSE - FIRST FLOOR PLAN, H-1-25117, Rev 6.
9. General Electric, 3/31/1955, HEAD HOUSE PLUMBING & DRAINAGE, H-1-25563, Rev 5, Sht 4.
10. Department of Energy, 1/1/1994, 100-KR-2 Operable Unit Focused Feasibility Study, DOE/RL-94-61 Appendix K, Draft A.

5/15/2014

Waste Information Data System
General Summary Report

Site Code: **600-218** **Site Reclassification Status: Interim Closed Out** Page 1

Site Names: 600-218; H-61-H Anti-Aircraft Artillery Site Dumping Area

Site Type: Dumping Area
Status: Inactive
Hanford Area: 600
OU/WMA: 200-OA-1

Start Date:
End Date:
Pipe Type: Not Specified

Site Description:

The waste site has been evaluated under a removal action and Interim Closed Out. It consisted of demolition debris consisting of wood, pipe, barbed wire, metal fence posts, empty oil cans, empty paint cans, food cans, and sheet metal. The dumping area was irregularly shaped and was comprised of two distinct areas The larger area measured 20 meters by 74 meters (67 feet by 243 feet). The smaller area was approximately 48 meters (157 ft) northeast of the larger portion, and was rectangular in shape, measuring approximately 1.5 meters (5 ft) by 1.8 meters (6 ft).

Location Description:

This site was located just southwest of the intersection of Route 11 and Route 6. It is 0.4 miles south of Route 11 and just west of Army Loop Road. The site is in the east half of the northeast quarter of Section 34, Township 13 north, Range 25 east. The dumping area is located in the SW portion of the site.

Associated Structures:

This dumping area is related to the Anti-Aircraft site 600-216.

Waste Information:

Type: Demolition and Inert Waste
Category: Nondangerous/nonradioactive
Physical State: Solid

Amount:
Units: Not Specified
Reported Date:

Description:

Wood waste from former buildings, concrete footings, pipe, sheet metal, barbed wire, steel fence posts.

Type: Barrels/Drums/Buckets/Cans
Category: Unknown
Physical State: Solid

Amount:
Units: Not Specified
Reported Date:

Description:

Empty oil cans, paint cans with dried paint.

Dimensions:

Length:	74.07	Meters	243.00	Feet
Width:	20.42	Meters	67.00	Feet
Sq. Area:	1,512.55	Square Meters	16280.98	Square Feet

Site Shape: Not Specified

Field Work:

Type: Site Walkdown
Begin Date: 3/25/1997
End Date: 3/25/1997
Purpose: Initial Review

Type: GPS Surveys
Begin Date: 3/26/1997
End Date: 4/2/1997
Purpose: Mapping

Regulatory Information:

Programmatic Responsibility

Responsible Contractor/Subcontractor:	CHPRC	CH2M HILL Plateau Remediation Company
Reclassifying Contractor/Subcontractor:	None	None
Responsible Project:	CPSM	Waste & Fuels Management Project - Central Plateau Surveillanc

Site Evaluation

Solid Waste Management Unit:
TPA Waste Management Unit Type: Waste Disposal Unit

Permitting

RCRA Part B Permit:	No	**TSD Number:**	
RCRA Part A Permit:	No	**Closure Plan:**	No
RCRA Permit Status:	Not Specified		
Septic Permit:	No	**216/218 Permit:**	
Inert LandFill:		**NPDES:**	
Air Operating Permit:		**State Waste Discharge Permit:**	
Air Operating Permit Number(s):			

Tri-Party Agreement

Lead Regulatory Agency: EPA
Unit Category: CERCLA Remedial/Removal Action
TPA Appendix: C

Remediation and Closure

Decision Document: Action Memorandum for Non Time Critical Removal Action for 37 Waste Sites in 200-MG-1 Operable Unit
Decision Document Status: None
Closure Document: Response Action Report (RAR)
Closure Type: Not Specified

Post Closure Requirments:

Closure Group:

Closure Group Name:	CG 600-218		
Type:	Interim		
Reclassification Status:	Prepared	**Reclassified On:**	7/21/2011
Excavation Start Date:	3/21/11	**Excavation Completed Date:**	4/14/2011

Remediation Action:

The dumping area was irregularly shaped and was comprised of two distinct areas The larger area measured 20 meters by 74 meters (67 feet by 243 feet). The smaller area was approximately 48 meters (157 ft) northeast of the larger portion, and was rectangular in shape, measuring approximately 1.5 meters (5 ft) by 1.8 meters (6 ft). It consisted of demolition debris consisting of wood, pipe, barbed wire, metal fence posts, empty oil cans, empty paint cans, food cans, and sheet metal. The analytical results from initial sampling demonstrated that soil conditions at the waste site did not comply with established removal action levels (RALs). Therefore, the alternative was changed to removal, treatment, and disposal (RTD). The removal action at the 600-218 waste site was conducted between August 2009 and May 2011, and included the collection of statistically based random and focused samples from locations within the boundaries of the waste site. Nineteen random locations were selected. Locations R4, R9, R11 and R17 were sampled at depths of 4 feet and 8 feet. Soil excavation was required at location R3 and R14. Samples were collected from the excavated areas for remedial verification. Radiological surveys performed for the 600-218 waste site resulted in no radiological dose readings greater than the measured background, and no radiological contamination was found.
Since RTD activities were limited in depth to less than 0.6 meters (2 ft) (i.e., surface debris removal at the waste site), backfill was not required at the 600-218 waste site.

Cleanup Verification:

The area of excavation at sample location R3 was approximately 44 square (475 sq.ft.). Two samples, selected randomly utilizing VSP, were collected from the base of the impacted area surrounding sample location R3. Implementation of Revision 1 of the SAP allowed for the refinement of the list of COPCs targeted during verification sampling to include PAHs only. The area of impact at sample location R14 was approximately 0.8 square meters (8.5 square feet) as determined by analytical results of in process samples indicating COPC concentrations less than established RALs. One random sample was collected from the base of the impacted area surrounding sample location R14. Implementation of Revision 1 of the SAP allowed for the refinement of the list of COPCs targeted during verification sampling to include metals analysis only. Manganese, mercury, and hexavalent chromium were excluded from analysis because they are not considered COPCs for the 600-218 waste site.

Sampling:

Sampling Region:	Verification Samples
Constituent List:	Metals, PAH
Comments:	At R3 and R14

Institutional Controls:

No institutional controls are required because there is no deep vadose zone contamination associated with the 600-218 waste site.

Statement Of Protectiveness:

In accordance with the SAP, the soil at the 600-218 waste site has been sampled, analyzed, and evaluated. The results obtained through the implementation of the RTD alternative demonstrate that concentrations of COPCs in the soil at the 600-218 waste site are less than established RALs. These results also indicate that residual concentrations will support reasonably anticipated future land use recognized in the EE/CA and Action Memorandum, and demonstrate that residual concentrations of COPCs in soil throughout the site are unlikely to

affect groundwater or the Columbia River. A review of the sampling results showed that the removal action at the 600-218 waste site has demonstrated achievement of the RAOs established in the Action Memorandum and identified in the RAWP.

Total Cost: 288,200.00

Images:

Pathname: //gisweb.rl.gov/widsimg/600/4016/4016_01.jpg **Date Taken:** 3/25/1997

Description:

H-61-H Dumping Area

Pathname: //gisweb.rl.gov/widsimg/600/4016/4016_02.jpg **Date Taken:** 1/12/2001

Description:

Little debris remains at this site, mostly heating ducts, transite, and glass.

Pathname: //gisweb.rl.gov/widsimg/600/4016/4016_03.jpg **Date Taken:** 1/22/2002

Description:

After the fire of 2000, the site is revegetating to cheatgrass. Little trash is visible on the surface.

Pathname: //gisweb.rl.gov/widsimg/600/4016/4016_04.jpg **Date Taken:** 1/22/2002

Description:

The smaller area mapped as part of 600-218 is marked with four fenceposts and contains metal debris such as fencing material.

Pathname: //gisweb.rl.gov/widsimg/600/4016/4016-05.JPG **Date Taken:** 4/1/2011

Description:

Aerial photo shows the area after remediation.

References:

1. 5/27/1957, Camp Hanford Washington Location Map - Forward Area Facilities/Utilities, CH-PE-215.
2. 7/20/2011, Response Action Report for the 200-MG-1 Operable Unit Waste Site 600-218, DOE/RL-2011-64.

5/15/2014

Waste Information Data System
General Summary Report

Site Code: **600-220** **Site Reclassification Status: Interim Closed Out** Page 1

Site Names: 600-220; H-51 Anti-Aircraft Artillery Site Dumping Area

Site Type: Dumping Area
Status: Inactive
Hanford Area: 600
OU/WMA: 200-OA-1

Start Date:
End Date: 1/1/1958
Pipe Type: Not Specified

Site Description:

The waste site has been evaluated under a removal action and Interim Closed Out. It consisted of three dumping areas. One area was surrounded with T-posts . Observations made during the 2010 site evaluation included an area covered with a white, granular material, an area containing burned material and other debris, a small area containing what appeared to be a tar-like substance, an area of visible debris such as partially buried containers, and a mound containing a wide variety of debris such as heavily corroded metal cans and containers, glass, and batteries. In addition, two mounds were observed that might have been used as a firing range containment berm. The debris at 600-220 was determined to be culturally significant and was not removed.

Location Description:

The site was on Army Loop Road, approximately 2 miles southwest of 200 West Area and extends to the southwest near SR 240 . This site is located in the southeast quarter of Section 15, Township 12 North, Range 25 East.

Process Description:

The dumps are located in three general areas. The July 2000 fire burned off all flammable material, such as wood, that had remained at the site. The dump area with the T-posts around it contains metal, transite, fluorescent light bulbs, metal ducting, fiberglass insulation, an unknown white granular substance, pipe, and wire. The second area is mostly wood, little remains now. The third area is a relatively large area consisting of empty cans and empty food, oil, paint and bleach bottles. Several wooden ammunition boxes and cardboard canisters were observed before 2000, but are now gone. The area appears to have been scraped with a bulldozer. Several waste materials are partially buried. The permanent structures included barracks, latrines, mess halls, craft shops, pump houses, motor pools, and radar facilities. Each site typically had a small arms range, water storage cistern, sanitary, and sewage disposal facilities. Pathways, sidewalks, roadways, and parking lots connected the structures.

Associated Structures:

This site is associated with 600-53, the site building foundations, and 6607-3, the site's septic system.

Site Comment:

The anti-aircraft sites were phased out of service in late 1957 and early 1958, and their structures and equipment were declared excess.

Waste Information:

Type: Misc. Trash and Debris
Category: Hazardous/Dangerous
Physical State: Solid

Amount:
Units: Not Specified
Reported Date:

Description:

Wood, metal, transite, fiberglass, piping, glass, fluorescent light tubes, a white granular substance, empty

cans, buckets, and bottles, fence posts, barbed wire, and concrete

Type:	Asbestos (non-friable)	**Amount:**	
Category:	Unknown	**Units:**	Not Specified
Physical State:	Solid	**Reported Date:**	

Description:
Transite siding

Dimensions:

Length:	180.00	Meters	590.55	Feet
Width:	149.00	Meters	488.85	Feet
Site Shape:	Irregular			

Comments:
This is the dimension of the largest dump area, calculated from Arcview.

Length:	17.00	Meters	55.77	Feet
Width:	17.00	Meters	55.77	Feet
Site Shape:	Square			

Comments:
This is the dimension of the smaller dump area, calculated from Arcview.

Field Work:

Type: Site Walkdown
Begin Date: 3/25/1997
End Date: 3/25/1997
Purpose: Initial Review

References:
1. T.F. Johnson, 10/24/1996, Site Investigation Logbook, EL-1336.

Type: GPS Surveys
Begin Date: 3/26/1997
End Date: 4/2/1997
Purpose: Mapping

Type: Site Walkdown
Begin Date: 1/12/2001
End Date: 1/12/2001
Purpose: Site evaluation

References:
1. S. G. Weiss, Field Logbook, EL-1428.

Regulatory Information:

Programmatic Responsibility

Site Code: 600-220 **Site Reclassification Status: Interim Closed Out** Page 3

Responsible Contractor/Subcontractor:	CHPRC	CH2M HILL Plateau Remediation Company
Reclassifying Contractor/Subcontractor:	None	None
Responsible Project:	CPSM	Waste & Fuels Management Project - Central Plateau Surveillanc

Site Evaluation

Solid Waste Management Unit: Yes

TPA Waste Management Unit Type: Not Specified

Permitting

RCRA Part B Permit:	No	**TSD Number:**	
RCRA Part A Permit:	No	**Closure Plan:**	No
RCRA Permit Status:	Not Specified		
Septic Permit:	No	**216/218 Permit:**	
Inert LandFill:	No	**NPDES:**	
Air Operating Permit:	No	**State Waste Discharge Permit:**	
Air Operating Permit Number(s):			

Tri-Party Agreement

Lead Regulatory Agency: EPA

Unit Category: CERCLA Remedial/Removal Action

TPA Appendix: C

Remediation and Closure

Decision Document: Action Memorandum for Non Time Critical Removal Action for 37 Waste Sites in 200-MG-1 Operable Unit

Decision Document Status: None

Closure Document: Response Action Report (RAR)

Closure Type: Not Specified

Post Closure Requirments:

Closure Group:

Closure Group Name:	CG 600-220		
Type:	Interim		
Reclassification Status:	Prepared	**Reclassified On:**	8/11/2011
Excavation Start Date:	4/1/11	**Excavation Completed Date:**	5/2/2011

Remediation Action:

The analytical results from confirmatory sampling demonstrated that soil conditions at the waste site did not meet removal action levels (RALs). Therefore, the alternative was changed to removal, treatment, and disposal (RTD). Radiological surveys performed during sampling activities indicated no radiological readings greater than the measured background, and no radiological contamination was found.
Seven Zones of Potential Concern (ZPC) and three biased locations were established during site evaluation. Focused samples were collected from ZPCs 1 through 4 and biased samples at BS 1 through 3 based on historical and process knowledge and visual indicators from the surface, which is generally defined as 0 to 0.3 m

(0 to 1 ft) below ground surface. Random samples were collected from ZPC 5 through 7 (using Visual Sample Plan (VSP) software as direct visual indicators were absent for these ZPCs). Analytical results from the initial sampling evolution indicated contaminants of potential concern (COPC) concentrations exceeded Removal Action Levels in three areas; ZPC 1 (white granular material), ZPC 2 and BS 1 (debris areas) and BS 2 (battery area) thus initiating RTD in those areas. The areas comprising ZPC 1, ZPC 2, and BS 1 were excavated to a vertical depth of approximately 0.9 to 1.2 meters (3 to 4 ft) below ground surface. In addition to the removal of the impacted soil from ZPC 1, ZPC 2, and BS 1, miscellaneous scattered debris, along with approximately 0.9 to 1.2 meters (3 to 4 ft) of underlying soil, was removed, thus enlarging the area of excavation beyond the three areas of impact identified during initial and in process sampling.

Cleanup Verification:

Verification sampling was performed in May 2011. The analytical results, demonstrated that there were no chemical COPC concentrations greater than the RALs remaining in soil at the 600-220 waste site. Radiological survey performed during removal action activities demonstrated no radiological dose rates greater than background and no contamination found.

Sampling:

Sampling Region: Seven Zones of Potential Concern

Constituent List: Metals, VOA, TPH, PAH, Nitrate, PCBs

Institutional Controls:

No institutional controls are required because there is no deep vadose zone contamination.

Statement Of Protectiveness:

In accordance with the SAP (DOE/RL-2009-60), the soil at the 600-220 waste site has been sampled, analyzed, and evaluated. The results obtained through the implementation of the RTD alternative demonstrate that contaminant concentrations in the soil at the 600-220 waste site are less than RALs. These results also indicate that residual concentrations will support reasonably anticipated future land use recognized in the EE/CA (DOE/RL-2008-44) and Action Memorandum (DOE/RL-2009-86), and demonstrate that residual concentrations of COPCs in soil throughout the site are unlikely to affect groundwater or the Columbia River. A review of the sampling results showed that the removal action at the 600-220 waste site has demonstrated achievement of the RAOs established in the Action Memorandum and identified in the RAWP (DOE/RL-2009-53).

Total Cost: 302,156.00

Evaluated For MTCA 2007: True

Images:

Pathname: //gisweb.rl.gov/widsimg/600/4148/4148_01.jpg **Date Taken:** 3/25/1997

Description:

Photo shows the general area.

Pathname: //gisweb.rl.gov/widsimg/600/4148/4148_02.jpg **Date Taken:**

Description:

Pathname: //gisweb.rl.gov/widsimg/600/4148/4148_03.jpg **Date Taken:**

Description:

Pathname: //gisweb.rl.gov/widsimg/600/4148/4148_04.jpg **Date Taken:**
Description:

Pathname: //gisweb.rl.gov/widsimg/600/4148/4148_05.jpg **Date Taken:**
Description:

Pathname: //gisweb.rl.gov/widsimg/600/4148/4148_06.jpg **Date Taken:**
Description:

Pathname: //gisweb.rl.gov/widsimg/600/4148/4148_07.jpg **Date Taken:**
Description:

Pathname: //gisweb.rl.gov/widsimg/600/4148/4148_08.jpg **Date Taken:** 3/25/1997
Description:
Photo shows some of the wood debris.

Pathname: //gisweb.rl.gov/widsimg/600/4148/4148_09.jpg **Date Taken:**
Description:

Pathname: //gisweb.rl.gov/widsimg/600/4148/4148_10.jpg **Date Taken:** 1/12/2001
Description:
After the July 2000 fire, only metal, glass, and transite remain at this dump.

Pathname: //gisweb.rl.gov/widsimg/600/4148/4148_11.jpg **Date Taken:** 1/12/2001
Description:
The wooden debris at this dumping area has burned in the July 2000 fire.

Pathname: //gisweb.rl.gov/widsimg/600/4148/4148_12.jpg **Date Taken:** 3/10/2005
Description:
The photo shows one of the dumping areas with a few pieces of metal strewn around on the ground.

Pathname: //gisweb.rl.gov/widsimg/600/4148/4148_13.jpg **Date Taken:** 3/10/2005
Description:
Large dumping area with some scattered debris.

Pathname: //gisweb.rl.gov/widsimg/600/4148/4148_14.jpg **Date Taken:** 3/10/2005
Description:
Rusted debris can be seen in the photo.

Pathname: //gisweb.rl.gov/widsimg/600/4148/4148_15.jpg **Date Taken:** 3/10/2005

Description:

Dumping area with T-posts around it. The white powder substance is visible in the photo.

Pathname: //gisweb.rl.gov/widsimg/600/4148/4148_16.jpg **Date Taken:** 3/10/2005

Description:

The photo shows more scattered debris at the dumping area with posts around it

Pathname: //gisweb.rl.gov/widsimg/600/4148/4148_17.jpg **Date Taken:** 3/10/2005

Description:

Dumping area with scattered debris and T-posts.

Pathname: //gisweb.rl.gov/widsimg/600/4148/4148-19.JPG **Date Taken:** 5/1/2011

Description:

Photo shows the open excavation in May 2011.

Pathname: //gisweb.rl.gov/widsimg/600/4148/4148-20.JPG **Date Taken:** 7/1/2011

Description:

Photo shows the completed, backfilled waste site area.

References:

1. T.F. Johnson, 10/24/1996, Site Investigation Logbook, EL-1336.
2. S. G. Weiss, Field Logbook, EL-1428.
3. D. W. Harvey, Military Operations, DOE/RL-97-Internet-1047 (Draft).
4. 8/10/2011, Response Action Report for 200-MG-1 Operable Unit Waste Site for 600-220, DOE/RL-2011-65.
5. Bo Wier, 10/31/2011, Completed Outer Area Waste sites.
6. Bo Wier, 10/31/2011, Completed Outer Area Waste sites.

5/15/2014

Waste Information Data System
General Summary Report

Site Code: 600-228 **Site Reclassification Status: Interim Closed Out** Page 1

Site Names: 600-228; H-40 Gun Site Dumping Area

Site Type: Dumping Area
Status: Inactive
Hanford Area: 600
OU/WMA: 200-OA-1

Start Date:
End Date: 1/1/1958
Pipe Type: Not Specified

Site Description:

The waste site has been evaluated under a removal action and Interim Closed Out. The site included four dumping areas, located in pits in the southern portion of the H-40 area. The pit located west of the main site measured about 12 meters (40 feet) in diameter and contains sheetrock, metal, transite, glass and empty paint cans. Two small pits, located south of the main site, were each about 4 meters (15 feet) in diameter. One pit was empty and the other contains steel fence posts and barbed wire. The largest pit was to the south-southeast, and on the topographic slope facing to the south. It contained a large quantity of metal objects, as well as some transite and glass. The July 2000 fire burned much of the wood debris in this pit and the western pit.

Location Description:

This site is located southeast of the 200 East Area, on the south side of Route 4 South. Trees viewed from Route 4 South aid in locating the site. The dumping areas are located to the southeast and west of the H-40 Gun Site.

Process Description:

These pits received debris from several years of military operation of the anti-aircraft site. Typically, Camp Hanford's anti-aircraft artillery sites were each roughly 20 acres in size and contained any number of buildings (typically around 20), various utility distribution systems, roads, and sidewalks. Each site consisted of emplacements protected by revetments made of sandbags and wood planking, wooden structures, prefabricated metal buildings, and, later, permanent, concrete block structures. The prefabricated buildings had aluminum walls and roofs with wooden or concrete floors set on concrete pier blocks and were the most commonly constructed. The permanent structures included barracks, latrines, mess halls, craft shops, pump houses, motor pools, and radar facilities. Each site typically had a small arms range, water storage cistern, sanitary, and sewage disposal facilities. Pathways, sidewalks, roadways, and parking lots connected the structures.

Associated Structures:

This site is related to 600-227 (the building foundations), and 6607-1 (the septic tank).

Site Comment:

The pit to the south-southwest of the site may have been partially buried under soil.
Soil excavation began in May 2011 and was completed in July 2011. The areas were backfilled in September 2011.

Field Work:

Type: GPS Surveys
Begin Date: 3/26/1997
End Date: 4/2/1997
Purpose: Mapping

Type: Site Walkdown
Begin Date: 1/10/2001
End Date: 1/10/2001
Purpose: Evaluate site conditions

References:

1. S. G. Weiss, Field Logbook, EL-1428.

Type: Site Walkdown
Begin Date: 4/16/1997
End Date: 4/16/1997
Purpose: Initial Review

References:

1. T.F. Johnson, 10/24/1996, Site Investigation Logbook, EL-1336.

Regulatory Information:

Programmatic Responsibility

Responsible Contractor/Subcontractor:	CHPRC	CH2M HILL Plateau Remediation Company
Reclassifying Contractor/Subcontractor:	None	None
Responsible Project:	CPSM	Waste & Fuels Management Project - Central Plateau Surveillanc

Site Evaluation

Solid Waste Management Unit: Yes
TPA Waste Management Unit Type: Waste Disposal Unit

Permitting

RCRA Part B Permit:	No	**TSD Number:**	
RCRA Part A Permit:	No	**Closure Plan:**	No
RCRA Permit Status:	Not Specified		
Septic Permit:	No	**216/218 Permit:**	
Inert LandFill:	No	**NPDES:**	
Air Operating Permit:	No	**State Waste Discharge Permit:**	
Air Operating Permit Number(s):			

Tri-Party Agreement

Lead Regulatory Agency: EPA
Unit Category: CERCLA Remedial/Removal Action
TPA Appendix: C

Remediation and Closure

Decision Document: Action Memorandum for Non Time Critical Removal Action for 37 Waste Sites in 200-MG-1 Operable Unit
Decision Document Status: None
Closure Document: Response Action Report (RAR)
Closure Type: Not Specified

Post Closure Requirments:

Closure Group:

Closure Group Name:	CG 600-228		
Type:	Interim		
Reclassification Status:	Prepared	**Reclassified On:**	9/21/2011
Excavation Start Date:	5/10/11	**Excavation Completed Date:**	8/2/2011

Remediation Action:

The analytical results from confirmatory sampling demonstrated that soil conditions at the waste site did not meet removal action levels Removal Action Levels (RALs). Therefore, the alternative was changed to removal, treatment, and disposal (RTD). The removal action at the 600-228 waste site was conducted from February 2010 through July 2011 and included the collection of focused and random samples from locations within the waste site.

Direct visual inspection of the site surface was performed for visual cues such as staining, discoloration, absence of vegetation, presence of debris and other anomalies. Due to the presence of empty paint cans and material that appears to be dried paint, the site is listed as having had a potential for liquid release. Radiological surveys were performed. No radiological dose readings above background nor radiological contamination was found. Each of the four pits were considered zones of potential contamination (ZPCs). Random, focused soil samples were collected during the initial sampling, based on historical and process knowledge of the waste site as a dumping area, and visual indicators from ZPC 1, ZPC 2, ZPC 3 and ZPC 4. Analytical results of samples collected from ZPC 2 and ZPC 3 did not indicate any contaminant concentrations greater than RALs. Areas of scattered debris observed at ZPCs 2 and 3 were removed during the RTD activities at the 600-228 waste site. Initial samples collected from ZPC 1 and ZPC 4 indicated concentrations of antimony and lead were greater than the RALs, thus indicating RTD for those areas. The area comprising ZPC 1 was excavated to depths ranging from approximately 0.91 meters (3 ft) below original ground surface in the southeast corner to approximately 2.4 meters (8 ft) in the northwest corner. The area comprising ZPC 4 was excavated to a depth of approximately 0.61 meters (2 ft) below original ground surface.

Cleanup Verification:

The area of impact identified at ZPC 1 was approximately 461 square meters (4,962 sq ft), therefore, eleven verification grab samples were collected from this area. The area of impact identified at ZPC 4 was approximately 65 square meters (700 sq ft), therefore, two verification samples were collected from this area. The COPC list targeted for verification sampling was metals analysis only.

Sampling:

Sampling Region:	Confimatory Sampling
Constituent List:	Metals, VOA, TPH, PAH, Nitrate, PCBs
Comments:	ZPC 1, ZPC 2, ZPC 3, ZPC 4
Sampling Region:	Verification Samples
Constituent List:	Metals
Comments:	ZPC 1, ZPC 4

Institutional Controls:

No waste site specific institutional controls required at the 600-228 waste site.

Statement Of Protectiveness:

In accordance with the SAP (DOE/RL-2009-60), the soil at the 600-228 waste site has been sampled, analyzed,

and evaluated. The results obtained through the implementation of the RTD alternative demonstrate that contaminant concentrations in the soil at the 600-228 waste site are less than RALs. These results also indicate that residual concentrations will support reasonably anticipated future land use recognized in the EE/CA (DOE/RL-2008-44) and Action Memorandum (DOE/RL-2009-86), and demonstrate that residual concentrations of COPCs in soil throughout the site are unlikely to affect groundwater or the Columbia River. A review of the sampling results showed that the removal action at the 600-228 waste site has demonstrated achievement of the RAOs established in the Action Memorandum and identified in the RAWP (DOE/RL-2009-53).

Images:

Pathname: //gisweb.rl.gov/widsimg/600/4161/4161_01.jpg **Date Taken:** 4/17/1997

Description:

Steel fence posts and barbed wire in pit.

Pathname: //gisweb.rl.gov/widsimg/600/4161/4161_02.jpg **Date Taken:** 4/16/1997

Description:

Empty pit located in the southeastern portion of the H-40 Gun Site.

Pathname: //gisweb.rl.gov/widsimg/600/4161/4161_03.jpg **Date Taken:** 4/17/1997

Description:

H-40 Gun Site dumping area pit located in the southwest portion of the site.

Pathname: //gisweb.rl.gov/widsimg/600/4161/4161_04.jpg **Date Taken:** 1/10/2001

Description:

Of the two of the southern dump areas, only one has material, rolls of barb wire.

Pathname: //gisweb.rl.gov/widsimg/600/4161/4161_05.jpg **Date Taken:** 1/10/2001

Description:

A bucket of hardened, unidentified material is just west of the western dump. Although the fire had blackened most of the surrounding area, the vegetation around this material is recovering the same as vegetation at more distance.

Pathname: //gisweb.rl.gov/widsimg/600/4161/4161_06.jpg **Date Taken:** 1/10/2001

Description:

The largest dump has several piles of metallic debris. Wood reported from previous walkdowns has been burned with the surrounding vegetation. Some of the objects are partly buried.

Pathname: //gisweb.rl.gov/widsimg/600/4161/4161_07.jpg **Date Taken:** 1/10/2001

Description:

The dump on the west side of 600-227 has also been burned in the July 2000 fire. Mainly sheetrock and transite remain.

Pathname: //gisweb.rl.gov/widsimg/600/4161/4161-08.JPG **Date Taken:** 8/1/2011

Description:

Photo shows the remediation excavation area.

Pathname: //gisweb.rl.gov/widsimg/600/4161/4161-09.JPG **Date Taken:** 9/1/2011

Description:

Photo shows the remediated area after being backfilled.

References:

1. T.F. Johnson, 10/24/1996, Site Investigation Logbook, EL-1336.
2. S. G. Weiss, Field Logbook, EL-1428.
3. D. W. Harvey, Military Operations, DOE/RL-97-Internet-1047 (Draft).
4. 9/29/2011, Response Action Report for 200-MG-1 Operable Unit Waste Site 600-228, DOE/RL-2011-90.

5/15/2014

Waste Information Data System
General Summary Report

Site Code: **600-281** **Site Reclassification Status: Interim Closed Out** Page 1

Site Names: 600-281; Scattered Debris South of Army Loop Road

Site Type: Dumping Area
Status: Inactive
Hanford Area: 600
OU/WMA: 200-OA-1

Start Date:
End Date:
Pipe Type: Not Specified

Site Description:

The waste site has been evaluated under a removal action and Interim Closed Out. After the range fire in June 2000, additional areas of debris were visible. Five areas of concentrated debris were identified. The debris includes material suspected to be asbestos, charred wood, glass, metal pipes, gauges and green metal containers, 55 gallon drums and batteries.

Location Description:

The waste site has been remediated. The areas of debris are located south of Army Loop Road, approximately 150 meters east of the H-42 Gun Site.

Associated Structures:

The debris is associated with sitecode 600-49 and 600-226.

Site Comment:

A June 2002 site walkdown was conducted to document scattered debris. Five waste areas west of the powerline road were identified on GPS job #529. The five waste areas designated during GPS job 529 contain the following debris: Area 1 - scattered debris, Area 2 - Broken burlap bags in mound of dirt, metal straps, dried paint, military issue dishes, broken concrete, rusted 55-gallon empty drum, Area 3 - Lightly rusted (not corroded) 55-gallon drum, an air hole at one end is open and drum appears empty except solid sound in middle, Area 4 - Broken toilet, small military issue batteries, mound of transite and homemade dumbbell and Area 5- east of powerline contains two mounds of transite.
Three compressed gas cylinders were found adjacent to well 699-16-51. In February 2007, the cylinders were removed from the area. They had previously contained argon, but were confirmed to be empty.

Waste Information:

Type: Demolition and Inert Waste
Category: Nondangerous/nonradioactive
Physical State: Solid

Amount:
Units: Not Specified
Reported Date:

Description:

Five areas of concentrated debris were identified. The debris includes material suspected to be asbestos, charred wood, glass, metal pipes, gauges and green metal containers. Three compressed gas cylinders were found adjacent to well 699-16-51.

References:

1. Jim Diebel, 1/29/2002, Environmental Site Information Form, 600-281.

Field Work:

Type: Site Walkdown

Begin Date: 6/13/2002
End Date: 6/13/2002
Purpose: Evaluate Debris

Comment:

Miscellaneous debris located over a wide area, appears to be from military buildings. No hazardous or dangerous waste was observed, only areas of broken concrete, transite, dried paint, mound of broken burlap bags, wire, nails, broken toilet, military issue dishes, two 55-gallon drums slightly rusted not corroded. Three compressed gas cylinders with caps were observed near sample well #61651.

References:

1. S. A. Christman, 2/4/2002, Site Investigation Logbook, EL-1487.

Type: GPS Surveys
Begin Date: 2/11/2002
End Date: 2/11/2002
Purpose: mapping

Comment:

GPS Job 529 mapped five new areas of debris.

Regulatory Information:

Programmatic Responsibility

Responsible Contractor/Subcontractor:	CHPRC	CH2M HILL Plateau Remediation Company
Reclassifying Contractor/Subcontractor:	None	None
Responsible Project:	CPSM	Waste & Fuels Management Project - Central Plateau Surveillanc

Site Evaluation

Solid Waste Management Unit: Yes
TPA Waste Management Unit Type: Not Specified

Permitting

RCRA Part B Permit:	No	**TSD Number:**	
RCRA Part A Permit:	No	**Closure Plan:**	No
RCRA Permit Status:	Not Specified		
Septic Permit:	No	**216/218 Permit:**	
Inert LandFill:	No	**NPDES:**	
Air Operating Permit:	No	**State Waste Discharge Permit:**	
Air Operating Permit Number(s):			

Tri-Party Agreement

Lead Regulatory Agency: EPA
Unit Category: CERCLA Remedial/Removal Action
TPA Appendix: C

Remediation and Closure

Decision Document: Action Memorandum for Non Time Critical Removal Action for 37 Waste Sites in 200-MG-1 Operable Unit

Decision Document Status: None

Closure Document: Response Action Report (RAR)

Closure Type: Not Specified

Post Closure Requirments:

Closure Group:

Closure Group Name: CG 600-281

Type: Interim

Reclassification Status: Prepared **Reclassified On:** 9/21/2011

Excavation Start Date: 4/1/11 **Excavation Completed Date:** 7/14/2011

Remediation Action:

Direct visual inspection of the site surface was performed for visual cues such as staining, discoloration, absence of vegetation, presence of debris and other anomalies. Radiological surveys were performed during sampling activities. No radiological readings greater than background, and no radiological contamination was found. The site was confirmed to be a nonradiological site.Ten Zones of Potential Contamination (ZPC) were identified. Initial random samples were collected from each zone. The results of the initial, confirmatory sampling indicated contaminant concentrations greater than the Removal Action Levels (RAL) in five of the sampled areas (ZPC 1, ZPC 2, ZPC 5, ZPC 6 and ZPC 8), thus the Remove, Treat, Dispose (RTD) option was initiated in these areas. The removal action at the 600-281 waste site was conducted from March 2010 through July 2011 and included the collection of focused and random samples from locations within the waste site. The excavation depths ranged from 2 to 7 feet below ground surface. Two areas of transite debris were identified during site evaluation and were removed during RTD activities at the 600-281 waste site. Additional focused samples were collected from these areas. The excavated areas were contoured and backfilled in August 2011.

Cleanup Verification:

Fourteen verification samples were collected from ZCP1, 2, 5, 6 and 8. A composite verification sample was collected from the transite debris areas and analyzed only for asbestos.

Sampling:

Sampling Region: Confirmatory Samples
Constituent List: Metals, VOA, TPH, PAH, Nitrate, PCBs
Comments: Zones 1 through 10

Sampling Region: Verification Samples
Constituent List: Hexavalent Chromium, Metals, PAH
Comments: Zones 1,2,5,6 and 8

Institutional Controls:

No waste site specific institutional controls required at the 600-281.

Statement Of Protectiveness:

In accordance with the SAP (DOE/RL-2009-60), the soil at the 600-281 waste site has been sampled, analyzed, and evaluated. The results obtained through the implementation of the RTD alternative demonstrate that contaminant concentrations in the soil at the 600-281 waste site are less than RALs. These results also indicate that residual concentrations will support reasonably anticipated future land use recognized in the EE/CA (DOE/RL-2008-44) and Action Memorandum (DOE/RL-2009-86), and demonstrate that residual concentrations of COPCs in soil throughout the site are unlikely to affect groundwater or the Columbia River. A review of the

sampling results showed that the removal action at the 600-281 waste site has demonstrated achievement of the RAOs established in the Action Memorandum and identified in the RAWP (DOE/RL-2009-53).

Total Cost: 140,834.00

Evaluated For MTCA 2007: True

Images:

Pathname: //gisweb.rl.gov/widsimg/600/4578/4578_01.jpg **Date Taken:** 1/22/2002

Description:

Photos shows material that may be asbestos.

Pathname: //gisweb.rl.gov/widsimg/600/4578/4578_02.jpg **Date Taken:** 6/13/2002

Description:

Photo shows piles of transite.

Pathname: //gisweb.rl.gov/widsimg/600/4578/4578_03.jpg **Date Taken:** 6/13/2002

Description:

Photo shows three compressed gas cylinders.

Pathname: //gisweb.rl.gov/widsimg/600/4578/4578_04.jpg **Date Taken:** 6/13/2002

Description:

Photo shows a mound of sand with deteriorating burlap bags.

Pathname: //gisweb.rl.gov/widsimg/600/4578/4578_05.jpg **Date Taken:** 6/13/2002

Description:

Photo shows a depression with an old, rusty 55 gallon drum.

Pathname: //gisweb.rl.gov/widsimg/600/4578/4578_06.jpg **Date Taken:** 6/13/2002

Description:

Photo shows an old 55 gallon drum.

Pathname: //gisweb.rl.gov/widsimg/600/4578/4578_07.jpg **Date Taken:** 6/13/2002

Description:

Photos shows an old dumb bell and a broken toilet.

Pathname: //gisweb.rl.gov/widsimg/600/4578/4578-08.JPG **Date Taken:** 3/1/2011

Description:

Photo shows the area that was reviewed for Cultural Resource activities.

Pathname: //gisweb.rl.gov/widsimg/600/4578/4578-09.JPG **Date Taken:** 4/1/2011

Description:

Photo shows a large area that was excavated during remediation activities.

Pathname: //gisweb.rl.gov/widsimg/600/4578/4578-10.JPG **Date Taken:** 6/1/2011

Description:

Photo shows a smaller area that was excavated during remediation activities.

Pathname: //gisweb.rl.gov/widsimg/600/4578/4578-11.JPG **Date Taken:** 8/1/2011

Description:

Photo shows the smaller excavated area after being backfilled.

Pathname: //gisweb.rl.gov/widsimg/600/4578/4578-12.JPG **Date Taken:** 8/1/2011

Description:

Photo shows the larger excavated area after being backfilled.

References:

1. Jim Diebel, 1/29/2002, Environmental Site Information Form, 600-281.
2. Curt Clement, 2/13/2007, Regarding WIDS Site 600-281.
3. S. A. Christman, 2/4/2002, Site Investigation Logbook, EL-1487.
4. 9/12/2011, Response Action Report for 200-MG-1 Operable Unit Waste Site 600-281, DOE/RL-2011-89.

Attachment H1

CHPRC-00784 – Tier 1 Risk Based Soil Concentrations Protective of Ecological Receptors at the Hanford Site

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CHPRC ADMINISTRATIVE DOCUMENT PROCESSING AND APPROVAL

DOCUMENT TITLE:
Tier 1 Risk-Based Soil Concentrations Protective of Ecological Receptors at the Hanford Site

OWNING ORGANIZATION/FACILITY:
CHPRC

Document Number: CHPRC-00784

Revision/Change Number: 1

DOCUMENT TYPE *(Check Applicable)* [ ] Plan [X] Report [ ] Study [ ] Description Document [ ] Other

DOCUMENT ACTION *(Check One)* [ ] New [X] Revision [ ] Cancellation

RESPONSIBLE CONTACTS

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Author:	Chris McCarthy	207-221-0703
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DOCUMENT CONTROL

Is the document intended to be controlled within the Document Management Control System (DMCS)? [ ] Yes [ ] No
Does document contain scientific and technical information intended for public use? [ ] Yes [ ] No
Does document contain controlled-use information [ ] Yes [ ] No
("yes" requires information clearance review in accordance with PRC-PRO-IRM-184)

DOCUMENT REVISION SUMMARY

NOTE: Provide a brief description or summary of the changes for the document listed.
The revised document addresses technical comments from Washington State Department of Ecology

REVIEWERS Others

Name *(print)*	Organization
John Lowe	CH2M HILL
Brad Sample	Ecological Risk, Inc.

APPROVAL SIGNATURES

Author:		7-23-2014	RELEASE / ISSUE
Name: (Print)	Chris McCarthy	Date	
Responsible Manager:		7-23-2014	DATE: Jul 31, 2014 HANFORD RELEASE
Name: (print)	Alaa Aly HE Nichols for AH Aly	Date	
Other:			
Name: (print)		Date	

A-6005-184 (REV 3)

Date Received for Clearance Process (MM/DD/YYYY)
07/31/2014

INFORMATION CLEARANCE FORM

A. Information Category

- [ ] Abstract
- [ ] Journal Article
- [ ] Summary
- [ ] Internet
- [ ] Visual Aid
- [ ] Software
- [ ] Full Paper
- [x] Report
- [ ] Other _____

B. Document Number CHPRC-00784 Revision 1

C. Title
Tier 1 Risk-Based Soil Concentrations Protective of Ecological Receptors at the Hanford Site

D. Proposed Internet Address

E. Required Information (MANDATORY)

1. Is document potentially Classified? (●) No ( ) Yes

Aly, Alaa H Will Nichols approved via IDMS Data File
Manager Required (Print and Sign)

If Yes _____
ADC Required (Print and Sign) ( ) No ( ) Yes Classified

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A-6001-401 (REV 5)

CHPRC-00784
Revision 1

Tier 1 Risk-Based Soil Concentrations Protective of Ecological Receptors at the Hanford Site

Prepared for the U.S. Department of Energy
Assistant Secretary for Environmental Management

Contractor for the U.S. Department of Energy
under Contract DE-AC06-08RL14788

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Approved for Public Release;
Further Dissemination Unlimited

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Document Type: ENV Program/Project: EP & SP

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Date Published
July 2014

Prepared for the U.S. Department of Energy
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APPROVED
By Lee Ann Snyder at 12:13 pm, Jul 31, 2014

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Executive Summary

A framework for derivation of ecological risk-based concentrations in soil is presented in this document for use in remedial investigations (RIs) and feasibility studies (FSs) at the Hanford Site. This framework is intended to be iterative, incorporating additional information as appropriate to improve decision making.

This iterative approach is in accordance with the steps outlined in EPA 540-R-97-006,[1] and the simplified and site-specific ecological evaluations described in WAC 173-340-7492[2] and WAC 173-340-7493.[3] The framework for development of these risk-based concentrations consists of the following progressive tiers that are more Hanford-specific and more accurately represent the conceptual ecological soil exposure pathway with each tier:

- Generic Screening Levels represent initial, conservative screening values readily available from published sources that are intended to differentiate between contaminants of potential ecological concern (COPECs) that clearly present no risk and those for which additional evaluation may be warranted.
- Tier 1—Values incorporate data that represent Hanford Site-specific receptors.
- Tier 2—Values incorporate additional Hanford Site-specific information to obtain values that better reflect Hanford Site conditions.
- Tier 3—Values are waste site-specific or location-specific and are based on data (e.g., bioaccumulation sampling, bioassays, and exposure factors) collected for specific locations at the Hanford Site.

Development of Tiers 2 and 3 values is not discussed in this report and will be addressed in separate documents as appropriate.

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[1] EPA 540-R-97-006, 1997, *Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments: Interim Final*, OSWER 9285.7-25, Office of Solid Waste and Emergency Response, U.S. Environmental Protection Agency, Washington, D.C. Available at: http://www.epa.gov/swerrims/riskassessment/ecorisk/ecorisk.htm.

[2] WAC 173-340-7492, "Model Toxics Control Act—Cleanup," "Simplified Terrestrial Ecological Evaluation Procedures," *Washington Administrative Code*, Olympia, Washington. Available at: http://apps.leg.wa.gov/wac/default.aspx?cite=173-340-7492.

[3] WAC 173-340-7493, "Model Toxics Control Act—Cleanup," "Site-Specific Terrestrial Ecological Evaluation Procedures," *Washington Administrative Code*, Olympia, Washington. Available at: http://apps.leg.wa.gov/wac/default.aspx?cite=173-340-7493.

Chapter 1 discusses the application of these values within the *Comprehensive Environmental Response, Compensation, and Liability Act of 1980*[4] (CERCLA) process. In the CERCLA process, a range of conservative risk-based screening values and benchmarks may be used in an ecological risk assessment (ERA) conducted as part of an RI. These values can be used for investigation planning, for use in screening analytical data to identify COPECs, media, and receptors that require further evaluation, and for evaluation of remedial alternatives. As described in this document, these values may be further refined to more ecologically relevant values with information collected in the RI. Based on the results from the ERA, ecological preliminary remediation goals PRGs used in the FS are identified from these risk-based values.

Chapter 2 presents a discussion of the tiered process for the derivation of these ecological risk-based concentrations. This is a framework that is iterative in nature, allowing the incorporation of additional site-specific information into the ecological risk-based concentrations. The initial step in this tiered process is the derivation of the Generic Screening Levels are. Conceptually, the Generic Screening Levels should represent the most conservative ecological risk-based concentrations. However, the Generic Screening Levels are drawn from a range of sources and reflect some variation in the types of effect levels and quality of data used in their calculation and in certain cases, the wildlife Tier 1 values may be lower than Generic Screening Levels. These occurrences need to be taken into consideration when using any of these values for screening contaminant concentrations in soil. Calculation of Tier 2 values for wildlife, which would incorporate additional Hanford Site-specific information, may be appropriate for further evaluation of contaminants where wildlife Tier 1 values may be lower than Generic Screening Levels.

The risk-based concentrations developed in this document can be used as screening levels for evaluating sampling and analytical data, and can used as PRGs in an FS. Depending on site-specific conditions, a value at any tier in the process can be used either for screening data or as a PRG. Further description of the decision-making cycle in the tiered process is discussed further in Section 1.2 of this document.

Chapter 3 summarizes the methods and assumptions for developing Tier 1 values. Tier 1 values for wildlife were developed using wildlife exposure models established or

[4] *Comprehensive Environmental Response, Compensation, and Liability Act of 1980*, 42 USC 9601, et seq. Available at: http://uscode.house.gov/download/pls/42C103.txt.

accepted by regulatory agencies. Data and assumptions that reflect bird and mammal species found at the Hanford Site were used to develop Tier 1 values.

Chapter 4 summarizes the uncertainties associated with the Tier 1 risk-based soil concentrations. Some of the Tier 1 values for wildlife should be used with caution in remediation planning and with a full understanding of their associated uncertainties. In cases where the ecological screening level value or a PRG for any particular COPEC become drivers for remedial decision making in an RI/FS, a discussion of the uncertainties should be presented in the ERA accompanying the RI/FS. In certain cases, refinement of the Tier 1 value to Tier 2 value may be desirable prior to using an ecological risk-based value in remedial decision making. Examples of uncertainty discussions for some contaminants have been included in this document. These examples provide a framework for the types of uncertainty discussions for any contaminant that should be incorporated into the risk characterization portion of an ERA, and when making decisions to proceed to the next level of refinement within the tiered process.

This report has not proposed Tier 1 values for plants or soil invertebrates at this time, as is discussed in Chapter 4. The lowest effect levels in soil from published sources for plants and soil invertebrates have been summarized in this report; however, the uncertainties in the literature data sets of effect levels identified in this report preclude development of Tier 1 values for use in data screening or for PRGs. Activities being conducted during 2011 to support development of ecological risk-based values for plants and soil invertebrates include:

- Incorporating plant and soil invertebrate bioassay data, collected as part of the River Corridor Baseline Risk Assessment (DOE/RL-2007-21),[5] along with additional literature and information into the development of ecological values
- Conducting additional plant and soil invertebrate bioassays using Hanford Site soils to estimate effect levels using a broader range of soil concentrations (DOE/RL-2010-118)[6]

[5] DOE/RL-2007-21, 2008, *Risk Assessment Report for the 100 Area and 300 Area Component of the River Corridor Baseline Risk Assessment*, Draft B, 3 vols., U.S. Department of Energy, Richland Operations Office, Richland, Washington.

[6] DOE/RL-2010-118, 2011, *Sampling and Analysis Plan for Ex Situ Plant and Invertebrate Bioassays to Evaluate Terrestrial Environments Across the Hanford Site*, Draft A, U.S. Department of Energy, Richland Operations Office, Richland, Washington.

- Evaluating revegetation success at interim-closed and revegetated waste sites cleaned up under Interim Action Records of Decision in the River Corridor

Chapter 5 presents a summary of the generic and Tier 1 values that were identified or derived for this report and a discussion of their application. The ecological risk-based values presented in this report result from a tiered process in which values are refined, as needed, with additional literature-derived or site-specific information, using more complex methods to develop values that are more representative of ecological exposure pathways at the Hanford Site. The tiered approach is in accordance with guidance from EPA 540-R-97-006, OSWER Directive 9285.7-55,[7] and the ecological evaluation procedure presented in WAC 173-340-7490,[8] WAC 173-340-7491,[9] and WAC 173-340-7492 and -7493. Central to the concept of a systematic, informed progression is an iterative process (i.e., cycles) of decision making involving evaluation, deliberation, data collection, and communication. All of these steps should be focused on deciding: (1) whether or not the ecological risk-based concentrations at the current tier are sufficient to support cleanup decision making (a process for exiting the tiered approach is available at each tier), (2) if the information available at the current tier is determined to be insufficient, whether or not progression to a higher tier of refinement warrants the additional effort. The need for refinement to a higher tier of ecological risk-based concentration is based on the uncertainties in the current-tier value, the confidence in the data used in developing the value, and the relevance of the assumptions used in its development to site conditions. Incorporation of additional information will result in a risk-based concentration that better reflects site-specific conditions. However, such refinement could result in a concentration value that is either higher or lower than the previous-tier value. Selection of a particular tier for use in screening data or for PRG development should take into consideration the level of confidence in the value and its relevance to site-specific conditions.

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[7] OSWER Directive 9285.7-55, 2003, *Guidance for Developing Ecological Soil Screening Levels*, Attachment 1-3, *Evaluation of Dermal Contact and Inhalation Exposure Pathways for the Purposes of Setting EcoSSLs*, Office of Solid Waste and Emergency Response, U.S. Environmental Protection Agency, Washington, D.C. Available at: http://www.epa.gov/ecotox/ecossl/pdf/ecossl_attachment_1-3.pdf.

[8] WAC 173-340-7490, "Model Toxics Control Act—Cleanup," "Terrestrial Ecological Evaluation Procedures," *Washington Administrative Code*, Olympia, Washington. Available at: http://apps.leg.wa.gov/WAC/default.aspx?cite=173-340-7490.

[9] WAC 173-340-7491, "Model Toxics Control Act—Cleanup," "Exclusions from a Terrestrial Ecological Evaluation," *Washington Administrative Code*, Olympia, Washington. Available at: http://apps.leg.wa.gov/WAC/default.aspx?cite=173-340-7491.

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Terms

AUF	area use factor
BAF	bioaccumulation factor
BCG	Biota Concentration Guide
BW	body weight
CERCLA	*Comprehensive Environmental Response, Compensation, and Liability Act of 1980*
COPEC	contaminant of potential ecological concern
CSM	conceptual site model
DOE	U.S. Department of Energy
EC10	concentration causing effects to 10 percent of exposed population
EC20	concentration causing effects to 20 percent of exposed population
EC50	concentration causing effects to 50 percent of exposed population
Ecology	Washington State Department of Ecology
EcoSSL	Ecological Soil Screening Level
EPA	U.S. Environmental Protection Agency
EPC	exposure point concentration
ERA	ecological risk assessment
ERAGS	*Ecological Risk Assessment Guidance for Superfund*
FIR	food intake rate
FS	feasibility study
HI	hazard index
HQ	hazard quotient
IRIS	Integrated Risk Information System
LC50	concentration lethal to 50 percent of exposed population
LOAEC	lowest observed adverse effects concentration
LOAEL	lowest observed adverse effect level
LOEC	lowest observed effect concentration
MATC	maximum acceptable toxicant concentration
MTCA	Model Toxics Control Act

NOAEC	no observed adverse effects concentration
NOAEL	no observed adverse effect level
NOEC	no observed effect concentration
ORNL	Oak Ridge National Laboratory
PAH	polyaromatic hydrocarbon
PNEC	predicted no effect concentration
PRG	preliminary remediation goal
RCBRA	River Corridor Baseline Risk Assessment
RI	remedial investigation
SAP	sampling and analysis plan
SLERA	Screening Level Ecology Risk Assessment
SMDP	scientific management decision point
SSL	soil screening level
TEE	terrestrial ecological evaluation
TRV	toxicity reference value
USACHPPM	U. S. Army Center for Health Promotion and Preventive Medicine
WIR	water ingestion rate

1 Introduction

A framework for derivation of ecological risk-based concentrations in soil for use in remedial investigations (RIs) and feasibility studies (FSs) at the Hanford Site is presented in this document. This framework is intended to be iterative, incorporating additional information as appropriate to improve decision making. This iterative approach is in accordance with the steps outlined in EPA 540-R-97-006, *Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments: Interim Final*, hereafter referred to as ERAGS, and the simplified and site-specific ecological evaluations described by the Washington State Department of Ecology (Ecology) in WAC 173-340-7492, "Model Toxics Control Act—Cleanup," "Simplified Terrestrial Ecological Evaluation Procedures," and WAC 173-340-7493, "Model Toxics Control Act—Cleanup," "Site-Specific Terrestrial Ecological Evaluation Procedures." Under both Ecology and U.S. Environmental Protection Agency (EPA) guidance, an initial screening step is performed to identify areas or contaminants that present no unacceptable risks to ecological receptors from those that warrant additional evaluation. Later steps in the ecological risk assessment (ERA) process integrate site-specific data and ecologically more realistic exposure and effects assumptions to provide improved risk estimates. The framework for development of these risk-based concentrations consists of the following progressively more site-specific and biologically realistic tiers:

- **Generic Screening Levels** represent initial, conservative screening values from readily available published literature and agency sources.
- **Tier 1 Values** are also based on agency developed or accepted methods, that have been calculated specifically for bird and mammal species present at the Hanford Site. Sources and derivation of Tier 1 values are presented in this report.
- **Tier 2 Values** represent Hanford Site-specific values. They build on the Tier 1 values but differ in that they incorporate additional Hanford-specific data.
- **Tier 3 Values** represent waste site-specific or location-specific risk-based concentrations. These would be based on data (e.g., bioaccumulation sampling, bioassays, and exposure factors) collected for specific waste sites or locations at the Hanford Site. Tier 3 values have not been developed for any contaminants at this time.

These ecological risk-based concentrations in soil represent values, which are intended to protect a range of receptors from adverse effects, that can be used in *Comprehensive Environmental Response, Compensation, and Liability Act of 1980* (CERCLA) RI/FSs. In the CERCLA process, a range of conservative ecotoxicological screening values and benchmarks may be used in an ERA conducted as part of an RI. These values can be used as screening levels for investigation planning; for screening analytical data to identify contaminants of potential ecological concern (COPECs), media, and receptors that require further evaluation; and for evaluating remedial alternatives. As described in this document, these screening values may be further refined with information collected in the RI. Based on the ERA results, an ecological preliminary remediation goal (PRG), that is used in the FS, is identified from these values. PRGs are applied in the detailed evaluation of remedial alternatives in the FS. Based on considerations of the nine criteria in the detailed evaluation of remedial alternatives, the PRGs are refined into final contaminant-specific cleanup levels, using the PRGs as the point of departure (EPA 540-R-98-031, *A Guide to Preparing Superfund Proposed Plans, Records of Decision, and Other Remedy Selection Decision Documents*).

1.1 Overview of Ecological Soil Screening Level Selection and/or Derivation

The tiered approach begins with identifying readily available soil screening levels (SSLs) for terrestrial plants, soil invertebrates, birds, and mammals extracted from published regulatory agency and related sources. These SSLs are soil-based analyte concentration values developed with generic, conservative assumptions. Through the tiered approach, these values are then refined as needed with additional literature-derived or site-specific information and using more complex methods to develop screening level values that are more representative of ecological exposure pathways at the Hanford Site. Central to the tiered approach is an iterative process of evaluation and deliberation. The objective of this iterative process is to decide:

- Whether or not a risk-based value in its current form is sufficient for use as a screening level or an ecological PRG to support cleanup decision making
- Whether or not progression to a higher tier of complexity in development of risk-based values would reduce uncertainty and/or increase confidence in the value used for cleanup decision making to warrant the additional effort if the information available at the current tier is determined to be insufficient

The tiered approach is in accordance with guidance developed by the EPA (principally EPA 540-R-97-006 and OSWER Directive 9285.7-55, *Guidance for Developing Ecological Soil Screening Levels*) and the ecological evaluation procedure presented in WAC 173-340-7490 through WAC 173-340-7493 (“Model Toxics Control Act—Cleanup,” “Terrestrial Ecological Evaluation Procedures;” “Exclusions from a Terrestrial Ecological Evaluation;” “Simplified Terrestrial Ecological Evaluation Procedures;” and “Site-Specific Terrestrial Ecological Evaluation Procedures”). A primary purpose for this document is to facilitate the evaluation and deliberation process through a presentation of the data, assumptions, and methods used in this tiered approach. The following subsections discuss these various tiers in further detail.

1.1.1 Generic Screening Levels

Generic Screening Levels for plants, soil invertebrates, birds, and mammals are obtained from existing published and accepted sources: EPA (Ecological Soil Screening Levels [EcoSSLs]), Washington State Department of Ecology (Ecological Indicator Soil Concentrations), Oak Ridge National Laboratory (ORNL) Screening-Level Benchmarks, and the U.S. Department of Energy (DOE) Biota Concentration Guides (BCGs). Generic Screening Values are not specific to the Hanford Site; rather, they represent conservative, literature-based screening values. Because of their inherent conservatism, Generic Screening Levels are intended to differentiate between contaminants that clearly present no risk and those for which additional evaluation may be warranted.

Further descriptions of each Generic Screening Level are presented in Chapter 2. These values are most useful for identifying COPECs in an ERA and are not specifically intended for use in making cleanup decisions. However, in the absence of any other ecological risk-based concentrations and based on project-specific factors, decision makers at the Hanford Site (i.e., DOE, EPA, and Ecology) may consider using Generic Screening Levels as ecological PRGs in RI/FSs.

1.1.2 Tier 1 Values

Tier 1 ecological risk-based concentration values are developed to reflect Hanford-specific conditions using information obtained from the literature. Overall guidance for the development of tiered values is the 8-step EPA process presented in ERAGS (EPA 540-R-97-006). Step 3 in the ERAGS (EPA 540-R-97-006) process is the baseline problem formulation, which calls for refinement of initial

screening levels and exposure assumptions and, therefore, supports the development of Tier 1 values. Development of the Tier 1 values also draws on EPA EcoSSL guidance (OSWER Directive 5285.7-55). The process for development of Tier 1 values also is consistent with Ecology's site-specific terrestrial ecological evaluation (TEE) procedure (WAC 173-340-7493). Development of Tier 1 values is discussed in detail in Chapter 3 of this document.

1.1.2.1 Wildlife

Tier 1 values in soil for wildlife were back-calculated from toxicity reference values (TRVs) using a wildlife exposure model. The TRVs used were based on both no and lowest observed adverse effects level (NOAELs and LOAELs). The Tier 1 values were calculated for bird and mammal species found at the Hanford Site. Exposure factors such as food and soil ingestion rates were derived for Hanford-specific wildlife from a review of the literature. Concentrations in food items were calculated with bioaccumulation models drawn primarily from EPA's EcoSSL guidance. Estimating exposures to insectivorous or omnivorous wildlife involved estimating bioaccumulation into soil invertebrates. The standard bioaccumulation models presented in the EcoSSL are based on accumulation of contaminants from soil to earthworms. It should be noted that application of earthworm bioaccumulation models at the Hanford Site introduces uncertainties into the exposure estimates and the resulting Tier 1 values because the soil invertebrate component of the food web at the site is primarily composed of arthropods. This uncertainty is addressed in Tier 2 values for wildlife.

The Tier 1 values for wildlife are more site-specific than the Generic Screening Levels, because they incorporate exposure factors for wildlife species that occur at the Hanford Site. However, bioaccumulation methods used for Tier 1 values, particularly from soil to soil invertebrates, are not Hanford Site-specific and are based on the same methods used for developing EcoSSLs.

1.1.2.2 Plants and Soil Invertebrates

Tier 1 risk-based concentration values for plants and soil invertebrates are not proposed at this time. However, these receptors are identified in the problem formulation (Section 3.1), and a focused review of ecological effects data available in the literature is presented in the exposure and effects assessment (Section 3.2). The review of the literature information suggests that there are substantial uncertainties with attempting to develop Tier 1 values for plants and soil invertebrates based solely on literature. Other lines of evidence should be considered for developing values for plants and soil invertebrates. These other lines of evidence are discussed further in Chapter 5.

1.1.3 Tier 2 Values

The development of Tier 2 values corresponds to exposure and effects assessment conducted as part of a baseline ERA within ERAGS (EPA 540-R-97-006), and reflect OSWER Directive 9285.7-28P, *Ecological Risk Assessment and Management Principles for Superfund Sites*, which encourages the use of site-specific ecological risk data to support cleanup decisions, whenever practicable. The process for development of Tier 2 values also is consistent with Ecology's site-specific TEE procedure (WAC 173-340-7493).

Note that calculated Tier 2 values for wildlife, plants, or soil invertebrates are not included in this document. Because of the complexity involved with data and analyses for Tier 2 values, a separate technical report will be prepared for them.

1.1.3.1 Wildlife

For wildlife, a primary difference between Tier 1 and Tier 2 values would be the use of bioaccumulation models (regressions and bioaccumulation factors [BAFs]) based on data and food chains present at the Hanford Site (e.g., arthropods in soil), rather than bioaccumulation estimated in earthworms.

1.1.3.2 Plants and Soil Invertebrates

For plants and soil invertebrates, Tier 2 values would combine literature-based effects data along with the results from toxicity bioassays conducted in soils from the Hanford Site. Development of Tier 2 values for plants and soil invertebrates would involve development of separate sampling and analysis plans (SAPs) and field sampling plans to support data collection. Some site-specific toxicity testing data for plants and soil invertebrates has been developed as part of the RCBRA (DOE/RL-2007-21). As discussed further in Chapter 5, these data will be evaluated further for use in developing Tier 2 ecological risk-based concentrations for plants and soil invertebrates.

1.1.4 Tier 3 Values

Tier 3 values represent waste site-specific or location-specific PRGs, based on data (e.g., bioaccumulation sampling, bioassays, and exposure factors) collected for specific locations at the Hanford Site. Development of Tier 3 values would involve development of separate SAPs and field sampling plans to support data collection. Tier 3 values would be the most refined and would be developed on an as needed basis to address specific receptor contaminant issues for which existing data are inadequate to reduce uncertainty about residual risks and environmental protection.

1.2 Decision Making Cycles in the Tiered Approach

The tiered approach presented in Figure 1-1 describes a general process for systematic, informed progression to increasingly more biologically realistic and site-specific ecological values for use in RI/FSs. Higher tiers reflect increasing complexity and greater investment of time and resources. Higher tiers also reflect more refined characterization of ecological risks, which may be important in cleanup decision making. Central to the concept of a systematic, informed progression is an iterative process (i.e., cycles) of decision making involving evaluation of existing information, deliberation, data collection, and communication. All of these steps should be focused on the following decisions:

- Whether or not the ecological risk-based concentrations at the current tier are sufficient to support cleanup decision making (a process for exiting the tiered approach is available at each tier)
- Whether or not progression to a higher tier of refinement would reduce uncertainties and/or increase confidence in risk-based concentrations to warrant the additional effort if the information available at the current tier is determined to be insufficient

Key points in the decision making cycles are presented in the following paragraphs.

In general, Generic Screening Levels should not be used as ecological PRGs. However, there should be a decision making cycle to make that specific judgment. In deciding whether a higher tier ecological value should be developed, the following factors should be considered (these factors typically will have been addressed as part of an ERA):

- Comparison between the Generic Screening Level, the background concentration in soil, and other PRGs in soil for protection of human health and groundwater

- Evaluation of the relevance of the assumptions used in the development of the Generic Screening Levels to site conditions
- Consideration of uncertainties with the Generic Screening Levels

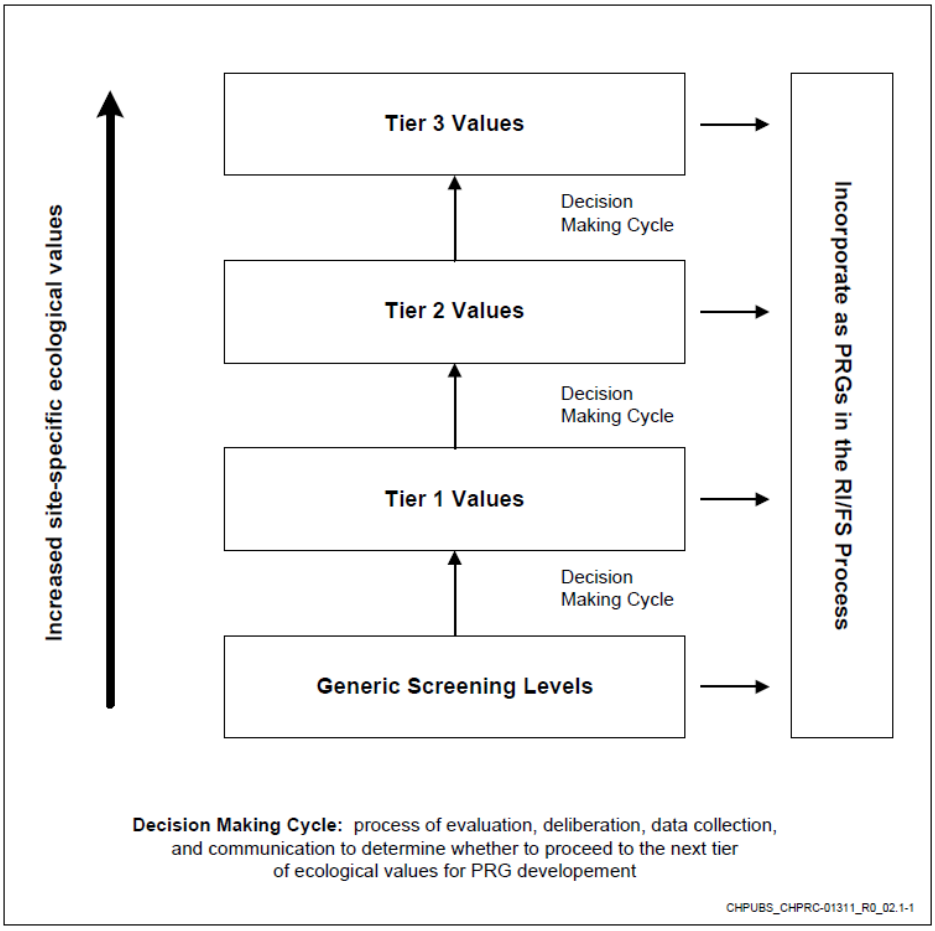

Figure 1-1. Tiered Approach to Ecological PRG Development

Proceeding from a Generic Screening Level to development of Tier 1 and/or Tier 2 values represents a scientific management decision point (SMDP) as defined in ERAGS (EPA 540-R-97-006). In cases where ecological risks are low (i.e., when waste site EPCs are close to or below Generic Screening Levels), where Generic Screening Levels are well above background concentrations in soil, where the investment of time and resources for refining ecological risk-based concentrations may outweigh the costs for cleanup, or for very simple waste sites, Generic Screening Levels may be suitable for use as PRGs. Otherwise, development of ecological risk-based concentrations should proceed to a higher tier because cleanup decision making would benefit from the additional analysis of ecological risk-based concentrations.

Selecting the appropriate value between Tiers 1 and 2 represents another SMDP as defined in ERAGS (EPA 540-R-97-006). The decision making cycle with these values involves determining if there is a need for a more refined ecological value. The question to be addressed in the SMDP is whether or not to proceed with the development and use of the values in the RI/FS process. The same factors discussed previously are considered in determining whether or not to use Tiers 1 and/or 2 values in the RI/FS

process. In addition, uncertainties in the data and assumptions used in developing the SSLs are evaluated to determine whether or not their incorporation introduces greater or lesser uncertainty than in the previous tier. The decision to develop Tier 2 values also takes into consideration the investment of time and resources for planning, field data collection, and analysis of data relative to the costs for proposed remediation based on Generic Screening Levels or Tier 1.

Moving to Tier 3 represents another SMDP and involves performing waste site-specific data collection. As with Tier 2 values, the decision to develop Tier 3 values takes into consideration the investment of time and resources for planning, field data collection, and analysis of data relative to the costs for proposed remediation based on Tiers 1 or 2 values.

2 Identification of Generic Screening Levels

Generic Screening Levels represent conservative screening concentrations in soil that are used as part of a Screening Level Ecological Risk Assessment (SLERA).[1] Within a SLERA, Generic Screening Levels are compared to the maximum concentrations in soil to differentiate between contaminants that clearly present no ecological risk and require no further evaluation, and those contaminants for which additional evaluation may be warranted. This additional evaluation may include exposure point concentration development using alternative statistics, such as the 95% UCL on the average, as described in EPA guidance and in WAC 173-340-740(7)(d)(1) if necessary. Generic Screening Levels are used in this document as the starting point for determining when further refinements in data or methods should be applied to a contaminant within this tiered process for developing ecological risk-based concentrations for use in screening and PRG development at the Hanford Site.

Generic Screening Levels are drawn from readily available values in published sources. For application at the Hanford Site, the following sources are used to obtain Generic Screening Levels:

- EPA EcoSSLs
- Ecology's Ecological Indicator Soil Concentrations, found in Ecology Publication 94-06, *Model Toxics Control Act Cleanup Regulation 173-340 WAC*, Table 749-3
- Screening benchmark concentrations in soil developed by ORNL (many of the Ecological Indicator Soil Concentrations published by Ecology were drawn from ORNL screening benchmark concentrations)
- BCGs for radionuclides that are presented in DOE-STD-1153-2002, *A Graded Approach for Evaluating Radiation Doses to Aquatic and Terrestrial Biota*

Values have been drawn from these sources for a broad range of chemical and radiological constituents that could be encountered in Hanford Site soils, as shown in Table 6-1. The list of constituents in Table 6-1 was drawn from existing ERAs conducted at the Hanford Site (DOE/RL-2007-21, *Risk Assessment Report for the 100 Area and 300 Area Component of the River Corridor Baseline Risk Assessment*; DOE/RL-2007-50, *Central Plateau Ecological Risk Assessment Data Package Report*; and WMP-20570, *Central Plateau Terrestrial Ecological Risk Assessment Data Quality Objectives Summary Report – Phase I*).

Background concentrations in soil are obtained from multiple sources. Hanford Site background studies have been conducted for several inorganic constituents and radionuclides (DOE/RL-92-24, *Hanford Site Background: Part 1, Soil Background for Nonradioactive Analytes*; DOE/RL-96-12, *Hanford Site Background: Part 2, Soil Background for Radionuclides*; and DOE/RL-95-55, *Hanford Site Background: Evaluation of Existing Soil Radionuclide Data*). For analytes without Hanford-specific background, Washington State background concentrations can be found in Ecology Publication 94-115, *Natural Background Soil Metals Concentrations in Washington State*. In addition, background concentrations for selected inorganic analytes can be found in PNNL-18577, *A Review of Metal Concentrations Measured in Surface Soil Samples Collected on and Around the Hanford Site*.

The following sections describe the Generic Screening Levels in further detail.

[1] A SLERA is the first two steps of EPA's eight-step process for ecological risk assessment outlined in EPA 540-R-97-006.

2.1 EPA Ecological Soil Screening Levels

EcoSSLs are values that can be used routinely to identify those contaminants of potential concern in soil requiring further evaluation in a baseline ERA. Although these screening levels were developed to be used specifically during a SLERA for Superfund sites, EPA envisions that any federal, state, or private environmental assessment or cleanup program could use these values to screen soil contaminants and sites in order to determine if additional site-specific ecological study was warranted. EPA cautions that EcoSSLs were not designed to be used as cleanup levels, and EPA emphasizes that it would be inappropriate to adopt or modify these EcoSSLs as cleanup standards (OSWER Directive 9285.7-55).

EcoSSLs were derived using standardized procedures for literature review, toxicity data selection, and data evaluation. Where acceptable data were judged to be adequate, four EcoSSL values were derived for each contaminant: one each for plants, soil invertebrates, birds, and mammals. This overall process for EcoSSL development is documented in EPA standard operating procedures.

Plant and soil invertebrate EcoSSL values were derived directly from an evaluation of selected published plant and soil invertebrate toxicity test data (measured toxic responses to known concentrations of contaminants in soil). The derivation of EcoSSLs for plants and invertabrates is described in Section 2.1.1.

The wildlife EcoSSL values were the result of a back calculation from a hazard quotient (HQ) of 1; the HQ is the ratio of the estimated exposure to an organism from a contaminant in soil and the TRV. An HQ of 1 is the condition where the level of exposure to a contaminant concentration in soil and the target effect levels (e.g., no effect and lowest effect level) are equal, indicating that adverse effects at or below that contaminant concentration meet the target. EPA used a generic food chain model to estimate the relationship between the concentration of the contaminant in soil and the level of exposure in the organism. The derivation of wildlife EcoSSLs is described in Section 2.1.2.

EcoSSLs were not developed for reptiles, amphibians, and soil microbes. EPA concluded that toxicity data for amphibians and reptiles were insufficient for EcoSSL development. While there has been some limited quantitative evaluation of ecological risks to reptiles and amphibians at the Hanford Site (DOE/RL-2007-21 and DOE/RL-2007-50) in general, Hanford Site ERAs will qualitatively address risks to reptiles and amphibians should these be identified as receptors of concern in a problem formulation. While EPA recognized the importance of soil microbial processes in terrestrial ecosystems, the data were believed to be insufficient, and the interpretation of test results was too uncertain for developing values for risk-based screening. Further discussion of soil microbes is presented in EP EcoSSL guidance, Attachment 1-2 (OSWER Directive 9285.7-55).

2.1.1 Derivation of EcoSSLs for Plants and Soil Invertebrates

EcoSSLs for plants and soil invertebrates were derived using data from tests performed within soil conditions favoring relatively high bioavailability for upland soils. The soil chemistry conditions of relatively high bioavailability were defined by low soil pH and organic matter content. From the studies reviewed, the measure of toxic effects to either plants or soil invertebrates were grouped into ecologically relevant endpoints including reproduction, population characteristics, and growth. Toxicity parameters used in deriving the EcoSSLs were the effective concentration affecting 20 percent of a test population (EC20), the maximum acceptable toxicant concentration (MATC), and the effective concentration affecting 10 percent of a test population (EC10). The MATC was calculated by EPA from studies that reported a no observed adverse effects concentration (NOAEC) and a lowest observed adverse effects concentration (LOAEC). The MATC was calculated as the geometric mean of the LOAEC and NOAEC. There was a preference for using “bounded” values; in other words, toxicity studies which reported

toxicity values that bounded both a LOAEC and a NOAEC. Studies reporting unbounded LOAECs or NOAECs were not considered to provide a reliable assessment of the dose-response and were not used by EPA for EcoSSL development. The EcoSSL for plants and soil invertebrates was calculated as the geometric mean of all the toxicity parameters from studies conducted under conditions of high bioavailability. The use of EC20, MATC, and EC10 as toxicity parameters means that EcoSSLs for plants and soil invertebrates are not based on NOAECs, with the exception of the MATC which is derived from the geometric mean of both the NOAEC and LOAEC.

2.1.2 Derivation of EcoSSLs for Wildlife

Wildlife EcoSSLs were developed for two groups of receptors: mammals and birds. As described previously, the wildlife EcoSSL values were the result of a back calculation from an HQ of 1, using the following wildlife risk model:

$$HQ = \frac{Exposure\ (mg/kg\ bw - day)}{TRV\ (mg/kg\ bw - day)}$$

where:

TRV = toxicity reference value

Birds and mammals experience chemical exposure through multiple pathways, including ingestion of abiotic media (surface water and sediment/soil) and biotic media (food), as well as inhalation and dermal contact. To assess this multiple pathway exposure, modeling is often employed. The end product, or exposure estimate, for birds and mammals is a dosage (amount of chemical in milligrams per kilogram receptor body weight [BW] per day [mg/kg/day]) rather than a media concentration, which is the case for the other receptors. Further descriptions of exposure models are presented in Section 3.2.

EcoSSLs for birds and mammals are derived using exposure factors for herbivores (mourning dove and meadow vole), insectivores (American woodcock and short tailed shrew), and carnivores (long tailed weasel and red tailed hawk). The contaminant concentrations in biota types (B_{ij}) composing wildlife diets (plants, soil invertebrates, or small mammals) are estimated assuming the concentration of contaminant "j" in food type "i" could be predicted from the contaminant concentration in soil ($Soil_j$) using bioaccumulation models. Bioaccumulation models were either derived within the EcoSSL process or obtained from existing sources (e.g., ORNL bioaccumulation reports). The following hierarchy of bioaccumulation modeling methods is used by EPA to estimate wildlife EcoSSLs:

- Existing regression equations are from ES/ER/TM-220, *Development and Validation of Bioaccumulation Models for Earthworms*; ES/ER/TM-219, *Development and Validation of Bioaccumulation Models for Small Mammals*; and BJR/OR-133, *Empirical Models for the Uptake of Inorganic Chemicals from Soil by Plants.*
- New regression equations were developed specifically for the EcoSSL using paired soil biota concentration data; new regression equations were developed if regressions were not available from the literature.
- BAFs were identified from the literature or estimated from paired soil biota concentration data if suitable regressions were not available.
- BAFs were estimated using modeling if BAFs were not available from the literature or measured data.

- For instances where data were not available to complete any of the previously listed options in the hierarchy, it was necessary to make assumptions concerning the bioaccumulation of contaminants for soil into biota types; this method was used very infrequently for developing EcoSSLs.

The wildlife TRV used in the development of EcoSSLs is defined as:

> *Dose above which ecologically relevant effects might occur to wildlife species following chronic dietary exposure and below which it is reasonably expected that such effects will not occur.*

As described in EPA guidance, literature was reviewed to select TRVs appropriate for calculating wildlife EcoSSLs. The primary objective of the literature review was to identify the following values:

- A no observed adverse effect level (NOAEL), which is the highest dose that does not cause a statistically significant adverse effect.
- A lowest observed adverse effect level (LOAEL), which is the lowest dose that caused a statistically significant adverse effect.

The TRV was calculated as the geometric mean of NOAELs for growth and reproduction effects. In cases where the geometric mean NOAEL was higher than the lowest bounded LOAEL (bounded refers to a LOAEL that has a paired NOAEL), the TRV was set at the highest bounded NOAEL below the lowest bounded LOAEL.

Finally, the lowest EcoSSL among the bird and mammal species of these trophic groups was selected as the final bird and mammal EcoSSLs published by EPA.

2.2 ORNL Ecotoxicological Screening Benchmarks

ORNL ecotoxicological screening benchmarks have been developed or obtained for the following types of exposure and classes of endpoint groups:

- Exposure of aquatic biota to chemicals in water (ES/ER/TM-96/R2, *Toxicological Benchmarks for Screening Potential Contaminants of Concern for Effects on Aquatic Biota at Oak Ridge Reservation: 1996 Revision*)
- Exposure of benthic biota to chemicals in sediments (ES/ER/TM-95/R4, *Toxicological Benchmarks for Screening Potential Contaminants of Concern for Effects on Sediment-Associated Biota: 1997 Revision*)
- Exposure of terrestrial plants to chemicals in soil (ES/ER/TM-85/R3, *Toxicological Benchmarks for Screening Potential Contaminants of Concern for Effects on Terrestrial Plants: 1995 Revision*)
- Exposure of soil invertebrates to chemicals in soil (ES/ER/TM-126/R2, *Toxicological Benchmarks for Contaminants of Potential Concern for Effects on Soil and Litter Invertebrates and Heterotrophic Process: 1997 Revision*)
- Exposure of wildlife to chemicals in orally ingested materials (ES/ER-TM-86/R3, *Toxicological Benchmarks for Wildlife: 1996 Revision*)

Only the benchmark values for plants and soil invertebrates have been used in this document for the development of ecological PRGs at the Hanford Site. The following overview of the ORNL benchmarks is drawn from ORNL/TM-13615, *A Guide to the ORNL Ecotoxicological Screening Benchmarks: Background, Development and Application.*

The ORNL ecotoxicological screening benchmarks are concentrations of chemicals in ambient media that are believed to represent acceptable concentrations with respect to selected ecological receptors. In general, if the benchmark concentrations are not exceeded, further analysis of that contaminant and ecological receptor is not warranted. The intended purpose of the ORNL ecotoxicological benchmarks is to screen chemical concentrations in environmental media to identify chemicals that are present at a sufficiently high concentration to present a potential risk to ecological receptors. These COPECs require further assessment to determine whether they do in fact pose significant risks.

The ORNL ecotoxicological benchmarks should not be used as remedial goals or as concentrations that pose significant risks. Rather, risk estimates for the chemicals of potential ecological concern and remedial goals for the chemicals of ecological concern (i.e., chemicals that are estimated to pose a significant risk) should be based on a weighing of the available evidence, including any site-specific toxicity tests or biological surveys. Even if the risk estimates and remedial goals are based solely on conventional, single chemical toxicity data, the ORNL benchmarks should not be automatically adopted as thresholds for significant risk. Rather, the risk assessors should return to the primary literature to determine what studies and data are most relevant to their site and assessment endpoints.

Noteworthy limitations identified with the benchmarks include their reliance on laboratory toxicity testing data and the use of models to extrapolate from toxicity testing endpoints to ERA endpoints. The benchmarks rely on single chemical toxicity testing data and do not incorporate potential effects from exposure to multiple contaminants. The guidelines for their use state a default assumption additivity of toxic effects; however, it becomes necessary to define a lower limit for significant contribution of a chemical to combined toxicity. Because the benchmarks are based on conventional laboratory toxicity data, their relationship to field exposures is uncertain. In particular, laboratory tests are generally designed to expose organisms to highly bioavailable and toxic forms of the test chemical under conditions that maximize exposure. For example, soil toxicity tests are usually performed with soluble forms of chemicals, and the tests are performed without aging the soil to allow for sequestration of the chemical. In general, these considerations mean that the benchmarks are conservative because the bioavailability and toxicity of the chemical in the field are generally lower than in the laboratory (ORNL/TM-13615).

The ORNL benchmarks for the toxicity to plants from chemical contaminants in soil were based on thresholds for effects on growth and reproduction derived from published toxicity studies conducted in soil or solution. The benchmarks are concentrations of chemicals that correspond to the lowest observed effect concentration (LOEC) for the 10th percentile of plant species tested. The ORNL benchmarks for toxicity to soil invertebrates and heterotrophic processes from chemical contaminants in soil represent thresholds (LOECs) for statistically significant effects on growth, reproduction, or activity. The toxicity benchmarks were derived by rank ordering the LOEC values, then selecting a value that approximated the 10th percentile. If 10 or fewer values were available for a chemical, the lowest LOEC was used. If the 10th percentile fell between LOEC values, a value was chosen by interpolation. If a chemical concentration in soil represented a 50 percent or higher reduction in survivorship of plants, the concentration was divided by 5 to approximate the more sensitive endpoints of growth or production.

2.3 Ecological Indicator Soil Concentrations

Ecology has developed Ecological Indicator Soil Concentrations for protection of terrestrial plants and animals as part of the TEE procedures presented in the Model Toxic Control Act (MTCA) regulations for the cleanup of contaminated sites (WAC-173-340-7490 through 7493). The TEE defines the following goals and procedures:

- Determining whether a release of hazardous substances to soil may pose a threat to the terrestrial environment
- Characterizing existing or potential threats to terrestrial plants or animals exposed to hazardous substances in soil
- Establishing site-specific cleanup standards for the protection of terrestrial plants and animals

The Ecological Indicator Soil Concentrations presented in Ecology Publication 94-6, Table 749-3, represent soil concentrations that are expected to be protective at any MTCA site and are provided for use in eliminating hazardous substances from further consideration under WAC 173-340-7493(2)(a)(i). The Ecological Indicator Soil Concentrations for plants are predominantly based on plant benchmarks published in ORNL's ES/ER/TM-85/R3. The Ecological Indicator Soil Concentrations for soil biota are based on soil invertebrate benchmarks published in ORNL's ES/ER/TM-126/R2. Ecological Indicator Soil Concentrations for wildlife represent the lowest value calculated using an exposure model with assumptions for a vole (mammalian herbivore), American robin (avian insectivore), or shrew (mammalian insectivore). The exposure model and exposure factors for these wildlife receptors are presented in Table 749-4 in the WAC. BAFs and TRVs used in calculating the wildlife values are presented in WAC Table 749-5. However, Tables 749-4 and 749-5 in the *Washington Administrative Code* requirements do not provide the citations for the exposure factors, BAFs, or TRVs, so Ecological Indicator Soil Concentrations for wildlife are not readily comparable with wildlife EcoSSLs.

Where Ecological Indicator Soil Concentrations values are exceeded, the following options are provided for demonstrating that the hazardous substance does not pose a threat to ecological receptors at a site, or for developing site-specific remedial standards for eliminating threats to ecological receptors:

- WAC 173-340-7493(1)(c)—Conduct a site-specific TEE (steps presented in this document, for risk-based Tier 1, 2, or 3 values that can be used in PRG development, conform with the procedures of a site-specific TTE).
- WAC 173-340-7493(2)(a)(ii)—Identify any complete potential pathways for exposure of plants or animals to the chemicals of concern (the problem formulation presented in this document conforms with the procedure for identifying complete ecological exposure pathways).
- WAC 173-340-7493(3)—If it is determined during the problem formulation step that further evaluation is necessary, the soil concentrations listed in Table 749-3 may be used as the cleanup level at the discretion of the person conducting the evaluation. Alternatively, one or more of several TEE methods identified in the TEE procedures may be used. The following alternative TEE methods are being applied to the development of ecological risk-based concentrations in soil for use in identifying risk-based concentrations appropriate for use at the Hanford Site:
  - Literature survey
  - Soil bioassays
  - Wildlife exposure model
  - Weight of evidence

2.3.1 Literature Survey

Under WAC 173-340-7493(3)(a), an analysis based on a literature survey can be conducted for the purposes of developing a soil concentration for chemicals not listed in Table 749-3, identifying a soil concentration for the protection of plants or soil biota more relevant to site-specific conditions than the value listed in Table 749-3, or obtaining a value for any of the wildlife exposure model variables listed in

Table 749-5 to calculate a soil concentration for protection of wildlife more relevant to site-specific conditions than the values listed in Table 749-3. As described in WAC 173-340-7493(4), TRVs or soil concentrations established from the literature will represent the lowest relevant LOAEL found in the literature. DOE recognizes that the TRVs used are from data used by EPA in the development of EcoSSLs. For chemicals for which EPA did not develop an EcoSSL, the lowest LOAEL TRVs for population level endpoints were selected. DOE has been able to confirm that sensitive species have been used to develop the LOAEL-based PRGs and that these substitute receptor species are sufficiently protective of the wildlife in the region, including sensitive species. BAF values will represent a reasonable maximum value from relevant information found in the literature. In assessing relevance, the following principles will be considered:

- Literature benchmark values should be obtained from studies that have test conditions as similar as possible to site conditions.
- The literature benchmark values or TRVs should correspond to the exposure route being assessed.
- The TRV or BAF value will be as appropriate as possible for the receptor being assessed. The TRV should be based on a significant endpoint.
- The literature benchmark value or TRV should preferably be based on chronic exposure.
- The literature benchmark value, TRV, or BAF should preferably correspond to the chemical form being assessed. Exceptions may apply for TRVs where documented biological transformations occur following uptake of the chemical or where chemical transformations are known to occur in the environment under conditions appropriate to the site.

2.3.2 Soil Bioassays

Under WAC 173-340-7493(3)(b)(ii), soil concentrations protective of soil biota or plants may also be established with soil bioassays that use species ecologically relevant to the site rather than standard test species. Species that do or could occur at the site are considered ecologically relevant. Soil bioassays would be used to develop site-specific, ecological risk-based concentrations or make site-specific cleanup decisions under Tier 3.

2.3.3 Wildlife Exposure Model

Equations and exposure parameters used in calculating soil concentrations protective of terrestrial wildlife (Tables 749-3, 749-4, and 749-5). Under WAC 173-340-7493(3)(c), changes to this model may be approved by the department under the following conditions:

- Alternative values for parameters listed in Table 749-5 may be used if they can be demonstrated to be more relevant to site-specific conditions (e.g., the value is based on a chemical form of a hazardous substance actually present at the site). An alternative value obtained from the literature will be supported by a literature survey.
- Receptor species of concern or exposure pathways identified in the problem formulation step may be added to the model if appropriate on a site-specific basis.
- A substitution for one or more of the receptor species listed in Table 749-4 may be made if there is scientifically supportable evidence that a receptor identified in Table 749-4 is not characteristic or a reasonable surrogate for a receptor that is characteristic of the ecoregion where the site is located (WAC 173-340-7493(7)).

2.3.4 Weight of Evidence

As described in WAC 173-340-7493(f), a weight of evidence approach will include a balance in the application of literature, field, and laboratory data, recognizing that each has particular strengths and weaknesses. Site-specific data will be given greater weight than default values or assumptions where appropriate. Hanford Site-specific approaches include the calculation of wildlife values, based on receptor species found at the Hanford Site as part of Tier 1 and 2 values, and the use of soil bioassay results to develop risk-based values or assess risks for plants and soil invertebrates as part of Tiers 2 and 3 values.

2.4 Biota Concentration Guides for Radionuclides

Two radionuclide effect thresholds, as determined by consensus of international radiation regulatory agencies, form the basis for effect thresholds used to develop screening levels of radionuclides in soil for protection of plants and animals. General guidance from ICRP-60, *Recommendations of the International Commission on Radiological Protection*; IAEA 332, *Effects of Ionizing Radiation on Plants and Animals at Levels Implied by Current Radiation Protection Standards*; and *Sources and Effects of Ionizing Radiation* (UNSCEAR, 2000) concluded that radiological doses to aquatic animals (including vertebrates and invertebrates) and to terrestrial plants and terrestrial animals (invertebrates and vertebrates) should not exceed 1.0 rad/day for terrestrial plants and 0.1rad/day for terrestrial animals, respectively. Provided that radiation exposure does not exceed these biota dose levels, the consensus opinion of the international radiological organizations is that ecological populations will be protected. DOE has adopted these effect thresholds and integrated them into the graded approach (DOE-STD-1153-2002).

The DOE graded approach includes a screening method and the following more detailed levels of analysis for demonstrating compliance with applicable dose limits for protection of biota:

- A general screening involves comparing maximum radionuclide concentrations in environmental media (i.e., soil) with a set of BCGs to evaluate compliance with the biota dose limits.
- Site-specific screening involves more realistic site representative grouped parameters (e.g., BAFs) in place of conservative default parameters, using mean radionuclide concentrations in place of maximum values, and taking into account time dependence and spatial extent of contamination.
- Site-specific analysis employs a kinetic allometric modeling methodology. Multiple parameters that represent contribution to an organism's internal dose can be modified to represent site and organism-specific characteristics. These parameters include body mass, consumption rates of food or soil, inhalation rate, lifespan, and biological elimination rates. Development of the organism-specific characteristics involve using allometric equations that relate these parameters to body mass.
- Site-specific biota dose assessment involves the collection and analysis of biota samples.

The BCGs for terrestrial plants and animals represent Generic Screening Levels for radionuclides in soil for assessing ecological risks at the Hanford Site. The BCGs for radionuclides use conservative assumptions for internal and external exposure. While existing effects data support the application of these dose limits to representative individuals within populations of plants and animals, the assumptions and parameters applied in the derivation of the BCGs are based on a maximally exposed individual, representing a conservative approach for screening purposes. The following assumptions are used for estimating doses from external exposure for purposes of developing BCGs:

- The source medium is infinite in extent and contains uniform concentrations of radionuclides (i.e., there are no hot spots).

- The exposed organism is very small; consequently, 100 percent of the radionuclide energies are absorbed.
- Organisms exposed to soil are uniformly surrounded by the source medium.

The following assumptions are used to estimate doses from internal exposure for the purpose of developing BCGs:

- All radionuclide decay energies are retained in tissue (100 percent of energies absorbed).
- Exposure for a given radionuclide includes all decay chain progeny.
- All radionuclides are uniformly distributed such that all target tissues may be affected.

BCGs can be calculated using dose models, equations, and default parameters that are presented in DOE-STD-1153-2002. The soil values that were calculated using these default methods are found in Table 6-4 of DOE-STD-1153-2002. These dose models, equations, and default parameters are also incorporated using DOE/EH-0676, *RESRAD-BIOTA: A Tool for Implementing a Graded Approach to Biota Dose Evaluation, User's Guide, Version 1*), which presents three levels of analysis corresponding to the following levels in the graded approach:

- Level 1—General screening approach
- Level 2—Site-specific screening with representative parameters
- Level 3—Site-specific analysis using the kinetic allometric modeling methodology

The BCGs presented in Table 6-1 were calculated using the Level 1 analysis in DOE/EH-0676.

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3 Development of Tier 1 Values

This chapter presents a description of the methodology used to develop the Tier 1 values. The Tier 1 values reflect the level of refinement associated with the baseline problem formulation step in the ERAGS process (EPA 540-R-97-006).

3.1 Problem Formulation

The problem formulation includes a general description of the Hanford Site setting, identification of COPECs, identification of the important aspects of the site to be protected (referred to as assessment endpoints), the means by which the assessment endpoints are evaluated (measures of exposure and effects), and previous site investigations. The end product of the problem formulation is a conceptual site model (CSM) that describes the contaminant sources and transport mechanisms, evaluates potential exposure pathways, and identifies the representative species that were used to assess ecological risk to those and other similar species. The following subsections summarize the information relevant to the development of Tier 1 concentration values.

3.1.1 Simplified Ecological Exposure Model

Development of the ecological exposure model involves characterizing the exposure pathways and ecological receptors that might be associated with the habitat types in the upland portions of the Hanford Site. Appropriate exposure pathways and representative endpoint species for the upland portions of the Hanford Site were developed based on information developed from previously conducted ERAs. Primary sources of information used in the development of the ecological exposure model include DOE/RL-2007-50, WMP-20570, and DOE/RL-2007-21.

With consideration of the ecological setting, land use, and COPEC release mechanisms known at Hanford Site upland areas, the following ecological exposure pathways considered the most plausible are graphically displayed in Figure 3-1:

- Potential current and future direct contact of vegetation with constituents in surface soil (less than 4.6 m [15 ft]) below ground surface as defined by the Standard Point of Compliance in Ecology Publication 94-06
- Potential current or future direct contact with, or ingestion of, surface soil by terrestrial invertebrates (e.g., beetles and ants)
- Direct contact with, or ingestion of, surface soil by terrestrial avian and mammalian wildlife
- Dietary exposure to COPECs bioaccumulated in food items (e.g., plants or prey) and subsequently consumed by terrestrial avian and mammalian wildlife
- Exposure to emissions from radionuclides bioaccumulated and retained within the tissues of plants, terrestrial invertebrates, and terrestrial wildlife
- External exposure of plants, terrestrial invertebrates, and terrestrial wildlife to emissions from radionuclides in soil

3.1.2 Assessment Endpoints

Assessment endpoints are an expression of the important ecological values that are to be protected at a site (Suter, 1993, *Ecological Risk Assessment*; EPA/630/R-95/002F, *Guidelines for Ecological Risk Assessment*; Suter et al., 2000, *Ecological Risk Assessment for Contaminated Sites*). Assessment endpoints are based on known information concerning the contaminants present, the study area, the

ecological CSM, and risk hypotheses. There are three components to each assessment endpoint: an entity (e.g., migratory birds), an attribute of that entity (e.g., individual survival), and a measure (e.g., a measurable value, such as an effect level). Measures are described following the general description of assessment endpoints (EPA/630/R-95/002F; Suter et al., 2000).

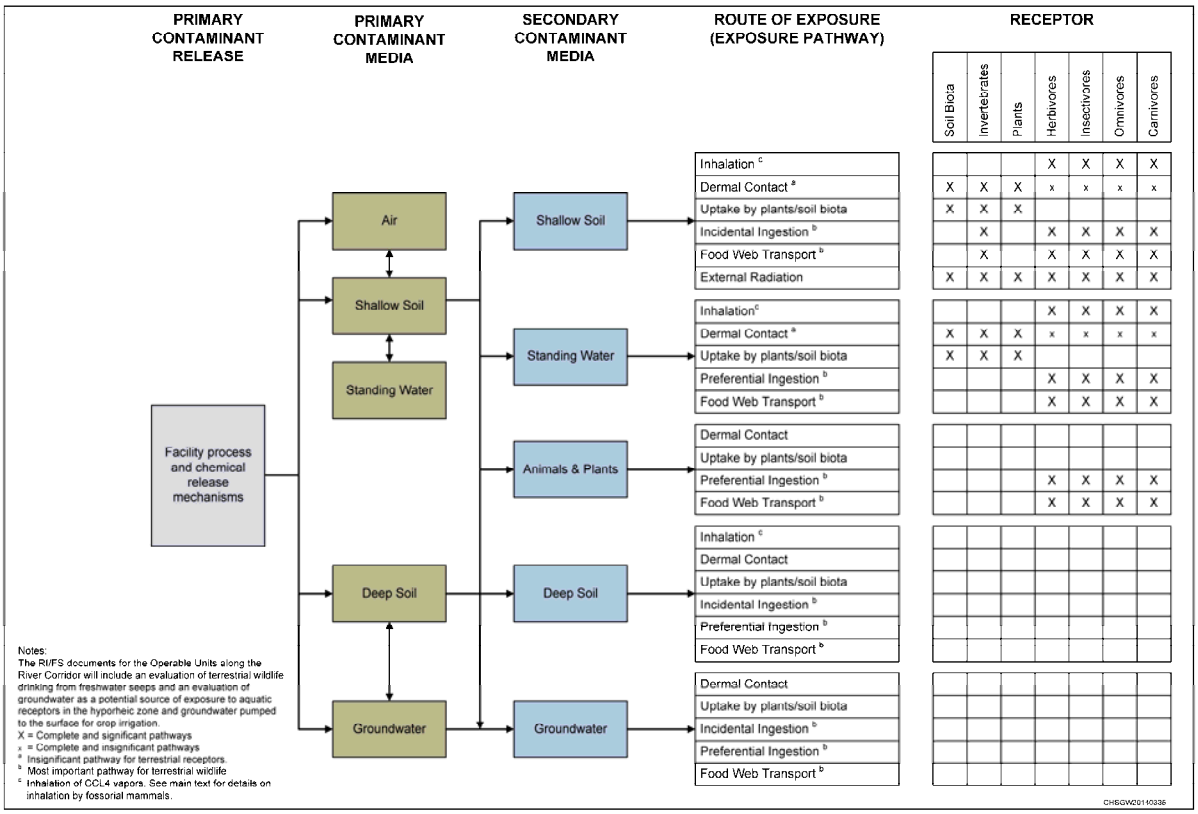

Figure 3-1. Conceptual Ecological Exposure Model for Hanford Site Terrestrial Habitats

The assessment endpoint entities for the Hanford Site were selected based on the following principal criteria:

- Ecological relevance
- Societal relevance
- Susceptibility (or high exposure) to known or potential stressors at the Hanford Site

The attribute selected for each entity was based on the organizational level of the entity and the primary criteria that were used to select it. Entities and attributes were selected for community and population levels of assessment. The maximum acceptable adverse effect levels generally selected for population level and community level assessment endpoints are LOECs or LOAELs (Efroymson et al., 1998). For

some assessment endpoints such as threatened and endangered species, there is no acceptable adverse effect level; consequently, NOECs or NOAELs would be used for these endpoints.[2]

A food web model for the terrestrial portion of the Hanford Site (Figure 3-2) has been developed based upon an understanding of the ecology of the area and documented in WMP-20570.

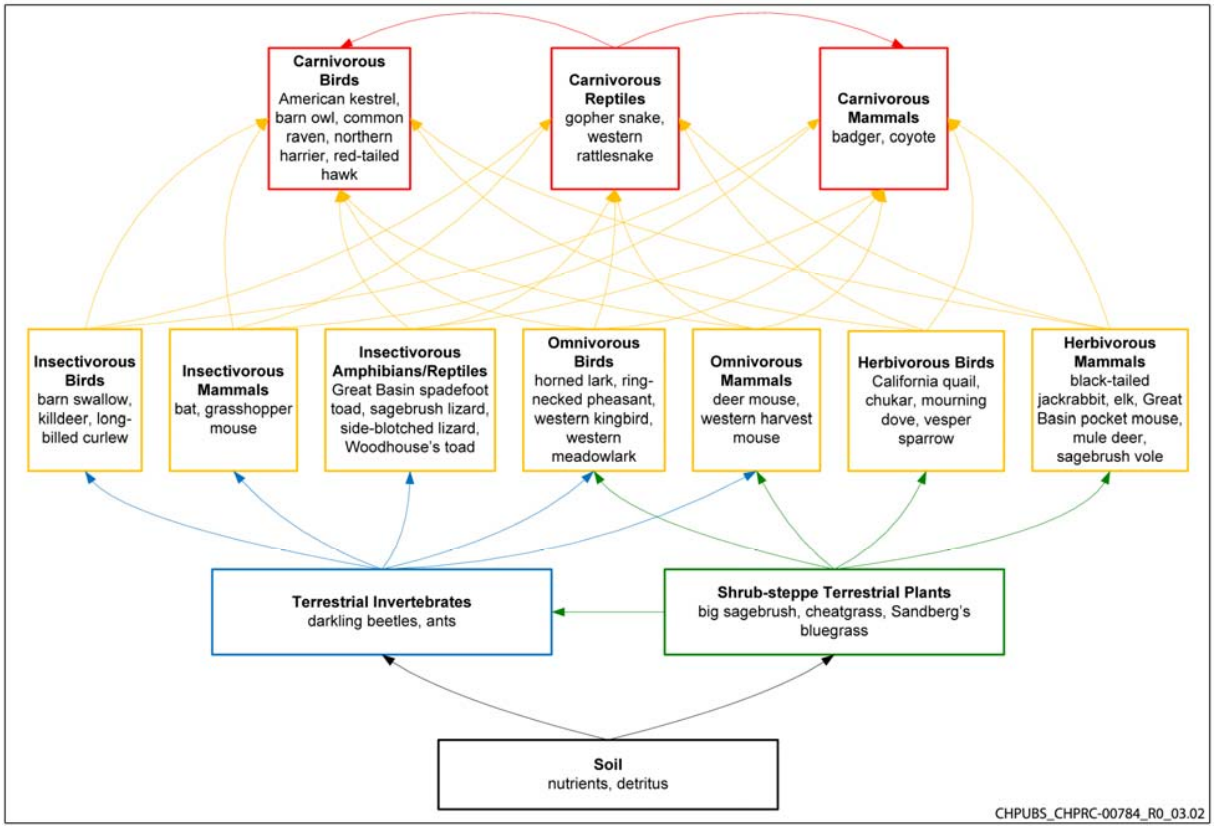

Figure 3-2. Hanford Site Terrestrial Food Web

Previous investigations have identified the following entities (represented by trophic guilds), and their associated organizational level, for consideration during ERAs within the terrestrial portion of the Hanford Site:

- Terrestrial plants—community level
- Terrestrial invertebrates—community level
- Herbivorous birds—population level
- Herbivorous mammals—population level
- Insectivorous birds—population level
- Insectivorous mammals—population level
- Omnivorous birds—population level
- Omnivorous mammals—population level

[2] Presence of federal or state listed endangered or threatened species should be evaluated on a project-specific basis. When they are suspected or known to be present, PRGs that afford greater protection (e.g., NOAEL or NOEC based) may be needed.

- Carnivorous birds—population level
- Carnivorous mammals—population level
- Reptiles[3]

To calculate Tier 1 values, endpoint species representative of functional groups that could use the site were identified. For example, a red-tailed hawk may be considered representative of raptors visiting the site. Consistent with EPA 540-R-97-006, EPA/630/R-95/002F, and WAC 173-340-7493, endpoint species should preferably be ones that have ecological relevance, are of societal value, are susceptible to chemical stressors at the site, and allow risk managers to meet policy goals. These factors were used to select representative receptor species common to the terrestrial portion of the Hanford Site that are within the described trophic guilds. The representative receptor species selected for each of the trophic guilds are as follows:

- Herbivorous birds—California quail (*Callipepla californica*)
- Herbivorous mammals—Great Basin pocket mouse (*Perognathus parvus*)
- Insectivorous birds—killdeer (*Charadrius vociferus*)
- Insectivorous mammals—northern grasshopper mouse (*Onychomys leucogaster*)
- Omnivorous birds—western meadowlark (*Sturnella neglecta*)
- Omnivorous mammals—deer mouse (*Peromyscus maniculatus*)
- Carnivorous birds (raptors)—red-tailed hawk (*Buteo jamaicensis*)
- Carnivorous mammals—badger (*Taxidea taxus*)

Individual species for terrestrial vegetation and invertebrates are not selected for evaluation.

3.1.3 Measures of Exposure and Effects

Measures (formerly referred to as measurement endpoints) are measurable attributes used to evaluate the risk hypotheses and are predictive of effects on the assessment endpoints (EPA/630/R-95/002F). The three categories of measures include the following:

- Measures of exposure are used to evaluate intake of a contaminant from contact with environmental media (e.g., soil). Measures of exposure can be an EPC of a COPEC in an environmental medium or food item. A measure of exposure also can be a dose occurring through ingestion, inhalation, or dermal contact with a contaminant in an environmental medium. Risk-based concentrations are estimated by back-calculating from a target dose associated with the selected assessment endpoint to a corresponding concentration in soil (see Section 3.2 for further discussion).

- Measures of effect are used to evaluate the response of an organism that is exposed to a stressor. Measures of effects include TRVs for wildlife and LOECs in soil for plants and soil invertebrates.

- Measures of ecosystem and receptor characteristics are used to evaluate the ecosystem characteristics that influence the assessment endpoints, the distribution of stressors, and the characteristics of the assessment endpoints that may affect exposure or response to the stressor. Measures of ecosystem and receptor characteristics are also used to characterize ecological risks as part of a baseline ERA. These kinds of ecological information are not used directly in calculations of risk-based concentrations. However, measures of ecosystem and receptor characteristics may represent additional lines of

[3] Although part of the terrestrial food web for the Hanford Site, effects data for reptiles and amphibians are not sufficient for the purpose of developing soil screening levels.

evidence used along with risk-based concentrations or PRGs in evaluating remedial alternatives in an RI/FS.

3.2 Exposure and Effects Analysis

The exposure assessment identifies exposure pathways associated with the representative receptor species listed in Section 3.1.2. It also describes the models used to calculate risk-based concentrations.
The effects assessment presents TRVs that have been derived from available literature-based toxicity information on COPECs for use in determining potential adverse effects for ecological receptors.
The TRVs are combined with the exposure information, described in the following subsections, to calculate Tier 1 values.

3.2.1 Exposure Characterization

The exposure characterization describes the exposure models and assumptions for each representative receptor species.

3.2.1.1 Chemical Exposure of Terrestrial Plants and Soil Invertebrates

Terrestrial plants and soil invertebrates experience exposure primarily through the soil in which they live. This exposure occurs as a consequence of living in a contaminated medium (i.e., receptors are directly exposed to COPECs). Although other exposure pathways (e.g., dietary exposure for invertebrates or foliar uptake) may contribute to total exposure for these receptors, exposure through the soil predominates. Consequently, estimates of exposure for terrestrial plants and soil invertebrates are represented directly by the concentration of COPECs in the soil (mg/kg).

3.2.1.2 Chemical Exposure of Birds and Mammals

Birds and mammals experience chemical exposure through multiple pathways, including ingestion of surface water, sediment/soil, and biotic media (food), in addition to inhalation and dermal contact. To assess this multiple pathway exposure, modeling can be or is often employed. The end product, or exposure estimate, for birds and mammals is a dosage (amount of chemical in milligrams per kilogram receptor BW per day [mg/kg/day]). The general form of the model used to estimate exposure of birds and mammals to chemicals in environmental media is as follows (Suter et al., 2000):

$$E_t = E_o + E_d + E_i$$

where:

E_t = total chemical exposure experienced by wildlife

E_o = oral exposure

E_d = dermal exposure

E_i = inhalation exposure

Oral exposure occurs through the consumption of contaminated food, water, or sediment/soil; dermal exposure occurs when contaminants are absorbed directly through the skin; and inhalation exposure occurs when volatile compounds or fine particulates are inhaled into the lungs. Although methods are available for assessing dermal exposure to humans (EPA/600/8-91/011B, *Dermal Exposure Assessment: Principles and Applications*), data necessary to estimate dermal exposure generally are not available for wildlife (EPA/600/R-93/187, *Wildlife Exposure Factors Handbook*).

Similarly, methods and data necessary to estimate wildlife inhalation exposures are poorly developed (EPA/600/R-93/187) or limited.[4] Recent publications have suggested the inclusion of inhalation and dermal pathways for developing TRVs for VOCs in fossorial mammals ("Efforts to Standardize Wildlife Toxicity Values Remain Unrealized," [Mayfield and Fairbrother, 2012]; "Wildlife Ecological Screening Levels for Inhalation of Volatile Organic Chemicals" [Gallegos et al., 2007]); and pesticides in birds ("A Comprehensive Re-Analysis of Pesticide Dermal Toxicity in Birds and Comparison with the Rat" [Mineau, 2012]), respectively. Olfactory bulb uptake in fossorial mammals affords a significant exposure route to Mn and Cd in soils was noted in "Olfactory Bulb Intake and Determination of Biotransfer Factors in the California Ground Squirrel (*Spermophilus Beecheyi*) Exposed to Manganese and Cadmium in Environmental Habitats," (Bench et al., 2001). However, at most waste sites at Hanford, VOCs and pesticides were not the primary COPECs identified in past investigations and methods for olfactory exposure and risk characaterization are not well established.Additionally, a wildlife receptor's exposure to contaminants by inhalation and dermal contact usually contributes little to its overall exposure (OSWER Directive 9285.7-55). Dermal exposure also is likely to be low, even in burrow dwelling animals, because of the presence of protective dermal layers (e.g., feathers, fur, or scales). Therefore, for the purposes of developing these Tier 1 concentration values, both dermal and inhalation exposure were assumed to be negligible.[5]

Total chemical exposure experienced by wildlife (E_t) is assumed to be equal to oral exposure (E_o). By replacing E_o with a generalized exposure model modified from Suter et al., 2000, the previous equation was rewritten as follows:

$$E_t = \left[\left[\sum_{i=1}^{n} B_{ij} \times P_i \times FIR\right] + \left[Soil_j \times P_s \times FIR\right] + \left[Water_j \times WIR\right]\right] x\, AUF$$

where:

E_t	=	total exposure (mg/kg/day)
$Soil_j$	=	chemical concentration in soil (mg/kg dry weight)
P_s	=	proportion of total food intake that is soil (kg soil/kg food)
FIR	=	food intake rate (kg food/kg BW/day, dry weight)
B_{ij}	=	chemical concentration in biota type (i) (mg/kg, dry weight)
P_i	=	proportion of biota type (i) in diet (unitless)
$Water_j$	=	chemical concentration in water (mg/L)
WIR	=	water ingestion rate (L water/kg BW/day)
AUF	=	area use factor (area of site/home range of receptor) (unitless)

The focus of this document is the development of ecological risk-based concentrations for upland environments and terrestrial organisms. Therefore, exposure pathways associated with water are not

[4] For assessing inhalation exposures, some data for mammals are available through the IRIS database, and a limited set of inhalation benchmarks for wildlife have been developed (Gallegos et al., 2007, "Wildlife Ecological Screening Levels for Inhalation of Volatile Organic Chemicals").

[5] If the CSM indicates that volatile organic compounds are a significant COPEC, focused analyses of the inhalation pathway may be warranted. Risk-based concentrations or PRGs for this pathway, however, are beyond the scope of this report.

addressed here. Large mammalian wildlife using the upland areas do move down to the Columbia River riparian area and drink from the freshwater seeps and from the Columbia River. Bats and birds frequenting or residing in these areas also can use the seeps along the Columbia River to meet their daily needs. A semi-quantitative evaluation of the ingestion of seep water was performed and is discussed with the risk characterization for the River Corridor Operable Units. Should risk-based concentrations or PRGs be required for riparian or near shore environments along the River Corridor (DOE/RL-2007-21), development of these values will be addressed in a separate document[12]. Additionally, 100 percent site use was assumed for calculation of Tier 1 concentration values resulting in an AUF of 1. The remaining parameters and assumptions for the exposure model consist of wildlife exposure parameters and bioaccumulation models, which are provided in the following subsections.

Wildlife Exposure Parameters. Species-specific exposure parameters are required to estimate exposure. These include BW, food intake rate (FIR), diet composition, and percent of diet as incidental soil ingestion. The following assumptions are part of the calculation of wildlife exposures:

- Incidental soil ingestion is not included as part of the total dietary composition, but instead is added to the total; for calculation purposes, it is treated as a percentage in addition to total dietary intake.
- All animals are assumed to be year-round residents, and migration away from areas contaminated with COPECs is not assumed to occur.
- Bioavailability of chemical constituents is assumed to be equivalent to the chemical form used for developing TRVs in the toxicity studies.

The exposure parameters and source references used for each representative receptor species are summarized in Tables 6-2 and 6-3. All weight-based exposure parameters are listed on a dry weight basis. Species-specific biological information was unavailable for some parameters. When this occurred, allometric equations that express general biological relationships for broader classes of animals were used to estimate the exposure parameters (Nagy, 2001, “Food Requirements of Wild Animals: Predictive Equations for Free-living Mammals, Reptiles, and Birds”). These allometric conversions are discussed in the following subsection.

The daily FIRs, in grams of food consumed per day, were either derived from literature sources (California quail and red-tailed hawk) or were estimated using trophic group-specific or taxa-specific allometric equations provided by Nagy, 2001, as follows:

$$\text{Omnivorous birds (g/day)} = 0.670 * BW^{0.627} \text{ (used for western meadowlark)}$$

$$\text{Charadriiformes (g/day)} = 0.522 * BW^{0.769} \text{ (used for killdeer)}$$

$$\text{Granivorous mammals (g/day)} = 0.659 * BW^{0.413} \text{ (used for Great Basin pocket mouse)}$$

$$\text{Omnivorous mammals (g/day)} = 0.432 * BW^{0.678} \text{ (used for deer mouse)}$$

$$\text{Insectivorous mammals (g/day)} = 0.373 * BW^{0.622} \text{ (used for grasshopper mouse)}$$

$$\text{Carnivorous mammals (g/day)} = 0.153 * BW^{0.834} \text{ (used for badger)}$$

[12] The RI/FS reports for the River Corridor Operable units present sediment PRGs that are consistent with values used in both the RCBRA (DOE/RL-21, 2007) and the *Columbia River Component Risk Assessment: Volume 1 Ecological Risk Assessment* (DOE/RL-2010-117) and represent the values porposed as state freshwater sediment cleanup values and presented in *Development of Benthic SQVs for Freshwater Sediments in Washington, Oregon, and Idaho* (Ecology Publication 11-09-054, 2011).

where:

BW = median body weight (g) based on data summarized in Table 6-3

The FIRs are then normalized to BW by converting to kilograms of food per kilogram of BW per day for the calculation of Tier 1 values. Red-tailed hawk and California quail FIRs represent the high-end estimate derived in EPA/600/R-93/187 as referenced in Table 6-2.

Estimation of Bioaccumulation into Food Items. The concentrations of COPECs in the food items were estimated rather than measured. For the purposes of exposure estimation, partitioning of constituents from environmental media to prey was estimated from literature values and models. The models presented in the EPA EcoSSLs methodology (OSWER Directive 9285.7-55) were used preferentially for estimation of bioaccumulation into biota from soil. Consistent with the approach employed for the EcoSSLs, regression-based models (if available) and median BAFs from the source selected by EPA were used. In the absence of applicable bioaccumulation models, a default value of 1 was assumed (as in the case of boron uptake to small mammals). In all cases, it was assumed that tissue uptake occurs under steady state conditions.

Available literature indicates that bioaccumulation is generally nonlinear and often decreases as the medium concentration increases (Sample et al., 1999, "Literature-Derived Bioaccumulation Models for Earthworms: Development and Validation"). This information is available in recent literature for several polyaromatic hydrocarbons (PAHs), metals, and Aroclors (BJR/OR-133, ES/ER/TM-219, and ES/ER/TM-220). Log linear bioaccumulation regression models were used to estimate the uptake of inorganics, as follows, when recommended in the EPA EcoSSL methodology (OSWER Directive 9285.7-55) and the original references:

$$\ln\left(Conc.COPEC_{prey}\right) = \left[B0 + B1\left(\ln\left[Conc.COPECsoil\right]\right)\right]$$

where:

$Conc.COPEC_{prey}$ = concentration of chemical in prey (mg/kg dry weight)

$B0$ = slope

$B1$ = intercept

$Conc.COPEC_{soil}$ = soil EPC (mg/kg dry weight)

The bioaccumulation models were selected from the following sources, which have been listed in order of preference by food type:

- Soil-to-Vegetation
  - OSWER Directive 9285.7-55, Attachment 4-1, Tables 4a and 4b
  - BJR/OR-133—dry weight plant BAFs and regression models
  - Beresford et al., 2008, "Derivation of Transfer Parameters for Use Within the ERICA Tool and the Default Concentration Ratios for Terrestrial Biota"—BAFs for grasses and herbs for radionuclides
  - USACHPPM, 2004, *Development of Terrestrial Exposure and Bioaccumulation Information for the Army Risk Assessment Modeling System (ARAMS)*

- Soil-to-Terrestrial Invertebrate
  - OSWER Directive 9285.7-55, Attachment 4-1, Tables 4a and 4b
  - ES/ER/TM-220—dry weight earthworm BAFs and regression models
  - Sample et al., 1999
  - Beresford et al., 2008—BAFs for detritivorous invertebrates for radionuclides
  - USACHPPM, 2004
- Soil-to-Small Mammals/Birds
  - OSWER Directive 9285.7-55, Attachment 4-1, Tables 4a and 4b
  - ES/ER/TM-219—dry weight small mammal BAFs and regression models
  - Beresford et al., 2008—BAFs for rodent mammals for radionuclides
  - ORNL-5786, *A Review and Analysis of Parameters for Assessing Transport of Environmentally Released Radionuclides Through Agriculture*
  - RTI, 2005, *Methodology for Predicting Cattle Biotransfer Factors*

Some bioaccumulation models for small mammals were diet-to-small mammal tissue rather than soil-to-small mammals. In these cases, a small mammal diet consisting of 100 percent soil invertebrates was assumed in calculating exposure estimates. Additionally, models to estimate uptake in birds, lizards, and other vertebrate prey items are lacking. Therefore, uptake relationships for all vertebrate prey items are assumed to be equivalent to small mammals of the same trophic level (e.g., herbivore and omnivore).

Table 6-4 lists the BAFs and regression models used to estimate chemical concentrations in food items for the receptors evaluated.

3.2.1.3 Radionuclide Exposure to Wildlife

Exposure to radionuclides differs from chemical exposure. Aquatic or terrestrial biota receive exposure to radionuclides through a combination of both internal and external pathways. Internal exposure is a function of radiation emitted from radionuclides that are retained in tissues. External exposure is due to radiation from radionuclides in soil, sediment, and water with which biota come into contact (or come near). For the purposes of developing Tier 1 values, radionuclide exposure was estimated based on the internal and external radiation exposure models incorporated into DOE-STD-1153-2002. In particular, the kinetic-allometric modeling methodology, which is part of the site-specific analysis portion of the graded approach, was used to calculate Tier 1 values for radionuclides in the wildlife receptor species. That kinetic-allometric modeling methodology is incorporated into Level 3 of the RESRAD-BIOTA Version 1.5 tool, DOE/EH-0676 (DOE-STD-1153-2002).

Tier 1 values for 22 radionuclides were calculated for the four bird and four mammal species resident at the Hanford Site (California quail, western meadowlark, killdeer, red-tailed hawk, Great Basin pocket gopher, deer mouse, grasshopper mouse, and badger), based on the following modified exposure assumptions:

- Species-specific BWs, diet composition, and incidental soil ingestion rates were modified as reported in Table 6-2.

- Exposure longevity and geometry factors were modified on a species-specific basis based on values reported in Table 6-11. Default allometric equations within the RESRAD-BIOTA model (DOE/EH-0676) were used for additional exposure parameters (e.g., inhalation rates).
- BAFs for radionuclides, extracted from the Environmental Risk from Ionizing Contaminants: Assessment and Management database (Beresford et al., 2008), were used as presented in Table 6-4.

As with Level 1 BCGs (used as Generic Screening Levels), Tier 1 values for radionuclides were calculated assuming 100 percent site use, which likely overestimates the exposure for most wildlife species.

3.2.2 Effects Assessment

The ecological effects assessment consists of an evaluation of available toxicity or other effects information that can be used to interpret the significance of the exposures to COPECs relative to potential adverse effects to ecological receptors. Data that can be used include literature-derived or site-specific single chemical toxicity data, site-specific ambient media toxicity tests, and site-specific field surveys (Suter et al., 2000). Calculation of Tier 1 values was based exclusively on single chemical toxicity data from literature sources. The following results were obtained from the effects assessment:

- TRVs for wildlife, which are then combined with the exposure models described in Section 4.2.1.2 to calculate Tier 1 values for nonradioactive contaminants, are tabulated.
- Tabulation of LOEC values for plants and soil invertebrates can be used in developing multiple lines of evidence regarding ecological risks to these receptors. At this time, Tier 1 values have not been developed in this document for plants and soil invertebrates.

Toxicity Reference Values for Wildlife. Both NOAEL and LOAEL based TRVs were identified for wildlife (birds and mammals) and were used to derive the Tier 1 values for wildlife presented in Chapter 4. The TRVs for birds and mammals were obtained from various sources and focus was given to the most recent sources and those derived or endorsed by EPA and Ecology (as evidenced by their use in either EcoSSLs or in Ecology Publication 94-06). The primary literature source used was EcoSSLs. The toxicity studies used were initially selected from the following sources, which have been listed in order of preference:

- OSWER Directives 9285.7-56, *Ecological Soil Screening Levels for Dieldrin: Interim Final*; 9285.7-57, *Ecological Soil Screening Levels for DDT and Metabolites: Interim Final*; 9285.7-60, *Ecological Soil Screening Level for Aluminum: Interim Final*; 9285.7-61, *Ecological Soil Screening Levels for Antimony: Interim Final*; 9285.7-62, *Ecological Soil Screening Levels for Arsenic: Interim Final*; 9285.7-63, *Ecological Soil Screening Levels for Barium: Interim Final*; 9285.7-64, *Ecological Soil Screening Levels for Beryllium: Interim Final*; 9285.7-65, *Ecological Soil Screening Levels for Cadmium: Interim Final*; 9285.7-66, *Ecological Soil Screening Levels for Chromium: Interim Final*; 9285.7-67, *Ecological Soil Screening Levels for Cobalt: Interim Final*; 9285.7-68, *Ecological Soil Screening Levels for Copper: Interim Final*; 9285.7-69, *Ecological Soil Screening Level for Iron: Interim Final*; 9285.7-70, *Ecological Soil Screening Levels for Lead: Interim Final*; 9285.7-71, *Ecological Soil Screening Levels for Manganese: Interim Final*; 9285.7-72, *Ecological Soil Screening Levels for Selenium: Interim Final*; 9285.7-73, *Ecological Soil Screening Levels for Zinc: Interim Final*; 9285.7-75, *Ecological Soil Screening Levels for Vanadium: Interim Final*; 9285.7-76, *Ecological Soil Screening Levels for Nickel: Interim Final*; 9285.7-77, *Ecological Soil Screening Levels for Silver: Interim Final*; and 9285.7-78, *Ecological Soil Screening Levels for Polycyclic Aromatic Hydrocarbons (PAHs): Interim Final*
- Other available literature—primarily ES/ER/TM-86/R3

- NOAEL and LOAEL values selected for chemicals and reported in the EPA Integrated Risk Information System (IRIS)
- NOAEL and LOAEL values presented in Wildlife Toxicity Assessments developed by USACHPPM

For analytes with EcoSSLs for birds and mammals, the NOAEL used to derive the final EcoSSL was selected as the NOAEL for development of Tier 1 values. In some cases, this value was the highest NOAEL below the LOAEL for studies evaluating growth and reproduction endpoints. In these cases, the paired LOAEL from the study with the highest NOAEL was selected as the LOAEL for development of a Tier 1 value. In other cases, the geometric mean of the NOAELs for growth and reproduction endpoints was selected for calculating the EcoSSL. In those cases, the LOAEL for development of a Tier 1 value was the lowest LOAEL above the geometric mean NOAEL. In rare cases (e.g., arsenic TRVs for birds), a study not cited in the EcoSSLs was selected because the study was of higher quality and had more ecologically relevant endpoints than those used to develop the EcoSSL values.

For analytes lacking EcoSSLs, other secondary and primary sources of studies were utilized. As possible, the primary literature sources were obtained and evaluated. Appropriate toxicity studies were selected based on several criteria:

- Studies were of chronic exposures or exposures during a critical stage of life (e.g., reproduction).
- Exposure was oral through food to ensure that data were representative of oral exposures expected for wildlife in the field.
- Emphasis was placed on studies of reproductive impacts to ensure relevancy to population level effects.
- Studies presented adequate information to evaluate and determine the magnitude of exposure and effects (or no effects concentrations).

Specifically, toxicity studies were selected to serve as the TRV if exposure was chronic or during reproduction (a critical life stage), the dosing regimen was sufficient to identify both a NOAEL and an LOAEL, and the study considered ecologically relevant effects (e.g., growth, reproduction, or survival). If multiple studies for a given COPEC meet these criteria, the study generating the lowest reliable toxicity value was selected to be the TRV.

The selected bird and mammal TRVs and study descriptions are presented in Tables 6-5 and 6-6, respectively. Summaries of the studies from which the NOAELs and LOAELs were extracted, and descriptions of the derivation of the TRV values, are presented in Appendix A.

3.2.3 Literature-Based Effects Data for Plants and Soil Invertebrates

Effects data and study descriptions for plants and soil invertebrates were extracted from EcoSSLs and ORNL reports[13]. These data, along with geometric means (calculated if suitable data were available), are presented in Tables 6-7 and 6-8 for plants and invertebrates, respectively. Data were restricted to the following measures of effects for each chemical:

- LOECs

[13] Note that plant and soil invertebrate effects data were extracted as presented in the ORNL or EcoSSL reports. ES/ER/TM-85/R3 (1997) justifies the use of LOECs as opposed to NOECs as the approach is consistent with the approach used to develop ER-Ls for sediment, soil benchmarks are based on community-level effects, and the benchmarks have been shown to be conservative in practice.

- MATCs (geometric mean of NOEC and LOEC)
- LC50s
- EC10s
- EC20s
- EC50s

Effect measures were representative of the most ecologically relevant endpoints (reproduction, survival, and development), exposure routes (plants, uptake via seed coat and/or roots; or invertebrates, oral and dermal exposure), and exposure period (chronic).

For many constituents, particularly metals, the available LOECs, MATCs, EC10, and EC20 values provide a large range of concentrations, sometimes two or three orders of magnitude. In general, values at the low-end of the concentration range also fall within the range of Generic Screening Levels and background concentrations in soil. These two factors create difficulty in selecting a risk-based concentration using a statistic drawn from the available literature data. Use of a lower percentile value, such as 10th or 20th percentile provides risk-based concentrations that resemble Generic Screening Levels or background concentrations in soil. Values at the high ends of the concentration ranges could create a high bias to central tendency values such as medians or geometric means. Based on these uncertainties, this document did not attempt to select literature-based values for use as Tier 1 risk-based concentrations for plants and soil invertebrates. As discussed in Chapter 5, other lines of evidence, particularly site-specific information should be identified to support development of Tier 2 values for plants and soil invertebrates. The range of literature-based concentrations and study conditions for toxicity tests with plants and soil invertebrates have been provided in this document for use as an additional line of evidence for use in developing Tier 2 values.

3.3 Risk Characterization

In the risk characterization, exposure and effects data are integrated to draw conclusions concerning the presence, nature, and magnitude of effects that may exist at a site. Risk is not directly evaluated in this report. Instead, exposure and effects data are used to calculate Tier 1 values that represent COPEC concentrations in soil that are associated with minimal likelihood of adverse effects (i.e., risk).

This section presents the methodology used to calculate Tier 1 values for nonradionuclide and radionuclide COPECs for community level and population level receptors that are common to and representative of the Central Plateau Area. These Tier 1 values are developed using approaches consistent with EPA risk assessment protocols (EPA 910/R-97/005, *EPA Region 10 Supplemental Ecological Risk Assessment Guidance for Superfund*; EPA 540-R-97-006; and EPA/630/R-95/002F) and Ecology Publication 94-06. The Tier 1 values are calculated for the most plausible potential exposure pathways (Section 2.1) for site-related constituents in surface soil at the Central Plateau Area.

This section also includes a discussion of the uncertainties and limitations associated with the risk assessment data and methodology. Other key uncertainties and assumptions associated with each of these steps are identified and discussed throughout the report.

3.3.1 Tier 1 Values for Wildlife

Because Generic Screening Levels for birds and mammals do not take into account receptors or conditions present at the Hanford Site, they may be overly conservative and, in certain cases, produce concentrations that are below local background concentrations in soil. Therefore, refinements that integrate updated data and exposure estimations for bird and mammal receptor species resident at the Hanford Site were developed. These refinements, identified as Tier 1 values for birds and mammals, were calculated for nonradionuclides in soil using the following basic equation:

$$1 = \frac{\sum (DFI) \times \left[(P_v \times C_v) + (P_i \times C_i) + (P_m \times C_m) + (SSL + P_s) \right]}{TRV}$$

where:

SSL	=	soil screening level
DFI	=	daily ingestion rate of all food items (kg/kg BW/day dry wt.)
P_v	=	proportion of diet represented by vegetation (unitless)
C_v	=	concentration in vegetation tissue (mg/kg dry wt.)
P_i	=	proportion of diet represented by terrestrial invertebrates (unitless)
C_i	=	concentration in soil invertebrate tissue (mg/kg dry wt.)
P_m	=	proportion of diet represented by small mammals/birds (unitless)
C_m	=	concentration in small mammal tissue (mg/kg dry wt.)
P_s	=	proportion of diet represented by incidentally ingested soil (unitless)

The TRV denotes the level of toxicity of the chemical, as reported from literature sources (Section 3.2.2). The chemical concentration in the food item (vegetation, soil invertebrate, and small mammal) is estimated by using BAFs or bioaccumulation regression models to extrapolate to the food source. This equation is solved using the Microsoft Office Excel® goal-seek tool, such that exposure (the numerattor) equals the TRV (the denominator). Tier 1 values for birds and mammals were derived for NOAEL (Table 6-9) and LOAEL (Table 6-10) TRVs. The exposure calculation worksheets, used to calculate the Tier 1 values based on NOAELs and LOAELs for birds and mammals, are provided in Tables A-1 through A-16, respectively (Appendix A).

3.3.2 Tier 1 Values for Radionuclides

Tier 1 radionuclide values for birds and mammals are presented in Table 6-12. Appendix B presents the detailed chemical-specific and receptor-specific exposure parameters, employed within RESRAD-BIOTA (DOE/EH-0676), to calculate the Tier 1 values for 22 radionuclides for each of the eight receptors selected.

® Microsoft Office Excel is a registered trademark of Microsoft Corporation.

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4 Uncertainties

This chapter discusses the uncertainties with the methods employed in the development of Generic Screening Levels and Tier 1 values. Some of these values should be used cautiously in remediation planning, with a full understanding of their associated uncertainties. For some inorganic constituents in soil, the Tier 1 values calculated in this report for some wildlife species are lower than Generic Screening Levels derived from MTCA. Overall, the Generic Screening Levels should be the most conservative values available. However, depending both on how recently the generic values were developed and the nature of the assumptions used, there may be some contaminants in which more refined values (i.e., Tier 1) for some species may be lower than generic values. Examples of contaminants in which Tier 1 values for wildlife are lower than generic values provided from MTCA are provided in Section 4.2. These examples provide a framework for the kinds of uncertainties discussions that should be incorporated into the risk characterization portion of an ERA, and when making decisions to proceed to the next level of refinement within the tiered process.

4.1 Uncertainties in Development of Tier 1 Values—General Considerations

The following uncertainties and limitations are associated with the proposed methodology and available data for development of Tier 1 values:

- Data concerning soil ingestion rates were not available for the bird and mammal receptors identified in the conceptual exposure model for the Hanford Site. Consequently, the soil ingestion rates were estimated based on assumed similarities to other species for which data were available. The suitability of these assumptions to the species onsite is unknown and may correspondingly underestimate or overestimate exposure. Consequently, Tier 1 values may be either overconservative or underconservative.

- Detailed life history data specific to the Hanford Site are not available; therefore, exposure parameters were either modeled on the basis of allometric relationships (e.g., FIRs) or data from the same species in other portions of its range. Because diet composition as well as food, water, and soil ingestion rates can differ among individuals and locations, published parameter values may not accurately reflect individuals present at the Hanford Site. Consequently, Tier 1 values may be either overconservative or underconservative. For example, diets used to establish Generic Screening Levels based on MTCA procedures (e.g., Ecological Indicator Soil Concentrations in Table 749-3) focus on selected food items but do not provide 100 percent of the receptor's diet. The Tier 1 values were derived with a model incorporating prey tissue items that comprise 100 percent of the receptor's diet. Therefore, the assumed contributions of ingestion of contaminants of prey tissues for the Tier 1 values would be greater than those used to develop the MTCA values (Tier 1 values for wildlife are usually higher than MTCA values through the use of more realistic BAFs).

- No site-specific data on COPEC concentrations in terrestrial plants, soil invertebrates, and small mammals or birds were used for Tier 1 wildlife exposure estimate calculations. Therefore, concentrations in these food items were estimated from literature reported bioaccumulation models (BAFs or regressions). The suitability of these bioaccumulation models to conditions at the Hanford Site is unknown. Consequently, modeled concentrations of COPECs in food items of wildlife may be either greater or less than concentrations under actual conditions and, consequently, Tier 1 values may be either overconservative or underconservative. For example, models used to develop the Generic Screening Levels, based on MTCA wildlife values (Table 749-3), rely upon BAFs to estimate the concentration of contaminants in invertebrate and plant tissues that are assumed to be linear and constant across all soil concentrations and do not account for other environmental

factors. While uptake factors for plants may be appropriate for small ranges of concentrations of some COPECs within nontoxic ranges (Jiang and Singh, 1994, "Effect of Different Forms and Sources of Arsenic on Crop Yield and Arsenic Concentration," and Carlson and Bazzaz, 1977, "Growth Reduction in American Sycamore (*Plantanus occidentalis* L.) Caused by Pb-Cd Interaction," as cited in BJR/OR-133), there is evidence to suggest that accumulation decreases with increasing soil concentration. Earthworm studies have shown this to be true (ES/ER/TM-220 and Neuhauser et al., 1995, "Toxicity of Metals to the Earthworm *Eisenia fetida*"). A number of empirically derived regression models have been developed describing the relationship of concentrations in biotic media to concentrations in their surrounding abiotic environmental media, which were incorporated into the methodology for establishing EPA's EcoSSLs for wildlife (OSWER Directive 9285.7-55). Hence, these models were employed in the development of the Tier 1 values, as available. For certain inorganics such as uranium, the default BAFs proscribed by MTCA that can be used to develop Generic Screening Levels for wildlife when an Ecological Indicator Soil Concentration is not available are considerably greater than literature-based, contaminant-specific values for BAFs. Tier 1 values often are higher than generic values because of the use of more realistic BAF values.

- Literature-derived toxicity data, based on laboratory studies, were used to derive Tier 1 values for wildlife receptor groups. It is assumed that effects observed in laboratory species were indicative of effects that would occur in wild species. The suitability of this assumption is unknown. Consequently, Tier 1 values may be either overconservative or underconservative. In certain cases, Tier 1 values were lower than Generic Screening Levels based on MTCA Ecological Indicator Soil Concentrations, because the Tier 1 values were based on a more recent assessment of toxicity data. TRVs used to develop Generic Screening Levels based on MTCA (Ecological Indicator Soil Concentrations presented in Table 749-3) were drawn from a review of toxicity values prepared by ORNL in the mid-1990s (ES/ER/TM-86/R3). When possible, the Tier 1 values were developed using a more comprehensive review of toxicological data presented in the EPA EcoSSL documents. In certain cases, the toxicity review conducted for EcoSSL development may identify an effect level lower than identified in the older ORNL document. Therefore, the process used for selecting effect levels as TRVs (e.g., selecting the lowest LOAEL above the highest or geometric mean NOAEL published for an EcoSSL) may produce a Tier 1 value that is more conservative than an MTCA Ecological Indicator Soil Concentration.

- Toxicity data were not available or were limited for some COPEC or receptor combinations. Therefore, screening level values could not be calculated for all receptors or COPECs, and the level (generic or Tier 1) varies by receptor and COPEC. Absence of values beyond Generic Screening Levels for plants and soil invertebrates can be addressed through performing site-specific bioassays, which are a component of Tiers 2 and 3. Development of Tiers 2 and 3 values is not discussed in this report.

- Bioavailability in the toxicity studies used for development of screening benchmarks and TRVs is generally high because many toxicity tests are performed using soluble salts of inorganic chemicals (as in the case of chromium toxicity to plants). Therefore, SSL values based solely on literature-derived toxicity values may be overconservative. For example, in the case of chromium toxicity to plants, the natural background value of chromium in Washington State soil was selected by Ecology (Ecology Publication 94-06, Table 749-3) rather than the ORNL plant toxicity values used for other analytes.

- Area use was conservatively assumed to be 100 percent for each receptor for the development of Tier 1 values for wildlife. The size of the site may be less than the foraging area for a particular

wildlife species. In particular, the Tier 1 values calculated here are likely overconservative for mammals and birds with larger home ranges.

- Bioavailability and toxicity of metals are functions of soil pH, with metals generally being more bioavailable and toxic at low pHs (OSWER Directive 9285.7-55). The pH for plant toxicity values ranges from 3 to 8.3 (mean = 6.3) (Table 6-7). The pH for invertebrate toxicity values ranges from 3.8 to 8.1 (mean = 5.6) (Table 6-8). The minimum soil pH reported in the River Corridor Baseline Risk Assessment (RCBRA) (DOE/RL-2007-21) for riparian and upland soil was 6.6. Soil pH in the Outer Area of the Central Plateau ranges from 3.6 to 9.9, with 93 percent of observations greater than 6.6 (based on a review of shallow soil data published in the Hanford Environmental Information System database). Because the range of pH values associated with plant and soil invertebrate toxicity includes values that are substantially less than those present throughout most of the Hanford Site, it is likely that Generic Screening Levels for plants and soil invertebrates developed under lower pH conditions do not accurately represent toxicity in Hanford Site soils.

4.2 Uncertainties in Development of Wildlife Screening Level Values—Specific Cases

The following sections provide some brief discussion of the uncertainties associated with the development of SSLs for selected contaminants and their application as ecological PRGs within an RI/FS. Ecological PRGs, in general, should be used cautiously in remedial decision making and should be applied with an understanding of the assumptions and uncertainties in their development. In cases where ecological PRGs for any particular COPEC become drivers for remedial decision making in an RI/FS, a discussion of the uncertainties should be presented in the ERA accompanying the RI/FS. The following subsections provide some selected examples of how uncertainties in the screening level development should be discussed. The uncertainties discussions will differ from contaminant to contaminant, based on the nature of the assumptions and data used in the screening level development process; therefore, the descriptions provided should be treated only as examples.

4.2.1 Uncertainties in Wildlife Values for Cadmium

Generic Screening Levels for cadmium that are available for bird species are the EcoSSL developed by EPA (0.77 mg/kg) and the Ecological Indicator Soil Concentration (14 mg/kg) published by Ecology. The Tier 1 value for cadmium for omnivorous birds (meadowlark, 5 mg/kg) and insectivorous birds (killdeer, 2 mg/kg) are lower than the Ecology value and higher than the EcoSSL. Selection of the TRV and the assumptions used in modeling wildlife exposure are responsible for the Tier 1values being lower than the Generic Screening Level based on Ecology's Soil Ecological Indicator Concentration.

4.2.1.1 TRV Selection

Ecology's Ecological Indicator Soil Concentration for avian wildlife is developed from a TRV that can be found in the ORNL screening benchmarks for wildlife (ES/ER/TM-86/R3). That TRV (20 mg/kg BW/day) was based on an LOAEL obtained in mallard ducks where the adverse effect observed was reduced reproductive potential (White and Finley, 1978, "Uptake and Retention of Dietary Cadmium in Mallard Ducks"). While this TRV is based on a measured effect that aligns with the target assessment endpoints for PRG development of population level effects (i.e., growth, survival, and reproduction) described in Section 2.2, 26 other studies that measured population level effects have produced lower LOAELs ranging from 2.37 to 14.7 mg/kg BW/day, as shown in the more comprehensive review produced by EPA for the cadmium EcoSSL (OSWER Directive 9285.7-65). As discussed in Section 3.2.2, development of Tier 1 values was based on the lowest LOAEL above the geometric mean NOAEL, which had been selected by EPA for EcoSSL development. This aligns with the process for

selecting TRVs described in EPA 540-R-97-006. The lowest value for a reproductive effect LOAEL, above the geometric mean NOAEL, was 2.37 mg/kg BW/day (Leach et al., 1979, "Cadmium and the Food Chain: The Effect of Dietary Cadmium on Tissue Composition in Chicks and Laying Hens"). The study by Leach et al., 1979, used longer exposure durations compared to White and Finley, 1978, and, therefore, may be more suitable for evaluating chronic exposures to cadmium. However, other studies provide higher LOAEL values for reproductive effects (OSWER Directive 9285.7-65), and use of the lowest value for the LOAEL potentially overstates ecological risks from cadmium (e.g., a higher concentration for cadmium in soil may also be protective of birds in these feeding guilds).

4.2.1.2 Estimation of Tissue Concentrations

Ingestion of soil invertebrates provides the largest contribution to total exposure of nonradionuclide inorganic constituents to omnivorous and insectivorous birds. For cadmium, estimated ingestion of soil invertebrates within the Tier 1 value models provides 97 percent of total exposure to the meadowlark (omnivorous bird) and over 99 percent of total exposure to the killdeer (insectivorous bird). Key factors in the wildlife exposure model used for calculating cadmium values in soil for these feeding guilds are the methods used to estimate the concentration of COPECs in components of the diet (e.g., prey items). Therefore, uncertainties in the methods to estimate the concentration of tissue in the diet will also result in uncertainties of the values. The concentration of cadmium in soil invertebrates in the diet of Hanford Site receptors has been calculated using an empirically derived regression model, based on accumulation in earthworms (ES/ER/TM-220). Using a bioaccumulation model based on an earthworm for the Hanford Site introduces uncertainties into the exposure estimates and the resulting Tier 1 values because the soil invertebrate component of the food web at the Hanford Site is primarily composed of arthropods (WMP-20570; DOE/RL-2001-54, *Ecological Evaluation of the Hanford 200 Areas – Phase I: Compilation of Existing 200 Areas Ecological Data*). Earthworms are unlikely to be found in the arid, sandy soils at the Hanford Site, whereas arthropods would be more appropriate as soil biota (DOE/RL-2001-54) found in the diets of birds and mammals foraging at the Hanford Site. Examples of soil invertebrates that would be part of the food web for the Hanford Site include darkling beetles and harvester ants (WMP-20570). Taxonomic and ecological differences between earthworms and arthropods suggest that earthworms may not be suitable surrogates for estimating bioaccumulation in arid environments. However, models for estimating bioaccumulation into earthworms are used because published models for arthropods are lacking. Evaluation of the available literature describing tissue concentrations of inorganic constituents in arthropods suggests that bioaccumulation rates for arthropods were equal or lower than for earthworms, and bioaccumulation of cadmium into insects generally was lower than for non-insect arthropods such as arachnids, centipedes, millipedes, and isopods (Sample and Arenal, 2001, *Development of Literature-based Bioaccumulation Models for Terrestrial Arthropods*). Based on these considerations, a bioaccumulation model based on earthworms introduces uncertainties into ingestion exposure of soil invertebrates by omnivorous and insectivorous birds under Hanford Site conditions. Available literature describing tissue concentrations in arthropods (Sample and Arenal, 2001) suggests that bioaccumulation rates are equal or lower than those for earthworms.

The available bioaccumulation model for earthworms is based on the underlying principle that the rates of accumulation decrease with increasing soil concentration and increasing body burden. This approach for estimating bioaccumulation, which is reflected in the regression model obtained from ES/ER/TM-220, and based on earthworm data, is considered more appropriate than applying a BAF that is constant across all soil concentrations. The method of estimating tissue concentrations used by Ecology to develop Ecological Indicator Soil Concentrations (Table 743-5) incorporates a BAF that is constant across all soil concentrations. Development of Tier 1 values used the more refined method of estimating bioaccumulation employing the regression model from ES/ER/TM-220 (this approach is also employed by EPA to develop EcoSSLs). However, if estimating soil invertebrate tissue concentrations using a

model based on earthworms overstates potential exposures for Hanford Site conditions, then a higher concentration for cadmium in soil may also be protective of birds in these feeding guilds.

4.2.1.3 Overall Assessment of Uncertainties with Cadmium

Generic Screening Levels are values published by regulatory agencies or widely recognized peer reviewed sources (e.g., ORNL reports). Tier 1 values are calculated values intended to represent biota present at the Hanford Site but were developed using information drawn from the literature. While further refinement of risk-based screening values is possible using additional site-specific considerations, the focus of this report was to develop SSLs using available literature information. In cases where cadmium in soil becomes a driver because of ecological risk, users of these Tier 1 values should be aware of the uncertainties in the values and mindful of the possibility that these Tier 1 values may be overly protective. In particular, users of these Tier 1 values should carefully consider further refinements using a BAF based on a food web that is appropriate for the Hanford Site (e.g., arthropods rather than the earthworm).

4.2.2 Uncertainties in Wildlife Values for Mercury

Uncertainties in the Tier 1 wildlife values for mercury in soil are related to the selected TRV and the methods used to estimate exposure through food ingestion. The Ecological Indicator Soil Concentration for inorganic mercury for wildlife is 5.5 mg/kg in soil, based on the robin (omnivorous bird). There is no EcoSSL available for inorganic mercury. Using TRVs and the wildlife exposure models provided by the State of Washington to calculate Ecological Indicator Soil Concentrations for the shrew (omnivorous mammal) and vole (herbivorous mammal) yields values of 9.6 mg/kg and 62.6 mg/kg, respectively (Table 749-3). The Tier 1 values for mercury are 21 mg/kg for the meadowlark (omnivorous bird); 4 mg/kg for the killdeer (insectivorous bird); 2 mg/kg for the deer mouse (omnivorous mammal); and 3 mg/kg for the grasshopper mouse (insectivorous mammal). The following subsections discuss how the various assumptions in the calculations provide these particular results.

4.2.2.1 TRV Selection

The TRV used to develop the Ecological Indicator Soil Concentration for the robin is drawn from the ORNL screening benchmarks for wildlife (ES/ER/TM-86/R3). That TRV (0.9 mg/kg BW/day) was based on an LOAEL obtained from a study on Japanese quail exposed to mercuric chloride for one year where the observed adverse effect was reduced reproductive potential (Hill and Shaffner, 1976, “Sexual Maturation and Productivity of Japanese Quail Fed Graded Concentrations of Mercuric Chloride”). The TRV used to develop the Tier 1 values for birds is 0.37 mg/kg BW/day as methyl mercury, which is the LOAEL obtained from a multi-generational study of mallard ducks where the observed adverse effect was reduced reproductive potential (Heinz, 1979, “Methylmercury: Reproductive and Behavioral Effects on Three Generations of Mallard Ducks”). The key uncertainty in the TRV selection for development of the Tier 1 values for terrestrial birds was use of a toxicity study assessing methyl mercury toxicity.

Less than 1 to 3 percent of the total mercury in surface soil is methyl mercury, and it will be bound largely to organic matter (EPA/452/R-97/008, *Mercury Study Report to Congress*). The other 97 to 99 percent of total soil mercury can be considered largely Hg(II) complexes, although a small fraction of mercury in typical soil will be elemental Hg. Soil conditions found at the Hanford Site (e.g., pH, temperature, and soil humic content) typically favor the formation of inorganic mercury compounds. Therefore, it is not likely that methyl mercury exposure would occur to the terrestrial species used to develop Tier 1 values.

Although the exposure duration of the Heinz (1979) study may be more reflective of chronic exposure, developing a screening level value for inorganic mercury based on methyl mercury toxicity represents an uncertainty in that value. Using the TRV derived from the Hill and Shaffner (1976) study on exposure to

mercuric chloride (e.g., using the 0.9 mg/kg BW/day TRV rather than 0.37 mg/kg BW/day value based on methyl mercury) would provide values that are about two-fold higher for bird species than the current Tier 1 value.

The TRVs used to calculate Ecological Indicator Soil Concentrations for inorganic mercury for a shrew (2.86 mg/kg BW/day) and a vole (2.18 mg/kg BW/day) are not found in the ORNL screening benchmarks for wildlife (ES/ER/TM-86/R3), and the adverse effects associated with those values are not known. The TRV used to develop the Tier 1 value for mammals is 0.16 mg/kg BW/day, which is the LOAEL in a three-generation reproductive study of rats exposed to methyl mercury chloride (Verschuuren et al., 1976a, "Toxicity of Methylmercury Chloride in Rats. II. Reproduction Study"). Use of a TRV based on methyl mercury toxicity data may not reflect the source of mercury exposure in soil to terrestrial receptors. Inorganic mercury compounds appear to be less toxic to mammals compared with methyl mercury compounds (ATSDR, 1999, "Toxicological Profile for Mercury"); adverse effects pertinent to the assessment endpoints of growth, survival, and reproduction occur at higher concentrations with inorganic mercury compounds compared with methyl mercury. Developing a screening level for inorganic mercury based on methyl mercury toxicity represents an uncertainty in that value. Although the selected TRV used to develop the Tier 1 values for mercury may be more reflective of long-term exposure, use of a TRV based on inorganic mercury would better reflect terrestrial exposure to mercury. For example, a short-term exposure study evaluating reproductive toxicity in female rats identified an NOAEL of 0.74 mg/kg BW/day and an LOAEL of 1.5 mg/kg BW/day (Heath et al., 2009, "The Effects of Chronic Mercuric Chloride Ingestion in Female Sprague–Dawley Rats on Fertility and Reproduction"). A short-term exposure study evaluating reproductive toxicity in male rats identified an LOAEL of 3 mg/kg BW/day (Boujbiha et al., 2009, "Testicular Toxicity in Mercuric Chloride Treated Rats: Association with Oxidative Stress"). While reproductive toxicity estimated from short-term studies (Heath et al., 2009; Boujbiha et al., 2009) is not directly comparable to multigenerational studies (Verschuuren et al., 1976a), the toxicity studies based on inorganic mercury suggest that the TRV used in this report for developing values for mammals may be overly conservative, and a higher concentration of inorganic mercury in soil might also be protective of omnivorous and insectivorous mammals.

To address these uncertainties associated with selection of TRVs for methyl mercury as opposed to inorganic mercury, avian and mammalian TRVs for inorganic mercury (mercuric chloride) have been included in Tables 6.5 and 6.6. Tier 1 wildlife values were then calculated using these TRVs. Note that although both NOAEL and LOAEL TRVs were available for birds, only a LOAEL was identified for mammals.

4.2.2.2 Estimation of Tissue Concentrations

Ingestion of soil invertebrates provides the largest contribution to total exposure of nonradionuclide inorganic constituents to omnivorous and insectivorous birds and mammals. For mercury, estimated ingestion of soil invertebrates provides 63 percent of total exposure to the meadowlark (omnivorous bird) and over 98 percent of total exposure to the killdeer (insectivorous bird); estimated ingestion of soil invertebrates provides 69 percent of total exposure to the deer mouse (omnivorous mammal) and 98 percent of total exposure to the grasshopper mouse (insectivorous mammal). As with cadmium, uncertainties with the estimation of mercury bioaccumulation are important factors in the screening level values for organisms in these feeding guilds, and using a bioaccumulation model for mercury that is based on data from earthworms (ES/ER/TM-220) introduces uncertainties into the exposure estimates and resulting values calculated for Hanford Site conditions. The soil invertebrate component of the food web at the site is primarily composed of arthropods (WMP-20570; DOE/RL-2001-54). Earthworms are unlikely to be found in the arid, sandy soils at the Hanford Site, whereas arthropods would be more appropriate as soil biota (DOE/RL-2001-54). Available literature describing tissue concentrations in

arthropods (Sample and Arenal, 2001) suggests that bioaccumulation rates are equal or lower than those for earthworms. If estimating soil invertebrate tissue concentrations using a model based on earthworms overstates potential exposures for Hanford Site conditions, then a higher concentration for mercury in soil may also be protective of birds and mammals in these feeding guilds.

4.2.2.3 Overall Assessment of Uncertainties for Mercury

The Tier 1 values for mercury were estimated in a conservative manner using available information characterizing toxicity from long-term exposure to bird and mammal species and wildlife exposure models derived from regulatory technical guidance. The forms of mercury used in these toxicological studies include both methyl (a form not likely found in the environment at the Hanford Site) and inorganic mercury (more likely to be found at the Hanford Site). Given that inorganic mercury is more likely to be present at the Hanford Site, the Tier 1 value for inorganic mercury should be used unless location-specific data suggests the presence of organic mercury. However when only the organic mercury value is used, if exposure concentrations are below the organic mercury value when used, then it is safe to assume that there are no risks attributable to inorganic mercury. Information developed in this report also suggests that a wildlife exposure model that incorporates food chain assumptions more appropriate for Hanford Site conditions (e.g., bioaccumulation from soil to arthropods, rather than from soil to earthworms) be considered.

4.2.3 Uncertainties in Wildlife Values for Uranium

The uncertainty in wildlife TRVs exists in both the selection of the value and the values themselves. Studies of adverse effects on wildlife can include differences in routes of exposure, duration of studies, endpoints measured, and statistical tests conducted to characterize observed effects. Thus, selecting a TRV from one study among many with varying study design creates some uncertainty.

The mammalian TRV for uranium was selected based on detailed reviews of available toxicity literature conducted by both Ecology and CHPRC. Ecology recommends a LOAEL of 1.3 mg/U/kg/d based on analyses in Sheppard et al. (2005). However, significant uncertainties and inconsistencies were identified with the derivation of this 1.3 mg/kg/d TRV. Consequently, the dose of 2.8 mg U/kg/d from Domingo et al. (1989a) was identified as the most appropariate LOAEL TRV for application at the Hanford Site as it was consistent with WAC 173-340-7493(4)(a). Details of these reviews are presented in Appendix C, Estimation of Tissue Concentrations.

An Ecological Indicator Soil Concentration was not derived for uranium; thus, Table 749-5 does not provide BAFs from which to estimate the concentration of uranium in prey tissues. In the absence of BAFs, MTCA prescribes that soil-to-invertebrate BAFs of 4.6 and soil-to-plant BAFs of 1.01 be used for all metals. Available literature suggests that the accumulation of uranium into biological tissues is much lower than the default values in MTCA for general metals. The use of MTCA default values for uranium would result in overly conservative refined Tier 1 values for wildlife. Thus, food chain models used to develop the Tier 1 values for uranium relied upon soil-to-plant, soil-to-invertebrate, and soil-to-small mammal BAFs of 0.021 (USACHPPM, 2004), 0.033 (ES/ER/TM-220), and 0.0002 (ORNL-5786), respectively. While these BAFs from the literature could either overestimate or underestimate actual tissue concentrations found at the Hanford Site, the uncertainty in using these values was considered lower than the uncertainty associated with using the default BAFs from MTCA.

4.2.3.1 Overall Assessment of Uncertainties with Uranium

The mammalian TRV for uranium was selected based on detailed reviews of available toxicity literature conducted by both Ecology and CHPRC. Ecology recommends a LOAEL of 1.3 mg/U/kg/d based on analyses in Sheppard et al. (2005). However, significant uncertainties and inconsistencies were identified

analyses in Sheppard et al. (2005). However, significant uncertainties and inconsistencies were identified with the derivation of this 1.3 mg/kg/d TRV. Consequently, the dose of 2.8 mg U/kg/d from Domingo et al. (1989a) was identified as the most appropariate LOAEL TRV for application at the Hanford Site as it was consistent with WAC 173-340-7493(4)(a). Details of these reviews are presented in Appendix C.

Should wildlife PRGs for uranium drive remedial decisions, users of these PRGs should carefully consider further refinements using a BAF based on a food web that is appropriate for the Hanford Site (e.g., arthropods rather than the earthworm) and possible further review of the TRVs.

4.3 Uncertainties in Plant and Invertebrate Values

In several cases, the LOEC data sets have such large variability that the geometric means derived from them are likely to overstate or understate potential toxicity in soil. In addition, these LOECs were drawn from studies in the literature that reflect a range of environmental conditions (e.g., soil pH, total organic carbon content in soil, soil type, and test species). Taken together, these studies may not characterize environmental conditions at the Hanford Site. For example, studies of plant toxicity of metals in low pH soils (<pH 6) may not reflect the potential toxicity in Hanford Site soils, where approximately 93 percent of pH measurements for soils from the Central Plateau are 6.6 or greater. Because bioaccumulation and toxicity of metals are enhanced in low pH soils, application of these results to the development of PRGs for the more neutral Hanford Site conditions would overstate the potential toxicity of plants in Hanford Site soils and, therefore, potentially result in overconservative values. Consequently, these LOEC datasets, and the geometric means based on them, are not recommended for use in developing values. The toxicity data from studies with low pH are included in order to summarize the data distributions of LOEC values for use in risk characterizations prepared as part of ERAs.

Existing ecological screening levels rely on ex situ laboratory studies with highly bioavailable forms of metals that exhibit toxicity at lower concentrations than those observed in natural conditions at the Hanford Site, including weathered soils with high variability in chemical concentrations and soil chemistry properties. These uncertainties support the need to create a study design to conduct toxicity testing for plants and invertebrates specific to soils at the Hanford Site; data collected from such toxicity testing could support a range of ERA activities, including the development of Hanford Site-specific screening levels or PRGs. Further discussion of a study design for collection of soil toxicity data is presented in DOE/RL-2010-118, *Sampling and Analysis Plan for Ex Situ Plant and Invertebrate Bioassays to Evaluate Terrestrial Environments Across the Hanford Site*.

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5 Summary and Discussion

Generic Screening Levels were identified for 113 of 137 COPECs considered (Table 6-1). Values were identified for 21 of 23 radionuclides, 28 of 29 metals/metalloids, 3 of 9 general inorganics, 17 of 25 volatile organic compounds, 19 of 20 individual PAHs or mixtures, 2 of 3 petroleum mixtures, 13 of 15 semivolatile organic compounds (including polychlorinated biphenyls), 0 of 1 herbicides, and 12 of 12 chlorinated pesticides. Overall, Generic Screening Levels were extracted from seven sources (excluding background values). The most robust data (i.e., values for multiple receptors for a given COPEC) were for metals and radionuclides, followed by PAHs, semivolatile organic compounds, and chlorinated pesticides. Mammals were the best represented receptor group (Generic Screening Levels were available for as many as 91 COPECs), followed by birds, plants, and soil invertebrates (Table 6-1).

Tier 1 values are also literature-based values, but they include broader, less conservative effect levels or have been calculated specifically for bird and mammal species present at the Hanford Site. Tier 1 values generally correspond to the effects values that would be employed in the baseline problem formulation as described in ERAGS (EPA 540-R-97-006). Tier 1 values were developed for a selected set of COPECs for four bird and four mammal species (e.g., California quail, western meadowlark, killdeer, red-tailed hawk, Great Basin pocket mouse, deer mouse, grasshopper mouse, and badger) representative of the Central Plateau at the Hanford Site. LOAEL-based values were developed for 88 and 107 COPECs for birds and mammals, respectively (Table 6-13).

Conceptually, the Generic Screening Levels should represent the most conservative ecological risk-based concentrations. However, the Generic Screening Levels are drawn from a range of sources and reflect some variation in the types of effect levels and quality of data used in their calculation. In certain cases, the wildlife Tier 1 values may be lower than Generic Screening Levels. These occurrences need to be taken into consideration when using any of these values for screening contaminant concentrations in soil.

The Tier 1 wildlife values that are based on LOAELs are higher than EcoSSLs for mammalian or avian species with the exceptions of nickel (for both mammalian and avian species), cobalt (avian), 2-methylnaphthalene (mammalian), and naphthalene (mammalian). In general, the differences between the Tier 1 values and EPA wildlife EcoSSLs are small, and they are associated with the differences in exposure factors when moving from generic wildlife species (EcoSSLs) to the Hanford-specific wildlife species (Tier 1 values). The state of Washington's Ecological Soil Indicator Concentrations for wildlife are frequently higher than the Tier 1 wildlife values derived in this report, based on the LOAELs. In most cases, the Tier 1 values are lower due to differences in the TRVs used by Ecology versus the TRVs used in this report (which were drawn in many cases from EPA's EcoSSL guidance). There are also differences in how the concentration of chemicals in prey tissue is estimated between the wildlife exposure model used by Ecology and the model used in this report. The TRVs and approach to estimating tissue concentration used to calculate the Tier 1 values in this report are drawn from EPA EcoSSL guidance, which reflects a more current data source than the data used for calculating the Ecological Indicator Soil Concentrations. For most chemicals, the lowest Tier 1 wildlife value is for an insectivorous or omnivorous receptor. Calculation of Tier 1 values for these receptors rely on bioaccumulation models that use data for accumulation into earthworms. Tier 2 values, which could be based on a bioaccumulation model more appropriate for the site such as those using arthropods and/or Hanford-specific bioaccumulation data, may provide greater refinement in ecological risk-based concentrations compared with the Tier 1 values presented in this report.

This report has not proposed Tier 1 values for plants or soil invertebrates at this time. The lowest effect levels (either LOECs or MATCs) for plants and soil invertebrates are summarized in Tables 6-7 and 6-8, respectively. As discussed in Section 4.3, the uncertainties in the literature data sets of effect levels

identified in this report preclude development of Tier 1 values for use in data screening or for PRGs. These uncertainties include data in the literature drawn from a range of environmental conditions that are not reflective of the Hanford Site (e.g., soil pHs below 5), and studies conducted under laboratory conditions with spiked concentrations of metals that are more bioavailable than the concentrations observed in weathered natural soils.

The following activities have subsequently been conducted to support development of ecological risk-based values for plants and soil invertebrates:

- Incorporating plant and soil invertebrate bioassay data collected as part of the RCBRA (DOE/RL-2007-21) into the development of Tier 2 ecological values
- Conducting additional plant and soil invertebrate bioassays using Hanford Site soils to estimate effect levels using a broader range of soil concentrations (DOE/RL-2010-118) to support development of Tier 2 values. The results of these bioassays are presented in ECF Hanford-11-0158.

The ecological risk-based values presented in this report are the results from a tiered process in which values are refined as needed with additional literature-derived or site-specific information and from using more complex methods to develop values that are more representative of ecological exposure pathways at the Hanford Site. The tiered approach is in accordance with guidance developed by EPA (principally, EPA 540-R-97-006 and OSWER Directive 9285.7-55) and the ecological evaluation procedure presented in WAC 173-340-7490 through WAC 173-340-7493. Central to the concept of a systematic, informed progression is an iterative process (i.e., cycles) of decision making involving evaluation, deliberation, data collection, and communication. All of these steps should be focused on deciding the following:

- Whether or not the ecological risk-based concentrations at the current tier are sufficient to support cleanup decision making (a process to exiting the tiered approach is available at each tier)
- Whether or not progression to a higher tier of refinement would reduce uncertainties and/or increase confidence in risk-based concentrations to warrant the additional effort if the information available at the current tier is determined to be insufficient

A primary objective of this document has been to support this evaluation and deliberation process through a presentation of the data, assumptions, and methods used in this tiered approach.

6 Tables

The tables, called out within the various sections of this document, are provided in this chapter.

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Table 6-1. Summary of Generic Screening Levels in Soil

Group	Soil Constituent	Units	EPA EcoSSLs					ORNL - ES/ER/TM-85/R3, ES/ER/TM-126/R2		DOE BCGs		Washington Dept. of Ecology - MTCA (WAC 173-340, Table 749-3)			Lowest Screening Benchmark by Receptor Type				Background Soil Concentrations [a]	Literature-derived Generic Screening Level [b]	Basis
			Plants	Invertebrate	Avian	Mammalian	Reference	Plants	Invertebrate	Terrestrial Plant	Terrestrial Animal	Plant	Soil Biota	Wildlife	Plant	Inverts	Avain, Mammalian, Wildlife	Overall Lowest Screening Benchmark			
Radionuclides	Americium-241	pCi/g	---	---	---	---	---	---	---	21500	3890	---	---	---	21500	---	3890	3890	---	3890	Benchmark
	Antimony-125	pCi/g	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Carbon-14	pCi/g	---	---	---	---	---	---	---	60700	4760	---	---	---	60700	---	4760	4760	---	4760	Benchmark
	Cesium-134	pCi/g	---	---	---	---	---	---	---	1090	11.3	---	---	---	1090	---	11.3	11.3	---	11.3	Benchmark
	Cesium 137	pCi/g	---	---	---	---	---	---	---	2210	20.8	---	---	---	2210	---	20.8	20.8	1.05	20.8	Benchmark
	Cobalt-60	pCi/g	---	---	---	---	---	---	---	6130	692	---	---	---	6130	---	692	692	0.00842	692	Benchmark
	Curium-244	pCi/g	---	---	---	---	---	---	---	153000	4060	---	---	---	153000	---	4060	4060	---	4060	Benchmark
	Europium-152	pCi/g	---	---	---	---	---	---	---	14700	1520	---	---	---	14700	---	1520	1520	---	1520	Benchmark
	Europium-154	pCi/g	---	---	---	---	---	---	---	12500	1290	---	---	---	12500	---	1290	1290	0.0334	1290	Benchmark
	Europium-155	pCi/g	---	---	---	---	---	---	---	153000	15800	---	---	---	153000	---	15800	15800	0.0539	15800	Benchmark
	Hydrogen-3 (tritium)	pCi/g	---	---	---	---	---	---	---	1680000	174000	---	---	---	1680000	---	174000	174000	---	174000	Benchmark
	Neptunium-237	pCi/g	---	---	---	---	---	---	---	8150	3860	---	---	---	8150	---	3860	3860	---	3860	Benchmark
	Nickel-63	pCi/g	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Plutonium-238	pCi/g	---	---	---	---	---	---	---	17500	5270	---	---	---	17500	---	5270	5270	0.00378	5270	Benchmark
	Plutonium-239/240	pCi/g	---	---	---	---	---	---	---	12700	6110	---	---	---	12700	---	6110	6110	0.0248	6110	Benchmark
	Radium-226	pCi/g	---	---	---	---	---	---	---	288	50.6	---	---	---	288	---	50.6	50.6	0.815	50.6	Benchmark
	Radium-228	pCi/g	---	---	---	---	---	---	---	245	43.9	---	---	---	245	---	43.9	43.9	---	43.9	Benchmark
	Strontium 90	pCi/g	---	---	---	---	---	---	---	3580	22.5	---	---	---	3580	---	22.5	22.5	0.178	22.5	Benchmark
	Technetium-99	pCi/g	---	---	---	---	---	---	---	21900	4490	---	---	---	21900	---	4490	4490	---	4490	Benchmark
	Thorium-232	pCi/g	---	---	---	---	---	---	---	23500	1510	---	---	---	23500	---	1510	1510	1.32	1510	Benchmark
	Uranium-234	pCi/g	---	---	---	---	---	---	---	51600	5130	---	---	---	51600	---	5130	5130	1.1	5130	Benchmark
	Uranium-235	pCi/g	---	---	---	---	---	---	---	27400	2770	---	---	---	27400	---	2770	2770	0.109	2770	Benchmark
	Uranium-238	pCi/g	---	---	---	---	---	---	---	15700	1580	---	---	---	15700	---	1580	1580	1.06	1580	Benchmark
Metals	Aluminum	mg/kg	Narrative Statement				OSWER Dir. 9285.7-60	50	---	---	---	50	---	---	50	---	---	50	11800	11800	Background
	Antimony	mg/kg	---	78	---	0.27	OSWER Dir. 9285.7-61	5	---	---	---	5	---	---	5	78	0.27	0.27	5	5	Background
	Arsenic, Total all valence states	mg/kg	18	---	43	46	OSWER Dir. 9285.7-62	10	60	---	---	---	---	---	10	60	43	10	6.47	10	Benchmark
	Arsenic (III)	mg/kg	---	---	---	---	---	---	---	---	---	---	---	7	---	---	7	7	---	7	Benchmark
	Arsenic (V)	mg/kg	---	---	---	---	---	---	---	---	---	10	60	132	10	60	132	10	---	10	Benchmark
	Barium	mg/kg	---	330	---	2000	OSWER Dir. 9285.7- 63	500	---	---	---	500	---	102	500	330	102	102	132	132	Background
	Beryllium	mg/kg	---	40	---	21	OSWER Dir. 9285.7- 64	10	---	---	---	10	---	---	10	40	21	10	1.51	10	Benchmark
	Bismuth	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Boron	mg/kg	---	---	---	---	---	0.5	---	---	---	0.5	---	---	0.5	---	---	0.5	3.62	3.62	Background
	Cadmium	mg/kg	32	140	0.77	0.36	OSWER Dir. 9285.7-65	4	20	---	---	4	20	14	4	20	0.36	0.36	0.81	0.81	Background
	Chromium (total) [c,d]	mg/kg	---	---	26	34	OSWER Dir. 9285.7- 66	1	0.4	---	---	42	42	67	1	0.4	26	0.4	18.5	18.5	Background
	Chromium (+3)	mg/kg	---	---	26	34	OSWER Dir. 9285.7- 66	1	0.4	---	---	42	42	67	1	0.4	26	0.4	---	0.4	Benchmark
	Chromium (+6)	mg/kg	---	---	---	130	OSWER Dir. 9285.7- 66	---	---	---	---	---	---	---	---	---	130	130	---	130	Benchmark
	Cobalt	mg/kg	13	---	120	230	OSWER Dir. 9285.7-67	20	---	---	---	20	---	---	13	---	120	13	15.7	15.7	Background
	Copper	mg/kg	70	80	28	49	OSWER Dir. 9285.7-68	100	50	---	---	100	50	217	70	50	28	28	22	28	Benchmark
	Lead	mg/kg	120	1700	11	56	OSWER Dir. 9285.7-70	50	500	---	---	50	500	118	50	500	11	11	10.2	11	Benchmark
	Lithium [d]	mg/kg	---	---	---	---	---	2	---	---	---	35	---	---	2	---	---	2	33.5	33.5	Background
	Manganese [d]	mg/kg	220	450	4300	4000	OSWER Dir. 9285.7-71	500	---	---	---	1100	---	1500	220	450	1500	220	512	512	Background
	Mercury	mg/kg	---	---	---	---	---	0.3	0.1	---	---	0.3	0.1	5.5	0.3	0.1	5.5	0.1	0.33	0.33	Background
	Molybdenum	mg/kg	---	---	---	---	---	2	---	---	---	2	---	7	2	---	7	2	6	6	Background
	Nickel	mg/kg	38	280	210	130	OSWER Dir. 9285.7-76	30	200	---	---	30	200	980	30	200	130	30	19.1	30	Benchmark
	Selenium	mg/kg	0.52	4.1	1.2	0.63	OSWER Dir. 9285.7-72	1	70	---	---	1	70	0.3	0.52	4.1	0.3	0.3	0.78	0.78	Background
	Silver	mg/kg	560	---	4.2	14	OSWER Dir. 9285.7-77	2	---	---	---	2	---	---	2	---	4.2	2	0.73	2	Benchmark
	Strontium	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Thallium	mg/kg	---	---	---	---	---	1	---	---	---	1	---	---	1	---	---	1	0.209	1	Benchmark
	Tin	mg/kg	---	---	---	---	---	50	---	---	---	50	---	---	50	---	---	50	---	50	Benchmark
	Uranium	mg/kg	---	---	---	---	---	5	---	---	---	5	---	---	5	---	---	5	3.21	100[f]	Benchmark
	Vanadium	mg/kg	---	---	7.8	280	OSWER Dir. 9285.7-75	2	---	---	---	2	---	---	2	---	7.8	2	85.1	85.1	Background
	Zinc [d]	mg/kg	160	120	46	79	OSWER Dir. 9285.7-73	50	200	---	---	86	200	360	50	120	46	46	67.8	67.8	Background
General Inorganics	Ammonia/Ammonium	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	9.23	9.23	Background
	Chloride	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	100	100	Background
	Cyanide	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Fluoride	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	2.81	2.81	Background
	Iodine	mg/kg	---	---	---	---	---	4	---	---	---	4	---	---	4	---	---	4	---	4	Benchmark
	Nitrate/Nitrite	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	52	52	Background
	Phosphate	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.785	0.785	Background
	Sulfate/Sulfite	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	237	237	Background
	Total Organic Carbon	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Table 6-1. Summary of Generic Screening Levels in Soil

			EPA EcoSSLs					ORNL - ES/ER/TM-85/R3, ES/ER/TM-126/R2		DOE BCGs		Washington Dept. of Ecology - MTCA (WAC 173-340, Table 749-3)			Lowest Screening Benchmark by Receptor Type						
Group	Soil Constituent	Units	Plants	Invertebrate	Avian	Mammalian	Reference	Plants	Invertebrate	Terrestrial Plant	Terrestrial Animal	Plant	Soil Biota	Wildlife	Plant	Inverts	Avain, Mammalian, Wildlife	Overall Lowest Screening Benchmark	Background Soil Concentrations [a]	Literature-derived Generic Screening Level [b]	Basis
Volatile Organics	1,1-dichloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	1,1-dichloroethene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	1,1,1-trichloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	1,1,2-trichloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	1,1,2,2-tetrachloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	1,2-dichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	1,2-dichloroethane (DCA)	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	1,3-dichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	2-butanone (Methyl Ethyl Ketone/MEK)	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	2-hexanone	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Benzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Butanol	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Carbon Tetrachloride	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Chlorobenzene	mg/kg	---	---	---	---	---	---	40	---	---	---	40	---	---	40	---	40	---	40	Benchmark
	Chloroform	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Cis-1,2-dichloroethylene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Dichloromethane (Methylene Chloride)	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Ethyl Benzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Methyl Isobutyl Ketone	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	n-butyl Benzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Tetrachloroethylene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Toluene	mg/kg	---	---	---	---	---	200	---	---	---	200	---	---	200	---	---	200	---	200	Benchmark
	Trans-1,2-dichloroethylene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Trichloroethylene (TCE)	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Xylene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Polycyclic Aromatic Hydrocarbons	Acenaphthene	mg/kg	---	29	---	100	OSWER Dir. 9285.7-75	20	---	---	---	20	---	---	20	29	100	20	---	20	Benchmark
	Acenaphthylene	mg/kg	---	29	---	100	OSWER Dir. 9285.7-75	---	---	---	---	---	---	---	---	29	100	29	---	29	Benchmark
	Anthracene	mg/kg	---	29	---	100	OSWER Dir. 9285.7-75	---	---	---	---	---	---	---	---	29	100	29	---	29	Benchmark
	Benzo(a)pyrene	mg/kg	---	18	---	1.1	OSWER Dir. 9285.7-75	---	---	---	---	---	---	12	---	18	1.1	1.1	---	1.1	Benchmark
	Benzo(a)anthracene	mg/kg	---	18	---	1.1	OSWER Dir. 9285.7-75	---	---	---	---	---	---	---	---	18	1.1	1.1	---	1.1	Benchmark
	Benzo(b)fluoranthene	mg/kg	---	18	---	1.1	OSWER Dir. 9285.7-75	---	---	---	---	---	---	---	---	18	1.1	1.1	---	1.1	Benchmark
	Benzo(ghi)perylene	mg/kg	---	18	---	1.1	OSWER Dir. 9285.7-75	---	---	---	---	---	---	---	---	18	1.1	1.1	---	1.1	Benchmark
	Benzo[k]fluoranthene	mg/kg	---	18	---	1.1	OSWER Dir. 9285.7-75	---	---	---	---	---	---	---	---	18	1.1	1.1	---	1.1	Benchmark
	Chrysene	mg/kg	---	18	---	1.1	OSWER Dir. 9285.7-75	---	---	---	---	---	---	---	---	18	1.1	1.1	---	1.1	Benchmark
	Dibenz(ah)anthracene	mg/kg	---	18	---	1.1	OSWER Dir. 9285.7-75	---	---	---	---	---	---	---	---	18	1.1	1.1	---	1.1	Benchmark
	Fluoranthene	mg/kg	---	18	---	1.1	OSWER Dir. 9285.7-75	---	---	---	---	---	---	---	---	18	1.1	1.1	---	1.1	Benchmark
	Fluorene	mg/kg	---	29	---	100	OSWER Dir. 9285.7-75	---	30	---	---	---	30	---	---	29	100	29	---	29	Benchmark
	Indeno[1,2,3-cd]pyrene	mg/kg	---	18	---	1.1	OSWER Dir. 9285.7-75	---	---	---	---	---	---	---	---	18	1.1	1.1	---	1.1	Benchmark
	2-Methylnaphthalene	mg/kg	---	29	---	100	OSWER Dir. 9285.7-75	---	---	---	---	---	---	---	---	29	100	29	---	29	Benchmark
	Naphthalene	mg/kg	---	29	---	100	OSWER Dir. 9285.7-75	---	---	---	---	---	---	---	---	29	100	29	---	29	Benchmark
	Phenanthrene	mg/kg	---	29	---	100	OSWER Dir. 9285.7-75	---	---	---	---	---	---	---	---	29	100	29	---	29	Benchmark
	Pyrene	mg/kg	---	18	---	1.1	OSWER Dir. 9285.7-75	---	---	---	---	---	---	---	---	18	1.1	1.1	---	1.1	Benchmark
	Total PAHs	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Low MW PAHs [e]	mg/kg	---	29	---	100	OSWER Dir. 9285.7-75	---	---	---	---	---	---	---	---	29	100	29	---	29	Benchmark
	High MW PAHs [f]	mg/kg	---	18	---	1.1	OSWER Dir. 9285.7-75	---	---	---	---	---	---	---	---	18	1.1	1.1	---	1.1	Benchmark
Petroleum	Gasoline Range Organics	mg/kg	---	---	---	---	---	---	---	---	---	---	100	5000	---	100	5000	100	---	100	Benchmark
	TPH - diesel	mg/kg	---	---	---	---	---	---	---	---	---	---	200	6000	---	200	6000	200	---	200	Benchmark
	TPH - kerosene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Semivolatile Organics	Normal paraffin hydrocarbons	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Phenol	mg/kg	---	---	---	---	---	70	30	---	---	70	30		70	30	---	30	---	30	Benchmark
	2-methylphenol (ocresol)	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	4-methylphenol (pcresol)	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	2,4-dinitrotoluene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Bis[2-ethylhexyl] phthalate [g]	mg/kg	---	---	---	---	---	100	---	---	---	100	---	---	100	---	---	100	---	100	Benchmark
	Polychlorinated Biphenyls (PCB) [h,i]	mg/kg	---	---	---	---	---	40	---	---	---	40	---	0.65	40	---	0.65	0.65	---	0.65	Benchmark
	Aroclor 1016 [h,i]	mg/kg	---	---	---	---	---	40	---	---	---	40	---	0.65	40	---	0.65	0.65	---	0.65	Benchmark
	Aroclor 1221 [h,i]	mg/kg	---	---	---	---	---	40	---	---	---	40	---	0.65	40	---	0.65	0.65	---	0.65	Benchmark
	Aroclor 1232 [h,i]	mg/kg	---	---	---	---	---	40	---	---	---	40	---	0.65	40	---	0.65	0.65	---	0.65	Benchmark
	Aroclor 1242 [h,i]	mg/kg	---	---	---	---	---	40	---	---	---	40	---	0.65	40	---	0.65	0.65	---	0.65	Benchmark
	Aroclor 1248 [h,i]	mg/kg	---	---	---	---	---	40	---	---	---	40	---	0.65	40	---	0.65	0.65	---	0.65	Benchmark
	Aroclor 1254 [h,i]	mg/kg	---	---	---	---	---	40	---	---	---	40	---	0.65	40	---	0.65	0.65	---	0.65	Benchmark

Table 6-1. Summary of Generic Screening Levels in Soil

Group	Soil Constituent	Units	EPA EcoSSLs					ORNL - ES/ER/TM-85/R3, ES/ER/TM-126/R2		DOE BCGs		Washington Dept. of Ecology - MTCA (WAC 173-340, Table 749-3)			Lowest Screening Benchmark by Receptor Type				Background Soil Concentrations [a]	Literature-derived Generic Screening Level [b]	Basis
			Plants	Invertebrate	Avian	Mammalian	Reference	Plants	Invertebrate	Terrestrial Plant	Terrestrial Animal	Plant	Soil Biota	Wildlife	Plant	Inverts	Avain, Mammalian, Wildlife	Overall Lowest Screening Benchmark			
	Aroclor 1260 [h,i]	mg/kg	---	---	---	---	---	40	---	---	---	40	---	0.65	40	---	0.65	0.65	---	0.65	Benchmark
	Aroclor-1262 [h,i, j]	mg/kg	---	---	---	---	---	40	---	---	---	40	---	0.65	40	---	0.65	0.65	---	0.65	Benchmark
Herbicide	Dichloroprop	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Pesticide	Aldrin	mg/kg	---	---	---	---	---	---	---	---	---	---	---	0.1	---	---	0.1	0.1	---	0.1	Benchmark
	beta-1,2,3,4,5,6-Hexachlorocyclohexane [k, l]	mg/kg	---	---	---	---	---	---	---	---	---	---	---	6	---	---	6	6	---	6	Benchmark
	alpha-Chlordane [m]	mg/kg	---	---	---	---	---	---	---	---	---	---	1	2.7	---	1	2.7	1	---	1	Benchmark
	gamma-Chlordane [m]	mg/kg	---	---	---	---	---	---	---	---	---	---	1	2.7	---	1	2.7	1	---	1	Benchmark
	Dichlorodiphenyldichloroethylene [n, o]	mg/kg	---	---	0.093	0.021	OSWER Dir. 9285.7-57	---	---	---	---	---	---	0.75	---	---	0.021	0.021	---	0.021	Benchmark
	Dichlorodiphenyltrichloroethane [o]	mg/kg	---	---	0.093	0.021	OSWER Dir. 9285.7-57	---	---	---	---	---	---	0.75	---	---	0.021	0.021	---	0.021	Benchmark
	Dieldrin	mg/kg	---	---	0.022	0.0049	OSWER Dir. 9285.7-56	---	---	---	---	---	---	0.07	---	---	0.0049	0.0049	---	0.0049	Benchmark
	Endosulfan I	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Endosulfan II	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Endosulfan sulfate	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Endrin aldehyde [p]	mg/kg	---	---	---	---	---	---	---	---	---	---	---	0.2	---	---	0.2	0.2	---	0.2	Benchmark
	Methoxychlor	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Notes:

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Ecology Publication 94-06, 2003, Model Toxics Control Act Cleanup Regulation 173-340 WAC, as28 revised, Washington State Department of Ecology, Olympia, Washington.
a. Hanford background soil concentrations is the 90th percentile value. Statewide background (Ecology Publication 94-115) is presented for selected inorganics (antimony and cadmium).
b. The Literature-derived Generic Screening Level is the higher of either the background or the Overall Lowest Screening Benchmark.
c. When Cr (total) not available, the lower of eitherCr+3 or Cr+6 as available were used as a surrogate.
d. MTCA plant and soil biota benchmarks were replaced by Washington state natural background concentration.
e. The Low MW PAHs screening values from EPA (OSWER Directive 9285.7-78) represents the sum of the low molecular weight polyaromatic hydrocarbons (PAHs). For the purposes of this assessment, the benchmark was also applied to the individual low molecular weight PAHs.
f. The High MW PAHs screening values from EPA (OSWER Directive 9285.7-78) represents the sum of the high molecular weight polyaromatic hydrocarbons (PAHs). For the purposes of this assessment, the benchmark was also applied to the individual high molecular weight PAHs.
g. values for diethyl phthalate were used as a surrogate for bis[2-ethylhexyl] phthalate.
h. Aroclor 1254 value was used as surrogate.
i. MTCA values represent screening value for PCB mixtures.
j. MTCA Aroclor 1260 values used as surrogate for Aroclor 1262.
k. Form of HCB not identified in Efroymson et al. (ES/ER/TM-126/R2).
l. MTCA value based on benzene hexachloride, including lindane.
m. MTCA values based on chlordane.
n. DDT values used as a surrogate for DDE.
o. MTCA value based on total DDT/DDE/DDD.
p. MTCA endrin aldehyde values based on endrin.

Acronyms:

--- = Value not available

Table 6-1. Summary of Generic Screening Levels in Soil

Group	Soil Constituent	Units	EPA EcoSSLs					ORNL - ES/ER/TM-85/R3, ES/ER/TM-126/R2		DOE BCGs		Washington Dept. of Ecology - MTCA (WAC 173-340, Table 749-3)			Lowest Screening Benchmark by Receptor Type				Background Soil Concentrations [a]	Literature-derived Generic Screening Level [b]	Basis
			Plants	Invertebrate	Avian	Mammalian	Reference	Plants	Invertebrate	Terrestrial Plant	Terrestrial Animal	Plant	Soil Biota	Wildlife	Plant	Inverts	Avain, Mammalian, Wildlife	Overall Lowest Screening Benchmark			

DOE BCG = United States Department of Energy biota concentration guide. Summary of media screening values (BCGs) for radionuclides at the former McClellan Air Force Base. All values extracted from DOE/EH-0676 or DOE-STD-1153-2002.
EcoSSL = Ecological soil screening level
EPA = United States Environmental Protection Agency
High MW PAHs = High molecular weight polycyclic aromatic hydrocarbons
Low MW PAHs = Low molecular weight polycyclic aromatic hydrocarbons
mg/kg = Milligram per kilogram
MTCA = Model Toxic Control Act
ORNL = Oakridge National Laboratory
pCi/g = Pico Curie per gram
TPH = Total petroleum hydrocarbons

Table 6-2. Exposure Factors for Bird and Mammal Endpoint Species

Assessment Endpoint Functional Group	Endpoint Species	Body Weight (kg)	Notes	Source	Food Intake (kg/kg-bw/d, dw)	Notes	Source	Diet Composition: % of Diet as Mammals/Birds	% Diet as Invertebrates	% of Diet as Plants	Major Food Items	Source	% of Diet as Soil	Soil Ingestion Site (kg/kg-(bw/d)[b]	Notes	Source
Granivorous bird	California Quail	**0.18**	Median from multiple studies	Robel, 1969 Roseberry and Klimstra, 1971 Guthery et al., 1988	**0.078**	Average of food ingestion rates over 4 seasons from exposure factors handbook for bobwhite (EPA, 1993). Rate based on diet of commercial game food with only 5 to 10 percent water content; therefore, assumed dry weight.	Koerth and Guthery, 1990	0	0	**100**	Primarily a granivore, but also ingests some animal matter (primarily snails) and green forage. It is assumed this species ingests 100 percent plants (seeds) for screening-level dose calculation purpose.		**6.1**	**0.00476**	Value for mourning dove assumed representative of California Quali. Median soil ingestion rate estimated for mourning dove in Table 3 of the EcoSSL guidance. The median was selected as the best measure of central tendancy that is unbiased by outliners.	OSWER Directive 9285.7 55
Omnivorous bird	Meadowlark	**0.0995**	Median from multiple studies	Wiens and Rotenberry, 1980 Maher, 1979	**0.12**	Allometric estimation for 'omnivorous birds' normalized to kg/kg-bw/d using median body weightsfrom multiple studies	Nagy, 2001[a]	0	**63**	**37**	Ground forager that consumes both plant material (primarily seeds) and invertebrates (primarily arthropods). Percentages represent averages for >1900 meadowlarks studied across North America.	Lanyon, 1994	**2.08**	**0.0025**	Data regarding soil ingestion of western meadowlarks are unavailable. For the purposes of this ERA, it was assumed that soil ingestion for meadowlarks is similar to that derived for the American robin.	Sample and Suter, 1994
Insectivorous bird	Killdeer	**0.0756**	Median from multiple studies	Purdue and Haines, 1977 Stegeman, 1955 Jackson and Jackson, 2000 Dunning, 1993	**0.192**	Allometric estimation for 'Charadriiformes' normalized to kg/kg-bw/d using median body weightsfrom multiple studies	Nagy, 2001[a]	0	**100**	0	Primarily consume terrestrial invertebrates, especially earthworms, grasshoppers, beetles, and snails. Forages in terrestrial and aquatic habitats.	Jackson and Jackson, 2000	**7.3**	**0.0140**	Data regarding soil ingestion of killdeer are unavailable. For the purposes of this ERA, it was assumed that soil ingestion for killdeer is similar to that of the least sandpiper. However, it should be noted that this value is likely somewhat higher than the actual soil ingestion for killdeer because killdeer do not probe in the soil/sediment. Jackson and Jackson (2000) reported grit to be 4.5% by volume of the esophageal contents in 15 killdeer, which suggests that a value of 7.3% may be a conservative estimate.	Beyer et al., 1994
Carnivorous bird	Red-tailed Hawk	**1.179**	Median from multiple studies	Craighead and Craighead,1956 Steenhof,1983 Springer and Osborne,1983	**0.035**	High end estimate (estimate* 1.25) presented in Table 1 of the EcoSSL guidance (EPA, 2007i). Based on empirical ingestion data from Craighead and Craighead (1956)	EPA, 2007i	**100**	0	0	Primarily eat small mammals such as mice, shrews, voles, rabbits, and squirrels, but also eat birds, lizards, snakes, and large insects, depending on availability. Assumed 100 percent small mammal diet for screening-level dose calculation purposes.	EPA,1993	**2.4**	**0.00085**	Median soil ingestion rate estimated for red-tailed hawk in Table 3 of the EcoSSL guidance. The median was selected as the best measure of central tendancy that is unbiased by outliners.	OSWER Directive 9285.7 55
Granivorous mammal	Great Basin pocket mouse	**0.0175**	Median from multiple studies	Scheffer,1938 O'Farrell et al.,1975 Schreiber,1978	**0.123**	Allometric estimation for 'granivorous mammals' normalized to kg/kg-bw/d using mean weight as reported by Scheffer, 1938, O'Farrell et al., 1975, and Schreiber, 1978	Nagy, 2001[a]	0	0	**100**	Diet consists primarily of seeds; however, insects (e.g., insect larvae reported in pocket mice from eastern Washington; Kritzman, 1974) may be consumed in the spring before seeds become available. Diet assumed to be 100 percent plants (seeds) for screening-level dose calculation purpose.	Kritzman,1974	**2**	**0.00246**	Data regarding soil ingestion of granivorous mammals are unavailable. For the purposes of this ERA, it was assumed that soil ingestion for pocket mice is similar to that of the white-footed mouse.	Beyer et al., 1994

Table 6-2. Exposure Factors for Bird and Mammal Endpoint Species

Assessment Endpoint Functional Group	Endpoint Species	Body Weight (kg)	Notes	Source	Food Intake (kg/kg-bw/d, dw)	Notes	Source	Diet Composition: % of Diet as Mammals/Birds	Diet Composition: % Diet as Invertebrates	Diet Composition: % of Diet as Plants	Diet Composition: Major Food Items	Diet Composition: Source	Diet Composition: % of Diet as Soil	Soil Ingestion Site (kg/kg-(bw/d)[b]	Notes	Source
Omnivorous mammal	Deer Mouse	**0.0194**	Median from multiple studies	O'Farrell, et al., 1975 Silva and Downing, 1995	**0.166**	Allometric estimation for 'omnivorous mammals' normalized to kg/kg-bw/d using median body weightsfrom multiple studies	Nagy, 2001[a]	0	**50**	**50**	Diet consists of plant material (primarily seeds) and terrestrial invertebrates (mainly insects). Approximation for diet of deer mice in Colorado over all seasons was 50 percent plants and 50 percent invertebrates.	EPA, 1993	**2**	**0.0033**	Assumed to be similar to the white-footed mouse because of similar dietary and foraging habits.	Beyer et al., 1994
Insectivorous mammal	Grasshopper mouse	**0.0346**	Median from multiple studies	Wied, Maximilian, Prinz zu., 1839 McKinney and Pasley, 1974 BHI-01757	**0.098**	Allometric estimation for 'insectivorous mammals' normalized to kg/kg-bw/d using median body weightsfrom multiple studies	Nagy, 2001[a]	0	**100**	0	Animal material contributed 89 percent of the total food consumed and cultivated grains represented less than 5 percent of the total in the stomach contents of field-trapped grasshopper mice from 90 locations across 13 states. Diet assumed to be 100 percent invertebrates for screening-level dose calculation purposes.	Bailey and Sperry, 1929	**0.9**	**0.00088**	Assumed to be similar to the short-tailed shrew because of similar dietary and foraging habits. Median soil ingestion rate estimated for short-tailed shrew in Table 3 of the EcoSSL guidance. The median was selected as the best measure of central tendancy that is unbiased by outliners.	OSWER Directive 9285.7 55
Carnivorous mammal	Badger	**7.6**	Median from multiple studies	Messick and Hornocker, 1981 Silva and Downing, 1995	**0.0347**	Allometric estimation for 'carnivorous mammals' normalized to kg/kg-bw/d using median body weightsfrom multiple studies	Nagy, 2001[a]	**100**	0	0	Carnivores that primarily eat small rodents (rats, mice, ground squirrels, pocket gophers), thought some reptiles, insects, birds, and carrion are consumed. Assumed 100 percent small mammal diet for screening-level dose calculation puposes.	Long, 1973	**5.2**	**0.00181**	Data regarding soil ingestion of badgers are unavailable. Because the badger is a burrowing mammal, soil ingestion may be similar to that of the prairie dog. It was assumed that the median soil ingestion of the two prairie dog species with available data (2.7 and 7.7 percent) would be representative of the badger.	Beyer et al., 1994

Notes:
Bold and underlined text indicates life-history parameters that were used in the initial screening exposure calculations.
a. Nagy (2001) regression equation format --> dry matter g/day/g body weight = *a* (grams body weight)^{b} /g body weight
b. Soil ingestion is equal to the percent soil in diet multiplied by the food ingestion rate as follows: soil ingestion = (percent soil/100* food ingestion rate)
BW = body weight
DW = dry weight
EPA = United States Environmental Protection Agency

Group	***a***	***b***
Birds		
omnivorous birds	0.670	0.627
Galliformes	0.088	0.891
Charadriiformes	0.522	0.769
Mammals		
carnivorous mammals	0.153	0.834
granivorous mammals	0.659	0.413
insectivorous mammals	0.373	0.622

Table 6-3. Body Weight Data for Selected Bird and Mammal Endpoint Species

					Summary Statistics			
Receptor Species	**Body Weight (kg)**	**Notes**	**Additional Information**	**References**	**Minimum**	**Median**	**Mean**	**Maximum**
California Quail	0.1899	A B fall		Robel, 1969	0.154	0.180	0.174	0.194
	0.1939	A B winter		Robel, 1969				
	0.19	A B spring		Robel, 1969				
	0.181	M winter		Roseberry and Klimstra, 1971				
	0.163	M summer		Roseberry and Klimstra, 1971				
	0.183	F winter		Roseberry and Klimstra, 1971				
	0.18	F summer		Roseberry and Klimstra, 1971				
	0.161	M winter		Guthery et al., 1988				
	0.154	M summer		Guthery et al., 1988				
	0.157	F winter		Guthery et al., 1988				
	0.157	F summer		Guthery et al., 1988				
Western Meadowlark	0.0894	F, N=32		Wiens and Rotenberry, 1980	0.0894	0.0995	0.100925	0.1153
	0.106	M, N=51		Wiens and Rotenberry, 1980				
	0.1153	M, N=76		Maher, 1979				
	0.093	F, N=53		Maher, 1979				
Killdeer	0.0711	N=1		Purdue and Haines, 1977	0.0711	0.0756	0.0895	0.1218
	0.1218	M, N=1		Stegeman, 1955				
	0.0756	M, N=2		Jackson and Jackson, 2000				
	0.095	M, F; weighted mean of males and females from the Great Plains		Dunning, 1993				
Red-tailed Hawk	1.224	F, N=100		Craighead and Craighead, 1956	0.957	1.179	1.13366667	1.235
	1.028	M, N=108		Craighead and Craighead, 1956				
	1.154	F		Steenhof, 1983				
	0.957	M		Steenhof, 1983				
	1.235	F		Springer and Osborne, 1983				
	1.204	M		Springer and Osborne, 1983				
Great Basin Pocket Mouse	0.0174	M, N=18	average weight of males at 500 ft elevation, Rattlesnake Mtn, WA	O'Farrell et al., 1975	0.0143	0.01745	0.0172	0.0191
	0.0183	M, N=12	average weight of males at 1,500 ft elevation, Rattlesnake Mtn, WA	O'Farrell et al., 1975				
	0.0176	M, N=11	average weight of males at 2,500 ft elevation, Rattlesnake Mtn, WA	O'Farrell et al., 1975				
	0.0191	M, N=12	average weight of males at 3,500 ft elevation, Rattlesnake Mtn, WA	O'Farrell et al., 1975				
	0.0175	M, N=10	avg measurements 10 individuals each sex, measured near Kennewick, WA	Scheffer, 1938				
	0.0143	F, N=10	avg measurements 10 individuals each sex, measured near Kennewick, WA	Scheffer, 1938				
	0.0174	M, N=4	mean of adult mean weights collected at Hanford	Schreiber, 1978 (Table 4)				
	0.016	F, N=4	mean of adult mean weights collected at Hanford	Schreiber, 1978 (Table 4)				
Deer Mouse	0.0217	M, N=2	average weight of males at 500 ft elevation, Rattlesnake Mtn, WA	O'Farrell, 1975	0.0166	0.01935	0.01936667	0.0217
	0.018	M, N=2	average weight of males at 1,500 ft elevation, Rattlesnake Mtn, WA	O'Farrell, 1975				
	0.0212	M, N=6	average weight of males at 2,500 ft elevation, Rattlesnake Mtn, WA	O'Farrell, 1975				
	0.0203	M, N=11	average weight of males at 3,500 ft elevation, Rattlesnake Mtn, WA	O'Farrell, 1975				
	0.0184	M	mean weight for species Washoe County Nevada	O'Farrell, 1978				
	0.0166	Mean of males and females from Washington		Silva and Downing, 1995				

Table 6-3. Body Weight Data for Selected Bird and Mammal Endpoint Species

					Summary Statistics			
Receptor Species	**Body Weight (kg)**	**Notes**	**Additional Information**	**References**	**Minimum**	**Median**	**Mean**	**Maximum**
Grasshopper Mouse	0.026	Low end of range		Wied, Maximilian and Prinz zu, 1841	0.026	0.0346	0.03406	0.049
	0.049	High end of range		Wied, Maximilian and Prinz zu, 1841				
	0.0347	F, N=9, 60 to 80 days	control mice receiving saline	McKinney and Pasley, 1974				
	0.0346	F, N=13, 100 to 108 days	control mice receiving saline	McKinney and Pasley, 1974				
	0.026	Mitchell, R., pers com		BHI-01757				
Badger	7.6	M, N=10		Messick and Hornocker, 1981, Appendix K	6.7	7.6	8.09888889	10.9
	8.8	M, N=61		Messick and Hornocker, 1981, Appendix K				
	9.8	M, N=64		Messick and Hornocker ,1981, Appendix K				
	10.9	M, N=1		Messick and Hornocker ,1981, Appendix K				
	6.9	F, N=20		Messick and Hornocker, 1981, Appendix K				
	6.7	F, N=60		Messick and Hornocker, 1981, Appendix K				
	7.2	F, N=47		Messick and Hornocker, 1981, Appendix K				
	7.8	F, N=9		Messick and Hornocker, 1981, Appendix K				
	7.19	Mean of males and females		Silva and Downing, 1995				

A = Adult
B = Both (Male and Female)
F = Female
M = Male
N = Number

Table 6-4. Biotransfer Factors and Regression Models Used for Refined Tier 1 PRG Calculations

Soil to Plants								
	Regression Models[a]					Bioaccumulation Factors		
Analyte	B0	B1	p-value	Source	Notes[b]	BAF	Source	Notes[b]
Americium-241						**0.00496**	Beresford et al., 2008	CR review
Antimony-125						**0.025**	Beresford et al., 2008	From Coughtrey et al. (1983) suggested value for natural vegetation (A.A. Balkema Vol. 3); Note one CR review value of CR=41
Carbon-14						**890**	Beresford et al., 2008	Specific activity model; FASSET
Cesium-134						**0.693425575**	Beresford et al., 2008	CR review
Cesium 137						**0.693425575**	Beresford et al., 2008	CR review
Cobalt-60						**0.0135**	Beresford et al., 2008	IAEA TRS364 value for grass
Curium-244						**0.000275**	Beresford et al., 2008	IAEA TRS364 value for grass
Europium-152						**0.00519802**	Beresford et al., 2008	Estimated from stable concs. in soils & angiosperms values presented Coughtrey and Thorne (1983; A.A. Balkema Vol. 1)
Europium-154						**0.00519802**	Beresford et al., 2008	Estimated from stable concs. in soils & angiosperms values presented Coughtrey and Thorne (1983; A.A. Balkema Vol. 1)
Europium-155						**0.00519802**	Beresford et al., 2008	Estimated from stable concs. in soils & angiosperms values presented Coughtrey and Thorne (1983; A.A. Balkema Vol. 1)
Hydrogen-3 (tritium)						**150**	Beresford et al., 2008	Specific activity model; FASSET
Neptunium-237						**0.01725**	Beresford et al., 2008	IAEA TRS363 value for grass
Nickel-63						**0.1875**	Beresford et al., 2008	CR review
Plutonium-238						**0.014425378**	Beresford et al., 2008	CR review; note some reviews report values in range 10-2 - 10-8 but present data in manner which cannot be used. Primary source here is Sheppard review of IUR data
Plutonium-239/240						**0.014425378**	Beresford et al., 2008	CR review; note some reviews report values in range 10-2 - 10-8 but present data in manner which cannot be used. Primary source here is Sheppard review of IUR data
Radium-226						**0.039440524**	Beresford et al., 2008	CR review
Radium-228						**0.039440524**	Beresford et al., 2008	CR review
Strontium 90						**0.206811821**	Beresford et al., 2008	CR review
Technetium-99						**20.00829611**	Beresford et al., 2008	CR review
Thorium-232						**0.043740981**	Beresford et al., 2008	CR review
Uranium-234						**0.0145507**	Beresford et al., 2008	CR review
Uranium-235						**0.0145507**	Beresford et al., 2008	CR review
Uranium-238						**0.0145507**	Beresford et al., 2008	CR review
Aluminum						**0.00287**	BJC/OR-133	Median - Table D-1 validation data
Antimony	**-3.233**	**0.938**	**0.0001**	OSWER Directive 9285.7 55	Derived from measured data in Appendix A	0.0102	BJC/OR-133	Median - Table D-1 validation data
Arsenic, Total all valence states	**-1.992**	**0.564**	**0.0001**	BJC/OR-133	Single variable regression; EcoSSLs used BAF	0.0375	BJC/OR-133	Median - Table 6; cited in OSWER Directive 9285.7 55
Arsenic (III)	**-1.992**	**0.564**	**0.0001**	BJC/OR-133	Single variable regression; EcoSSLs used BAF	0.0375	BJC/OR-133	Median - Table 6; cited in OSWER Directive 9285.7 55
Arsenic (V)	**-1.992**	**0.564**	**0.0001**	BJC/OR-133	Single variable regression; EcoSSLs used BAF	0.0375	BJC/OR-133	Median - Table 6; cited in OSWER Directive 9285.7 55
Barium						**0.156**	BJC/OR-133	Median - Table D-1 validation data; cited in OSWER Directive 9285.7 55
Beryllium	**-0.5361**	**0.7345**	**0.0001**	OSWER Directive 9285.7 55	Derived from measured data in Appendix A			
Bismuth						**0.005**	ORNL-5786	Figure 2.2
Boron						**5.714**	USACHPPM, 2004	Median - Table 4-6 leaf tissue
Cadmium	**-0.476**	**0.546**	**0.0001**	BJC/OR-133	Cited in OSWER Directive 9285.7 55 (Table 4a)	0.586	BJC/OR-133	Median - Table 6
Chromium (total)						**0.041**	BJC/OR-133	Median - Table D-1 validation data; cited in OSWER Directive 9285.7 55
Chromium (+3)						**0.041**	BJC/OR-133	Median - Table D-1 validation data; cited in OSWER Directive 9285.7 55
Chromium (+6)						**0.041**	BJC/OR-133	Median - Table D-1 validation data; cited in OSWER Directive 9285.7 55
Cobalt						**0.00745**	BJC/OR-133	Median - Table D-1 validation data; cited in OSWER Directive 9285.7 55
Copper	**0.669**	**0.394**	**0.0001**	BJC/OR-133	Cited in OSWER Directive 9285.7 55 (Table 4a)	0.124	BJC/OR-133	Median - Table 6
Lead	**-1.328**	**0.561**	**0.0001**	BJC/OR-133	Cited in OSWER Directive 9285.7 55 (Table 4a)	0.0389	BJC/OR-133	Median - Table 6
Lithium						**0.004**	ORNL-5786	Figure 2.2
Manganese						**0.0792**	BJC/OR-133	Median - Table D-1 validation data; cited in OSWER Directive 9285.7 55
Mercury	**-0.996**	**0.544**	**0.0001**	BJC/OR-133	Single variable regression	0.0652	BJC/OR-133	Median - Table 6
Molybdenum						**1.2504**	USACHPPM, 2004	Median - Table 4-6 leaf tissue
Nickel	**-2.224**	**0.748**	**0.0001**	BJC/OR-133	Cited in OSWER Directive 9285.7 55 (Table 4a)	0.018	USACHPPM, 2004	Median - Table 6

Table 6-4. Biotransfer Factors and Regression Models Used for Refined Tier 1 PRG Calculations

Soil to Plants								
	Regression Models[a]					Bioaccumulation Factors		
Analyte	B0	B1	p-value	Source	Notes[b]	BAF	Source	Notes[b]
Selenium	**-0.678**	**1.104**	**0.0001**	BJC/OR-133	Cited in OSWER Directive 9285.7 55 (Table 4a)	0.672	USACHPPM, 2004	Median - Table 6
Silver						**0.014**	BJC/OR-133	Median - Table D-1 validation data
Strontium						**0.207**	Beresford et al., 2008	CR review
Thallium						**0.004**	ORNL-5786	Figure 2.2
Tin						**1**	Default	
Uranium						**0.021**	USACHPPM, 2004	Median - Table 4-6 leaf tissue
Vanadium						**0.00485**	BJC/OR-133	Median - Table D-1 validation data
Zinc	**1.575**	**0.555**	**0.0001**	BJC/OR-133	Cited in OSWER Directive 9285.7 55 (Table 4a)	0.366	BJC/OR-133	Median - Table 6
Ammonia/Ammonium								
Chloride								
Cyanide								
Fluoride						**0.006**	ORNL-5786	Figure 2.2
Iodine						**0.05**	ORNL-5786	Figure 2.2
Nitrate/Nitrite								
Phosphate								
Sulfate/Sulfite								
Total Organic Carbon								
1,1-dichloroethane							OSWER Directive 9285.7-55	Kow (1.79) outside of range of Kow-based models for plants (OSWER Directive 9285.7-55); BAF is undefined.
1,1-dichloroethene							OSWER Directive 9285.7-55	Kow (2.13) outside of range of Kow-based models for plants (OSWER Directive 9285.7-55); BAF is undefined.
1,1,1-trichloroethane							OSWER Directive 9285.7-55	Kow (2.48) outside of range of Kow-based models for plants (OSWER Directive 9285.7-55); BAF is undefined.
1,1,2-trichloroethane							OSWER Directive 9285.7-55	Kow (2.05) outside of range of Kow-based models for plants (OSWER Directive 9285.7-55); BAF is undefined.
1,1,2,2-tetrachloroethane							OSWER Directive 9285.7-55	Kow (2.39) outside of range of Kow-based models for plants (OSWER Directive 9285.7-55); BAF is undefined.
1,2-dichlorobenzene						**2.45**	OSWER Directive 9285.7-55	Log Kow model for nonionic organics (rinsed plants); log Kow = 3.43 (EPA, 1995)
1,2-dichloroethane (DCA)							OSWER Directive 9285.7-55	Kow (1.47) outside of range of Kow-based models for plants (OSWER Directive 9285.7-55); BAF is undefined.
1,3-dichlorobenzene						**2.23**	OSWER Directive 9285.7-55	Log Kow model for nonionic organics (rinsed plants); log Kow = 3.53 (EPA, 2010)c
2-butanone (Methyl Ethyl Ketone/MEK)							OSWER Directive 9285.7-55	Kow (0.29) outside of range of Kow-based models for plants (OSWER Directive 9285.7-55); BAF is undefined.
2-hexanone							OSWER Directive 9285.7-55	Kow (1.38) outside of range of Kow-based models for plants (OSWER Directive 9285.7-55); BAF is undefined.
Benzene							OSWER Directive 9285.7-55	Kow (2.13) outside of range of Kow-based models for plants (OSWER Directive 9285.7-55); BAF is undefined.
Butanol							OSWER Directive 9285.7-55	Kow (0.8) outside of range of Kow-based models for plants (OSWER Directive 9285.7-55); BAF is undefined.
Carbon Tetrachloride							OSWER Directive 9285.7-55	Kow (2.73) outside of range of Kow-based models for plants (OSWER Directive 9285.7-55); BAF is undefined.
Chlorobenzene							OSWER Directive 9285.7-55	Kow (2.86) outside of range of Kow-based models for plants (OSWER Directive 9285.7-55); BAF is undefined.
Chloroform							OSWER Directive 9285.7-55	Kow (1.92) outside of range of Kow-based models for plants (OSWER Directive 9285.7-55); BAF is undefined.
Cis-1,2-dichloroethylene							OSWER Directive 9285.7-55	Kow (1.86) outside of range of Kow-based models for plants (OSWER Directive 9285.7-55); BAF is undefined.
Dichloromethane (Methylene Chloride)							OSWER Directive 9285.7-55	Kow (1.25) outside of range of Kow-based models for plants (OSWER Directive 9285.7-55); BAF is undefined.
Ethyl Benzene						**3.21**	OSWER Directive 9285.7-55	Log Kow model for nonionic organics (rinsed plants); log Kow = 3.14 (EPA, 1995)
Methyl Isobutyl Ketone							OSWER Directive 9285.7-55	Kow (1.19) outside of range of Kow-based models for plants (OSWER Directive 9285.7-55); BAF is undefined.
n-butyl Benzene						**1.67**	OSWER Directive 9285.7-55	Log Kow model for nonionic organics (rinsed plants); log Kow = 3.84 (EPA, 2010)c

Table 6-4. Biotransfer Factors and Regression Models Used for Refined Tier 1 PRG Calculations

Soil to Plants								
	Regression Models[a]					Bioaccumulation Factors		
Analyte	B0	B1	p-value	Source	Notes[b]	BAF	Source	Notes[b]
Tetrachloroethylene							OSWER Directive 9285.7-55	Kow (2.67) outside of range of Kow-based models for plants (OSWER Directive 9285.7-55); BAF is undefined.
Toluene							OSWER Directive 9285.7-55	Kow (2.75) outside of range of Kow-based models for plants (OSWER Directive 9285.7-55); BAF is undefined.
Trans-1,2-dichloroethylene							OSWER Directive 9285.7-55	Kow (2.07) outside of range of Kow-based models for plants (OSWER Directive 9285.7-55); BAF is undefined.
Trichloroethylene (TCE)							OSWER Directive 9285.7-55	Kow (2.71) outside of range of Kow-based models for plants (OSWER Directive 9285.7-55); BAF is undefined.
Xylene						**3.43**	OSWER Directive 9285.7-55	Log Kow model for nonionic organics (rinsed plants); log Kow = 3.07 (EPA, 1995)
Acenaphthene	**-5.562**	**-0.8556**	**NR**	OSWER Directive 9285.7-55	Derived from measured data in Appendix C or Figure 4			
Acenaphthylene	**-1.144**	**0.791**	**NR**	OSWER Directive 9285.7-55	Modeled using the rinsed PAH-specific equation			
Anthracene	**-0.9887**	**0.7784**	**NR**	OSWER Directive 9285.7-55	Derived from measured data in Appendix C or Figure 4			
Benzo(a)pyrene	**-2.0615**	**0.975**	**NR**	OSWER Directive 9285.7-55	Derived from measured data in Appendix C or Figure 4			
Benzo(a)anthracene	**-2.7078**	**0.5944**	**NR**	OSWER Directive 9285.7-55	Derived from measured data in Appendix C or Figure 4			
Benzo(b)fluoranthene						**0.31**	OSWER Directive 9285.7-55	Median BAF calculated from measured data in Appendix C
Benzo(ghi)perylene	**-0.9313**	**1.1829**	**NR**	OSWER Directive 9285.7-55	Derived from measured data in Appendix C or Figure 4			
Benzo[k]fluoranthene	**-4.6482**	**0.1668**	**NR**	OSWER Directive 9285.7-55	Derived from measured data in Appendix C or Figure 4			
Chrysene	**-2.7078**	**0.5944**	**NR**	OSWER Directive 9285.7-55	Derived from measured data in Appendix C or Figure 4			
Dibenz(ah)anthracene						**0.13**	OSWER Directive 9285.7-55	Median BAF calculated from measured data in Appendix C
Fluoranthene						**0.5**	OSWER Directive 9285.7-55	Median BAF calculated from measured data in Appendix C
Fluorene	**-5.562**	**-0.8556**	**NR**	OSWER Directive 9285.7-55	Derived from measured data in Appendix C or Figure 4			
Indeno[1,2,3-cd]pyrene						**0.11**	OSWER Directive 9285.7-55	Median BAF calculated from measured data in Appendix C
2-Methylnaphthalene	**-1.3205**	**4.544**	**NR**	OSWER Directive 9285.7-55	Based on LMW PAH rinsed model in Figure 4			
Naphthalene						**12.2**	OSWER Directive 9285.7-55	Median BAF calculated from measured data in Appendix C
Phenanthrene	**-0.1665**	**0.6203**	**NR**	OSWER Directive 9285.7-55	Derived from measured data in Appendix C or Figure 4			
Pyrene						**0.72**	OSWER Directive 9285.7-55	Median BAF calculated from measured data in Appendix C
Total PAHs	**0.083**	**0.3015**	**NR**	OSWER Directive 9285.7-55	Derived from measured data in Appendix C or Figure 4			
Low MW PAHs	**-1.3205**	**0.4544**	**0.0001**	OSWER Directive 9285.7-55	Derived from measured data in Appendix C or Figure 4			
High MW PAHs	**-1.7026**	**0.9469**	**0.0001**	OSWER Directive 9285.7-55	Derived from measured data in Appendix C or Figure 4			
TPH - Diesel								
TPH - Kerosene								
Normal paraffin hydrocarbons								
Phenol							OSWER Directive 9285.7-55	Kow (1.48) outside of range of Kow-based models for plants (OSWER Directive 9285.7 55); BAF is undefined.
2-methylphenol (ocresol)							OSWER Directive 9285.7-55	Kow (1.99) outside of range of Kow-based models for plants (OSWER Directive 9285.7 55); BAF is undefined.
4-methylphenol (pcresol)							OSWER Directive 9285.7-55	Kow (1.95) outside of range of Kow-based models for plants (OSWER Directive 9285.7 55); BAF is undefined.
2,4-dinitrotoluene	1.873	-0.3768	NR	Tsao and Sample, 2005		**0.376**	Tsao and Sample, 2005	Median BAF for foliage, all plants, from Table 3.3-1
Bis[2-ethylhexyl] phthalate						**0.07**	OSWER Directive 9285.7-55	Log Kow model for nonionic organics (rinsed plants); log Kow = 7.30 (EPA, 1995)[c]
Total PCBs						**0.17**	OSWER Directive 9285.7-55	Log Kow model for nonionic organics (rinsed plants); log Kow = 6.29 (EPA, 2010)c
Aroclor 1016						**0.30**	OSWER Directive 9285.7-55	Log Kow model for nonionic organics (rinsed plants); log Kow = 5.69 (ChemIDPlus Lite)[c]
Aroclor 1221						**0.78**	OSWER Directive 9285.7-55	Log Kow model for nonionic organics (rinsed plants); log Kow = 4.65 (ChemIDPlus Lite)[c]
Aroclor 1232						**0.99**	OSWER Directive 9285.7-55	Log Kow model for nonionic organics (rinsed plants); log Kow = 4.4 (ChemIDPlus Lite)[c]
Aroclor 1242						**0.16**	OSWER Directive 9285.7-55	Log Kow model for nonionic organics (rinsed plants); log Kow = 6.34 (ChemIDPlus Lite)[c]
Aroclor 1248						**0.18**	OSWER Directive 9285.7-55	Log Kow model for nonionic organics (rinsed plants); log Kow = 6.2 (ChemIDPlus Lite)[c]
Aroclor 1254						**0.14**	OSWER Directive 9285.7-55	Log Kow model for nonionic organics (rinsed plants); log Kow = 6.5 (ChemIDPlus Lite)[c]

Table 6-4. Biotransfer Factors and Regression Models Used for Refined Tier 1 PRG Calculations

Analyte	Regression Models[a]					Bioaccumulation Factors		
	B0	B1	p-value	Source	Notes[b]	BAF	Source	Notes[b]
Soil to Plants								
Aroclor 1260						**0.05**	OSWER Directive 9285.7-55	Log Kow model for nonionic organics (rinsed plants); log Kow = 7.55 (ChemIDPlus Lite)[c]
Aroclor-1262								
Dichloroprop								
Aldrin						**0.14**	OSWER Directive 9285.7-55	Log Kow model for nonionic organics (rinsed plants); log Kow = 6.50 (EPA, 1995)[c]
beta-1,2,3,4,5,6-Hexachlorocyclohexane						**1.72**	OSWER Directive 9285.7-55	Log Kow model for nonionic organics (rinsed plants); log Kow = 3.81 (EPA, 1995)[c]
alpha-Chlordane						**0.16**	OSWER Directive 9285.7-55	Log Kow model for nonionic organics (rinsed plants); log Kow = 6.32 (EPA, 1995)[c]
gamma-Chlordane						**0.16**	OSWER Directive 9285.7-55	Log Kow model for nonionic organics (rinsed plants); log Kow = 6.32 (EPA, 1995)[c]
Dichlorodiphenyldichloroethylene	**-2.5119**	**0.7524**	**NR**	OSWER Directive 9285.7-55	Regression model for total DDTs from Table 4b			
Dichlorodiphenyltrichloroethane	**-2.5119**	**0.7524**	**NR**	OSWER Directive 9285.7-55	Regression model for total DDTs from Table 4b			
Dieldrin						**0.41**	OSWER Directive 9285.7-55	Empirical BAF from Table 4b
Endosulfan I						**1.31**	OSWER Directive 9285.7-55	Log Kow model for nonionic organics (rinsed plants); log Kow = 4.10 (EPA, 1995)[c]
Endosulfan II						**1.31**	OSWER Directive 9285.7-55	Log Kow model for nonionic organics (rinsed plants); log Kow = 4.10 (EPA, 1995)[c]
Endosulfan sulfate						**1.98**	OSWER Directive 9285.7-55	Log Kow model for nonionic organics (rinsed plants); log Kow = 4.10 (EPA, 2010)c
Endrin aldehyde						**1.44**	OSWER Directive 9285.7-55	Log Kow model for nonionic organics (rinsed plants); log Kow = 4 (EPA, 1995)[c]
Methoxychlor						**0.52**	OSWER Directive 9285.7-55	Log Kow model for nonionic organics (rinsed plants); log Kow = 5.08 (EPA, 1995)[c]
Soil to Terrestrial Invertebrates								
Americium-241						**0.1006**	Beresford et al., 2008	CR review
Antimony-125						**0.2525**	Beresford et al., 2008b	Same as gastropod (most conservative invertebrate CR)
Carbon-14						**430**	Beresford et al., 2008	Assume same as worm
Cesium-134						**0.1341**	Beresford et al., 2008	CR review
Cesium 137						**0.1341**	Beresford et al., 2008	CR review
Cobalt-60						**0.0035**	Beresford et al., 2008	CR review
Curium-244						**0.1374**	Beresford et al., 2008	CR review
Europium-152						**0.0008**	Beresford et al., 2008	Same as soil invertebrate
Europium-154						**0.0008**	Beresford et al., 2008	Same as soil invertebrate
Europium-155						**0.0008**	Beresford et al., 2008	Same as soil invertebrate
Hydrogen-3 (tritium)						**150**	Beresford et al., 2008	Assume same as worm
Neptunium-237						**0.1006**	Beresford et al., 2008	Same as Am gastropod
Nickel-63						**0.0086**	Beresford et al., 2008	CR review
Plutonium-238						**0.0388**	Beresford et al., 2008	CR review
Plutonium-239/240						**0.0388**	Beresford et al., 2008	CR review
Radium-226						**0.0900**	Beresford et al., 2008	CR review
Radium-228						**0.0900**	Beresford et al., 2008	CR review
Strontium 90						**0.4066**	Beresford et al., 2008	CR review
Technetium-99						**0.3700**	Beresford et al., 2008	Assume maximum available value in lack of data
Thorium-232						**0.0088**	Beresford et al., 2008	Assume U Soil invertebrate
Uranium-234						**0.0088**	Beresford et al., 2008	Same as soil invertebrate
Uranium-235						**0.0088**	Beresford et al., 2008	Same as soil invertebrate
Uranium-238						**0.0088**	Beresford et al., 2008	Same as soil invertebrate

Table 6-4. Biotransfer Factors and Regression Models Used for Refined Tier 1 PRG Calculations

Soil to Terrestrial Invertebrates								
	Regression Models[a]					Bioaccumulation Factors		
Analyte	B0	B1	p-value	Source	Notes[b]	BAF	Source	Notes[b]
Aluminum						**0.043**	ES/ER/TM-220	Median - Table C.1
Antimony						**1**	ORNL-5786 cited in EPA 2007i	Assumed earthworm conc = soil conc according to (Table 4a)
Arsenic	**-1.421**	**0.706**	**0.0001**	ES/ER/TM-220	Sample et al., 1999 cited in OSWER Directive 9285.7-55 (Table 4a)	0.224	ES/ER/TM-220	Median - Table 11
Arsenic (III)	**-1.421**	**0.706**	**0.0001**	ES/ER/TM-220	Sample et al., 1999 cited in OSWER Directive 9285.7-55 (Table 4a)	0.224	ES/ER/TM-220	Median - Table 11
Arsenic (V)	**-1.421**	**0.706**	**0.0001**	ES/ER/TM-220	Sample et al., 1999 cited in OSWER Directive 9285.7-55 (Table 4a)	0.224	ES/ER/TM-220	Median - Table 11
Barium						**0.091**	ES/ER/TM-220	Median - Table 11; cited in OSWER Directive 9285.7 55
Beryllium						**0.045**	ES/ER/TM-220	Median - Table C.1; cited in OSWER Directive 9285.7 55
Bismuth						**1**	Default	
Boron						**1**	Default	
Cadmium	**2.114**	**0.795**	**0.0001**	ES/ER/TM-220	Sample et al., 1999 cited in OSWER Directive 9285.7-55 (Table 4a)	7.708	ES/ER/TM-220	Median - Table 11
Chromium						**0.306**	ES/ER/TM-220	Median - Table 11; cited in OSWER Directive 9285.7 55
Chromium (+3)						**0.306**	ES/ER/TM-220	Median - Table 11; cited in OSWER Directive 9285.7 55
Chromium (+6)						**0.306**	ES/ER/TM-220	Median - Table 11; cited in OSWER Directive 9285.7 55
Cobalt						**0.291**	ES/ER/TM-220	Median - Table 11; cited in OSWER Directive 9285.7 55
Copper	1.675	0.264	0.0001	ES/ER/TM-220	General regression - low r^2	**0.515**	ES/ER/TM-220	Median - Table 11; cited in OSWER Directive 9285.7 55
Lead	**-0.218**	**0.807**	**0.0001**	ES/ER/TM-220	Sample et al., 1999 cited in OSWER Directive 9285.7 55 (Table 4a)	0.266	ES/ER/TM-220	Median - Table 11
Lithium						**0.046**	ES/ER/TM-220	Median - Table C.1
Manganese	**-0.809**	**0.682**	**0.0002**	ES/ER/TM-220	Sample et al., 1999 cited in OSWER Directive 9285.7 55 (Table 4a)	0.054	ES/ER/TM-220	Median - Table 11
Mercury	**0.0781**	**0.3369**	**0.0028**	ES/ER/TM-220	General regression, not including validation data	1.693	ES/ER/TM-220	Median - Table 11
Molybdenum						**0.953**	ES/ER/TM-220	Median - Table C.1
Nickel	3.677	-0.26	NR	ES/ER/TM-220	regression not significant	**1.059**	ES/ER/TM-220	Median - Table 11
Selenium	**-0.075**	**0.733**	**0.016**	ES/ER/TM-220	Sample et al., 1999 cited in OSWER Directive 9285.7 55 (Table 4a)	0.985	ES/ER/TM-220	Median - Table 11
Silver						**2.045**	ES/ER/TM-220	Median - Table C.1; cited in OSWER Directive 9285.7 55
Strontium						**0.4066**	Beresford et al., 2008	CR review
Thallium						**0.0541**	USACHPPM, 2004	Median - Table 4-5 (Insecta)
Tin						**0.08**	ORNL-5786	No data available for invertebrates; assumed to be similar to uptake to small mammals (from Figure 2.25)
Uranium						**0.033**	ES/ER/TM-220	Median - Table C.1
Vanadium						**0.042**	ES/ER/TM-220	Median - Table C.1; cited in OSWER Directive 9285.7 55
Zinc	**4.449**	**0.328**	**0.0001**	ES/ER/TM-220	Sample et al., 1999 cited in OSWER Directive 9285.7 55 (Table 4a)			
Ammonia/Ammonium								
Chloride								
Cyanide								
Fluoride								
Iodine								
Nitrate/Nitrite								
Phosphate								
Sulfate/Sulfite								
Total Organic Carbon								
1,1-dichloroethane						**1.010**	OSWER Directive 9285.7-55	Calculated using model from OSWER Directive 9285.7-55 and log Koc and Kow from EPA, 2010e
1,1-dichloroethene						**1.011**	OSWER Directive 9285.7-55	Calculated using model from OSWER Directive 9285.7-55 and log Koc and Kow from EPA, 2010e
1,1,1-trichloroethane						**1.013**	OSWER Directive 9285.7-55	Calculated using model from OSWER Directive 9285.7-55 and log Koc and Kow from EPA, 2010e
1,1,2-trichloroethane						**1.010**	OSWER Directive 9285.7-55	Calculated using model from OSWER Directive 9285.7-55 and log Koc and Kow from EPA, 2010e

Table 6-4. Biotransfer Factors and Regression Models Used for Refined Tier 1 PRG Calculations

Soil to Terrestrial Invertebrates								
	Regression Models[a]					Bioaccumulation Factors		
Analyte	B0	B1	p-value	Source	Notes[b]	BAF	Source	Notes[b]
1,1,2,2-tetrachloroethane						**1.013**	OSWER Directive 9285.7-55	Calculated using model from OSWER Directive 9285.7-55 and log Koc and Kow from EPA, 2010e
1,2-dichlorobenzene						**1.018**	OSWER Directive 9285.7-55	Calculated using model from OSWER Directive 9285.7-55 and log Koc and Kow from EPA, 2010e
1,2-dichloroethane (DCA)						**0.988**	OSWER Directive 9285.7-55	Calculated using model from OSWER Directive 9285.7-55 and log Koc and Kow from EPA, 2010e
1,3-dichlorobenzene						**1.018**	OSWER Directive 9285.7-55	Calculated using model from OSWER Directive 9285.7-55 and log Koc and Kow from EPA, 2010e
2-butanone (Methyl Ethyl Ketone/MEK)						**0.094**	OSWER Directive 9285.7-55	Calculated using model from OSWER Directive 9285.7-55 and log Koc and Kow from EPA, 2010e
2-hexanone						**0.207**	OSWER Directive 9285.7-55	Calculated using model from OSWER Directive 9285.7-55 and log Koc and Kow from EPA, 2010e
Benzene						**1.011**	OSWER Directive 9285.7-55	Calculated using model from OSWER Directive 9285.7-55 and log Koc and Kow from EPA, 2010e
Butanol						**0.478**	OSWER Directive 9285.7-55	Calculated using model from OSWER Directive 9285.7-55 and log Koc and Kow from EPA, 2010e
Carbon Tetrachloride						**1.015**	OSWER Directive 9285.7-55	Calculated using model from OSWER Directive 9285.7-55 and log Koc and Kow from EPA, 2010e
Chlorobenzene						**1.015**	OSWER Directive 9285.7-55	Calculated using model from OSWER Directive 9285.7-55 and log Koc and Kow from EPA, 2010e
Chloroform						**1.011**	OSWER Directive 9285.7-55	Calculated using model from OSWER Directive 9285.7-55 and log Koc and Kow from EPA, 2010e
Cis-1,2-dichloroethylene						**1.011**	OSWER Directive 9285.7-55	Calculated using model from OSWER Directive 9285.7-55 and log Koc and Kow from EPA, 2010e
Dichloromethane (Methylene Chloride)						**1.007**	OSWER Directive 9285.7-55	Calculated using model from OSWER Directive 9285.7-55 and log Koc and Kow from EPA, 2010e
Ethyl Benzene						**1.016**	OSWER Directive 9285.7-55	Calculated using model from OSWER Directive 9285.7-55 and log Koc and Kow from EPA, 2010e
Methyl Isobutyl Ketone						**0.197**	OSWER Directive 9285.7-55	Calculated using model from OSWER Directive 9285.7-55 and log Koc and Kow from EPA, 2010e
n-butyl Benzene						**1.022**	OSWER Directive 9285.7-55	Calculated using model from OSWER Directive 9285.7-55 and log Koc and Kow from EPA, 2010e
Tetrachloroethylene						**1.018**	OSWER Directive 9285.7-55	Calculated using model from OSWER Directive 9285.7-55 and log Koc and Kow from EPA, 2010e
Toluene						**1.014**	OSWER Directive 9285.7-55	Calculated using model from OSWER Directive 9285.7-55 and log Koc and Kow from EPA, 2010e
Trans-1,2-dichloroethylene						**1.011**	OSWER Directive 9285.7-55	Calculated using model from OSWER Directive 9285.7-55 and log Koc and Kow from EPA, 2010e
Trichloroethylene (TCE)						**1.012**	OSWER Directive 9285.7-55	Calculated using model from OSWER Directive 9285.7-55 and log Koc and Kow from EPA, 2010e
Xylene						**1.016**	OSWER Directive 9285.7-55	Calculated using model from OSWER Directive 9285.7-55 and log Koc and Kow from EPA, 2010e
Acenaphthene						**1.470**	OSWER Directive 9285.7-55	Modeled from Kow based on Jager (1998) [Table 5]
Acenaphthylene						**22.9**	OSWER Directive 9285.7-55	Modeled from Kow based on Jager (1998) [Table 5]
Anthracene						**2.42**	OSWER Directive 9285.7-55	Modeled from Kow based on Jager (1998) [Table 5]
Benzo(a)pyrene						**1.33**	OSWER Directive 9285.7-55	Modeled from Kow based on Jager (1998) [Table 5]
Benzo(a)anthracene						**1.59**	OSWER Directive 9285.7-55	Modeled from Kow based on Jager (1998) [Table 5]
Benzo(b)fluoranthene						**2.6**	OSWER Directive 9285.7-55	Modeled from Kow based on Jager (1998) [Table 5]
Benzo(ghi)perylene						**2.94**	OSWER Directive 9285.7-55	Modeled from Kow based on Jager (1998) [Table 5]
Benzo[k]fluoranthene						**2.6**	OSWER Directive 9285.7-55	Modeled from Kow based on Jager (1998) [Table 5]
Chrysene						**2.29**	OSWER Directive 9285.7-55	Modeled from Kow based on Jager (1998) [Table 5]
Dibenz(ah)anthracene						**2.31**	OSWER Directive 9285.7-55	Modeled from Kow based on Jager (1998) [Table 5]
Fluoranthene						**3.04**	OSWER Directive 9285.7-55	Modeled from Kow based on Jager (1998) [Table 5]
Fluorene						**9.57**	OSWER Directive 9285.7-55	Modeled from Kow based on Jager (1998) [Table 5]
Indeno[1,2,3-cd]pyrene						**2.86**	OSWER Directive 9285.7-55	Modeled from Kow based on Jager (1998) [Table 5]
2-Methylnaphthalene						**1.020**	OSWER Directive 9285.7-55	Calculated using model from OSWER Directive 9285.7-55 and log Koc and Kow
Naphthalene						**4.4**	OSWER Directive 9285.7-55	Modeled from Kow based on Jager (1998) [Table 5]
Phenanthrene						**1.72**	OSWER Directive 9285.7-55	Modeled from Kow based on Jager (1998) [Table 5]

Table 6-4. Biotransfer Factors and Regression Models Used for Refined Tier 1 PRG Calculations

Analyte	Regression Models[a]					Bioaccumulation Factors		
	B0	B1	p-value	Source	Notes[b]	BAF	Source	Notes[b]
Soil to Terrestrial Invertebrates								
Pyrene						**1.75**	OSWER Directive 9285.7-55	Modeled from Kow based on Jager (1998) [Table 5]
Total PAHs								
Low MW PAHs								
High MW PAHs								
TPH - Diesel								
TPH - Kerosene								
Normal paraffin hydrocarbons								
Phenol						**0.235**	OSWER Directive 9285.7-55	Calculated using model from OSWER Directive 9285.7-55 and log Koc and Kow
2-methylphenol (ocresol)						**0.336**	OSWER Directive 9285.7-55	Calculated using model from OSWER Directive 9285.7-55 and log Koc and Kow
4-methylphenol (pcresol)						**0.333**	OSWER Directive 9285.7-55	Calculated using model from OSWER Directive 9285.7-55 and log Koc and Kow
2,4-dinitrotoluene						**0.184**	OSWER Directive 9285.7-55	Calculated using model from OSWER Directive 9285.7-55 and log Koc and Kow
Bis[2-ethylhexyl] phthalate						**41.144**	OSWER Directive 9285.7-55	Calculated using model from OSWER Directive 9285.7-55 and log Koc and Kow
Total PCBs	**1.41**	**1.36**	**0.0001**	Sample et al., 1999	Combined model and validation data sets, Table 3	**6.67**	Sample et al., 1999	Median, combined model and validation datasets, Table 2
Aroclor 1016	**1.41**	**1.36**	**0.0001**	Sample et al., 1999	Combined model and validation data sets, Table 3	**6.67**	Sample et al., 1999	Median, combined model and validation datasets, Table 2
Aroclor 1221	**1.41**	**1.36**	**0.0001**	Sample et al., 1999	Combined model and validation data sets, Table 3	**6.67**	Sample et al., 1999	Median, combined model and validation datasets, Table 2
Aroclor 1232	**1.41**	**1.36**	**0.0001**	Sample et al., 1999	Combined model and validation data sets, Table 3	**6.67**	Sample et al., 1999	Median, combined model and validation datasets, Table 2
Aroclor 1242	**1.41**	**1.36**	**0.0001**	Sample et al., 1999	Combined model and validation data sets, Table 3	**6.67**	Sample et al., 1999	Median, combined model and validation datasets, Table 2
Aroclor 1248	**1.41**	**1.36**	**0.0001**	Sample et al., 1999	Combined model and validation data sets, Table 3	**6.67**	Sample et al., 1999	Median, combined model and validation datasets, Table 2
Aroclor 1254	**1.41**	**1.36**	**0.0001**	Sample et al., 1999	Combined model and validation data sets, Table 3	**6.67**	Sample et al., 1999	Median, combined model and validation datasets, Table 2
Aroclor 1260	**1.41**	**1.36**	**0.0001**	Sample et al., 1999	Combined model and validation data sets, Table 3	**6.67**	Sample et al., 1999	Median, combined model and validation datasets, Table 2
Aroclor-1262								
Dichloroprop								
Aldrin						**1.033**	OSWER Directive 9285.7-55	Calculated using model from OSWER Directive 9285.7 55 and log Koc and Kow
beta-1,2,3,4,5,6-Hexachlorocyclohexane						**1.021**	OSWER Directive 9285.7-55	Calculated using model from OSWER Directive 9285.7 55 and log Koc and Kow
alpha-Chlordane						**1.031**	OSWER Directive 9285.7-55	Calculated using model from OSWER Directive 9285.7 55 and log Koc and Kow
gamma-Chlordane						**1.036**	OSWER Directive 9285.7-55	Calculated using model from OSWER Directive 9285.7 55 and log Koc and Kow
Dichlorodiphenyldichloroethylene	**2.4771**	**0.8804**	**0.0001**	OSWER Directive 9285.7-55	Regression derived from measured data			
Dichlorodiphenyltrichloroethane	**2.1247**	**0.8689**	**0.0001**	OSWER Directive 9285.7-55	Regression derived from measured data			
Dieldrin						**14.70**	OSWER Directive 9285.7-55	Median BAF
Endosulfan I						**1.184**	OSWER Directive 9285.7-55	Calculated using model from OSWER Directive 9285.7 55 and log Koc and Kow
Endosulfan II						**1.184**	OSWER Directive 9285.7-55	Calculated using model from OSWER Directive 9285.7 55 and log Koc and Kow
Endosulfan sulfate						**1.184**	OSWER Directive 9285.7-55	Calculated using model from OSWER Directive 9285.7 55 and log Koc and Kow
Endrin aldehyde						**6.686**	OSWER Directive 9285.7-55	Calculated using model from OSWER Directive 9285.7 55 and log Koc and Kow
Methoxychlor						**3.739**	OSWER Directive 9285.7-55	Calculated using model from OSWER Directive 9285.7 55 and log Koc and Kow
Soil to Small Mammal								
Americium-241						**0.041**	Beresford et al., 2008	CR review
Antimony-125						**2.1465E-06**	Beresford et al., 2008	Constant dietary CR [assume shrub diet] Beresford et al., 2004
Carbon-14						**1340**	Beresford et al., 2008	Specific activity model; FASSET
Cesium-134						**2.87**	Beresford et al., 2008	CR review - reindeer data not included
Cesium 137						**2.87**	Beresford et al., 2008	CR review - reindeer data not included
Cobalt-60						**0.30**	Beresford et al., 2008	CR review
Curium-244						**0.041**	Beresford et al., 2008	Assume Am mammal
Europium-152						**0.002**	Beresford et al., 2008	Allometric prediction using USDoE (EPIC vole parameters, grass CR of 1E-2)
Europium-154						**0.002**	Beresford et al., 2008	Allometric prediction using USDoE (EPIC vole parameters, grass CR of 1E-2)
Europium-155						**0.002**	Beresford et al., 2008	Allometric prediction using USDoE (EPIC vole parameters, grass CR of 1E-2)
Hydrogen-3 (tritium)						**150**	Beresford et al., 2008	Specific activity model; FASSET
Neptunium-237						**0.041**	Beresford et al., 2008	Same as Am mammal
Nickel-63						**0.072**	Beresford et al., 2008	CR review but based on stable Ni concentrations in mammalian tissues and 'general' soil concentrations FWCR = 3.87e-3 (in: Coughtrey and Thorne, 1983, A.A. Balkema, Vol. 2). Note 1 study gives high conc. in bone which may increase CR circa 10x)

Table 6-4. Biotransfer Factors and Regression Models Used for Refined Tier 1 PRG Calculations

Soil to Small Mammal								
	Regression Models[a]					Bioaccumulation Factors		
Analyte	B0	B1	p-value	Source	Notes[b]	BAF	Source	Notes[b]
Plutonium-238						**0.023**	Beresford et al., 2008	CR review
Plutonium-239/240						**0.023**	Beresford et al., 2008	CR review
Radium-226						**0.027**	Beresford et al., 2008	CR review - reindeer data not included
Radium-228						**0.027**	Beresford et al., 2008	CR review - reindeer data not included
Strontium 90						**1.74**	Beresford et al., 2008	CR review - reindeer data not included
Technetium-99						**0.37**	Beresford et al., 2008	FASTer prediction
Thorium-232						**0.00012**	Beresford et al., 2008	CR review
Uranium-234						**0.00011**	Beresford et al., 2008	CR review
Uranium-235						**0.00011**	Beresford et al., 2008	CR review
Uranium-238						**0.00011**	Beresford et al., 2008	CR review
Aluminum						**0.0263**	ES/ER/TM-219	Median - Table C.1 (general)
Antimony							ORNL-5786 cited in OSWER Directive 9285.7-55	**0.001* 50 * Cdiet (from Table 4a)**
Arsenic	**-4.8471**	**0.8188**	**0.0001**	ES/ER/TM-219	cited in OSWER Directive 9285.7-55 (Table 4a) - general	0.0038	ES/ER/TM-219	Median - Table 2 (general)
Arsenic (III)	**-4.8471**	**0.8188**	**0.0001**	ES/ER/TM-219	cited in OSWER Directive 9285.7-55 (Table 4a) - general	0.0038	ES/ER/TM-219	Median - Table 2 (general)
Arsenic (V)	**-4.8471**	**0.8188**	**0.0001**	ES/ER/TM-219	cited in OSWER Directive 9285.7-55 (Table 4a) - general	0.0038	ES/ER/TM-219	Median - Table 2 (general)
Barium						**0.0168**	ES/ER/TM-219	Median - Table 2 (general); cited in OSWER Directive 9285.7 55
Beryllium							ORNL-5786 cited in OSWER Directive 9285.7-55 (table 4a)	**0.001 * 50 * Cdiet (from Table 4a)**
Bismuth						**1**	Default value	Default Value
Boron						**1**	Default value	Default Value
Cadmium	**-1.2571**	**0.4723**	**0.0001**	ES/ER/TM-219	cited in OSWER Directive 9285.7-55 (Table 4a) - herbivore	0.7568		
Chromium	**-1.4599**	**0.7338**	**0.0001**	ES/ER/TM-219	cited in OSWER Directive 9285.7-55 (Table 4a) - general	0.0605	ES/ER/TM-219	Median - Table 2 (general)
Chromium (+3)	**-1.4599**	**0.7338**	**0.0001**	ES/ER/TM-219	cited in OSWER Directive 9285.7-55 (Table 4a) - general	0.0605	ES/ER/TM-219	Median - Table 2 (general)
Chromium (+6)	**-1.4599**	**0.7338**	**0.0001**	ES/ER/TM-219	cited in OSWER Directive 9285.7-55 (Table 4a) - general	0.0605	ES/ER/TM-219	Median - Table 2 (general)
Cobalt	**-4.4669**	**1.307**	**0.01**	ES/ER/TM-219	cited in OSWER Directive 9285.7-55 (Table 4a) - general	0.1000	ES/ER/TM-219	Median - Table 2 (general)
Copper	**2.042**	**0.1444**	**0.0001**	ES/ER/TM-219	cited in OSWER Directive 9285.7-55 (Table 4a) - general	0.5999	ES/ER/TM-219	Median - Table 2 (general)
Lead	**0.0761**	**0.4422**	**0.0001**	ES/ER/TM-219	cited in OSWER Directive 9285.7-55 (Table 4a) - general	0.1233	ES/ER/TM-219	Median - Table 2 (general)
Lithium						**1**	Default value	Default Value
Manganese						**0.0205**	ES/ER/TM-219	Median - Table C.1 (general)
Mercury						**0.054**	ES/ER/TM-219	Median - Table 2 (general)
Molybdenum						**1**	Default value	
Nickel	**-0.2462**	**0.4658**	**0.0001**	ES/ER/TM-219	cited in OSWER Directive 9285.7-55 (Table 4a) - general	0.3524	ES/ER/TM-219	Median - Table 2 (general)
Selenium	**-0.4158**	**0.3764**	**0.0026**	ES/ER/TM-219	cited in OSWER Directive 9285.7-55 (Table 4a) - general	0.2107	ES/ER/TM-219	Median - Table 2 (general)
Silver						**0.0040**	ES/ER/TM-219	Median - Table C.1 (general)
Strontium						**1.74**	Beresford et al., 2008	CR review - reindeer data not included
Thallium						**0.1124**	ES/ER/TM-219	Median - Table 2 (general)
Tin						**0.08**	ORNL-5786	Figure 2.25
Uranium						**0.0002**	ORNL-5786	Figure 2.25
Vanadium						**0.0123**	ES/ER/TM-219	Median - Table C.1 (general)
Zinc	**4.3632**	**0.0706**	**0.0013**	ES/ER/TM-219	cited in OSWER Directive 9285.7-55 (Table 4a) - herbivore	0.8984	ES/ER/TM-219	Median - Table 2 (general)
Ammonia/Ammonium								
Chloride								
Cyanide								
Fluoride								
Iodine								
Nitrate/Nitrite								
Phosphate								
Sulfate/Sulfite								
Total Organic Carbon								
1,1-dichloroethane						**0.0109**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 1.79 (EPA, 1995)[d]
1,1-dichloroethene						**0.0186**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 2.13 (EPA, 1995)[d]

Table 6-4. Biotransfer Factors and Regression Models Used for Refined Tier 1 PRG Calculations

Soil to Small Mammal								
	Regression Models[a]					Bioaccumulation Factors		
Analyte	B0	B1	p-value	Source	Notes[b]	BAF	Source	Notes[b]
1,1,1-trichloroethane						**0.0305**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 2.48 (EPA, 1995)[d]
1,1,2-trichloroethane						**0.0165**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 2.05 (EPA, 1995)[d]
1,1,2,2-tetrachloroethane						**0.0270**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 2.39 (EPA, 1995)[d]
1,2-dichlorobenzene						**0.0882**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 3.43 (EPA, 1995)[d]
1,2-dichloroethane (DCA)						**0.0063**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 1.47 (EPA, 1995)[d]
1,3-dichlorobenzene						**0.0963**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 3.53 (EPA, 2010)d
2-butanone (Methyl Ethyl Ketone/MEK)						**0.0006**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 0.29 (EPA, 2010)d
2-hexanone						**0.0053**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 1.38 (EPA, 2010)d
Benzene						**0.0186**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 2.13 (EPA, 1995)[d]
Butanol						**0.0017**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 0.8 (EPA, 1995)[d]
Carbon Tetrachloride						**0.0420**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 2.73 (EPA, 1995)[d]
Chlorobenzene						**0.0490**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 2.86 (EPA, 1995)[d]
Chloroform						**0.0135**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 1.92 (EPA, 1995)[d]
Cis-1,2-dichloroethylene						**0.0122**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 1.86 (EPA, 1995)[d]
Dichloromethane (Methylene Chloride)						**0.0042**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 1.25 (EPA, 1995)[d]
Ethyl Benzene						**0.0666**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 3.14 (EPA, 1995)[d]
Methyl Isobutyl Ketone						**0.0037**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 1.19 (EPA, 1995)[d]
n-butyl Benzene						**0.1227**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 3.84 (EPA, 2010)d
Tetrachloroethylene						**0.0390**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 1.79 (EPA, 1995)[d]
Toluene						**0.0430**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 1.79 (EPA, 1995)[d]
Trans-1,2-dichloroethylene						**0.0170**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 1.79 (EPA, 1995)[d]
Trichloroethylene (TCE)						**0.0410**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 1.79 (EPA, 1995)[d]
Xylene						**0.0619**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 1.79 (EPA, 1995)[d]
Acenaphthene						**0**	OSWER Directive 9285.7-55	Assumed to be negligible
Acenaphthylene						**0**	OSWER Directive 9285.7-55	Assumed to be negligible
Anthracene						**0**	OSWER Directive 9285.7-55	Assumed to be negligible
Benzo(a)pyrene						**0**	OSWER Directive 9285.7-55	Assumed to be negligible
Benzo(a)anthracene						**0**	OSWER Directive 9285.7-55	Assumed to be negligible
Benzo(b)fluoranthene						**0**	OSWER Directive 9285.7-55	Assumed to be negligible
Benzo(ghi)perylene						**0**	OSWER Directive 9285.7-55	Assumed to be negligible
Benzo[k]fluoranthene						**0**	OSWER Directive 9285.7-55	Assumed to be negligible
Chrysene						**0**	OSWER Directive 9285.7-55	Assumed to be negligible
Dibenz(ah)anthracene						**0**	OSWER Directive 9285.7-55	Assumed to be negligible
Fluoranthene						**0**	OSWER Directive 9285.7-55	Assumed to be negligible
Fluorene						**0**	OSWER Directive 9285.7-55	Assumed to be negligible
Indeno[1,2,3-cd]pyrene						**0**	OSWER Directive 9285.7-55	Assumed to be negligible

Table 6-4. Biotransfer Factors and Regression Models Used for Refined Tier 1 PRG Calculations

Soil to Small Mammal								
	Regression Models[a]					Bioaccumulation Factors		
Analyte	B0	B1	p-value	Source	Notes[b]	BAF	Source	Notes[b]
2-Methylnaphthalene						**0**	OSWER Directive 9285.7-55	Assumed to be negligible
Naphthalene						**0**	OSWER Directive 9285.7-55	Assumed to be negligible
Phenanthrene						**0**	OSWER Directive 9285.7-55	Assumed to be negligible
Pyrene						**0**	OSWER Directive 9285.7-55	Assumed to be negligible
Total PAHs						**0**	OSWER Directive 9285.7-55	Assumed to be negligible
Low MW PAHs						**0**	OSWER Directive 9285.7-55	Assumed to be negligible
High MW PAHs						**0**	OSWER Directive 9285.7-55	Assumed to be negligible
TPH - Diesel						**0**	OSWER Directive 9285.7-55	Assumed to be negligible
TPH - Kerosene						**0**	OSWER Directive 9285.7-55	Assumed to be negligible
Normal paraffin hydrocarbons						**0**	OSWER Directive 9285.7-55	Assumed to be negligible
Phenol						**0.0064**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 1.48 (EPA, 1995)[d]
2-methylphenol (ocresol)						**0.0150**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 1.99 (EPA, 1995)[d]
4-methylphenol (pcresol)						**0.0141**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 1.95 (EPA, 1995)[d]
2,4-dinitrotoluene						**0.0155**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 2.01 (EPA, 1995)[d]
Bis[2-ethylhexyl] phthalate						**0.0945**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 7.3 (EPA, 1995)[d]
Total PCBs						**0.1792**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 6.29 (EPA, 2010)d
Aroclor 1016						**0.2104**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 5.69 (ChemIDPlus Lite)[d]
Aroclor 1221						**0.1883**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 4.65 (ChemIDPlus Lite)[d]
Aroclor 1232						**0.1704**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 4.4 (ChemIDPlus Lite)[d]
Aroclor 1242						**0.1756**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 6.34 (ChemIDPlus Lite)[d]
Aroclor 1248						**0.1855**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 6.2 (ChemIDPlus Lite)[d]
Aroclor 1254						**0.1630**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 6.5 (ChemIDPlus Lite)[d]
Aroclor 1260						**0.0750**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 7.55 (ChemIDPlus Lite)[d]
Aroclor-1262								
Dichloroprop								
Aldrin						**0.1630**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 6.5 (EPA, 1995)[d]
beta-1,2,3,4,5,6-Hexachlorocyclohexane						**0.1201**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 3.81 (EPA, 1995)[d]
alpha-Chlordane						**0.1771**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 6.32 (EPA, 1995)[d]
gamma-Chlordane						**0.1771**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 6.32 (EPA, 1995)[d]
Dichlorodiphenyldichloroethylene	**3.6401**	**0.641**	**0.0001**	OSWER Directive 9285.7-55	Regression derived from measured data [Appendix D]	0.1410	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 6.76 (EPA, 1995)[d]
Dichlorodiphenyltrichloroethane	**1.1788**	**0.7254**	**0.0001**	OSWER Directive 9285.7-55	Regression derived from measured data [Appendix D]	0.1606	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 6.53 (EPA, 1995)[d]
Dieldrin						**1.20**	OSWER Directive 9285.7-55	Median BAF

Table 6-4. Biotransfer Factors and Regression Models Used for Refined Tier 1 PRG Calculations

Soil to Small Mammal								
	Regression Models[a]					Bioaccumulation Factors		
Analyte	B0	B1	p-value	Source	Notes[b]	BAF	Source	Notes[b]
Endosulfan I						**0.1455**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 4.1 (EPA, 1995)[d]
Endosulfan II						**0.1455**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 4.1 (EPA, 1995)[d]
Endosulfan sulfate						**0.1072**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 3.66 (EPA, 2010)d
Endrin aldehyde						**0.1368**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 4 (EPA, 1995)[d]
Methoxychlor						**0.2093**	RTI, 2005	logKow model for organics with logKow between -0.67 and 8.2; log Kow = 5.08 (EPA, 1995)[d]

a. Regression models are in the form of LN(plant, invertebrate, or small mammal concentration) = B0 + B1(LN (soil concentration).

b. Notes refer to tables and appendices in the cited references, not tables or appendices of this report.

c. BAFs for uptake of organics with log Kows between 3 and 8 to plants were derived using log BAF = -0.4057*(logKow)+1.781 (rinsed plants, OSWER Directive 9285.7 55).

d. BAFs for uptake of organics to small mammals were derived using log BAF = $-0.099(\log Kow)^2 + 1.07(\log Kow) - 3.56$; this regression is for uptake to fat and represents the lipid concentration rather than whole body.

e. BAFs for uptake of organics to invertebrates were derived using BAF = (0.87*(logKow)/(Koc*foc) (OSWER Directive 9285.7 55), where foc = 0.01.

BAF = Bioaccumulation Factor

Cdiet = concentration in small mammal diet (assumed to be 50 percent plants and 50 percent invertebrates)

EPA = United States Environmental Protection Agency

NR = Not reported

PCBs = polychlorinated biphenyls

TPH = total petroleum hydrocarbons

USACHPPM = United States Army Center for Health Promotion and Preventive Medicine

Table 6-5. Avian Toxicity Reference Values

Chemical Class	Soil Constituent	Form/Surrogate Analyte	Primary Study	Test Species	Test Species Body Weight (kg)	Duration	Exposure Route	General Effect Endpoint	Specific Effect Endpoint	Uncertainty Factors Applied	Uncertainty Factor Type	NOAEL (mg/kg/d)	LOAEL (mg/kg/d)	Secondary Source	Notes	Selected Avian NOAEL TRV (mg/kg/d)	Selected Avian LOAEL TRV (mg/kg/d)
Metals	Aluminum	aluminum sulfate	Carriere et al., 1986	ringed dove	0.155	4 month	oral in diet	reproduction				109.7	---	ES/ER/TM 86/R3		**109.7**	**---**
	Antimony															**---**	**---**
	Arsenic	arsenic oxide	Holcman and Stibilj, 1997*	chicken	1.6	19 days during reproduction	oral in diet	reproduction	progeny count	NA	NA	2.24	---	OSWER Directive 9285.7 62		**---**	**---**
	Arsenic	sodium arsenate	Stanley et al., 1994	mallard	1	>10 weeks	oral in diet	reproduction				9.3	40.3			**9.3**	**40.3**
	Barium	barium hydroxide	Johnson et al., 1960	1-day old chicks	0.121	4 weeks	oral in diet	mortality		0.1	subchronic-chronic	20.8	41.7	ES/ER/TM 86/R3		**20.8**	**41.7**
	Beryllium															**---**	**---**
	Bismuth															**---**	**---**
	Boron	boric acid	Smith and Anders, 1989	mallard	1	3 weeks pre-, during, and 3 weeks post-reproduction	oral in diet	reproduction	egg fertility, duckling growth, embryo and duckling mortality			28.8	100	ES/ER/TM 86/R3		**28.8**	**100**
	Cadmium	multiple forms	multiple studies*	multiple species								1.47	---	OSWER Directive 9285.7 65	Geometric mean of NOAELs for reproduction and growth	**1.47**	**---**
	Cadmium	cadmium sulfate	Leach et al., 1979*	chicken	1.6	12 weeks during egg laying	oral in diet	reproduction	egg production, progeny count			0.593	2.37	OSWER Directive 9285.7 65	lowest bounded reproductive LOAEL above the geometric mean NOAEL from EcoSSL	**---**	**2.37**
	Chromium (3+)	multiple forms	multiple studies*	chicken				reproduction and growth				2.66	---	OSWER Directive 9285.7-66	Geometric mean of NOAELs for reproduction and growth	**2.66**	**---**
	Chromium (3+)	chrome alum doceahydrate	Haseltine et al., unpublished*	black duck	1.17	180-190 days	oral in diet	reproduction	reproductive success			0.569	2.78	OSWER Directive 9285.7-66	lowest bounded reproductive LOAEL above the geometric mean NOAEL from EcoSSL	**---**	**2.78**
	Cobalt	multiple forms	multiple studies*	multiple species				growth	body weight			7.61		OSWER Directive 9285.7-67	Geometric mean of NOAELs for reproduction and growth	**7.61**	
	Cobalt	cobalt chloride	Hill, 1979*	chicken	0.328	5 weeks	oral in diet	growth	body weight			3.89	7.8	OSWER Directive 9285.7-67	lowest bounded reproductive LOAEL above the geometric mean NOAEL from EcoSSL	**---**	**7.8**
	Copper	copper	al Ankari et al., 1998*	chicken	1.5161	84 days during egg laying	oral in diet	reproduction	eggs per nest			4.05	12.1	OSWER Directive 9285.7-68	value is highest bounded NOAEL lower than the lowest bounded LOAEL value for reproduction, growth or survival; LOAEL is from same study	**4.05**	**12.1**
	Lead	lead acetate	Edens and Garlich, 1983*	chicken	1.81	4 weeks during egg laying	oral in diet	reproduction	progeny count			1.63	3.26	OSWER Directive 9285.7-70	value is highest bounded NOAEL lower than the lowest bounded LOAEL value for reproduction, growth or survival; LOAEL is from same study	**1.63**	**3.26**
	Lithium															**---**	**---**
	Manganese	multiple forms	multiple studies*	multiple species				reproduction and growth				179	---	OSWER Directive 9285.7-71	Geometric mean of NOAELs for reproduction and growth	**179**	**---**
	Manganese	manganese chloride tetrahydrate	Southern and Baker, 1983*	chicken	0.316	14 days	oral in diet	growth	body weight			261	348	OSWER Directive 9285.7-71	lowest bounded growth or reproductive LOAEL above the geometric mean NOAEL from EcoSSL	**---**	**348**
	Mercury (methyl)	methyl mercury	Heinz and Hoffman, 1998; Heinz, 1979	mallard	1	2.5 months to two generations	oral in diet	reproduction				0.068	0.37			**0.068**	**0.37**
	Mercury (inorganic)	Mercuric Chloride	Hill and Schaffner 1976	Japanese quail	0.15	1 year	oral in diet	reproduction	reduced fertility and egg hatchability			0.45	0.9	Sample et al. 1996		**0.45**	**0.9**
	Molybdenum	Sodium molybdate	Lepore and Miller, 1965	chicken	1.5	21 days through reproduction	oral in diet	reproduction	embryonic viability	0.1	LOAEL-NOAEL	3.53	35.3	ES/ER/TM 86/R3		**3.53**	**35.3**
	Nickel	multiple forms	multiple studies*	multiple species				reproduction and growth				6.71	---	OSWER Directive 9285.7-76	Geometric mean of reproduction and growth studies	**6.71**	**---**
	Nickel	nickel chloride hexahydrate	Martinez and Diaz, 1996*	chicken	1.8901	42 days	oral in diet	growth	body weight			5.76	11.5	OSWER Directive 9285.7-76	lowest bounded growth or reproductive LOAEL above the geometric mean NOAEL from EcoSSL	**---**	**11.5**
	Selenium	sodium selenite	El-Begearmi and Combs, 1982*	chicken	0.328	2 weeks	oral in diet	survival	mortality			0.29	0.579	OSWER Directive 9285.7-72	value is highest bounded NOAEL lower than the lowest bounded LOAEL value for reproduction, growth or survival; LOAEL is from same study	**0.29**	**0.579**
	Silver	silver acetate	Jensen et al. 1974*	turkey	0.662	5 weeks	oral in diet		growth	0.1	LOAEL-NOAEL	2.02	20.2	OSWER Directive 9285.7-77	lowest growth, reproduction, or survival LOAEL, with NOAEL estimated by application of uncertainty factor	**2.02**	**20.2**
	Strontium															**---**	**---**
	Thallium											---	---			**---**	**---**

Table 6-5. Avian Toxicity Reference Values

Chemical Class	Soil Constituent	Form/Surrogate Analyte	Primary Study	Test Species	Test Species Body Weight (kg)	Duration	Exposure Route	General Effect Endpoint	Specific Effect Endpoint	Uncertainty Factors Applied	Uncertainty Factor Type	NOAEL (mg/kg/d)	LOAEL (mg/kg/d)	Secondary Source	Notes	Selected Avian NOAEL TRV (mg/kg/d)	Selected Avian LOAEL TRV (mg/kg/d)
	Tin	bis(Tributyltin) oxide (TBTO)	Schlatterer et al., 1993	Japanese quail	0.15	6 weeks during reproduction	oral in diet	reproduction	egg weight and hatchability	NA	NA	6.8	16.9	ES/ER/TM 86/R3		**6.8**	**16.9**
	Uranium	depleted metallic	Haseltine and Sileo, 1983	black duck	1.25	6 weeks	oral in diet	growth, mortality, organ pathology	mortality, body weight, blood chemistry, liver or kidney effects	0.1	subchronic-chronic	16	---	ES/ER/TM 86/R3		**16**	**---**
	Vanadium	sodium metavanadate	Hill, 1979*	chicken	1.042	5 weeks	oral in diet	growth	body weight			0.344	0.688	OSWER Directive 9285.7-75	value is highest bounded NOAEL lower than the lowest bounded LOAEL value for reproduction, growth or survival; LOAEL is from same study	**0.344**	**0.688**
	Zinc	multiple forms	multiple studies*	multiple species				reproduction and growth				66.1	---	OSWER Directive 9285.7-73	Geometric mean of reproduction and growth studies	**66.1**	**---**
	Zinc	zinc acetate	Gibson et al., 1986*	chicken	2	10 weeks	oral in diet	reproduction	progeny count			57.3	66.5	OSWER Directive 9285.7-73	lowest bounded growth or reproductive LOAEL above the geometric mean NOAEL from EcoSSL	**---**	**66.5**
General Inorganics	Ammonia/Ammonium															**---**	**---**
	Chloride															**---**	**---**
	Cyanide															**---**	**---**
	Fluoride		Pattee et al., 1988	screech owl	0.18	1 month	oral in diet	reproduction	hatching success	NA	NA	7.8	32	ES/ER/TM 86/R3		7.8	32
	Iodine															**---**	**---**
	Nitrate/Nitrite															**---**	**---**
	Phosphate															**---**	**---**
	Sulfate/Sulfite															**---**	**---**
	Total Organic Carbon															**---**	**---**
Volatile Organics	1,1-dichloroethane	1,2-dichloroethane (DCA)	Alumot et al., 1976b	chicken	1.6	2 yr	oral in diet	reproduction	reduced egg production			17.2	34.4	ES/ER/TM 86/R3		**17.2**	**34.4**
	1,1-dichloroethene	1,2-dichloroethane (DCA)	Alumot et al., 1976b	chicken	1.6	2 yr	oral in diet	reproduction	reduced egg production			17.2	34.4	ES/ER/TM 86/R3		**17.2**	**34.4**
	1,1,1-trichloroethane	1,2-dichloroethane (DCA)	Alumot et al., 1976b	chicken	1.6	2 yr	oral in diet	reproduction	reduced egg production			17.2	34.4	ES/ER/TM 86/R3		**17.2**	**34.4**
	1,1,2-trichloroethane	1,2-dichloroethane (DCA)	Alumot et al., 1976b	chicken	1.6	2 yr	oral in diet	reproduction	reduced egg production			17.2	34.4	ES/ER/TM 86/R3		**17.2**	**34.4**
	1,1,2,2-tetrachloroethane	1,2-dichloroethane (DCA)	Alumot et al., 1976b	chicken	1.6	2 yr	oral in diet	reproduction	reduced egg production			17.2	34.4	ES/ER/TM 86/R3		**17.2**	**34.4**
	1,2-dichlorobenzene	1,2-dichloroethane (DCA)	Alumot et al., 1976b	chicken	1.6	2 yr	oral in diet	reproduction	reduced egg production			17.2	34.4	ES/ER/TM 86/R3		**17.2**	**34.4**
	1,2-dichloroethane (DCA)	NA	Alumot et al., 1976b	chicken	1.6	2 yr	oral in diet	reproduction	reduced egg production			17.2	34.4	ES/ER/TM 86/R3		**17.2**	**34.4**
	1,3-dichlorobenzene	1,2-dichloroethane (DCA)	Alumot et al., 1976b	chicken	1.6	2 yr	oral in diet	reproduction	reduced egg production			17.2	34.4	ES/ER/TM 86/R3		**17.2**	**34.4**
	2-butanone (Methyl Ethyl Ketone/MEK)	2-hexanone	Abou-Donia et al., 1982	chicken	1.7	90 days	oral gavage	survival, pathology, neurotoxicity	weight loss and ataxia	0.1	LOAEL-NOAEL	10	100			**10**	**100**
	2-hexanone	NA	Abou-Donia et al., 1982	chicken	1.7	90 days	oral gavage	survival, pathology, neurotoxicity	weight loss and ataxia	0.1	LOAEL-NOAEL	10	100			**10**	**100**
	Benzene	xylene	Hill and Camardese, 1986	Japanese quail		5 days	oral in diet	growth and mortality		0.01	subacute-chronic	40.7	---		5 day dietary exposure to 4066 mg/kg/d had no effect	**40.7**	**---**
	Butanol															**---**	**---**
	Carbon Tetrachloride	1,2-dichloroethane (DCA)	Alumot et al., 1976b	chicken	1.6	2 yr	oral in diet	reproduction	reduced egg production			17.2	34.4	ES/ER/TM 86/R3		**17.2**	**34.4**
	Chlorobenzene	1,2-dichloroethane (DCA)	Alumot et al., 1976b	chicken	1.6	2 yr	oral in diet	reproduction	reduced egg production			17.2	34.4	ES/ER/TM 86/R3		**17.2**	**34.4**
	Chloroform	1,2-dichloroethane (DCA)	Alumot et al., 1976b	chicken	1.6	2 yr	oral in diet	reproduction	reduced egg production			17.2	34.4	ES/ER/TM 86/R3		**17.2**	**34.4**
	Cis-1,2-dichloroethylene	1,2-dichloroethane (DCA)	Alumot et al., 1976b	chicken	1.6	2 yr	oral in diet	reproduction	reduced egg production			17.2	34.4	ES/ER/TM 86/R3		**17.2**	**34.4**

Table 6-5. Avian Toxicity Reference Values

Chemical Class	Soil Constituent	Form/Surrogate Analyte	Primary Study	Test Species	Test Species Body Weight (kg)	Duration	Exposure Route	General Effect Endpoint	Specific Effect Endpoint	Uncertainty Factors Applied	Uncertainty Factor Type	NOAEL (mg/kg/d)	LOAEL (mg/kg/d)	Secondary Source	Notes	Selected Avian NOAEL TRV (mg/kg/d)	Selected Avian LOAEL TRV (mg/kg/d)
	Dichloromethane (Methylene Chloride)	1,2-dichloroethane (DCA)	Alumot et al., 1976b	chicken	1.6	2 yr	oral in diet	reproduction	reduced egg production			17.2	34.4	ES/ER/TM 86/R3		**17.2**	**34.4**
	Ethyl Benzene	xylene	Hill and Camardese, 1986	Japanese quail		5 days	oral in diet	growth and mortality		0.01	subacute-chronic	40.7	---		5 day dietary exposure to 4066 mg/kg/d had no effect	**40.7**	**---**
	Methyl Isobutyl Ketone	2-hexanone	Abou-Donia et al., 1982	chicken	1.7	90 days	oral gavage	survival, pathology, neurotoxicity	weight loss and ataxia	0.1	LOAEL-NOAEL	10	100			**10**	**100**
	n-butyl Benzene	xylene	Hill and Camardese, 1986	Japanese quail		5 days	oral in diet	growth and mortality		0.01	subacute-chronic	40.7	---		5 day dietary exposure to 4066 mg/kg/d had no effect	**40.7**	**---**
	Tetrachloroethylene	1,2-dichloroethane (DCA)	Alumot et al., 1976b	chicken	1.6	2 yr	oral in diet	reproduction	reduced egg production			17.2	34.4	ES/ER/TM 86/R3		**17.2**	**34.4**
	Toluene	xylene	Hill and Camardese, 1986	Japanese quail		5 days	oral in diet	growth and mortality		0.01	subacute-chronic	33.3	---		5 day dietary exposure to 4066 mg/kg/d had no effect	**40.7**	**---**
	Trans-1,2-dichloroethylene	1,2-dichloroethane (DCA)	Alumot et al., 1976b	chicken	1.6	2 yr	oral in diet	reproduction	reduced egg production			17.2	34.4	ES/ER/TM 86/R3		**17.2**	**34.4**
	Trichloroethylene (TCE)	1,2-dichloroethane (DCA)	Alumot et al., 1976b	chicken	1.6	2 yr	oral in diet	reproduction	reduced egg production			17.2	34.4	ES/ER/TM 86/R3		**17.2**	**34.4**
	Xylene	NA	Hill and Camardese, 1986	Japanese quail		5 days	oral in diet	growth and mortality		0.01	subacute-chronic	40.7	---		5 day dietary exposure to 4066 mg/kg/d had no effect	**40.7**	**---**
Polycyclic Aromatic Hydrocarbons	Acenaphthene	aromatic hydrocarbon mixture	Patton and Dieter, 1980	mallard	1.23	7 mo	oral in diet	growth	liver weight			32.5	325		*Mixture of ethylbenzene, 1,2,3,4-tetrahydronaphthalene, dimethylnaphthalene, 2,3,3-trimethylindolenine, acenaphthene, acenaphthylene, phenanthrene, 2-methylbenzothiazole, dibenzothiophene, and 2,6-dimethylquinoline	**32.5**	**325**
	Acenaphthylene	aromatic hydrocarbon mixture	Patton and Dieter, 1980	mallard	1.23	7 mo	oral in diet	growth	liver weight			32.5	325		* Mixture of ethylbenzene, 1,2,3,4-tetrahydronaphthalene, dimethylnaphthalene, 2,3,3-trimethylindolenine, acenaphthene, acenaphthylene, phenanthrene, 2-methylbenzothiazole, dibenzothiophene, and 2,6-dimethylquinoline	**32.5**	**325**
	Anthracene	aromatic hydrocarbon mixture	Patton and Dieter 1980	mallard	1.23	7 mo	oral in diet	growth	liver weight			32.5	325		* Mixture of ethylbenzene, 1,2,3,4-tetrahydronaphthalene, dimethylnaphthalene, 2,3,3-trimethylindolenine, acenaphthene, acenaphthylene, phenanthrene, 2-methylbenzothiazole, dibenzothiophene, and 2,6-dimethylquinoline	**32.5**	**325**
	Benzo(a)pyrene	benzo(a)anthracene	Beall 2007	bobwhite quail		60 days	oral in diet	growth				0.65	---		NOAEL based on mean exposure over 60-day duration of the study.	**0.65**	**---**
	Benzo(a)anthracene	NA	Beall 2007	bobwhite quail		60 days	oral in diet	growth				0.65	---		NOAEL based on mean exposure over 60-day duration of the study.	**0.65**	**---**
	Benzo(b)fluoranthene	benzo(a)anthracene	Beall 2007	bobwhite quail		60 days	oral in diet	growth				0.65	---		NOAEL based on mean exposure over 60-day duration of the study.	**0.65**	**---**
	Benzo(ghi)perylene	benzo(a)anthracene	Beall 2007	bobwhite quail		60 days	oral in diet	growth				0.65	---		NOAEL based on mean exposure over 60-day duration of the study.	**0.65**	**---**
	Benzo(k)fluoranthene	benzo(a)anthracene	Beall 2007	bobwhite quail		60 days	oral in diet	growth				0.65	---		NOAEL based on mean exposure over 60-day duration of the study.	**0.65**	**---**
	Chrysene	benzo(a)anthracene	Beall 2007	bobwhite quail		60 days	oral in diet	growth				0.65	---		NOAEL based on mean exposure over 60-day duration of the study.	**0.65**	**---**
	Dibenz(ah)anthracene	benzo(a)anthracene	Beall 2007	bobwhite quail		60 days	oral in diet	growth				0.65	---		NOAEL based on mean exposure over 60-day duration of the study.	**0.65**	**---**
	Fluoranthene	benzo(a)anthracene	Beall 2007	bobwhite quail		60 days	oral in diet	growth				0.65	---		NOAEL based on mean exposure over 60-day duration of the study.	**0.65**	**---**
	Fluorene	aromatic hydrocarbon mixture	Patton and Dieter 1980	mallard	1.23	7 months	oral in diet	growth	liver weight			32.5	325		* Mixture of ethylbenzene, 1,2,3,4-tetrahydronaphthalene, dimethylnaphthalene, 2,3,3-trimethylindolenine, acenaphthene, acenaphthylene, phenanthrene, 2-methylbenzothiazole, dibenzothiophene, and 2,6-dimethylquinoline	**32.5**	**325**
	Indeno[1,2,3-cd]pyrene	benzo(a)anthracene	Beall 2007	bobwhite quail		60 days	oral in diet	growth				0.65	---		NOAEL based on mean exposure over 60-day duration of the study.	**0.65**	**---**

Table 6-5. Avian Toxicity Reference Values

Chemical Class	Soil Constituent	Form/Surrogate Analyte	Primary Study	Test Species	Test Species Body Weight (kg)	Duration	Exposure Route	General Effect Endpoint	Specific Effect Endpoint	Uncertainty Factors Applied	Uncertainty Factor Type	NOAEL (mg/kg/d)	LOAEL (mg/kg/d)	Secondary Source	Notes	Selected Avian NOAEL TRV (mg/kg/d)	Selected Avian LOAEL TRV (mg/kg/d)
	2-Methylnaphthalene	aromatic hydrocarbon mixture	Patton and Dieter 1980	mallard	1.23	7 mo	oral in diet	growth	liver weight			32.5	325		* Mixture of ethylbenzene, 1,2,3,4-tetrahydronaphthalene, dimethylnaphthalene, 2,3,3-trimethylindolenine, acenaphthene, acenaphthylene, phenanthrene, 2-methylbenzothiazole, dibenzothiophene, and 2,6-dimethylquinoline	**32.5**	**325**
	Naphthalene	aromatic hydrocarbon mixture	Patton and Dieter 1980	mallard	1.23	7 months	oral in diet	growth	liver weight			32.5	325		* Mixture of ethylbenzene, 1,2,3,4-tetrahydronaphthalene, dimethylnaphthalene, 2,3,3-trimethylindolenine, acenaphthene, acenaphthylene, phenanthrene, 2-methylbenzothiazole, dibenzothiophene, and 2,6-dimethylquinoline	**32.5**	**325**
	Phenanthrene	aromatic hydrocarbon mixture	Patton and Dieter 1980	mallard	1.23	7 months	oral in diet	growth	liver weight			32.5	325		* Mixture of ethylbenzene, 1,2,3,4-tetrahydronaphthalene, dimethylnaphthalene, 2,3,3-trimethylindolenine, acenaphthene, acenaphthylene, phenanthrene, 2-methylbenzothiazole, dibenzothiophene, and 2,6-dimethylquinoline	**32.5**	**325**
	Pyrene	Benzo(a)anthracene	Beall 2007	bobwhite quail		60 days	oral in diet	growth				0.65	---		NOAEL based on mean exposure over 60-day duration of the study.	**0.65**	**---**
	Low Molecular Weight PAHs	aromatic hydrocarbon mixture	Patton and Dieter 1980	mallard	1.23	7 months	oral in diet	growth	liver weight			32.5	325		* Mixture of ethylbenzene, 1,2,3,4-tetrahydronaphthalene, dimethylnaphthalene, 2,3,3-trimethylindolenine, acenaphthene, acenaphthylene, phenanthrene, 2-methylbenzothiazole, dibenzothiophene, and 2,6-dimethylquinoline	**32.5**	**325**
	High Molecular Weight PAHs	benzo(a)anthracene	Beall 2007	bobwhite quail		60 days	oral in diet	growth				0.65	---		NOAEL based on mean exposure over 60-day duration of the study.	**0.65**	**---**
Petroleum	Gasoline Range Organics	No. 2 Fuel	Szaro et al. 1981	mallard	1	18 weeks	oral in diet	mortality and growth	reduced growth			500	5000			**500**	**5000**
	TPH - Diesel	No. 2 Fuel	Szaro et al. 1981	mallard	1	18 weeks	oral in diet	mortality and growth	reduced growth			500	5000			**500**	**5000**
	TPH - Kerosene	No. 2 Fuel	Szaro et al. 1981	mallard	1	18 weeks	oral in diet	mortality and growth	reduced growth			500	5000			**500**	**5000**
Semivolatile Organics	Normal paraffin hydrocarbons	aliphatic hydrocarbon mixture	Patton and Dieter 1980	mallard	1.23	7 months	oral in diet	growth				813	---		* Mixture of n-paraffins (tridecane, pentadecane, hexadecane, heptadecane, octadecane, and nonadecane), iso-paraffins (2,2,4,6,6-pentamethylheptane, 2,2,4,4,6,8,8-heptamethylnonane, and 2,6,10,14-tetramethylpentadecane), and 2-ring cyclo-paraffins (decahydronaphthalene)	**813**	**---**
	Phenol															**---**	**---**
	2-methylphenol (o-cresol)															**---**	**---**
	4-methylphenol (p-cresol)															**---**	**---**
	2,4-dinitrotoluene	NA	Johnson et al., 2005	bobwhite quail		60 days	oral gavage	hematoxicity and mortality	hematoxicity and mortality	0.01(for NOAEL) 0.25 (for LOAEL)	subchronic-chronic, inter-species differences	0.01	1.3	39 EJ 1138 01D	study and value selected based on an extensive review of available literature - documented in USACHPPM	**0.01**	**1.3**
	Bis[2-ethylhexyl] phthalate	NA	Peakall, 1974	ringed dove	0.155	4 weeks (during reproduction)	oral in diet	reproduction		NA		1.1		ES/ER/TM 86/R3		**1.1**	**---**
	Total PCBs	aroclor 1254	Dahlgren et al., 1972	ring-necked pheasant	1	17 weeks during egg laying	oral via gelatin capsule	reproduction	reduced egg hatchability	0.1	LOAEL-NOAEL	0.18	1.8	ES/ER/TM 86/R3		**0.18**	**1.8**
	Aroclor 1016	aroclor 1254	Dahlgren et al., 1972	ring-necked pheasant	1	17 weeks during egg laying	oral via gelatin capsule	reproduction	reduced egg hatchability	0.1	LOAEL-NOAEL	0.18	1.8	ES/ER/TM 86/R3		**0.18**	**1.8**
	Aroclor 1221	aroclor 1254	Dahlgren et al., 1972	ring-necked pheasant	1	17 weeks during egg laying	oral via gelatin capsule	reproduction	reduced egg hatchability	0.1	LOAEL-NOAEL	0.18	1.8	ES/ER/TM 86/R3		**0.18**	**1.8**
	Aroclor 1232	aroclor 1254	Dahlgren et al., 1972	ring-necked pheasant	1	17 weeks during egg laying	oral via gelatin capsule	reproduction	reduced egg hatchability	0.1	LOAEL-NOAEL	0.18	1.8	ES/ER/TM 86/R3		**0.18**	**1.8**
	Aroclor 1242	aroclor 1254	Dahlgren et al., 1972	ring-necked pheasant	1	17 weeks during egg laying	oral via gelatin capsule	reproduction	reduced egg hatchability	0.1	LOAEL-NOAEL	0.18	1.8	ES/ER/TM 86/R3		**0.18**	**1.8**

Table 6-5. Avian Toxicity Reference Values

Chemical Class	Soil Constituent	Form/Surrogate Analyte	Primary Study	Test Species	Test Species Body Weight (kg)	Duration	Exposure Route	General Effect Endpoint	Specific Effect Endpoint	Uncertainty Factors Applied	Uncertainty Factor Type	NOAEL (mg/kg/d)	LOAEL (mg/kg/d)	Secondary Source	Notes	Selected Avian NOAEL TRV (mg/kg/d)	Selected Avian LOAEL TRV (mg/kg/d)
	Aroclor 1248	aroclor 1254	Dahlgren et al., 1972	ring-necked pheasant	1	17 weeks during egg laying	oral via gelatin capsule	reproduction	reduced egg hatchability	0.1	LOAEL-NOAEL	0.18	1.8	ES/ER/TM 86/R3		**0.18**	**1.8**
	Aroclor 1254	aroclor 1254	Dahlgren et al., 1972	ring-necked pheasant	1	17 weeks during egg laying	oral via gelatin capsule	reproduction	reduced egg hatchability	0.1	LOAEL-NOAEL	0.18	1.8	ES/ER/TM 86/R3		**0.18**	**1.8**
	Aroclor 1260	aroclor 1254	Dahlgren et al., 1972	ring-necked pheasant	1	17 weeks during egg laying	oral via gelatin capsule	reproduction	reduced egg hatchability	0.1	LOAEL-NOAEL	0.18	1.8	ES/ER/TM 86/R3		**0.18**	**1.8**
	Aroclor 1262	aroclor 1254	Dahlgren et al., 1972	ring-necked pheasant	1	17 weeks during egg laying	oral via gelatin capsule	reproduction	reduced egg hatchability	0.1	LOAEL-NOAEL	0.18	1.8	ES/ER/TM 86/R3		**0.18**	**1.8**
Herbicide	Dichloroprop															**---**	**---**
Pesticide	Aldrin	NA	Hall et al., 1971	ring-necked pheasant		6 weeks	oral via gelatin capsule	growth		0.1 (for NOAEL) 0.25 (for LOAEL)	subchronic-chronic	0.007	0.035	39 EJ 1138 01J	study and value selected based on an extensive review of available literature - documented in USACHPPM	**0.007**	**0.035**
	beta-1,2,3,4,5,6-Hexachlorocyclohexane	gamma hexachlorobenzene (lindane)	Chakravarty and Lahiri, 1986; Chakravarty et al., 1986	mallard	1	8 weeks	oral intubation	reproduction	eggshell thickness, egg number, etc.	0.1	for interspecies uncertainty	0.571	0.857	87 MA02T6 05C	study and value selected based on an extensive review of available literature - documented in USACHPPM	**0.571**	**0.857**
	alpha-Chlordane	chlordane	Stickel et al., 1983	red-winged blackbird	0.064	84 days	oral in diet	mortality				2.14	10.7	ES/ER/TM 86/R3		**2.14**	**10.7**
	gamma-Chlordane	chlordane	Stickel et al., 1983	red-winged blackbird	0.064	84 days	oral in diet	mortality				2.14	10.7	ES/ER/TM 86/R3		**2.14**	**10.7**
	Dichlorodiphenyldichloroethylene	DDT	Cecil et al., 1978	chicken		30 days	oral in diet	growth	body weight			0.227	2.27	OSWER Directive 9285.7 57	value is highest bounded NOAEL lower than the lowest bounded LOAEL value for reproduction, growth or survival; LOAEL is from same study	**0.227**	**---**
	Dichlorodiphenyldichloroethylene	DDT	Heath et al., 1969	mallard		1 year	oral in diet	reproduction	reproductive success			0.563	1.892	OSWER Directive 9285.7 57	value is lowest reproductive LOAEL above the NOAEL used for the EcoSSL; NOAEL is from same study	**---**	**1.892**
	Dichlorodiphenyltrichloroethane	NA	Cecil et al., 1978	chicken		30 days	oral in diet	growth	body weight			0.227	2.27	OSWER Directive 9285.7 57	value is highest bounded NOAEL lower than the lowest bounded LOAEL value for reproduction, growth or survival; LOAEL is from same study	**0.227**	**---**
	Dichlorodiphenyltrichloroethane	NA	Heath et al., 1969	mallard		1 year	oral in diet	reproduction	reproductive success			0.563	1.892	OSWER Directive 9285.7 57	value is lowest reproductive LOAEL above the NOAEL used for the EcoSSL; NOAEL is from same study	**---**	**1.892**
	Dieldrin	NA	Nebeker et al., 1992	mallard		24 days	oral in diet	growth	body weight			0.0709	3.78	OSWER Directive 9285.7 56	value is highest bounded NOAEL lower than the lowest bounded LOAEL value for reproduction, growth or survival; LOAEL is from same study	**0.0709**	**---**
	Dieldrin	NA	Wiese et al., 1968	crowned guinea fowl		21 months	oral in diet	reproduction	number of progeny			0.0671	0.223	OSWER Directive 9285.7 56	value is lowest reproductive LOAEL above the NOAEL used for the EcoSSL; NOAEL is from same study	**---**	**0.223**
	Endosulfan I	endosulfan	Abiola, 1992	gray partridge	0.4	4 weeks (during reproduction)	oral in diet	reproduction				10	---	ES/ER/TM 86/R3		**10**	**---**
	Endosulfan II	endosulfan	Abiola, 1992	gray partridge	0.4	4 weeks (during reproduction)	oral in diet	reproduction				10	---	ES/ER/TM 86/R3		**10**	**---**
	Endosulfan sulfate	endosulfan	Abiola, 1992	gray partridge	0.4	4 weeks (during reproduction)	oral in diet	reproduction				10	---	ES/ER/TM 86/R3		**10**	**---**
	Endrin aldehyde	endrin	Spann et al., 1986	mallard	1.15	>200 days	oral in diet	reproduction				0.3	---	ES/ER/TM 86/R3		**0.3**	**---**
	Methoxychlor															**---**	**---**

Notes:

Uncertainty factors were used to adjust all measured effect concentrations to chronic NOAELS and chronic LOAELs as follows:

LOAEL to NOAEL = 0.1

Subchronic to chronic = 0.1

where:

chronic = >12 weeks or during critical lifestage

subchronic = 4 to 12 weeks

These uncertainty factors are consistent with methods used in development of the EcoSSLs (EPA, 2007a) and are more conservative than uncertainty factors. recommended in EPA 540-R-97-006.

*Study information and calculated NOAELs and LOAELs for these sources were taken directly from the cited EcoSSL report developed by the EPA. All other primary sources were obtained and reviewed, and TRVs were extracted or developed from the study.

EcoSSL = Ecological Soil Screening Level

EPA = United States Environmental Protection Agency

LOAEL = lowest observable adverse effect level

mg/kg/d = milligrams per kilogram per day

Table 6-5. Avian Toxicity Reference Values

Chemical Class	Soil Constituent	Form/Surrogate Analyte	Primary Study	Test Species	Test Species Body Weight (kg)	Duration	Exposure Route	General Effect Endpoint	Specific Effect Endpoint	Uncertainty Factors Applied	Uncertainty Factor Type	NOAEL (mg/kg/d)	LOAEL (mg/kg/d)	Secondary Source	Notes	Selected Avian NOAEL TRV (mg/kg/d)	Selected Avian LOAEL TRV (mg/kg/d)

NA = not applicable
NOAEL = no observable adverse effect level
PAH = polynuclear aromatic hydrocarbon
PCB = polychlorinated biphenyl
TPH = total petroleum hydrocarbon
TRV = toxicity reference value
USACHPPM = United States Army Center for Health Promotion and Preventive Medicine
Bold values were selected as the avian TRVs.

Table 6-6. Mammalian Toxicity Reference Values

Chemical Class	Soil Constituent	Form/Surrogate Analyte	Primary Study	Test Species	Test Species Body Weight (kg)	Duration	Exposure Route	General Effect Endpoint	Specific Effect Endpoint	Uncertainty Factors Applied	Uncertainty Factor type	NOAEL (mg/kg/d)	LOAEL (mg/kg/d)	Secondary Source	Notes	Selected Mammalian NOAEL TRV (mg/kg/d)	Selected Mammalian LOAEL TRV (mg/kg/d)
Metals	Aluminum	aluminum chloride	Ondreicka et al., 1966	mouse	0.03	3 generations	oral in water	reproduction	offspring growth	0.1	LOAEL-NOAEL	1.93	19.3	ES/ER/TM-86/R3	Note that soil pH must be <5.5 (EPA, 2003) for Al to be bioavailable.	**1.93**	**19.3**
	Antimony	antimony trichloride	*Rossi et al., 1987	rat	0.33	31 days	oral in water	reproduction	progeny body weight			0.059	0.59	OSWER Directive 9285.7-61	value is highest bounded NOAEL lower than the lowest bounded LOAEL value for reproduction, growth or survival; LOAEL is from same study	**0.059**	**0.59**
	Arsenic	sodium arsenite	*Neiger and Osweiler, 1989	dog	10.1	8 weeks	oral in diet	growth	reduced body weight			1.04	1.66	OSWER Directive 9285.7-62	value is highest bounded NOAEL lower than the lowest bounded LOAEL value for reproduction, growth or survival; LOAEL is from same study	**1.04**	**1.66**
	Barium	multiple forms	*multiple studies	multiple species								51.8		OSWER Directive 9285.7-63	geometric mean of NOAELs for reproduction and growth	**---**	**---**
	Barium	barium chloride	NTP, 1994	rat	0.35	105 weeks	oral in water	nephrotoxicity	increased kidney weight			45	75		study selected because NOAEL is similar to EcoSSL, study is of long duration, and a LOAEL was identified.	**45**	**75**
	Beryllium	beryllium sulfate	*Schroeder and Mitchener, 1975	rat	0.486	lifetime	oral in water	longevity				0.532		OSWER Directive 9285.7-64	Same study as ES/E/TM-86/R3, but used different body weight in calculation of NOAEL	**0.532**	**---**
	Bismuth															**---**	**---**
	Boron	boric acid or Borax	Weir and Fischer, 1972	rat	0.35	three generations	oral in diet	reproduction	sterility			28	93.6	ES/ER/TM-86/R3		**28**	**93.6**
	Cadmium	cadmium acetate	*Yuhas et al., 1979	rat	0.43	2 weeks	oral in water	growth	body weight			0.77	7.7	OSWER Directive 9285.7-65	value is highest bounded NOAEL lower than the lowest bounded LOAEL value for reproduction, growth or survival; LOAEL is from same study	**---**	**---**
	Cadmium	cadmium chloride	Sutou et al., 1980a and 1980b	rat	0.303	6 weeks during reproduction	oral gavage	reproduction	reduced fetal survival			1	10	ES/ER/TM-86/R3	The ORNL TRV for cadmium was selected as it represents reproductive effects, is a longer study, and is comparable to the TRV used for EcoSSLs	**1**	**10**
	Chromium (6+)	multiple forms	*multiple studies	multiple species				reproduction and growth				9.24		OSWER Directive 9285.7-66	geometric mean of NOAELs for reproduction and growth	**9.24**	**---**
	Chromium (6+)	sodium dichromate	Chowdhury and Mitra, 1995	rat	0.3084	90 days	oral gavage	reproduction	testes weight			20	40	OSWER Directive 9285.7-66	lowest bounded reproductive LOAEL above the geometric mean NOAEL from EcoSSL	**---**	**40**
	Chromium (3+)	multiple forms	*multiple studies	multiple species				reproduction and growth				2.4		OSWER Directive 9285.7-66	geometric mean of NOAELs for reproduction and growth	**2.4**	**---**
	Chromium (3+)	chromium sulfate	*Zahid et al., 1990	mouse	0.0249	35 days	oral in diet	reproduction	sperm cell counts	0.1	LOAEL-NOAEL	0.962	9.62	OSWER Directive 9285.7-66	lowest reproductive LOAEL above the geometric mean NOAEL from EcoSSL	**---**	**9.62**
	Cobalt	multiple forms	*multiple studies	multiple species				reproduction and growth				7.33		OSWER Directive 9285.7-67	geometric mean of NOAELs for reproduction and growth	**7.33**	**---**
	Cobalt	cobalt chloride	*Domingo et al., 1985	rat	0.3	28 days	gavage	reproduction	progeny body weight			5.45	10.9	OSWER Directive 9285.7-67	lowest bounded reproductive LOAEL above the geometric mean NOAEL from EcoSSL	**---**	**10.9**
	Copper	copper sulfate pentahydrate	*Allcroft et al., 1961	pig	100	4 weeks	oral in diet	growth	body weight			5.6	9.34	OSWER Directive 9285.7-68	value is highest bounded NOAEL lower than the lowest bounded LOAEL value for reproduction, growth or survival; LOAEL is from same study	**5.6**	**9.34**
	Lead	lead acetate	*Kimmel et al., 1980	rat	0.3	7 weeks during gestation	oral in water	growth	body weight			4.7	8.9	OSWER Directive 9285.7-68	value is highest bounded NOAEL lower than the lowest bounded LOAEL value for reproduction, growth or survival; LOAEL is from same study	**4.7**	**8.9**
	Lithium	lithium carbonate	Marathe and Thomas, 1986	rat	0.35	days 6-15 of gestation	oral in diet	reproduction	reduced number of offspring			9.4	18.8	ES/ER/TM-86/R3		**9.4**	**18.8**
	Manganese	multiple forms	*multiple studies	multiple species				reproduction and growth				51.5		OSWER Directive 9285.7-71	geometric mean of NOAELs for reproduction and growth	**51.5**	**---**
	Manganese	manganese oxide	*Rehnberg et al., 1980	rat	0.0566	20 days	gavage	reproduction, growth	reproductive organ histology, body weight			21	71	OSWER Directive 9285.7-71	lowest bounded growth or reproductive LOAEL above the geometric mean NOAEL from EcoSSL	**---**	**71**
	Mercury (methyl)	methylmercury chloride	Verschuuren et al., 1976a	rat	0.35	three generations	oral in diet	reproduction	pup viability			0.032	0.16	ES/ER/TM-86/R3		**0.032**	**0.16**
	mercury (inorganic)	mercuric chloride	Atkinson, 2001	rat		multiple generations	gavage	reproduction	reproduction and fertility - sex ratio, live birth index, fertility index			---	0.37		study selected based on detailed review of available values for an EPA Region IV lead chlor-alkali Superfund Site	**---**	**0.37**
	Molybdenum	molybdate (MoO4)	Schroeder and Mitchener, 1971	mouse	0.03	three generations	oral in water	reproduction	reproductive success, number of runts	0.1	LOAEL-NOAEL	0.26	2.6	ES/ER/TM-86/R3		**0.26**	**2.6**
	Nickel	nickelous chloride	*Pandey and Srivastava, 2000	mouse	0.025	35 days	oral (other)	reproduction	sperm cell counts			1.7	3.4	OSWER Directive 9285.7-76	value is highest bounded NOAEL lower than the lowest bounded LOAEL value for reproduction, growth or survival; LOAEL is from same study	**1.7**	**3.4**
	Selenium	sodium selenite	*Mahan and Moxon, 1984	pig	17.8	37 days	oral in diet	growth	body weight			0.143	0.215	OSWER Directive 9285.7-72	value is highest bounded NOAEL lower than the lowest bounded LOAEL value for reproduction, growth or survival; LOAEL is from same study	**0.143**	**0.215**
	Silver	silver acetate	*Van Vleet, 1976	pig	8.86	40 days	oral in diet	growth	body weight	0.1	LOAEL-NOAEL	6.02	60.2	OSWER Directive 9285.7-77	lowest growth, reproduction, or survival LOAEL, with NOAEL estimated by application of uncertainty factor	**6.02**	**60.2**
	Strontium	strontium chloride	Skoryna, 1981	rat	0.35	3 yrs	oral in water	growth	body weight			263		ES/ER/TM-86/R3		**263**	**---**
	Thallium	thallium sulfate	Formigli et al., 1986	rat	0.365	60 days	drinking water	reproduction	sperm motility	0.05 and 0.25	subchronic LOAEL-chronic NOAEL; subchronic LOAEL-chronic LOAEL	0.015	0.075	ES/ER/TM-86/R3; 37 EJ1138 01O	study and value selected based on an extensive review of available literature - documented in USACHPPM	**0.015**	**0.075**
	Tin	bis(tibutyltin) oxide (TBTO)	Davis et al., 1987	mouse	0.03	days 6-15 of gestation	oral intubation	reproduction	reduced fetal weight and fetal survival			23.4	35	ES/ER/TM-86/R3		**23.4**	**35**
	Uranium	uranyl acetate	Domingo et al., 1989a	mouse	0.028	gestational days 6-15	drinking water	reproduction	pup survival and body weight	0.1	LOAEL-NOAEL	0.28	2.8		Statistically significant 25.5% fetal growth reduction at a dose of 2.8 mg U/kg/d.	0.28	2.8
	Vanadium	sodium orthovanadate	*Sanchez et al., 1991	mouse	0.047	12 days during gestation	gavage	reproduction	ODVP			4.16	8.31	OSWER Directive 9285.7-75	value is highest bounded NOAEL lower than the lowest bounded LOAEL value for reproduction, growth or survival; LOAEL is from same study	**4.16**	**8.31**

Table 6-6. Mammalian Toxicity Reference Values

Chemical Class	Soil Constituent	Form/Surrogate Analyte	Primary Study	Test Species	Test Species Body Weight (kg)	Duration	Exposure Route	General Effect Endpoint	Specific Effect Endpoint	Uncertainty Factors Applied	Uncertainty Factor type	NOAEL (mg/kg/d)	LOAEL (mg/kg/d)	Secondary Source	Notes	Selected Mammalian NOAEL TRV (mg/kg/d)	Selected Mammalian LOAEL TRV (mg/kg/d)
	Zinc	various forms	*multiple studies	multiple species				reproduction and growth				75.4		OSWER Directive 9285.7-73	geometric mean of NOAELs for reproduction and growth	**75.4**	---
	Zinc	zinc sulfate	*Miller et al., 1989	cattle	580	14 weeks	oral in diet	reproduction	progeny body weight			37.9	75.9	OSWER Directive 9285.7-73	lowest bounded growth or reproductive LOAEL above the geometric mean NOAEL from EcoSSL	---	**75.9**
General Inorganics	Ammonia/Ammonium															---	---
	Chloride															---	---
	Cyanide	potassium cyanide	Tewe and Maner, 1981	rat	0.273	gestation and lactation	oral in diet	reproduction	juvenile growth			68.7	---	ES/ER/TM-86/R3		**68.7**	---
	Fluoride	sodium fluoride	Aulerich et al., 1987	mink	1	382 days	oral in diet	reproduction	kit survival			31.37	52.75	ES/ER/TM-86/R3		**31.37**	**52.75**
	Iodine	potassium iodide	Aulerich et al., 1978	mink	1	breeding through lactation	oral in diet	reproduction	kit survival			1.37	13.7			**1.37**	**13.7**
	Nitrate/Nitrite	potassium nitrate	Sleight and Atallah, 1968	guinea pig	0.86	143-204 days	oral in water	reproduction	number of live births			507	1130	ES/ER/TM-86/R3		**507**	**1130**
	Phosphate															---	---
	Sulfate/Sulfite															---	---
	Total Organic Carbon															---	---
Volatile Organics	1,1-dichloroethane	1,2-dichloroethane (DCA)	Lane et al., 1982	mouse	0.035	2 generations	oral in water	reproduction				50	---	ES/ER/TM-86/R3		**50**	---
	1,1-dichloroethene	NA	Quast et al., 1983	rat	0.35	2 years	oral in water	mortality, body weight				30	---	ES/ER/TM-86/R3		**30**	---
	1,1,1-trichloroethane	NA	Lane et al., 1982	mouse	0.035	2 generations	oral in water	reproduction				1000	---	ES/ER/TM-86/R3		**1000**	---
	1,1,2-trichloroethane	1,1,1-trichloroethane	Lane et al., 1982	mouse	0.035	2 generations	oral in water	reproduction				1000	---	ES/ER/TM-86/R3		**1000**	---
	1,1,2,2-tetrachloroethane	1,1,1,2-tetrachloroethane	NTP, 1983	rat		103 wks	oral gavage	nephrotoxicity		0.1	LOAEL-NOAEL	8.93	89.3	IRIS	Verified on IRIS (http://www.epa.gov/ncea/iris/subst/0265.htm) Dec 11, 2009	**8.93**	**89.3**
	1,2-dichlorobenzene	NA	NTP, 1985	rat		2 yrs	oral gavage	survival and pathology				85.7	---	IRIS	Verified on IRIS (http://www.epa.gov/ncea/iris/subst/0408.htm) Dec 11, 2009	**85.7**	---
	1,2-dichloroethane (DCA)	NA	Lane et al., 1982	mouse	0.035	2 generations	oral in water	reproduction				50	---	ES/ER/TM-86/R3		**50**	---
	1,3-dichlorobenzene	1,2-dichlorobenzene	NTP, 1985	rat		2 yrs	oral gavage	survival and pathology				85.7	---	IRIS	Verified on IRIS (http://www.epa.gov/ncea/iris/subst/0408.htm) Dec 11, 2009	**85.7**	---
	2-butanone (Methyl Ethyl Ketone/MEK)	NA	Cox et al., 1975	rat	0.35	2 generations	oral in water	reproduction	reduced litter size and pup survival			1771	4571	ES/ER/TM-86/R3		**1771**	**4571**
	2-hexanone	NA	O'Donoghue et al., 1978	rat		13 months	oral in water	neurotoxicity				5	36.1	IRIS	Verified on IRIS (http://www.epa.gov/ncea/iris/subst/1019.htm) Dec 11, 2009; NOAEL is BMDL10 value; LOAEL is BMD10 value	**5**	**36.1**
	Benzene	NA	Wolf et al., 1956	rat	0.175-0.250	187 days	oral gavage	survival and pathology	hemotoxicity			0.7	7			**0.7**	**7**
	Butanol	NA	EPA, 1986	rat		13 weeks	oral gavage	hypoactivity/ataxia				125	500	IRIS	Verified on IRIS (http://www.epa.gov/ncea/iris/subst/0140.htm) Dec 11, 2009	**125**	**500**
	Carbon Tetrachloride	NA	Alumot et al., 1976a	rat	0.35	2 yrs	oral in diet	reproduction				16	---	ES/ER/TM-86/R3		**16**	---
	Chlorobenzene	NA	Monsanto Co., 1967	dog		13 weeks	oral in capsules	liver pathology				19.5	38.7	IRIS	Verified on IRIS (http://www.epa.gov/ncea/iris/subst/0399.htm) Dec 11, 2009	**19.5**	**38.7**
	Chloroform	NA	Palmer et al., 1979	rat	0.35	13 wk	oral intubation	liver, kidney, gonad condition	gonadal atrophy	0.1	subchronic-chronic	15	41	ES/ER/TM-86/R3		**15**	**41**
	Cis-1,2-dichloroethylene	1,2-dichloroethylene	Palmer et al., 1979	mouse	0.03	90 days	oral in water	body and organ weights				45.2	---	ES/ER/TM-86/R3		**45.2**	---
	Dichloromethane (Methylene Chloride)	NA	NCA, 1982	rat	0.35	2 yrs	oral in water	liver histology				5.85	50	ES/ER/TM-86/R3		**5.85**	**50**
	Ethyl Benzene	NA	Wolf et al., 1956	rat	0.175-0.250	182 days	oral gavage	survival and pathology	liver and kidney histopathology			136	408			**97.1**	**291**
	Methyl Isobutyl Ketone	2-butanone (Methyl Ethyl Ketone/MEK)	Cox et al., 1975	rat	0.35	2 generations	oral in water	reproduction	reduced litter size and pup survival			1771	4571	ES/ER/TM-86/R3		**1771**	**4571**
	n-butyl Benzene	isopropyl benzene	Wolf et al., 1956	rat	0.175-0.250	194 days	oral gavage	survival and pathology	increased kidney weight			110	330			**110**	**330**
	Tetrachloroethylene	1,1,2,2-tetrachloroethylene	Buben and O'Flaherty, 1985	mouse	0.03	6 weeks	oral gavage	hepatotoxicity		0.1	LOAEL-NOAEL	1.4	7	ES/ER/TM-86/R3		**1.4**	**7**
	Toluene	NA	Gospe et al,. 1994	rat	0.2	gestation days 6-19	oral gavage	reproduction	maternal weight loss			52	520			**52**	**520**
	Trans-1,2-dichloroethylene	1,2-dichloroethylene	Palmer et al., 1979	mouse	0.03	90 days	oral in water	body and organ weights				45.2	---	ES/ER/TM-86/R3		**45.2**	---
	Trichloroethylene (TCE)	NA	Buben and O'Flaherty, 1985	mouse	0.03	6 weeks	oral gavage	hepatotoxicity		0.01	LOAEL-NOAEL subchronic-chronic	0.7	7	ES/ER/TM-86/R3		**0.7**	**7**
	Xylene	xylene mixture	NTP, 1986	rat		103 wks	oral gavage	behavior growth mortality				179	350			**179**	**350**
Polycyclic Aromatic Hydrocarbons	Acenaphthene	NA	EPA, 1989a	mouse	0.03	90 days	oral gavage	hepatotoxicity	liver weight changes and cellular hypertrophy			175	350	IRIS	Verified on IRIS (http://www.epa.gov/ncea/iris/subst/0442.htm) Dec 9, 2009	**175**	**350**
	Acenaphthylene	acenaphthene	EPA, 1989a	mouse	0.03	90 days	oral gavage	hepatotoxicity	liver weight changes and cellular hypertrophy			175	350	IRIS	Verified on IRIS (http://www.epa.gov/ncea/iris/subst/0442.htm) Dec 9, 2009	**175**	**350**
	Anthracene	NA	EPA, 1989b	mouse	0.03	90 days	oral gavage	survival and pathology	reduced body weight			1000	---	IRIS	Verified on IRIS (http://www.epa.gov/ncea/iris/subst/0434.htm) Dec 9, 2009	**1000**	---
	Benzo(a)pyrene	NA	Mackenzie and Angevine, 1981	mouse	0.03	gestation days 7-16	oral intubation	reproduction	reduced pregnancy rate and fertility	0.1	LOAEL-NOAEL	1	10	ES/ER/TM-86/R3; 39 EJ 1138-01P	study and value selected based on an extensive review of available literature - documented in USACHPPM	**1**	**10**
	Benzo(a)anthracene	benzo(a)pyrene	Mackenzie and Angevine, 1981	mouse	0.03	gestation days 7-16	oral intubation	reproduction	reduced pregnancy rate and fertility	0.1	LOAEL-NOAEL	1	10	ES/ER/TM-86/R3; 39 EJ 1138-01P	study and value selected based on an extensive review of available literature - documented in USACHPPM	**1**	**10**
	Benzo(b)fluoranthene	benzo(a)pyrene	Mackenzie and Angevine, 1981	mouse	0.03	gestation days 7-16	oral intubation	reproduction	reduced pregnancy rate and fertility	0.1	LOAEL-NOAEL	1	10	ES/ER/TM-86/R3; 39 EJ 1138-01P	study and value selected based on an extensive review of available literature - documented in USACHPPM	**1**	**10**
	Benzo(ghi)perylene	benzo(a)pyrene	Mackenzie and Angevine, 1981	mouse	0.03	gestation days 7-16	oral intubation	reproduction	reduced pregnancy rate and fertility	0.1	LOAEL-NOAEL	1	10	ES/ER/TM-86/R3; 39 EJ 1138-01P	study and value selected based on an extensive review of available literature - documented in USACHPPM	**1**	**10**
	Benzo(k)fluoranthene	benzo(a)pyrene	Mackenzie and Angevine, 1981	mouse	0.03	gestation days 7-16	oral intubation	reproduction	reduced pregnancy rate and fertility	0.1	LOAEL-NOAEL	1	10	ES/ER/TM-86/R3; 39 EJ 1138-01P	study and value selected based on an extensive review of available literature - documented in USACHPPM	**1**	**10**
	Chrysene	benzo(a)pyrene	Mackenzie and Angevine, 1981	mouse	0.03	gestation days 7-16	oral intubation	reproduction	reduced pregnancy rate and fertility	0.1	LOAEL-NOAEL	1	10	ES/ER/TM-86/R3; 39 EJ 1138-01P	study and value selected based on an extensive review of available literature - documented in USACHPPM	**1**	**10**

Table 6-6. Mammalian Toxicity Reference Values

Chemical Class	Soil Constituent	Form/Surrogate Analyte	Primary Study	Test Species	Test Species Body Weight (kg)	Duration	Exposure Route	General Effect Endpoint	Specific Effect Endpoint	Uncertainty Factors Applied	Uncertainty Factor type	NOAEL (mg/kg/d)	LOAEL (mg/kg/d)	Secondary Source	Notes	Selected Mammalian NOAEL TRV (mg/kg/d)	Selected Mammalian LOAEL TRV (mg/kg/d)
	Dibenz(ah)anthracene	benzo(a)pyrene	Mackenzie and Angevine, 1981	mouse	0.03	gestation days 7-16	oral intubation	reproduction	reduced pregnancy rate and fertility	0.1	LOAEL-NOAEL	1	10	ES/ER/TM-86/R3; 39 EJ 1138-01P	study and value selected based on an extensive review of available literature - documented in USACHPPM	**1**	**10**
	Fluoranthene	NA	EPA, 1988b	mouse	0.03	13 weeks	oral gavage	nephropathy	increased liver wt and pathology			125	250	IRIS	Verified on IRIS (http://www.epa.gov/ncea/iris/subst/0444.htm) Dec 9, 2009	**125**	**250**
	Fluorene	NA	EPA, 1989c	mouse	0.03	13 weeks	oral gavage	hemotoxicity				125	250	IRIS	Verified on IRIS (http://www.epa.gov/ncea/iris/subst/0435.htm) Dec 9, 2009	**125**	**250**
	Indeno[1,2,3-cd]pyrene	benzo(a)pyrene	Mackenzie and Angevine, 1981	mouse	0.03	gestation days 7-16	oral intubation	reproduction	reduced pregnancy rate and fertility	0.1	LOAEL-NOAEL	1	10	ES/ER/TM-86/R3; 39 EJ 1138-01P	study and value selected based on an extensive review of available literature - documented in USACHPPM	**1**	**10**
	2-Methylnaphthalene	NA	Murata et al., 1997	mouse	0.0425	81 wks	oral in diet	survival and pathology	pulmonary pathology			50.3	113.8			**50.3**	**113.8**
	Naphthalene	NA	NTP, 1991	rat	0.24	days 6-15 of gestation	oral gavage	reproduction	maternal weight loss			50	150			**50**	**150**
	Phenanthrene	anthracene	EPA, 1989b	rat	0.03	90 days	oral gavage	survival and pathology	reduced body weight			1000	---	IRIS	Verified on IRIS (http://www.epa.gov/ncea/iris/subst/0434.htm) Dec 9, 2009	**1000**	**---**
	Pyrene	NA	EPA, 1989d	mouse	0.03	13 weeks	oral gavage	nephropathy				75	125	IRIS	Verified on IRIS (http://www.epa.gov/ncea/iris/subst/0445.htm) Dec 9, 2009	**75**	**125**
	Low Molecular Weight PAHs	1-naphthaleneacetic acid	*Verschuuren et al., 1976b	rat	0.247	6 weeks	oral in diet	growth	reduced body weight			65.6	328	OSWER Directive 9285.7-78	value is highest bounded NOAEL lower than the lowest bounded LOAEL value for reproduction, growth or survival; LOAEL is from same study	**65.6**	**328**
	High Molecular Weight PAHs	benzo(a)pyrene	*Culp et al., 1998	mouse	0.038	55 weeks	oral in diet	survival	reduced survival			0.615	3.07	OSWER Directive 9285.7-78	value is highest bounded NOAEL lower than the lowest bounded LOAEL value for reproduction, growth or survival; LOAEL is from same study	**0.615**	**3.07**
Petroleum	Gasoline Range Organics	JP-8 jet fuel	Cooper and Mattie, 1996	rat	0.35	gestation days 6-15	oral gavage	reproduction	adult and fetal weight; fetal mortality			1000	1500			**1000**	**1500**
	TPH - Diesel	JP-8 jet fuel	Cooper and Mattie, 1996	rat	0.35	gestation days 6-15	oral gavage	reproduction	adult and fetal weight; fetal mortality			1000	1500			**1000**	**1500**
	TPH - Kerosene	JP-8 jet fuel	Cooper and Mattie, 1996	rat	0.35	gestation days 6-15	oral gavage	reproduction	adult and fetal weight; fetal mortality			1000	1500			**1000**	**1500**
Semivolatile Organics	Normal paraffin hydrocarbons	JP-8 jet fuel	Cooper and Mattie, 1996	rat	0.35	gestation days 6-15	oral gavage	reproduction	adult and fetal weight; fetal mortality			1000	1500			**1000**	**1500**
	Phenol	NA	EPAOTS0573686	rat		gestation days 6-15	oral gavage	reproduction	reduced fetal weight	0.1	for interspecies uncertainty	12	36	87 MA02T6 05E	study and value selected based on an extensive review of available literature - documented in USACHPPM	**12**	**36**
	2-methylphenol (o-cresol)	NA	Hornshaw et al., 1986	mink	0.958	6 month	oral in diet	reproduction		NA		313	---	ES/ER/TM-86/R3	calculations have been updated to use body weight and ingestion data from primary source	**313**	**---**
	4-methylphenol (p-cresol)	2-methylphenol (o-cresol)	Hornshaw et al., 1986	mink	0.958	6 month	oral in diet	reproduction		NA		313	---	ES/ER/TM-86/R3	calculations have been updated to use body weight and ingestion data from primary source	**313**	**---**
	2,4-dinitrotoluene	NA	Ellis et al., 1979	dog		24 months	oral in capsules	hemotoxicity and mortality	hemotoxicity and mortality	NA		0.67	1.4	39 EJ 1138 01D	NOAEL and LOAEL are LED10 and ED10 values, respectively calcualted using EPA benchmark dose software. Study for benchmark calculation selected based on an extensive review of available literature - documented in USACHPPM	**0.67**	**1.4**
	Bis[2-ethylhexyl] phthalate	NA	Lamb et al., 1987	mouse	0.03	105 days (during reproduction)	oral in diet	reproduction		NA		18.3	183	ES/ER/TM-86/R3		**18.3**	**183**
	Total PCBs	aroclor 1254	McCoy et al., 1995	Oldfield mouse	0.014	12 months	oral in diet	reproduction	reduced number of litters, pup body weight, and pup survival	0.1	LOAEL-NOAEL	0.068	0.68	ES/ER/TM-86/R3		**0.068**	**0.68**
	Aroclor 1016	aroclor 1016	EPA/600/3~80/033	mink	1	18 months	oral in diet	reproduction	reduced kit growth			1.37	3.43	ES/ER/TM-86/R3		**1.37**	**3.43**
	Aroclor 1221	aroclor 1254	McCoy et al., 1995	Oldfield mouse	0.014	12 months	oral in diet	reproduction	reduced number of litters, pup body weight, and pup survival	0.1	LOAEL-NOAEL	0.068	0.68	ES/ER/TM-86/R3		**0.068**	**0.68**
	Aroclor 1232	aroclor 1254	McCoy et al., 1995	Oldfield mouse	0.014	12 months	oral in diet	reproduction	reduced number of litters, pup body weight, and pup survival	0.1	LOAEL-NOAEL	0.068	0.68	ES/ER/TM-86/R3		**0.068**	**0.68**
	Aroclor 1242	aroclor 1242	Bleavins et al., 1980	mink	1	7 months	oral in diet	reproduction	total reproductive failure	0.1	LOAEL-NOAEL	0.069	0.69	ES/ER/TM-86/R3		**0.069**	**0.69**
	Aroclor 1248	aroclor 1248	Barsotti et al., 1976	Rhesus monkey	5	14 months	oral in diet	reproduction	reduced pregnancy and live birth rates	0.1	LOAEL-NOAEL	0.0087	0.087	ES/ER/TM-86/R3	recalculated: study reports PCB consumption of 0.43 mg PCB/day	**0.0087**	**0.087**
	Aroclor 1254	aroclor 1254	McCoy et al., 1995	Oldfield mouse	0.014	12 months	oral in diet	reproduction	reduced number of litters, pup body weight, and pup survival	0.1	LOAEL-NOAEL	0.068	0.68	ES/ER/TM-86/R3		**0.068**	**0.68**
	Aroclor 1260	aroclor 1254	McCoy et al., 1995	Oldfield mouse	0.014	12 months	oral in diet	reproduction	reduced number of litters, pup body weight, and pup survival	0.1	LOAEL-NOAEL	0.068	0.68	ES/ER/TM-86/R3		**0.068**	**0.68**
	Aroclor 1262	aroclor 1254	McCoy et al., 1995	Oldfield mouse	0.014	12 months	oral in diet	reproduction	reduced number of litters, pup body weight, and pup survival	0.1	LOAEL-NOAEL	0.068	0.68	ES/ER/TM-86/R3		**0.068**	**0.68**
Herbicide	Dichloroprop															**---**	**---**
Pesticide	Aldrin	NA	Treon and Cleveland, 1955	rat	0.35	3 generations	oral in diet	reproduction	number of litters and offspring mortality	NA	---	0.2	1	ES/ER/TM-86/R3		**0.2**	**1**
	beta-1,2,3,4,5,6-Hexachlorocyclohexane	NA	Van Velsen et al., 1986	rat	0.35	13 weeks	oral in diet	growth, blood chemistry, organ histology	gonadal atrophy in male and female rats	0.1	chronic-subchronic	0.4	2	ES/ER/TM-86/R3		**0.4**	**2**
	alpha-Chlordane	chlordane	Narotsky and Kavlock, 1995	rat		6 to 19 gestational days	oral gavage	reproduction	post natal pup viability	0.1	LOAEL-NOAEL	2.1	21	87 MA02T6 05A	study and value selected based on an extensive review of available literature - documented in USACHPPM	**2.1**	**21**
	gamma-Chlordane	chlordane	Narotsky and Kavlock, 1995	rat		6 to 19 gestational days	oral gavage	reproduction	post natal pup viability	0.1	LOAEL-NOAEL	2.1	21	87 MA02T6 05A	study and value selected based on an extensive review of available literature - documented in USACHPPM	**2.1**	**21**
	Dichlorodiphenyldichloroethylene (DDE)	DDT	Wrenn et al., 1970	rat		15 days (during gestation)	oral gavage	reproduction				0.147	0.735	EPA, 2007a	value is highest bounded NOAEL lower than the lowest bounded LOAEL value for reproduction, growth or survival; LOAEL is from same study	**0.147**	**0.735**

Table 6-6. Mammalian Toxicity Reference Values

Chemical Class	Soil Constituent	Form/Surrogate Analyte	Primary Study	Test Species	Test Species Body Weight (kg)	Duration	Exposure Route	General Effect Endpoint	Specific Effect Endpoint	Uncertainty Factors Applied	Uncertainty Factor type	NOAEL (mg/kg/d)	LOAEL (mg/kg/d)	Secondary Source	Notes	Selected Mammalian NOAEL TRV (mg/kg/d)	Selected Mammalian LOAEL TRV (mg/kg/d)
	Dichlorodiphenyltrichloroethane (DDT)	NA	Wrenn et al., 1970	rat		15 days (during gestation)	oral gavage	reproduction				0.147	0.735	EPA, 2007a	value is highest bounded NOAEL lower than the lowest bounded LOAEL value for reproduction, growth or survival; LOAEL is from same study	**0.147**	**0.735**
	Dieldrin	NA	Harr et al., 1970	rat		750 days	oral in diet	reproduction		NA	---	0.015	0.03	EPA, 2007b	value is highest bounded NOAEL lower than the lowest bounded LOAEL value for reproduction, growth or survival; LOAEL is from same study	**0.015**	**0.03**
	Endosulfan I	endosulfan	Dikshith et al., 1984	rat	0.35	30 days (not during reproduction)	oral intubation	reproduction and blood chemistry		0.1	chronic-subchronic	0.15	---	ES/ER/TM-86/R3	no effects observed at highest dose	**0.15**	**---**
	Endosulfan II	endosulfan	Dikshith et al., 1984	rat	0.35	30 days (not during reproduction)	oral intubation	reproduction and blood chemistry		0.1	chronic-subchronic	0.15	---	ES/ER/TM-86/R3	no effects observed at highest dose	**0.15**	**---**
	Endosulfan sulfate	endosulfan	Dikshith et al., 1984	rat	0.35	30 days (not during reproduction)	oral intubation	reproduction and blood chemistry		0.1	chronic-subchronic	0.15	---	ES/ER/TM-86/R3	no effects observed at highest dose	**0.15**	**---**
	Endrin aldehyde	endrin	Good and Ware, 1969	mouse	0.03	120 days (during reproduction)	oral in diet	reproduction	reduced parental survival, litter size, and no. yng/d	0.1	LOAEL-NOAEL	0.092	0.92	ES/ER/TM-86/R3		**0.092**	**0.92**
	Methoxychlor	NA	Gray et al., 1988	rat	0.35	11 months (during reproduction)	oral in diet	reproduction	fertility and litter size reduced	NA	---	4	8	ES/ER/TM-86/R3		**4**	**8**

Notes:
Uncertainty factors were used to adjust all measured effect concentrations to chronic NOAELS and chronic LOAELs as follows:
LOAEL to NOAEL = 0.1
Subchronic to chronic = 0.1
where:
chronic = >12 weeks or during critical lifestage
subchronic = 4 to 12 weeks
These uncertainty factors are consistent with methods used in development of the EcoSSLs (EPA, 2007a) and are more conservative than uncertainty factors recommended in EPA 540-R-97-006.
*Study information and calculated NOAELs and LOAELs for these sources were taken directly from the cited EcoSSL report developed by the EPA. All other primary sources were obtained and reviewed, and TRVs were extracted or developed from the study.
Terms:
BMD = benchmark dose
BMDL = benchmark dose limit
EcoSSl = ecological soil screening level
ED = effective dose
EPA = United States Environmental Protection Agency
LED = lethal dose
LOAEL = lowest observable adverse effect level
NA = not applicable
NOAEL = no observable adverse effect level
mg/kg/d = milligrams per kilogram per day
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyl
TPH = total petroleum hydrocarbon
TRV = toxicity reference value
USACHPPM = United States Army Center for Health Promotion and Preventive Medicine
Bold values were selected as the mammalian TRVs.

Table 6-7. Terrestrial Plant Effect Data

Chemical		Test Organism				Toxicity Value					Ecological Soil Screening Level (EcoSSL) Details				Reference/Source			
Name	Form	Name	pH	% Organic Matter	Exposure (days)	Parameter	Type	Comment	Soil Concen. (mg/kg dw)	Parameter % Decrease	Bio-availability Score	Total Evaluation Score	Eligible for Eco-SSL Derivation?	Used for Eco-SSL?	Primary	IP Number	Study ID	Secondary
Aluminum	Al2(SO4)3	White Clover	5			Seedling Establish	LOEC		50						Mackay et al., 1990			ES/ER/TM 85/R3
Aluminum																		OSWER Directive 9285.7 60
Antimony						Phytotoxic	LOEC		5						Kabata-Pendias and Pendias, 1984			ES/ER/TM 85/R3
Arsenic		Blueberry	4.6	0.17-98.0		Growth	MATC		55		0	13	Y	N	Anastasia and Kender, 1973	11144	a	OSWER Directive 9285.7 62
Arsenic		Ryegrass	4.9	5.3		Growth	MATC		22		0	11	Y	N	Jiang and Singh, 1994	4441	b	OSWER Directive 9285.7 62
Arsenic		Ryegrass	4.9	5.3		Growth	MATC		22		0	11	N	N	Jiang and Singh, 1994	4441	d	OSWER Directive 9285.7 62
Arsenic		Barley	4.9	5.3		Growth	MATC		22		0	11	Y	N	Jiang and Singh, 1994	4441	f	OSWER Directive 9285.7 62
Arsenic		Barley	4.9	5.3		Growth	MATC		22		0	11	N	N	Jiang and Singh, 1994	4441	h	OSWER Directive 9285.7 62
Arsenic	NaAsO2	Barley	5	6	365	Grain Yield	LOEC		50						Jiang and Singh, 1994			ES/ER/TM 85/R3
Arsenic	NaAsO2	Ryegrass	5	6	365	Grain Yield	LOEC		250						Jiang and Singh, 1994			ES/ER/TM 85/R3
Arsenic	Na HAsO4	Ryegrass	5	6	365	Grain Yield	LOEC		250						Jiang and Singh, 1994			ES/ER/TM 85/R3
Arsenic	Na HAsO4	Barley	5	6	365	Grain Yield	LOEC		250						Jiang and Singh, 1994			ES/ER/TM 85/R3
Arsenic		Radish	5.1	1.5		Population	MATC		6		1	13	N	N	Woolson and Isensee, 1981	56454	a	OSWER Directive 9285.7 62
Arsenic		Soybean	5.1	1.5		Population	MATC		6		1	13	N	N	Woolson and Isensee, 1981	56454	b	OSWER Directive 9285.7 62
Arsenic		Corn	5.5	1.2		Growth	MATC		40		1	12	Y	N	Jacobs et al., 1970	5577	b	OSWER Directive 9285.7 62
Arsenic		Snap Bean	5.5	1.2		Growth	MATC		22		1	12	Y	N	Jacobs et al., 1970	5577	c	OSWER Directive 9285.7 62
Arsenic		Pea	5.5	1.2		Growth	MATC		40		1	12	Y	N	Jacobs et al., 1970	5577	e	OSWER Directive 9285.7 62
Arsenic		Potato	5.5	1.2		Growth	MATC		97		1	11	Y	N	Jacobs et al., 1970	5577	a	OSWER Directive 9285.7 62
Arsenic		Ryegrass	5.6	0.7		Growth	MATC		22		2	13	Y	Y	Jiang and Singh, 1994	4441	a	OSWER Directive 9285.7 62
Arsenic		Barley	5.6	0.7		Growth	LOAEC		2		2	13	N	N	Jiang and Singh, 1994	4441	e	OSWER Directive 9285.7 62
Arsenic		Barley	5.6	0.7		Growth	LOAEC		2		2	13	N	N	Jiang and Singh, 1994	4441	g	OSWER Directive 9285.7 62
Arsenic		Ryegrass	5.6	0.7		Growth	MATC		22		2	13	N	N	Jiang and Singh, 1994	4441	c	OSWER Directive 9285.7 62
Arsenic	NaAsO2	Barley	6	1	365	Grain Yield	LOEC		2						Jiang and Singh, 1994			ES/ER/TM 85/R3
Arsenic	NaAsO2	Ryegrass	6	1	365	Grain Yield	LOEC		50						Jiang and Singh, 1994			ES/ER/TM 85/R3
Arsenic	NaHAsO4	Barley	6	1	365	Grain Yield	LOEC		50						Jiang and Singh, 1994			ES/ER/TM 85/R3

Table 6-7. Terrestrial Plant Effect Data

Chemical		Test Organism				Toxicity Value					Ecological Soil Screening Level (EcoSSL) Details				Reference/Source			
Name	Form	Name	pH	% Organic Matter	Exposure (days)	Parameter	Type	Comment	Soil Concen. (mg/kg dw)	Parameter % Decrease	Bio-availability Score	Total Evaluation Score	Eligible for Eco-SSL Derivation?	Used for Eco-SSL?	Primary	IP Number	Study ID	Secondary
Arsenic	Na HAsO4	Ryegrass	6	1	365	Grain Yield	LOEC		250						Jiang and Singh, 1994			ES/ER/TM 85/R3
Arsenic	As2O3	Cotton			42	Shoot Weight	LOEC		11.2						Deuel and Swoboda,1972			ES/ER/TM 85/R3
Arsenic	As2O3	Soybean			42	Shoot Weight	LOEC		11.2						Deuel and Swoboda,1972			ES/ER/TM 85/R3
Arsenic	As2O3	Soybean			42	Shoot Weight	LOEC		22.4						Deuel and Swoboda,1972			ES/ER/TM 85/R3
Arsenic	As2O3	Cotton			42	Shoot Weight	LOEC		89.6						Deuel and Swoboda,1972			ES/ER/TM 85/R3
Arsenic	As2O3	Spruce			335	Height	LOEC		1000						Rosehart and Lee, 1973			ES/ER/TM 85/R3
Arsenic	NaH2AsO4	Corn	7		28	Fresh Weight	LOEC		100						Woolson et al., 1971			ES/ER/TM 85/R3
Arsenic	Al(H2AsO4)3	Corn	7		28	Fresh Weight	LOEC		100						Woolson et al., 1971			ES/ER/TM 85/R3
Arsenic	Ca(H2AsO4)2	Corn	7		28	Fresh Weight	LOEC		100						Woolson et al., 1971			ES/ER/TM 85/R3
Arsenic		Cotton	7.9	1.1		Growth	MATC		69		2	16	Y	Y	Schweizer, 1967	9659	a	OSWER Directive 9285.7 62
Arsenic		Rice	7.9	1.1		Growth	MATC		4		2	15	Y	Y	Schweizer, 1967	9659	b	OSWER Directive 9285.7 62
Barium		Bush bean	7.1 - 8.4	1.0 - 2.4		Growth	MATC		1,414		0	11	Y	N	Chaudhry et al., 1977			OSWER Directive 9285.7 63
Barium	Ba(NO3)2	Barley			14	Plant Weight	LOEC		500						Chaudhry et al., 1977			ES/ER/TM 85/R3
Barium	Ba(NO3)2	Bush Beans			14	Plant Weight	LOEC		1000						Chaudhry et al., 1977			ES/ER/TM 85/R3
Barium	Ba(NO3)2	Bush Beans			14	Plant Weight	LOEC		2000						Chaudhry et al., 1977			ES/ER/TM 85/R3
Beryllium	$BeSO_4$	Soybean	4.9	1.9	14	Shoot Weight	LCT	LCT	25		2	12	N	N	Sajwan et al., 1996		a	ES/ER/TM 85/R3 and OSWER Directive 9285.7 64
Beryllium	$BeSO_4$	Soybean	5.5	3.2	14	Shoot Weight	LCT	LCT	25		2	12	N	N	Sajwan et al., 1996		c	ES/ER/TM 85/R3 and OSWER Directive 9285.7 64
Beryllium						Phytotoxic	LOEC		10						Kabata-Pendias and Pendias, 1984			ES/ER/TM 85/R3
Beryllium		Soybean	6.5	1.9		Growth	LOAEC		25		2	12	N	N	Sajwan et al., 1996		b	OSWER Directive 9285.7 64
Beryllium		Soybean	6.0	3.2		Growth	LOAEC		25		1	12	N	N	Sajwan et al., 1996		d	OSWER Directive 9285.7 64
Beryllium		Kale	6.5	1.9		Growth	MATC		56.8		2	16	Y	N	Kaplan et al. 1990		a	OSWER Directive 9285.7 64

Table 6-7. Terrestrial Plant Effect Data

Chemical		Test Organism				Toxicity Value					Ecological Soil Screening Level (EcoSSL) Details				Reference/Source			
Name	Form	Name	pH	% Organic Matter	Exposure (days)	Parameter	Type	Comment	Soil Concen. (mg/kg dw)	Parameter % Decrease	Bio-availability Score	Total Evaluation Score	Eligible for Eco-SSL Derivation?	Used for Eco-SSL?	Primary	IP Number	Study ID	Secondary
Boron	H3BO3	Corn	5	56	49	Shoot Weight	LOEC		50						John et al., 1977			ES/ER/TM 85/R3
Boron	H3BO3	Corn	6	6	49	Shoot Weight	LOEC		0.5						John et al., 1977			ES/ER/TM 85/R3
Boron	H3BO3	Corn	6	3	49	Shoot Weight	LOEC		50						John et al., 1977			ES/ER/TM 85/R3
Cadmium		Oats	6.1	1.3		Growth	EC50		239		2	12	N	N	Gunther and Pestemer, 1990		a	OSWER Directive 9285.7 65
Cadmium		Turnip	6.1	1.3		Growth	EC50		69		2	12	N	N	Gunther and Pestemer, 1990		b	OSWER Directive 9285.7 65
Cadmium		Strawberry	5.1	0.5		Growth	cnbd		could not be determined (cnbd)		2	14	N	N	Cieslinski et al., 1996		a	OSWER Directive 9285.7 65
Cadmium		Black-eyed Susan	4.7-6.9	0.138-3.47		Growth	EC25		10		1	11	Y	N	Miles and Parker, 1980			OSWER Directive 9285.7 65
Cadmium		Wild bergamot	4.7-6.9	0.138-3.47		Growth	EC25		6		1	11	Y	N	Miles and Parker, 1980			OSWER Directive 9285.7 65
Cadmium		Little bluestem	4.7-6.9	0.138-3.47		Growth	EC25		12		1	11	Y	N	Miles and Parker, 1980			OSWER Directive 9285.7 65
Cadmium	CdCl2	Soybean	6		28	Shoot Weight	LOEC		1						Miller et al., 1976			ES/ER/TM 85/R3
Cadmium	CdCl2	Soybean	6		42	Plant Weight	LOEC		1.25						Strickland et al.,1979			ES/ER/TM 85/R3
Cadmium	CdCl2	Spruce			98	Root and Shoot Weights	LOEC		2						Burton et al., 1984			ES/ER/TM 85/R3
Cadmium	CdCl2	Soybean	6	0.5	42	Plant Weight	LOEC		2.5						Strickland et al., 1979			ES/ER/TM 85/R3
Cadmium	CdCl2	Radish	7	4	26	Root Weight	LOEC		2.5						Haghiri, 1973			ES/ER/TM 85/R3
Cadmium	CdCl2	Lettuce	7	4	37	Plant Weight	LOEC		2.5						Haghiri, 1973			ES/ER/TM 85/R3
Cadmium		Corn	6		28	Shoot Weight	LOEC		2.5						Miller et al., 1977			ES/ER/TM 85/R3
Cadmium		Spinach	8	1		Plant Weight	LOEC		4						Sadana and Singh, 1987b			ES/ER/TM 85/R3
Cadmium	CdSO4	Spinach	8			Leaf Weight	LOEC		4						Bingham et al., 1975			ES/ER/TM 85/R3
Cadmium	CdSO4	Soybean	8			bean weight	LOEC		5						Bingham et al., 1975			ES/ER/TM 85/R3
Cadmium	CdCl2	Sycamore			90	Leaf Weight	LOEC		5						Carlson and Bazzaz, 1977			ES/ER/TM 85/R3
Cadmium	CdCl2	Wheat	7	4	35	Shoot Weight	LOEC		5						Haghiri, 1973			ES/ER/TM 85/R3
Cadmium	Cd(NO3)2	Beech	5			annual ring width	LOEC		none provided						Hagemeyer et al., 1993			ES/ER/TM 85/R3
Cadmium	CdSO4	Curley Cress	8			Leaf Weight	LOEC		8						Bingham et al., 1975			ES/ER/TM 85/R3

Table 6-7. Terrestrial Plant Effect Data

Chemical		Test Organism				Toxicity Value					Ecological Soil Screening Level (EcoSSL) Details				Reference/Source			
Name	Form	Name	pH	% Organic Matter	Exposure (days)	Parameter	Type	Comment	Soil Concen. (mg/kg dw)	Parameter % Decrease	Bio-availability Score	Total Evaluation Score	Eligible for Eco-SSL Derivation?	Used for Eco-SSL?	Primary	IP Number	Study ID	Secondary
Cadmium	CdCl2	Black-eyed Susan	5	2	42	germination; Root and Shoot Weights	LOEC		10						Miles and Parker, 1979a			ES/ER/TM 85/R3
Cadmium	CdCl2	Blazing Star	5	2	42	Root and Shoot Weights	LOEC		10						Miles and Parker, 1979a			ES/ER/TM 85/R3
Cadmium	CdCl2	Thimblewee d	5	2	42	Shoot Weight	LOEC		10						Miles and Parker, 1979a			ES/ER/TM 85/R3
Cadmium	CdCl2	Bergamot	5	2	42	Root Weight	LOEC		10						Miles and Parker, 1979a			ES/ER/TM 85/R3
Cadmium	CdCl2	Soybean	5		28	Shoot Weight	LOEC		10						Miller et al., 1976			ES/ER/TM 85/R3
Cadmium	CdCl2	Soybean	6		28	Shoot Weight	LOEC		10						Miller et al., 1976			ES/ER/TM 85/R3
Cadmium	CdCl2	Soybean	7		28	Shoot Weight	LOEC		10						Miller et al., 1976			ES/ER/TM 85/R3
Cadmium	CdCl2	Soybean	6		28	Shoot Weight	LOEC		10						Miller et al., 1976			ES/ER/TM 85/R3
Cadmium	CdCl2	Radish	5		42	Root and Shoot Weights	LOEC		10						Khan and Frankland, 1983			ES/ER/TM 85/R3
Cadmium	CdCl2	Oats	5		42	Root Weight	LOEC		10						Khan and Frankland, 1984			ES/ER/TM 85/R3
Cadmium	loamy	Wheat	8	0.9		Grain Yield	LOEC		10						Sadana and Singh, 1987a			ES/ER/TM 85/R3
Cadmium	CdCl2	Bluestem	8	2.5	84	Root and Shoot Weights	LOEC		10						Miles and Parker, 1979a			ES/ER/TM 85/R3
Cadmium	CdCl2	Soybean	7	4	35	Shoot Weight	LOEC		10						Haghiri, 1973			ES/ER/TM 85/R3
Cadmium	CdCl2	Soybean				Seeds/Plant	LOEC		10						Aery and Sakar, 1991			ES/ER/TM 85/R3
Cadmium	CdCl2	Soybeans	6	1	42	Plant Weight	LOEC		10						Strickland et al., 1979			ES/ER/TM 85/R3
Cadmium	CdSO4	Lettuce	8			head weight	LOEC		13						Bingham et al., 1975			ES/ER/TM 85/R3
Cadmium	C4H6CdO4	Wheat	6	1.7	28	Shoot Weight	LOEC		14.1						Reber, 1989			ES/ER/TM 85/R3
Cadmium	CdCl2	Tomato	5	3.7	14	Fresh Shoot Weight	LOEC		16						Adema and Henzen, 1989			ES/ER/TM 85/R3
Cadmium	CdSO4	Corn	8			Grain Yield	LOEC		18						Bingham et al., 1975			ES/ER/TM 85/R3
Cadmium	CdSO4	Carrot	8			tuber weight	LOEC		20						Bingham et al., 1975			ES/ER/TM 85/R3
Cadmium	CdCl2	Red Oak	6	1.5	112	Plant Weight	LOEC		20						Dixon, 1988			ES/ER/TM 85/R3
Cadmium	CdCl2	Wheat	8	1		Grain and straw yields	LOEC		20						Singh et al., 1991			ES/ER/TM 85/R3
Cadmium	CdCl2	Soybeans	6	2	42	Plant Weight	LOEC		20						Strickland et al., 1979			ES/ER/TM 85/R3
Cadmium	CdCl2	Corn	7	2.1	7	Root length	LOEC		25						Hassett et al., 1976			ES/ER/TM 85/R3

Table 6-7. Terrestrial Plant Effect Data

Chemical		Test Organism				Toxicity Value					Ecological Soil Screening Level (EcoSSL) Details				Reference/Source			
Name	Form	Name	pH	% Organic Matter	Exposure (days)	Parameter	Type	Comment	Soil Concen. (mg/kg dw)	Parameter % Decrease	Bio-availability Score	Total Evaluation Score	Eligible for Eco-SSL Derivation?	Used for Eco-SSL?	Primary	IP Number	Study ID	Secondary
Cadmium	CdCl2	Corn	5	2.2	35	Plant Weight	LOEC		28						Traynor and Knezek, 1973			ES/ER/TM 85/R3
Cadmium	CdSO4	turnip	8			Tuber weight	LOEC		28						Bingham et al., 1975			ES/ER/TM 85/R3
Cadmium	CdCl2	Ky bluegrass	5	2	42	Root and Shoot Weights	LOEC		30						Miles and Parker, 1979a			ES/ER/TM 85/R3
Cadmium	CdCl2	Bluestem	5	2	42	Root and Shoot Weights	LOEC		30						Miles and Parker, 1979a			ES/ER/TM 85/R3
Cadmium	CdCl2	Poison-ivy	5	2	42	Root and Shoot Weights	LOEC		30						Miles and Parker, 1979a			ES/ER/TM 85/R3
Cadmium	CdO	Wheat	6		161	Grain Yield	LOEC		30						Muramoto et al., 1990			ES/ER/TM 85/R3
Cadmium	CdCl2	Lettuce	8	1.4	14	Fresh Shoot Weight	LOEC		33						Adema and Henzen, 1989			ES/ER/TM 85/R3
Cadmium	CdCl2	Spinach	5	11.8		Root and Leaf Weights	LOEC		40						John, 1973			ES/ER/TM 85/R3
Cadmium	CdCl2	Peas	5	11.8		Seed, pod, vine weights	LOEC		40						John, 1973			ES/ER/TM 85/R3
Cadmium	CdCl2	Oats	5	11.8		Grain Yield	LOEC		40						John, 1973			ES/ER/TM 85/R3
Cadmium	CdCl2	Radish	5	11.8		tuber and Top Weights	LOEC		40						John, 1973			ES/ER/TM 85/R3
Cadmium	CdSO4	Field bean	8			Bean weight	LOEC		40						Bingham et al., 1975			ES/ER/TM 85/R3
Cadmium	CdCl2	Wheat	5		42	Root Weight	LOEC		50						Khan and Frankland, 1984			ES/ER/TM 85/R3
Cadmium	CdSO4	Wheat	8			Grain Yield	LOEC		50						Bingham et al., 1975			ES/ER/TM 85/R3
Cadmium	CdCl2+CdO	Radish	5		42	Root Weight	LOEC		50						Khan and Frankland, 1984			ES/ER/TM 85/R3
Cadmium	CdSO4	Radish	8			Tuber weight	LOEC		96						Bingham et al., 1975			ES/ER/TM 85/R3
Cadmium	CdCl2	Oats	5	3.7	14	Fresh Shoot Weight	LOEC		97						Adema and Henzen, 1989			ES/ER/TM 85/R3
Cadmium	CdCl2	Rye	6			Shoot Weight	LOEC		100						Carlson and Rolfe,1979			ES/ER/TM 85/R3
Cadmium	CdCl2	Radish	6	12.9	21	Top and Root Weights	LOEC		100						John et al., 1972			ES/ER/TM 85/R3
Cadmium	CdO	Rice	6			Root and Shoot Weights	LOEC		100						Muramoto et al., 1990			ES/ER/TM 85/R3
Cadmium	CdO	Wheat	5		42	Root Weight	LOEC		100						Khan and Frankland, 1984			ES/ER/TM 85/R3

Table 6-7. Terrestrial Plant Effect Data

Chemical		Test Organism				Toxicity Value					Ecological Soil Screening Level (EcoSSL) Details				Reference/Source			
Name	Form	Name	pH	% Organic Matter	Exposure (days)	Parameter	Type	Comment	Soil Concen. (mg/kg dw)	Parameter % Decrease	Bio-availability Score	Total Evaluation Score	Eligible for Eco-SSL Derivation?	Used for Eco-SSL?	Primary	IP Number	Study ID	Secondary
Cadmium	CdO	Radish	5		42	Root and Shoot Weights	LOEC		100						Khan and Frankland, 1983			ES/ER/TM 85/R3
Cadmium	CdCl2	Soybean	7		28	Shoot Weight	LOEC		100						Miller et al., 1976			ES/ER/TM 85/R3
Cadmium	C4H6CdO4	Wheat	7	2.2	28	Shoot Weight	LOEC		113						Reber, 1989			ES/ER/TM 85/R3
Cadmium	CdCl2	Lettuce	5	3.7	14	Fresh Shoot Weight	LOEC		136						Adema and Henzen, 1989			ES/ER/TM 85/R3
Cadmium	CdCl2	Oats	8	1.4	14	Leaf Weight	LOEC		159						Adema and Henzen, 1989			ES/ER/TM 85/R3
Cadmium	CdSO4	Tomato	8			Fruit weight	LOEC		160						Bingham et al., 1975			ES/ER/TM 85/R3
Cadmium	CdSO4	Zucchini	8			Fruit weight	LOEC		160						Bingham et al., 1975			ES/ER/TM 85/R3
Cadmium	CdSO4	Cabbage	8			Head weight	LOEC		170						Bingham et al., 1975			ES/ER/TM 85/R3
Cadmium	CdCl2	Tomato	8	1.4	14	Fresh Shoot Weight	LOEC		171						Adema and Henzen, 1989			ES/ER/TM 85/R3
Cadmium	CdCl2	Lettuce	5	11.8		Root and Leaf Weights	LOEC		200						John, 1973			ES/ER/TM 85/R3
Cadmium	CdCl2	Broccoli	5	11.8		Leaf Weight	LOEC		200						John, 1973			ES/ER/TM 85/R3
Cadmium	CdCl2	Cauliflower	5	11.8		Root and Leaf Weights	LOEC		200						John, 1973			ES/ER/TM 85/R3
Cadmium	CdCl2	Carrot	5	11.8		Root, tuber,Top Weight	LOEC		200						John, 1973			ES/ER/TM 85/R3
Cadmium		Cotton	7		35	Leaf and stem weights	LOEC		300						Rehab and Wallace, 1978a,c			ES/ER/TM 85/R3
Cadmium		Cotton	7		35	Leaf and stem weights	LOEC		300						Rehab and Wallace, 1978a,c			ES/ER/TM 85/R3
Cadmium		Ryegrass	6.0	0.1		Growth	MATC		22		2	14	Y	Y	Singh and Jeng, 1993			OSWER Directive 9285.7 65
Cadmium		Lettuce	5.1	3.7		Growth	MATC		57		2	16	Y	Y	Adema and Henzen, 1989		a	OSWER Directive 9285.7 65
Cadmium		Tomato	5.1	3.7		Growth	MATC		57		2	16	Y	Y	Adema and Henzen, 1989		b	OSWER Directive 9285.7 65
Cadmium		Oats	5.1	3.7		Growth	MATC		18		2	16	Y	Y	Adema and Henzen, 1989		c	OSWER Directive 9285.7 65
Cadmium		Corn	4.2	4.43		Growth	MATC		71		2	14	Y	Y	Lehoczky et al., 1996		b	OSWER Directive 9285.7 65
Cadmium		Garlic	4.2	4.43		Growth	MATC		22		2	14	Y	Y	Lehoczky et al., 1996		c	OSWER Directive 9285.7 65

Table 6-7. Terrestrial Plant Effect Data

Chemical		Test Organism				Toxicity Value					Ecological Soil Screening Level (EcoSSL) Details				Reference/Source			
Name	Form	Name	pH	% Organic Matter	Exposure (days)	Parameter	Type	Comment	Soil Concen. (mg/kg dw)	Parameter % Decrease	Bio-availability Score	Total Evaluation Score	Eligible for Eco-SSL Derivation?	Used for Eco-SSL?	Primary	IP Number	Study ID	Secondary
Cadmium		Barley	6.9	1.9		Growth	MATC		9		2	12	Y	Y	Monette,1978			OSWER Directive 9285.7 65
Cadmium		White Pine	4.8	1.9		Growth	MATC		39		2	12	Y	Y	Kelly et al., 1979		a	OSWER Directive 9285.7 65
Cadmium		Yellow Birch	4.8	1.9		Growth	MATC		39		2	12	Y	Y	Kelly et al., 1979		b	OSWER Directive 9285.7 65
Cadmium		Choke Cherry	4.8	1.9		Growth	MATC		39		2	12	Y	Y	Kelly et al., 1979		c	OSWER Directive 9285.7 65
Cadmium		Loblolly pine	4.8	1.9		Growth	MATC		39		2	12	Y	Y	Kelly et al., 1979		d	OSWER Directive 9285.7 65
Cadmium		Red Oak	6.0	1.5		Growth	MATC		14		2	16	Y	Y	Dixon, 1988		b	OSWER Directive 9285.7 65
Cadmium		Alfalfa	6.4	1.0		Growth	MATC		79		2	11	Y	Y	Taylor, 1974			OSWER Directive 9285.7 65
Cadmium		Lettuce	4.3	4.4		Growth	LOAEC		10		2	15	N	N	Lehoczky et al., 1998		b	OSWER Directive 9285.7 65
Cadmium		Red Oak	6.0	1.5		Growth	MATC		32		2	16	N	N	Dixon, 1988		a	OSWER Directive 9285.7 65
Cadmium		corn	5.5	2.58		Growth	LOAEC		5		2	12	N	N	Mahler et al., 1987			OSWER Directive 9285.7 65
Cadmium		spinach	4.2	4.43		Growth	LOAEC		10		2	14	N	N	Lehoczky et al., 1996		d	OSWER Directive 9285.7 65
Cadmium		Radish	6.9	1.0		Growth	LOAEC		100		2	11	N	N	Zaman and Zereen, 1998		a	OSWER Directive 9285.7 65
Cadmium		Radish	6.9	1.0		Growth	LOAEC		50		2	11	N	N	Zaman and Zereen, 1998		b	OSWER Directive 9285.7 65
Cadmium		Radish	6.9	1.0		Physiology	LOAEC		50		2	11	N	N	Zaman and Zereen, 1998		b	OSWER Directive 9285.7 65
Cadmium		Cotton	6.8	1.3		Growth	LOAEC		300		2	12	N	N	Rehab and Wallace, 1978a,c		b	OSWER Directive 9285.7 65
Cadmium		Cowpea	8	0.3		Growth	MATC		2		1	14	Y	N	Singh and Nayyar, 1994		b	OSWER Directive 9285.7 65
Cadmium		Egyptian clover	8	0.3		Growth	MATC		2		1	14	Y	N	Singh and Nayyar, 1994		c	OSWER Directive 9285.7 65
Cadmium		Indiana clover	8	0.3		Growth	MATC		2		1	14	Y	N	Singh and Nayyar, 1994		d	OSWER Directive 9285.7 65

Table 6-7. Terrestrial Plant Effect Data

Chemical		Test Organism				Toxicity Value					Ecological Soil Screening Level (EcoSSL) Details				Reference/Source			
Name	Form	Name	pH	% Organic Matter	Exposure (days)	Parameter	Type	Comment	Soil Concen. (mg/kg dw)	Parameter % Decrease	Bio-availability Score	Total Evaluation Score	Eligible for Eco-SSL Derivation?	Used for Eco-SSL?	Primary	IP Number	Study ID	Secondary
Cadmium		Maize	8	0.3		Growth	MATC		35		1	14	Y	N	Singh and Nayyar, 1994		e	OSWER Directive 9285.7 65
Cadmium		Oats	8	0.3		Growth	MATC		4		1	14	Y	N	Singh and Nayyar, 1994		f	OSWER Directive 9285.7 65
Cadmium		Pearl millet	8	0.3		Growth	MATC		2		1	14	Y	N	Singh and Nayyar, 1994		g	OSWER Directive 9285.7 65
Cadmium		Alfalfa	8	0.3		Growth	LOAEC		1		1	14	N	N	Singh and Nayyar, 1994		a	OSWER Directive 9285.7 65
Cadmium		Teosinte	8	0.3		Growth	LOAEC		1		1	14	N	N	Singh and Nayyar, 1994		h	OSWER Directive 9285.7 65
Cadmium		Lettuce	7.5	1.4		Growth	MATC		6		1	15	N	N	Adema and Henzen, 1989		d	OSWER Directive 9285.7 65
Cadmium		Tomato	7.5	1.4		Growth	LOAEC		3		1	15	N	N	Adema and Henzen, 1989		e	OSWER Directive 9285.7 65
Cadmium		Oats	7.5	1.4		Growth	MATC		18		1	15	N	N	Adema and Henzen, 1989		f	OSWER Directive 9285.7 65
Cadmium		garlic	6.8	5.7		Growth	MATC		71		1	13	Y	N	Lehoczky et al., 1996		a	OSWER Directive 9285.7 65
Cadmium		Wheat (var LW 711)	8.1	0.3		Growth	MATC		18		1	11	Y	N	Singh et al., 1989		a	OSWER Directive 9285.7 65
Cadmium		Wheat (var LW 711)	8.1	0.3		Growth	MATC		35		1	11	Y	N	Singh et al., 1989		b	OSWER Directive 9285.7 65
Cadmium		onion	8.3	0.5		Growth	LOAEC		50		1	11	N	N	Dang et al., 1990		C	OSWER Directive 9285.7 65
Cadmium		fenugreek	8.3	0.5		Growth	LOAEC		50		1	11	N	N	Dang et al., 1990		F	OSWER Directive 9285.7 65
Cadmium		corn	6-6.4	2.58-4.64		Growth	LOAEC		5		1	11	N	N	Mahler et al., 1987			OSWER Directive 9285.7 65
Cadmium		Alfalfa	6.9	4.8		Growth	MATC		177		1	14	N	N	Taylor and Allinson, 1981		d	OSWER Directive 9285.7 65
Cadmium		Wheat	8.40	0.45		Growth	LOAEC		10		1	11	N	N	Sadana and Singh, 1987a		d	OSWER Directive 9285.7 65
Chromium	K2Cr2O7	Lettuce	5	3.7	14	Fresh Shoot Weight	LOEC		>11						Adema and Henzen, 1989			ES/ER/TM 85/R3
Chromium	K2Cr2O7	Tomato	5	3.7	14	Fresh Shoot Weight	LOEC		21						Adema and Henzen, 1989			ES/ER/TM 85/R3
Chromium	K2Cr2O7	Oats	5	3.7	14	Fresh Shoot Weight	LOEC		31						Adema and Henzen, 1989			ES/ER/TM 85/R3

Table 6-7. Terrestrial Plant Effect Data

Chemical		Test Organism				Toxicity Value					Ecological Soil Screening Level (EcoSSL) Details				Reference/Source			
Name	Form	Name	pH	% Organic Matter	Exposure (days)	Parameter	Type	Comment	Soil Concen. (mg/kg dw)	Parameter % Decrease	Bio-availability Score	Total Evaluation Score	Eligible for Eco-SSL Derivation?	Used for Eco-SSL?	Primary	IP Number	Study ID	Secondary
Chromium		Lettuce	5.1	3.7		Growth	could not be determined		could not be determined		2	13	N	N	Adema and Henzen, 1989	2125	c	OSWER Directive 9285.7 66
Chromium		Oat	6.1	2.2		Growth	EC50		9		1	14	N	N	Gunther and Pestemer, 1990	7099	a	OSWER Directive 9285.7 66
Chromium		Turnip	6.1	2.2		Growth	EC50		3		1	14	N	N	Gunther and Pestemer, 1990	7099	b	OSWER Directive 9285.7 66
Chromium	K2Cr2O7	Soybean			3	Fresh Shoot Weight	LOEC		30						Turner and Rust, 1971			ES/ER/TM 85/R3
Chromium		Carrot	7	1		Growth	LOAEC		15		1	11	N	N	Kadar and Morvai, 1998	12988	a	OSWER Directive 9285.7 66
Chromium	K2Cr2O7	Lettuce	8	1.4	14	Fresh Shoot Weight	LOEC		1.8						Adema and Henzen, 1989			ES/ER/TM 85/R3
Chromium	K2Cr2O7	Tomato	8	1.4	14	Fresh Shoot Weight	LOEC		6.8						Adema and Henzen, 1989			ES/ER/TM 85/R3
Chromium	K2Cr2O7	Oats	8	1.4	14	Fresh Shoot Weight	LOEC		7.4						Adema and Henzen, 1989			ES/ER/TM 85/R3
Cobalt						Phytotoxic	LOEC		25						Kabata-Pendias and Pendias, 1984			ES/ER/TM 85/R3
Cobalt		Alfalfa	5.0	5.0		Growth	EC20		0.60		2	18	Y	Y	TN & Associates, Inc., 2000		a	OSWER Directive 9285.7 67
Cobalt		Barley	5.0	5.0		Growth	EC20		29.8		2	18	Y	Y	TN & Associates, Inc., 2000		b	OSWER Directive 9285.7 67
Cobalt		Radish	5.0	5.0		Growth	EC20		14.5		2	18	Y	Y	TN & Associates, Inc., 2000		c	OSWER Directive 9285.7 67
Cobalt		Alfalfa	6.3	0.1		Growth	EC20		13.4		2	18	Y	Y	TN & Associates, Inc., 2000		d	OSWER Directive 9285.7 67
Cobalt		Barley	6.3	0.1		Growth	EC20		36.4		2	18	Y	Y	TN & Associates, Inc., 2000		e	OSWER Directive 9285.7 67
Cobalt		Radish	6.3	0.1		Growth	EC20		45.2		2	18	Y	Y	TN & Associates, Inc., 2000		f	OSWER Directive 9285.7 67
Cobalt		Cotton	6.6	2.4		Growth	LOAEC		100		1	12	Y	N	Rehab and Wallace, 1978		f	OSWER Directive 9285.7 67
Copper		Common oat	4.6	2.5		Growth	LOAEC		150		2	14	N	N	Tikhomirov et al, 1988	4757	d	OSWER Directive 9285.7 68
Copper	CuSO4	Bluestem	5	1.9	84	Root and Shoot Weights	LOEC		100						Miles and Parker, 1979b			ES/ER/TM 85/R3
Copper		Alfalfa	5.4	1.1		Growth	EC10		32		2	13	Y	Y	Gonzalez, 1991	4609	g	OSWER Directive 9285.7 68

Table 6-7. Terrestrial Plant Effect Data

Chemical		Test Organism				Toxicity Value					Ecological Soil Screening Level (EcoSSL) Details				Reference/Source			
Name	Form	Name	pH	% Organic Matter	Exposure (days)	Parameter	Type	Comment	Soil Concen. (mg/kg dw)	Parameter % Decrease	Bio-availability Score	Total Evaluation Score	Eligible for Eco-SSL Derivation?	Used for Eco-SSL?	Primary	IP Number	Study ID	Secondary
Copper		citrus cultivar	5.4	1		Growth	LOAEC		5		2	11	N	N	Spencer, 1966	15004	--	OSWER Directive 9285.7 68
Copper		Alfalfa	5.5	2.8		Growth	EC10		58		2	13	Y	Y	Gonzalez, 1991	4609	e	OSWER Directive 9285.7 68
Copper		Common oat	5.5	2		Growth	EC50		535		2	14	N	N	Mitchell et al., 1988	15861	a	OSWER Directive 9285.7 68
Copper		Cucumber	5.5	2		Growth	EC50		540		2	14	N	N	Mitchell et al., 1988	15861	b	OSWER Directive 9285.7 68
Copper		Soybean	5.5	2		Growth	EC50		550		2	14	N	N	Mitchell et al., 1988	15861	c	OSWER Directive 9285.7 68
Copper		Heath-leaf banksia	5.5	2		Growth	EC50		610		2	14	N	N	Mitchell et al., 1988	15861	d	OSWER Directive 9285.7 68
Copper		She-oak	5.5	2		Growth	EC50		205		2	14	N	N	Mitchell et al., 1988	15861	e	OSWER Directive 9285.7 68
Copper		Yellow bloodwood	5.5	2		Growth	EC50		560		2	14	N	N	Mitchell et al., 1988	15861	f	OSWER Directive 9285.7 68
Copper		Common oat	5.5	2		Growth	LC50		1765		2	13	N	N	Mitchell et al., 1988	15861	g	OSWER Directive 9285.7 68
Copper		Cucumber	5.5	2		Growth	LC50		1725		2	13	N	N	Mitchell et al., 1988	15861	h	OSWER Directive 9285.7 68
Copper		Soybean	5.5	2		Growth	LC50		1140		2	13	N	N	Mitchell et al., 1988	15861	I	OSWER Directive 9285.7 68
Copper		Heath-leaf banksia	5.5	2		Growth	LC50		1520		2	13	N	N	Mitchell et al., 1988	15861	j	OSWER Directive 9285.7 68
Copper		She-oak	5.5	2		Growth	LC50		580		2	13	N	N	Mitchell et al., 1988	15861	k	OSWER Directive 9285.7 68
Copper		Yellow bloodwood	5.5	2		Growth	LC50		1845		2	13	N	N	Mitchell et al., 1988	15861	l	OSWER Directive 9285.7 68
Copper		Common oat	5.6	1.6		Reproduction	MATC		283		2	11	N	N	De Haan, 1985	5048	a	OSWER Directive 9285.7 68
Copper		Common oat	5.9	2.9		Growth	LOAEC		400		1	13	N	N	Tikhomirov et al, 1988	4757	c	OSWER Directive 9285.7 68
Copper		Citrus cultivar	6	0.98		Growth	MATC		141		2	13	Y	Y	Mozaffari et al, 1996	4176	b	OSWER Directive 9285.7 68
Copper		Barley	6.1	9		Growth	EC20		143		0	12	Y	N	Aquaterra, 2000	22616	c	OSWER Directive 9285.7 68

Table 6-7. Terrestrial Plant Effect Data

Chemical		Test Organism				Toxicity Value					Ecological Soil Screening Level (EcoSSL) Details				Reference/Source			
Name	Form	Name	pH	% Organic Matter	Exposure (days)	Parameter	Type	Comment	Soil Concen. (mg/kg dw)	Parameter % Decrease	Bio-availability Score	Total Evaluation Score	Eligible for Eco-SSL Derivation?	Used for Eco-SSL?	Primary	IP Number	Study ID	Secondary
Copper		Northern Wheatgrass	6.1	9		Growth	EC20		151.7		0	12	Y	N	Aquaterra, 2000	22616	l	OSWER Directive 9285.7 68
Copper		Alfalfa	6.3	1.3		Growth	EC10		115		2	13	Y	Y	Gonzalez, 1991	4609	d	OSWER Directive 9285.7 68
Copper		Black bindweed	6.4	1.7		Reproduction	MATC		251		2	14	Y	Y	Kjaer and Elmegaard, 1996	4231	c	OSWER Directive 9285.7 68
Copper		Black bindweed	6.4	1.7		Growth	EC50		272		2	14	N	N	Kjaer and Elmegaard, 1996	4231	a	OSWER Directive 9285.7 68
Copper		Black bindweed	6.4	1.7		Mortality	EC50		219		2	14	N	N	Kjaer and Elmegaard, 1996	4231	d	OSWER Directive 9285.7 68
Copper		Perennial ryegrass	4.4 - 5.4	1		Growth	MATC		16		2	12	Y	Y	Torres and De Varennes, 1998	13958	--	OSWER Directive 9285.7 68
Copper		Cotton	6.6	2.4		Growth	MATC		141.4		1	14	Y	N	Rehab and Wallace, 1978b	46710	--	OSWER Directive 9285.7 68
Copper		Citrus cultivar	7	0.98		Growth	LOAEC		200		1	12	N	N	Mozaffari et al, 1996	4176	c	OSWER Directive 9285.7 68
Copper		Alfalfa	7.3	0.5		Growth	EC10		41		1	12	Y	N	Gonzalez, 1991	4609	f	OSWER Directive 9285.7 68
Copper		Alfalfa	7.5	1.1		Growth	EC10		821		1	12	Y	N	Gonzalez, 1991	4609	c	OSWER Directive 9285.7 68
Copper		Barley, cultivated	7.6	3.8	14	Emergence	LOEC		322						Ali et al. 2004			LA UR 08 6673
Copper		Barley, cultivated	7.6	3.8	14	Root Biomass	LOEC		28.2						Ali et al. 2004			LA UR 08 6673
Copper		Wheat	7.8	0.2		Growth	MATC		28		1	13	Y	N	Chhibba et al, 1994	12325	a	OSWER Directive 9285.7 68
Copper		Alfalfa	7.8	1.8		Growth	EC10		1253		1	12	Y	N	Gonzalez, 1991	4609	b	OSWER Directive 9285.7 68
Copper		Alfalfa	7.8	2.9		Growth	EC20		326.4		0	12	Y	N	Aquaterra, 2000	22616	a	OSWER Directive 9285.7 68
Copper		Barley	7.8	2.9		Growth	EC20		0.74		0	12	Y	N	Aquaterra, 2000	22616	d	OSWER Directive 9285.7 68
Copper		Carrot	7.8	2.9		Growth	EC20		659		0	12	Y	N	Aquaterra, 2000	22616	f	OSWER Directive 9285.7 68
Copper		Corn	7.8	2.9		Growth	EC20		407.6		0	12	Y	N	Aquaterra, 2000	22616	g	OSWER Directive 9285.7 68

Table 6-7. Terrestrial Plant Effect Data

Chemical		Test Organism				Toxicity Value					Ecological Soil Screening Level (EcoSSL) Details				Reference/Source			
Name	Form	Name	pH	% Organic Matter	Exposure (days)	Parameter	Type	Comment	Soil Concen. (mg/kg dw)	Parameter % Decrease	Bio-availability Score	Total Evaluation Score	Eligible for Eco-SSL Derivation?	Used for Eco-SSL?	Primary	IP Number	Study ID	Secondary
Copper		Cucumber	7.8	2.9		Growth	EC20		506		0	12	Y	N	Aquaterra, 2000	22616	i	OSWER Directive 9285.7 68
Copper		Grama grass	7.8	2.9		Growth	EC20		471.3		0	12	Y	N	Aquaterra, 2000	22616	k	OSWER Directive 9285.7 68
Copper		Northern Wheatgrass	7.8	2.9		Growth	EC20		391.3		0	12	Y	N	Aquaterra, 2000	22616	m	OSWER Directive 9285.7 68
Copper		Radish	7.8	2.9		Growth	EC20		347.3		0	12	Y	N	Aquaterra, 2000	22616	o	OSWER Directive 9285.7 68
Copper		Barley, cultivated	7.8	0.27	14	Emergence	LOEC		31						Ali et al., 2004			LA UR 08 6673
Copper		Barley, cultivated	7.8	0.27	14	Shoot Biomass	LOEC		31						Ali et al., 2004			LA UR 08 6673
Copper		Barley, cultivated	7.8	0.27	14	Root Biomass	LOEC		3						Ali et al., 2004			LA UR 08 6673
Copper	CuSO4	Bluestem	8	2.5	84	Root and Shoot Weights	LOEC		100						Miles and Parker, 1979b			ES/ER/TM 85/R3
Copper		Alfalfa	8.1	3.5		Growth	EC20		674		0	12	Y	N	Aquaterra, 2000	22616	b	OSWER Directive 9285.7 68
Copper		Barley	8.1	3.5		Growth	EC20		234.8		0	12	Y	N	Aquaterra, 2000	22616	e	OSWER Directive 9285.7 68
Copper		Corn	8.1	3.5		Growth	EC20		776.2		0	12	Y	N	Aquaterra, 2000	22616	h	OSWER Directive 9285.7 68
Copper		Cucumber	8.1	3.5		Growth	EC20		804.9		0	12	Y	N	Aquaterra, 2000	22616	j	OSWER Directive 9285.7 68
Copper		Northern wheatgrass	8.1	3.5		Growth	EC20		801.6		0	12	Y	N	Aquaterra, 2000	22616	n	OSWER Directive 9285.7 68
Copper		Radish	8.1	3.5		Growth	EC20		322.7		0	12	Y	N	Aquaterra, 2000	22616	p	OSWER Directive 9285.7 68
Copper	CuSO4	Bush Beans			17	Leaf Weight	LOEC		200						Wallace et al., 1977b			ES/ER/TM 85/R3
Copper		Black bindweed	6.0-6.7	4.5		Growth	EC50		284		1	16	N	N	Pedersen et al., 2000a	56463	a	OSWER Directive 9285.7 68
Copper		Black bindweed	6.0-6.7	4.5		Growth	EC50		258		1	16	N	N	Pedersen et al., 2000a	56463	b	OSWER Directive 9285.7 68
Copper		Black bindweed	6.0-6.7	4.5		Growth	EC50		259		1	16	N	N	Pedersen et al., 2000a	56463	c	OSWER Directive 9285.7 68
Copper		Black bindweed	6.0-6.7	4.5		Growth	EC50		329		1	16	N	N	Pedersen et al., 2000a	56463	d	OSWER Directive 9285.7 68

Table 6-7. Terrestrial Plant Effect Data

Chemical		Test Organism				Toxicity Value					Ecological Soil Screening Level (EcoSSL) Details				Reference/Source			
Name	Form	Name	pH	% Organic Matter	Exposure (days)	Parameter	Type	Comment	Soil Concen. (mg/kg dw)	Parameter % Decrease	Bio-availability Score	Total Evaluation Score	Eligible for Eco-SSL Derivation?	Used for Eco-SSL?	Primary	IP Number	Study ID	Secondary
Copper		Black bindweed	6.0-6.7	4.5		Growth	EC50		260		1	16	N	N	Pedersen et al., 2000a	56463	e	OSWER Directive 9285.7 68
Copper		Black bindweed	6.0-6.7	4.5		Growth	EC50		291		1	16	N	N	Pedersen et al., 2000a	56463	f	OSWER Directive 9285.7 68
Iron																		OSWER Directive 9285.7 69
Lead	PbCl2	Spruce	3	45.3	98	Root and Shoot Weights	LOEC		100						Burton et al.. 1984			ES/ER/TM 85/R3
Lead	PbCl2	Lettuce	4	17	30	Leaf Weight	LOEC		1000						John and Van Laerhoven, 1972			ES/ER/TM 85/R3
Lead	Pb(NO3)2	Lettuce	4	17	30	Leaf Weight	LOEC		1000						John and Van Laerhoven, 1972			ES/ER/TM 85/R3
Lead		Loblolly pine	4	2.5		Growth	MATC		144		2	12	Y	Y	Davis and Barnes, 1973		a	OSWER Directive 9285.7 70
Lead		Red maple	4	2.5		Growth	MATC		144		2	12	Y	Y	Davis and Barnes, 1973		b	OSWER Directive 9285.7 70
Lead	PbCl2	Bluestem	5	1.93	84	Root Weight	LOEC		450						Miles and Parker, 1979b			ES/ER/TM 85/R3
Lead	PbCl2	Oat	5		42	Root Weight	LOEC		500						Khan and Frankland, 1984			ES/ER/TM 85/R3
Lead	PbCl2	Radish	5		42	Root Weight	LOEC		500						Khan and Frankland, 1983			ES/ER/TM 85/R3
Lead	PbCl2	Wheat	5		42	Root Weight	LOEC		1000						Khan and Frankland, 1984			ES/ER/TM 85/R3
Lead	PbO	Radish	5		42	Root Weight	LOEC		1000						Khan and Frankland, 1983			ES/ER/TM 85/R3
Lead		Ryegrass	5.6	0.1		Growth	MATC		22		2	14	Y	Y	Singh and Jeng, 1993			OSWER Directive 9285.7 70
Lead	PbCl2	Red Oak	6	1.5	112	Plant Weight	LOEC		50						Dixon, 1988			ES/ER/TM 85/R3
Lead		Corn	6		31	Plant Weight	LOEC		250						Miller et al., 1977			ES/ER/TM 85/R3
Lead	PbO	Wheat	6			Root and Shoot Weights	LOEC		1000						Muramoto et al., 1990			ES/ER/TM 85/R3
Lead	PbCl2	Rye	6			Shoot Weight	LOEC		5000						Carlson and Rolfe, 1979			ES/ER/TM 85/R3

Table 6-7. Terrestrial Plant Effect Data

Chemical		Test Organism				Toxicity Value					Ecological Soil Screening Level (EcoSSL) Details				Reference/Source			
Name	Form	Name	pH	% Organic Matter	Exposure (days)	Parameter	Type	Comment	Soil Concen. (mg/kg dw)	Parameter % Decrease	Bio-availability Score	Total Evaluation Score	Eligible for Eco-SSL Derivation?	Used for Eco-SSL?	Primary	IP Number	Study ID	Secondary
Lead	PbCl2	Fescue	6			Shoot Weight	LOEC		5000						Carlson and Rolfe. 1979			ES/ER/TM 85/R3
Lead		Red Oak	6	1.5		Growth	LOAEC		100		2	19	N	N	Dixon, 1988			OSWER Directive 9285.7 70
Lead		Berseem clover	6.3	0.94		Growth	MATC		316		2	14	Y	Y	Marques Dos Santos et al., 1993		b	OSWER Directive 9285.7 70
Lead		Corn	6.5	2.1		Growth	MATC		158		1	15	Y	N	Hassett et al., 1976			OSWER Directive 9285.7 70
Lead	PbCl2	sycamore			90	Leaf Weight	LOEC		50						Carlson and Bazzaz, 1977			ES/ER/TM 85/R3
Lead	PbCl2	autumn olive			49	Transpiration	LOEC		160						Rolfe and Bazzaz, 1975			ES/ER/TM 85/R3
Lead		*cassia occidentalis L.*			Up to 6 months in the field	Percentage of seed germination	LOEC		46	38					Krishnayya and Bedi, 1986			LA UR 08 6673
Lead		Berseem clover	6.7	3.11		Growth	MATC		141		1	13	Y	N	Marques Dos Santos et al., 1993		a	OSWER Directive 9285.7 70
Lead		Spinach	6.7	3		Growth	MATC		424		1	13	Y	N	Gaweda, 1991		b	OSWER Directive 9285.7 70
Lead		Radish	6.9	1		Growth, Biomass	LOAEC		500		2	14	N	N	Zaman and Zereen, 1998		a	OSWER Directive 9285.7 70
Lead		Radish	6.9	1		Growth	LOAEC		100		2	14	N	N	Zaman and Zereen, 1998		b	OSWER Directive 9285.7 70
Lead		Radish	6.9	1		Growth	LOAEC		100		2	14	N	N	Zaman and Zereen, 1998		c	OSWER Directive 9285.7 70
Lead	PbCl2	Corn	7	2.1	7	root length	LOEC		500						Hassett et al., 1976			ES/ER/TM 85/R3
Lead		Sow thistle	7.23	1.6		Growth	MATC		2263		1	14	Y	N	Xiong, 1997			OSWER Directive 9285.7 70
Lead		Tomato	7.45	2.06		Reproduction	MATC		35		0	14	N	N	Balba et al., 1991		a	OSWER Directive 9285.7 70
Lead		Tomato	7.73	1.7		Reproduction	MATC		71		1	15	Y	N	Balba et al., 1991		b	OSWER Directive 9285.7 70
Lead	PbCl2	Bluestem	8	2.5	84	Root and Shoot Weights	LOEC		450						Miles and Parker, 1979b			ES/ER/TM 85/R3
Lead		Tomato	8.2	0.86		Reproduction	MATC		71		1	15	Y	N	Balba et al., 1991		c	OSWER Directive 9285.7 70
Lead		Fenugreek	8.3	0.5		Growth	MATC		283		1	11	Y	N	Dang et al., 1990		g	OSWER Directive 9285.7 70

Table 6-7. Terrestrial Plant Effect Data

Chemical		Test Organism				Toxicity Value					Ecological Soil Screening Level (EcoSSL) Details				Reference/Source			
Name	Form	Name	pH	% Organic Matter	Exposure (days)	Parameter	Type	Comment	Soil Concen. (mg/kg dw)	Parameter % Decrease	Bio-availability Score	Total Evaluation Score	Eligible for Eco-SSL Derivation?	Used for Eco-SSL?	Primary	IP Number	Study ID	Secondary
Lead		Onion	8.3	0.5		Growth	LOAEC		50		1	11	N	N	Dang et al., 1990		d	OSWER Directive 9285.7 70
Lithium	LiSO4	Orange			180	Phytotoxic	LOEC		2						Aldrich et al., 1951			ES/ER/TM 85/R3
Lithium	LiCl	Bush Beans	6		10	Leaf Weight	LOEC		25						Wallace et al., 1977c			ES/ER/TM 85/R3
Lithium	LiNO3	Cotton	6		16	Leaf and stem weights	LOEC		50						Wallace et al., 1977c			ES/ER/TM 85/R3
Lithium	Li2C2O4	Barley	6		10	Shoot Weight	LOEC		500						Wallace, 1979			ES/ER/TM 85/R3
Manganese		Barley	4.6	0.78		Growth	MATC		71		2	16	Y	Y	Reid, 1965	55992		OSWER Directive 9285.7 71
Manganese		Common bean	5.4	1.9		Reproduction	LOAEC		80		2	15	N	N	Gonzalez and Lynch, 1999	18987		OSWER Directive 9285.7 71
Manganese		Nile grass	4.62-5.16	0.017 - 4.24		Growth	MATC		707		1	11	Y	Y	Foy et al., 1998	11629		OSWER Directive 9285.7 71
Manganese	MnSO4	Bush Beans			17	Stem Weight	LOEC		500						Wallace et al., 1977b			ES/ER/TM 85/R3
Manganese		Cotton	6.6	2.4		Growth	MATC		707		1	14	Y	Y	Rehab and Wallace, 1978b	46710		OSWER Directive 9285.7 71
Manganese		Barley	7.3	0.78		Growth	MATC		71		1	15	Y	Y	Reid, 1965	55992		OSWER Directive 9285.7 71
Mercury	chloralkali waste	Barley	7.4	0.7	7	Seedling height	LOEC		64						Panda et al., 1992			ES/ER/TM 85/R3
Mercury						Phytotoxic	LOEC		0.3						Kabata-Pendias and Pendias, 1984			ES/ER/TM 85/R3
Molydbenum						Phytotoxic	LOEC		2						Kabata-Pendias and Pendias, 1984			ES/ER/TM 85/R3
Nickel	NiSO4	Barley	6		14	Shoot Weight	LOEC		25						Wallace et al., 1977a			ES/ER/TM 85/R3
Nickel	NiCl2	Red Oak	6	1.5	112	Plant Weight	LOEC		50						Dixon, 1988			ES/ER/TM 85/R3
Nickel	NiCl2	Oats	6	1.4	110	Grain and straw weights	LOEC		50						Halstead et al., 1969			ES/ER/TM 85/R3
Nickel	NiSO4	Bush Beans	6		14	Leaf Weight	LOEC		100						Wallace et al., 1977a			ES/ER/TM 85/R3
Nickel	NiSO4	Bush Beans	6		14	Shoot Weight	LOEC		100						Wallace et al., 1977a			ES/ER/TM 85/R3
Nickel	NiCl2	Oats	6	4.1	110	Straw weight	LOEC		100						Halstead et al., 1969			ES/ER/TM 85/R3
Nickel	NiSO4	Ryegrass	5		28	Shoot Weight	LOEC		180						Khalid and Tinsley, 1980			ES/ER/TM 85/R3
Nickel	NiSO4	Corn	4		14	Shoot Weight	LOEC		250						Wallace et al., 1977a			ES/ER/TM 85/R3

Table 6-7. Terrestrial Plant Effect Data

Chemical		Test Organism				Toxicity Value					Ecological Soil Screening Level (EcoSSL) Details				Reference/Source			
Name	Form	Name	pH	% Organic Matter	Exposure (days)	Parameter	Type	Comment	Soil Concen. (mg/kg dw)	Parameter % Decrease	Bio-availability Score	Total Evaluation Score	Eligible for Eco-SSL Derivation?	Used for Eco-SSL?	Primary	IP Number	Study ID	Secondary
Nickel	NiSO4	Bush Beans	8		14	Shoot Weight	LOEC		250						Wallace et al., 1977a			ES/ER/TM 85/R3
Nickel	NiSO4	Corn	6		14	Shoot Weight	LOEC		250						Wallace et al., 1977a			ES/ER/TM 85/R3
Nickel	NiSO4	Corn	8		14	Shoot Weight	LOEC		250						Wallace et al., 1977a			ES/ER/TM 85/R3
Nickel	NiCl2	Corn	5	2.2	35	Plant Weight	LOEC		294						Traynor and Knezek, 1973			ES/ER/TM 85/R3
Nickel		Alfalfa	5.0	5.0		Growth	EC20		17		2	18	Y	Y	TN & Associates, Inc., 2000	56444	G	OSWER Directive 9285.7 76
Nickel		Barley	5.0	5.0		Growth	EC20		7		2	18	Y	Y	TN & Associates, Inc., 2000	56444	H	OSWER Directive 9285.7 76
Nickel		brassica	5.0	5.0		Growth	EC20		10		2	18	Y	Y	TN & Associates, Inc., 2000	56444	I	OSWER Directive 9285.7 76
Nickel		Alfalfa	6.3	0.1		Growth	EC20		25		2	18	Y	Y	TN & Associates, Inc., 2000	56444	J	OSWER Directive 9285.7 76
Nickel		Barley	6.3	0.1		Growth	EC20		65		2	18	Y	Y	TN & Associates, Inc., 2000	56444	K	OSWER Directive 9285.7 76
Nickel		brassica	6.3	0.1		Growth	EC20		32		2	18	Y	Y	TN & Associates, Inc., 2000	56444	L	OSWER Directive 9285.7 76
Nickel		Red Oak	6.0	1.5		Growth	MATC		32		2	16	Y	Y	Dixon, 1988	7450	--	OSWER Directive 9285.7 76
Nickel		Alfalfa	6.9	1.7		Growth	MATC		177		2	15	Y	Y	Taylor and Allinson, 1981	2790	B	OSWER Directive 9285.7 76
Nickel		Ryegrass	4.7	4.5		Growth	MATC		52		2	15	Y	Y	Khalid and Tinsley, 1980	7481	--	OSWER Directive 9285.7 76
Nickel		Alfalfa	6.4	1.0		Growth	MATC		177		2	11	Y	Y	Taylor, 1974	9645	--	OSWER Directive 9285.7 76
Nickel		oat	6.1	1.4		Reproduction	MATC		71		2	13	Y	Y	Halstead et al., 1969	7465	B	OSWER Directive 9285.7 76
Nickel		Corn	8.0	0.3		Growth	MATC		141		1	15	Y	N	Narwal et al., 1996	11707	A	OSWER Directive 9285.7 76
Nickel		Corn	7.8	0.2		Growth	MATC		71		1	15	Y	N	Narwal et al., 1996	11707	B	OSWER Directive 9285.7 76
Nickel		Corn	7.7	1.2		Growth	MATC		71		1	15	Y	N	Narwal et al., 1996	11707	C	OSWER Directive 9285.7 76
Nickel		Alfalfa	6.9	4.8		Growth	MATC		177		1	14	Y	N	Taylor and Allinson, 1981	2790	A	OSWER Directive 9285.7 76

Table 6-7. Terrestrial Plant Effect Data

Chemical		Test Organism				Toxicity Value					Ecological Soil Screening Level (EcoSSL) Details				Reference/Source			
Name	Form	Name	pH	% Organic Matter	Exposure (days)	Parameter	Type	Comment	Soil Concen. (mg/kg dw)	Parameter % Decrease	Bio-availability Score	Total Evaluation Score	Eligible for Eco-SSL Derivation?	Used for Eco-SSL?	Primary	IP Number	Study ID	Secondary
Nickel		Oat	5.7	4.1		Reproduction	MATC		224		1	12	Y	N	Halstead et al., 1969	7465	C	OSWER Directive 9285.7 76
Nickel		Alfalfa	5.7	4.1		Growth	MATC		32		1	12	Y	N	Halstead et al., 1969	7465	F	OSWER Directive 9285.7 76
Nickel		Alfalfa	7.8	4.0		Growth	MATC		224		0	11	Y	N	Halstead et al., 1969	7465	D	OSWER Directive 9285.7 76
Nickel		Oat	4.6	2.5		Growth	LOAEC		100		2	14	N	N	Tikhomirov et al., 1988	4757	B	OSWER Directive 9285.7 76
Nickel		Alfalfa	6.1	1.4		Growth	LOAEC		20		2	13	N	N	Halstead et al., 1969	7465	E	OSWER Directive 9285.7 76
Nickel		Cotton	6.8	2.2	35	Leaf and stem weights	LOAEC		100		1	12	N	N	Rehab and Wallace, 1978a,c	7523	A	ES/ER/TM 85/R3 and OSWER Directive 9285.7 76
Nickel		Corn	8.2	1.2		Growth	MATC		57		1	11	N	N	Metwally and Rabie, 1989	1536	D	OSWER Directive 9285.7 76
Nickel		Bush Beans	5.8	2.8		Growth	LOAEC		100		1	11	N	N	Wallace et al., 1977a	57304	B	OSWER Directive 9285.7 76
Nickel		Oat	5.9	2.9		Growth	LOAEC		400		1	13	N	N	Tikhomirov et al., 1988	4757	A	OSWER Directive 9285.7 76
Nickel		onion	8.3	0.5		Growth	LOAEC		50		1	11	N	N	Dang et al., 1990	12906	A	OSWER Directive 9285.7 76
Nickel		fenugreek	8.3	0.5		Growth	LOAEC		50		1	11	N	N	Dang et al., 1990	12906	B	OSWER Directive 9285.7 76
Nickel		Barley	5.8	2.8		Growth	MATC		50		1	11	N	N	Wallace et al., 1977a	57304	C	OSWER Directive 9285.7 76
Nickel		chickpea	8.0	2.0		Growth	MATC		6		0	11	N	N	Gupta et al., 1996	13146	A	OSWER Directive 9285.7 76
Nickel		lentil	8.0	2.0		Growth	MATC		4		0	11	N	N	Gupta et al., 1996	13146	B	OSWER Directive 9285.7 76
Nickel		Mustard	8.0	2.0		Growth	MATC		14		0	11	N	N	Gupta et al., 1996	13146	C	OSWER Directive 9285.7 76
Selenium	Na2SeO4	sorgrass	5	11	42	Shoot Weight	LOEC		1						Carlson et al., 1991			ES/ER/TM 85/R3
Selenium	Na2SeO3	sorgrass	5	11	42	Shoot Weight	LOEC		2						Carlson et al., 1991			ES/ER/TM 85/R3
Selenium		Alfalfa	5	5.0		Growth	EC20		1		0	16	Y	N	TN & Associates, 2000	56444	S	OSWER Directive 9285.7 72

Table 6-7. Terrestrial Plant Effect Data

Chemical		Test Organism				Toxicity Value					Ecological Soil Screening Level (EcoSSL) Details				Reference/Source			
Name	Form	Name	pH	% Organic Matter	Exposure (days)	Parameter	Type	Comment	Soil Concen. (mg/kg dw)	Parameter % Decrease	Bio-availability Score	Total Evaluation Score	Eligible for Eco-SSL Derivation?	Used for Eco-SSL?	Primary	IP Number	Study ID	Secondary
Selenium		Barley	5	5.0		Growth	EC20		3		0	16	Y	N	TN & Associates, 2000	56444	T	OSWER Directive 9285.7 72
Selenium		Brassica	5	5.0		Growth	EC20		1		0	16	Y	N	TN & Associates, 2000	56444	U	OSWER Directive 9285.7 72
Selenium		Alfalfa	5.6	1.3		Growth	MATC		0.9		2	12	Y	Y	Wan et al., 1988	7562	g	OSWER Directive 9285.7 72
Selenium	Na2SeO4	sorgrass	6	18.5	42	Shoot Weight	LOEC		1						Carlson et al., 1991			ES/ER/TM 85/R3
Selenium	Na2SeO4	sorgrass	6	18.5	42	Shoot Weight	LOEC		1						Carlson et al., 1991			ES/ER/TM 85/R3
Selenium	Na2SeO4	Alfalfa	6	15		Shoot Weight	LOEC		1.5						Wan et al., 1988			ES/ER/TM 85/R3
Selenium		Alfalfa	6.3	0.1		Growth	EC20		0.1		2	18	Y	Y	TN & Associates, 2000	56444	V	OSWER Directive 9285.7 72
Selenium		Barley	6.3	0.1		Growth	EC20		0.2		2	18	Y	Y	TN & Associates, 2000	56444	W	OSWER Directive 9285.7 72
Selenium		Brassica	6.3	0.1		Growth	EC20		0.2		2	18	Y	Y	TN & Associates, 2000	56444	X	OSWER Directive 9285.7 72
Selenium		Alfalfa	6.7	1.1		Growth	LOAEC		0.5		2	12	N	N	Wan et al., 1988	7562	e	OSWER Directive 9285.7 72
Selenium		Alfalfa	6.9	1.1		Growth	MATC		0.9		2	12	Y	Y	Wan et al., 1988	7562	h	OSWER Directive 9285.7 72
Selenium	Na2SeO4	sorgrass	7	11	42	Shoot Weight	LOEC		1						Carlson et al., 1991			ES/ER/TM 85/R3
Selenium	Na2SeO4	Alfalfa	7	13		Shoot Weight	LOEC		1.5						Wan et al., 1988			ES/ER/TM 85/R3
Selenium	Na2SeO4	Alfalfa	7	13		Shoot Weight	LOEC		1.5						Wan et al., 1988			ES/ER/TM 85/R3
Selenium	Na2SeO4	Alfalfa	7	6.5		Shoot Weight	LOEC		2						Soltanpour and Workman, 1980			ES/ER/TM 85/R3
Selenium	Na2SeO4	Alfalfa	7	6.3		Shoot Weight	LOEC		4						Soltanpour and Workman, 1980			ES/ER/TM 85/R3
Selenium	Na2SeO3	Wheat	7.9	0.2	50	weight	LOEC	LCT	2.5						Singh and Singh, 1978			ES/ER/TM 85/R3
Selenium		Raya	7.9	0.17		Growth	MATC		1.4		2	13	Y	Y	Singh et al., 1980b	21715		OSWER Directive 9285.7 72
Selenium	Na2SeO4	Alfalfa	8	5		Shoot Weight	LOEC		2						Soltanpour and Workman, 1980			ES/ER/TM 85/R3
Selenium	Na2SeO4	Alfalfa	8	3.7		Shoot Weight	LOEC		2						Soltanpour and Workman, 1980			ES/ER/TM 85/R3

Table 6-7. Terrestrial Plant Effect Data

Chemical		Test Organism				Toxicity Value					Ecological Soil Screening Level (EcoSSL) Details				Reference/Source			
Name	Form	Name	pH	% Organic Matter	Exposure (days)	Parameter	Type	Comment	Soil Concen. (mg/kg dw)	Parameter % Decrease	Bio-availability Score	Total Evaluation Score	Eligible for Eco-SSL Derivation?	Used for Eco-SSL?	Primary	IP Number	Study ID	Secondary
Selenium	Na2SeO4	Alfalfa	8	3.1		Shoot Weight	LOEC		2						Soltanpour and Workman, 1980			ES/ER/TM 85/R3
Selenium		Berseem	8	0.14		Growth	MATC		1.6		2	12	Y	Y	Singh et al., 1980a	21716		OSWER Directive 9285.7 72
Selenium		Cowpea	8	0.1		Growth	MATC		0.8		2	11	Y	Y	Singh and Singh, 1979	21714		OSWER Directive 9285.7 72
Silver							LOEC		2						Kabata-Pendias and Pendias, 1984			ES/ER/TM 85/R3
Silver		Soybeans	7.4	0.17-2.8		Growth	MATC		3162		0	11	Y	Y	Weaver and Klarich, 1973	20195	c	OSWER Directive 9285.7 77
Silver		Wheat	7.4	0.17-2.8		Growth	MATC		316		0	11	Y	Y	Weaver and Klarich, 1973	20195	e	OSWER Directive 9285.7 77
Silver		Corn	7.4	0.17-2.8		Growth	MATC		316		0	11	Y	Y	Weaver and Klarich, 1973	20195	f	OSWER Directive 9285.7 77
Silver		Sunflower	7.4	0.17-2.8		Growth	MATC		316		0	11	Y	Y	Weaver and Klarich, 1973	20195	g	OSWER Directive 9285.7 77
Thallium						Phytotoxic			1						Kabata-Pendias and Pendias, 1984			ES/ER/TM 85/R3
Tin	SnCl2	Bush Bean	6		17	Shoot Weight	LOEC		500						Romney et al., 1975			ES/ER/TM 85/R3
Tin						Phytotoxic	LOEC		50						Kabata-Pendias and Pendias, 1984			ES/ER/TM 85/R3
Uranium		Wheat				Seeds per Spike	EC25		0.5						Aery and Jain 1998			Sheppard et al. 2005
Uranium		Corn, Sorghum, Cotton, Sugar beet				Yield	EC25		5						Schevchenko et al. 1987			Sheppard et al. 2005
Uranium		Wheat, Tomato				Yield	EC25		6						Gulati et al. 1980			Sheppard et al. 2005
Uranium		Native Range Grasses				Biomass	LOEC		50						Meyer et al. 1998			Sheppard et al. 2005
Uranium		Wheat				Yield	EC11		50						Zhukov and Zudilkin 1971			Sheppard et al. 2005
Uranium		Rice				Survival	EC25		250						Bufatin et al. 1986			Sheppard et al. 2005
Uranium		Beans				Pod Yield	EC25		300						Sheppard et al. 1992			Sheppard et al. 2005
Uranium		Swiss Chard	6.4		40	Yield	LOEC		25						Sheppard et al. 1983			
Vanadium		Broccoli	6.5	1.1		Growth	LOAEC		100		2	15	Y	N	Kaplan et al., 1990	3295	a	OSWER Directive 9285.7 75

Table 6-7. Terrestrial Plant Effect Data

Chemical		Test Organism				Toxicity Value					Ecological Soil Screening Level (EcoSSL) Details				Reference/Source			
Name	Form	Name	pH	% Organic Matter	Exposure (days)	Parameter	Type	Comment	Soil Concen. (mg/kg dw)	Parameter % Decrease	Bio-availability Score	Total Evaluation Score	Eligible for Eco-SSL Derivation?	Used for Eco-SSL?	Primary	IP Number	Study ID	Secondary
Vanadium						Phytotoxic	LOEC		2.5						EPA 450/2-81-078			ES/ER/TM 85/R3
Vanadium						Phytotoxic	LOEC		50						Kabata-Pendias and Pendias, 1984			ES/ER/TM 85/R3
Zinc		Oats	4.2	0.7		Growth	LOAEC		95		2	17	N	N	Roszyk et al., 1988	13624	a	OSWER Directive 9285.7 73
Zinc		Mustard	4.2	0.7		Growth	LOAEC		95		2	17	N	N	Roszyk et al., 1988	13624	n	OSWER Directive 9285.7 73
Zinc		Oats	4.3	0.8		Growth	MATC		143		2	18	Y	Y	Roszyk et al., 1988	13624	p	OSWER Directive 9285.7 73
Zinc	ZnSO4	Beech	5			annual ring width	LOEC		3.3						Hagemeyer et al., 1993			ES/ER/TM 85/R3
Zinc		Oats	5.3	2.6		Growth	MATC		155		2	18	Y	Y	Roszyk et al., 1988	13624	b	OSWER Directive 9285.7 73
Zinc		Mustard	5.3	2.6		Growth	LOAEC		105		2	18	N	N	Roszyk et al., 1988	13624	l	OSWER Directive 9285.7 73
Zinc		Oats	5.4	7		Growth	MATC		283		1	11	N	N	De Haan et al., 1985	5048	e	OSWER Directive 9285.7 73
Zinc		Soybean	5.5	1.2		Growth	LOAEC		131		2	12	N	N	White et al., 1979b	57096	a	OSWER Directive 9285.7 73
Zinc		Oats	5.6	2.3		Growth	MATC		361		1	17	Y	N	Roszyk et al., 1988	13624	d	OSWER Directive 9285.7 73
Zinc		Mustard	5.6	2.3		Growth	MATC		177		1	17	Y	N	Roszyk et al., 1988	13624	g	OSWER Directive 9285.7 73
Zinc		Seradela	5.6	5.2		Growth	LOAEC		102		1	17	N	N	Roszyk et al., 1988	13624	zb	OSWER Directive 9285.7 73
Zinc		Oats	5.7	1.3		Growth	MATC		159		2	18	Y	Y	Roszyk et al., 1988	13624	u	OSWER Directive 9285.7 73
Zinc		Oats	5.7	5.7		Growth	MATC		319		1	18	Y	N	Roszyk et al., 1988	13624	zc	OSWER Directive 9285.7 73
Zinc		Seradela	5.7	5.7		Growth	LOAEC		95		1	17	N	N	Roszyk et al., 1988	13624	ze	OSWER Directive 9285.7 73
Zinc		Oats	5.9	2.3		Growth	MATC		169		1	17	Y	N	Roszyk et al., 1988	13624	z	OSWER Directive 9285.7 73
Zinc	ZnSO4	Soybean	6			Leaf Weight	LOEC		131						White et al., 1979a			ES/ER/TM 85/R3
Zinc	ZnO	Wheat	6			Plant Weight and grain yeild	LOEC		1000						Muramoto et al., 1990			ES/ER/TM 85/R3

Table 6-7. Terrestrial Plant Effect Data

Chemical		Test Organism				Toxicity Value					Ecological Soil Screening Level (EcoSSL) Details				Reference/Source			
Name	Form	Name	pH	% Organic Matter	Exposure (days)	Parameter	Type	Comment	Soil Concen. (mg/kg dw)	Parameter % Decrease	Bio-availability Score	Total Evaluation Score	Eligible for Eco-SSL Derivation?	Used for Eco-SSL?	Primary	IP Number	Study ID	Secondary
Zinc	ZnO	Rice	6			Root Weight	LOEC		1000						Muramoto et al., 1990			ES/ER/TM 85/R3
Zinc		Lettuce	6.3	<1		Growth	MATC		173		2	12	Y	Y	Sheppard et al., 1993	4146	b	OSWER Directive 9285.7 73
Zinc		Soybean	6.5	1.2		Growth	MATC		185		2	13	Y	Y	White et al., 1979b	57096	d	OSWER Directive 9285.7 73
Zinc	ZnSO4	Soybean				Seeds/Plant	LOEC		25						Aery and Sakar, 1991			ES/ER/TM 85/R3
Zinc	ZnSO4	coriander			60	Root and Shoot Weights	LOEC		87						Lata and Veer, 1990			ES/ER/TM 85/R3
Zinc	ZnSO4	spinach			60	Root and Shoot Weights	LOEC		87						Lata and Veer, 1990			ES/ER/TM 85/R3
Zinc	ZnSO4	cowpea			30	Shoot Weight	LOEC		316						Gall and Barnette, 1940			ES/ER/TM 85/R3
Zinc	ZnSO4	Corn			30	Shoot Weight	LOEC		632						Gall and Barnette, 1940			ES/ER/TM 85/R3
Zinc	ZnSO4	Cowpea			30	Shoot Weight	LOEC		222						Gall and Barnette, 1940			ES/ER/TM 85/R3
Zinc	ZnSO4	Corn			30	Shoot Weight	LOEC		334						Gall and Barnette, 1940			ES/ER/TM 85/R3
Zinc	ZnSO4	Corn			30	Shoot Weight	LOEC		404						Gall and Barnette, 1940			ES/ER/TM 85/R3
Zinc	ZnSO4	cowpea			30	Shoot Weight	LOEC		141						Gall and Barnette, 1940			ES/ER/TM 85/R3
Zinc		Cotton	6.6	2.4		Growth	MATC		283		1	14	Y	N	Rehab and Wallace, 1978b	46710	b	OSWER Directive 9285.7 73
Zinc		Cotton	6.6	2.4		Growth	MATC		283		1	14	Y	N	Rehab and Wallace, 1978b	46710	a	OSWER Directive 9285.7 73
Zinc	ZnSO4	Soybean	7			Leaf Weight	LOEC		393						White et al., 1979a			ES/ER/TM 85/R3
Zinc		Carrot	7.0	1.032		Growth	MATC		57		1	17	Y	N	Kadar and Morvai, 1998	12988	a	OSWER Directive 9285.7 73
Zinc		Garden Pea	7.0	1.032		Growth	MATC		34		1	17	Y	N	Kadar and Morvai, 1998	12988	b	OSWER Directive 9285.7 73
Zinc		Red Clover	7.0	3.00		Growth	MATC		90		1	11	Y	N	Biro et al., 1998	12986	b	OSWER Directive 9285.7 73
Zinc		Oats	7.0	3.3		Growth	MATC		162		0	16	Y	N	Roszyk et al., 1988	13624	t	OSWER Directive 9285.7 73
Zinc		Common Bean	7.1	0.32		Growth	MATC		330		1	13	Y	N	Kucharski and Niklewska, 1992	13292		OSWER Directive 9285.7 73
Zinc		Mustard	7.1	3.7		Growth	MATC		157		0	16	Y	N	Roszyk et al., 1988	13624	zm	OSWER Directive 9285.7 73

Table 6-7. Terrestrial Plant Effect Data

Chemical		Test Organism				Toxicity Value					Ecological Soil Screening Level (EcoSSL) Details				Reference/Source			
Name	Form	Name	pH	% Organic Matter	Exposure (days)	Parameter	Type	Comment	Soil Concen. (mg/kg dw)	Parameter % Decrease	Bio-availability Score	Total Evaluation Score	Eligible for Eco-SSL Derivation?	Used for Eco-SSL?	Primary	IP Number	Study ID	Secondary
Zinc		Mustard	7.9	2.70		Growth	MATC		424		0	12	Y	N	Sheppard et al., 1993	4146	c	OSWER Directive 9285.7 73
Zinc		Wheat	8.2	0.086		Growth	MATC		113		1	13	Y	N	Singh et al., 1991	12701		OSWER Directive 9285.7 73
Zinc		Onion	8.3	0.5		Growth	MATC		141		1	11	Y	N	Dang et al., 1990	12906	E	OSWER Directive 9285.7 73
Zinc		Fenugreek	8.3	0.5		Growth	MATC		283		1	11	Y	N	Dang et al., 1990	12906	H	OSWER Directive 9285.7 73
Fluorine						Phytotoxic	LOEC		200						Kabata-Pendias and Pendias, 1984			ES/ER/TM 85/R3
Iodine	KI	Tomato	7		97	Top Weight	LOEC		4						Newton and Toth 1952			ES/ER/TM 85/R3
Iodine	KI	Tomato	7		97	Top Weight	LOEC		4						Newton and Toth, 1952			ES/ER/TM 85/R3
Iodine	KI	Tomato	7		97	Top Weight	LOEC		4						Newton and Toth, 1952			ES/ER/TM 85/R3
Iodine	KI	Tomato	7		97	Top Weight	LOEC		4						Newton and Toth, 1952			ES/ER/TM 85/R3
Toluene		Soybean	5		21	Fresh Shoot Weight	LOEC		20,000						Overcash et al., 1982			ES/ER/TM 85/R3
Toluene		Corn	5		21	Fresh Shoot Weight	LOEC		200						Overcash et al., 1982			ES/ER/TM 85/R3
Toluene		Corn	4			% germination	LOEC		20,000						Overcash et al., 1982			ES/ER/TM 85/R3
Toluene		Corn	6		21	Fresh Shoot Weight	LOEC		20,000						Overcash et al., 1982			ES/ER/TM 85/R3
Toluene		Fescue	6		21	Fresh Shoot Weight	LOEC		20,000						Overcash et al., 1982			ES/ER/TM 85/R3
Toluene		Soybean	6		21	Fresh Shoot Weight	LOEC		200						Overcash et al., 1982			ES/ER/TM 85/R3
Toluene		Soybean	4			% germination	LOEC		2000						Overcash et al., 1982			ES/ER/TM 85/R3
Acenaphthene		Lettuce	8	2	14	Fresh Weight Shoot	LOEC		25						Hulzebos et al., 1993			ES/ER/TM 85/R3
Anthracene		Oats	5.5	2.0		Growth	EC50		30		2	15	N	N	Mitchell et al., 1988	15861	g	OSWER Directive 9285.7 78
Anthracene		Cucumber	5.5	2.0		Growth	EC50		720		2	15	N	N	Mitchell et al., 1988	15861	h	OSWER Directive 9285.7 78
Anthracene		Oats	5.5	2.0		Mortality	LC50		525		2	14	N	N	Mitchell et al., 1988	15861	a	OSWER Directive 9285.7 78
Anthracene		Cucumber	5.5	2.0		Mortality	LC50		>1000		2	12	N	N	Mitchell et al., 1988	15861	b	OSWER Directive 9285.7 78

Table 6-7. Terrestrial Plant Effect Data

Chemical		Test Organism				Toxicity Value					Ecological Soil Screening Level (EcoSSL) Details				Reference/Source			
Name	Form	Name	pH	% Organic Matter	Exposure (days)	Parameter	Type	Comment	Soil Concen. (mg/kg dw)	Parameter % Decrease	Bio-availability Score	Total Evaluation Score	Eligible for Eco-SSL Derivation?	Used for Eco-SSL?	Primary	IP Number	Study ID	Secondary
Anthracene		Soybean	5.5	2.0		Mortality	LC50		>1000		2	12	N	N	Mitchell et al., 1988	15861	c	OSWER Directive 9285.7 78
Anthracene		Heath Banksia	5.5	2.0		Mortality	LC50		>1000		2	12	N	N	Mitchell et al., 1988	15861	d	OSWER Directive 9285.7 78
Anthracene		She-oak	5.5	2.0		Mortality	LC50		>1000		2	12	N	N	Mitchell et al., 1988	15861	e	OSWER Directive 9285.7 78
Anthracene		Yellow Bloodwood	5.5	2.0		Mortality	LC50		>1000		2	12	N	N	Mitchell et al., 1988	15861	f	OSWER Directive 9285.7 78
Anthracene		Soybean	5.5	2.0		Growth	EC50		>1000		2	15	N	N	Mitchell et al., 1988	15861	i	OSWER Directive 9285.7 78
Anthracene		HHath Banksia	5.5	2.0		Growth	EC50		>1000		2	15	N	N	Mitchell et al., 1988	15861	j	OSWER Directive 9285.7 78
Anthracene		She-oak	5.5	2.0		Growth	EC50		>1000		2	15	N	N	Mitchell et al., 1988	15861	k	OSWER Directive 9285.7 78
Anthracene		Yellow Bloodwood	5.5	2.0		Growth	EC50		>1000		2	15	N	N	Mitchell et al., 1988	15861	l	OSWER Directive 9285.7 78
TPH Diesel							EC50	10th percentile of LOEC	1105						Marwood et al., 1998			Efroymson et al., 2004
TPH Diesel							EC50	10th percentile of LOEC	1039						Marwood et al., 1998			Efroymson et al., 2004
TPH Diesel							LOAEC	10th percentile of LOEC	10000						Miller et al., 1980			Efroymson et al., 2004
TPH Diesel							EC>20	10th percentile of LOEC	25000						Adam and Duncan, 1999; Hou et al., 1999			Efroymson et al., 2004
TPH Diesel							EC>20	10th percentile of LOEC	14000						Wang and Bartha, 1990			Efroymson et al., 2004
TPH Diesel							EC50	10th percentile of LOEC	94						Marwood et al., 1998			Efroymson et al., 2004
Bis[2-ethylhexyl] phthalate	diethylphthalate	Lettuce	8	2	14	Fresh Weight Shoot	LOEC		134						Hulzebos et al., 1993			ES/ER/TM 85/R3
Bis[2-ethylhexyl] phthalate	Di-n-butylphthalate	Corn	6		21	Shoot Weight (fresh)	LOEC		200						Overcash et al., 1982			ES/ER/TM 85/R3
Bis[2-ethylhexyl] phthalate	Di-n-butylphthalate	Corn	4		21	Root and Shoot Weights (fresh)	LOEC		200						Overcash et al., 1982			ES/ER/TM 85/R3

Table 6-7. Terrestrial Plant Effect Data

Chemical		Test Organism				Toxicity Value					Ecological Soil Screening Level (EcoSSL) Details				Reference/Source			
Name	Form	Name	pH	% Organic Matter	Exposure (days)	Parameter	Type	Comment	Soil Concen. (mg/kg dw)	Parameter % Decrease	Bio-availability Score	Total Evaluation Score	Eligible for Eco-SSL Derivation?	Used for Eco-SSL?	Primary	IP Number	Study ID	Secondary
Bis[2-ethylhexyl] phthalate	Di-n-butylphthalate	Corn	5		21	Shoot Weight (fresh)	LOEC		200						Overcash et al., 1982			ES/ER/TM 85/R3
Bis[2-ethylhexyl] phthalate	Di-n-butylphthalate	Fescue	5		21	Shoot Weight (fresh)	LOEC		2000						Overcash et al., 1982			ES/ER/TM 85/R3
Bis[2-ethylhexyl] phthalate	Di-n-butylphthalate	Fescue	6		21	Shoot Weight (fresh)	LOEC		2000						Overcash et al., 1982			ES/ER/TM 85/R3
Bis[2-ethylhexyl] phthalate	Di-n-butylphthalate	Soybean	6		21	Shoot Weight (fresh)	LOEC		200						Overcash et al., 1982			ES/ER/TM 85/R3
Bis[2-ethylhexyl] phthalate	Di-n-butylphthalate	Soybean	4		21	% seed germination	LOEC		200						Overcash et al., 1982			ES/ER/TM 85/R3
phenol		Lettuce	8	2	14	Fresh Weight Shoot	LOEC		79						Hulzebos et al., 1993			ES/ER/TM 85/R3
phenol		Lettuce	8	2	14	Fresh Weight Shoot	LOEC		168						Hulzebos et al., 1993			ES/ER/TM 85/R3
PCB - Aroclor 1254		Pigweed	4	1.4	28	Plant height	LOEC		100						Strek and Weber, 1982			ES/ER/TM 85/R3
PCB - Aroclor 1254		Soybean	5	1	26	Fresh Weight Shoot	LOEC		100						Weber and Mrozek, 1979			ES/ER/TM 85/R3
PCB - Aroclor 1254		Soybean	5	1	16	Fresh Weight Shoot	LOEC		1000						Strek and Weber, 1980			ES/ER/TM 85/R3
PCB - Aroclor 1254		Pigweed	5	1		Fresh weight leaves and plant height	LOEC		100						Strek and Weber, 1980			ES/ER/TM 85/R3
PCB - Aroclor 1254		Soybean	5	1	16	Fresh Weight Shoot	LOEC		1000						Strek and Weber, 1980			ES/ER/TM 85/R3
PCB - Aroclor 1254		Pigweed	5	1		Fresh weight leaves and plant height	LOEC		40						Strek and Weber, 1980			ES/ER/TM 85/R3
PCB - Aroclor 1254		Soybean	5	1	16	Fresh weight leaves and plant height	LOEC		1000						Strek and Weber, 1980			ES/ER/TM 85/R3
PCB - Aroclor 1254		Beet	5	1		Fresh weight leaves and plant height	LOEC		1000						Strek and Weber, 1980			ES/ER/TM 85/R3
DDT		Common bean	7.8	0.9		Growth	MATC		7.1		0	12	Y	N	Pareek and Gaur, 1970	17330	a	OSWER Directive 9285.7 57

Table 6-7. Terrestrial Plant Effect Data

Chemical		Test Organism				Toxicity Value					Ecological Soil Screening Level (EcoSSL) Details				Reference/Source			
Name	Form	Name	pH	% Organic Matter	Exposure (days)	Parameter	Type	Comment	Soil Concen. (mg/kg dw)	Parameter % Decrease	Bio-availability Score	Total Evaluation Score	Eligible for Eco-SSL Derivation?	Used for Eco-SSL?	Primary	IP Number	Study ID	Secondary
Dieldrin		Cotton	6.6	0.85		Growth	MATC	Medium vigor seeds. Seedling height.	34.6		1	14	N	N	Rajanna and de la Cruz, 1977		a	OSWER Directive 9285.7 56
Dieldrin		Soybean	6.6	0.85		Growth	MATC	Medium vigor seeds. Seedling height.	14.1		1	14	N	N	Rajanna and de la Cruz, 1977		b	OSWER Directive 9285.7 56
Dieldrin		Corn	6.6	0.85		Growth	MATC	Medium vigor seeds. Seedling height.	24.5		1	14	N	N	Rajanna and de la Cruz, 1977		c	OSWER Directive 9285.7 56
Dieldrin		Wheat	6.6	0.85		Growth	MATC	Medium vigor seeds. Seedling height.	34.6		1	14	N	N	Rajanna and de la Cruz, 1977		d	OSWER Directive 9285.7 56
Dieldrin		Cotton	6.6	0.85		Growth	MATC	Medium vigor seeds. Seedling dry weight.	44.7		1	14	N	N	Rajanna and de la Cruz, 1977		e	OSWER Directive 9285.7 56
Dieldrin		Soybean	6.6	0.85		Growth	MATC	Medium vigor seeds. Seedling dry weight.	34.6		1	14	N	N	Rajanna and de la Cruz, 1977		f	OSWER Directive 9285.7 56
Dieldrin		Corn	6.6	0.85		Growth	MATC	Medium vigor seeds. Seedling dry weight.	24.5		1	14	N	N	Rajanna and de la Cruz, 1977		g	OSWER Directive 9285.7 56
Dieldrin		Wheat	6.6	0.85		Growth	MATC	Medium vigor seeds. Seedling dry weight.	7.1		1	14	N	N	Rajanna and de la Cruz, 1977		h	OSWER Directive 9285.7 56
Dieldrin		Cotton	6.6	0.85		Growth	MATC	Low vigor seeds. Seedling height.	34.6		1	14	N	N	Rajanna and de la Cruz, 1977		i	OSWER Directive 9285.7 56
Dieldrin		Soybean	6.6	0.85		Growth	MATC	Low vigor seeds. Seedling height.	24.5		1	14	N	N	Rajanna and de la Cruz, 1977		j	OSWER Directive 9285.7 56
Dieldrin		Corn	6.6	0.85		Growth	MATC	Low vigor seeds. Seedling height.	34.6		1	14	N	N	Rajanna and de la Cruz, 1977		k	OSWER Directive 9285.7 56

Table 6-7. Terrestrial Plant Effect Data

Chemical		Test Organism				Toxicity Value					Ecological Soil Screening Level (EcoSSL) Details				Reference/Source			
Name	Form	Name	pH	% Organic Matter	Exposure (days)	Parameter	Type	Comment	Soil Concen. (mg/kg dw)	Parameter % Decrease	Bio-availability Score	Total Evaluation Score	Eligible for Eco-SSL Derivation?	Used for Eco-SSL?	Primary	IP Number	Study ID	Secondary
Dieldrin		Wheat	6.6	0.85		Growth	MATC	Low vigor seeds. Seedling height.	7.1		1	14	N	N	Rajanna and de la Cruz, 1977		l	OSWER Directive 9285.7 56
Dieldrin		Cotton	6.6	0.85		Growth	MATC	Low vigor seeds. Seedling dry weight.	7.1		1	14	N	N	Rajanna and de la Cruz, 1977		m	OSWER Directive 9285.7 56
Dieldrin		Soybean	6.6	0.85		Growth	MATC	Low vigor seeds. Seedling dry weight.	14.1		1	14	N	N	Rajanna and de la Cruz, 1977		n	OSWER Directive 9285.7 56
Dieldrin		Corn	6.6	0.85		Growth	MATC	Low vigor seeds. Seedling dry weight.	7.1		1	14	N	N	Rajanna and de la Cruz, 1977		o	OSWER Directive 9285.7 56
Dieldrin		Wheat	6.6	0.85		Growth	MATC	Low vigor seeds. Seedling dry weight.	7.1		1	14	N	N	Rajanna and de la Cruz, 1977		p	OSWER Directive 9285.7 56
Dieldrin		Corn, Reids yellow			14	Growth	LOEC	Decreased plant size	1.149						Cole et al. 1976			LA UR 08 6673
Dieldrin		Cabbage			35	Growth	LOEC	Decreased in plant size, root fresh mass, and shoot fresh mass	0.114	22					Kabir and Kahn 1972			LA UR 08 6673
Ammonia	no data																	
Bismuth	no data																	
Calcium	no data																	
Chloride	no data																	
Cyanide	no data																	
Hexavalent Chromium	Only LANL data																	
Hydrazine	no data																	
Magnesium	no data																	
Nitrate	no data																	
Nitrite	no data																	
Nitrogen in Nitrite and Nitrate	no data																	
Phosphate	no data																	
Potassium	no data																	
Silicon	no data																	
Sodium	no data																	
Strontium	no data																	
Sulfate	no data																	
Sulfide	no data																	
Thorium	no data																	
Titanium	no data																	
Zirconium	no data																	
1,1,1-Trichloroethane	no data																	
2-Butanone	no data																	

Table 6-7. Terrestrial Plant Effect Data

Chemical		Test Organism				Toxicity Value					Ecological Soil Screening Level (EcoSSL) Details				Reference/Source			
Name	Form	Name	pH	% Organic Matter	Exposure (days)	Parameter	Type	Comment	Soil Concen. (mg/kg dw)	Parameter % Decrease	Bio-availability Score	Total Evaluation Score	Eligible for Eco-SSL Derivation?	Used for Eco-SSL?	Primary	IP Number	Study ID	Secondary
4,4'-DDD (Dichlorodiphenyldichloroethane)	no data																	
Acetone	no data																	
Aroclor-1260	no data																	
Benzene	no data																	
Benzo(a)anthracene	no data																	
Benzo(a)pyrene	no data																	
Benzo(b)fluoranthene	no data																	
Benzo(ghi)perylene	no data																	
Benzo(k)fluoranthene	no data																	
Bis(2-ethylhexyl) phthalate	no data																	
Butylbenzylphthalate	no data																	
Carbazole	no data																	
Carbon disulfide	no data																	
Chloroform	no data																	
Chloromethane	no data																	
Chrysene	no data																	
Diacetone alcohol	no data																	
Dibenz[a,h]anthracene	no data																	
Fluoranthene	no data																	
High boiling hydrocarbons	no data																	
Indeno(1,2,3-cd)pyrene	no data																	
Methylene chloride	no data																	
Phenanthrene	no data																	
Pyrene	no data																	
Tetrachloroethene	no data																	
Total organic carbon	NA																	
Total petroleum hydrocarbons - motor oil (high boiling)	no data																	
Xylenes (total)	Only LANL data																	
Alkalinity	NA																	
pH Measurement (range)	NA																	
Europium-154	no data, but there is data for E-152																	
Europium-155	no data, but there is data for E-153																	
Neptunium-237	no data																	
Nickel-63	no data																	
Plutonium-238	no data																	
Plutonium-239/240	no data																	
Potassium-40	no data and not listed														CPEE (DOE-RL-2001-54 Rev 0, App C3)			
Radium-226	no data																	
Radium-228	no data																	

Table 6-7. Terrestrial Plant Effect Data

Chemical		Test Organism				Toxicity Value					Ecological Soil Screening Level (EcoSSL) Details				Reference/Source			
Name	Form	Name	pH	% Organic Matter	Exposure (days)	Parameter	Type	Comment	Soil Concen. (mg/kg dw)	Parameter % Decrease	Bio-availability Score	Total Evaluation Score	Eligible for Eco-SSL Derivation?	Used for Eco-SSL?	Primary	IP Number	Study ID	Secondary
Selenium-79	no data and Excluded - Constituent generated at less than 5.0 E-05 times cesium-137 activity. Based on ORIGEN2 modeling of Hanford reactor production.														CPEE (DOE-RL-2001-54 Rev 0, App C3)			
Strontium-90	no data																	
Technetium-99	no data																	
Thorium-230	no data and not listed														CPEE (DOE-RL-2001-54 Rev 0, App C3)			
Thorium-232	no data																	
Tritium	no data and Not listed and is on target list for 100-BC OUs														CPEE (DOE-RL-2001-54 Rev 0, App C3)			
Uranium-233/234	no data																	
Uranium-234	no data																	
Uranium-235	no data																	
Uranium-238	no data																	
Gross alpha	NA																	
Gross beta	NA																	
Total beta radiostrontium	NA																	

Notes:
Geometric means were derived using LOECs, LOAECs, EC20s, EC10s, and MATCs. ILLs, LC50s, and EC50s were not evaluated except for TPH diesel for which all endpoints were listed as 10th percentiles of the LOEC.
EC25s, EC50s, and LC50s were only considered for analytes for which no other effects data were available. A geometric mean was derived from these effect levels and then the geometric mean was multiplied by uncertainty factor of 0.1.
Values for diethyl phthalate and di-n-butyl phthalate were used as a surrogate for bis[2-ethylhexyl] phthalate.

Acronyms:
EC10 = concentration at which an effect is observed in 10% of exposed organisms
EC20 = concentration at which an effect is observed in 20% of exposed organisms
EC50 = concentration at which an effect is observed in 50% of exposed organisms
ILL = Incipient lethal level
LC50 = concentration lethal to 50% of exposed organisms
LCT = Lowest Concentration Tested
LOAEC = lowest observed adverse effect concentration
LOEC = lowest adverse effect concentration
MATC = maximum acceptable toxicant concentration (calculated as a geometric mean of the NOEC and LOEC)
NOEC = no observed effect concentration

Table 6-8. Summary of Terrestrial Invertebrate Effects Data

Chemical		Test Organism		Soil			Toxicity Value						Ecological Soil Screening Level (EcoSSL) Details				Reference/Source			
Name	Form	Name	Species	Type	pH	% Organic Matter	Exposure (days)	Parameter	Type	Comment	Soil Concentration (mg/kg dw)	Parameter % Decrease	Bio-availability Score	Total Evaluation Score	Eligible for Eco-SSL Derivation?	Used for Eco-SSL?	Primary	IP Number	Study ID	Secondary
Aluminum																				OSWER Directive 9285.7 60
Antimony		Enchytraeid	Enchytraeus crypticus		4.08-5.29	1.2		Reproduction	EC20		194		2	16	Y	Y	Kuperman et al., 2002			OSWER Directive 9285.7 61
Antimony		Springtail	Folsomia candida		4.57-5.29	1.2		Reproduction	EC20		81		2	17	Y	Y	Phillips et al., 2002			OSWER Directive 9285.7 61
Antimony		Earthworm	Eisenia fetida		4.39-5.29	1.2		Reproduction	EC20		30		2	15	Y	Y	Simini et al., 2002			OSWER Directive 9285.7 61
Arsenic	KH2AsO4	Earthworm	Eisenia fetida	Peaty Marshland Soil and Manure			56	Cocoons/Worm	LOEC	Lowest Concentration Tested (LCT)	68	56					Fischer and Koszorus, 1992			ES/ER/TM-126/R2
Barium		Potworm	Enchytraeus crypticus		4.36-5.29	1.2		Reproduction	EC20		585		2	17	Y	Y	Kuperman et al., 2002			OSWER Directive 9285.7 63
Barium		Springtail	Folsomia candida		4.47-5.29	1.2		Reproduction	EC20		165		2	18	Y	Y	Phillips et al., 2002			OSWER Directive 9285.7 63
Barium		Earthworm	Eisenia fetida		4.26-5.29	1.2		Reproduction	EC20		370		2	17	Y	Y	Simini et al., 2002			OSWER Directive 9285.7 63
Beryllium		Potworm	*Enchytraeus crypticus*		4.29-5.29	1.2		Reproduction	EC20		45		2	17	Y	Y	Kuperman et al., 2002	62344		ES/ER/TM 85/R3 and OSWER Directive 9285.7 64
Beryllium		Springtail	*Folsomia candida*		4.29-5.29	1.2		Reproduction	EC20		28		2	18	Y	Y	Phillips et al., 2002	62345		ES/ER/TM 85/R3 and OSWER Directive 9285.7 64
Beryllium		Earthworm	*Eisenia fetida*		3.83-5.29	1.2		Reproduction	EC20		52		2	16	Y	Y	Simini et al., 2002	62343		ES/ER/TM 85/R3 and OSWER Directive 9285.7 64
Cadmium	C4H6CdO4	Earthworm	*Eisenia fetida*	Horse Manure			56	Cocoon Production	LOEC	LCT	25	52					Malecki et al., 1982			ES/ER/TM-126/R2
Cadmium	C4H6CdO4	Earthworm	*Eisenia fetida*	Horse Manure			140	Cocoon Production	LOEC	LCT	50	24					Malecki et al., 1982			ES/ER/TM-126/R2
Cadmium	Soluble Forms	Earthworm	*Eisenia fetida*	Horse Manure			42	Growth;Cocoon Production	LOEC	LCT	100	25,100					Neuhauser et al., 1984			ES/ER/TM-126/R2
Cadmium		Nematode	*Caenorhabditis elegans*		4	4.2		Mortality	LC50		7		2	13	N	N	Donkin and Dusenbery, 1994			OSWER Directive 9285.7 65
Cadmium		Nematode	*Caenorhabditis elegans*		4	1.14		Mortality	LC50		268		2	13	N	N	Peredney and Williams, 2000b		a	OSWER Directive 9285.7 65
Cadmium		Nematode	*Caenorhabditis elegans*		4	1.14		Mortality	LC50		371		2	13	N	N	Peredney and Williams, 2000b		b	OSWER Directive 9285.7 65
Cadmium		Nematode	*Caenorhabditis elegans*		4	4.2		Mortality	LC50		937		2	13	N	N	Peredney and Williams, 2000b		c	OSWER Directive 9285.7 65
Cadmium		Nematode	*Caenorhabditis elegans*		4	4.2		Mortality	LC50		1215		2	13	N	N	Peredney and Williams, 2000b		d	OSWER Directive 9285.7 65
Cadmium		Earthworm	*Eisenia fetida*		4.1	1.7		Mortality	LC50		>1000		2	14	N	N	Van Gestel and Van Dis, 1988		a	OSWER Directive 9285.7 65

Table 6-8. Summary of Terrestrial Invertebrate Effects Data

Chemical		Test Organism		Soil			Toxicity Value						Ecological Soil Screening Level (EcoSSL) Details				Reference/Source			
Name	Form	Name	Species	Type	pH	% Organic Matter	Exposure (days)	Parameter	Type	Comment	Soil Concentration (mg/kg dw)	Parameter % Decrease	Bio-availability Score	Total Evaluation Score	Eligible for Eco-SSL Derivation?	Used for Eco-SSL?	Primary	IP Number	Study ID	Secondary
Cadmium		Springtail	*Folsomia candida*		5.2	2.4		Reproduction	EC50		125		2	18	N	N	Vonk et al., 1996		c	OSWER Directive 9285.7 65
Cadmium		Springtail	*Folsomia candida*		4.9	3.8		Reproduction	EC50		49		2	18	N	N	Vonk et al., 1996		e	OSWER Directive 9285.7 65
Cadmium		Earthworm	*Eisenia fetida*		5.4	2.4		Growth	EC50		393		2	17	N	N	Vonk et al., 1996		h	OSWER Directive 9285.7 65
Cadmium		Earthworm	*Eisenia fetida*		4.9	3.8		Growth	EC50		332		2	17	N	N	Vonk et al., 1996		j	OSWER Directive 9285.7 65
Cadmium		Earthworm	*Eisenia andrei*		6.5	10.0		Mortality	ILL	Incipient Lethal Level	112		1	16	N	N	Conder and Lanno, 2000			OSWER Directive 9285.7 65
Cadmium		Springtail	*Folsomia candida*		6.2	10.0		Reproduction	EC50		123		1	15	N	N	Crommentuijn et al., 1995			OSWER Directive 9285.7 65
Cadmium		Earthworm	*Eisenia fetida*		6.5	10.0		Mortality	LC50		298		1	13	N	N	Fitzpatrick et al., 1996			OSWER Directive 9285.7 65
Cadmium		Earthworm	*Eisenia fetida*		6.0	10.0		Mortality	LC50		876		1	14	N	N	Neuhauser et al., 1986a, 1985			OSWER Directive 9285.7 65
Cadmium		Nematode	*Caenorhabditis elegans*		4	10.0		Mortality	LC50		1,641		1	12	N	N	Peredney and Williams, 2000a			OSWER Directive 9285.7 65
Cadmium		Nematode	*Caenorhabditis elegans*		4	10.0		Mortality	LC50		1642		1	12	N	N	Peredney and Williams, 2000b		e	OSWER Directive 9285.7 65
Cadmium		Nematode	*Caenorhabditis elegans*		4	10.0		Mortality	LC50		1852		1	12	N	N	Peredney and Williams, 2000b		f	OSWER Directive 9285.7 65
Cadmium		Earthworm	*Eisenia fetida*		6.1	10.0		Growth	EC50		215		1	15	N	N	Spurgeon and Hopkin, 1995			OSWER Directive 9285.7 65
Cadmium		Earthworm	*Eisenia fetida*		6.3	10.0		Reproduction	EC50		46		1	15	N	N	Spurgeon et al., 1994			OSWER Directive 9285.7 65
Cadmium		Springtail	*Folsomia candida*		6.0	10.0		Reproduction	EC50		40		1	15	N	N	Van Gestel and Hensbergen, 1997			OSWER Directive 9285.7 65
Cadmium		Springtail	*Folsomia candida*		5.0	10.0		Reproduction	EC50		101		1	17	N	N	Vonk et al., 1996		a	OSWER Directive 9285.7 65
Cadmium		Springtail	*Folsomia candida*		6.5	10.0		Reproduction	EC50		223		1	17	N	N	Vonk et al., 1996		b	OSWER Directive 9285.7 65
Cadmium		Springtail	*Folsomia candida*		6.5	2.4		Reproduction	EC50		112		1	17	N	N	Vonk et al., 1996		d	OSWER Directive 9285.7 65
Cadmium		Earthworm	*Eisenia fetida*		5.4	10.0		Growth	EC50		410		1	16	N	N	Vonk et al., 1996		f	OSWER Directive 9285.7 65
Cadmium		Earthworm	*Eisenia fetida*		6.9	10.0		Growth	EC50		358		1	16	N	N	Vonk et al., 1996		g	OSWER Directive 9285.7 65
Cadmium		Earthworm	*Eisenia fetida*		6.9	2.4		Growth	EC50		343		1	16	N	N	Vonk et al., 1996		l	OSWER Directive 9285.7 65
Cadmium		Earthworm	*Eisenia fetida*		7.0	7.7		Mortality	LC50		>1000		0	12	N	N	Van Gestel and Van Dis, 1988		b	OSWER Directive 9285.7 65

Table 6-8. Summary of Terrestrial Invertebrate Effects Data

Chemical		Test Organism		Soil			Toxicity Value						Ecological Soil Screening Level (EcoSSL) Details				Reference/Source			
Name	Form	Name	Species	Type	pH	% Organic Matter	Exposure (days)	Parameter	Type	Comment	Soil Concentration (mg/kg dw)	Parameter % Decrease	Bio-availability Score	Total Evaluation Score	Eligible for Eco-SSL Derivation?	Used for Eco-SSL?	Primary	IP Number	Study ID	Secondary
Cadmium	CdCl2	Earthworm	*Eisenia andrei*	OECD Soil	6	5	84	Sexual Development EC50	LOEC		27	50					Van Gestel et al., 1991b			ES/ER/TM-126/R2
Cadmium	Cd(NO3)2	Earthworm	*Eisenia fetida*	OECD Soil	6		56	Cocoon Production EC50	LOEC		46.3	50					Spurgeon et al., 1994			ES/ER/TM-126/R2
Cadmium	CdCl2	Earthworm	*Eisenia andrei*	OECD Soil	6	5	84	Sexual Development EC50	LOEC		108	50					Van Gestel et al., 1991a			ES/ER/TM-126/R2
Cadmium	CdCl2	Earthworm	*Eisenia fetida*	Sandy Soil	4	0.9	14	Survival LC50	LOEC		440	50					Van Gestel and Van Dis 1988			ES/ER/TM-126/R2
Cadmium	CdNO3	Earthworm	*Eisenia fetida*	OECD Soil	6	5	14	Survival LC50	LOEC		1843	50					Neuhauser et al., 1985b			ES/ER/TM-126/R2
Cadmium		Springtail	*Folsomia candida*		5.6	10.0		Population	EC10		6		1	16	Y	Y	Van Gestel and Van Diepen, 1997			OSWER Directive 9285.7 65
Cadmium	CdSO4	Earthworm	*Aporrectodea caliginosa*	Egyptian	7.05	10.8	56	Cocoon Production	LOEC		10	25					Khalil et al., 1996			ES/ER/TM-126/R2
Cadmium	CdCl2	Earthworm	*Eisenia andrei*	OECD Soil	6	5	21	Cocoons/Worm; Juveniles/Worm	LOEC		18	23,22					Van Gestel et al., 1992			ES/ER/TM-126/R2
Cadmium	CdCl2	Earthworm	*Eisenia andrei*	OECD Soil	6	5	84	Growth	LOEC		32	40					Van Gestel et al., 1991a			ES/ER/TM-126/R2
Cadmium	CdCl2	Earthworm	*Eisenia andrei*	OECD Soil	6	5	84	Growth	LOEC		100	44					Van Gestel et al., 1991a			ES/ER/TM-126/R2
Cadmium		Earthworm	*Dendrobaena rubida*	Soil and Dung	5	5.7	120	Cocoons/Worm	LOEC		100	62					Bengtsson et al., 1986			ES/ER/TM-126/R2
Cadmium		Earthworm	*Dendrobaena rubida*	Soil and Dung	6	5.7	120	Cocoons/Worm; Hatchlings/Cocoon	LOEC		100	78,71					Bengtsson et al., 1986			ES/ER/TM-126/R2
Cadmium		Earthworm	*Dendrobaena rubida*	Soil and Dung	6	5.7	120	Total Hatchlings	LOEC		100	74					Bengtsson et al., 1986			ES/ER/TM-126/R2
Cadmium		Earthworm	*Dendrobaena rubida*	Soil and Dung	7	5.7	120	% Cocoon Hatching success	LOEC		100	47					Bengtsson et al., 1986			ES/ER/TM-126/R2
Cadmium		Earthworm	*Dendrobaena rubida*	Soil and Dung	7	5.7	120	Hatchlings/Conc; Total Hatchlings	LOEC		100	38,30					Bengtsson et al., 1986			ES/ER/TM-126/R2
Cadmium	Cd(NO3)2	Earthworm	*Eisenia fetida*	OECD Soil	6.1		21	Growth	LOEC		215	50					Spurgeon and Hopkin, 1995			ES/ER/TM-126/R2
Cadmium	CdCl2	Earthworm	*Lumbricus rubellas*	Sandy Loam	7	4	84	Survival	LOEC		1000	82					Ma, 1982			ES/ER/TM-126/R2
Cadmium		Earthworm	*Eisenia andrei*		6.0	10.0		Reproduction	MATC		13		1	16	Y	Y	Van Gestel et al., 1992		a	OSWER Directive 9285.7 65
Cadmium		Springtail	*Folsomia candida*		6.0	10.0		Reproduction	MATC		220		1	16	Y	Y	Crommentuijn et al., 1993			OSWER Directive 9285.7 65
Cadmium		Earthworm	*Eisenia andrei*		6.7	10.0		Growth	MATC		24		1	16	Y	Y	Van Gestel et al., 1991a		a	OSWER Directive 9285.7 65
Cadmium		Springtail	*Folsomia candida*		*6.0*	10.0		Reproduction	MATC		600		1	16	Y	Y	Sandifer and Hopkin, 1997			OSWER Directive 9285.7 65
Cadmium		Springtail	*Folsomia candida*		6.0	10.0		Reproduction	MATC		108		1	15	Y	Y	Crouau et al., 1999		a	OSWER Directive 9285.7 65
Cadmium		Springtail	*Folsomia candida*		6.0	10.0		Reproduction	MATC		600		1	14	Y	Y	Sandifer and Hopkin, 1996		a	OSWER Directive 9285.7 65
Cadmium		Springtail	*Folsomia candida*		4.5	10.0		Reproduction	MATC		600		1	14	Y	Y	Sandifer and Hopkin, 1996		c	OSWER Directive 9285.7 65
Cadmium		Springtail	*Folsomia candida*		5.0	10.0		Reproduction	MATC		600		1	14	Y	Y	Sandifer and Hopkin, 1996		b	OSWER Directive 9285.7 65

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Chemical		Test Organism		Soil			Toxicity Value						Ecological Soil Screening Level (EcoSSL) Details				Reference/Source			
Name	Form	Name	Species	Type	pH	% Organic Matter	Exposure (days)	Parameter	Type	Comment	Soil Concentration (mg/kg dw)	Parameter % Decrease	Bio-availability Score	Total Evaluation Score	Eligible for Eco-SSL Derivation?	Used for Eco-SSL?	Primary	IP Number	Study ID	Secondary
Cadmium		Nematode	*Plectuc acuminatus*		5.5	10.0		Reproduction	MATC		566		1	14	Y	Y	Kammenga et al., 1996			OSWER Directive 9285.7 65
Cadmium		Earthworm	*Eisenia andrei*		6.0	10.0		Reproduction	LOAEC		10		1	15	N	N	Van Gestel et al., 1993			OSWER Directive 9285.7 65
Chromium	K2Cr2O7	Earthworm	Octochaetus pattoni	Soil and Dung			60	Survival	LOEC	LCT	2	75					Abbasi and Soni, 1983			ES/ER/TM-126/R2
Chromium	K2Cr2O7	Earthworm	Pheretima posthuma	Paddy Soil			61	Survival	LOEC	LCT	10	100					Soni and Abbasi, 1981			ES/ER/TM-126/R2
Chromium	Cr(NO3)3	Earthworm	Eisenia andrei	OECD Soil	6	5	21	Growth	LOEC		32	30					Van Gestel et al., 1992			ES/ER/TM-126/R2
Chromium	KCr(SO4)2	Earthworm	Eisenia fetida	Soil and Manure			56	Number Cocoons and Hatchlings	LOEC	LCT	625	55					Molnar et al., 1989			ES/ER/TM-126/R2
Chromium	K2Cr2O7	Earthworm	Eisenia fetida	Soil and Manure			14	Weight Gain of Juveniles	LOEC	LCT	625	43					Molnar et al., 1989			ES/ER/TM-126/R2
Chromium		Earthworm	*Eisenia andrei*		6.7	10		Reproduction	MATC		57		1	16	Y	N	Van Gestel et al., 1992	12874	a	OSWER Directive 9285.7 65
Chromium		Earthworm	*Eisenia andrei*		6	10		Reproduction	MATC		57		1	12	Y	N	Van Gestel et al., 1993	6828		OSWER Directive 9285.7 65
Copper		Earthworm	*Eisenia fetida*		3.8	5.9		Mortality	LOAEC		100		2	12	N	N	Phillips et al., 1996	11508	b	OSWER Directive 9285.7 68
Copper		Nematode	Not available		4	3.7		Population	MATC		116		2	14	Y	Y	Korthals et al., 1996a	7848	a	OSWER Directive 9285.7 68
Copper		Nematode	*Caenorhabditis elegans*		4	1.14		Mortality	LC50		20		2	13	N	N	Peredney and Williams, 2000b	56449	g	EPA, 2007 (February)
Copper		Nematode	*Caenorhabditis elegans*		4	1.14		Mortality	LC50		25		2	13	N	N	Peredney and Williams, 2000b	56449	h	EPA, 2007 (February)
Copper		Nematode	*Caenorhabditis elegans*		4	4.2		Mortality	LC50		186		2	13	N	N	Peredney and Williams, 2000b	56449	i	EPA, 2007 (February)
Copper		Nematode	*Caenorhabditis elegans*		4	4.2		Mortality	LC50		252		2	13	N	N	Peredney and Williams, 2000b	56449	j	EPA, 2007 (February)
Copper		Nematode	*Caenorhabditis elegans*		4	10		Mortality	LC50		1272		1	12	N	N	Peredney and Williams, 2000a	53082	--	OSWER Directive 9285.7 68
Copper		Nematode	*Caenorhabditis elegans*		4	10		Mortality	LC50		431		1	12	N	N	Peredney and Williams, 2000b	56449	k	OSWER Directive 9285.7 68
Copper		Nematode	*Caenorhabditis elegans*		4	10		Mortality	LC50		463		1	12	N	N	Peredney and Williams, 2000b	56449	l	OSWER Directive 9285.7 68
Copper		Nematode	Not available		4.1	3.2		Reproduction	MATC		141		2	13	Y	Y	Korthals et al., 1996b	4402	a	OSWER Directive 9285.7 68
Copper		Nematode	Not available		4.25	3.3		Population	MATC		141		2	13	Y	Y	Korthals et al., 1998	13828	--	OSWER Directive 9285.7 68
Copper		Springtail	*Folsomia candida*		4.5	10		Reproduction	MATC		1732		1	16	Y	N	Sandifer and Hopkin, 1996	4056	c	OSWER Directive 9285.7 68
Copper		Earthworm	*Eisenia fetida*		4.7	1.4		Growth	MATC		200		1	13	Y	N	Phillips et al., 1996	11508	a	OSWER Directive 9285.7 68
Copper		Earthworm	*Lumbricus rubellus*		4.8	5.7		Reproduction	MATC		84		2	14	Y	Y	Ma, 1984	11146	a	OSWER Directive 9285.7 68
Copper	CuCl2	Earthworm	Allolobophora chlorotica	Sandy Loam	5	2.5		Cocoon Production	LOEC		51	50					Ma, 1988			ES/ER/TM-126/R2
Copper	CuCl2	Earthworm	Apporectodea caliginosa	Sandy Loam	5	2.5	42	Cocoon Production	LOEC		68	50					Ma, 1988			ES/ER/TM-126/R2

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Name	Form	Name	Species	Type	pH	% Organic Matter	Exposure (days)	Parameter	Type	Comment	Soil Concentration (mg/kg dw)	Parameter % Decrease	Bio-availability Score	Total Evaluation Score	Eligible for Eco-SSL Derivation?	Used for Eco-SSL?	Primary	IP Number	Study ID	Secondary
Copper		Earthworm	Dendrobaena rubida	Soil and Dung	5	5.7	120	Cocoons/Worm; Hatchlings/Cocoon	LOEC	LCT	100	70, 64					Bengtsson et al., 1986			ES/ER/TM-126/R2
Copper	CuCl2	Earthworm	Lumbricus rubellus	Sandy Loam	5	2.5		Cocoon Production	LOEC		122	50					Ma, 1988			ES/ER/TM-126/R2
Copper	CuCl2	Earthworm	Lumbricus rubellus	Loamy Sand	5	2.9	42	Cocoon Production	LOEC		131	42					Ma, 1984			ES/ER/TM-126/R2
Copper	CuSO4	Earthworm	Lumbricus rubellus	Loamy Sand	5	2.9	18	Cocoon Production	LOEC		148	26					Ma, 1984			ES/ER/TM-126/R2
Copper		Earthworm	*Aporrectodea caliginosa*		5	5		Reproduction	EC10		27		2	13	Y	Y	Ma, 1988	7854	a	OSWER Directive 9285.7 68
Copper		Earthworm	*Allolobophora chlorotica*		5	5		Reproduction	EC10		28		2	13	Y	Y	Ma, 1988	7854	b	OSWER Directive 9285.7 68
Copper		Earthworm	*Lumbricus rubellus*		5	5		Reproduction	EC10		80		2	13	Y	Y	Ma, 1988	7854	c	OSWER Directive 9285.7 68
Copper		Springtail	*Folsomia candida*		5.1	10		Reproduction	MATC		447		1	16	Y	N	Sandifer and Hopkin, 1996	4056	b	OSWER Directive 9285.7 68
Copper		Nematode	*Caenorhabditis elegans*		5.1	3		Mortality	LC50		413		2	13	N	N	Donkin and Dusenbery, 1993	7838	b	OSWER Directive 9285.7 68
Copper		Nematode	*Caenorhabditis elegans*		5.2	1.7		Mortality	LC50		534		2	14	N	N	Donkin and Dusenbery, 1993	7838	a	OSWER Directive 9285.7 68
Copper		Springtail	*Folsomia fimetaria*		5.5	4		Reproduction	EC10		38		2	16	Y	Y	Scott-Fordsmand et al., 1997	2288	--	OSWER Directive 9285.7 68
Copper		Nematode	*Plectus acuminatus*		5.5	10		Reproduction	LOAEC		10		1	13	N	N	Kammenga et al., 1996	5515	--	OSWER Directive 9285.7 68
Copper		Earthworm	*Enchytraeus crypticus*		5.5	10		Reproduction	LC50		477		1	16	N	N	Posthuma et al., 1997	2380	a	OSWER Directive 9285.7 68
Copper		Earthworm	*Eisenia andrei*		5.6	<1.0		Reproduction	MATC		133		2	15	Y	Y	Svendsen and Weeks, 1997a	11490	--	OSWER Directive 9285.7 68
Copper		Earthworm	*Lumbricus rubellus*		5.6	<1.0		Growth	MATC		188		2	13	Y	Y	Svendsen and Weeks, 1997b	4449	--	OSWER Directive 9285.7 68
Copper		Earthworm	*Eisenia fetida*		5.8	4		Reproduction	MATC		18		1	11	Y	N	Kula and Larink, 1997	11046	d	OSWER Directive 9285.7 68
Copper		Earthworm	*Eisenia andrei*		5.8	4		Reproduction	MATC		6		1	11	Y	N	Kula and Larink, 1997	11046	b	OSWER Directive 9285.7 68
Copper		Springtail	*Folsomia candida*		5.8	10		Reproduction	MATC		447		1	16	Y	N	Sandifer and Hopkin, 1996	4056	a	OSWER Directive 9285.7 68
Copper	Cu(NO3)2	Earthworm	Eisenia fetida	OECD Soil	6		56	Cocoon Production	EC50		53.3	50					Spurgeon et al., 1994			ES/ER/TM-126/R2
Copper	CuCl2	Earthworm	Eisenia andrei	OECD Soil	6	5	84	Growth	LOEC		100	32					Van Gestel et al., 1991a			ES/ER/TM-126/R2
Copper	CuCl2	Earthworm	Eisenia fetida	OECD Soil	6	5	21	Cocoon Production	LOEC		180	36					Van Gestel et al., 1989			ES/ER/TM-126/R2
Copper	CuSO4	Earthworm	Lumbricus rubellus	Loamy Sand	6	2.9	18	Cocoon Production	LOEC		278	33					Ma, 1984			ES/ER/TM-126/R2
Copper		Earthworm	Dendrobaena rubida	Soil and Dung	6	5.7	120	Cocoons/Worm; Hatchlings/Cocoon	LOEC		500	100					Bengtsson et al., 1986			ES/ER/TM-126/R2
Copper		Earthworm	Dendrobaena rubida	Soil and Dung	6	5.7	120	% Hatching Success	LOEC		500	100					Bengtsson et al., 1986			ES/ER/TM-126/R2

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Copper	CuNO3	Earthworm	Eisenia fetida	OECD Soil	6	5	14	Survival	LC50		643	50					Neuhauser et al., 1985b			ES/ER/TM-126/R2
Copper		Springtail	*Folsomia candida*		6	10		Reproduction	MATC		447		1	13	Y	N	Sandifer and Hopkin, 1997	758	--	OSWER Directive 9285.7 68
Copper		Earthworm	*Eisenia fetida*		6	10		Reproduction	MATC		18		1	11	Y	N	Kula and Larink, 1997	11046	a	OSWER Directive 9285.7 68
Copper		Earthworm	*Eisenia andrei*		6	10		Reproduction	MATC		85		1	13	Y	N	Van Gestel et al., 1989	4111	--	OSWER Directive 9285.7 68
Copper		Earthworm	*Eisenia andrei*		6	10		Reproduction	MATC		179		1	11	Y	N	Kula and Larink, 1997	11046	c	OSWER Directive 9285.7 68
Copper		Earthworm	*Enchytraeus crypticus*		6	10		Reproduction	LC50		873		1	16	N	N	Posthuma et al., 1997	2380	b	OSWER Directive 9285.7 68
Copper		Earthworm	*Eisenia fetida*		6	10		Mortality	LC50		643		1	14	N	N	Neuhauser et al., 1985b	17707	--	OSWER Directive 9285.7 68
Copper		Earthworm	*Eisenia fetida*		6	10		Mortality	LC50		643		1	11	N	N	Neuhauser et al., 1985b	6812	--	OSWER Directive 9285.7 68
Copper	Cu-nitrate	Earthworm	Eisenia fetida	OECD Soil	6.1		21	Growth	LOEC		601	50					Spurgeon and Hopkin, 1995			ES/ER/TM-126/R2
Copper		Springtail	*Onychiurus folsomi*		6.1	9		Reproduction	EC20		425		0	17	Y	N	Aquaterra, 2000	22616	e	OSWER Directive 9285.7 68
Copper		Earthworm	*Lumbricus terrestris*		6.1	1.7		Mortality	LC50		98		2	13	N	N	Haque and Ebing, 1983	10944	--	OSWER Directive 9285.7 68
Copper		Nematode	*Caenorhabditis elegans*		6.1	3.4		Mortality	LC50		1061		1	12	N	N	Donkin and Dusenbery, 1993	7838	c	OSWER Directive 9285.7 68
Copper		Earthworm	*Eisenia fetida*		6.1	9		Mortality	LC50		632		0	15	N	N	Aquaterra, 2000	22616	aa	OSWER Directive 9285.7 68
Copper		Earthworm	*Lumbricus terrestris*		6.1	9		Mortality	LC50		456		0	15	N	N	Aquaterra, 2000	22616	ab	OSWER Directive 9285.7 68
Copper		Earthworm	*Eisenia andrei*		6.2	10		Growth	MATC		75		1	16	Y	N	Van Gestel et al., 1991a	6826	b	OSWER Directive 9285.7 68
Copper		Nematode	*Caenorhabditis elegans*		6.2	2.2		Mortality	LC50		629		1	12	N	N	Donkin and Dusenbery, 1993	7838	d	OSWER Directive 9285.7 68
Copper		Earthworm	*A. tuberclata*		6.3	5		Reproduction	MATC		141		1	16	Y	N	Bogomolov et al., 1996	4940	a	OSWER Directive 9285.7 68
Copper		Nematode	Not available		6.3	5		Population	MATC		566		1	16	Y	N	Bogomolov et al., 1996	4940	b	OSWER Directive 9285.7 68
Copper		Earthworm	*Eisenia fetida*		6.3	10		Reproduction	LC50		53		1	15	N	N	Spurgeon et al., 1994	4364	--	OSWER Directive 9285.7 68
Copper		Earthworm	Allolobophora caliginosa	Polder Soil			60	Cocoon Production	LOEC	LCT	110	27					Van Rhee, 1975			ES/ER/TM-126/R2
Copper		Earthworm	Allolobophora caliginosa	Polder Soil			60	Total Hatchlings	LOEC	LCT	110	74					Van Rhee, 1975			ES/ER/TM-126/R2
Copper	CuSO4	Earthworm	Octolasium cyaneum	Brown Soil		3	14	Survival	LC50		180	50					Streit and Jaggy, 1983			ES/ER/TM-126/R2
Copper	C4H6CuO4	Earthworm	Eisenia fetida	Horse Manure			56	Cocoon Production	LOEC		500	24					Malecki et al., 1982			ES/ER/TM-126/R2

Table 6-8. Summary of Terrestrial Invertebrate Effects Data

Chemical		Test Organism		Soil			Toxicity Value						Ecological Soil Screening Level (EcoSSL) Details				Reference/Source			
Name	Form	Name	Species	Type	pH	% Organic Matter	Exposure (days)	Parameter	Type	Comment	Soil Concentration (mg/kg dw)	Parameter % Decrease	Bio-availability Score	Total Evaluation Score	Eligible for Eco-SSL Derivation?	Used for Eco-SSL?	Primary	IP Number	Study ID	Secondary
Copper	CuSO4	Earthworm	Octolasium cyaneum	Rendzina Soil		14	14	Survival	LC50		850	50					Streit and Jaggy, 1983			ES/ER/TM-126/R2
Copper	C4H6CuO4	Earthworm	Eisenia fetida	Horse Manure			140	Cocoon Production	LOEC		1000	24					Malecki et al., 1982			ES/ER/TM-126/R2
Copper	Soluble forms	Earthworm	Eisenia fetida	Horse Manure			42	Growth;Cocoon Production	LOEC		2000	85					Neuhauser et al., 1984			ES/ER/TM-126/R2
Copper	CuSO4	Earthworm	Octolasium cyaneum	Peat Soil		43	14	Survival	LC50		2500	50					Streit and Jaggy, 1983			ES/ER/TM-126/R2
Copper		Springtail	*Folsomia candida*		6.7	4.5		Reproduction	EC10		50		1	14	Y	N	Pedersen et al., 2000b	55995	a	OSWER Directive 9285.7 68
Copper		Springtail	*F. fimetaria*		6.7	4.5		Reproduction	EC10		141		1	14	Y	N	Pedersen et al., 2000b	55995	b	OSWER Directive 9285.7 68
Copper	CuCl2	Earthworm	Lumbricus rubellus	Sandy Loam	7	1.7	42	Cocoon Production	LOEC		63	41					Ma, 1984			ES/ER/TM-126/R2
Copper		Earthworm	Dendrobaena rubida	Soil and Dung	7	5.7	120	Cocoons/Worm; Hatchlings/Cocoon	LOEC		500	100					Bengtsson et al., 1986			ES/ER/TM-126/R2
Copper		Earthworm	Dendrobaena rubida	Soil and Dung	7	5.7	120	% Hatching Success	LOEC		500	100					Bengtsson et al., 1986			ES/ER/TM-126/R2
Copper	CuCl2	Earthworm	Lumbricus rubellus	Sandy Loam	7	4	84	Survival	LOEC		1000	82					Ma, 1982.			ES/ER/TM-126/R2
Copper	Cu-sulfate	Earthworm	Aporrectodea caliginosa	Egyptian	7.05	10.8	56	Cocoon Production	LOEC		100	36					Khalil et al., 1996			ES/ER/TM-126/R2
Copper		Earthworm	*Lumbricus rubellus*		7.1	5.7		Reproduction	MATC		203		1	14	Y	N	Ma, 1984	11146	b	OSWER Directive 9285.7 68
Copper		Earthworm	*Eisenia fetida*		7.8	2.9		Mortality	LC50		721		0	14	N	N	Aquaterra, 2000	22616	ca	OSWER Directive 9285.7 68
Copper		Earthworm	*Lumbricus terrestris*		7.8	2.9		Mortality	LC50		313		0	14	N	N	Aquaterra, 2000	22616	cb	OSWER Directive 9285.7 68
Copper		Earthworm	*Eisenia fetida*		8.1	3.5		Mortality	LC50		596		0	14	N	N	Aquaterra, 2000	22616	da	OSWER Directive 9285.7 68
Copper		Earthworm	*Lumbricus terrestris*		8.1	3.5		Mortality	LC50		486		0	14	N	N	Aquaterra, 2000	22616	db	OSWER Directive 9285.7 68
Copper		Springtail	*Folsomia fimetaria L.*		6.7-7.1	3.9-5.5		Reproduction	MATC		500		1	15	Y	N	Scott-Fordsmand et al., 2000	22634	a	OSWER Directive 9285.7 68
Lead		Nematode	Caenorhabditis elegans		4	1.14		Mortality	LC50		285		2	13	N	N	Peredney and Williams, 2000b		s	OSWER Directive 9285.7 70
Lead		Nematode	Caenorhabditis elegans		4	1.14		Mortality	LC50		297		2	13	N	N	Peredney and Williams, 2000b		t	OSWER Directive 9285.7 70
Lead		Nematode	Caenorhabditis elegans		4	4.2		Mortality	LC50		847		2	13	N	N	Peredney and Williams, 2000b		u	OSWER Directive 9285.7 70
Lead		Nematode	Caenorhabditis elegans		4	4.2		Mortality	LC50		1341		2	13	N	N	Peredney and Williams, 2000b		v	OSWER Directive 9285.7 70
Lead		Nematode	Caenorhabditis elegans		4	10		Mortality	LC50		1434		1	12	N	N	Peredney and Williams, 2000a; 2000b		w	OSWER Directive 9285.7 70
Lead		Collembola	Folsomia candida		4.5	10		Reproduction	MATC		3162		1	16	Y	Y	Sandifer and Hopkin,		c	OSWER Directive
Lead		Earthworm	Dendrobaena rubida	Soil and Dung	5	5.7	120	Cocoons/Worm; Hatchlings/Cocoo	LOEC		500	100					Bengtsson et al., 1986			ES/ER/TM-126/R2
Lead		Collembola	Folsomia candida		5	10		Reproduction	MATC		894		1	15	Y	Y	Sandifer and Hopkin,		b	EPA, 2005g
Lead		Nematode	Caenorhabditis		5.1	3		Mortality	LC50		891		2	14	N	N	Donkin and		b	EPA, 2005g

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Chemical		Test Organism		Soil			Toxicity Value						Ecological Soil Screening Level (EcoSSL) Details				Reference/Source			
Name	Form	Name	Species	Type	pH	% Organic Matter	Exposure (days)	Parameter	Type	Comment	Soil Concentration (mg/kg dw)	Parameter % Decrease	Bio-availability Score	Total Evaluation Score	Eligible for Eco-SSL Derivation?	Used for Eco-SSL?	Primary	IP Number	Study ID	Secondary
Lead	Pb(NO3)2	Earthworm	Eisenia fetida	OECD Soil	6		56	Cocoon Production EC50	LOEC		1940	50					Spurgeon et al., 1994			ES/ER/TM-126/R2
Lead	PbNO3	Earthworm	Eisenia fetida	OECD Soil	6	5	14	Survival LC50	LOEC		5941	50					Neuhauser et al., 1986b			ES/ER/TM-126/R2
Lead		Collembola	Folsomia candida		6	10		Reproduction	MATC		3162		1	16	Y	Y	Sandifer and Hopkin, 1996		a	OSWER Directive 9285.7 70
Lead		Collembola	Folsomia candida		6	10		Reproduction	MATC		894		1	15	Y	Y	Sandifer and Hopkin, 1997			OSWER Directive 9285.7 70
Lead		Earthworm	Eisenia fetida		6	10		Mortality	LC50		3716		1	13	N	N	Neuhauser et al., 1985b; 1986a		b	OSWER Directive 9285.7 70
Lead	Pb-nitrate	Earthworm	Eisenia fetida	OECD Soil	6.1		21	Growth	LOEC		1629	50					Spurgeon and Hopkin, 1995			ES/ER/TM-126/R2
Lead		Earthworm	Eisenia fetida		6.1	10		Reproduction	EC50		1629		1	15	N	N	Spurgeon and Hopkin, 1995			OSWER Directive 9285.7 70
Lead		Nematode	Caenorhabditis elegans		6.1	3.4		Mortality	LC50		13.9		1	13	N	N	Donkin and Dusenbery, 1994		c	OSWER Directive 9285.7 70
Lead		Nematode	Caenorhabditis elegans		6.2	1.7		Mortality	LC50		1554		2	14	N	N	Donkin and Dusenbery, 1994		a	OSWER Directive 9285.7 70
Lead		Nematode	Caenorhabditis elegans		6.2	2.2		Mortality	LC50		11.6		1	13	N	N	Donkin and Dusenbery, 1994		d	OSWER Directive 9285.7 70
Lead		Earthworm	Eisenia fetida		6.3	10		Reproduction	EC50		1940		1	15	N	N	Spurgeon et al., 1994			OSWER Directive 9285.7 70
Lead		Earthworm	Eisenia fetida		6.5	10		Mortality	ILL		1.16		1	16	N	N	Conder and Lanno, 2000			OSWER Directive 9285.7 70
Lead	C4H6O4Pb	Earthworm	Eisenia fetida	Horse Manure			56	Cocoon Production	LOEC		4000	50					Malecki et al., 1982			ES/ER/TM-126/R2
Lead	C4H6O4Pb	Earthworm	Eisenia fetida	Horse Manure			140	Cocoon Production	LOEC		5000	28					Malecki et al., 1982			ES/ER/TM-126/R2
Lead	Sol forms	Earthworm	Eisenia fetida	Horse Manure			42	Cocoon Production	LOEC	LCT	5000	80					Neuhauser et al. 1984			ES/ER/TM-126/R2
Manganese		Potworm	*Enchytraeus crypticus*		4.86 - 5.39	1.2		Reproduction	EC20		116		2	17	Y	Y	Kuperman et al., 2002		62344	OSWER Directive 9285.7 71
Manganese		Springtail	*Folsomia candida*		4.56 - 5.29	1.2		Reproduction	EC20		1209		2	18	Y	Y	Phillips et al., 2002		62345	OSWER Directive 9285.7 71
Manganese		Earthworm	*Eisenia fetida*		4.58 - 5.29	1.2		Reproduction	EC20		629		2	16	Y	Y	Simini et al., 2002		62343	OSWER Directive 9285.7 71
Mercury	HgCl2	Earthworm	Octochaetus pattoni	Soil and Dung			60	Survival; Cocoon Production	LOEC	LCT	0.5	65, 40					Abbasi and Soni, 1983			ES/ER/TM-126/R2
Mercury	CH3HgCl	Earthworm	Eisenia fetida	Potting Soil			84	Survival; segment regeneration	LOEC		12.5	69					Beyer et al., 1985			ES/ER/TM-126/R2
Nickel	Soluble forms	Earthworm	*Eisenia fetida*	Horse Manure			42	Cocoon Production	LOEC	LCT	250	33					Neuhauser et al., 1984			ES/ER/TM-126/R2
Nickel		Roundworm	*Caenorhabditis elegans*		4.0	1.14		Mortality	LC50		144		2	13	N	N	Peredney and Williams, 2000b	56449	m	OSWER Directive 9285.7 76
Nickel		Roundworm	*Caenorhabditis elegans*		4.0	1.14		Mortality	LC50		44		2	13	N	N	Peredney and Williams, 2000b	56449	n	OSWER Directive 9285.7 76

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Chemical		Test Organism		Soil			Toxicity Value						Ecological Soil Screening Level (EcoSSL) Details				Reference/Source			
Name	Form	Name	Species	Type	pH	% Organic Matter	Exposure (days)	Parameter	Type	Comment	Soil Concentration (mg/kg dw)	Parameter % Decrease	Bio-availability Score	Total Evaluation Score	Eligible for Eco-SSL Derivation?	Used for Eco-SSL?	Primary	IP Number	Study ID	Secondary
Nickel		Roundworm	*Caenorhabditis elegans*		4.0	4.2		Mortality	LC50		387		2	13	N	N	Peredney and Williams, 2000b	56449	o	OSWER Directive 9285.7 76
Nickel		Roundworm	*Caenorhabditis elegans*		4.0	4.2		Mortality	LC50		165		2	13	N	N	Peredney and Williams, 2000b	56449	p	OSWER Directive 9285.7 76
Nickel		Earthworm	*Eisenia fetida*		6.0	10.0		Mortality	LC50		242		1	11	N	N	Neuhauser et al., 1985b	6812	--	OSWER Directive 9285.7 76
Nickel		Roundworm	*Caenorhabditis elegans*		4	10		Mortality	LC50		797		1	12	N	N	Peredney and Williams, 2000a	53082	--	OSWER Directive 9285.7 76
Nickel		Roundworm	*Caenorhabditis elegans*		4	10		Mortality	LC50		800		1	12	N	N	Peredney and Williams, 2000b	56449	q	OSWER Directive 9285.7 76
Nickel		Roundworm	*Caenorhabditis elegans*		4	10		Mortality	LC50		348		1	12	N	N	Peredney and Williams, 2000b	56449	r	OSWER Directive 9285.7 76
Nickel		Earthworm	*Eisenia fetida*		6.0	10.0		Mortality	LC50		242		0	14	N	N	Neuhauser et al., 1986a	17707	--	OSWER Directive 9285.7 76
Nickel	NiNO3	Earthworm	*Eisenia fetida*	OECD Soil	6	5	14	Survival LC 50	LOEC		757	50					Neuhauser et al., 1985b			ES/ER/TM-126/R2
Nickel	C4H6NiO4	Earthworm	*Eisenia fetida*	Horse Manure			140	Cocoon Production	LOEC		200	23					Malecki et al., 1982			ES/ER/TM-126/R2
Nickel	C4H6NiO4	Earthworm	*Eisenia fetida*	Horse Manure			56	Cocoon Production	LOEC		300	41					Malecki et al., 1982			ES/ER/TM-126/R2
Nickel	NiCl2	Earthworm	*Lumbricus rubellus*	Sandy Loam	7	4	84	Survival	LOEC		1000	31					Ma, 1982			ES/ER/TM-126/R2
Nickel		Springtail	*Folsomia fimetaria L.*		5.8	4.0		Reproduction	MATC		387		1	16	Y	Y	Scott-Fordsmand et al., 1999	15163	--	OSWER Directive 9285.7 76
Nickel		Earthworm	*Eisenia veneta*		5.8	4.0		Reproduction	MATC		173		1	13	Y	Y	Scott-Fordsmand et al., 1998	18892	a	OSWER Directive 9285.7 76
Nickel		Earthworm	*Eisenia fetida*		6.0	10.0		Reproduction	MATC		240		1	14	Y	Y	Lock and Janssen, 2002	66195	a	OSWER Directive 9285.7 76
Nickel		Earthworm	*Enchytraeus albidus*		6.0	10.0		Reproduction	MATC		240		1	14	Y	Y	Lock and Janssen, 2002	66195	b	OSWER Directive 9285.7 76
Nickel		Springtail	*Folsomia candida*		6.0	10.0		Reproduction	MATC		423		1	14	Y	Y	Lock and Janssen, 2002	66195	c	OSWER Directive 9285.7 76
Nickel		Nematodes	nematoda (various sp.)		4.1	1.9		Population	LOAEC		100		1	14	N	N	Korthals et al., 1996	4402	--	OSWER Directive 9285.7 76
Selenium	Na2SeO3	Earthworm	Eisenia fetida	Soil and Manure			56	Cocoons/Worm	LOEC	LCT	77	69					Fischer and Koszorus, 1992			ES/ER/TM-126/R2
Selenium		Earthworm	*Eisenia fetida*		7.1	1		Reproduction	EC20		3.4		2	18	Y	Y	Checkai et al., 2004	92935		OSWER Directive 9285.7 72
Selenium		Enchytraeidae	*Enchytraeus crypticus*		7.1	1		Reproduction	EC20		4.4		2	18	Y	Y	Checkai et al., 2004	92935		OSWER Directive 9285.7 72
Selenium		Springtail	*Folsomia candida*		7.1	1		Reproduction	EC20		4.7		2	18	Y	Y	Checkai et al., 2004	92935		OSWER Directive 9285.7 72
Uranium		Springtail	*Onychiurus folsomi*	fine sand	6.2			survival and reproduction	EC20		92						Sheppard et al., 2004			Sheppard et al., 2005
Uranium		Earthworm	*Lumbricus sp.*	<10% clay			54 days	survival	LOEC		300						Sheppard and Evanden (1992)			Sheppard et al., 2005
Uranium		Springtail	*Folsomia candida*	fine sand	6.2			survival	EC20		350						Sheppard et al., 2004			Sheppard et al., 2005

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Name	Form	Name	Species	Type	pH	% Organic Matter	Exposure (days)	Parameter	Type	Comment	Soil Concentration (mg/kg dw)	Parameter % Decrease	Bio-availability Score	Total Evaluation Score	Eligible for Eco-SSL Derivation?	Used for Eco-SSL?	Primary	IP Number	Study ID	Secondary
Uranium		Springtail	*Onychiurus folsomi*	loam	7.5			survival and reproduction	EC20		>390						Sheppard et al., 2004			Sheppard et al., 2005
Uranium		Springtail	*Folsomia candida*	loam	7.5			survival and reproduction	EC20		>710						Sheppard et al., 2004			Sheppard et al., 2005
Uranium		Earthworm	*Lumbricus sp.*	NA				survival	EC25		1000						Sheppard et al., 1992			Sheppard et al., 2005
Zinc	Zn(NO3)2	Earthworm	Eisenia fetida	Artificial Soil	4	2.5	21	Cocoon Production	LOEC		142	50					Spurgeon and Hopkin, 1996b			ES/ER/TM-126/R2
Zinc	Zn(NO3)2	Earthworm	Eisenia fetida	Artificial Soil	4	5	21	Cocoon Production	LOEC		189	50					Spurgeon and Hopkin, 1996b			ES/ER/TM-126/R2
Zinc	Zn(NO3)2	Earthworm	Eisenia fetida	Artificial Soil	4	7.5	21	Cocoon Production	LOEC		230	50					Spurgeon and Hopkin, 1996b			ES/ER/TM-126/R2
Zinc		Nematode	*Caenorhabditis elegans*		4	1.14		Mortality	LC50		54.2		2	13	N	N	Peredney and Williams, 2000b	56449	y	OSWER Directive 9285.7 73
Zinc		Nematode	*Caenorhabditis elegans*		4	4.2		Mortality	LC50		186		2	13	N	N	Peredney and Williams, 2000b	56449	aa	OSWER Directive 9285.7 73
Zinc		Nematode	*Caenorhabditis elegans*		4	10		Mortality	LC50		670		1	12	N	N	Peredney and Williams, 2000a	53082		OSWER Directive 9285.7 73
Zinc		Nematode	*Caenorhabditis elegans*		4	10		Mortality	LC50		661		1	12	N	N	Peredney and Williams, 2000b	56449	ac	OSWER Directive 9285.7 73
Zinc		Nematode	multiple		4.1	4		Population	MATC		35		2	13	Y	Y	Korthals et al., 1998	13828		OSWER Directive 9285.7 73
Zinc		Nematode	multiple		4.1	3.2		Population	MATC		141		2	13	Y	Y	Korthals et al., 1996b	4402		OSWER Directive 9285.7 73
Zinc		Springtail	*Folsomia candida*		4.5	1.9		Reproduction	EC10		116		2	17	Y	Y	Smit and Van Gestel, 1997	4434		OSWER Directive 9285.7 73
Zinc		Springtail	*Folsomia candida*		4.5	10		Reproduction	MATC		548		1	14	Y	N	Sandifer and Hopkin, 1996	4056	c	OSWER Directive 9285.7 73
Zinc		Springtail	*Folsomia candida*		4.7	2.4		Reproduction	EC10		136		2	17	Y	Y	Smit and Van Gestel, 1998	6159	b	OSWER Directive 9285.7 73
Zinc		Springtail	*Folsomia candida*		4.7	2.4		Reproduction	EC10		355		2	17	Y	Y	Smit and Van Gestel, 1998	6159	d	OSWER Directive 9285.7 73
Zinc		Springtail	*Folsomia candida*		4.8	2.4		Reproduction	EC10		99		2	15	Y	Y	Smit et al., 1998	11279		OSWER Directive 9285.7 73
Zinc	Zn(NO3)2	Earthworm	Eisenia fetida	Artificial Soil	5	2.5	21	Cocoon Production	LOEC		199	50					Spurgeon and Hopkin,1996b			ES/ER/TM-126/R2
Zinc	Zn(NO3)2	Earthworm	Eisenia fetida	Artificial Soil	5	5	21	Cocoon Production	LOEC		343	50					Spurgeon and Hopkin, 1996b			ES/ER/TM-126/R2
Zinc	Zn(NO3)2	Earthworm	Eisenia fetida	Artificial Soil	5	7.5	21	Cocoon Production	LOEC		548	50					Spurgeon and Hopkin, 1996b			ES/ER/TM-126/R2
Zinc		Springtail	*Folsomia candida*		5	10		Reproduction	MATC		548		1	14	Y	N	Sandifer and Hopkin, 1996	4056	b	OSWER Directive 9285.7 73
Zinc		Nematode	*Caenorhabditis elegans*		5.1	3		Mortality	LC50		255		2	15	N	N	Donkin and Dusenbery, 1994	7877	b	OSWER Directive 9285.7 73
Zinc	Zn(NO3)2	Earthworm	Eisenia fetida	Artificial Soil	6	2.5	21	Cocoon Production	LOEC		136	50					Spurgeon and Hopkin, 1996b			ES/ER/TM-126/R2
Zinc	Zn(NO3)2	Earthworm	Eisenia fetida	OECD Soil	6		21	Growth rate	LOEC		190	69					Spurgeon and Hopkin, 1996a			ES/ER/TM-126/R2
Zinc	Zn(NO3)2	Earthworm	Aporrectodea rosea	OECD Soil	6		21	Growth rate	LOEC		190	48					Spurgeon and Hopkin, 1996a			ES/ER/TM-126/R2

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Zinc	Zn(NO3)2	Earthworm	Lumbricus rubellus	OECD Soil	6		21	Cocoon Production	LOEC		190	69					Spurgeon and Hopkin, 1996a			ES/ER/TM-126/R2
Zinc	Zn(NO3)2	Earthworm	Eisenia fetida	OECD Soil	6		56	Cocoon Production	EC50		276	50					Spurgeon et al., 1994			ES/ER/TM-126/R2
Zinc	Zn(NO3)2	Earthworm	Eisenia fetida	Artificial Soil	6	5	21	Cocoon Production	LOEC		462	50					Spurgeon and Hopkin, 1996b			ES/ER/TM-126/R2
Zinc	ZnCl2	Earthworm	Eisenia andrei	OECD Soil	6	5	21	Cocoons/Worm; Juveniles/Worm	LOEC		560	42					Van Gestel et al., 1993			ES/ER/TM-126/R2
Zinc	Zn(NO3)2	Earthworm	Eisenia fetida	Artificial Soil	6	7.5	21	Cocoon Production	LOEC		592	50					Spurgeon and Hopkin, 1996b			ES/ER/TM-126/R2
Zinc		Springtail	*Folsomia candida*		6	10		Reproduction	EC10		399		1	13	Y	N	Van Gestel and Hensbergen, 1997	10987		OSWER Directive 9285.7 73
Zinc		Springtail	*Folsomia candida*		6	10		Reproduction	MATC		863		1	14	Y	N	Sandifer and Hopkin, 1996	4056	a	OSWER Directive 9285.7 73
Zinc		Earthworm	*Eisenia fetida*		6	10		Reproduction	LOAEC		190		1	13	Y	N	Spurgeon et al., 1997	4442	a	OSWER Directive 9285.7 73
Zinc		Springtail	*Folsomia candida*		6	10		Reproduction	EC10		269		1	17	Y	N	90	6159	a	OSWER Directive 9285.7 73
Zinc		Earthworm	*Eisenia andrei*		6	10		Reproduction	MATC		423		1	12	Y	N	Van Gestel et al., 1993	6828		OSWER Directive 9285.7 73
Zinc		Springtail	*Folsomia candida*		6	10		Reproduction	MATC		548		1	15	Y	N	Sandifer and Hopkin, 1997	758		OSWER Directive 9285.7 73
Zinc		Earthworm	*Eisenia fetida*		6	10		Reproduction	MATC		466		1	12	Y	N	Spurgeon and Hopkin, 1996a	7870		OSWER Directive 9285.7 73
Zinc		Earthworm	*Eisenia fetida*		6	10		Reproduction	EC50		234		1	13	N	N	Spurgeon et al., 1997	4442	c	OSWER Directive 9285.7 73
Zinc		Springtail	*Folsomia candida*		6	3.3		Reproduction	EC50		348		1	15	N	N	Smit and Van Gestel, 1996	7869	a	OSWER Directive 9285.7 73
Zinc		Springtail	*Folsomia candida*		6	3		Reproduction	EC50		185		1	15	N	N	Smit and Van Gestel, 1996	7869	b	OSWER Directive 9285.7 73
Zinc		Earthworm	*Eisenia fetida*		6	10		Mortality	LC50		232		1	14	N	N	Neuhauser et al., 1985b	17707		OSWER Directive 9285.7 73
Zinc		Earthworm	*Eisenia fetida*		6	10		Reproduction	MATC		466		1	12	Y	N	Spurgeon and Hopkin, 1996a	7870		OSWER Directive 9285.7 73
Zinc	Zn(NO3)2	Earthworm	Eisenia fetida	OECD Soil	6.1		21	Growth	LOEC		1078	50					Spurgeon and Hopkin 1995			ES/ER/TM-126/R2
Zinc		Nematode	*Caenorhabditis elegans*		6.1	3.4		Mortality	LC50		392		1	15	N	N	Donkin and Dusenbery, 1994	7877	c	OSWER Directive 9285.7 73
Zinc		Nematode	*Caenorhabditis elegans*		6.2	1.7		Mortality	LC50		183		1	15	N	N	Donkin and Dusenbery, 1994	7877	a	OSWER Directive 9285.7 73
Zinc		Nematode	*Caenorhabditis elegans*		6.2	2.2		Mortality	LC50		549		1	15	N	N	Donkin and Dusenbery, 1994	7877	d	OSWER Directive 9285.7 73
Zinc		Earthworm	*Eisenia fetida*		6.3	10		Reproduction	EC50		276		1	11	N	N	Spurgeon et al., 1994	4364		OSWER Directive 9285.7 73
Zinc		Earthworm	*Enchytraeus crypticus*		6.4	10		Reproduction	EC50		188		1	13	N	N	Posthuma et al., 1997	2380	a	OSWER Directive 9285.7 73

Table 6-8. Summary of Terrestrial Invertebrate Effects Data

Chemical		Test Organism		Soil			Toxicity Value						Ecological Soil Screening Level (EcoSSL) Details				Reference/Source			
Name	Form	Name	Species	Type	pH	% Organic Matter	Exposure (days)	Parameter	Type	Comment	Soil Concentration (mg/kg dw)	Parameter % Decrease	Bio-availability Score	Total Evaluation Score	Eligible for Eco-SSL Derivation?	Used for Eco-SSL?	Primary	IP Number	Study ID	Secondary
Zinc		Earthworm	*Enchytraeus crypticus*		6.4	10		Reproduction	EC50		336		1	13	N	N	Posthuma et al., 1997	2380	b	OSWER Directive 9285.7 73
Zinc		Earthworm	*Eisenia andrei*		6.5	10		Mortality	ILL		631		1	16	N	N	Conder and Lanno, 2000	46691		OSWER Directive 9285.7 73
Zinc	ZnNO3	Earthworm	Eisenia fetida	OECD Soil			14	Survival	LC50		662	50					Neuhauser et al., 1986a			ES/ER/TM-126/R2
Zinc		Earthworm	Allolobophora caliginosa	polder Soil				Body Weight; Cocoon Production; Mortality; Sexual Development	LOEC		1100	53, 100, 22, 100					Van Rhee, 1975			ES/ER/TM-126/R2
Zinc	C4H6O4Zn	Earthworm	Eisenia fetida	Horse Manure			56	Cocoon Production	LOEC		2000	36					Malecki et al., 1982			ES/ER/TM-126/R2
Zinc	Soluble Forms	Earthworm	Eisenia fetida	Horse Manure			42	Cocoon Production	LOEC		2500	50					Neuhauser et al., 1984			ES/ER/TM-126/R2
Zinc	C4H6O4Zn	Earthworm	Eisenia fetida	Horse Manure			140	Cocoon Production	LOEC		5000	53					Malecki et al., 1982			ES/ER/TM-126/R2
Zinc		Springtail	*Folsomia candida*		7	2		Reproduction	EC10		1059		1	17	Y	N	Smit and Van Gestel, 1998	6159	c	OSWER Directive 9285.7 73
Zinc	Zn-sulfate	Earthworm	Aporrectodea caliginosa	Egyptian	7.05	10.8	56	Cocoon Production	LOEC		300	20					Khalil et al. 1996			ES/ER/TM-126/R2
Chlorobenzene		Earthworm	*Eisenia fetida*	Sandy Soil	5	1.8	14	Survival	LC50		240	50					Van Gestel et al., 1991b			ES/ER/TM-126/R2
Chlorobenzene		Earthworm	*Eisenia fetida*	OECD Soil	6	4	14	Survival	LC50		446	50					Van Gestel et al., 1991b			ES/ER/TM-126/R2
Chlorobenzene		Earthworm	*Lumbricus rubellus*	Sandy Soil	5	1.8	14	Survival	LC50		547	50					Van Gestel et al., 1991b			ES/ER/TM-126/R2
Chlorobenzene		Earthworm	*Lumbricus rubellus*	OECD Soil	6	4	14	Survival	LC50		1107	50					Van Gestel et al., 1991b			ES/ER/TM-126/R2
Fluoranthene		springtail	*Folsomia fimetaria L.*		6.2	2.8		Reproduction	EC10		37		0	14	Y	Y	Sverdrup et al., 2001	20-6-1332	b	OSWER Directive 9285.7 78
Fluoranthene		potWorm	*Enchytraeus crypticus*		6.2	2.8		Reproduction	EC10		15		0	14	Y	Y	Sverdrup et al., 2002a	21-1-109	b	OSWER Directive 9285.7 78
Fluoranthene		Earthworm	*Eisenia veneta*		6.2	2.8		Growth	EC10		113		0	14	Y	Y	Sverdrup et al., 2002c	21-9-1927	b	OSWER Directive 9285.7 78
Fluorene		Earthworm	*Eisenia fetida*		6.0	10.0		Mortality	LC50		173		1	15	N	N	Neuhauser et al., 1985a	17707	a	OSWER Directive 9285.7 78
Fluorene		Earthworm	*Allolobophora tuberculata*	OECD Soil	6	5	14	Survival	LC50		206	50					Neuhauser et al., 1986b			ES/ER/TM-126/R2
Fluorene		Earthworm	*Eisenia fetida*	OECD Soil	6	5	14	Survival	LC50		173	50					Neuhauser et al., 1986b			ES/ER/TM-126/R2
Fluorene		Earthworm	*Eudrilus eugenia*	OECD Soil	6	5	14	Survival	LC50		197	50					Neuhauser et al., 1986b			ES/ER/TM-126/R2
Fluorene		Earthworm	*Perionyx excavatus*	OECD Soil	6	5	14	Survival	LC50		170	50					Neuhauser et al., 1986b			ES/ER/TM-126/R2
Fluorene		Earthworm	*Allolobophora tuberculata*		6.0	10.0		Mortality	LC50		206		1	15	N	N	Neuhauser et al., 1986b	1214	a	OSWER Directive 9285.7 78
Fluorene		Earthworm	*Eisenia fetida*		6.0	10.0		Mortality	LC50		173		1	15	N	N	Neuhauser et al., 1986b	1214	b	OSWER Directive 9285.7 78
Fluorene		Earthworm	*Eudrilus eugenia*		6.0	10.0		Mortality	LC50		197		1	15	N	N	Neuhauser et al., 1986b	1214	c	OSWER Directive 9285.7 78
Fluorene		Earthworm	*Perionyx excavatus*		6.0	10.0		Mortality	LC50		170		1	15	N	N	Neuhauser et al., 1986b	1214	d	OSWER Directive 9285.7 78

Table 6-8. Summary of Terrestrial Invertebrate Effects Data

Chemical		Test Organism		Soil			Toxicity Value						Ecological Soil Screening Level (EcoSSL) Details				Reference/Source			
Name	Form	Name	Species	Type	pH	% Organic Matter	Exposure (days)	Parameter	Type	Comment	Soil Concentration (mg/kg dw)	Parameter % Decrease	Bio-availability Score	Total Evaluation Score	Eligible for Eco-SSL Derivation?	Used for Eco-SSL?	Primary	IP Number	Study ID	Secondary
Fluorene		springtail	*Folsomia fimetaria L.*		6.2	2.8		Reproduction	EC10		8		0	14	Y	Y	Neuhauser et al., 1986b	20-6-1332	d	OSWER Directive 9285.7 78
Fluorene		potWorm	*Enchytraeus crypticus*		6.2	2.8		Reproduction	EC10		25		0	14	Y	Y	Neuhauser et al., 1986b	21-1-109	d	OSWER Directive 9285.7 78
Fluorene		Earthworm	*Eisenia veneta*		6.2	2.8		Growth	EC10		31		0	14	Y	Y	Neuhauser et al., 1986b	21-9-1927	d	OSWER Directive 9285.7 78
Fluorene		Earthworm	*Eisenia fetida*	Horse Manure			56	Cocoon Production	LOEC		750	49					Neuhauser et al., 1986b			ES/ER/TM-126/R2
Phenanthrene		springtail	*Folsomia candida*		6.0	10.0		Reproduction	MATC		175		1	17	Y	Y	Neuhauser et al., 1986b	18893		OSWER Directive 9285.7 78
Phenanthrene		springtail	*Folsomia fimetaria L.*		6.2	2.8		Reproduction	EC10		23		0	14	Y	Y	Neuhauser et al., 1986b	20-6-1332	c	OSWER Directive 9285.7 78
Phenanthrene		potWorm	*Enchytraeus crypticus*		6.2	2.8		Reproduction	EC10		40		0	14	Y	Y	Neuhauser et al., 1986b	21-1-109	c	OSWER Directive 9285.7 78
Phenanthrene		springtail	*Folsomia fimetaria L.*		6.2	2.8		Reproduction	EC10		9		0	14	Y	Y	Neuhauser et al., 1986b	21-3-489	b	OSWER Directive 9285.7 78
Phenanthrene		Earthworm	*Eisenia veneta*		6.2	2.8		Growth	EC10		25		0	14	Y	Y	Neuhauser et al., 1986b	21-9-1927	c	OSWER Directive 9285.7 78
Pyrene		Earthworm	*Lumbricus rubellus*		NA	10.0		Reproduction	MATC		80		0	11	Y	Y	Neuhauser et al., 1986b	57-1675		OSWER Directive 9285.7 78
Pyrene		springtail	*Folsomia candida*		6.0	10.0		Reproduction	MATC		10		0	13	Y	Y	Neuhauser et al., 1986b	57-175	a	OSWER Directive 9285.7 78
Pyrene		springtail	*Folsomia fimetaria L.*		6.2	2.8		Reproduction	EC10		10		0	14	Y	Y	Neuhauser et al., 1986b	20-6-1332	a	OSWER Directive 9285.7 78
Pyrene		potWorm	*Enchytraeus crypticus*		6.2	2.8		Reproduction	EC10		11		0	14	Y	Y	Neuhauser et al., 1986b	21-1-109	a	OSWER Directive 9285.7 78
Pyrene		springtail	*Folsomia fimetaria L.*		6.2	2.8		Reproduction	EC10		10		0	14	Y	Y	Neuhauser et al., 1986b	21-3-489	a	OSWER Directive 9285.7 78
Pyrene		Earthworm	*Eisenia veneta*		6.2	2.8		Growth	EC10		38		0	14	Y	Y	Neuhauser et al., 1986b	21-9-1927	a	OSWER Directive 9285.7 78
TPH Diesel									EC>20		3400						Neuhauser et al., 1986b			Efroymson et al., 2004
Phenol		Earthworm	*Eudrilus eugeniae*	OECD Soil	6	5	14	Survival LC50	LOEC		188	50					Neuhauser et al., 1986b			ES/ER/TM-126/R2
Phenol		Earthworm	*Perionyx excavatus*	OECD Soil	6	5	14	Survival LC50	LOEC		258	50					Neuhauser et al., 1986b			ES/ER/TM-126/R2
Phenol		Earthworm	*Eisenia fetida*	OECD Soil	6	5	14	Survival LC50	LOEC		401	50					Neuhauser et al., 1986b			ES/ER/TM-126/R2
Phenol		Earthworm	*Allolobophora tuberculata*	OECD Soil	6	5	14	Survival LC50	LOEC		450	50					Neuhauser et al., 1986b			ES/ER/TM-126/R2
Phenol		Earthworm	*Eisenia fetida*	Horse Manure			56	Cocoon Production	LOEC		4900	26					Neuhauser and Callahan, 1990			ES/ER/TM-126/R2
DDT		Common Cricket	*Gryllus pennsylvanicus*		≤ 7	0		Mortality	LC50		0.08		1	13	N	N	Harris, 1966	9602	a	OSWER Directive 9285.7 57
DDT		Common Cricket	*Gryllus pennsylvanicus*		≤ 7	0.5		Mortality	LC50		1.75		1	13	N	N	Harris, 1966	9602	b	OSWER Directive 9285.7 57

Table 6-8. Summary of Terrestrial Invertebrate Effects Data

Chemical		Test Organism		Soil			Toxicity Value						Ecological Soil Screening Level (EcoSSL) Details				Reference/Source			
Name	Form	Name	Species	Type	pH	% Organic Matter	Exposure (days)	Parameter	Type	Comment	Soil Concentration (mg/kg dw)	Parameter % Decrease	Bio-availability Score	Total Evaluation Score	Eligible for Eco-SSL Derivation?	Used for Eco-SSL?	Primary	IP Number	Study ID	Secondary
DDT		Common Cricket	*Gryllus pennsylvanicus*		≤ 7	1.4		Mortality	LC50		3.1		1	13	N	N	Harris, 1966	9602	c	OSWER Directive 9285.7 57
DDT		Common Cricket	*Gryllus pennsylvanicus*		≤ 7	2		Mortality	LC50		4.1		1	13	N	N	Harris, 1966	9602	d	OSWER Directive 9285.7 57
DDT		Common Cricket	*Gryllus pennsylvanicus*		7.2	1.4		Mortality	LC50		4.3		1	12	N	N	Harris, 1964	7783	a	OSWER Directive 9285.7 57
DDT		Common Cricket	*Gryllus pennsylvanicus*		≤ 7	6.6		Mortality	LC50		11.4		0	12	N	N	Harris, 1966	9602	e	OSWER Directive 9285.7 57
DDT		Common Cricket	*Gryllus pennsylvanicus*		≤ 7	9.1		Mortality	LC50		4.2		0	12	N	N	Harris, 1966	9602	f	OSWER Directive 9285.7 57
DDT		Common Cricket	*Gryllus pennsylvanicus*		≤ 7	15.9		Mortality	LC50		11.8		0	12	N	N	Harris, 1966	9602	g	OSWER Directive 9285.7 57
DDT		Common Cricket	*Gryllus pennsylvanicus*		≤ 7	18.8		Mortality	LC50		20.4		0	12	N	N	Harris, 1966	9602	h	OSWER Directive 9285.7 57
DDT		Common Cricket	*Gryllus pennsylvanicus*		≤ 7	39.8		Mortality	LC50		45.3		0	12	N	N	Harris, 1966	9602	i	OSWER Directive 9285.7 57
DDT		Common Cricket	*Gryllus pennsylvanicus*		≤ 7	64.6		Mortality	LC50		77.2		0	12	N	N	Harris, 1966	9602	j	OSWER Directive 9285.7 57
Total PAHs	No Data																			
Boron	No Data																			
Cobalt	No Data																			
Iron	No Data																			
Lithium	No Data																			
Molybdenum	No Data																			
Silver	No Data																			
Strontium	No Data																			
Thallium	No Data																			
Tin	No Data																			
Vanadium	No Data																			
Uranium	No Data																			
Acenaphthene	No Data																			
Diethylphthalate	No Data																			
Toluene	No Data																			
Ammonia	No Data																			
Bismuth	No Data																			
Calcium	No Data																			
Chloride	No Data																			
Hexavalent Chromium	No Data																			
Hydrazine	No Data																			
Magnesium	No Data																			
Nitrate	No Data																			
Nitrite	No Data																			
Nitrogen in Nitrite and Nitrate	No Data																			
Phosphate	No Data																			
Potassium	No Data																			
Silicon	No Data																			
Sodium	No Data																			
Sulfate	No Data																			
Sulfide	No Data																			

Table 6-8. Summary of Terrestrial Invertebrate Effects Data

Chemical		Test Organism		Soil			Toxicity Value						Ecological Soil Screening Level (EcoSSL) Details				Reference/Source			
Name	Form	Name	Species	Type	pH	% Organic Matter	Exposure (days)	Parameter	Type	Comment	Soil Concentration (mg/kg dw)	Parameter % Decrease	Bio-availability Score	Total Evaluation Score	Eligible for Eco-SSL Derivation?	Used for Eco-SSL?	Primary	IP Number	Study ID	Secondary
Thorium	No Data																			
Titanium	No Data																			
Zirconium	No Data																			
1,1,1-Trichloroethane	No Data																			
2-butanone (Methyl Ethyl Ketone/MEK)	No Data																			
4,4'-DDD (Dichlorodiphenyldichloroethane)	Same as DDT																			
Acetone	No Data																			
Anthracene	No Data																			
Benzene	No Data																			
Benzo(a)anthracene	No Data																			
Benzo(a)pyrene	No Data																			
Benzo(b)fluoranthene	No Data																			
Benzo(ghi)perylene	No Data																			
Benzo(k)fluoranthene	No Data																			
Bis(2-ethylhexyl) phthalate	No Data																			
Butylbenzylphthalate	No Data																			
Carbazole	No Data																			
Carbon disulfide	No Data																			
Chloroform	No Data																			
Chloromethane	No Data																			
Chrysene	No Data																			
Diacetone alcohol	No Data																			
Dibenz[a,h]anthracene	No Data																			
Di-n-butylphthalate	No Data																			
Fluoranthene	No Data																			
High boiling hydrocarbons	No Data																			
Indeno(1,2,3-cd)pyrene	No Data																			
Methylene chloride	No Data																			
Phenanthrene	No Data																			
Pyrene	No Data																			
Tetrachloroethene	No Data																			
Total organic carbon	No Data																			
Total petroleum hydrocarbons - motor oil (high boiling)	No Data																			
Xylenes (Total)	No Data																			
Ammonia/Ammonium	No Data																			
Cyanide	No Data																			
Fluoride	No Data																			
Iodine	No Data																			
Nitrate/Nitrite	No Data																			
Sulfate/Sulfite	No Data																			
1,1-dichloroethane	No Data																			
1,1-dichloroethene	No Data																			
1,1,2-trichloroethane	No Data																			
1,1,2,2-tetrachloroethane	No Data																			
1,2-dichlorobenzene	No Data																			
1,2-dichloroethane (DCA)	No Data																			
1,3-dichlorobenzene	No Data																			
2-hexanone	No Data																			
Butanol	No Data																			
Carbon Tetrachloride	No Data																			
Cis-1,2-dichloroethylene	No Data																			

Table 6-8. Summary of Terrestrial Invertebrate Effects Data

Chemical		Test Organism		Soil			Toxicity Value						Ecological Soil Screening Level (EcoSSL) Details				Reference/Source			
Name	Form	Name	Species	Type	pH	% Organic Matter	Exposure (days)	Parameter	Type	Comment	Soil Concentration (mg/kg dw)	Parameter % Decrease	Bio-availability Score	Total Evaluation Score	Eligible for Eco-SSL Derivation?	Used for Eco-SSL?	Primary	IP Number	Study ID	Secondary
Dichloromethane	No Data																			
Ethyl Benzene	No Data																			
Methyl Isobutyl Ketone	No Data																			
n-butyl Benzene	No Data																			
Trans-1,2-dichloroethylene	No Data																			
Trichloroethylene (TCE)	No Data																			
2-Methylnaphthalene	No Data																			
Naphthalene	No Data																			
Gasoline Range Organics	No Data																			
TPH - diesel	No Data																			
TPH - kerosene	No Data																			
Normal paraffin hydrocarbons	No Data																			
2-methylphenol (ocresol)	No Data																			
4-methylphenol (pcresol)	No Data																			
2,4-dinitrotoluene	No Data																			
Polychlorinated Biphenyls (PCB)	No Data																			
Aroclor 1016	No Data																			
Aroclor 1221	No Data																			
Aroclor 1232	No Data																			
Aroclor 1242	No Data																			
Aroclor 1248	No Data																			
Aroclor 1254	No Data																			
Aroclor 1260	No Data																			
Aroclor-1262	No Data																			
Dichloroprop	No Data																			
Aldrin	No Data																			
beta-1,2,3,4,5,6-Hexachlorocyclohexane	No Data																			
alpha-Chlordane	No Data																			
gamma-Chlordane	No Data																			
Dieldrin	No Data																			
Endosulfan I	No Data																			
Endosulfan II	No Data																			
Endosulfan sulfate	No Data																			
Endrin aldehyde	No Data																			
Methoxychlor	No Data																			
Europium-154	No Data																			
Europium-155	No Data																			
Neptunium-237	No Data																			
Nickel-63	No Data																			
Plutonium-238	No Data																			
Plutonium-239/240	No Data																			
Potassium-40	No Data																			
Radium-226	No Data																			
Radium-228	No Data																			
Selenium-79	No Data																			
Strontium-90	No Data																			
Technetium-99	No Data																			
Thorium-230	No Data																			
Thorium-232	No Data																			
Tritium	No Data																			
Uranium-233/234	No Data																			
Uranium-234	No Data																			
Uranium-235	No Data																			

Table 6-8. Summary of Terrestrial Invertebrate Effects Data

Chemical		Test Organism		Soil			Toxicity Value						Ecological Soil Screening Level (EcoSSL) Details				Reference/Source			
Name	Form	Name	Species	Type	pH	% Organic Matter	Exposure (days)	Parameter	Type	Comment	Soil Concentration (mg/kg dw)	Parameter % Decrease	Bio-availability Score	Total Evaluation Score	Eligible for Eco-SSL Derivation?	Used for Eco-SSL?	Primary	IP Number	Study ID	Secondary
Uranium-238	No Data																			

Notes:

Geometric means were dervied using LOECs, LOAECs, EC20s, EC10s, and MATCs. ILLs, LC50s, and EC50s were not evaluated except for DDT for which all values available were LC50s.
EC25s, EC50s, and LC50s were only considered for analytes for which no other effects data were available. A geometric mean was derived from these effect levels and then the geometric mena was multiplied by uncertainty factor of 0.1.

Acronyms:
EC10 = concentration at which an effect is observed in 10% of exposed organisms
EC20 = concentration at which an effect is observed in 20% of exposed organisms
EC50 = concentration at which an effect is observed in 50% of exposed organisms
ILL = Incipient lethal level
LC50 = concentration lethal to 50% of exposed organisms
LOAEC = lowest observed adverse effect concentration
LOEC = lowest adverse effect concentration
MATC = maximum acceptable toxicant concentration (calculated as a geometric mean of the NOEC and LOEC)
NOEC = no observed effect concentration

Table 6-9. Summary of Tier 1 Values for Chemicals Based on No Observed Adverse Effect Levels

Analyte	California Quail	Meadowlark	Killdeer	Red-tailed Hawk	Great Basin Pocket Mouse	Deer Mouse	Grasshopper Mouse	Badger	Lowest
Aluminum	22020	18602	4921	61782	687	271	380	710	271
Antimony					8.8	0.66	0.60	17	0.60
Arsenic, Total all valence states	1800	1981	425	10344	265	105	171	549	105
Arsenic (III)	1800	1981	425	10344	265	105	171	549	105
Arsenic (V)	1800	1981	425	10344	265	105	171	549	105
Barium	1229	1271	660	14442	2082	1889	4605	18843	660
Beryllium					13.9	18.0	101	283	13.9
Bismuth									
Boron	63.9	86.5	140	797	39.8	49.9	284	767	39.8
Cadmium	151	2.8	0.9	1375	76.2	1.5	1.3	455	0.89
Chromium (total)	334	96.5	36.5	1286	320	74.7	78.0	752	36.5
Chromium (+3)	334	96.5	36.5	1286	320	74.7	78.0	752	36.5
Chromium (+6)					1233	288	300	3380	288
Cobalt	1425	305	109	1601	2174	261	250	1346	109
Copper	485	85.3	35.8	3728	873	100	109	2640	35.8
Lead	247	48.7	15.5	979	1204	151	153	2005	15.5
Lithium					3189	1258	1749	257	257
Manganese	16369	24184	9588	113951	4227	4115	18430	20464	4115
Mercury (methyl)	3.1	0.35	0.04	24.6	0.49	0.03	0.03	9	0.03
Mercury (inorganic)	46.0	31.65	5.60	162.8					5.60
Molybdenum	34.5	27.0	17.9	97.7	1.7	1.4	2.8	7	1.4
Nickel	1081	79.4	30.8	6037	303	17.8	16.3	637	16.3
Selenium	5.6	3.7	1.7	158	2.1	1.2	1.8	32	1.2
Silver	345	12.8	5.0	2044	1442	34.6	30.0	3097	5.0
Strontium					9442	4849	6476	4228	4228
Thallium					5.1	1.8	2.4	3	1.8
Tin	82.2	128	231	1852	187	252	2691	5107	82.2
Uranium	2502	2691	785	18730	56	36	68	155	36
Vanadium	67.0	58.2	15.6	268	1363	577	835	1864	15.6
Zinc	4973	714	66.6	70825	4612	633	794	38590	66.6
Ammonia/Ammonium									

Table 6-9. Summary of Tier 1 Values for Chemicals Based on No Observed Adverse Effect Levels

Analyte	California Quail	Meadowlark	Killdeer	Red-tailed Hawk	Great Basin Pocket Mouse	Deer Mouse	Grasshopper Mouse	Badger	Lowest
Chloride									
Cyanide					27971	20693	78123	38061	20693
Fluoride	1492	2812	556	9206	9825	8216	35673	17379	556
Iodine					159	183	1558	759	159
Nitrate/Nitrite					206422	152711	576537	280885	152711
Phosphate									
Sulfate/Sulfite									
Total Organic Carbon									
1,1-dichloroethane	3615	217	82.7	13955	20357	574	502	22894	82.7
1,1-dichloroethene	3615	217	82.5	11433	12214	344	301	12238	82.5
1,1,1-trichloroethane	3615	217	82.4	8936	407144	11444	10016	349074	82.4
1,1,2-trichloroethane	3615	217	82.6	12031	407144	11472	10041	420572	82.6
1,1,2,2-tetrachloroethane	3615	217	82.4	9549	3636	102	89.4	3255	82.4
1,2-dichlorobenzene	87.8	91.0	82.1	4343	282	294	854	17612	82.1
1,2-dichloroethane (DCA)	3615	222	84.3	16084	20357	586	513	24710	84.3
1,3-dichlorobenzene	96.1	95.9	82.0	4051	310	314	854	16652	82.0
2-butanone (Methyl Ethyl Ketone/MEK)	2102	1041	312	11538	721052	159713	176661	970851	312
2-hexanone	2102	548	186	9653	2036	244	237	2512	186
Benzene	8554	513	195	27053	285	8.0	7.0	286	7.0
Butanol					50893	2906	2626	67049	2626
Carbon Tetrachloride	3615	216	82.3	7382	6514	183	160	4904	82.3
Chlorobenzene	3615	216	82.3	6672	7939	223	195	5561	82.3
Chloroform	3615	217	82.6	13003	6107	172	151	6600	82.6
Cis-1,2-dichloroethylene	3615	217	82.6	13446	18403	518	453	20271	82.6
Dichloromethane (Methylene Chloride)	3615	218	82.9	17281	2382	67.3	58.9	2999	58.9
Ethyl Benzene	159	182	194	12721	342	384	1357	33025	159
Methyl Isobutyl Ketone	2102	573	193	10211	721052	90040	87996	915292	193
n-butyl Benzene	301	263	193	7857	530	485	1092	18135	193
Tetrachloroethylene	3615	216	82	7733	570	16.0	14.0	443	14.0
Toluene	8554	512	195	17200	21171	594	520	15763	195
Trans-1,2-dichloroethylene	3615	217	83	11881	18403	518	453	18869	83

Table 6-9. Summary of Tier 1 Values for Chemicals Based on No Observed Adverse Effect Levels

Analyte	California Quail	Meadowlark	Killdeer	Red-tailed Hawk	Great Basin Pocket Mouse	Deer Mouse	Grasshopper Mouse	Badger	Lowest
Trichloroethylene (TCE)	3615	217	82	7498	285	8.0	7.0	217	7.0
Xylene	149	175	194	13419	422	481	1787	45266	149
Acenaphthene	6831	285	110	38362	71250	1396	1211	96952	110
Acenaphthylene	3506	19	7.4	38362	24321	91.4	77.9	96952	7.4
Anthracene	3405	170	68	38362	178811	4784	4213	554013	68
Benzo(a)pyrene	47.2	6.0	2.4	767	60.4	8.1	7.6	554	2.4
Benzo(a)anthracene	118	5.2	2.0	767	307	7.3	6.4	554	2.0
Benzo(b)fluoranthene	22.5	3.0	1.3	767	24.7	4.1	3.9	554	1.3
Benzo(ghi)perylene	12.2	2.6	1.1	767	12.6	3.5	3.5	554	1.1
Benzo[k]fluoranthene	136	3.2	1.3	767	406	4.6	3.9	554	1.3
Chrysene	118	3.6	1.4	767	307	5.1	4.5	554	1.4
Dibenz(ah)anthracene	43.6	3.5	1.4	767	54.3	4.9	4.4	554	1.4
Fluoranthene	14.9	2.5	1.1	767	1957	421	420	69252	1.1
Fluorene	6831	45	17.5	38362	50893	157	134	69252	17.5
Indeno[1,2,3-cd]pyrene	48.7	2.9	1.2	767	62.6	4.0	3.6	554	1.2
2-Methylnaphthalene	5.0	5.7	155	38362	5.0	5.5	500	27867	5.0
Naphthalene	34.0	36.9	416	38362	33.3	36.2	116	27701	33.3
Phenanthrene	4329	236	94	38362	301134	6731	5919	554013	94.3
Pyrene	10.7	3.9	1.9	767	825	360	436	41551	1.9
Total PAHs									
Low MW PAHs	6592	12623	2316	38362	25369	19170	74597	36343	2316
High MW PAHs	39.5	72.4	46.3	767	29.1	39	699	341	29.1
Gasoline Range Organics									
TPH - Diesel	105086	199535	35638	590179	407144	301205	1137154	554013	35638
TPH - Kerosene	105086	199535	35638	590179	407144	301205	1137154	554013	35638
Normal paraffin hydrocarbons	170870	324445	57948	959632	407144	301205	1137154	554013	57948
Phenol					4886	526	504	5919	504
2-methylphenol (ocresol)					127436	10038	9293	134503	9293
4-methylphenol (pcresol)					127436	10102	9358	136361	9358
2,4-dinitrotoluene	0.29	0.30	0.20	7.2	13.8	13.5	35.6	286	0.20
Bis[2-ethylhexyl] phthalate	111	0.35	0.14	263	1733	5.4	4.6	3599	0.14

Table 6-9. Summary of Tier 1 Values for Chemicals Based on No Observed Adverse Effect Levels

Analyte	California Quail	Meadowlark	Killdeer	Red-tailed Hawk	Great Basin Pocket Mouse	Deer Mouse	Grasshopper Mouse	Badger	Lowest
Total PCBs	10.0	0.65	0.33	25.1	2.9	0.30	0.27	8	0.27
Aroclor 1016	6.4	0.64	0.33	21.8	35.2	2.8	2.5	150	0.33
Aroclor 1221	2.7	0.61	0.33	24.0	0.69	0.25	0.27	8	0.25
Aroclor 1232	2.2	0.59	0.33	26.2	0.55	0.24	0.27	9	0.24
Aroclor 1242	10.4	0.65	0.33	25.6	3.09	0.30	0.27	9	0.27
Aroclor 1248	9.4	0.65	0.33	24.3	0.35	0.06	0.06	1	0.06
Aroclor 1254	11.5	0.65	0.33	27.3	3.5	0.30	0.27	9	0.27
Aroclor 1260	20.4	0.66	0.33	51.5	7.7	0.30	0.27	15	0.27
Aroclor-1262	37.8	71.8	12.8	212	27.7	20.5	77.3	38	12.8
Dichloroprop									
Aldrin	0.45	0.08	0.03	1.1	10.2	2.0	2.0	27	0.03
beta-1,2,3,4,5,6-Hexachlorocyclohexane	4.1	3.6	2.7	112	1.9	1.7	4.0	67	1.7
alpha-Chlordane	122	24	10	302	92.5	20.5	20.7	264	10.1
gamma-Chlordane	122	24	10	302	92.5	20.4	20.6	264	10.0
Dichlorodiphenyldichloroethylene	30.4	0.21	0.07	0.06	20.5	0.11	0.09	0	0.03
Dichlorodiphenyltrichloroethane	30.4	0.30	0.10	2.5	20.5	0.16	0.14	1	0.10
Dieldrin	1.9	0.06	0.02	1.6	0.28	0.01	0.01	0	0.01
Endosulfan I	93.4	66.3	41.4	1671	0.92	0.71	1.3	22	0.71
Endosulfan II	93.4	66.3	41.4	1671	0.92	0.71	1.3	22	0.71
Endosulfan sulfate	62.9	55.4	41.4	2160	0.61	0.56	1.3	27	0.56
Endrin aldehyde	2.6	0.52	0.23	52.9	0.51	0.14	0.14	14	0.14
Methoxychlor					59.8	11.2	10.9	441	10.9

Note:
Highlighted cells represent limiting value.

Table 6-10. Summary of Tier 1 Values for Chemicals Based on Lowest Observed Adverse Effect Levels

Analyte	California Quail	Meadowlark	Killdeer	Red-tailed Hawk	Great Basin Pocket Mouse	Deer Mouse	Grasshopper Mouse	Badger	Lowest
Aluminum					6872	2708	3799	7101	2708
Antimony					96.6	6.6	6.0	167	6.0
Arsenic, Total all valence states	8104	10559	2132	45439	459	190	318	881	190
Arsenic (III)	8104	10559	2132	45439	459	190	318	881	190
Arsenic (V)	8104	10559	2132	45439	459	190	318	881	190
Barium	2464	2548	1323	28954	3470	3148	7676	31405	1323
Beryllium									
Bismuth									
Boron	222	300	485	2766	133	167	949	2563	133
Cadmium	278	5.1	1.6	2335	2065	27.5	23.6	5228	1.6
Chromium (total)	349	101	38.2	1355	1284	299	313	3536	38.2
Chromium (+3)	349	101	38.2	1355	1284	299	313	3536	38.2
Chromium (+6)					5340	1245	1300	16583	1245
Cobalt	1461	313	111	1633	3233	388	372	1869	111
Copper	1914	272	107	13021	1894	176	182	4672	107
Lead	537	115	35.6	2433	2544	332	336	4108	35.6
Lithium					6379	2517	3498	515	515
Manganese	31823	48820	19636	221536	5828	5798	27720	28213	5798
Mercury (methyl)	35.5	21.3	3.6	134	8.0	1.9	3.2	43.4	1.9
Mercury (inorganic)	110.8	112.5	22.1	326	31.0	12.3	32.4	100.3	12.3
Molybdenum	345	270	179	977	16.7	14.0	27.7	71.2	14.0
Nickel	1912	136	52.9	11078	676	35.8	32.6	1438	32.6
Selenium	10.5	8.2	4.3	417	3.0	1.9	3.2	60	1.9
Silver	3453	128	49.6	20437	14418	346	300	30969	49.6
Strontium									
Thallium					25.4	9.2	12.2	13.1	9.2
Tin	204	318	575	4603	279	377	4025	7639	204
Uranium					556	359	682	1545	359
Vanadium	134	116	31.1	537	2723	1153	1668	3723	31.1
Zinc	5015	726	67.8	71294	4661	644	810	38866	67.8
Ammonia/Ammonium									

Table 6-10. Summary of Tier 1 Values for Chemicals Based on Lowest Observed Adverse Effect Levels

Analyte	California Quail	Meadowlark	Killdeer	Red-tailed Hawk	Great Basin Pocket Mouse	Deer Mouse	Grasshopper Mouse	Badger	Lowest
Chloride									
Cyanide									
Fluoride	6123	11539	2281	37771	16521	13816	59985	29224	2281
Iodine					1594	1834	15579	7590	1594
Nitrate/Nitrite					460073	340361	1284984	626035	340361
Phosphate									
Sulfate/Sulfite									
Total Organic Carbon									
1,1-dichloroethane	7230	435	165	27909					165
1,1-dichloroethene	7230	434	165	22866					165
1,1,1-trichloroethane	7230	433	165	17871					165
1,1,2-trichloroethane	7230	434	165	24063					165
1,1,2,2-tetrachloroethane	7230	433	165	19098	36358	1022	894	32554	165
1,2-dichlorobenzene	176	182	164	8687					164
1,2-dichloroethane (DCA)	7230	444	169	32168					169
1,3-dichlorobenzene	192	192	164	8103					164
2-butanone (Methyl Ethyl Ketone/MEK)	21017	10406	3123	115382	1861055	412224	455968	2505793	3123
2-hexanone	21017	5483	1856	96532	14698	1759	1708	18135	1708
Benzene					2850	80.2	70.2	2856	70.2
Butanol					203572	11625	10503	268194	10503
Carbon Tetrachloride	7230	433	165	14765					165
Chlorobenzene	7230	433	165	13345	15756	442	387	11036	165
Chloroform	7230	434	165	26006	16693	470	412	18041	165
Cis-1,2-dichloroethylene	7230	434	165	26892					165
Dichloromethane (Methylene Chloride)	7230	436	166	34562	20357	576	504	25632	166
Ethyl Benzene					1027	1151	4073	99076	1027
Methyl Isobutyl Ketone	21017	5729	1927	102114	1861055	232395	227119	2362393	1927
n-butyl Benzene					1589	1454	3275	54406	1454
Tetrachloroethylene	7230	431	164	15467	2850	79.8	69.8	2216	69.8
Toluene					211715	5944	5202	157633	5202
Trans-1,2-dichloroethylene	7230	434	165	23763					165

Table 6-10. Summary of Tier 1 Values for Chemicals Based on Lowest Observed Adverse Effect Levels

Analyte	California Quail	Meadowlark	Killdeer	Red-tailed Hawk	Great Basin Pocket Mouse	Deer Mouse	Grasshopper Mouse	Badger	Lowest
Trichloroethylene (TCE)	7230	434	165	14996	2850	80.1	70.1	2169	70.1
Xylene					826	940	3494	88509	826
Acenaphthene	68306	2849	1096	383617	142500	2793	2422	193905	1096
Acenaphthylene	43766	186	73.6	383617	54132	183	156	193905	73.6
Anthracene	43405	1716	678	383617					678
Benzo(a)pyrene					635	81.2	76.4	5540	76.4
Benzo(a)anthracene					3636	73.4	64.0	5540	64.0
Benzo(b)fluoranthene					247	40.8	39.2	5540	39.2
Benzo(ghi)perylene					88.9	32.4	34.7	5540	32.4
Benzo[k]fluoranthene					4069	45.6	39.2	5540	39.2
Chrysene					3636	51.4	44.5	5540	44.5
Dibenz(ah)anthracene					543	48.6	44.1	5540	44.1
Fluoranthene					3915	841	839	138503	839
Fluorene	68306	446	175	383617	101786	313	267	138503	175
Indeno[1,2,3-cd]pyrene					626	40	35.7	5540	36
2-Methylnaphthalene	8.4	9.5	1547	383617	6.0	6.5	1132	63047	6.0
Naphthalene	340	369	378	383617	100	109	348	83102	100
Phenanthrene	56061	2406	943	383617					943
Pyrene					1375	600	727	69252	600
Total PAHs									
Low MW PAHs	67600	128679	23165	383617	130652	97560	372987	181716	23165
High MW PAHs					157	209	3491	1701	157
Gasoline Range Organics									
TPH - Diesel	1050862	1995354	356382	5901794	610716	451807	1705732	831020	356382
TPH - Kerosene	1050862	1995354	356382	5901794	610716	451807	1705732	831020	356382
Normal paraffin hydrocarbons					610716	451807	1705732	831020	451807
Phenol					14657	1578	1511	17756	1511
2-methylphenol (ocresol)									
4-methylphenol (pcresol)									
2,4-dinitrotoluene	38.1	39.1	26.4	932	28.8	28.1	74.4	597	26.4
Bis[2-ethylhexyl] phthalate					17332	53.5	45.4	35994	45.4

Table 6-10. Summary of Tier 1 Values for Chemicals Based on Lowest Observed Adverse Effect Levels

Analyte	California Quail	Meadowlark	Killdeer	Red-tailed Hawk	Great Basin Pocket Mouse	Deer Mouse	Grasshopper Mouse	Badger	Lowest
Total PCBs	100	3.6	1.8	251	29.2	1.6	1.5	85	1.5
Aroclor 1016	64	3.6	1.8	218	88.1	5.3	4.8	377	1.8
Aroclor 1221	27	3.4	1.8	240	6.9	1.5	1.5	82	1.5
Aroclor 1232	22	3.4	1.8	262	5.5	1.4	1.5	88	1.4
Aroclor 1242	104	3.6	1.8	256	30.9	1.6	1.5	87	1.5
Aroclor 1248	94	3.6	1.8	243	3.5	0.3	0.32	11	0.32
Aroclor 1254	115	3.6	1.8	273	34.8	1.6	1.5	91	1.5
Aroclor 1260	204	3.6	1.8	515	76.7	1.6	1.5	154	1.5
Aroclor-1262	378	718	128	2125	277	205	773	377	128
Dichloroprop									
Aldrin	2.2	0.40	0.16	5.3	51.1	9.9	9.8	134	0.16
beta-1,2,3,4,5,6-Hexachlorocyclohexane	6.2	5.5	4.1	168	9.4	8.7	19.9	335	4.1
alpha-Chlordane	608	121	50.4	1508	925	205	207	2641	50.4
gamma-Chlordane	608	121	50.2	1508	925	204	206	2641	50.2
Dichlorodiphenyldichloroethylene	300	2.3	0.80	1.7	136	0.71	0.6	0.40	0.40
Dichlorodiphenyltrichloroethane	300	3.5	1.2	46.3	136	1.0	0.9	12.7	0.88
Dieldrin	6.1	0.20	0.08	5.2	0.57	0.02	0.02	0.69	0.02
Endosulfan I									
Endosulfan II									
Endosulfan sulfate									
Endrin aldehyde					5.1	1.4	1.4	140	1.4
Methoxychlor					120	22.4	21.8	882	21.8

Notes:
Highlighted cells represent limiting value.

Table 6-11. Additional Parameters for Estimation of Radionuclide Exposure for Birds and Mammals

Endpoint	Assumed Longevity (years)	Assumed Geometry Category[a]	Geometry Dimensions
California Quail	7	3	10x2x2 cm
Meadowlark	6	3	10x2x2 cm
Killdeer	10	3	10x2x2 cm
Red-tailed Hawk	7	4	45x8.7x4.9 cm
Great Basin Pocket Mouse	4	3	10x2x2 cm
Deer Mouse	1	3	10x2x2 cm
Grasshopper mouse	5	3	10x2x2 cm
Badger	5	5	50x26x13 cm

a. From RESRAD-BIOTA

Table 6-12. Summary of Tier 1 Values in Soil (pCi/g) for Radionuclides

	California Quail	Western Meadowlark	Killdeer	Red-tailed Hawk	Great Basin Pocket Mouse	Deer Mouse	Grasshopper Mouse	Badger	Lowest
Am-241	28900.00	25000.00	11900.00	17800.00	72100.00	48700.00	41400.00	4840.00	4840.00
C-14	54.00	60.10	56.30	49.50	61.40	59.70	135.00	31.60	31.60
Cm-244	389000.00	252000.00	105000.00	207000.00	2300000.00	722000.00	499000.00	50800.00	50800.00
Co-60	805.00	805.00	805.00	863.00	805.00	805.00	806.00	1000.00	805.00
Cs-134	1140.00	1190.00	1200.00	854.00	1160.00	1180.00	1270.00	562.00	562.00
Cs-137	2390.00	2700.00	2800.00	1430.00	2510.00	2630.00	3280.00	924.00	924.00
Eu-152	1740.00	1740.00	1740.00	1880.00	1740.00	1740.00	1740.00	2220.00	1740.00
Eu-154	1610.00	1610.00	1610.00	1740.00	1610.00	1610.00	1610.00	2060.00	1610.00
Eu-155	33400.00	33400.00	33400.00	37300.00	33400.00	33400.00	33400.00	48600.00	33400.00
H-3	1430.00	1280.00	936.00	1130.00	3270.00	2290.00	2830.00	420.00	420.00
Np-237	8190.00	8140.00	7880.00	9150.00	8250.00	8170.00	8180.00	11200.00	7880.00
Pu-238	36300.00	56200.00	20900.00	26800.00	291000.00	161000.00	161000.00	5980.00	5980.00
Pu-239	38800.00	60300.00	22300.00	28400.00	324000.00	175000.00	176000.00	6270.00	6270.00
Ra-226	168.00	142.00	58.30	377.00	285.00	165.00	199.00	193.00	58.30
Ra-228	169.00	140.00	55.20	418.00	306.00	165.00	203.00	193.00	55.20
Sb-125	4580.00	4580.00	4580.00	5040.00	4580.00	4580.00	4580.00	6130.00	4580.00
Sr-90	521.00	302.00	151.00	112.00	706.00	519.00	413.00	91.10	91.10
Tc-99	5360.00	11500.00	137000.00	280000.00	8670.00	12100.00	412000.00	128000.00	5360.00
Th-232	5070.00	12900.00	5340.00	12400.00	34400.00	32500.00	86200.00	4560.00	4560.00
U-234	12700.00	21800.00	6370.00	40900.00	30300.00	24800.00	51600.00	14200.00	6370.00
U-235	6340.00	7810.00	4360.00	10200.00	8600.00	8130.00	9630.00	8060.00	4360.00
U-238	8020.00	10400.00	5150.00	22100.00	11900.00	11000.00	13900.00	13400.00	5150.00

Note:
Highlighted cells represent limiting value.

Table 6-13. Summary of Tier 1 Soil Screening Levels for Protection of Wildlife Receptors

			NOAEL-based site-specific PRGs									LOAEL-based site-specific PRGs								
Group	Soil Constituent	Units	California Quail	Meadow-lark	Killdeer	Red-tailed Hawk	Great Basin Pocket Mouse	Deer Mouse	Grass-hopper Mouse	Badger	NOAEL Lowest	California Quail	Meadow-lark	Killdeer	Red-tailed Hawk	Great Basin Pocket Mouse	Deer Mouse	Grass-hopper Mouse	Badger	LOAEL Lowest
Radionuclides	Americium-241	pCi/g	---	---	---	---	---	---	---	---	---	28900	25000	11900	17800	72100	48700	41400	4840	4840
	Carbon-14	pCi/g	---	---	---	---	---	---	---	---	---	54	60	56	50	61	60	135	32	32
	Curium-244	pCi/g	---	---	---	---	---	---	---	---	---	389000	252000	105000	207000	2300000	722000	499000	50800	50800
	Cobalt-60	pCi/g	---	---	---	---	---	---	---	---	---	805	805	805	863	805	805	806	1000	805
	Cesium-134	pCi/g	---	---	---	---	---	---	---	---	---	1140	1190	1200	854	1160	1180	1270	562	562
	Cesium 137	pCi/g	---	---	---	---	---	---	---	---	---	2390	2700	2800	1430	2510	2630	3280	924	924
	Europium-152	pCi/g	---	---	---	---	---	---	---	---	---	1740	1740	1740	1880	1740	1740	1740	2220	1740
	Europium-154	pCi/g	---	---	---	---	---	---	---	---	---	1610	1610	1610	1740	1610	1610	1610	2060	1610
	Europium-155	pCi/g	---	---	---	---	---	---	---	---	---	33400	33400	33400	37300	33400	33400	33400	48600	33400
	Hydrogen-3 (tritium)	pCi/g	---	---	---	---	---	---	---	---	---	1430	1280	936	1130	3270	2290	2830	420	420
	Neptunium-237	pCi/g	---	---	---	---	---	---	---	---	---	8190	8140	7880	9150	8250	8170	8180	11200	7880
	Nickel-63	pCi/g	---	---	---	---	---	---	---	---	---									
	Plutonium-238	pCi/g	---	---	---	---	---	---	---	---	---	36300	56200	20900	26800	291000	161000	161000	5980	5980
	Plutonium-239/240	pCi/g	---	---	---	---	---	---	---	---	---	38800	60300	22300	28400	324000	175000	176000	6270	6270
	Radium-226	pCi/g	---	---	---	---	---	---	---	---	---	168	142	58	377	285	165	199	193	58
	Radium-228	pCi/g	---	---	---	---	---	---	---	---	---	169	140	55	418	306	165	203	193	55
	Antimony-125	pCi/g	---	---	---	---	---	---	---	---	---	4580	4580	4580	5040	4580	4580	4580	6130	4580
	Strontium 90	pCi/g	---	---	---	---	---	---	---	---	---	521	302	151	112	706	519	413	91	91
	Technetium-99	pCi/g	---	---	---	---	---	---	---	---	---	5360	11500	137000	280000	8670	12100	412000	128000	5360
	Thorium-232	pCi/g	---	---	---	---	---	---	---	---	---	5070	12900	5340	12400	34400	32500	86200	4560	4560
	Uranium-234	pCi/g	---	---	---	---	---	---	---	---	---	12700	21800	6370	40900	30300	24800	51600	14200	6370
	Uranium-235	pCi/g	---	---	---	---	---	---	---	---	---	6340	7810	4360	10200	8600	8130	9630	8060	4360
	Uranium-238	pCi/g	---	---	---	---	---	---	---	---	---	8020	10400	5150	22100	11900	11000	13900	13400	5150
Metals	Aluminum	mg/kg	22020	18602	4921	61782	687	271	380	710	271	---	---	---	---	6872	2708	3799	7101	2708
	Antimony	mg/kg	---	---	---	---	8.82	0.66	0.60	16.66	0.60	---	---	---	---	97	7	6	167	6
	Arsenic, Total all valence states	mg/kg	1800	1981	425	10344	265	105	171	549	105	8104	10559	2132	45439	459	190	318	881	190
	Arsenic (III)	mg/kg	1800	1981	425	10344	265	105	171	549	105	8104	10559	2132	45439	459	190	318	881	190
	Arsenic (V)	mg/kg	1800	1981	425	10344	265	105	171	549	105	8104	10559	2132	45439	459	190	318	881	190
	Barium	mg/kg	1229	1271	660	14442	2082	1889	4605	18843	660	2464	2548	1323	28954	3470	3148	7676	31405	1323
	Beryllium	mg/kg	---	---	---	---	14	18	101	283	14	---	---	---	---	---	---	---	---	---
	Bismuth	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Boron	mg/kg	64	86	140	797	40	50	284	767	40	222	300	485	2766	133	167	949	2563	133
	Cadmium	mg/kg	151	2.8	0.9	1375	76	1.5	1.3	455	0.9	278	5	2	2335	2065	28	24	5228	2
	Chromium (total)	mg/kg	334	97	37	1286	320	75	78	752	37	349	101	38	1355	1284	299	313	3536	38
	Chromium (+3)	mg/kg	334	97	37	1286	320	75	78	752	37	349	101	38	1355	1284	299	313	3536	38
	Chromium (+6)	mg/kg	---	---	---	---	1233	288	300	3380	288	---	---	---	---	5340	1245	1300	16583	1245
	Cobalt	mg/kg	1425	305	109	1601	2174	261	250	1346	109	1461	313	111	1633	3233	388	372	1869	111
	Copper	mg/kg	485	85	36	3728	873	100	109	2640	36	1914	272	107	13021	1894	176	182	4672	107
	Lead	mg/kg	247	49	16	979	1204	151	153	2005	16	537	115	36	2433	2544	332	336	4108	36
	Lithium	mg/kg	---	---	---	---	3189	1258	1749	257	257	---	---	---	---	6379	2517	3498	515	515
	Manganese	mg/kg	16369	24184	9588	113951	4227	4115	18430	20464	4115	31823	48820	19636	221536	5828	5798	27720	28213	5798
	Mercury (methyl)	mg/kg	3.1	0.4	0.04	25	0.5	0.03	0.03	8.7	0.03	36	21	4	134	8	2	3	43	2
	mercury (Inorganic)		46.0	31.7	5.6	162.8					5.6	111	112	22	326	31	12	32	100	12
	Molybdenum	mg/kg	35	27	18	98	1.7	1.4	2.8	7.1	1.4	345	270	179	977	17	14	28	71	14
	Nickel	mg/kg	1081	79	31	6037	303	18	16	637	16	1912	136	53	11078	676	36	33	1438	33
	Selenium	mg/kg	5.6	3.7	1.7	158	2.1	1.2	1.8	32	1.2	10	8	4	417	3	2	3	60	2
	Silver	mg/kg	345	13	5.0	2044	1442	35	30	3097	5.0	3453	128	50	20437	14418	346	300	30969	50
	Strontium	mg/kg	---	---	---	---	9442	4849	6476	4228	4228	---	---	---	---	---	---	---	---	---
	Thallium	mg/kg	---	---	---	---	5.1	1.8	2.4	2.6	1.8	---	---	---	---	25	9	12	13	9
	Tin	mg/kg	82	128	231	1852	187	252	2691	5107	82	204	318	575	4603	279	377	4025	7639	204
	Uranium	mg/kg	2502	2691	785	18730	56	36	68	155	36	---	---	---	---	556	359	682	1545	359
	Vanadium	mg/kg	67	58	16	268	1363	577	835	1864	16	134	116	31	537	2723	1153	1668	3723	31
	Zinc	mg/kg	4973	714	67	70825	4612	633	794	38590	67	5015	726	68	71294	4661	644	810	38866	68
General Inorganics	Ammonia/Ammonium	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Chloride	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Cyanide	mg/kg	---	---	---	---	27971	20693	78123	38061	20693	---	---	---	---	---	---	---	---	---
	Fluoride (fluorine)	mg/kg	1492	2812	556	9206	9825	8216	35673	17379	556	6123	11539	2281	37771	16521	13816	59985	29224	2281
	Iodine	mg/kg	---	---	---	---	159	183	1558	759	159	---	---	---	---	1594	1834	15579	7590	1594
	Nitrate/Nitrite	mg/kg	---	---	---	---	206422	152711	576537	280885	152711	---	---	---	---	460073	340361	1284984	626035	340361
	Phosphate	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Sulfate/Sulfite	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Total Organic Carbon	%	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	1,1-dichloroethane	mg/kg	3615	217	83	13955	20357	574	502	22894	83	7230	435	165	27909	---	---	---	---	165
	1,1-dichloroethene	mg/kg	3615	217	83	11433	12214	344	301	12238	83	7230	434	165	22866	---	---	---	---	165
	1,1,1-trichloroethane	mg/kg	3615	217	82	8936	407144	11444	10016	349074	82	7230	433	165	17871	---	---	---	---	165
	1,1,2-trichloroethane	mg/kg	3615	217	83	12031	407144	11472	10041	420572	83	7230	434	165	24063	---	---	---	---	165

Table 6-13. Summary of Tier 1 Soil Screening Levels for Protection of Wildlife Receptors

			NOAEL-based site-specific PRGs									LOAEL-based site-specific PRGs								
Group	Soil Constituent	Units	California Quail	Meadow-lark	Killdeer	Red-tailed Hawk	Great Basin Pocket Mouse	Deer Mouse	Grass-hopper Mouse	Badger	NOAEL Lowest	California Quail	Meadow-lark	Killdeer	Red-tailed Hawk	Great Basin Pocket Mouse	Deer Mouse	Grass-hopper Mouse	Badger	LOAEL Lowest
Volatile Organics	1,1,2,2-tetrachloroethane	mg/kg	3615	217	82	9549	3636	102	89	3255	82	7230	433	165	19098	36358	1022	894	32554	165
	1,2-dichlorobenzene	mg/kg	88	91	82	4343	282	294	854	17612	82	176	182	164	8687	---	---	---	---	164
	1,2-dichloroethane (DCA)	mg/kg	3615	222	84	16084	20357	586	513	24710	84	7230	444	169	32168	---	---	---	---	169
	1,3-dichlorobenzene	mg/kg	96	96	82	4051	310	314	854	16652	82	192	192	164	8103	---	---	---	---	164
	2-butanone (Methyl Ethyl Ketone/MEK)	mg/kg	2102	1041	312	11538	721052	159713	176661	970851	312	21017	10406	3123	115382	1861055	412224	455968	2505793	3123
	2-hexanone	mg/kg	2102	548	186	9653	2036	244	237	2512	186	21017	5483	1856	96532	14698	1759	1708	18135	1708
	Benzene	mg/kg	8554	513	195	27053	285	8	7	286	7	---	---	---	---	2850	80	70	2856	70
	Butanol	mg/kg	---	---	---	---	50893	2906	2626	67049	2626	---	---	---	---	203572	11625	10503	268194	10503
	Carbon Tetrachloride	mg/kg	3615	216	82	7382	6514	183	160	4904	82	7230	433	165	14765	---	---	---	---	165
	Chlorobenzene	mg/kg	3615	216	82	6672	7939	223	195	5561	82	7230	433	165	13345	15756	442	387	11036	165
	Chloroform	mg/kg	3615	217	83	13003	6107	172	151	6600	83	7230	434	165	26006	16693	470	412	18041	165
	Cis-1,2-dichloroethylene	mg/kg	3615	217	83	13446	18403	518	453	20271	83	7230	434	165	26892	---	---	---	---	165
	Dichloromethane (Methylene Chloride)	mg/kg	3615	218	83	17281	2382	67	59	2999	59	7230	436	166	34562	20357	576	504	25632	166
	Ethyl Benzene	mg/kg	159	183	194	12721	342	384	1357	33025	159	---	---	---	---	1027	1151	4075	99076	1027
	Methyl Isobutyl Ketone	mg/kg	2102	573	193	10211	721052	90040	87996	915292	193	21017	5729	1927	102114	1861055	232395	227119	2362393	1927
	n-butyl Benzene	mg/kg	301	263	193	7857	530	485	1092	18135	193	---	---	---	---	1589	1454	3275	54406	1454
	Tetrachloroethylene	mg/kg	3615	216	82	7733	570	16	14	443	14	7230	431	164	15467	2850	80	70	2216	70
	Toluene	mg/kg	8554	512	195	17200	21171	594	520	15763	195	---	---	---	---	211715	5944	5202	157633	5202
	Trans-1,2-dichloroethylene	mg/kg	3615	217	83	11881	18403	518	453	18869	83	7230	434	165	23763	---	---	---	---	165
	Trichloroethylene (TCE)	mg/kg	3615	217	82	7498	285	8	7	217	7	7230	434	165	14996	2850	80	70	2169	70
	Xylene	mg/kg	149	175	194	13419	422	481	1787	45266	149	---	---	---	---	826	940	3494	88509	826

Table 6-13. Summary of Tier 1 Soil Screening Levels for Protection of Wildlife Receptors

			NOAEL-based site-specific PRGs									LOAEL-based site-specific PRGs								
Group	Soil Constituent	Units	California Quail	Meadow-lark	Killdeer	Red-tailed Hawk	Great Basin Pocket Mouse	Deer Mouse	Grass-hopper Mouse	Badger	NOAEL Lowest	California Quail	Meadow-lark	Killdeer	Red-tailed Hawk	Great Basin Pocket Mouse	Deer Mouse	Grass-hopper Mouse	Badger	LOAEL Lowest
Polycyclic Aromatic Hydrocarbons	Acenaphthene	mg/kg	6831	285	110	38362	71250	1396	1211	96952	110	68306	2849	1096	383617	142500	2793	2422	193905	1096
	Acenaphthylene	mg/kg	3506	19	7	38362	24321	91	78	96952	7	43766	186	74	383617	54132	183	156	193905	74
	Anthracene	mg/kg	3405	170	68	38362	178811	4784	4213	554013	68	43405	1716	678	383617	---	---	---	---	678
	Benzo(a)pyrene	mg/kg	47	6.0	2.4	767	60	8.1	7.6	554	2.4	---	---	---	---	635	81	76	5540	76
	Benzo(a)anthracene	mg/kg	118	5.2	2.0	767	307	7.3	6.4	554	2.0	---	---	---	---	3636	73	64	5540	64
	Benzo(b)fluoranthene	mg/kg	22	3.0	1.3	767	25	4.1	3.9	554	1.3	---	---	---	---	247	41	39	5540	39
	Benzo(ghi)perylene	mg/kg	12	2.6	1.1	767	13	3.5	3.5	554	1.1	---	---	---	---	89	32	35	5540	32
	Benzo[k]fluoranthene	mg/kg	136	3.2	1.3	767	406	4.6	3.9	554	1.3	---	---	---	---	4069	46	39	5540	39
	Chrysene	mg/kg	118	3.6	1.4	767	307	5.1	4.5	554	1.4	---	---	---	---	3636	51	45	5540	45
	Dibenz(ah)anthracene	mg/kg	44	3.5	1.4	767	54	4.9	4.4	554	1.4	---	---	---	---	543	49	44	5540	44
	Fluoranthene	mg/kg	15	2.5	1.1	767	1957	421	420	69252	1.1	---	---	---	---	3915	841	839	138503	839
	Fluorene	mg/kg	6831	45	18	38362	50893	157	134	69252	17.5	68306	446	175	383617	101786	313	267	138503	175
	Indeno[1,2,3-cd]pyrene	mg/kg	49	2.9	1.2	767	63	4.0	3.6	554	1.2	---	---	---	---	626	40	36	5540	36
	2-Methylnaphthalene	mg/kg	5	5.7	155	38362	5.0	5.5	500	27867	5.0	8	9	1547	383617	6	7	1132	63047	6
	Naphthalene	mg/kg	34	37	416	38362	33	36.2	116	27701	33.3	340	369	378	383617	100	109	348	83102	100
	Phenanthrene	mg/kg	4329	236	94	38362	301134	6731	5919	554013	94.3	56061	2406	943	383617	---	---	---	---	943
	Pyrene	mg/kg	11	3.9	1.9	767	825	360	436	41551	1.9	---	---	---	---	1375	600	727	69252	600
	Total PAHs	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Low MW PAHs	mg/kg	6592	12623	2316	38362	25369	19170	74597	36343	2316	67600	128679	23165	383617	130652	97560	372987	181716	23165
	High MW PAHs	mg/kg	40	72	46	767	29	39	699	341	29					157	209	3491	1701	157
Petro-leum	Gasoline Range Organics	mg/kg																		
	TPH - diesel	mg/kg	105086	199535	35638	590179	407144	301205	1137154	554013	35638	1050862	1995354	356382	5901794	610716	451807	1705732	831020	356382
	TPH - kerosene	mg/kg	105086	199535	35638	590179	407144	301205	1137154	554013	35638	1050862	1995354	356382	5901794	610716	451807	1705732	831020	356382
Semivolatile Organics	Normal paraffin hydrocarbons	mg/kg	170870	324445	57948	959632	407144	301205	1137154	554013	57948	---	---	---	---	610716	451807	1705732	831020	451807
	Phenol	mg/kg	---	---	---	---	4886	526	504	5919	504	---	---	---	---	14657	1578	1511	17756	1511
	2-methylphenol (ocresol)	mg/kg	---	---	---	---	127436	10038	9293	134503	9293	---	---	---	---	---	---	---	---	---
	4-methylphenol (pcresol)	mg/kg	---	---	---	---	127436	10102	9358	136361	9358	---	---	---	---	---	---	---	---	---
	2,4-dinitrotoluene	mg/kg	0.29	0.30	0.20	7.17	13.8	13.5	35.6	286	0.20	38	39	26	932	29	28	74	597	26
	Bis[2-ethylhexyl] phthalate	mg/kg	111.1	0.35	0.14	263.03	1733	5.35	4.55	3599	0.14	---	---	---	---	17332	54	45	35994	45
	Polychlorinated Biphenyls (PCB) [b]	mg/kg	10.0	0.65	0.33	25.09	2.92	0.30	0.27	8.5	0.27	100	3.6	1.8	251	29	1.6	1.5	85	1.5
	Aroclor 1016 [b]	mg/kg	6.4	0.64	0.33	21.75	35.2	2.75	2.47	150.4	0.33	64	3.6	1.8	218	88	5.3	4.8	377	1.8
	Aroclor 1221 [b]	mg/kg	2.7	0.61	0.33	24.02	0.69	0.25	0.27	8.2	0.25	27	3.4	1.8	240	7	1.5	1.5	82	1.5
	Aroclor 1232 [b]	mg/kg	2.2	0.59	0.33	26.24	0.55	0.24	0.27	8.8	0.24	22	3.4	1.8	262	5	1.4	1.5	88	1.4
	Aroclor 1242 [b]	mg/kg	10.4	0.65	0.33	25.55	3.1	0.30	0.27	8.7	0.27	104	3.6	1.8	256	31	1.6	1.5	87	1.5
	Aroclor 1248 [b]	mg/kg	9.4	0.65	0.33	24.33	0.35	0.06	0.06	1.1	0.06	94	3.6	1.8	243	3	0.3	0.3	11	0.3
	Aroclor 1254	mg/kg	11.5	0.65	0.33	27.26	3.5	0.30	0.27	9.1	0.27	115	3.6	1.8	273	35	1.6	1.5	91	1.5
	Aroclor 1260 [b]	mg/kg	20.4	0.66	0.33	51.49	7.7	0.30	0.27	15.4	0.27	204	3.6	1.8	515	77	1.6	1.5	154	1.5
	Aroclor-1262 [b]	mg/kg	37.8	71.8	12.8	212	27.7	20.5	77.3	37.7	12.8	378	718	128	2125	277	205	773	377	128
Herbicide	Dichloroprop	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Table 6-13. Summary of Tier 1 Soil Screening Levels for Protection of Wildlife Receptors

			NOAEL-based site-specific PRGs									LOAEL-based site-specific PRGs								
Group	Soil Constituent	Units	California Quail	Meadow-lark	Killdeer	Red-tailed Hawk	Great Basin Pocket Mouse	Deer Mouse	Grass-hopper Mouse	Badger	NOAEL Lowest	California Quail	Meadow-lark	Killdeer	Red-tailed Hawk	Great Basin Pocket Mouse	Deer Mouse	Grass-hopper Mouse	Badger	LOAEL Lowest
Pesticide	Aldrin	mg/kg	0.45	0.08	0.03	1.1	10.2	2.0	2.0	27	0.03	2.2	0.4	0.2	5.3	51	9.9	9.8	134	0.2
	beta-1,2,3,4,5,6-Hexachlorocyclohexane	mg/kg	4.1	3.6	2.7	112.2	1.9	1.7	4.0	67	1.7	6.2	5.5	4.1	168	9.4	8.7	20	335	4.1
	alpha-Chlordane	mg/kg	122	24	10	302	93	21	21	264	10	608	121	50	1508	925	205	207	2641	50
	gamma-Chlordane	mg/kg	122	24	10	302	93	20	21	264	10	608	121	50	1508	925	204	206	2641	50
	Dichlorodiphenyldichloroethane (DDD) [c]	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Dichlorodiphenyldichloroethylene (DDE) [c]	mg/kg	30.4	0.21	0.07	0.06	20.5	0.11	0.09	0.03	0.03	300	2.3	0.8	1.7	136	0.7	0.6	0.4	0.4
	Dichlorodiphenyltrichloroethane	mg/kg	30.4	0.30	0.10	2.5	20.5	0.16	0.14	1.4	0.10	300	3.5	1.2	46.3	136	1.0	0.9	12.7	0.9
	Dieldrin	mg/kg	1.9	0.06	0.02	1.6	0.28	0.01	0.01	0.35	0.01	6.1	0.20	0.08	5.2	0.57	0.02	0.02	0.69	0.02
	Endosulfan I	mg/kg	93.4	66.3	41.4	1671	0.92	0.71	1.29	21.9	0.71	---	---	---	---	---	---	---	---	---
	Endosulfan II	mg/kg	93.4	66.3	41.4	1671	0.92	0.71	1.29	21.9	0.71	---	---	---	---	---	---	---	---	---
	Endosulfan sulfate	mg/kg	62.9	55.4	41.4	2160	0.61	0.56	1.29	27.2	0.56	---	---	---	---	---	---	---	---	---
	Endrin aldehyde	mg/kg	2.6	0.52	0.23	52.9	0.51	0.14	0.14	14.0	0.14	---	---	---	---	5.1	1.4	1.4	140	1.4
	Methoxychlor	mg/kg	---	---	---	---	59.78	11.20	10.92	441	10.9	---	---	---	---	120	22	22	882	22

a Values for diethyl phthalate and di-n-butyl phthalate were used as a surrogate for bis(2)ethylhexyl phthalate
b Aroclor 1254 value was used as surrogate.
c DDT values used as a surrogate for DDE and DDD.
High MW PAHs = High molecular weight polycyclic aromatic hydrocarbons
Low MW PAHs = Low molecular weight polycyclic aromatic hydrocarbons
mg/kg = Milligram per kilogram
pCi/g = Pico Curie per gram
PRG = Preliminary remedial goal
TPH = Total petroleum hydrocarbons
--- = Value not available

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Appendix A

Description of Studies Used to Calculate Benchmarks

Table A-1. Exposure Calculation Worksheet for Determining NOAEL-Based PRGs for California Quail

Analyte	Soil PRG (mg/kg)	Literature-derived Bioaccumulation Models									Estimated Concentrations in Biota (mg/kg DW)			Food Intake Rate	Diet Composition (proportion)				Estimated Exposure (mg/kg/d)					Percent Estimated Exposure by Pathway				Selected Avian NOAEL TRV (mg/kg/d)	NOAEL HQ
		Plants			Soil Inverts			Small Mammals																					
		intercept	slope	BAF	intercept	slope	BAF	intercept	slope	BAF	Plants	Soil Invertbrates	Small Mammals	(kg/kg-bw/d, dw)	Small Mammals	Soil Inverts	Plants	Soil	Small Mammals	Soil Inverts	Plants	Soil	Total	Small Mam.	Soil Inverts	Plants	Soil		
Aluminum	22019.89			0.00287			0.043			0.0263	63.20	946.86	579.12	0.078	0	0	1	0.061	0.00	0.00	4.93	104.77	109.70	0.00%	0.00%	4.49%	95.51%	109.7	1.0
Antimony	1.00	-3.233	0.938				1			0.001 * 50 * Cdiet	0.04	1.00	0.05	0.078	0	0	1	0.061	0.00	0.00	0.00	0.00	0.01	0.00%	0.00%	39.27%	60.73%	---	---
Arsenic, Total all valence states	1799.96	-1.992	0.564		-1.421	0.706		-4.8471	0.8188		9.35	47.98	3.63	0.078	0	0	1	0.061	0.00	0.00	0.73	8.56	9.29	0.00%	0.00%	7.85%	92.15%	9.3	1.0
Arsenic (III)	1799.96	-1.992	0.564		-1.421	0.706		-4.8471	0.8188		9.35	47.98	3.63	0.078	0	0	1	0.061	0.00	0.00	0.73	8.56	9.29	0.00%	0.00%	7.85%	92.15%	9.3	1.0
Arsenic (V)	1799.96	-1.992	0.564		-1.421	0.706		-4.8471	0.8188		9.35	47.98	3.63	0.078	0	0	1	0.061	0.00	0.00	0.73	8.56	9.29	0.00%	0.00%	7.85%	92.15%	9.3	1.0
Barium	1228.88			0.156			0.091			0.0168	191.71	111.83	20.65	0.078	0	0	1	0.061	0.00	0.00	14.95	5.85	20.80	0.00%	0.00%	71.89%	28.11%	20.8	1.0
Beryllium	1.00	-0.5361	0.7345				0.045			0.001 * 50 * Cdiet	0.59	0.05	0.00	0.078	0	0	1	0.061	0.00	0.00	0.05	0.00	0.05	0.00%	0.00%	90.56%	9.44%	---	---
Bismuth	1.00			0.005			1			1	0.01	1.00	1.00	0.078	0	0	1	0.061	0.00	0.00	0.00	0.00	0.01	0.00%	0.00%	7.58%	92.42%	---	---
Boron	63.94			5.714			1			1	365.33	63.94	63.94	0.078	0	0	1	0.061	0.00	0.00	28.50	0.30	28.80	0.00%	0.00%	98.94%	1.06%	28.8	1.0
Cadmium	151.07	-0.476	0.546		2.114	0.795		-1.2571	0.4723		9.62	447.24	3.04	0.078	0	0	1	0.061	0.00	0.00	0.75	0.72	1.47	0.00%	0.00%	51.07%	48.93%	1.47	1.0
Chromium (total)	334.34			0.041			0.306	-1.4599	0.7338		13.71	102.31	16.53	0.078	0	0	1	0.061	0.00	0.00	1.07	1.59	2.66	0.00%	0.00%	40.20%	59.80%	2.66	1.0
Chromium (+3)	334.34			0.041			0.306	-1.4599	0.7338		13.71	102.31	16.53	0.078	0	0	1	0.061	0.00	0.00	1.07	1.59	2.66	0.00%	0.00%	40.20%	59.80%	2.66	1.0
Chromium (+6)	1.00			0.041			0.306	-1.4599	0.7338		0.04	0.31	0.23	0.078	0	0	1	0.061	0.00	0.00	0.00	0.00	0.01	0.00%	0.00%	40.20%	59.80%	---	---
Cobalt	1425.33			0.00745			0.291	-4.4669	1.307		10.62	414.77	152.13	0.078	0	0	1	0.061	0.00	0.00	0.83	6.78	7.61	0.00%	0.00%	10.88%	89.12%	7.61	1.0
Copper	485.15	0.669	0.394				0.515	2.042	0.1444		22.32	249.85	18.82	0.078	0	0	1	0.061	0.00	0.00	1.74	2.31	4.05	0.00%	0.00%	43.00%	57.00%	4.05	1.0
Lead	247.02	-1.328	0.561		-0.218	0.807		0.0761	0.4422		5.83	68.59	12.33	0.078	0	0	1	0.061	0.00	0.00	0.45	1.18	1.63	0.00%	0.00%	27.89%	72.11%	1.63	1.0
Lithium	1.00			0.004			0.046			1	0.00	0.05	1.00	0.078	0	0	1	0.061	0.00	0.00	0.00	0.00	0.01	0.00%	0.00%	6.15%	93.85%	---	---
Manganese	16368.56			0.0792	-0.809	0.682				0.0205	1296.39	333.13	335.56	0.078	0	0	1	0.061	0.00	0.00	101.12	77.88	179.00	0.00%	0.00%	56.49%	43.51%	179	1.0
Mercury (methyl)	3.09	-0.996	0.544		0.0781	0.3369				0.054	0.68	1.58	0.17	0.078	0	0	1	0.061	0.00	0.00	0.05	0.01	0.07	0.00%	0.00%	78.34%	21.66%	0.068	1.0
Mercury (inorganic)	45.98	-0.996	0.544		0.0781	0.3369				0.054	2.96	3.93	2.50	0.078	0	0	1	0.061	0.00	0.00	0.23	0.22	0.45	0.00%	0.00%	51.38%	48.62%	0.45	1.0
Molybdenum	34.51			1.2504			0.953			1	43.15	32.89	34.51	0.078	0	0	1	0.061	0.00	0.00	3.37	0.16	3.53	0.00%	0.00%	95.35%	4.65%	3.53	1.0
Nickel	1080.61	-2.224	0.748				1.059	-0.2462	0.4658		20.11	1144.37	20.24	0.078	0	0	1	0.061	0.00	0.00	1.57	5.14	6.71	0.00%	0.00%	23.37%	76.63%	6.71	1.0
Selenium	5.57	-0.678	1.104		-0.075	0.733		-0.4158	0.3764		3.38	3.27	1.26	0.078	0	0	1	0.061	0.00	0.00	0.26	0.03	0.29	0.00%	0.00%	90.87%	9.13%	0.29	1.0
Silver	345.30			0.014			2.045			0.0040	4.83	706.14	1.38	0.078	0	0	1	0.061	0.00	0.00	0.38	1.64	2.02	0.00%	0.00%	18.67%	81.33%	2.02	1.0
Strontium	1.00			0.207			0.4066			1.74	0.21	0.41	1.74	0.078	0	0	1	0.061	0.00	0.00	0.02	0.00	0.02	0.00%	0.00%	77.22%	22.78%	---	---
Thallium	1.00			0.004			0.0541			0.1124	0.00	0.05	0.11	0.078	0	0	1	0.061	0.00	0.00	0.00	0.00	0.01	0.00%	0.00%	6.15%	93.85%	---	---
Tin	82.17			1			0.08			0.08	82.17	6.57	6.57	0.078	0	0	1	0.061	0.00	0.00	6.41	0.39	6.80	0.00%	0.00%	94.25%	5.75%	6.8	1.0
Uranium	2501.56			0.021			0.033			0.0002	52.53	82.55	0.50	0.078	0	0	1	0.061	0.00	0.00	4.10	11.90	16.00	0.00%	0.00%	25.61%	74.39%	16	1.0
Vanadium	66.97			0.00485			0.042			0.0123	0.32	2.81	0.82	0.078	0	0	1	0.061	0.00	0.00	0.03	0.32	0.34	0.00%	0.00%	7.37%	92.63%	0.344	1.0
Zinc	4973.24	1.575	0.555		4.449	0.328		4.3632	0.0706		544.06	1395.32	143.18	0.078	0	0	1	0.061	0.00	0.00	42.44	23.66	66.10	0.00%	0.00%	64.20%	35.80%	66.1	1.0
Ammonia/Ammonium	1.00													0.078	0	0	1	0.061	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Chloride	1.00													0.078	0	0	1	0.061	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Cyanide	1.00													0.078	0	0	1	0.061	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Fluoride	1492.54			0.006							8.96			0.078	0	0	1	0.061	0.00	0.00	0.70	7.10	7.80	0.00%	0.00%	8.96%	91.04%	7.8	1.0
Iodine	1.00			0.05							0.05			0.078	0	0	1	0.061	0.00	0.00	0.00	0.00	0.01	0.00%	0.00%	45.05%	54.95%	---	---
Nitrate/Nitrite	1.00													0.078	0	0	1	0.061	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Phosphate	1.00													0.078	0	0	1	0.061	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Sulfate/Sulfite	1.00													0.078	0	0	1	0.061	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Total Organic Carbon	1.00													0.078	0	0	1	0.061	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---

Table A-1. Exposure Calculation Worksheet for Determining NOAEL-Based PRGs for California Quail

Analyte	Soil PRG (mg/kg)	Literature-derived Bioaccumulation Models									Estimated Concentrations in Biota (mg/kg DW)			Food Intake Rate	Diet Composition (proportion)				Estimated Exposure (mg/kg/d)					Percent Estimated Exposure by Pathway				Selected Avian NOAEL TRV (mg/kg/d)	NOAEL HQ
		Plants			Soil Inverts			Small Mammals																					
		intercept	slope	BAF	intercept	slope	BAF	intercept	slope	BAF	Plants	Soil Invertbrates	Small Mammals	(kg/kg-bw/d, dw)	Small Mammals	Soil Inverts	Plants	Soil	Small Mammals	Soil Inverts	Plants	Soil	Total	Small Mam.	Soil Inverts	Plants	Soil		
1,1-dichloroethane	3614.96						1.010			0.0109		3649.64	39.46	0.078	0	0	1	0.061	0.00	0.00	0.00	17.20	17.20	0.00%	0.00%	0.00%	100.00%	17.2	1.0
1,1-dichloroethene	3614.96						1.011			0.0186		3655.55	67.31	0.078	0	0	1	0.061	0.00	0.00	0.00	17.20	17.20	0.00%	0.00%	0.00%	100.00%	17.2	1.0
1,1,1-trichloroethane	3614.96						1.013			0.0305		3661.30	110.36	0.078	0	0	1	0.061	0.00	0.00	0.00	17.20	17.20	0.00%	0.00%	0.00%	100.00%	17.2	1.0
1,1,2-trichloroethane	3614.96						1.010			0.0165		3651.90	59.64	0.078	0	0	1	0.061	0.00	0.00	0.00	17.20	17.20	0.00%	0.00%	0.00%	100.00%	17.2	1.0
1,1,2,2-tetrachloroethane	3614.96						1.013			0.0270		3661.72	97.70	0.078	0	0	1	0.061	0.00	0.00	0.00	17.20	17.20	0.00%	0.00%	0.00%	100.00%	17.2	1.0
1,2-dichlorobenzene	87.76			2.45			1.018			0.0882	215.16	89.31	7.74	0.078	0	0	1	0.061	0.00	0.00	16.78	0.42	17.20	0.00%	0.00%	97.57%	2.43%	17.2	1.0
1,2-dichloroethane (DCA)	3614.96						0.988			0.0063		3572.93	22.75	0.078	0	0	1	0.061	0.00	0.00	0.00	17.20	17.20	0.00%	0.00%	0.00%	100.00%	17.2	1.0
1,3-dichlorobenzene	96.13			2.23			1.018			0.0963	214.65	97.86	9.25	0.078	0	0	1	0.061	0.00	0.00	16.74	0.46	17.20	0.00%	0.00%	97.34%	2.66%	17.2	1.0
2-butanone (Methyl Ethyl Ketone/MEK)	2101.72						0.094			0.0006		196.72	1.16	0.078	0	0	1	0.061	0.00	0.00	0.00	10.00	10.00	0.00%	0.00%	0.00%	100.00%	10	1.0
2-hexanone	2101.72						0.207			0.0053		435.69	11.24	0.078	0	0	1	0.061	0.00	0.00	0.00	10.00	10.00	0.00%	0.00%	0.00%	100.00%	10	1.0
Benzene	8554.01						1.011			0.0186		8650.06	159.26	0.078	0	0	1	0.061	0.00	0.00	0.00	40.70	40.70	0.00%	0.00%	0.00%	100.00%	40.7	1.0
Butanol	1.00						0.478			0.0017		0.48	0.00	0.078	0	0	1	0.061	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Carbon Tetrachloride	3614.96						1.015			0.0420		3668.14	151.83	0.078	0	0	1	0.061	0.00	0.00	0.00	17.20	17.20	0.00%	0.00%	0.00%	100.00%	17.2	1.0
Chlorobenzene	3614.96						1.015			0.0490		3667.87	177.22	0.078	0	0	1	0.061	0.00	0.00	0.00	17.20	17.20	0.00%	0.00%	0.00%	100.00%	17.2	1.0
Chloroform	3614.96						1.011			0.0135		3653.00	48.70	0.078	0	0	1	0.061	0.00	0.00	0.00	17.20	17.20	0.00%	0.00%	0.00%	100.00%	17.2	1.0
Cis-1,2-dichloroethylene	3614.96						1.011			0.0122		3655.02	44.24	0.078	0	0	1	0.061	0.00	0.00	0.00	17.20	17.20	0.00%	0.00%	0.00%	100.00%	17.2	1.0
Dichloromethane (Methylene Chloride)	3614.96						1.007			0.0042		3639.38	15.17	0.078	0	0	1	0.061	0.00	0.00	0.00	17.20	17.20	0.00%	0.00%	0.00%	100.00%	17.2	1.0
Ethyl Benzene	159.31			3.21			1.016			0.0666	512.08	161.89	10.62	0.078	0	0	1	0.061	0.00	0.00	39.94	0.76	40.70	0.00%	0.00%	98.14%	1.86%	40.7	1.0
Methyl Isobutyl Ketone	2101.72						0.197			0.0037		413.99	7.86	0.078	0	0	1	0.061	0.00	0.00	0.00	10.00	10.00	0.00%	0.00%	0.00%	100.00%	10	1.0
n-butyl Benzene	301.18			1.67			1.022			0.1227	503.42	307.91	36.97	0.078	0	0	1	0.061	0.00	0.00	39.27	1.43	40.70	0.00%	0.00%	96.48%	3.52%	40.7	1.0
Tetrachloroethylene	3614.96						1.018			0.0390		3678.25	141.01	0.078	0	0	1	0.061	0.00	0.00	0.00	17.20	17.20	0.00%	0.00%	0.00%	100.00%	17.2	1.0
Toluene	8554.01						1.014			0.0430		8674.41	368.11	0.078	0	0	1	0.061	0.00	0.00	0.00	40.70	40.70	0.00%	0.00%	0.00%	100.00%	40.7	1.0
Trans-1,2-dichloroethylene	3614.96						1.011			0.0170		3655.02	61.49	0.078	0	0	1	0.061	0.00	0.00	0.00	17.20	17.20	0.00%	0.00%	0.00%	100.00%	17.2	1.0
Trichloroethylene (TCE)	3614.96						1.012			0.0410		3659.98	148.16	0.078	0	0	1	0.061	0.00	0.00	0.00	17.20	17.20	0.00%	0.00%	0.00%	100.00%	17.2	1.0
Xylene	149.40			3.43			1.016			0.0619	512.68	151.80	9.25	0.078	0	0	1	0.061	0.00	0.00	39.99	0.71	40.70	0.00%	0.00%	98.25%	1.75%	40.7	1.0
Acenaphthene	6830.60	-5.562	-0.8556				1.470			0	0.00	10040.98	0.00	0.078	0	0	1	0.061	0.00	0.00	0.00	32.50	32.50	0.00%	0.00%	0.00%	100.00%	32.5	1.0
Acenaphthylene	3505.79	-1.144	0.791				22.9			0	202.81	80282.51	0.00	0.078	0	0	1	0.061	0.00	0.00	15.82	16.68	32.50	0.00%	0.00%	48.68%	51.32%	32.5	1.0
Anthracene	3405.23	-0.9887	0.7784				2.42			0	208.95	8240.66	0.00	0.078	0	0	1	0.061	0.00	0.00	16.30	16.20	32.50	0.00%	0.00%	50.15%	49.85%	32.5	1.0
Benzo(a)pyrene	47.19	-2.0615	0.975				1.33			0	5.45	62.77	0.00	0.078	0	0	1	0.061	0.00	0.00	0.43	0.22	0.65	0.00%	0.00%	65.45%	34.55%	0.65	1.0
Benzo(a)anthracene	117.98	-2.7078	0.5944				1.59			0	1.14	187.59	0.00	0.078	0	0	1	0.061	0.00	0.00	0.09	0.56	0.65	0.00%	0.00%	13.64%	86.36%	0.65	1.0
Benzo(b)fluoranthene	22.46			0.31			2.6			0	6.96	58.40	0.00	0.078	0	0	1	0.061	0.00	0.00	0.54	0.11	0.65	0.00%	0.00%	83.56%	16.44%	0.65	1.0
Benzo(ghi)perylene	12.19	-0.9313	1.1829				2.94			0	7.59	35.84	0.00	0.078	0	0	1	0.061	0.00	0.00	0.59	0.06	0.65	0.00%	0.00%	91.08%	8.92%	0.65	1.0
Benzo[k]fluoranthene	136.25	-4.6482	0.1668				2.6			0	0.02	354.24	0.00	0.078	0	0	1	0.061	0.00	0.00	0.00	0.65	0.65	0.00%	0.00%	0.26%	99.74%	0.65	1.0
Chrysene	117.98	-2.7078	0.5944				2.29			0	1.14	270.18	0.00	0.078	0	0	1	0.061	0.00	0.00	0.09	0.56	0.65	0.00%	0.00%	13.64%	86.36%	0.65	1.0
Dibenz(ah)anthracene	43.63			0.13			2.31			0	5.67	100.79	0.00	0.078	0	0	1	0.061	0.00	0.00	0.44	0.21	0.65	0.00%	0.00%	68.06%	31.94%	0.65	1.0
Fluoranthene	14.85			0.5			3.04			0	7.43	45.16	0.00	0.078	0	0	1	0.061	0.00	0.00	0.58	0.07	0.65	0.00%	0.00%	89.13%	10.87%	0.65	1.0
Fluorene	6830.60	-5.562	-0.8556				9.57			0	0.00	65368.85	0.00	0.078	0	0	1	0.061	0.00	0.00	0.00	32.50	32.50	0.00%	0.00%	0.00%	100.00%	32.5	1.0
Indeno[1,2,3-cd]pyrene	48.73			0.11			2.86			0	5.36	139.38	0.00	0.078	0	0	1	0.061	0.00	0.00	0.42	0.23	0.65	0.00%	0.00%	64.33%	35.67%	0.65	1.0

Table A-1. Exposure Calculation Worksheet for Determining NOAEL-Based PRGs for California Quail

Analyte	Soil PRG (mg/kg)	Literature-derived Bioaccumulation Models									Estimated Concentrations in Biota (mg/kg DW)			Food Intake Rate	Diet Composition (proportion)				Estimated Exposure (mg/kg/d)					Percent Estimated Exposure by Pathway				Selected Avian NOAEL TRV (mg/kg/d)	NOAEL HQ
		Plants			Soil Inverts			Small Mammals																					
		intercept	slope	BAF	intercept	slope	BAF	intercept	slope	BAF	Plants	Soil Invertbrates	Small Mammals	(kg/kg-bw/d, dw)	Small Mammals	Soil Inverts	Plants	Soil	Small Mammals	Soil Inverts	Plants	Soil	Total	Small Mam.	Soil Inverts	Plants	Soil		
2-Methylnaphthalene	5.04	-1.3205	4.544				1.020			0	416.34	5.14	0.00	0.078	0	0	1	0.061	0.00	0.00	32.47	0.02	32.50	0.00%	0.00%	99.93%	0.07%	32.5	1.0
Naphthalene	33.98			12.2			4.4			0	414.59	149.53	0.00	0.078	0	0	1	0.061	0.00	0.00	32.34	0.16	32.50	0.00%	0.00%	99.50%	0.50%	32.5	1.0
Phenanthrene	4329.17	-0.1665	0.6203				1.72			0	152.53	7446.16	0.00	0.078	0	0	1	0.061	0.00	0.00	11.90	20.60	32.50	0.00%	0.00%	36.61%	63.39%	32.5	1.0
Pyrene	10.67			0.72			1.75			0	7.68	18.67	0.00	0.078	0	0	1	0.061	0.00	0.00	0.60	0.05	0.65	0.00%	0.00%	92.19%	7.81%	0.65	1.0
Total PAHs	1.00	0.083	0.3015							0	1.09		0.00	0.078	0	0	1	0.061	0.00	0.00	0.08	0.00	0.09	0.00%	0.00%	94.68%	5.32%	---	---
Low MW PAHs	6592.49	-1.3205	0.4544							0	14.52		0.00	0.078	0	0	1	0.061	0.00	0.00	1.13	31.37	32.50	0.00%	0.00%	3.48%	96.52%	32.5	1.0
High MW PAHs	39.51	-1.7026	0.9469							0	5.92		0.00	0.078	0	0	1	0.061	0.00	0.00	0.46	0.19	0.65	0.00%	0.00%	71.08%	28.92%	0.65	1.0
Gasoline Range Organics																												500	---
TPH - Diesel	105086.17									0			0.00	0.078	0	0	1	0.061	0.00	0.00	0.00	500.00	500.00	0.00%	0.00%	0.00%	100.00%	500	1.0
TPH - Kerosene	105086.17									0			0.00	0.078	0	0	1	0.061	0.00	0.00	0.00	500.00	500.00	0.00%	0.00%	0.00%	100.00%	500	1.0
Normal paraffin hydrocarbons	170870.11									0			0.00	0.078	0	0	1	0.061	0.00	0.00	0.00	813.00	813.00	0.00%	0.00%	0.00%	100.00%	813	1.0
Phenol	1.00						0.235			0.0064		0.23	0.01	0.078	0	0	1	0.061	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
2-methylphenol (ocresol)	1.00						0.336			0.0150		0.34	0.02	0.078	0	0	1	0.061	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
4-methylphenol (pcresol)	1.00						0.333			0.0141		0.33	0.01	0.078	0	0	1	0.061	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
2,4-dinitrotoluene	0.29	1.873	-0.3768	0.376			0.184			0.0155	0.11	0.05	0.00	0.078	0	0	1	0.061	0.00	0.00	0.01	0.00	0.01	0.00%	0.00%	86.04%	13.96%	0.01	1.0
Bis[2-ethylhexyl] phthalate	111.06			0.07			41.144			0.0945	7.33	4569.64	10.49	0.078	0	0	1	0.061	0.00	0.00	0.57	0.53	1.10	0.00%	0.00%	51.96%	48.04%	1.1	1.0
Total PCBs	10.01			0.17	1.41	1.36				0.1792	1.70	93.99	1.79	0.078	0	0	1	0.061	0.00	0.00	0.13	0.05	0.18	0.00%	0.00%	73.53%	26.47%	0.18	1.0
Aroclor 1016	6.45			0.30	1.41	1.36				0.2104	1.91	51.67	1.36	0.078	0	0	1	0.061	0.00	0.00	0.15	0.03	0.18	0.00%	0.00%	82.95%	17.05%	0.18	1.0
Aroclor 1221	2.73			0.78	1.41	1.36				0.1883	2.14	16.05	0.51	0.078	0	0	1	0.061	0.00	0.00	0.17	0.01	0.18	0.00%	0.00%	92.78%	7.22%	0.18	1.0
Aroclor 1232	2.19			0.99	1.41	1.36				0.1704	2.17	11.93	0.37	0.078	0	0	1	0.061	0.00	0.00	0.17	0.01	0.18	0.00%	0.00%	94.20%	5.80%	0.18	1.0
Aroclor 1242	10.36			0.16	1.41	1.36				0.1756	1.68	98.45	1.82	0.078	0	0	1	0.061	0.00	0.00	0.13	0.05	0.18	0.00%	0.00%	72.62%	27.38%	0.18	1.0
Aroclor 1248	9.41			0.18	1.41	1.36				0.1855	1.73	86.33	1.75	0.078	0	0	1	0.061	0.00	0.00	0.14	0.04	0.18	0.00%	0.00%	75.14%	24.86%	0.18	1.0
Aroclor 1254	11.52			0.14	1.41	1.36				0.1630	1.60	113.76	1.88	0.078	0	0	1	0.061	0.00	0.00	0.13	0.05	0.18	0.00%	0.00%	69.55%	30.45%	0.18	1.0
Aroclor 1260	20.38			0.05	1.41	1.36				0.0750	1.06	247.09	1.53	0.078	0	0	1	0.061	0.00	0.00	0.08	0.10	0.18	0.00%	0.00%	46.13%	53.87%	0.18	1.0
Aroclor-1262	37.83													0.078	0	0	1	0.061	0.00	0.00	0.00	0.18	0.18	0.00%	0.00%	0.00%	100.00%	0.18	1.0
Dichloroprop	1.00													0.078	0	0	1	0.061	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Aldrin	0.45			0.14			1.033			0.1630	0.06	0.46	0.07	0.078	0	0	1	0.061	0.00	0.00	0.00	0.00	0.01	0.00%	0.00%	69.55%	30.45%	0.007	1.0
beta-1,2,3,4,5,6-Hexachlorocyclohexane	4.11			1.72			1.021			0.1201	7.07	4.20	0.49	0.078	0	0	1	0.061	0.00	0.00	0.55	0.02	0.57	0.00%	0.00%	96.57%	3.43%	0.571	1.0
alpha-Chlordane	121.50			0.16			1.031			0.1771	20.02	125.33	21.51	0.078	0	0	1	0.061	0.00	0.00	1.56	0.58	2.14	0.00%	0.00%	72.99%	27.01%	2.14	1.0
gamma-Chlordane	121.50			0.16			1.036			0.1771	20.02	125.82	21.51	0.078	0	0	1	0.061	0.00	0.00	1.56	0.58	2.14	0.00%	0.00%	72.99%	27.01%	2.14	1.0
Dichlorodiphenyldichloroethylene	30.37	-2.5119	0.7524		2.4771	0.8804		3.6401	0.641		1.06	240.37	339.69	0.078	0	0	1	0.061	0.00	0.00	0.08	0.14	0.23	0.00%	0.00%	36.35%	63.65%	0.227	1.0
Dichlorodiphenyltrichloroethane	30.37	-2.5119	0.7524		2.1247	0.8689		1.1788	0.7254		1.06	162.48	38.66	0.078	0	0	1	0.061	0.00	0.00	0.08	0.14	0.23	0.00%	0.00%	36.35%	63.65%	0.227	1.0
Dieldrin	1.93			0.41			14.70			1.20	0.79	28.37	2.32	0.078	0	0	1	0.061	0.00	0.00	0.06	0.01	0.07	0.00%	0.00%	87.05%	12.95%	0.0709	1.0
Endosulfan I	93.44			1.31			1.184			0.1455	122.51	110.61	13.59	0.078	0	0	1	0.061	0.00	0.00	9.56	0.44	10.00	0.00%	0.00%	95.55%	4.45%	10	1.0
Endosulfan II	93.44			1.31			1.184			0.1455	122.51	110.61	13.59	0.078	0	0	1	0.061	0.00	0.00	9.56	0.44	10.00	0.00%	0.00%	95.55%	4.45%	10	1.0
Endosulfan sulfate	62.89			1.98			1.184			0.1072	124.37	74.45	6.74	0.078	0	0	1	0.061	0.00	0.00	9.70	0.30	10.00	0.00%	0.00%	97.01%	2.99%	10	1.0
Endrin aldehyde	2.56			1.44			6.686			0.1368	3.69	17.14	0.35	0.078	0	0	1	0.061	0.00	0.00	0.29	0.01	0.30	0.00%	0.00%	95.93%	4.07%	0.3	1.0
Methoxychlor	1.00			0.52			3.739			0.2093	0.52	3.74	0.21	0.078	0	0	1	0.061	0.00	0.00	0.04	0.00	0.05	0.00%	0.00%	89.59%	10.41%	---	---

Notes:

It has been conservatively assumed that all chemical intake is absorbed by the receptor.

Table A-1. Exposure Calculation Worksheet for Determining NOAEL-Based PRGs for California Quail

Analyte	Soil PRG (mg/kg)	Literature-derived Bioaccumulation Models									Estimated Concentrations in Biota (mg/kg DW)			Food Intake Rate	Diet Composition (proportion)				Estimated Exposure (mg/kg/d)					Percent Estimated Exposure by Pathway				Selected Avian NOAEL TRV (mg/kg/d)	NOAEL HQ
		Plants			Soil Inverts			Small Mammals																					
		intercept	slope	BAF	intercept	slope	BAF	intercept	slope	BAF	Plants	Soil Invertbrates	Small Mammals	(kg/kg-bw/d, dw)	Small Mammals	Soil Inverts	Plants	Soil	Small Mammals	Soil Inverts	Plants	Soil	Total	Small Mam.	Soil Inverts	Plants	Soil		

1 - When no TRV was available, the PRG is listed as 1 mg/kg based on formulas in the spreadsheet but no actual PRG is recommended.

Acronyms:

BAF = Bioaccumulation factor
DW = Dry weight
FIR = Food ingestion rate
mg/kg = Miligrams per kilogram
mg/kg BW/day, DW = Miligrams per kilogram of body weight per day, dry weight
mg/kg/d = Miligrams per kilogram per day
NOAEL = No observed adverse effect level
PRGs = Preliminary remediation goals
TRV = Toxicity reference value

Equations:

Total Estimated Exposure = Food Intake + Incidental Soil Intake
Food Intake = estimated concentration in biota X proportion of biota type X food ingestion rate (FIR)
Incidental Soil intake = concentration in soil X proportion of soil as component of diet X food ingestion rate (FIR)
Estimated Concentrations in Biota (method 1) = B1*(ln[Site Specific Soil Concentration]) + B0
where: B1 = slope and B0 = intercept
Estimated Concentrations in Biota (method 2) = soil concentration X BAF
Hazard Quotient = Total Estimated Exposure (Dose) / TRV
Therefore, when the HQ = 1, soil concentration = PRG
where: Soil concentration (mg/kg) = TRV / (Food Intake + Incidental Soil Intake) = Soil PRG

Table A-2. Exposure Calculation Worksheet for Determining NOAEL-Based PRGs for Western Meadowlark

Analyte	Soil PRG (mg/kg)	Literature-derived Bioaccumulation Models									Estimated Concentrations in Biota (mg/kg DW)			Food Intake Rate	Diet Composition (proportion)				Estimated Exposure (mg/kg/d)					Percent Estimated Exposure by Pathway				Selected Avian NOAEL TRV (mg/kg/d)	NOAEL HQ
		Plants			Soil Inverts			Small Mammals																					
		intercept	slope	BAF	intercept	slope	BAF	intercept	slope	BAF	Plants	Soil Invertbrates	Small Mammals	(kg/kg-bw/d, dw)	Small Mammals	Soil Inverts	Plants	Soil	Small Mammals	Soil Inverts	Plants	Soil	Total	Small Mam.	Soil Inverts	Plants	Soil		
Aluminum	18601.60			0.00287			0.043			0.0263	53.39	799.87	489.22	0.12	0	0.63	0.37	0.0208	0.00	60.71	2.38	46.61	109.70	0.00%	55.34%	2.17%	42.49%	109.7	1.0
Antimony	1.00	-3.233	0.938				1			0.001 * 50 * Cdiet	0.04	1.00	0.05	0.12	0	0.63	0.37	0.0208	0.00	0.08	0.00	0.00	0.08	0.00%	94.68%	2.19%	3.13%	---	---
Arsenic, Total all valence states	1980.65	-1.992	0.564		-1.421	0.706		-4.8471	0.8188		9.87	51.34	3.93	0.12	0	0.63	0.37	0.0208	0.00	3.90	0.44	4.96	9.30	0.00%	41.90%	4.73%	53.37%	9.3	1.0
Arsenic (III)	1980.65	-1.992	0.564		-1.421	0.706		-4.8471	0.8188		9.87	51.34	3.93	0.12	0	0.63	0.37	0.0208	0.00	3.90	0.44	4.96	9.30	0.00%	41.90%	4.73%	53.37%	9.3	1.0
Arsenic (V)	1980.65	-1.992	0.564		-1.421	0.706		-4.8471	0.8188		9.87	51.34	3.93	0.12	0	0.63	0.37	0.0208	0.00	3.90	0.44	4.96	9.30	0.00%	41.90%	4.73%	53.37%	9.3	1.0
Barium	1270.92			0.156			0.091			0.0168	198.26	115.65	21.35	0.12	0	0.63	0.37	0.0208	0.00	8.78	8.84	3.18	20.80	0.00%	42.20%	42.49%	15.31%	20.8	1.0
Beryllium	1.00	-0.5361	0.7345				0.045			0.001 * 50 * Cdiet	0.59	0.05	0.00	0.12	0	0.63	0.37	0.0208	0.00	0.00	0.03	0.00	0.03	0.00%	10.67%	81.50%	7.83%	---	---
Bismuth	1.00			0.005			1			1	0.01	1.00	1.00	0.12	0	0.63	0.37	0.0208	0.00	0.08	0.00	0.00	0.08	0.00%	96.53%	0.28%	3.19%	---	---
Boron	86.46			5.714			1			1	494.03	86.46	86.46	0.12	0	0.63	0.37	0.0208	0.00	6.56	22.02	0.22	28.80	0.00%	22.78%	76.46%	0.75%	28.8	1.0
Cadmium	2.77	-0.476	0.546		2.114	0.795		-1.2571	0.4723		1.08	18.64	0.46	0.12	0	0.63	0.37	0.0208	0.00	1.41	0.05	0.01	1.47	0.00%	96.24%	3.29%	0.47%	1.47	1.0
Chromium (total)	96.52			0.041			0.306	-1.4599	0.7338		3.96	29.54	6.64	0.12	0	0.63	0.37	0.0208	0.00	2.24	0.18	0.24	2.66	0.00%	84.28%	6.63%	9.09%	2.66	1.0
Chromium (+3)	96.52			0.041			0.306	-1.4599	0.7338		3.96	29.54	6.64	0.12	0	0.63	0.37	0.0208	0.00	2.24	0.18	0.24	2.66	0.00%	84.28%	6.63%	9.09%	2.66	1.0
Chromium (+6)	1.00			0.041			0.306	-1.4599	0.7338		0.04	0.31	0.23	0.12	0	0.63	0.37	0.0208	0.00	0.02	0.00	0.00	0.03	0.00%	84.28%	6.63%	9.09%		---
Cobalt	305.33			0.00745			0.291	-4.4669	1.307		2.27	88.85	20.31	0.12	0	0.63	0.37	0.0208	0.00	6.74	0.10	0.77	7.61	0.00%	88.61%	1.33%	10.05%	7.61	1.0
Copper	85.30	0.669	0.394				0.515	2.042	0.1444		11.25	43.93	14.64	0.12	0	0.63	0.37	0.0208	0.00	3.33	0.50	0.21	4.05	0.00%	82.33%	12.39%	5.28%	4.05	1.0
Lead	48.68	-1.328	0.561		-0.218	0.807		0.0761	0.4422		2.34	18.49	6.01	0.12	0	0.63	0.37	0.0208	0.00	1.40	0.10	0.12	1.63	0.00%	86.11%	6.41%	7.48%	1.63	1.0
Lithium	1.00			0.004			0.046			1	0.00	0.05	1.00	0.12	0	0.63	0.37	0.0208	0.00	0.00	0.00	0.00	0.01	0.00%	56.54%	2.89%	40.58%	---	---
Manganese	24183.51			0.0792	-0.809	0.682				0.0205	1915.33	434.73	495.76	0.12	0	0.63	0.37	0.0208	0.00	32.99	85.38	60.60	178.97	0.00%	18.44%	47.70%	33.86%	179	1.0
Mercury (methyl)	0.35	-0.996	0.544		0.0781	0.3369				0.054	0.21	0.76	0.02	0.12	0	0.63	0.37	0.0208	0.00	0.06	0.01	0.00	0.07	0.00%	84.95%	13.74%	1.30%	0.068	1.0
Mercury (inorganic)	31.65	-0.996	0.544		0.0781	0.3369				0.054	2.42	3.46	1.72	0.12	0	0.63	0.37	0.0208	0.00	0.26	0.11	0.08	0.45	0.00%	58.41%	23.97%	17.63%	0.45	1.0
Molybdenum	27.03			1.2504			0.953			1	33.80	25.76	27.03	0.12	0	0.63	0.37	0.0208	0.00	1.96	1.51	0.07	3.53	0.00%	55.39%	42.69%	1.92%	3.53	1.0
Nickel	79.37	-2.224	0.748				1.059	-0.2462	0.4658		2.85	84.05	6.00	0.12	0	0.63	0.37	0.0208	0.00	6.38	0.13	0.20	6.71	0.00%	95.14%	1.90%	2.97%	6.71	1.0
Selenium	3.72	-0.678	1.104		-0.075	0.733		-0.4158	0.3764		2.16	2.43	1.08	0.12	0	0.63	0.37	0.0208	0.00	0.18	0.10	0.01	0.29	0.00%	63.55%	33.23%	3.21%	0.29	1.0
Silver	12.76			0.014			2.045			0.0040	0.18	26.09	0.05	0.12	0	0.63	0.37	0.0208	0.00	1.98	0.01	0.03	2.02	0.00%	98.02%	0.39%	1.58%	2.02	1.0
Strontium	1.00			0.207			0.4066			1.74	0.21	0.41	1.74	0.12	0	0.63	0.37	0.0208	0.00	0.03	0.01	0.00	0.04	0.00%	72.47%	21.65%	5.88%	---	---
Thallium	1.00			0.004			0.0541			0.1124	0.00	0.05	0.11	0.12	0	0.63	0.37	0.0208	0.00	0.00	0.00	0.00	0.01	0.00%	60.47%	2.63%	36.90%	---	---
Tin	127.93			1			0.08			0.08	127.93	10.23	10.23	0.12	0	0.63	0.37	0.0208	0.00	0.78	5.70	0.32	6.80	0.00%	11.42%	83.86%	4.71%	6.8	1.0
Uranium	2690.66			0.021			0.033			0.0002	56.50	88.79	0.54	0.12	0	0.63	0.37	0.0208	0.00	6.74	2.52	6.74	16.00	0.00%	42.12%	15.74%	42.14%	16	1.0
Vanadium	58.21			0.00485			0.042			0.0123	0.28	2.44	0.72	0.12	0	0.63	0.37	0.0208	0.00	0.19	0.01	0.15	0.34	0.00%	53.94%	3.66%	42.40%	0.344	1.0
Zinc	714.12	1.575	0.555		4.449	0.328		4.3632	0.0706		185.29	738.27	124.85	0.12	0	0.63	0.37	0.0208	0.00	56.03	8.26	1.79	66.08	0.00%	84.79%	12.50%	2.71%	66.1	1.0
Ammonia/Ammonium	1.00													0.12	0	0.63	0.37	0.0208	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Chloride	1.00													0.12	0	0.63	0.37	0.0208	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Cyanide	1.00													0.12	0	0.63	0.37	0.0208	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Fluoride	2812.56			0.006							16.88			0.12	0	0.63	0.37	0.0208	0.00	0.00	0.75	7.05	7.80	0.00%	0.00%	9.64%	90.36%	7.8	1.0
Iodine	1.00			0.05							0.05			0.12	0	0.63	0.37	0.0208	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	47.07%	52.93%	---	---
Nitrate/Nitrite	1.00													0.12	0	0.63	0.37	0.0208	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Phosphate	1.00													0.12	0	0.63	0.37	0.0208	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Sulfate/Sulfite	1.00													0.12	0	0.63	0.37	0.0208	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Total Organic Carbon	1.00													0.12	0	0.63	0.37	0.0208	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
1,1-dichloroethane	217.36						1.010			0.0109		219.45	2.37	0.12	0	0.63	0.37	0.0208	0.00	16.66	0.00	0.54	17.20	0.00%	96.83%	0.00%	3.17%	17.2	1.0
1,1-dichloroethene	217.02						1.011			0.0186		219.46	4.04	0.12	0	0.63	0.37	0.0208	0.00	16.66	0.00	0.54	17.20	0.00%	96.84%	0.00%	3.16%	17.2	1.0
1,1,1-trichloroethane	216.69						1.013			0.0305		219.47	6.62	0.12	0	0.63	0.37	0.0208	0.00	16.66	0.00	0.54	17.20	0.00%	96.84%	0.00%	3.16%	17.2	1.0
1,1,2-trichloroethane	217.23						1.010			0.0165		219.45	3.58	0.12	0	0.63	0.37	0.0208	0.00	16.66	0.00	0.54	17.20	0.00%	96.84%	0.00%	3.16%	17.2	1.0
1,1,2,2-tetrachloroethane	216.67						1.013			0.0270		219.47	5.86	0.12	0	0.63	0.37	0.0208	0.00	16.66	0.00	0.54	17.20	0.00%	96.84%	0.00%	3.16%	17.2	1.0
1,2-dichlorobenzene	90.99			2.45			1.018			0.0882	223.08	92.60	8.02	0.12	0	0.63	0.37	0.0208	0.00	7.03	9.94	0.23	17.20	0.00%	40.86%	57.81%	1.33%	17.2	1.0

Table A-2. Exposure Calculation Worksheet for Determining NOAEL-Based PRGs for Western Meadowlark

Analyte	Soil PRG (mg/kg)	Literature-derived Bioaccumulation Models									Estimated Concentrations in Biota (mg/kg DW)			Food Intake Rate	Diet Composition (proportion)				Estimated Exposure (mg/kg/d)					Percent Estimated Exposure by Pathway				Selected Avian NOAEL TRV (mg/kg/d)	NOAEL HQ
		Plants			Soil Inverts			Small Mammals																					
		intercept	slope	BAF	intercept	slope	BAF	intercept	slope	BAF	Plants	Soil Invertbrates	Small Mammals	(kg/kg-bw/d, dw)	Small Mammals	Soil Inverts	Plants	Soil	Small Mammals	Soil Inverts	Plants	Soil	Total	Small Mam.	Soil Inverts	Plants	Soil		
1,2-dichloroethane (DCA)	221.88						0.988			0.0063		219.30	1.40	0.12	0	0.63	0.37	0.0208	0.00	16.64	0.00	0.56	17.20	0.00%	96.77%	0.00%	3.23%	17.2	1.0
1,3-dichlorobenzene	95.93			2.23			1.018			0.0963	214.20	97.66	9.23	0.12	0	0.63	0.37	0.0208	0.00	7.41	9.55	0.24	17.20	0.00%	43.09%	55.51%	1.40%	17.2	1.0
2-butanone (Methyl Ethyl Ketone/MEK)	1040.62						0.094			0.0006		97.40	0.57	0.12	0	0.63	0.37	0.0208	0.00	7.39	0.00	2.61	10.00	0.00%	73.92%	0.00%	26.08%	10	1.0
2-hexanone	548.27						0.207			0.0053		113.66	2.93	0.12	0	0.63	0.37	0.0208	0.00	8.63	0.00	1.37	10.00	0.00%	86.26%	0.00%	13.74%	10	1.0
Benzene	513.53						1.011			0.0186		519.30	9.56	0.12	0	0.63	0.37	0.0208	0.00	39.41	0.00	1.29	40.70	0.00%	96.84%	0.00%	3.16%	40.7	1.0
Butanol	1.00						0.478			0.0017		0.48	0.00	0.12	0	0.63	0.37	0.0208	0.00	0.04	0.00	0.00	0.04	0.00%	93.54%	0.00%	6.46%	---	---
Carbon Tetrachloride	216.30						1.015			0.0420		219.48	9.08	0.12	0	0.63	0.37	0.0208	0.00	16.66	0.00	0.54	17.20	0.00%	96.85%	0.00%	3.15%	17.2	1.0
Chlorobenzene	216.31						1.015			0.0490		219.48	10.60	0.12	0	0.63	0.37	0.0208	0.00	16.66	0.00	0.54	17.20	0.00%	96.85%	0.00%	3.15%	17.2	1.0
Chloroform	217.17						1.011			0.0135		219.45	2.93	0.12	0	0.63	0.37	0.0208	0.00	16.66	0.00	0.54	17.20	0.00%	96.84%	0.00%	3.16%	17.2	1.0
Cis-1,2-dichloroethylene	217.05						1.011			0.0122		219.46	2.66	0.12	0	0.63	0.37	0.0208	0.00	16.66	0.00	0.54	17.20	0.00%	96.84%	0.00%	3.16%	17.2	1.0
Dichloromethane (Methylene Chloride)	217.95						1.007			0.0042		219.43	0.91	0.12	0	0.63	0.37	0.0208	0.00	16.65	0.00	0.55	17.20	0.00%	96.82%	0.00%	3.18%	17.2	1.0
Ethyl Benzene	182.58			3.21			1.016			0.0666	586.89	185.54	12.17	0.12	0	0.63	0.37	0.0208	0.00	14.08	26.16	0.46	40.70	0.00%	34.60%	64.28%	1.12%	40.7	1.0
Methyl Isobutyl Ketone	572.87						0.197			0.0037		112.84	2.14	0.12	0	0.63	0.37	0.0208	0.00	8.56	0.00	1.44	10.00	0.00%	85.64%	0.00%	14.36%	10	1.0
n-butyl Benzene	263.25			1.67			1.022			0.1227	440.02	269.13	32.31	0.12	0	0.63	0.37	0.0208	0.00	20.43	19.61	0.66	40.70	0.00%	50.19%	48.19%	1.62%	40.7	1.0
Tetrachloroethylene	215.72						1.018			0.0390		219.50	8.41	0.12	0	0.63	0.37	0.0208	0.00	16.66	0.00	0.54	17.20	0.00%	96.86%	0.00%	3.14%	17.2	1.0
Toluene	512.13						1.014			0.0430		519.34	22.04	0.12	0	0.63	0.37	0.0208	0.00	39.42	0.00	1.28	40.70	0.00%	96.85%	0.00%	3.15%	40.7	1.0
Trans-1,2-dichloroethylene	217.05						1.011			0.0170		219.46	3.69	0.12	0	0.63	0.37	0.0208	0.00	16.66	0.00	0.54	17.20	0.00%	96.84%	0.00%	3.16%	17.2	1.0
Trichloroethylene (TCE)	216.77						1.012			0.0410		219.46	8.88	0.12	0	0.63	0.37	0.0208	0.00	16.66	0.00	0.54	17.20	0.00%	96.84%	0.00%	3.16%	17.2	1.0
Xylene	174.99			3.43			1.016			0.0619	600.50	177.80	10.84	0.12	0	0.63	0.37	0.0208	0.00	13.49	26.77	0.44	40.70	0.00%	33.16%	65.77%	1.08%	40.7	1.0
Acenaphthene	284.90	-5.562	-0.8556				1.470			0	0.00	418.80	0.00	0.12	0	0.63	0.37	0.0208	0.00	31.79	0.00	0.71	32.50	0.00%	97.80%	0.00%	2.20%	32.5	1.0
Acenaphthylene	18.59	-1.144	0.791				22.9			0	3.21	425.67	0.00	0.12	0	0.63	0.37	0.0208	0.00	32.31	0.14	0.05	32.50	0.00%	99.42%	0.44%	0.14%	32.5	1.0
Anthracene	169.72	-0.9887	0.7784				2.42			0	20.24	410.72	0.00	0.12	0	0.63	0.37	0.0208	0.00	31.17	0.90	0.43	32.50	0.00%	95.92%	2.78%	1.31%	32.5	1.0
Benzo(a)pyrene	5.97	-2.0615	0.975				1.33			0	0.73	7.94	0.00	0.12	0	0.63	0.37	0.0208	0.00	0.60	0.03	0.01	0.65	0.00%	92.72%	4.98%	2.30%	0.65	1.0
Benzo(a)anthracene	5.21	-2.7078	0.5944				1.59			0	0.18	8.29	0.00	0.12	0	0.63	0.37	0.0208	0.00	0.63	0.01	0.01	0.65	0.00%	96.77%	1.22%	2.01%	0.65	1.0
Benzo(b)fluoranthene	3.04			0.31			2.6			0	0.94	7.91	0.00	0.12	0	0.63	0.37	0.0208	0.00	0.60	0.04	0.01	0.65	0.00%	92.36%	6.47%	1.17%	0.65	1.0
Benzo(ghi)perylene	2.64	-0.9313	1.1829				2.94			0	1.24	7.75	0.00	0.12	0	0.63	0.37	0.0208	0.00	0.59	0.06	0.01	0.65	0.00%	90.48%	8.50%	1.02%	0.65	1.0
Benzo[k]fluoranthene	3.25	-4.6482	0.1668				2.6			0	0.01	8.45	0.00	0.12	0	0.63	0.37	0.0208	0.00	0.64	0.00	0.01	0.65	0.00%	98.67%	0.08%	1.25%	0.65	1.0
Chrysene	3.65	-2.7078	0.5944				2.29			0	0.14	8.36	0.00	0.12	0	0.63	0.37	0.0208	0.00	0.63	0.01	0.01	0.65	0.00%	97.61%	0.99%	1.41%	0.65	1.0
Dibenz(ah)anthracene	3.54			0.13			2.31			0	0.46	8.18	0.00	0.12	0	0.63	0.37	0.0208	0.00	0.62	0.02	0.01	0.65	0.00%	95.48%	3.16%	1.36%	0.65	1.0
Fluoranthene	2.54			0.5			3.04			0	1.27	7.73	0.00	0.12	0	0.63	0.37	0.0208	0.00	0.59	0.06	0.01	0.65	0.00%	90.30%	8.72%	0.98%	0.65	1.0
Fluorene	44.59	-5.562	-0.8556				9.57			0	0.00	426.74	0.00	0.12	0	0.63	0.37	0.0208	0.00	32.39	0.00	0.11	32.50	0.00%	99.66%	0.00%	0.34%	32.5	1.0
Indeno[1,2,3-cd]pyrene	2.90			0.11			2.86			0	0.32	8.28	0.00	0.12	0	0.63	0.37	0.0208	0.00	0.63	0.01	0.01	0.65	0.00%	96.70%	2.18%	1.12%	0.65	1.0
2-Methylnaphthalene	5.69	-1.3205	4.544				1.020			0	718.80	5.80	0.00	0.12	0	0.63	0.37	0.0208	0.00	0.44	32.04	0.01	32.49	0.00%	1.35%	98.60%	0.04%	32.5	1.0
Naphthalene	36.92			12.2			4.4			0	450.43	162.45	0.00	0.12	0	0.63	0.37	0.0208	0.00	12.33	20.08	0.09	32.50	0.00%	37.94%	61.78%	0.28%	32.5	1.0
Phenanthrene	235.76	-0.1665	0.6203				1.72			0	25.08	405.51	0.00	0.12	0	0.63	0.37	0.0208	0.00	30.78	1.12	0.59	32.49	0.00%	94.74%	3.44%	1.82%	32.5	1.0
Pyrene	3.88			0.72			1.75			0	2.80	6.79	0.00	0.12	0	0.63	0.37	0.0208	0.00	0.52	0.12	0.01	0.65	0.00%	79.33%	19.17%	1.50%	0.65	1.0
Total PAHs	1.00	0.083	0.3015							0	1.09		0.00	0.12	0	0.63	0.37	0.0208	0.00	0.00	0.05	0.00	0.05	0.00%	0.00%	95.08%	4.92%		---
Low MW PAHs	12622.80	-1.3205	0.4544							0	19.50		0.00	0.12	0	0.63	0.37	0.0208	0.00	0.00	0.87	31.63	32.50	0.00%	0.00%	2.67%	97.33%	32.5	1.0
High MW PAHs	72.42	-1.7026	0.9469							0	10.51		0.00	0.12	0	0.63	0.37	0.0208	0.00	0.00	0.47	0.18	0.65	0.00%	0.00%	72.08%	27.92%	0.65	1.0
Gasoline Range Organics																												500	---
TPH - Diesel	199535.36									0			0.00	0.12	0	0.63	0.37	0.0208	0.00	0.00	0.00	500.00	500.00	0.00%	0.00%	0.00%	100.00%	500	1.0
TPH - Kerosene	199535.36									0			0.00	0.12	0	0.63	0.37	0.0208	0.00	0.00	0.00	500.00	500.00	0.00%	0.00%	0.00%	100.00%	500	1.0
Normal paraffin hydrocarbons	324444.50									0			0.00	0.12	0	0.63	0.37	0.0208	0.00	0.00	0.00	813.00	813.00	0.00%	0.00%	0.00%	100.00%	813	1.0
Phenol	1.00						0.235			0.0064		0.23	0.01	0.12	0	0.63	0.37	0.0208	0.00	0.02	0.00	0.00	0.02	0.00%	87.67%	0.00%	12.33%	---	---
2-methylphenol (ocresol)	1.00						0.336			0.0150		0.34	0.02	0.12	0	0.63	0.37	0.0208	0.00	0.03	0.00	0.00	0.03	0.00%	91.05%	0.00%	8.95%	---	---

Table A-2. Exposure Calculation Worksheet for Determining NOAEL-Based PRGs for Western Meadowlark

Analyte	Soil PRG (mg/kg)	Literature-derived Bioaccumulation Models									Estimated Concentrations in Biota (mg/kg DW)			Food Intake Rate	Diet Composition (proportion)				Estimated Exposure (mg/kg/d)					Percent Estimated Exposure by Pathway				Selected Avian NOAEL TRV (mg/kg/d)	NOAEL HQ
		Plants			Soil Inverts			Small Mammals																					
		intercept	slope	BAF	intercept	slope	BAF	intercept	slope	BAF	Plants	Soil Invertbrates	Small Mammals	(kg/kg-bw/d, dw)	Small Mammals	Soil Inverts	Plants	Soil	Small Mammals	Soil Inverts	Plants	Soil	Total	Small Mam.	Soil Inverts	Plants	Soil		
4-methylphenol (pcresol)	1.00						0.333			0.0141		0.33	0.01	0.12	0	0.63	0.37	0.0208	0.00	0.03	0.00	0.00	0.03	0.00%	90.99%	0.00%	9.01%	---	---
2,4-dinitrotoluene	0.30	1.873	-0.3768	0.376			0.184			0.0155	0.11	0.06	0.00	0.12	0	0.63	0.37	0.0208	0.00	0.00	0.01	0.00	0.01	0.00%	41.98%	50.47%	7.55%	0.01	1.0
Bis[2-ethylhexyl] phthalate	0.35			0.07			41.144			0.0945	0.02	14.48	0.03	0.12	0	0.63	0.37	0.0208	0.00	1.10	0.00	0.00	1.10	0.00%	99.83%	0.09%	0.08%	1.1	1.0
Total PCBs	0.65			0.17	1.41	1.36				0.1792	0.11	2.29	0.12	0.12	0	0.63	0.37	0.0208	0.00	0.17	0.00	0.00	0.18	0.00%	96.36%	2.73%	0.91%	0.18	1.0
Aroclor 1016	0.64			0.30	1.41	1.36				0.2104	0.19	2.24	0.13	0.12	0	0.63	0.37	0.0208	0.00	0.17	0.01	0.00	0.18	0.00%	94.39%	4.71%	0.89%	0.18	1.0
Aroclor 1221	0.61			0.78	1.41	1.36				0.1883	0.48	2.07	0.11	0.12	0	0.63	0.37	0.0208	0.00	0.16	0.02	0.00	0.18	0.00%	87.39%	11.77%	0.84%	0.18	1.0
Aroclor 1232	0.59			0.99	1.41	1.36				0.1704	0.59	2.01	0.10	0.12	0	0.63	0.37	0.0208	0.00	0.15	0.03	0.00	0.18	0.00%	84.65%	14.52%	0.82%	0.18	1.0
Aroclor 1242	0.65			0.16	1.41	1.36				0.1756	0.11	2.29	0.11	0.12	0	0.63	0.37	0.0208	0.00	0.17	0.00	0.00	0.18	0.00%	96.48%	2.61%	0.91%	0.18	1.0
Aroclor 1248	0.65			0.18	1.41	1.36				0.1855	0.12	2.28	0.12	0.12	0	0.63	0.37	0.0208	0.00	0.17	0.01	0.00	0.18	0.00%	96.13%	2.97%	0.90%	0.18	1.0
Aroclor 1254	0.65			0.14	1.41	1.36				0.1630	0.09	2.30	0.11	0.12	0	0.63	0.37	0.0208	0.00	0.17	0.00	0.00	0.18	0.00%	96.84%	2.25%	0.91%	0.18	1.0
Aroclor 1260	0.66			0.05	1.41	1.36				0.0750	0.03	2.33	0.05	0.12	0	0.63	0.37	0.0208	0.00	0.18	0.00	0.00	0.18	0.00%	98.23%	0.85%	0.92%	0.18	1.0
Aroclor-1262	71.83													0.12	0	0.63	0.37	0.0208	0.00	0.00	0.00	0.18	0.18	0.00%	0.00%	0.00%	100.00%	0.18	1.0
Dichloroprop	1.00													0.12	0	0.63	0.37	0.0208	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Aldrin	0.08			0.14			1.033			0.1630	0.01	0.08	0.01	0.12	0	0.63	0.37	0.0208	0.00	0.01	0.00	0.00	0.01	0.00%	89.99%	7.13%	2.88%	0.007	1.0
beta-1,2,3,4,5,6-Hexachlorocyclohexane	3.65			1.72			1.021			0.1201	6.27	3.72	0.44	0.12	0	0.63	0.37	0.0208	0.00	0.28	0.28	0.01	0.57	0.00%	49.48%	48.92%	1.60%	0.571	1.0
alpha-Chlordane	24.28			0.16			1.031			0.1771	4.00	25.04	4.30	0.12	0	0.63	0.37	0.0208	0.00	1.90	0.18	0.06	2.14	0.00%	88.82%	8.33%	2.84%	2.14	1.0
gamma-Chlordane	24.19			0.16			1.036			0.1771	3.99	25.06	4.28	0.12	0	0.63	0.37	0.0208	0.00	1.90	0.18	0.06	2.14	0.00%	88.86%	8.31%	2.83%	2.14	1.0
Dichlorodiphenyldichloroethylene	0.21	-2.5119	0.7524		2.4771	0.8804		3.6401	0.641		0.02	2.97	13.87	0.12	0	0.63	0.37	0.0208	0.00	0.23	0.00	0.00	0.23	0.00%	99.29%	0.49%	0.23%	0.227	1.0
Dichlorodiphenyltrichloroethane	0.30	-2.5119	0.7524		2.1247	0.8689		1.1788	0.7254		0.03	2.96	1.37	0.12	0	0.63	0.37	0.0208	0.00	0.22	0.00	0.00	0.23	0.00%	99.02%	0.65%	0.33%	0.227	1.0
Dieldrin	0.06			0.41			14.70			1.20	0.03	0.92	0.07	0.12	0	0.63	0.37	0.0208	0.00	0.07	0.00	0.00	0.07	0.00%	98.17%	1.61%	0.22%	0.0709	1.0
Endosulfan I	66.32			1.31			1.184			0.1455	86.95	78.50	9.65	0.12	0	0.63	0.37	0.0208	0.00	5.96	3.88	0.17	10.00	0.00%	59.58%	38.76%	1.66%	10	1.0
Endosulfan II	66.32			1.31			1.184			0.1455	86.95	78.50	9.65	0.12	0	0.63	0.37	0.0208	0.00	5.96	3.88	0.17	10.00	0.00%	59.58%	38.76%	1.66%	10	1.0
Endosulfan sulfate	55.40			1.98			1.184			0.1072	109.56	65.58	5.94	0.12	0	0.63	0.37	0.0208	0.00	4.98	4.88	0.14	10.00	0.00%	49.78%	48.84%	1.39%	10	1.0
Endrin aldehyde	0.52			1.44			6.686			0.1368	0.75	3.49	0.07	0.12	0	0.63	0.37	0.0208	0.00	0.27	0.03	0.00	0.30	0.00%	88.39%	11.18%	0.44%	0.3	1.0
Methoxychlor	1.00			0.52			3.739			0.2093	0.52	3.74	0.21	0.12	0	0.63	0.37	0.0208	0.00	0.28	0.02	0.00	0.31	0.00%	91.64%	7.55%	0.81%	---	---

Notes:

It has been conservatively assumed that all chemical intake is absorbed by the receptor.

1 - When no TRV was available, the PRG is listed as 1 mg/kg based on formulas in the spreadsheet but no actual PRG is recommended.

Acronyms:

BAF = Bioaccumulation factor
DW = Dry weight
FIR = Food ingestion rate
mg/kg = Miligrams per kilogram
mg/kg BW/day, DW = Miligrams per kilogram of body weight per day, dry weight
mg/kg/d = Miligrams per kilogram per day
NOAEL = No observed adverse effect level
PRGs = Preliminary remediation goals
TRV = Toxicity reference value

Equations:

Total Estimated Exposure = Food Intake + Incidental Soil Intake
Food Intake = estimated concentration in biota X proportion of biota type X food ingestion rate (FIR)
Incidental Soil intake = concentration in soil X proportion of soil as component of diet X food ingestion rate (FIR)
Estimated Concentrations in Biota (method 1) = B1*(ln[Site Specific Soil Concentration]) + B0
where: B1 = slope and B0 = intercept
Estimated Concentrations in Biota (method 2) = soil concentration X BAF
Hazard Quotient = Total Estimated Exposure (Dose) / TRV
Therefore, when the HQ = 1, soil concentration = PRG
where: Soil concentration (mg/kg) = TRV / (Food Intake + Incidental Soil Intake) = Soil PRG

Table A-3. Exposure Calculation Worksheet for Determining NOAEL-Based PRGs for Killdeer

Analyte	Soil PRG (mg/kg)	Literature-derived Bioaccumulation Models									Estimated Concentrations in Biota (mg/kg DW)			Food Intake Rate	Diet Composition (proportion)				Estimated Exposure (mg/kg/d)					Percent Estimated Exposure by Pathway				Selected Avian NOAEL TRV (mg/kg/d)	NOAEL HQ
		Plants			Soil Inverts			Small Mammals																					
		intercept	slope	BAF	intercept	slope	BAF	intercept	slope	BAF	Plants	Soil Invertbrates	Small Mammals	(kg/kg-bw/d, dw)	Small Mammals	Soil Inverts	Plants	Soil	Small Mammals	Soil Inverts	Plants	Soil	Total	Small Mam.	Soil Inverts	Plants	Soil		
Aluminum	4920.58			0.00287			0.043			0.0263	14.12	211.59	129.41	0.192	0	1	0	0.073	0.00	40.66	0.00	69.04	109.70	0.00%	37.07%	0.00%	62.93%	109.7	1.0
Antimony	1.00	-3.233	0.938				1			0.001 * 50 * Cdiet	0.04	1.00	0.05	0.192	0	1	0	0.073	0.00	0.19	0.00	0.01	0.21	0.00%	93.20%	0.00%	6.80%	---	---
Arsenic, Total all valence states	425.03	-1.992	0.564		-1.421	0.706		-4.8471	0.8188		4.14	17.32	1.11	0.192	0	1	0	0.073	0.00	3.33	0.00	5.96	9.29	0.00%	35.82%	0.00%	64.18%	9.3	1.0
Arsenic (III)	425.03	-1.992	0.564		-1.421	0.706		-4.8471	0.8188		4.14	17.32	1.11	0.192	0	1	0	0.073	0.00	3.33	0.00	5.96	9.29	0.00%	35.82%	0.00%	64.18%	9.3	1.0
Arsenic (V)	425.03	-1.992	0.564		-1.421	0.706		-4.8471	0.8188		4.14	17.32	1.11	0.192	0	1	0	0.073	0.00	3.33	0.00	5.96	9.29	0.00%	35.82%	0.00%	64.18%	9.3	1.0
Barium	659.91			0.156			0.091			0.0168	102.95	60.05	11.09	0.192	0	1	0	0.073	0.00	11.54	0.00	9.26	20.80	0.00%	55.49%	0.00%	44.51%	20.8	1.0
Beryllium	1.00	-0.5361	0.7345				0.045			0.001 * 50 * Cdiet	0.59	0.05	0.00	0.192	0	1	0	0.073	0.00	0.01	0.00	0.01	0.02	0.00%	38.14%	0.00%	61.86%	---	---
Bismuth	1.00			0.005			1			1	0.01	1.00	1.00	0.192	0	1	0	0.073	0.00	0.19	0.00	0.01	0.21	0.00%	93.20%	0.00%	6.80%	---	---
Boron	139.66			5.714			1			1	798.00	139.66	139.66	0.192	0	1	0	0.073	0.00	26.84	0.00	1.96	28.80	0.00%	93.20%	0.00%	6.80%	28.8	1.0
Cadmium	0.89	-0.476	0.546		2.114	0.795		-1.2571	0.4723		0.58	7.58	0.27	0.192	0	1	0	0.073	0.00	1.46	0.00	0.01	1.47	0.00%	99.15%	0.00%	0.85%	1.47	1.0
Chromium (total)	36.52			0.041			0.306	-1.4599	0.7338		1.50	11.17	3.25	0.192	0	1	0	0.073	0.00	2.15	0.00	0.51	2.66	0.00%	80.74%	0.00%	19.26%	2.66	1.0
Chromium (+3)	36.52			0.041			0.306	-1.4599	0.7338		1.50	11.17	3.25	0.192	0	1	0	0.073	0.00	2.15	0.00	0.51	2.66	0.00%	80.74%	0.00%	19.26%	2.66	1.0
Chromium (+6)	1.00			0.041			0.306	-1.4599	0.7338		0.04	0.31	0.23	0.192	0	1	0	0.073	0.00	0.06	0.00	0.01	0.07	0.00%	80.74%	0.00%	19.26%		---
Cobalt	108.78			0.00745			0.291	-4.4669	1.307		0.81	31.66	5.27	0.192	0	1	0	0.073	0.00	6.08	0.00	1.53	7.61	0.00%	79.95%	0.00%	20.05%	7.61	1.0
Copper	35.84	0.669	0.394				0.515	2.042	0.1444		8.00	18.46	12.92	0.192	0	1	0	0.073	0.00	3.55	0.00	0.50	4.05	0.00%	87.59%	0.00%	12.41%	4.05	1.0
Lead	15.51	-1.328	0.561		-0.218	0.807		0.0761	0.4422		1.23	7.35	3.63	0.192	0	1	0	0.073	0.00	1.41	0.00	0.22	1.63	0.00%	86.65%	0.00%	13.35%	1.63	1.0
Lithium	1.00			0.004			0.046			1	0.00	0.05	1.00	0.192	0	1	0	0.073	0.00	0.01	0.00	0.01	0.02	0.00%	38.66%	0.00%	61.34%	---	---
Manganese	9588.41			0.0792	-0.809	0.682				0.0205	759.40	231.32	196.56	0.192	0	1	0	0.073	0.00	44.46	0.00	134.52	178.98	0.00%	24.84%	0.00%	75.16%	179	1.0
Mercury (methyl)	0.04	-0.996	0.544		0.0781	0.3369				0.054	0.06	0.35	0.00	0.192	0	1	0	0.073	0.00	0.07	0.00	0.00	0.07	0.00%	99.27%	0.00%	0.73%	0.068	1.0
Mercury (inorganic)	5.60	-0.996	0.544		0.0781	0.3369				0.054	0.94	1.93	0.30	0.192	0	1	0	0.073	0.00	0.37	0.00	0.08	0.45	0.00%	82.53%	0.00%	17.47%	0.45	1.0
Molybdenum	17.90			1.2504			0.953			1	22.38	17.06	17.90	0.192	0	1	0	0.073	0.00	3.28	0.00	0.25	3.53	0.00%	92.88%	0.00%	7.12%	3.53	1.0
Nickel	30.84	-2.224	0.748				1.059	-0.2462	0.4658		1.41	32.66	3.86	0.192	0	1	0	0.073	0.00	6.28	0.00	0.43	6.71	0.00%	93.55%	0.00%	6.45%	6.71	1.0
Selenium	1.72	-0.678	1.104		-0.075	0.733		-0.4158	0.3764		0.93	1.38	0.81	0.192	0	1	0	0.073	0.00	0.27	0.00	0.02	0.29	0.00%	91.66%	0.00%	8.34%	0.29	1.0
Silver	4.96			0.014			2.045			0.0040	0.07	10.15	0.02	0.192	0	1	0	0.073	0.00	1.95	0.00	0.07	2.02	0.00%	96.55%	0.00%	3.45%	2.02	1.0
Strontium	1.00			0.207			0.4066			1.74	0.21	0.41	1.74	0.192	0	1	0	0.073	0.00	0.08	0.00	0.01	0.09	0.00%	84.78%	0.00%	15.22%	---	---
Thallium	1.00			0.004			0.0541			0.1124	0.00	0.05	0.11	0.192	0	1	0	0.073	0.00	0.01	0.00	0.01	0.02	0.00%	42.56%	0.00%	57.44%	---	---
Tin	231.25			1			0.08			0.08	231.25	18.50	18.50	0.192	0	1	0	0.073	0.00	3.56	0.00	3.24	6.80	0.00%	52.29%	0.00%	47.71%	6.8	1.0
Uranium	785.38			0.021			0.033			0.0002	16.49	25.92	0.16	0.192	0	1	0	0.073	0.00	4.98	0.00	11.02	16.00	0.00%	31.13%	0.00%	68.87%	16	1.0
Vanadium	15.56			0.00485			0.042			0.0123	0.08	0.65	0.19	0.192	0	1	0	0.073	0.00	0.13	0.00	0.22	0.34	0.00%	36.52%	0.00%	63.48%	0.344	1.0
Zinc	66.60	1.575	0.555		4.449	0.328		4.3632	0.0706		49.66	339.06	105.60	0.192	0	1	0	0.073	0.00	65.16	0.00	0.93	66.10	0.00%	98.59%	0.00%	1.41%	66.1	1.0
Ammonia/Ammonium	1.00													0.192	0	1	0	0.073	0.00	0.00	0.00	0.01	0.01	0.00%	0.00%	0.00%	100.00%	---	---
Chloride	1.00													0.192	0	1	0	0.073	0.00	0.00	0.00	0.01	0.01	0.00%	0.00%	0.00%	100.00%	---	---
Cyanide	1.00													0.192	0	1	0	0.073	0.00	0.00	0.00	0.01	0.01	0.00%	0.00%	0.00%	100.00%	---	---
Fluoride	555.96			0.006							3.34			0.192	0	1	0	0.073	0.00	0.00	0.00	7.80	7.80	0.00%	0.00%	0.00%	100.00%	7.8	1.0
Iodine	1.00			0.05							0.05			0.192	0	1	0	0.073	0.00	0.00	0.00	0.01	0.01	0.00%	0.00%	0.00%	100.00%	---	---
Nitrate/Nitrite	1.00													0.192	0	1	0	0.073	0.00	0.00	0.00	0.01	0.01	0.00%	0.00%	0.00%	100.00%	---	---
Phosphate	1.00													0.192	0	1	0	0.073	0.00	0.00	0.00	0.01	0.01	0.00%	0.00%	0.00%	100.00%	---	---
Sulfate/Sulfite	1.00													0.192	0	1	0	0.073	0.00	0.00	0.00	0.01	0.01	0.00%	0.00%	0.00%	100.00%	---	---
Total Organic Carbon	1.00													0.192	0	1	0	0.073	0.00	0.00	0.00	0.01	0.01	0.00%	0.00%	0.00%	100.00%	---	---

Table A-3. Exposure Calculation Worksheet for Determining NOAEL-Based PRGs for Killdeer

Analyte	Soil PRG (mg/kg)	Literature-derived Bioaccumulation Models									Estimated Concentrations in Biota (mg/kg DW)			Food Intake Rate	Diet Composition (proportion)				Estimated Exposure (mg/kg/d)					Percent Estimated Exposure by Pathway				Selected Avian NOAEL TRV (mg/kg/d)	NOAEL HQ
		Plants			Soil Inverts			Small Mammals																					
		intercept	slope	BAF	intercept	slope	BAF	intercept	slope	BAF	Plants	Soil Invertbrates	Small Mammals	(kg/kg-bw/d, dw)	Small Mammals	Soil Inverts	Plants	Soil	Small Mammals	Soil Inverts	Plants	Soil	Total	Small Mam.	Soil Inverts	Plants	Soil		
1,1-dichloroethane	82.67						1.010			0.0109		83.46	0.90	0.192	0	1	0	0.073	0.00	16.04	0.00	1.16	17.20	0.00%	93.26%	0.00%	6.74%	17.2	1.0
1,1-dichloroethene	82.54						1.011			0.0186		83.47	1.54	0.192	0	1	0	0.073	0.00	16.04	0.00	1.16	17.20	0.00%	93.27%	0.00%	6.73%	17.2	1.0
1,1,1-trichloroethane	82.42						1.013			0.0305		83.48	2.52	0.192	0	1	0	0.073	0.00	16.04	0.00	1.16	17.20	0.00%	93.28%	0.00%	6.72%	17.2	1.0
1,1,2-trichloroethane	82.62						1.010			0.0165		83.46	1.36	0.192	0	1	0	0.073	0.00	16.04	0.00	1.16	17.20	0.00%	93.26%	0.00%	6.74%	17.2	1.0
1,1,2,2-tetrachloroethane	82.41						1.013			0.0270		83.48	2.23	0.192	0	1	0	0.073	0.00	16.04	0.00	1.16	17.20	0.00%	93.28%	0.00%	6.72%	17.2	1.0
1,2-dichlorobenzene	82.05			2.45			1.018			0.0882	201.16	83.50	7.24	0.192	0	1	0	0.073	0.00	16.05	0.00	1.15	17.20	0.00%	93.31%	0.00%	6.69%	17.2	1.0
1,2-dichloroethane (DCA)	84.32						0.988			0.0063		83.34	0.53	0.192	0	1	0	0.073	0.00	16.02	0.00	1.18	17.20	0.00%	93.12%	0.00%	6.88%	17.2	1.0
1,3-dichlorobenzene	82.03			2.23			1.018			0.0963	183.16	83.51	7.90	0.192	0	1	0	0.073	0.00	16.05	0.00	1.15	17.20	0.00%	93.31%	0.00%	6.69%	17.2	1.0
2-butanone (Methyl Ethyl Ketone/MEK)	312.32						0.094			0.0006		29.23	0.17	0.192	0	1	0	0.073	0.00	5.62	0.00	4.38	10.00	0.00%	56.18%	0.00%	43.82%	10	1.0
2-hexanone	185.63						0.207			0.0053		38.48	0.99	0.192	0	1	0	0.073	0.00	7.40	0.00	2.60	10.00	0.00%	73.96%	0.00%	26.04%	10	1.0
Benzene	195.32						1.011			0.0186		197.51	3.64	0.192	0	1	0	0.073	0.00	37.96	0.00	2.74	40.70	0.00%	93.27%	0.00%	6.73%	40.7	1.0
Butanol	1.00						0.478			0.0017		0.48	0.00	0.192	0	1	0	0.073	0.00	0.09	0.00	0.01	0.11	0.00%	86.76%	0.00%	13.24%	---	---
Carbon Tetrachloride	82.28						1.015			0.0420		83.49	3.46	0.192	0	1	0	0.073	0.00	16.05	0.00	1.15	17.20	0.00%	93.29%	0.00%	6.71%	17.2	1.0
Chlorobenzene	82.28						1.015			0.0490		83.49	4.03	0.192	0	1	0	0.073	0.00	16.05	0.00	1.15	17.20	0.00%	93.29%	0.00%	6.71%	17.2	1.0
Chloroform	82.60						1.011			0.0135		83.47	1.11	0.192	0	1	0	0.073	0.00	16.04	0.00	1.16	17.20	0.00%	93.26%	0.00%	6.74%	17.2	1.0
Cis-1,2-dichloroethylene	82.55						1.011			0.0122		83.47	1.01	0.192	0	1	0	0.073	0.00	16.04	0.00	1.16	17.20	0.00%	93.27%	0.00%	6.73%	17.2	1.0
Dichloromethane (Methylene Chloride)	82.88						1.007			0.0042		83.44	0.35	0.192	0	1	0	0.073	0.00	16.04	0.00	1.16	17.20	0.00%	93.24%	0.00%	6.76%	17.2	1.0
Ethyl Benzene	194.43			3.21			1.016			0.0666	624.96	197.58	12.96	0.192	0	1	0	0.073	0.00	37.97	0.00	2.73	40.70	0.00%	93.30%	0.00%	6.70%	40.7	1.0
Methyl Isobutyl Ketone	192.73						0.197			0.0037		37.96	0.72	0.192	0	1	0	0.073	0.00	7.30	0.00	2.70	10.00	0.00%	72.96%	0.00%	27.04%	10	1.0
n-butyl Benzene	193.33			1.67			1.022			0.1227	323.16	197.66	23.73	0.192	0	1	0	0.073	0.00	37.99	0.00	2.71	40.70	0.00%	93.34%	0.00%	6.66%	40.7	1.0
Tetrachloroethylene	82.07						1.018			0.0390		83.50	3.20	0.192	0	1	0	0.073	0.00	16.05	0.00	1.15	17.20	0.00%	93.31%	0.00%	6.69%	17.2	1.0
Toluene	194.81						1.014			0.0430		197.55	8.38	0.192	0	1	0	0.073	0.00	37.97	0.00	2.73	40.70	0.00%	93.28%	0.00%	6.72%	40.7	1.0
Trans-1,2-dichloroethylene	82.55						1.011			0.0170		83.47	1.40	0.192	0	1	0	0.073	0.00	16.04	0.00	1.16	17.20	0.00%	93.27%	0.00%	6.73%	17.2	1.0
Trichloroethylene (TCE)	82.45						1.012			0.0410		83.48	3.38	0.192	0	1	0	0.073	0.00	16.04	0.00	1.16	17.20	0.00%	93.27%	0.00%	6.73%	17.2	1.0
Xylene	194.45			3.43			1.016			0.0619	667.29	197.57	12.04	0.192	0	1	0	0.073	0.00	37.97	0.00	2.73	40.70	0.00%	93.30%	0.00%	6.70%	40.7	1.0
Acenaphthene	109.59	-5.562	-0.8556				1.470			0	0.00	161.10	0.00	0.192	0	1	0	0.073	0.00	30.96	0.00	1.54	32.50	0.00%	95.27%	0.00%	4.73%	32.5	1.0
Acenaphthylene	7.36	-1.144	0.791				22.9			0	1.54	168.57	0.00	0.192	0	1	0	0.073	0.00	32.40	0.00	0.10	32.50	0.00%	99.68%	0.00%	0.32%	32.5	1.0
Anthracene	67.83	-0.9887	0.7784				2.42			0	9.91	164.15	0.00	0.192	0	1	0	0.073	0.00	31.55	0.00	0.95	32.50	0.00%	97.07%	0.00%	2.93%	32.5	1.0
Benzo(a)pyrene	2.41	-2.0615	0.975				1.33			0	0.30	3.21	0.00	0.192	0	1	0	0.073	0.00	0.62	0.00	0.03	0.65	0.00%	94.80%	0.00%	5.20%	0.65	1.0
Benzo(a)anthracene	2.03	-2.7078	0.5944				1.59			0	0.10	3.23	0.00	0.192	0	1	0	0.073	0.00	0.62	0.00	0.03	0.65	0.00%	95.61%	0.00%	4.39%	0.65	1.0
Benzo(b)fluoranthene	1.27			0.31			2.6			0	0.39	3.29	0.00	0.192	0	1	0	0.073	0.00	0.63	0.00	0.02	0.65	0.00%	97.27%	0.00%	2.73%	0.65	1.0
Benzo(ghi)perylene	1.12	-0.9313	1.1829				2.94			0	0.45	3.30	0.00	0.192	0	1	0	0.073	0.00	0.63	0.00	0.02	0.65	0.00%	97.58%	0.00%	2.42%	0.65	1.0
Benzo[k]fluoranthene	1.27	-4.6482	0.1668				2.6			0	0.01	3.29	0.00	0.192	0	1	0	0.073	0.00	0.63	0.00	0.02	0.65	0.00%	97.27%	0.00%	2.73%	0.65	1.0
Chrysene	1.43	-2.7078	0.5944				2.29			0	0.08	3.28	0.00	0.192	0	1	0	0.073	0.00	0.63	0.00	0.02	0.65	0.00%	96.91%	0.00%	3.09%	0.65	1.0
Dibenz(ah)anthracene	1.42			0.13			2.31			0	0.18	3.28	0.00	0.192	0	1	0	0.073	0.00	0.63	0.00	0.02	0.65	0.00%	96.94%	0.00%	3.06%	0.65	1.0
Fluoranthene	1.09			0.5			3.04			0	0.54	3.30	0.00	0.192	0	1	0	0.073	0.00	0.63	0.00	0.02	0.65	0.00%	97.65%	0.00%	2.35%	0.65	1.0
Fluorene	17.54	-5.562	-0.8556				9.57			0	0.00	167.82	0.00	0.192	0	1	0	0.073	0.00	32.25	0.00	0.25	32.50	0.00%	99.24%	0.00%	0.76%	32.5	1.0
Indeno[1,2,3-cd]pyrene	1.15			0.11			2.86			0	0.13	3.30	0.00	0.192	0	1	0	0.073	0.00	0.63	0.00	0.02	0.65	0.00%	97.51%	0.00%	2.49%	0.65	1.0
2-Methylnaphthalene	154.74	-1.3205	4.544				1.020			0	2376974828.28	157.81	0.00	0.192	0	1	0	0.073	0.00	30.33	0.00	2.17	32.50	0.00%	93.32%	0.00%	6.68%	32.5	1.0

Table A-3. Exposure Calculation Worksheet for Determining NOAEL-Based PRGs for Killdeer

Analyte	Soil PRG (mg/kg)	Literature-derived Bioaccumulation Models									Estimated Concentrations in Biota (mg/kg DW)			Food Intake Rate	Diet Composition (proportion)				Estimated Exposure (mg/kg/d)					Percent Estimated Exposure by Pathway				Selected Avian NOAEL TRV (mg/kg/d)	NOAEL HQ
		Plants			Soil Inverts			Small Mammals																					
		intercept	slope	BAF	intercept	slope	BAF	intercept	slope	BAF	Plants	Soil Invertbrates	Small Mammals	(kg/kg-bw/d, dw)	Small Mammals	Soil Inverts	Plants	Soil	Small Mammals	Soil Inverts	Plants	Soil	Total	Small Mam.	Soil Inverts	Plants	Soil		
Naphthalene	415.86			12.2			4.4			0	5073.47	1829.78	0.00	0.192	0	1	0	0.073	0.00	351.67	0.00	5.83	357.50	0.00%	98.37%	0.00%	1.63%	32.5	---
Phenanthrene	94.31	-0.1665	0.6203				1.72			0	14.21	162.22	0.00	0.192	0	1	0	0.073	0.00	31.18	0.00	1.32	32.50	0.00%	95.93%	0.00%	4.07%	32.5	1.0
Pyrene	1.86			0.72			1.75			0	1.34	3.25	0.00	0.192	0	1	0	0.073	0.00	0.62	0.00	0.03	0.65	0.00%	96.00%	0.00%	4.00%	0.65	1.0
Total PAHs	1.00	0.083	0.3015							0	1.09		0.00	0.192	0	1	0	0.073	0.00	0.00	0.00	0.01	0.01	0.00%	0.00%	0.00%	100.00%		---
Low MW PAHs	2316.48	-1.3205	0.4544							0	9.03		0.00	0.192	0	1	0	0.073	0.00	0.00	0.00	32.50	32.50	0.00%	0.00%	0.00%	100.00%	32.5	1.0
High MW PAHs	46.33	-1.7026	0.9469							0	6.89		0.00	0.192	0	1	0	0.073	0.00	0.00	0.00	0.65	0.65	0.00%	0.00%	0.00%	100.00%	0.65	1.0
Gasoline Range Organics																												500	---
TPH - Diesel	35638.15									0			0.00	0.192	0	1	0	0.073	0.00	0.00	0.00	500.00	500.00	0.00%	0.00%	0.00%	100.00%	500	1.0
TPH - Kerosene	35638.15									0			0.00	0.192	0	1	0	0.073	0.00	0.00	0.00	500.00	500.00	0.00%	0.00%	0.00%	100.00%	500	1.0
Normal paraffin hydrocarbons	57947.64									0			0.00	0.192	0	1	0	0.073	0.00	0.00	0.00	813.00	813.00	0.00%	0.00%	0.00%	100.00%	813	1.0
Phenol	1.00						0.235			0.0064		0.23	0.01	0.192	0	1	0	0.073	0.00	0.05	0.00	0.01	0.06	0.00%	76.28%	0.00%	23.72%	---	---
2-methylphenol (ocresol)	1.00						0.336			0.0150		0.34	0.02	0.192	0	1	0	0.073	0.00	0.06	0.00	0.01	0.08	0.00%	82.14%	0.00%	17.86%	---	---
4-methylphenol (pcresol)	1.00						0.333			0.0141		0.33	0.01	0.192	0	1	0	0.073	0.00	0.06	0.00	0.01	0.08	0.00%	82.03%	0.00%	17.97%	---	---
2,4-dinitrotoluene	0.20	1.873	-0.3768	0.376			0.184			0.0155	0.08	0.04	0.00	0.192	0	1	0	0.073	0.00	0.01	0.00	0.00	0.01	0.00%	71.56%	0.00%	28.44%	0.01	1.0
Bis[2-ethylhexyl] phthalate	0.14			0.07			41.144			0.0945	0.01	5.71	0.01	0.192	0	1	0	0.073	0.00	1.10	0.00	0.00	1.10	0.00%	99.82%	0.00%	0.18%	1.1	1.0
Total PCBs	0.33			0.17	1.41	1.36				0.1792	0.06	0.91	0.06	0.192	0	1	0	0.073	0.00	0.18	0.00	0.00	0.18	0.00%	97.42%	0.00%	2.58%	0.18	1.0
Aroclor 1016	0.33			0.30	1.41	1.36				0.2104	0.10	0.91	0.07	0.192	0	1	0	0.073	0.00	0.18	0.00	0.00	0.18	0.00%	97.42%	0.00%	2.58%	0.18	1.0
Aroclor 1221	0.33			0.78	1.41	1.36				0.1883	0.26	0.91	0.06	0.192	0	1	0	0.073	0.00	0.18	0.00	0.00	0.18	0.00%	97.42%	0.00%	2.58%	0.18	1.0
Aroclor 1232	0.33			0.99	1.41	1.36				0.1704	0.33	0.91	0.06	0.192	0	1	0	0.073	0.00	0.18	0.00	0.00	0.18	0.00%	97.42%	0.00%	2.58%	0.18	1.0
Aroclor 1242	0.33			0.16	1.41	1.36				0.1756	0.05	0.91	0.06	0.192	0	1	0	0.073	0.00	0.18	0.00	0.00	0.18	0.00%	97.42%	0.00%	2.58%	0.18	1.0
Aroclor 1248	0.33			0.18	1.41	1.36				0.1855	0.06	0.91	0.06	0.192	0	1	0	0.073	0.00	0.18	0.00	0.00	0.18	0.00%	97.42%	0.00%	2.58%	0.18	1.0
Aroclor 1254	0.33			0.14	1.41	1.36				0.1630	0.05	0.91	0.05	0.192	0	1	0	0.073	0.00	0.18	0.00	0.00	0.18	0.00%	97.42%	0.00%	2.58%	0.18	1.0
Aroclor 1260	0.33			0.05	1.41	1.36				0.0750	0.02	0.91	0.02	0.192	0	1	0	0.073	0.00	0.18	0.00	0.00	0.18	0.00%	97.42%	0.00%	2.58%	0.18	1.0
Aroclor-1262	12.83													0.192	0	1	0	0.073	0.00	0.00	0.00	0.18	0.18	0.00%	0.00%	0.00%	100.00%	0.18	1.0
Dichloroprop	1.00													0.192	0	1	0	0.073	0.00	0.00	0.00	0.01	0.01	0.00%	0.00%	0.00%	100.00%	---	---
Aldrin	0.03			0.14			1.033			0.1630	0.00	0.03	0.01	0.192	0	1	0	0.073	0.00	0.01	0.00	0.00	0.01	0.00%	93.40%	0.00%	6.60%	0.007	1.0
beta-1,2,3,4,5,6-Hexachlorocyclohexane	2.72			1.72			1.021			0.1201	4.67	2.77	0.33	0.192	0	1	0	0.073	0.00	0.53	0.00	0.04	0.57	0.00%	93.33%	0.00%	6.67%	0.571	1.0
alpha-Chlordane	10.08			0.16			1.031			0.1771	1.66	10.40	1.78	0.192	0	1	0	0.073	0.00	2.00	0.00	0.14	2.14	0.00%	93.39%	0.00%	6.61%	2.14	1.0
gamma-Chlordane	10.04			0.16			1.036			0.1771	1.66	10.40	1.78	0.192	0	1	0	0.073	0.00	2.00	0.00	0.14	2.14	0.00%	93.41%	0.00%	6.59%	2.14	1.0
Dichlorodiphenyldichloroethylene	0.07	-2.5119	0.7524		2.4771	0.8804		3.6401	0.641		0.01	1.18	7.06	0.192	0	1	0	0.073	0.00	0.23	0.00	0.00	0.23	0.00%	99.55%	0.00%	0.45%	0.227	1.0
Dichlorodiphenyltrichloroethane	0.10	-2.5119	0.7524		2.1247	0.8689		1.1788	0.7254		0.01	1.17	0.63	0.192	0	1	0	0.073	0.00	0.23	0.00	0.00	0.23	0.00%	99.36%	0.00%	0.64%	0.227	1.0
Dieldrin	0.02			0.41			14.70			1.20	0.01	0.37	0.03	0.192	0	1	0	0.073	0.00	0.07	0.00	0.00	0.07	0.00%	99.51%	0.00%	0.49%	0.0709	1.0
Endosulfan I	41.40			1.31			1.184			0.1455	54.28	49.01	6.02	0.192	0	1	0	0.073	0.00	9.42	0.00	0.58	10.00	0.00%	94.19%	0.00%	5.81%	10	1.0
Endosulfan II	41.40			1.31			1.184			0.1455	54.28	49.01	6.02	0.192	0	1	0	0.073	0.00	9.42	0.00	0.58	10.00	0.00%	94.19%	0.00%	5.81%	10	1.0
Endosulfan sulfate	41.40			1.98			1.184			0.1072	81.87	49.01	4.44	0.192	0	1	0	0.073	0.00	9.42	0.00	0.58	10.00	0.00%	94.19%	0.00%	5.81%	10	1.0
Endrin aldehyde	0.23			1.44			6.686			0.1368	0.33	1.54	0.03	0.192	0	1	0	0.073	0.00	0.30	0.00	0.00	0.30	0.00%	98.92%	0.00%	1.08%	0.3	1.0
Methoxychlor	1.00			0.52			3.739			0.2093	0.52	3.74	0.21	0.192	0	1	0	0.073	0.00	0.72	0.00	0.01	0.73	0.00%	98.09%	0.00%	1.91%	---	---

Notes:

It has been conservatively assumed that all chemical intake is absorbed by the receptor.

1 - When no TRV was available, the PRG is listed as 1 mg/kg based on formulas in the spreadsheet but no actual PRG is recommended.

Acronyms:

Table A-3. Exposure Calculation Worksheet for Determining NOAEL-Based PRGs for Killdeer

Analyte	Soil PRG (mg/kg)	Literature-derived Bioaccumulation Models									Estimated Concentrations in Biota (mg/kg DW)			Food Intake Rate	Diet Composition (proportion)				Estimated Exposure (mg/kg/d)					Percent Estimated Exposure by Pathway				Selected Avian NOAEL TRV (mg/kg/d)	NOAEL HQ
		Plants			Soil Inverts			Small Mammals																					
		intercept	slope	BAF	intercept	slope	BAF	intercept	slope	BAF	Plants	Soil Invertbrates	Small Mammals	(kg/kg-bw/d, dw)	Small Mammals	Soil Inverts	Plants	Soil	Small Mammals	Soil Inverts	Plants	Soil	Total	Small Mam.	Soil Inverts	Plants	Soil		

BAF = Bioaccumulation factor
DW = Dry weight
FIR = Food ingestion rate
mg/kg = Miligrams per kilogram
mg/kg BW/day, DW = Miligrams per kilogram of body weight per day, dry weight
mg/kg/d = Miligrams per kilogram per day
NOAEL = No observed adverse effect level
PRGs = Preliminary remediation goals
TRV = Toxicity reference value

Equations:

Total Estimated Exposure = Food Intake + Incidental Soil Intake
Food Intake = estimated concentration in biota X proportion of biota type X food ingestion rate (FIR)
Incidental Soil intake = concentration in soil X proportion of soil as component of diet X food ingestion rate (FIR)
Estimated Concentrations in Biota (method 1) = B1*(ln[Site Specific Soil Concentration]) + B0
where: B1 = slope and B0 = intercept
Estimated Concentrations in Biota (method 2) = soil concentration X BAF
Hazard Quotient = Total Estimated Exposure (Dose) / TRV
Therefore, when the HQ = 1, soil concentration = PRG
where: Soil concentration (mg/kg) = TRV / (Food Intake + Incidental Soil Intake) = Soil PRG

Table A-4. Exposure Calculation Worksheet for Determining NOAEL-Based PRGs for Red-tailed Hawk

Analyte	Soil PRG (mg/kg)	Literature-derived Bioaccumulation Models									Estimated Concentrations in Biota (mg/kg DW)			Food Intake Rate	Diet Composition (proportion)				Estimated Exposure (mg/kg/d)					Percent Estimated Exposure by Pathway				Selected Avian NOAEL TRV (mg/kg/d)	NOAEL HQ
		Plants			Soil Inverts			Small Mammals																					
		intercept	slope	BAF	intercept	slope	BAF	intercept	slope	BAF	Plants	Soil Invertbrates	Small Mammals	(kg/kg-bw/d, dw)	Small Mammals	Soil Inverts	Plants	Soil	Small Mammals	Soil Inverts	Plants	Soil	Total	Small Mam.	Soil Inverts	Plants	Soil		
Aluminum	61782.28			0.00287			0.043			0.0263	177.32	2656.64	1624.87	0.035	1	0	0	0.024	57.36	0.00	0.00	52.34	109.70	52.29%	0.00%	0.00%	47.71%	109.7	1.0
Antimony	1.00	-3.233	0.938				1			0.001 * 50 * Cdiet	0.04	1.00	0.05	0.035	1	0	0	0.024	0.00	0.00	0.00	0.00	0.00	67.57%	0.00%	0.00%	32.43%	---	---
Arsenic, Total all valence states	10343.53	-1.992	0.564		-1.421	0.706		-4.8471	0.8188		25.07	164.90	15.21	0.035	1	0	0	0.024	0.54	0.00	0.00	8.76	9.30	5.77%	0.00%	0.00%	94.23%	9.3	1.0
Arsenic (III)	10343.53	-1.992	0.564		-1.421	0.706		-4.8471	0.8188		25.07	164.90	15.21	0.035	1	0	0	0.024	0.54	0.00	0.00	8.76	9.30	5.77%	0.00%	0.00%	94.23%	9.3	1.0
Arsenic (V)	10343.53	-1.992	0.564		-1.421	0.706		-4.8471	0.8188		25.07	164.90	15.21	0.035	1	0	0	0.024	0.54	0.00	0.00	8.76	9.30	5.77%	0.00%	0.00%	94.23%	9.3	1.0
Barium	14442.04			0.156			0.091			0.0168	2252.96	1314.23	242.63	0.035	1	0	0	0.024	8.56	0.00	0.00	12.24	20.80	41.18%	0.00%	0.00%	58.82%	20.8	1.0
Beryllium	1.00	-0.5361	0.7345				0.045			0.001 * 50 * Cdiet	0.59	0.05	0.00	0.035	1	0	0	0.024	0.00	0.00	0.00	0.00	0.00	8.57%	0.00%	0.00%	91.43%	---	---
Bismuth	1.00			0.005			1			1	0.01	1.00	1.00	0.035	1	0	0	0.024	0.04	0.00	0.00	0.00	0.04	97.66%	0.00%	0.00%	2.34%	---	---
Boron	796.74			5.714			1			1	4552.58	796.74	796.74	0.035	1	0	0	0.024	28.13	0.00	0.00	0.68	28.80	97.66%	0.00%	0.00%	2.34%	28.8	1.0
Cadmium	1374.94	-0.476	0.546		2.114	0.795		-1.2571	0.4723		32.12	2588.41	8.63	0.035	1	0	0	0.024	0.30	0.00	0.00	1.16	1.47	20.74%	0.00%	0.00%	79.26%	1.47	1.0
Chromium (total)	1286.46			0.041			0.306	-1.4599	0.7338		52.75	393.66	44.43	0.035	1	0	0	0.024	1.57	0.00	0.00	1.09	2.66	59.00%	0.00%	0.00%	41.00%	2.66	1.0
Chromium (+3)	1286.46			0.041			0.306	-1.4599	0.7338		52.75	393.66	44.43	0.035	1	0	0	0.024	1.57	0.00	0.00	1.09	2.66	59.00%	0.00%	0.00%	41.00%	2.66	1.0
Chromium (+6)	1.00			0.041			0.306	-1.4599	0.7338		0.04	0.31	0.23	0.035	1	0	0	0.024	0.01	0.00	0.00	0.00	0.01	90.63%	0.00%	0.00%	9.37%	---	---
Cobalt	1601.40			0.00745			0.291	-4.4669	1.307		11.93	466.01	177.15	0.035	1	0	0	0.024	6.25	0.00	0.00	1.36	7.61	82.17%	0.00%	0.00%	17.83%	7.61	1.0
Copper	3727.67	0.669	0.394				0.515	2.042	0.1444		49.85	1919.75	25.27	0.035	1	0	0	0.024	0.89	0.00	0.00	3.16	4.05	22.02%	0.00%	0.00%	77.98%	4.05	1.0
Lead	978.92	-1.328	0.561		-0.218	0.807		0.0761	0.4422		12.62	208.38	22.68	0.035	1	0	0	0.024	0.80	0.00	0.00	0.83	1.63	49.11%	0.00%	0.00%	50.89%	1.63	1.0
Lithium	1.00			0.004			0.046			1	0.00	0.05	1.00	0.035	1	0	0	0.024	0.04	0.00	0.00	0.00	0.04	97.66%	0.00%	0.00%	2.34%	---	---
Manganese	113951.05			0.0792	-0.809	0.682				0.0205	9024.92	1251.23	2336.00	0.035	1	0	0	0.024	82.46	0.00	0.00	96.54	179.00	46.07%	0.00%	0.00%	53.93%	179	1.0
Mercury (methyl)	24.60	-0.996	0.544		0.0781	0.3369				0.054	2.11	3.18	1.34	0.035	1	0	0	0.024	0.05	0.00	0.00	0.02	0.07	69.35%	0.00%	0.00%	30.65%	0.068	1.0
Mercury (inorganic)	162.81	-0.996	0.544		0.0781	0.3369				0.054	5.90	6.01	8.84	0.035	1	0	0	0.024	0.31	0.00	0.00	0.14	0.45	69.35%	0.00%	0.00%	30.65%	0.45	1.0
Molybdenum	97.66			1.2504			0.953			1	122.11	93.07	97.66	0.035	1	0	0	0.024	3.45	0.00	0.00	0.08	3.53	97.66%	0.00%	0.00%	2.34%	3.53	1.0
Nickel	6037.33	-2.224	0.748				1.059	-0.2462	0.4658		72.81	6393.53	45.10	0.035	1	0	0	0.024	1.59	0.00	0.00	5.11	6.71	23.74%	0.00%	0.00%	76.26%	6.71	1.0
Selenium	157.63	-0.678	1.104		-0.075	0.733		-0.4158	0.3764		135.44	37.87	4.43	0.035	1	0	0	0.024	0.16	0.00	0.00	0.13	0.29	53.95%	0.00%	0.00%	46.05%	0.29	1.0
Silver	2043.71			0.014			2.045			0.0040	28.61	4179.38	8.17	0.035	1	0	0	0.024	0.29	0.00	0.00	1.73	2.02	14.29%	0.00%	0.00%	85.71%	2.02	1.0
Strontium	1.00			0.207			0.4066			1.74	0.21	0.41	1.74	0.035	1	0	0	0.024	0.06	0.00	0.00	0.00	0.06	98.64%	0.00%	0.00%	1.36%	---	---
Thallium	1.00			0.004			0.0541			0.1124	0.00	0.05	0.11	0.035	1	0	0	0.024	0.00	0.00	0.00	0.00	0.00	82.40%	0.00%	0.00%	17.60%	---	---
Tin	1852.26			1			0.08			0.08	1852.26	148.18	148.18	0.035	1	0	0	0.024	5.23	0.00	0.00	1.57	6.80	76.92%	0.00%	0.00%	23.08%	6.8	1.0
Uranium	18729.66			0.021			0.033			0.0002	393.32	618.08	3.75	0.035	1	0	0	0.024	0.13	0.00	0.00	15.87	16.00	0.83%	0.00%	0.00%	99.17%	16	1.0
Vanadium	268.46			0.00485			0.042			0.0123	1.30	11.28	3.30	0.035	1	0	0	0.024	0.12	0.00	0.00	0.23	0.34	33.88%	0.00%	0.00%	66.12%	0.344	1.0
Zinc	70825.06	1.575	0.555		4.449	0.328		4.3632	0.0706		2376.12	3334.55	172.72	0.035	1	0	0	0.024	6.10	0.00	0.00	60.00	66.10	9.22%	0.00%	0.00%	90.78%	66.1	1.0
Ammonia/Ammonium	1.00													0.035	1	0	0	0.024	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Chloride	1.00													0.035	1	0	0	0.024	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Cyanide	1.00													0.035	1	0	0	0.024	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Fluoride	9206.80			0.006							55.24			0.035	1	0	0	0.024	0.00	0.00	0.00	7.80	7.80	0.00%	0.00%	0.00%	100.00%	7.8	1.0
Iodine	1.00			0.05							0.05			0.035	1	0	0	0.024	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Nitrate/Nitrite	1.00													0.035	1	0	0	0.024	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Phosphate	1.00													0.035	1	0	0	0.024	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---

Table A-4. Exposure Calculation Worksheet for Determining NOAEL-Based PRGs for Red-tailed Hawk

Analyte	Soil PRG (mg/kg)	Literature-derived Bioaccumulation Models									Estimated Concentrations in Biota (mg/kg DW)			Food Intake Rate	Diet Composition (proportion)				Estimated Exposure (mg/kg/d)					Percent Estimated Exposure by Pathway				Selected Avian NOAEL TRV (mg/kg/d)	NOAEL HQ
		Plants			Soil Inverts			Small Mammals																					
		intercept	slope	BAF	intercept	slope	BAF	intercept	slope	BAF	Plants	Soil Invertbrates	Small Mammals	(kg/kg-bw/d, dw)	Small Mammals	Soil Inverts	Plants	Soil	Small Mammals	Soil Inverts	Plants	Soil	Total	Small Mam.	Soil Inverts	Plants	Soil		
Sulfate/Sulfite	1.00													0.035	1	0	0	0.024	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Total Organic Carbon	1.00													0.035	1	0	0	0.024	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
1,1-dichloroethane	13954.67						1.010			0.0109		14088.51	152.34	0.035	1	0	0	0.024	5.38	0.00	0.00	11.82	17.20	31.27%	0.00%	0.00%	68.73%	17.2	1.0
1,1-dichloroethene	11432.85						1.011			0.0186		11561.23	212.86	0.035	1	0	0	0.024	7.51	0.00	0.00	9.69	17.20	43.69%	0.00%	0.00%	56.31%	17.2	1.0
1,1,1-trichloroethane	8935.68						1.013			0.0305		9050.21	272.80	0.035	1	0	0	0.024	9.63	0.00	0.00	7.57	17.20	55.99%	0.00%	0.00%	44.01%	17.2	1.0
1,1,2-trichloroethane	12031.27						1.010			0.0165		12154.21	198.50	0.035	1	0	0	0.024	7.01	0.00	0.00	10.19	17.20	40.74%	0.00%	0.00%	59.26%	17.2	1.0
1,1,2,2-tetrachloroethane	9548.86						1.013			0.0270		9672.37	258.08	0.035	1	0	0	0.024	9.11	0.00	0.00	8.09	17.20	52.97%	0.00%	0.00%	47.03%	17.2	1.0
1,2-dichlorobenzene	4343.45			2.45			1.018			0.0882	10648.38	4420.25	383.01	0.035	1	0	0	0.024	13.52	0.00	0.00	3.68	17.20	78.61%	0.00%	0.00%	21.39%	17.2	1.0
1,2-dichloroethane (DCA)	16083.77						0.988			0.0063		15896.76	101.24	0.035	1	0	0	0.024	3.57	0.00	0.00	13.63	17.20	20.78%	0.00%	0.00%	79.22%	17.2	1.0
1,3-dichlorobenzene	4051.47			2.23			1.018			0.0963	9046.73	4124.57	390.02	0.035	1	0	0	0.024	13.77	0.00	0.00	3.43	17.20	80.04%	0.00%	0.00%	19.96%	17.2	1.0
2-butanone (Methyl Ethyl Ketone/MEK)	11538.19						0.094			0.0006		1079.95	6.37	0.035	1	0	0	0.024	0.22	0.00	0.00	9.78	10.00	2.25%	0.00%	0.00%	97.75%	10	1.0
2-hexanone	9653.17						0.207			0.0053		2001.10	51.61	0.035	1	0	0	0.024	1.82	0.00	0.00	8.18	10.00	18.22%	0.00%	0.00%	81.78%	10	1.0
Benzene	27053.32						1.011			0.0186		27357.09	503.69	0.035	1	0	0	0.024	17.78	0.00	0.00	22.92	40.70	43.69%	0.00%	0.00%	56.31%	40.7	1.0
Butanol	1.00						0.478			0.0017		0.48	0.00	0.035	1	0	0	0.024	0.00	0.00	0.00	0.00	0.00	6.65%	0.00%	0.00%	93.35%	---	---
Carbon Tetrachloride	7382.46						1.015			0.0420		7491.05	310.07	0.035	1	0	0	0.024	10.95	0.00	0.00	6.25	17.20	63.64%	0.00%	0.00%	36.36%	17.2	1.0
Chlorobenzene	6672.38						1.015			0.0490		6770.04	327.11	0.035	1	0	0	0.024	11.55	0.00	0.00	5.65	17.20	67.13%	0.00%	0.00%	32.87%	17.2	1.0
Chloroform	13002.94						1.011			0.0135		13139.75	175.18	0.035	1	0	0	0.024	6.18	0.00	0.00	11.02	17.20	35.95%	0.00%	0.00%	64.05%	17.2	1.0
Cis-1,2-dichloroethylene	13446.00						1.011			0.0122		13594.99	164.55	0.035	1	0	0	0.024	5.81	0.00	0.00	11.39	17.20	33.77%	0.00%	0.00%	66.23%	17.2	1.0
Dichloromethane (Methylene Chloride)	17281.03						1.007			0.0042		17397.76	72.51	0.035	1	0	0	0.024	2.56	0.00	0.00	14.64	17.20	14.88%	0.00%	0.00%	85.12%	17.2	1.0
Ethyl Benzene	12721.13			3.21			1.016			0.0666	40891.01	12927.29	847.67	0.035	1	0	0	0.024	29.92	0.00	0.00	10.78	40.70	73.52%	0.00%	0.00%	26.48%	40.7	1.0
Methyl Isobutyl Ketone	10211.45						0.197			0.0037		2011.42	38.21	0.035	1	0	0	0.024	1.35	0.00	0.00	8.65	10.00	13.49%	0.00%	0.00%	86.51%	10	1.0
n-butyl Benzene	7857.27			1.67			1.022			0.1227	13133.60	8033.04	964.40	0.035	1	0	0	0.024	34.04	0.00	0.00	6.66	40.70	83.64%	0.00%	0.00%	16.36%	40.7	1.0
Tetrachloroethylene	7733.34						1.018			0.0390		7868.74	301.65	0.035	1	0	0	0.024	10.65	0.00	0.00	6.55	17.20	61.91%	0.00%	0.00%	38.09%	17.2	1.0
Toluene	17199.83						1.014			0.0430		17441.90	740.18	0.035	1	0	0	0.024	26.13	0.00	0.00	14.57	40.70	64.20%	0.00%	0.00%	35.80%	40.7	1.0
Trans-1,2-dichloroethylene	11881.41						1.011			0.0170		12013.06	202.10	0.035	1	0	0	0.024	7.13	0.00	0.00	10.07	17.20	41.48%	0.00%	0.00%	58.52%	17.2	1.0
Trichloroethylene (TCE)	7497.82						1.012			0.0410		7591.18	307.30	0.035	1	0	0	0.024	10.85	0.00	0.00	6.35	17.20	63.07%	0.00%	0.00%	36.93%	17.2	1.0
Xylene	13419.08			3.43			1.016			0.0619	46049.36	13634.45	830.92	0.035	1	0	0	0.024	29.33	0.00	0.00	11.37	40.70	72.07%	0.00%	0.00%	27.93%	40.7	1.0
Acenaphthene	38361.66	-5.562	-0.8556				1.470			0	0.00	56391.64	0.00	0.035	1	0	0	0.024	0.00	0.00	0.00	32.50	32.50	0.00%	0.00%	0.00%	100.00%	32.5	1.0
Acenaphthylene	38361.66	-1.144	0.791				22.9			0	1345.95	878482.06	0.00	0.035	1	0	0	0.024	0.00	0.00	0.00	32.50	32.50	0.00%	0.00%	0.00%	100.00%	32.5	1.0
Anthracene	38361.66	-0.9887	0.7784				2.42			0	1376.32	92835.22	0.00	0.035	1	0	0	0.024	0.00	0.00	0.00	32.50	32.50	0.00%	0.00%	0.00%	100.00%	32.5	1.0
Benzo(a)pyrene	767.23	-2.0615	0.975				1.33			0	82.70	1020.42	0.00	0.035	1	0	0	0.024	0.00	0.00	0.00	0.65	0.65	0.00%	0.00%	0.00%	100.00%	0.65	1.0
Benzo(a)anthracene	767.23	-2.7078	0.5944				1.59			0	3.46	1219.90	0.00	0.035	1	0	0	0.024	0.00	0.00	0.00	0.65	0.65	0.00%	0.00%	0.00%	100.00%	0.65	1.0
Benzo(b)fluoranthene	767.23			0.31			2.6			0	237.84	1994.81	0.00	0.035	1	0	0	0.024	0.00	0.00	0.00	0.65	0.65	0.00%	0.00%	0.00%	100.00%	0.65	1.0
Benzo(ghi)perylene	767.23	-0.9313	1.1829				2.94			0	1018.88	2255.67	0.00	0.035	1	0	0	0.024	0.00	0.00	0.00	0.65	0.65	0.00%	0.00%	0.00%	100.00%	0.65	1.0
Benzo[k]fluoranthene	767.23	-4.6482	0.1668				2.6			0	0.03	1994.81	0.00	0.035	1	0	0	0.024	0.00	0.00	0.00	0.65	0.65	0.00%	0.00%	0.00%	100.00%	0.65	1.0
Chrysene	767.23	-2.7078	0.5944				2.29			0	3.46	1756.96	0.00	0.035	1	0	0	0.024	0.00	0.00	0.00	0.65	0.65	0.00%	0.00%	0.00%	100.00%	0.65	1.0
Dibenz(ah)anthracene	767.23			0.13			2.31			0	99.74	1772.31	0.00	0.035	1	0	0	0.024	0.00	0.00	0.00	0.65	0.65	0.00%	0.00%	0.00%	100.00%	0.65	1.0

Table A-4. Exposure Calculation Worksheet for Determining NOAEL-Based PRGs for Red-tailed Hawk

Analyte	Soil PRG (mg/kg)	Literature-derived Bioaccumulation Models									Estimated Concentrations in Biota (mg/kg DW)			Food Intake Rate	Diet Composition (proportion)				Estimated Exposure (mg/kg/d)					Percent Estimated Exposure by Pathway				Selected Avian NOAEL TRV (mg/kg/d)	NOAEL HQ
		Plants			Soil Inverts			Small Mammals																					
		intercept	slope	BAF	intercept	slope	BAF	intercept	slope	BAF	Plants	Soil Invertbrates	Small Mammals	(kg/kg-bw/d, dw)	Small Mammals	Soil Inverts	Plants	Soil	Small Mammals	Soil Inverts	Plants	Soil	Total	Small Mam.	Soil Inverts	Plants	Soil		
Fluoranthene	767.23			0.5			3.04			0	383.62	2332.39	0.00	0.035	1	0	0	0.024	0.00	0.00	0.00	0.65	0.65	0.00%	0.00%	0.00%	100.00%	0.65	1.0
Fluorene	38361.66	-5.562	-0.8556				9.57			0	0.00	367121.10	0.00	0.035	1	0	0	0.024	0.00	0.00	0.00	32.50	32.50	0.00%	0.00%	0.00%	100.00%	32.5	1.0
Indeno[1,2,3-cd]pyrene	767.23			0.11			2.86			0	84.40	2194.29	0.00	0.035	1	0	0	0.024	0.00	0.00	0.00	0.65	0.65	0.00%	0.00%	0.00%	100.00%	0.65	1.0
2-Methylnaphthalene	38361.66	-1.3205	4.544				1.020			0	18019551830566900000 0.00	39122.94	0.00	0.035	1	0	0	0.024	0.00	0.00	0.00	32.50	32.50	0.00%	0.00%	0.00%	100.00%	32.5	1.0
Naphthalene	38361.66			12.2			4.4			0	468012.28	168791.31	0.00	0.035	1	0	0	0.024	0.00	0.00	0.00	32.50	32.50	0.00%	0.00%	0.00%	100.00%	32.5	1.0
Phenanthrene	38361.66	-0.1665	0.6203				1.72			0	590.31	65982.06	0.00	0.035	1	0	0	0.024	0.00	0.00	0.00	32.50	32.50	0.00%	0.00%	0.00%	100.00%	32.5	1.0
Pyrene	767.23			0.72			1.75			0	552.41	1342.66	0.00	0.035	1	0	0	0.024	0.00	0.00	0.00	0.65	0.65	0.00%	0.00%	0.00%	100.00%	0.65	1.0
Total PAHs	1.00	0.083	0.3015							0	1.09		0.00	0.035	1	0	0	0.024	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Low MW PAHs	38361.66	-1.3205	0.4544							0	32.32		0.00	0.035	1	0	0	0.024	0.00	0.00	0.00	32.50	32.50	0.00%	0.00%	0.00%	100.00%	32.5	1.0
High MW PAHs	767.23	-1.7026	0.9469							0	98.24		0.00	0.035	1	0	0	0.024	0.00	0.00	0.00	0.65	0.65	0.00%	0.00%	0.00%	100.00%	0.65	1.0
Gasoline Range Organics																												500	---
TPH - Diesel	590179.41									0			0.00	0.035	1	0	0	0.024	0.00	0.00	0.00	500.00	500.00	0.00%	0.00%	0.00%	100.00%	500	1.0
TPH - Kerosene	590179.41									0			0.00	0.035	1	0	0	0.024	0.00	0.00	0.00	500.00	500.00	0.00%	0.00%	0.00%	100.00%	500	1.0
Normal paraffin hydrocarbons	959631.73									0			0.00	0.035	1	0	0	0.024	0.00	0.00	0.00	813.00	813.00	0.00%	0.00%	0.00%	100.00%	813	1.0
Phenol	1.00						0.235			0.0064		0.23	0.01	0.035	1	0	0	0.024	0.00	0.00	0.00	0.00	0.00	21.07%	0.00%	0.00%	78.93%	---	---
2-methylphenol (ocresol)	1.00						0.336			0.0150		0.34	0.02	0.035	1	0	0	0.024	0.00	0.00	0.00	0.00	0.00	38.52%	0.00%	0.00%	61.48%	---	---
4-methylphenol (pcresol)	1.00						0.333			0.0141		0.33	0.01	0.035	1	0	0	0.024	0.00	0.00	0.00	0.00	0.00	37.05%	0.00%	0.00%	62.95%	---	---
2,4-dinitrotoluene	7.17	1.873	-0.3768	0.376			0.184			0.0155	2.70	1.32	0.11	0.035	1	0	0	0.024	0.00	0.00	0.00	0.01	0.01	39.26%	0.00%	0.00%	60.74%	0.01	1.0
Bis[2-ethylhexyl] phthalate	263.03			0.07			41.144			0.0945	17.35	10822.33	24.85	0.035	1	0	0	0.024	0.88	0.00	0.00	0.22	1.10	79.74%	0.00%	0.00%	20.26%	1.1	1.0
Total PCBs	25.09			0.17	1.41	1.36				0.1792	4.25	327.82	4.50	0.035	1	0	0	0.024	0.16	0.00	0.00	0.02	0.18	88.19%	0.00%	0.00%	11.81%	0.18	1.0
Aroclor 1016	21.75			0.30	1.41	1.36				0.2104	6.46	270.01	4.58	0.035	1	0	0	0.024	0.16	0.00	0.00	0.02	0.18	89.76%	0.00%	0.00%	10.24%	0.18	1.0
Aroclor 1221	24.02			0.78	1.41	1.36				0.1883	18.84	308.94	4.52	0.035	1	0	0	0.024	0.16	0.00	0.00	0.02	0.18	88.70%	0.00%	0.00%	11.30%	0.18	1.0
Aroclor 1232	26.24			0.99	1.41	1.36				0.1704	25.99	348.38	4.47	0.035	1	0	0	0.024	0.16	0.00	0.00	0.02	0.18	87.65%	0.00%	0.00%	12.35%	0.18	1.0
Aroclor 1242	25.55			0.16	1.41	1.36				0.1756	4.13	336.08	4.49	0.035	1	0	0	0.024	0.16	0.00	0.00	0.02	0.18	87.97%	0.00%	0.00%	12.03%	0.18	1.0
Aroclor 1248	24.33			0.18	1.41	1.36				0.1855	4.49	314.50	4.52	0.035	1	0	0	0.024	0.16	0.00	0.00	0.02	0.18	88.55%	0.00%	0.00%	11.45%	0.18	1.0
Aroclor 1254	27.26			0.14	1.41	1.36				0.1630	3.80	367.09	4.44	0.035	1	0	0	0.024	0.16	0.00	0.00	0.02	0.18	87.17%	0.00%	0.00%	12.83%	0.18	1.0
Aroclor 1260	51.49			0.05	1.41	1.36				0.0750	2.69	871.55	3.86	0.035	1	0	0	0.024	0.14	0.00	0.00	0.04	0.18	75.77%	0.00%	0.00%	24.23%	0.18	1.0
Aroclor-1262	212.46													0.035	1	0	0	0.024	0.00	0.00	0.00	0.18	0.18	0.00%	0.00%	0.00%	100.00%	0.18	1.0
Dichloroprop	1.00													0.035	1	0	0	0.024	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Aldrin	1.06			0.14			1.033			0.1630	0.15	1.10	0.17	0.035	1	0	0	0.024	0.01	0.00	0.00	0.00	0.01	87.17%	0.00%	0.00%	12.83%	0.007	1.0
beta-1,2,3,4,5,6-Hexachlorocyclohexane	112.24			1.72			1.021			0.1201	192.94	114.61	13.48	0.035	1	0	0	0.024	0.48	0.00	0.00	0.10	0.57	83.35%	0.00%	0.00%	16.65%	0.571	1.0
alpha-Chlordane	301.53			0.16			1.031			0.1771	49.69	311.02	53.39	0.035	1	0	0	0.024	1.88	0.00	0.00	0.26	2.14	88.06%	0.00%	0.00%	11.94%	2.14	1.0
gamma-Chlordane	301.53			0.16			1.036			0.1771	49.69	312.26	53.39	0.035	1	0	0	0.024	1.88	0.00	0.00	0.26	2.14	88.06%	0.00%	0.00%	11.94%	2.14	1.0
Dichlorodiphenyldichloroethylene	0.06	-2.5119	0.7524		2.4771	0.8804		3.6401	0.641		0.01	1.03	6.43	0.035	1	0	0	0.024	0.23	0.00	0.00	0.00	0.23	99.98%	0.00%	0.00%	0.02%	0.227	1.0
Dichlorodiphenyltrichloroethane	2.53	-2.5119	0.7524		2.1247	0.8689		1.1788	0.7254		0.16	18.74	6.37	0.035	1	0	0	0.024	0.22	0.00	0.00	0.00	0.23	99.06%	0.00%	0.00%	0.94%	0.227	1.0
Dieldrin	1.64			0.41			14.70			1.20	0.67	24.12	1.97	0.035	1	0	0	0.024	0.07	0.00	0.00	0.00	0.07	98.04%	0.00%	0.00%	1.96%	0.0709	1.0
Endosulfan I	1671.48			1.31			1.184			0.1455	2191.45	1978.68	243.17	0.035	1	0	0	0.024	8.58	0.00	0.00	1.42	10.00	85.84%	0.00%	0.00%	14.16%	10	1.0

Table A-4. Exposure Calculation Worksheet for Determining NOAEL-Based PRGs for Red-tailed Hawk

Analyte	Soil PRG (mg/kg)	Literature-derived Bioaccumulation Models									Estimated Concentrations in Biota (mg/kg DW)			Food Intake Rate	Diet Composition (proportion)				Estimated Exposure (mg/kg/d)					Percent Estimated Exposure by Pathway				Selected Avian NOAEL TRV (mg/kg/d)	NOAEL HQ
		Plants			Soil Inverts			Small Mammals																					
		intercept	slope	BAF	intercept	slope	BAF	intercept	slope	BAF	Plants	Soil Invertbrates	Small Mammals	(kg/kg-bw/d, dw)	Small Mammals	Soil Inverts	Plants	Soil	Small Mammals	Soil Inverts	Plants	Soil	Total	Small Mam.	Soil Inverts	Plants	Soil		
Endosulfan II	1671.48			1.31			1.184			0.1455	2191.45	1978.68	243.17	0.035	1	0	0	0.024	8.58	0.00	0.00	1.42	10.00	85.84%	0.00%	0.00%	14.16%	10	1.0
Endosulfan sulfate	2159.84			1.98			1.184			0.1072	4271.29	2556.79	231.45	0.035	1	0	0	0.024	8.17	0.00	0.00	1.83	10.00	81.70%	0.00%	0.00%	18.30%	10	1.0
Endrin aldehyde	52.86			1.44			6.686			0.1368	76.09	353.43	7.23	0.035	1	0	0	0.024	0.26	0.00	0.00	0.04	0.30	85.07%	0.00%	0.00%	14.93%	0.3	1.0
Methoxychlor	1.00			0.52			3.739			0.2093	0.52	3.74	0.21	0.035	1	0	0	0.024	0.01	0.00	0.00	0.00	0.01	89.71%	0.00%	0.00%	10.29%	---	---

Notes:
It has been conservatively assumed that all chemical intake is absorbed by the receptor.
1 - When no TRV was available, the PRG is listed as 1 mg/kg based on formulas in the spreadsheet but no actual PRG is recommended.

Acronyms:
BAF = Bioaccumulation factor
DW = Dry weight
FIR = Food ingestion rate
mg/kg = Miligrams per kilogram
mg/kg BW/day, DW = Miligrams per kilogram of body weight per day, dry weight
mg/kg/d = Miligrams per kilogram per day
NOAEL = No observed adverse effect level
PRGs = Preliminary remediation goals
TRV = Toxicity reference value

Equations:
Total Estimated Exposure = Food Intake + Incidental Soil Intake
Food Intake = estimated concentration in biota X proportion of biota type X food ingestion rate (FIR)
Incidental Soil intake = concentration in soil X proportion of soil as component of diet X food ingestion rate (FIR)
Estimated Concentrations in Biota (method 1) = B1*(ln[Site Specific Soil Concentration]) + B0
where: B1 = slope and B0 = intercept
Estimated Concentrations in Biota (method 2) = soil concentration X BAF
Hazard Quotient = Total Estimated Exposure (Dose) / TRV
Therefore, when the HQ = 1, soil concentration = PRG
where: Soil concentration (mg/kg) = TRV / (Food Intake + Incidental Soil Intake) = Soil PRG

Table A-5. Exposure Calculation Worksheet for Determining NOAEL-Based PRGs for Great Basin Pocket Mouse

Analyte	Soil PRG[1] (mg/kg)	Literature-derived Bioaccumulation Models									Estimated Concentrations in Biota (mg/kg DW)			Food Intake Rate	Diet Composition (proportion)				Estimated Exposure (mg/kg/d)					Percent Estimated Exposure by Pathway				Selected Mammalian NOAEL TRV (mg/kg/d)	NOAEL HQ
		Plants			Soil Inverts			Small Mammals																					
		intercept	slope	BAF	intercept	slope	BAF	intercept	slope	BAF	Plants	Soil Invertbrates	Small Mammals	(kg/kg-bw/d, dw)	Small Mammals	Soil Inverts	Plants	Soil	Small Mammals	Soil Inverts	Plants	Soil	Total	Small Mam.	Soil Inverts	Plants	Soil		
Aluminum	687.18			0.00287			0.043			0.0263	1.97	29.55	18.07	0.123	0	0	1	0.02	0.00	0.00	0.24	1.69	1.93	0.00%	0.00%	12.55%	87.45%	1.93	1.0
Antimony	8.82	-3.233	0.938				1			0.001 * 50 * Cdiet	0.30	8.82	0.44	0.123	0	0	1	0.02	0.00	0.00	0.04	0.02	0.06	0.00%	0.00%	63.28%	36.72%	0.059	1.0
Arsenic, Total all valence states	264.76	-1.992	0.564		-1.421	0.706		-4.8471	0.8188		3.17	12.40	0.76	0.123	0	0	1	0.02	0.00	0.00	0.39	0.65	1.04	0.00%	0.00%	37.46%	62.54%	1.04	1.0
Arsenic (III)	264.76	-1.992	0.564		-1.421	0.706		-4.8471	0.8188		3.17	12.40	0.76	0.123	0	0	1	0.02	0.00	0.00	0.39	0.65	1.04	0.00%	0.00%	37.46%	62.54%	1.04	1.0
Arsenic (V)	264.76	-1.992	0.564		-1.421	0.706		-4.8471	0.8188		3.17	12.40	0.76	0.123	0	0	1	0.02	0.00	0.00	0.39	0.65	1.04	0.00%	0.00%	37.46%	62.54%	1.04	1.0
Barium	2081.99			0.156			0.091			0.0168	324.79	189.46	34.98	0.123	0	0	1	0.02	0.00	0.00	39.89	5.11	45.00	0.00%	0.00%	88.64%	11.36%	45	1.0
Beryllium	13.95	-0.5361	0.7345				0.045			0.001 * 50 * Cdiet	4.05	0.63	0.03	0.123	0	0	1	0.02	0.00	0.00	0.50	0.03	0.53	0.00%	0.00%	93.56%	6.44%	0.532	1.0
Bismuth	1.00			0.005			1			1	0.01	1.00	1.00	0.123	0	0	1	0.02	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	20.00%	80.00%	---	---
Boron	39.76			5.714			1			1	227.21	39.76	39.76	0.123	0	0	1	0.02	0.00	0.00	27.90	0.10	28.00	0.00%	0.00%	99.65%	0.35%	28	1.0
Cadmium	76.19	-0.476	0.546		2.114	0.795		-1.2571	0.4723		6.62	259.54	2.20	0.123	0	0	1	0.02	0.00	0.00	0.81	0.19	1.00	0.00%	0.00%	81.29%	18.71%	1	1.0
Chromium (total)	320.38			0.041			0.306	-1.4599	0.7338		13.14	98.03	16.02	0.123	0	0	1	0.02	0.00	0.00	1.61	0.79	2.40	0.00%	0.00%	67.21%	32.79%	2.4	1.0
Chromium (+3)	320.38			0.041			0.306	-1.4599	0.7338		13.14	98.03	16.02	0.123	0	0	1	0.02	0.00	0.00	1.61	0.79	2.40	0.00%	0.00%	67.21%	32.79%	2.4	1.0
Chromium (+6)	1233.45			0.041			0.306	-1.4599	0.7338		50.57	377.43	43.08	0.123	0	0	1	0.02	0.00	0.00	6.21	3.03	9.24	0.00%	0.00%	67.21%	32.79%	9.24	1.0
Cobalt	2174.40			0.00745			0.291	-4.4669	1.307		16.20	632.75	264.21	0.123	0	0	1	0.02	0.00	0.00	1.99	5.34	7.33	0.00%	0.00%	27.14%	72.86%	7.33	1.0
Copper	872.95	0.669	0.394				0.515	2.042	0.1444		28.14	449.57	20.49	0.123	0	0	1	0.02	0.00	0.00	3.46	2.14	5.60	0.00%	0.00%	61.71%	38.29%	5.6	1.0
Lead	1204.17	-1.328	0.561		-0.218	0.807		0.0761	0.4422		14.17	246.29	24.85	0.123	0	0	1	0.02	0.00	0.00	1.74	2.96	4.70	0.00%	0.00%	37.05%	62.95%	4.7	1.0
Lithium	3189.29			0.004			0.046			1	12.76	146.71	3189.29	0.123	0	0	1	0.02	0.00	0.00	1.57	7.83	9.40	0.00%	0.00%	16.67%	83.33%	9.4	1.0
Manganese	4227.40			0.0792	-0.809	0.682				0.0205	334.81	132.32	86.66	0.123	0	0	1	0.02	0.00	0.00	41.12	10.38	51.50	0.00%	0.00%	79.84%	20.16%	51.5	1.0
Mercury (methyl)	0.49	-0.996	0.544		0.0781	0.3369				0.054	0.25	0.85	0.03	0.123	0	0	1	0.02	0.00	0.00	0.03	0.00	0.03	0.00%	0.00%	96.23%	3.77%	0.032	1.0
Mercury (inorganic)	1.00	-0.996	0.544		0.0781	0.3369				0.054	0.37	1.08	0.05	0.123	0	0	1	0.02	0.00	0.00	0.05	0.00	0.05	0.00%	0.00%	94.86%	5.14%	---	---
Molybdenum	1.67			1.2504			0.953			1	2.08	1.59	1.67	0.123	0	0	1	0.02	0.00	0.00	0.26	0.00	0.26	0.00%	0.00%	98.43%	1.57%	0.26	1.0
Nickel	303.26	-2.224	0.748				1.059	-0.2462	0.4658		7.77	321.16	11.20	0.123	0	0	1	0.02	0.00	0.00	0.95	0.74	1.70	0.00%	0.00%	56.17%	43.83%	1.7	1.0
Selenium	2.05	-0.678	1.104		-0.075	0.733		-0.4158	0.3764		1.12	1.57	0.87	0.123	0	0	1	0.02	0.00	0.00	0.14	0.01	0.14	0.00%	0.00%	96.47%	3.53%	0.143	1.0
Silver	1441.77			0.014			2.045			0.0040	20.18	2948.42	5.77	0.123	0	0	1	0.02	0.00	0.00	2.48	3.54	6.02	0.00%	0.00%	41.18%	58.82%	6.02	1.0
Strontium	9442.09			0.207			0.4066			1.74	1952.74	3839.42	16431.42	0.123	0	0	1	0.02	0.00	0.00	239.81	23.19	263.00	0.00%	0.00%	91.18%	8.82%	263	1.0
Thallium	5.09			0.004			0.0541			0.1124	0.02	0.28	0.57	0.123	0	0	1	0.02	0.00	0.00	0.00	0.01	0.02	0.00%	0.00%	16.67%	83.33%	0.015	1.0
Tin	186.81			1			0.08			0.08	186.81	14.94	14.94	0.123	0	0	1	0.02	0.00	0.00	22.94	0.46	23.40	0.00%	0.00%	98.04%	1.96%	23.4	1.0
Uranium	55.61			0.021			0.033			0.0002	1.17	1.84	0.01	0.123	0	0	1	0.02	0.00	0.00	0.14	0.14	0.28	0.00%	0.00%	51.22%	48.78%	0.28	1.0
Vanadium	1363.15			0.00485			0.042			0.0123	6.61	57.25	16.77	0.123	0	0	1	0.02	0.00	0.00	0.81	3.35	4.16	0.00%	0.00%	19.52%	80.48%	4.16	1.0
Zinc	4611.56	1.575	0.555		4.449	0.328		4.3632	0.0706		521.73	1361.19	142.42	0.123	0	0	1	0.02	0.00	0.00	64.07	11.33	75.40	0.00%	0.00%	84.98%	15.02%	75.4	1.0
Ammonia/Ammonium	1.00													0.123	0	0	1	0.02	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Chloride	1.00													0.123	0	0	1	0.02	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Cyanide	27970.79													0.123	0	0	1	0.02	0.00	0.00	0.00	68.70	68.70	0.00%	0.00%	0.00%	100.00%	68.7	1.0
Fluoride	9824.70			0.006							58.95			0.123	0	0	1	0.02	0.00	0.00	7.24	24.13	31.37	0.00%	0.00%	23.08%	76.92%	31.37	1.0
Iodine	159.37			0.05							7.97			0.123	0	0	1	0.02	0.00	0.00	0.98	0.39	1.37	0.00%	0.00%	71.43%	28.57%	1.37	1.0
Nitrate/Nitrite	206421.95													0.123	0	0	1	0.02	0.00	0.00	0.00	507.00	507.00	0.00%	0.00%	0.00%	100.00%	507	1.0
Phosphate	1.00													0.123	0	0	1	0.02	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Sulfate/Sulfite	1.00													0.123	0	0	1	0.02	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Total Organic Carbon	1.00													0.123	0	0	1	0.02	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---

Table A-5. Exposure Calculation Worksheet for Determining NOAEL-Based PRGs for Great Basin Pocket Mouse

Analyte	Soil PRG[1] (mg/kg)	Literature-derived Bioaccumulation Models									Estimated Concentrations in Biota (mg/kg DW)			Food Intake Rate	Diet Composition (proportion)				Estimated Exposure (mg/kg/d)					Percent Estimated Exposure by Pathway				Selected Mammalian NOAEL TRV (mg/kg/d)	NOAEL HQ
		Plants			Soil Inverts			Small Mammals																					
		intercept	slope	BAF	intercept	slope	BAF	intercept	slope	BAF	Plants	Soil Invertbrates	Small Mammals	(kg/kg-bw/d, dw)	Small Mammals	Soil Inverts	Plants	Soil	Small Mammals	Soil Inverts	Plants	Soil	Total	Small Mam.	Soil Inverts	Plants	Soil		
1,1-dichloroethane	20357.19						1.010			0.0109		20552.44	222.23	0.123	0	0	1	0.02	0.00	0.00	0.00	50.00	50.00	0.00%	0.00%	0.00%	100.00%	50	1.0
1,1-dichloroethene	12214.32						1.011			0.0186		12351.46	227.41	0.123	0	0	1	0.02	0.00	0.00	0.00	30.00	30.00	0.00%	0.00%	0.00%	100.00%	30	1.0
1,1,1-trichloroethane	407143.89						1.013			0.0305		412362.69	12429.63	0.123	0	0	1	0.02	0.00	0.00	0.00	1000.00	1000.00	0.00%	0.00%	0.00%	100.00%	1000	1.0
1,1,2-trichloroethane	407143.89						1.010			0.0165		411304.24	6717.39	0.123	0	0	1	0.02	0.00	0.00	0.00	1000.00	1000.00	0.00%	0.00%	0.00%	100.00%	1000	1.0
1,1,2,2-tetrachloroethane	3635.79						1.013			0.0270		3682.82	98.27	0.123	0	0	1	0.02	0.00	0.00	0.00	8.93	8.93	0.00%	0.00%	0.00%	100.00%	8.93	1.0
1,2-dichlorobenzene	282.35			2.45			1.018			0.0882	692.20	287.34	24.90	0.123	0	0	1	0.02	0.00	0.00	85.01	0.69	85.70	0.00%	0.00%	99.19%	0.81%	85.7	1.0
1,2-dichloroethane (DCA)	20357.19						0.988			0.0063		20120.49	128.14	0.123	0	0	1	0.02	0.00	0.00	0.00	50.00	50.00	0.00%	0.00%	0.00%	100.00%	50	1.0
1,3-dichlorobenzene	309.75			2.23			1.018			0.0963	691.65	315.34	29.82	0.123	0	0	1	0.02	0.00	0.00	84.94	0.76	85.70	0.00%	0.00%	99.11%	0.89%	85.7	1.0
2-butanone (Methyl Ethyl Ketone/MEK)	721051.83						0.094			0.0006		67489.02	398.05	0.123	0	0	1	0.02	0.00	0.00	0.00	1771.00	1771.00	0.00%	0.00%	0.00%	100.00%	1771	1.0
2-hexanone	2035.72						0.207			0.0053		422.00	10.88	0.123	0	0	1	0.02	0.00	0.00	0.00	5.00	5.00	0.00%	0.00%	0.00%	100.00%	5	1.0
Benzene	285.00						1.011			0.0186		288.20	5.31	0.123	0	0	1	0.02	0.00	0.00	0.00	0.70	0.70	0.00%	0.00%	0.00%	100.00%	0.7	1.0
Butanol	50892.99						0.478			0.0017		24337.90	86.96	0.123	0	0	1	0.02	0.00	0.00	0.00	125.00	125.00	0.00%	0.00%	0.00%	100.00%	125	1.0
Carbon Tetrachloride	6514.30						1.015			0.0420		6610.13	273.61	0.123	0	0	1	0.02	0.00	0.00	0.00	16.00	16.00	0.00%	0.00%	0.00%	100.00%	16	1.0
Chlorobenzene	7939.31						1.015			0.0490		8055.51	389.23	0.123	0	0	1	0.02	0.00	0.00	0.00	19.50	19.50	0.00%	0.00%	0.00%	100.00%	19.5	1.0
Chloroform	6107.16						1.011			0.0135		6171.41	82.28	0.123	0	0	1	0.02	0.00	0.00	0.00	15.00	15.00	0.00%	0.00%	0.00%	100.00%	15	1.0
Cis-1,2-dichloroethylene	18402.90						1.011			0.0122		18606.82	225.21	0.123	0	0	1	0.02	0.00	0.00	0.00	45.20	45.20	0.00%	0.00%	0.00%	100.00%	45.2	1.0
Dichloromethane (Methylene Chloride)	2381.79						1.007			0.0042		2397.88	9.99	0.123	0	0	1	0.02	0.00	0.00	0.00	5.85	5.85	0.00%	0.00%	0.00%	100.00%	5.85	1.0
Ethyl Benzene	342.39			3.21			1.016			0.0666	1100.58	347.94	22.82	0.123	0	0	1	0.02	0.00	0.00	135.16	0.84	136.00	0.00%	0.00%	99.38%	0.62%	136	1.0
Methyl Isobutyl Ketone	721051.83						0.197			0.0037		142030.74	2698.19	0.123	0	0	1	0.02	0.00	0.00	0.00	1771.00	1771.00	0.00%	0.00%	0.00%	100.00%	1771	1.0
n-butyl Benzene	529.53			1.67			1.022			0.1227	885.13	541.38	64.99	0.123	0	0	1	0.02	0.00	0.00	108.70	1.30	110.00	0.00%	0.00%	98.82%	1.18%	110	1.0
Tetrachloroethylene	570.00						1.018			0.0390		579.98	22.23	0.123	0	0	1	0.02	0.00	0.00	0.00	1.40	1.40	0.00%	0.00%	0.00%	100.00%	1.4	1.0
Toluene	21171.48						1.014			0.0430		21469.46	911.10	0.123	0	0	1	0.02	0.00	0.00	0.00	52.00	52.00	0.00%	0.00%	0.00%	100.00%	52	1.0
Trans-1,2-dichloroethylene	18402.90						1.011			0.0170		18606.82	313.03	0.123	0	0	1	0.02	0.00	0.00	0.00	45.20	45.20	0.00%	0.00%	0.00%	100.00%	45.2	1.0
Trichloroethylene (TCE)	285.00						1.012			0.0410		288.55	11.68	0.123	0	0	1	0.02	0.00	0.00	0.00	0.70	0.70	0.00%	0.00%	0.00%	100.00%	0.7	1.0
Xylene	422.29			3.43			1.016			0.0619	1449.13	429.06	26.15	0.123	0	0	1	0.02	0.00	0.00	177.96	1.04	179.00	0.00%	0.00%	99.42%	0.58%	179	1.0
Acenaphthene	71250.18	-5.562	-0.8556				1.470			0	0.00	104737.77	0.00	0.123	0	0	1	0.02	0.00	0.00	0.00	175.00	175.00	0.00%	0.00%	0.00%	100.00%	175	1.0
Acenaphthylene	24320.69	-1.144	0.791				22.9			0	938.59	556943.73	0.00	0.123	0	0	1	0.02	0.00	0.00	115.26	59.73	175.00	0.00%	0.00%	65.87%	34.13%	175	1.0
Anthracene	178810.67	-0.9887	0.7784				2.42			0	4561.17	432721.83	0.00	0.123	0	0	1	0.02	0.00	0.00	560.14	439.18	999.33	0.00%	0.00%	56.05%	43.95%	1000	1.0
Benzo(a)pyrene	60.38	-2.0615	0.975				1.33			0	6.94	80.30	0.00	0.123	0	0	1	0.02	0.00	0.00	0.85	0.15	1.00	0.00%	0.00%	85.17%	14.83%	1	1.0
Benzo(a)anthracene	306.81	-2.7078	0.5944				1.59			0	2.01	487.83	0.00	0.123	0	0	1	0.02	0.00	0.00	0.25	0.75	1.00	0.00%	0.00%	24.63%	75.37%	1	1.0
Benzo(b)fluoranthene	24.68			0.31			2.6			0	7.65	64.16	0.00	0.123	0	0	1	0.02	0.00	0.00	0.94	0.06	1.00	0.00%	0.00%	93.94%	6.06%	1	1.0
Benzo(ghi)perylene	12.60	-0.9313	1.1829				2.94			0	7.89	37.04	0.00	0.123	0	0	1	0.02	0.00	0.00	0.97	0.03	1.00	0.00%	0.00%	96.91%	3.09%	1	1.0
Benzo[k]fluoranthene	405.73	-4.6482	0.1668				2.6			0	0.03	1054.90	0.00	0.123	0	0	1	0.02	0.00	0.00	0.00	1.00	1.00	0.00%	0.00%	0.32%	99.68%	1	1.0
Chrysene	306.81	-2.7078	0.5944				2.29			0	2.01	702.59	0.00	0.123	0	0	1	0.02	0.00	0.00	0.25	0.75	1.00	0.00%	0.00%	24.63%	75.37%	1	1.0
Dibenz(ah)anthracene	54.29			0.13			2.31			0	7.06	125.40	0.00	0.123	0	0	1	0.02	0.00	0.00	0.87	0.13	1.00	0.00%	0.00%	86.67%	13.33%	1	1.0
Fluoranthene	1957.42			0.5			3.04			0	978.71	5950.56	0.00	0.123	0	0	1	0.02	0.00	0.00	120.19	4.81	125.00	0.00%	0.00%	96.15%	3.85%	125	1.0
Fluorene	50892.99	-5.562	-0.8556				9.57			0	0.00	487045.88	0.00	0.123	0	0	1	0.02	0.00	0.00	0.00	125.00	125.00	0.00%	0.00%	0.00%	100.00%	125	1.0
Indeno[1,2,3-cd]pyrene	62.64			0.11			2.86			0	6.89	179.14	0.00	0.123	0	0	1	0.02	0.00	0.00	0.85	0.15	1.00	0.00%	0.00%	84.62%	15.38%	1	1.0
2-Methylnaphthalene	5.02	-1.3205	4.544				1.020			0	409.47	5.12	0.00	0.123	0	0	1	0.02	0.00	0.00	50.29	0.01	50.30	0.00%	0.00%	99.98%	0.02%	50.3	1.0

Table A-5. Exposure Calculation Worksheet for Determining NOAEL-Based PRGs for Great Basin Pocket Mouse

Analyte	Soil PRG[1] (mg/kg)	Literature-derived Bioaccumulation Models									Estimated Concentrations in Biota (mg/kg DW)			Food Intake Rate	Diet Composition (proportion)				Estimated Exposure (mg/kg/d)					Percent Estimated Exposure by Pathway				Selected Mammalian NOAEL TRV (mg/kg/d)	NOAEL HQ
		Plants			Soil Inverts			Small Mammals																					
		intercept	slope	BAF	intercept	slope	BAF	intercept	slope	BAF	Plants	Soil Invertbrates	Small Mammals	(kg/kg-bw/d, dw)	Small Mammals	Soil Inverts	Plants	Soil	Small Mammals	Soil Inverts	Plants	Soil	Total	Small Mam.	Soil Inverts	Plants	Soil		
Naphthalene	33.32			12.2			4.4			0	406.48	146.60	0.00	0.123	0	0	1	0.02	0.00	0.00	49.92	0.08	50.00	0.00%	0.00%	99.84%	0.16%	50	1.0
Phenanthrene	301134.27	-0.1665	0.6203				1.72			0	2119.17	517950.95	0.00	0.123	0	0	1	0.02	0.00	0.00	260.25	739.63	999.87	0.00%	0.00%	26.03%	73.97%	1000	1.0
Pyrene	825.29			0.72			1.75			0	594.21	1444.26	0.00	0.123	0	0	1	0.02	0.00	0.00	72.97	2.03	75.00	0.00%	0.00%	97.30%	2.70%	75	1.0
Total PAHs	1.00	0.083	0.3015							0	1.09		0.00	0.123	0	0	1	0.02	0.00	0.00	0.13	0.00	0.14	0.00%	0.00%	98.19%	1.81%		---
Low MW PAHs	25368.94	-1.3205	0.4544							0	26.78		0.00	0.123	0	0	1	0.02	0.00	0.00	3.29	62.31	65.60	0.00%	0.00%	5.01%	94.99%	65.6	1.0
High MW PAHs	29.05	-1.7026	0.9469							0	4.43		0.00	0.123	0	0	1	0.02	0.00	0.00	0.54	0.07	0.61	0.00%	0.00%	88.40%	11.60%	0.615	1.0
Gasoline Range Organics																												1000	---
TPH - Diesel	407143.89									0			0.00	0.123	0	0	1	0.02	0.00	0.00	0.00	1000.00	1000.00	0.00%	0.00%	0.00%	100.00%	1000	1.0
TPH - Kerosene	407143.89									0			0.00	0.123	0	0	1	0.02	0.00	0.00	0.00	1000.00	1000.00	0.00%	0.00%	0.00%	100.00%	1000	1.0
Normal paraffin hydrocarbons	407143.89									0			0.00	0.123	0	0	1	0.02	0.00	0.00	0.00	1000.00	1000.00	0.00%	0.00%	0.00%	100.00%	1000	1.0
Phenol	4885.73						0.235			0.0064		1147.19	31.31	0.123	0	0	1	0.02	0.00	0.00	0.00	12.00	12.00	0.00%	0.00%	0.00%	100.00%	12	1.0
2-methylphenol (ocresol)	127436.04						0.336			0.0150		42779.65	1916.65	0.123	0	0	1	0.02	0.00	0.00	0.00	313.00	313.00	0.00%	0.00%	0.00%	100.00%	313	1.0
4-methylphenol (pcresol)	127436.04						0.333			0.0141		42476.12	1800.30	0.123	0	0	1	0.02	0.00	0.00	0.00	313.00	313.00	0.00%	0.00%	0.00%	100.00%	313	1.0
2,4-dinitrotoluene	13.78	1.873	-0.3768	0.376			0.184			0.0155	5.18	2.53	0.21	0.123	0	0	1	0.02	0.00	0.00	0.64	0.03	0.67	0.00%	0.00%	94.95%	5.05%	0.67	1.0
Bis[2-ethylhexyl] phthalate	1733.20			0.07			41.144			0.0945	114.35	71311.01	163.73	0.123	0	0	1	0.02	0.00	0.00	14.04	4.26	18.30	0.00%	0.00%	76.74%	23.26%	18.3	1.0
Total PCBs	2.92			0.17	1.41	1.36				0.1792	0.50	17.61	0.52	0.123	0	0	1	0.02	0.00	0.00	0.06	0.01	0.07	0.00%	0.00%	89.45%	10.55%	0.068	1.0
Aroclor 1016	35.21			0.30	1.41	1.36				0.2104	10.45	519.70	7.41	0.123	0	0	1	0.02	0.00	0.00	1.28	0.09	1.37	0.00%	0.00%	93.69%	6.31%	1.37	1.0
Aroclor 1221	0.69			0.78	1.41	1.36				0.1883	0.54	2.47	0.13	0.123	0	0	1	0.02	0.00	0.00	0.07	0.00	0.07	0.00%	0.00%	97.51%	2.49%	0.068	1.0
Aroclor 1232	0.55			0.99	1.41	1.36				0.1704	0.54	1.81	0.09	0.123	0	0	1	0.02	0.00	0.00	0.07	0.00	0.07	0.00%	0.00%	98.02%	1.98%	0.068	1.0
Aroclor 1242	3.09			0.16	1.41	1.36				0.1756	0.50	19.01	0.54	0.123	0	0	1	0.02	0.00	0.00	0.06	0.01	0.07	0.00%	0.00%	89.00%	11.00%	0.069	1.0
Aroclor 1248	0.35			0.18	1.41	1.36				0.1855	0.06	0.97	0.06	0.123	0	0	1	0.02	0.00	0.00	0.01	0.00	0.01	0.00%	0.00%	90.21%	9.79%	0.0087	1.0
Aroclor 1254	3.48			0.14	1.41	1.36				0.1630	0.48	22.30	0.57	0.123	0	0	1	0.02	0.00	0.00	0.06	0.01	0.07	0.00%	0.00%	87.45%	12.55%	0.068	1.0
Aroclor 1260	7.67			0.05	1.41	1.36				0.0750	0.40	65.36	0.58	0.123	0	0	1	0.02	0.00	0.00	0.05	0.02	0.07	0.00%	0.00%	72.31%	27.69%	0.068	1.0
Aroclor-1262	27.69													0.123	0	0	1	0.02	0.00	0.00	0.00	0.07	0.07	0.00%	0.00%	0.00%	100.00%	0.068	1.0
Dichloroprop	1.00													0.123	0	0	1	0.02	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Aldrin	10.22			0.14			1.033			0.1630	1.42	10.56	1.67	0.123	0	0	1	0.02	0.00	0.00	0.17	0.03	0.20	0.00%	0.00%	87.45%	12.55%	0.2	1.0
beta-1,2,3,4,5,6-Hexachlorocyclohexane	1.87			1.72			1.021			0.1201	3.22	1.91	0.22	0.123	0	0	1	0.02	0.00	0.00	0.40	0.00	0.40	0.00%	0.00%	98.85%	1.15%	0.4	1.0
alpha-Chlordane	92.53			0.16			1.031			0.1771	15.25	95.44	16.38	0.123	0	0	1	0.02	0.00	0.00	1.87	0.23	2.10	0.00%	0.00%	89.18%	10.82%	2.1	1.0
gamma-Chlordane	92.53			0.16			1.036			0.1771	15.25	95.82	16.38	0.123	0	0	1	0.02	0.00	0.00	1.87	0.23	2.10	0.00%	0.00%	89.18%	10.82%	2.1	1.0
Dichlorodiphenyldichloroethylene	20.48	-2.5119	0.7524		2.4771	0.8804		3.6401	0.641		0.79	169.96	263.92	0.123	0	0	1	0.02	0.00	0.00	0.10	0.05	0.15	0.00%	0.00%	65.76%	34.24%	0.147	1.0
Dichlorodiphenyltrichloroethane	20.48	-2.5119	0.7524		2.1247	0.8689		1.1788	0.7254		0.79	115.40	29.06	0.123	0	0	1	0.02	0.00	0.00	0.10	0.05	0.15	0.00%	0.00%	65.76%	34.24%	0.147	1.0
Dieldrin	0.28			0.41			14.70			1.20	0.12	4.18	0.34	0.123	0	0	1	0.02	0.00	0.00	0.01	0.00	0.02	0.00%	0.00%	95.35%	4.65%	0.015	1.0
Endosulfan I	0.92			1.31			1.184			0.1455	1.20	1.09	0.13	0.123	0	0	1	0.02	0.00	0.00	0.15	0.00	0.15	0.00%	0.00%	98.50%	1.50%	0.15	1.0
Endosulfan II	0.92			1.31			1.184			0.1455	1.20	1.09	0.13	0.123	0	0	1	0.02	0.00	0.00	0.15	0.00	0.15	0.00%	0.00%	98.50%	1.50%	0.15	1.0
Endosulfan sulfate	0.61			1.98			1.184			0.1072	1.21	0.72	0.07	0.123	0	0	1	0.02	0.00	0.00	0.15	0.00	0.15	0.00%	0.00%	99.00%	1.00%	0.15	1.0
Endrin aldehyde	0.51			1.44			6.686			0.1368	0.74	3.43	0.07	0.123	0	0	1	0.02	0.00	0.00	0.09	0.00	0.09	0.00%	0.00%	98.63%	1.37%	0.092	1.0
Methoxychlor	59.78			0.52			3.739			0.2093	31.38	223.52	12.51	0.123	0	0	1	0.02	0.00	0.00	3.85	0.15	4.00	0.00%	0.00%	96.33%	3.67%	4	1.0

Notes:

It has been conservatively assumed that all chemical intake is absorbed by the receptor.

1 - When no TRV was available, the PRG is listed as 1 mg/kg based on formulas in the spreadsheet but no actual PRG is recommended.

Acronyms:

Table A-5. Exposure Calculation Worksheet for Determining NOAEL-Based PRGs for Great Basin Pocket Mouse

Analyte	Soil PRG[1] (mg/kg)	Literature-derived Bioaccumulation Models									Estimated Concentrations in Biota (mg/kg DW)			Food Intake Rate	Diet Composition (proportion)				Estimated Exposure (mg/kg/d)					Percent Estimated Exposure by Pathway				Selected Mammalian NOAEL TRV (mg/kg/d)	NOAEL HQ
		Plants			Soil Inverts			Small Mammals																					
		intercept	slope	BAF	intercept	slope	BAF	intercept	slope	BAF	Plants	Soil Invertbrates	Small Mammals	(kg/kg-bw/d, dw)	Small Mammals	Soil Inverts	Plants	Soil	Small Mammals	Soil Inverts	Plants	Soil	Total	Small Mam.	Soil Inverts	Plants	Soil		

BAF = Bioaccumulation factor
DW = Dry weight
FIR = Food ingestion rate
mg/kg = Miligrams per kilogram
mg/kg BW/day, DW = Miligrams per kilogram of body weight per day, dry weight
mg/kg/d = Miligrams per kilogram per day
NOAEL = No observed adverse effect level
PRGs = Preliminary remediation goals
TRV = Toxicity reference value

Equations:

Total Estimated Exposure = Food Intake + Incidental Soil Intake
Food Intake = estimated concentration in biota X proportion of biota type X food ingestion rate (FIR)
Incidental Soil intake = concentration in soil X proportion of soil as component of diet X food ingestion rate (FIR)
Estimated Concentrations in Biota (method 1) = B1*(ln[Site Specific Soil Concentration]) + B0
where: B1 = slope and B0 = intercept
Estimated Concentrations in Biota (method 2) = soil concentration X BAF
Hazard Quotient = Total Estimated Exposure (Dose) / TRV
Therefore, when the HQ = 1, soil concentration = PRG
where: Soil concentration (mg/kg) = TRV / (Food Intake + Incidental Soil Intake) = Soil PRG

Table A-6. Exposure Calculation Worksheet for Determining NOAEL-Based PRGs for Deer Mouse

Analyte	Soil PRG (mg/kg)	Literature-derived Bioaccumulation Models									Estimated Concentrations in Biota (mg/kg DW)			Food Intake Rate	Diet Composition (proportion)				Estimated Exposure (mg/kg/d)					Percent Estimated Exposure by Pathway				Selected Mammalian NOAEL TRV (mg/kg/d)	NOAEL HQ
		Plants			Soil Inverts			Small Mammals																					
		intercept	slope	BAF	intercept	slope	BAF	intercept	slope	BAF	Plants	Soil Invertbrates	Small Mammals	(kg/kg-bw/d, dw)	Small Mammals	Soil Inverts	Plants	Soil	Small Mammals	Soil Inverts	Plants	Soil	Total	Small Mam.	Soil Inverts	Plants	Soil		
Aluminum	270.79			0.00287			0.043			0.0263	0.78	11.64	7.12	0.166	0	0.5	0.5	0.02	0.00	0.97	0.06	0.90	1.93	0.00%	50.08%	3.34%	46.58%	1.93	1.0
Antimony	0.66	-3.233	0.938				1			0.001 * 50 * Cdiet	0.03	0.66	0.03	0.166	0	0.5	0.5	0.02	0.00	0.05	0.00	0.00	0.06	0.00%	92.55%	3.75%	3.70%	0.059	1.0
Arsenic, Total all valence states	104.92	-1.992	0.564		-1.421	0.706		-4.8471	0.8188		1.88	6.45	0.35	0.166	0	0.5	0.5	0.02	0.00	0.54	0.16	0.35	1.04	0.00%	51.48%	15.02%	33.50%	1.04	1.0
Arsenic (III)	104.92	-1.992	0.564		-1.421	0.706		-4.8471	0.8188		1.88	6.45	0.35	0.166	0	0.5	0.5	0.02	0.00	0.54	0.16	0.35	1.04	0.00%	51.48%	15.02%	33.50%	1.04	1.0
Arsenic (V)	104.92	-1.992	0.564		-1.421	0.706		-4.8471	0.8188		1.88	6.45	0.35	0.166	0	0.5	0.5	0.02	0.00	0.54	0.16	0.35	1.04	0.00%	51.48%	15.02%	33.50%	1.04	1.0
Barium	1889.09			0.156			0.091			0.0168	294.70	171.91	31.74	0.166	0	0.5	0.5	0.02	0.00	14.27	24.46	6.27	45.00	0.00%	31.71%	54.36%	13.94%	45	1.0
Beryllium	17.96	-0.5361	0.7345				0.045			0.001 * 50 * Cdiet	4.88	0.81	0.04	0.166	0	0.5	0.5	0.02	0.00	0.07	0.41	0.06	0.53	0.00%	12.61%	76.17%	11.21%	0.532	1.0
Bismuth	1.00			0.005			1			1	0.01	1.00	1.00	0.166	0	0.5	0.5	0.02	0.00	0.08	0.00	0.00	0.09	0.00%	95.69%	0.48%	3.83%	---	---
Boron	49.95			5.714			1			1	285.40	49.95	49.95	0.166	0	0.5	0.5	0.02	0.00	4.15	23.69	0.17	28.00	0.00%	14.81%	84.60%	0.59%	28	1.0
Cadmium	1.47	-0.476	0.546		2.114	0.795		-1.2571	0.4723		0.77	11.22	0.34	0.166	0	0.5	0.5	0.02	0.00	0.93	0.06	0.00	1.00	0.00%	93.16%	6.35%	0.49%	1	1.0
Chromium (total)	74.72			0.041			0.306	-1.4599	0.7338		3.06	22.86	5.50	0.166	0	0.5	0.5	0.02	0.00	1.90	0.25	0.25	2.40	0.00%	79.07%	10.59%	10.34%	2.4	1.0
Chromium (+3)	74.72			0.041			0.306	-1.4599	0.7338		3.06	22.86	5.50	0.166	0	0.5	0.5	0.02	0.00	1.90	0.25	0.25	2.40	0.00%	79.07%	10.59%	10.34%	2.4	1.0
Chromium (+6)	287.66			0.041			0.306	-1.4599	0.7338		11.79	88.02	14.80	0.166	0	0.5	0.5	0.02	0.00	7.31	0.98	0.96	9.24	0.00%	79.07%	10.59%	10.34%	9.24	1.0
Cobalt	260.93			0.00745			0.291	-4.4669	1.307		1.94	75.93	16.54	0.166	0	0.5	0.5	0.02	0.00	6.30	0.16	0.87	7.33	0.00%	85.98%	2.20%	11.82%	7.33	1.0
Copper	99.95	0.669	0.394				0.515	2.042	0.1444		11.98	51.47	14.98	0.166	0	0.5	0.5	0.02	0.00	4.27	0.99	0.33	5.60	0.00%	76.31%	17.76%	5.93%	5.6	1.0
Lead	151.05	-1.328	0.561		-0.218	0.807		0.0761	0.4422		4.42	46.12	9.92	0.166	0	0.5	0.5	0.02	0.00	3.83	0.37	0.50	4.70	0.00%	81.50%	7.82%	10.68%	4.7	1.0
Lithium	1258.37			0.004			0.046			1	5.03	57.88	1258.37	0.166	0	0.5	0.5	0.02	0.00	4.80	0.42	4.18	9.40	0.00%	51.11%	4.44%	44.44%	9.4	1.0
Manganese	4115.32			0.0792	-0.809	0.682				0.0205	325.93	129.92	84.36	0.166	0	0.5	0.5	0.02	0.00	10.78	27.05	13.66	51.50	0.00%	20.94%	52.53%	26.53%	51.5	1.0
Mercury (methyl)	0.03	-0.996	0.544		0.0781	0.3369				0.054	0.05	0.33	0.00	0.166	0	0.5	0.5	0.02	0.00	0.03	0.00	0.00	0.03	0.00%	85.59%	14.10%	0.31%	0.032	1.0
Mercury (inorganic)	1.00	-0.996	0.544		0.0781	0.3369				0.054	0.37	1.08	0.05	0.166	0	0.5	0.5	0.02	0.00	0.09	0.03	0.00	0.12	0.00%	72.54%	24.78%	2.68%	---	---
Molybdenum	1.40			1.2504			0.953			1	1.75	1.33	1.40	0.166	0	0.5	0.5	0.02	0.00	0.11	0.14	0.00	0.26	0.00%	42.48%	55.74%	1.78%	0.26	1.0
Nickel	17.77	-2.224	0.748				1.059	-0.2462	0.4658		0.93	18.82	2.99	0.166	0	0.5	0.5	0.02	0.00	1.56	0.08	0.06	1.70	0.00%	91.98%	4.55%	3.47%	1.7	1.0
Selenium	1.19	-0.678	1.104		-0.075	0.733		-0.4158	0.3764		0.62	1.06	0.71	0.166	0	0.5	0.5	0.02	0.00	0.09	0.05	0.00	0.14	0.00%	61.36%	35.86%	2.77%	0.143	1.0
Silver	34.55			0.014			2.045			0.0040	0.48	70.66	0.14	0.166	0	0.5	0.5	0.02	0.00	5.87	0.04	0.11	6.02	0.00%	97.43%	0.67%	1.91%	6.02	1.0
Strontium	4849.22			0.207			0.4066			1.74	1002.88	1971.83	8438.77	0.166	0	0.5	0.5	0.02	0.00	163.66	83.24	16.10	263.00	0.00%	62.23%	31.65%	6.12%	263	1.0
Thallium	1.84			0.004			0.0541			0.1124	0.01	0.10	0.21	0.166	0	0.5	0.5	0.02	0.00	0.01	0.00	0.01	0.02	0.00%	55.15%	4.08%	40.77%	0.015	1.0
Tin	251.72			1			0.08			0.08	251.72	20.14	20.14	0.166	0	0.5	0.5	0.02	0.00	1.67	20.89	0.84	23.40	0.00%	7.14%	89.29%	3.57%	23.4	1.0
Uranium	35.89			0.021			0.033			0.0002	0.75	1.18	0.01	0.166	0	0.5	0.5	0.02	0.00	0.10	0.06	0.12	0.28	0.00%	35.11%	22.34%	42.55%	0.28	1.0
Vanadium	577.09			0.00485			0.042			0.0123	2.80	24.24	7.10	0.166	0	0.5	0.5	0.02	0.00	2.01	0.23	1.92	4.16	0.00%	48.36%	5.58%	46.06%	4.16	1.0
Zinc	633.13	1.575	0.555		4.449	0.328		4.3632	0.0706		173.32	709.69	123.79	0.166	0	0.5	0.5	0.02	0.00	58.90	14.39	2.10	75.39	0.00%	78.13%	19.08%	2.79%	75.4	1.0
Ammonia/Ammonium	1.00													0.166	0	0.5	0.5	0.02	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Chloride	1.00													0.166	0	0.5	0.5	0.02	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Cyanide	20692.77													0.166	0	0.5	0.5	0.02	0.00	0.00	0.00	68.70	68.70	0.00%	0.00%	0.00%	100.00%	68.7	1.0
Fluoride	8216.34			0.006							49.30			0.166	0	0.5	0.5	0.02	0.00	0.00	4.09	27.28	31.37	0.00%	0.00%	13.04%	86.96%	31.37	1.0
Iodine	183.40			0.05							9.17			0.166	0	0.5	0.5	0.02	0.00	0.00	0.76	0.61	1.37	0.00%	0.00%	55.56%	44.44%	1.37	1.0
Nitrate/Nitrite	152710.84													0.166	0	0.5	0.5	0.02	0.00	0.00	0.00	507.00	507.00	0.00%	0.00%	0.00%	100.00%	507	1.0
Phosphate	1.00													0.166	0	0.5	0.5	0.02	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Sulfate/Sulfite	1.00													0.166	0	0.5	0.5	0.02	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Total Organic Carbon	1.00													0.166	0	0.5	0.5	0.02	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
1,1-dichloroethane	573.95						1.010			0.0109		579.45	6.27	0.166	0	0.5	0.5	0.02	0.00	48.09	0.00	1.91	50.00	0.00%	96.19%	0.00%	3.81%	50	1.0
1,1-dichloroethene	343.83						1.011			0.0186		347.69	6.40	0.166	0	0.5	0.5	0.02	0.00	28.86	0.00	1.14	30.00	0.00%	96.19%	0.00%	3.81%	30	1.0

Table A-6. Exposure Calculation Worksheet for Determining NOAEL-Based PRGs for Deer Mouse

Analyte	Soil PRG (mg/kg)	Literature-derived Bioaccumulation Models									Estimated Concentrations in Biota (mg/kg DW)			Food Intake Rate	Diet Composition (proportion)				Estimated Exposure (mg/kg/d)					Percent Estimated Exposure by Pathway				Selected Mammalian NOAEL TRV (mg/kg/d)	NOAEL HQ
		Plants			Soil Inverts			Small Mammals																					
		intercept	slope	BAF	intercept	slope	BAF	intercept	slope	BAF	Plants	Soil Invertbrates	Small Mammals	(kg/kg-bw/d, dw)	Small Mammals	Soil Inverts	Plants	Soil	Small Mammals	Soil Inverts	Plants	Soil	Total	Small Mam.	Soil Inverts	Plants	Soil		
1,1,1-trichloroethane	11443.76						1.013			0.0305		11590.44	349.36	0.166	0	0.5	0.5	0.02	0.00	962.01	0.00	37.99	1000.00	0.00%	96.20%	0.00%	3.80%	1000	1.0
1,1,2-trichloroethane	11472.08						1.010			0.0165		11589.31	189.28	0.166	0	0.5	0.5	0.02	0.00	961.91	0.00	38.09	1000.00	0.00%	96.19%	0.00%	3.81%	1000	1.0
1,1,2,2-tetrachloroethane	102.18						1.013			0.0270		103.50	2.76	0.166	0	0.5	0.5	0.02	0.00	8.59	0.00	0.34	8.93	0.00%	96.20%	0.00%	3.80%	8.93	1.0
1,2-dichlorobenzene	294.23			2.45			1.018			0.0882	721.33	299.43	25.95	0.166	0	0.5	0.5	0.02	0.00	24.85	59.87	0.98	85.70	0.00%	29.00%	69.86%	1.14%	85.7	1.0
1,2-dichloroethane (DCA)	585.79						0.988			0.0063		578.98	3.69	0.166	0	0.5	0.5	0.02	0.00	48.06	0.00	1.94	50.00	0.00%	96.11%	0.00%	3.89%	50	1.0
1,3-dichlorobenzene	313.74			2.23			1.018			0.0963	700.57	319.41	30.20	0.166	0	0.5	0.5	0.02	0.00	26.51	58.15	1.04	85.70	0.00%	30.93%	67.85%	1.22%	85.7	1.0
2-butanone (Methyl Ethyl Ketone/MEK)	159713.07						0.094			0.0006		14948.83	88.17	0.166	0	0.5	0.5	0.02	0.00	1240.75	0.00	530.25	1771.00	0.00%	70.06%	0.00%	29.94%	1771	1.0
2-hexanone	243.60						0.207			0.0053		50.50	1.30	0.166	0	0.5	0.5	0.02	0.00	4.19	0.00	0.81	5.00	0.00%	83.83%	0.00%	16.17%	5	1.0
Benzene	8.02						1.011			0.0186		8.11	0.15	0.166	0	0.5	0.5	0.02	0.00	0.67	0.00	0.03	0.70	0.00%	96.19%	0.00%	3.81%	0.7	1.0
Butanol	2906.16						0.478			0.0017		1389.78	4.97	0.166	0	0.5	0.5	0.02	0.00	115.35	0.00	9.65	125.00	0.00%	92.28%	0.00%	7.72%	125	1.0
Carbon Tetrachloride	182.77						1.015			0.0420		185.46	7.68	0.166	0	0.5	0.5	0.02	0.00	15.39	0.00	0.61	16.00	0.00%	96.21%	0.00%	3.79%	16	1.0
Chlorobenzene	222.77						1.015			0.0490		226.03	10.92	0.166	0	0.5	0.5	0.02	0.00	18.76	0.00	0.74	19.50	0.00%	96.21%	0.00%	3.79%	19.5	1.0
Chloroform	172.03						1.011			0.0135		173.84	2.32	0.166	0	0.5	0.5	0.02	0.00	14.43	0.00	0.57	15.00	0.00%	96.19%	0.00%	3.81%	15	1.0
Cis-1,2-dichloroethylene	518.11						1.011			0.0122		523.85	6.34	0.166	0	0.5	0.5	0.02	0.00	43.48	0.00	1.72	45.20	0.00%	96.19%	0.00%	3.81%	45.2	1.0
Dichloromethane (Methylene Chloride)	67.33						1.007			0.0042		67.79	0.28	0.166	0	0.5	0.5	0.02	0.00	5.63	0.00	0.22	5.85	0.00%	96.18%	0.00%	3.82%	5.85	1.0
Ethyl Benzene	383.68			3.21			1.016			0.0666	1233.31	389.90	25.57	0.166	0	0.5	0.5	0.02	0.00	32.36	102.36	1.27	136.00	0.00%	23.80%	75.27%	0.94%	136	1.0
Methyl Isobutyl Ketone	90039.69						0.197			0.0037		17735.76	336.93	0.166	0	0.5	0.5	0.02	0.00	1472.07	0.00	298.93	1771.00	0.00%	83.12%	0.00%	16.88%	1771	1.0
n-butyl Benzene	484.77			1.67			1.022			0.1227	810.30	495.61	59.50	0.166	0	0.5	0.5	0.02	0.00	41.14	67.25	1.61	110.00	0.00%	37.40%	61.14%	1.46%	110	1.0
Tetrachloroethylene	15.95						1.018			0.0390		16.23	0.62	0.166	0	0.5	0.5	0.02	0.00	1.35	0.00	0.05	1.40	0.00%	96.22%	0.00%	3.78%	1.4	1.0
Toluene	594.37						1.014			0.0430		602.73	25.58	0.166	0	0.5	0.5	0.02	0.00	50.03	0.00	1.97	52.00	0.00%	96.21%	0.00%	3.79%	52	1.0
Trans-1,2-dichloroethylene	518.11						1.011			0.0170		523.85	8.81	0.166	0	0.5	0.5	0.02	0.00	43.48	0.00	1.72	45.20	0.00%	96.19%	0.00%	3.81%	45.2	1.0
Trichloroethylene (TCE)	8.01						1.012			0.0410		8.11	0.33	0.166	0	0.5	0.5	0.02	0.00	0.67	0.00	0.03	0.70	0.00%	96.20%	0.00%	3.80%	0.7	1.0
Xylene	480.57			3.43			1.016			0.0619	1649.13	488.28	29.76	0.166	0	0.5	0.5	0.02	0.00	40.53	136.88	1.60	179.00	0.00%	22.64%	76.47%	0.89%	179	1.0
Acenaphthene	1396.31	-5.562	-0.8556				1.470			0	0.00	2052.58	0.00	0.166	0	0.5	0.5	0.02	0.00	170.36	0.00	4.64	175.00	0.00%	97.35%	0.00%	2.65%	175	1.0
Acenaphthylene	91.39	-1.144	0.791				22.9			0	11.33	2092.90	0.00	0.166	0	0.5	0.5	0.02	0.00	173.71	0.94	0.30	174.95	0.00%	99.29%	0.54%	0.17%	175	1.0
Anthracene	4783.60	-0.9887	0.7784				2.42			0	272.23	11576.30	0.00	0.166	0	0.5	0.5	0.02	0.00	960.83	22.59	15.88	999.31	0.00%	96.15%	2.26%	1.59%	1000	1.0
Benzo(a)pyrene	8.08	-2.0615	0.975				1.33			0	0.98	10.75	0.00	0.166	0	0.5	0.5	0.02	0.00	0.89	0.08	0.03	1.00	0.00%	89.21%	8.10%	2.68%	1	1.0
Benzo(a)anthracene	7.26	-2.7078	0.5944				1.59			0	0.22	11.54	0.00	0.166	0	0.5	0.5	0.02	0.00	0.96	0.02	0.02	1.00	0.00%	95.79%	1.80%	2.41%	1	1.0
Benzo(b)fluoranthene	4.08			0.31			2.6			0	1.27	10.62	0.00	0.166	0	0.5	0.5	0.02	0.00	0.88	0.11	0.01	1.00	0.00%	88.14%	10.51%	1.36%	1	1.0
Benzo(ghi)perylene	3.47	-0.9313	1.1829				2.94			0	1.72	10.19	0.00	0.166	0	0.5	0.5	0.02	0.00	0.85	0.14	0.01	1.00	0.00%	84.61%	14.24%	1.15%	1	1.0
Benzo[k]fluoranthene	4.56	-4.6482	0.1668				2.6			0	0.01	11.85	0.00	0.166	0	0.5	0.5	0.02	0.00	0.98	0.00	0.02	1.00	0.00%	98.38%	0.10%	1.51%	1	1.0
Chrysene	5.09	-2.7078	0.5944				2.29			0	0.18	11.67	0.00	0.166	0	0.5	0.5	0.02	0.00	0.97	0.01	0.02	1.00	0.00%	96.85%	1.46%	1.69%	1	1.0
Dibenz(ah)anthracene	4.86			0.13			2.31			0	0.63	11.22	0.00	0.166	0	0.5	0.5	0.02	0.00	0.93	0.05	0.02	1.00	0.00%	93.15%	5.24%	1.61%	1	1.0
Fluoranthene	420.68			0.5			3.04			0	210.34	1278.86	0.00	0.166	0	0.5	0.5	0.02	0.00	106.15	17.46	1.40	125.00	0.00%	84.92%	13.97%	1.12%	125	1.0
Fluorene	156.71	-5.562	-0.8556				9.57			0	0.00	1499.76	0.00	0.166	0	0.5	0.5	0.02	0.00	124.48	0.00	0.52	125.00	0.00%	99.58%	0.00%	0.42%	125	1.0
Indeno[1,2,3-cd]pyrene	4.00			0.11			2.86			0	0.44	11.45	0.00	0.166	0	0.5	0.5	0.02	0.00	0.95	0.04	0.01	1.00	0.00%	95.02%	3.65%	1.33%	1	1.0
2-Methylnaphthalene	5.47	-1.3205	4.544				1.020			0	600.10	5.57	0.00	0.166	0	0.5	0.5	0.02	0.00	0.46	49.81	0.02	50.29	0.00%	0.92%	99.04%	0.04%	50.3	1.0
Naphthalene	36.20			12.2			4.4			0	441.67	159.29	0.00	0.166	0	0.5	0.5	0.02	0.00	13.22	36.66	0.12	50.00	0.00%	26.44%	73.32%	0.24%	50	1.0
Phenanthrene	6731.36	-0.1665	0.6203				1.72			0	200.57	11577.94	0.00	0.166	0	0.5	0.5	0.02	0.00	960.97	16.65	22.35	999.96	0.00%	96.10%	1.66%	2.23%	1000	1.0
Pyrene	360.01			0.72			1.75			0	259.20	630.01	0.00	0.166	0	0.5	0.5	0.02	0.00	52.29	21.51	1.20	75.00	0.00%	69.72%	28.69%	1.59%	75	1.0
Total PAHs	1.00	0.083	0.3015							0	1.09		0.00	0.166	0	0.5	0.5	0.02	0.00	0.00	0.09	0.00	0.09	0.00%	0.00%	96.45%	3.55%		---

Table A-6. Exposure Calculation Worksheet for Determining NOAEL-Based PRGs for Deer Mouse

Analyte	Soil PRG (mg/kg)	Literature-derived Bioaccumulation Models									Estimated Concentrations in Biota (mg/kg DW)			Food Intake Rate	Diet Composition (proportion)				Estimated Exposure (mg/kg/d)					Percent Estimated Exposure by Pathway				Selected Mammalian NOAEL TRV (mg/kg/d)	NOAEL HQ
		Plants			Soil Inverts			Small Mammals																					
		intercept	slope	BAF	intercept	slope	BAF	intercept	slope	BAF	Plants	Soil Invertbrates	Small Mammals	(kg/kg-bw/d, dw)	Small Mammals	Soil Inverts	Plants	Soil	Small Mammals	Soil Inverts	Plants	Soil	Total	Small Mam.	Soil Inverts	Plants	Soil		
Low MW PAHs	19169.51	-1.3205	0.4544							0	23.58		0.00	0.166	0	0.5	0.5	0.02	0.00	0.00	1.96	63.64	65.60	0.00%	0.00%	2.98%	97.02%	65.6	1.0
High MW PAHs	39.00	-1.7026	0.9469							0	5.85		0.00	0.166	0	0.5	0.5	0.02	0.00	0.00	0.49	0.13	0.61	0.00%	0.00%	78.95%	21.05%	0.615	1.0
Gasoline Range Organics																												1000	---
TPH - Diesel	301204.82									0			0.00	0.166	0	0.5	0.5	0.02	0.00	0.00	0.00	1000.00	1000.00	0.00%	0.00%	0.00%	100.00%	1000	1.0
TPH - Kerosene	301204.82									0			0.00	0.166	0	0.5	0.5	0.02	0.00	0.00	0.00	1000.00	1000.00	0.00%	0.00%	0.00%	100.00%	1000	1.0
Normal paraffin hydrocarbons	301204.82									0			0.00	0.166	0	0.5	0.5	0.02	0.00	0.00	0.00	1000.00	1000.00	0.00%	0.00%	0.00%	100.00%	1000	1.0
Phenol	526.11						0.235			0.0064		123.53	3.37	0.166	0	0.5	0.5	0.02	0.00	10.25	0.00	1.75	12.00	0.00%	85.44%	0.00%	14.56%	12	1.0
2-methylphenol (ocresol)	10037.62						0.336			0.0150		3369.58	150.97	0.166	0	0.5	0.5	0.02	0.00	279.68	0.00	33.32	313.00	0.00%	89.35%	0.00%	10.65%	313	1.0
4-methylphenol (pcresol)	10101.66						0.333			0.0141		3367.02	142.71	0.166	0	0.5	0.5	0.02	0.00	279.46	0.00	33.54	313.00	0.00%	89.29%	0.00%	10.71%	313	1.0
2,4-dinitrotoluene	13.46	1.873	-0.3768	0.376			0.184			0.0155	5.06	2.47	0.21	0.166	0	0.5	0.5	0.02	0.00	0.21	0.42	0.04	0.67	0.00%	30.63%	62.70%	6.67%	0.67	1.0
Bis[2-ethylhexyl] phthalate	5.35			0.07			41.144			0.0945	0.35	220.20	0.51	0.166	0	0.5	0.5	0.02	0.00	18.28	0.03	0.02	18.32	0.00%	99.74%	0.16%	0.10%	18.3	1.0
Total PCBs	0.30			0.17	1.41	1.36				0.1792	0.05	0.80	0.05	0.166	0	0.5	0.5	0.02	0.00	0.07	0.00	0.00	0.07	0.00%	92.69%	5.92%	1.40%	0.068	1.0
Aroclor 1016	2.75			0.30	1.41	1.36				0.2104	0.82	16.23	0.58	0.166	0	0.5	0.5	0.02	0.00	1.35	0.07	0.01	1.42	0.00%	94.60%	4.76%	0.64%	1.37	1.0
Aroclor 1221	0.25			0.78	1.41	1.36				0.1883	0.19	0.61	0.05	0.166	0	0.5	0.5	0.02	0.00	0.05	0.02	0.00	0.07	0.00%	75.05%	23.74%	1.21%	0.068	1.0
Aroclor 1232	0.24			0.99	1.41	1.36				0.1704	0.23	0.58	0.04	0.166	0	0.5	0.5	0.02	0.00	0.05	0.02	0.00	0.07	0.00%	70.28%	28.57%	1.15%	0.068	1.0
Aroclor 1242	0.30			0.16	1.41	1.36				0.1756	0.05	0.81	0.05	0.166	0	0.5	0.5	0.02	0.00	0.07	0.00	0.00	0.07	0.00%	92.97%	5.64%	1.39%	0.069	1.0
Aroclor 1248	0.06			0.18	1.41	1.36				0.1855	0.01	0.09	0.01	0.166	0	0.5	0.5	0.02	0.00	0.01	0.00	0.00	0.01	0.00%	86.96%	10.71%	2.32%	0.0087	1.0
Aroclor 1254	0.30			0.14	1.41	1.36				0.1630	0.04	0.80	0.05	0.166	0	0.5	0.5	0.02	0.00	0.07	0.00	0.00	0.07	0.00%	93.68%	4.91%	1.41%	0.068	1.0
Aroclor 1260	0.30			0.05	1.41	1.36				0.0750	0.02	0.80	0.02	0.166	0	0.5	0.5	0.02	0.00	0.07	0.00	0.00	0.07	0.00%	96.65%	1.90%	1.45%	0.068	1.0
Aroclor-1262	20.48													0.166	0	0.5	0.5	0.02	0.00	0.00	0.00	0.07	0.07	0.00%	0.00%	0.00%	100.00%	0.068	1.0
Dichloroprop	1.00													0.166	0	0.5	0.5	0.02	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Aldrin	1.99			0.14			1.033			0.1630	0.28	2.05	0.32	0.166	0	0.5	0.5	0.02	0.00	0.17	0.02	0.01	0.20	0.00%	85.21%	11.49%	3.30%	0.2	1.0
beta-1,2,3,4,5,6-Hexachlorocyclohexane	1.73			1.72			1.021			0.1201	2.98	1.77	0.21	0.166	0	0.5	0.5	0.02	0.00	0.15	0.25	0.01	0.40	0.00%	36.73%	61.83%	1.44%	0.4	1.0
alpha-Chlordane	20.47			0.16			1.031			0.1771	3.37	21.11	3.62	0.166	0	0.5	0.5	0.02	0.00	1.75	0.28	0.07	2.10	0.00%	83.43%	13.33%	3.24%	2.1	1.0
gamma-Chlordane	20.40			0.16			1.036			0.1771	3.36	21.12	3.61	0.166	0	0.5	0.5	0.02	0.00	1.75	0.28	0.07	2.10	0.00%	83.49%	13.29%	3.22%	2.1	1.0
Dichlorodiphenyldichloroethylene	0.11	-2.5119	0.7524		2.4771	0.8804		3.6401	0.641		0.02	1.75	9.44	0.166	0	0.5	0.5	0.02	0.00	0.15	0.00	0.00	0.15	0.00%	98.85%	0.89%	0.26%	0.147	1.0
Dichlorodiphenyltrichloroethane	0.16	-2.5119	0.7524		2.1247	0.8689		1.1788	0.7254		0.02	1.74	0.88	0.166	0	0.5	0.5	0.02	0.00	0.14	0.00	0.00	0.15	0.00%	98.45%	1.18%	0.37%	0.147	1.0
Dieldrin	0.01			0.41			14.70			1.20	0.00	0.18	0.01	0.166	0	0.5	0.5	0.02	0.00	0.01	0.00	0.00	0.01	0.00%	97.03%	2.71%	0.26%	0.015	1.0
Endosulfan I	0.71			1.31			1.184			0.1455	0.93	0.84	0.10	0.166	0	0.5	0.5	0.02	0.00	0.07	0.08	0.00	0.15	0.00%	46.70%	51.72%	1.58%	0.15	1.0
Endosulfan II	0.71			1.31			1.184			0.1455	0.93	0.84	0.10	0.166	0	0.5	0.5	0.02	0.00	0.07	0.08	0.00	0.15	0.00%	46.70%	51.72%	1.58%	0.15	1.0
Endosulfan sulfate	0.56			1.98			1.184			0.1072	1.12	0.67	0.06	0.166	0	0.5	0.5	0.02	0.00	0.06	0.09	0.00	0.15	0.00%	36.98%	61.77%	1.25%	0.15	1.0
Endrin aldehyde	0.14			1.44			6.686			0.1368	0.20	0.91	0.02	0.166	0	0.5	0.5	0.02	0.00	0.08	0.02	0.00	0.09	0.00%	81.88%	17.63%	0.49%	0.092	1.0
Methoxychlor	11.20			0.52			3.739			0.2093	5.88	41.87	2.34	0.166	0	0.5	0.5	0.02	0.00	3.48	0.49	0.04	4.00	0.00%	86.88%	12.19%	0.93%	4	1.0

Notes:
It has been conservatively assumed that all chemical intake is absorbed by the receptor.
1 - When no TRV was available, the PRG is listed as 1 mg/kg based on formulas in the spreadsheet but no actual PRG is recommended.

Acronyms:
BAF = Bioaccumulation factor
DW = Dry weight
FIR = Food ingestion rate
mg/kg = Miligrams per kilogram
mg/kg BW/day, DW = Miligrams per kilogram of body weight per day, dry weight
mg/kg/d = Miligrams per kilogram per day
NOAEL = No observed adverse effect level
PRGs = Preliminary remediation goals
TRV = Toxicity reference value

Equations:
Total Estimated Exposure = Food Intake + Incidental Soil Intake
Food Intake = estimated concentration in biota X proportion of biota type X food ingestion rate (FIR)
Incidental Soil intake = concentration in soil X proportion of soil as component of diet X food ingestion rate (FIR)
Estimated Concentrations in Biota (method 1) = B1*(ln[Site Specific Soil Concentration]) + B0
where: B1 = slope and B0 = intercept
Estimated Concentrations in Biota (method 2) = soil concentration X BAF
Hazard Quotient = Total Estimated Exposure (Dose) / TRV
Therefore, when the HQ = 1, soil concentration = PRG
where: Soil concentration (mg/kg) = TRV / (Food Intake + Incidental Soil Intake) = Soil PRG

Table A-7. Exposure Calculation Worksheet for Determining NOAEL-Based PRGs for Grasshopper Mouse

		Literature-derived Bioaccumulation Models									Estimated Concentrations in Biota (mg/kg DW)			Food Intake Rate	Diet Composition (proportion)				Estimated Exposure (mg/kg/d)					Percent Estimated Exposure by Pathway					
		Plants			Soil Inverts			Small Mammals																					
Analyte	Soil PRG (mg/kg)	intercept	slope	BAF	intercept	slope	BAF	intercept	slope	BAF	Plants	Soil Invertbrates	Small Mammals	(kg/kg-bw/d, dw)	Small Mammals	Soil Inverts	Plants	Soil	Small Mammals	Soil Inverts	Plants	Soil	Total	Small Mam.	Soil Inverts	Plants	Soil	Selected Mammalian NOAEL TRV (mg/kg/d)	NOAEL HQ
Aluminum	380.00			0.00287			0.043			0.0263	1.09	16.34	9.99	0.098	0	1	0	0.009	0.00	1.60	0.00	0.33	1.93	0.00%	82.69%	0.00%	17.31%	1.93	1.0
Antimony	0.60	-3.233	0.938				1			0.001 * 50 * Cdiet	0.02	0.60	0.03	0.098	0	1	0	0.009	0.00	0.06	0.00	0.00	0.06	0.00%	99.11%	0.00%	0.89%	0.059	1.0
Arsenic, Total all valence states	170.75	-1.992	0.564		-1.421	0.706		-4.8471	0.8188		2.48	9.10	0.53	0.098	0	1	0	0.009	0.00	0.89	0.00	0.15	1.04	0.00%	85.55%	0.00%	14.45%	1.04	1.0
Arsenic (III)	170.75	-1.992	0.564		-1.421	0.706		-4.8471	0.8188		2.48	9.10	0.53	0.098	0	1	0	0.009	0.00	0.89	0.00	0.15	1.04	0.00%	85.55%	0.00%	14.45%	1.04	1.0
Arsenic (V)	170.75	-1.992	0.564		-1.421	0.706		-4.8471	0.8188		2.48	9.10	0.53	0.098	0	1	0	0.009	0.00	0.89	0.00	0.15	1.04	0.00%	85.55%	0.00%	14.45%	1.04	1.0
Barium	4605.48			0.156			0.091			0.0168	718.45	419.10	77.37	0.098	0	1	0	0.009	0.00	40.95	0.00	4.05	45.00	0.00%	91.00%	0.00%	9.00%	45	1.0
Beryllium	100.83	-0.5361	0.7345				0.045			0.001 * 50 * Cdiet	17.33	4.54	0.23	0.098	0	1	0	0.009	0.00	0.44	0.00	0.09	0.53	0.00%	83.33%	0.00%	16.67%	0.532	1.0
Bismuth	1.00			0.005			1			1	0.01	1.00	1.00	0.098	0	1	0	0.009	0.00	0.10	0.00	0.00	0.10	0.00%	99.11%	0.00%	0.89%	---	---
Boron	284.01			5.714			1			1	1622.82	284.01	284.01	0.098	0	1	0	0.009	0.00	27.75	0.00	0.25	28.00	0.00%	99.11%	0.00%	0.89%	28	1.0
Cadmium	1.30	-0.476	0.546		2.114	0.795		-1.2571	0.4723		0.72	10.22	0.32	0.098	0	1	0	0.009	0.00	1.00	0.00	0.00	1.00	0.00%	99.89%	0.00%	0.11%	1	1.0
Chromium (total)	77.98			0.041			0.306	-1.4599	0.7338		3.20	23.86	5.68	0.098	0	1	0	0.009	0.00	2.33	0.00	0.07	2.40	0.00%	97.14%	0.00%	2.86%	2.4	1.0
Chromium (+3)	77.98			0.041			0.306	-1.4599	0.7338		3.20	23.86	5.68	0.098	0	1	0	0.009	0.00	2.33	0.00	0.07	2.40	0.00%	97.14%	0.00%	2.86%	2.4	1.0
Chromium (+6)	300.21			0.041			0.306	-1.4599	0.7338		12.31	91.86	15.27	0.098	0	1	0	0.009	0.00	8.98	0.00	0.26	9.24	0.00%	97.14%	0.00%	2.86%	9.24	1.0
Cobalt	250.06			0.00745			0.291	-4.4669	1.307		1.86	72.77	15.64	0.098	0	1	0	0.009	0.00	7.11	0.00	0.22	7.33	0.00%	97.00%	0.00%	3.00%	7.33	1.0
Copper	109.38	0.669	0.394				0.515	2.042	0.1444		12.41	56.33	15.18	0.098	0	1	0	0.009	0.00	5.50	0.00	0.10	5.60	0.00%	98.28%	0.00%	1.72%	5.6	1.0
Lead	153.49	-1.328	0.561		-0.218	0.807		0.0761	0.4422		4.46	46.72	9.99	0.098	0	1	0	0.009	0.00	4.56	0.00	0.13	4.70	0.00%	97.13%	0.00%	2.87%	4.7	1.0
Lithium	1749.15			0.004			0.046			1	7.00	80.46	1749.15	0.098	0	1	0	0.009	0.00	7.86	0.00	1.54	9.40	0.00%	83.64%	0.00%	16.36%	9.4	1.0
Manganese	18430.08			0.0792	-0.809	0.682				0.0205	1459.66	361.20	377.82	0.098	0	1	0	0.009	0.00	35.29	0.00	16.21	51.50	0.00%	68.53%	0.00%	31.47%	51.5	1.0
Mercury (methyl)	0.03	-0.996	0.544		0.0781	0.3369				0.054	0.05	0.33	0.00	0.098	0	1	0	0.009	0.00	0.03	0.00	0.00	0.03	0.00%	99.92%	0.00%	0.08%	0.032	1.0
Mercury (inorganic)	1.00	-0.996	0.544		0.0781	0.3369				0.054	0.37	1.08	0.05	0.098	0	1	0	0.009	0.00	0.11	0.00	0.00	0.11	0.00%	99.17%	0.00%	0.83%		
Molybdenum	2.77			1.2504			0.953			1	3.46	2.64	2.77	0.098	0	1	0	0.009	0.00	0.26	0.00	0.00	0.26	0.00%	99.06%	0.00%	0.94%	--- 0.26	--- 1.0
Nickel	16.29	-2.224	0.748				1.059	-0.2462	0.4658		0.87	17.25	2.87	0.098	0	1	0	0.009	0.00	1.69	0.00	0.01	1.70	0.00%	99.16%	0.00%	0.84%	1.7	1.0
Selenium	1.83	-0.678	1.104		-0.075	0.733		-0.4158	0.3764		0.99	1.45	0.83	0.098	0	1	0	0.009	0.00	0.14	0.00	0.00	0.14	0.00%	98.87%	0.00%	1.13%	0.143	1.0
Silver	30.00			0.014			2.045			0.0040	0.42	61.34	0.12	0.098	0	1	0	0.009	0.00	5.99	0.00	0.03	6.02	0.00%	99.56%	0.00%	0.44%	6.02	1.0
Strontium	6476.09			0.207			0.4066			1.74	1339.33	2633.36	11269.90	0.098	0	1	0	0.009	0.00	257.31	0.00	5.69	263.00	0.00%	97.83%	0.00%	2.17%	263	1.0
Thallium	2.43			0.004			0.0541			0.1124	0.01	0.13	0.27	0.098	0	1	0	0.009	0.00	0.01	0.00	0.00	0.02	0.00%	85.74%	0.00%	14.26%	0.015	1.0
Tin	2690.84			1			0.08			0.08	2690.84	215.27	215.27	0.098	0	1	0	0.009	0.00	21.03	0.00	2.37	23.40	0.00%	89.89%	0.00%	10.11%	23.4	1.0
Uranium	68.23			0.021			0.033			0.0002	1.43	2.25	0.01	0.098	0	1	0	0.009	0.00	0.22	0.00	0.06	0.28	0.00%	78.57%	0.00%	21.43%	0.28	1.0
Vanadium	834.81			0.00485			0.042			0.0123	4.05	35.06	10.27	0.098	0	1	0	0.009	0.00	3.43	0.00	0.73	4.16	0.00%	82.35%	0.00%	17.65%	4.16	1.0
Zinc	794.24	1.575	0.555		4.449	0.328		4.3632	0.0706		196.56	764.47	125.79	0.098	0	1	0	0.009	0.00	74.70	0.00	0.70	75.39	0.00%	99.07%	0.00%	0.93%	75.4	1.0
Ammonia/Ammonium	1.00													0.098	0	1	0	0.009	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Chloride	1.00													0.098	0	1	0	0.009	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Cyanide	78122.51													0.098	0	1	0	0.009	0.00	0.00	0.00	68.70	68.70	0.00%	0.00%	0.00%	100.00%	68.7	1.0
Fluoride	35672.53			0.006							214.04			0.098	0	1	0	0.009	0.00	0.00	0.00	31.37	31.37	0.00%	0.00%	0.00%	100.00%	31.37	1.0
Iodine	1557.90			0.05							77.90			0.098	0	1	0	0.009	0.00	0.00	0.00	1.37	1.37	0.00%	0.00%	0.00%	100.00%	1.37	1.0
Nitrate/Nitrite	576537.26													0.098	0	1	0	0.009	0.00	0.00	0.00	507.00	507.00	0.00%	0.00%	0.00%	100.00%	507	1.0
Phosphate	1.00													0.098	0	1	0	0.009	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Sulfate/Sulfite	1.00													0.098	0	1	0	0.009	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Total Organic Carbon	1.00													0.098	0	1	0	0.009	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
1,1-dichloroethane	502.38						1.010			0.0109		507.20	5.48	0.098	0	1	0	0.009	0.00	49.56	0.00	0.44	50.00	0.00%	99.12%	0.00%	0.88%	50	1.0
1,1-dichloroethene	300.94						1.011			0.0186		304.32	5.60	0.098	0	1	0	0.009	0.00	29.74	0.00	0.26	30.00	0.00%	99.12%	0.00%	0.88%	30	1.0
1,1,1-trichloroethane	10015.86						1.013			0.0305		10144.25	305.77	0.098	0	1	0	0.009	0.00	991.19	0.00	8.81	1000.00	0.00%	99.12%	0.00%	0.88%	1000	1.0
1,1,2-trichloroethane	10041.41						1.010			0.0165		10144.02	165.67	0.098	0	1	0	0.009	0.00	991.17	0.00	8.83	1000.00	0.00%	99.12%	0.00%	0.88%	1000	1.0

Table A-7. Exposure Calculation Worksheet for Determining NOAEL-Based PRGs for Grasshopper Mouse

		Literature-derived Bioaccumulation Models									Estimated Concentrations in Biota (mg/kg DW)			Food Intake Rate	Diet Composition (proportion)				Estimated Exposure (mg/kg/d)					Percent Estimated Exposure by Pathway					
		Plants			Soil Inverts			Small Mammals																					
Analyte	Soil PRG (mg/kg)	intercept	slope	BAF	intercept	slope	BAF	intercept	slope	BAF	Plants	Soil Invertbrates	Small Mammals	(kg/kg-bw/d, dw)	Small Mammals	Soil Inverts	Plants	Soil	Small Mammals	Soil Inverts	Plants	Soil	Total	Small Mam.	Soil Inverts	Plants	Soil	Selected Mammalian NOAEL TRV (mg/kg/d)	NOAEL HQ
1,1,2,2-tetrachloroethane	89.43						1.013			0.0270		90.59	2.42	0.098	0	1	0	0.009	0.00	8.85	0.00	0.08	8.93	0.00%	99.12%	0.00%	0.88%	8.93	1.0
1,2-dichlorobenzene	854.29			2.45			1.018			0.0882	2094.38	869.40	75.33	0.098	0	1	0	0.009	0.00	84.95	0.00	0.75	85.70	0.00%	99.12%	0.00%	0.88%	85.7	1.0
1,2-dichloroethane (DCA)	513.07						0.988			0.0063		507.10	3.23	0.098	0	1	0	0.009	0.00	49.55	0.00	0.45	50.00	0.00%	99.10%	0.00%	0.90%	50	1.0
1,3-dichlorobenzene	853.99			2.23			1.018			0.0963	1906.92	869.40	82.21	0.098	0	1	0	0.009	0.00	84.95	0.00	0.75	85.70	0.00%	99.12%	0.00%	0.88%	85.7	1.0
2-butanone (Methyl Ethyl Ketone/MEK)	176661.35						0.094			0.0006		16535.15	97.52	0.098	0	1	0	0.009	0.00	1615.65	0.00	155.35	1771.00	0.00%	91.23%	0.00%	8.77%	1771	1.0
2-hexanone	236.58						0.207			0.0053		49.04	1.26	0.098	0	1	0	0.009	0.00	4.79	0.00	0.21	5.00	0.00%	95.84%	0.00%	4.16%	5	1.0
Benzene	7.02						1.011			0.0186		7.10	0.13	0.098	0	1	0	0.009	0.00	0.69	0.00	0.01	0.70	0.00%	99.12%	0.00%	0.88%	0.7	1.0
Butanol	2625.73						0.478			0.0017		1255.67	4.49	0.098	0	1	0	0.009	0.00	122.69	0.00	2.31	125.00	0.00%	98.15%	0.00%	1.85%	125	1.0
Carbon Tetrachloride	159.96						1.015			0.0420		162.31	6.72	0.098	0	1	0	0.009	0.00	15.86	0.00	0.14	16.00	0.00%	99.12%	0.00%	0.88%	16	1.0
Chlorobenzene	194.96						1.015			0.0490		197.82	9.56	0.098	0	1	0	0.009	0.00	19.33	0.00	0.17	19.50	0.00%	99.12%	0.00%	0.88%	19.5	1.0
Chloroform	150.58						1.011			0.0135		152.16	2.03	0.098	0	1	0	0.009	0.00	14.87	0.00	0.13	15.00	0.00%	99.12%	0.00%	0.88%	15	1.0
Cis-1,2-dichloroethylene	453.49						1.011			0.0122		458.51	5.55	0.098	0	1	0	0.009	0.00	44.80	0.00	0.40	45.20	0.00%	99.12%	0.00%	0.88%	45.2	1.0
Dichloromethane (Methylene Chloride)	58.94						1.007			0.0042		59.34	0.25	0.098	0	1	0	0.009	0.00	5.80	0.00	0.05	5.85	0.00%	99.11%	0.00%	0.89%	5.85	1.0
Ethyl Benzene	1357.66			3.21			1.016			0.0666	4364.07	1379.66	90.47	0.098	0	1	0	0.009	0.00	134.81	0.00	1.19	136.00	0.00%	99.12%	0.00%	0.88%	136	1.0
Methyl Isobutyl Ketone	87995.70						0.197			0.0037		17333.14	329.28	0.098	0	1	0	0.009	0.00	1693.62	0.00	77.38	1771.00	0.00%	95.63%	0.00%	4.37%	1771	1.0
n-butyl Benzene	1091.54			1.67			1.022			0.1227	1824.53	1115.96	133.98	0.098	0	1	0	0.009	0.00	109.04	0.00	0.96	110.00	0.00%	99.13%	0.00%	0.87%	110	1.0
Tetrachloroethylene	13.96						1.018			0.0390		14.20	0.54	0.098	0	1	0	0.009	0.00	1.39	0.00	0.01	1.40	0.00%	99.12%	0.00%	0.88%	1.4	1.0
Toluene	520.19						1.014			0.0430		527.51	22.39	0.098	0	1	0	0.009	0.00	51.54	0.00	0.46	52.00	0.00%	99.12%	0.00%	0.88%	52	1.0
Trans-1,2-dichloroethylene	453.49						1.011			0.0170		458.51	7.71	0.098	0	1	0	0.009	0.00	44.80	0.00	0.40	45.20	0.00%	99.12%	0.00%	0.88%	45.2	1.0
Trichloroethylene (TCE)	7.01						1.012			0.0410		7.10	0.29	0.098	0	1	0	0.009	0.00	0.69	0.00	0.01	0.70	0.00%	99.12%	0.00%	0.88%	0.7	1.0
Xylene	1787.19			3.43			1.016			0.0619	6132.97	1815.87	110.66	0.098	0	1	0	0.009	0.00	177.43	0.00	1.57	179.00	0.00%	99.12%	0.00%	0.88%	179	1.0
Acenaphthene	1210.97	-5.562	-0.8556				1.470			0	0.00	1780.12	0.00	0.098	0	1	0	0.009	0.00	173.94	0.00	1.06	175.00	0.00%	99.39%	0.00%	0.61%	175	1.0
Acenaphthylene	77.90	-1.144	0.791				22.9			0	9.99	1784.01	0.00	0.098	0	1	0	0.009	0.00	174.31	0.00	0.07	174.38	0.00%	99.96%	0.00%	0.04%	175	1.0
Anthracene	4213.42	-0.9887	0.7784				2.42			0	246.62	10196.47	0.00	0.098	0	1	0	0.009	0.00	996.29	0.00	3.71	1000.00	0.00%	99.63%	0.00%	0.37%	1000	1.0
Benzo(a)pyrene	7.64	-2.0615	0.975				1.33			0	0.92	10.17	0.00	0.098	0	1	0	0.009	0.00	0.99	0.00	0.01	1.00	0.00%	99.33%	0.00%	0.67%	1	1.0
Benzo(a)anthracene	6.40	-2.7078	0.5944				1.59			0	0.20	10.18	0.00	0.098	0	1	0	0.009	0.00	0.99	0.00	0.01	1.00	0.00%	99.44%	0.00%	0.56%	1	1.0
Benzo(b)fluoranthene	3.92			0.31			2.6			0	1.22	10.20	0.00	0.098	0	1	0	0.009	0.00	1.00	0.00	0.00	1.00	0.00%	99.66%	0.00%	0.34%	1	1.0
Benzo(ghi)perylene	3.47	-0.9313	1.1829				2.94			0	1.72	10.20	0.00	0.098	0	1	0	0.009	0.00	1.00	0.00	0.00	1.00	0.00%	99.69%	0.00%	0.31%	1	1.0
Benzo[k]fluoranthene	3.92	-4.6482	0.1668				2.6			0	0.01	10.20	0.00	0.098	0	1	0	0.009	0.00	1.00	0.00	0.00	1.00	0.00%	99.66%	0.00%	0.34%	1	1.0
Chrysene	4.45	-2.7078	0.5944				2.29			0	0.16	10.19	0.00	0.098	0	1	0	0.009	0.00	1.00	0.00	0.00	1.00	0.00%	99.61%	0.00%	0.39%	1	1.0
Dibenz(ah)anthracene	4.41			0.13			2.31			0	0.57	10.19	0.00	0.098	0	1	0	0.009	0.00	1.00	0.00	0.00	1.00	0.00%	99.61%	0.00%	0.39%	1	1.0
Fluoranthene	419.58			0.5			3.04			0	209.79	1275.52	0.00	0.098	0	1	0	0.009	0.00	124.63	0.00	0.37	125.00	0.00%	99.70%	0.00%	0.30%	125	1.0
Fluorene	133.55	-5.562	-0.8556				9.57			0	0.00	1278.10	0.00	0.098	0	1	0	0.009	0.00	124.88	0.00	0.12	125.00	0.00%	99.91%	0.00%	0.09%	125	1.0
Indeno[1,2,3-cd]pyrene	3.57			0.11			2.86			0	0.39	10.20	0.00	0.098	0	1	0	0.009	0.00	1.00	0.00	0.00	1.00	0.00%	99.69%	0.00%	0.31%	1	1.0
2-Methylnaphthalene	500.36	-1.3205	4.544				1.020			0	492088262936.27	510.29	0.00	0.098	0	1	0	0.009	0.00	49.86	0.00	0.44	50.30	0.00%	99.13%	0.00%	0.87%	50.3	1.0
Naphthalene	116.06			12.2			4.4			0	1415.96	510.67	0.00	0.098	0	1	0	0.009	0.00	49.90	0.00	0.10	50.00	0.00%	99.80%	0.00%	0.20%	50	1.0
Phenanthrene	5919.25	-0.1665	0.6203				1.72			0	185.19	10181.12	0.00	0.098	0	1	0	0.009	0.00	994.79	0.00	5.21	1000.00	0.00%	99.48%	0.00%	0.52%	1000	1.0
Pyrene	436.37			0.72			1.75			0	314.19	763.65	0.00	0.098	0	1	0	0.009	0.00	74.62	0.00	0.38	75.00	0.00%	99.49%	0.00%	0.51%	75	1.0
Total PAHs	1.00	0.083	0.3015							0	1.09		0.00	0.098	0	1	0	0.009	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%		---
Low MW PAHs	74597.33	-1.3205	0.4544							0	43.72		0.00	0.098	0	1	0	0.009	0.00	0.00	0.00	65.60	65.60	0.00%	0.00%	0.00%	100.00%	65.6	1.0
High MW PAHs	699.35	-1.7026	0.9469							0	89.99		0.00	0.098	0	1	0	0.009	0.00	0.00	0.00	0.62	0.62	0.00%	0.00%	0.00%	100.00%	0.615	1.0
Gasoline Range Organics																		0.009										1000	---
TPH - Diesel	1137154.37									0			0.00	0.098	0	1	0	0.009	0.00	0.00	0.00	1000.00	1000.00	0.00%	0.00%	0.00%	100.00%	1000	1.0

Table A-7. Exposure Calculation Worksheet for Determining NOAEL-Based PRGs for Grasshopper Mouse

		Literature-derived Bioaccumulation Models									Estimated Concentrations in Biota (mg/kg DW)			Food Intake Rate	Diet Composition (proportion)				Estimated Exposure (mg/kg/d)					Percent Estimated Exposure by Pathway					
		Plants			Soil Inverts			Small Mammals																					
Analyte	Soil PRG (mg/kg)	intercept	slope	BAF	intercept	slope	BAF	intercept	slope	BAF	Plants	Soil Invertbrates	Small Mammals	(kg/kg-bw/d, dw)	Small Mammals	Soil Inverts	Plants	Soil	Small Mammals	Soil Inverts	Plants	Soil	Total	Small Mam.	Soil Inverts	Plants	Soil	Selected Mammalian NOAEL TRV (mg/kg/d)	NOAEL HQ
TPH - Kerosene	1137154.37									0			0.00	0.098	0	1	0	0.009	0.00	0.00	0.00	1000.00	1000.00	0.00%	0.00%	0.00%	100.00%	1000	1.0
Normal paraffin hydrocarbons	1137154.37									0			0.00	0.098	0	1	0	0.009	0.00	0.00	0.00	1000.00	1000.00	0.00%	0.00%	0.00%	100.00%	1000	1.0
Phenol	503.73						0.235			0.0064		118.28	3.23	0.098	0	1	0	0.009	0.00	11.56	0.00	0.44	12.00	0.00%	96.31%	0.00%	3.69%	12	1.0
2-methylphenol (ocresol)	9293.33						0.336			0.0150		3119.72	139.77	0.098	0	1	0	0.009	0.00	304.83	0.00	8.17	313.00	0.00%	97.39%	0.00%	2.61%	313	1.0
4-methylphenol (pcresol)	9357.99						0.333			0.0141		3119.14	132.20	0.098	0	1	0	0.009	0.00	304.77	0.00	8.23	313.00	0.00%	97.37%	0.00%	2.63%	313	1.0
2,4-dinitrotoluene	35.58	1.873	-0.3768	0.376			0.184			0.0155	13.38	6.54	0.55	0.098	0	1	0	0.009	0.00	0.64	0.00	0.03	0.67	0.00%	95.33%	0.00%	4.67%	0.67	1.0
Bis[2-ethylhexyl] phthalate	4.55			0.07			41.144			0.0945	0.30	187.25	0.43	0.098	0	1	0	0.009	0.00	18.30	0.00	0.00	18.30	0.00%	99.98%	0.00%	0.02%	18.3	1.0
Total PCBs	0.27			0.17	1.41	1.36				0.1792	0.05	0.69	0.05	0.098	0	1	0	0.009	0.00	0.07	0.00	0.00	0.07	0.00%	99.65%	0.00%	0.35%	0.068	1.0
Aroclor 1016	2.47			0.30	1.41	1.36				0.2104	0.73	13.99	0.52	0.098	0	1	0	0.009	0.00	1.37	0.00	0.00	1.37	0.00%	99.84%	0.00%	0.16%	1.37	1.0
Aroclor 1221	0.27			0.78	1.41	1.36				0.1883	0.21	0.69	0.05	0.098	0	1	0	0.009	0.00	0.07	0.00	0.00	0.07	0.00%	99.65%	0.00%	0.35%	0.068	1.0
Aroclor 1232	0.27			0.99	1.41	1.36				0.1704	0.27	0.69	0.05	0.098	0	1	0	0.009	0.00	0.07	0.00	0.00	0.07	0.00%	99.65%	0.00%	0.35%	0.068	1.0
Aroclor 1242	0.27			0.16	1.41	1.36				0.1756	0.04	0.70	0.05	0.098	0	1	0	0.009	0.00	0.07	0.00	0.00	0.07	0.00%	99.65%	0.00%	0.35%	0.069	1.0
Aroclor 1248	0.06			0.18	1.41	1.36				0.1855	0.01	0.09	0.01	0.098	0	1	0	0.009	0.00	0.01	0.00	0.00	0.01	0.00%	99.40%	0.00%	0.60%	0.0087	1.0
Aroclor 1254	0.27			0.14	1.41	1.36				0.1630	0.04	0.69	0.04	0.098	0	1	0	0.009	0.00	0.07	0.00	0.00	0.07	0.00%	99.65%	0.00%	0.35%	0.068	1.0
Aroclor 1260	0.27			0.05	1.41	1.36				0.0750	0.01	0.69	0.02	0.098	0	1	0	0.009	0.00	0.07	0.00	0.00	0.07	0.00%	99.65%	0.00%	0.35%	0.068	1.0
Aroclor-1262	77.33													0.098	0	1	0	0.009	0.00	0.00	0.00	0.07	0.07	0.00%	0.00%	0.00%	100.00%	0.068	1.0
Dichloroprop	1.00													0.098	0	1	0	0.009	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Aldrin	1.96			0.14			1.033			0.1630	0.27	2.03	0.32	0.098	0	1	0	0.009	0.00	0.20	0.00	0.00	0.20	0.00%	99.14%	0.00%	0.86%	0.2	1.0
beta-1,2,3,4,5,6-Hexachlorocyclohexane	3.97			1.72			1.021			0.1201	6.83	4.06	0.48	0.098	0	1	0	0.009	0.00	0.40	0.00	0.00	0.40	0.00%	99.13%	0.00%	0.87%	0.4	1.0
alpha-Chlordane	20.66			0.16			1.031			0.1771	3.40	21.31	3.66	0.098	0	1	0	0.009	0.00	2.08	0.00	0.02	2.10	0.00%	99.14%	0.00%	0.86%	2.1	1.0
gamma-Chlordane	20.57			0.16			1.036			0.1771	3.39	21.31	3.64	0.098	0	1	0	0.009	0.00	2.08	0.00	0.02	2.10	0.00%	99.14%	0.00%	0.86%	2.1	1.0
Dichlorodiphenyldichloroethylene	0.09	-2.5119	0.7524		2.4771	0.8804		3.6401	0.641		0.01	1.50	8.42	0.098	0	1	0	0.009	0.00	0.15	0.00	0.00	0.15	0.00%	99.94%	0.00%	0.06%	0.147	1.0
Dichlorodiphenyltrichloroethane	0.14	-2.5119	0.7524		2.1247	0.8689		1.1788	0.7254		0.02	1.50	0.78	0.098	0	1	0	0.009	0.00	0.15	0.00	0.00	0.15	0.00%	99.92%	0.00%	0.08%	0.147	1.0
Dieldrin	0.01			0.41			14.70			1.20	0.00	0.15	0.01	0.098	0	1	0	0.009	0.00	0.01	0.00	0.00	0.02	0.00%	99.94%	0.00%	0.06%	0.015	1.0
Endosulfan I	1.29			1.31			1.184			0.1455	1.69	1.52	0.19	0.098	0	1	0	0.009	0.00	0.15	0.00	0.00	0.15	0.00%	99.25%	0.00%	0.75%	0.15	1.0
Endosulfan II	1.29			1.31			1.184			0.1455	1.69	1.52	0.19	0.098	0	1	0	0.009	0.00	0.15	0.00	0.00	0.15	0.00%	99.25%	0.00%	0.75%	0.15	1.0
Endosulfan sulfate	1.29			1.98			1.184			0.1072	2.55	1.52	0.14	0.098	0	1	0	0.009	0.00	0.15	0.00	0.00	0.15	0.00%	99.25%	0.00%	0.75%	0.15	1.0
Endrin aldehyde	0.14			1.44			6.686			0.1368	0.20	0.94	0.02	0.098	0	1	0	0.009	0.00	0.09	0.00	0.00	0.09	0.00%	99.87%	0.00%	0.13%	0.092	1.0
Methoxychlor	10.92			0.52			3.739			0.2093	5.73	40.84	2.29	0.098	0	1	0	0.009	0.00	3.99	0.00	0.01	4.00	0.00%	99.76%	0.00%	0.24%	4	1.0

Notes:
It has been conservatively assumed that all chemical intake is absorbed by the receptor.
1 - When no TRV was available, the PRG is listed as 1 mg/kg based on formulas in the spreadsheet but no actual PRG is recommended.

Acronyms:
BAF = Bioaccumulation factor
DW = Dry weight
FIR = Food ingestion rate
mg/kg = Miligrams per kilogram
mg/kg BW/day, DW = Miligrams per kilogram of body weight per day, dry weight
mg/kg/d = Miligrams per kilogram per day
NOAEL = No observed adverse effect level
PRGs = Preliminary remediation goals
TRV = Toxicity reference value

Equations:
Total Estimated Exposure = Food Intake + Incidental Soil Intake
Food Intake = estimated concentration in biota X proportion of biota type X food ingestion rate (FIR)
Incidental Soil intake = concentration in soil X proportion of soil as component of diet X food ingestion rate (FIR)
Estimated Concentrations in Biota (method 1) = B1*(ln[Site Specific Soil Concentration]) + B0
where: B1 = slope and B0 = intercept
Estimated Concentrations in Biota (method 2) = soil concentration X BAF
Hazard Quotient = Total Estimated Exposure (Dose) / TRV
Therefore, when the HQ = 1, soil concentration = PRG
where: Soil concentration (mg/kg) = TRV / (Food Intake + Incidental Soil Intake) = Soil PRG

Table A-8. Exposure Calculation Worksheet for Determining NOAEL-Based PRGs for Badger

Analyte	Soil (mg/kg)	Literature-derived Bioaccumulation Models									Estimated Concentrations in Biota (mg/kg DW)			Food Intake Rate	Diet Composition (proportion)				Estimated Exposure (mg/kg/d)					Percent Estimated Exposure by Pathway				Selected Mammalian NOAEL TRV (mg/kg/d)	NOAEL HQ
		Plants			Soil Inverts			Small Mammals																					
		intercept	slope	BAF	intercept	slope	BAF	intercept	slope	BAF	Plants	Soil Invertbrates	Small Mammals	(kg/kg-bw/d, dw)	Small Mammals	Soil Inverts	Plants	Soil	Small Mammals	Soil Inverts	Plants	Soil	Total	Small Mam.	Soil Inverts	Plants	Soil		
Aluminum	710.10			0.00287			0.043			0.0263	2.04	30.53	18.68	0.035	1	0	0	0.052	0.65	0.00	0.00	1.28	1.93	33.59%	0.00%	0.00%	66.41%	1.93	1.0
Antimony	16.66	-3.233	0.938				1			0.001 * 50 * Cdiet	0.55	16.66	0.83	0.035	1	0	0	0.052	0.03	0.00	0.00	0.03	0.06	49.02%	0.00%	0.00%	50.98%	0.059	1.0
Arsenic, Total all valence states	549.25	-1.992	0.564		-1.421	0.706		-4.8471	0.8188		4.79	20.76	1.37	0.035	1	0	0	0.052	0.05	0.00	0.00	0.99	1.04	4.59%	0.00%	0.00%	95.41%	1.04	1.0
Arsenic (III)	549.25	-1.992	0.564		-1.421	0.706		-4.8471	0.8188		4.79	20.76	1.37	0.035	1	0	0	0.052	0.05	0.00	0.00	0.99	1.04	4.59%	0.00%	0.00%	95.41%	1.04	1.0
Arsenic (V)	549.25	-1.992	0.564		-1.421	0.706		-4.8471	0.8188		4.79	20.76	1.37	0.035	1	0	0	0.052	0.05	0.00	0.00	0.99	1.04	4.59%	0.00%	0.00%	95.41%	1.04	1.0
Barium	18842.90			0.156			0.091			0.0168	2939.49	1714.70	316.56	0.035	1	0	0	0.052	10.99	0.00	0.00	34.01	45.00	24.42%	0.00%	0.00%	75.58%	45	1.0
Beryllium	282.51	-0.5361	0.7345				0.045			0.001 * 50 * Cdiet	36.94	12.71	0.64	0.035	1	0	0	0.052	0.02	0.00	0.00	0.51	0.53	4.15%	0.00%	0.00%	95.85%	0.532	1.0
Bismuth	1.00			0.005			1			1	0.01	1.00	1.00	0.035	1	0	0	0.052	0.03	0.00	0.00	0.00	0.04	95.06%	0.00%	0.00%	4.94%	---	---
Boron	766.77			5.714			1			1	4381.33	766.77	766.77	0.035	1	0	0	0.052	26.62	0.00	0.00	1.38	28.00	95.06%	0.00%	0.00%	4.94%	28	1.0
Cadmium	455.47	-0.476	0.546		2.114	0.795		-1.2571	0.4723		17.57	1075.40	5.12	0.035	1	0	0	0.052	0.18	0.00	0.00	0.82	1.00	17.79%	0.00%	0.00%	82.21%	1	1.0
Chromium (total)	752.34			0.041			0.306	-1.4599	0.7338		30.85	230.22	29.97	0.035	1	0	0	0.052	1.04	0.00	0.00	1.36	2.40	43.38%	0.00%	0.00%	56.62%	2.4	1.0
Chromium (+3)	752.34			0.041			0.306	-1.4599	0.7338		30.85	230.22	29.97	0.035	1	0	0	0.052	1.04	0.00	0.00	1.36	2.40	43.38%	0.00%	0.00%	56.62%	2.4	1.0
Chromium (+6)	3379.86			0.041			0.306	-1.4599	0.7338		138.57	1034.24	90.26	0.035	1	0	0	0.052	3.13	0.00	0.00	6.10	9.23	33.93%	0.00%	0.00%	66.07%	9.24	1.0
Cobalt	1346.06			0.00745			0.291	-4.4669	1.307		10.03	391.70	141.17	0.035	1	0	0	0.052	4.90	0.00	0.00	2.43	7.33	66.85%	0.00%	0.00%	33.15%	7.33	1.0
Copper	2640.09	0.669	0.394				0.515	2.042	0.1444		43.52	1359.65	24.04	0.035	1	0	0	0.052	0.83	0.00	0.00	4.77	5.60	14.90%	0.00%	0.00%	85.10%	5.6	1.0
Lead	2005.03	-1.328	0.561		-0.218	0.807		0.0761	0.4422		18.87	371.65	31.13	0.035	1	0	0	0.052	1.08	0.00	0.00	3.62	4.70	23.00%	0.00%	0.00%	77.00%	4.7	1.0
Lithium	257.42			0.004			0.046			1	1.03	11.84	257.42	0.035	1	0	0	0.052	8.94	0.00	0.00	0.46	9.40	95.06%	0.00%	0.00%	4.94%	9.4	1.0
Manganese	20464.11			0.0792	-0.809	0.682				0.0205	1620.76	387.93	419.51	0.035	1	0	0	0.052	14.56	0.00	0.00	36.94	51.50	28.28%	0.00%	0.00%	71.72%	51.5	1.0
Mercury (methyl)	8.67	-0.996	0.544		0.0781	0.3369				0.054	1.20	2.24	0.47	0.035	1	0	0	0.052	0.02	0.00	0.00	0.02	0.03	51.08%	0.00%	0.00%	48.92%	0.032	1.0
Mercury (inorganic)	1.00	-0.996	0.544		0.0781	0.3369				0.054	0.37	1.08	0.05	0.035	1	0	0	0.052	0.00	0.00	0.00	0.00	0.00	51.08%	0.00%	0.00%	48.92%	---	---
Molybdenum	7.12			1.2504			0.953			1	8.90	6.79	7.12	0.035	1	0	0	0.052	0.25	0.00	0.00	0.01	0.26	95.06%	0.00%	0.00%	4.94%	0.26	1.0
Nickel	637.16	-2.224	0.748				1.059	-0.2462	0.4658		13.54	674.75	15.82	0.035	1	0	0	0.052	0.55	0.00	0.00	1.15	1.70	32.32%	0.00%	0.00%	67.68%	1.7	1.0
Selenium	32.28	-0.678	1.104		-0.075	0.733		-0.4158	0.3764		23.52	11.84	2.44	0.035	1	0	0	0.052	0.08	0.00	0.00	0.06	0.14	59.24%	0.00%	0.00%	40.76%	0.143	1.0
Silver	3096.93			0.014			2.045			0.0040	43.36	6333.23	12.39	0.035	1	0	0	0.052	0.43	0.00	0.00	5.59	6.02	7.14%	0.00%	0.00%	92.86%	6.02	1.0
Strontium	4227.51			0.207			0.4066			1.74	874.30	1719.03	7356.86	0.035	1	0	0	0.052	255.37	0.00	0.00	7.63	263.00	97.10%	0.00%	0.00%	2.90%	263	1.0
Thallium	2.63			0.004			0.0541			0.1124	0.01	0.14	0.30	0.035	1	0	0	0.052	0.01	0.00	0.00	0.00	0.02	68.37%	0.00%	0.00%	31.63%	0.015	1.0
Tin	5107.00			1			0.08			0.08	5107.00	408.56	408.56	0.035	1	0	0	0.052	14.18	0.00	0.00	9.22	23.40	60.61%	0.00%	0.00%	39.39%	23.4	1.0
Uranium	154.53			0.021			0.033			0.0002	3.25	5.10	0.03	0.035	1	0	0	0.052	0.00	0.00	0.00	0.28	0.28	0.38%	0.00%	0.00%	99.62%	0.28	1.0
Vanadium	1863.83			0.00485			0.042			0.0123	9.04	78.28	22.93	0.035	1	0	0	0.052	0.80	0.00	0.00	3.36	4.16	19.13%	0.00%	0.00%	80.87%	4.16	1.0
Zinc	38590.44	1.575	0.555		4.449	0.328		4.3632	0.0706		1696.33	2732.38	165.47	0.035	1	0	0	0.052	5.74	0.00	0.00	69.66	75.40	7.62%	0.00%	0.00%	92.38%	75.4	1.0
Ammonia/Ammonium	1.00													0.035	1	0	0	0.052	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Chloride	1.00													0.035	1	0	0	0.052	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Cyanide	38060.72			0.006										0.035	1	0	0	0.052	0.00	0.00	0.00	68.70	68.70	0.00%	0.00%	0.00%	100.00%	68.7	1.0
Fluoride	17379.40			0.05							104.28			0.035	1	0	0	0.052	0.00	0.00	0.00	31.37	31.37	0.00%	0.00%	0.00%	100.00%	31.37	1.0
Iodine	759.00										37.95			0.035	1	0	0	0.052	0.00	0.00	0.00	1.37	1.37	0.00%	0.00%	0.00%	100.00%	1.37	1.0
Nitrate/Nitrite	280884.80													0.035	1	0	0	0.052	0.00	0.00	0.00	507.00	507.00	0.00%	0.00%	0.00%	100.00%	507	1.0
Phosphate	1.00													0.035	1	0	0	0.052	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Sulfate/Sulfite	1.00													0.035	1	0	0	0.052	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Total Organic Carbon	1.00													0.035	1	0	0	0.052	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
1,1-dichloroethane	22894.29						1.010			0.0109		23113.87	249.93	0.035	1	0	0	0.052	8.68	0.00	0.00	41.32	50.00	17.35%	0.00%	0.00%	82.65%	50	1.0
1,1-dichloroethene	12238.43						1.011			0.0186		12375.85	227.86	0.035	1	0	0	0.052	7.91	0.00	0.00	22.09	30.00	26.37%	0.00%	0.00%	73.63%	30	1.0
1,1,1-trichloroethane	349074.28						1.013			0.0305		353548.73	10656.84	0.035	1	0	0	0.052	369.92	0.00	0.00	630.08	1000.00	36.99%	0.00%	0.00%	63.01%	1000	1.0
1,1,2-trichloroethane	420572.26						1.010			0.0165		424869.82	6938.94	0.035	1	0	0	0.052	240.86	0.00	0.00	759.14	1000.00	24.09%	0.00%	0.00%	75.91%	1000	1.0
1,1,2,2-tetrachloroethane	3255.35						1.013			0.0270		3297.46	87.98	0.035	1	0	0	0.052	3.05	0.00	0.00	5.88	8.93	34.20%	0.00%	0.00%	65.80%	8.93	1.0

Table A-8. Exposure Calculation Worksheet for Determining NOAEL-Based PRGs for Badger

Analyte	Soil (mg/kg)	Literature-derived Bioaccumulation Models									Estimated Concentrations in Biota (mg/kg DW)			Food Intake Rate	Diet Composition (proportion)				Estimated Exposure (mg/kg/d)					Percent Estimated Exposure by Pathway				Selected Mammalian NOAEL TRV (mg/kg/d)	NOAEL HQ
		Plants			Soil Inverts			Small Mammals																					
		intercept	slope	BAF	intercept	slope	BAF	intercept	slope	BAF	Plants	Soil Invertbrates	Small Mammals	(kg/kg-bw/d, dw)	Small Mammals	Soil Inverts	Plants	Soil	Small Mammals	Soil Inverts	Plants	Soil	Total	Small Mam.	Soil Inverts	Plants	Soil		
1,2-dichlorobenzene	17612.27			2.45			1.018			0.0882	43178.18	17923.71	1553.07	0.035	1	0	0	0.052	53.91	0.00	0.00	31.79	85.70	62.91%	0.00%	0.00%	37.09%	85.7	1.0
1,2-dichloroethane (DCA)	24709.56						0.988			0.0063		24422.25	155.54	0.035	1	0	0	0.052	5.40	0.00	0.00	44.60	50.00	10.80%	0.00%	0.00%	89.20%	50	1.0
1,3-dichlorobenzene	16651.92			2.23			1.018			0.0963	37182.89	16952.39	1603.01	0.035	1	0	0	0.052	55.64	0.00	0.00	30.06	85.70	64.93%	0.00%	0.00%	35.07%	85.7	1.0
2-butanone (Methyl Ethyl Ketone/MEK)	970850.97						0.094			0.0006		90869.72	535.95	0.035	1	0	0	0.052	18.60	0.00	0.00	1752.40	1771.00	1.05%	0.00%	0.00%	98.95%	1771	1.0
2-hexanone	2511.81						0.207			0.0053		520.70	13.43	0.035	1	0	0	0.052	0.47	0.00	0.00	4.53	5.00	9.32%	0.00%	0.00%	90.68%	5	1.0
Benzene	285.56						1.011			0.0186		288.77	5.32	0.035	1	0	0	0.052	0.18	0.00	0.00	0.52	0.70	26.37%	0.00%	0.00%	73.63%	0.7	1.0
Butanol	67048.62						0.478			0.0017		32063.80	114.56	0.035	1	0	0	0.052	3.98	0.00	0.00	121.02	125.00	3.18%	0.00%	0.00%	96.82%	125	1.0
Carbon Tetrachloride	4903.54						1.015			0.0420		4975.67	205.96	0.035	1	0	0	0.052	7.15	0.00	0.00	8.85	16.00	44.68%	0.00%	0.00%	55.32%	16	1.0
Chlorobenzene	5560.69						1.015			0.0490		5642.08	272.61	0.035	1	0	0	0.052	9.46	0.00	0.00	10.04	19.50	48.53%	0.00%	0.00%	51.47%	19.5	1.0
Chloroform	6600.19						1.011			0.0135		6669.63	88.92	0.035	1	0	0	0.052	3.09	0.00	0.00	11.91	15.00	20.58%	0.00%	0.00%	79.42%	15	1.0
Cis-1,2-dichloroethylene	20270.86						1.011			0.0122		20495.47	248.07	0.035	1	0	0	0.052	8.61	0.00	0.00	36.59	45.20	19.05%	0.00%	0.00%	80.95%	45.2	1.0
Dichloromethane (Methylene Chloride)	2999.00						1.007			0.0042		3019.25	12.58	0.035	1	0	0	0.052	0.44	0.00	0.00	5.41	5.85	7.47%	0.00%	0.00%	92.53%	5.85	1.0
Ethyl Benzene	33025.64			3.21			1.016			0.0666	106158.13	33560.86	2200.65	0.035	1	0	0	0.052	76.39	0.00	0.00	59.61	136.00	56.17%	0.00%	0.00%	43.83%	136	1.0
Methyl Isobutyl Ketone	915291.62						0.197			0.0037		180291.54	3425.04	0.035	1	0	0	0.052	118.89	0.00	0.00	1652.11	1771.00	6.71%	0.00%	0.00%	93.29%	1771	1.0
n-butyl Benzene	18135.28			1.67			1.022			0.1227	30313.52	18540.97	2225.92	0.035	1	0	0	0.052	77.27	0.00	0.00	32.73	110.00	70.24%	0.00%	0.00%	29.76%	110	1.0
Tetrachloroethylene	443.18						1.018			0.0390		450.94	17.29	0.035	1	0	0	0.052	0.60	0.00	0.00	0.80	1.40	42.86%	0.00%	0.00%	57.14%	1.4	1.0
Toluene	15763.32						1.014			0.0430		15985.17	678.36	0.035	1	0	0	0.052	23.55	0.00	0.00	28.45	52.00	45.28%	0.00%	0.00%	54.72%	52	1.0
Trans-1,2-dichloroethylene	18869.15						1.011			0.0170		19078.23	320.96	0.035	1	0	0	0.052	11.14	0.00	0.00	34.06	45.20	24.65%	0.00%	0.00%	75.35%	45.2	1.0
Trichloroethylene (TCE)	216.87						1.012			0.0410		219.57	8.89	0.035	1	0	0	0.052	0.31	0.00	0.00	0.39	0.70	44.08%	0.00%	0.00%	55.92%	0.7	1.0
Xylene	45266.25			3.43			1.016			0.0619	155337.22	45992.77	2802.91	0.035	1	0	0	0.052	97.29	0.00	0.00	81.71	179.00	54.35%	0.00%	0.00%	45.65%	179	1.0
Acenaphthene	96952.35	-5.562	-0.8556				1.470			0	0.00	142519.95	0.00	0.035	1	0	0	0.052	0.00	0.00	0.00	175.00	175.00	0.00%	0.00%	0.00%	100.00%	175	1.0
Acenaphthylene	96952.35	-1.144	0.791				22.9			0	2802.43	2220208.77	0.00	0.035	1	0	0	0.052	0.00	0.00	0.00	175.00	175.00	0.00%	0.00%	0.00%	100.00%	175	1.0
Anthracene	554013.42	-0.9887	0.7784				2.42			0	10999.41	1340712.47	0.00	0.035	1	0	0	0.052	0.00	0.00	0.00	1000.00	1000.00	0.00%	0.00%	0.00%	100.00%	1000	1.0
Benzo(a)pyrene	554.01	-2.0615	0.975				1.33			0	60.21	736.84	0.00	0.035	1	0	0	0.052	0.00	0.00	0.00	1.00	1.00	0.00%	0.00%	0.00%	100.00%	1	1.0
Benzo(a)anthracene	554.01	-2.7078	0.5944				1.59			0	2.85	880.88	0.00	0.035	1	0	0	0.052	0.00	0.00	0.00	1.00	1.00	0.00%	0.00%	0.00%	100.00%	1	1.0
Benzo(b)fluoranthene	554.01			0.31			2.6			0	171.74	1440.43	0.00	0.035	1	0	0	0.052	0.00	0.00	0.00	1.00	1.00	0.00%	0.00%	0.00%	100.00%	1	1.0
Benzo(ghi)perylene	554.01	-0.9313	1.1829				2.94			0	693.19	1628.80	0.00	0.035	1	0	0	0.052	0.00	0.00	0.00	1.00	1.00	0.00%	0.00%	0.00%	100.00%	1	1.0
Benzo[k]fluoranthene	554.01	-4.6482	0.1668				2.6			0	0.03	1440.43	0.00	0.035	1	0	0	0.052	0.00	0.00	0.00	1.00	1.00	0.00%	0.00%	0.00%	100.00%	1	1.0
Chrysene	554.01	-2.7078	0.5944				2.29			0	2.85	1268.69	0.00	0.035	1	0	0	0.052	0.00	0.00	0.00	1.00	1.00	0.00%	0.00%	0.00%	100.00%	1	1.0
Dibenz(ah)anthracene	554.01			0.13			2.31			0	72.02	1279.77	0.00	0.035	1	0	0	0.052	0.00	0.00	0.00	1.00	1.00	0.00%	0.00%	0.00%	100.00%	1	1.0
Fluoranthene	69251.68			0.5			3.04			0	34625.84	210525.10	0.00	0.035	1	0	0	0.052	0.00	0.00	0.00	125.00	125.00	0.00%	0.00%	0.00%	100.00%	125	1.0
Fluorene	69251.68	-5.562	-0.8556				9.57			0	0.00	662738.55	0.00	0.035	1	0	0	0.052	0.00	0.00	0.00	125.00	125.00	0.00%	0.00%	0.00%	100.00%	125	1.0
Indeno[1,2,3-cd]pyrene	554.01			0.11			2.86			0	60.94	1584.48	0.00	0.035	1	0	0	0.052	0.00	0.00	0.00	1.00	1.00	0.00%	0.00%	0.00%	100.00%	1	1.0
2-Methylnaphthalene	27866.87	-1.3205	4.544				1.020			0	4216918636082140000 0.00	28419.88	0.00	0.035	1	0	0	0.052	0.00	0.00	0.00	50.30	50.30	0.00%	0.00%	0.00%	100.00%	50.3	1.0
Naphthalene	27700.67			12.2			4.4			0	337948.18	121882.95	0.00	0.035	1	0	0	0.052	0.00	0.00	0.00	50.00	50.00	0.00%	0.00%	0.00%	100.00%	50	1.0
Phenanthrene	554013.42	-0.1665	0.6203				1.72			0	3093.11	952903.08	0.00	0.035	1	0	0	0.052	0.00	0.00	0.00	1000.00	1000.00	0.00%	0.00%	0.00%	100.00%	1000	1.0
Pyrene	41551.01			0.72			1.75			0	29916.72	72714.26	0.00	0.035	1	0	0	0.052	0.00	0.00	0.00	75.00	75.00	0.00%	0.00%	0.00%	100.00%	75	1.0
Total PAHs	1.00	0.083	0.3015							0	1.09		0.00	0.035	1	0	0	0.052	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%		---
Low MW PAHs	36343.28	-1.3205	0.4544							0	31.53		0.00	0.035	1	0	0	0.052	0.00	0.00	0.00	65.60	65.60	0.00%	0.00%	0.00%	100.00%	65.6	1.0
High MW PAHs	340.72	-1.7026	0.9469							0	45.55		0.00	0.035	1	0	0	0.052	0.00	0.00	0.00	0.62	0.62	0.00%	0.00%	0.00%	100.00%	0.615	1.0
Gasoline Range Organics																												1000	---
TPH - Diesel	554013.42									0			0.00	0.035	1	0	0	0.052	0.00	0.00	0.00	1000.00	1000.00	0.00%	0.00%	0.00%	100.00%	1000	1.0
TPH - Kerosene	554013.42									0			0.00	0.035	1	0	0	0.052	0.00	0.00	0.00	1000.00	1000.00	0.00%	0.00%	0.00%	100.00%	1000	1.0
Normal paraffin hydrocarbons	554013.42									0			0.00	0.035	1	0	0	0.052	0.00	0.00	0.00	1000.00	1000.00	0.00%	0.00%	0.00%	100.00%	1000	1.0

Table A-8. Exposure Calculation Worksheet for Determining NOAEL-Based PRGs for Badger

Analyte	Soil (mg/kg)	Literature-derived Bioaccumulation Models									Estimated Concentrations in Biota (mg/kg DW)			Food Intake Rate	Diet Composition (proportion)				Estimated Exposure (mg/kg/d)					Percent Estimated Exposure by Pathway				Selected Mammalian NOAEL TRV (mg/kg/d)	NOAEL HQ
		Plants			Soil Inverts			Small Mammals																					
		intercept	slope	BAF	intercept	slope	BAF	intercept	slope	BAF	Plants	Soil Invertbrates	Small Mammals	(kg/kg-bw/d, dw)	Small Mammals	Soil Inverts	Plants	Soil	Small Mammals	Soil Inverts	Plants	Soil	Total	Small Mam.	Soil Inverts	Plants	Soil		
Phenol	5918.74						0.235			0.0064		1389.75	37.93	0.035	1	0	0	0.052	1.32	0.00	0.00	10.68	12.00	10.97%	0.00%	0.00%	89.03%	12	1.0
2-methylphenol (ocresol)	134503.46						0.336			0.0150		45152.15	2022.94	0.035	1	0	0	0.052	70.22	0.00	0.00	242.78	313.00	22.43%	0.00%	0.00%	77.57%	313	1.0
4-methylphenol (pcresol)	136360.50						0.333			0.0141		45450.77	1926.38	0.035	1	0	0	0.052	66.87	0.00	0.00	246.13	313.00	21.36%	0.00%	0.00%	78.64%	313	1.0
2,4-dinitrotoluene	285.89	1.873	-0.3768	0.376			0.184			0.0155	107.50	52.52	4.44	0.035	1	0	0	0.052	0.15	0.00	0.00	0.52	0.67	22.98%	0.00%	0.00%	77.02%	0.67	1.0
Bis[2-ethylhexyl] phthalate	3599.39			0.07			41.144			0.0945	237.48	148093.65	340.03	0.035	1	0	0	0.052	11.80	0.00	0.00	6.50	18.30	64.50%	0.00%	0.00%	35.50%	18.3	1.0
Total PCBs	8.47			0.17	1.41	1.36				0.1792	1.44	74.88	1.52	0.035	1	0	0	0.052	0.05	0.00	0.00	0.02	0.07	77.51%	0.00%	0.00%	22.49%	0.068	1.0
Aroclor 1016	150.41			0.30	1.41	1.36				0.2104	44.65	3744.85	31.65	0.035	1	0	0	0.052	1.10	0.00	0.00	0.27	1.37	80.18%	0.00%	0.00%	19.82%	1.37	1.0
Aroclor 1221	8.15			0.78	1.41	1.36				0.1883	6.39	71.07	1.54	0.035	1	0	0	0.052	0.05	0.00	0.00	0.01	0.07	78.36%	0.00%	0.00%	21.64%	0.068	1.0
Aroclor 1232	8.81			0.99	1.41	1.36				0.1704	8.73	78.98	1.50	0.035	1	0	0	0.052	0.05	0.00	0.00	0.02	0.07	76.61%	0.00%	0.00%	23.39%	0.068	1.0
Aroclor 1242	8.74			0.16	1.41	1.36				0.1756	1.41	78.07	1.53	0.035	1	0	0	0.052	0.05	0.00	0.00	0.02	0.07	77.15%	0.00%	0.00%	22.85%	0.069	1.0
Aroclor 1248	1.06			0.18	1.41	1.36				0.1855	0.19	4.41	0.20	0.035	1	0	0	0.052	0.01	0.00	0.00	0.00	0.01	78.11%	0.00%	0.00%	21.89%	0.0087	1.0
Aroclor 1254	9.11			0.14	1.41	1.36				0.1630	1.27	82.67	1.49	0.035	1	0	0	0.052	0.05	0.00	0.00	0.02	0.07	75.82%	0.00%	0.00%	24.18%	0.068	1.0
Aroclor 1260	15.42			0.05	1.41	1.36				0.0750	0.81	169.12	1.16	0.035	1	0	0	0.052	0.04	0.00	0.00	0.03	0.07	59.07%	0.00%	0.00%	40.93%	0.068	1.0
Aroclor-1262	37.67													0.035	1	0	0	0.052	0.00	0.00	0.00	0.07	0.07	0.00%	0.00%	0.00%	100.00%	0.068	1.0
Dichloroprop	1.00													0.035	1	0	0	0.052	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Aldrin	26.80			0.14			1.033			0.1630	3.73	27.68	4.37	0.035	1	0	0	0.052	0.15	0.00	0.00	0.05	0.20	75.82%	0.00%	0.00%	24.18%	0.2	1.0
beta-1,2,3,4,5,6-Hexachlorocyclohexane	66.95			1.72			1.021			0.1201	115.09	68.36	8.04	0.035	1	0	0	0.052	0.28	0.00	0.00	0.12	0.40	69.79%	0.00%	0.00%	30.21%	0.4	1.0
alpha-Chlordane	264.12			0.16			1.031			0.1771	43.53	272.44	46.76	0.035	1	0	0	0.052	1.62	0.00	0.00	0.48	2.10	77.30%	0.00%	0.00%	22.70%	2.1	1.0
gamma-Chlordane	264.12			0.16			1.036			0.1771	43.53	273.52	46.76	0.035	1	0	0	0.052	1.62	0.00	0.00	0.48	2.10	77.30%	0.00%	0.00%	22.70%	2.1	1.0
Dichlorodiphenyldichloroethylene	0.03	-2.5119	0.7524		2.4771	0.8804		3.6401	0.641		0.01	0.58	4.23	0.035	1	0	0	0.052	0.15	0.00	0.00	0.00	0.15	99.96%	0.00%	0.00%	0.04%	0.147	1.0
Dichlorodiphenyltrichloroethane	1.41	-2.5119	0.7524		2.1247	0.8689		1.1788	0.7254		0.10	11.25	4.16	0.035	1	0	0	0.052	0.14	0.00	0.00	0.00	0.15	98.27%	0.00%	0.00%	1.73%	0.147	1.0
Dieldrin	0.35			0.41			14.70			1.20	0.14	5.07	0.41	0.035	1	0	0	0.052	0.01	0.00	0.00	0.00	0.02	95.85%	0.00%	0.00%	4.15%	0.015	1.0
Endosulfan I	21.88			1.31			1.184			0.1455	28.69	25.90	3.18	0.035	1	0	0	0.052	0.11	0.00	0.00	0.04	0.15	73.67%	0.00%	0.00%	26.33%	0.15	1.0
Endosulfan II	21.88			1.31			1.184			0.1455	28.69	25.90	3.18	0.035	1	0	0	0.052	0.11	0.00	0.00	0.04	0.15	73.67%	0.00%	0.00%	26.33%	0.15	1.0
Endosulfan sulfate	27.15			1.98			1.184			0.1072	53.69	32.14	2.91	0.035	1	0	0	0.052	0.10	0.00	0.00	0.05	0.15	67.33%	0.00%	0.00%	32.67%	0.15	1.0
Endrin aldehyde	14.04			1.44			6.686			0.1368	20.21	93.87	1.92	0.035	1	0	0	0.052	0.07	0.00	0.00	0.03	0.09	72.45%	0.00%	0.00%	27.55%	0.092	1.0
Methoxychlor	441.01			0.52			3.739			0.2093	231.47	1648.98	92.30	0.035	1	0	0	0.052	3.20	0.00	0.00	0.80	4.00	80.10%	0.00%	0.00%	19.90%	4	1.0

Notes:

It has been conservatively assumed that all chemical intake is absorbed by the receptor.

1 - When no TRV was available, the PRG is listed as 1 mg/kg based on formulas in the spreadsheet but no actual PRG is recommended.

Acronyms:

BAF = Bioaccumulation factor
DW = Dry weight
FIR = Food ingestion rate
mg/kg = Miligrams per kilogram
mg/kg BW/day, DW = Miligrams per kilogram of body weight per day, dry weight
mg/kg/d = Miligrams per kilogram per day
NOAEL = No observed adverse effect level
PRGs = Preliminary remediation goals
TRV = Toxicity reference value

Equations:

Total Estimated Exposure = Food Intake + Incidental Soil Intake
Food Intake = estimated concentration in biota X proportion of biota type X food ingestion rate (FIR)
Incidental Soil intake = concentration in soil X proportion of soil as component of diet X food ingestion rate (FIR)
Estimated Concentrations in Biota (method 1) = B1*(ln[Site Specific Soil Concentration]) + B0
where: B1 = slope and B0 = intercept
Estimated Concentrations in Biota (method 2) = soil concentration X BAF
Hazard Quotient = Total Estimated Exposure (Dose) / TRV
Therefore, when the HQ = 1, soil concentration = PRG
where: Soil concentration (mg/kg) = TRV / (Food Intake + Incidental Soil Intake) = Soil PRG

Table A-9. Exposure Calculation Worksheet for Determining LOAEL-Based PRGs for California Quail

		Literature-derived Bioaccumulation Models									Estimated Concentrations in Biota (mg/kg DW)				Food Intake	Diet Composition (proportion)				Estimated Exposure (mg/kg/d)					Percent Estimated Exposure by Pathway					
		Plants			Soil Inverts			Small Mammals																						
Analyte	Soil (mg/kg)	intercept	slope	BAF	intercept	slope	BAF	intercept	slope	BAF	Plants	Soil Invert.	Small Mam.	Species	(kg/kg-bw/d, dw)	Small Mam.	Soil Invert	Plants	Soil	Small Mam.	Soil Invert.	Plants	Soil	Total	Small Mam.	Soil Inverts	Plants	Soil	Selected Avian LOAEL TRV (mg/kg/d)	LOAEL HQ
Aluminum	1.00			0.00287			0.043			0.0263	0.00	0.04	0.03	California Quail	0.078	0	0	1	0.061	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	4.49%	95.51%	---	---
Antimony	1.00	-3.233	0.938				1			0.001 * 50 * Cdiet	0.04	1.00	0.05	California Quail	0.078	0	0	1	0.061	0.00	0.00	0.00	0.00	0.01	0.00%	0.00%	39.27%	60.73%	---	---
Arsenic, Total all valence states	8103.60	-1.992	0.564		-1.421	0.706		-4.8471	0.8188		21.85	138.80	12.46	California Quail	0.078	0	0	1	0.061	0.00	0.00	1.70	38.56	40.26	0.00%	0.00%	4.23%	95.77%	40.30	1.00
Arsenic (III)	8103.60	-1.992	0.564		-1.421	0.706		-4.8471	0.8188		21.85	138.80	12.46	California Quail	0.078	0	0	1	0.061	0.00	0.00	1.70	38.56	40.26	0.00%	0.00%	4.23%	95.77%	40.30	1.00
Arsenic (V)	8103.60	-1.992	0.564		-1.421	0.706		-4.8471	0.8188		21.85	138.80	12.46	California Quail	0.078	0	0	1	0.061	0.00	0.00	1.70	38.56	40.26	0.00%	0.00%	4.23%	95.77%	40.30	1.00
Barium	2463.67			0.156			0.091			0.0168	384.33	224.19	41.39	California Quail	0.078	0	0	1	0.061	0.00	0.00	29.98	11.72	41.70	0.00%	0.00%	71.89%	28.11%	41.70	1.00
Beryllium	1.00	-0.5361	0.7345				0.045			0.001 * 50 * Cdiet	0.59	0.05	0.00	California Quail	0.078	0	0	1	0.061	0.00	0.00	0.05	0.00	0.05	0.00%	0.00%	90.56%	9.44%	---	---
Bismuth	1.00			0.005			1			1	0.01	1.00	1.00	California Quail	0.078	0	0	1	0.061	0.00	0.00	0.00	0.00	0.01	0.00%	0.00%	7.58%	92.42%	---	---
Boron	222.00			5.714			1			1	1268.51	222.00	222.00	California Quail	0.078	0	0	1	0.061	0.00	0.00	98.94	1.06	100.00	0.00%	0.00%	98.94%	1.06%	100.00	1.00
Cadmium	277.98	-0.476	0.546		2.114	0.795		-1.2571	0.4723		13.42	726.26	4.06	California Quail	0.078	0	0	1	0.061	0.00	0.00	1.05	1.32	2.37	0.00%	0.00%	44.18%	55.82%	2.37	1.00
Chromium (total)	349.42			0.041			0.306	-1.4599	0.7338		14.33	106.92	17.07	California Quail	0.078	0	0	1	0.061	0.00	0.00	1.12	1.66	2.78	0.00%	0.00%	40.20%	59.80%	2.78	1.00
Chromium (+3)	349.42			0.041			0.306	-1.4599	0.7338		14.33	106.92	17.07	California Quail	0.078	0	0	1	0.061	0.00	0.00	1.12	1.66	2.78	0.00%	0.00%	40.20%	59.80%	2.78	1.00
Chromium (+6)	1.00			0.041			0.306	-1.4599	0.7338		0.04	0.31	0.23	California Quail	0.078	0	0	1	0.061	0.00	0.00	0.00	0.00	0.01	0.00%	0.00%	40.20%	59.80%		---
Cobalt	1460.92			0.00745			0.291	-4.4669	1.307		10.88	425.13	157.11	California Quail	0.078	0	0	1	0.061	0.00	0.00	0.85	6.95	7.80	0.00%	0.00%	10.88%	89.12%	7.80	1.00
Copper	1914.48	0.669	0.394				0.515	2.042	0.1444		38.34	985.96	22.95	California Quail	0.078	0	0	1	0.061	0.00	0.00	2.99	9.11	12.10	0.00%	0.00%	24.72%	75.28%	12.10	1.00
Lead	537.35	-1.328	0.561		-0.218	0.807		0.0761	0.4422		9.01	128.42	17.39	California Quail	0.078	0	0	1	0.061	0.00	0.00	0.70	2.56	3.26	0.00%	0.00%	21.57%	78.43%	3.26	1.00
Lithium	1.00			0.004			0.046			1	0.00	0.05	1.00	California Quail	0.078	0	0	1	0.061	0.00	0.00	0.00	0.00	0.01	0.00%	0.00%	6.15%	93.85%	---	---
Manganese	31822.67			0.0792	-0.809	0.682				0.0205	2520.36	524.23	652.36	California Quail	0.078	0	0	1	0.061	0.00	0.00	196.59	151.41	348.00	0.00%	0.00%	56.49%	43.51%	348.00	1.00
Mercury (methyl)	35.51	-0.996	0.544		0.0781	0.3369				0.054	2.58	3.60	1.93	California Quail	0.078	0	0	1	0.061	0.00	0.00	0.20	0.17	0.37	0.00%	0.00%	54.31%	45.69%	0.37	1.00
Mercury (inorganic)	110.75	-0.996	0.544		0.0781	0.3369				0.054	4.78	5.28	6.01	California Quail	0.078	0	0	1	0.061	0.00	0.00	0.37	0.53	0.90	0.00%	0.00%	41.44%	58.56%	0.90	1.00
Molybdenum	345.10			1.2504			0.953			1	431.51	328.88	345.10	California Quail	0.078	0	0	1	0.061	0.00	0.00	33.66	1.64	35.30	0.00%	0.00%	95.35%	4.65%	35.30	1.00
Nickel	1911.91	-2.224	0.748				1.059	-0.2462	0.4658		30.81	2024.71	26.40	California Quail	0.078	0	0	1	0.061	0.00	0.00	2.40	9.10	11.50	0.00%	0.00%	20.90%	79.10%	11.50	1.00
Selenium	10.47	-0.678	1.104		-0.075	0.733		-0.4158	0.3764		6.78	5.19	1.60	California Quail	0.078	0	0	1	0.061	0.00	0.00	0.53	0.05	0.58	0.00%	0.00%	91.40%	8.60%	0.58	1.00
Silver	3452.99			0.014			2.045			0.0040	48.34	7061.37	13.81	California Quail	0.078	0	0	1	0.061	0.00	0.00	3.77	16.43	20.20	0.00%	0.00%	18.67%	81.33%	20.20	1.00
Strontium	1.00			0.207			0.4066			1.74	0.21	0.41	1.74	California Quail	0.078	0	0	1	0.061	0.00	0.00	0.02	0.00	0.02	0.00%	0.00%	77.22%	22.78%	---	---
Thallium	1.00			0.004			0.0541			0.1124	0.00	0.05	0.11	California Quail	0.078	0	0	1	0.061	0.00	0.00	0.00	0.00	0.01	0.00%	0.00%	6.15%	93.85%	---	---
Tin	204.21			1			0.08			0.08	204.21	16.34	16.34	California Quail	0.078	0	0	1	0.061	0.00	0.00	15.93	0.97	16.90	0.00%	0.00%	94.25%	5.75%	16.90	1.00
Uranium	1.00			0.021			0.033			0.0002	0.02	0.03	0.00	California Quail	0.078	0	0	1	0.061	0.00	0.00	0.00	0.00	0.01	0.00%	0.00%	25.61%	74.39%	---	---
Vanadium	133.95			0.00485			0.042			0.0123	0.65	5.63	1.65	California Quail	0.078	0	0	1	0.061	0.00	0.00	0.05	0.64	0.69	0.00%	0.00%	7.37%	92.63%	0.69	1.00
Zinc	5015.41	1.575	0.555		4.449	0.328		4.3632	0.0706		546.62	1399.19	143.27	California Quail	0.078	0	0	1	0.061	0.00	0.00	42.64	23.86	66.50	0.00%	0.00%	64.12%	35.88%	66.50	1.00
Ammonia/Ammonium	1.00													California Quail	0.078	0	0	1	0.061	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---

Table A-9. Exposure Calculation Worksheet for Determining LOAEL-Based PRGs for California Quail

		Literature-derived Bioaccumulation Models									Estimated Concentrations in Biota (mg/kg DW)				Food Intake	Diet Composition (proportion)				Estimated Exposure (mg/kg/d)					Percent Estimated Exposure by Pathway					
		Plants			Soil Inverts			Small Mammals																						
Analyte	Soil (mg/kg)	intercept	slope	BAF	intercept	slope	BAF	intercept	slope	BAF	Plants	Soil Invert.	Small Mam.	Species	(kg/kg-bw/d, dw)	Small Mam.	Soil Invert	Plants	Soil	Small Mam.	Soil Invert.	Plants	Soil	Total	Small Mam.	Soil Inverts	Plants	Soil	Selected Avian LOAEL TRV (mg/kg/d)	LOAEL HQ
Chloride	1.00													California Quail	0.078	0	0	1	0.061	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Cyanide	1.00													California Quail	0.078	0	0	1	0.061	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Fluoride	6123.23			0.006							36.74			California Quail	0.078	0	0	1	0.061	0.00	0.00	2.87	29.13	32.00	0.00%	0.00%	8.96%	91.04%	32.00	1.00
Iodine	1.00			0.05							0.05			California Quail	0.078	0	0	1	0.061	0.00	0.00	0.00	0.00	0.01	0.00%	0.00%	45.05%	54.95%	---	---
Nitrate/Nitrite	1.00													California Quail	0.078	0	0	1	0.061	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Phosphate	1.00													California Quail	0.078	0	0	1	0.061	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Sulfate/Sulfite	1.00													California Quail	0.078	0	0	1	0.061	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Total Organic Carbon	1.00													California Quail	0.078	0	0	1	0.061	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
1,1-dichloroethane	7229.93						1.010			0.0109		7299.27	78.93	California Quail	0.078	0	0	1	0.061	0.00	0.00	0.00	34.40	34.40	0.00%	0.00%	0.00%	100.00%	34.40	1.00
1,1-dichloroethene	7229.93						1.011			0.0186		7311.11	134.61	California Quail	0.078	0	0	1	0.061	0.00	0.00	0.00	34.40	34.40	0.00%	0.00%	0.00%	100.00%	34.40	1.00
1,1,1-trichloroethane	7229.93						1.013			0.0305		7322.60	220.72	California Quail	0.078	0	0	1	0.061	0.00	0.00	0.00	34.40	34.40	0.00%	0.00%	0.00%	100.00%	34.40	1.00
1,1,2-trichloroethane	7229.93						1.010			0.0165		7303.81	119.29	California Quail	0.078	0	0	1	0.061	0.00	0.00	0.00	34.40	34.40	0.00%	0.00%	0.00%	100.00%	34.40	1.00
1,1,2,2-tetrachloroethane	7229.93						1.013			0.0270		7323.45	195.41	California Quail	0.078	0	0	1	0.061	0.00	0.00	0.00	34.40	34.40	0.00%	0.00%	0.00%	100.00%	34.40	1.00
1,2-dichlorobenzene	175.53			2.45			1.018			0.0882	430.32	178.63	15.48	California Quail	0.078	0	0	1	0.061	0.00	0.00	33.56	0.84	34.40	0.00%	0.00%	97.57%	2.43%	34.40	1.00
1,2-dichloroethane (DCA)	7229.93						0.988			0.0063		7145.86	45.51	California Quail	0.078	0	0	1	0.061	0.00	0.00	0.00	34.40	34.40	0.00%	0.00%	0.00%	100.00%	34.40	1.00
1,3-dichlorobenzene	192.26			2.23			1.018			0.0963	429.30	195.73	18.51	California Quail	0.078	0	0	1	0.061	0.00	0.00	33.49	0.91	34.40	0.00%	0.00%	97.34%	2.66%	34.40	1.00
2-butanone (Methyl Ethyl Ketone/MEK)	21017.23						0.094			0.0006		1967.17	11.60	California Quail	0.078	0	0	1	0.061	0.00	0.00	0.00	100.00	100.00	0.00%	0.00%	0.00%	100.00%	100.00	1.00
2-hexanone	21017.23						0.207			0.0053		4356.86	112.37	California Quail	0.078	0	0	1	0.061	0.00	0.00	0.00	100.00	100.00	0.00%	0.00%	0.00%	100.00%	100.00	1.00
Benzene	1.00						1.011			0.0186		1.01	0.02	California Quail	0.078	0	0	1	0.061	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Butanol	1.00						0.478			0.0017		0.48	0.00	California Quail	0.078	0	0	1	0.061	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Carbon Tetrachloride	7229.93						1.015			0.0420		7336.28	303.67	California Quail	0.078	0	0	1	0.061	0.00	0.00	0.00	34.40	34.40	0.00%	0.00%	0.00%	100.00%	34.40	1.00
Chlorobenzene	7229.93						1.015			0.0490		7335.75	354.45	California Quail	0.078	0	0	1	0.061	0.00	0.00	0.00	34.40	34.40	0.00%	0.00%	0.00%	100.00%	34.40	1.00
Chloroform	7229.93						1.011			0.0135		7305.99	97.40	California Quail	0.078	0	0	1	0.061	0.00	0.00	0.00	34.40	34.40	0.00%	0.00%	0.00%	100.00%	34.40	1.00
Cis-1,2-dichloroethylene	7229.93						1.011			0.0122		7310.04	88.48	California Quail	0.078	0	0	1	0.061	0.00	0.00	0.00	34.40	34.40	0.00%	0.00%	0.00%	100.00%	34.40	1.00
Dichloromethane (Methylene Chloride)	7229.93						1.007			0.0042		7278.77	30.34	California Quail	0.078	0	0	1	0.061	0.00	0.00	0.00	34.40	34.40	0.00%	0.00%	0.00%	100.00%	34.40	1.00
Ethyl Benzene	1.00			3.21			1.016			0.0666	3.21	1.02	0.07	California Quail	0.078	0	0	1	0.061	0.00	0.00	0.25	0.00	0.26	0.00%	0.00%	98.14%	1.86%	---	---
Methyl Isobutyl Ketone	21017.23						0.197			0.0037		4139.92	78.65	California Quail	0.078	0	0	1	0.061	0.00	0.00	0.00	100.00	100.00	0.00%	0.00%	0.00%	100.00%	100.00	1.00
n-butyl Benzene	1.00			1.67			1.022			0.1227	1.67	1.02	0.12	California Quail	0.078	0	0	1	0.061	0.00	0.00	0.13	0.00	0.14	0.00%	0.00%	96.48%	3.52%	---	---
Tetrachloroethylene	7229.93						1.018			0.0390		7356.51	282.02	California Quail	0.078	0	0	1	0.061	0.00	0.00	0.00	34.40	34.40	0.00%	0.00%	0.00%	100.00%	34.40	1.00
Toluene	7229.93						1.014			0.0430		7331.68	311.13	California Quail	0.078	0	0	1	0.061	0.00	0.00	0.00	34.40	34.40	0.00%	0.00%	0.00%	100.00%	---	---
Trans-1,2-dichloroethylene	7229.93						1.011			0.0170		7310.04	122.98	California Quail	0.078	0	0	1	0.061	0.00	0.00	0.00	34.40	34.40	0.00%	0.00%	0.00%	100.00%	34.40	1.00

Table A-9. Exposure Calculation Worksheet for Determining LOAEL-Based PRGs for California Quail

		Literature-derived Bioaccumulation Models									Estimated Concentrations in Biota (mg/kg DW)				Food Intake	Diet Composition (proportion)				Estimated Exposure (mg/kg/d)					Percent Estimated Exposure by Pathway					
		Plants			Soil Inverts			Small Mammals																						
Analyte	Soil (mg/kg)	intercept	slope	BAF	intercept	slope	BAF	intercept	slope	BAF	Plants	Soil Invert.	Small Mam.	Species	(kg/kg-bw/d, dw)	Small Mam.	Soil Invert	Plants	Soil	Small Mam.	Soil Invert.	Plants	Soil	Total	Small Mam.	Soil Inverts	Plants	Soil	Selected Avian LOAEL TRV (mg/kg/d)	LOAEL HQ
Trichloroethylene (TCE)	7229.93						1.012			0.0410		7319.95	296.32	California Quail	0.078	0	0	1	0.061	0.00	0.00	0.00	34.40	34.40	0.00%	0.00%	0.00%	100.00%	34.40	1.00
Xylene	7229.93			3.43			1.016			0.0619	24810.47	7345.97	447.68	California Quail	0.078	0	0	1	0.061	0.00	0.00	1935.22	34.40	1969.62	0.00%	0.00%	98.25%	1.75%	---	---
Acenaphthene	68306.01	-5.562	-0.8556				1.470			0	0.00	100409.84	0.00	California Quail	0.078	0	0	1	0.061	0.00	0.00	0.00	325.00	325.00	0.00%	0.00%	0.00%	100.00%	325.00	1.00
Acenaphthylene	43765.65	-1.144	0.791				22.9			0	1493.84	1002233.31	0.00	California Quail	0.078	0	0	1	0.061	0.00	0.00	116.52	208.24	324.76	0.00%	0.00%	35.88%	64.12%	325.00	1.00
Anthracene	43404.77	-0.9887	0.7784				2.42			0	1515.21	105039.54	0.00	California Quail	0.078	0	0	1	0.061	0.00	0.00	118.19	206.52	324.71	0.00%	0.00%	36.40%	63.60%	325.00	1.00
Benzo(a)pyrene	1.00	-2.0615	0.975				1.33			0	0.13	1.33	0.00	California Quail	0.078	0	0	1	0.061	0.00	0.00	0.01	0.00	0.01	0.00%	0.00%	67.60%	32.40%	---	---
Benzo(a)anthracene	1.00	-2.7078	0.5944				1.59			0	0.07	1.59	0.00	California Quail	0.078	0	0	1	0.061	0.00	0.00	0.01	0.00	0.01	0.00%	0.00%	52.23%	47.77%	---	---
Benzo(b)fluoranthene	1.00			0.31			2.6			0	0.31	2.60	0.00	California Quail	0.078	0	0	1	0.061	0.00	0.00	0.02	0.00	0.03	0.00%	0.00%	83.56%	16.44%	---	---
Benzo(ghi)perylene	1.00	-0.9313	1.1829				2.94			0	0.39	2.94	0.00	California Quail	0.078	0	0	1	0.061	0.00	0.00	0.03	0.00	0.04	0.00%	0.00%	86.59%	13.41%	---	---
Benzo[k]fluoranthene	1.00	-4.6482	0.1668				2.6			0	0.01	2.60	0.00	California Quail	0.078	0	0	1	0.061	0.00	0.00	0.00	0.00	0.01	0.00%	0.00%	13.57%	86.43%	---	---
Chrysene	1.00	-2.7078	0.5944				2.29			0	0.07	2.29	0.00	California Quail	0.078	0	0	1	0.061	0.00	0.00	0.01	0.00	0.01	0.00%	0.00%	52.23%	47.77%	---	---
Dibenz(ah)anthracene	1.00			0.13			2.31			0	0.13	2.31	0.00	California Quail	0.078	0	0	1	0.061	0.00	0.00	0.01	0.00	0.01	0.00%	0.00%	68.06%	31.94%	---	---
Fluoranthene	1.00			0.5			3.04			0	0.50	3.04	0.00	California Quail	0.078	0	0	1	0.061	0.00	0.00	0.04	0.00	0.04	0.00%	0.00%	89.13%	10.87%	---	---
Fluorene	68306.01	-5.562	-0.8556				9.57			0	0.00	653688.52	0.00	California Quail	0.078	0	0	1	0.061	0.00	0.00	0.00	325.00	325.00	0.00%	0.00%	0.00%	100.00%	325.00	1.00
Indeno[1,2,3-cd]pyrene	1.00			0.11			2.86			0	0.11	2.86	0.00	California Quail	0.078	0	0	1	0.061	0.00	0.00	0.01	0.00	0.01	0.00%	0.00%	64.33%	35.67%	---	---
2-Methylnaphthalene	8.37	-1.3205	4.544				1.020			0	4165.52	8.54	0.00	California Quail	0.078	0	0	1	0.061	0.00	0.00	324.91	0.04	324.95	0.00%	0.00%	99.99%	0.01%	325.00	1.00
Naphthalene	339.83			12.2			4.4			0	4145.94	1495.26	0.00	California Quail	0.078	0	0	1	0.061	0.00	0.00	323.38	1.62	325.00	0.00%	0.00%	99.50%	0.50%	325.00	1.00
Phenanthrene	56061.03	-0.1665	0.6203				1.72			0	746.94	96424.96	0.00	California Quail	0.078	0	0	1	0.061	0.00	0.00	58.26	266.74	325.00	0.00%	0.00%	17.93%	82.07%	325.00	1.00
Pyrene	1.00			0.72			1.75			0	0.72	1.75	0.00	California Quail	0.078	0	0	1	0.061	0.00	0.00	0.06	0.00	0.06	0.00%	0.00%	92.19%	7.81%	---	---
Total PAHs	1.00	0.083	0.3015							0	1.09		0.00	California Quail	0.078	0	0	1	0.061	0.00	0.00	0.08	0.00	0.09	0.00%	0.00%	94.68%	5.32%		---
Low MW PAHs	67599.94	-1.3205	0.4544							0	41.81		0.00	California Quail	0.078	0	0	1	0.061	0.00	0.00	3.26	321.64	324.90	0.00%	0.00%	1.00%	99.00%	325.00	1.00
High MW PAHs	1.00	-1.7026	0.9469							0	0.18		0.00	California Quail	0.078	0	0	1	0.061	0.00	0.00	0.01	0.00	0.02	0.00%	0.00%	74.92%	25.08%	---	---
Gasoline Range Organics																													5000.00	0.00
TPH - Diesel	1050861.71									0			0.00	California Quail	0.078	0	0	1	0.061	0.00	0.00	0.00	5000.00	5000.00	0.00%	0.00%	0.00%	100.00%	5000.00	1.00
TPH - Kerosene	1050861.71									0			0.00	California Quail	0.078	0	0	1	0.061	0.00	0.00	0.00	5000.00	5000.00	0.00%	0.00%	0.00%	100.00%	5000.00	1.00
Normal paraffin hydrocarbons	1.00									0			0.00	California Quail	0.078	0	0	1	0.061	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Phenol	1.00						0.235			0.0064		0.23	0.01	California Quail	0.078	0	0	1	0.061	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
2-methylphenol (ocresol)	1.00						0.336			0.0150		0.34	0.02	California Quail	0.078	0	0	1	0.061	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
4-methylphenol (pcresol)	1.00						0.333			0.0141		0.33	0.01	California Quail	0.078	0	0	1	0.061	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
2,4-dinitrotoluene	38.14	1.873	-0.3768	0.376			0.184			0.0155	14.34	7.01	0.59	California Quail	0.078	0	0	1	0.061	0.00	0.00	1.12	0.18	1.30	0.00%	0.00%	86.04%	13.96%	1.30	1.00
Bis[2-ethylhexyl] phthalate	1.00			0.07			41.144			0.0945	0.07	41.14	0.09	California Quail	0.078	0	0	1	0.061	0.00	0.00	0.01	0.00	0.01	0.00%	0.00%	51.96%	48.04%	---	---

Table A-9. Exposure Calculation Worksheet for Determining LOAEL-Based PRGs for California Quail

		Literature-derived Bioaccumulation Models									Estimated Concentrations in Biota (mg/kg DW)				Food Intake	Diet Composition (proportion)				Estimated Exposure (mg/kg/d)					Percent Estimated Exposure by Pathway					
		Plants			Soil Inverts			Small Mammals																						
Analyte	Soil (mg/kg)	intercept	slope	BAF	intercept	slope	BAF	intercept	slope	BAF	Plants	Soil Invert.	Small Mam.	Species	(kg/kg-bw/d, dw)	Small Mam.	Soil Invert	Plants	Soil	Small Mam.	Soil Invert.	Plants	Soil	Total	Small Mam.	Soil Inverts	Plants	Soil	Selected Avian LOAEL TRV (mg/kg/d)	LOAEL HQ
Total PCBs	100.12			0.17	1.41	1.36				0.1792	16.97	2153.12	17.95	California Quail	0.078	0	0	1	0.061	0.00	0.00	1.32	0.48	1.80	0.00%	0.00%	73.53%	26.47%	1.80	1.00
Aroclor 1016	64.48			0.30	1.41	1.36				0.2104	19.14	1183.61	13.57	California Quail	0.078	0	0	1	0.061	0.00	0.00	1.49	0.31	1.80	0.00%	0.00%	82.95%	17.05%	1.80	1.00
Aroclor 1221	27.30			0.78	1.41	1.36				0.1883	21.41	367.73	5.14	California Quail	0.078	0	0	1	0.061	0.00	0.00	1.67	0.13	1.80	0.00%	0.00%	92.78%	7.22%	1.80	1.00
Aroclor 1232	21.94			0.99	1.41	1.36				0.1704	21.74	273.23	3.74	California Quail	0.078	0	0	1	0.061	0.00	0.00	1.70	0.10	1.80	0.00%	0.00%	94.20%	5.80%	1.80	1.00
Aroclor 1242	103.60			0.16	1.41	1.36				0.1756	16.76	2255.42	18.19	California Quail	0.078	0	0	1	0.061	0.00	0.00	1.31	0.49	1.80	0.00%	0.00%	72.62%	27.38%	1.80	1.00
Aroclor 1248	94.05			0.18	1.41	1.36				0.1855	17.34	1977.66	17.45	California Quail	0.078	0	0	1	0.061	0.00	0.00	1.35	0.45	1.80	0.00%	0.00%	75.14%	24.86%	1.80	1.00
Aroclor 1254	115.21			0.14	1.41	1.36				0.1630	16.05	2606.11	18.78	California Quail	0.078	0	0	1	0.061	0.00	0.00	1.25	0.55	1.80	0.00%	0.00%	69.55%	30.45%	1.80	1.00
Aroclor 1260	203.80			0.05	1.41	1.36				0.0750	10.65	5660.58	15.29	California Quail	0.078	0	0	1	0.061	0.00	0.00	0.83	0.97	1.80	0.00%	0.00%	46.13%	53.87%	1.80	1.00
Aroclor-1262	378.31													California Quail	0.078	0	0	1	0.061	0.00	0.00	0.00	1.80	1.80	0.00%	0.00%	0.00%	100.00%	1.80	1.00
Dichloroprop	1.00													California Quail	0.078	0	0	1	0.061	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Aldrin	2.24			0.14			1.033			0.1630	0.31	2.31	0.37	California Quail	0.078	0	0	1	0.061	0.00	0.00	0.02	0.01	0.04	0.00%	0.00%	69.55%	30.45%	0.04	1.00
beta-1,2,3,4,5,6-Hexachlorocyclohexane	6.17			1.72			1.021			0.1201	10.61	6.30	0.74	California Quail	0.078	0	0	1	0.061	0.00	0.00	0.83	0.03	0.86	0.00%	0.00%	96.57%	3.43%	0.86	1.00
alpha-Chlordane	607.51			0.16			1.031			0.1771	100.12	626.63	107.56	California Quail	0.078	0	0	1	0.061	0.00	0.00	7.81	2.89	10.70	0.00%	0.00%	72.99%	27.01%	10.70	1.00
gamma-Chlordane	607.51			0.16			1.036			0.1771	100.12	629.12	107.56	California Quail	0.078	0	0	1	0.061	0.00	0.00	7.81	2.89	10.70	0.00%	0.00%	72.99%	27.01%	10.70	1.00
Dichlorodiphenyldichloroethylene	300.36	-2.5119	0.7524		2.4771	0.8804		3.6401	0.641		5.93	1807.60	1475.85	California Quail	0.078	0	0	1	0.061	0.00	0.00	0.46	1.43	1.89	0.00%	0.00%	24.46%	75.54%	1.89	1.00
Dichlorodiphenyltrichloroethane	300.36	-2.5119	0.7524		2.1247	0.8689		1.1788	0.7254		5.93	1190.05	203.81	California Quail	0.078	0	0	1	0.061	0.00	0.00	0.46	1.43	1.89	0.00%	0.00%	24.46%	75.54%	1.89	1.00
Dieldrin	6.07			0.41			14.70			1.20	2.49	89.23	7.28	California Quail	0.078	0	0	1	0.061	0.00	0.00	0.19	0.03	0.22	0.00%	0.00%	87.05%	12.95%	0.22	1.00
Endosulfan I	1.00			1.31			1.184			0.1455	1.31	1.18	0.15	California Quail	0.078	0	0	1	0.061	0.00	0.00	0.10	0.00	0.11	0.00%	0.00%	95.55%	4.45%	---	---
Endosulfan II	1.00			1.31			1.184			0.1455	1.31	1.18	0.15	California Quail	0.078	0	0	1	0.061	0.00	0.00	0.10	0.00	0.11	0.00%	0.00%	95.55%	4.45%	---	---
Endosulfan sulfate	1.00			1.98			1.184			0.1072	1.98	1.18	0.11	California Quail	0.078	0	0	1	0.061	0.00	0.00	0.15	0.00	0.16	0.00%	0.00%	97.01%	2.99%	---	---
Endrin aldehyde	1.00			1.44			6.686			0.1368	1.44	6.69	0.14	California Quail	0.078	0	0	1	0.061	0.00	0.00	0.11	0.00	0.12	0.00%	0.00%	95.93%	4.07%	---	---
Methoxychlor	1.00			0.52			3.739			0.2093	0.52	3.74	0.21	California Quail	0.078	0	0	1	0.061	0.00	0.00	0.04	0.00	0.05	0.00%	0.00%	89.59%	10.41%	---	---

Notes:

It has been conservatively assumed that all chemical intake is absorbed by the receptor.

1 - When no TRV was available, the PRG is listed as 1 mg/kg based on formulas in the spreadsheet but no actual PRG is recommended.

Acronyms:

BAF = Bioaccumulation factor

DW = Dry weight

FIR = Food ingestion rate

mg/kg = Miligrams per kilogram

mg/kg BW/day, DW = Miligrams per kilogram of body weight per day, dry weight

mg/kg/d = Miligrams per kilogram per day

NOAEL = No observed adverse effect level

PRGs = Preliminary remediation goals

TRV = Toxicity reference value

Equations:

Total Estimated Exposure = Food Intake + Incidental Soil Intake

Food Intake = estimated concentration in biota X proportion of biota type X food ingestion rate (FIR)

Incidental Soil intake = concentration in soil X proportion of soil as component of diet X food ingestion rate (FIR)

Estimated Concentrations in Biota (method 1) = B1*(ln[Site Specific Soil Concentration]) + B0

Table A-9. Exposure Calculation Worksheet for Determining LOAEL-Based PRGs for California Quail

		Literature-derived Bioaccumulation Models									Estimated Concentrations in Biota (mg/kg DW)				Food Intake	Diet Composition (proportion)				Estimated Exposure (mg/kg/d)					Percent Estimated Exposure by Pathway					
		Plants			Soil Inverts			Small Mammals																						
Analyte	Soil (mg/kg)	intercept	slope	BAF	intercept	slope	BAF	intercept	slope	BAF	Plants	Soil Invert.	Small Mam.	Species	(kg/kg-bw/d, dw)	Small Mam.	Soil Invert	Plants	Soil	Small Mam.	Soil Invert.	Plants	Soil	Total	Small Mam.	Soil Inverts	Plants	Soil	Selected Avian LOAEL TRV (mg/kg/d)	LOAEL HQ

where: B1 = slope and B0 = intercept

Estimated Concentrations in Biota (method 2) = soil concentration X BAF

Hazard Quotient = Total Estimated Exposure (Dose) / TRV

Therefore, when the HQ = 1, soil concentration = PRG

where: Soil concentration (mg/kg) = TRV / (Food Intake + Incidental Soil Intake) = Soil PRG

Table A-10. Exposure Calculation Worksheet for Determining LOAEL-Based PRGs for Western Meadowlark

		Literature-derived Bioaccumulation Models									Estimated Concentrations in Biota (mg/kg DW)			Food Intake	Diet Composition (proportion)				Estimated Exposure (mg/kg/d)					Percent Estimated Exposure by Pathway					
		Plants			Soil Inverts			Small Mammals																					
Analyte	Soil (mg/kg)	intercept	slope	BAF	intercept	slope	BAF	intercept	slope	BAF	Plants	Soil Inverts	Small Mam.	(kg/kg-bw/d, dw)	Small Mam.	Soil Inverts	Plants	Soil	Small Mam.	Soil Inverts	Plants	Soil	Total	Small Mam.	Soil Inverts	Plants	Soil	Selected Avian LOAEL TRV (mg/kg/d)	LOAEL HQ
Aluminum	1.00			0.00287			0.043			0.0263	0.00	0.04	0.03	0.12	0	0.63	0.37	0.0208	0.00	0.00	0.00	0.00	0.01	0.00%	55.34%	2.17%	42.49%	---	---
Antimony	1.00	-3.233	0.938				1			0.001 * 50 * Cdiet	0.04	1.00	0.05	0.12	0	0.63	0.37	0.0208	0.00	0.08	0.00	0.00	0.08	0.00%	94.68%	2.19%	3.13%	---	---
Arsenic, Total all valence states	10558.64	-1.992	0.564		-1.421	0.706		-4.8471	0.8188		25.36	167.31	15.47	0.12	0	0.63	0.37	0.0208	0.00	12.70	1.13	26.46	40.29	0.00%	31.52%	2.81%	65.67%	**40.30**	**1.00**
Arsenic (III)	10558.64	-1.992	0.564		-1.421	0.706		-4.8471	0.8188		25.36	167.31	15.47	0.12	0	0.63	0.37	0.0208	0.00	12.70	1.13	26.46	40.29	0.00%	31.52%	2.81%	65.67%	**40.30**	**1.00**
Arsenic (V)	10558.64	-1.992	0.564		-1.421	0.706		-4.8471	0.8188		25.36	167.31	15.47	0.12	0	0.63	0.37	0.0208	0.00	12.70	1.13	26.46	40.29	0.00%	31.52%	2.81%	65.67%	**40.30**	**1.00**
Barium	2547.94			0.156			0.091			0.0168	397.48	231.86	42.81	0.12	0	0.63	0.37	0.0208	0.00	17.60	17.72	6.38	41.70	0.00%	42.20%	42.49%	15.31%	**41.70**	**1.00**
Beryllium	1.00	-0.5361	0.7345				0.045			0.001 * 50 * Cdiet	0.59	0.05	0.00	0.12	0	0.63	0.37	0.0208	0.00	0.00	0.03	0.00	0.03	0.00%	10.67%	81.50%	7.83%	---	---
Bismuth	1.00			0.005			1			1	0.01	1.00	1.00	0.12	0	0.63	0.37	0.0208	0.00	0.08	0.00	0.00	0.08	0.00%	96.53%	0.28%	3.19%	---	---
Boron	300.21			5.714			1			1	1715.38	300.21	300.21	0.12	0	0.63	0.37	0.0208	0.00	22.78	76.46	0.75	100.00	0.00%	22.78%	76.46%	0.75%	**100.00**	**1.00**
Cadmium	5.08	-0.476	0.546		2.114	0.795		-1.2571	0.4723		1.51	30.17	0.61	0.12	0	0.63	0.37	0.0208	0.00	2.29	0.07	0.01	2.37	0.00%	96.62%	2.84%	0.54%	**2.37**	**1.00**
Chromium (total)	100.88			0.041			0.306	-1.4599	0.7338		4.14	30.87	6.86	0.12	0	0.63	0.37	0.0208	0.00	2.34	0.18	0.25	2.78	0.00%	84.28%	6.63%	9.09%	**2.78**	**1.00**
Chromium (+3)	100.88			0.041			0.306	-1.4599	0.7338		4.14	30.87	6.86	0.12	0	0.63	0.37	0.0208	0.00	2.34	0.18	0.25	2.78	0.00%	84.28%	6.63%	9.09%	**2.78**	**1.00**
Chromium (+6)	1.00			0.041			0.306	-1.4599	0.7338		0.04	0.31	0.23	0.12	0	0.63	0.37	0.0208	0.00	0.02	0.00	0.00	0.03	0.00%	84.28%	6.63%	9.09%		---
Cobalt	312.95			0.00745			0.291	-4.4669	1.307		2.33	91.07	20.97	0.12	0	0.63	0.37	0.0208	0.00	6.91	0.10	0.78	7.80	0.00%	88.61%	1.33%	10.05%	**7.80**	**1.00**
Copper	271.87	0.669	0.394				0.515	2.042	0.1444		17.77	140.01	17.31	0.12	0	0.63	0.37	0.0208	0.00	10.63	0.79	0.68	12.10	0.00%	87.82%	6.55%	5.63%	**12.10**	**1.00**
Lead	114.72	-1.328	0.561		-0.218	0.807		0.0761	0.4422		3.79	36.94	8.79	0.12	0	0.63	0.37	0.0208	0.00	2.80	0.17	0.29	3.26	0.00%	86.00%	5.18%	8.82%	**3.26**	**1.00**
Lithium	1.00			0.004			0.046			1	0.00	0.05	1.00	0.12	0	0.63	0.37	0.0208	0.00	0.00	0.00	0.00	0.01	0.00%	56.54%	2.89%	40.58%	---	---
Manganese	48820.09			0.0792	-0.809	0.682				0.0205	3866.55	701.91	1000.81	0.12	0	0.63	0.37	0.0208	0.00	53.27	172.35	122.33	347.96	0.00%	15.31%	49.53%	35.16%	**348.00**	**1.00**
Mercury (methyl)	21.26	-0.996	0.544		0.0781	0.3369				0.054	1.95	3.03	1.15	0.12	0	0.63	0.37	0.0208	0.00	0.23	0.09	0.05	0.37	0.00%	62.12%	23.47%	14.40%	**0.37**	**1.00**
Mercury (inorganic)	112.47	-0.996	0.544		0.0781	0.3369				0.054	4.82	5.31	6.11	0.12	0	0.63	0.37	0.0208	0.00	0.40	0.21	0.28	0.90	0.00%	44.78%	23.89%	31.33%	**0.90**	**1.00**
Molybdenum	270.35			1.2504			0.953			1	338.04	257.64	270.35	0.12	0	0.63	0.37	0.0208	0.00	19.55	15.07	0.68	35.30	0.00%	55.39%	42.69%	1.92%	**35.30**	**1.00**
Nickel	136.40	-2.224	0.748				1.059	-0.2462	0.4658		4.28	144.45	7.72	0.12	0	0.63	0.37	0.0208	0.00	10.96	0.19	0.34	11.50	0.00%	95.37%	1.66%	2.97%	**11.50**	**1.00**
Selenium	8.17	-0.678	1.104		-0.075	0.733		-0.4158	0.3764		5.16	4.33	1.45	0.12	0	0.63	0.37	0.0208	0.00	0.33	0.23	0.02	0.58	0.00%	56.72%	39.74%	3.54%	**0.58**	**1.00**
Silver	127.57			0.014			2.045			0.0040	1.79	260.89	0.51	0.12	0	0.63	0.37	0.0208	0.00	19.80	0.08	0.32	20.20	0.00%	98.02%	0.39%	1.58%	**20.20**	**1.00**
Strontium	1.00			0.207			0.4066			1.74	0.21	0.41	1.74	0.12	0	0.63	0.37	0.0208	0.00	0.03	0.01	0.00	0.04	0.00%	72.47%	21.65%	5.88%	---	---
Thallium	1.00			0.004			0.0541			0.1124	0.00	0.05	0.11	0.12	0	0.63	0.37	0.0208	0.00	0.00	0.00	0.00	0.01	0.00%	60.47%	2.63%	36.90%	---	---
Tin	317.95			1			0.08			0.08	317.95	25.44	25.44	0.12	0	0.63	0.37	0.0208	0.00	1.93	14.17	0.80	16.90	0.00%	11.42%	83.86%	4.71%	**16.90**	**1.00**
Uranium	1.00			0.021			0.033			0.0002	0.02	0.03	0.00	0.12	0	0.63	0.37	0.0208	0.00	0.00	0.00	0.00	0.01	0.00%	42.12%	15.74%	42.14%	---	---
Vanadium	116.42			0.00485			0.042			0.0123	0.56	4.89	1.43	0.12	0	0.63	0.37	0.0208	0.00	0.37	0.03	0.29	0.69	0.00%	53.94%	3.66%	42.40%	**0.69**	**1.00**
Zinc	725.66	1.575	0.555		4.449	0.328		4.3632	0.0706		186.95	742.16	124.99	0.12	0	0.63	0.37	0.0208	0.00	56.33	8.33	1.82	66.48	0.00%	84.73%	12.53%	2.74%	**66.50**	**1.00**
Ammonia/Ammonium	1.00													0.12	0	0.63	0.37	0.0208	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Chloride	1.00													0.12	0	0.63	0.37	0.0208	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Cyanide	1.00													0.12	0	0.63	0.37	0.0208	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Fluoride	11538.73			0.006							69.23			0.12	0	0.63	0.37	0.0208	0.00	0.00	3.09	28.91	32.00	0.00%	0.00%	9.64%	90.36%	**32.00**	**1.00**
Iodine	1.00			0.05							0.05			0.12	0	0.63	0.37	0.0208	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	47.07%	52.93%	---	---
Nitrate/Nitrite	1.00													0.12	0	0.63	0.37	0.0208	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Phosphate	1.00													0.12	0	0.63	0.37	0.0208	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Sulfate/Sulfite	1.00													0.12	0	0.63	0.37	0.0208	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---

Table A-10. Exposure Calculation Worksheet for Determining LOAEL-Based PRGs for Western Meadowlark

		Literature-derived Bioaccumulation Models									Estimated Concentrations in Biota (mg/kg DW)			Food Intake	Diet Composition (proportion)				Estimated Exposure (mg/kg/d)					Percent Estimated Exposure by Pathway					
		Plants			Soil Inverts			Small Mammals																					
Analyte	Soil (mg/kg)	intercept	slope	BAF	intercept	slope	BAF	intercept	slope	BAF	Plants	Soil Inverts	Small Mam.	(kg/kg-bw/d, dw)	Small Mam.	Soil Inverts	Plants	Soil	Small Mam.	Soil Inverts	Plants	Soil	Total	Small Mam.	Soil Inverts	Plants	Soil	Selected Avian LOAEL TRV (mg/kg/d)	LOAEL HQ
Total Organic Carbon	1.00													0.12	0	0.63	0.37	0.0208	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
1,1-dichloroethane	434.72						1.010			0.0109		438.89	4.75	0.12	0	0.63	0.37	0.0208	0.00	33.31	0.00	1.09	34.40	0.00%	96.83%	0.00%	3.17%	**34.40**	**1.00**
1,1-dichloroethene	434.04						1.011			0.0186		438.91	8.08	0.12	0	0.63	0.37	0.0208	0.00	33.31	0.00	1.09	34.40	0.00%	96.84%	0.00%	3.16%	**34.40**	**1.00**
1,1,1-trichloroethane	433.38						1.013			0.0305		438.93	13.23	0.12	0	0.63	0.37	0.0208	0.00	33.31	0.00	1.09	34.40	0.00%	96.84%	0.00%	3.16%	**34.40**	**1.00**
1,1,2-trichloroethane	434.46						1.010			0.0165		438.90	7.17	0.12	0	0.63	0.37	0.0208	0.00	33.31	0.00	1.09	34.40	0.00%	96.84%	0.00%	3.16%	**34.40**	**1.00**
1,1,2,2-tetrachloroethane	433.33						1.013			0.0270		438.94	11.71	0.12	0	0.63	0.37	0.0208	0.00	33.31	0.00	1.09	34.40	0.00%	96.84%	0.00%	3.16%	**34.40**	**1.00**
1,2-dichlorobenzene	181.99			2.45			1.018			0.0882	446.16	185.20	16.05	0.12	0	0.63	0.37	0.0208	0.00	14.06	19.89	0.46	34.40	0.00%	40.86%	57.81%	1.33%	**34.40**	**1.00**
1,2-dichloroethane (DCA)	443.75						0.988			0.0063		438.59	2.79	0.12	0	0.63	0.37	0.0208	0.00	33.29	0.00	1.11	34.40	0.00%	96.77%	0.00%	3.23%	**34.40**	**1.00**
1,3-dichlorobenzene	191.85			2.23			1.018			0.0963	428.39	195.31	18.47	0.12	0	0.63	0.37	0.0208	0.00	14.82	19.10	0.48	34.40	0.00%	43.09%	55.51%	1.40%	**34.40**	**1.00**
2-butanone (Methyl Ethyl Ketone/MEK)	10406.18						0.094			0.0006		974.00	5.74	0.12	0	0.63	0.37	0.0208	0.00	73.92	0.00	26.08	100.00	0.00%	73.92%	0.00%	26.08%	**100.00**	**1.00**
2-hexanone	5482.66						0.207			0.0053		1136.55	29.31	0.12	0	0.63	0.37	0.0208	0.00	86.26	0.00	13.74	100.00	0.00%	86.26%	0.00%	13.74%	**100.00**	**1.00**
Benzene	1.00						1.011			0.0186		1.01	0.02	0.12	0	0.63	0.37	0.0208	0.00	0.08	0.00	0.00	0.08	0.00%	96.84%	0.00%	3.16%	---	---
Butanol	1.00						0.478			0.0017		0.48	0.00	0.12	0	0.63	0.37	0.0208	0.00	0.04	0.00	0.00	0.04	0.00%	93.54%	0.00%	6.46%	---	---
Carbon Tetrachloride	432.60						1.015			0.0420		438.96	18.17	0.12	0	0.63	0.37	0.0208	0.00	33.32	0.00	1.08	34.40	0.00%	96.85%	0.00%	3.15%	**34.40**	**1.00**
Chlorobenzene	432.63						1.015			0.0490		438.96	21.21	0.12	0	0.63	0.37	0.0208	0.00	33.32	0.00	1.08	34.40	0.00%	96.85%	0.00%	3.15%	**34.40**	**1.00**
Chloroform	434.33						1.011			0.0135		438.90	5.85	0.12	0	0.63	0.37	0.0208	0.00	33.31	0.00	1.09	34.40	0.00%	96.84%	0.00%	3.16%	**34.40**	**1.00**
Cis-1,2-dichloroethylene	434.10						1.011			0.0122		438.91	5.31	0.12	0	0.63	0.37	0.0208	0.00	33.31	0.00	1.09	34.40	0.00%	96.84%	0.00%	3.16%	**34.40**	**1.00**
Dichloromethane (Methylene Chloride)	435.91						1.007			0.0042		438.85	1.83	0.12	0	0.63	0.37	0.0208	0.00	33.31	0.00	1.09	34.40	0.00%	96.82%	0.00%	3.18%	**34.40**	**1.00**
Ethyl Benzene	1.00			3.21			1.016			0.0666	3.21	1.02	0.07	0.12	0	0.63	0.37	0.0208	0.00	0.08	0.14	0.00	0.22	0.00%	34.60%	64.28%	1.12%	---	---
Methyl Isobutyl Ketone	5728.72						0.197			0.0037		1128.43	21.44	0.12	0	0.63	0.37	0.0208	0.00	85.64	0.00	14.36	100.00	0.00%	85.64%	0.00%	14.36%	**100.00**	**1.00**
n-butyl Benzene	1.00			1.67			1.022			0.1227	1.67	1.02	0.12	0.12	0	0.63	0.37	0.0208	0.00	0.08	0.07	0.00	0.15	0.00%	50.19%	48.19%	1.62%	---	---
Tetrachloroethylene	431.44						1.018			0.0390		439.00	16.83	0.12	0	0.63	0.37	0.0208	0.00	33.32	0.00	1.08	34.40	0.00%	96.86%	0.00%	3.14%	**34.40**	**1.00**
Toluene	1.00						1.014			0.0430		1.01	0.04	0.12	0	0.63	0.37	0.0208	0.00	0.08	0.00	0.00	0.08	0.00%	96.85%	0.00%	3.15%	---	---
Trans-1,2-dichloroethylene	434.10						1.011			0.0170		438.91	7.38	0.12	0	0.63	0.37	0.0208	0.00	33.31	0.00	1.09	34.40	0.00%	96.84%	0.00%	3.16%	**34.40**	**1.00**
Trichloroethylene (TCE)	433.53						1.012			0.0410		438.93	17.77	0.12	0	0.63	0.37	0.0208	0.00	33.31	0.00	1.09	34.40	0.00%	96.84%	0.00%	3.16%	**34.40**	**1.00**
Xylene	1.00			3.43			1.016			0.0619	3.43	1.02	0.06	0.12	0	0.63	0.37	0.0208	0.00	0.08	0.15	0.00	0.23	0.00%	33.16%	65.77%	1.08%	---	---
Acenaphthene	2849.00	-5.562	-0.8556				1.470			0	0.00	4188.03	0.00	0.12	0	0.63	0.37	0.0208	0.00	317.86	0.00	7.14	325.00	0.00%	97.80%	0.00%	2.20%	**325.00**	**1.00**
Acenaphthylene	186.19	-1.144	0.791				22.9			0	19.89	4263.65	0.00	0.12	0	0.63	0.37	0.0208	0.00	323.60	0.89	0.47	324.95	0.00%	99.58%	0.27%	0.14%	**325.00**	**1.00**
Anthracene	1716.22	-0.9887	0.7784				2.42			0	122.58	4153.25	0.00	0.12	0	0.63	0.37	0.0208	0.00	315.22	5.46	4.30	324.99	0.00%	97.00%	1.68%	1.32%	**325.00**	**1.00**
Benzo(a)pyrene	1.00	-2.0615	0.975				1.33			0	0.13	1.33	0.00	0.12	0	0.63	0.37	0.0208	0.00	0.10	0.01	0.00	0.11	0.00%	92.51%	5.20%	2.30%	---	---
Benzo(a)anthracene	1.00	-2.7078	0.5944				1.59			0	0.07	1.59	0.00	0.12	0	0.63	0.37	0.0208	0.00	0.12	0.00	0.00	0.13	0.00%	95.66%	2.36%	1.99%	---	---
Benzo(b)fluoranthene	1.00			0.31			2.6			0	0.31	2.60	0.00	0.12	0	0.63	0.37	0.0208	0.00	0.20	0.01	0.00	0.21	0.00%	92.36%	6.47%	1.17%	---	---
Benzo(ghi)perylene	1.00	-0.9313	1.1829				2.94			0	0.39	2.94	0.00	0.12	0	0.63	0.37	0.0208	0.00	0.22	0.02	0.00	0.24	0.00%	91.75%	7.22%	1.03%	---	---
Benzo[k]fluoranthene	1.00	-4.6482	0.1668				2.6			0	0.01	2.60	0.00	0.12	0	0.63	0.37	0.0208	0.00	0.20	0.00	0.00	0.20	0.00%	98.54%	0.21%	1.25%	---	---
Chrysene	1.00	-2.7078	0.5944				2.29			0	0.07	2.29	0.00	0.12	0	0.63	0.37	0.0208	0.00	0.17	0.00	0.00	0.18	0.00%	96.94%	1.66%	1.40%	---	---
Dibenz(ah)anthracene	1.00			0.13			2.31			0	0.13	2.31	0.00	0.12	0	0.63	0.37	0.0208	0.00	0.18	0.01	0.00	0.18	0.00%	95.48%	3.16%	1.36%	---	---
Fluoranthene	1.00			0.5			3.04			0	0.50	3.04	0.00	0.12	0	0.63	0.37	0.0208	0.00	0.23	0.02	0.00	0.26	0.00%	90.30%	8.72%	0.98%	---	---
Fluorene	445.91	-5.562	-0.8556				9.57			0	0.00	4267.37	0.00	0.12	0	0.63	0.37	0.0208	0.00	323.88	0.00	1.12	325.00	0.00%	99.66%	0.00%	0.34%	**325.00**	**1.00**

Table A-10. Exposure Calculation Worksheet for Determining LOAEL-Based PRGs for Western Meadowlark

		Literature-derived Bioaccumulation Models									Estimated Concentrations in Biota (mg/kg DW)			Food Intake	Diet Composition (proportion)				Estimated Exposure (mg/kg/d)					Percent Estimated Exposure by Pathway					
		Plants			Soil Inverts			Small Mammals																					
Analyte	Soil (mg/kg)	intercept	slope	BAF	intercept	slope	BAF	intercept	slope	BAF	Plants	Soil Inverts	Small Mam.	(kg/kg-bw/d, dw)	Small Mam.	Soil Inverts	Plants	Soil	Small Mam.	Soil Inverts	Plants	Soil	Total	Small Mam.	Soil Inverts	Plants	Soil	Selected Avian LOAEL TRV (mg/kg/d)	LOAEL HQ
Indeno[1,2,3-cd]pyrene	1.00			0.11			2.86			0	0.11	2.86	0.00	0.12	0	0.63	0.37	0.0208	0.00	0.22	0.00	0.00	0.22	0.00%	96.70%	2.18%	1.12%	---	---
2-Methylnaphthalene	9.46	-1.3205	4.544				1.020			0	7269.79	9.65	0.00	0.12	0	0.63	0.37	0.0208	0.00	0.73	324.05	0.02	324.80	0.00%	0.23%	99.77%	0.01%	**325.00**	**1.00**
Naphthalene	369.21			12.2			4.4			0	4504.32	1624.51	0.00	0.12	0	0.63	0.37	0.0208	0.00	123.30	200.78	0.93	325.00	0.00%	37.94%	61.78%	0.28%	**325.00**	**1.00**
Phenanthrene	2405.58	-0.1665	0.6203				1.72			0	105.94	4137.60	0.00	0.12	0	0.63	0.37	0.0208	0.00	314.03	4.72	6.03	324.78	0.00%	96.69%	1.45%	1.86%	**325.00**	**1.00**
Pyrene	1.00			0.72			1.75			0	0.72	1.75	0.00	0.12	0	0.63	0.37	0.0208	0.00	0.13	0.03	0.00	0.17	0.00%	79.33%	19.17%	1.50%	---	---
Total PAHs	1.00	0.083	0.3015							0	1.09		0.00	0.12	0	0.63	0.37	0.0208	0.00	0.00	0.05	0.00	0.05	0.00%	0.00%	95.08%	4.92%		---
Low MW PAHs	128678.69	-1.3205	0.4544							0	56.01		0.00	0.12	0	0.63	0.37	0.0208	0.00	0.00	2.50	322.45	324.94	0.00%	0.00%	0.77%	99.23%	**325.00**	**1.00**
High MW PAHs	1.00	-1.7026	0.9469							0	0.18		0.00	0.12	0	0.63	0.37	0.0208	0.00	0.00	0.01	0.00	0.01	0.00%	0.00%	76.42%	23.58%	---	---
Gasoline Range Organics																												**5000.00**	**0.00**
TPH - Diesel	1995353.63									0			0.00	0.12	0	0.63	0.37	0.0208	0.00	0.00	0.00	5000.00	5000.00	0.00%	0.00%	0.00%	100.00%	**5000.00**	**1.00**
TPH - Kerosene	1995353.63									0			0.00	0.12	0	0.63	0.37	0.0208	0.00	0.00	0.00	5000.00	5000.00	0.00%	0.00%	0.00%	100.00%	**5000.00**	**1.00**
Normal paraffin hydrocarbons	1.00									0			0.00	0.12	0	0.63	0.37	0.0208	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Phenol	1.00						0.235			0.0064		0.23	0.01	0.12	0	0.63	0.37	0.0208	0.00	0.02	0.00	0.00	0.02	0.00%	87.67%	0.00%	12.33%	---	---
2-methylphenol (ocresol)	1.00						0.336			0.0150		0.34	0.02	0.12	0	0.63	0.37	0.0208	0.00	0.03	0.00	0.00	0.03	0.00%	91.05%	0.00%	8.95%	---	---
4-methylphenol (pcresol)	1.00						0.333			0.0141		0.33	0.01	0.12	0	0.63	0.37	0.0208	0.00	0.03	0.00	0.00	0.03	0.00%	90.99%	0.00%	9.01%	---	---
2,4-dinitrotoluene	39.15	1.873	-0.3768	0.376			0.184			0.0155	14.72	7.19	0.61	0.12	0	0.63	0.37	0.0208	0.00	0.55	0.66	0.10	1.30	0.00%	41.98%	50.47%	7.55%	**1.30**	**1.00**
Bis[2-ethylhexyl] phthalate	1.00			0.07			41.144			0.0945	0.07	41.14	0.09	0.12	0	0.63	0.37	0.0208	0.00	3.12	0.00	0.00	3.13	0.00%	99.83%	0.09%	0.08%	---	---
Total PCBs	3.58			0.17	1.41	1.36				0.1792	0.61	23.24	0.64	0.12	0	0.63	0.37	0.0208	0.00	1.76	0.03	0.01	1.80	0.00%	98.00%	1.50%	0.50%	**1.80**	**1.00**
Aroclor 1016	3.55			0.30	1.41	1.36				0.2104	1.06	22.98	0.75	0.12	0	0.63	0.37	0.0208	0.00	1.74	0.05	0.01	1.80	0.00%	96.89%	2.61%	0.49%	**1.80**	**1.00**
Aroclor 1221	3.44			0.78	1.41	1.36				0.1883	2.70	22.02	0.65	0.12	0	0.63	0.37	0.0208	0.00	1.67	0.12	0.01	1.80	0.00%	92.83%	6.69%	0.48%	**1.80**	**1.00**
Aroclor 1232	3.40			0.99	1.41	1.36				0.1704	3.37	21.64	0.58	0.12	0	0.63	0.37	0.0208	0.00	1.64	0.15	0.01	1.80	0.00%	91.19%	8.34%	0.47%	**1.80**	**1.00**
Aroclor 1242	3.59			0.16	1.41	1.36				0.1756	0.58	23.26	0.63	0.12	0	0.63	0.37	0.0208	0.00	1.77	0.03	0.01	1.80	0.00%	98.06%	1.44%	0.50%	**1.80**	**1.00**
Aroclor 1248	3.58			0.18	1.41	1.36				0.1855	0.66	23.20	0.66	0.12	0	0.63	0.37	0.0208	0.00	1.76	0.03	0.01	1.80	0.00%	97.87%	1.63%	0.50%	**1.80**	**1.00**
Aroclor 1254	3.59			0.14	1.41	1.36				0.1630	0.50	23.30	0.59	0.12	0	0.63	0.37	0.0208	0.00	1.77	0.02	0.01	1.80	0.00%	98.26%	1.24%	0.50%	**1.80**	**1.00**
Aroclor 1260	3.62			0.05	1.41	1.36				0.0750	0.19	23.57	0.27	0.12	0	0.63	0.37	0.0208	0.00	1.79	0.01	0.01	1.81	0.00%	99.03%	0.47%	0.50%	**1.80**	**1.00**
Aroclor-1262	718.33													0.12	0	0.63	0.37	0.0208	0.00	0.00	0.00	1.80	1.80	0.00%	0.00%	0.00%	100.00%	**1.80**	**1.00**
Dichloroprop	1.00													0.12	0	0.63	0.37	0.0208	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Aldrin	0.40			0.14			1.033			0.1630	0.06	0.42	0.07	0.12	0	0.63	0.37	0.0208	0.00	0.03	0.00	0.00	0.03	0.00%	89.99%	7.13%	2.88%	**0.04**	**1.00**
beta-1,2,3,4,5,6-Hexachlorocyclohexane	5.47			1.72			1.021			0.1201	9.41	5.59	0.66	0.12	0	0.63	0.37	0.0208	0.00	0.42	0.42	0.01	0.86	0.00%	49.48%	48.92%	1.60%	**0.86**	**1.00**
alpha-Chlordane	121.40			0.16			1.031			0.1771	20.01	125.22	21.49	0.12	0	0.63	0.37	0.0208	0.00	9.50	0.89	0.30	10.70	0.00%	88.82%	8.33%	2.84%	**10.70**	**1.00**
gamma-Chlordane	120.97			0.16			1.036			0.1771	19.94	125.28	21.42	0.12	0	0.63	0.37	0.0208	0.00	9.51	0.89	0.30	10.70	0.00%	88.86%	8.31%	2.83%	**10.70**	**1.00**
Dichlorodiphenyldichloroethylene	2.30	-2.5119	0.7524		2.4771	0.8804		3.6401	0.641		0.15	24.76	64.92	0.12	0	0.63	0.37	0.0208	0.00	1.88	0.01	0.01	1.89	0.00%	99.34%	0.36%	0.30%	**1.89**	**1.00**
Dichlorodiphenyltrichloroethane	3.47	-2.5119	0.7524		2.1247	0.8689		1.1788	0.7254		0.21	24.69	8.02	0.12	0	0.63	0.37	0.0208	0.00	1.87	0.01	0.01	1.89	0.00%	99.05%	0.49%	0.46%	**1.89**	**1.00**
Dieldrin	0.20			0.41			14.70			1.20	0.08	2.88	0.24	0.12	0	0.63	0.37	0.0208	0.00	0.22	0.00	0.00	0.22	0.00%	98.17%	1.61%	0.22%	**0.22**	**1.00**
Endosulfan I	1.00			1.31			1.184			0.1455	1.31	1.18	0.15	0.12	0	0.63	0.37	0.0208	0.00	0.09	0.06	0.00	0.15	0.00%	59.58%	38.76%	1.66%	---	---
Endosulfan II	1.00			1.31			1.184			0.1455	1.31	1.18	0.15	0.12	0	0.63	0.37	0.0208	0.00	0.09	0.06	0.00	0.15	0.00%	59.58%	38.76%	1.66%	---	---
Endosulfan sulfate	1.00			1.98			1.184			0.1072	1.98	1.18	0.11	0.12	0	0.63	0.37	0.0208	0.00	0.09	0.09	0.00	0.18	0.00%	49.78%	48.84%	1.39%	---	---
Endrin aldehyde	1.00			1.44			6.686			0.1368	1.44	6.69	0.14	0.12	0	0.63	0.37	0.0208	0.00	0.51	0.06	0.00	0.57	0.00%	88.39%	11.18%	0.44%	---	---

Table A-10. Exposure Calculation Worksheet for Determining LOAEL-Based PRGs for Western Meadowlark

Analyte	Soil (mg/kg)	Literature-derived Bioaccumulation Models									Estimated Concentrations in Biota (mg/kg DW)			Food Intake	Diet Composition (proportion)				Estimated Exposure (mg/kg/d)					Percent Estimated Exposure by Pathway				Selected Avian LOAEL TRV (mg/kg/d)	LOAEL HQ
		Plants			Soil Inverts			Small Mammals																					
		intercept	slope	BAF	intercept	slope	BAF	intercept	slope	BAF	Plants	Soil Inverts	Small Mam.	(kg/kg-bw/d, dw)	Small Mam.	Soil Inverts	Plants	Soil	Small Mam.	Soil Inverts	Plants	Soil	Total	Small Mam.	Soil Inverts	Plants	Soil		
Methoxychlor	1.00			0.52			3.739			0.2093	0.52	3.74	0.21	0.12	0	0.63	0.37	0.0208	0.00	0.28	0.02	0.00	0.31	0.00%	91.64%	7.55%	0.81%	---	---

Notes:
It has been conservatively assumed that all chemical intake is absorbed by the receptor.
1 - When no TRV was available, the PRG is listed as 1 mg/kg based on formulas in the spreadsheet but no actual PRG is recommended.

Acronyms:
BAF = Bioaccumulation factor
DW = Dry weight
FIR = Food ingestion rate
mg/kg = Miligrams per kilogram
mg/kg BW/day, DW = Miligrams per kilogram of body weight per day, dry weight
mg/kg/d = Miligrams per kilogram per day
NOAEL = No observed adverse effect level
PRGs = Preliminary remediation goals
TRV = Toxicity reference value

Equations:
Total Estimated Exposure = Food Intake + Incidental Soil Intake
Food Intake = estimated concentration in biota X proportion of biota type X food ingestion rate (FIR)
Incidental Soil intake = concentration in soil X proportion of soil as component of diet X food ingestion rate (FIR)
Estimated Concentrations in Biota (method 1) = B1*(ln[Site Specific Soil Concentration]) + B0
where: B1 = slope and B0 = intercept
Estimated Concentrations in Biota (method 2) = soil concentration X BAF
Hazard Quotient = Total Estimated Exposure (Dose) / TRV
Therefore, when the HQ = 1, soil concentration = PRG
where: Soil concentration (mg/kg) = TRV / (Food Intake + Incidental Soil Intake) = Soil PRG

Table A-11. Exposure Calculation Worksheet for Determining LOAEL-Based PRGs for Killdeer

		Literature-derived Bioaccumulation Models									Estimated Concentrations in Biota (mg/kg DW)			Food Intake	Diet Composition (proportion)				Estimated Exposure (mg/kg/d)					Percent Estimated Exposure by Pathway					
		Plants			Soil Inverts			Small Mammals																					
Analyte	Soil (mg/kg)	intercept	slope	BAF	intercept	slope	BAF	intercept	slope	BAF	Plants	Soil Inverts	Small Mam.	(kg/kg-bw/d, dw)	Small Mam.	Soil Inverts	Plants	Soil	Small Mam.	Soil Inverts	Plants	Soil	Total	Small Mam.	Soil Inverts	Plants	Soil	Selected Avian LOAEL TRV (mg/kg/d)	LOAEL HQ
Aluminum	1.00			0.00287			0.043			0.0263	0.00	0.04	0.03	0.192	0	1	0	0.073	0.00	0.01	0.00	0.01	0.02	0.00%	37.07%	0.00%	62.93%	---	---
Antimony	1.00	-3.233	0.938				1			0.001 * 50 * Cdiet	0.04	1.00	0.05	0.192	0	1	0	0.073	0.00	0.19	0.00	0.01	0.21	0.00%	93.20%	0.00%	6.80%	---	---
Arsenic, Total all valence states	2131.65	-1.992	0.564		-1.421	0.706		-4.8471	0.8188		10.29	54.07	4.17	0.192	0	1	0	0.073	0.00	10.39	0.00	29.91	40.30	0.00%	25.79%	0.00%	74.21%	**40.30**	**1.00**
Arsenic (III)	2131.65	-1.992	0.564		-1.421	0.706		-4.8471	0.8188		10.29	54.07	4.17	0.192	0	1	0	0.073	0.00	10.39	0.00	29.91	40.30	0.00%	25.79%	0.00%	74.21%	**40.30**	**1.00**
Arsenic (V)	2131.65	-1.992	0.564		-1.421	0.706		-4.8471	0.8188		10.29	54.07	4.17	0.192	0	1	0	0.073	0.00	10.39	0.00	29.91	40.30	0.00%	25.79%	0.00%	74.21%	**40.30**	**1.00**
Barium	1323.00			0.156			0.091			0.0168	206.39	120.39	22.23	0.192	0	1	0	0.073	0.00	23.14	0.00	18.56	41.70	0.00%	55.49%	0.00%	44.51%	**41.70**	**1.00**
Beryllium	1.00	-0.5361	0.7345				0.045			0.001 * 50 * Cdiet	0.59	0.05	0.00	0.192	0	1	0	0.073	0.00	0.01	0.00	0.01	0.02	0.00%	38.14%	0.00%	61.86%	---	---
Bismuth	1.00			0.005			1			1	0.01	1.00	1.00	0.192	0	1	0	0.073	0.00	0.19	0.00	0.01	0.21	0.00%	93.20%	0.00%	6.80%	---	---
Boron	484.92			5.714			1			1	2770.82	484.92	484.92	0.192	0	1	0	0.073	0.00	93.20	0.00	6.80	100.00	0.00%	93.20%	0.00%	6.80%	**100.00**	**1.00**
Cadmium	1.63	-0.476	0.546		2.114	0.795		-1.2571	0.4723		0.81	12.21	0.36	0.192	0	1	0	0.073	0.00	2.35	0.00	0.02	2.37	0.00%	99.04%	0.00%	0.96%	**2.37**	**1.00**
Chromium (total)	38.17			0.041			0.306	-1.4599	0.7338		1.56	11.68	3.36	0.192	0	1	0	0.073	0.00	2.24	0.00	0.54	2.78	0.00%	80.74%	0.00%	19.26%	**2.78**	**1.00**
Chromium (+3)	38.17			0.041			0.306	-1.4599	0.7338		1.56	11.68	3.36	0.192	0	1	0	0.073	0.00	2.24	0.00	0.54	2.78	0.00%	80.74%	0.00%	19.26%	**2.78**	**1.00**
Chromium (+6)	1.00			0.041			0.306	-1.4599	0.7338		0.04	0.31	0.23	0.192	0	1	0	0.073	0.00	0.06	0.00	0.01	0.07	0.00%	80.74%	0.00%	19.26%		---
Cobalt	111.50			0.00745			0.291	-4.4669	1.307		0.83	32.45	5.44	0.192	0	1	0	0.073	0.00	6.24	0.00	1.56	7.80	0.00%	79.95%	0.00%	20.05%	**7.80**	**1.00**
Copper	107.07	0.669	0.394				0.515	2.042	0.1444		12.31	55.14	15.13	0.192	0	1	0	0.073	0.00	10.60	0.00	1.50	12.10	0.00%	87.59%	0.00%	12.41%	**12.10**	**1.00**
Lead	35.58	-1.328	0.561		-0.218	0.807		0.0761	0.4422		1.97	14.36	5.24	0.192	0	1	0	0.073	0.00	2.76	0.00	0.50	3.26	0.00%	84.68%	0.00%	15.32%	**3.26**	**1.00**
Lithium	1.00			0.004			0.046			1	0.00	0.05	1.00	0.192	0	1	0	0.073	0.00	0.01	0.00	0.01	0.02	0.00%	38.66%	0.00%	61.34%	---	---
Manganese	19635.66			0.0792	-0.809	0.682				0.0205	1555.14	377.15	402.53	0.192	0	1	0	0.073	0.00	72.48	0.00	275.49	347.97	0.00%	20.83%	0.00%	79.17%	**348.00**	**1.00**
Mercury (methyl)	3.59	-0.996	0.544		0.0781	0.3369				0.054	0.74	1.66	0.19	0.192	0	1	0	0.073	0.00	0.32	0.00	0.05	0.37	0.00%	86.39%	0.00%	13.61%	**0.37**	**1.00**
Mercury (inorganic)	22.11	-0.996	0.544		0.0781	0.3369				0.054	1.99	3.07	1.20	0.192	0	1	0	0.073	0.00	0.59	0.00	0.31	0.90	0.00%	65.53%	0.00%	34.47%	**0.90**	**1.00**
Molybdenum	179.02			1.2504			0.953			1	223.84	170.60	179.02	0.192	0	1	0	0.073	0.00	32.79	0.00	2.51	35.30	0.00%	92.88%	0.00%	7.12%	**35.30**	**1.00**
Nickel	52.86	-2.224	0.748				1.059	-0.2462	0.4658		2.10	55.98	4.96	0.192	0	1	0	0.073	0.00	10.76	0.00	0.74	11.50	0.00%	93.55%	0.00%	6.45%	**11.50**	**1.00**
Selenium	4.29	-0.678	1.104		-0.075	0.733		-0.4158	0.3764		2.54	2.70	1.14	0.192	0	1	0	0.073	0.00	0.52	0.00	0.06	0.58	0.00%	89.60%	0.00%	10.40%	**0.58**	**1.00**
Silver	49.62			0.014			2.045			0.0040	0.69	101.48	0.20	0.192	0	1	0	0.073	0.00	19.50	0.00	0.70	20.20	0.00%	96.55%	0.00%	3.45%	**20.20**	**1.00**
Strontium	1.00			0.207			0.4066			1.74	0.21	0.41	1.74	0.192	0	1	0	0.073	0.00	0.08	0.00	0.01	0.09	0.00%	84.78%	0.00%	15.22%	---	---
Thallium	1.00			0.004			0.0541			0.1124	0.00	0.05	0.11	0.192	0	1	0	0.073	0.00	0.01	0.00	0.01	0.02	0.00%	42.56%	0.00%	57.44%	---	---
Tin	574.73			1			0.08			0.08	574.73	45.98	45.98	0.192	0	1	0	0.073	0.00	8.84	0.00	8.06	16.90	0.00%	52.29%	0.00%	47.71%	**16.90**	**1.00**
Uranium	1.00			0.021			0.033			0.0002	0.02	0.03	0.00	0.192	0	1	0	0.073	0.00	0.01	0.00	0.01	0.02	0.00%	31.13%	0.00%	68.87%	---	---
Vanadium	31.13			0.00485			0.042			0.0123	0.15	1.31	0.38	0.192	0	1	0	0.073	0.00	0.25	0.00	0.44	0.69	0.00%	36.52%	0.00%	63.48%	**0.69**	**1.00**
Zinc	67.80	1.575	0.555		4.449	0.328		4.3632	0.0706		50.16	341.05	105.73	0.192	0	1	0	0.073	0.00	65.55	0.00	0.95	66.50	0.00%	98.57%	0.00%	1.43%	**66.50**	**1.00**
Ammonia/Ammonium	1.00													0.192	0	1	0	0.073	0.00	0.00	0.00	0.01	0.01	0.00%	0.00%	0.00%	100.00%	---	---
Chloride	1.00													0.192	0	1	0	0.073	0.00	0.00	0.00	0.01	0.01	0.00%	0.00%	0.00%	100.00%	---	---
Cyanide	1.00													0.192	0	1	0	0.073	0.00	0.00	0.00	0.01	0.01	0.00%	0.00%	0.00%	100.00%	---	---
Fluoride	2280.84			0.006							13.69			0.192	0	1	0	0.073	0.00	0.00	0.00	32.00	32.00	0.00%	0.00%	0.00%	100.00%	**32.00**	**1.00**

Table A-11. Exposure Calculation Worksheet for Determining LOAEL-Based PRGs for Killdeer

		Literature-derived Bioaccumulation Models									Estimated Concentrations in Biota (mg/kg DW)			Food Intake	Diet Composition (proportion)				Estimated Exposure (mg/kg/d)					Percent Estimated Exposure by Pathway					
		Plants			Soil Inverts			Small Mammals																					
Analyte	Soil (mg/kg)	intercept	slope	BAF	intercept	slope	BAF	intercept	slope	BAF	Plants	Soil Inverts	Small Mam.	(kg/kg-bw/d, dw)	Small Mam.	Soil Inverts	Plants	Soil	Small Mam.	Soil Inverts	Plants	Soil	Total	Small Mam.	Soil Inverts	Plants	Soil	Selected Avian LOAEL TRV (mg/kg/d)	LOAEL HQ
Iodine	1.00			0.05							0.05			0.192	0	1	0	0.073	0.00	0.00	0.00	0.01	0.01	0.00%	0.00%	0.00%	100.00%	---	---
Nitrate/Nitrite	1.00													0.192	0	1	0	0.073	0.00	0.00	0.00	0.01	0.01	0.00%	0.00%	0.00%	100.00%	---	---
Phosphate	1.00													0.192	0	1	0	0.073	0.00	0.00	0.00	0.01	0.01	0.00%	0.00%	0.00%	100.00%	---	---
Sulfate/Sulfite	1.00													0.192	0	1	0	0.073	0.00	0.00	0.00	0.01	0.01	0.00%	0.00%	0.00%	100.00%	---	---
Total Organic Carbon	1.00													0.192	0	1	0	0.073	0.00	0.00	0.00	0.01	0.01	0.00%	0.00%	0.00%	100.00%	---	---
1,1-dichloroethane	165.33						1.010			0.0109		166.92	1.80	0.192	0	1	0	0.073	0.00	32.08	0.00	2.32	34.40	0.00%	93.26%	0.00%	6.74%	**34.40**	**1.00**
1,1-dichloroethene	165.08						1.011			0.0186		166.94	3.07	0.192	0	1	0	0.073	0.00	32.08	0.00	2.32	34.40	0.00%	93.27%	0.00%	6.73%	**34.40**	**1.00**
1,1,1-trichloroethane	164.84						1.013			0.0305		166.96	5.03	0.192	0	1	0	0.073	0.00	32.09	0.00	2.31	34.40	0.00%	93.28%	0.00%	6.72%	**34.40**	**1.00**
1,1,2-trichloroethane	165.24						1.010			0.0165		166.93	2.73	0.192	0	1	0	0.073	0.00	32.08	0.00	2.32	34.40	0.00%	93.26%	0.00%	6.74%	**34.40**	**1.00**
1,1,2,2-tetrachloroethane	164.82						1.013			0.0270		166.96	4.45	0.192	0	1	0	0.073	0.00	32.09	0.00	2.31	34.40	0.00%	93.28%	0.00%	6.72%	**34.40**	**1.00**
1,2-dichlorobenzene	164.11			2.45			1.018			0.0882	402.32	167.01	14.47	0.192	0	1	0	0.073	0.00	32.10	0.00	2.30	34.40	0.00%	93.31%	0.00%	6.69%	**34.40**	**1.00**
1,2-dichloroethane (DCA)	168.64						0.988			0.0063		166.68	1.06	0.192	0	1	0	0.073	0.00	32.03	0.00	2.37	34.40	0.00%	93.12%	0.00%	6.88%	**34.40**	**1.00**
1,3-dichlorobenzene	164.05			2.23			1.018			0.0963	366.32	167.01	15.79	0.192	0	1	0	0.073	0.00	32.10	0.00	2.30	34.40	0.00%	93.31%	0.00%	6.69%	**34.40**	**1.00**
2-butanone (Methyl Ethyl Ketone/MEK)	3123.19						0.094			0.0006		292.32	1.72	0.192	0	1	0	0.073	0.00	56.18	0.00	43.82	100.00	0.00%	56.18%	0.00%	43.82%	**100.00**	**1.00**
2-hexanone	1856.29						0.207			0.0053		384.81	9.92	0.192	0	1	0	0.073	0.00	73.96	0.00	26.04	100.00	0.00%	73.96%	0.00%	26.04%	**100.00**	**1.00**
Benzene	1.00						1.011			0.0186		1.01	0.02	0.192	0	1	0	0.073	0.00	0.19	0.00	0.01	0.21	0.00%	93.27%	0.00%	6.73%	---	---
Butanol	1.00						0.478			0.0017		0.48	0.00	0.192	0	1	0	0.073	0.00	0.09	0.00	0.01	0.11	0.00%	86.76%	0.00%	13.24%	---	---
Carbon Tetrachloride	164.56						1.015			0.0420		166.98	6.91	0.192	0	1	0	0.073	0.00	32.09	0.00	2.31	34.40	0.00%	93.29%	0.00%	6.71%	**34.40**	**1.00**
Chlorobenzene	164.57						1.015			0.0490		166.98	8.07	0.192	0	1	0	0.073	0.00	32.09	0.00	2.31	34.40	0.00%	93.29%	0.00%	6.71%	**34.40**	**1.00**
Chloroform	165.19						1.011			0.0135		166.93	2.23	0.192	0	1	0	0.073	0.00	32.08	0.00	2.32	34.40	0.00%	93.26%	0.00%	6.74%	**34.40**	**1.00**
Cis-1,2-dichloroethylene	165.11						1.011			0.0122		166.94	2.02	0.192	0	1	0	0.073	0.00	32.08	0.00	2.32	34.40	0.00%	93.27%	0.00%	6.73%	**34.40**	**1.00**
Dichloromethane (Methylene Chloride)	165.77						1.007			0.0042		166.89	0.70	0.192	0	1	0	0.073	0.00	32.07	0.00	2.33	34.40	0.00%	93.24%	0.00%	6.76%	**34.40**	**1.00**
Ethyl Benzene	1.00			3.21			1.016			0.0666	3.21	1.02	0.07	0.192	0	1	0	0.073	0.00	0.20	0.00	0.01	0.21	0.00%	93.30%	0.00%	6.70%	---	---
Methyl Isobutyl Ketone	1927.26						0.197			0.0037		379.63	7.21	0.192	0	1	0	0.073	0.00	72.96	0.00	27.04	100.00	0.00%	72.96%	0.00%	27.04%	**100.00**	**1.00**
n-butyl Benzene	1.00			1.67			1.022			0.1227	1.67	1.02	0.12	0.192	0	1	0	0.073	0.00	0.20	0.00	0.01	0.21	0.00%	93.34%	0.00%	6.66%	---	---
Tetrachloroethylene	164.13						1.018			0.0390		167.01	6.40	0.192	0	1	0	0.073	0.00	32.10	0.00	2.30	34.40	0.00%	93.31%	0.00%	6.69%	**34.40**	**1.00**
Toluene							1.014			0.0430		0.00	0.00	0.192	0	1	0	0.073	0.00	0.00	0.00	0.00	0.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	---	---
Trans-1,2-dichloroethylene	165.11						1.011			0.0170		166.94	2.81	0.192	0	1	0	0.073	0.00	32.08	0.00	2.32	34.40	0.00%	93.27%	0.00%	6.73%	**34.40**	**1.00**
Trichloroethylene (TCE)	164.90						1.012			0.0410		166.95	6.76	0.192	0	1	0	0.073	0.00	32.09	0.00	2.31	34.40	0.00%	93.27%	0.00%	6.73%	**34.40**	**1.00**
Xylene				3.43			1.016			0.0619	0.00	0.00	0.00	0.192	0	1	0	0.073	0.00	0.00	0.00	0.00	0.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	---	---
Acenaphthene	1095.94	-5.562	-0.8556				1.470			0	0.00	1611.03	0.00	0.192	0	1	0	0.073	0.00	309.62	0.00	15.38	325.00	0.00%	95.27%	0.00%	4.73%	**325.00**	**1.00**
Acenaphthylene	73.61	-1.144	0.791				22.9			0	9.55	1685.66	0.00	0.192	0	1	0	0.073	0.00	323.97	0.00	1.03	325.00	0.00%	99.68%	0.00%	0.32%	**325.00**	**1.00**
Anthracene	678.31	-0.9887	0.7784				2.42			0	59.51	1641.51	0.00	0.192	0	1	0	0.073	0.00	315.48	0.00	9.52	325.00	0.00%	97.07%	0.00%	2.93%	**325.00**	**1.00**
Benzo(a)pyrene	1.00	-2.0615	0.975				1.33			0	0.13	1.33	0.00	0.192	0	1	0	0.073	0.00	0.26	0.00	0.01	0.27	0.00%	94.80%	0.00%	5.20%	---	---

Table A-11. Exposure Calculation Worksheet for Determining LOAEL-Based PRGs for Killdeer

		Literature-derived Bioaccumulation Models									Estimated Concentrations in Biota (mg/kg DW)			Food Intake	Diet Composition (proportion)				Estimated Exposure (mg/kg/d)					Percent Estimated Exposure by Pathway					
		Plants			Soil Inverts			Small Mammals																					
Analyte	Soil (mg/kg)	intercept	slope	BAF	intercept	slope	BAF	intercept	slope	BAF	Plants	Soil Inverts	Small Mam.	(kg/kg-bw/d, dw)	Small Mam.	Soil Inverts	Plants	Soil	Small Mam.	Soil Inverts	Plants	Soil	Total	Small Mam.	Soil Inverts	Plants	Soil	Selected Avian LOAEL TRV (mg/kg/d)	LOAEL HQ
Benzo(a)anthracene	1.00	-2.7078	0.5944				1.59			0	0.07	1.59	0.00	0.192	0	1	0	0.073	0.00	0.31	0.00	0.01	0.32	0.00%	95.61%	0.00%	4.39%	---	---
Benzo(b)fluoranthene	1.00			0.31			2.6			0	0.31	2.60	0.00	0.192	0	1	0	0.073	0.00	0.50	0.00	0.01	0.51	0.00%	97.27%	0.00%	2.73%	---	---
Benzo(ghi)perylene	1.00	-0.9313	1.1829				2.94			0	0.39	2.94	0.00	0.192	0	1	0	0.073	0.00	0.57	0.00	0.01	0.58	0.00%	97.58%	0.00%	2.42%	---	---
Benzo[k]fluoranthene	1.00	-4.6482	0.1668				2.6			0	0.01	2.60	0.00	0.192	0	1	0	0.073	0.00	0.50	0.00	0.01	0.51	0.00%	97.27%	0.00%	2.73%	---	---
Chrysene	1.00	-2.7078	0.5944				2.29			0	0.07	2.29	0.00	0.192	0	1	0	0.073	0.00	0.44	0.00	0.01	0.45	0.00%	96.91%	0.00%	3.09%	---	---
Dibenz(ah)anthracene	1.00			0.13			2.31			0	0.13	2.31	0.00	0.192	0	1	0	0.073	0.00	0.44	0.00	0.01	0.46	0.00%	96.94%	0.00%	3.06%	---	---
Fluoranthene	1.00			0.5			3.04			0	0.50	3.04	0.00	0.192	0	1	0	0.073	0.00	0.58	0.00	0.01	0.60	0.00%	97.65%	0.00%	2.35%	---	---
Fluorene	175.36	-5.562	-0.8556				9.57			0	0.00	1678.23	0.00	0.192	0	1	0	0.073	0.00	322.54	0.00	2.46	325.00	0.00%	99.24%	0.00%	0.76%	**325.00**	**1.00**
Indeno[1,2,3-cd]pyrene	1.00			0.11			2.86			0	0.11	2.86	0.00	0.192	0	1	0	0.073	0.00	0.55	0.00	0.01	0.56	0.00%	97.51%	0.00%	2.49%	---	---
2-Methylnaphthalene	1547.37	-1.3205	4.544				1.020			0	83181085330306.80	1578.07	0.00	0.192	0	1	0	0.073	0.00	303.29	0.00	21.71	325.00	0.00%	93.32%	0.00%	6.68%	**325.00**	**1.00**
Naphthalene	378.05			12.2			4.4			0	4612.24	1663.43	0.00	0.192	0	1	0	0.073	0.00	319.70	0.00	5.30	325.00	0.00%	98.37%	0.00%	1.63%	**325.00**	**1.00**
Phenanthrene	943.13	-0.1665	0.6203				1.72			0	59.27	1622.18	0.00	0.192	0	1	0	0.073	0.00	311.77	0.00	13.23	325.00	0.00%	95.93%	0.00%	4.07%	**325.00**	**1.00**
Pyrene	1.00			0.72			1.75			0	0.72	1.75	0.00	0.192	0	1	0	0.073	0.00	0.34	0.00	0.01	0.35	0.00%	96.00%	0.00%	4.00%	---	---
Total PAHs	1.00	0.083	0.3015							0	1.09		0.00	0.192	0	1	0	0.073	0.00	0.00	0.00	0.01	0.01	0.00%	0.00%	0.00%	100.00%		---
Low MW PAHs	23164.80	-1.3205	0.4544							0	25.70		0.00	0.192	0	1	0	0.073	0.00	0.00	0.00	325.00	325.00	0.00%	0.00%	0.00%	100.00%	**325.00**	**1.00**
High MW PAHs	1.00	-1.7026	0.9469							0	0.18		0.00	0.192	0	1	0	0.073	0.00	0.00	0.00	0.01	0.01	0.00%	0.00%	0.00%	100.00%	---	---
Gasoline Range Organics																												**5000.00**	**0.00**
TPH - Diesel	356381.52									0			0.00	0.192	0	1	0	0.073	0.00	0.00	0.00	5000.00	5000.00	0.00%	0.00%	0.00%	100.00%	**5000.00**	**1.00**
TPH - Kerosene	356381.52									0			0.00	0.192	0	1	0	0.073	0.00	0.00	0.00	5000.00	5000.00	0.00%	0.00%	0.00%	100.00%	**5000.00**	**1.00**
Normal paraffin hydrocarbons	1.00									0			0.00	0.192	0	1	0	0.073	0.00	0.00	0.00	0.01	0.01	0.00%	0.00%	0.00%	100.00%	---	---
Phenol	1.00						0.235			0.0064		0.23	0.01	0.192	0	1	0	0.073	0.00	0.05	0.00	0.01	0.06	0.00%	76.28%	0.00%	23.72%	---	---
2-methylphenol (ocresol)	1.00						0.336			0.0150		0.34	0.02	0.192	0	1	0	0.073	0.00	0.06	0.00	0.01	0.08	0.00%	82.14%	0.00%	17.86%	---	---
4-methylphenol (pcresol)	1.00						0.333			0.0141		0.33	0.01	0.192	0	1	0	0.073	0.00	0.06	0.00	0.01	0.08	0.00%	82.03%	0.00%	17.97%	---	---
2,4-dinitrotoluene	26.35	1.873	-0.3768	0.376			0.184			0.0155	9.91	4.84	0.41	0.192	0	1	0	0.073	0.00	0.93	0.00	0.37	1.30	0.00%	71.56%	0.00%	28.44%	**1.30**	**1.00**
Bis[2-ethylhexyl] phthalate	1.00			0.07			41.144			0.0945	0.07	41.14	0.09	0.192	0	1	0	0.073	0.00	7.91	0.00	0.01	7.92	0.00%	99.82%	0.00%	0.18%	---	---
Total PCBs	1.82			0.17	1.41	1.36				0.1792	0.31	9.23	0.33	0.192	0	1	0	0.073	0.00	1.77	0.00	0.03	1.80	0.00%	98.58%	0.00%	1.42%	**1.80**	**1.00**
Aroclor 1016	1.82			0.30	1.41	1.36				0.2104	0.54	9.23	0.38	0.192	0	1	0	0.073	0.00	1.77	0.00	0.03	1.80	0.00%	98.58%	0.00%	1.42%	**1.80**	**1.00**
Aroclor 1221	1.82			0.78	1.41	1.36				0.1883	1.43	9.23	0.34	0.192	0	1	0	0.073	0.00	1.77	0.00	0.03	1.80	0.00%	98.58%	0.00%	1.42%	**1.80**	**1.00**
Aroclor 1232	1.82			0.99	1.41	1.36				0.1704	1.80	9.23	0.31	0.192	0	1	0	0.073	0.00	1.77	0.00	0.03	1.80	0.00%	98.58%	0.00%	1.42%	**1.80**	**1.00**
Aroclor 1242	1.82			0.16	1.41	1.36				0.1756	0.29	9.23	0.32	0.192	0	1	0	0.073	0.00	1.77	0.00	0.03	1.80	0.00%	98.58%	0.00%	1.42%	**1.80**	**1.00**
Aroclor 1248	1.82			0.18	1.41	1.36				0.1855	0.34	9.23	0.34	0.192	0	1	0	0.073	0.00	1.77	0.00	0.03	1.80	0.00%	98.58%	0.00%	1.42%	**1.80**	**1.00**
Aroclor 1254	1.82			0.14	1.41	1.36				0.1630	0.25	9.23	0.30	0.192	0	1	0	0.073	0.00	1.77	0.00	0.03	1.80	0.00%	98.58%	0.00%	1.42%	**1.80**	**1.00**
Aroclor 1260	1.82			0.05	1.41	1.36				0.0750	0.09	9.23	0.14	0.192	0	1	0	0.073	0.00	1.77	0.00	0.03	1.80	0.00%	98.58%	0.00%	1.42%	**1.80**	**1.00**
Aroclor-1262	128.30													0.192	0	1	0	0.073	0.00	0.00	0.00	1.80	1.80	0.00%	0.00%	0.00%	100.00%	**1.80**	**1.00**

Table A-11. Exposure Calculation Worksheet for Determining LOAEL-Based PRGs for Killdeer

		Literature-derived Bioaccumulation Models									Estimated Concentrations in Biota (mg/kg DW)			Food Intake	Diet Composition (proportion)				Estimated Exposure (mg/kg/d)					Percent Estimated Exposure by Pathway					
		Plants			Soil Inverts			Small Mammals																					
Analyte	Soil (mg/kg)	intercept	slope	BAF	intercept	slope	BAF	intercept	slope	BAF	Plants	Soil Inverts	Small Mam.	(kg/kg-bw/d, dw)	Small Mam.	Soil Inverts	Plants	Soil	Small Mam.	Soil Inverts	Plants	Soil	Total	Small Mam.	Soil Inverts	Plants	Soil	Selected Avian LOAEL TRV (mg/kg/d)	LOAEL HQ
Dichloroprop	1.00													0.192	0	1	0	0.073	0.00	0.00	0.00	0.01	0.01	0.00%	0.00%	0.00%	100.00%	---	---
Aldrin	0.16			0.14			1.033			0.1630	0.02	0.17	0.03	0.192	0	1	0	0.073	0.00	0.03	0.00	0.00	0.04	0.00%	93.40%	0.00%	6.60%	**0.04**	**1.00**
beta-1,2,3,4,5,6-Hexachlorocyclohexane	4.08			1.72			1.021			0.1201	7.01	4.16	0.49	0.192	0	1	0	0.073	0.00	0.80	0.00	0.06	0.86	0.00%	93.33%	0.00%	6.67%	**0.86**	**1.00**
alpha-Chlordane	50.41			0.16			1.031			0.1771	8.31	51.99	8.92	0.192	0	1	0	0.073	0.00	9.99	0.00	0.71	10.70	0.00%	93.39%	0.00%	6.61%	**10.70**	**1.00**
gamma-Chlordane	50.22			0.16			1.036			0.1771	8.28	52.01	8.89	0.192	0	1	0	0.073	0.00	10.00	0.00	0.70	10.70	0.00%	93.41%	0.00%	6.59%	**10.70**	**1.00**
Dichlorodiphenyldichloroethylene	0.80	-2.5119	0.7524		2.4771	0.8804		3.6401	0.641		0.07	9.79	33.03	0.192	0	1	0	0.073	0.00	1.88	0.00	0.01	1.89	0.00%	99.41%	0.00%	0.59%	**1.89**	**1.00**
Dichlorodiphenyltrichloroethane	1.19	-2.5119	0.7524		2.1247	0.8689		1.1788	0.7254		0.09	9.75	3.69	0.192	0	1	0	0.073	0.00	1.87	0.00	0.02	1.89	0.00%	99.12%	0.00%	0.88%	**1.89**	**1.00**
Dieldrin	0.08			0.41			14.70			1.20	0.03	1.15	0.09	0.192	0	1	0	0.073	0.00	0.22	0.00	0.00	0.22	0.00%	99.51%	0.00%	0.49%	**0.22**	**1.00**
Endosulfan I	1.00			1.31			1.184			0.1455	1.31	1.18	0.15	0.192	0	1	0	0.073	0.00	0.23	0.00	0.01	0.24	0.00%	94.19%	0.00%	5.81%	---	---
Endosulfan II	1.00			1.31			1.184			0.1455	1.31	1.18	0.15	0.192	0	1	0	0.073	0.00	0.23	0.00	0.01	0.24	0.00%	94.19%	0.00%	5.81%	---	---
Endosulfan sulfate	1.00			1.98			1.184			0.1072	1.98	1.18	0.11	0.192	0	1	0	0.073	0.00	0.23	0.00	0.01	0.24	0.00%	94.19%	0.00%	5.81%	---	---
Endrin aldehyde	1.00			1.44			6.686			0.1368	1.44	6.69	0.14	0.192	0	1	0	0.073	0.00	1.28	0.00	0.01	1.30	0.00%	98.92%	0.00%	1.08%	---	---
Methoxychlor	1.00			0.52			3.739			0.2093	0.52	3.74	0.21	0.192	0	1	0	0.073	0.00	0.72	0.00	0.01	0.73	0.00%	98.09%	0.00%	1.91%	---	---

Notes:
It has been conservatively assumed that all chemical intake is absorbed by the receptor.
1 - When no TRV was available, the PRG is listed as 1 mg/kg based on formulas in the spreadsheet but no actual PRG is recommended.
Acronyms:
BAF = Bioaccumulation factor
DW = Dry weight
FIR = Food ingestion rate
mg/kg = Miligrams per kilogram
mg/kg BW/day, DW = Miligrams per kilogram of body weight per day, dry weight
mg/kg/d = Miligrams per kilogram per day
NOAEL = No observed adverse effect level
PRGs = Preliminary remediation goals
TRV = Toxicity reference value
Equations:
Total Estimated Exposure = Food Intake + Incidental Soil Intake
Food Intake = estimated concentration in biota X proportion of biota type X food ingestion rate (FIR)
Incidental Soil intake = concentration in soil X proportion of soil as component of diet X food ingestion rate (FIR)
Estimated Concentrations in Biota (method 1) = B1*(ln[Site Specific Soil Concentration]) + B0
where: B1 = slope and B0 = intercept
Estimated Concentrations in Biota (method 2) = soil concentration X BAF
Hazard Quotient = Total Estimated Exposure (Dose) / TRV
Therefore, when the HQ = 1, soil concentration = PRG
where: Soil concentration (mg/kg) = TRV / (Food Intake + Incidental Soil Intake) = Soil PRG

Table A-12. Exposure Calculation Worksheet for Determining LOAEL-Based PRGs for Red-tailed Hawk

		Literature-derived Bioaccumulation Models									Estimated Concentrations in Biota (mg/kg DW)			Food Intake	Diet Composition (proportion)				Estimated Exposure (mg/kg/d)					Percent Estimated Exposure by Pathway					
		Plants			Soil Inverts			Small Mammals																					
Analyte	Soil (mg/kg)	intercept	slope	BAF	intercept	slope	BAF	intercept	slope	BAF	Plants	Soil Inverts	Small Mam.	(kg/kg-bw/d, dw)	Small Mam.	Soil Inverts	Plants	Soil	Small Mam.	Soil Inverts	Plants	Soil	Total	Small Mam.	Soil Inverts	Plants	Soil	Selected Avian LOAEL TRV (mg/kg/d)	LOAEL HQ
Aluminum	1.00			0.00287			0.043			0.0263	0.00	0.04	0.03	0.035	1	0	0	0.024	0.00	0.00	0.00	0.00	0.00	52.29%	0.00%	0.00%	47.71%	---	---
Antimony	1.00	-3.233	0.938				1			0.001 * 50 * Cdiet	0.04	1.00	0.05	0.035	1	0	0	0.024	0.00	0.00	0.00	0.00	0.00	67.57%	0.00%	0.00%	32.43%	---	---
Arsenic, Total all valence states	45439.07	-1.992	0.564		-1.421	0.706		-4.8471	0.8188		57.77	468.83	51.10	0.035	1	0	0	0.024	1.80	0.00	0.00	38.50	40.30	4.48%	0.00%	0.00%	95.52%	**40.30**	**1.00**
Arsenic (III)	45439.07	-1.992	0.564		-1.421	0.706		-4.8471	0.8188		57.77	468.83	51.10	0.035	1	0	0	0.024	1.80	0.00	0.00	38.50	40.30	4.48%	0.00%	0.00%	95.52%	**40.30**	**1.00**
Arsenic (V)	45439.07	-1.992	0.564		-1.421	0.706		-4.8471	0.8188		57.77	468.83	51.10	0.035	1	0	0	0.024	1.80	0.00	0.00	38.50	40.30	4.48%	0.00%	0.00%	95.52%	**40.30**	**1.00**
Barium	28953.51			0.156			0.091			0.0168	4516.75	2634.77	486.42	0.035	1	0	0	0.024	17.17	0.00	0.00	24.53	41.70	41.18%	0.00%	0.00%	58.82%	**41.70**	**1.00**
Beryllium	1.00	-0.5361	0.7345				0.045			0.001 * 50 * Cdiet	0.59	0.05	0.00	0.035	1	0	0	0.024	0.00	0.00	0.00	0.00	0.00	8.57%	0.00%	0.00%	91.43%	---	---
Bismuth	1.00			0.005			1			1	0.01	1.00	1.00	0.035	1	0	0	0.024	0.04	0.00	0.00	0.00	0.04	97.66%	0.00%	0.00%	2.34%	---	---
Boron	2766.47			5.714			1			1	15807.59	2766.47	2766.47	0.035	1	0	0	0.024	97.66	0.00	FALSE	2.34	100.00	97.66%	0.00%	0.00%	2.34%	**100.00**	**1.00**
Cadmium	2335.22	-0.476	0.546		2.114	0.795		-1.2571	0.4723		42.89	3943.84	11.09	0.035	1	0	0	0.024	0.39	0.00	0.00	1.98	2.37	16.52%	0.00%	0.00%	83.48%	**2.37**	**1.00**
Chromium (total)	1355.27			0.041			0.306	-1.4599	0.7338		55.57	414.71	46.16	0.035	1	0	0	0.024	1.63	0.00	0.00	1.15	2.78	58.66%	0.00%	0.00%	41.34%	**2.78**	**1.00**
Chromium (+3)	1355.27			0.041			0.306	-1.4599	0.7338		55.57	414.71	46.16	0.035	1	0	0	0.024	1.63	0.00	0.00	1.15	2.78	58.66%	0.00%	0.00%	41.34%	**2.78**	**1.00**
Chromium (+6)	1.00			0.041			0.306	-1.4599	0.7338		0.04	0.31	0.23	0.035	1	0	0	0.024	0.01	0.00	0.00	0.00	0.01	90.63%	0.00%	0.00%	9.37%		---
Cobalt	1632.76			0.00745			0.291	-4.4669	1.307		12.16	475.13	181.69	0.035	1	0	0	0.024	6.41	0.00	0.00	1.38	7.80	82.26%	0.00%	0.00%	17.74%	**7.80**	**1.00**
Copper	13020.77	0.669	0.394				0.515	2.042	0.1444		81.60	6705.70	30.27	0.035	1	0	0	0.024	1.07	0.00	0.00	11.03	12.10	8.83%	0.00%	0.00%	91.17%	**12.10**	**1.00**
Lead	2433.19	-1.328	0.561		-0.218	0.807		0.0761	0.4422		21.03	434.48	33.92	0.035	1	0	0	0.024	1.20	0.00	0.00	2.06	3.26	36.74%	0.00%	0.00%	63.26%	**3.26**	**1.00**
Lithium	1.00			0.004			0.046			1	0.00	0.05	1.00	0.035	1	0	0	0.024	0.04	0.00	0.00	0.00	0.04	97.66%	0.00%	0.00%	2.34%	---	---
Manganese	221536.11			0.0792	-0.809	0.682				0.0205	17545.66	1969.01	4541.49	0.035	1	0	0	0.024	160.31	0.00	0.00	187.69	348.00	46.07%	0.00%	0.00%	53.93%	**348.00**	**1.00**
Mercury (methyl)	133.86	-0.996	0.544		0.0781	0.3369				0.054	5.30	5.63	7.27	0.035	1	0	0	0.024	0.26	0.00	0.00	0.11	0.37	69.35%	0.00%	0.00%	30.65%	**0.37**	**1.00**
Mercury (inorganic)	325.62	-0.996	0.544		0.0781	0.3369				0.054	8.60	7.59	17.68	0.035	1	0	0	0.024	0.62	0.00	0.00	0.28	0.90	69.35%	0.00%	0.00%	30.65%	**0.90**	**1.00**
Molybdenum	976.56			1.2504			0.953			1	1221.09	930.66	976.56	0.035	1	0	0	0.024	34.47	0.00	0.00	0.83	35.30	97.66%	0.00%	0.00%	2.34%	**35.30**	**1.00**
Nickel	11078.24	-2.224	0.748				1.059	-0.2462	0.4658		114.66	11731.86	59.84	0.035	1	0	0	0.024	2.11	0.00	0.00	9.39	11.50	18.37%	0.00%	0.00%	81.63%	**11.50**	**1.00**
Selenium	417.07	-0.678	1.104		-0.075	0.733		-0.4158	0.3764		396.52	77.28	6.39	0.035	1	0	0	0.024	0.23	0.00	0.00	0.35	0.58	38.97%	0.00%	0.00%	61.03%	**0.58**	**1.00**
Silver	20437.07			0.014			2.045			0.0040	286.12	41793.81	81.75	0.035	1	0	0	0.024	2.89	0.00	0.00	17.31	20.20	14.29%	0.00%	0.00%	85.71%	**20.20**	**1.00**
Strontium	1.00			0.207			0.4066			1.74	0.21	0.41	1.74	0.035	1	0	0	0.024	0.06	0.00	0.00	0.00	0.06	98.64%	0.00%	0.00%	1.36%	---	---
Thallium	1.00			0.004			0.0541			0.1124	0.00	0.05	0.11	0.035	1	0	0	0.024	0.00	0.00	0.00	0.00	0.00	82.40%	0.00%	0.00%	17.60%	---	---
Tin	4603.40			1			0.08			0.08	4603.40	368.27	368.27	0.035	1	0	0	0.024	13.00	0.00	0.00	3.90	16.90	76.92%	0.00%	0.00%	23.08%	**16.90**	**1.00**
Uranium	1.00			0.021			0.033			0.0002	0.02	0.03	0.00	0.035	1	0	0	0.024	0.00	0.00	0.00	0.00	0.00	0.83%	0.00%	0.00%	99.17%	---	---
Vanadium	536.92			0.00485			0.042			0.0123	2.60	22.55	6.60	0.035	1	0	0	0.024	0.23	0.00	0.00	0.45	0.69	33.88%	0.00%	0.00%	66.12%	**0.69**	**1.00**
Zinc	71293.85	1.575	0.555		4.449	0.328		4.3632	0.0706		2384.83	3341.78	172.80	0.035	1	0	0	0.024	6.10	0.00	0.00	60.40	66.50	9.17%	0.00%	0.00%	90.83%	**66.50**	**1.00**
Ammonia/Ammonium	1.00													0.035	1	0	0	0.024	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Chloride	1.00													0.035	1	0	0	0.024	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Cyanide	1.00													0.035	1	0	0	0.024	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Fluoride	37771.48			0.006							226.63			0.035	1	0	0	0.024	0.00	0.00	0.00	32.00	32.00	0.00%	0.00%	0.00%	100.00%	**32.00**	**1.00**
Iodine	1.00			0.05							0.05			0.035	1	0	0	0.024	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---

Table A-12. Exposure Calculation Worksheet for Determining LOAEL-Based PRGs for Red-tailed Hawk

		Literature-derived Bioaccumulation Models									Estimated Concentrations in Biota (mg/kg DW)			Food Intake	Diet Composition (proportion)				Estimated Exposure (mg/kg/d)					Percent Estimated Exposure by Pathway					
		Plants			Soil Inverts			Small Mammals																					
Analyte	Soil (mg/kg)	intercept	slope	BAF	intercept	slope	BAF	intercept	slope	BAF	Plants	Soil Inverts	Small Mam.	(kg/kg-bw/d, dw)	Small Mam.	Soil Inverts	Plants	Soil	Small Mam.	Soil Inverts	Plants	Soil	Total	Small Mam.	Soil Inverts	Plants	Soil	Selected Avian LOAEL TRV (mg/kg/d)	LOAEL HQ
Nitrate/Nitrite	1.00													0.035	1	0	0	0.024	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Phosphate	1.00													0.035	1	0	0	0.024	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Sulfate/Sulfite	1.00													0.035	1	0	0	0.024	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Total Organic Carbon	1.00													0.035	1	0	0	0.024	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
1,1-dichloroethane	27909.35						1.010			0.0109		28177.03	304.68	0.035	1	0	0	0.024	10.76	0.00	0.00	23.64	34.40	31.27%	0.00%	0.00%	68.73%	**34.40**	**1.00**
1,1-dichloroethene	22865.71						1.011			0.0186		23122.45	425.73	0.035	1	0	0	0.024	15.03	0.00	0.00	19.37	34.40	43.69%	0.00%	0.00%	56.31%	**34.40**	**1.00**
1,1,1-trichloroethane	17871.35						1.013			0.0305		18100.43	545.59	0.035	1	0	0	0.024	19.26	0.00	0.00	15.14	34.40	55.99%	0.00%	0.00%	44.01%	**34.40**	**1.00**
1,1,2-trichloroethane	24062.54						1.010			0.0165		24308.42	397.00	0.035	1	0	0	0.024	14.01	0.00	0.00	20.39	34.40	40.74%	0.00%	0.00%	59.26%	**34.40**	**1.00**
1,1,2,2-tetrachloroethane	19097.72						1.013			0.0270		19344.75	516.16	0.035	1	0	0	0.024	18.22	0.00	0.00	16.18	34.40	52.97%	0.00%	0.00%	47.03%	**34.40**	**1.00**
1,2-dichlorobenzene	8686.89			2.45			1.018			0.0882	21296.76	8840.50	766.02	0.035	1	0	0	0.024	27.04	0.00	0.00	7.36	34.40	78.61%	0.00%	0.00%	21.39%	**34.40**	**1.00**
1,2-dichloroethane (DCA)	32167.55						0.988			0.0063		31793.52	202.48	0.035	1	0	0	0.024	7.15	0.00	0.00	27.25	34.40	20.78%	0.00%	0.00%	79.22%	**34.40**	**1.00**
1,3-dichlorobenzene	8102.94			2.23			1.018			0.0963	18093.45	8249.15	780.03	0.035	1	0	0	0.024	27.54	0.00	0.00	6.86	34.40	80.04%	0.00%	0.00%	19.96%	**34.40**	**1.00**
2-butanone (Methyl Ethyl Ketone/MEK)	115381.89						0.094			0.0006		10799.52	63.70	0.035	1	0	0	0.024	2.25	0.00	0.00	97.75	100.00	2.25%	0.00%	0.00%	97.75%	**100.00**	**1.00**
2-hexanone	96531.69						0.207			0.0053		20010.96	516.10	0.035	1	0	0	0.024	18.22	0.00	0.00	81.78	100.00	18.22%	0.00%	0.00%	81.78%	**100.00**	**1.00**
Benzene	1.00						1.011			0.0186		1.01	0.02	0.035	1	0	0	0.024	0.00	0.00	0.00	0.00	0.00	43.69%	0.00%	0.00%	56.31%	---	---
Butanol	1.00						0.478			0.0017		0.48	0.00	0.035	1	0	0	0.024	0.00	0.00	0.00	0.00	0.00	6.65%	0.00%	0.00%	93.35%	---	---
Carbon Tetrachloride	14764.92						1.015			0.0420		14982.11	620.15	0.035	1	0	0	0.024	21.89	0.00	0.00	12.51	34.40	63.64%	0.00%	0.00%	36.36%	**34.40**	**1.00**
Chlorobenzene	13344.76						1.015			0.0490		13540.08	654.23	0.035	1	0	0	0.024	23.09	0.00	0.00	11.31	34.40	67.13%	0.00%	0.00%	32.87%	**34.40**	**1.00**
Chloroform	26005.89						1.011			0.0135		26279.49	350.36	0.035	1	0	0	0.024	12.37	0.00	0.00	22.03	34.40	35.95%	0.00%	0.00%	64.05%	**34.40**	**1.00**
Cis-1,2-dichloroethylene	26892.00						1.011			0.0122		27189.98	329.10	0.035	1	0	0	0.024	11.62	0.00	0.00	22.78	34.40	33.77%	0.00%	0.00%	66.23%	**34.40**	**1.00**
Dichloromethane (Methylene Chloride)	34562.06						1.007			0.0042		34795.52	145.01	0.035	1	0	0	0.024	5.12	0.00	0.00	29.28	34.40	14.88%	0.00%	0.00%	85.12%	**34.40**	**1.00**
Ethyl Benzene	1.00			3.21			1.016			0.0666	3.21	1.02	0.07	0.035	1	0	0	0.024	0.00	0.00	0.00	0.00	0.00	73.52%	0.00%	0.00%	26.48%	---	---
Methyl Isobutyl Ketone	102114.45						0.197			0.0037		20114.22	382.11	0.035	1	0	0	0.024	13.49	0.00	0.00	86.51	100.00	13.49%	0.00%	0.00%	86.51%	**100.00**	**1.00**
n-butyl Benzene	1.00			1.67			1.022			0.1227	1.67	1.02	0.12	0.035	1	0	0	0.024	0.00	0.00	0.00	0.00	0.01	83.64%	0.00%	0.00%	16.36%	---	---
Tetrachloroethylene	15466.68						1.018			0.0390		15737.47	603.30	0.035	1	0	0	0.024	21.30	0.00	0.00	13.10	34.40	61.91%	0.00%	0.00%	38.09%	**34.40**	**1.00**
Toluene	1.00						1.014			0.0430		1.01	0.04	0.035	1	0	0	0.024	0.00	0.00	0.00	0.00	0.00	64.20%	0.00%	0.00%	35.80%	---	---
Trans-1,2-dichloroethylene	23762.81						1.011			0.0170		24026.12	404.20	0.035	1	0	0	0.024	14.27	0.00	0.00	20.13	34.40	41.48%	0.00%	0.00%	58.52%	**34.40**	**1.00**
Trichloroethylene (TCE)	14995.63						1.012			0.0410		15182.35	614.61	0.035	1	0	0	0.024	21.70	0.00	0.00	12.70	34.40	63.07%	0.00%	0.00%	36.93%	**34.40**	**1.00**
Xylene	1.00			3.43			1.016			0.0619	3.43	1.02	0.06	0.035	1	0	0	0.024	0.00	0.00	0.00	0.00	0.00	72.07%	0.00%	0.00%	27.93%	---	---
Acenaphthene	383616.62	-5.562	-0.8556				1.470			0	0.00	563916.43	0.00	0.035	1	0	0	0.024	0.00	0.00	0.00	325.00	325.00	0.00%	0.00%	0.00%	100.00%	**325.00**	**1.00**
Acenaphthylene	383616.62	-1.144	0.791				22.9			0	8318.21	8784820.59	0.00	0.035	1	0	0	0.024	0.00	0.00	0.00	325.00	325.00	0.00%	0.00%	0.00%	100.00%	**325.00**	**1.00**
Anthracene	383616.62	-0.9887	0.7784				2.42			0	8262.64	928352.22	0.00	0.035	1	0	0	0.024	0.00	0.00	0.00	325.00	325.00	0.00%	0.00%	0.00%	100.00%	**325.00**	**1.00**
Benzo(a)pyrene	1.00	-2.0615	0.975				1.33			0	0.13	1.33	0.00	0.035	1	0	0	0.024	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Benzo(a)anthracene	1.00	-2.7078	0.5944				1.59			0	0.07	1.59	0.00	0.035	1	0	0	0.024	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Benzo(b)fluoranthene	1.00			0.31			2.6			0	0.31	2.60	0.00	0.035	1	0	0	0.024	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---

Table A-12. Exposure Calculation Worksheet for Determining LOAEL-Based PRGs for Red-tailed Hawk

		Literature-derived Bioaccumulation Models									Estimated Concentrations in Biota (mg/kg DW)			Food Intake	Diet Composition (proportion)				Estimated Exposure (mg/kg/d)					Percent Estimated Exposure by Pathway					
		Plants			Soil Inverts			Small Mammals																					
Analyte	Soil (mg/kg)	intercept	slope	BAF	intercept	slope	BAF	intercept	slope	BAF	Plants	Soil Inverts	Small Mam.	(kg/kg-bw/d, dw)	Small Mam.	Soil Inverts	Plants	Soil	Small Mam.	Soil Inverts	Plants	Soil	Total	Small Mam.	Soil Inverts	Plants	Soil	Selected Avian LOAEL TRV (mg/kg/d)	LOAEL HQ
Benzo(ghi)perylene	1.00	-0.9313	1.1829				2.94			0	0.39	2.94	0.00	0.035	1	0	0	0.024	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Benzo[k]fluoranthene	1.00	-4.6482	0.1668				2.6			0	0.01	2.60	0.00	0.035	1	0	0	0.024	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Chrysene	1.00	-2.7078	0.5944				2.29			0	0.07	2.29	0.00	0.035	1	0	0	0.024	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Dibenz(ah)anthracene	1.00			0.13			2.31			0	0.13	2.31	0.00	0.035	1	0	0	0.024	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Fluoranthene	1.00			0.5			3.04			0	0.50	3.04	0.00	0.035	1	0	0	0.024	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Fluorene	383616.62	-5.562	-0.8556				9.57			0	0.00	3671211.05	0.00	0.035	1	0	0	0.024	0.00	0.00	0.00	325.00	325.00	0.00%	0.00%	0.00%	100.00%	**325.00**	**1.00**
Indeno[1,2,3-cd]pyrene	1.00			0.11			2.86			0	0.11	2.86	0.00	0.035	1	0	0	0.024	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
2-Methylnaphthalene	383616.62	-1.3205	4.544				1.020			0	630585507512385000000000.00	391229.35	0.00	0.035	1	0	0	0.024	0.00	0.00	0.00	325.00	325.00	0.00%	0.00%	0.00%	100.00%	**325.00**	**1.00**
Naphthalene	383616.62			12.2			4.4			0	4680122.76	1687913.13	0.00	0.035	1	0	0	0.024	0.00	0.00	0.00	325.00	325.00	0.00%	0.00%	0.00%	100.00%	**325.00**	**1.00**
Phenanthrene	383616.62	-0.1665	0.6203				1.72			0	2462.53	659820.59	0.00	0.035	1	0	0	0.024	0.00	0.00	0.00	325.00	325.00	0.00%	0.00%	0.00%	100.00%	**325.00**	**1.00**
Pyrene	1.00			0.72			1.75			0	0.72	1.75	0.00	0.035	1	0	0	0.024	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Total PAHs	1.00	0.083	0.3015							0	1.09		0.00	0.035	1	0	0	0.024	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%		---
Low MW PAHs	383616.62	-1.3205	0.4544							0	92.01		0.00	0.035	1	0	0	0.024	0.00	0.00	0.00	325.00	325.00	0.00%	0.00%	0.00%	100.00%	**325.00**	**1.00**
High MW PAHs	1.00	-1.7026	0.9469							0	0.18		0.00	0.035	1	0	0	0.024	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Gasoline Range Organics																												**5000.00**	**0.00**
TPH - Diesel	5901794.15									0			0.00	0.035	1	0	0	0.024	0.00	0.00	0.00	5000.00	5000.00	0.00%	0.00%	0.00%	100.00%	**5000.00**	**1.00**
TPH - Kerosene	5901794.15									0			0.00	0.035	1	0	0	0.024	0.00	0.00	0.00	5000.00	5000.00	0.00%	0.00%	0.00%	100.00%	**5000.00**	**1.00**
Normal paraffin hydrocarbons	1.00									0			0.00	0.035	1	0	0	0.024	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Phenol	1.00						0.235			0.0064		0.23	0.01	0.035	1	0	0	0.024	0.00	0.00	0.00	0.00	0.00	21.07%	0.00%	0.00%	78.93%	---	---
2-methylphenol (ocresol)	1.00						0.336			0.0150		0.34	0.02	0.035	1	0	0	0.024	0.00	0.00	0.00	0.00	0.00	38.52%	0.00%	0.00%	61.48%	---	---
4-methylphenol (pcresol)	1.00						0.333			0.0141		0.33	0.01	0.035	1	0	0	0.024	0.00	0.00	0.00	0.00	0.00	37.05%	0.00%	0.00%	62.95%	---	---
2,4-dinitrotoluene	932.00	1.873	-0.3768	0.376			0.184			0.0155	350.43	171.21	14.46	0.035	1	0	0	0.024	0.51	0.00	0.00	0.79	1.30	39.26%	0.00%	0.00%	60.74%	**1.30**	**1.00**
Bis[2-ethylhexyl] phthalate	1.00			0.07			41.144			0.0945	0.07	41.14	0.09	0.035	1	0	0	0.024	0.00	0.00	0.00	0.00	0.00	79.74%	0.00%	0.00%	20.26%	---	---
Total PCBs	250.88			0.17	1.41	1.36				0.1792	42.52	7509.94	44.97	0.035	1	0	0	0.024	1.59	0.00	0.00	0.21	1.80	88.19%	0.00%	0.00%	11.81%	**1.80**	**1.00**
Aroclor 1016	217.53			0.30	1.41	1.36				0.2104	64.58	6185.65	45.77	0.035	1	0	0	0.024	1.62	0.00	0.00	0.18	1.80	89.76%	0.00%	0.00%	10.24%	**1.80**	**1.00**
Aroclor 1221	240.18			0.78	1.41	1.36				0.1883	188.37	7077.40	45.23	0.035	1	0	0	0.024	1.60	0.00	0.00	0.20	1.80	88.70%	0.00%	0.00%	11.30%	**1.80**	**1.00**
Aroclor 1232	262.36			0.99	1.41	1.36				0.1704	259.91	7980.98	44.69	0.035	1	0	0	0.024	1.58	0.00	0.00	0.22	1.80	87.65%	0.00%	0.00%	12.35%	**1.80**	**1.00**
Aroclor 1242	255.51			0.16	1.41	1.36				0.1756	41.33	7699.11	44.86	0.035	1	0	0	0.024	1.58	0.00	0.00	0.22	1.80	87.97%	0.00%	0.00%	12.03%	**1.80**	**1.00**
Aroclor 1248	243.35			0.18	1.41	1.36				0.1855	44.86	7204.87	45.15	0.035	1	0	0	0.024	1.59	0.00	0.00	0.21	1.80	88.55%	0.00%	0.00%	11.45%	**1.80**	**1.00**
Aroclor 1254	272.65			0.14	1.41	1.36				0.1630	37.98	8409.57	44.45	0.035	1	0	0	0.024	1.57	0.00	0.00	0.23	1.80	87.17%	0.00%	0.00%	12.83%	**1.80**	**1.00**
Aroclor 1260	514.89			0.05	1.41	1.36				0.0750	26.90	19966.01	38.63	0.035	1	0	0	0.024	1.36	0.00	0.00	0.44	1.80	75.77%	0.00%	0.00%	24.23%	**1.80**	**1.00**
Aroclor-1262	2124.65													0.035	1	0	0	0.024	0.00	0.00	0.00	1.80	1.80	0.00%	0.00%	0.00%	100.00%	**1.80**	**1.00**
Dichloroprop	1.00													0.035	1	0	0	0.024	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Aldrin	5.30			0.14			1.033			0.1630	0.74	5.48	0.86	0.035	1	0	0	0.024	0.03	0.00	0.00	0.00	0.04	87.17%	0.00%	0.00%	12.83%	**0.04**	**1.00**
beta-1,2,3,4,5,6-Hexachlorocyclohexane	168.46			1.72			1.021			0.1201	289.58	172.01	20.23	0.035	1	0	0	0.024	0.71	0.00	0.00	0.14	0.86	83.35%	0.00%	0.00%	16.65%	**0.86**	**1.00**

Table A-12. Exposure Calculation Worksheet for Determining LOAEL-Based PRGs for Red-tailed Hawk

		Literature-derived Bioaccumulation Models									Estimated Concentrations in Biota (mg/kg DW)			Food Intake	Diet Composition (proportion)				Estimated Exposure (mg/kg/d)					Percent Estimated Exposure by Pathway					
		Plants			Soil Inverts			Small Mammals																					
Analyte	Soil (mg/kg)	intercept	slope	BAF	intercept	slope	BAF	intercept	slope	BAF	Plants	Soil Inverts	Small Mam.	(kg/kg-bw/d, dw)	Small Mam.	Soil Inverts	Plants	Soil	Small Mam.	Soil Inverts	Plants	Soil	Total	Small Mam.	Soil Inverts	Plants	Soil	Selected Avian LOAEL TRV (mg/kg/d)	LOAEL HQ
alpha-Chlordane	1507.65			0.16			1.031			0.1771	248.47	1555.10	266.93	0.035	1	0	0	0.024	9.42	0.00	0.00	1.28	10.70	88.06%	0.00%	0.00%	11.94%	**10.70**	**1.00**
gamma-Chlordane	1507.65			0.16			1.036			0.1771	248.47	1561.29	266.93	0.035	1	0	0	0.024	9.42	0.00	0.00	1.28	10.70	88.06%	0.00%	0.00%	11.94%	**10.70**	**1.00**
Dichlorodiphenyldichloroethylene	1.70	-2.5119	0.7524		2.4771	0.8804		3.6401	0.641		0.12	19.00	53.53	0.035	1	0	0	0.024	1.89	0.00	0.00	0.00	1.89	99.92%	0.00%	0.00%	0.08%	**1.89**	**1.00**
Dichlorodiphenyltrichloroethane	46.28	-2.5119	0.7524		2.1247	0.8689		1.1788	0.7254		1.45	234.33	52.49	0.035	1	0	0	0.024	1.85	0.00	0.00	0.04	1.89	97.93%	0.00%	0.00%	2.07%	**1.89**	**1.00**
Dieldrin	5.16			0.41			14.70			1.20	2.12	75.87	6.19	0.035	1	0	0	0.024	0.22	0.00	0.00	0.00	0.22	98.04%	0.00%	0.00%	1.96%	**0.22**	**1.00**
Endosulfan I	1.00			1.31			1.184			0.1455	1.31	1.18	0.15	0.035	1	0	0	0.024	0.01	0.00	0.00	0.00	0.01	85.84%	0.00%	0.00%	14.16%	**---**	**---**
Endosulfan II	1.00			1.31			1.184			0.1455	1.31	1.18	0.15	0.035	1	0	0	0.024	0.01	0.00	0.00	0.00	0.01	85.84%	0.00%	0.00%	14.16%	**---**	**---**
Endosulfan sulfate	1.00			1.98			1.184			0.1072	1.98	1.18	0.11	0.035	1	0	0	0.024	0.00	0.00	0.00	0.00	0.00	81.70%	0.00%	0.00%	18.30%	**---**	**---**
Endrin aldehyde	1.00			1.44			6.686			0.1368	1.44	6.69	0.14	0.035	1	0	0	0.024	0.00	0.00	0.00	0.00	0.01	85.07%	0.00%	0.00%	14.93%	**---**	**---**
Methoxychlor	1.00			0.52			3.739			0.2093	0.52	3.74	0.21	0.035	1	0	0	0.024	0.01	0.00	0.00	0.00	0.01	89.71%	0.00%	0.00%	10.29%	**---**	**---**

Notes:
It has been conservatively assumed that all chemical intake is absorbed by the receptor.
1 - When no TRV was available, the PRG is listed as 1 mg/kg based on formulas in the spreadsheet but no actual PRG is recommended.

Acronyms:
BAF = Bioaccumulation factor
DW = Dry weight
FIR = Food ingestion rate
mg/kg = Miligrams per kilogram
mg/kg BW/day, DW = Miligrams per kilogram of body weight per day, dry weight
mg/kg/d = Miligrams per kilogram per day
NOAEL = No observed adverse effect level
PRGs = Preliminary remediation goals
TRV = Toxicity reference value

Equations:
Total Estimated Exposure = Food Intake + Incidental Soil Intake
Food Intake = estimated concentration in biota X proportion of biota type X food ingestion rate (FIR)
Incidental Soil intake = concentration in soil X proportion of soil as component of diet X food ingestion rate (FIR)
Estimated Concentrations in Biota (method 1) = B1*(ln[Site Specific Soil Concentration]) + B0
where: B1 = slope and B0 = intercept
Estimated Concentrations in Biota (method 2) = soil concentration X BAF
Hazard Quotient = Total Estimated Exposure (Dose) / TRV
Therefore, when the HQ = 1, soil concentration = PRG
where: Soil concentration (mg/kg) = TRV / (Food Intake + Incidental Soil Intake) = Soil PRG

Table A-13. Exposure Calculation Worksheet for Determining LOAEL-Based PRGs for Great Basin Pocket Mouse

		Literature-derived Bioaccumulation Models									Estimated Concentrations in Biota (mg/kg DW)			Food Intake	Diet Composition (proportion)				Estimated Exposure (mg/kg/d)					Percent Estimated Exposure by Pathway					
		Plants			Soil Inverts			Small Mammals																					
Analyte	Soil (mg/kg)	intercept	slope	BAF	intercept	slope	BAF	intercept	slope	BAF	Plants	Soil Invert.	Small Mam.	(kg/kg-bw/d, dw)	Small Mam.	Soil Inverts	Plants	Soil	Small Mam.	Soil Inverts	Plants	Soil	Total	Small Mam.	Soil Inverts	Plants	Soil	Selected Mammalian LOAEL TRV (mg/kg/d)	LOAEL HQ
Aluminum	6871.78			0.00287			0.043			0.0263	19.72	295.49	180.73	0.123	0	0	1	0.02	0.00	0.00	2.42	16.88	19.30	0.00%	0.00%	12.55%	87.45%	**19.30**	**1.00**
Antimony	96.64	-3.233	0.938				1			0.001 * 50 * Cdiet	2.87	96.64	4.83	0.123	0	0	1	0.02	0.00	0.00	0.35	0.24	0.59	0.00%	0.00%	59.76%	40.24%	**0.59**	**1.00**
Arsenic, Total all valence states	459.41	-1.992	0.564		-1.421	0.706		-4.8471	0.8188		4.33	18.30	1.19	0.123	0	0	1	0.02	0.00	0.00	0.53	1.13	1.66	0.00%	0.00%	32.02%	67.98%	**1.66**	**1.00**
Arsenic (III)	459.41	-1.992	0.564		-1.421	0.706		-4.8471	0.8188		4.33	18.30	1.19	0.123	0	0	1	0.02	0.00	0.00	0.53	1.13	1.66	0.00%	0.00%	32.02%	67.98%	**1.66**	**1.00**
Arsenic (V)	459.41	-1.992	0.564		-1.421	0.706		-4.8471	0.8188		4.33	18.30	1.19	0.123	0	0	1	0.02	0.00	0.00	0.53	1.13	1.66	0.00%	0.00%	32.02%	67.98%	**1.66**	**1.00**
Barium	3469.98			0.156			0.091			0.0168	541.32	315.77	58.30	0.123	0	0	1	0.02	0.00	0.00	66.48	8.52	75.00	0.00%	0.00%	88.64%	11.36%	**75.00**	**1.00**
Beryllium	1.00	-0.5361	0.7345				0.045			0.001 * 50 * Cdiet	0.59	0.05	0.00	0.123	0	0	1	0.02	0.00	0.00	0.07	0.00	0.07	0.00%	0.00%	96.69%	3.31%	**---**	**---**
Bismuth	1.00			0.005			1			1	0.01	1.00	1.00	0.123	0	0	1	0.02	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	20.00%	80.00%	**---**	**---**
Boron	132.92			5.714			1			1	759.51	132.92	132.92	0.123	0	0	1	0.02	0.00	0.00	93.27	0.33	93.60	0.00%	0.00%	99.65%	0.35%	**93.60**	**1.00**
Cadmium	2065.15	-0.476	0.546		2.114	0.795		-1.2571	0.4723		40.11	3576.73	10.46	0.123	0	0	1	0.02	0.00	0.00	4.93	5.07	10.00	0.00%	0.00%	49.27%	50.73%	**10.00**	**1.00**
Chromium (total)	1284.17			0.041			0.306	-1.4599	0.7338		52.65	392.96	44.37	0.123	0	0	1	0.02	0.00	0.00	6.47	3.15	9.62	0.00%	0.00%	67.21%	32.79%	**9.62**	**1.00**
Chromium (+3)	1284.17			0.041			0.306	-1.4599	0.7338		52.65	392.96	44.37	0.123	0	0	1	0.02	0.00	0.00	6.47	3.15	9.62	0.00%	0.00%	67.21%	32.79%	**9.62**	**1.00**
Chromium (+6)	5339.59			0.041			0.306	-1.4599	0.7338		218.92	1633.92	126.25	0.123	0	0	1	0.02	0.00	0.00	26.89	13.11	40.00	0.00%	0.00%	67.21%	32.79%	**40.00**	**1.00**
Cobalt	3233.42			0.00745			0.291	-4.4669	1.307		24.09	940.93	443.79	0.123	0	0	1	0.02	0.00	0.00	2.96	7.94	10.90	0.00%	0.00%	27.14%	72.86%	**10.90**	**1.00**
Copper	1893.59	0.669	0.394				0.515	2.042	0.1444		38.18	975.20	22.91	0.123	0	0	1	0.02	0.00	0.00	4.69	4.65	9.34	0.00%	0.00%	50.20%	49.80%	**9.34**	**1.00**
Lead	2544.20	-1.328	0.561		-0.218	0.807		0.0761	0.4422		21.57	450.40	34.59	0.123	0	0	1	0.02	0.00	0.00	2.65	6.25	8.90	0.00%	0.00%	29.77%	70.23%	**8.90**	**1.00**
Lithium	6378.59			0.004			0.046			1	25.51	293.42	6378.59	0.123	0	0	1	0.02	0.00	0.00	3.13	15.67	18.80	0.00%	0.00%	16.67%	83.33%	**18.80**	**1.00**
Manganese	5828.07			0.0792	-0.809	0.682				0.0205	461.58	164.72	119.48	0.123	0	0	1	0.02	0.00	0.00	56.69	14.31	71.00	0.00%	0.00%	79.84%	20.16%	**71.00**	**1.00**
Mercury (methyl)	7.98	-0.996	0.544		0.0781	0.3369				0.054	1.14	2.18	0.43	0.123	0	0	1	0.02	0.00	0.00	0.14	0.02	0.16	0.00%	0.00%	87.75%	12.25%	**0.16**	**1.00**
Mercury (inorganic)	31.00	-0.996	0.544		0.0781	0.3369				0.054	2.39	3.44	1.68	0.123	0	0	1	0.02	0.00	0.00	0.29	0.08	0.37	0.00%	0.00%	79.41%	20.59%	**0.37**	**1.00**
Molybdenum	16.67			1.2504			0.953			1	20.84	15.88	16.67	0.123	0	0	1	0.02	0.00	0.00	2.56	0.04	2.60	0.00%	0.00%	98.43%	1.57%	**2.60**	**1.00**
Nickel	675.83	-2.224	0.748				1.059	-0.2462	0.4658		14.15	715.70	16.26	0.123	0	0	1	0.02	0.00	0.00	1.74	1.66	3.40	0.00%	0.00%	51.15%	48.85%	**3.40**	**1.00**
Selenium	2.97	-0.678	1.104		-0.075	0.733		-0.4158	0.3764		1.69	2.06	0.99	0.123	0	0	1	0.02	0.00	0.00	0.21	0.01	0.21	0.00%	0.00%	96.60%	3.40%	**0.22**	**1.00**
Silver	14417.68			0.014			2.045			0.0040	201.85	29484.16	57.67	0.123	0	0	1	0.02	0.00	0.00	24.79	35.41	60.20	0.00%	0.00%	41.18%	58.82%	**60.20**	**1.00**
Strontium	1.00			0.207			0.4066			1.74	0.21	0.41	1.74	0.123	0	0	1	0.02	0.00	0.00	0.03	0.00	0.03	0.00%	0.00%	91.18%	8.82%	**---**	**---**
Thallium	25.45			0.004			0.0541			0.1124	0.10	1.38	2.86	0.123	0	0	1	0.02	0.00	0.00	0.01	0.06	0.08	0.00%	0.00%	16.67%	83.33%	**0.08**	**1.00**
Tin	279.41			1			0.08			0.08	279.41	22.35	22.35	0.123	0	0	1	0.02	0.00	0.00	34.31	0.69	35.00	0.00%	0.00%	98.04%	1.96%	**35.00**	**1.00**
Uranium	556.10			0.021			0.033			0.0002	11.68	18.35	0.11	0.123	0	0	1	0.02	0.00	0.00	1.43	1.37	2.80	0.00%	0.00%	51.22%	48.78%	**2.80**	**1.00**
Vanadium	2723.03			0.00485			0.042			0.0123	13.21	114.37	33.49	0.123	0	0	1	0.02	0.00	0.00	1.62	6.69	8.31	0.00%	0.00%	19.52%	80.48%	**8.31**	**1.00**
Zinc	4660.81	1.575	0.555		4.449	0.328		4.3632	0.0706		524.82	1365.94	142.53	0.123	0	0	1	0.02	0.00	0.00	64.45	11.45	75.90	0.00%	0.00%	84.92%	15.08%	**75.90**	**1.00**
Ammonia/Ammonium	1.00													0.123	0	0	1	0.02	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	**---**	**---**

Table A-13. Exposure Calculation Worksheet for Determining LOAEL-Based PRGs for Great Basin Pocket Mouse

		Literature-derived Bioaccumulation Models									Estimated Concentrations in Biota (mg/kg DW)			Food Intake	Diet Composition (proportion)				Estimated Exposure (mg/kg/d)					Percent Estimated Exposure by Pathway					
		Plants			Soil Inverts			Small Mammals																					
Analyte	Soil (mg/kg)	intercept	slope	BAF	intercept	slope	BAF	intercept	slope	BAF	Plants	Soil Invert.	Small Mam.	(kg/kg-bw/d, dw)	Small Mam.	Soil Inverts	Plants	Soil	Small Mam.	Soil Inverts	Plants	Soil	Total	Small Mam.	Soil Inverts	Plants	Soil	Selected Mammalian LOAEL TRV (mg/kg/d)	LOAEL HQ
Chloride	1.00													0.123	0	0	1	0.02	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Cyanide	1.00													0.123	0	0	1	0.02	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Fluoride	16520.65			0.006							99.12			0.123	0	0	1	0.02	0.00	0.00	12.17	40.58	52.75	0.00%	0.00%	23.08%	76.92%	**52.75**	**1.00**
Iodine	1593.68			0.05							79.68			0.123	0	0	1	0.02	0.00	0.00	9.79	3.91	13.70	0.00%	0.00%	71.43%	28.57%	**13.70**	**1.00**
Nitrate/Nitrite	460072.60													0.123	0	0	1	0.02	0.00	0.00	0.00	1130.00	1130.00	0.00%	0.00%	0.00%	100.00%	**1130.00**	**1.00**
Phosphate	1.00													0.123	0	0	1	0.02	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Sulfate/Sulfite	1.00													0.123	0	0	1	0.02	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Total Organic Carbon	1.00													0.123	0	0	1	0.02	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
1,1-dichloroethane	1.00						1.010			0.0109		1.01	0.01	0.123	0	0	1	0.02	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
1,1-dichloroethene	1.00						1.011			0.0186		1.01	0.02	0.123	0	0	1	0.02	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
1,1,1-trichloroethane	1.00						1.013			0.0305		1.01	0.03	0.123	0	0	1	0.02	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
1,1,2-trichloroethane	1.00						1.010			0.0165		1.01	0.02	0.123	0	0	1	0.02	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
1,1,2,2-tetrachloroethane	36357.95						1.013			0.0270		36828.25	982.66	0.123	0	0	1	0.02	0.00	0.00	0.00	89.30	89.30	0.00%	0.00%	0.00%	100.00%	**89.30**	**1.00**
1,2-dichlorobenzene	1.00			2.45			1.018			0.0882	2.45	1.02	0.09	0.123	0	0	1	0.02	0.00	0.00	0.30	0.00	0.30	0.00%	0.00%	99.19%	0.81%	---	---
1,2-dichloroethane (DCA)	1.00						0.988			0.0063		0.99	0.01	0.123	0	0	1	0.02	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
1,3-dichlorobenzene	1.00			2.23			1.018			0.0963	2.23	1.02	0.10	0.123	0	0	1	0.02	0.00	0.00	0.27	0.00	0.28	0.00%	0.00%	99.11%	0.89%	---	---
2-butanone (Methyl Ethyl Ketone/MEK)	1861054.73						0.094			0.0006		174191.03	1027.39	0.123	0	0	1	0.02	0.00	0.00	0.00	4571.00	4571.00	0.00%	0.00%	0.00%	100.00%	**4571.00**	**1.00**
2-hexanone	14697.89						0.207			0.0053		3046.86	78.58	0.123	0	0	1	0.02	0.00	0.00	0.00	36.10	36.10	0.00%	0.00%	0.00%	100.00%	**36.10**	**1.00**
Benzene	2850.01						1.011			0.0186		2882.01	53.06	0.123	0	0	1	0.02	0.00	0.00	0.00	7.00	7.00	0.00%	0.00%	0.00%	100.00%	**7.00**	**1.00**
Butanol	203571.95						0.478			0.0017		97351.61	347.82	0.123	0	0	1	0.02	0.00	0.00	0.00	500.00	500.00	0.00%	0.00%	0.00%	100.00%	**500.00**	**1.00**
Carbon Tetrachloride	1.00						1.015			0.0420		1.01	0.04	0.123	0	0	1	0.02	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Chlorobenzene	15756.47						1.015			0.0490		15987.09	772.46	0.123	0	0	1	0.02	0.00	0.00	0.00	38.70	38.70	0.00%	0.00%	0.00%	100.00%	**38.70**	**1.00**
Chloroform	16692.90						1.011			0.0135		16868.52	224.89	0.123	0	0	1	0.02	0.00	0.00	0.00	41.00	41.00	0.00%	0.00%	0.00%	100.00%	**41.00**	**1.00**
Cis-1,2-dichloroethylene	1.00						1.011			0.0122		1.01	0.01	0.123	0	0	1	0.02	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Dichloromethane (Methylene Chloride)	20357.19						1.007			0.0042		20494.70	85.41	0.123	0	0	1	0.02	0.00	0.00	0.00	50.00	50.00	0.00%	0.00%	0.00%	100.00%	**50.00**	**1.00**
Ethyl Benzene	1027.17			3.21			1.016			0.0666	3301.75	1043.82	68.45	0.123	0	0	1	0.02	0.00	0.00	405.48	2.52	408.00	0.00%	0.00%	99.38%	0.62%	**408.00**	**1.00**
Methyl Isobutyl Ketone	1861054.73						0.197			0.0037		366585.28	6964.10	0.123	0	0	1	0.02	0.00	0.00	0.00	4571.00	4571.00	0.00%	0.00%	0.00%	100.00%	**4571.00**	**1.00**
n-butyl Benzene	1588.60			1.67			1.022			0.1227	2655.38	1624.14	194.98	0.123	0	0	1	0.02	0.00	0.00	326.10	3.90	330.00	0.00%	0.00%	98.82%	1.18%	**330.00**	**1.00**
Tetrachloroethylene	2850.01						1.018			0.0390		2899.90	111.17	0.123	0	0	1	0.02	0.00	0.00	0.00	7.00	7.00	0.00%	0.00%	0.00%	100.00%	**7.00**	**1.00**
Toluene	211714.82						1.014			0.0430		214694.56	9110.95	0.123	0	0	1	0.02	0.00	0.00	0.00	520.00	520.00	0.00%	0.00%	0.00%	100.00%	**520.00**	**1.00**
Trans-1,2-dichloroethylene	1.00						1.011			0.0170		1.01	0.02	0.123	0	0	1	0.02	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---

Table A-13. Exposure Calculation Worksheet for Determining LOAEL-Based PRGs for Great Basin Pocket Mouse

		Literature-derived Bioaccumulation Models									Estimated Concentrations in Biota (mg/kg DW)			Food Intake	Diet Composition (proportion)				Estimated Exposure (mg/kg/d)					Percent Estimated Exposure by Pathway					
		Plants			Soil Inverts			Small Mammals																					
Analyte	Soil (mg/kg)	intercept	slope	BAF	intercept	slope	BAF	intercept	slope	BAF	Plants	Soil Invert.	Small Mam.	(kg/kg-bw/d, dw)	Small Mam.	Soil Inverts	Plants	Soil	Small Mam.	Soil Inverts	Plants	Soil	Total	Small Mam.	Soil Inverts	Plants	Soil	Selected Mammalian LOAEL TRV (mg/kg/d)	LOAEL HQ
Trichloroethylene (TCE)	2850.01						1.012			0.0410		2885.49	116.81	0.123	0	0	1	0.02	0.00	0.00	0.00	7.00	7.00	0.00%	0.00%	0.00%	100.00%	**7.00**	**1.00**
Xylene	825.70			3.43			1.016			0.0619	2833.49	838.95	51.13	0.123	0	0	1	0.02	0.00	0.00	347.97	2.03	350.00	0.00%	0.00%	99.42%	0.58%	**350.00**	**1.00**
Acenaphthene	142500.36	-5.562	-0.8556				1.470			0	0.00	209475.53	0.00	0.123	0	0	1	0.02	0.00	0.00	0.00	350.00	350.00	0.00%	0.00%	0.00%	100.00%	**350.00**	**1.00**
Acenaphthylene	54131.54	-1.144	0.791				22.9			0	1767.37	1239612.23	0.00	0.123	0	0	1	0.02	0.00	0.00	217.04	132.95	350.00	0.00%	0.00%	62.01%	37.99%	**350.00**	**1.00**
Anthracene	1.00	-0.9887	0.7784				2.42			0	0.37	2.42	0.00	0.123	0	0	1	0.02	0.00	0.00	0.05	0.00	0.05	0.00%	0.00%	94.90%	5.10%	**---**	**---**
Benzo(a)pyrene	634.65	-2.0615	0.975				1.33			0	68.73	844.09	0.00	0.123	0	0	1	0.02	0.00	0.00	8.44	1.56	10.00	0.00%	0.00%	84.41%	15.59%	**10.00**	**1.00**
Benzo(a)anthracene	3635.53	-2.7078	0.5944				1.59			0	8.72	5780.49	0.00	0.123	0	0	1	0.02	0.00	0.00	1.07	8.93	10.00	0.00%	0.00%	10.71%	89.29%	**10.00**	**1.00**
Benzo(b)fluoranthene	246.75			0.31			2.6			0	76.49	641.56	0.00	0.123	0	0	1	0.02	0.00	0.00	9.39	0.61	10.00	0.00%	0.00%	93.94%	6.06%	**10.00**	**1.00**
Benzo(ghi)perylene	88.95	-0.9313	1.1829				2.94			0	79.65	261.51	0.00	0.123	0	0	1	0.02	0.00	0.00	9.78	0.22	10.00	0.00%	0.00%	97.82%	2.18%	**10.00**	**1.00**
Benzo[k]fluoranthene	4069.49	-4.6482	0.1668				2.6			0	0.04	10580.68	0.00	0.123	0	0	1	0.02	0.00	0.00	0.00	10.00	10.00	0.00%	0.00%	0.05%	99.95%	**10.00**	**1.00**
Chrysene	3635.53	-2.7078	0.5944				2.29			0	8.72	8325.37	0.00	0.123	0	0	1	0.02	0.00	0.00	1.07	8.93	10.00	0.00%	0.00%	10.71%	89.29%	**10.00**	**1.00**
Dibenz(ah)anthracene	542.86			0.13			2.31			0	70.57	1254.00	0.00	0.123	0	0	1	0.02	0.00	0.00	8.67	1.33	10.00	0.00%	0.00%	86.67%	13.33%	**10.00**	**1.00**
Fluoranthene	3914.85			0.5			3.04			0	1957.42	11901.13	0.00	0.123	0	0	1	0.02	0.00	0.00	240.38	9.62	250.00	0.00%	0.00%	96.15%	3.85%	**250.00**	**1.00**
Fluorene	101785.97	-5.562	-0.8556				9.57			0	0.00	974091.76	0.00	0.123	0	0	1	0.02	0.00	0.00	0.00	250.00	250.00	0.00%	0.00%	0.00%	100.00%	**250.00**	**1.00**
Indeno[1,2,3-cd]pyrene	626.38			0.11			2.86			0	68.90	1791.43	0.00	0.123	0	0	1	0.02	0.00	0.00	8.46	1.54	10.00	0.00%	0.00%	84.62%	15.38%	**10.00**	**1.00**
2-Methylnaphthalene	6.01	-1.3205	4.544				1.020			0	926.48	6.13	0.00	0.123	0	0	1	0.02	0.00	0.00	113.78	0.01	113.79	0.00%	0.00%	99.99%	0.01%	**113.80**	**1.00**
Naphthalene	99.95			12.2			4.4			0	1219.43	439.80	0.00	0.123	0	0	1	0.02	0.00	0.00	149.75	0.25	150.00	0.00%	0.00%	99.84%	0.16%	**150.00**	**1.00**
Phenanthrene	1.00	-0.1665	0.6203				1.72			0	0.85	1.72	0.00	0.123	0	0	1	0.02	0.00	0.00	0.10	0.00	0.11	0.00%	0.00%	97.69%	2.31%	**---**	**---**
Pyrene	1375.49			0.72			1.75			0	990.35	2407.10	0.00	0.123	0	0	1	0.02	0.00	0.00	121.62	3.38	125.00	0.00%	0.00%	97.30%	2.70%	**125.00**	**1.00**
Total PAHs	1.00	0.083	0.3015							0	1.09		0.00	0.123	0	0	1	0.02	0.00	0.00	0.13	0.00	0.14	0.00%	0.00%	98.19%	1.81%	**---**	**---**
Low MW PAHs	130652.20	-1.3205	0.4544							0	56.40		0.00	0.123	0	0	1	0.02	0.00	0.00	6.93	320.90	327.83	0.00%	0.00%	2.11%	97.89%	**328.00**	**1.00**
High MW PAHs	156.91	-1.7026	0.9469							0	21.86		0.00	0.123	0	0	1	0.02	0.00	0.00	2.68	0.39	3.07	0.00%	0.00%	87.45%	12.55%	**3.07**	**1.00**
Gasoline Range Organics																												**1500.00**	**0.00**
TPH - Diesel	610715.84									0			0.00	0.123	0	0	1	0.02	0.00	0.00	0.00	1500.00	1500.00	0.00%	0.00%	0.00%	100.00%	**1500.00**	**1.00**
TPH - Kerosene	610715.84									0			0.00	0.123	0	0	1	0.02	0.00	0.00	0.00	1500.00	1500.00	0.00%	0.00%	0.00%	100.00%	**1500.00**	**1.00**
Normal paraffin hydrocarbons	610715.84									0			0.00	0.123	0	0	1	0.02	0.00	0.00	0.00	1500.00	1500.00	0.00%	0.00%	0.00%	100.00%	**1500.00**	**1.00**
Phenol	14657.18						0.235			0.0064		3441.58	93.93	0.123	0	0	1	0.02	0.00	0.00	0.00	36.00	36.00	0.00%	0.00%	0.00%	100.00%	**36.00**	**1.00**
2-methylphenol (ocresol)	1.00						0.336			0.0150		0.34	0.02	0.123	0	0	1	0.02	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	**---**	**---**
4-methylphenol (pcresol)	1.00						0.333			0.0141		0.33	0.01	0.123	0	0	1	0.02	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	**---**	**---**
2,4-dinitrotoluene	28.79	1.873	-0.3768	0.376			0.184			0.0155	10.82	5.29	0.45	0.123	0	0	1	0.02	0.00	0.00	1.33	0.07	1.40	0.00%	0.00%	94.95%	5.05%	**1.40**	**1.00**
Bis[2-ethylhexyl] phthalate	17332.00			0.07			41.144			0.0945	1143.51	713110.07	1637.34	0.123	0	0	1	0.02	0.00	0.00	140.43	42.57	183.00	0.00%	0.00%	76.74%	23.26%	**183.00**	**1.00**

Table A-13. Exposure Calculation Worksheet for Determining LOAEL-Based PRGs for Great Basin Pocket Mouse

		Literature-derived Bioaccumulation Models									Estimated Concentrations in Biota (mg/kg DW)			Food Intake	Diet Composition (proportion)				Estimated Exposure (mg/kg/d)					Percent Estimated Exposure by Pathway					
		Plants			Soil Inverts			Small Mammals																					
Analyte	Soil (mg/kg)	intercept	slope	BAF	intercept	slope	BAF	intercept	slope	BAF	Plants	Soil Invert.	Small Mam.	(kg/kg-bw/d, dw)	Small Mam.	Soil Inverts	Plants	Soil	Small Mam.	Soil Inverts	Plants	Soil	Total	Small Mam.	Soil Inverts	Plants	Soil	Selected Mammalian LOAEL TRV (mg/kg/d)	LOAEL HQ
Total PCBs	29.22			0.17	1.41	1.36				0.1792	4.95	403.37	5.24	0.123	0	0	1	0.02	0.00	0.00	0.61	0.07	0.68	0.00%	0.00%	89.45%	10.55%	**0.68**	**1.00**
Aroclor 1016	88.14			0.30	1.41	1.36				0.2104	26.17	1810.56	18.55	0.123	0	0	1	0.02	0.00	0.00	3.21	0.22	3.43	0.00%	0.00%	93.69%	6.31%	**3.43**	**1.00**
Aroclor 1221	6.88			0.78	1.41	1.36				0.1883	5.40	56.47	1.30	0.123	0	0	1	0.02	0.00	0.00	0.66	0.02	0.68	0.00%	0.00%	97.51%	2.49%	**0.68**	**1.00**
Aroclor 1232	5.48			0.99	1.41	1.36				0.1704	5.43	41.40	0.93	0.123	0	0	1	0.02	0.00	0.00	0.67	0.01	0.68	0.00%	0.00%	98.02%	1.98%	**0.68**	**1.00**
Aroclor 1242	30.91			0.16	1.41	1.36				0.1756	5.00	435.45	5.43	0.123	0	0	1	0.02	0.00	0.00	0.61	0.08	0.69	0.00%	0.00%	89.00%	11.00%	**0.69**	**1.00**
Aroclor 1248	3.47			0.18	1.41	1.36				0.1855	0.64	22.21	0.64	0.123	0	0	1	0.02	0.00	0.00	0.08	0.01	0.09	0.00%	0.00%	90.21%	9.79%	**0.09**	**1.00**
Aroclor 1254	34.76			0.14	1.41	1.36				0.1630	4.84	510.76	5.67	0.123	0	0	1	0.02	0.00	0.00	0.59	0.09	0.68	0.00%	0.00%	87.45%	12.55%	**0.68**	**1.00**
Aroclor 1260	76.65			0.05	1.41	1.36				0.0750	4.00	1497.36	5.75	0.123	0	0	1	0.02	0.00	0.00	0.49	0.19	0.68	0.00%	0.00%	72.31%	27.69%	**0.68**	**1.00**
Aroclor-1262	276.86													0.123	0	0	1	0.02	0.00	0.00	0.00	0.68	0.68	0.00%	0.00%	0.00%	100.00%	**0.68**	**1.00**
Dichloroprop	1.00													0.123	0	0	1	0.02	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	**---**	**---**
Aldrin	51.12			0.14			1.033			0.1630	7.12	52.79	8.33	0.123	0	0	1	0.02	0.00	0.00	0.87	0.13	1.00	0.00%	0.00%	87.45%	12.55%	**1.00**	**1.00**
beta-1,2,3,4,5,6-Hexachlorocyclohexane	9.36			1.72			1.021			0.1201	16.10	9.56	1.12	0.123	0	0	1	0.02	0.00	0.00	1.98	0.02	2.00	0.00%	0.00%	98.85%	1.15%	**2.00**	**1.00**
alpha-Chlordane	925.29			0.16			1.031			0.1771	152.49	954.42	163.83	0.123	0	0	1	0.02	0.00	0.00	18.73	2.27	21.00	0.00%	0.00%	89.18%	10.82%	**21.00**	**1.00**
gamma-Chlordane	925.29			0.16			1.036			0.1771	152.49	958.21	163.83	0.123	0	0	1	0.02	0.00	0.00	18.73	2.27	21.00	0.00%	0.00%	89.18%	10.82%	**21.00**	**1.00**
Dichlorodiphenyldi-chloroethylene	135.88	-2.5119	0.7524		2.4771	0.8804		3.6401	0.641		3.27	899.11	887.61	0.123	0	0	1	0.02	0.00	0.00	0.40	0.33	0.73	0.00%	0.00%	54.59%	45.41%	**0.74**	**1.00**
Dichlorodiphenyltrichloroeth	135.88	-2.5119	0.7524		2.1247	0.8689		1.1788	0.7254		3.27	597.36	114.64	0.123	0	0	1	0.02	0.00	0.00	0.40	0.33	0.73	0.00%	0.00%	54.59%	45.41%	**0.74**	**1.00**
Dieldrin	0.57			0.41			14.70			1.20	0.23	8.35	0.68	0.123	0	0	1	0.02	0.00	0.00	0.03	0.00	0.03	0.00%	0.00%	95.35%	4.65%	**0.03**	**1.00**
Endosulfan I	1.00			1.31			1.184			0.1455	1.31	1.18	0.15	0.123	0	0	1	0.02	0.00	0.00	0.16	0.00	0.16	0.00%	0.00%	98.50%	1.50%	**---**	**---**
Endosulfan II	1.00			1.31			1.184			0.1455	1.31	1.18	0.15	0.123	0	0	1	0.02	0.00	0.00	0.16	0.00	0.16	0.00%	0.00%	98.50%	1.50%	**---**	**---**
Endosulfan sulfate	1.00			1.98			1.184			0.1072	1.98	1.18	0.11	0.123	0	0	1	0.02	0.00	0.00	0.24	0.00	0.25	0.00%	0.00%	99.00%	1.00%	**---**	**---**
Endrin aldehyde	5.13			1.44			6.686			0.1368	7.39	34.32	0.70	0.123	0	0	1	0.02	0.00	0.00	0.91	0.01	0.92	0.00%	0.00%	98.63%	1.37%	**0.92**	**1.00**
Methoxychlor	119.56			0.52			3.739			0.2093	62.75	447.04	25.02	0.123	0	0	1	0.02	0.00	0.00	7.71	0.29	8.00	0.00%	0.00%	96.33%	3.67%	**8.00**	**1.00**

Notes:
It has been conservatively assumed that all chemical intake is absorbed by the receptor.
1 - When no TRV was available, the PRG is listed as 1 mg/kg based on formulas in the spreadsheet but no actual PRG is recommended.

Acronyms:
BAF = Bioaccumulation factor
DW = Dry weight
FIR = Food ingestion rate
mg/kg = Miligrams per kilogram
mg/kg BW/day, DW = Miligrams per kilogram of body weight per day, dry weight
mg/kg/d = Miligrams per kilogram per day
NOAEL = No observed adverse effect level
PRGs = Preliminary remediation goals
TRV = Toxicity reference value

Equations:
Total Estimated Exposure = Food Intake + Incidental Soil Intake
Food Intake = estimated concentration in biota X proportion of biota type X food ingestion rate (FIR)
Incidental Soil intake = concentration in soil X proportion of soil as component of diet X food ingestion rate (FIR)
Estimated Concentrations in Biota (method 1) = B1*(ln[Site Specific Soil Concentration]) + B0
where: B1 = slope and B0 = intercept
Estimated Concentrations in Biota (method 2) = soil concentration X BAF
Hazard Quotient = Total Estimated Exposure (Dose) / TRV
Therefore, when the HQ = 1, soil concentration = PRG
where: Soil concentration (mg/kg) = TRV / (Food Intake + Incidental Soil Intake) = Soil PRG

Table A-14. Exposure Calculation Worksheet for Determining LOAEL-Based PRGs for Deer Mouse

		Literature-derived Bioaccumulation Models									Estimated Concentrations in Biota (mg/kg DW)			Food Intake	Diet Composition (proportion)				Estimated Exposure (mg/kg/d)					Percent Estimated Exposure by Pathway						
		Plants			Soil Inverts			Small Mammals																						
Analyte	Soil (mg/kg)	intercept	slope	BAF	intercept	slope	BAF	intercept	slope	BAF	Plants	Soil Inverts	Small Mam.	(kg/kg-bw/d, dw)	Small Mam.	Soil Inverts	Plants	Soil	Small Mam.	Soil Inverts	Plants	Soil	Total	Small Mam.	Soil Inverts	Plants	Soil	Selected Mammalian LOAEL TRV (mg/kg/d)	NOAEL HQ	LOAEL HQ
Aluminum	2707.93			0.00287			0.043			0.0263	7.77	116.44	71.22	0.166	0	0.5	0.5	0.02	0.00	9.66	0.65	8.99	19.30	0.00%	50.08%	3.34%	46.58%	**19.30**	**10.00**	**1.00**
Antimony	6.61	-3.233	0.938				1			0.001 * 50 * Cdiet	0.23	6.61	0.33	0.166	0	0.5	0.5	0.02	0.00	0.55	0.02	0.02	0.59	0.00%	93.02%	3.26%	3.72%	**0.59**	**10.00**	**1.00**
Arsenic, Total all valence states	189.51	-1.992	0.564		-1.421	0.706		-4.8471	0.8188		2.63	9.79	0.58	0.166	0	0.5	0.5	0.02	0.00	0.81	0.22	0.63	1.66	0.00%	48.96%	13.14%	37.90%	**1.66**	**1.60**	**1.00**
Arsenic (III)	189.51	-1.992	0.564		-1.421	0.706		-4.8471	0.8188		2.63	9.79	0.58	0.166	0	0.5	0.5	0.02	0.00	0.81	0.22	0.63	1.66	0.00%	48.96%	13.14%	37.90%	**1.66**	**1.60**	**1.00**
Arsenic (V)	189.51	-1.992	0.564		-1.421	0.706		-4.8471	0.8188		2.63	9.79	0.58	0.166	0	0.5	0.5	0.02	0.00	0.81	0.22	0.63	1.66	0.00%	48.96%	13.14%	37.90%	**1.66**	**1.60**	**1.00**
Barium	3148.48			0.156			0.091			0.0168	491.16	286.51	52.89	0.166	0	0.5	0.5	0.02	0.00	23.78	40.77	10.45	75.00	0.00%	31.71%	54.36%	13.94%	**75.00**	**1.67**	**1.00**
Beryllium	1.00	-0.5361	0.7345				0.045			0.001 * 50 * Cdiet	0.59	0.05	0.00	0.166	0	0.5	0.5	0.02	0.00	0.00	0.05	0.00	0.06	0.00%	6.72%	87.31%	5.97%	**---**	**0.10**	**---**
Bismuth	1.00			0.005			1			1	0.01	1.00	1.00	0.166	0	0.5	0.5	0.02	0.00	0.08	0.00	0.00	0.09	0.00%	95.69%	0.48%	3.83%	**---**	**---**	**---**
Boron	166.97			5.714			1			1	954.06	166.97	166.97	0.166	0	0.5	0.5	0.02	0.00	13.86	79.19	0.55	93.60	0.00%	14.81%	84.60%	0.59%	**93.60**	**3.34**	**1.00**
Cadmium	27.54	-0.476	0.546		2.114	0.795		-1.2571	0.4723		3.80	115.58	1.36	0.166	0	0.5	0.5	0.02	0.00	9.59	0.32	0.09	10.00	0.00%	95.93%	3.15%	0.91%	**10.00**	**10.00**	**1.00**
Chromium (total)	299.49			0.041			0.306	-1.4599	0.7338		12.28	91.64	15.25	0.166	0	0.5	0.5	0.02	0.00	7.61	1.02	0.99	9.62	0.00%	79.07%	10.59%	10.34%	**9.62**	**4.01**	**1.00**
Chromium (+3)	299.49			0.041			0.306	-1.4599	0.7338		12.28	91.64	15.25	0.166	0	0.5	0.5	0.02	0.00	7.61	1.02	0.99	9.62	0.00%	79.07%	10.59%	10.34%	**9.62**	**4.01**	**1.00**
Chromium (+6)	1245.29			0.041			0.306	-1.4599	0.7338		51.06	381.06	43.38	0.166	0	0.5	0.5	0.02	0.00	31.63	4.24	4.13	40.00	0.00%	79.07%	10.59%	10.34%	**40.00**	**4.33**	**1.00**
Cobalt	388.02			0.00745			0.291	-4.4669	1.307		2.89	112.91	27.78	0.166	0	0.5	0.5	0.02	0.00	9.37	0.24	1.29	10.90	0.00%	85.98%	2.20%	11.82%	**10.90**	**1.49**	**1.00**
Copper	175.77	0.669	0.394				0.515	2.042	0.1444		14.96	90.52	16.26	0.166	0	0.5	0.5	0.02	0.00	7.51	1.24	0.58	9.34	0.00%	80.45%	13.30%	6.25%	**9.34**	**1.67**	**1.00**
Lead	331.98	-1.328	0.561		-0.218	0.807		0.0761	0.4422		6.88	87.07	14.06	0.166	0	0.5	0.5	0.02	0.00	7.23	0.57	1.10	8.90	0.00%	81.20%	6.42%	12.38%	**8.90**	**1.89**	**1.00**
Lithium	2516.73			0.004			0.046			1	10.07	115.77	2516.73	0.166	0	0.5	0.5	0.02	0.00	9.61	0.84	8.36	18.80	0.00%	51.11%	4.44%	44.44%	**18.80**	**2.00**	**1.00**
Manganese	5798.20			0.0792	-0.809	0.682				0.0205	459.22	164.14	118.86	0.166	0	0.5	0.5	0.02	0.00	13.62	38.12	19.25	70.99	0.00%	19.19%	53.69%	27.12%	**71.00**	**1.38**	**1.00**
Mercury (methyl)	1.87	-0.996	0.544		0.0781	0.3369				0.054	0.52	1.33	0.10	0.166	0	0.5	0.5	0.02	0.00	0.11	0.04	0.01	0.16	0.00%	69.22%	26.91%	3.87%	**0.16**	**5.00**	**1.00**
Mercury (inorganic)	12.30	-0.996	0.544		0.0781	0.3369				0.054	1.45	2.52	0.67	0.166	0	0.5	0.5	0.02	0.00	0.21	0.12	0.04	0.37	0.00%	56.50%	32.46%	11.04%	**0.37**	**--**	**1.00**
Molybdenum	13.96			1.2504			0.953			1	17.46	13.31	13.96	0.166	0	0.5	0.5	0.02	0.00	1.10	1.45	0.05	2.60	0.00%	42.48%	55.74%	1.78%	**2.60**	**10.00**	**1.00**
Nickel	35.81	-2.224	0.748				1.059	-0.2462	0.4658		1.57	37.92	4.14	0.166	0	0.5	0.5	0.02	0.00	3.15	0.13	0.12	3.40	0.00%	92.66%	3.84%	3.50%	**3.40**	**2.00**	**1.00**
Selenium	1.90	-0.678	1.104		-0.075	0.733		-0.4158	0.3764		1.03	1.48	0.84	0.166	0	0.5	0.5	0.02	0.00	0.12	0.09	0.01	0.21	0.00%	57.30%	39.77%	2.93%	**0.22**	**1.50**	**1.00**
Silver	345.55			0.014			2.045			0.0040	4.84	706.64	1.38	0.166	0	0.5	0.5	0.02	0.00	58.65	0.40	1.15	60.20	0.00%	97.43%	0.67%	1.91%	**60.20**	**10.00**	**1.00**
Strontium	1.00			0.207			0.4066			1.74	0.21	0.41	1.74	0.166	0	0.5	0.5	0.02	0.00	0.03	0.02	0.00	0.05	0.00%	62.23%	31.65%	6.12%	**---**	**0.00**	**---**
Thallium	9.21			0.004			0.0541			0.1124	0.04	0.50	1.04	0.166	0	0.5	0.5	0.02	0.00	0.04	0.00	0.03	0.08	0.00%	55.15%	4.08%	40.77%	**0.08**	**5.00**	**1.00**
Tin	376.51			1			0.08			0.08	376.51	30.12	30.12	0.166	0	0.5	0.5	0.02	0.00	2.50	31.25	1.25	35.00	0.00%	7.14%	89.29%	3.57%	**35.00**	**1.50**	**1.00**
Uranium	358.88			0.021			0.033			0.0002	7.54	11.84	0.07	0.166	0	0.5	0.5	0.02	0.00	0.98	0.63	1.19	2.80	0.00%	35.11%	22.34%	42.55%	**2.80**	**0.91**	**1.00**
Vanadium	1152.80			0.00485			0.042			0.0123	5.59	48.42	14.18	0.166	0	0.5	0.5	0.02	0.00	4.02	0.46	3.83	8.31	0.00%	48.36%	5.58%	46.06%	**8.31**	**2.00**	**1.00**
Zinc	643.92	1.575	0.555		4.449	0.328		4.3632	0.0706		174.95	713.63	123.94	0.166	0	0.5	0.5	0.02	0.00	59.23	14.52	2.14	75.89	0.00%	78.05%	19.13%	2.82%	**75.90**	**1.01**	**1.00**
Ammonia/Ammonium	1.00													0.166	0	0.5	0.5	0.02	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	**---**	**---**	**---**

Table A-14. Exposure Calculation Worksheet for Determining LOAEL-Based PRGs for Deer Mouse

		Literature-derived Bioaccumulation Models									Estimated Concentrations in Biota (mg/kg DW)			Food Intake	Diet Composition (proportion)				Estimated Exposure (mg/kg/d)					Percent Estimated Exposure by Pathway						
		Plants			Soil Inverts			Small Mammals																						
Analyte	Soil (mg/kg)	intercept	slope	BAF	intercept	slope	BAF	intercept	slope	BAF	Plants	Soil Inverts	Small Mam.	(kg/kg-bw/d, dw)	Small Mam.	Soil Inverts	Plants	Soil	Small Mam.	Soil Inverts	Plants	Soil	Total	Small Mam.	Soil Inverts	Plants	Soil	Selected Mammalian LOAEL TRV (mg/kg/d)	NOAEL HQ	LOAEL HQ
Chloride	1.00													0.166	0	0.5	0.5	0.02	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---	---
Cyanide	1.00													0.166	0	0.5	0.5	0.02	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	**0.00**	---
Fluoride	13816.13			0.006							82.90			0.166	0	0.5	0.5	0.02	0.00	0.00	6.88	45.87	52.75	0.00%	0.00%	13.04%	86.96%	**52.75**	**1.68**	**1.00**
Iodine	1834.00			0.05							91.70			0.166	0	0.5	0.5	0.02	0.00	0.00	7.61	6.09	13.70	0.00%	0.00%	55.56%	44.44%	**13.70**	**10.00**	**1.00**
Nitrate/Nitrite	340361.45													0.166	0	0.5	0.5	0.02	0.00	0.00	0.00	1130.00	1130.00	0.00%	0.00%	0.00%	100.00%	**1130.00**	**2.23**	**1.00**
Phosphate	1.00													0.166	0	0.5	0.5	0.02	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---	---
Sulfate/Sulfite	1.00													0.166	0	0.5	0.5	0.02	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---	---
Total Organic Carbon	1.00													0.166	0	0.5	0.5	0.02	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---	---
1,1-dichloroethane	1.00						1.010			0.0109		1.01	0.01	0.166	0	0.5	0.5	0.02	0.00	0.08	0.00	0.00	0.09	0.00%	96.19%	0.00%	3.81%	---	**0.00**	---
1,1-dichloroethene	1.00						1.011			0.0186		1.01	0.02	0.166	0	0.5	0.5	0.02	0.00	0.08	0.00	0.00	0.09	0.00%	96.19%	0.00%	3.81%	---	**0.00**	---
1,1,1-trichloroethane	1.00						1.013			0.0305		1.01	0.03	0.166	0	0.5	0.5	0.02	0.00	0.08	0.00	0.00	0.09	0.00%	96.20%	0.00%	3.80%	---	**0.00**	---
1,1,2-trichloroethane	1.00						1.010			0.0165		1.01	0.02	0.166	0	0.5	0.5	0.02	0.00	0.08	0.00	0.00	0.09	0.00%	96.19%	0.00%	3.81%	---	**0.00**	---
1,1,2,2-tetrachloroethane	1021.81						1.013			0.0270		1035.03	27.62	0.166	0	0.5	0.5	0.02	0.00	85.91	0.00	3.39	89.30	0.00%	96.20%	0.00%	3.80%	**89.30**	**10.00**	**1.00**
1,2-dichlorobenzene	1.00			2.45			1.018			0.0882	2.45	1.02	0.09	0.166	0	0.5	0.5	0.02	0.00	0.08	0.20	0.00	0.29	0.00%	29.00%	69.86%	1.14%	---	**0.00**	---
1,2-dichloroethane (DCA)	1.00						0.988			0.0063		0.99	0.01	0.166	0	0.5	0.5	0.02	0.00	0.08	0.00	0.00	0.09	0.00%	96.11%	0.00%	3.89%	---	**0.00**	---
1,3-dichlorobenzene	1.00			2.23			1.018			0.0963	2.23	1.02	0.10	0.166	0	0.5	0.5	0.02	0.00	0.08	0.19	0.00	0.27	0.00%	30.93%	67.85%	1.22%	---	**0.00**	---
2-butanone (Methyl Ethyl Ketone/MEK)	412223.86						0.094			0.0006		38583.33	227.57	0.166	0	0.5	0.5	0.02	0.00	3202.42	0.00	1368.58	4571.00	0.00%	70.06%	0.00%	29.94%	**4571.00**	**2.58**	**1.00**
2-hexanone	1758.76						0.207			0.0053		364.59	9.40	0.166	0	0.5	0.5	0.02	0.00	30.26	0.00	5.84	36.10	0.00%	83.83%	0.00%	16.17%	**36.10**	**7.22**	**1.00**
Benzene	80.23						1.011			0.0186		81.13	1.49	0.166	0	0.5	0.5	0.02	0.00	6.73	0.00	0.27	7.00	0.00%	96.19%	0.00%	3.81%	**7.00**	**10.00**	**1.00**
Butanol	11624.66						0.478			0.0017		5559.11	19.86	0.166	0	0.5	0.5	0.02	0.00	461.41	0.00	38.59	500.00	0.00%	92.28%	0.00%	7.72%	**500.00**	**4.00**	**1.00**
Carbon Tetrachloride	1.00						1.015			0.0420		1.01	0.04	0.166	0	0.5	0.5	0.02	0.00	0.08	0.00	0.00	0.09	0.00%	96.21%	0.00%	3.79%	---	**0.01**	---
Chlorobenzene	442.11						1.015			0.0490		448.58	21.67	0.166	0	0.5	0.5	0.02	0.00	37.23	0.00	1.47	38.70	0.00%	96.21%	0.00%	3.79%	**38.70**	**1.98**	**1.00**
Chloroform	470.22						1.011			0.0135		475.17	6.34	0.166	0	0.5	0.5	0.02	0.00	39.44	0.00	1.56	41.00	0.00%	96.19%	0.00%	3.81%	**41.00**	**2.73**	**1.00**
Cis-1,2-dichloroethylene	1.00						1.011			0.0122		1.01	0.01	0.166	0	0.5	0.5	0.02	0.00	0.08	0.00	0.00	0.09	0.00%	96.19%	0.00%	3.81%	---	**0.00**	---
Dichloromethane (Methylene Chloride)	575.50						1.007			0.0042		579.39	2.41	0.166	0	0.5	0.5	0.02	0.00	48.09	0.00	1.91	50.00	0.00%	96.18%	0.00%	3.82%	**50.00**	**8.55**	**1.00**
Ethyl Benzene	1151.04			3.21			1.016			0.0666	3699.93	1169.70	76.70	0.166	0	0.5	0.5	0.02	0.00	97.08	307.09	3.82	408.00	0.00%	23.80%	75.27%	0.94%	**408.00**	**4.20**	**1.00**
Methyl Isobutyl Ketone	232394.92						0.197			0.0037		45776.49	869.63	0.166	0	0.5	0.5	0.02	0.00	3799.45	0.00	771.55	4571.00	0.00%	83.12%	0.00%	16.88%	**4571.00**	**2.58**	**1.00**
n-butyl Benzene	1454.30			1.67			1.022			0.1227	2430.90	1486.83	178.50	0.166	0	0.5	0.5	0.02	0.00	123.41	201.76	4.83	330.00	0.00%	37.40%	61.14%	1.46%	**330.00**	**3.00**	**1.00**
Tetrachloroethylene	79.75						1.018			0.0390		81.15	3.11	0.166	0	0.5	0.5	0.02	0.00	6.74	0.00	0.26	7.00	0.00%	96.22%	0.00%	3.78%	**7.00**	**5.00**	**1.00**
Toluene	5943.66						1.014			0.0430		6027.31	255.78	0.166	0	0.5	0.5	0.02	0.00	500.27	0.00	19.73	520.00	0.00%	96.21%	0.00%	3.79%	**520.00**	**10.00**	**1.00**
Trans-1,2-dichloroethylene	1.00						1.011			0.0170		1.01	0.02	0.166	0	0.5	0.5	0.02	0.00	0.08	0.00	0.00	0.09	0.00%	96.19%	0.00%	3.81%	---	**0.00**	---

Table A-14. Exposure Calculation Worksheet for Determining LOAEL-Based PRGs for Deer Mouse

		Literature-derived Bioaccumulation Models									Estimated Concentrations in Biota (mg/kg DW)			Food Intake	Diet Composition (proportion)				Estimated Exposure (mg/kg/d)					Percent Estimated Exposure by Pathway						
		Plants			Soil Inverts			Small Mammals																						
Analyte	Soil (mg/kg)	intercept	slope	BAF	intercept	slope	BAF	intercept	slope	BAF	Plants	Soil Inverts	Small Mam.	(kg/kg-bw/d, dw)	Small Mam.	Soil Inverts	Plants	Soil	Small Mam.	Soil Inverts	Plants	Soil	Total	Small Mam.	Soil Inverts	Plants	Soil	Selected Mammalian LOAEL TRV (mg/kg/d)	NOAEL HQ	LOAEL HQ
Trichloroethylene (TCE)	80.13						1.012			0.0410		81.13	3.28	0.166	0	0.5	0.5	0.02	0.00	6.73	0.00	0.27	7.00	0.00%	96.20%	0.00%	3.80%	**7.00**	**10.00**	**1.00**
Xylene	939.65			3.43			1.016			0.0619	3224.55	954.73	58.18	0.166	0	0.5	0.5	0.02	0.00	79.24	267.64	3.12	350.00	0.00%	22.64%	76.47%	0.89%	**350.00**	**1.96**	**1.00**
Acenaphthene	2792.63	-5.562	-0.856				1.470			0	0.00	4105.16	0.00	0.166	0	0.5	0.5	0.02	0.00	340.73	0.00	9.27	350.00	0.00%	97.35%	0.00%	2.65%	**350.00**	**2.00**	**1.00**
Acenaphthylene	182.92	-1.144	0.791				22.9			0	19.62	4188.95	0.00	0.166	0	0.5	0.5	0.02	0.00	347.68	1.63	0.61	349.92	0.00%	99.36%	0.47%	0.17%	**350.00**	**2.00**	**1.00**
Anthracene	1.00	-0.9887	0.7784				2.42			0	0.37	2.42	0.00	0.166	0	0.5	0.5	0.02	0.00	0.20	0.03	0.00	0.24	0.00%	85.45%	13.14%	1.41%	**---**	**0.00**	**---**
Benzo(a)pyrene	81.16	-2.0615	0.975				1.33			0	9.25	107.94	0.00	0.166	0	0.5	0.5	0.02	0.00	8.96	0.77	0.27	10.00	0.00%	89.62%	7.68%	2.70%	**10.00**	**10.00**	**1.00**
Benzo(a)anthracene	73.37	-2.7078	0.5944				1.59			0	0.86	116.66	0.00	0.166	0	0.5	0.5	0.02	0.00	9.68	0.07	0.24	10.00	0.00%	96.85%	0.71%	2.44%	**10.00**	**10.00**	**1.00**
Benzo(b)fluoranthene	40.84			0.31			2.6			0	12.66	106.19	0.00	0.166	0	0.5	0.5	0.02	0.00	8.81	1.05	0.14	10.00	0.00%	88.14%	10.51%	1.36%	**10.00**	**10.00**	**1.00**
Benzo(ghi)perylene	32.35	-0.9313	1.1829				2.94			0	24.08	95.11	0.00	0.166	0	0.5	0.5	0.02	0.00	7.89	2.00	0.11	10.00	0.00%	78.94%	19.98%	1.07%	**10.00**	**10.00**	**1.00**
Benzo[k]fluoranthene	45.63	-4.6482	0.1668				2.6			0	0.02	118.64	0.00	0.166	0	0.5	0.5	0.02	0.00	9.85	0.00	0.15	10.00	0.00%	98.47%	0.02%	1.51%	**10.00**	**10.00**	**1.00**
Chrysene	51.38	-2.7078	0.5944				2.29			0	0.69	117.66	0.00	0.166	0	0.5	0.5	0.02	0.00	9.77	0.06	0.17	9.99	0.00%	97.72%	0.58%	1.71%	**10.00**	**9.99**	**1.00**
Dibenz(ah)anthracene	48.58			0.13			2.31			0	6.32	112.22	0.00	0.166	0	0.5	0.5	0.02	0.00	9.31	0.52	0.16	10.00	0.00%	93.15%	5.24%	1.61%	**10.00**	**10.00**	**1.00**
Fluoranthene	841.35			0.5			3.04			0	420.68	2557.72	0.00	0.166	0	0.5	0.5	0.02	0.00	212.29	34.92	2.79	250.00	0.00%	84.92%	13.97%	1.12%	**250.00**	**2.00**	**1.00**
Fluorene	313.43	-5.562	-0.856				9.57			0	0.00	2999.51	0.00	0.166	0	0.5	0.5	0.02	0.00	248.96	0.00	1.04	250.00	0.00%	99.58%	0.00%	0.42%	**250.00**	**2.00**	**1.00**
Indeno[1,2,3-cd]pyrene	40.03			0.11			2.86			0	4.40	114.48	0.00	0.166	0	0.5	0.5	0.02	0.00	9.50	0.37	0.13	10.00	0.00%	95.02%	3.65%	1.33%	**10.00**	**10.00**	**1.00**
2-Methylnaphthalene	6.55	-1.3205	4.544				1.020			0	1363.49	6.68	0.00	0.166	0	0.5	0.5	0.02	0.00	0.55	113.17	0.02	113.75	0.00%	0.49%	99.49%	0.02%	**113.80**	**2.26**	**1.00**
Naphthalene	108.61			12.2			4.4			0	1325.01	477.87	0.00	0.166	0	0.5	0.5	0.02	0.00	39.66	109.98	0.36	150.00	0.00%	26.44%	73.32%	0.24%	**150.00**	**3.00**	**1.00**
Phenanthrene	1.00	-0.1665	0.6203				1.72			0	0.85	1.72	0.00	0.166	0	0.5	0.5	0.02	0.00	0.14	0.07	0.00	0.22	0.00%	65.99%	32.48%	1.53%	**---**	**0.00**	**---**
Pyrene	600.01			0.72			1.75			0	432.01	1050.02	0.00	0.166	0	0.5	0.5	0.02	0.00	87.15	35.86	1.99	125.00	0.00%	69.72%	28.69%	1.59%	**125.00**	**1.67**	**1.00**
Total PAHs	1.00	0.083	0.3015							0	1.09		0.00	0.166	0	0.5	0.5	0.02	0.00	0.00	0.09	0.00	0.09	0.00%	0.00%	96.45%	3.55%	**---**	**---**	**---**
Low MW PAHs	97560.30	-1.3205	0.4544							0	49.39		0.00	0.166	0	0.5	0.5	0.02	0.00	0.00	4.10	323.90	328.00	0.00%	0.00%	1.25%	98.75%	**328.00**	**5.00**	**1.00**
High MW PAHs	208.68	-1.7026	0.9469							0	28.63		0.00	0.166	0	0.5	0.5	0.02	0.00	0.00	2.38	0.69	3.07	0.00%	0.00%	77.43%	22.57%	**3.07**	**4.99**	**1.00**
Gasoline Range Organics																												**1500.00**	**0.00**	**0.00**
TPH - Diesel	451807.23									0			0.00	0.166	0	0.5	0.5	0.02	0.00	0.00	0.00	1500.00	1500.00	0.00%	0.00%	0.00%	100.00%	**1500.00**	**1.50**	**1.00**
TPH - Kerosene	451807.23									0			0.00	0.166	0	0.5	0.5	0.02	0.00	0.00	0.00	1500.00	1500.00	0.00%	0.00%	0.00%	100.00%	**1500.00**	**1.50**	**1.00**
Normal paraffin hydrocarbons	451807.23									0			0.00	0.166	0	0.5	0.5	0.02	0.00	0.00	0.00	1500.00	1500.00	0.00%	0.00%	0.00%	100.00%	**1500.00**	**1.50**	**1.00**
Phenol	1578.34						0.235			0.0064		370.60	10.11	0.166	0	0.5	0.5	0.02	0.00	30.76	0.00	5.24	36.00	0.00%	85.44%	0.00%	14.56%	**36.00**	**3.00**	**1.00**
2-methylphenol (ocresol)	1.00						0.336			0.0150		0.34	0.02	0.166	0	0.5	0.5	0.02	0.00	0.03	0.00	0.00	0.03	0.00%	89.35%	0.00%	10.65%	**---**	**0.00**	**---**
4-methylphenol (pcresol)	1.00						0.333			0.0141		0.33	0.01	0.166	0	0.5	0.5	0.02	0.00	0.03	0.00	0.00	0.03	0.00%	89.29%	0.00%	10.71%	**---**	**0.00**	**---**
2,4-dinitrotoluene	28.13	1.873	-0.377	0.376			0.184			0.0155	10.58	5.17	0.44	0.166	0	0.5	0.5	0.02	0.00	0.43	0.88	0.09	1.40	0.00%	30.63%	62.70%	6.67%	**1.40**	**2.09**	**1.00**
Bis[2-ethylhexyl] phthalate	53.52			0.07			41.144			0.0945	3.53	2201.98	5.06	0.166	0	0.5	0.5	0.02	0.00	182.76	0.29	0.18	183.23	0.00%	99.74%	0.16%	0.10%	**183.00**	**10.01**	**1.00**

Table A-14. Exposure Calculation Worksheet for Determining LOAEL-Based PRGs for Deer Mouse

		Literature-derived Bioaccumulation Models									Estimated Concentrations in Biota (mg/kg DW)			Food Intake	Diet Composition (proportion)				Estimated Exposure (mg/kg/d)					Percent Estimated Exposure by Pathway						
		Plants			Soil Inverts			Small Mammals																						
Analyte	Soil (mg/kg)	intercept	slope	BAF	intercept	slope	BAF	intercept	slope	BAF	Plants	Soil Inverts	Small Mam.	(kg/kg-bw/d, dw)	Small Mam.	Soil Inverts	Plants	Soil	Small Mam.	Soil Inverts	Plants	Soil	Total	Small Mam.	Soil Inverts	Plants	Soil	Selected Mammalian LOAEL TRV (mg/kg/d)	NOAEL HQ	LOAEL HQ
Total PCBs	1.61			0.17	1.41	1.36				0.1792	0.27	7.85	0.29	0.166	0	0.5	0.5	0.02	0.00	0.65	0.02	0.01	0.68	0.00%	95.87%	3.34%	0.79%	**0.68**	**10.00**	**1.00**
Aroclor 1016	5.30			0.30	1.41	1.36				0.2104	1.57	39.54	1.11	0.166	0	0.5	0.5	0.02	0.00	3.28	0.13	0.02	3.43	0.00%	95.68%	3.81%	0.51%	**3.43**	**2.50**	**1.00**
Aroclor 1221	1.48			0.78	1.41	1.36				0.1883	1.16	6.97	0.28	0.166	0	0.5	0.5	0.02	0.00	0.58	0.10	0.00	0.68	0.00%	85.12%	14.16%	0.72%	**0.68**	**10.00**	**1.00**
Aroclor 1232	1.44			0.99	1.41	1.36				0.1704	1.42	6.71	0.24	0.166	0	0.5	0.5	0.02	0.00	0.56	0.12	0.00	0.68	0.00%	81.91%	17.38%	0.70%	**0.68**	**10.00**	**1.00**
Aroclor 1242	1.63			0.16	1.41	1.36				0.1756	0.26	7.98	0.29	0.166	0	0.5	0.5	0.02	0.00	0.66	0.02	0.01	0.69	0.00%	96.04%	3.18%	0.79%	**0.69**	**10.00**	**1.00**
Aroclor 1248	0.35			0.18	1.41	1.36				0.1855	0.06	0.97	0.06	0.166	0	0.5	0.5	0.02	0.00	0.08	0.01	0.00	0.09	0.00%	92.58%	6.10%	1.32%	**0.09**	**10.00**	**1.00**
Aroclor 1254	1.62			0.14	1.41	1.36				0.1630	0.23	7.90	0.26	0.166	0	0.5	0.5	0.02	0.00	0.66	0.02	0.01	0.68	0.00%	96.45%	2.76%	0.79%	**0.68**	**10.00**	**1.00**
Aroclor 1260	1.64			0.05	1.41	1.36				0.0750	0.09	8.04	0.12	0.166	0	0.5	0.5	0.02	0.00	0.67	0.01	0.01	0.68	0.00%	98.15%	1.05%	0.80%	**0.68**	**10.00**	**1.00**
Aroclor-1262	204.82													0.166	0	0.5	0.5	0.02	0.00	0.00	0.00	0.68	0.68	0.00%	0.00%	0.00%	100.00%	**0.68**	**10.00**	**1.00**
Dichloroprop	1.00													0.166	0	0.5	0.5	0.02	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	**---**	**---**	**---**
Aldrin	9.94			0.14			1.033			0.1630	1.38	10.27	1.62	0.166	0	0.5	0.5	0.02	0.00	0.85	0.11	0.03	1.00	0.00%	85.21%	11.49%	3.30%	**1.00**	**5.00**	**1.00**
beta-1,2,3,4,5,6-Hexachlorocyclohexane	8.67			1.72			1.021			0.1201	14.90	8.85	1.04	0.166	0	0.5	0.5	0.02	0.00	0.73	1.24	0.03	2.00	0.00%	36.73%	61.83%	1.44%	**2.00**	**5.00**	**1.00**
alpha-Chlordane	204.66			0.16			1.031			0.1771	33.73	211.10	36.23	0.166	0	0.5	0.5	0.02	0.00	17.52	2.80	0.68	21.00	0.00%	83.43%	13.33%	3.24%	**21.00**	**10.00**	**1.00**
gamma-Chlordane	203.98			0.16			1.036			0.1771	33.62	211.24	36.11	0.166	0	0.5	0.5	0.02	0.00	17.53	2.79	0.68	21.00	0.00%	83.49%	13.29%	3.22%	**21.00**	**10.00**	**1.00**
Dichlorodiphenyldichloroethylene	0.71	-2.5119	0.7524		2.4771	0.8804		3.6401	0.641		0.06	8.77	30.48	0.166	0	0.5	0.5	0.02	0.00	0.73	0.01	0.00	0.74	0.00%	98.98%	0.70%	0.32%	**0.74**	**5.00**	**1.00**
Dichlorodiphenyltrichloroethane	1.05	-2.5119	0.7524		2.1247	0.8689		1.1788	0.7254		0.08	8.73	3.37	0.166	0	0.5	0.5	0.02	0.00	0.72	0.01	0.00	0.73	0.00%	98.58%	0.95%	0.47%	**0.74**	**5.00**	**1.00**
Dieldrin	0.02			0.41			14.70			1.20	0.01	0.35	0.03	0.166	0	0.5	0.5	0.02	0.00	0.03	0.00	0.00	0.03	0.00%	97.03%	2.71%	0.26%	**0.03**	**2.00**	**1.00**
Endosulfan I	1.00			1.31			1.184			0.1455	1.31	1.18	0.15	0.166	0	0.5	0.5	0.02	0.00	0.10	0.11	0.00	0.21	0.00%	46.70%	51.72%	1.58%	**---**	**1.40**	**---**
Endosulfan II	1.00			1.31			1.184			0.1455	1.31	1.18	0.15	0.166	0	0.5	0.5	0.02	0.00	0.10	0.11	0.00	0.21	0.00%	46.70%	51.72%	1.58%	**---**	**1.40**	**---**
Endosulfan sulfate	1.00			1.98			1.184			0.1072	1.98	1.18	0.11	0.166	0	0.5	0.5	0.02	0.00	0.10	0.16	0.00	0.27	0.00%	36.98%	61.77%	1.25%	**---**	**1.77**	**---**
Endrin aldehyde	1.36			1.44			6.686			0.1368	1.95	9.08	0.19	0.166	0	0.5	0.5	0.02	0.00	0.75	0.16	0.00	0.92	0.00%	81.88%	17.63%	0.49%	**0.92**	**10.00**	**1.00**
Methoxychlor	22.39			0.52			3.739			0.2093	11.75	83.74	4.69	0.166	0	0.5	0.5	0.02	0.00	6.95	0.98	0.07	8.00	0.00%	86.88%	12.19%	0.93%	**8.00**	**2.00**	**1.00**

Notes:
It has been conservatively assumed that all chemical intake is absorbed by the receptor.
1 - When no TRV was available, the PRG is listed as 1 mg/kg based on formulas in the spreadsheet but no actual PRG is recommended.

Acronyms:
BAF = Bioaccumulation factor
DW = Dry weight
FIR = Food ingestion rate
mg/kg = Miligrams per kilogram
mg/kg BW/day, DW = Miligrams per kilogram of body weight per day, dry weight
mg/kg/d = Miligrams per kilogram per day
NOAEL = No observed adverse effect level
PRGs = Preliminary remediation goals
TRV = Toxicity reference value

Equations:
Total Estimated Exposure = Food Intake + Incidental Soil Intake
Food Intake = estimated concentration in biota X proportion of biota type X food ingestion rate (FIR)
Incidental Soil intake = concentration in soil X proportion of soil as component of diet X food ingestion rate (FIR)
Estimated Concentrations in Biota (method 1) = B1*(ln[Site Specific Soil Concentration]) + B0
where: B1 = slope and B0 = intercept
Estimated Concentrations in Biota (method 2) = soil concentration X BAF
Hazard Quotient = Total Estimated Exposure (Dose) / TRV
Therefore, when the HQ = 1, soil concentration = PRG
where: Soil concentration (mg/kg) = TRV / (Food Intake + Incidental Soil Intake) = Soil PRG

Table A-15. Exposure Calculation Worksheet for Determining LOAEL-Based PRGs for Grasshopper Mouse

		Literature-derived Bioaccumulation Models									Estimated Concentrations in Biota (mg/kg DW)			Food Intake	Diet Composition (proportion)				Estimated Exposure (mg/kg/d)					Percent Estimated Exposure by Pathway					
		Plants			Soil Inverts			Small Mammals																					
Analyte	Soil (mg/kg)	intercept	slope	BAF	intercept	slope	BAF	intercept	slope	BAF	Plants	Soil Invert.	Small Mam.	(kg/kg-bw/d, dw)	Small Mam.	Soil Inverts	Plants	Soil	Small Mam.	Soil Inverts	Plants	Soil	Total	Small Mam.	Soil Inverts	Plants	Soil	Selected Mammalian LOAEL TRV (mg/kg/d)	LOAEL HQ
Aluminum	3798.53			0.00287			0.043			0.0263	10.90	163.34	99.90	0.098	0	1	0	0.009	0.00	15.96	0.00	3.34	19.30	0.00%	82.69%	0.00%	17.31%	**19.30**	**1.00**
Antimony	5.98	-3.233	0.938				1			0.001 * 50 * Cdiet	0.21	5.98	0.30	0.098	0	1	0	0.009	0.00	0.58	0.00	0.01	0.59	0.00%	99.11%	0.00%	0.89%	**0.59**	**1.00**
Arsenic, Total all valence states	318.36	-1.992	0.564		-1.421	0.706		-4.8471	0.8188		3.52	14.12	0.88	0.098	0	1	0	0.009	0.00	1.38	0.00	0.28	1.66	0.00%	83.13%	0.00%	16.87%	**1.66**	**1.00**
Arsenic (III)	318.36	-1.992	0.564		-1.421	0.706		-4.8471	0.8188		3.52	14.12	0.88	0.098	0	1	0	0.009	0.00	1.38	0.00	0.28	1.66	0.00%	83.13%	0.00%	16.87%	**1.66**	**1.00**
Arsenic (V)	318.36	-1.992	0.564		-1.421	0.706		-4.8471	0.8188		3.52	14.12	0.88	0.098	0	1	0	0.009	0.00	1.38	0.00	0.28	1.66	0.00%	83.13%	0.00%	16.87%	**1.66**	**1.00**
Barium	7675.79			0.156			0.091			0.0168	1197.42	698.50	128.95	0.098	0	1	0	0.009	0.00	68.25	0.00	6.75	75.00	0.00%	91.00%	0.00%	9.00%	**75.00**	**1.00**
Beryllium	1.00	-0.5361	0.7345				0.045			0.001 * 50 * Cdiet	0.59	0.05	0.00	0.098	0	1	0	0.009	0.00	0.00	0.00	0.00	0.01	0.00%	83.33%	0.00%	16.67%	**---**	**---**
Bismuth	1.00			0.005			1			1	0.01	1.00	1.00	0.098	0	1	0	0.009	0.00	0.10	0.00	0.00	0.10	0.00%	99.11%	0.00%	0.89%	**---**	**---**
Boron	949.39			5.714			1			1	5424.84	949.39	949.39	0.098	0	1	0	0.009	0.00	92.77	0.00	0.83	93.60	0.00%	99.11%	0.00%	0.89%	**93.60**	**1.00**
Cadmium	23.57	-0.476	0.546		2.114	0.795		-1.2571	0.4723		3.49	102.13	1.27	0.098	0	1	0	0.009	0.00	9.98	0.00	0.02	10.00	0.00%	99.79%	0.00%	0.21%	**10.00**	**1.00**
Chromium (total)	312.56			0.041			0.306	-1.4599	0.7338		12.81	95.64	15.73	0.098	0	1	0	0.009	0.00	9.35	0.00	0.27	9.62	0.00%	97.14%	0.00%	2.86%	**9.62**	**1.00**
Chromium (+3)	312.56			0.041			0.306	-1.4599	0.7338		12.81	95.64	15.73	0.098	0	1	0	0.009	0.00	9.35	0.00	0.27	9.62	0.00%	97.14%	0.00%	2.86%	**9.62**	**1.00**
Chromium (+6)	1299.60			0.041			0.306	-1.4599	0.7338		53.28	397.68	44.76	0.098	0	1	0	0.009	0.00	38.86	0.00	1.14	40.00	0.00%	97.14%	0.00%	2.86%	**40.00**	**1.00**
Cobalt	371.85			0.00745			0.291	-4.4669	1.307		2.77	108.21	26.27	0.098	0	1	0	0.009	0.00	10.57	0.00	0.33	10.90	0.00%	97.00%	0.00%	3.00%	**10.90**	**1.00**
Copper	182.42	0.669	0.394				0.515	2.042	0.1444		15.18	93.95	16.34	0.098	0	1	0	0.009	0.00	9.18	0.00	0.16	9.34	0.00%	98.28%	0.00%	1.72%	**9.34**	**1.00**
Lead	336.43	-1.328	0.561		-0.218	0.807		0.0761	0.4422		6.93	88.01	14.14	0.098	0	1	0	0.009	0.00	8.60	0.00	0.30	8.90	0.00%	96.67%	0.00%	3.33%	**8.90**	**1.00**
Lithium	3498.30			0.004			0.046			1	13.99	160.92	3498.30	0.098	0	1	0	0.009	0.00	15.72	0.00	3.08	18.80	0.00%	83.64%	0.00%	16.36%	**18.80**	**1.00**
Manganese	27720.38			0.0792	-0.809	0.682				0.0205	2195.45	477.14	568.27	0.098	0	1	0	0.009	0.00	46.62	0.00	24.38	71.00	0.00%	65.67%	0.00%	34.33%	**71.00**	**1.00**
Mercury (methyl)	3.25	-0.996	0.544		0.0781	0.3369				0.054	0.70	1.61	0.18	0.098	0	1	0	0.009	0.00	0.16	0.00	0.00	0.16	0.00%	98.21%	0.00%	1.79%	**0.16**	**1.00**
Mercury (inorganic)	32.43	-0.996	0.544		0.0781	0.3369				0.054	2.45	3.49	1.76	0.098	0	1	0	0.009	0.00	0.34	0.00	0.03	0.37	0.00%	92.28%	0.00%	7.72%	**0.37**	**1.00**
Molybdenum	27.66			1.2504			0.953			1	34.59	26.36	27.66	0.098	0	1	0	0.009	0.00	2.58	0.00	0.02	2.60	0.00%	99.06%	0.00%	0.94%	**2.60**	**1.00**
Nickel	32.58	-2.224	0.748				1.059	-0.2462	0.4658		1.46	34.50	3.96	0.098	0	1	0	0.009	0.00	3.37	0.00	0.03	3.40	0.00%	99.16%	0.00%	0.84%	**3.40**	**1.00**
Selenium	3.19	-0.678	1.104		-0.075	0.733		-0.4158	0.3764		1.83	2.17	1.02	0.098	0	1	0	0.009	0.00	0.21	0.00	0.00	0.21	0.00%	98.70%	0.00%	1.30%	**0.22**	**1.00**
Silver	299.96			0.014			2.045			0.0040	4.20	613.41	1.20	0.098	0	1	0	0.009	0.00	59.94	0.00	0.26	60.20	0.00%	99.56%	0.00%	0.44%	**60.20**	**1.00**
Strontium	1.00			0.207			0.4066			1.74	0.21	0.41	1.74	0.098	0	1	0	0.009	0.00	0.04	0.00	0.00	0.04	0.00%	97.83%	0.00%	2.17%	**---**	**---**
Thallium	12.16			0.004			0.0541			0.1124	0.05	0.66	1.37	0.098	0	1	0	0.009	0.00	0.06	0.00	0.01	0.08	0.00%	85.74%	0.00%	14.26%	**0.08**	**1.00**
Tin	4024.76			1			0.08			0.08	4024.76	321.98	321.98	0.098	0	1	0	0.009	0.00	31.46	0.00	3.54	35.00	0.00%	89.89%	0.00%	10.11%	**35.00**	**1.00**
Uranium	682.29			0.021			0.033			0.0002	14.33	22.52	0.14	0.098	0	1	0	0.009	0.00	2.20	0.00	0.60	2.80	0.00%	78.57%	0.00%	21.43%	**2.80**	**1.00**
Vanadium	1667.60			0.00485			0.042			0.0123	8.09	70.04	20.51	0.098	0	1	0	0.009	0.00	6.84	0.00	1.47	8.31	0.00%	82.35%	0.00%	17.65%	**8.31**	**1.00**
Zinc	810.09	1.575	0.555		4.449	0.328		4.3632	0.0706		198.72	769.44	125.97	0.098	0	1	0	0.009	0.00	75.18	0.00	0.71	75.89	0.00%	99.06%	0.00%	0.94%	**75.90**	**1.00**
Ammonia/Ammonium	1.00													0.098	0	1	0	0.009	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	**---**	**---**

Table A-15. Exposure Calculation Worksheet for Determining LOAEL-Based PRGs for Grasshopper Mouse

		Literature-derived Bioaccumulation Models									Estimated Concentrations in Biota (mg/kg DW)			Food Intake	Diet Composition (proportion)				Estimated Exposure (mg/kg/d)					Percent Estimated Exposure by Pathway					
		Plants			Soil Inverts			Small Mammals																					
Analyte	Soil (mg/kg)	intercept	slope	BAF	intercept	slope	BAF	intercept	slope	BAF	Plants	Soil Invert.	Small Mam.	(kg/kg-bw/d, dw)	Small Mam.	Soil Inverts	Plants	Soil	Small Mam.	Soil Inverts	Plants	Soil	Total	Small Mam.	Soil Inverts	Plants	Soil	Selected Mammalian LOAEL TRV (mg/kg/d)	LOAEL HQ
Chloride	1.00													0.098	0	1	0	0.009	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Cyanide	1.00													0.098	0	1	0	0.009	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Fluoride	59984.89			0.006							359.91			0.098	0	1	0	0.009	0.00	0.00	0.00	52.75	52.75	0.00%	0.00%	0.00%	100.00%	**52.75**	**1.00**
Iodine	15579.01			0.05							778.95			0.098	0	1	0	0.009	0.00	0.00	0.00	13.70	13.70	0.00%	0.00%	0.00%	100.00%	**13.70**	**1.00**
Nitrate/Nitrite	1284984.44													0.098	0	1	0	0.009	0.00	0.00	0.00	1130.00	1130.00	0.00%	0.00%	0.00%	100.00%	**1130.00**	**1.00**
Phosphate	1.00													0.098	0	1	0	0.009	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Sulfate/Sulfite	1.00													0.098	0	1	0	0.009	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Total Organic Carbon	1.00													0.098	0	1	0	0.009	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
1,1-dichloroethane	1.00						1.010			0.0109		1.01	0.01	0.098	0	1	0	0.009	0.00	0.10	0.00	0.00	0.10	0.00%	99.12%	0.00%	0.88%	---	---
1,1-dichloroethene	1.00						1.011			0.0186		1.01	0.02	0.098	0	1	0	0.009	0.00	0.10	0.00	0.00	0.10	0.00%	99.12%	0.00%	0.88%	---	---
1,1,1-trichloroethane	1.00						1.013			0.0305		1.01	0.03	0.098	0	1	0	0.009	0.00	0.10	0.00	0.00	0.10	0.00%	99.12%	0.00%	0.88%	---	---
1,1,2-trichloroethane	1.00						1.010			0.0165		1.01	0.02	0.098	0	1	0	0.009	0.00	0.10	0.00	0.00	0.10	0.00%	99.12%	0.00%	0.88%	---	---
1,1,2,2-tetrachloroethane	894.31						1.013			0.0270		905.88	24.17	0.098	0	1	0	0.009	0.00	88.51	0.00	0.79	89.30	0.00%	99.12%	0.00%	0.88%	**89.30**	**1.00**
1,2-dichlorobenzene	1.00			2.45			1.018			0.0882	2.45	1.02	0.09	0.098	0	1	0	0.009	0.00	0.10	0.00	0.00	0.10	0.00%	99.12%	0.00%	0.88%	---	---
1,2-dichloroethane (DCA)	1.00						0.988			0.0063		0.99	0.01	0.098	0	1	0	0.009	0.00	0.10	0.00	0.00	0.10	0.00%	99.10%	0.00%	0.90%	---	---
1,3-dichlorobenzene	1.00			2.23			1.018			0.0963	2.23	1.02	0.10	0.098	0	1	0	0.009	0.00	0.10	0.00	0.00	0.10	0.00%	99.12%	0.00%	0.88%	---	---
2-butanone (Methyl Ethyl Ketone/MEK)	455967.83						0.094			0.0006		42677.68	251.71	0.098	0	1	0	0.009	0.00	4170.03	0.00	400.97	4571.00	0.00%	91.23%	0.00%	8.77%	**4571.00**	**1.00**
2-hexanone	1708.10						0.207			0.0053		354.09	9.13	0.098	0	1	0	0.009	0.00	34.60	0.00	1.50	36.10	0.00%	95.84%	0.00%	4.16%	**36.10**	**1.00**
Benzene	70.22						1.011			0.0186		71.01	1.31	0.098	0	1	0	0.009	0.00	6.94	0.00	0.06	7.00	0.00%	99.12%	0.00%	0.88%	**7.00**	**1.00**
Butanol	10502.90						0.478			0.0017		5022.67	17.95	0.098	0	1	0	0.009	0.00	490.76	0.00	9.24	500.00	0.00%	98.15%	0.00%	1.85%	**500.00**	**1.00**
Carbon Tetrachloride	1.00						1.015			0.0420		1.01	0.04	0.098	0	1	0	0.009	0.00	0.10	0.00	0.00	0.10	0.00%	99.12%	0.00%	0.88%	---	---
Chlorobenzene	386.93						1.015			0.0490		392.59	18.97	0.098	0	1	0	0.009	0.00	38.36	0.00	0.34	38.70	0.00%	99.12%	0.00%	0.88%	**38.70**	**1.00**
Chloroform	411.58						1.011			0.0135		415.91	5.54	0.098	0	1	0	0.009	0.00	40.64	0.00	0.36	41.00	0.00%	99.12%	0.00%	0.88%	**41.00**	**1.00**
Cis-1,2-dichloroethylene	1.00						1.011			0.0122		1.01	0.01	0.098	0	1	0	0.009	0.00	0.10	0.00	0.00	0.10	0.00%	99.12%	0.00%	0.88%	---	---
Dichloromethane (Methylene Chloride)	503.78						1.007			0.0042		507.19	2.11	0.098	0	1	0	0.009	0.00	49.56	0.00	0.44	50.00	0.00%	99.11%	0.00%	0.89%	**50.00**	**1.00**
Ethyl Benzene	4072.97			3.21			1.016			0.0666	13092.21	4138.97	271.40	0.098	0	1	0	0.009	0.00	404.42	0.00	3.58	408.00	0.00%	99.12%	0.00%	0.88%	**408.00**	**1.00**
Methyl Isobutyl Ketone	227119.32						0.197			0.0037		44737.32	849.89	0.098	0	1	0	0.009	0.00	4371.27	0.00	199.73	4571.00	0.00%	95.63%	0.00%	4.37%	**4571.00**	**1.00**
n-butyl Benzene	3274.62			1.67			1.022			0.1227	5473.60	3347.88	401.93	0.098	0	1	0	0.009	0.00	327.12	0.00	2.88	330.00	0.00%	99.13%	0.00%	0.87%	**330.00**	**1.00**
Tetrachloroethylene	69.79						1.018			0.0390		71.01	2.72	0.098	0	1	0	0.009	0.00	6.94	0.00	0.06	7.00	0.00%	99.12%	0.00%	0.88%	**7.00**	**1.00**
Toluene	5201.85						1.014			0.0430		5275.07	223.86	0.098	0	1	0	0.009	0.00	515.43	0.00	4.57	520.00	0.00%	99.12%	0.00%	0.88%	**520.00**	**1.00**
Trans-1,2-dichloroethylene	1.00						1.011			0.0170		1.01	0.02	0.098	0	1	0	0.009	0.00	0.10	0.00	0.00	0.10	0.00%	99.12%	0.00%	0.88%	---	---
Trichloroethylene (TCE)	70.14						1.012			0.0410		71.01	2.87	0.098	0	1	0	0.009	0.00	6.94	0.00	0.06	7.00	0.00%	99.12%	0.00%	0.88%	**7.00**	**1.00**
Xylene	3494.50			3.43			1.016			0.0619	11991.85	3550.59	216.38	0.098	0	1	0	0.009	0.00	346.93	0.00	3.07	350.00	0.00%	99.12%	0.00%	0.88%	**350.00**	**1.00**

Table A-15. Exposure Calculation Worksheet for Determining LOAEL-Based PRGs for Grasshopper Mouse

		Literature-derived Bioaccumulation Models									Estimated Concentrations in Biota (mg/kg DW)			Food Intake	Diet Composition (proportion)				Estimated Exposure (mg/kg/d)					Percent Estimated Exposure by Pathway					
		Plants			Soil Inverts			Small Mammals																					
Analyte	Soil (mg/kg)	intercept	slope	BAF	intercept	slope	BAF	intercept	slope	BAF	Plants	Soil Invert.	Small Mam.	(kg/kg-bw/d, dw)	Small Mam.	Soil Inverts	Plants	Soil	Small Mam.	Soil Inverts	Plants	Soil	Total	Small Mam.	Soil Inverts	Plants	Soil	Selected Mammalian LOAEL TRV (mg/kg/d)	LOAEL HQ
Acenaphthene	2421.93	-5.562	-0.8556				1.470			0	0.00	3560.24	0.00	0.098	0	1	0	0.009	0.00	347.87	0.00	2.13	350.00	0.00%	99.39%	0.00%	0.61%	**350.00**	**1.00**
Acenaphthylene	155.81	-1.144	0.791				22.9			0	17.28	3568.01	0.00	0.098	0	1	0	0.009	0.00	348.63	0.00	0.14	348.77	0.00%	99.96%	0.00%	0.04%	**350.00**	**1.00**
Anthracene	1.00	-0.9887	0.7784				2.42			0	0.37	2.42	0.00	0.098	0	1	0	0.009	0.00	0.24	0.00	0.00	0.24	0.00%	99.63%	0.00%	0.37%	**---**	**---**
Benzo(a)pyrene	76.43	-2.0615	0.975				1.33			0	8.73	101.66	0.00	0.098	0	1	0	0.009	0.00	9.93	0.00	0.07	10.00	0.00%	99.33%	0.00%	0.67%	**10.00**	**1.00**
Benzo(a)anthracene	64.00	-2.7078	0.5944				1.59			0	0.79	101.77	0.00	0.098	0	1	0	0.009	0.00	9.94	0.00	0.06	10.00	0.00%	99.44%	0.00%	0.56%	**10.00**	**1.00**
Benzo(b)fluoranthene	39.23			0.31			2.6			0	12.16	101.99	0.00	0.098	0	1	0	0.009	0.00	9.97	0.00	0.03	10.00	0.00%	99.66%	0.00%	0.34%	**10.00**	**1.00**
Benzo(ghi)perylene	34.70	-0.9313	1.1829				2.94			0	26.16	102.03	0.00	0.098	0	1	0	0.009	0.00	9.97	0.00	0.03	10.00	0.00%	99.69%	0.00%	0.31%	**10.00**	**1.00**
Benzo[k]fluoranthene	39.23	-4.6482	0.1668				2.6			0	0.02	101.99	0.00	0.098	0	1	0	0.009	0.00	9.97	0.00	0.03	10.00	0.00%	99.66%	0.00%	0.34%	**10.00**	**1.00**
Chrysene	44.52	-2.7078	0.5944				2.29			0	0.64	101.94	0.00	0.098	0	1	0	0.009	0.00	9.96	0.00	0.04	10.00	0.00%	99.61%	0.00%	0.39%	**10.00**	**1.00**
Dibenz(ah)anthracene	44.13			0.13			2.31			0	5.74	101.95	0.00	0.098	0	1	0	0.009	0.00	9.96	0.00	0.04	10.00	0.00%	99.61%	0.00%	0.39%	**10.00**	**1.00**
Fluoranthene	839.16			0.5			3.04			0	419.58	2551.04	0.00	0.098	0	1	0	0.009	0.00	249.26	0.00	0.74	250.00	0.00%	99.70%	0.00%	0.30%	**250.00**	**1.00**
Fluorene	267.10	-5.562	-0.8556				9.57			0	0.00	2556.19	0.00	0.098	0	1	0	0.009	0.00	249.77	0.00	0.23	250.00	0.00%	99.91%	0.00%	0.09%	**250.00**	**1.00**
Indeno[1,2,3-cd]pyrene	35.67			0.11			2.86			0	3.92	102.02	0.00	0.098	0	1	0	0.009	0.00	9.97	0.00	0.03	10.00	0.00%	99.69%	0.00%	0.31%	**10.00**	**1.00**
2-Methylnaphthalene	1132.02	-1.3205	4.544				1.020			0	20101502546608.90	1154.49	0.00	0.098	0	1	0	0.009	0.00	112.80	0.00	1.00	113.80	0.00%	99.13%	0.00%	0.87%	**113.80**	**1.00**
Naphthalene	348.19			12.2			4.4			0	4247.89	1532.02	0.00	0.098	0	1	0	0.009	0.00	149.69	0.00	0.31	150.00	0.00%	99.80%	0.00%	0.20%	**150.00**	**1.00**
Phenanthrene	1.00	-0.1665	0.6203				1.72			0	0.85	1.72	0.00	0.098	0	1	0	0.009	0.00	0.17	0.00	0.00	0.17	0.00%	99.48%	0.00%	0.52%	**---**	**---**
Pyrene	727.29			0.72			1.75			0	523.65	1272.75	0.00	0.098	0	1	0	0.009	0.00	124.36	0.00	0.64	125.00	0.00%	99.49%	0.00%	0.51%	**125.00**	**1.00**
Total PAHs	1.00	0.083	0.3015							0	1.09		0.00	0.098	0	1	0	0.009	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	**---**	**---**
Low MW PAHs	372986.63	-1.3205	0.4544							0	90.84		0.00	0.098	0	1	0	0.009	0.00	0.00	0.00	328.00	328.00	0.00%	0.00%	0.00%	100.00%	**328.00**	**1.00**
High MW PAHs	3491.06	-1.7026	0.9469							0	412.47		0.00	0.098	0	1	0	0.009	0.00	0.00	0.00	3.07	3.07	0.00%	0.00%	0.00%	100.00%	**3.07**	**1.00**
Gasoline Range Organics																												**1500.00**	**0.00**
TPH - Diesel	1705731.55									0			0.00	0.098	0	1	0	0.009	0.00	0.00	0.00	1500.00	1500.00	0.00%	0.00%	0.00%	100.00%	**1500.00**	**1.00**
TPH - Kerosene	1705731.55									0			0.00	0.098	0	1	0	0.009	0.00	0.00	0.00	1500.00	1500.00	0.00%	0.00%	0.00%	100.00%	**1500.00**	**1.00**
Normal paraffin hydrocarbons	1705731.55									0			0.00	0.098	0	1	0	0.009	0.00	0.00	0.00	1500.00	1500.00	0.00%	0.00%	0.00%	100.00%	**1500.00**	**1.00**
Phenol	1511.20						0.235			0.0064		354.84	9.68	0.098	0	1	0	0.009	0.00	34.67	0.00	1.33	36.00	0.00%	96.31%	0.00%	3.69%	**36.00**	**1.00**
2-methylphenol (ocresol)	1.00						0.336			0.0150		0.34	0.02	0.098	0	1	0	0.009	0.00	0.03	0.00	0.00	0.03	0.00%	97.39%	0.00%	2.61%	**---**	**---**
4-methylphenol (pcresol)	1.00						0.333			0.0141		0.33	0.01	0.098	0	1	0	0.009	0.00	0.03	0.00	0.00	0.03	0.00%	97.37%	0.00%	2.63%	**---**	**---**
2,4-dinitrotoluene	74.35	1.873	-0.3768	0.376			0.184			0.0155	27.96	13.66	1.15	0.098	0	1	0	0.009	0.00	1.33	0.00	0.07	1.40	0.00%	95.33%	0.00%	4.67%	**1.40**	**1.00**
Bis[2-ethylhexyl] phthalate	45.42			0.07			41.144			0.0945	3.00	1868.81	4.29	0.098	0	1	0	0.009	0.00	182.60	0.00	0.04	182.64	0.00%	99.98%	0.00%	0.02%	**183.00**	**1.00**
Total PCBs	1.47			0.17	1.41	1.36				0.1792	0.25	6.95	0.26	0.098	0	1	0	0.009	0.00	0.68	0.00	0.00	0.68	0.00%	99.81%	0.00%	0.19%	**0.68**	**1.00**
Aroclor 1016	4.85			0.30	1.41	1.36				0.2104	1.44	35.06	1.02	0.098	0	1	0	0.009	0.00	3.43	0.00	0.00	3.43	0.00%	99.88%	0.00%	0.12%	**3.43**	**1.00**

Table A-15. Exposure Calculation Worksheet for Determining LOAEL-Based PRGs for Grasshopper Mouse

		Literature-derived Bioaccumulation Models									Estimated Concentrations in Biota (mg/kg DW)			Food Intake	Diet Composition (proportion)				Estimated Exposure (mg/kg/d)					Percent Estimated Exposure by Pathway					
		Plants			Soil Inverts			Small Mammals																					
Analyte	Soil (mg/kg)	intercept	slope	BAF	intercept	slope	BAF	intercept	slope	BAF	Plants	Soil Invert.	Small Mam.	(kg/kg-bw/d, dw)	Small Mam.	Soil Inverts	Plants	Soil	Small Mam.	Soil Inverts	Plants	Soil	Total	Small Mam.	Soil Inverts	Plants	Soil	Selected Mammalian LOAEL TRV (mg/kg/d)	LOAEL HQ
Aroclor 1221	1.47			0.78	1.41	1.36				0.1883	1.16	6.95	0.28	0.098	0	1	0	0.009	0.00	0.68	0.00	0.00	0.68	0.00%	99.81%	0.00%	0.19%	**0.68**	**1.00**
Aroclor 1232	1.47			0.99	1.41	1.36				0.1704	1.46	6.95	0.25	0.098	0	1	0	0.009	0.00	0.68	0.00	0.00	0.68	0.00%	99.81%	0.00%	0.19%	**0.68**	**1.00**
Aroclor 1242	1.49			0.16	1.41	1.36				0.1756	0.24	7.05	0.26	0.098	0	1	0	0.009	0.00	0.69	0.00	0.00	0.69	0.00%	99.81%	0.00%	0.19%	**0.69**	**1.00**
Aroclor 1248	0.32			0.18	1.41	1.36				0.1855	0.06	0.89	0.06	0.098	0	1	0	0.009	0.00	0.09	0.00	0.00	0.09	0.00%	99.67%	0.00%	0.33%	**0.09**	**1.00**
Aroclor 1254	1.47			0.14	1.41	1.36				0.1630	0.21	6.95	0.24	0.098	0	1	0	0.009	0.00	0.68	0.00	0.00	0.68	0.00%	99.81%	0.00%	0.19%	**0.68**	**1.00**
Aroclor 1260	1.47			0.05	1.41	1.36				0.0750	0.08	6.95	0.11	0.098	0	1	0	0.009	0.00	0.68	0.00	0.00	0.68	0.00%	99.81%	0.00%	0.19%	**0.68**	**1.00**
Aroclor-1262	773.26													0.098	0	1	0	0.009	0.00	0.00	0.00	0.68	0.68	0.00%	0.00%	0.00%	100.00%	**0.68**	**1.00**
Dichloroprop	1.00													0.098	0	1	0	0.009	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	**---**	**---**
Aldrin	9.82			0.14			1.033			0.1630	1.37	10.15	1.60	0.098	0	1	0	0.009	0.00	0.99	0.00	0.01	1.00	0.00%	99.14%	0.00%	0.86%	**1.00**	**1.00**
beta-1,2,3,4,5,6-Hexachlorocyclohexane	19.87			1.72			1.021			0.1201	34.16	20.29	2.39	0.098	0	1	0	0.009	0.00	1.98	0.00	0.02	2.00	0.00%	99.13%	0.00%	0.87%	**2.00**	**1.00**
alpha-Chlordane	206.56			0.16			1.031			0.1771	34.04	213.06	36.57	0.098	0	1	0	0.009	0.00	20.82	0.00	0.18	21.00	0.00%	99.14%	0.00%	0.86%	**21.00**	**1.00**
gamma-Chlordane	205.75			0.16			1.036			0.1771	33.91	213.07	36.43	0.098	0	1	0	0.009	0.00	20.82	0.00	0.18	21.00	0.00%	99.14%	0.00%	0.86%	**21.00**	**1.00**
Dichlorodiphenyldichloroethylene	0.59	-2.5119	0.7524		2.4771	0.8804		3.6401	0.641		0.05	7.52	27.25	0.098	0	1	0	0.009	0.00	0.73	0.00	0.00	0.74	0.00%	99.93%	0.00%	0.07%	**0.74**	**1.00**
Dichlorodiphenyltrichloroethane	0.88	-2.5119	0.7524		2.1247	0.8689		1.1788	0.7254		0.07	7.51	2.97	0.098	0	1	0	0.009	0.00	0.73	0.00	0.00	0.73	0.00%	99.89%	0.00%	0.11%	**0.74**	**1.00**
Dieldrin	0.02			0.41			14.70			1.20	0.01	0.31	0.03	0.098	0	1	0	0.009	0.00	0.03	0.00	0.00	0.03	0.00%	99.94%	0.00%	0.06%	**0.03**	**1.00**
Endosulfan I	1.00			1.31			1.184			0.1455	1.31	1.18	0.15	0.098	0	1	0	0.009	0.00	0.12	0.00	0.00	0.12	0.00%	99.25%	0.00%	0.75%	**---**	**---**
Endosulfan II	1.00			1.31			1.184			0.1455	1.31	1.18	0.15	0.098	0	1	0	0.009	0.00	0.12	0.00	0.00	0.12	0.00%	99.25%	0.00%	0.75%	**---**	**---**
Endosulfan sulfate	1.00			1.98			1.184			0.1072	1.98	1.18	0.11	0.098	0	1	0	0.009	0.00	0.12	0.00	0.00	0.12	0.00%	99.25%	0.00%	0.75%	**---**	**---**
Endrin aldehyde	1.41			1.44			6.686			0.1368	2.02	9.40	0.19	0.098	0	1	0	0.009	0.00	0.92	0.00	0.00	0.92	0.00%	99.87%	0.00%	0.13%	**0.92**	**1.00**
Methoxychlor	21.84			0.52			3.739			0.2093	11.47	81.68	4.57	0.098	0	1	0	0.009	0.00	7.98	0.00	0.02	8.00	0.00%	99.76%	0.00%	0.24%	**8.00**	**1.00**

Notes:
It has been conservatively assumed that all chemical intake is absorbed by the receptor.
1 - When no TRV was available, the PRG is listed as 1 mg/kg based on formulas in the spreadsheet but no actual PRG is recommended.
Acronyms:
BAF = Bioaccumulation factor
DW = Dry weight
FIR = Food ingestion rate
mg/kg = Miligrams per kilogram
mg/kg BW/day, DW = Miligrams per kilogram of body weight per day, dry weight
mg/kg/d = Miligrams per kilogram per day
NOAEL = No observed adverse effect level
PRGs = Preliminary remediation goals
TRV = Toxicity reference value
Equations:
Total Estimated Exposure = Food Intake + Incidental Soil Intake
Food Intake = estimated concentration in biota X proportion of biota type X food ingestion rate (FIR)
Incidental Soil intake = concentration in soil X proportion of soil as component of diet X food ingestion rate (FIR)
Estimated Concentrations in Biota (method 1) = B1*(ln[Site Specific Soil Concentration]) + B0
where: B1 = slope and B0 = intercept
Estimated Concentrations in Biota (method 2) = soil concentration X BAF
Hazard Quotient = Total Estimated Exposure (Dose) / TRV
Therefore, when the HQ = 1, soil concentration = PRG
where: Soil concentration (mg/kg) = TRV / (Food Intake + Incidental Soil Intake) = Soil PRG

Table A-16. Exposure Calculation Worksheet for Determining LOAEL-Based PRGs for Badger

		Literature-derived Bioaccumulation Models									Estimated Concentrations in Biota (mg/kg DW)			Food Intake	Diet Composition (proportion)				Estimated Exposure (mg/kg/d)					Percent Estimated Exposure by Pathway					
		Plants			Soil Inverts			Small Mammals																					
Analyte	Soil (mg/kg)	intercept	slope	BAF	intercept	slope	BAF	intercept	slope	BAF	Plants	Soil Inverts	Small Mam.	(kg/kg-bw/d, dw)	Small Mam.	Soil Inverts	Plants	Soil	Small Mam.	Soil Inverts	Plants	Soil	Total	Small Mam.	Soil Inverts	Plants	Soil	Selected Mammalian LOAEL TRV (mg/kg/d)	LOAEL HQ
Aluminum	7100.99			0.00287			0.043			0.0263	20.38	305.34	186.76	0.0347	1	0	0	0.052	6.48	0.00	0.00	12.82	19.30	33.59%	0.00%	0.00%	66.41%	**19.30**	**1.00**
Antimony	166.64	-3.233	0.938				1			0.001 * 50 * Cdiet	4.79	166.64	8.33	0.0347	1	0	0	0.052	0.29	0.00	0.00	0.30	0.59	49.02%	0.00%	0.00%	50.98%	**0.59**	**1.00**
Arsenic, Total all valence states	880.60	-1.992	0.564		-1.421	0.706		-4.8471	0.8188		6.25	28.97	2.02	0.0347	1	0	0	0.052	0.07	0.00	0.00	1.59	1.66	4.23%	0.00%	0.00%	95.77%	**1.66**	**1.00**
Arsenic (III)	880.60	-1.992	0.564		-1.421	0.706		-4.8471	0.8188		6.25	28.97	2.02	0.0347	1	0	0	0.052	0.07	0.00	0.00	1.59	1.66	4.23%	0.00%	0.00%	95.77%	**1.66**	**1.00**
Arsenic (V)	880.60	-1.992	0.564		-1.421	0.706		-4.8471	0.8188		6.25	28.97	2.02	0.0347	1	0	0	0.052	0.07	0.00	0.00	1.59	1.66	4.23%	0.00%	0.00%	95.77%	**1.66**	**1.00**
Barium	31404.83			0.156			0.091			0.0168	4899.15	2857.84	527.60	0.0347	1	0	0	0.052	18.31	0.00	0.00	56.69	75.00	24.42%	0.00%	0.00%	75.58%	**75.00**	**1.00**
Beryllium	1.00	-0.5361	0.7345				0.045			0.001 * 50 * Cdiet	0.59	0.05	0.00	0.0347	1	0	0	0.052	0.00	0.00	0.00	0.00	0.00	4.15%	0.00%	0.00%	95.85%	**---**	**---**
Bismuth	1.00			0.005			1			1	0.01	1.00	1.00	0.0347	1	0	0	0.052	0.03	0.00	0.00	0.00	0.04	95.06%	0.00%	0.00%	4.94%	**---**	**---**
Boron	2563.21			5.714			1			1	14646.17	2563.21	2563.21	0.0347	1	0	0	0.052	88.97	0.00	0.00	4.63	93.60	95.06%	0.00%	0.00%	4.94%	**93.60**	**1.00**
Cadmium	5228.02	-0.476	0.546		2.114	0.795		-1.2571	0.4723		66.60	7484.74	16.23	0.0347	1	0	0	0.052	0.56	0.00	0.00	9.44	10.00	5.63%	0.00%	0.00%	94.37%	**10.00**	**1.00**
Chromium (total)	3535.56			0.041			0.306	-1.4599	0.7338		144.96	1081.88	93.29	0.0347	1	0	0	0.052	3.24	0.00	0.00	6.38	9.62	33.66%	0.00%	0.00%	66.34%	**9.62**	**1.00**
Chromium (+3)	3535.56			0.041			0.306	-1.4599	0.7338		144.96	1081.88	93.29	0.0347	1	0	0	0.052	3.24	0.00	0.00	6.38	9.62	33.66%	0.00%	0.00%	66.34%	**9.62**	**1.00**
Chromium (+6)	16583.35			0.041			0.306	-1.4599	0.7338		679.92	5074.51	289.98	0.0347	1	0	0	0.052	10.07	0.00	0.00	29.93	40.00	25.17%	0.00%	0.00%	74.83%	**40.00**	**1.00**
Cobalt	1868.88			0.00745			0.291	-4.4669	1.307		13.92	543.84	216.77	0.0347	1	0	0	0.052	7.52	0.00	0.00	3.37	10.90	69.05%	0.00%	0.00%	30.95%	**10.90**	**1.00**
Copper	4672.45	0.669	0.394				0.515	2.042	0.1444		54.49	2406.31	26.10	0.0347	1	0	0	0.052	0.91	0.00	0.00	8.43	9.34	9.70%	0.00%	0.00%	90.30%	**9.34**	**1.00**
Lead	4108.35	-1.328	0.561		-0.218	0.807		0.0761	0.4422		28.22	663.06	42.76	0.0347	1	0	0	0.052	1.48	0.00	0.00	7.42	8.90	16.68%	0.00%	0.00%	83.32%	**8.90**	**1.00**
Lithium	514.83			0.004			0.046			1	2.06	23.68	514.83	0.0347	1	0	0	0.052	17.87	0.00	0.00	0.93	18.80	95.06%	0.00%	0.00%	4.94%	**18.80**	**1.00**
Manganese	28212.66			0.0792	-0.809	0.682				0.0205	2234.44	482.90	578.36	0.0347	1	0	0	0.052	20.08	0.00	0.00	50.92	71.00	28.28%	0.00%	0.00%	71.72%	**71.00**	**1.00**
Mercury (methyl)	43.36	-0.996	0.544		0.0781	0.3369				0.054	2.87	3.85	2.35	0.0347	1	0	0	0.052	0.08	0.00	0.00	0.08	0.16	51.08%	0.00%	0.00%	48.92%	**0.16**	**1.00**
Mercury (inorganic)	100.27	-0.996	0.544		0.0781	0.3369				0.054	4.53	5.11	5.44	0.0347	1	0	0	0.052	0.19	0.00	0.00	0.18	0.37	51.08%	0.00%	0.00%	48.92%	**0.37**	**1.00**
Molybdenum	71.20			1.2504			0.953			1	89.03	67.85	71.20	0.0347	1	0	0	0.052	2.47	0.00	0.00	0.13	2.60	95.06%	0.00%	0.00%	4.94%	**2.60**	**1.00**
Nickel	1438.31	-2.224	0.748				1.059	-0.2462	0.4658		24.90	1523.18	23.12	0.0347	1	0	0	0.052	0.80	0.00	0.00	2.60	3.40	23.61%	0.00%	0.00%	76.39%	**3.40**	**1.00**
Selenium	59.89	-0.678	1.104		-0.075	0.733		-0.4158	0.3764		46.53	18.63	3.08	0.0347	1	0	0	0.052	0.11	0.00	0.00	0.11	0.21	49.72%	0.00%	0.00%	50.28%	**0.22**	**1.00**
Silver	30969.35			0.014			2.045			0.0040	433.57	63332.32	123.88	0.0347	1	0	0	0.052	4.30	0.00	0.00	55.90	60.20	7.14%	0.00%	0.00%	92.86%	**60.20**	**1.00**
Strontium	1.00			0.207			0.4066			1.74	0.21	0.41	1.74	0.0347	1	0	0	0.052	0.06	0.00	0.00	0.00	0.06	97.10%	0.00%	0.00%	2.90%	**---**	**---**
Thallium	13.14			0.004			0.0541			0.1124	0.05	0.71	1.48	0.0347	1	0	0	0.052	0.05	0.00	0.00	0.02	0.08	68.37%	0.00%	0.00%	31.63%	**0.08**	**1.00**
Tin	7638.67			1			0.08			0.08	7638.67	611.09	611.09	0.0347	1	0	0	0.052	21.21	0.00	0.00	13.79	35.00	60.61%	0.00%	0.00%	39.39%	**35.00**	**1.00**
Uranium	1545.29			0.021			0.033			0.0002	32.45	50.99	0.31	0.0347	1	0	0	0.052	0.01	0.00	0.00	2.79	2.80	0.38%	0.00%	0.00%	99.62%	**2.80**	**1.00**
Vanadium	3723.18			0.00485			0.042			0.0123	18.06	156.37	45.80	0.0347	1	0	0	0.052	1.59	0.00	0.00	6.72	8.31	19.13%	0.00%	0.00%	80.87%	**8.31**	**1.00**
Zinc	38865.84	1.575	0.555		4.449	0.328		4.3632	0.0706		1703.04	2738.76	165.55	0.0347	1	0	0	0.052	5.75	0.00	0.00	70.15	75.90	7.57%	0.00%	0.00%	92.43%	**75.90**	**1.00**
Ammonia/Ammonium	1.00													0.0347	1	0	0	0.052	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	**---**	**---**
Chloride	1.00													0.0347	1	0	0	0.052	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	**---**	**---**
Cyanide	1.00													0.0347	1	0	0	0.052	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	**---**	**---**
Fluoride	29224.21			0.006							175.35			0.0347	1	0	0	0.052	0.00	0.00	0.00	52.75	52.75	0.00%	0.00%	0.00%	100.00%	**52.75**	**1.00**

Table A-16. Exposure Calculation Worksheet for Determining LOAEL-Based PRGs for Badger

		Literature-derived Bioaccumulation Models									Estimated Concentrations in Biota (mg/kg DW)			Food Intake	Diet Composition (proportion)				Estimated Exposure (mg/kg/d)					Percent Estimated Exposure by Pathway					
		Plants			Soil Inverts			Small Mammals																					
Analyte	Soil (mg/kg)	intercept	slope	BAF	intercept	slope	BAF	intercept	slope	BAF	Plants	Soil Inverts	Small Mam.	(kg/kg-bw/d, dw)	Small Mam.	Soil Inverts	Plants	Soil	Small Mam.	Soil Inverts	Plants	Soil	Total	Small Mam.	Soil Inverts	Plants	Soil	Selected Mammalian LOAEL TRV (mg/kg/d)	LOAEL HQ
Iodine	7589.98			0.05							379.50			0.0347	1	0	0	0.052	0.00	0.00	0.00	13.70	13.70	0.00%	0.00%	0.00%	100.00%	**13.70**	**1.00**
Nitrate/Nitrite	626035.16													0.0347	1	0	0	0.052	0.00	0.00	0.00	1130.00	1130.00	0.00%	0.00%	0.00%	100.00%	**1130.00**	**1.00**
Phosphate	1.00													0.0347	1	0	0	0.052	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Sulfate/Sulfite	1.00													0.0347	1	0	0	0.052	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Total Organic Carbon	1.00													0.0347	1	0	0	0.052	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
1,1-dichloroethane	1.00						1.010			0.0109		1.01	0.01	0.0347	1	0	0	0.052	0.00	0.00	0.00	0.00	0.00	17.35%	0.00%	0.00%	82.65%	---	---
1,1-dichloroethene	1.00						1.011			0.0186		1.01	0.02	0.0347	1	0	0	0.052	0.00	0.00	0.00	0.00	0.00	26.37%	0.00%	0.00%	73.63%	---	---
1,1,1-trichloroethane	1.00						1.013			0.0305		1.01	0.03	0.0347	1	0	0	0.052	0.00	0.00	0.00	0.00	0.00	36.99%	0.00%	0.00%	63.01%	---	---
1,1,2-trichloroethane	1.00						1.010			0.0165		1.01	0.02	0.0347	1	0	0	0.052	0.00	0.00	0.00	0.00	0.00	24.09%	0.00%	0.00%	75.91%	---	---
1,1,2,2-tetrachloroethane	32553.53						1.013			0.0270		32974.62	879.83	0.0347	1	0	0	0.052	30.54	0.00	0.00	58.76	89.30	34.20%	0.00%	0.00%	65.80%	**89.30**	**1.00**
1,2-dichlorobenzene	1.00			2.45			1.018			0.0882	2.45	1.02	0.09	0.0347	1	0	0	0.052	0.00	0.00	0.00	0.00	0.00	62.91%	0.00%	0.00%	37.09%	---	---
1,2-dichloroethane (DCA)	1.00						0.988			0.0063		0.99	0.01	0.0347	1	0	0	0.052	0.00	0.00	0.00	0.00	0.00	10.80%	0.00%	0.00%	89.20%	---	---
1,3-dichlorobenzene	1.00			2.23			1.018			0.0963	2.23	1.02	0.10	0.0347	1	0	0	0.052	0.00	0.00	0.00	0.00	0.01	64.93%	0.00%	0.00%	35.07%	---	---
2-butanone (Methyl Ethyl Ketone/MEK)	2505793.22						0.094			0.0006		234537.27	1383.31	0.0347	1	0	0	0.052	48.02	0.00	0.00	4522.98	4571.00	1.05%	0.00%	0.00%	98.95%	**4571.00**	**1.00**
2-hexanone	18135.29						0.207			0.0053		3759.43	96.96	0.0347	1	0	0	0.052	3.37	0.00	0.00	32.73	36.10	9.32%	0.00%	0.00%	90.68%	**36.10**	**1.00**
Benzene	2855.63						1.011			0.0186		2887.70	53.17	0.0347	1	0	0	0.052	1.85	0.00	0.00	5.15	7.00	26.37%	0.00%	0.00%	73.63%	**7.00**	**1.00**
Butanol	268194.47						0.478			0.0017		128255.21	458.24	0.0347	1	0	0	0.052	15.91	0.00	0.00	484.09	500.00	3.18%	0.00%	0.00%	96.82%	**500.00**	**1.00**
Carbon Tetrachloride	1.00						1.015			0.0420		1.01	0.04	0.0347	1	0	0	0.052	0.00	0.00	0.00	0.00	0.00	44.68%	0.00%	0.00%	55.32%	---	---
Chlorobenzene	11035.82						1.015			0.0490		11197.35	541.03	0.0347	1	0	0	0.052	18.78	0.00	0.00	19.92	38.70	48.53%	0.00%	0.00%	51.47%	**38.70**	**1.00**
Chloroform	18040.51						1.011			0.0135		18230.31	243.05	0.0347	1	0	0	0.052	8.44	0.00	0.00	32.56	41.00	20.58%	0.00%	0.00%	79.42%	**41.00**	**1.00**
Cis-1,2-dichloroethylene	1.00						1.011			0.0122		1.01	0.01	0.0347	1	0	0	0.052	0.00	0.00	0.00	0.00	0.00	19.05%	0.00%	0.00%	80.95%	---	---
Dichloromethane (Methylene Chloride)	25632.44						1.007			0.0042		25805.58	107.55	0.0347	1	0	0	0.052	3.73	0.00	0.00	46.27	50.00	7.47%	0.00%	0.00%	92.53%	**50.00**	**1.00**
Ethyl Benzene	99076.93			3.21			1.016			0.0666	318474.40	100682.57	6601.95	0.0347	1	0	0	0.052	229.17	0.00	0.00	178.83	408.00	56.17%	0.00%	0.00%	43.83%	**408.00**	**1.00**
Methyl Isobutyl Ketone	2362392.98						0.197			0.0037		465337.46	8840.12	0.0347	1	0	0	0.052	306.86	0.00	0.00	4264.14	4571.00	6.71%	0.00%	0.00%	93.29%	**4571.00**	**1.00**
n-butyl Benzene	54405.85			1.67			1.022			0.1227	90940.55	55622.91	6677.77	0.0347	1	0	0	0.052	231.80	0.00	0.00	98.20	330.00	70.24%	0.00%	0.00%	29.76%	**330.00**	**1.00**
Tetrachloroethylene	2215.89						1.018			0.0390		2254.69	86.43	0.0347	1	0	0	0.052	3.00	0.00	0.00	4.00	7.00	42.86%	0.00%	0.00%	57.14%	**7.00**	**1.00**
Toluene	157633.17						1.014			0.0430		159851.75	6783.60	0.0347	1	0	0	0.052	235.47	0.00	0.00	284.53	520.00	45.28%	0.00%	0.00%	54.72%	**520.00**	**1.00**
Trans-1,2-dichloroethylene	1.00						1.011			0.0170		1.01	0.02	0.0347	1	0	0	0.052	0.00	0.00	0.00	0.00	0.00	24.65%	0.00%	0.00%	75.35%	---	---
Trichloroethylene (TCE)	2168.73						1.012			0.0410		2195.73	88.89	0.0347	1	0	0	0.052	3.09	0.00	0.00	3.91	7.00	44.08%	0.00%	0.00%	55.92%	**7.00**	**1.00**
Xylene	88509.43			3.43			1.016			0.0619	303732.00	89929.99	5480.55	0.0347	1	0	0	0.052	190.24	0.00	0.00	159.76	350.00	54.35%	0.00%	0.00%	45.65%	**350.00**	**1.00**
Acenaphthene	193904.70	-5.562	-0.8556				1.470			0	0.00	285039.90	0.00	0.0347	1	0	0	0.052	0.00	0.00	0.00	350.00	350.00	0.00%	0.00%	0.00%	100.00%	**350.00**	**1.00**
Acenaphthylene	193904.70	-1.144	0.791				22.9			0	4848.97	4440417.53	0.00	0.0347	1	0	0	0.052	0.00	0.00	0.00	350.00	350.00	0.00%	0.00%	0.00%	100.00%	**350.00**	**1.00**
Anthracene	1.00	-0.9887	0.7784				2.42			0	0.37	2.42	0.00	0.0347	1	0	0	0.052	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Benzo(a)pyrene	5540.13	-2.0615	0.975				1.33			0	568.37	7368.38	0.00	0.0347	1	0	0	0.052	0.00	0.00	0.00	10.00	10.00	0.00%	0.00%	0.00%	100.00%	**10.00**	**1.00**

Table A-16. Exposure Calculation Worksheet for Determining LOAEL-Based PRGs for Badger

		Literature-derived Bioaccumulation Models									Estimated Concentrations in Biota (mg/kg DW)			Food Intake	Diet Composition (proportion)				Estimated Exposure (mg/kg/d)					Percent Estimated Exposure by Pathway					
		Plants			Soil Inverts			Small Mammals																					
Analyte	Soil (mg/kg)	intercept	slope	BAF	intercept	slope	BAF	intercept	slope	BAF	Plants	Soil Inverts	Small Mam.	(kg/kg-bw/d, dw)	Small Mam.	Soil Inverts	Plants	Soil	Small Mam.	Soil Inverts	Plants	Soil	Total	Small Mam.	Soil Inverts	Plants	Soil	Selected Mammalian LOAEL TRV (mg/kg/d)	LOAEL HQ
Benzo(a)anthracene	5540.13	-2.7078	0.5944				1.59			0	11.20	8808.81	0.00	0.0347	1	0	0	0.052	0.00	0.00	0.00	10.00	10.00	0.00%	0.00%	0.00%	100.00%	**10.00**	**1.00**
Benzo(b)fluoranthene	5540.13			0.31			2.6			0	1717.44	14404.35	0.00	0.0347	1	0	0	0.052	0.00	0.00	0.00	10.00	10.00	0.00%	0.00%	0.00%	100.00%	**10.00**	**1.00**
Benzo(ghi)perylene	5540.13	-0.9313	1.1829				2.94			0	10562.13	16287.99	0.00	0.0347	1	0	0	0.052	0.00	0.00	0.00	10.00	10.00	0.00%	0.00%	0.00%	100.00%	**10.00**	**1.00**
Benzo[k]fluoranthene	5540.13	-4.6482	0.1668				2.6			0	0.04	14404.35	0.00	0.0347	1	0	0	0.052	0.00	0.00	0.00	10.00	10.00	0.00%	0.00%	0.00%	100.00%	**10.00**	**1.00**
Chrysene	5540.13	-2.7078	0.5944				2.29			0	11.20	12686.91	0.00	0.0347	1	0	0	0.052	0.00	0.00	0.00	10.00	10.00	0.00%	0.00%	0.00%	100.00%	**10.00**	**1.00**
Dibenz(ah)anthracene	5540.13			0.13			2.31			0	720.22	12797.71	0.00	0.0347	1	0	0	0.052	0.00	0.00	0.00	10.00	10.00	0.00%	0.00%	0.00%	100.00%	**10.00**	**1.00**
Fluoranthene	138503.35			0.5			3.04			0	69251.68	421050.20	0.00	0.0347	1	0	0	0.052	0.00	0.00	0.00	250.00	250.00	0.00%	0.00%	0.00%	100.00%	**250.00**	**1.00**
Fluorene	138503.35	-5.562	-0.8556				9.57			0	0.00	1325477.10	0.00	0.0347	1	0	0	0.052	0.00	0.00	0.00	250.00	250.00	0.00%	0.00%	0.00%	100.00%	**250.00**	**1.00**
Indeno[1,2,3-cd]pyrene	5540.13			0.11			2.86			0	609.41	15844.78	0.00	0.0347	1	0	0	0.052	0.00	0.00	0.00	10.00	10.00	0.00%	0.00%	0.00%	100.00%	**10.00**	**1.00**
2-Methylnaphthalene	63046.73	-1.3205	4.544				1.020			0	1722585297935160000000.00	64297.87	0.00	0.0347	1	0	0	0.052	0.00	0.00	0.00	113.80	113.80	0.00%	0.00%	0.00%	100.00%	**113.80**	**1.00**
Naphthalene	83102.01			12.2			4.4			0	1013844.55	365648.85	0.00	0.0347	1	0	0	0.052	0.00	0.00	0.00	150.00	150.00	0.00%	0.00%	0.00%	100.00%	**150.00**	**1.00**
Phenanthrene	1.00	-0.1665	0.6203				1.72			0	0.85	1.72	0.00	0.0347	1	0	0	0.052	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	**---**	**---**
Pyrene	69251.68			0.72			1.75			0	49861.21	121190.43	0.00	0.0347	1	0	0	0.052	0.00	0.00	0.00	125.00	125.00	0.00%	0.00%	0.00%	100.00%	**125.00**	**1.00**
Total PAHs	1.00	0.083	0.3015							0	1.09		0.00	0.0347	1	0	0	0.052	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	**---**	**---**
Low MW PAHs	181716.40	-1.3205	0.4544							0	65.52		0.00	0.0347	1	0	0	0.052	0.00	0.00	0.00	328.00	328.00	0.00%	0.00%	0.00%	100.00%	**328.00**	**1.00**
High MW PAHs	1700.82	-1.7026	0.9469							0	208.78		0.00	0.0347	1	0	0	0.052	0.00	0.00	0.00	3.07	3.07	0.00%	0.00%	0.00%	100.00%	**3.07**	**1.00**
Gasoline Range Organics																												**1500.00**	**0.00**
TPH - Diesel	831020.12									0			0.00	0.0347	1	0	0	0.052	0.00	0.00	0.00	1500.00	1500.00	0.00%	0.00%	0.00%	100.00%	**1500.00**	**1.00**
TPH - Kerosene	831020.12									0			0.00	0.0347	1	0	0	0.052	0.00	0.00	0.00	1500.00	1500.00	0.00%	0.00%	0.00%	100.00%	**1500.00**	**1.00**
Normal paraffin hydrocarbons	831020.12									0			0.00	0.0347	1	0	0	0.052	0.00	0.00	0.00	1500.00	1500.00	0.00%	0.00%	0.00%	100.00%	**1500.00**	**1.00**
Phenol	17756.23						0.235			0.0064		4169.26	113.79	0.0347	1	0	0	0.052	3.95	0.00	0.00	32.05	36.00	10.97%	0.00%	0.00%	89.03%	**36.00**	**1.00**
2-methylphenol (ocresol)	1.00						0.336			0.0150		0.34	0.02	0.0347	1	0	0	0.052	0.00	0.00	0.00	0.00	0.00	22.43%	0.00%	0.00%	77.57%	**---**	**---**
4-methylphenol (pcresol)	1.00						0.333			0.0141		0.33	0.01	0.0347	1	0	0	0.052	0.00	0.00	0.00	0.00	0.00	21.36%	0.00%	0.00%	78.64%	**---**	**---**
2,4-dinitrotoluene	597.39	1.873	-0.3768	0.376			0.184			0.0155	224.62	109.74	9.27	0.0347	1	0	0	0.052	0.32	0.00	0.00	1.08	1.40	22.98%	0.00%	0.00%	77.02%	**1.40**	**1.00**
Bis[2-ethylhexyl] phthalate	35993.87			0.07			41.144			0.0945	2374.75	1480936.51	3400.31	0.0347	1	0	0	0.052	118.03	0.00	0.00	64.97	183.00	64.50%	0.00%	0.00%	35.50%	**183.00**	**1.00**
Total PCBs	84.71			0.17	1.41	1.36				0.1792	14.36	1715.43	15.18	0.0347	1	0	0	0.052	0.53	0.00	0.00	0.15	0.68	77.51%	0.00%	0.00%	22.49%	**0.68**	**1.00**
Aroclor 1016	376.56			0.30	1.41	1.36				0.2104	111.79	13046.51	79.23	0.0347	1	0	0	0.052	2.75	0.00	0.00	0.68	3.43	80.18%	0.00%	0.00%	19.82%	**3.43**	**1.00**
Aroclor 1221	81.52			0.78	1.41	1.36				0.1883	63.94	1628.06	15.35	0.0347	1	0	0	0.052	0.53	0.00	0.00	0.15	0.68	78.36%	0.00%	0.00%	21.64%	**0.68**	**1.00**
Aroclor 1232	88.10			0.99	1.41	1.36				0.1704	87.28	1809.38	15.01	0.0347	1	0	0	0.052	0.52	0.00	0.00	0.16	0.68	76.61%	0.00%	0.00%	23.39%	**0.68**	**1.00**
Aroclor 1242	87.35			0.16	1.41	1.36				0.1756	14.13	1788.47	15.34	0.0347	1	0	0	0.052	0.53	0.00	0.00	0.16	0.69	77.15%	0.00%	0.00%	22.85%	**0.69**	**1.00**
Aroclor 1248	10.55			0.18	1.41	1.36				0.1855	1.95	100.94	1.96	0.0347	1	0	0	0.052	0.07	0.00	0.00	0.02	0.09	78.11%	0.00%	0.00%	21.89%	**0.09**	**1.00**
Aroclor 1254	91.11			0.14	1.41	1.36				0.1630	12.69	1893.82	14.85	0.0347	1	0	0	0.052	0.52	0.00	0.00	0.16	0.68	75.82%	0.00%	0.00%	24.18%	**0.68**	**1.00**
Aroclor 1260	154.21			0.05	1.41	1.36				0.0750	8.06	3874.30	11.57	0.0347	1	0	0	0.052	0.40	0.00	0.00	0.28	0.68	59.07%	0.00%	0.00%	40.93%	**0.68**	**1.00**
Aroclor-1262	376.73													0.0347	1	0	0	0.052	0.00	0.00	0.00	0.68	0.68	0.00%	0.00%	0.00%	100.00%	**0.68**	**1.00**

Table A-16. Exposure Calculation Worksheet for Determining LOAEL-Based PRGs for Badger

		Literature-derived Bioaccumulation Models									Estimated Concentrations in Biota (mg/kg DW)			Food Intake	Diet Composition (proportion)				Estimated Exposure (mg/kg/d)					Percent Estimated Exposure by Pathway					
		Plants			Soil Inverts			Small Mammals																					
Analyte	Soil (mg/kg)	intercept	slope	BAF	intercept	slope	BAF	intercept	slope	BAF	Plants	Soil Inverts	Small Mam.	(kg/kg-bw/d, dw)	Small Mam.	Soil Inverts	Plants	Soil	Small Mam.	Soil Inverts	Plants	Soil	Total	Small Mam.	Soil Inverts	Plants	Soil	Selected Mammalian LOAEL TRV (mg/kg/d)	LOAEL HQ
Dichloroprop	1.00													0.0347	1	0	0	0.052	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	---	---
Aldrin	133.98			0.14			1.033			0.1630	18.66	138.38	21.84	0.0347	1	0	0	0.052	0.76	0.00	0.00	0.24	1.00	75.82%	0.00%	0.00%	24.18%	**1.00**	**1.00**
beta-1,2,3,4,5,6-Hexachlorocyclohexane	334.76			1.72			1.021			0.1201	575.46	341.82	40.21	0.0347	1	0	0	0.052	1.40	0.00	0.00	0.60	2.00	69.79%	0.00%	0.00%	30.21%	**2.00**	**1.00**
alpha-Chlordane	2641.24			0.16			1.031			0.1771	435.29	2724.38	467.64	0.0347	1	0	0	0.052	16.23	0.00	0.00	4.77	21.00	77.30%	0.00%	0.00%	22.70%	**21.00**	**1.00**
gamma-Chlordane	2641.24			0.16			1.036			0.1771	435.29	2735.21	467.64	0.0347	1	0	0	0.052	16.23	0.00	0.00	4.77	21.00	77.30%	0.00%	0.00%	22.70%	**21.00**	**1.00**
Dichlorodiphenyldichloroethylene	0.40	-2.5119	0.7524		2.4771	0.8804		3.6401	0.641		0.04	5.31	21.16	0.0347	1	0	0	0.052	0.73	0.00	0.00	0.00	0.74	99.90%	0.00%	0.00%	0.10%	**0.74**	**1.00**
Dichlorodiphenyltrichloroethane	12.68	-2.5119	0.7524		2.1247	0.8689		1.1788	0.7254		0.55	76.06	20.51	0.0347	1	0	0	0.052	0.71	0.00	0.00	0.02	0.73	96.89%	0.00%	0.00%	3.11%	**0.74**	**1.00**
Dieldrin	0.69			0.41			14.70			1.20	0.28	10.15	0.83	0.0347	1	0	0	0.052	0.03	0.00	0.00	0.00	0.03	95.85%	0.00%	0.00%	4.15%	**0.03**	**1.00**
Endosulfan I	1.00			1.31			1.184			0.1455	1.31	1.18	0.15	0.0347	1	0	0	0.052	0.01	0.00	0.00	0.00	0.01	73.67%	0.00%	0.00%	26.33%	---	---
Endosulfan II	1.00			1.31			1.184			0.1455	1.31	1.18	0.15	0.0347	1	0	0	0.052	0.01	0.00	0.00	0.00	0.01	73.67%	0.00%	0.00%	26.33%	---	---
Endosulfan sulfate	1.00			1.98			1.184			0.1072	1.98	1.18	0.11	0.0347	1	0	0	0.052	0.00	0.00	0.00	0.00	0.01	67.33%	0.00%	0.00%	32.67%	---	---
Endrin aldehyde	140.40			1.44			6.686			0.1368	202.10	938.73	19.20	0.0347	1	0	0	0.052	0.67	0.00	0.00	0.25	0.92	72.45%	0.00%	0.00%	27.55%	**0.92**	**1.00**
Methoxychlor	882.02			0.52			3.739			0.2093	462.94	3297.95	184.60	0.0347	1	0	0	0.052	6.41	0.00	0.00	1.59	8.00	80.10%	0.00%	0.00%	19.90%	**8.00**	**1.00**

Notes:
It has been conservatively assumed that all chemical intake is absorbed by the receptor.
1 - When no TRV was available, the PRG is listed as 1 mg/kg based on formulas in the spreadsheet but no actual PRG is recommended.
Acronyms:
BAF = Bioaccumulation factor
DW = Dry weight
FIR = Food ingestion rate
mg/kg = Miligrams per kilogram
mg/kg BW/day, DW = Miligrams per kilogram of body weight per day, dry weight
mg/kg/d = Miligrams per kilogram per day
NOAEL = No observed adverse effect level
PRGs = Preliminary remediation goals
TRV = Toxicity reference value
Equations:
Total Estimated Exposure = Food Intake + Incidental Soil Intake
Food Intake = estimated concentration in biota X proportion of biota type X food ingestion rate (FIR)
Incidental Soil intake = concentration in soil X proportion of soil as component of diet X food ingestion rate (FIR)
Estimated Concentrations in Biota (method 1) = B1*(ln[Site Specific Soil Concentration]) + B0
where: B1 = slope and B0 = intercept
Estimated Concentrations in Biota (method 2) = soil concentration X BAF
Hazard Quotient = Total Estimated Exposure (Dose) / TRV
Therefore, when the HQ = 1, soil concentration = PRG
where: Soil concentration (mg/kg) = TRV / (Food Intake + Incidental Soil Intake) = Soil PRG

Appendix B

RESRAD-BIOTA

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TABLE B-1
Chemical-specific Parameter Values Used in the BCG calculations
Central Plateau Area at Hanford, Washington

Nuclide	Fraction of radionuclide assimilated into the body (f1) [1,2]	alpha(α) [1,2]	beta(β) [1,2]	Radiological decay constant (1/day) [3]
Am-241	0.001	0.8	0.81	4.39E-06
C-14	1	2	0.25	3.32E-07
Cm-244	0.0001	0.8	0.81	1.05E-04
Co-60	0.05	2.6	0.24	3.61E-04
Cs-134	1	3.5	0.24	9.21E-04
Cs-137	1	3.5	0.24	6.30E-05
Eu-152	0.001	1.4	0.8	1.42E-04
Eu-154	0.001	1.4	0.8	2.16E-04
Eu-155	0.001	1.4	0.8	3.83E-04
H-3	1	0.82	0.55	1.54E-04
Np-237	0.001	0.8	0.28	8.88E-10
Pu-238	0.001	0.8	0.81	2.17E-05
Pu-239	0.001	0.8	0.81	7.89E-08
Ra-226	0.2	2	0.25	1.19E-06
Ra-228	0.2	2	0.25	3.30E-04
Sb-125	0.01	0.5	0.25	6.86E-04
Sr-90	0.3	107	0.26	6.54E-05
Tc-99	0.8	0.3	0.4	8.92E-09
Th-232	0.0002	3.3	0.81	1.35E-13
U-234	0.05	0.8	0.28	7.77E-09
U-235	0.05	0.8	0.28	2.70E-12
U-238	0.05	0.8	0.28	4.25E-13

Notes:
[1] Parameter values were obtained from the database accompanied with RESRAD- Biota (version 1.5)
[2] Paramater values were for terrestrial animal.
[3] Parameter values were obtained from Risk Assessment Information System (RAIS).
References:

U.S. Department of Energy (DOE). 2009. *RESRAD-BIOTA Version 1.5.* Available at: http://web.ead.anl.gov/resrad/home2/.

Oak Ridge National Laboratory(ORNL). 2010. "RAIS: The Risk Assessment Information System." Available at http://rais.ornl.gov/.
Acronyms:
f1 = fraction of radionuclide assimilated into the body
alpha (α) = alpha parameter for calculating biological half life
beta (β) = beta parameter for calculating biological half life

TABLE B-2
Internal/External Dose Conversion Factors
Central Plateau Area at Hanford, Washington

	California Quail		Meadowlark		Killdeer		Red-tailed Hawk		Great Basin Pocket Mouse		Deer Mouse		Grasshopper Mouse		Badger	
Nuclide	DF_int	DF_ext	DF_int	DF_ext	DF_int	DF_ext	DF_int	DF_ext	DF_int	DF_ext	DF_int	DF_ext	DF_int	DF_ext	DF_int	DF_ext
Am-241	2.07E+00	4.32E-04	2.07E+00	4.32E-04	2.07E+00	4.32E-04	2.07E+00	3.60E-04	2.07	4.32E-04	2.07	4.32E-04	2.07	4.32E-04	2.07E+00	2.57E-04
C-14	9.21E-04	1.22E-06	9.21E-04	1.22E-06	9.21E-04	1.22E-06	9.22E-04	3.99E-07	9.21E-04	1.22E-06	9.21E-04	1.22E-06	9.21E-04	1.22E-06	9.22E-04	1.21E-07
Cm-244	2.20E+00	9.44E-06	2.20E+00	9.44E-06	2.20E+00	9.44E-06	2.20E+00	3.61E-06	2.2	9.44E-06	2.2	9.44E-06	2.2	9.44E-06	2.22E+00	1.44E-06
Co-60	3.20E-03	4.53E-02	3.20E-03	4.53E-02	3.20E-03	4.53E-02	6.27E-03	4.22E-02	3.20E-03	4.53E-02	3.20E-03	4.53E-02	3.20E-03	4.53E-02	1.22E-02	3.63E-02
Cs-134	3.96E-03	2.81E-02	3.96E-03	2.81E-02	3.96E-03	2.81E-02	6.10E-03	2.59E-02	3.96E-03	2.81E-02	3.96E-03	2.81E-02	3.96E-03	2.81E-02	1.03E-02	2.18E-02
Cs-137	4.80E-03	1.03E-02	4.80E-03	1.03E-02	4.80E-03	1.03E-02	5.68E-03	9.46E-03	4.80E-03	1.03E-02	4.80E-03	1.03E-02	4.80E-03	1.03E-02	7.23E-03	7.90E-03
Eu-152	2.94E-03	2.10E-02	2.94E-03	2.10E-02	2.94E-03	2.10E-02	4.52E-03	1.94E-02	2.94E-03	2.10E-02	2.94E-03	2.10E-02	2.94E-03	2.10E-02	7.53E-03	1.64E-02
Eu-154	5.66E-03	2.27E-02	5.66E-03	2.27E-02	5.66E-03	2.27E-02	7.39E-03	2.09E-02	2.94E-03	2.27E-02	2.94E-03	2.27E-02	2.94E-03	2.27E-02	1.06E-02	1.77E-02
Eu-155	1.23E-03	1.09E-03	1.23E-03	1.09E-03	1.23E-03	1.09E-03	1.34E-03	9.79E-04	1.23E-03	1.09E-03	1.23E-03	1.09E-03	1.23E-03	1.09E-03	1.57E-03	7.48E-04
H-3	1.06E-04	4.36E-09	1.06E-04	4.36E-09	1.06E-04	4.36E-09	1.06E-04	8.79E-11	1.06E-04	4.36E-09	1.06E-04	4.36E-09	1.06E-04	4.36E-09	1.06E-04	6.95E-10
Np-237	1.76E+00	4.40E-03	1.76E+00	4.40E-03	1.76E+00	4.40E-03	1.76E+00	3.95E-03	1.76E+00	4.40E-03	1.76E+00	4.40E-03	1.76E+00	4.40E-03	1.76E+00	3.18E-03
Pu-238	2.08E+00	9.78E-06	2.08E+00	9.78E-06	2.08E+00	9.78E-06	2.08E+00	3.71E-06	2.08E+00	9.78E-06	2.08E+00	9.78E-06	2.08E+00	9.78E-06	2.08E+00	1.50E-06
Pu-239	1.95E+00	4.32E-06	1.95E+00	4.32E-06	1.95E+00	4.32E-06	1.95E+00	1.73E-06	1.95E+00	4.32E-06	1.95E+00	4.32E-06	1.95E+00	4.32E-06	1.95E+00	7.47E-07
Ra-226	1.11E+01	3.27E-02	1.11E+01	3.27E-02	1.11E+01	3.27E-02	1.11E+01	2.96E-02	1.11E+01	3.27E-02	1.11E+01	3.27E-02	1.11E+01	3.27E-02	1.11E+01	2.50E-02
Ra-228	1.22E+01	1.57E-02	1.22E+01	1.57E-02	1.22E+01	1.57E-02	1.22E+01	1.43E-02	1.22E+01	1.57E-02	1.22E+01	1.57E-02	1.22E+01	1.57E-02	1.22E+01	1.21E-02
Sb-125	2.64E-03	7.96E-03	2.64E-03	7.96E-03	2.64E-03	7.96E-03	3.36E-03	7.24E-03	2.64E-03	7.96E-03	2.64E-03	7.96E-03	2.64E-03	7.96E-03	4.65E-03	5.95E-03
Sr-90	1.89E-02	2.19E-03	1.89E-02	2.19E-03	1.89E-02	2.19E-03	2.03E-02	7.17E-04	1.89E-02	2.19E-03	1.89E-02	2.19E-03	1.89E-02	2.19E-03	2.08E-02	2.64E-04
Tc-99	1.57E-03	5.50E-06	1.57E-03	5.50E-06	1.57E-03	5.50E-06	1.58E-03	1.68E-06	1.57E-03	5.50E-06	1.57E-03	5.50E-06	1.57E-03	5.50E-06	1.58E-03	5.96E-07
Th-232	1.37E+01	8.28E-06	1.37E+01	8.28E-06	1.37E+01	8.28E-06	1.37E+01	4.81E-06	1.37E+01	8.28E-06	1.37E+01	8.28E-06	1.37E+01	8.28E-06	1.37E+01	3.01E-06
U-234	1.81E+00	9.60E-06	1.81E+00	9.60E-06	1.81E+00	9.60E-06	1.81E+00	4.43E-06	1.81E+00	9.60E-06	1.81E+00	9.60E-06	1.81E+00	9.60E-06	1.81E+00	2.31E-06
U-235	1.65E+00	3.25E-03	1.65E+00	3.25E-03	1.65E+00	3.25E-03	1.65E+00	2.89E-03	1.65E+00	3.25E-03	1.65E+00	3.25E-03	1.65E+00	3.25E-03	1.65E+00	2.31E-03
U-238	1.60E+00	2.10E-03	1.60E+00	2.10E-03	1.60E+00	2.10E-03	1.61E+00	9.53E-04	1.60E+00	2.10E-03	1.60E+00	2.10E-03	1.60E+00	2.10E-03	1.61E+00	5.53E-04

Note:
Dose conversion factors were calculated based on the geometry of each species using the RESRAD-Biota (version 1.5).
Acronyms:
DF_int = internal dose conversion factor
DF_ext = external dose conversion factor

TABLE B-3
Calculation of Level 3 Biota Concentration Guide for California Quail
Central Plateau Area at Hanford, Washington

Species:	California Quail		
Parameter [6]	**Symbol**	**Value**	**Unit**
Body Weight	M_b	0.1800	(kg)
Food Intake	r_{food}	14.0400	(g-food/ individual)
Soil Ingestion	r_{soil}	0.8564	(g-soil/ individual)
Diet Composition [6]:			
Plants ($\%_{plant}$)		100%	
Terrestrial Invertebrates ($\%_{inv}$)		0%	
Mammals/Birds ($\%_{mamm}$)		0%	
Longevity	T_{life}	7.0	(years)
Dust loading in air	X_{dust}	1.00E-04	(g/m3)
Dose limit	DL	0.1	(rad/day)
Geometry Information Used to Calculate Conversion Factors:			
Assumed Geometry	3		
Geometry Dimensions	10 x 2 x 2	(cm3)	

Eqn. 1
$$k_{bio} = \frac{0.69315}{\alpha (M_b)^{\beta}}$$

Eqn. 2
$$k_{eff} = k_{bio} + k_{rad}$$

Eqn. 3
$$Intake_{ing} = r_{food} \times \sum (BAF \times \%_{composition}) = r_{food} \times \left[(BAF_{plant} \times \%_{plant}) + (BAF_{inv} \times \%_{inv}) + (BAF_{mammr} \times \%_{mamm}) \right]$$

Eqn. 4
$$Intake_{inh} = PT_IT \times X_{dust} \times 0.481 \times M_b^{0.76}$$

Eqn. 5 Lumped Parameter (LP)
$$\frac{f_1 (Intake_{ing} + Intake_{inh}) \times (1 - e^{-(k_{eff} \times 365.25 \times T_{life})})}{k_{eff} \times M_b}$$

Eqn. 6 Biota Concentration Guide (BCG)
$$\frac{(365.25 \times DL)}{[(DF_int \times LP) + DF_ext]}$$

Radionuclies		**Chemical Specific Parameters (Unitless)**				**Biological Accumulation Factor (BAF) (Unitless)**			**Dose Conversion Factor (rad/yr per pCi/g)**		**Calculation of biological half life and effective half life (1/day)**			**Calculation of Ingestion/Inhalation Intake (g-soil/ individual)**						**Calculation of Lumped Parameter (LP)**			**Biota Concentration Guide (pCi/g)**
		f1	**alpha (α)**	**beta (β)**	**PT_IT**	**Soil to Plants (BAF_{plant})**	**Soil to Terrestrial Invertebrates (BAF_{inv})**	**Soil to Small Mammal (BAF_{mamm})**	**DF_int**	**DF_ext**	**Radiological decay constant (k_{rad})**	**Biological decay constant (k_{bio})**	**Effective half life (k_{eff})**	**Plants**	**Terrestrial Invertebrates**	**Small Mammal**	**Soil**	**Ingestion intake [Total]**	**Inhalation intake**	**Numerator (kg-soil/day)**	**Denominator (kg-tissue/day)**	**LP (pCi/g-tissue per pCi/g-soil)**	
	References:	**[1]**	**[1]**	**[1]**	**[2]**	**[3]**	**[3]**	**[3]**	**[4]**	**[4]**	**[5]**	**[Eqn. 1]**	**[Eqn. 2]**					**[Eqn. 3]**	**[Eqn. 4]**			**[Eqn. 5]**	**[Eqn. 6]**
Americium-241	Am-241	0.001	0.8	0.81	1	4.96E-03	1.01E-01	4.08E-02	2.07E+00	4.32E-04	4.39E-06	1.29E-02	1.29E-02	6.96E-02	0.00E+00	0.00E+00	8.56E-01	9.26E-04	1.31E-05	9.39E-07	2.32E-03	4.04E-04	2.88E+04
Carbon-14	C-14	1	2	0.25	1	8.90E+02	4.30E+02	1.34E+03	9.21E-04	1.22E-06	3.32E-07	9.46E-02	9.46E-02	1.25E+04	0.00E+00	0.00E+00	8.56E-01	1.25E+01	1.31E-05	1.25E+01	1.70E-02	7.34E+02	5.40E+01
Curium-244	Cm-244	0.0001	0.8	0.81	1	2.75E-04	1.37E-01	4.08E-02	2.20E+00	9.44E-06	1.05E-04	1.29E-02	1.30E-02	3.86E-03	0.00E+00	0.00E+00	8.56E-01	8.60E-04	1.31E-05	8.73E-08	2.34E-03	3.73E-05	3.99E+05
Cobalt-60	Co-60	0.05	2.6	0.24	1	1.35E-02	3.52E-03	2.95E-01	3.20E-03	4.53E-02	3.61E-04	7.67E-02	7.70E-02	1.90E-01	0.00E+00	0.00E+00	8.56E-01	1.05E-03	1.31E-05	5.30E-05	1.39E-02	3.82E-03	8.06E+02
Cesium-134	Cs-134	1	3.5	0.24	1	6.93E-01	1.34E-01	2.87E+00	3.96E-03	2.81E-02	9.21E-04	5.69E-02	5.79E-02	9.74E+00	0.00E+00	0.00E+00	8.56E-01	1.06E-02	1.31E-05	1.06E-02	1.04E-02	1.02E+00	1.14E+03
Cesium-137	Cs-137	1	3.5	0.24	1	6.93E-01	1.34E-01	2.87E+00	4.80E-03	1.03E-02	6.30E-05	5.69E-02	5.70E-02	9.74E+00	0.00E+00	0.00E+00	8.56E-01	1.06E-02	1.31E-05	1.06E-02	1.03E-02	1.03E+00	2.39E+03
Europium-152	Eu-152	0.001	1.4	0.8	1	5.20E-03	7.93E-04	2.04E-03	2.94E-03	2.10E-02	1.42E-04	7.77E-03	7.91E-03	7.30E-02	0.00E+00	0.00E+00	8.56E-01	9.29E-04	1.31E-05	9.42E-07	1.42E-03	6.62E-04	1.74E+03
Europium-154	Eu-154	0.001	1.4	0.8	1	5.20E-03	7.93E-04	2.04E-03	5.66E-03	2.27E-02	2.16E-04	7.77E-03	7.99E-03	7.30E-02	0.00E+00	0.00E+00	8.56E-01	9.29E-04	1.31E-05	9.42E-07	1.44E-03	6.56E-04	1.61E+03
Europium-155	Eu-155	0.001	1.4	0.8	1	5.20E-03	7.93E-04	2.04E-03	1.23E-03	1.09E-03	3.83E-04	7.77E-03	8.15E-03	7.30E-02	0.00E+00	0.00E+00	8.56E-01	9.29E-04	1.31E-05	9.42E-07	1.47E-03	6.42E-04	3.35E+04
Hydrogen-3 (tritium)	H-3	1	0.82	0.55	1	1.50E+02	1.50E+02	1.50E+02	1.06E-04	4.36E-09	1.54E-04	4.86E-02	4.88E-02	2.11E+03	0.00E+00	0.00E+00	8.56E-01	2.11E+00	1.31E-05	2.11E+00	8.78E-03	2.40E+02	1.44E+03
Neptunium-237	Np-237	0.001	0.8	0.28	1	1.73E-02	1.01E-01	4.08E-02	1.76E+00	4.40E-03	8.88E-10	2.02E-01	2.02E-01	2.42E-01	0.00E+00	0.00E+00	8.56E-01	1.10E-03	1.31E-05	1.11E-06	3.64E-02	3.05E-05	8.20E+03
Plutonium-238	Pu-238	0.001	0.8	0.81	1	1.44E-02	3.88E-02	2.34E-02	2.08E+00	9.78E-06	2.17E-05	1.29E-02	1.29E-02	2.03E-01	0.00E+00	0.00E+00	8.56E-01	1.06E-03	1.31E-05	1.07E-06	2.33E-03	4.61E-04	3.77E+04
Plutonium-239	Pu-239	0.001	0.8	0.81	1	1.44E-02	3.88E-02	2.34E-02	1.95E+00	4.32E-06	7.89E-08	1.29E-02	1.29E-02	2.03E-01	0.00E+00	0.00E+00	8.56E-01	1.06E-03	1.31E-05	1.07E-06	2.32E-03	4.61E-04	4.04E+04
Radium-226	Ra-226	0.2	2	0.25	1	3.94E-02	9.00E-02	2.65E-02	1.11E+01	3.27E-02	1.19E-06	9.46E-02	9.46E-02	5.54E-01	0.00E+00	0.00E+00	8.56E-01	1.41E-03	1.31E-05	2.85E-04	1.70E-02	1.67E-02	1.67E+02
Radium-228	Ra-228	0.2	2	0.25	1	3.94E-02	9.00E-02	2.65E-02	1.22E+01	1.57E-02	3.30E-04	9.46E-02	9.49E-02	5.54E-01	0.00E+00	0.00E+00	8.56E-01	1.41E-03	1.31E-05	2.85E-04	1.71E-02	1.67E-02	1.67E+02
Antimony-125	Sb-125	0.01	0.5	0.25	1	2.50E-02	2.53E-01	2.15E-06	2.64E-03	7.96E-03	6.86E-04	3.78E-01	3.79E-01	3.51E-01	0.00E+00	0.00E+00	8.56E-01	1.21E-03	1.31E-05	1.22E-05	6.82E-02	1.79E-04	4.59E+03
Strontium-90	Sr-90	0.3	107	0.26	1	2.07E-01	4.07E-01	1.74E+00	1.89E-02	2.19E-03	6.54E-05	1.68E-03	1.74E-03	2.90E+00	0.00E+00	0.00E+00	8.56E-01	3.76E-03	1.31E-05	1.12E-03	3.14E-04	3.56E+00	5.25E+02
Technetium-99	Tc-99	0.8	0.3	0.4	1	2.00E+01	3.70E-01	3.70E-01	1.57E-03	5.50E-06	8.92E-09	2.89E-01	2.89E-01	2.81E+02	0.00E+00	0.00E+00	8.56E-01	2.82E-01	1.31E-05	2.25E-01	5.21E-02	4.33E+00	5.37E+03
Thorium-232	Th-232	0.0002	3.3	0.81	1	4.37E-02	8.84E-03	1.22E-04	1.37E+01	8.28E-06	1.35E-13	3.13E-03	3.13E-03	6.14E-01	0.00E+00	0.00E+00	8.56E-01	1.47E-03	1.31E-05	2.97E-07	5.63E-04	5.26E-04	5.06E+03
Uranium-234	U-234	0.05	0.8	0.28	1	1.46E-02	8.84E-03	1.06E-04	1.81E+00	9.60E-06	7.77E-09	2.02E-01	2.02E-01	2.04E-01	0.00E+00	0.00E+00	8.56E-01	1.06E-03	1.31E-05	5.37E-05	3.64E-02	1.47E-03	1.36E+04
Uranium-235	U-235	0.05	0.8	0.28	1	1.46E-02	8.84E-03	1.06E-04	1.65E+00	3.25E-03	2.70E-12	2.02E-01	2.02E-01	2.04E-01	0.00E+00	0.00E+00	8.56E-01	1.06E-03	1.31E-05	5.37E-05	3.64E-02	1.47E-03	6.43E+03
Uranium-238	U-238	0.05	0.8	0.28	1	1.46E-02	8.84E-03	1.06E-04	1.60E+00	2.10E-03	4.25E-13	2.02E-01	2.02E-01	2.04E-01	0.00E+00	0.00E+00	8.56E-01	1.06E-03	1.31E-05	5.37E-05	3.64E-02	1.47E-03	8.19E+03

References:

[1] ANL, 2009, RESRAD-BIOTA for Windows, Version 1.5, Argonne National Laboratory, Argonne, Illinois. Available at: http://web.ead.anl.gov/resrad/home2/biota.cfm.
[2] PT_IT value of 1 was used.
[3] Beresford, N.A., C.L. Barnett, B.J. Howard, W.A. Scott, J.E. Brown, and D. Copplestone, 2008, "Derivation of Transfer Parameters for Use Within the ERICA Tool and the Default Concentration Ratios for Terrestrial Biota," *J. Environ. Radiol*., Vol. 99, No. 9, pp. 1393–1407.
[4] Dose conversion factors were calculated based on the geometry of each species using the RESRAD-Biota (version 1.5). Oak Ridge National Laboratory (ORNL). 2010. "RIAS: The Risk Assessment Information System." Available at http://rais.ornl.gov/.
[5] Oak Ridge National Laboratory(ORNL). 2010. "RAID: The Risk Assessment Information System." Available at http://rais.ornl.gov/.
[6] References for species-specific parameter values are presented in Table 2 of the main document to which this table is an attachment

Acronyms:
f1 = fraction of radionuclide assimilated into the body
alpha (α) = alpha parameter for calculating biological half life
beta (β) = beta parameter for calculating biological half life
PT_IT = correlation factor for adjusting inhalation relative to ingestion exposure
DF_int = internal dose conversion factor
DF_ext = external dose conversion factor

TABLE B-4
Calculation of Level 3 Biota Concentration Guide for Medowlark
Central Plateau Area at Hanford, Washington

Species:	Meadowlark		
Parameter [6]	**Symbol**	**Value**	**Unit**
Body Weight	M_b	0.0995	(kg)
Food Intake	r_{food}	11.9870	(g-food/ individual)
Soil Ingestion	r_{soil}	0.2493	(g-soil/ individual)
Diet Composition [6]:			
Plants ($\%_{plant}$)		37%	
Terrestrial Invertebrates ($\%_{inv}$)		63%	
Mammals/Birds ($\%_{mamm}$)		0%	
Longevity	T_{life}	6.0	(years)
Dust loading in air	X_{dust}	1.00E-04	(g/m3)
Dose limit	DL	0.1	(rad/day)
Geometry Information Used to Calculate Conversion Factors:			
Assumed Geometry	3		
Geometry Dimensions	10 x 2 x 2	(cm3)	

Eqn. 1
$$k_{bio} = \frac{0.69315}{\alpha (M_b)^{\beta}}$$

Eqn. 2
$$k_{eff} = k_{bio} + k_{rad}$$

Eqn. 3
$$Intake_{ing} = r_{food} \times \sum (BAF \times \%_{composition}) = r_{food} \times \left[(BAF_{plant} \times \%_{plant}) + (BAF_{inv} \times \%_{inv}) + (BAF_{mammr} \times \%_{mamm}) \right]$$

Eqn. 4
$$Intake_{inh} = PT_IT \times X_{dust} \times 0.481 \times M_b^{0.76}$$

Eqn. 5 Lumped Parameter (LP)
$$\frac{f_1 (Intake_{ing} + Intake_{inh}) \times (1 - e^{-(k_{eff} \times 365.25 \times T_{life})})}{k_{eff} \times M_b}$$

Eqn. 6 Biota Concentration Guide (BCG)
$$\frac{(365.25 \times DL)}{[(DF_int \times LP) + DF_ext]}$$

Radionuclides		Chemical Specific Parameters (Unitless)				Biological Accumulation Factor (BAF) (Unitless)			Dose Conversion Factor (rad/yr per pCi/g)		Calculation of biological half life and effective half life (1/day)			Calculation of Ingestion/Inhalation Intake (g-soil/ individual)						Calculation of Lumped Parameter (LP)			Biota Concentration Guide (pCi/g)
		f1	alpha (α)	beta (β)	PT_IT	Soil to Plants (BAF_{plant})	Soil to Terrestrial Invertebrates (BAF_{inv})	Soil to Small Mammal (BAF_{mamm})	DF_int	DF_ext	Radiological decay constant (k_{rad})	Biological decay constant (k_{bio})	Effective half life (k_{eff})	Plants	Terrestrial Invertebrates	Small Mammal	Soil	Ingestion intake [Total]	Inhalation intake	Numerator (kg-soil/day)	Denominator (kg-tissue/day)	LP (pCi/g-tissue per pCi/g-soil)	
	References:	[1]	[1]	[1]	[2]	[3]	[3]	[3]	[4]	[4]	[5]	[Eqn. 1]	[Eqn. 2]					[Eqn. 3]	[Eqn. 4]			[Eqn. 5]	[Eqn. 6]
Americium-241	Am-241	0.001	0.8	0.81	1	4.96E-03	1.01E-01	4.08E-02	2.07E+00	4.32E-04	4.39E-06	2.09E-02	2.09E-02	2.20E-02	7.59E-01	0.00E+00	2.49E-01	1.03E-03	8.33E-06	1.04E-06	2.08E-03	5.00E-04	2.49E+04
Carbon-14	C-14	1	2	0.25	1	8.90E+02	4.30E+02	1.34E+03	9.21E-04	1.22E-06	3.32E-07	1.10E-01	1.10E-01	3.95E+03	3.25E+03	0.00E+00	2.49E-01	7.19E+00	8.33E-06	7.19E+00	1.09E-02	6.59E+02	6.02E+01
Curium-244	Cm-244	0.0001	0.8	0.81	1	2.75E-04	1.37E-01	4.08E-02	2.20E+00	9.44E-06	1.05E-04	2.09E-02	2.10E-02	1.22E-03	1.04E+00	0.00E+00	2.49E-01	1.29E-03	8.33E-06	1.30E-07	2.09E-03	6.21E-05	2.50E+05
Cobalt-60	Co-60	0.05	2.6	0.24	1	1.35E-02	3.52E-03	2.95E-01	3.20E-03	4.53E-02	3.61E-04	8.84E-02	8.87E-02	5.99E-02	2.66E-02	0.00E+00	2.49E-01	3.36E-04	8.33E-06	1.72E-05	8.83E-03	1.95E-03	8.06E+02
Cesium-134	Cs-134	1	3.5	0.24	1	6.93E-01	1.34E-01	2.87E+00	3.96E-03	2.81E-02	9.21E-04	6.57E-02	6.66E-02	3.08E+00	1.01E+00	0.00E+00	2.49E-01	4.34E-03	8.33E-06	4.35E-03	6.62E-03	6.56E-01	1.19E+03
Cesium-137	Cs-137	1	3.5	0.24	1	6.93E-01	1.34E-01	2.87E+00	4.80E-03	1.03E-02	6.30E-05	6.57E-02	6.57E-02	3.08E+00	1.01E+00	0.00E+00	2.49E-01	4.34E-03	8.33E-06	4.35E-03	6.54E-03	6.65E-01	2.71E+03
Europium-152	Eu-152	0.001	1.4	0.8	1	5.20E-03	7.93E-04	2.04E-03	2.94E-03	2.10E-02	1.42E-04	1.25E-02	1.26E-02	2.31E-02	5.99E-03	0.00E+00	2.49E-01	2.78E-04	8.33E-06	2.87E-07	1.26E-03	2.28E-04	1.74E+03
Europium-154	Eu-154	0.001	1.4	0.8	1	5.20E-03	7.93E-04	2.04E-03	5.66E-03	2.27E-02	2.16E-04	1.25E-02	1.27E-02	2.31E-02	5.99E-03	0.00E+00	2.49E-01	2.78E-04	8.33E-06	2.87E-07	1.26E-03	2.27E-04	1.61E+03
Europium-155	Eu-155	0.001	1.4	0.8	1	5.20E-03	7.93E-04	2.04E-03	1.23E-03	1.09E-03	3.83E-04	1.25E-02	1.29E-02	2.31E-02	5.99E-03	0.00E+00	2.49E-01	2.78E-04	8.33E-06	2.87E-07	1.28E-03	2.24E-04	3.35E+04
Hydrogen-3 (tritium)	H-3	1	0.82	0.55	1	1.50E+02	1.50E+02	1.50E+02	1.06E-04	4.36E-09	1.54E-04	6.73E-02	6.75E-02	6.65E+02	1.13E+03	0.00E+00	2.49E-01	1.80E+00	8.33E-06	1.80E+00	6.71E-03	2.68E+02	1.29E+03
Neptunium-237	Np-237	0.001	0.8	0.28	1	1.73E-02	1.01E-01	4.08E-02	1.76E+00	4.40E-03	8.88E-10	2.39E-01	2.39E-01	7.65E-02	7.59E-01	0.00E+00	2.49E-01	1.09E-03	8.33E-06	1.09E-06	2.38E-02	4.60E-05	8.15E+03
Plutonium-238	Pu-238	0.001	0.8	0.81	1	1.44E-02	3.88E-02	2.34E-02	2.08E+00	9.78E-06	2.17E-05	2.09E-02	2.09E-02	6.40E-02	2.93E-01	0.00E+00	2.49E-01	6.06E-04	8.33E-06	6.14E-07	2.08E-03	2.96E-04	5.85E+04
Plutonium-239	Pu-239	0.001	0.8	0.81	1	1.44E-02	3.88E-02	2.34E-02	1.95E+00	4.32E-06	7.89E-08	2.09E-02	2.09E-02	6.40E-02	2.93E-01	0.00E+00	2.49E-01	6.06E-04	8.33E-06	6.14E-07	2.08E-03	2.96E-04	6.28E+04
Radium-226	Ra-226	0.2	2	0.25	1	3.94E-02	9.00E-02	2.65E-02	1.11E+01	3.27E-02	1.19E-06	1.10E-01	1.10E-01	1.75E-01	6.80E-01	0.00E+00	2.49E-01	1.10E-03	8.33E-06	2.22E-04	1.09E-02	2.04E-02	1.41E+02
Radium-228	Ra-228	0.2	2	0.25	1	3.94E-02	9.00E-02	2.65E-02	1.22E+01	1.57E-02	3.30E-04	1.10E-01	1.10E-01	1.75E-01	6.80E-01	0.00E+00	2.49E-01	1.10E-03	8.33E-06	2.22E-04	1.10E-02	2.03E-02	1.39E+02
Antimony-125	Sb-125	0.01	0.5	0.25	1	2.50E-02	2.53E-01	2.15E-06	2.64E-03	7.96E-03	6.86E-04	4.39E-01	4.40E-01	1.11E-01	1.91E+00	0.00E+00	2.49E-01	2.27E-03	8.33E-06	2.28E-05	4.37E-02	5.20E-04	4.59E+03
Strontium-90	Sr-90	0.3	107	0.26	1	2.07E-01	4.07E-01	1.74E+00	1.89E-02	2.19E-03	6.54E-05	1.96E-03	2.02E-03	9.17E-01	3.07E+00	0.00E+00	2.49E-01	4.24E-03	8.33E-06	1.26E-03	2.01E-04	6.25E+00	3.04E+02
Technetium-99	Tc-99	0.8	0.3	0.4	1	2.00E+01	3.70E-01	3.70E-01	1.57E-03	5.50E-06	8.92E-09	3.67E-01	3.67E-01	8.87E+01	2.79E+00	0.00E+00	2.49E-01	9.18E-02	8.33E-06	7.34E-02	3.65E-02	2.01E+00	1.15E+04
Thorium-232	Th-232	0.0002	3.3	0.81	1	4.37E-02	8.84E-03	1.22E-04	1.37E+01	8.28E-06	1.35E-13	5.06E-03	5.06E-03	1.94E-01	6.68E-02	0.00E+00	2.49E-01	5.10E-04	8.33E-06	1.04E-07	5.03E-04	2.06E-04	1.29E+04
Uranium-234	U-234	0.05	0.8	0.28	1	1.46E-02	8.84E-03	1.06E-04	1.81E+00	9.60E-06	7.77E-09	2.39E-01	2.39E-01	6.45E-02	6.68E-02	0.00E+00	2.49E-01	3.81E-04	8.33E-06	1.94E-05	2.38E-02	8.18E-04	2.45E+04
Uranium-235	U-235	0.05	0.8	0.28	1	1.46E-02	8.84E-03	1.06E-04	1.65E+00	3.25E-03	2.70E-12	2.39E-01	2.39E-01	6.45E-02	6.68E-02	0.00E+00	2.49E-01	3.81E-04	8.33E-06	1.94E-05	2.38E-02	8.18E-04	7.94E+03
Uranium-238	U-238	0.05	0.8	0.28	1	1.46E-02	8.84E-03	1.06E-04	1.60E+00	2.10E-03	4.25E-13	2.39E-01	2.39E-01	6.45E-02	6.68E-02	0.00E+00	2.49E-01	3.81E-04	8.33E-06	1.94E-05	2.38E-02	8.18E-04	1.07E+04

References:
[1] ANL, 2009, RESRAD-BIOTA for Windows, Version 1.5, Argonne National Laboratory, Argonne, Illinois. Available at: http://web.ead.anl.gov/resrad/home2/biota.cfm.
[2] PT_IT value of 1 was used.
[3] Beresford, N.A., C.L. Barnett, B.J. Howard, W.A. Scott, J.E. Brown, and D. Copplestone, 2008, "Derivation of Transfer Parameters for Use Within the ERICA Tool and the Default
[4] Dose conversion factors were calculated based on the geometry of each species using the RESRAD-Biota (version 1.5). Oak Ridge National Laboratory (ORNL). 2010. "RAIS: The Risk
[5] Oak Ridge National Laboratory (ORNL). 2010. "RAIS: The Risk Assessment Information System." Available at http://rais.ornl.gov/.
[6] References for species-specific parameter values are presented in Table 2 of the main document to which this table is an attachment

Acronyms:
f1 = fraction of radionuclide assimilated into the body
alpha (α) = alpha parameter for calculating biological half life
beta (β) = beta parameter for calculating biological half life
PT_IT = correlation factor for adjusting inhalation relative to ingestion exposure
DF_int = internal dose conversion factor
DF_ext = external dose conversion factor

TABLE B-5
Calculation of Level 3 Biota Concentration Guide for Killdeer
Central Plateau Area at Hanford, Washington

Species:	Killdeer		
Parameter [6]	**Symbol**	**Value**	**Unit**
Body Weight	M_b	0.0756	(kg)
Food Intake	r_{food}	14.5296	(g-food/ individual)
Soil Ingestion	r_{soil}	1.0607	(g-soil/ individual)
Diet Composition [6]:			
Plants ($\%_{plant}$)		0%	
Terrestrial Invertebrates ($\%_{inv}$)		100%	
Mammals/Birds ($\%_{mamm}$)		0%	
Longevity	T_{life}	10.0	(years)
Dust loading in air	X_{dust}	1.00E-04	(g/m3)
Dose limit	DL	0.1	(rad/day)
Geometry Information Used to Calculate Conversion Factors:			
Assumed Geometry	3		
Geometry Dimensions	10 x 2 x 2	(cm3)	

Eqn. 1
$$k_{bio} = \frac{0.69315}{\alpha (M_b)^{\beta}}$$

Eqn. 2
$$k_{eff} = k_{bio} + k_{rad}$$

Eqn. 3
$$Intake_{ing} = r_{food} \times \sum (BAF \times \%_{composition}) = r_{food} \times \left[(BAF_{plant} \times \%_{plant}) + (BAF_{inv} \times \%_{inv}) + (BAF_{mammal} \times \%_{mamm}) \right]$$

Eqn. 4
$$Intake_{inh} = PT_IT \times X_{dust} \times 0.481 \times M_b^{0.76}$$

Eqn. 5 Lumped Parameter (LP)
$$\frac{f_1 (Intake_{ing} + Intake_{inh}) \times (1 - e^{-(k_{eff} \times 365.25 \times T_{life})})}{k_{eff} \times M_b}$$

Eqn. 6 Biota Concentration Guide (BCG)
$$\frac{(365.25 \times DL)}{[(DF_int \times LP) + DF_ext]}$$

Radionuclides		**Chemical Specific Parameters (Unitless)**				**Biological Accumulation Factor (BAF) (Unitless)**			**Dose Conversion Factor (rad/yr per pCi/g)**		**Calculation of biological half life and effective half life (1/day)**			**Calculation of Ingestion/Inhalation Intake (g-soil/ individual)**						**Calculation of Lumped Parameter (LP)**			**Biota Concentration Guide (pCi/g)**
		f1	**alpha (α)**	**beta (β)**	**PT_IT**	**Soil to Plants (BAF_{plant})**	**Soil to Terrestrial Invertebrates (BAF_{inv})**	**Soil to Small Mammal (BAF_{mamm})**	**DF_int**	**DF_ext**	**Radiological decay constant (k_{rad})**	**Biological decay constant (k_{bio})**	**Effective half life (k_{eff})**	**Plants**	**Terrestrial Invertebrates**	**Small Mammal**	**Soil**	**Ingestion intake [Total]**	**Inhalation intake**	**Numerator (kg-soil/day)**	**Denominator (kg-tissue/day)**	**LP (pCi/g-tissue per pCi/g-soil)**	
	References:	**[1]**	**[1]**	**[1]**	**[2]**	**[3]**	**[3]**	**[3]**	**[4]**	**[4]**	**[5]**	**[Eqn. 1]**	**[Eqn. 2]**					**[Eqn. 3]**	**[Eqn. 4]**			**[Eqn. 5]**	**[Eqn. 6]**
Americium-241	Am-241	0.001	0.8	0.81	1	4.96E-03	1.01E-01	4.08E-02	2.07E+00	4.32E-04	4.39E-06	2.61E-02	2.61E-02	0.00E+00	1.46E+00	0.00E+00	1.06E+00	2.52E-03	6.76E-06	2.53E-06	1.97E-03	1.28E-03	1.18E+04
Carbon-14	C-14	1	2	0.25	1	8.90E+02	4.30E+02	1.34E+03	9.21E-04	1.22E-06	3.32E-07	1.18E-01	1.18E-01	0.00E+00	6.25E+03	0.00E+00	1.06E+00	6.25E+00	6.76E-06	6.25E+00	8.89E-03	7.03E+02	5.64E+01
Curium-244	Cm-244	0.0001	0.8	0.81	1	2.75E-04	1.37E-01	4.08E-02	2.20E+00	9.44E-06	1.05E-04	2.61E-02	2.62E-02	0.00E+00	2.00E+00	0.00E+00	1.06E+00	3.06E-03	6.76E-06	3.06E-07	1.98E-03	1.55E-04	1.04E+05
Cobalt-60	Co-60	0.05	2.6	0.24	1	1.35E-02	3.52E-03	2.95E-01	3.20E-03	4.53E-02	3.61E-04	9.44E-02	9.48E-02	0.00E+00	5.12E-02	0.00E+00	1.06E+00	1.11E-03	6.76E-06	5.59E-05	7.16E-03	7.81E-03	8.06E+02
Cesium-134	Cs-134	1	3.5	0.24	1	6.93E-01	1.34E-01	2.87E+00	3.96E-03	2.81E-02	9.21E-04	7.01E-02	7.11E-02	0.00E+00	1.95E+00	0.00E+00	1.06E+00	3.01E-03	6.76E-06	3.02E-03	5.37E-03	5.61E-01	1.20E+03
Cesium-137	Cs-137	1	3.5	0.24	1	6.93E-01	1.34E-01	2.87E+00	4.80E-03	1.03E-02	6.30E-05	7.01E-02	7.02E-02	0.00E+00	1.95E+00	0.00E+00	1.06E+00	3.01E-03	6.76E-06	3.02E-03	5.31E-03	5.68E-01	2.80E+03
Europium-152	Eu-152	0.001	1.4	0.8	1	5.20E-03	7.93E-04	2.04E-03	2.94E-03	2.10E-02	1.42E-04	1.56E-02	1.57E-02	0.00E+00	1.15E-02	0.00E+00	1.06E+00	1.07E-03	6.76E-06	1.08E-06	1.19E-03	9.09E-04	1.74E+03
Europium-154	Eu-154	0.001	1.4	0.8	1	5.20E-03	7.93E-04	2.04E-03	5.66E-03	2.27E-02	2.16E-04	1.56E-02	1.58E-02	0.00E+00	1.15E-02	0.00E+00	1.06E+00	1.07E-03	6.76E-06	1.08E-06	1.19E-03	9.05E-04	1.61E+03
Europium-155	Eu-155	0.001	1.4	0.8	1	5.20E-03	7.93E-04	2.04E-03	1.23E-03	1.09E-03	3.83E-04	1.56E-02	1.59E-02	0.00E+00	1.15E-02	0.00E+00	1.06E+00	1.07E-03	6.76E-06	1.08E-06	1.20E-03	8.95E-04	3.35E+04
Hydrogen-3 (tritium)	H-3	1	0.82	0.55	1	1.50E+02	1.50E+02	1.50E+02	1.06E-04	4.36E-09	1.54E-04	7.83E-02	7.85E-02	0.00E+00	2.18E+03	0.00E+00	1.06E+00	2.18E+00	6.76E-06	2.18E+00	5.93E-03	3.68E+02	9.37E+02
Neptunium-237	Np-237	0.001	0.8	0.28	1	1.73E-02	1.01E-01	4.08E-02	1.76E+00	4.40E-03	8.88E-10	2.58E-01	2.58E-01	0.00E+00	1.46E+00	0.00E+00	1.06E+00	2.52E-03	6.76E-06	2.53E-06	1.95E-02	1.30E-04	7.89E+03
Plutonium-238	Pu-238	0.001	0.8	0.81	1	1.44E-02	3.88E-02	2.34E-02	2.08E+00	9.78E-06	2.17E-05	2.61E-02	2.61E-02	0.00E+00	5.63E-01	0.00E+00	1.06E+00	1.62E-03	6.76E-06	1.63E-06	1.97E-03	8.27E-04	2.11E+04
Plutonium-239	Pu-239	0.001	0.8	0.81	1	1.44E-02	3.88E-02	2.34E-02	1.95E+00	4.32E-06	7.89E-08	2.61E-02	2.61E-02	0.00E+00	5.63E-01	0.00E+00	1.06E+00	1.62E-03	6.76E-06	1.63E-06	1.97E-03	8.27E-04	2.26E+04
Radium-226	Ra-226	0.2	2	0.25	1	3.94E-02	9.00E-02	2.65E-02	1.11E+01	3.27E-02	1.19E-06	1.18E-01	1.18E-01	0.00E+00	1.31E+00	0.00E+00	1.06E+00	2.37E-03	6.76E-06	4.75E-04	8.89E-03	5.35E-02	5.83E+01
Radium-228	Ra-228	0.2	2	0.25	1	3.94E-02	9.00E-02	2.65E-02	1.22E+01	1.57E-02	3.30E-04	1.18E-01	1.18E-01	0.00E+00	1.31E+00	0.00E+00	1.06E+00	2.37E-03	6.76E-06	4.75E-04	8.91E-03	5.33E-02	5.48E+01
Antimony-125	Sb-125	0.01	0.5	0.25	1	2.50E-02	2.53E-01	2.15E-06	2.64E-03	7.96E-03	6.86E-04	4.70E-01	4.71E-01	0.00E+00	3.67E+00	0.00E+00	1.06E+00	4.73E-03	6.76E-06	4.74E-05	3.56E-02	1.33E-03	4.59E+03
Strontium-90	Sr-90	0.3	107	0.26	1	2.07E-01	4.07E-01	1.74E+00	1.89E-02	2.19E-03	6.54E-05	2.10E-03	2.17E-03	0.00E+00	5.91E+00	0.00E+00	1.06E+00	6.97E-03	6.76E-06	2.09E-03	1.64E-04	1.28E+01	1.50E+02
Technetium-99	Tc-99	0.8	0.3	0.4	1	2.00E+01	3.70E-01	3.70E-01	1.57E-03	5.50E-06	8.92E-09	4.10E-01	4.10E-01	0.00E+00	5.38E+00	0.00E+00	1.06E+00	6.44E-03	6.76E-06	5.15E-03	3.10E-02	1.66E-01	1.37E+05
Thorium-232	Th-232	0.0002	3.3	0.81	1	4.37E-02	8.84E-03	1.22E-04	1.37E+01	8.28E-06	1.35E-13	6.32E-03	6.32E-03	0.00E+00	1.28E-01	0.00E+00	1.06E+00	1.19E-03	6.76E-06	2.39E-07	4.78E-04	5.01E-04	5.32E+03
Uranium-234	U-234	0.05	0.8	0.28	1	1.46E-02	8.84E-03	1.06E-04	1.81E+00	9.60E-06	7.77E-09	2.58E-01	2.58E-01	0.00E+00	1.28E-01	0.00E+00	1.06E+00	1.19E-03	6.76E-06	5.98E-05	1.95E-02	3.06E-03	6.57E+03
Uranium-235	U-235	0.05	0.8	0.28	1	1.46E-02	8.84E-03	1.06E-04	1.65E+00	3.25E-03	2.70E-12	2.58E-01	2.58E-01	0.00E+00	1.28E-01	0.00E+00	1.06E+00	1.19E-03	6.76E-06	5.98E-05	1.95E-02	3.06E-03	4.40E+03
Uranium-238	U-238	0.05	0.8	0.28	1	1.46E-02	8.84E-03	1.06E-04	1.60E+00	2.10E-03	4.25E-13	2.58E-01	2.58E-01	0.00E+00	1.28E-01	0.00E+00	1.06E+00	1.19E-03	6.76E-06	5.98E-05	1.95E-02	3.06E-03	5.22E+03

References:
[1] ANL, 2009, RESRAD-BIOTA for Windows, Version 1.5, Argonne National Laboratory, Argonne, Illinois. Available at: http://web.ead.anl.gov/resrad/home2/biota.cfm.
[2] PT_IT value of 1 was used.
[3] Beresford, N.A., C.L. Barnett, B.J. Howard, W.A. Scott, J.E. Brown, and D. Copplestone, 2008, "Derivation of Transfer Parameters for Use Within the ERICA Tool and the Default
[4] Dose conversion factors were calculated based on the geometry of each species using the RESRAD-Biota (version 1.5). Oak Ridge National Laboratory (ORNL). 2010. "RAIS: The Risk
[5] Oak Ridge National Laboratory (ORNL). 2010. "RAIS: The Risk Assessment Information System." Available at http://rais.ornl.gov/.
[6] References for species-specific parameter values are presented in Table 2 of the main document to which this table is an attachment

Acronyms:
f1 = fraction of radionuclide assimilated into the body
alpha (α) = alpha parameter for calculating biological half life
beta (β) = beta parameter for calculating biological half life
PT_IT = correlation factor for adjusting inhalation relative to ingestion exposure
DF_int = internal dose conversion factor
DF_ext = external dose conversion factor

TABLE B-6
Calculation of Level 3 Biota Concentration Guide for Red-tailed Hawk
Central Plateau Area at Hanford, Washington

Species:	Red-tailed Hawk		
Parameter [6]	**Symbol**	**Value**	**Unit**
Body Weight	M_b	1.1790	(kg)
Food Intake	r_{food}	41.6187	(g-food/ individual)
Soil Ingestion	r_{soil}	0.9988	(g-soil/ individual)
Diet Composition [6]:			
Plants ($\%_{plant}$)		0%	
Terrestrial Invertebrates ($\%_{inv}$)		0%	
Mammals/Birds ($\%_{mamm}$)		100%	
Longevity	T_{life}	7.0	(years)
Dust loading in air	X_{dust}	1.00E-04	(g/m3)
Dose limit	DL	0.1	(rad/day)
Geometry Information Used to Calculate Conversion Factors:			
Assumed Geometry	4		
Geometry Dimensions	45 x 8.7 x 4.9	(cm3)	

Eqn. 1

$$k_{bio} = \frac{0.69315}{\alpha (M_b)^{\beta}}$$

Eqn. 2

$$k_{eff} = k_{bio} + k_{rad}$$

Eqn. 3

$$Intake_{ing} = r_{food} \times \sum (BAF \times \%_{composition})$$
$$= r_{food} \times \left[\left(BAF_{plant} \times \%_{plant} \right) + \left(BAF_{inv} \times \%_{inv} \right) + \left(BAF_{mammr} \times \%_{mamm} \right) \right]$$

Eqn. 4

$$Intake_{Inh} = PT_IT \times X_{dust} \times 0.481 \times M_b^{0.76}$$

Eqn. 5 Lumped Parameter (LP)

$$\frac{f_1 \left(Intake_{ing} + Intake_{inh} \right) \times \left(1 - e^{-(k_{eff} \times 365.25 \times T_{life})} \right)}{k_{eff} \times M_b}$$

Eqn. 6 Biota Concentration Guide (BCG)

$$\frac{(365.25 \times DL)}{[(DF_int \times LP) + DF_ext]}$$

Radionuclies		Chemical Specific Parameters (Unitless)				Biological Accumulation Factor (BAF) (Unitless)			Dose Conversion Factor (rad/yr per pCi/g)		Calculation of biological half life and effective half life (1/day)			Calculation of Ingestion/Inhalation Intake (g-soil/ individual)						Calculation of Lumped Parameter (LP)			Biota Concentration Guide (pCi/g)
		f1	alpha (α)	beta (β)	PT_IT	Soil to Plants (BAF_{plant})	Soil to Terrestrial Invertebrates (BAF_{inv})	Soil to Small Mammal (BAF_{mamm})	DF_int	DF_ext	Radiological decay constant (k_{rad})	Biological decay constant (k_{bio})	Effective half life (k_{eff})	Plants	Terrestrial Invertebrates	Small Mammal	Soil	Ingestion intake [Total]	Inhalation intake	Numerator (kg-soil/day)	Denomonator (kg-tissue/day)	LP (pCi/g-tissue per pCi/g-soil)	
	References:	[1]	[1]	[1]	[2]	[3]	[3]	[3]	[4]	[4]	[5]	[Eqn. 1]	[Eqn. 2]					[Eqn. 3]	[Eqn. 4]			[Eqn. 5]	[Eqn. 6]
Americium-241	Am-241	0.001	0.8	0.81	1	4.96E-03	1.01E-01	4.08E-02	2.07E+00	3.60E-04	4.39E-06	2.82E-03	2.82E-03	0.00E+00	0.00E+00	1.70E+00	9.99E-01	2.70E-03	5.45E-05	2.75E-06	3.33E-03	8.26E-04	1.76E+04
Carbon-14	C-14	1	2	0.25	1	8.90E+02	4.30E+02	1.34E+03	9.22E-04	3.99E-07	3.32E-07	5.91E-02	5.91E-02	0.00E+00	0.00E+00	5.58E+04	9.99E-01	5.58E+01	5.45E-05	5.58E+01	6.97E-02	8.00E+02	4.95E+01
Curium-244	Cm-244	0.0001	0.8	0.81	1	2.75E-04	1.37E-01	4.08E-02	2.20E+00	3.61E-06	1.05E-04	2.82E-03	2.92E-03	0.00E+00	0.00E+00	1.70E+00	9.99E-01	2.70E-03	5.45E-05	2.75E-07	3.45E-03	7.98E-05	2.04E+05
Cobalt-60	Co-60	0.05	2.6	0.24	1	1.35E-02	3.52E-03	2.95E-01	6.27E-03	4.22E-02	3.61E-04	4.88E-02	4.92E-02	0.00E+00	0.00E+00	1.23E+01	9.99E-01	1.33E-02	5.45E-05	6.68E-04	5.80E-02	1.15E-02	8.64E+02
Cesium-134	Cs-134	1	3.5	0.24	1	6.93E-01	1.34E-01	2.87E+00	6.10E-03	2.59E-02	9.21E-04	3.63E-02	3.72E-02	0.00E+00	0.00E+00	1.20E+02	9.99E-01	1.21E-01	5.45E-05	1.21E-01	4.39E-02	2.75E+00	8.56E+02
Cesium-137	Cs-137	1	3.5	0.24	1	6.93E-01	1.34E-01	2.87E+00	5.68E-03	9.46E-03	6.30E-05	3.63E-02	3.63E-02	0.00E+00	0.00E+00	1.20E+02	9.99E-01	1.21E-01	5.45E-05	1.21E-01	4.28E-02	2.82E+00	1.43E+03
Europium-152	Eu-152	0.001	1.4	0.8	1	5.20E-03	7.93E-04	2.04E-03	4.52E-03	1.94E-02	1.42E-04	1.73E-03	1.87E-03	0.00E+00	0.00E+00	8.51E-02	9.99E-01	1.08E-03	5.45E-05	1.13E-06	2.20E-03	5.12E-04	1.88E+03
Europium-154	Eu-154	0.001	1.4	0.8	1	5.20E-03	7.93E-04	2.04E-03	7.39E-03	2.09E-02	2.16E-04	1.73E-03	1.94E-03	0.00E+00	0.00E+00	8.51E-02	9.99E-01	1.08E-03	5.45E-05	1.13E-06	2.29E-03	4.93E-04	1.75E+03
Europium-155	Eu-155	0.001	1.4	0.8	1	5.20E-03	7.93E-04	2.04E-03	1.34E-03	9.79E-04	3.83E-04	1.73E-03	2.11E-03	0.00E+00	0.00E+00	8.51E-02	9.99E-01	1.08E-03	5.45E-05	1.13E-06	2.49E-03	4.55E-04	3.73E+04
Hydrogen-3 (tritium)	H-3	1	0.82	0.55	1	1.50E+02	1.50E+02	1.50E+02	1.06E-04	8.79E-11	1.54E-04	1.73E-02	1.74E-02	0.00E+00	0.00E+00	6.24E+03	9.99E-01	6.24E+00	5.45E-05	6.24E+00	2.06E-02	3.04E+02	1.13E+03
Neptunium-237	Np-237	0.001	0.8	0.28	1	1.73E-02	1.01E-01	4.08E-02	1.76E+00	3.95E-03	8.88E-10	1.20E-01	1.20E-01	0.00E+00	0.00E+00	1.70E+00	9.99E-01	2.70E-03	5.45E-05	2.75E-06	1.41E-01	1.95E-05	9.17E+03
Plutonium-238	Pu-238	0.001	0.8	0.81	1	1.44E-02	3.88E-02	2.34E-02	2.08E+00	3.71E-06	2.17E-05	2.82E-03	2.84E-03	0.00E+00	0.00E+00	9.73E-01	9.99E-01	1.97E-03	5.45E-05	2.03E-06	3.35E-03	6.05E-04	2.89E+04
Plutonium-239	Pu-239	0.001	0.8	0.81	1	1.44E-02	3.88E-02	2.34E-02	1.95E+00	1.73E-06	7.89E-08	2.82E-03	2.82E-03	0.00E+00	0.00E+00	9.73E-01	9.99E-01	1.97E-03	5.45E-05	2.03E-06	3.32E-03	6.10E-04	3.07E+04
Radium-226	Ra-226	0.2	2	0.25	1	3.94E-02	9.00E-02	2.65E-02	1.11E+01	2.96E-02	1.19E-06	5.91E-02	5.91E-02	0.00E+00	0.00E+00	1.10E+00	9.99E-01	2.10E-03	5.45E-05	4.31E-04	6.97E-02	6.19E-03	3.72E+02
Radium-228	Ra-228	0.2	2	0.25	1	3.94E-02	9.00E-02	2.65E-02	1.22E+01	1.43E-02	3.30E-04	5.91E-02	5.95E-02	0.00E+00	0.00E+00	1.10E+00	9.99E-01	2.10E-03	5.45E-05	4.31E-04	7.01E-02	6.15E-03	4.09E+02
Antimony-125	Sb-125	0.01	0.5	0.25	1	2.50E-02	2.53E-01	2.15E-06	3.36E-03	7.24E-03	6.86E-04	2.37E-01	2.37E-01	0.00E+00	0.00E+00	8.93E-05	9.99E-01	9.99E-04	5.45E-05	1.05E-05	2.80E-01	3.77E-05	5.04E+03
Strontium-90	Sr-90	0.3	107	0.26	1	2.07E-01	4.07E-01	1.74E+00	2.03E-02	7.17E-04	6.54E-05	1.03E-03	1.10E-03	0.00E+00	0.00E+00	7.24E+01	9.99E-01	7.34E-02	5.45E-05	2.07E-02	1.29E-03	1.60E+01	1.12E+02
Technetium-99	Tc-99	0.8	0.3	0.4	1	2.00E+01	3.70E-01	3.70E-01	1.58E-03	1.68E-06	8.92E-09	1.36E-01	1.36E-01	0.00E+00	0.00E+00	1.54E+01	9.99E-01	1.64E-02	5.45E-05	1.32E-02	1.61E-01	8.18E-02	2.79E+05
Thorium-232	Th-232	0.0002	3.3	0.81	1	4.37E-02	8.84E-03	1.22E-04	1.37E+01	4.81E-06	1.35E-13	6.83E-04	6.83E-04	0.00E+00	0.00E+00	5.07E-03	9.99E-01	1.00E-03	5.45E-05	1.75E-07	8.05E-04	2.17E-04	1.23E+04
Uranium-234	U-234	0.05	0.8	0.28	1	1.46E-02	8.84E-03	1.06E-04	1.81E+00	4.43E-06	7.77E-09	1.20E-01	1.20E-01	0.00E+00	0.00E+00	4.42E-03	9.99E-01	1.00E-03	5.45E-05	5.29E-05	1.41E-01	3.75E-04	5.34E+04
Uranium-235	U-235	0.05	0.8	0.28	1	1.46E-02	8.84E-03	1.06E-04	1.65E+00	2.89E-03	2.70E-12	1.20E-01	1.20E-01	0.00E+00	0.00E+00	4.42E-03	9.99E-01	1.00E-03	5.45E-05	5.29E-05	1.41E-01	3.75E-04	1.04E+04
Uranium-238	U-238	0.05	0.8	0.28	1	1.46E-02	8.84E-03	1.06E-04	1.61E+00	9.53E-04	4.25E-13	1.20E-01	1.20E-01	0.00E+00	0.00E+00	4.42E-03	9.99E-01	1.00E-03	5.45E-05	5.29E-05	1.41E-01	3.75E-04	2.35E+04

References:

[1] ANL, 2009, RESRAD-BIOTA for Windows, Version 1.5, Argonne National Laboratory, Argonne, Illinois. Available at: http://web.ead.anl.gov/resrad/home2/biota.cfm.
[2] PT_IT value of 1 was used.
[3] Beresford, N.A., C.L. Barnett, B.J. Howard, W.A. Scott, J.E. Brown, and D. Copplestone, 2008, "Derivation of Transfer Parameters for Use Within the ERICA Tool and the Default
[4] Dose conversion factors were calculated based on the geometry of each species using the RESRAD-Biota (version 1.5). Oak Ridge National Laboratory (ORNL). 2010. "RAIS: The Risk
[5] Oak Ridge National Laboratory (ORNL). 2010. "RAIS: The Risk Assessment Information System." Available at http://rais.ornl.gov/.
[6] References for species-specific parameter values are presented in Table 2 of the main document to which this table is an attachment

Acronyms:

f1 = fraction of radionuclide assimilated into the body
alpha (α) = alpha parameter for calculating biological half life
beta (β) = beta parameter for calculating biological half life
PT_IT = correlation factor for adjusting inhalation relative to ingestion exposure
DF_int = internal dose conversion factor
DF_ext = external dose conversion factor

TABLE B-7
Calculation of Level 3 Biota Concentration Guide for Great Basin Pocket Mouse
Central Plateau Area at Hanford, Washington

Species:	Great Basin Pocket Mouse		
Parameter [6]	**Symbol**	**Value**	**Unit**
Body Weight	M_b	0.0175	(kg)
Food Intake	r_{food}	2.1491	(g-food/ individual)
Soil Ingestion	r_{soil}	0.0430	(g-soil/ individual)
Diet Composition [6]:			
Plants ($\%_{plant}$)		100%	
Terrestrial Invertebrates ($\%_{inv}$)		0%	
Mammals/Birds ($\%_{mamm}$)		0%	
Longevity	T_{life}	4.0	(years)
Dust loading in air	X_{dust}	1.00E-04	(g/m3)
Dose limit	DL	0.1	(rad/day)
Geometry Information Used to Calculate Conversion Factors:			
Assumed Geometry	3		
Geometry Dimensions	10 x 2 x 2	(cm3)	

Eqn. 1
$$k_{bio} = \frac{0.69315}{\alpha (M_b)^{\beta}}$$

Eqn. 2
$$k_{eff} = k_{bio} + k_{rad}$$

Eqn. 3
$$Intake_{ing} = r_{food} \times \sum (BAF \times \%_{composition})$$
$$= r_{food} \times \left[\left(BAF_{plant} \times \%_{plant} \right) + \left(BAF_{inv} \times \%_{inv} \right) + \left(BAF_{mamm} \times \%_{mamm} \right) \right]$$

Eqn. 4
$$Intake_{Inh} = PT_IT \times X_{dust} \times 0.481 \times M_b^{0.76}$$

Eqn. 5 Lumped Parameter (LP)
$$\frac{f_1 \left(Intake_{ing} + Intake_{inh} \right) \times \left(1 - e^{-(k_{eff} \times 365.25 \times T_{life})} \right)}{k_{eff} \times M_b}$$

Eqn. 6 Biota Concentration Guide (BCG)
$$\frac{(365.25 \times DL)}{[(DF_int \times LP) + DF_ext]}$$

Radionuclides		Chemical Specific Parameters (Unitless)				Biological Accumulation Factor (BAF) (Unitless)			Dose Conversion Factor (rad/yr per pCi/g)		Calculation of biological half life and effective half life (1/day)			Calculation of Ingestion/Inhalation Intake (g-soil/ individual)						Calculation of Lumped Parameter (LP)			Biota Concentration Guide (pCi/g)
		f1	alpha (α)	beta (β)	PT_IT	Soil to Plants (BAF_{plant})	Soil to Terrestrial Invertebrates (BAF_{inv})	Soil to Small Mammal (BAF_{mamm})	DF_int	DF_ext	Radiological decay constant (k_{rad})	Biological decay constant (k_{bio})	Effective half life (k_{eff})	Plants	Terrestrial Invertebrates	Small Mammal	Soil	Ingestion intake [Total]	Inhalation intake	Numerator (kg-soil/day)	Denominator (kg-tissue/day)	LP (pCi/g-tissue per pCi/g-soil)	
	References:	[1]	[1]	[1]	[2]	[3]	[3]	[3]	[4]	[4]	[5]	[Eqn. 1]	[Eqn. 2]					[Eqn. 3]	[Eqn. 4]			[Eqn. 5]	[Eqn. 6]
Americium-241	Am-241	0.001	0.8	0.81	1	4.96E-03	1.01E-01	4.08E-02	2.07E+00	4.32E-04	4.39E-06	8.53E-02	8.53E-02	1.07E-02	0.00E+00	0.00E+00	4.30E-02	5.36E-05	2.22E-06	5.59E-08	1.49E-03	3.74E-05	7.17E+04
Carbon-14	C-14	1	2	0.25	1	8.90E+02	4.30E+02	1.34E+03	9.21E-04	1.22E-06	3.32E-07	1.69E-01	1.69E-01	1.91E+03	0.00E+00	0.00E+00	4.30E-02	1.91E+00	2.22E-06	1.91E+00	2.97E-03	6.45E+02	6.15E+01
Curium-244	Cm-244	0.0001	0.8	0.81	1	2.75E-04	1.37E-01	4.08E-02	2.20E+00	9.44E-06	1.05E-04	8.53E-02	8.54E-02	5.91E-04	0.00E+00	0.00E+00	4.30E-02	4.36E-05	2.22E-06	4.58E-09	1.49E-03	3.06E-06	2.26E+06
Cobalt-60	Co-60	0.05	2.6	0.24	1	1.35E-02	3.52E-03	2.95E-01	3.20E-03	4.53E-02	3.61E-04	1.34E-01	1.34E-01	2.90E-02	0.00E+00	0.00E+00	4.30E-02	7.20E-05	2.22E-06	3.71E-06	2.35E-03	1.58E-03	8.06E+02
Cesium-134	Cs-134	1	3.5	0.24	1	6.93E-01	1.34E-01	2.87E+00	3.96E-03	2.81E-02	9.21E-04	9.96E-02	1.01E-01	1.49E+00	0.00E+00	0.00E+00	4.30E-02	1.53E-03	2.22E-06	1.54E-03	1.76E-03	8.73E-01	1.16E+03
Cesium-137	Cs-137	1	3.5	0.24	1	6.93E-01	1.34E-01	2.87E+00	4.80E-03	1.03E-02	6.30E-05	9.96E-02	9.97E-02	1.49E+00	0.00E+00	0.00E+00	4.30E-02	1.53E-03	2.22E-06	1.54E-03	1.74E-03	8.80E-01	2.51E+03
Europium-152	Eu-152	0.001	1.4	0.8	1	5.20E-03	7.93E-04	2.04E-03	2.94E-03	2.10E-02	1.42E-04	5.01E-02	5.03E-02	1.12E-02	0.00E+00	0.00E+00	4.30E-02	5.42E-05	2.22E-06	5.64E-08	8.80E-04	6.41E-05	1.74E+03
Europium-154	Eu-154	0.001	1.4	0.8	1	5.20E-03	7.93E-04	2.04E-03	2.94E-03	2.27E-02	2.16E-04	5.01E-02	5.04E-02	1.12E-02	0.00E+00	0.00E+00	4.30E-02	5.42E-05	2.22E-06	5.64E-08	8.81E-04	6.40E-05	1.61E+03
Europium-155	Eu-155	0.001	1.4	0.8	1	5.20E-03	7.93E-04	2.04E-03	1.23E-03	1.09E-03	3.83E-04	5.01E-02	5.05E-02	1.12E-02	0.00E+00	0.00E+00	4.30E-02	5.42E-05	2.22E-06	5.64E-08	8.84E-04	6.38E-05	3.35E+04
Hydrogen-3 (tritium)	H-3	1	0.82	0.55	1	1.50E+02	1.50E+02	1.50E+02	1.06E-04	4.36E-09	1.54E-04	1.75E-01	1.75E-01	3.22E+02	0.00E+00	0.00E+00	4.30E-02	3.22E-01	2.22E-06	3.22E-01	3.07E-03	1.05E+02	3.28E+03
Neptunium-237	Np-237	0.001	0.8	0.28	1	1.73E-02	1.01E-01	4.08E-02	1.76E+00	4.40E-03	8.88E-10	3.89E-01	3.89E-01	3.71E-02	0.00E+00	0.00E+00	4.30E-02	8.01E-05	2.22E-06	8.23E-08	6.80E-03	1.21E-05	8.26E+03
Plutonium-238	Pu-238	0.001	0.8	0.81	1	1.44E-02	3.88E-02	2.34E-02	2.08E+00	9.78E-06	2.17E-05	8.53E-02	8.53E-02	3.10E-02	0.00E+00	0.00E+00	4.30E-02	7.40E-05	2.22E-06	7.62E-08	1.49E-03	5.10E-05	3.15E+05
Plutonium-239	Pu-239	0.001	0.8	0.81	1	1.44E-02	3.88E-02	2.34E-02	1.95E+00	4.32E-06	7.89E-08	8.53E-02	8.53E-02	3.10E-02	0.00E+00	0.00E+00	4.30E-02	7.40E-05	2.22E-06	7.62E-08	1.49E-03	5.11E-05	3.52E+05
Radium-226	Ra-226	0.2	2	0.25	1	3.94E-02	9.00E-02	2.65E-02	1.11E+01	3.27E-02	1.19E-06	1.69E-01	1.69E-01	8.48E-02	0.00E+00	0.00E+00	4.30E-02	1.28E-04	2.22E-06	2.60E-05	2.97E-03	8.77E-03	2.81E+02
Radium-228	Ra-228	0.2	2	0.25	1	3.94E-02	9.00E-02	2.65E-02	1.22E+01	1.57E-02	3.30E-04	1.69E-01	1.70E-01	8.48E-02	0.00E+00	0.00E+00	4.30E-02	1.28E-04	2.22E-06	2.60E-05	2.97E-03	8.75E-03	2.98E+02
Antimony-125	Sb-125	0.01	0.5	0.25	1	2.50E-02	2.53E-01	2.15E-06	2.64E-03	7.96E-03	6.86E-04	6.78E-01	6.78E-01	5.37E-02	0.00E+00	0.00E+00	4.30E-02	9.67E-05	2.22E-06	9.89E-07	1.19E-02	8.33E-05	4.59E+03
Strontium-90	Sr-90	0.3	107	0.26	1	2.07E-01	4.07E-01	1.74E+00	1.89E-02	2.19E-03	6.54E-05	3.08E-03	3.14E-03	4.44E-01	0.00E+00	0.00E+00	4.30E-02	4.87E-04	2.22E-06	1.45E-04	5.50E-05	2.64E+00	7.00E+02
Technetium-99	Tc-99	0.8	0.3	0.4	1	2.00E+01	3.70E-01	3.70E-01	1.57E-03	5.50E-06	8.92E-09	7.35E-01	7.35E-01	4.30E+01	0.00E+00	0.00E+00	4.30E-02	4.30E-02	2.22E-06	3.44E-02	1.29E-02	2.68E+00	8.68E+03
Thorium-232	Th-232	0.0002	3.3	0.81	1	4.37E-02	8.84E-03	1.22E-04	1.37E+01	8.28E-06	1.35E-13	2.07E-02	2.07E-02	9.40E-02	0.00E+00	0.00E+00	4.30E-02	1.37E-04	2.22E-06	2.78E-08	3.62E-04	7.70E-05	3.44E+04
Uranium-234	U-234	0.05	0.8	0.28	1	1.46E-02	8.84E-03	1.06E-04	1.81E+00	9.60E-06	7.77E-09	3.89E-01	3.89E-01	3.13E-02	0.00E+00	0.00E+00	4.30E-02	7.43E-05	2.22E-06	3.82E-06	6.80E-03	5.62E-04	3.56E+04
Uranium-235	U-235	0.05	0.8	0.28	1	1.46E-02	8.84E-03	1.06E-04	1.65E+00	3.25E-03	2.70E-12	3.89E-01	3.89E-01	3.13E-02	0.00E+00	0.00E+00	4.30E-02	7.43E-05	2.22E-06	3.82E-06	6.80E-03	5.62E-04	8.74E+03
Uranium-238	U-238	0.05	0.8	0.28	1	1.46E-02	8.84E-03	1.06E-04	1.60E+00	2.10E-03	4.25E-13	3.89E-01	3.89E-01	3.13E-02	0.00E+00	0.00E+00	4.30E-02	7.43E-05	2.22E-06	3.82E-06	6.80E-03	5.62E-04	1.22E+04

References:
[1] ANL, 2009, RESRAD-BIOTA for Windows, Version 1.5, Argonne National Laboratory, Argonne, Illinois. Available at: http://web.ead.anl.gov/resrad/home2/biota.cfm.
[2] PT_IT value of 1 was used.
[3] Beresford, N.A., C.L. Barnett, B.J. Howard, W.A. Scott, J.E. Brown, and D. Copplestone, 2008, "Derivation of Transfer Parameters for Use Within the ERICA Tool and the Default
[4] Dose conversion factors were calculated based on the geometry of each species using the RESRAD-Biota (version 1.5). Oak Ridge National Laboratory (ORNL). 2010. "RAIS: The Risk
[5] Oak Ridge National Laboratory (ORNL). 2010. "RAIS: The Risk Assessment Information System." Available at http://rais.ornl.gov/.
[6] References for species-specific parameter values are presented in Table 2 of the main document to which this table is an attachment

Acronyms:
f1 = fraction of radionuclide assimilated into the body
alpha (α) = alpha parameter for calculating biological half life
beta (β) = beta parameter for calculating biological half life
PT_IT = correlation factor for adjusting inhalation relative to ingestion exposure
DF_int = internal dose conversion factor
DF_ext = external dose conversion factor

TABLE B-8
Calculation of Level 3 Biota Concentration Guide for Deer Mouse
Central Plateau Area at Hanford, Washington

Species:	Deer Mouse		
Parameter [6]	**Symbol**	**Value**	**Unit**
Body Weight	M_b	0.0194	(kg)
Food Intake	r_{food}	3.2204	(g-food/ individual)
Soil Ingestion	r_{soil}	0.0644	(g-soil/ individual)
Diet Composition [6]:			
Plants ($\%_{plant}$)		50%	
Terrestrial Invertebrates ($\%_{inv}$)		50%	
Mammals/Birds ($\%_{mamm}$)		0%	
Longevity	T_{life}	1.0	(years)
Dust loading in air	X_{dust}	1.00E-04	(g/m3)
Dose limit	DL	0.1	(rad/day)
Geometry Information Used to Calculate Conversion Factors:			
Assumed Geometry	3		
Geometry Dimensions	10 x 2 x 2	(cm3)	

Eqn. 1
$$k_{bio} = \frac{0.69315}{\alpha (M_b)^{\beta}}$$

Eqn. 2
$$k_{eff} = k_{bio} + k_{rad}$$

Eqn. 3
$$Intake_{ing} = r_{food} \times \sum (BAF \times \%_{composition})$$
$$= r_{food} \times \left[\left(BAF_{plant} \times \%_{plant} \right) + \left(BAF_{inv} \times \%_{inv} \right) + \left(BAF_{mamm} \times \%_{mamm} \right) \right]$$

Eqn. 4
$$Intake_{inh} = PT_IT \times X_{dust} \times 0.481 \times M_b^{0.76}$$

Eqn. 5 Lumped Parameter (LP)
$$\frac{f_1 \left(Intake_{ing} + Intake_{inh} \right) \times \left(1 - e^{-(k_{eff} \times 365.25 \times T_{life})} \right)}{k_{eff} \times M_b}$$

Eqn. 6 Biota Concentration Guide (BCG)
$$\frac{(365.25 \times DL)}{[(DF_int \times LP) + DF_ext]}$$

Radionuclides		Chemical Specific Parameters (Unitless)				Biological Accumulation Factor (BAF) (Unitless)			Dose Conversion Factor (rad/yr per pCi/g)		Calculation of biological half life and effective half life (1/day)			Calculation of Ingestion/Inhalation Intake (g-soil/ individual)						Calculation of Lumped Parameter (LP)			Biota Concentration Guide (pCi/g)
		f1	alpha (α)	beta (β)	PT_IT	Soil to Plants (BAF_{plant})	Soil to Terrestrial Invertebrates (BAF_{inv})	Soil to Small Mammal (BAF_{mamm})	DF_int	DF_ext	Radiological decay constant (k_{rad})	Biological decay constant (k_{bio})	Effective half life (k_{eff})	Plants	Terrestrial Invertebrates	Small Mammal	Soil	Ingestion intake [Total]	Inhalation intake	Numerator (kg-soil/day)	Denominator (kg-tissue/day)	LP (pCi/g-tissue per pCi/g-soil)	
	References:	[1]	[1]	[1]	[2]	[3]	[3]	[3]	[4]	[4]	[5]	[Eqn. 1]	[Eqn. 2]					[Eqn. 3]	[Eqn. 4]			[Eqn. 5]	[Eqn. 6]
Americium-241	Am-241	0.001	0.8	0.81	1	4.96E-03	1.01E-01	4.08E-02	2.07E+00	4.32E-04	4.39E-06	7.85E-02	7.85E-02	7.98E-03	1.62E-01	0.00E+00	6.44E-02	2.34E-04	2.40E-06	2.37E-07	1.52E-03	1.56E-04	4.84E+04
Carbon-14	C-14	1	2	0.25	1	8.90E+02	4.30E+02	1.34E+03	9.21E-04	1.22E-06	3.32E-07	1.65E-01	1.65E-01	1.43E+03	6.92E+02	0.00E+00	6.44E-02	2.13E+00	2.40E-06	2.13E+00	3.20E-03	6.63E+02	5.98E+01
Curium-244	Cm-244	0.0001	0.8	0.81	1	2.75E-04	1.37E-01	4.08E-02	2.20E+00	9.44E-06	1.05E-04	7.85E-02	7.86E-02	4.43E-04	2.21E-01	0.00E+00	6.44E-02	2.86E-04	2.40E-06	2.89E-08	1.52E-03	1.89E-05	7.15E+05
Cobalt-60	Co-60	0.05	2.6	0.24	1	1.35E-02	3.52E-03	2.95E-01	3.20E-03	4.53E-02	3.61E-04	1.31E-01	1.31E-01	2.17E-02	5.67E-03	0.00E+00	6.44E-02	9.18E-05	2.40E-06	4.71E-06	2.55E-03	1.85E-03	8.06E+02
Cesium-134	Cs-134	1	3.5	0.24	1	6.93E-01	1.34E-01	2.87E+00	3.96E-03	2.81E-02	9.21E-04	9.72E-02	9.81E-02	1.12E+00	2.16E-01	0.00E+00	6.44E-02	1.40E-03	2.40E-06	1.40E-03	1.90E-03	7.35E-01	1.18E+03
Cesium-137	Cs-137	1	3.5	0.24	1	6.93E-01	1.34E-01	2.87E+00	4.80E-03	1.03E-02	6.30E-05	9.72E-02	9.73E-02	1.12E+00	2.16E-01	0.00E+00	6.44E-02	1.40E-03	2.40E-06	1.40E-03	1.89E-03	7.42E-01	2.64E+03
Europium-152	Eu-152	0.001	1.4	0.8	1	5.20E-03	7.93E-04	2.04E-03	2.94E-03	2.10E-02	1.42E-04	4.62E-02	4.63E-02	8.37E-03	1.28E-03	0.00E+00	6.44E-02	7.41E-05	2.40E-06	7.65E-08	8.99E-04	8.51E-05	1.74E+03
Europium-154	Eu-154	0.001	1.4	0.8	1	5.20E-03	7.93E-04	2.04E-03	2.94E-03	2.27E-02	2.16E-04	4.62E-02	4.64E-02	8.37E-03	1.28E-03	0.00E+00	6.44E-02	7.41E-05	2.40E-06	7.65E-08	9.00E-04	8.49E-05	1.61E+03
Europium-155	Eu-155	0.001	1.4	0.8	1	5.20E-03	7.93E-04	2.04E-03	1.23E-03	1.09E-03	3.83E-04	4.62E-02	4.66E-02	8.37E-03	1.28E-03	0.00E+00	6.44E-02	7.41E-05	2.40E-06	7.65E-08	9.03E-04	8.46E-05	3.35E+04
Hydrogen-3 (tritium)	H-3	1	0.82	0.55	1	1.50E+02	1.50E+02	1.50E+02	1.06E-04	4.36E-09	1.54E-04	1.65E-01	1.66E-01	2.42E+02	2.42E+02	0.00E+00	6.44E-02	4.83E-01	2.40E-06	4.83E-01	3.21E-03	1.50E+02	2.29E+03
Neptunium-237	Np-237	0.001	0.8	0.28	1	1.73E-02	1.01E-01	4.08E-02	1.76E+00	4.40E-03	8.88E-10	3.78E-01	3.78E-01	2.78E-02	1.62E-01	0.00E+00	6.44E-02	2.54E-04	2.40E-06	2.56E-07	7.33E-03	3.50E-05	8.19E+03
Plutonium-238	Pu-238	0.001	0.8	0.81	1	1.44E-02	3.88E-02	2.34E-02	2.08E+00	9.78E-06	2.17E-05	7.85E-02	7.85E-02	2.32E-02	6.24E-02	0.00E+00	6.44E-02	1.50E-04	2.40E-06	1.52E-07	1.52E-03	1.00E-04	1.67E+05
Plutonium-239	Pu-239	0.001	0.8	0.81	1	1.44E-02	3.88E-02	2.34E-02	1.95E+00	4.32E-06	7.89E-08	7.85E-02	7.85E-02	2.32E-02	6.24E-02	0.00E+00	6.44E-02	1.50E-04	2.40E-06	1.52E-07	1.52E-03	1.00E-04	1.83E+05
Radium-226	Ra-226	0.2	2	0.25	1	3.94E-02	9.00E-02	2.65E-02	1.11E+01	3.27E-02	1.19E-06	1.65E-01	1.65E-01	6.35E-02	1.45E-01	0.00E+00	6.44E-02	2.73E-04	2.40E-06	5.50E-05	3.20E-03	1.72E-02	1.63E+02
Radium-228	Ra-228	0.2	2	0.25	1	3.94E-02	9.00E-02	2.65E-02	1.22E+01	1.57E-02	3.30E-04	1.65E-01	1.65E-01	6.35E-02	1.45E-01	0.00E+00	6.44E-02	2.73E-04	2.40E-06	5.50E-05	3.21E-03	1.71E-02	1.62E+02
Antimony-125	Sb-125	0.01	0.5	0.25	1	2.50E-02	2.53E-01	2.15E-06	2.64E-03	7.96E-03	6.86E-04	6.61E-01	6.61E-01	4.03E-02	4.07E-01	0.00E+00	6.44E-02	5.11E-04	2.40E-06	5.14E-06	1.28E-02	4.00E-04	4.59E+03
Strontium-90	Sr-90	0.3	107	0.26	1	2.07E-01	4.07E-01	1.74E+00	1.89E-02	2.19E-03	6.54E-05	3.00E-03	3.06E-03	3.33E-01	6.55E-01	0.00E+00	6.44E-02	1.05E-03	2.40E-06	2.13E-04	5.94E-05	3.59E+00	5.22E+02
Technetium-99	Tc-99	0.8	0.3	0.4	1	2.00E+01	3.70E-01	3.70E-01	1.57E-03	5.50E-06	8.92E-09	7.06E-01	7.06E-01	3.22E+01	5.96E-01	0.00E+00	6.44E-02	3.29E-02	2.40E-06	2.63E-02	1.37E-02	1.92E+00	1.21E+04
Thorium-232	Th-232	0.0002	3.3	0.81	1	4.37E-02	8.84E-03	1.22E-04	1.37E+01	8.28E-06	1.35E-13	1.90E-02	1.90E-02	7.04E-02	1.42E-02	0.00E+00	6.44E-02	1.49E-04	2.40E-06	3.03E-08	3.69E-04	8.20E-05	3.23E+04
Uranium-234	U-234	0.05	0.8	0.28	1	1.46E-02	8.84E-03	1.06E-04	1.81E+00	9.60E-06	7.77E-09	3.78E-01	3.78E-01	2.34E-02	1.42E-02	0.00E+00	6.44E-02	1.02E-04	2.40E-06	5.22E-06	7.33E-03	7.13E-04	2.81E+04
Uranium-235	U-235	0.05	0.8	0.28	1	1.46E-02	8.84E-03	1.06E-04	1.65E+00	3.25E-03	2.70E-12	3.78E-01	3.78E-01	2.34E-02	1.42E-02	0.00E+00	6.44E-02	1.02E-04	2.40E-06	5.22E-06	7.33E-03	7.13E-04	8.25E+03
Uranium-238	U-238	0.05	0.8	0.28	1	1.46E-02	8.84E-03	1.06E-04	1.60E+00	2.10E-03	4.25E-13	3.78E-01	3.78E-01	2.34E-02	1.42E-02	0.00E+00	6.44E-02	1.02E-04	2.40E-06	5.22E-06	7.33E-03	7.13E-04	1.13E+04

References:
[1] ANL, 2009, RESRAD-BIOTA for Windows, Version 1.5, Argonne National Laboratory, Argonne, Illinois. Available at: http://web.ead.anl.gov/resrad/home2/biota.cfm.
[2] PT_IT value of 1 was used.
[3] Beresford, N.A., C.L. Barnett, B.J. Howard, W.A. Scott, J.E. Brown, and D. Copplestone, 2008, "Derivation of Transfer Parameters for Use Within the ERICA Tool and the Default
[4] Dose conversion factors were calculated based on the geometry of each species using the RESRAD-Biota (version 1.5). Oak Ridge National Laboratory (ORNL). 2010. "RAIS: The Risk
[5] Oak Ridge National Laboratory (ORNL). 2010. "RAIS: The Risk Assessment Information System." Available at http://rais.ornl.gov/.
[6] References for species-specific parameter values are presented in Table 2 of the main document to which this table is an attachment

Acronyms:
f1 = fraction of radionuclide assimilated into the body
alpha (α) = alpha parameter for calculating biological half life
beta (β) = beta parameter for calculating biological half life
PT_IT = correlation factor for adjusting inhalation relative to ingestion exposure
DF_int = internal dose conversion factor
DF_ext = external dose conversion factor

TABLE B-9
Calculation of Level 3 Biota Concentration Guide for Grasshopper Mouse
Central Plateau Area at Hanford, Washington

Species:	Grasshopper Mouse		
Parameter [6]	**Symbol**	**Value**	**Unit**
Body Weight	M_b	0.0346	(kg)
Food Intake	r_{food}	3.3808	(g-food/ individual)
Soil Ingestion	r_{soil}	0.0304	(g-soil/ individual)
Diet Composition [6]:			
Plants ($\%_{plant}$)		0%	
Terrestrial Invertebrates ($\%_{inv}$)		100%	
Mammals/Birds ($\%_{mamm}$)		0%	
Longevity	T_{life}	5.0	(years)
Dust loading in air	X_{dust}	1.00E-04	(g/m3)
Dose limit	DL	0.1	(rad/day)
Geometry Information Used to Calculate Conversion Factors:			
Assumed Geometry	3		
Geometry Dimensions	10 x 2 x 2	(cm3)	

Eqn. 1
$$k_{bio} = \frac{0.69315}{\alpha (M_b)^{\beta}}$$

Eqn. 2
$$k_{eff} = k_{bio} + k_{rad}$$

Eqn. 3
$$Intake_{ing} = r_{food} \times \sum (BAF \times \%_{composition})$$
$$= r_{food} \times \left[\left(BAF_{plant} \times \%_{plant} \right) + \left(BAF_{inv} \times \%_{inv} \right) + \left(BAF_{mamm} \times \%_{mamm} \right) \right]$$

Eqn. 4
$$Intake_{inh} = PT_IT \times X_{dust} \times 0.481 \times M_b^{0.76}$$

Eqn. 5 Lumped Parameter (LP)
$$\frac{f_1 \left(Intake_{ing} + Intake_{inh} \right) \times \left(1 - e^{-(k_{eff} \times 365.25 \times T_{life})} \right)}{k_{eff} \times M_b}$$

Eqn. 6 Biota Concentration Guide (BCG)
$$\frac{(365.25 \times DL)}{[(DF_int \times LP) + DF_ext]}$$

Radionuclides		Chemical Specific Parameters (Unitless)				Biological Accumulation Factor (BAF) (Unitless)			Dose Conversion Factor (rad/yr per pCi/g)		Calculation of biological half life and effective half life (1/day)			Calculation of Ingestion/Inhalation Intake (g-soil/ individual)						Calculation of Lumped Parameter (LP)			Biota Concentration Guide (pCi/g)
		f1	alpha (α)	beta (β)	PT_IT	Soil to Plants (BAF_{plant})	Soil to Terrestrial Invertebrates (BAF_{inv})	Soil to Small Mammal (BAF_{mamm})	DF_int	DF_ext	Radiological decay constant (k_{rad})	Biological decay constant (k_{bio})	Effective half life (k_{eff})	Plants	Terrestrial Invertebrates	Small Mammal	Soil	Ingestion intake [Total]	Inhalation intake	Numerator (kg-soil/day)	Denominator (kg-tissue/day)	LP (pCi/g-tissue per pCi/g-soil)	
	References:	[1]	[1]	[1]	[2]	[3]	[3]	[3]	[4]	[4]	[5]	[Eqn. 1]	[Eqn. 2]					[Eqn. 3]	[Eqn. 4]			[Eqn. 5]	[Eqn. 6]
Americium-241	Am-241	0.001	0.8	0.81	1	4.96E-03	1.01E-01	4.08E-02	2.07E+00	4.32E-04	4.39E-06	4.91E-02	4.91E-02	0.00E+00	3.40E-01	0.00E+00	3.04E-02	3.70E-04	3.73E-06	3.74E-07	1.70E-03	2.20E-04	4.11E+04
Carbon-14	C-14	1	2	0.25	1	8.90E+02	4.30E+02	1.34E+03	9.21E-04	1.22E-06	3.32E-07	1.43E-01	1.43E-01	0.00E+00	1.45E+03	0.00E+00	3.04E-02	1.45E+00	3.73E-06	1.45E+00	4.94E-03	2.94E+02	1.35E+02
Curium-244	Cm-244	0.0001	0.8	0.81	1	2.75E-04	1.37E-01	4.08E-02	2.20E+00	9.44E-06	1.05E-04	4.91E-02	4.92E-02	0.00E+00	4.65E-01	0.00E+00	3.04E-02	4.95E-04	3.73E-06	4.99E-08	1.70E-03	2.93E-05	4.94E+05
Cobalt-60	Co-60	0.05	2.6	0.24	1	1.35E-02	3.52E-03	2.95E-01	3.20E-03	4.53E-02	3.61E-04	1.14E-01	1.14E-01	0.00E+00	1.19E-02	0.00E+00	3.04E-02	4.23E-05	3.73E-06	2.30E-06	3.95E-03	5.83E-04	8.06E+02
Cesium-134	Cs-134	1	3.5	0.24	1	6.93E-01	1.34E-01	2.87E+00	3.96E-03	2.81E-02	9.21E-04	8.46E-02	8.55E-02	0.00E+00	4.53E-01	0.00E+00	3.04E-02	4.84E-04	3.73E-06	4.87E-04	2.96E-03	1.65E-01	1.27E+03
Cesium-137	Cs-137	1	3.5	0.24	1	6.93E-01	1.34E-01	2.87E+00	4.80E-03	1.03E-02	6.30E-05	8.46E-02	8.47E-02	0.00E+00	4.53E-01	0.00E+00	3.04E-02	4.84E-04	3.73E-06	4.87E-04	2.93E-03	1.66E-01	3.29E+03
Europium-152	Eu-152	0.001	1.4	0.8	1	5.20E-03	7.93E-04	2.04E-03	2.94E-03	2.10E-02	1.42E-04	2.91E-02	2.92E-02	0.00E+00	2.68E-03	0.00E+00	3.04E-02	3.31E-05	3.73E-06	3.68E-08	1.01E-03	3.64E-05	1.74E+03
Europium-154	Eu-154	0.001	1.4	0.8	1	5.20E-03	7.93E-04	2.04E-03	2.94E-03	2.27E-02	2.16E-04	2.91E-02	2.93E-02	0.00E+00	2.68E-03	0.00E+00	3.04E-02	3.31E-05	3.73E-06	3.68E-08	1.01E-03	3.64E-05	1.61E+03
Europium-155	Eu-155	0.001	1.4	0.8	1	5.20E-03	7.93E-04	2.04E-03	1.23E-03	1.09E-03	3.83E-04	2.91E-02	2.95E-02	0.00E+00	2.68E-03	0.00E+00	3.04E-02	3.31E-05	3.73E-06	3.68E-08	1.02E-03	3.62E-05	3.35E+04
Hydrogen-3 (tritium)	H-3	1	0.82	0.55	1	1.50E+02	1.50E+02	1.50E+02	1.06E-04	4.36E-09	1.54E-04	1.20E-01	1.21E-01	0.00E+00	5.07E+02	0.00E+00	3.04E-02	5.07E-01	3.73E-06	5.07E-01	4.17E-03	1.22E+02	2.83E+03
Neptunium-237	Np-237	0.001	0.8	0.28	1	1.73E-02	1.01E-01	4.08E-02	1.76E+00	4.40E-03	8.88E-10	3.21E-01	3.21E-01	0.00E+00	3.40E-01	0.00E+00	3.04E-02	3.70E-04	3.73E-06	3.74E-07	1.11E-02	3.37E-05	8.19E+03
Plutonium-238	Pu-238	0.001	0.8	0.81	1	1.44E-02	3.88E-02	2.34E-02	2.08E+00	9.78E-06	2.17E-05	4.91E-02	4.91E-02	0.00E+00	1.31E-01	0.00E+00	3.04E-02	1.61E-04	3.73E-06	1.65E-07	1.70E-03	9.72E-05	1.72E+05
Plutonium-239	Pu-239	0.001	0.8	0.81	1	1.44E-02	3.88E-02	2.34E-02	1.95E+00	4.32E-06	7.89E-08	4.91E-02	4.91E-02	0.00E+00	1.31E-01	0.00E+00	3.04E-02	1.61E-04	3.73E-06	1.65E-07	1.70E-03	9.72E-05	1.88E+05
Radium-226	Ra-226	0.2	2	0.25	1	3.94E-02	9.00E-02	2.65E-02	1.11E+01	3.27E-02	1.19E-06	1.43E-01	1.43E-01	0.00E+00	3.04E-01	0.00E+00	3.04E-02	3.35E-04	3.73E-06	6.77E-05	4.94E-03	1.37E-02	1.98E+02
Radium-228	Ra-228	0.2	2	0.25	1	3.94E-02	9.00E-02	2.65E-02	1.22E+01	1.57E-02	3.30E-04	1.43E-01	1.43E-01	0.00E+00	3.04E-01	0.00E+00	3.04E-02	3.35E-04	3.73E-06	6.77E-05	4.96E-03	1.37E-02	2.00E+02
Antimony-125	Sb-125	0.01	0.5	0.25	1	2.50E-02	2.53E-01	2.15E-06	2.64E-03	7.96E-03	6.86E-04	5.72E-01	5.72E-01	0.00E+00	8.54E-01	0.00E+00	3.04E-02	8.84E-04	3.73E-06	8.88E-06	1.98E-02	4.48E-04	4.59E+03
Strontium-90	Sr-90	0.3	107	0.26	1	2.07E-01	4.07E-01	1.74E+00	1.89E-02	2.19E-03	6.54E-05	2.58E-03	2.64E-03	0.00E+00	1.37E+00	0.00E+00	3.04E-02	1.41E-03	3.73E-06	4.19E-04	9.15E-05	4.58E+00	4.11E+02
Technetium-99	Tc-99	0.8	0.3	0.4	1	2.00E+01	3.70E-01	3.70E-01	1.57E-03	5.50E-06	8.92E-09	5.60E-01	5.60E-01	0.00E+00	1.25E+00	0.00E+00	3.04E-02	1.28E-03	3.73E-06	1.03E-03	1.94E-02	5.31E-02	4.11E+05
Thorium-232	Th-232	0.0002	3.3	0.81	1	4.37E-02	8.84E-03	1.22E-04	1.37E+01	8.28E-06	1.35E-13	1.19E-02	1.19E-02	0.00E+00	2.99E-02	0.00E+00	3.04E-02	6.03E-05	3.73E-06	1.28E-08	4.12E-04	3.11E-05	8.41E+04
Uranium-234	U-234	0.05	0.8	0.28	1	1.46E-02	8.84E-03	1.06E-04	1.81E+00	9.60E-06	7.77E-09	3.21E-01	3.21E-01	0.00E+00	2.99E-02	0.00E+00	3.04E-02	6.03E-05	3.73E-06	3.20E-06	1.11E-02	2.88E-04	6.88E+04
Uranium-235	U-235	0.05	0.8	0.28	1	1.46E-02	8.84E-03	1.06E-04	1.65E+00	3.25E-03	2.70E-12	3.21E-01	3.21E-01	0.00E+00	2.99E-02	0.00E+00	3.04E-02	6.03E-05	3.73E-06	3.20E-06	1.11E-02	2.88E-04	9.80E+03
Uranium-238	U-238	0.05	0.8	0.28	1	1.46E-02	8.84E-03	1.06E-04	1.60E+00	2.10E-03	4.25E-13	3.21E-01	3.21E-01	0.00E+00	2.99E-02	0.00E+00	3.04E-02	6.03E-05	3.73E-06	3.20E-06	1.11E-02	2.88E-04	1.43E+04

References:
[1] ANL, 2009, RESRAD-BIOTA for Windows, Version 1.5, Argonne National Laboratory, Argonne, Illinois. Available at: http://web.ead.anl.gov/resrad/home2/biota.cfm.
[2] PT_IT value of 1 was used.
[3] Beresford, N.A., C.L. Barnett, B.J. Howard, W.A. Scott, J.E. Brown, and D. Copplestone, 2008, "Derivation of Transfer Parameters for Use Within the ERICA Tool and the Default
[4] Dose conversion factors were calculated based on the geometry of each species using the RESRAD-Biota (version 1.5). Oak Ridge National Laboratory (ORNL). 2010. "RAIS: The Risk
[5] Oak Ridge National Laboratory (ORNL). 2010. "RAIS: The Risk Assessment Information System." Available at http://rais.ornl.gov/.
[6] References for species-specific parameter values are presented in Table 2 of the main document to which this table is an attachment

Acronyms:
f1 = fraction of radionuclide assimilated into the body
alpha (α) = alpha parameter for calculating biological half life
beta (β) = beta parameter for calculating biological half life
PT_IT = correlation factor for adjusting inhalation relative to ingestion exposure
DF_int = internal dose conversion factor
DF_ext = external dose conversion factor

TABLE B-10
Calculation of Level 3 Biota Concentration Guide for Badger
Central Plateau Area at Hanford, Washington

Species:	Badger		
Parameter [6]	**Symbol**	**Value**	**Unit**
Body Weight	M_b	7.6000	(kg)
Food Intake	r_{food}	263.8092	(g-food/ individual)
Soil Ingestion	r_{soil}	13.7181	(g-soil/ individual)
Diet Composition [6]:			
Plants ($\%_{plant}$)		0%	
Terrestrial Invertebrates ($\%_{inv}$)		0%	
Mammals/Birds ($\%_{mamm}$)		100%	
Longevity	T_{life}	5.0	(years)
Dust loading in air	X_{dust}	1.00E-04	(g/m3)
Dose limit	DL	0.1	(rad/day)
Geometry Information Used to Calculate Conversion Factors:			
Assumed Geometry	5		
Geometry Dimensions	50 x 26 x 13	(cm3)	

Eqn. 1

$$k_{bio} = \frac{0.69315}{\alpha (M_b)^{\beta}}$$

Eqn. 2

$$k_{eff} = k_{bio} + k_{rad}$$

Eqn. 3

$$Intake_{ing} = r_{food} \times \sum (BAF \times \%_{composition})$$
$$= r_{food} \times \left[\left(BAF_{plant} \times \%_{plant} \right) + \left(BAF_{inv} \times \%_{inv} \right) + \left(BAF_{mamm<} \times \%_{mamm} \right) \right]$$

Eqn. 4

$$Intake_{Inh} = PT_IT \times X_{dust} \times 0.481 \times M_b^{0.76}$$

Eqn. 5 Lumped Parameter (LP)

$$\frac{f_1 \left(Intake_{ing} + Intake_{inh} \right) \times \left(1 - e^{-(k_{eff} \times 365.25 \times T_{life})} \right)}{k_{eff} \times M_b}$$

Eqn. 6 Biota Concentration Guide (BCG)

$$\frac{(365.25 \times DL)}{[(DF_int \times LP) + DF_ext]}$$

Radionuclies		Chemical Specific Parameters (Unitless)				Biological Accumulation Factor (BAF) (Unitless)			Dose Conversion Factor (rad/yr per pCi/g)		Calculation of biological half life and effective half life (1/day)			Calculation of Ingestion/Inhalation Intake (g-soil/ individual)						Calculation of Lumped Parameter (LP)			Biota Concentration Guide (pCi/g)
		f1	alpha (α)	beta (β)	PT_IT	Soil to Plants (BAF_{plant})	Soil to Terrestrial Invertebrates (BAF_{inv})	Soil to Small Mammal (BAF_{mamm})	DF_int	DF_out	Radiological decay constant (k_{rad})	Biological decay constant (k_{bio})	Effective half life (k_{eff})	Plants	Terrestrial Invertebrates	Small Mammal	Soil	Ingestion intake [Total]	Inhalation intake	Numerator (kg-soil/day)	Denominator (kg-tissue/day)	LP (pCi/g-tissue per pCi/g-soil)	
	References:	[1]	[1]	[1]	[2]	[3]	[3]	[3]	[4]	[4]	[5]	[Eqn. 1]	[Eqn. 2]					[Eqn. 3]	[Eqn. 4]			[Eqn. 5]	[Eqn. 6]
Americium-241	Am-241	0.001	0.8	0.81	1	4.96E-03	1.01E-01	4.08E-02	2.07E+00	2.57E-04	4.39E-06	6.23E-04	6.27E-04	0.00E+00	0.00E+00	1.08E+01	1.37E+01	2.45E-02	2.25E-04	1.68E-05	4.77E-03	3.53E-03	4.82E+03
Carbon-14	C-14	1	2	0.25	1	8.90E+02	4.30E+02	1.34E+03	9.22E-04	1.21E-07	3.32E-07	3.71E-02	3.71E-02	0.00E+00	0.00E+00	3.54E+05	1.37E+01	3.54E+02	2.25E-04	3.54E+02	2.82E-01	1.25E+03	3.16E+01
Curium-244	Cm-244	0.0001	0.8	0.81	1	2.75E-04	1.37E-01	4.08E-02	2.22E+00	1.44E-06	1.05E-04	6.23E-04	7.28E-04	0.00E+00	0.00E+00	1.08E+01	1.37E+01	2.45E-02	2.25E-04	1.82E-06	5.53E-03	3.28E-04	5.00E+04
Cobalt-60	Co-60	0.05	2.6	0.24	1	1.35E-02	3.52E-03	2.95E-01	1.22E-02	3.63E-02	3.61E-04	3.12E-02	3.16E-02	0.00E+00	0.00E+00	7.79E+01	1.37E+01	9.17E-02	2.25E-04	4.59E-03	2.40E-01	1.91E-02	1.00E+03
Cesium-134	Cs-134	1	3.5	0.24	1	6.93E-01	1.34E-01	2.87E+00	1.03E-02	2.18E-02	9.21E-04	2.32E-02	2.41E-02	0.00E+00	0.00E+00	7.58E+02	1.37E+01	7.72E-01	2.25E-04	7.72E-01	1.83E-01	4.21E+00	5.60E+02
Cesium-137	Cs-137	1	3.5	0.24	1	6.93E-01	1.34E-01	2.87E+00	7.23E-03	7.90E-03	6.30E-05	2.32E-02	2.33E-02	0.00E+00	0.00E+00	7.58E+02	1.37E+01	7.72E-01	2.25E-04	7.72E-01	1.77E-01	4.37E+00	9.25E+02
Europium-152	Eu-152	0.001	1.4	0.8	1	5.20E-03	7.93E-04	2.04E-03	7.53E-03	1.64E-02	1.42E-04	3.89E-04	5.31E-04	0.00E+00	0.00E+00	5.39E-01	1.37E+01	1.43E-02	2.25E-04	8.99E-06	4.04E-03	2.23E-03	2.22E+03
Europium-154	Eu-154	0.001	1.4	0.8	1	5.20E-03	7.93E-04	2.04E-03	1.06E-02	1.77E-02	2.16E-04	3.89E-04	6.05E-04	0.00E+00	0.00E+00	5.39E-01	1.37E+01	1.43E-02	2.25E-04	9.69E-06	4.60E-03	2.11E-03	2.06E+03
Europium-155	Eu-155	0.001	1.4	0.8	1	5.20E-03	7.93E-04	2.04E-03	1.57E-03	7.48E-04	3.83E-04	3.89E-04	7.72E-04	0.00E+00	0.00E+00	5.39E-01	1.37E+01	1.43E-02	2.25E-04	1.09E-05	5.87E-03	1.87E-03	4.86E+04
Hydrogen-3 (tritium)	H-3	1	0.82	0.55	1	1.50E+02	1.50E+02	1.50E+02	1.06E-04	6.95E-10	1.54E-04	6.20E-03	6.36E-03	0.00E+00	0.00E+00	3.96E+04	1.37E+01	3.96E+01	2.25E-04	3.96E+01	4.83E-02	8.19E+02	4.20E+02
Neptunium-237	Np-237	0.001	0.8	0.28	1	1.73E-02	1.01E-01	4.08E-02	1.76E+00	3.18E-03	8.88E-10	7.10E-02	7.10E-02	0.00E+00	0.00E+00	1.08E+01	1.37E+01	2.45E-02	2.25E-04	2.47E-05	5.39E-01	4.58E-05	1.12E+04
Plutonium-238	Pu-238	0.001	0.8	0.81	1	1.44E-02	3.88E-02	2.34E-02	2.08E+00	1.50E-06	2.17E-05	6.23E-04	6.44E-04	0.00E+00	0.00E+00	6.17E+00	1.37E+01	1.99E-02	2.25E-04	1.39E-05	4.90E-03	2.84E-03	6.18E+03
Plutonium-239	Pu-239	0.001	0.8	0.81	1	1.44E-02	3.88E-02	2.34E-02	1.95E+00	7.47E-07	7.89E-08	6.23E-04	6.23E-04	0.00E+00	0.00E+00	6.17E+00	1.37E+01	1.99E-02	2.25E-04	1.37E-05	4.73E-03	2.89E-03	6.49E+03
Radium-226	Ra-226	0.2	2	0.25	1	3.94E-02	9.00E-02	2.65E-02	1.11E+01	2.50E-02	1.19E-06	3.71E-02	3.71E-02	0.00E+00	0.00E+00	6.99E+00	1.37E+01	2.07E-02	2.25E-04	4.19E-03	2.82E-01	1.48E-02	1.92E+02
Radium-228	Ra-228	0.2	2	0.25	1	3.94E-02	9.00E-02	2.65E-02	1.22E+01	1.21E-02	3.30E-04	3.71E-02	3.74E-02	0.00E+00	0.00E+00	6.99E+00	1.37E+01	2.07E-02	2.25E-04	4.19E-03	2.85E-01	1.47E-02	1.91E+02
Antimony-125	Sb-125	0.01	0.5	0.25	1	2.50E-02	2.53E-01	2.15E-06	4.65E-03	5.95E-03	6.86E-04	1.48E-01	1.49E-01	0.00E+00	0.00E+00	5.66E-04	1.37E+01	1.37E-02	2.25E-04	1.39E-04	1.13E+00	1.23E-04	6.14E+03
Strontium-90	Sr-90	0.3	107	0.26	1	2.07E-01	4.07E-01	1.74E+00	2.08E-02	2.64E-04	6.54E-05	6.34E-04	7.00E-04	0.00E+00	0.00E+00	4.59E+02	1.37E+01	4.73E-01	2.25E-04	1.02E-01	5.32E-03	1.92E+01	9.12E+01
Technetium-99	Tc-99	0.8	0.3	0.4	1	2.00E+01	3.70E-01	3.70E-01	1.58E-03	5.96E-07	8.92E-09	6.48E-02	6.48E-02	0.00E+00	0.00E+00	9.76E+01	1.37E+01	1.11E-01	2.25E-04	8.92E-02	4.92E-01	1.81E-01	1.27E+05
Thorium-232	Th-232	0.0002	3.3	0.81	1	4.37E-02	8.84E-03	1.22E-04	1.37E+01	3.01E-06	1.35E-13	1.51E-04	1.51E-04	0.00E+00	0.00E+00	3.21E-02	1.37E+01	1.38E-02	2.25E-04	6.73E-07	1.15E-03	5.87E-04	4.54E+03
Uranium-234	U-234	0.05	0.8	0.28	1	1.46E-02	8.84E-03	1.06E-04	1.81E+00	2.31E-06	7.77E-09	7.10E-02	7.10E-02	0.00E+00	0.00E+00	2.80E-02	1.37E+01	1.37E-02	2.25E-04	6.99E-04	5.39E-01	1.30E-03	1.56E+04
Uranium-235	U-235	0.05	0.8	0.28	1	1.46E-02	8.84E-03	1.06E-04	1.65E+00	2.31E-03	2.70E-12	7.10E-02	7.10E-02	0.00E+00	0.00E+00	2.80E-02	1.37E+01	1.37E-02	2.25E-04	6.99E-04	5.39E-01	1.30E-03	8.21E+03
Uranium-238	U-238	0.05	0.8	0.28	1	1.46E-02	8.84E-03	1.06E-04	1.61E+00	5.53E-04	4.25E-13	7.10E-02	7.10E-02	0.00E+00	0.00E+00	2.80E-02	1.37E+01	1.37E-02	2.25E-04	6.99E-04	5.39E-01	1.30E-03	1.38E+04

References:
[1] ANL, 2009, RESRAD-BIOTA for Windows, Version 1.5, Argonne National Laboratory, Argonne, Illinois. Available at: http://web.ead.anl.gov/resrad/home2/biota.cfm.
[2] PT_IT value of 1 was used.
[3] Beresford, N.A., C.L. Barnett, B.J. Howard, W.A. Scott, J.E. Brown, and D. Copplestone, 2008a, "Derivation of Transfer Parameters for Use Within the ERICA Tool and the Default
[4] Dose conversion factors were calculated based on the geometry of each species using the RESRAD-Biota (version 1.5). Oak Ridge National Laboratory (ORNL). 2010. "RAIS: The Risk
[5] Oak Ridge National Laboratory (ORNL). 2010. "RAIS: The Risk Assessment Information System." Available at http://rais.ornl.gov/.
[6] References for species-specific parameter values are presented in Table 2 of the main document to which this table is an attachment

Acronyms:
f1 = fraction of radionuclide assimilated into the body
alpha (α) = alpha parameter for calculating biological half life
beta (β) = beta parameter for calculating biological half life
PT_IT = correlation factor for adjusting inhalation relative to ingestion exposure
DF_int = internal dose conversion factor
DF_ext = external dose conversion factor

Appendix C

Evaluation and Selection of the Uranium TRV for Mammals at the Hanford Site

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Ecology Memorandum

Ecology Position
January 2014

Subject: Toxicity reference value (TRV) for uranium (U) for mammals (underlying a wildlife preliminary remediation goal [PRG] for Hanford soils)

Problem

USDOE (2013) has proposed a LOAEL based soil PRG (40 mg/kg) for U for mammals, calculated for a badger receptor with a soil to small mammal bioaccumulation regression equation, using the wildlife exposure model used to derive EPA EcoSSLs (USEPA, 2007). In addition, this PRG incorporates a mammalian LOAEL TRV (6.13 mg U/kg-d) from Sample et al (1996). However, this proposed TRV from Sample et al (1996) is based on a single study (Paternain et al, 1989) and does not utilize data from the most sensitive study endpoint (i.e., decreased body weight in pups) to identify a LOAEL.

Analysis

Data have been tabulated for key studies, relating to TRV development for U (Table 1). Sample et al (1996) derived a final LOAEL of 6.13 mg U/kg-d. This is based on the 10 mg/kg-d dose of uranyl acetate (and a U fraction of 0.6132 of the test compound) in a study by Paternain et al (1989), employing oral exposure to mice. However, Sample et al (1996) did not include the significant decrease in pup body weight at the 5 mg/kg-d dose. Pup body weight decreased ($P<0.05$) by 8% after 21 days. Also, the chemical form of U is reported as uranyl acetate by Sample et al (1996) vs. uranyl acetate dihydrate by Paternain et al (1989). Thus, the fraction of U should be 0.561 (rather than 0.6132). Using the decrease in pup body weight at 5 mg/kg-d of uranyl acetate dihydrate, as well as the lower U fraction (Paternain et al, 1989), a LOAEL of 2.8 mg U/kg-d is derived.

LOAEL results of Domingo et al (1989) and Ortega et al (1989), using rats and mice orally exposed to uranyl acetate dihydrate, are consistent with those of Paternain et al (1989) (Table 1). A 33% decrease in maternal body weight ($P<0.05$) and a 26% decrease in fetal body weight ($P<0.001$) were reported in mice after a 9 day gestational exposure period at 5 mg/kg-d (2.8 mg U/kg-d) (Domingo et al, 1989). Similarly, a 38% decrease in body weight ($P<0.05$) was observed in male rats after 3 weeks at 4 mg/kg-d (2.2 mg U/kg-d) (Ortega et al, 1989).

LOAEL results for histopathological changes in the kidney (e.g., renal tubular lesions) and liver (e.g., nuclear and cytoplasmic changes) of rats and kidney of rabbits (e.g., renal tubular lesions) after oral exposure to uranyl nitrate hexahydrate for 91 days have been reported by Gilman et al (1998a,b,c) (Table1). In particular, a LOAEL of 0.06 mg U/kg-d was derived in male rats for renal damage (Gilman et al, 1998b). Although these histopathological endpoints are not directly useful for deriving soil PRGs (which preferentially employ ecologically relevant endpoints, e.g., growth, reproduction, survival), intake rates relating to histopathological endpoints (Gilman et al, 1998a,b) were compared allometrically with intake rates relating to growth effect endpoints (Ortega et al, 1989; Paternain et al, 1989; Domingo et al, 1989) to estimate their relative difference in sensitivity (Sheppard et al, 2005). In this manner, growth effects were shown to be approximately 21.6 (ratio of allometric coefficients=1.3/0.06) times less sensitive than renal damage, resulting in a LOAEL of 1.3 mg U/kg-d (21.6*0.06 mg U/kg-d) for growth and development in small mammals (Sheppard et al, 2005) (Table 1).

Recommendation

Using a weight of evidence approach (which considers a wider range of studies) and an allometric ratio between renal damage and growth effects, a more defensible LOAEL TRV (1.3 mg U/kg-d) for small mammals has been derived by Sheppard et al (2007). It is recommended that this LOAEL be used as the TRV for deriving a soil PRG for U for mammals at the Hanford Site. This would reduce the current Tier 2 soil PRG for U from 40 to approximately 13 mg/kg.

References

Domingo, JL et al. 1989. The developmental toxicity of uranium in mice. Toxicol 55:143-152.

Gilman, AP et al. 1998a. Uranyl nitrate: 91 day toxicity studies in the New Zealand White rabbit. Toxicol Sci 41:129-137.

Gilman, AP et al. 1998b. Uranyl nitrate: 28 day and 91 day toxicity studies in the Sprague-Dawley rat. Toxicol Sci 41:117-128.

Gilman, AP et al. 1998c. Uranyl nitrate: 91 day exposure and recovery studies in the male New Zealand White rabbit. Toxicol Sci 41:138-151.

Ortega, A et al. 1989. Evaluation of the oral toxicity of uranium in a 4 week drinking water study in rats.

Paternain, JL et al. 1989. The effects of uranium on reproduction, gestation, and postnatal survival in mice. Ecotoxicol Environ Safety 17:291-296.

Sample, BE et al. 1996. Toxicological benchmarks for wildlife: 1996 revision. ES/ER/TM-86/R3, ORNL, Oak Ridge, TN.

Sheppard, SC et al. 2005. Derivation of ecotoxicity thresholds for uranium. J Environ Radioact 79:55-83.

USDOE. 2013. Tier 2 risk based soil concentrations protective of ecological receptors at the Hanford Site. CHPRC-01311, Rev 1, Richland, WA.

USEPA. 2007. Guidance for developing EcoSSLs. Exposure models and bioaccumulation factors for derivation of wildlife EcoSSLs. OSWER Directive 9285.7-55, Attachment 4-1

Table 1. Key studies, relating to TRV development for U.

Test Chemical	MW (g/mol)	U fraction (238.0/MW)	Test Species	Exposure Duration	Exposure Route	Dose (test chemical)	Endpoint selected	NOAEL (mg U/kg-d)	LOAEL (mg U/kg-d)	Reference
uranyl acetate[1]	390.1	0.6132	mice	60 d prior to mating, plus through gestation, delivery, lactation	oral (intubation)	5, 10, 25 mg/kg-d	reproduction	3.07	6.13	Sample et al (1996) citing Paternain et al (1989
uranyl acetate dihydrate	424.1	0.561	mice (male, female)	60 d prior to mating, plus through gestation, delivery, lactation	oral (intragastric)	0, 5, 10, 25 mg/kg-d	growth/body weight (pups)	NS	2.8	Paternain et al (1989)
uranyl acetate dihydrate	424.1	0.561	mice (female)	gestational days 6-15	oral (gavage)	0, 5, 10, 25, 50 mg/kg-d	growth/body weight (maternal, fetal)	NS	2.8	Domingo et al (1989)
uranyl acetate dihydrate	424.1	0.561	rats (male)	4 wks	oral (drinking water)	0, 2, 4, 8, 16 mg/kg-d	growth/body weight	1.1	2.2	Ortega et al (1989)
uranyl nitrate hexahydrate	502.1	0.474	rabbits (male)	91 d	oral (drinking water)	0.96, 4.8, 24, 120, 600 mg/L	renal damage	NS	0.05	Gilman et al (1998a)
uranyl nitrate	502.1	0.474	rabbits	91 d	oral (drinking	4.8, 24,	renal damage	NS	0.49	Gilman et al

hexahydrate			(female)		water)	600 mg/L				(1998a)
uranyl nitrate hexahydrate	502.1	0.474	rats (male)	91 d	oral (drinking water)	0.96, 4.8, 24, 120, 600 mg/L	renal and hepatic damage	NS	0.06	Gilman et al (1998b)
uranyl nitrate hexahydrate	502.1	0.474	rats (female)	91 d	oral (drinking water)	0.96, 4.8, 24, 120, 600 mg/L	renal and hepatic damage	NS	0.09	Gilman et al (1998b)
uranyl nitrate hexahydrate	502.1	0.474	rabbits (male)	91 d	oral (drinking water)	24, 600 mg/L	renal damage	NS	≤1.36	Gilman et al (1998c)
various	NA	NA	mammal (1 kg)	various	oral	various	growth and development	0.1	1.3	Sheppard et al (2005)

Abbreviations: TRV=toxicity reference value, U=uranium, MW=molecular weight, NOAEL=no observed adverse effect level, LOAEL=lowest observed adverse effect level, NS=not specified, NA=not applicable.
[1]uranyl acetate dihydrate (according to Paternain et al, 1989).

RL Response

Ecological Risk, Inc.

To: James Hansen, Alaa Aly

From: Bradley E. Sample, PhD

Date: 1/16/2013

Re: Mammalian TRV for Uranium

On January 8, 2014, the Washington Department of Ecology (Ecology) provided to the US Department of Energy (DOE) a document representing the January 2014 Ecology Position on the Toxicity Reference Value (TRV) for uranium (U) for mammals. Ecological Risk, Inc., reviewed this document on behalf of CHPRC and DOE. This technical memorandum summarizes our comments on the Ecology Uranium TRV document. In addition we present the results of our evaluation of uranium mammalian toxicity data.

Comments on Ecology Uranium TRV document

In our review of the Ecology uranium TRV document, we identified a number of issues. These are listed below.

1) **2nd paragraph, 4th sentence:** Sample et al. (1996) did not consider this response biologically significant as the growth reduction was less than 20%. Use of a 20% threshold to identify biologically significant effects is consistent with existing regulatory policy and practice (Suter et al. 2000; see Attachment 1) and has previously been applied at the Hanford Site (DOE 2011). It should be noted that in their review of Paternain et al. (1989), WHO (2004) only identified effects at the 5.6 and 14 mg U/kg/d doses. In their review of Paternain et al. (1989), ATSDR (1999) identified the 5.6 mg U/kg/d dose (rounded to 6) as the NOAEL.

2) **2nd paragraph, 5th sentence:** We agree that the dose calculation in Sample et al. (1996) is incorrect - the corrected dose calculation will be used in future calculations, as necessary.

3) **3rd paragraph, last sentence:** We do not agree that the data presented in Ortega et al. (1989) is suitable to define a LOAEL. Ecology is correct in stating that male rats displayed a statistically significant 38% weight loss after 3 weeks exposure to 4 mg/kg/d uranyl acetate. However the weight loss at 3 weeks was not uniform across doses: it was 38% at 4 mg/kg/d; 24% at 8 mg/kg/d; and 29% at 16 mg/kg/d. Higher concentrations of uranium produced less weight loss than lower concentrations. Further, at 4 weeks there was no statistically significant weight differences between control and any treatment doses. In fact, mean weight of control rats was 11% to 35% less than rats in any of the U dose groups.

4) **4th paragraph, 3rd sentence:** We agree that text corresponds with the analyses presented in Sheppard et al. (2005). However, there are a number of serious issues with the analysis presented in Sheppard et al. (2005) that we believe undermine its validity to define a mammalian TRV for uranium. Specifically:

A) Sheppard et al. (2005) assume that 'intake' scales uniformly to the 0.75 power. Published allometric models for both food and water ingestion do not support this statement. The allometric model for water consumption in mammals developed by Calder and Braun (1983) is:

$$0.099(\text{BW in kg})^{0.90}$$

Nagy (2001) developed allometric scaling based on field observations of food ingestion rates for mammals, birds and reptiles. Allometric scaling factors for dry matter food ingestion for mammals ranged from 0.41 to 0.86. Further, Nagy (2005) states '*The scaling slopes for FMR (*field metabolic rate*) often differ from BMR (*basal metabolic rate*) slopes for the same Class of animals, and most differ from the theoretical slope of 0.75*."

B) Sheppard et al. (2005) employ an allometric scaling approach to extrapolate uranium doses among test species. Allometric scaling for extrapolating wildlife toxicity data is no longer recommended by USEPA (USEPA 2005). This position is supported by Allard et al. (2011).

C) Sheppard et al. (2005) identifies 1.3 mg U /kg/d to be a LOAEL for 'growth', however the basis for this value is not evident. It appears that Sheppard et al. (2005) conflate the renal effects from Gilman et al. (1989c) with growth and reproductive effects in other studies. In section 10.1 of their paper, Sheppard et al. (2005) compare the renal LOAEL from Gilman et al. (1989c; 1.36 mg/kg/d) to the growth and development LOAELs from Ortega et al. (1989; 2.2 mg/kg/d), Paternain et al. (1989; 5.6 mg/kg/d), and Domingo et al. (1989a; 2.8 mg/kg/d) and state that "*Despite the rather different animals, dosage methods and endpoints, the effect concentrations were quite similar*." We do not agree that the effect concentrations are similar; a LOAEL of 1.36 mg/kg/d is not equal to LOAELs of 2.2 mg/kg/d, 2.8 mg/kg/d, or 5.6 mg/kg/d. Further, the 1.36 mg/kg/d dose reported in Gilman et al. (1998c) is not actually a LOAEL, but rather a NOAEL (see below). Because of these multiple issues with the Sheppard et al. (2005) study, we believe that their analysis is flawed and do not agree that the 1.3 mg U/kg/d value is defensible or appropriate.

CHPRC Evaluation of Mammalian Toxicity Data

CHPRC conducted a review of available uranium toxicity data for mammals, using the Sheppard et al. (2005) paper as a starting point, as it is the basis for the TRV recommended by Ecology.

We obtained and reviewed the key papers which form the basis for Sheppard et al. (2005). These are summarized in Table 1. We also evaluated two additional reviews of uranium toxicity to mammals: WHO (2004) and ATSDR (1999). These were considered to provide independent interpretations of the studies.

The study that appears to be the basis for the 1.3 mg/kg/d TRV in Sheppard et al. (2005) is Gilman et al. (1998c). In this study, rabbits were exposed to uranyl nitrate in drinking water for 91 days followed by a 91 day recovery period. Two doses were provided: 1.36 and 40.98 mg U /kg/d. Gilman et al. (1998c) observed no statistically significant increase in the incidence of kidney lesions at 1.36 mg/kg/d but did observe multiple highly significant differences at 40.98 mg/kg/d. None the less, Gilman et al. (1998c) estimate that the LOAEL is at or below 1.36 mg/kg/d. This is based on U concentrations in kidneys and not on the actual dose. Further, although Gilman et al. (1998c) state in the text of the paper that kidney U concentrations were significantly elevated relative to controls for both the 1.36 and 40.98 mg U /kg/d doses, this is not supported by the results they present in tables. In their discussion, Gilman et al. (1998c) also state: '*The rabbits exposed to 24 mg UN/L* [1.36 mg U/kg/d]*in this study showed few dose-related changes (tubular atrophy or dilation and cytoplasmic vacuolation or pigmentation), contrasting markedly with the findings of the previous study in male rabbits (Gilman et al, 1998b)*.

In their review of toxicity of U in drinking water, WHO (2004) interpreted the results from Gilman et al. (1998c) to indicate a LOAEL between 1.36 and 40.98 mg/kg/d. This is consistent with the results actually reported in Gilman et al. (1998c) and our interpretation. In their review of Gilman et al. (1998c), ATSDR (1999) identifies 1.36 as a less serious LOAEL for renal effects and 40.98 as a serious LOAEL.

In relation to the kidney toxicity studies of Gilman et al. (1998a, 1998b, and 1998c), Sheppard et al. (2005) state: "*However, it is not clear these effects would have ecological significance, because both the testes and the kidney probably have inherent excess capacity, so that some degree of damage is sustainable. In addition, it is possible that kidney function can recover on cessation of U intake*." We concur with this statement from Sheppard et al. (2005). This is also consistent with the Eco-SSLs and how we generally select toxicity data for TRVs, by focusing on growth, reproduction and survival[1].

Additional studies were referenced by Sheppard et al. (2005). These were performed on mice, focused on developmental and reproduction effects, and summarized in Table 1. Sheppard et al.

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[1] USEPA (2007)defines a TRV as: '*Doses above which ecologically relevant effects (growth, reproduction or survival) might occur to wildlife species following chronic dietary exposure and below which it is reasonably expected that such effects will not occur*.'

(2005) states that "*Despite the rather different animals, dosage methods and endpoints, the effect concentrations were quite similar. These effects are more clearly related to ecological function, because they deal with growth and development rate.*" We agree that the results from these studies are more ecologically relevant. We do not agree however that the effect concentrations are similar (see comment 4D, above).

Based on the results from the reproductive studies on mice (Domingo et al. 1989a, Domingo et al. 1989b, and Paternain et al. 1989), LOAELs range from 2.8 to 28 mg U /kg/d. Sample et al. (1996) recommends use of the LOAEL from Paternain et al. (1989). We concur, as this represents effects associated with the longest term (>60 days) reproductive exposure. The lowest LOAEL (Domingo et al. 1989a) is based on only 9 days exposure. In addition, Domingo et al. (1989a) only observed statistically significant fetal weight reduction at the 2.8 mg/kg/d dose; no other reproductive effects were evident. At the next highest (5.6 mg/kg/d) and all subsequent doses, fetal weight, length, and number of stunted fetuses/litter are all statistically significantly increased. This 5.6 mg/kg/d dose corresponds with the dose at which Paternain et al. (1989) observed statistically significant embryolethality and reduced fetal growth.

Conclusion

We agree with statements made in Sheppard et al. (2005) concerning the ecological relevancy of developmental toxicity data relative to kidney data. However, due to the significant uncertainties/inconsistencies associated with the derivation of the 1.3 mg/kg/d TRV, we do not agree with Ecology that this value represents the most defensible TRV. Rather, based on our evaluation of the available data, we believe that the 5.6 mg/kg/d TRV is most suitable. However, because WAC 173-340-7493(4)(a) states "*Toxicity reference values or soil concentrations established from the literature shall represent the lowest relevant LOAEL found in the literature*", the LOAEL of 2.8 mg/kg/d from Domingo et al. (1989b) may be the most defendable.

In conclusion, we find that the TRV of 1.3 mg U/kg/d proposed in Sheppard et al. (2005), and recommended by Ecology for use at Hanford, is not suitable based on our evaluation of the original published literature (see Comment 4C, above), coupled with reviews performed by ATSDR (1999) and WHO (2004). Similarly, we find the 2.2 mg U/kg/d TRV from Ortega et al. (1989) not to be an acceptable LOAEL based on our review Ortega et al. (1989) outlined in Comment 3 (above). Based on our review of results presented in Domingo et al. (1989a and 1989b) and Paternain et al. (1989), it appears that serious reproductive effects are first evident at a dose of 5.6 mg U/kg/d. However, Domingo et al. (1989a) also observed a statistically significant 25.5% fetal growth reduction at a dose of 2.8 mg U/kg/d. Therefore, to be consistent with WAC 173-340-7493(4)(a), we believe this dose of 2.8 mg U/kg/d to be the most appropriate LOAEL for application at the Hanford Site.

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Attachment 1

From Suter at el. (2000):

For the Oak Ridge Reservation, a level of effect that is considered potentially significant has been inferred on the basis of analysis of EPA and Tennessee regulatory practice (Suter et al. 1994a). The clearest ecological criteria for regulation in the U.S. are those developed for the regulation of aqueous effluent under the National Pollution Discharge Elimination System (NPDES). NPDES permitting may be based on any of three types of evidence: water quality criteria, effluent toxicity tests, and biological surveys, and the use of each of these implies that a 20% reduction in ecological parameters is acceptable.

1. The Chronic National Ambient Water Quality Criteria (NAWQC) for Protection of Aquatic Life are based on thresholds for statistically significant effects on individual responses of fish and aquatic invertebrates. Those thresholds correspond to approximately 25% reductions in the parameters of fish chronic tests (Suter et al. 1987). Because of the compounding of individual responses across life stages, the chronic NAWQC concentrations are estimated to correspond to much more than 20% effects on a continuously-exposed fish population (Barnthouse et al. 1990). Hence, while the EPA did not intend to design the NAWQC to correspond to a 20% effect or any other particular level of effect, the consequence of the procedure used to derive the NAWQC is to specify a concentration that, in chronic exposures, results in effects of that are greater than 20%, on average.

2. The subchronic tests used to regulate effluents based on their toxicity cannot reliably detect reductions of less than 20% in the test endpoints (Anderson and Norberg-King 1991). Once again, this is a consequence of the manner in which the EPA regulates effluents rather than a conscious policy decision.

3. Twenty percent is the approximate detection limit of field measurement techniques used in regulating aqueous contaminants based on bioassessment. For example, the community metrics for an exposed benthic macroinvertebrate community must be reduced by more than 20% relative to the best communities within the ecoregion to be considered even slightly impaired in the EPA's rapid bioassessment procedure (Plafkin et al. 1989). Measures for other taxa that are more difficult to sample may be even less sensitive. For example, the number of fish species and individuals must be reduced by 33% to receive less than the top score in the EPA's rapid bioassessment procedure for fish (Plafkin et al. 1989). Once again, this effects level is a

consequence of the manner in which the EPA regulates effluents rather than a conscious policy decision.

The 20% level is also consistent with practice in assessments of terrestrial effects. The Lowest-Observed-Effects-Concentration (LOEC) for dietary tests of avian reproduction (the most important chronic test endpoint for ecological assessment of terrestrial effects of pesticides and arguably the most applicable test for waste sites) corresponds to approximately a 20% effect on individual response parameters (Office of Pesticide Programs 1982).

Therefore, a decrement in an ecological assessment endpoint that is less than 20% is generally acceptable based on current EPA regulatory practice and could not be reliably confirmed by field studies. Therefore, it is de minimis in practice.

Table 1. Summary of dietary toxicity data for uranium in mammals

Study	Test Species	Form	Exposure	Duration	effects	NOAEL (mg U/kg/d)	LOAEL (mg U/kg/d)	Notes
Gilman et al. 1998a	rats	uranyl nitrate	drinking water	91 days	renal lesions	NA	0.06 (male) 0.09 (female)	
Gilman et al. 1998b	rabbits - male	uranyl nitrate	drinking water	91 days	renal lesions	NA	0.05	Note that this LOAEL is associated with *Pasteurella* infection; Authors note that influence of infection on LOAEL cannot be excluded
Gilman et al. 1998b	rabbits - female	uranyl nitrate	drinking water	91 days	renal lesions	NA	0.49	rabbits were *Pasteurella*-free
Gilman et al. 1998c	rabbits - male	uranyl nitrate	drinking water	91 days exposure/ 91 days recovery	renal lesions	1.36	40.98	rabbits were *Pasteurella*-free; The authors of this study observed no statistically significant increase in the incidence of kidney lesions at 1.36 mg/kg/d but did observe multiple highly significant differences at 40.98 mg/kg/d. None the less, in the authors *estimate* that the LOAEL is at or below 1.36 mg/kg/d. This is based on U concentrations in kidneys and not on the actual dose. Note that in their review of toxicity of U in drinking water, WHO (2004) interpreted the results from Gilman et al. (1998c) to indicate a LOAEL between 1.36 and 40.98 mg/kg/d. This is consistent with the results actually reported in Gilman et al. (1998c). ATSDR (1999) identifies 1.36 as a less serious LOAEL for renal effects and 40.98 as a serious LOAEL.

Domingo et al. 1989a	mice	uranyl acetate	drinking water	gestational days 6-15	reproduction development		2.8	Only one measure, fetal weight, was significantly reduced at 2.8 mg/kg/d. Fetal growth and number of stunted fetuses/litter increased in a dose-dependent manner, starting at 5.6 mg/kg/d.
Domingo et al. 1989b	mice	uranyl acetate	oral gavage	d 13 of pregnancy to d 21 of lactation	reproduction development	2.8	28	Whereas litter size and other reproductive and developmental indices were not reduced at 2.8 mg/kg/d, they were significantly reduced among mice recieving the 28 mg/kg/d dose. In their review of toxicity of U in drinking water, WHO (2004) identified the NOAEL to be 2.8 mg/kg based on developmental effects to pups. Also, ATSDR (1999) identifies the serious LOAEL from this study to be 28 mg/kg/d based on decreased litter size.
Paternain et al. 1989	mice	uranyl acetate	oral gavage	60 d prior to gestation plus through lactation	reproduction development	2.8	5.6	Fetal growth and embryolethality occur in a dose-dependent manner starting at 5.6 mg/kg/d. Both Sample et al. (1996) and WHO (2004) identify this dose as a LOAEL. ATSDR (1999) identifies the NOAEL from this study to be 6 (rounded from 5.6) mg/kg/d and the LOAEL to be 14 mg/kg/d. **(note that Sample et al. [1996] includes a calculation error for proportion of U in uranyl acetate - NOAEL and LOAEL are correctly reported as 2.8 and 5.6 mg/kg/d, not 3.07 and 6.13 mg/kg/d)**

Attachment H2

CHPRC-01311 – Tier 2 Risk Based Soil Concentrations Protective of Ecological Receptors at the Hanford Site

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DOCUMENT TITLE: Tier 2 Risk-Based Soil Concentrations Protective of Ecological Receptors at the Hanford Site	**OWNING ORGANIZATION/FACILITY:** CHPRC
Document Number: CHPRC-01311	**Revision/Change Number:** 2

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The revised document addresses technical comments from Washington State Department of Ecology

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APPROVAL SIGNATURES

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A-6005-184 (REV 3)

Carr, Linda A

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Sent: Wednesday, June 25, 2014 1:44 PM
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Cc: Aly, Alaa H; Morgans, Donna L; Nichols, William E
Subject: RE: Emailing: approval_template, 000_CHPRC-01311_R2 cover page

Hi Chris - yes, I approve. Do I need to send back a signed copy of the approval? Let me know.

Thanks

Brad

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Brad and Alaa - can you confirm that you approve of the Rev 2 of the Tier 2 going out? I put today down as the approval date.

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A-6001-401 (REV 5)

CHPRC-01311
Revision 2

Tier 2 Risk-Based Soil Concentrations Protective of Ecological Receptors at the Hanford Site

Prepared for the U.S. Department of Energy
Assistant Secretary for Environmental Management

Contractor for the U.S. Department of Energy
under Contract DE-AC06-08RL14788

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CHPRC-01311
Revision 2

Tier 2 Risk-Based Soil Concentrations Protective of Ecological Receptors at the Hanford Site

Document Type: ENV Program/Project: EP & SP

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Date Published
June 2014

Prepared for the U.S. Department of Energy
Assistant Secretary for Environmental Management

Contractor for the U.S. Department of Energy
under Contract DE-AC06-08RL14788

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Executive Summary

A framework for derivation of ecological risk-based concentrations in soil is presented in this document for use in remedial investigations (RIs) and feasibility studies (FSs) at the Hanford Site. This framework is intended to be iterative, incorporating additional information as appropriate to improve decision making.

This iterative approach is in accordance with the steps outlined in EPA 540-R-97-006,[1] and the simplified and site-specific ecological evaluations described in WAC 173-340-7492[2] and WAC 173-340-7493.[3] The framework for development of these risk-based concentrations consists of the following progressive tiers that are more Hanford Site-specific and more accurately represent the conceptual ecological soil exposure pathway with each tier:

- Generic Screening Levels—Initial, conservative screening values readily available from published sources that are intended to differentiate between contaminants of potential ecological concern (COPECs) that clearly present no risk, and those for which additional evaluation may be warranted.
- Tier 1—Values incorporate data that represent Hanford Site-specific receptors.
- Tier 2—Values incorporate additional Hanford Site-specific information (e.g., tissue data, bioassays, and receptor-specific exposure factors) to obtain values that better reflect Hanford Site conditions.
- Tier 3—Values are waste site-specific or location-specific and are based on data (e.g., bioaccumulation sampling, bioassays, and exposure factors) collected for specific locations at the Hanford Site.

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[1] EPA 540-R-97-006, 1997, *Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments: Interim Final*, OSWER 9285.7-25, Office of Solid Waste and Emergency Response, U.S. Environmental Protection Agency, Washington, D.C. Available at: http://www.epa.gov/swerrims/riskassessment/ecorisk/ecorisk.htm.

[2] WAC 173-340-7492, "Model Toxics Control Act—Cleanup," "Simplified Terrestrial Ecological Evaluation Procedures," *Washington Administrative Code*, Olympia, Washington. Available at: http://apps.leg.wa.gov/wac/default.aspx?cite=173-340-7492.

[3] WAC 173-340-7493, "Model Toxics Control Act—Cleanup," "Site-Specific Terrestrial Ecological Evaluation Procedures," *Washington Administrative Code*, Olympia, Washington. Available at: http://apps.leg.wa.gov/wac/default.aspx?cite=173-340-7493.

Chapter 1 discusses the application of risk-based values within the *Comprehensive Environmental Response, Compensation, and Liability Act of 1980*[4] (CERCLA) process. In the CERCLA process, a range of conservative risk-based screening values and benchmarks may be used in an ecological risk assessment (ERA) conducted as part of an RI or other studies. These values can be used for investigation planning; for use in screening analytical data to identify COPECs, media, and receptors that require further evaluation; and for evaluation of remedial alternatives. As described in this document, these values may be further refined to more ecologically relevant values (i.e., Tier 2 values) with information collected in the RI. Based on the results from the ERA, ecological preliminary remediation goals (PRGs) used in the FS are identified from these risk-based values.

Chapter 2 summarizes the methods and assumptions for developing Tier 2 values for the same eight wildlife species for which Tier 1 values were derived as summarized in CHPRC-00784.[5] Published soil and tissue chemistry data used to develop exposure models employed in Tier 1 were obtained and integrated with Hanford Site-specific data. The combined data were used to establish loglinear regression models and bioaccumulation factors that were then employed to estimate tissue concentrations expected in the diets of the eight wildlife species. Tier 2 values were then derived using the same food chain models employed for the Tier 1 values with incorporation of the Hanford Site-specific estimates of tissue chemistry for prey items.

Chapter 3 summarizes the uncertainties associated with the Tier 2 risk-based soil concentrations. Some of the Tier 2 values for wildlife should be used with caution in remediation planning and with a full understanding of their associated uncertainty. In cases where the ecological screening level value or PRG for any particular COPEC becomes a driver for remedial decision making in an RI/FS, a discussion of the uncertainty should be presented in the ERA accompanying the RI/FS. In certain cases, refinement of the Tier 2 value to a Tier 3 value may be desirable prior to using an ecological risk-based value in remedial decision making. The uncertainty discussion provides a framework for discussion to be incorporated into the risk characterization

[4] *Comprehensive Environmental Response, Compensation, and Liability Act of 1980*, 42 USC 9601, et seq., Pub. L. 107-377, December 31, 2002. Available at: http://epw.senate.gov/cercla.pdf.

[5] CHPRC-00784, 2010, *Tier 1 Risk-Based Soil Concentrations Protective of Ecological Receptors at the Hanford Site*, CH2M HILL Plateau Remediation Company, Richland, Washington.

portion of an ERA and when making decisions to proceed to the next level of refinement within the tiered process. Development of Tiers 3 values is not discussed in this report and will be addressed in separate documents, as appropriate.

This report has not proposed Tier 2 values for plants or soil invertebrates at this time. Tier 2 values for plants and invertebrates are presented in ECF-Hanford-11-0158.

Chapter 4 presents a summary of the Tier 2 values that were derived for this report and a discussion of their application. Differences between these Tier 2 values and the Tier 1 values are presented and discussed with respect to the nature of the changes. The ecological risk-based values presented in this report result from a tiered process in which values were refined with additional literature-derived and/or site-specific information, using more complex methods to develop values that are more representative of ecological exposure pathways at the Hanford Site. The tiered approach is in accordance with guidance from EPA 540-R-97-006, OSWER Directive 9285.7-55,[6] and the ecological evaluation procedure presented in WAC 173-340-7490,[7] WAC 173-340-7491,[8] WAC 173-340-7492, and WAC 173-340-7493. Central to the concept of a systematic, informed progression is an iterative process (i.e., cycles) of decision making involving evaluation, deliberation, data collection, and communication. All of these steps should be focused on deciding: (1) whether or not the ecological risk-based concentrations at the current tier are sufficient to support cleanup decision making (a process for exiting the tiered approach is available at each tier), (2) if the information available at the current tier is determined to be insufficient, whether or not progression to a higher tier of refinement warrants the additional effort. The need for refinement to a higher tier of ecological risk-based concentration is based on the uncertainties in the current tier value, the confidence in the data used in developing the value, and the relevance of the assumptions used in its development to site conditions. Incorporation of additional information will result in a risk-based concentration that better reflects site-specific conditions. However,

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[6] OSWER Directive 9285.7-55, 2003, *Guidance for Developing Ecological Soil Screening Levels*, Attachment 1-3, *Evaluation of Dermal Contact and Inhalation Exposure Pathways for the Purposes of Setting EcoSSLs*, Office of Solid Waste and Emergency Response, U.S. Environmental Protection Agency, Washington, D.C. Available at: http://www.epa.gov/ecotox/ecossl/pdf/ecossl_attachment_1-3.pdf.

[7] WAC 173-340-7490, "Model Toxics Control Act—Cleanup," "Terrestrial Ecological Evaluation Procedures," *Washington Administrative Code*, Olympia, Washington. Available at: http://apps.leg.wa.gov/WAC/default.aspx?cite=173-340-7490.

[8] WAC 173-340-7491, "Model Toxics Control Act—Cleanup," "Exclusions from a Terrestrial Ecological Evaluation," *Washington Administrative Code*, Olympia, Washington. Available at: http://apps.leg.wa.gov/WAC/default.aspx?cite=173-340-7491.

such refinement could result in a concentration value that is either higher or lower than the previous tier value. Selection of a particular tier for use in screening data or for PRG development should take into consideration the level of confidence in the value and its relevance to site-specific conditions.

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Terms

B	badger
BAF	bioaccumulation factor
BW	body weight
CERCLA	*Comprehensive Environmental Response, Compensation, and Liability Act of 1980*
COPEC	contaminant of potential ecological concern
CQ	California quail
CSM	conceptual site model
DDT	dichlorodiphenyldichloroethylene
DM	deer mouse
DW	dry weight
Ecology	Washington State Department of Ecology
EcoSSL	ecological soil screening level
EPA	U.S. Environmental Protection Agency
EPC	exposure point concentration
ERA	ecological risk assessment
ERAGS	*Ecological Risk Assessment Guidance for Superfund*
FIR	food intake rate
FS	feasibility study
GB	Great Basin pocket mouse
GM	grasshopper mouse
HEIS	Hanford Environmental Information System
IRIS	Integrated Risk Information System
K	killdeer
LAOEL	lowest observed adverse effect level
LOEC	lowest observed effect concentration
MIS	multi-increment sampling
MTCA	Model Toxics Control Act
N/A	not applicable
NBD	no bioaccumulation data
NTD	no toxicity data
NOAEL	no observed adverse effect level

NOEC	no observed effect concentration
PAH	polycyclic aromatic hydrocarbon
PCB	polychlorinated biphenyl
PRG	preliminary remediation goal
RI	remedial investigation
RH	red-tailed hawk
SMDP	scientific management decision point
SSL	soil screening level
SVOC	semivolatile organic compound
TEE	terrestrial ecological evaluation
TPH	total petroleum hydrocarbon
TRV	toxicity reference value
WM	western meadowlark

1 Introduction

A framework for derivation of ecological risk-based concentrations in soil for use in remedial investigations (RIs) and feasibility studies (FSs) at the Hanford Site is presented in this document. This framework is intended to be iterative, incorporating additional information, as appropriate, to improve decision making. This iterative approach is in accordance with the steps outlined in EPA 540-R-97-006, *Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments: Interim Final*, hereafter referred to as ERAGS, and the simplified and site-specific ecological evaluations described by the Washington State Department of Ecology (Ecology) in WAC 173-340-7492, "Model Toxics Control Act—Cleanup," "Simplified Terrestrial Ecological Evaluation Procedures," and WAC 173-340-7493, "Site-Specific Terrestrial Ecological Evaluation Procedures." Under both Ecology and U.S. Environmental Protection Agency (EPA) guidance, an initial screening step is performed to identify areas or contaminants that present no unacceptable risks to ecological receptors from those that warrant additional evaluation. Later steps in the ecological risk assessment (ERA) process integrate site-specific data and ecologically more realistic exposure and effects assumptions to provide improved risk estimates. The framework for development of these risk-based concentrations consists of the following progressively more site-specific, site relevant, and biologically realistic tiers:

- **Generic Screening Levels:** represent initial, conservative screening values from readily available published literature and agency sources.
- **Tier 1 Values:** are also based on agency developed or accepted methods but they have been calculated specifically for bird and mammal species present at the Hanford Site. Sources and derivation of Tier 1 values were presented in CHPRC-00784, *Tier 1 Risk-Based Soil Concentrations Protective of Ecological Receptors at the Hanford Site*.
- **Tier 2 Values:** represent Hanford Site-specific values. They build on the Tier 1 values, but differ in that they incorporate additional site-specific data. This report presents Tier 2 values for birds and mammals for selected non-radiological contaminants in soil. Radionuclides were not assessed at this level because Tier 1 values were sufficient for decision-making and did not require refinement past the first Tier.
- **Tier 3 Values:** represent waste site-specific or location-specific risk-based concentrations. These would be based on data (bioaccumulation sampling, bioassays, and exposure factors) collected for specific waste sites or locations at the Hanford Site. Tier 3 values have not been developed for any contaminants at this time.

These ecological risk-based concentrations in soil represent values, which are intended to protect a range of receptors from adverse effects, that can be used in *Comprehensive Environmental Response, Compensation, and Liability Act of 1980* (CERCLA) RI/FSs. In the CERCLA process, a range of conservative ecotoxicological screening values and benchmarks may be used in an ERA conducted as part of an RI. These values can be used as screening levels for investigation planning; for screening analytical data to identify contaminants of potential ecological concern (COPECs), media, and receptors that require further evaluation; and for evaluating remedial alternatives. As described in this document, these screening values may be further refined with information collected in the RI. Based on the ERA results, an ecological preliminary remediation goal (PRG), that is used in the FS, is identified from these values. PRGs are applied in the detailed evaluation of remedial alternatives in the FS. Based on considerations of the nine criteria in the detailed evaluation of remedial alternatives, the PRGs are refined into final contaminant-specific cleanup levels, using the PRGs as the point of departure

(EPA 540-R-98-031, *A Guide to Preparing Superfund Proposed Plans, Records of Decision, and Other Remedy Selection Decision Documents*).

1.1 Overview of Tier 2 Ecological Soil Screening Level Derivation

The tiered approach begins with identifying readily available risk-based concentrations for terrestrial plants, soil invertebrates, birds, and mammals extracted from published regulatory agency and related sources. These risk-based concentrations are soil-based analyte concentration values developed with generic, conservative assumptions. Through the tiered approach, these values are then refined, as needed, with additional literature-derived or site-specific information, using more complex methods to develop screening-level values that are more representative of ecological exposure pathways at the Hanford Site. Central to the tiered approach is an iterative process of evaluation and deliberation. The objective of this iterative process is to decide the following:

- Whether or not a risk-based value in its current form is sufficient for use as a screening level or an ecological PRG to support cleanup decision making
- Whether or not progression to a higher tier of complexity in development of risk-based values would reduce uncertainty or increase confidence in the value used for cleanup decision making to warrant the additional effort

The tiered approach is in accordance with EPA guidance (principally EPA 540-R-97-006 and OSWER Directive 9285.7-55, *Guidance for Developing Ecological Soil Screening Levels*) and the ecological evaluation procedure presented in WAC 173-340-7490, "Terrestrial Ecological Evaluation Procedures," through WAC 173-340-7493, "Site-Specific Terrestrial Ecological Evaluation Procedures." A primary purpose for this document is to facilitate the evaluation and deliberation process through a presentation of the data, assumptions, and methods used in this tiered approach. The following sections discuss these various tiers in further detail, with a focus on Tier 2 values.

A discussion of these various tiers is presented in CHPRC-00784. The Tier 2 values for birds and mammals presented in this report represent Hanford Site-specific values. They build on the Tier 1 values (CHPRC-00784), using the same receptors, exposure models, life history parameters, and toxicity reference values (TRVs) used for the Tier 1 values. Use of bioaccumulation models that reflect a food chain for an arid environment such as the Hanford Site and integration of Hanford Site-specific bioaccumulation data represent the differences between the Tier 1 and Tier 2 values.

The development of Tier 2 values corresponds to an exposure and effects assessment, conducted as part of a baseline ecological risk assessment within ERAGS (EPA 540-R-97-006), and reflects OSWER Directive 9385.7-28P, *Ecological Risk Assessment and Management Principles for Superfund Sites*, which encourages the use of site-specific ecological risk data to support cleanup decisions, whenever practicable. The process for development of Tier 2 values also is consistent with Ecology's site-specific terrestrial ecological evaluation (TEE) procedure (WAC 173-340-7493). These Tier 2 values are intended be applied to all upland environments across the Hanford Site. Though additional receptors may also be present in riparian areas, the Tier 2 values and the supporting bioaccumulation and exposure models and TRVs in this report are applicable for riparian areas and can be used in conjunction with values for those additional receptors.

1.2 Decision Making Cycles in the Tiered Approach

The tiered approach presented in Figure 1-1 describes a general process for systematic, informed progression to increasingly more biologically realistic and site-specific ecological values for use in

RI/FSs. Higher tiers reflect increasing complexity and greater investment of time and resources. Higher tiers also reflect more refined characterization of ecological risks, which may be important in cleanup decision making. Central to the concept of a systematic, informed progression is an iterative process (i.e., cycles) of decision making involving evaluation of existing information, deliberation, data collection, and communication. All of these steps should be focused on the following decisions:

- Whether or not the ecological risk-based concentrations at the current tier are sufficient to support cleanup decision making (a process for exiting the tiered approach is available at each tier)
- Whether or not progression to a higher tier of refinement would reduce uncertainty and/or increase confidence in the value used to warrant the additional effort if the information available at the current tier is determined to be insufficient

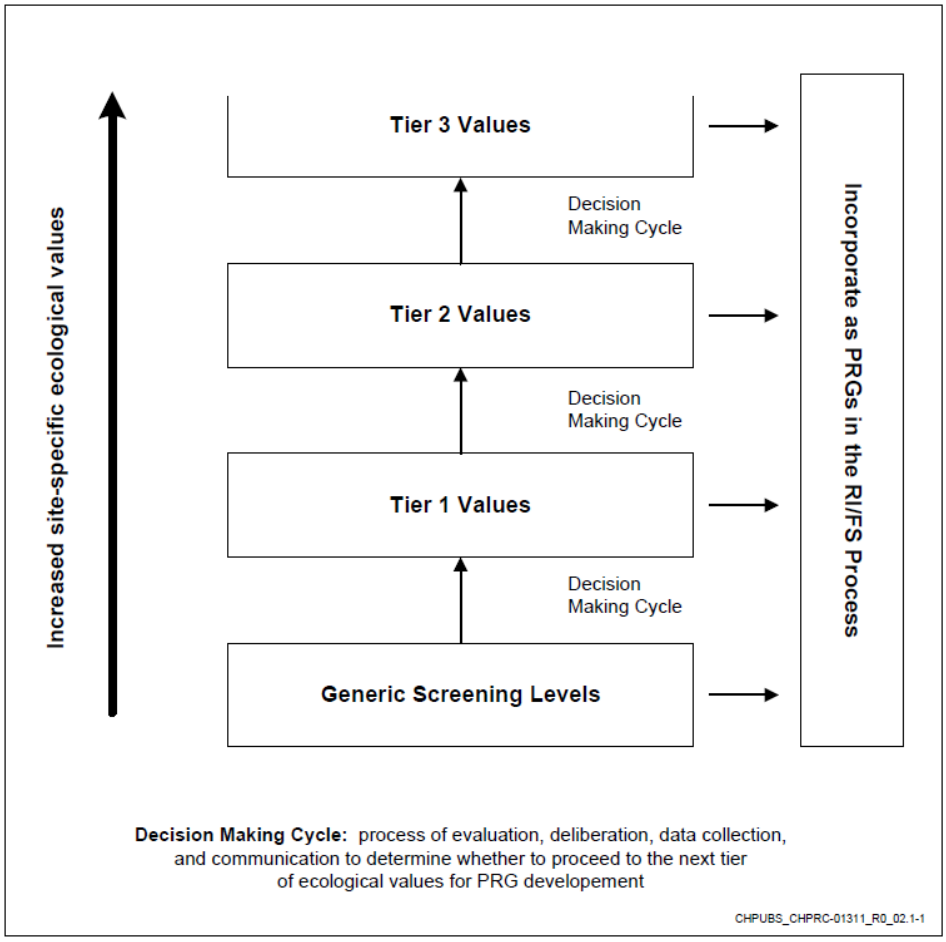


Figure 1-1. Tiered Approach to Ecological PRG Development

Key points in the decision making cycles are presented in the following paragraphs.

In general, Generic Screening Levels should not be used as ecological PRGs. However, there should be a decision making cycle to make that specific judgment. In deciding whether a higher tier ecological value should be developed, the following factors should be considered (these factors typically will have been addressed as part of an ERA):

- Comparison between the Tier 1 values, background concentrations in soil, and other values for protection of human health and groundwater from COPECs in soil
- Evaluation of the relevance of the assumptions used in the development of the Tier 1 values to site conditions
- Consideration of uncertainties with the Tier 1 values

Proceeding from a Generic Screening Level to development of Tier 1 values represents a scientific management decision point (SMDP) as defined in ERAGS (EPA 540-R-97-006). In cases where ecological risks are low (i.e., when waste site exposure point concentrations [EPCs] are close to or below Generic Screening Levels), where Generic Screening Levels are well above background concentrations in soil, where the investment of time and resources for refining ecological risk-based concentrations may outweigh the costs for cleanup, or for very simple waste sites, Generic Screening Levels may be suitable for use as PRGs. Otherwise, development of ecological risk-based concentrations should proceed to a higher tier because cleanup decision making would benefit from the additional analysis of ecological risk-based concentrations.

The decision to develop Tier 2 values represents another SMDP as defined in ERAGS (EPA 540-R-97-006). The decision making cycle with these values involves determining if there is a need for an ecological value that is more refined than the Tier 1 value by the inclusion of field-collected data. The same factors already discussed are considered in determining whether or not to use Tier 1 values or to develop Tier 2 values for the RI/FS process. In addition, uncertainties in the data and assumptions used in developing the Tier 1 values are evaluated to determine whether or not their incorporation introduces greater or lesser uncertainty than in the previous tier. The decision to develop Tier 2 values also takes into consideration the investment of time and resources for planning, field data collection, and analysis of data relative to the costs for proposed remediation based on Generic Screening Levels or Tier 1 values.

Moving to Tier 3 represents another SMDP and involves performing waste site-specific data collection. As with Tier 2 values, the decision to develop Tier 3 values takes into consideration the investment of time and resources for planning, field data collection, and analysis of data relative to the costs for proposed remediation based on Tier 1 or Tier 2 values.

1.3 Rationale for the Development of Tier 2 Values

The decision to develop Tier 2 values was based on two primary factors. First, in comparison of the Tier 1 values with background and values protective of human health, the Tier 1 values were lower and thus would be driving risk management decisions. Second, the lowest Tier 1 wildlife risk-based values[9] for many analytes[10] were lower than State of Washington Ecological Indicator Soil Concentrations for wildlife in Table 749-3 of WAC 173-340-900, “Model Toxics Control Act—Cleanup,” “Tables”. Also, comparison of soil chemistry data from waste sites within the Central Plateau and River Corridor[11]

[9] The lowest was selected among values for a range of feeding guilds and receptors based on NOAELs (no observed adverse effect levels)

[10] Cadmium, total chromium, copper, lead, mercury, molybdenum, nickel, selenium, zinc, aldrin, DDE, and dieldrin and with no corresponding wildlife soils values for beryllium, cobalt, and lithium.

[11] The sampling and analytical data in soil for these selected analytes were obtained from a data pull from the Hanford Environmental Information System (HEIS). This data pull captured soil sampling and analytical data found in HEIS as of July 21, 2010 for the Central Plateau Outer Area waste sites and post-remediation data from the 100 and 300 Areas waste sites collected by the River Corridor Contractor. This data pull was performed on December 15, 2010 and was exported to a Microsoft Excel® workbook for further analysis.

revealed that up to ten percent or more of the data for several analytes (nearly all metals) exceeded these Tier 1 thresholds (Table 1-1). These last two points prompted a review of the assumptions used in the development of the Tier 1 values and their site relevance. Based on review of those assumptions, as is dicussed in later chapters, Tier 2 values for wildlife were developed representing risk-based soil concentrations that incorporate available Hanford Site-specific data.

2 Development of Tier 2 Values for Wildlife

The Tier 2 values for birds and mammals presented in this report have been developed using the same methodology, including the same receptors, exposure models, life history parameters, and TRVs, as used for the calculation of Tier 1 wildlife values reported in CHPRC-00784. The Tier 2 values represent Hanford Site-specific values that are intended to be applied to upland and riparian environments site-wide. The incorporation of soil arthropod bioaccumulation, rather than solely relying on earthworm bioaccumulation, and the integration of Hanford Site-specific bioaccumulation data for plants, soil arthropods, and mammals represents the differences between Tier 1 and Tier 2 values for birds and mammals. Development of these Tier 2 values corresponds to the exposure assessment that would be conducted as part of a baseline ecological risk assessment within the ERA framework outlined in ERAGS (EPA 540-R-97-006). In addition, development of the Tier 2 values for wildlife is based on the procedures developed by Ecology for a site-specific TEE, specifically those described in WAC 173-340-7493(3). Under this section, the results from a literature survey may be employed to calculate a soil concentration more relevant to site-specific conditions. A weight of evidence approach may be used that takes into consideration literature and field and laboratory data, reflecting that each has particular strengths and weaknesses.

The following sections describe the methodology used to calculate Tier 2 wildlife values. Much of this methodology is the same as that used for calculating Tier 1 values and is repeated in the following sections. New information describing the incorporation of site-specific bioaccumulation data and literature information describing bioaccumulation in soil arthropods is included.

2.1 Problem Formulation

The problem formulation includes a general description of the Hanford Site setting, identification of COPECs, identification of important aspects of the site to be protected (referred to as assessment endpoints), the means by which the assessment endpoints are evaluated (measures of exposure and effects), and previous site investigations. The end product of the problem formulation is a conceptual site model (CSM) that describes the contaminant sources and transport mechanisms, evaluates potential exposure pathways, and identifies the representative species that were used to assess ecological risk to those and other similar species. The following subsections summarize the information relevant to the development of Tier 2 concentration values.

2.1.1 Simplified Ecological Exposure Model

Development of the ecological exposure model involves characterizing the exposure pathways and ecological receptors that might be associated with the habitat types in the upland portions of the Hanford Site. Appropriate exposure pathways and representative endpoint species for the upland portions of the Hanford Site were developed using information from previously conducted ERAs. Primary sources of information used in the development of the ecological exposure model include DOE/RL-2007-21, *River Corridor Baseline Risk Assessment Volume 1: Ecological Risk Assessment*,. DOE/RL-2007-50, *Central Plateau Ecological Risk Assessment Data Package Report*; and WMP-20570, *Central Plateau Terrestrial Ecological Risk Assessment Data Quality Objectives Summary Report – Phase I.*

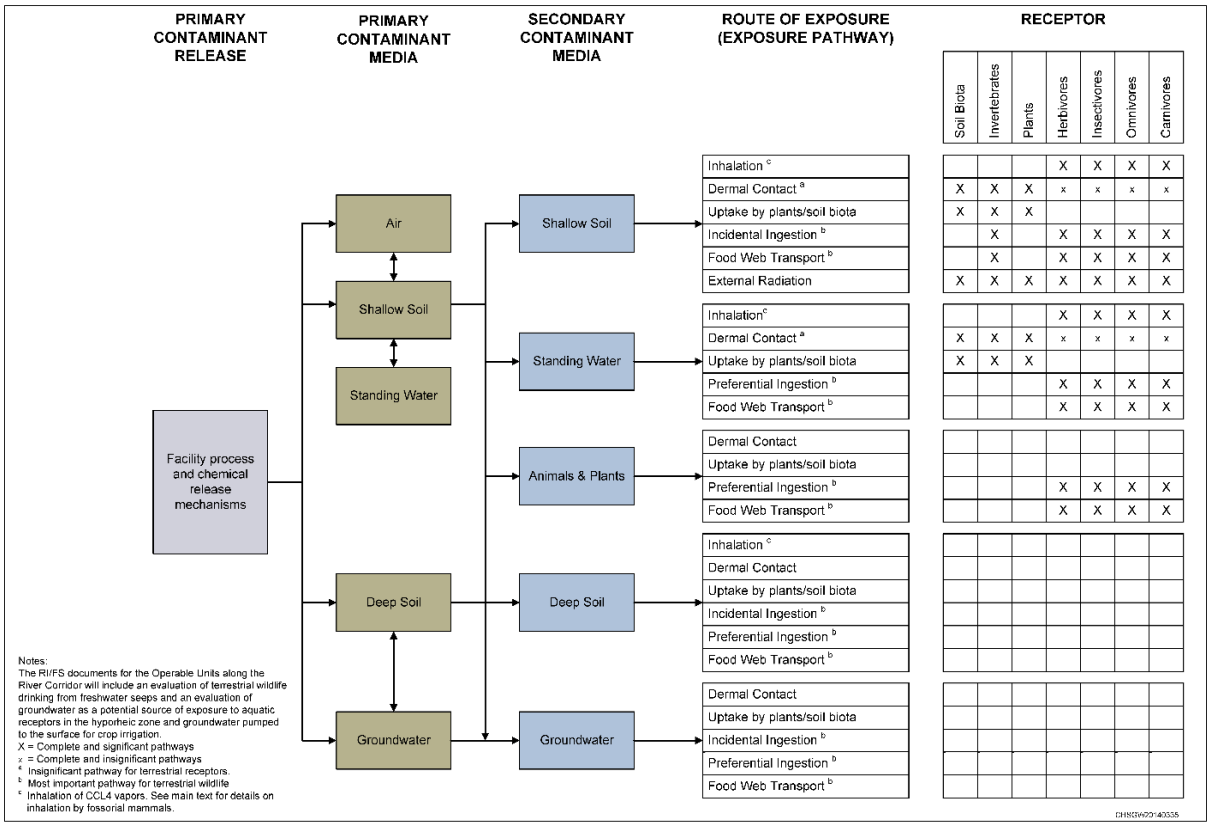
With consideration of the ecological setting, land use, and COPEC release mechanisms known at Hanford Site upland areas, the following ecological exposure pathways considered most plausible are graphically displayed in Figure 2-1:

- Potential current and future direct contact of vegetation with constituents in surface soil (less than 4.6 m [15 ft] below ground surface) as defined by the “Standard Point of Compliance” in

WAC 173-340-7490(4)(b) (human excavation activities up to a depth of 4.6 m (15 ft) could bring soils to the surface that become accessible to ecological receptors)

- Potential current or future direct contact with, or ingestion of, surface soil by terrestrial invertebrates (e.g., beetles and ants)
- Direct contact with, or ingestion of, surface soil by terrestrial avian and mammalian wildlife
- Dietary exposure to COPECs bioaccumulated in food items (e.g., plants or prey) and subsequently consumed by terrestrial avian and mammalian wildlife
- Exposure to emissions from radionuclides bioaccumulated and retained within the tissues of plants, terrestrial invertebrates, and terrestrial wildlife
- External exposure of plants, terrestrial invertebrates, and terrestrial wildlife to emissions from radionuclides in soil

Figure 2-1. Conceptual Ecological Exposure Model for Terrestrial Habitats in Hanford Site Upland Areas



2.1.2 Assessment Endpoints

Assessment endpoints are an expression of the important ecological values that are to be protected at a site (Suter, 1993, *Ecological Risk Assessment*; EPA/630/R-95/002F, *Guidelines for Ecological Risk Assessment*; Suter et al., 2000, *Ecological Risk Assessment for Contaminated Sites*). Assessment endpoints are based on known information concerning the contaminants present, the study area, the ecological CSM, and risk hypotheses. There are three components to each assessment endpoint: an entity (e.g., migratory birds), an attribute of that entity (e.g., individual survival), and a measure (e.g., a measurable value, such as an effect level). Measures are described following the general description of assessment endpoints (EPA/630/R-95/002F; Suter et al., 2000).

The assessment endpoint entities for the Hanford Site were selected based on the following principal criteria:

- Ecological relevance
- Societal relevance
- Susceptibility (or high exposure) to known or potential stressors at the Hanford Site

The attribute selected for each entity was based on the organizational level of the entity and the primary criteria that were used to select it. Entities and attributes were selected for community and population levels of assessment. The maximum acceptable adverse effect levels generally selected for population level and community level assessment endpoints are the lowest observed effect concentrations (LOECs) or lowest observed adverse effect levels (LOAELs) Efroymson et al. (1997). For some assessment endpoints, such as threatened and endangered species, there is no acceptable adverse effect level; consequently, no observed effect concentrations (NOECs) or no observed adverse effect levels (NOAELs) would be used for these endpoints.[12]

A food web model for the terrestrial portion of the Hanford Site (Figure 2-2) has been developed based upon an understanding of the ecology of the area and documented in WMP-20570.

Previous investigations have identified the following entities (represented by trophic guilds) and their associated organizational level:

- Terrestrial plants[13]—community level
- Terrestrial invertebrates[14]—community level
- Herbivorous birds—population level
- Herbivorous mammals—population level
- Insectivorous birds—population level
- Insectivorous mammals—population level
- Omnivorous birds—population level
- Omnivorous mammals—population level

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[12] Presence of federal or state listed endangered or threatened species should be evaluated on a project-specific basis. When they are suspected or known to be present, PRGs that afford greater protection (e.g., NOAEL or NOEC based) may be needed. Values based on NOAELs are presented in Table 2-10.

[13] DOE/RL-2010-118, *Sampling and Analysis Plan for Ex-Situ Plant and Invertebrate Bioassays to Evaluate Terrestrial Environments Across the Hanford Site*, supports the development of risk-based soil concentrations protective of plants and invertebrates at the Hanford Site.

[14] Ibid.

- Carnivorous birds—population level
- Carnivorous mammals—population level
- Reptiles and amphibians[15]

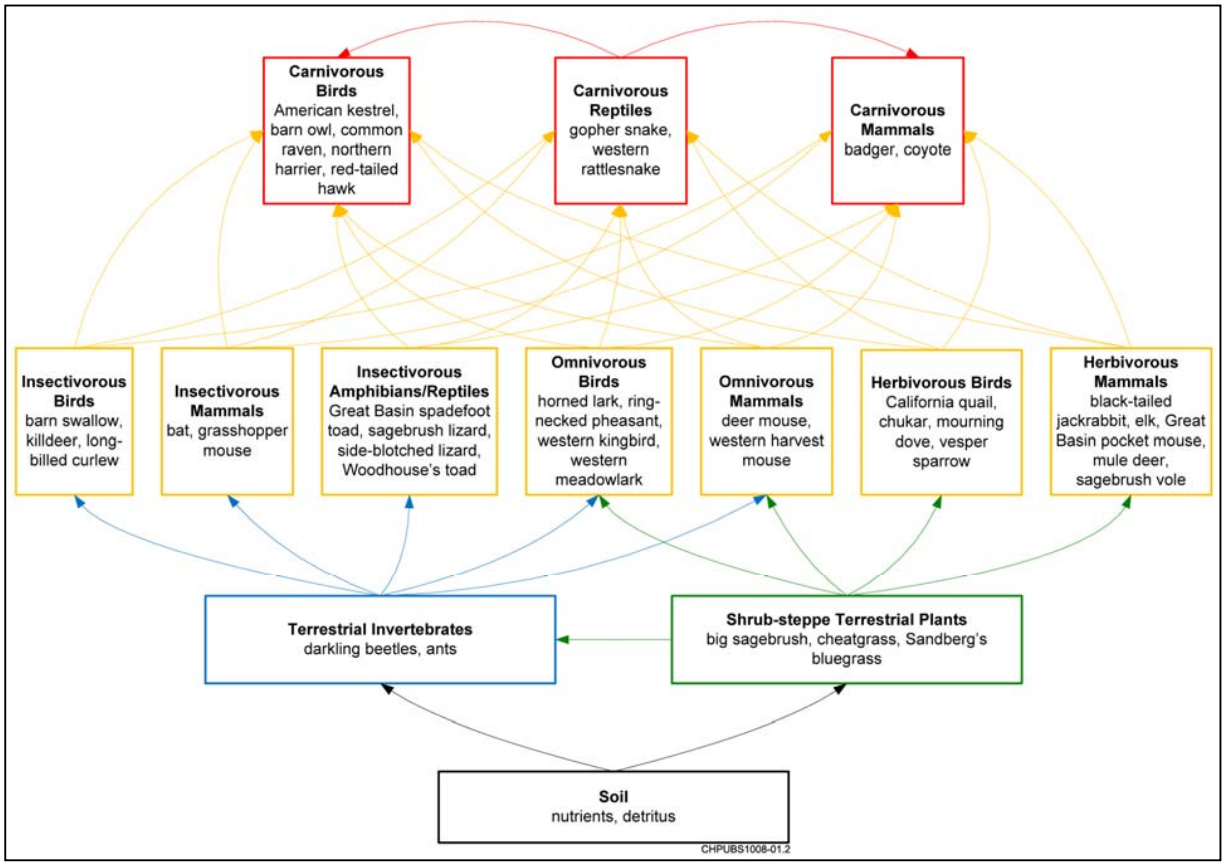

Figure 2-2. Hanford Site Upland Terrestrial Food Web

To calculate Tier 1 values, endpoint species representative of functional groups that could use the site were identified. For example, a red-tailed hawk may be considered representative of raptors visiting the site. Consistent with EPA 540-R-97-006, EPA/630/R-95/002F, and WAC 173-340-7493, endpoint species should preferably have ecological relevance, societal value, and susceptibility to chemical stressors at the site and should allow risk managers to meet policy goals. These factors were used to select representative receptor species common to the terrestrial portion of the Hanford Site that are within the described trophic guilds. These same species were retained for development of Tier 2 values. The representative receptor species selected for each of the trophic guilds are as follows:

- Herbivorous birds—California quail (*Callipepla californica*)
- Herbivorous mammals—Great Basin pocket mouse (*Perognathus parvus*)
- Insectivorous birds—killdeer (*Charadrius vociferus*)
- Insectivorous mammals—northern grasshopper mouse (*Onychomys leucogaster*)

[15] Although they are part of the food web for the Central Plateau area, effects data (i.e., toxicity) for reptiles and amphibians are lacking. Therefore, soil screening levels (SSLs) were not developed for this trophic guild.

- Omnivorous birds—western meadowlark (*Sturnella neglecta*)
- Omnivorous mammals—deer mouse (*Peromyscus maniculatus*)
- Carnivorous birds (raptors)—red-tailed hawk (*Buteo jamaicensis*)
- Carnivorous mammals—badger (*Taxidea taxus*)

Individual species for terrestrial vegetation and invertebrates are not selected for evaluation.

2.1.3 Measures of Exposure and Effects

Measures (formerly referred to as measurement endpoints) are measurable attributes used to evaluate the risk hypotheses and are predictive of effects on the assessment endpoints (EPA/630/R-95/002F). The three categories of measures include the following:

1. Measures of exposure are used to evaluate intake of a contaminant from contact with environmental media (e.g., soil). Measures of exposure can be an EPC of a COPEC in an environmental medium or a food item. A measure of exposure also can be a dose occurring through ingestion, inhalation, or dermal contact with a contaminant in an environmental medium. Risk-based concentrations are estimated by back-calculating from a target dose associated with the selected assessment endpoint to a corresponding concentration in soil (see Section 2.2 for further discussion).

2. Measures of effect are used to evaluate the response of an organism that is exposed to a stressor. Measures of effects include LOAEL TRVs for wildlife and LOECs in soil for plants and soil invertebrates.

3. Measures of ecosystem and receptor characteristics are used to evaluate the ecosystem characteristics that influence the assessment endpoints, the distribution of stressors, and the characteristics of the assessment endpoints that may affect exposure or response to the stressor. Measures of ecosystem and receptor characteristics are also used to characterize ecological risks as part of a baseline ERA. These kinds of ecological information are not used directly in calculations of risk-based concentrations. However, measures of ecosystem and receptor characteristics may represent additional lines of evidence used along with risk-based concentrations or PRGs in evaluating remedial alternatives in an RI/FS.

2.2 Exposure and Effects Analysis

The exposure assessment identifies exposure pathways associated with the representative receptor species listed in Section 2.1.2. It also describes the models used to calculate risk-based concentrations. The effects assessment presents TRVs that have been derived from available literature-based toxicity information on COPECs for use in determining potential adverse effects for ecological receptors. The TRVs are combined with the exposure information, described in the following subsections, to calculate Tier 2 values.

2.2.1 Exposure Characterization

The exposure characterization describes the exposure models and assumptions for each representative receptor species.

2.2.1.1 Chemical Exposure of Birds and Mammals

Birds and mammals experience chemical exposure through multiple pathways, including ingestion of surface water, sediment/soil, and biotic media (food), in addition to inhalation and dermal contact. To assess this multiple pathway exposure, modeling can be or is often employed. The end product, or exposure estimate, for birds and mammals is a dosage (amount of chemicals in milligrams per kilogram

receptor body weight (BW) per day [mg/kg/day]). The general form of the model used to estimate exposure of birds and mammals to chemicals in environmental media is as follows (Suter et al., 2000):

$$E_t = E_o + E_d + E_i$$

where:

E_t = total chemical exposure experienced by wildlife

E_o = oral exposure

E_d = dermal exposure

E_i = inhalation exposure

Oral exposure occurs through the consumption of contaminated food, water, or sediment/soil; dermal exposure occurs when contaminants are absorbed directly through the skin; and inhalation exposure occurs when volatile compounds or fine particulates are inhaled into the lungs. Although methods are available for assessing dermal exposure to humans (EPA/600/8-91/011B, *Dermal Exposure Assessment: Principles and Applications*), data necessary to estimate dermal exposure generally are not available for wildlife (EPA/600/R-93/187, *Wildlife Exposure Factors Handbook*).

Similarly, methods and data necessary to estimate wildlife inhalation exposures are poorly developed (EPA/600/R-93/187) or limited.[16] Additionally, a wildlife receptor's exposure to contaminants by inhalation and dermal contact usually contributes little to its overall exposure (OSWER Directive 9285.7-55). Recent publications have suggested the inclusion of inhalation and dermal pathways for developing TRVs for VOCs in fossorial mammals ("Wildlife Ecological Screening Levels for Inhalation of Volatile Organic Chemicals" [Gallegos et al., 2007]) and pesticides in birds ("A Comprehensive Re-Analysis of Pesticide Dermal Toxicity in Birds and Comparison with the Rat" [Mineau, 2012]), respectively. Bench et al (2001), also noted olfactory bulb uptake in fossorial mammals affords a significant exposure route to manganese and cadmium in soils. However, VOCs and pesticides were not the primary COPECs identified in past investigations and methods for olfactory exposure and risk characaterization are not well established. Dermal exposure also is likely to be low, even in burrow-dwelling animals, because of the presence of protective dermal layers (e.g., feathers, fur, or scales). Therefore, for the purposes of these Tier 2 concentration values, both dermal and inhalation exposures were assumed to be negligible.[17]
Total chemical exposure experienced by wildlife (E_t) is equal to oral exposure (E_o). By replacing E_o with a generalized exposure model modified from Suter et al. (2000), the previous equation was rewritten as follows:

$$E_t = \left\lfloor \left[\sum_{i=1}^{n} B_{ij} \times P_i \times FIR \right] + \left[Soil_j \times P_s \times FIR \right] + \left[Water_j \times WIR \right] \right\rfloor x\ AUF$$

where:

[16] For assessing inhalation exposures, some data for mammals are available through the Integrated Risk Information System (IRIS) database, and a limited set of inhalation benchmarks for wildlife have been developed (Gallegos et al., 2007, "Wildlife Ecological Screening Levels for Inhalation of Volatile Organic Chemicals").
[17] If the CSM indicates that a volatile organic compound is a significant COPEC, focused analyses of the inhalation pathway may be warranted. Risk-based concentrations or PRGs for this pathway, however, are beyond the scope of this report.

E_t = total exposure (mg/kg/day)

$Soil_j$ = chemical concentration in soil (mg/kg dry weight)

P_s = soil ingestion rate as proportion of diet (unitless)

FIR = food intake rate (kg food/kg body weight/day, dry weight)

B_{ij} = chemical concentration in biota type (i) (mg/kg, dry weight)

P_i = proportion of biota type (i) in diet (unitless)

$Water_j$ = chemical concentration in water (mg/L)

WIR = water ingestion rate (L water/kg body weight/day)

AUF = area use factor (area of site/home range of receptor) (unitless)

The focus of this document is the development of ecological risk-based concentrations for upland environments and terrestrial organisms. Therefore, exposure pathways associated with sediment and water are not addressed. Should risk-based concentrations or PRGs be required for riparian or nearshore environments along the River Corridor, development of these values will be addressed in a separate document[18]. Additionally, 100 percent site use was assumed for calculation of Tier 2 concentration values resulting in an area use factor of 1. The remaining parameters and assumptions for the exposure model consist of wildlife exposure parameters and bioaccumulation models, which are provided in the following subsections.

Wildlife Exposure Parameters. Species-specific exposure parameters are required to estimate exposure. These include BW, food intake rate (FIR), diet composition, and percent of diet as incidental soil ingestion. The following assumptions are part of the calculation of wildlife exposures.

- Incidental soil ingestion is not included as part of the total dietary composition but is added to total dietary exposure instead; for calculation purposes, it is treated as a percentage in addition to total dietary intake.
- All animals are assumed to be year-round residents, and migration from areas contaminated with COPECs is assumed not to occur.
- Bioavailability of chemical constituents are assumed to be equivalent to the chemical form used in the toxicity studies.

The exposure parameters and source references used for each endpoint species are summarized in Tables 2-1 and 2-2. All weight-based exposure parameters are listed on a dry weight (DW) basis. Species-specific biological information was unavailable for some parameters. When this occurred, allometric equations that express general biological relationships for broader classes of animals were used to estimate the exposure parameters (Nagy, 2001, “Food Requirements of Wild Animals: Predictive Equations for Free-living Mammals, Reptiles, and Birds”). These allometric models are discussed in the following subsections.

[18] The RI/FS reports for the River Corridor Operable units present sediment PRGs that are consistent with values used in both the RCBRA (DOE/RL-21, 2007) and the *Columbia River Component Risk Assessment: Volume 1 Ecological Risk Assessment* (DOE/RL-2010-117) and represent the values porposed as state freshwater sediment cleanup values and presented in *Development of Benthic SQVs for Freshwater Sediments in Washington, Oregon, and Idaho* (Ecology Publication 11-09-054, 2011).

The daily FIRs, in grams of food consumed per day, either were derived from literature sources (California quail and red-tailed hawk) or were estimated using trophic group-specific or taxa-specific allometric equations provided by Nagy (2001) as follows:

Omnivorous birds (g/day) = $0.670 * BW^{0.627}$ (used for western meadowlark)

Charadriiformes (g/day) = $0.522 * BW^{0.769}$ (used for killdeer)

Granivorous mammals (g/day) = $0.659 * BW^{0.413}$ (used for Great Basin pocket mouse)

Omnivorous mammals (g/day) = $0.432 * BW^{0.678}$ (used for deer mouse)

Insectivorous mammals (g/day) = $0.373 * BW^{0.622}$ (used for grasshopper mouse)

Carnivorous mammals (g/day) = $0.153 * BW^{0.834}$ (used for badger)

where:

BW = median body weight (g) based on data summarized in Table 2-2

The FIR is then normalized to BW by converting to kilograms of food per kilogram of BW per day for the calculation of Tier 2 values. Red-tailed hawk and California quail FIRs represent the high-end estimate derived in EPA/600/R-93/187, as referenced in Table 2-1.

2.2.1.2 Estimation of Bioaccumulation into Food Items

Paired soil and whole body prey tissue chemistry data have been analyzed for metals and other contaminants at the Hanford Site and can be used to develop Tier 2 risk-based concentrations. Use of these Hanford Site data make Tier 2 risk-based concentrations more reflective of site-specific conditions than Tier 1 values and, consistent with Principle 3 of OSWER Directive 9285.7-28P, site-specific data are preferable to literature-based data for determining whether or not site releases present unacceptable risks and for developing protective quantitative cleanup levels.

While sample collection efforts have focused on collecting paired tissue and soil chemistry data appropriately representative of the Hanford Site, broad soil concentration ranges (5-6 orders of magnitude) are necessary to observe bioaccumulation relationships that may not be evident over narrow soil concentration ranges (1-2 orders of magnitude)(Sample et al. 1999). Hanford Site bioaccumulation data were simultaneously sampled and collocated with soil concentrations ranging from less than one, to up to two orders of magnitude (DOE/RL-2007-21, River Corridor Baseline Risk Assessment Volume 1: Ecological Risk Assessment; DOE/RL-2007-50, *Central Plateau Ecological Risk Assessment Data Package Report* Rev. 1). Further, as shown in Table 2-3, soil concentrations associated with bioaccumulation data do not cover the range of concentrations observed in the Central Plateau Outer Area or River Corridor and will not cover the range that will be found in the Central Plateau Inner Area. Consequently, development of the Tier 2 values for birds and mammals focused on the integration of available Hanford Site-specific bioaccumulation data with that from existing data sets. Data for soil paired with plants, terrestrial arthropods and small mammals from existing bioaccumulation models (i.e., those from OSWER Directive 9285.7-55 used to develop the ecological soil screening levels [EcoSSLs]), and other sources (for arthropods) were combined with Hanford Site data to develop a set of more site-

specific and site-relevant bioaccumulation models.[19] Development of the resulting integrated bioaccumulation models is described in the following subsections.

Hanford Site-Specific Bioaccumulation Data. Bioaccumulation data have been collected in support of the *River Corridor Baseline Risk Assessment* (DOE/RL-2007-21) and the *Central Plateau ERA* (DOE/RL-2007-50). Collocated soil data, and data representing tissue from terrestrial plants, small mammals, and terrestrial arthropods, were extracted from HEIS. Data were extracted for metals, general inorganics, radionuclides, chlorinated pesticides, polychlorinated biphenyls (PCBs), polycyclic aromatic hydrocarbons (PAHs), and semivolatile organic compounds (SVOCs). Plant data consisted of measured concentrations in foliage, shoots, and other aboveground parts of grasses, shrubs, and trees at the Hanford Site. Small mammal data consisted of measured concentrations in whole single mice or composites of multiple whole mice. Terrestrial arthropod data consisted of measured concentrations in whole single or composites of multiple whole invertebrates. Only paired samples in which the target analytes were detected in both tissue and in soil were retained for the bioaccumulation database; observations in which either soil or tissue concentrations were below detection limits were excluded from consideration. Some of the soil samples retained in the database were collected using multi-increment sampling (MIS) techniques. These data are considered suitable for bioaccumulation modeling because tissue samples associated with MIS were collected within the MIS unit, frequently as composited tissues samples. These tissue samples are, therefore, considered to be representative of the accumulation associated with MIS-based soil concentrations. Hanford Site-specific paired soil and tissue data used to support development of Tier 2 values are presented in Appendix A.

[19] These bioaccumulation models are defined as more site-specific and site-relevant because they are based on both site-specific data and data from published literature sources. The combining of Hanford Site-specific and literature data was performed to maximize utility of the Hanford Site-specific data collected over comparatively narrow concentration ranges.

Literature-Derived Bioaccumulation Data for Plants and Small Mammals. Data from previously developed and published bioaccumulation models for plants and small mammals were used to augment the Hanford Site-specific data. Specifically, the plant bioaccumulation database from BJC/OR-133, *Empirical Models for the Uptake of Inorganic Chemicals from Soil by Plants*, and "Uptake of Inorganic Chemicals from Soil by Plant Leaves: Regressions of Field Data" (Efroymson et al., 2001), and the small mammal bioaccumulation database from ES/ER/TM-219, *Development and Validation of Bioaccumulation Models for Small Mammals*, were used. These datasets were used in their entirety; no observations were excluded, and no additional data, other than that used in the EcoSSLs, were included. These are the same data from the bioaccumulation models and bioaccumulation factors (BAFs) used in the development of Tier 1 values for the Hanford Site. These data also represent the primary bioaccumulation data for inorganics integrated into the USEPA EcoSSLs (OSWER Directive 9285.7-55).

The development of the plant bioaccumulation database is described by Efroymson et al. (2001) as follows:

> "Field and greenhouse studies in which concentrations of arsenic, cadmium, copper, lead, mercury, nickel, selenium, or zinc in both surface soil and collocated, aboveground plant tissue were analyzed were identified. Information regarding soil and plant concentrations, soil parameters, exposure time, chemical form, dry or wet weight, extraction method, plant species, and plant part was compiled in a spreadsheet. The database included the following number of observations per growth form: 525, graminoid; 544, forb/herb; 4, forb/herb or vine; 69, forb/herb or shrub; 16, shrub; 18, tree or shrub; 49, tree; and 107, unknown or composited samples. Approximately thirty percent of the data represented chemical concentrations in plant leaves, excluding stems, fruits and seeds; and the remaining aboveground samples included clippings, unspecified aboveground parts or shoots. Samples of fruits or seeds alone were excluded from the database. Tests in which salts (e.g., cadmium chloride, copper sulfate, sodium selenate) were added in solution to soil were excluded because of preliminary results that suggested that regressions of concentrations in plants on concentrations in soil were different for field and salt chemical forms.
>
> Only studies in which concentrations were expressed on an air- or oven-dry weight basis were used. Although most studies reported that plant material was washed, studies were not excluded if the extent of washing was not stated in the paper. Studies were used even if the individual investigators observed no correlation between concentrations of contaminants in soils and plants. Concentrations of chemicals in soil or plants were sometimes estimated from a figure, but only if estimates could be made within about 10%. Data for species that are known to hyperaccumulate metals were excluded. Data for which measured concentrations were below detection thresholds were excluded.
>
> Each plant species or variety, soil type, location, and concentration of the test element in soil represented an independent observation in the dataset. Differences in exposure duration or above-ground plant part did not constitute separate observations; concentrations in soils or plants that differed on the basis of one of these two variables were averaged. The number of observations in these means, which ranged between 1 and 6, was not retained in the subsequent statistical analysis.
>
> Concentrations of contaminants in soil at the time of plant sampling were used if known. If these concentrations were not measured (as was often the case in pot studies), the initial concentration of the element measured in or added to soil was assumed to be equivalent to the final concentration. In field experiments, the change in soil concentration of an element over time was assumed to be minimal.
>
> Observations were included in the database if the total chemical concentration in soil was measured, either by extraction with strong acid or by extraction with moderately strong acid (e.g., 4 N sulfuric

acid) sometimes accompanied by heat. Studies in which concentrations of contaminants in soil were determined by a partial extraction with DTPA (diethylene triamine pentaacetic acid), weak acids, or water were excluded from analysis.

For studies in which contaminant concentrations at multiple depths were measured, the concentration at the 0-10, 0-15, or 0-20 cm depth interval was recorded. Where only a single soil depth was measured, it ranged from 5 to 70 cm.

Studies included contamination from the following sources: mine wastes (ores, tailings), smelter deposits, other industrial sources, vehicle and other urban emissions, wastewater effluents, composts, fertilizers, dredged materials, sewage sludges, fly ashes, flue dusts, nuclear waste, and arsenical pesticide residues. Where materials such as fertilizers were added to soil, data were excluded if mixing with soil did not occur. In addition, some measurements were taken from background locations. For example, chemical data for arsenic included the following sources: mine waste (24 observations), smelter operations (23 observations), fly ash disposal (18 observations), pesticide use (19 observations), nuclear waste (4 observations), unidentified urban sources (3 observations), background or no apparent anthropogenic source (13 observations), and unknown source (18 observations). Field studies in which a current, local atmospheric source of contaminants was present were excluded from the database."

Similarly, the development of the small mammal bioaccumulation database was described by Sample et al. (1998) as follows:

"A literature search was performed for studies that reported chemical concentrations in co-located small mammal and soil samples. Data were restricted to only studies that reported whole body or carcass (whole body minus selected organs or other tissues) concentrations. To ensure relevancy of UFs and models to field situations, only field studies in which resident small mammals were collected were considered. All small mammal tissue burdens were therefore assumed to be at equilibrium with soil concentrations. To ensure comparability of data, only ‘total’ chemical analyses of both soil and small mammals (i.e., resulting from extractions of metals using concentrated acids) were included. Data resulting from DTPA, acetic acid, and other mild extraction methods were excluded. The mean (or composite) chemical concentration in soil and small mammal reported for each sampling location evaluated in each study was considered an observation. If data for multiple small mammal species were reported at a site, each was considered a separate observation. Soil and small mammal data in the database were reported as mg/kg dry weight. If studies reported small mammal concentrations in terms of wet weight, dry weight concentrations were estimated assuming a 68% water content (EPA 1993). Data concerning soil characteristics [e.g., soil pH, % organic matter, cation exchange capacity, soil texture, etc.] were rarely reported and therefore do not appear in the database. Because chemical uptake was expected to vary according to small mammal diet preferences, each species was assigned to one of the three trophic groups: insectivore (diet consisting primarily of insects and other invertebrates), herbivore (diet consisting primarily of plant material), and omnivore (diet consisting of both animal and plant material). A summary of the small mammal species included in the database and the trophic groups to which they were assigned is presented in Table 1. To validate the models developed from the literature-derived data, soil and small mammal data collected as part of Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) remedial investigations at sites in Oklahoma (PTI 1995) and Montana (LaTier et al. 1995) were acquired as a validation dataset. Small mammal species in this validation dataset, however, represented only the herbivore and omnivore trophic groups. Validation data for insectivores were unavailable."

Literature-Derived Bioaccumulation Data for Terrestrial Arthropods. Soil invertebrate bioaccumulation models used for Tier 1 values consisted of the earthworm models from ES/ER/TM-220, *Development and Validation of Bioaccumulation Models for Earthworms*, and "Literature-Derived Bioaccumulation Models for Earthworms: Development and Validation" (Sample et al., 1999). Site-specific observations (as detailed in DOE/RL-2007-21 and DOE/RL-2007-50) indicate that earthworms have a limited occurrence in the riparian habitats at the site, are nonexistent in upland soils, and have little or no contribution to the invertebrate portion of bird and mammal diets at the Hanford Site. Rather, insects and other arthropods (e.g., spiders) are the primary prey of invertebrate feeding birds and mammals at the Hanford Site (WMP-20570). Consequently, the bioaccumulation models and BAFs from ES/ER/TM-220 and Sample et al. (1999) were not used to develop Tier 2 values. Instead, the data collected at the Hanford Site to address site-specific bioaccumulation into invertebrate prey of birds and mammals focused on arthropods (DOE/RL-2007-21).

To supplement these Hanford Site-specific data, additional field collected bioaccumulation data for terrestrial arthropods were identified and extracted from published literature. This database was largely developed to support bioaccumulation modeling for the US Army Adaptive Risk Assessment Modeling Syetems (ARAMS[20]) and was first presented in USACHPPM (2004).

A literature search was performed for studies that reported chemical concentrations in collocated biota and media samples. Literature databases searched included those hosted by the Defense Technical Information Center (DTIC-STINET: Technical Reports), EPA (ECOTOXicology database), and the U.S. National Library of Medicine (Toxicology Data Network). Over 250 references were collected and reviewed for relevant data (i.e., reported media and biota concentrations or diet and biota concentrations).

From the range of studies reviewed, 22 were identified as containing relevant data (i.e., reported collocated soil and biota concentrations). Terrestrial invertebrate data focused on studies of accumulation in insects or spiders and reported whole body concentrations. To ensure relevancy of the soil-to-biota factors and models to field situations, only field studies that collected resident terrestrial invertebrates were considered.[21] Therefore, all terrestrial invertebrate residues were assumed to be at equilibrium with soil concentrations.

To ensure comparability of data, only "total" chemical analyses of both soil and biota (e.g., resulting from extractions of metals using concentrated acids) were included. Data resulting from acetic acid, diethylenetriaminepentaacetic acid, and other mild extraction methods were excluded. The mean (or composite) chemical concentration in media and biota reported for each sampling location evaluated in each study was considered an observation. If data for multiple species were reported at a site, each species was considered a separate observation. Soil and biota data in the terrestrial arthropod database were reported as mg/kg DW. If a study identified in the literature search reported biota concentrations in wet weight, then DW concentrations were either calculated using the water content presented in the study or estimated assuming water content percentages as presented in EPA/600/R-93/187 when water content was not presented in the study.

Data concerning species, soil pH, percent organic matter (OM), cation exchange capacity (CEC), soil texture, and soil Ca concentration (mg/kg dry wt) were included in the database whenever reported. Additionally, class, order, and family taxonomic data were included for each species in the database. These data were used to develop uptake factors by taxon for terrestrial invertebrates. Because chemical

[20] Note that ARAMS was previously known as the *Army* Risk Assessment Modeling System.

[21] One laboratory study was included: total PCB bioaccumulation from soil into crickets. This was done because field data for this contaminant was lacking.

uptake was expected to vary according to terrestrial invertebrate diet preferences, each species was assigned to one of three trophic groups: predator (diet consisting primarily of other insects), herbivore (diet consisting primarily of plant material), and detritivore (diet consisting primarily of organic matter in the leaf litter).

To ensure the accuracy of the terrestrial arthropod database, all data were verified by at least one reviewer. The reviewer would first examine the study for data presented and analytical methods used. The reviewer would then check all calculations and conversions necessary to obtain required units (e.g., mg/kg dry weight). Finally, a minimum of 25 percent of all data was checked. If an error was found during this check, then 100 percent of the data was verified. Unit conversion and transposition errors were the most common types of errors found; however these were infrequent. All errors were corrected. Note that this QA step was performed as part of the development of the dataset in USACHPPM (2004) and not the full dataset that included Hanford Site data.

Summaries of the analytical methods and data presented for each of the 22 studies included in the database are presented in Appendix B. The database of paired tissue and soil data from these 22 studies is presented in Appendix C.

Development of Integrated Bioaccumulation Models. The Hanford Site-specific plant, soil invertebrate, and small mammal data were integrated with the literature-derived bioaccumulation data. All of the Hanford Site-specific biota data were reported as wet weight concentrations, while all of the literature-derived data were reported as dry concentrations. The Hanford Site-specific data were converted to a DW basis for comparability with the literature-derived bioaccumulation data. Water content data for the Hanford Site biota samples were lacking. Consequently, water contents were assumed to be 79 percent for plants (median for young grasses), 68 percent for small mammals (based on mean of mice, voles, and rabbits), and 61 percent for terrestrial invertebrates (based on mean for beetles) (EPA/600/R-93/187). DW concentrations were calculated as (wet weight)/(1-proportion of water content).

Bioaccumulation analyses were performed once all biota data were standardized to a DW basis. Analyses focused on observations where the chemical of interest was detected in both soil and the matched tissue sample; all observations in which either soil or tissue concentrations were nondetects were excluded from the analyses. Analyses consisted of development of both linear BAFs and nonlinear regression analyses[22]. BAFs are simply the ratio between concentrations measured in tissue and that in soil. BAFs were calculated for all paired soil tissue observations and summary statistics (arithmetic mean, standard deviation, minimum, maximum, median, and 90th percentile).

To evaluate if a loglinear relationship between the chemical concentration in the soil and terrestrial biota existed, simple loglinear regression analyses were performed using the *SAS/STAT User's Guide* (SAS Institute, 1999). Chemical concentrations in both soil and biota tissues were transformed to natural log prior to regression analyses. Regression analyses were considered to be significant and suitable for estimation purposes if all three of the following criteria were met: $p < 0.05$, $r^2 > 0.2$, and a positive slope. If regression analyses did not meet anyone of these criteria, the median BAFs were used to estimate tissue concentrations in exposure models.

Scatter plots of the Hanford Site-specific data overlaid on the literature-derived data were produced to provide a graphical presentation of the similarity of these datasets. Scatter plots of the bioaccumulation data are presented in Appendix D. Most scatterplots show at least some overlap between the Hanford data

[22] Note that the use of regression analyses was not a generally accepted method for determining bioaccumulation relationships until after the initial USEPA EcoSSLs were published in 2003.

and the broader literature data set, however, there were a few cases where there is no overlap and a large separation between the two data sources. These exceptions are discussed in more detail in the uncertainty analysis (Chapter 3). Summary statistics for the BAFs and the results of the loglinear regression analyses are presented in Tables 2-4, 2-5, and 2-6 for terrestrial plants, terrestrial arthropods, and small mammals, respectively.

BAFs and regression analyses were performed for all analytes for which data were available, regardless of whether toxicity data were available for development of Tier 2 values. As a consequence, the number of analytes presented in Tables 2-4, 2-5, and 2-6 exceeds the final number of Tier 2 values developed. Scatter plots in Appendix D were only developed for analytes for which Tier 2 values were developed.

2.2.2 Effects Assessment

The ecological effects assessment consists of an evaluation of available toxicity or other effects information that can be used to interpret the significance of the exposures to COPECs relative to potential adverse effects to ecological receptors. Data that can be used include literature-derived or site-specific single chemical toxicity data, site-specific ambient media toxicity tests, and site-specific field surveys (Suter et al., 2000). Calculation of Tier 2 values was based exclusively on the same single chemical toxicity data from literature sources.Both NOAEL and LOAEL based TRVs were identified for wildlife (birds and mammals) and were used to derive the Tier 2 values. The TRVs for birds and mammals were obtained from various sources, and focus was given to the most recent sources and those derived or endorsed by EPA and Ecology (as evidenced by their use in either EcoSSLs or in WAC 173-340). The primary literature source used was the EcoSSLs. The toxicity studies used were initially selected from the following sources, which have been listed in order of preference:

- OSWER Directives 9285.7-56, *Ecological Soil Screening Levels for Dieldrin: Interim Final*; 9285.7-57, *Ecological Soil Screening Levels for DDT and Metabolites*: Interim Final; 9285.7-60, *Ecological Soil Screening Level for Aluminum: Interim Final*; 9285.7-61, *Ecological Soil Screening Levels for Antimony: Interim Final*; 9285.7-62, *Ecological Soil Screening Levels for Arsenic: Interim Final*; 9285.7-63, *Ecological Soil Screening Levels for Barium: Interim Final*; 9285.7-64, *Ecological Soil Screening Levels for Beryllium: Interim Final*; 9285.7-65, *Ecological Soil Screening Levels for Cadmium: Interim Final*; 9285.7-66, *Ecological Soil Screening Levels for Chromium: Interim Final*; 9285.7-67, *Ecological Soil Screening Levels for Cobalt: Interim Final*; 9285.7-68, *Ecological Soil Screening Levels for Copper: Interim Final*; 9285.7-69, *Ecological Soil Screening Level for Iron: Interim Final*; 9285.7-70, *Ecological Soil Screening Levels for Lead: Interim Final*; 9285.7-71, *Ecological Soil Screening Levels for Manganese: Interim Final*; 9285.7-72, *Ecological Soil Screening Levels for Selenium: Interim Final*; 9285.7-73, *Ecological Soil Screening Levels for Zinc: Interim Final*; 9285.7-75, *Ecological Soil Screening Levels for Vanadium: Interim Final*; 9285.7-76, *Ecological Soil Screening Levels for Nickel: Interim Final*; 9285.7-77, *Ecological Soil Screening Levels for Silver: Interim Final*; and 9285.7-78, *Ecological Soil Screening Levels for Polycyclic Aromatic Hydrocarbons (PAHs): Interim Final*

- Other available literature, primarily ES/ER/TM-86/R3, *Toxicological Benchmarks for Wildlife: 1996 Revision*

- NOAEL and LOAEL values that were selected for chemicals and reported in the EPA IRIS database

- NOAEL and LOAEL values presented in the Wildlife Toxicity Assessments developed by the U.S. Army Center for Health Promotion and Preventive Medicine

An EPA panel of experts developed a process for reviewing and selecting TRVs for Eco-SSL development for wildlife. The process was to select NOAELs to develop Eco-SSLs for wildlife. Selected TRVs were either the highest NOAEL for population level effects (e.g., survival, growth, and reproduction endpoints) below the lowest LOAEL for population level effects or the geometric mean of NOAELs, depending on the number and quality of data available. Selection of the TRVs for development of Hanford Site Tier 1 and Tier 2 values attempted to draw on the work of this expert panel. Thus, for analytes that EPA has developed Eco-SSLs for birds and mammals, those same NOAELs were used for developing Hanford Site wildlife values. In some cases, the NOAEL-based TRV for the Eco-SSL was the highest NOAEL below the lowest LOAEL identified for studies evaluating survival, growth, and reproduction endpoints. In these cases, the paired LOAEL from the study was selected as the LOAEL for developing Hanford Site values. In other cases, the geometric mean of the NOAELs for growth and reproduction endpoints was selected to derive the Eco-SSL. In these cases, the LOAEL for developing Hanford Site values was selected as the lowest LOAEL from the Eco SSL dataset above the geometric mean NOAEL.

The only exceptions to this TRV selection process was for the arsenic TRV for avian receptors, where the selected study was not identified and reviewed by the EPA panel. The selected study ("Main and Interactive Effects of Arsenic and Selenium on Mallard Reproduction and Duckling Growth and Survival" [Stanley et al., 1994]) was conducted by USFWS at Patuxent Wildlife Research Center over a period of 92-173 days that resulted in both a NOAEL and LOAEL for reproductive effects. The Eco-SSL document considered nine studies on the effects of arsenic to have sufficient quality to consider in developing the avian SSL. "Arsenic Residues in Eggs from Laying Hens Fed with a Diet Containing Arsenic (III) Oxide" (Holcman and Stibilj, 1997) presented an unbound NOAEL that was selected because it was the lowest value. The Stanley study was conducted by a reliable research group over a much longer time frame, and produced bounded results (i.e., the NOAEL was bound by a LOAEL). The intent of the Eco-SSLs is to provide a value that can be used to provide a reliable conservative screen whereas TRV selection for the Hanford Site is for use in remedial decisions. Given all of this information, the NOAEL and LOAEL from "Main and Interactive Effects of Arsenic and Selenium on Mallard Reproduction and Duckling Growth and Survival" (Stanley et al., 1994) were selected over the Eco-SSL recommendation.

For analytes lacking EcoSSLs, other secondary and primary sources of studies were utilized. As possible, the primary literature sources were obtained and evaluated. Appropriate toxicity studies were selected based on the following criteria:

- Studies were of chronic exposures or exposures during a critical stage of life (e.g., reproduction).
- Exposure was oral through food to ensure that data were representative of oral exposures expected for wildlife in the field.
- Emphasis was placed on studies of reproductive impacts to ensure relevancy to population level effects.
- Studies presented adequate information to evaluate and determine the magnitude of exposure and effects (or no effects concentrations).

Specifically, toxicity studies were selected to serve as the TRV if exposure was chronic or, if during reproduction (a critical life stage), the dosing regimen was sufficient to identify both an NOAEL and an LOAEL, and the study considered ecologically relevant effects (e.g., growth, reproduction, or survival). If multiple studies for a given COPEC met these criteria, the study generating the lowest reliable toxicity value was selected to be the TRV.

The mammalian TRV for uranium was selected based on detailed reviews of available toxicity literature conducted by both Ecology and CHPRC. Ecology recommends a LOAEL of 1.3 mg/U/kg/d based on analyses in Sheppard et al. (2005). However, significant uncertainties and inconsistencies were identified with the derivation of this 1.3 mg/kg/d TRV. Consequently, the dose of 2.8 mg U/kg/d from Domingo et al. (1989) was identified as the most appropriate LOAEL TRV for application at the Hanford Site as it was consistent with WAC 173-340-7493(4)(a). Details of these reviews are presented in Appendix H.

The selected bird and mammal TRVs and study descriptions are presented in Tables 2-7 and 2-8, respectively. Summaries of the studies from which the TRVs were extracted, and descriptions of the derivation of the TRV values, are presented in Appendix E.

2.3 Risk Characterization

In the risk characterization, exposure and effects data are integrated to draw conclusions concerning the presence, nature, and magnitude of effects that may exist at a site. Risk is not directly evaluated in this report. Instead, exposure and effects data are used to calculate Tier 2 values that represent COPEC concentrations in soil that are associated with minimal likelihood of adverse effects (i.e., risk).

This section presents the methodology used to calculate Tier 2 values for nonradionuclide COPECs for community and population level assessment endpoints for receptors that are common to, and representative of, terrestrial environments at the Hanford Site. These Tier 2 values are developed using approaches consistent with EPA risk assessment protocols (EPA 910/R-97/005, *EPA Region 10 Supplemental Ecological Risk Assessment Guidance for Superfund*; EPA 540-R-97-006; and EPA/630/R-9S/002F) and the TEE procedure (WAC 173-340-7493). The Tier 2 values are calculated for the most plausible potential exposure pathways (Section 2.1) for site-related constituents in surface soil at the Hanford Site.

Tier 2 values for birds and mammals were calculated using the same exposure model used for Tier 1 values for birds and mammals:

$$1 = \frac{\sum (DFI) \times \left[(P_v \times C_v) + (P_i \times C_i) + (P_m \times C_m) + (SSL\ X\ P_s) \right]}{TRV}$$

where:

SSL = Soil screening level (mg/kg)

TRV = Toxicity reference value (mg/kg BW/day)

P_v = Proportion of diet represented by vegetation (unitless)

DFI = Daily ingestion rate of all food items (kg/kg-BW/day DW)

C_v = Concentration in vegetation tissue (mg/kg DW)

P_i = Proportion of diet represented by terrestrial invertebrates (unitless)

C_i = Concentration in soil invertebrate tissue (mg/kg dry wt.)

P_m = Proportion of diet represented by small mammals/birds (unitless)

C_m = Concentration in small mammal tissue (mg/kg dry wt.)

P_s = Proportion of diet represented by incidentally ingested soil (unitless)

The TRV denotes the level of toxicity of the chemical, as reported from literature sources (Section 2.2.2). The chemical concentration in the food item (vegetation, terrestrial invertebrate, and small mammal) is estimated by using BAFs or bioaccumulation regression models to extrapolate to the food source. This equation is solved using the Microsoft Office Excel® goal seek tool, such that exposure (the numerator) equals the TRV (the denominator). With the exception of the bioaccumulation models (which are used to calculate C_v, C_i, and C_m in the equation), all parameters used to calculate the Tier 2 values were identical to those used for the Tier 1 values (CHPRC-00784). Therefore, any changes in SSL values are due solely to the integration of site-specific bioaccumulation data. Tier 2 values for birds and mammals were derived based on LOAELs and are reported in Table 2-9. The exposure calculation worksheets used to calculate the LOAEL-based initial Tier 2 values for birds and mammals are provided in Appendix F.

Tier 2 risk-based concentrations were calculated for 43 analytes: 1 general inorganic, 24 metals, 4 PAHs, 1 PCB, 11 chlorinated pesticides, and 2 SVOCs (Table 2-9). Where bioaccumulation models (BAF or regression model) were lacking for any food types for a specific receptor, a risk-based concentration was not calculated.[23] Bioaccumulation data were available for metals for all biota types but were lacking for some biota types for all organics; as a consequence, Tier 2 risk-based concentrations could not be calculated for all receptors for all organics considered. Risk-based concentrations were also not calculated if neither an NOAEL nor an LOAEL were available. Whereas Tier 2 risk-based concentrations were calculated for at least one mammal receptor for all 43 analytes, Tier 2 risk-based concentrations could not be calculated for 6 analytes (beryllium, antimony, strontium, thallium, methoxychlor, and phenol) for avian receptors due to the lack of toxicity data. Specific NOAEL based PRGs where also calculated to help indentify analytes that could warrant further investigation when possible (Table 2-10; Appendix G).

® Microsoft Office Excel is a registered trademark of Microsoft Corporation, Redmond, Washington.

[23] Calculation of exposure without fully parameterizing the exposure model (as would be the case where bioaccumulation data are lacking for a receptors food type) results in an inaccurate exposure estimate. SSLs based on such inaccurate exposure estimates would have extremely high uncertainty and may not be protective of exposed biota.

3 Uncertainties

This chapter discusses uncertainties with the methods employed in developing the Tier 2 values and with the resulting values themselves. Uncertainties in the development of Tier 1 risk-based concentrations are described in CHPRC-00784. Many of these uncertainties also apply to the Tier 2 values. However, the development of Tier 2 values is specifically aimed at reducing the overall uncertainty associated with the Tier 1 values and producing values that do not underestimate risks. The methods employed in the Tier 2 risk-based concentration development primarily focus on eliminating the uncertainty of using information developed from laboratory studies or studies across a broad geographic area (e.g., North America) to represent risks to the wildlife indigenous to the Columbia Plateau ecoregion or the Hanford Site.

As was discussed for the Tier 1 values in CHPRC-00784, some of the Tier 2 values should be used with caution in remediation planning and with a full understanding of their associated uncertainties. For some inorganic constituents in soil, the Tier 2 values calculated in this report are lower than Tier 1 values. Overall, the Generic Screening Levels should be the most conservative values available, followed by Tier 1 values, followed by Tier 2 values. However, depending both on how Tier 1 values were developed and the nature of the assumptions used, there may be some contaminants for which more refined values (i.e., Tier 2) for some species may be lower than Tier 1 values. For example, the Tier 1 arsenic value for the California quail is greater than the Tier 2 arsenic value. The Tier 1 value was derived with a plant tissue bioaccumulation model. Additional site-specific data were considered and, as a result, the pooled site-specific and literature data for paired tissue and soil chemistry samples did not result in a good fit with a regression model. Thus, the median BAF from the combined data set was used to calculate the Tier 2 value. Other examples include manganese values for the killdeer and grasshopper mouse. The Tier 1 values were calculated using an earthworm bioaccumulation model, whereas the Tier 2 values relied on a median BAF for accumulation into arthropod tissue. The differences in these values and how they were calculated and the uncertainty associated should be discussed and incorporated into the risk characterization portion of an ERA. These factors should also be considered when making risk management decisions such as proceeding to the next level of refinement within the tiered process.

Although Tier 2 values have been developed to reduce specific uncertainties inherent to Tier 1 values, other uncertainties associated with the Tier 1 risk-based concentrations remain in the Tier 2 values. Uncertainties associated with Tier 1 values were discussed in the Tier 1 report (CHPRC-00784), and uncertainties common to the Tier 1 and Tier 2 values are briefly reviewed here in Section 3.1. Uncertainties specific to the Tier 2 values are discussed in Section 3.2. In Section 3.3, Tier 1 and Tier 2 values are compared, and the associated uncertainties are discussed with respect to the magnitude of the differences.

3.1 Summary of Uncertainties Relevant to Both Tier 1 and Tier 2 Values

The following uncertainties, associated with the development of Tier 1 risk-based concentrations, were discussed in the Tier 1 report (CHPRC-00784) and are also applicable to the Tier 2 values:

- Some parameters used to characterize exposure to COPECs for each receptor (i.e., the ingestion rates of food and soil) were not available for the bird and mammal species identified in the conceptual exposure model. Therefore, these parameters were estimated based on assumed similarities to other species for which data of varying quality and quantity were available or through allometric scaling based on assumed median BWs. Consequently, exposure may be underestimated or overestimated, and values based on these estimates may be either overconservative or underconservative.

- Although species-specific dietary composition (i.e., the relative proportion of prey items, such as small mammals, invertebrates, and plants in the diet) data were available and used, observations specific to the Hanford Site or eastern Washington were unavailable. Because diet can vary widely by location, the degree to which the selected dietary data represent the Hanford Site is uncertain. Consequently, exposure may be underestimated or overestimated, and values based on these estimates may be either overconservative or underconservative.

- Area use was conservatively assumed to be 100 percent for each receptor for the development of both Tier 1 and Tier 2 values for wildlife. In many cases, the size of the site will be less than the foraging area for a particular wildlife species. Therefore, both Tier 1 and Tier 2 values likely over estimate exposure, particularly for larger roaming mammals and birds.

- The characterization of effects for each COPEC was based on toxicity test results from laboratory studies reported in the literature. In most cases, the available toxicity data were for commonly used laboratory test species, such as chicken or mouse, rather than from the receptor species of interest. It is assumed that effects observed in laboratory species in the laboratory tests were indicative of effects that would occur in wild species at Hanford. The suitability of this assumption is unknown. Therefore, both Tier 1 and Tier 2 values may be either overconservative or underconservative. It is not possible to determine the direction of any potential bias for these assumptions, and depending on the availability of toxicity data for specific COPECs, the variability around the estimate may be more difficult to bound than the variability of assumptions about exposure.

- Bioavailability in the toxicity studies used for development of screening benchmarks and TRVs is generally high because many toxicity tests are performed using soluble salts of inorganic chemicals. Therefore, risk-based concentrations based on literature-derived toxicity values may be overconservative.

- Toxicity data were not available or were limited for some COPEC/receptor combinations. Therefore, Tier 1 and Tier 2 risk-based concentrations could not be calculated for all receptors or COPECs. Exclusion of COPECs from Tier 1 and Tier 2 risk-based concentration development may not adequately address aggregate risk at a site, although it should be noted that remedial alternatives, which are protective of receptors with PRGs, may also be protective of receptors lacking sufficient toxicity data.

- The avian Tier 1 and Tier 2 risk-based concentrations for arsenic are based on data for pentavalent arsenic. Although pentavalent arsenic is less toxic than trivalent arsenic, it is likely more prevalent in surface soil to which wildlife could become exposed. Consequently, exposure may be overestimated or underestimated, depending on the form and spatial distribution of arsenic species in soil.

3.2 Uncertainty in Tier 1 and Tier 2 Bioaccumulation Assumptions

For Tier 1 values, concentrations in the food items integrated into the wildlife exposure models were estimated solely from literature-based bioaccumulation models (BAFs or regression models). In addition, soil invertebrate bioaccumulation was represented by earthworms, a taxa not representative of the Central Plateau. Taken together, the suitability of these BAFs and models to conditions at the Hanford Site is either unknown or questionable (depending on the food web and receptor). Modeled dietary concentrations may therefore either be greater than or less than actual site concentrations, with the resulting Tier 1 values being either overconservative or underconservative.

Food chain models underlying the generic screening levels for wildlife published in the Model Toxics Control Act estimate contaminant concentrations in invertebrate and plant tissues based simply on BAFs.

BAFs represent a linear accumulation rate that is constant across all soil concentrations and does not account for other environmental factors. While BAFs may be appropriate for small ranges of concentrations of some analytes within nontoxic ranges (Jiang and Singh, 1994, "Effect of Different Forms and Sources of Arsenic on Crop Yield and Arsenic Concentration," and Carlson and Bazzaz, 1977, "Growth Reduction in American Sycamore [*Plantanus occidentalis* L.] Caused by Pb-Cd Interaction"), there is evidence to suggest that accumulation decreases with increasing soil concentration. Earthworm studies have shown this to be true (ES/ER/TM-220; Neuhauser et al., 1985, "Toxicity of Metals to the Earthworm *Eisenia fetida*"). A number of empirically derived regression models have been developed describing the relationship of concentrations in biota tissue to concentrations in their surrounding abiotic media. These were incorporated into the methodology for establishing EPA's EcoSSLs for wildlife (OSWER Directive 9285.7-55) and were employed in the development of the Tier 1 values as available. For certain inorganics such as uranium, the default BAFs prescribed in WAC 173-340, Table 749-5, are considerably greater than literature-based BAFs. Tier 1 values often are higher than generic values because of the use of more realistic BAFs and regression-based bioaccumulation models. Although more realistic, the BAFs and regression-based bioaccumulation models integrated into the Tier 1 values are wholly literature-based and do not include any Hanford Site-specific data. This lack of site-specificity contributes uncertainty to the final Tier 1 values.

For Tier 2 values, uncertainty inherent to the Tier 1 bioaccumulation estimates was reduced (where possible) by replacing the Tier 1 bioaccumulation models with models that include Hanford Site-specific bioaccumulation data (small mammal, arthropod, and plant tissue data, each paired with collocated soil data). Principle 3 of OSWER Directive 9285.7-28P maintains site-specific data, including tissue residue data, is preferable to literature-based data to develop protective quantitative cleanup levels. Hanford Site-specific and literature-based bioaccumulation data overlap and display comparable distributions for many analytes (e.g., cadmium [Figure D-8], copper [Figure D-11], lead [Figure D-17], and zinc [Figure D-25]). However in some cases (e.g., aluminum [Figure D-3] and thallium [Figure D-21] in soil invertebrates and small mammals; silver [Figure D-2] in plants and small mammals, etc.), Hanford Site-specific and literature-based bioaccumulation data do not overlap and are discontinuous. In these cases, bioaccumulation models using the combined data may either over or under estimate the actual accumulation of chemicals into tissue biota, with the resulting Tier 2 values being either overconservative or underconservative.

Scatter plots of the paired soil and tissue concentrations in Appendix D showed that for a few analyte-tissue relationships, the concentrations in soil associated with prey tissue from Hanford do not overlap the concentration in soils from the broader literature[24]. Soil ranges in some cases differ by an order of magnitude or more. Full overlap is neither expected nor desired per the reasons listed in Chapter 1. However, with absolutely no overlap, a large difference adds uncertainty to any statistics performed on the pooled data and then to any risk-based values that incorporate a statistical representation of these data. Careful consideration was given in these cases as to whether or not to pool the Hanford specific and literature data. Using pooled data for these analytes assumes that if data were available within the range not currently represented by either dataset, these data would be consistent with the relationship described by the pooled data. Given the uncertainty of this assumption, with a sufficient number of samples, the Hanford data could have been used exclusively. However, as shown in Table 3-3, in many cases the percentage of paired samples with detects in both soil and tissue was actually quite low (below thirty percent and even below ten percent for some soil-tissue combinations). The paired soil and tissue samples

[24] Cases for soil associated with plant tissue included antimony, beryllium, silver, and vanadium. Cases for soil associated with small mammal tissue included aluminum, mercury, and thallium.

from the Hanford database were collected from 48 waste sites and 18 reference sites. The results suggest that in many cases the data represents background or reference conditions. Given this finding, in cases where Hanford and literature data did not overlap, the data were still pooled.

The decision to pool Hanford and literature data when it is not continuous may introduce uncertainty at the expense of site-specificity. Exclusive use of Hanford soil-tissue data is reasonable if the conditions at Hanford are unique and indicative of a bioaccumulation relationship than differs from that observed in the broader literature. A different relationship could be due to unique bioavailability characteristics due to soil properties, source of the chemicals being evaluated, or the specific species accumulating the chemicals. Bioaccumulation scatterplots for Hanford and literature data presented in Appendix D however do not support the likelihood of unique conditions.Given the heterogeneous distribution of soil concentrations, relatively small waste sites, soil covers over waste sites, etc., there is uncertainty in the Hanford data irrespective of soil types and study methods. As a consequence, use of the Hanford data alone could either over- or under-estimate actual exposure and bioaccumulation. Considering the uncertainties of both approaches (i.e., using Hanford only data or pooled data), the benefit of pooling was determined to outweigh the uncertainties of pooling.

Estimation of tissue accumulation with a regression relationship is based on the assumption that there is a common mechanism underlying contaminant uptake from an environmental media by a receptor. If each media-receptor relationship did not devolve from a common mechanism – if each reflected a truly independent and unique relationship – then media-receptor (tissue) plots could never be explored using regression analysis. This common relationship (which may or may not be linear) is evident on a receptor-specific basis, and across a range of media concentrations. Many of the Hanford-only media-tissue data occupy the lower end of the soil concentration range. Data from the literature are required to represent higher concentrations and thus more completely delineate the underlying bioaccumulation relationship. Because they only represent low soil concentrations, BAFs (and the resulting PRGs) based solely on 66 Hanford samples are no more relevant than those from the published literature when they are used to estimate tissue concentrations associated with soil concentrations that are higher than those found in the 66 Hanford samples used to derive the BAFs. Given the understanding that bioaccumulation is higher at lower concentrations, the reference samples may be heavily influencing the statistics of the “site” data. As was presented in CHPRC-01311, there is evidence that soil concentrations at other waste sites-those already remediated, those yet to be remediated, and perhaps those yet to even be sampled will be in excess of the concentration ranges of the Hanford only samples. Thus, BAFs and regressions from pooled data sets were employed for food-chain models used to develop all Tier 2 PRGs for Hanford, except where noted (e.g., beryllium and antiomony[25]).

For the cases where Hanford and literature data were not continuous, additional evaluation was conducted to better explain how PRGs could have differed had the data not been pooled. The BAFs used to generate these data are found in Table 3-4 and results are found in Table 3-5 . A discussion of the results is found below. In all cases, pooling the data is recommended.

<u>*Silver*</u>

Included in table because Hanford and literature data for soil and plants were discontinuous. Thus only PRGs for herbivores and omnivores are discussed.

[25] For the cases of soil associated with plant tissue for beryllium and antimony, the methodology for EcoSSL development provides regressions from the broader literature data that was employed instead of using a BAF or regression from the pooled data. The overlap between the pooled plant bioaccumulation data and the EcoSSL data is displayed in Figures D-7 and D-18 for beryllium and antimony, respectively.

Tier 2 PRGs for herbivores (quail and pocket mouse) and omnivores (meadowlark and deer mouse) employed a regression equation of silver into plants. Data consisted of 4 paired samples from Hanford (soil range 0.3-0.35 mg/kg – Hanford Site background has a 90th percentile value of 0.167 and a maximum value of 0.273 mg/kg) and 10 from literature (soil range 1-7 mg/kg). Of the 150 total paired soil and plant tissue samples collected at the Hanford Site, only 4 samples had detected silver concentrations in both soil and tissue. This low frequency of detection (3%) suggests limited bioavailability and/or very low uptake of silver into plants. While the resulting Hanford PRGs are lower, they are based on few samples with detected concentrations, and concentrations in these samples are marginally greater than background. Pooling of data expands the data set to better represent the bioaccumulation relationship over a broader soil concentration range.

The final recommendation is that Hanford only data for silver would not be appropriate. Pooled data sets should be used.

Thallium

Included in table because Hanford and literature data for soil and mammals were discontinuous. Thus only PRGs for carnivores are discussed.

Tier 2 PRGs for carnivores (badger and hawk) relied on a median BAF from pooled data. Thirteen paired samples from Hanford (soil at 0.15 -0.2 mg/kg) and 2 from literature (soil at 1.1 mg/kg). Only 13 of 111 (12%) paired samples had thallium concentrations detected in both soil and tissue, again suggesting limited bioavailability and/or very low uptake into small mammals. Hanford Site 90th percentile value for background for thallium 0.185 mg/kg with a maximum value of 0.523 mg/kg. While the resulting Hanford-only PRGs are lower, they are based on few samples with detected concentrations, and concentrations in these samples are within the range of background. Pooling of data expands the data set to better represent the bioaccumulation relationship over a broader soil concentration range.

The final recommendation is that Hanford only data for thallium for small mammals would not be appropriate. Pooled data sets should be used.

Mercury

Included in table because Hanford and literature data for soil and mammals were discontinuous. Thus only PRGs for carnivores are discussed.

Tier 2 PRGs for carnivores (badger and hawk) relied on a median BAF from pooled data. Data consisted of 5 paired samples from Hanford (with soil concentrations ranging from 0.2 -0.07 mg/kg; Hanford Site background has a 90th percentile value of 0.013 and a maximum value of 0.029 mg/kg) and 18 from literature (with soil concentrations ranging from 0.4-0.6 mg/kg). The Hanford-only PRGs for these receptors relied on 5 paired samples (out of a total of 111 samples collected) in which mercury was detected in both soil and tissue. This low frequency of detection (<5%) suggests limited bioavailability and/or very low uptake into small mammals. While the resulting Hanford-only PRGs are lower, they are based on few samples with detected concentrations. Pooling of data expands the data set to better represent the bioaccumulation relationship over a broader soil concentration range.

The final recommendation is that Hanford only data for mercury would not be appropriate. Pooled data sets should be used.

Aluminum

Included in table because Hanford and literature data for soil and mammals were discontinuous. Thus only PRGs for carnivores are discussed. It should be noted that the EcoSSL for aluminum states that

unless soil pH is less than 5.5, aluminum is unlikely to be bioavailable and unlikely to present a risk to soil exposed biota. Soil pHs at Hanford have generally been reported in the 7-8 range. Consequently, with the exception of waste sites that may have lower soil pH, aluminum is unlikely to present risks to soil exposed biota at the Hanford site.

Tier 2 PRGs for carnivores (badger and hawk) employed a regression equation of aluminum into small mammals based on 67 paired samples from Hanford (with soil concentrations ranging from 4,000-10,000 mg/kg; Hanford Site background has a 90th percentile value of 11,800 and a maximum value of 18,100 mg/kg) and 12 samples from literature (with soil concentrations ranging from 10,000->20,000 mg/kg). Aluminum was detected in both soil and tissue from all 67 samples, all of which were within the background range. While the resulting Hanford-only PRGs are higher, they are based samples that are within the range of background. Pooling of data expands the data set to better represent the bioaccumulation relationship over a broader soil concentration range.

Final recommendation is that pooled data for aluminum would be appropriate.

Vanadium

Included in table because Hanford and literature data for soil and plants were discontinuous. Thus only PRGs for herbivores and omnivores are discussed.

Tier 2 PRGs for herbivores (quail and pocket mouse) and omnivores (meadowlark and deer mouse) employed a regression equation of vanadium into plants based on 51 paired samples from Hanford (with soil concentrations ranging 35 -70 mg/kg – Hanford Site background has a 90th percentile value of 85.1 and a maximum value of 97.9 mg/kg) and 31 samples from literature (with soil concentrations ranging from 20-60 mg/kg). Of the 150 sample pairs from Hanford, all were within the range of background concentrations and 51 (39%) had detected vanadium in both soil and tissue. Literature data also fall within the Hanford background range. The resulting Hanford-only PRGs for California quail, western meadowlark, and deer mouse are higher, while those for Great Basin pocket mouse are lower. Because both the Hanford and literature data are indicative of bioaccumulation at background concentrations, and bioaccumulation rates generally decrease with increasing concentration, PRGs based on these values, although uncertain, are likely to be conservative.

Final recommendation is that pooled data for vanadium would be appropriate.

3.3 Uncertainty in Tier 2 Values

To evaluate uncertainty in the Tier 2 values, the quality of available bioaccumulation data was identified for each analyte in each prey item to derive a qualitative level of confidence associated with the value for each analyte-receptor combination (Table 3-1).

Levels of confidence were based primarily on the amount of data that was available for use in the bioaccumulation model and significance of the loglinear relationship of the paired soil and tissue chemistry data for the analyte. The levels of confidence were assigned as follows:

- **High confidence (low uncertainty):** Sample size for paired soil and tissue samples was large ($n > 100$), loglinear regression was significant ($p < 0.05$), and the regression explained a reasonable portion of the variability ($r^2 \geq 0.33$).
- **Moderate confidence (moderate uncertainty):** Sample size for paired soil and tissue samples was greater than 10, and loglinear regressions were not significant; therefore, a BAF was used for the dominant pathway.

- **Low confidence (high uncertainty):** Fewer than 10 paired soil and tissue samples; BAF was used in bioaccumulation model.

As shown in Table 3-1, the greatest number of analyte-specific, risk-based concentrations with a high level of confidence are for herbivorous receptors (California quail [10] and Great Basin pocket mouse [11]) followed by those for carnivorous mammals (badger [9]). The least number of high confidence values were derived for omnivores (western meadowlark [3] and deer mouse [4]). Overall confidence for a specific analyte across all receptors was highest for copper and lead with a high level of confidence assigned for all eight receptors. Overall confidence for cadmium and zinc values was also high, as a high level of confidence was assigned to values for six of the eight receptors. These findings across analytes and for receptors by feeding guild are directly related to the number of paired soil and tissue samples available for modeling semi-site-specific bioaccumulation into the prey of Hanford Site receptors and the goodness of fit of loglinear regression models (r^2) derived to characterize these data.

The lowest Tier 2 PRG value for each analyte was assessed further by considering the modeled tissue concentrations relative to which pathway dominates the total estimated dose of the analyte for that receptor (Table 3-2). This additional analysis of the lowest value was considered because this value is more likely to guide remedial action decisions for the protection of wildlife. The lowest Tier 2 values for five metals (arsenic, cadmium, copper, lead, and zinc) were judged to have high confidence. Among metals, most Tier 2 values (15 of 24) were judged to have moderate confidence. Two (thallium and tin) were judged to have low confidence. Because of limitations associated with site-specific bioaccumulation data, the lowest Tier 2 values for 22 of 43 analytes (including all values for general inorganics, PAHs, PCBs, chlorinated, pesticides, and SVOCs) were also considered to have low confidence.

Because the bioaccumulation data used in the models represent a broad range of concentrations, Tier 2 values with high confidence may be generally applied across the Hanford Site with limited concern. Additional consideration should be applied for the Tier 2 values with moderate confidence, as they are based on less robust bioaccumulation data than those with high confidence. These values may have more limited and localized application than those with high confidence; however, these values are preferable to the Tier 1 values. Tier 2 values with low confidence should be applied very cautiously. The limited bioaccumulation data upon which they are based suggests that they are not broadly applicable. For these analytes, use of the previously developed Tier 1 values may be preferable. Alternatively, additional site-specific bioaccumulation data could be collected and used to calculate a more robust value.

The models used to develop Tier 2 values all include the use of TRVs for the literature that are doses of a chemical reported on a dry weight basis. Estimation of the exposure term must also be on a dry weight basis. The Hanford tissue data reported measurements on a wet weigth basis and did nor provide the percent moisture of the tissue samples. Therefore, default percent moisture values available from the EPA (EPA/600/R-93/187) were assumed in order to convert the Hanford tissue data to a dry weight basis. The Hanford tissues could have had lower or higher moisture contents resulting in either an overconservative or underconservative Tier 2 value.

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4 Summary and Discussion

Tier 2 values were developed as refinements of Tier 1 values by including available Hanford Site-specific bioaccumulation data instead of relying on models using data from across North America. The use of Hanford Site-specific data is intended to provide more accurate exposure estimates with less uncertainty because it accounts for Hanford Site-specific conditions that affect bioavailability of soil constituents. Additionally, for invertivorous receptors, the Tier 2 values are based on bioaccumulation by terrestrial arthropods rather than earthworms (soil invertebrates are rarely encountered in the arid upland soils found at the Hanford Site).

Table 4-1 presents Tier 1 and Tier 2 values; Hanford Site-specific data were available to develop Tier 2 values for 43 analytes: 1 general inorganic, 24 metals, 4 PAHs, 1 PCB, 11 chlorinated pesticides, and 2 SVOCs. Where Hanford Site-specific bioaccumulation models (BAF or regression model) were lacking for any food types for a specific receptor, a risk-based concentration was not calculated. For all biota types, bioaccumulation data were available for metals; however, data were lacking for some biota types for all organics. As a consequence, Tier 2 values could not be calculated for all receptors for all organics considered. Risk-based concentrations were also not calculated if neither a NOAEL nor a LOAEL were available. Whereas Tier 2 values were calculated for at least one mammal receptor for all 43 analytes, Tier 2 values could not be calculated for avian receptors for 6 analytes (beryllium, antimony, strontium, thallium, methoxychlor, and phenol) due to the lack of toxicity data. Consequently, Tier 2 values were derived for a total of 37 analytes.

Table 3-2 presents an analysis of the lowest Tier 2 values for each analyte with sufficient data (i.e., moderate confidence) for deriving a value. Four receptors accounted for the lowest Tier 2 values for 39 of the 43 analytes: killdeer (14 analytes), deer mouse (11 analytes), Great Basin pocket mouse (8 analytes), and California quail (6 analytes). Grasshopper mice, badger, red-tailed hawk, and western meadowlark each represented the lowest Tier 2 value for two or fewer analytes. Terrestrial plants and arthropods were the most frequent dominant exposure pathways, representing 17 and 16 analytes, respectively. Soil ingestion was the dominant exposure pathway for eight analytes (all of which were metals); small mammals ingestion dominated for only two analytes (PCBs and aldrin). The infrequency with which the lowest Tier 2 values were associated with carnivorous receptors (badger and red-tailed hawk) reflects the limited representation of more highly bioaccumulative compounds (such as PCBs and organochlorine pesticides) at the Hanford Site; as a result, there is limited food web transport and relatively less exposure of receptors at higher trophic levels (carnivores, such as badger and hawk) onsite.

For many receptor-analyte combinations, the Hanford Site-specific bioaccumulation data were limited to relatively few observations (i.e., less than 10) and, for those receptor-analyte combinations, the Tier 2 values may not be less uncertain than the Tier 1 values. The Tier 2 values for only five metals (arsenic, cadmium, copper, lead, and zinc) were considered to have high confidence. For each of these metals, more than 100 paired tissue/soil data points were used in the bioaccumulation models and, in most cases, a regression model was used to estimate bioaccumulation rather than a simpler BAF. For cadmium, copper, lead, and zinc, the lowest Tier 2 value was greater than the lowest Tier 1 value. This pattern supports the assumption that the bioaccumulation models for Tier 1 values are generally conservative, and models relying on a robust Hanford Site-specific bioaccumulation data set reduce uncertainty and also result in greater risk-based concentrations. However, as shown in Table 4-1, this assumption does not apply to all analytes. For example, although the Tier 2 values for arsenic are based on moderate to high confidence bioaccumulation data (Table 3-1), the Tier 2 values are almost uniformly lower than those for Tier 1.

Table 4-1 presents the progression of risk-based soil concentrations for metals (and some inorganics like boron) from the Generic Screening Levels to the Tier 1 values to the Tier 2 values. Though based on smaller sample sizes (<100 samples) and BAFs instead of regression models, the lowest Tier 1 values for ten analytes (arsenic, boron, mercury, manganese, molybdenum, selenium, strontium, tin, thallium, and uranium) decrease from Tier 1 to Tier 2. For these analytes, the available paired soil and tissue data indicate that Hanford Site conditions support accumulation in tissues at greater rates than what has been observed in other field studies. For some analytes, such as manganese and uranium, the measured concentration of all tissues was greater than estimated. For others, such as selenium and thallium, differences were negligible and just slightly more than estimated. And for some, such as strontium, measured concentrations were higher than estimated, while others were lower. While the lowest Tier 2 values for these 10 analytes may be lower than the lowest Tier 1 values, the greater number of samples in the data set used to develop these Tier 2 values, and the fact that they include Hanford Site-specific data, reduces the uncertainty in their derivation relative to the Tier 1 values; thus, they should be considered more appropriate than the Tier 1 values.

The differences between Tier 1 and Tier 2 values are strictly due to differences in modeled estimates of tissue concentration. Table 4-2 presents a summary of the modeling of tissue concentration of metals (and some inorganics like boron) used in the Tier 2 values relative to the models used for the Tier 1 values. There are no ubiquitous trends in the accumulation of tissue across any one prey item. Modeled concentrations in plants, invertebrates, and small mammals all appear to decrease for some analytes and increase for others. Across analytes, modeled concentrations tend either to increase or decrease across all three tissue types. However, there were several analytes for which modeled concentrations increased for some tissues and decreased for others. Likewise, there were differences between receptors consuming the same tissues. Due to differences in exposure factors between receptors (ingestion rates, percentages of different food items in the diet, and incidental ingestion of soil), modeled tissue estimates for some analytes differ between receptors that eat the same tissue type. As an example, the estimate of lead in plant tissue within the diet of the California quail decreased in deriving the Tier 2 value, while it increased for other herbivorous and omnivorous receptors.

The ecological risk-based values presented in this report result from a tiered process in which values are refined, as needed, with additional site-specific information and from using more complex methods to develop values that are more representative of ecological exposure pathways at the Hanford Site. The tiered approach is in accordance with guidance developed by EPA (principally, EPA 540-R-97-006 and OSWER Directive 9285.7-55) and the ecological evaluation procedure presented in WAC 173-340-7490 through WAC 173-340-7493. Central to the concept of a systematic, informed progression is an iterative process (i.e., cycles) of decision making involving evaluation, deliberation, data collection, and communication. All of these steps should be focused on deciding the following:

- Whether or not the ecological risk-based concentrations at the current tier are sufficient to support cleanup decision making (a process to exiting the tiered approach is available at each tier)
- Whether or not progression to a higher tier of refinement would reduce uncertainties and/or increase confidence in risk-based concentrations to warrant the additional effort if the information available at the current tier is determined to be insufficient

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Tables

Table 1-1. Comparison of Central Plateau Outer Area and River Corridor Waste Site Analytical Results to Tier 1 Values Protective of Wildlife

Constituent	Background[1] (mg/kg)	Lowest Tier 1 Wildlife (mg/kg)	Statistics (mg/kg)													
			Area	Maximum	99th	98th	95th	90th	75th	50th	25th	10th	5th	Minimum	Sample Count
Antimony	**0.13**[2]	6	Outer Area	2,100	186	39	10	3.35	1.1875	0.505	0.2925	0.07735	0.047325	0.0368	166
		Grasshopper mouse	River Corridor	266	6	3.584	1.63	1.1	0.793	0.52	0.39	0.296	0.26	0.1	955
Arsenic	6.47	190	Outer Area	131	13.58	10.888	6.676	5.262	3.75	2.88	2.35	1.82	1.58	0.881	957
		Deer mouse	River Corridor	100	24.884	15.6	8.61	6.3	3.8	2.8	2.2	1.7	1.4	0.43	5,174
Barium	132	1,323	Outer Area	4,760	195.2	150.4	120	105	89.6	76.5	62.5	49.8	43.7	0.77	981
		Killdeer	River Corridor	9,420	326.04	207.08	131	100	79.1	65	54.8	45.28	38.5	1.3	4,949
Boron	**3.89**[2]	133	Outer Area	105	47.467	43.924	40.605	35.8	28.35	14.3	8.59	5.268	2.1	0.51	520
		Pocket mouse	River Corridor	497	26.569	15.2	7.225	3.9	2.3	1.5	1	0.7	0.5753	0.19	3,344
Cadmium	**0.563**[2]	2	Outer Area	28	7	4	3	1.19	0.3935	0.15	0.11	0.07	0.0535	0.0116	511
		Killdeer	River Corridor	55	2	1.84	1.1	0.56	0.2	0.118	0.075	0.053	0.047	0.01	2,776
Chromium	18.5	38	Outer Area	815	94	46	21.86	14.86	10.4	8.07	6.055	4.028	3.026	1.43	1,003
		Killdeer	River Corridor	23,000	152	76	30.3	19.1	13	10	7.9	6.2	5.1	0.12	5,998
Cobalt	15.7	111	Outer Area	18	13.217	12.6	11	9.884	8.6425	7.6	6.42	5.666	5.149	2.83	584
		Killdeer	River Corridor	34	12.8	11.4	10.2	9.4	8.2	7	5.81	5	4.5	0.28	4,458
Copper	22	107	Outer Area	4,080	170	77.82	39.9	22.5	16.5	13.7	11.5	9.7	8.93	0.729	841
		Killdeer	River Corridor	82,900	71.216	46.016	29.57	22.5	16.8	14.1	12.4	10.9	10	0.13	4,347
Lead	10.2	36	Outer Area	335,000	555	239	81	21.3	7.7	5.3	3.93	2.87	2.4	1.3	971
		Killdeer	River Corridor	52,800	164.44	93	47	24.7	8.67	4.9	3.5	2.618	2.3	0.25	6,079
Manganese	512	5,798	Outer Area	8,460	913.28	741.64	431.4	396.6	365	326	286	261	247.8	134	213
		Deer mouse	River Corridor	33,400	561.04	506.08	409	375	332	292	259	224	203	3.2	4,449
Mercury	0.0131[2]	2	Outer Area	86	31	10.796	4.3	0.964	0.245	0.07	0.0274	0.0107	0.008571	0.00514	175
		Deer mouse	River	252	13.65	5.168	1.3	0.5	0.11	0.034	0.017	0.0092	0.0075	0.0044	2,011

Table 1-1. Comparison of Central Plateau Outer Area and River Corridor Waste Site Analytical Results to Tier 1 Values Protective of Wildlife

Constituent	Background[1] (mg/kg)	Lowest Tier 1 Wildlife (mg/kg)	Statistics (mg/kg)												
			Area	Maximum	99th	98th	95th	90th	75th	50th	25th	10th	5th	Minimum	Sample Count
			Corridor												
Nickel	19.1	33	Outer Area	268	36	20.988	16.21	13.2	10.6	9.2	7.855	6.566	5.188	0.95	879
		Grasshopper mouse	River Corridor	142	42	22.628	15.6	13.1	11.2	9.93	8.8	7.9	7.202	1.6	1,485
Selenium	0.78[2]	2	Outer Area	5	2.4666	2.0824	1.716	1.536	1.2	0.92	0.64	0.45	0.38	0.197	635
		Deer mouse	River Corridor	11	6.112	4.316	2.57	1.68	1.1	0.76	0.4955	0.3368	0.29	0.204	243
Thallium	**0.185**[2]	9	Outer Area	5	3.0072	1.4	1.3	0.98	0.63	0.17	0.11	0.08436	0.06104	0.0192	285
		Deer mouse	River Corridor	5	4.06	3.12	2.4	1.8	1.6	1.2	0.9	0.503	0.452	0.37	61
Uranium	**3.21**[3]	706	Outer Area	87	15.056	8.9	1.948	0.8764	0.54	0.43	0.35	0.2824	0.2594	0.14	637
		Deer mouse	River Corridor	2,610	565.25	206.1	64.625	31.1	5.4175	3.1	2.2	1.5	1.4	1.1	106
Vanadium	85.1	31	Outer Area	104	87.375	84.08	77.2	70.2	59.4	48.05	37.225	23.2	19.1	4.98	806
		Killdeer	River Corridor	128	87.142	81.9	74.1	68.2	57.7	47.1	39	31.3	27.3	0.09	4,430
Zinc	67.8	68	Outer Area	9,420	760	312	144	84	53.375	43.95	36.3	29.2	25.1	10.2	958
		Killdeer	River Corridor	28,600	349	282	137	71	49.5	42.3	36.7	31.7	28.8	0.84	4,332

[1]All background values are Hanford-specific 90th percentiles from DOE/RL-92-24, 2001 unless otherwise stated.

[2] Hanford-specific 90th percentile from ECF-HANFORD-11-0038.

[3]Not a Hanford Site-specific background value; source of value is DOE/RL-96-17, *Remedial Design Report/Remedial Action Work Plan for the 100 Area*.

Statistics:

Underlined data = below background

Shaded data = above wildlife value

Table 2-1. Exposure Factors for Bird and Mammal Endpoint Species

Assessment Endpoint Functional Group	Endpoint Species	Body Weight (kg)	Notes	Source	Food Intake (kg/kg-bw/d, dw)	Notes	Source	Diet Composition						Soil Ingestion Site (kg/kg-bw/d)[b]	Notes	Source
								Percent of Diet as Mammals/ Birds	Percent of Diet as Invertebrates	Percent of Diet as Plants	Major Food Items	Source	Percent of Diet as Soil			
Granivorous bird	California Quail	**0.18**	Median from multiple studies	Robel, 1969; Roseberry and Klimstra, 1971; Guthery et al., 1988	**0.078**	Average of food ingestion rates over 4 seasons from exposure factors handbook for bobwhite (EPA, 1993). Rate based on diet of commercial game food with only 5 to 10% water content, therefore, assumed DW.	Koerth and Guthery, 1990	0	0	**100**	Primarily a granivore, but also ingests some animal matter (primarily snails) and green forage. It is assumed this species ingests 100% plants (seeds) for screening level dose calculation purpose.	Assumed	**6.1**	**0.00476**	Value for mourning dove assumed representative of California Quail. Median soil ingestion rate estimated for mourning dove in Table 3 of the EcoSSL guidance. The median was selected as the best measure of central tendency that is unbiased by outliers.	EPA, 2007i
Omnivorous bird	Meadowlark	**0.0995**	Median from multiple studies	Wiens and Rotenberry, 1980; Maher, 1979	**0.12**	Allometric estimation for omnivorous birds normalized to kg/kg-bw/d using median body weights from multiple studies.	Nagy, 2001[a]	0	**63**	**37**	Ground forager that consumes both plant material (primarily seeds) and invertebrates (primarily arthropods). Percentages represent averages for >1900 meadowlarks studied across North America.	Lanyon, 1994	**2.08**	**0.0025**	Data regarding soil ingestion of western meadowlarks are unavailable. For the purposes of this ERA, it was assumed that soil ingestion for meadowlarks is similar to that derived for the American robin.	ES/ER/TM-125
Insectivorous bird	Killdeer	**0.0756**	Median from multiple studies	Purdue and Haines, 1977; Stegeman, 1955; Jackson et al., 2000; Dunning, 1993	**0.192**	Allometric estimation for charadriiformes normalized to kg/kg-bw/d using median body weights from multiple studies.	Nagy, 2001[a]	0	**100**	0	Primarily consume terrestrial invertebrates, especially earthworms, grasshoppers, beetles, and snails. Forages in terrestrial and aquatic habitats.	Jackson and Jackson, 2000	**7.3**	**0.0140**	Data regarding soil ingestion of killdeer are unavailable. For the purposes of this ERA, it was assumed that soil ingestion for killdeer is similar to that of the least sandpiper. However, it should be noted that this value is likely somewhat higher than the actual soil ingestion for killdeer because killdeer do not probe in the soil/sediment. Jackson and Jackson (2000) reported grit to be 4.5% by volume of the esophageal contents in 15 killdeer, which suggests that a value of 7.3% may be a conservative estimate.	Beyer et al., 1994

Table 2-1. Exposure Factors for Bird and Mammal Endpoint Species

Assessment Endpoint Functional Group	Endpoint Species	Body Weight (kg)	Notes	Source	Food Intake (kg/kg-bw/d, dw)	Notes	Source	Diet Composition						Soil Ingestion Site (kg/kg-bw/d)[b]	Notes	Source
								Percent of Diet as Mammals/ Birds	Percent of Diet as Invertebrates	Percent of Diet as Plants	Major Food Items	Source	Percent of Diet as Soil			
Carnivorous bird	Red-Tailed Hawk	**1.179**	Median from multiple studies	Craighead and Craighead, 1956; Steenhof,1983; Springer and Osborne, 1983	**0.035**	High end estimate (estimate * 1.25) presented in Table 1 of the EcoSSL guidance (EPA, 2007i). Based on empirical ingestion data from Craighead and Craighead (1956).	EPA, 2007i	**100**	0	0	Primarily eat small mammals such as mice, shrews, voles, rabbits, and squirrels, but also eat birds, lizards, snakes, and large insects, depending on availability. Assumed 100% small mammal diet for screening level dose calculation purposes.	EPA, 1993 (Section 2.1.6)	**2.4**	**0.00085**	Median soil ingestion rate estimated for red-tailed hawk in Table 3 of the EcoSSL guidance. The median was selected as the best measure of central tendency that is unbiased by outliers.	EPA, 2007i
Granivorous mammal	Great Basin Pocket Mouse	**0.0175**	Median from multiple studies	Scheffer, 1938; O'Farrell et al., 1975; Schreiber, 1978	**0.123**	Allometric estimation for granivorous mammals normalized to kg/kg-bw/d using mean weight as reported by Scheffer, 1938; O'Farrell et al., 1975; and Schreiber, 1978.	Nagy, 2001[a]	0	0	**100**	Diet consists primarily of seeds; however, insects (e.g., insect larvae reported in pocket mice from eastern Washington; Kritzman, 1974) may be consumed in the spring before seeds become available. Diet assumed to be 100% plants (seeds) for screening level dose calculation purpose.	Kritzman, 1974	**2**	**0.00246**	Data regarding soil ingestion of granivorous mammals are unavailable. For the purposes of this ERA, it was assumed that soil ingestion for pocket mice is similar to that of the white-footed mouse.	Beyer et al., 1994
Omnivorous mammal	Deer Mouse	**0.0194**	Median from multiple studies	O'Farrell, et al., 1975; Silva and Downing, 1995	**0.166**	Allometric estimation for omnivorous mammals normalized to kg/kg-bw/d using median body weights from multiple studies.	Nagy, 2001[a]	0	**50**	**50**	Diet consists of plant material (primarily seeds) and terrestrial invertebrates (mainly insects). Approximation for diet of deer mice in Colorado over all seasons was 50% plants and 50% invertebrates.	EPA, 1993 (Section 2.2.7)	**2**	**0.0033**	Assumed to be similar to the white-footed mouse because of similar dietary and foraging habits.	Beyer et al., 1994

Table 2-1. Exposure Factors for Bird and Mammal Endpoint Species

Assessment Endpoint Functional Group	Endpoint Species	Body Weight (kg)	Notes	Source	Food Intake (kg/kg-bw/d, dw)	Notes	Source	Diet Composition						Soil Ingestion Site (kg/kg-bw/d)[b]	Notes	Source
								Percent of Diet as Mammals/ Birds	Percent of Diet as Invertebrates	Percent of Diet as Plants	Major Food Items	Source	Percent of Diet as Soil			
Insectivorous mammal	Grasshopper mouse	**0.0346**	Median from multiple studies	Wied, Maximilian Prinz zu, 1839; McKinney and Pasley, 1974; BHI-01757	**0.098**	Allometric estimation for insectivorous mammals normalized to kg/kg-bw/d using median body weights from multiple studies.	Nagy, 2001[a]	0	**100**	0	Animal material contributed 89 percent of the total food consumed and cultivated grains represented less than 5% of the total in the stomach contents of field trapped grasshopper mice from 90 locations across 13 states. Diet assumed to be 100% invertebrates for screening level dose calculation purposes.	Bailey and Sperry, 1929	**0.9**	**0.00088**	Assumed to be similar to the short-tailed shrew because of similar dietary and foraging habits. Median soil ingestion rate estimated for short-tailed shrew in Table 3 of the EcoSSL guidance. The median was selected as the best measure of central tendency that is unbiased by outliers.	EPA, 2007i
Carnivorous mammal	Badger	**7.6**	Median from multiple studies	Messick and Hornocker, 1981; Silva and Downing, 1995	**0.0347**	Allometric estimation for carnivorous mammals normalized to kg/kg-bw/d using median body weights from multiple studies.	Nagy, 2001[a]	**100**	0	0	Carnivores that primarily eat small rodents (rats, mice, ground squirrels, and pocket gophers), thought some reptiles, insects, birds, and carrion are consumed. Assumed 100% small mammal diet for screening level dose calculation purposes.	Long, 1973	**5.2**	**0.00181**	Data regarding soil ingestion of badgers are unavailable. Because the badger is a burrowing mammal, soil ingestion may be similar to that of the prairie dog. It was assumed that the median soil ingestion of the two prairie dog species with available data (2.7 and 7.7%) would be representative of the badger.	Beyer et al., 1994

Notes: **Bold and underlined text** indicates life history parameters that were used in the initial screening exposure calculations.

a. Nagy (2001) regression equation format--> dry matter g/day/g body weight=a(grams body weight)^b/g body weight.

b. Soil ingestion is equal to the percent soil in diet multiplied by the food ingestion rate as follows: soil ingestion=(percent soil/100 * food ingestion rate).

Group	a	b
Birds		
Omnivorous birds	0.670	0.627
Galliformes	0.088	0.891
Charadriiformes	0.522	0.769
Mammals		
Carnivorous mammals	0.153	0.834
Granivorous mammals	0.659	0.413
Insectivorous mammals	0.373	0.622

Table 2-2. Body Weight Data for Selected Bird and Mammal Endpoint Species

Receptor Species	Body Weight (kg)	Notes	Additional Information	References	Minimum	Median	Mean	Maximum
California Quail	0.1899	A B fall		Robel, 1969	0.154	0.180	0.174	0.194
	0.1939	A B winter		Robel, 1969				
	0.19	A B spring		Robel, 1969				
	0.181	M winter		Roseberry and Klimstra, 1971				
	0.163	M summer		Roseberry and Klimstra, 1971				
	0.183	F winter		Roseberry and Klimstra, 1971				
	0.18	F summer		Roseberry and Klimstra, 1971				
	0.161	M winter		Guthery et al., 1988				
	0.154	M summer		Guthery et al., 1988				
	0.157	F winter		Guthery et al., 1988				
	0.157	F summer		Guthery et al., 1988				
Western Meadowlark	0.0894	F, N = 32		Wiens and Rotenberry, 1981	0.0894	0.0995	0.100925	0.1153
	0.106	M, N = 51		Wiens and Rotenberry, 1981				
	0.1153	M, N = 76		Maher, 1979				
	0.093	F, N = 53		Maher, 1979				
Killdeer	0.0711	N = 1		Purdue and Haines, 1977	0.0711	0.0756	0.0895	0.1218
	0.1218	M, N = 1		Stegeman, 1955				
	0.0756	M, N = 2		Jackson et al., 2000				

Table 2-2. Body Weight Data for Selected Bird and Mammal Endpoint Species

Receptor Species	Body Weight (kg)	Notes	Additional Information	References	Minimum	Median	Mean	Maximum
	0.095	M, F; weighted mean of males and females from the Great Plains		Dunning, 1993				
Red-Tailed Hawk	1.224	F, N = 100		Craighead and Craighead, 1956	0.957	1.179	1.133667	1.235
	1.028	M, N = 108		Craighead and Craighead, 1956				
	1.154	F		Steenhof, 1983				
	0.957	M		Steenhof, 1983				
	1.235	F		Springer and Osborne, 1983				
	1.204	M		Springer and Osborne, 1983				
Great Basin Pocket Mouse	0.0174	M, N = 18	Average weight of males at 500 ft elevation; Rattlesnake Mtn, WA	O'Farrell et al., 1975	0.0143	0.01745	0.0172	0.0191
	0.0183	M, N = 12	Average weight of males at 1,500 ft elevation; Rattlesnake Mtn, WA	O'Farrell et al., 1975				
	0.0176	M, N = 11	Average weight of males at 2,500 ft elevation; Rattlesnake Mtn, WA	O'Farrell et al., 1975				
	0.0191	M, N = 12	Average weight of males at 3,500 ft elevation; Rattlesnake Mtn, WA	O'Farrell et al., 1975				
	0.0175	M, N = 10	Average measurements 10 individuals each sex, measured near Kennewick, WA	Scheffer, 1938				
	0.0143	F, N = 10	Average measurements 10 individuals each sex, measured near Kennewick, WA	Scheffer, 1938				
	0.0174	M, N = 4	Mean of adult mean weights collected at Hanford Site	Schreiber, 1978 (Table 4)				
	0.016	F, N = 4	Mean of adult mean weights collected at	Schreiber, 1978 (Table 4)				

Table 2-2. Body Weight Data for Selected Bird and Mammal Endpoint Species

Receptor Species	Body Weight (kg)	Notes	Additional Information	References	Minimum	Median	Mean	Maximum
			Hanford Site					
Deer Mouse	0.0217	M, N = 2	Average weight of males at 500 ft elevation; Rattlesnake Mtn, WA	O'Farrell, 1975	0.0166	0.01935	0.019367	0.0217
	0.018	M, N = 2	Average weight of males at 1,500 ft elevation; Rattlesnake Mtn, WA	O'Farrell, 1975				
	0.0212	M, N = 6	Average weight of males at 2,500 ft elevation; Rattlesnake Mtn, WA	O'Farrell, 1975				
	0.0203	M, N = 11	Average weight of males at 3,500 ft elevation; Rattlesnake Mtn, WA	O'Farrell, 1975				
	0.0184	M	Mean weight for species; Washoe County, Nevada	O'Farrell, 1978				
	0.0166	Mean of males and females from Washington		Silva and Downing, 1995				
Grasshopper Mouse	0.026	Low end of range		Wied, Maximilian Prinz zu, 1839	0.026	0.0346	0.03406	0.049
	0.049	High end of range		Wied, Maximilian Prinz zu, 1839				
	0.0347	F, N = 9, 60 to 80 days	Control mice receiving saline	McKinney and Pasley, 1974				
	0.0346	F, N = 13, 100 to 108days	Control mice receiving saline	McKinney and Pasley, 1974				
	0.026	Mitchell, R., personal communication		BHI-01757				

Table 2-2. Body Weight Data for Selected Bird and Mammal Endpoint Species

Receptor Species	Body Weight (kg)	Notes	Additional Information	References	Minimum	Median	Mean	Maximum
Badger	7.6	M, N = 10		Messick and Hornocker, 1981, Appendix K	6.7	7.6	8.098889	10.9
	8.8	M, N = 61		Messick and Hornocker, 1981, Appendix K				
	9.8	M, N = 64		Messick and Hornocker, 1981, Appendix K				
	10.9	M, N = 1		Messick and Hornocker, 1981, Appendix K				
	6.9	F, N = 20		Messick and Hornocker, 1981, Appendix K				
	6.7	F, N = 60		Messick and Hornocker, 1981, Appendix K				
	7.2	F, N = 47		Messick and Hornocker, 1981, Appendix K				
	7.8	F, N = 9		Messick and Hornocker, 1981, Appendix K				
	7.19	Mean of males and females		Silva and Downing, 1995				

A = adult
B = both (male and female)
F = female
M = male
N = number

Table 2-3. A Comparison of Soil Concentrations Associated with Tissue Samples

Analyte	Soil Concentrations Co-located Hanford (mg/kg)[1]	Median BAF Hanford Data[1]	Soil Concentrations Co-located Broader Area (ORNL data set) (mg/kg)[2]	Median BAF (Pooled Data) BAF[3]	Soil Concentrations River Corridor (mg/kg)[4]	Soil Concentrations Outer Area (mg/kg)[4]
Plants						
Aluminum	4,450 - 42,304	0.01	>10,000 - >11,000	0.012	NA	NA
Antimony	0.38 - 0.56	0.04	4 - >15,000[5]	NA[5]	0.1 - 266	0.03 -2,100
Arsenic	2 - 15.9	0.11	1-1,100	0.047	0.43 -100	0.88 - 131
Barium	52 - 420	0.29	NA	0.25	1.3 - 9,420	0.8 - 4,760
Beryllium	0.29 - 0.75	0.23	0.16-200[5]	NA[5]	NA	NA
Boron	0.5 - 29.6	23.48	NA	23.4	0.2 - 497	0.5 - 105
Cadmium	0.25 - 2.2	0.24	0.04 - 400	0.559	0.016 - 28	0.01 - 55
Chromium	5.3 - 141	0.20	>20 - <50	0.1	0.1 - 23,000	1.4 - 815
Cobalt	5.3 - 9.5	0.27	7 - <20	0.01	0.3 - 33.4	2.8 - 18
Copper	9.7 - 44.9	0.62	>1 - >4,000	0.3	0.1 - 82,900	0.7 - 4,080
Lead	5.0 - 77.2	0.02	0.3 - 5000	0.032	1.3 - 335,000	0.25 - 52,800
Lithium	4.5 - 13.5	0.07	NA	0.07	NA	NA
Manganese	166 - 761	0.16	>200 - >1,000	0.15	3.2 - 33,400	134 - 8,460
Mercury	0.027 - 0.069	1.80	0.01 - >1,000	0.668	0.005 - 86	0.004 - 252
Molybdenum	0.2 - 1.1	3.50	NA	3.5	NA	NA
Nickel	7.9 - 24.9	0.23	2 - 10,000	0.1	1.6 - 142	0.95 - 268
Selenium	0.2 - 1.2	2.99	.03 - >200	0.7	0.2 - 11	0.2 - 5.4
Silver	0.3 - 0.35	0.05	1 - <8	0.019	NA	NA

Table 2-3. A Comparison of Soil Concentrations Associated with Tissue Samples

Analyte	Soil Concentrations Co-located Hanford (mg/kg)[1]	Median BAF Hanford Data[1]	Soil Concentrations Co-located Broader Area (ORNL data set) (mg/kg)[2]	Median BAF (Pooled Data) BAF[3]	Soil Concentrations River Corridor (mg/kg)[4]	Soil Concentrations Outer Area (mg/kg)[4]
Strontium	17.9 -245	1.74	NA	1.7	NA	NA
Thallium	0.45 - 0.7	0.05	NA	0.05	0.4 - 5.2	.02 - 5
Tin	1.6 - 18	2.16	NA	2.2	NA	NA
Uranium (Calculated Total)	0.3 - 1.9	0.04	>1 - <7	0.02	1.1 - 2610	0.1 - 87.3
Arthropods						
Vanadium	33.5 - 69.1	0.04	>20 - <60	0.02	0.1 - 128	5 - 104
Zinc	34.2 - 393	0.62	6 ->10,000	0.4	0.84 - 28,600	10.2 - 9,420
Aluminum	4450 -11,900	0.01	>10,000 - <11,000	0.006	NA	NA
Antimony	0.3 -1.1	1.88	4 - 4	0.008	0.1 - 266	0.03 -2,100
Arsenic	1.8 - 15.9	0.55	3 - >1,000	0.283	0.43 -100	0.88 - 131
Barium	51.5 - 377	0.07	80 - <300	0.06	1.3 - 9,420	0.8 - 4,760
Beryllium	NA	NA	0.7 - <1.1	0.02	NA	NA
Boron	0.5 - 29.6	5.63	NA	5.6	0.2 - 497	0.5 - 105
Cadmium	0.055 - 2.4	0.676	0.003 - >100	0.748	0.016 - 28	0.01 - 55
Chromium	5.3 - 141	0.05	>10 - >300	0.06	0.1 - 23,000	1.4 - 815
Cobalt	5.8 -12.1	0.06	7 - <20	0.01	0.3 - 33.4	2.8 - 18
Copper	9.7 - 44.9	1.16	8 - >2,000	0.7	0.1 - 82,900	0.7 - 4,080
Lead	4.8 - 102	0.055	2 - 100,000	0.035	1.3 - 335,000	0.25 - 52,800
Lithium	4.5 - 13.5	0.01	NA	0.01	NA	NA

Table 2-3. A Comparison of Soil Concentrations Associated with Tissue Samples

Analyte	Soil Concentrations Co-located Hanford (mg/kg)[1]	Median BAF Hanford Data[1]	Soil Concentrations Co-located Broader Area (ORNL data set) (mg/kg)[2]	Median BAF (Pooled Data) BAF[3]	Soil Concentrations River Corridor (mg/kg)[4]	Soil Concentrations Outer Area (mg/kg)[4]
Manganese	166 - 562	0.04	>200 - >1,000	0.04	3.2 - 33,400	134 - 8,460
Mercury	0.027 - 0.107	1.39	0.5 - 0.6	0.09	0.005 - 86	0.004 - 252
Molybdenum	0.2 - 1.1	1.90	NA	1.9	NA	NA
Nickel	7.9 - 24.5	0.16	3 - >400	0.2	1.6 - 142	0.95 - 268
Selenium	0.2 - 1.2	2.00	0.2 - 20	0.7	0.2 - 11	0.2 - 5.4
Silver	0.29 - 0.29	1.29	1 - 7	0.004	NA	NA
Strontium	16.5 - 245	0.87	NA	0.9	NA	NA
Thallium	0.13 - 0.2	0.29	2 - 2	0.3	0.4 - 5.2	.02 - 5
Tin	0.7 - 18.0	1.40	NA	1.4	NA	NA
Uranium (Calculated Total)	0.4 - 4.6	0.81	>1 - <2	0.9	1.1 - 2610	0.1 - 87.3
Vanadium	36.6 - 84.4	0.01	>20 - <60	0.02	0.1 - 128	5 - 104
Zinc	34.2 - 393	3.95	4 - >20,000	2	0.84 - 28,600	10.2 - 9,420

Table 2-3. A Comparison of Soil Concentrations Associated with Tissue Samples

Analyte	Soil Concentrations Co-located Hanford (mg/kg)[1]	Median BAF Hanford Data[1]	Soil Concentrations Co-located Broader Area (ORNL data set) (mg/kg)[2]	Median BAF (Pooled Data) BAF[3]	Soil Concentrations River Corridor (mg/kg)[4]	Soil Concentrations Outer Area (mg/kg)[4]

Acronyms:
NA=Data Not Available.
Notes:
1. Soil concentrations ranges and BAFs associated with Hanford Site tissue samples are form the RCBRA (DOE/RL-2007-21) and CPERA (DOE/RL-2007-50).
2. Soil concentration ranges are those associated with tissue samples in the following doucments from Oak Rideg National laboraotry (ORNL): BJC/OR 133; ES/ER/TM-219; ES/ER/TM-220.
3. BAFs for pooled data are Tables 2-4, 2-5, and 2-6.
4. The Samples and analytical data in soil for these selected analytes were obtained from a data pull from the Hanford Environmental Information System (HEIS). This data pull captured soil sampling and analytical data found in HEIS as of July 21, 2010 for the Central Plateau Outer Area Waste Sites and Post-remediation data from 100 and 300 Area waste sites.
5. Hanford and ORNL data were limited. Bioaccumulation model from EcoSSLs (OSWER Directive 9285.7-55) was used instead.
Citations:
BJC/OR 133, 1998, *Empirical Models for the Uptake of Inorganic Chemicals from Soil by Plants*, Bechtel Jacobs Company LLC, Oak Ridge, Tennessee. Available at: http://www.esd.ornl.gov/programs/ecorisk/documents/bjcor 133.pdf.
DOE/RL 2007 21, *River Corridor Baseline Risk Assessment Volume 1: Ecological Risk Assessment*, U.S. Department of Energy, Richland Operations Office, Richland, Washington.

DOE/RL 2007 50, 2011, C*entral Plateau Ecological Risk Assessment Data Package Report,* Rev. 0, U.S. Department of Energy, Richland Operations Office, Richland, Washington.

Table 2-4. Semi-Site-Specific Bioaccumulation Models for Terrestrial Plants

Analyte Group	Analyte	Plant BAFs					Plant Regressions				
		Sample Size	Minimum	Median	90th Percentile	Maximum	Intercept	Slope	Sample Size	Probability Value	r-square
General Inorganic	Iron	139	0.001	0.018	0.072	0.170	9.098	-0.317	139	0.53	0.00
General Inorganic	Nitrogen in Nitrite and Nitrate	10	9.762	340.627	1921.974	2501.434	6.622	-1.244	10	0.03	0.46
Metal	Silver	14	0.003	0.019	0.048	0.085	-3.636	0.340	14	0.015	0.40
Metal	Aluminum	157	0.000	0.012	0.078	0.213	9.053	-0.469	157	0.0007	0.07
Metal	Arsenic	153	0.000	0.047	1.250	9.074	-1.419	0.447	153	0.0001	0.09
Metal	Boron	125	1.071	23.481	92.308	225.815	3.173	0.720	125	<0.0001	0.16
Metal	Barium	178	0.032	0.250	0.964	2.205	2.257	0.241	178	0.025	0.03
Metal	Beryllium[1]	5	0.127	0.227	0.493	0.493	-0.5361	0.7345	18	<0.0001	0.734

Table 2-4. Semi-Site-Specific Bioaccumulation Models for Terrestrial Plants

Analyte Group	Analyte	Plant BAFs					Plant Regressions				
		Sample Size	Minimum	Median	90th Percentile	Maximum	Intercept	Slope	Sample Size	Probability Value	r-square
Metal	Cadmium	234	0.009	0.569	3.060	22.879	-0.591	0.547	234	<0.0001	0.40
Metal	Cobalt	37	0.002	0.011	0.284	0.332	2.073	-1.683	37	0.03	0.13
Metal	Chromium	155	0.005	0.124	0.537	1.190	2.690	-0.682	155	<0.0001	0.20
Metal	Copper	326	0.001	0.306	1.722	7.4	1.539	0.253	326	<0.0001	0.14
Metal	Mercury	156	0.001	0.688	5	12.230	-0.973	0.538	156	<0.0001	0.60
Metal	Lithium	96	0.012	0.072	0.275	0.668	-1.092	0.315	96	0.34	0.01
Metal	Manganese	178	0.020	0.154	0.612	1.047	3.683	0.071	178	0.68	0.00
Metal	Molybdenum	47	0.736	3.548	15.873	20.952	0.700	-0.219	47	0.26	0.03
Metal	Nickel	230	0.001	0.095	0.940	22.214	-0.528	0.476	230	<0.0001	0.21

Table 2-4. Semi-Site-Specific Bioaccumulation Models for Terrestrial Plants

Analyte Group	Analyte	Plant BAFs					Plant Regressions				
		Sample Size	Minimum	Median	90th Percentile	Maximum	Intercept	Slope	Sample Size	Probability Value	r-square
Metal	Lead	223	0.000	0.032	0.392	10.601	-1.607	0.577	223	<0.0001	0.23
Metal	Antimony[1]	21	0.009	0.038	0.074	0.079	-3.233	0.938	17	<0.0001	0.795
Metal	Selenium	169	0.02	0.722	3.5	77	-0.505	1.040	169	<0.0001	0.61
Metal	Thorium	6	0.004	0.007	0.014	0.014	4.379	-4.125	6	0.19	0.38
Metal	Tin	7	0.741	2.165	15.476	15.476	2.833	-0.065	7	0.77	0.02
Metal	Thallium	10	0.017	0.050	0.118	0.131	-4.084	-0.683	10	0.66	0.03
Metal	Uranium (Calculated Total)	21	0.005	0.041	0.095	6.712	-3.638	-0.486	21	0.36	0.04
Metal	Vanadium	72	0.002	0.024	0.078	0.159	-9.118	2.383	72	<0.0001	0.25
Metal	Zinc	370	0.009	0.403	2.443	34.286	1.965	0.479	370	<0.0001	0.33

Table 2-4. Semi-Site-Specific Bioaccumulation Models for Terrestrial Plants

Analyte Group	Analyte	Plant BAFs					Plant Regressions				
		Sample Size	Minimum	Median	90th Percentile	Maximum	Intercept	Slope	Sample Size	Probability Value	r-square
PAH	Benzo[k]fluoranthene	1	49.723	49.723	49.723	49.723	1.823	0	1		
Pesticide	Aldrin	1	13.900	13.900	13.900	13.900	-3.661	0	1		
Pesticide	Alpha-Benzene Hexachloride	3	5.952	11.111	333.333	333.333	-10.406	-1.072	3	0.17	0.93
Pesticide	Alpha-Chlordane	1	119.048	119.048	119.048	119.048	-3.045	0	1		
Pesticide	Beta-1,2,3,4,5,6-Hexachlorocyclohexane	1	178.571	178.571	178.571	178.571	-0.560	0	1		
Pesticide	Delta-Benzene Hexachloride	2	21.164	25.132	29.101	29.101	-3.108	0	2		0
Pesticide	Dichlorodiphenyldichloroethane	1	67.100	67.100	67.100	67.100	-1.913	0	1		
Pesticide	Dichlorodiphenyldichloroethylene	7	15.238	99.395	1785.714	1785.714	-2.050	-0.104	7	0.87	0.01
Pesticide	Dichlorodiphenyltrichloroethane	3	106.732	111.801	270.936	270.936	0.570	0.387	3	0.80	0.10

Table 2-4. Semi-Site-Specific Bioaccumulation Models for Terrestrial Plants

Analyte Group	Analyte	Plant BAFs					Plant Regressions				
		Sample Size	Minimum	Median	90th Percentile	Maximum	Intercept	Slope	Sample Size	Probability Value	r-square
Pesticide	Dieldrin	1	1798.942	1798.942	1798.942	1798.942	0.482	0	1		
Pesticide	Endosulfan I	8	7.003	36.451	149.660	149.660	-2.156	0.075	8	0.84	0.01
Pesticide	Endosulfan Sulfate	1	3.968	3.968	3.968	3.968	-2.639	0	1		
Pesticide	Endrin Aldehyde	1	68.783	68.783	68.783	68.783	-2.089	0	1		
Pesticide	Endrin Ketone	1	103.908	103.908	103.908	103.908	-1.881	0	1		
Pesticide	Gamma-Benzene Hexachloride (Lindane)	2	15.238	15.238	15.238	15.238	-3.624	0	2		
Pesticide	Gamma-Chlordane	5	11.402	42.262	156.463	156.463	-6.160	-0.532	5	0.006	0.94
Pesticide	Heptachlor	1	1253.133	1253.133	1253.133	1253.133	-0.336	0	1		
Pesticide	Methoxychlor	7	8.306	127.976	252.	252.97	-6.556	-0.8	7	0.02	0.70

Table 2-4. Semi-Site-Specific Bioaccumulation Models for Terrestrial Plants

Analyte Group	Analyte	Plant BAFs					Plant Regressions				
		Sample Size	Minimum	Median	90th Percentile	Maximum	Intercept	Slope	Sample Size	Probability Value	r-square
					976	6		77			
Radionuclide	Beryllium-7	37	1.770	6.372	14.156	22.987	0.586	-0.083	37	0.69	0.00
Radionuclide	Cesium-137	26	0.003	0.072	0.195	0.347	-3.496	0.268	26	0.016	0.22
Radionuclide	Cobalt-60	1	0.149	0.149	0.149	0.149	-4.679	0	1		
Radionuclide	Lead-212	10	0.023	0.038	0.122	0.171	-3.164	0.531	10	0.57	0.04
Radionuclide	Lead-214	1	0.036	0.036	0.036	0.036	-3.678	0	1		
Radionuclide	Plutonium-238	9	0.025	0.280	1.356	1.356	-5.189	0.470	9	0.24	0.19
Radionuclide	Plutonium-239/240	52	0.000	0.035	0.128	1.329	-5.850	0.431	52	<0.0001	0.36
Radionuclide	Potassium-40	195	0.320	1.179	3.726	6.722	6.486	-1.424	195	<0.0001	0.40
Radionuclide	Strontium-90	61	0.017	0.294	1.349	7.480	-1.648	0.785	61	<0.0001	0.26

Table 2-4. Semi-Site-Specific Bioaccumulation Models for Terrestrial Plants

Analyte Group	Analyte	Plant BAFs					Plant Regressions				
		Sample Size	Minimum	Median	90th Percentile	Maximum	Intercept	Slope	Sample Size	Probability Value	r-square
Radionuclide	Thorium-228	1	1.157	1.157	1.157	1.157	-0.629	0	1		
Radionuclide	Thorium-230	17	1.697	3.074	6.156	6.160	0.472	0.052	17	0.71	0.01
Radionuclide	Uranium-233/234	21	0.005	0.047	0.097	2.754	-4.186	0.166	21	0.72	0.01
Radionuclide	Uranium-235	1	0.065	0.065	0.065	0.065	-6.277	0	1		
Radionuclide	Uranium-238	22	0.005	0.043	0.165	6.720	-5.329	-0.545	22	0.28	0.06
SVOC	Bis[2-ethylhexyl]phthalate	21	11.772	80.586	236.874	273.810	0.724	-0.182	21	0.35	0.05
SVOC	Di-n-butylphthalate	3	36.125	58.203	214.186	214.186	-1.101	-0.495	3	0.80	0.10
SVOC	Phenol	2	213.574	620.572	1027.569	1027.569	-11.254	-3.589	2		1

Note: Shaded cells represent the bioaccumulation model recommended for use.

[1] Hanford and ORNL data were limited. Log-linear bioaccumulation regression model from EcoSSLs (OSWER Directive 9285.7-55) was used instead.

Table 2-4. Semi-Site-Specific Bioaccumulation Models for Terrestrial Plants

Analyte Group	Analyte	Plant BAFs					Plant Regressions				
		Sample Size	Minimum	Median	90th Percentile	Maximum	Intercept	Slope	Sample Size	Probability Value	r-square

Whereas BAFs represent data from Hanford and ORNL, plant regressions are from OSWER Directive 9285.7-55.

Table 2-5. Semi-Site-Specific Bioaccumulation Models for Terrestrial Arthropods

Analyte Group	Analyte	Arthropod BAFs					Arthropod Regressions			Probability Value	r-square
		Sample Size	Minimum	Median	90th Percentile	Maximum	Intercept	Slope	Sample Size		
General Inorganic	Fluoride	2	0.012	0.124	0.236	0.236	-53.400	11.654	2		1
General Inorganic	Iron	91	0.002	0.008	0.021	0.102	6.629	-0.140	91	0.70	0.002
Metal	Silver	27	0.004	0.034	0.358	1	-2.525	0.112	27	0.69	0.007
Metal	Aluminum	91	0.001	0.006	0.016	0.040	6.389	-0.261	91	0.19	0.019
Metal	Arsenic	130	0.013	0.283	1.042	2.215	-0.450	0.544	130	<0.0001	0.451
Metal	Boron	80	0.468	5.626	16.666	34.507	1.889	0.187	80	0.10	0.035
Metal	Barium	115	0.010	0.056	0.148	0.738	1.792	-0.027	115	0.89	0.000
Metal	Beryllium	30	0.014	0.021	0.031	0.143	-3.754	-0.531	30	0.14	0.076
Metal	Cadmium	245	0.021	0.748	7.5	37.058	0.132	0.654	245	<0.0001	0.553
Metal	Cobalt	46	0.003	0.011	0.064	0.071	1.167	-1.419	46	0.0014	0.209
Metal	Chromium	96	0.005	0.060	0.399	0.741	-0.511	0.288	96	0.05	0.039
Metal	Copper	248	0.005	0.671	1.996	9.211	2.077	0.332	248	<0.0001	0.331
Metal	Mercury	39	0.058	0.889	2.167	6.667	-3.019	-0.124	39	0.13	0.062
Metal	Lithium	30	0.008	0.014	0.030	0.045	-2.731	0.338	30	0.19	0.060
Metal	Manganese	93	0.009	0.053	0.128	0.862	2.315	0.118	93	0.22	0.017
Metal	Molybdenum	41	0.657	1.864	3.248	6.175	-0.108	-0.142	41	0.26	0.033
Metal	Nickel	82	0.030	0.093	0.199	1.010	-0.898	0.475	82	0.01	0.081
Metal	Lead	211	0	0.035	0.238	1.026	-1.943	0.726	210	<0.0001	0.640
Metal	Antimony	11	0.005	0.0075	1.880	4.396	-0.942	-1.686	11	<0.0001	0.828
Metal	Selenium	35	0.018	1.161	3.774	6.061	-0.004	0.258	35	0.07	0.096

Table 2-5. Semi-Site-Specific Bioaccumulation Models for Terrestrial Arthropods

Analyte Group	Analyte	Arthropod BAFs					Arthropod Regressions			Probability Value	r-square
		Sample Size	Minimum	Median	90th Percentile	Maximum	Intercept	Slope	Sample Size		
Metal	Tin	2	0.855	0.971	1.088	1.088	3.393	-1.772	2		1
Metal	Thallium	30	0.051	0.056	0.706	1.209	-5.384	-1.679	30	<0.0001	0.611
Metal	Uranium (Calculated Total)	18	0.236	0.314	0.611	0.661	-1.028	1.078	18	<0.0001	0.733
Metal	Vanadium	93	0.003	0.010	0.069	0.088	-4.602	1.070	93	0.005	0.083
Metal	Zinc	259	0.010	0.652	2.299	9.784	3.520	0.315	259	<0.0001	0.407
PAH	Fluoranthene	3	1.667	2.536	5.430	5.430	2.842	1.881	3	0.47	0.553
PAH	Fluorene	1	211.161	211.161	211.161	211.161	-1.025	0	1		
PAH	Phenanthrene	1	35.060	35.060	35.060	35.060	-1.391	0	1		
PCB	Total PCB	5	0.072	0.149	0.1906	0.1906	-1.187	0.866	5	0.02	0.880
Pesticide	Dichlorodiphenyldichloroethylene	1	17.094	17.094	17.094	17.094	-3.076	0	1		
Pesticide	Dichlorodiphenyltrichloroethane	3	9.942	39.886	122.577	122.577	-1.300	0.094	3	0.96	0.004
Pesticide	Endosulfan I	2	53.333	92.441	131.550	131.550	-68.402	-9.828	2		1
Pesticide	Endosulfan Sulfate	1	2991.453	2991.453	2991.453	2991.453	1.278	0	1		
Pesticide	Methoxychlor	2	37.904	91.067	144.231	144.231	28.218	5.047	2		1
Radionuclide	Actinium-228	1	5.528	5.528	5.528	5.528	1.380	0	1		
Radionuclide	Bismuth-214	1	4.996	4.996	4.996	4.996	1.000	0	1		
Radionuclide	Cesium-137	8	0.029	0.084	0.258	0.258	-0.718	0.066	8	0.90	0.003
Radionuclide	Lead-214	1	4.481	4.481	4.481	4.481	0.952	0	1		
Radionuclide	Potassium-40	1	0.829	0.829	0.829	0.829	2.663	0	1		
Radionuclide	Radium-226	7	1.111	3.486	4.996	4.996	-1.331	-3.426	7	0.07	0.522

Table 2-5. Semi-Site-Specific Bioaccumulation Models for Terrestrial Arthropods

Analyte Group	Analyte	Arthropod BAFs					Arthropod Regressions			Probability Value	r-square
		Sample Size	Minimum	Median	90th Percentile	Maximum	Intercept	Slope	Sample Size		
Radionuclide	Radium-228	3	1.669	1.929	5.528	5.528	-1.402	-6.817	3	0.71	0.195
Radionuclide	Strontium-90	18	0.320	4.808	45.788	179.820	1.183	0.475	18	<0.0001	0.800
Radionuclide	Thorium-230	2	2.513	2.737	2.961	2.961	0.403	0.505	2		1
Radionuclide	Uranium-233/234	16	0.205	0.485	0.906	1.144	-5.181	-1.285	16	0.08	0.206
Radionuclide	Uranium-235	14	1.122	2.939	4.487	5.449	-5.388	-0.424	14	0.39	0.063
Radionuclide	Uranium-238	18	0.216	0.286	0.586	0.650	-0.950	1.119	18	<0.0001	0.722

Note: Shaded cells represent the bioaccumulation model recommended for use.

Table 2-6. Semi-Site-Specific Bioaccumulation Models for Small Mammals

Analyte Group	Analyte	Small Mammal BAFs					Small Mammal Regressions				r-square
		Sample Size	Minimum	Median	90th Percentile	Maximum	Intercept	Slope	Sample Size	Probability Value	
General Inorganic	Fluoride	4	0.002	0.058	0.362	0.362	1.755	0.313	4	0.07	0.865
General Inorganic	Iron	82	0.005	0.018	0.027	0.038	1.031	0.493	82	0.0003	0.149
Metal	Silver	11	0	0.004	0.810	1.293	-0.993	-0.935	7	0.16	0.356
Metal	Aluminum	79	0.005	0.017	0.043	0.093	-3.636	0.964	79	<0.0001	0.291
Metal	Arsenic	84	0	0.004	0.181	1	-2.271	0.279	72	0.03	0.069
Metal	Boron	54	0.158	1.020	5.307	49.569	0.84461072	-0.182	54	0.20	0.032
Metal	Barium	99	0.014	0.122	0.204	0.346	2.792	-0.104	99	0.47	0.005
Metal	Beryllium[1]	58	--	--	--	--	--	--	58	--	--
Metal	Cadmium	109	0.015	0.337	3.918	69.561	-0.505	0.506	109	<0.0001	0.225
Metal	Cobalt	18	0.010	0.021	0.1	0.18	-3.449	0.957	18	0.03	0.261
Metal	Chromium	111	0.015	0.105	0.273	1.572	-0.427	0.411	111	<0.0001	0.191
Metal	Copper	187	0.004	0.620	1.028	2.515	1.918	0.169	187	<0.0001	0.276
Metal	Mercury	23	0.018	0.090	1.392	2.344	-3.573	-0.321	23	0.09	0.133
Metal	Lithium	42	0.012	0.031	0.047	0.068	-1.775	0.152	42	0.45	0.014
Metal	Manganese	79	0.011	0.041	0.069	0.079	1.773	0.143	79	0.19	0.022
Metal	Molybdenum	30	0.824	1.916	2.887	4.581	-0.016	0.030	30	0.81	0.002
Metal	Nickel	130	0	0.166	0.469	1.143	-0.323	0.445	123	<0.0001	0.239
Metal	Lead	230	0.003	0.112	0.319	2.659	-0.662	0.552	230	<0.0001	0.557
Metal	Antimony[1]	102	--	--	--	--	--	--	102	--	--
Metal	Selenium	59	0	0.652	2.469	10.938	0.169	0.113	51	0.12	0.050
Metal	Tin	17	0.260	1.403	4.225	5.068	1.286	0.05	17	0.11	0.165

Table 2-6. Semi-Site-Specific Bioaccumulation Models for Small Mammals

Analyte Group	Analyte	Small Mammal BAFs					Small Mammal Regressions				r-square
		Sample Size	Minimum	Median	90th Percentile	Maximum	Intercept	Slope	Sample Size	Probability Value	
								6			
Metal	Thallium	15	0.102	0.268	0.654	1.034	-1.936	0.558	15	0.002	0.533
Metal	Uranium (Calculated Total)	22	0.381	0.808	1.945	8.767	0.202	1.342	22	0.0003	0.481
Metal	Vanadium	93	0.005	0.015	0.034	0.088	-1.472	0.291	93	0.33	0.010
Metal	Zinc	214	0.005	2.056	7.279	35.623	5.504	-0.055	214	0.05	0.018
PCB	Aroclor 1260	1	110.294	110.294	110.294	110.294	-0.288	0	1		
PCB	2,3,7,8-tetrachlorodibenzo-*p*-dioxin	5	0.307	1.067	2.2	2.2	0.811	1.099	5	0.01	0.922
PCB	2,3,7,8-tetrachlorodibenzofuran	4	0.074	0.125	0.157	0.157	3.867	1.619	4	0.30	0.485
Pesticide	Aldrin	1	100	100	100	100	-2.996	0	1		
Pesticide	Delta-Benzene Hexachloride	2	57.292	61.458	65.625	65.625	2.588	0.769	2		1
Radionuclide	Americium-241	4	9.856	11.298	22.727	22.727	13.784	4.125	4	0.01	0.979
Radionuclide	Cesium-137	8	0.054	0.279	6.857	6.857	5.195	-1.818	8	0.008	0.712
Radionuclide	Plutonium-239/240	6	1.445	2.915	8.239	8.239	-0.631	0.446	6	0.08	0.570
Radionuclide	Potassium-40	33	0.469	0.841	1.134	1.431	2.486	-0.122	33	0.57	0.010
Radionuclide	Radium-226	5	1.361	1.482	338.390	338.390	6.240	8.114	5	0.59	0.107
Radionuclide	Radium-228	1	7.859	7.859	7.859	7.859	1.881	0	1		
Radionuclide	Strontium-90	10	0.481	1.766	38.789	71.429	1.688	0.545	10	0.002	0.732
Radionuclide	Thorium-228	2	0.603	0.700	0.796	0.796	0.260	2.405	2		1
Radionuclide	Thorium-230	6	1.559	2.796	7.099	7.099	0.130	-0.110	6	0.84	0.011
Radionuclide	Thorium-232	2	0.628	0.656	0.684	0.684	-0.543	0.733	2		1

Table 2-6. Semi-Site-Specific Bioaccumulation Models for Small Mammals

Analyte Group	Analyte	Small Mammal BAFs					Small Mammal Regressions				r-square
		Sample Size	Minimum	Median	90th Percentile	Maximum	Intercept	Slope	Sample Size	Probability Value	
Radionuclide	Uranium-233/234	30	0.354	1.447	3.726	6.560	0.745	1.182	30	0.0001	0.420
Radionuclide	Uranium-235	12	6.250	10.147	17.045	20.833	2.994	1.139	12	0.04	0.369
Radionuclide	Uranium-238	22	0.347	0.747	1.935	8.842	0.537	1.372	22	0.0004	0.479
SVOC	Bis[2-ethylhexyl]phthalate	34	1.414	25.799	119.318	1325.758	0.264	-0.028	34	0.91	0.000
SVOC	Di-n-butylphthalate	12	3.279	19.339	31.250	36.668	-0.374	-0.011	12	0.91	0.001
SVOC	Phenol	14	10.313	44.286	92.329	156.250	-0.278	-0.127	14	0.59	0.024

Note: Shaded cells represent the bioaccumulation model recommended for use.

[1]Hanford and ORNL data were lacking. Sample size represents number of samples collected in which analyte was below detection limit in soil, small mammal tissue or both. Bioaccumulation models from EcoSSLs (USEPA 2007) were used instead where C_m=0.001*50*C_d. C_m=concentration in small mammal; C_d=concentration in small mammal diet; diet assumed to be 100% invertebrates.

Table 2-7. Avian Toxicity Reference Values

Chemical Class	Soil Constituent	Form/Surrogate Analyte	Primary Study	Test Species	Test Species Body Weight (kg)	Duration	Exposure Route	General Effect Endpoint	Specific Effect Endpoint	Uncertainty Factors Applied	Uncertainty Factor Type	NOAEL (mg/kg/d)	LOAEL (mg/kg/d)	Secondary Source	Notes	Selected Avian NOAEL TRV (mg/kg/d)	Selected Avian LOAEL TRV (mg/kg/d)
Metals	Aluminum	Aluminum Sulfate	Carriere et al., 1986	ringed dove	0.155	4 months	oral in diet	reproduction				109.7	---	ES/ER/TM 86/R3		109.7	---
	Antimony															---	---
	Arsenic	Arsenic Oxide	Holcman and Stibilj, 1997*	chicken	1.6	19 days during reproduction	oral in diet	reproduction	progeny count	N/A	N/A	2.24	---	OSWER Directive 9285.7-62		---	---
	Arsenic	Sodium Arsenate	Stanley et al., 1994	mallard	1	>10 weeks	oral in diet	reproduction				9.3	40.3			9.3	40.3
	Barium	Barium Hydroxide	Johnson et al., 1960	1 day old chicks	0.121	4 weeks	oral in diet	mortality		0.1	subchronic-chronic	20.8	41.7	ES/ER/TM 86/R3		20.8	41.7
	Beryllium															---	---
	Bismuth															---	---
	Boron	Boric Acid	Smith and Anders, 1989	mallard	1	3 weeks before and during and 3 weeks after reproduction	oral in diet	reproduction	egg fertility, duckling growth, embryo and duckling mortality			28.8	100	ES/ER/TM 86/R3		28.8	100
	Cadmium	Multiple Forms	Multiple Studies*	multiple species								1.47	---	OSWER Directive 9285.7-65	geometric mean of NOAELs for reproduction and growth	1.47	---
	Cadmium	Cadmium Sulfate	Leach et al., 1979*	chicken	1.6	12 weeks during egg laying	oral in diet	reproduction	egg production, progeny count			0.593	2.37	OSWER Directive 9285.7-65	lowest bounded reproductive LOAEL above the geometric mean NOAEL from EcoSSL	---	2.37
	Chromium (3+)	Multiple Forms	Multiple Studies*	chicken				reproduction and growth				2.66	---	OSWER Directive 9285.7-66	geometric mean of NOAELs for reproduction and growth	2.66	---
	Chromium (3+)	Chrome Alum Doceahydrate	Haseltine et al., Unpublished (1985)*	black duck	1.17	180 to 190 days	oral in diet	reproduction	reproductive success			0.569	2.78	OSWER Directive 9285.7-66	lowest bounded reproductive LOAEL above the geometric mean NOAEL from EcoSSL	---	2.78
	Cobalt	Multiple Forms	Multiple Studies*	multiple species				growth	body weight			7.61		OSWER Directive 9285.7-67	geometric mean of NOAELs for reproduction and growth	7.61	
	Cobalt	Cobalt Chloride	Hill, 1979*	chicken	0.328	5 weeks	oral in diet	growth	body weight			3.89	7.8	OSWER Directive 9285.7-67	lowest bounded reproductive LOAEL above the geometric mean NOAEL from EcoSSL	---	7.8
	Copper	Copper	Al Ankari et al., 1998*	chicken	1.5161	84 days during egg laying	oral in diet	reproduction	eggs per nest			4.05	12.1	OSWER Directive 9285.7-68	value is highest bounded NOAEL lower than the lowest bounded LOAEL value for reproduction, growth or survival; LOAEL is from same study	4.05	12.1

Table 2-7. Avian Toxicity Reference Values

Chemical Class	Soil Constituent	Form/Surrogate Analyte	Primary Study	Test Species	Test Species Body Weight (kg)	Duration	Exposure Route	General Effect Endpoint	Specific Effect Endpoint	Uncertainty Factors Applied	Uncertainty Factor Type	NOAEL (mg/kg/d)	LOAEL (mg/kg/d)	Secondary Source	Notes	Selected Avian NOAEL TRV (mg/kg/d)	Selected Avian LOAEL TRV (mg/kg/d)
	Lead	Lead Acetate	Edens and Garlich, 1983*	chicken	1.81	4 weeks during egg laying	oral in diet	reproduction	progeny count			1.63	3.26	OSWER Directive 9285.7-70	value is highest bounded NOAEL lower than the lowest bounded LOAEL value for reproduction, growth or survival; LOAEL is from same study	1.63	3.26
	Lithium															---	---
	Manganese	Multiple Forms	Multiple Studies*	multiple species				reproduction and growth				179	---	OSWER Directive 9285.7-71	geometric mean of NOAELs for reproduction and growth	179	---
	Manganese	Manganese Chloride Tetrahydrate	Southern and Baker, 1983*	chicken	0.316	14 days	oral in diet	growth	body weight			261	348	OSWER Directive 9285.7-71	lowest bounded growth or reproductive LOAEL above the geometric mean NOAEL from EcoSSL	---	348
	Mercury	Methyl Mercury	Heinz and Hoffman, 1998; Heinz, 1979	mallard	1	2.5 months to two generations	oral in diet	reproduction				0.068	0.37			0.068	0.37
	Molybdenum	Sodium Molybdate	Lepore and Miller, 1965	chicken	1.5	21 days through reproduction	oral in diet	reproduction	embryonic viability	0.1	LOAEL-NOAEL	3.53	35.3	ES/ER/TM 86/R3		3.53	35.3
	Nickel	Multiple Forms	Multiple Studies*	multiple species				reproduction and growth				6.71	---	OSWER Directive 9285.7-76	geometric mean of reproduction and growth studies	6.71	---
	Nickel	Nickel Chloride Hexahydrate	Martinez and Diaz, 1996*	chicken	1.8901	42 days	oral in diet	growth	body weight			5.76	11.5	OSWER Directive 9285.7-76	lowest bounded growth or reproductive LOAEL above the geometric mean NOAEL from EcoSSL	---	11.5
	Selenium	Sodium Selenite	El-Begearmi and Combs, 1982*	chicken	0.328	2 weeks	oral in diet	survival	mortality			0.29	0.579	OSWER Directive 9285.7-72	value is highest bounded NOAEL lower than the lowest bounded LOAEL value for reproduction, growth or survival; LOAEL is from same study	0.29	0.579
	Silver	Silver Acetate	Jensen et al., 1974*	turkey	0.662	5 weeks	oral in diet		growth	0.1	LOAEL-NOAEL	2.02	20.2	OSWER Directive 9285.7-77	lowest growth, reproduction, or survival LOAEL, with NOAEL estimated by application of uncertainty factor	2.02	20.2
	Strontium															---	---
	Thallium											---	---			---	---
	Tin	bis(Tributyltin) oxide	Schlatterer et al., 1993	Japanese quail	0.15	6 weeks during reproduction	oral in diet	reproduction	egg weight and hatchability	N/A	N/A	6.8	16.9	ES/ER/TM 86/R3		6.8	16.9
	Uranium	Depleted Metallic	Haseltine and Sileo, 1983	black duck	1.25	6 weeks	oral in diet	growth, mortality, organ	mortality, body weight,	0.1	subchronic-chronic	16	---	ES/ER/TM 86/R3		16	---

Table 2-7. Avian Toxicity Reference Values

Chemical Class	Soil Constituent	Form/Surrogate Analyte	Primary Study	Test Species	Test Species Body Weight (kg)	Duration	Exposure Route	General Effect Endpoint	Specific Effect Endpoint	Uncertainty Factors Applied	Uncertainty Factor Type	NOAEL (mg/kg/d)	LOAEL (mg/kg/d)	Secondary Source	Notes	Selected Avian NOAEL TRV (mg/kg/d)	Selected Avian LOAEL TRV (mg/kg/d)
								pathology	blood chemistry, liver or kidney effects								
	Vanadium	Sodium Metavanadate	Hill, 1979*	chicken	1.042	5 weeks	oral in diet	growth	body weight			0.344	0.688	OSWER Directive 9285.7-75	value is highest bounded NOAEL lower than the lowest bounded LOAEL value for reproduction, growth or survival; LOAEL is from same study	0.344	0.688
	Zinc	Multiple Forms	Multiple Studies*	multiple species				reproduction and growth				66.1	---	OSWER Directive 9285.7-73	geometric mean of reproduction and growth studies	66.1	---
	Zinc	Zinc Acetate	Gibson et al., 1986*	chicken	2	10 weeks	oral in diet	reproduction	progeny count			57.3	66.5	OSWER Directive 9285.7-73	lowest bounded growth or reproductive LOAEL above the geometric mean NOAEL from EcoSSL	---	66.5
General Inorganics	Ammonia/Ammonium															---	---
	Chloride															---	---
	Cyanide															---	---
	Fluoride		Pattee et al., 1988	screech owl	0.18	1 month	oral in diet	reproduction	hatching success	N/A	N/A	7.8	32	ES/ER/TM 86/R3		7.8	32
	Iodine															---	---
	Nitrate/Nitrite															---	---
	Phosphate															---	---
	Sulfate/Sulfite															---	---
	Total Organic Carbon															---	---
Volatile Organics	1,1-dichloroethane	1,2-dichloroethane	Alumot et al., 1976b	chicken	1.6	2 years	oral in diet	reproduction	reduced egg production			17.2	34.4	ES/ER/TM 86/R3		17.2	34.4
	1,1-dichloroethene	1,2-dichloroethane	Alumot et al., 1976b	chicken	1.6	2 years	oral in diet	reproduction	reduced egg production			17.2	34.4	ES/ER/TM 86/R3		17.2	34.4
	1,1,1-trichloroethane	1,2-dichloroethane	Alumot et al., 1976b	chicken	1.6	2 years	oral in diet	reproduction	reduced egg production			17.2	34.4	ES/ER/TM 86/R3		17.2	34.4
	1,1,2-trichloroethane	1,2-dichloroethane	Alumot et al., 1976b	chicken	1.6	2 years	oral in diet	reproduction	reduced egg production			17.2	34.4	ES/ER/TM 86/R3		17.2	34.4
	1,1,2,2-tetrachloroethane	1,2-dichloroethane	Alumot et al., 1976b	chicken	1.6	2 years	oral in diet	reproduction	reduced egg			17.2	34.4	ES/ER/TM 86/R3		17.2	34.4

Table 2-7. Avian Toxicity Reference Values

Chemical Class	Soil Constituent	Form/Surrogate Analyte	Primary Study	Test Species	Test Species Body Weight (kg)	Duration	Exposure Route	General Effect Endpoint	Specific Effect Endpoint	Uncertainty Factors Applied	Uncertainty Factor Type	NOAEL (mg/kg/d)	LOAEL (mg/kg/d)	Secondary Source	Notes	Selected Avian NOAEL TRV (mg/kg/d)	Selected Avian LOAEL TRV (mg/kg/d)
									production								
	1,2-dichlorobenzene	1,2-dichloroethane	Alumot et al., 1976b	chicken	1.6	2 years	oral in diet	reproduction	reduced egg production			17.2	34.4	ES/ER/TM 86/R3		17.2	34.4
	1,2-dichloroethane	N/A	Alumot et al., 1976b	chicken	1.6	2 years	oral in diet	reproduction	reduced egg production			17.2	34.4	ES/ER/TM 86/R3		17.2	34.4
	1,3-dichlorobenzene	1,2-dichloroethane	Alumot et al., 1976b	chicken	1.6	2 years	oral in diet	reproduction	reduced egg production			17.2	34.4	ES/ER/TM 86/R3		17.2	34.4
	2-butanone (Methyl Ethyl Ketone)	2-hexanone	Abou-Donia et al., 1982	chicken	1.7	90 days	oral gavage	survival, pathology, neurotoxicity	weight loss and ataxia	0.1	LOAEL-NOAEL	10	100			10	100
	2-hexanone	N/A	Abou-Donia et al., 1982	chicken	1.7	90 days	oral gavage	survival, pathology, neurotoxicity	weight loss and ataxia	0.1	LOAEL-NOAEL	10	100			10	100
	Benzene	Xylene	Hill and Camardese, 1986	Japanese quail		5 days	oral in diet	growth and mortality		0.01	subacute-chronic	40.7	---		5 day dietary exposure to 4066 mg/kg/d had no effect	40.7	---
	Butanol															---	---
	Carbon Tetrachloride	1,2-dichloroethane	Alumot et al., 1976b	chicken	1.6	2 years	oral in diet	reproduction	reduced egg production			17.2	34.4	ES/ER/TM 86/R3		17.2	34.4
	Chlorobenzene	1,2-dichloroethane	Alumot et al., 1976b	chicken	1.6	2 years	oral in diet	reproduction	reduced egg production			17.2	34.4	ES/ER/TM 86/R3		17.2	34.4
	Chloroform	1,2-dichloroethane	Alumot et al., 1976b	chicken	1.6	2 years	oral in diet	reproduction	reduced egg production			17.2	34.4	ES/ER/TM 86/R3		17.2	34.4
	Cis-1,2-dichloroethylene	1,2-dichloroethane	Alumot et al., 1976b	chicken	1.6	2 years	oral in diet	reproduction	reduced egg production			17.2	34.4	ES/ER/TM 86/R3		17.2	34.4
	Dichloromethane (Methylene Chloride)	1,2-dichloroethane	Alumot et al., 1976b	chicken	1.6	2 years	oral in diet	reproduction	reduced egg production			17.2	34.4	ES/ER/TM 86/R3		17.2	34.4
	Ethyl Benzene	xylene	Hill and Camardese, 1986	Japanese quail		5 days	oral in diet	growth and mortality		0.01	subacute-chronic	40.7	---		5 day dietary exposure to 4066 mg/kg/d had no effect	40.7	---
	Methyl Isobutyl Ketone	2-hexanone	Abou-Donia et al., 1982	chicken	1.7	90 days	oral gavage	survival, pathology, neurotoxicity	weight loss and ataxia	0.1	LOAEL-NOAEL	10	100			10	100
	n-butyl Benzene	Xylene	Hill and Camardese, 1986	Japanese quail		5 days	oral in diet	growth and mortality		0.01	subacute-chronic	40.7	---		5 day dietary exposure to 4066 mg/kg/d had no effect	40.7	---

Table 2-7. Avian Toxicity Reference Values

Chemical Class	Soil Constituent	Form/Surrogate Analyte	Primary Study	Test Species	Test Species Body Weight (kg)	Duration	Exposure Route	General Effect Endpoint	Specific Effect Endpoint	Uncertainty Factors Applied	Uncertainty Factor Type	NOAEL (mg/kg/d)	LOAEL (mg/kg/d)	Secondary Source	Notes	Selected Avian NOAEL TRV (mg/kg/d)	Selected Avian LOAEL TRV (mg/kg/d)
	Tetrachloroethylene	1,2-dichloroethane	Alumot et al., 1976b	chicken	1.6	2 years	oral in diet	reproduction	reduced egg production			17.2	34.4	ES/ER/TM 86/R3		17.2	34.4
	Toluene	Xylene	Hill and Camardese, 1986	Japanese quail		5 days	oral in diet	growth and mortality		0.01	subacute-chronic	33.3	---		5 day dietary exposure to 4066 mg/kg/d had no effect	40.7	---
	Trans-1,2-dichloroethylene	1,2-dichloroethane	Alumot et al., 1976b	chicken	1.6	2 years	oral in diet	reproduction	reduced egg production			17.2	34.4	ES/ER/TM 86/R3		17.2	34.4
	Trichloroethylene	1,2-dichloroethane	Alumot et al., 1976b	chicken	1.6	2 years	oral in diet	reproduction	reduced egg production			17.2	34.4	ES/ER/TM 86/R3		17.2	34.4
	Xylene	N/A	Hill and Camardese, 1986	Japanese quail		5 days	oral in diet	growth and mortality		0.01	subacute-chronic	40.7	---		5 day dietary exposure to 4066 mg/kg/d had no effect	40.7	---
Polycyclic Aromatic Hydrocarbons	Acenaphthene	Aromatic Hydrocarbon Mixture	Patton and Dieter, 1980	mallard	1.23	7 months	oral in diet	growth	liver weight			32.5	325		*Mixture of ethylbenzene, 1,2,3,4-tetrahydronaphthalene, dimethylnaphthalene, 2,3,3-trimethylindolenine, acenaphthene, acenaphthylene, phenanthrene, 2-methylbenzothiazole, dibenzothiophene, and 2,6-dimethylquinoline	32.5	325
	Acenaphthylene	Aromatic Hydrocarbon Mixture	Patton and Dieter, 1980	mallard	1.23	7 months	oral in diet	growth	liver weight			32.5	325		* Mixture of ethylbenzene, 1,2,3,4-tetrahydronaphthalene, dimethylnaphthalene, 2,3,3-trimethylindolenine, acenaphthene, acenaphthylene, phenanthrene, 2-methylbenzothiazole, dibenzothiophene, and 2,6-dimethylquinoline	32.5	325
	Anthracene	Aromatic Hydrocarbon Mixture	Patton and Dieter, 1980	mallard	1.23	7 months	oral in diet	growth	liver weight			32.5	325		* Mixture of ethylbenzene, 1,2,3,4-tetrahydronaphthalene, dimethylnaphthalene, 2,3,3-trimethylindolenine, acenaphthene, acenaphthylene, phenanthrene, 2-methylbenzothiazole, dibenzothiophene, and 2,6-dimethylquinoline	32.5	325
	Benzo(a)pyrene	Benzo(a)anthracene	Beall, 2007	bobwhite quail		60 days	oral in diet	growth				0.65	---		NOAEL based on mean exposure over 60 day duration of the study	0.65	---
	Benzo(a)anthracene	N/A	Beall, 2007	bobwhite quail		60 days	oral in diet	growth				0.65	---		NOAEL based on mean exposure over 60 day duration of the study	0.65	---

Table 2-7. Avian Toxicity Reference Values

Chemical Class	Soil Constituent	Form/Surrogate Analyte	Primary Study	Test Species	Test Species Body Weight (kg)	Duration	Exposure Route	General Effect Endpoint	Specific Effect Endpoint	Uncertainty Factors Applied	Uncertainty Factor Type	NOAEL (mg/kg/d)	LOAEL (mg/kg/d)	Secondary Source	Notes	Selected Avian NOAEL TRV (mg/kg/d)	Selected Avian LOAEL TRV (mg/kg/d)
	Benzo(b)fluoranthene	Benzo(a)anthracene	Beall, 2007	bobwhite quail		60 days	oral in diet	growth				0.65	---		NOAEL based on mean exposure over 60 day duration of the study	0.65	---
	Benzo(ghi)perylene	Benzo(a)anthracene	Beall, 2007	bobwhite quail		60 days	oral in diet	growth				0.65	---		NOAEL based on mean exposure over 60 day duration of the study	0.65	---
	Benzo(k)fluoranthene	Benzo(a)anthracene	Beall, 2007	bobwhite quail		60 days	oral in diet	growth				0.65	---		NOAEL based on mean exposure over 60 day duration of the study	0.65	---
	Chrysene	Benzo(a)anthracene	Beall, 2007	bobwhite quail		60 days	oral in diet	growth				0.65	---		NOAEL based on mean exposure over 60 day duration of the study	0.65	---
	Dibenz(ah)anthracene	Benzo(a)anthracene	Beall, 2007	bobwhite quail		60 days	oral in diet	growth				0.65	---		NOAEL based on mean exposure over 60 day duration of the study	0.65	---
	Fluoranthene	Benzo(a)anthracene	Beall, 2007	bobwhite quail		60 days	oral in diet	growth				0.65	---		NOAEL based on mean exposure over 60 day duration of the study	0.65	---
	Fluorene	Aromatic Hydrocarbon Mixture	Patton and Dieter, 1980	mallard	1.23	7 months	oral in diet	growth	liver weight			32.5	325		* Mixture of ethylbenzene, 1,2,3,4-tetrahydronaphthalene, dimethylnaphthalene, 2,3,3-trimethylindolenine, acenaphthene, acenaphthylene, phenanthrene, 2-methylbenzothiazole, dibenzothiophene, and 2,6-dimethylquinoline	32.5	325
	Indeno[1,2,3-cd]pyrene	Benzo(a)anthracene	Beall, 2007	bobwhite quail		60 days	oral in diet	growth				0.65	---		NOAEL based on mean exposure over 60 day duration of the study	0.65	---
	2-Methylnaphthalene	Aromatic Hydrocarbon Mixture	Patton and Dieter, 1980	mallard	1.23	7 months	oral in diet	growth	liver weight			32.5	325		* Mixture of ethylbenzene, 1,2,3,4-tetrahydronaphthalene, dimethylnaphthalene, 2,3,3-trimethylindolenine, acenaphthene, acenaphthylene, phenanthrene, 2-methylbenzothiazole, dibenzothiophene, and 2,6-dimethylquinoline	32.5	325
	Naphthalene	Aromatic Hydrocarbon Mixture	Patton and Dieter, 1980	mallard	1.23	7 months	oral in diet	growth	liver weight			32.5	325		* Mixture of ethylbenzene, 1,2,3,4-tetrahydronaphthalene, dimethylnaphthalene, 2,3,3-trimethylindolenine, acenaphthene, acenaphthylene, phenanthrene, 2-methylbenzothiazole, dibenzothiophene, and 2,6-dimethylquinoline	32.5	325

Table 2-7. Avian Toxicity Reference Values

Chemical Class	Soil Constituent	Form/Surrogate Analyte	Primary Study	Test Species	Test Species Body Weight (kg)	Duration	Exposure Route	General Effect Endpoint	Specific Effect Endpoint	Uncertainty Factors Applied	Uncertainty Factor Type	NOAEL (mg/kg/d)	LOAEL (mg/kg/d)	Secondary Source	Notes	Selected Avian NOAEL TRV (mg/kg/d)	Selected Avian LOAEL TRV (mg/kg/d)
	Phenanthrene	Aromatic Hydrocarbon Mixture	Patton and Dieter, 1980	mallard	1.23	7 months	oral in diet	growth	liver weight			32.5	325		* Mixture of ethylbenzene, 1,2,3,4-tetrahydronaphthalene, dimethylnaphthalene, 2,3,3-trimethylindolenine, acenaphthene, acenaphthylene, phenanthrene, 2-methylbenzothiazole, dibenzothiophene, and 2,6-dimethylquinoline	32.5	325
	Pyrene	Benzo(a)anthracene	Beall, 2007	bobwhite quail		60 days	oral in diet	growth				0.65	---		NOAEL based on mean exposure over 60-day duration of the study.	0.65	---
	Low Molecular Weight PAHs	Aromatic Hydrocarbon Mixture	Patton and Dieter, 1980	mallard	1.23	7 months	oral in diet	growth	liver weight			32.5	325		* Mixture of ethylbenzene, 1,2,3,4-tetrahydronaphthalene, dimethylnaphthalene, 2,3,3-trimethylindolenine, acenaphthene, acenaphthylene, phenanthrene, 2-methylbenzothiazole, dibenzothiophene, and 2,6-dimethylquinoline	32.5	325
	High Molecular Weight PAHs	Benzo(a)anthracene	Beall, 2007	bobwhite quail		60 days	oral in diet	growth				0.65	---		NOAEL based on mean exposure over 60-day duration of the study	0.65	---
Petroleum	Gasoline Range Organics	No. 2 Fuel	Szaro et al., 1981	mallard	1	18 weeks	oral in diet	mortality and growth	reduced growth			500	5,000			500	5000
	TPH (Diesel)	No. 2 Fuel	Szaro et al., 1981	mallard	1	18 weeks	oral in diet	mortality and growth	reduced growth			500	5,000			500	5000
	TPH (Kerosene)	No. 2 Fuel	Szaro et al., 1981	mallard	1	18 weeks	oral in diet	mortality and growth	reduced growth			500	5,000			500	5000
Semivolatile Organics	Normal Paraffin Hydrocarbons	Aliphatic Hydrocarbon Mixture	Patton and Dieter, 1980	mallard	1.23	7 months	oral in diet	growth				813	---		* Mixture of n-paraffins (tridecane, pentadecane, hexadecane, heptadecane, octadecane, and nonadecane), iso-paraffins (2,2,4,6,6-pentamethylheptane, 2,2,4,4,6,8,8-heptamethylnonane, and 2,6,10,14-tetramethylpentadecane), and 2-ring cyclo-paraffins (decahydronaphthalene)	813	---
	Phenol															---	---
	2-methylphenol (*o*-cresol)															---	---
	4-methylphenol (*p*-cresol)															---	---
	2,4-dinitrotoluene	N/A	Johnson et al., 2005	bobwhite quail		60 days	oral gavage	hematoxicity and mortality	hematoxicity and mortality	0.01(for NOAEL) 0.25 (for	subchronic-chronic, interspecies differences	0.01	1.3	39-EJ-1138 - 01D	study and value selected based on an extensive review of available literature documented	0.01	1.3

Table 2-7. Avian Toxicity Reference Values

Chemical Class	Soil Constituent	Form/Surrogate Analyte	Primary Study	Test Species	Test Species Body Weight (kg)	Duration	Exposure Route	General Effect Endpoint	Specific Effect Endpoint	Uncertainty Factors Applied	Uncertainty Factor Type	NOAEL (mg/kg/d)	LOAEL (mg/kg/d)	Secondary Source	Notes	Selected Avian NOAEL TRV (mg/kg/d)	Selected Avian LOAEL TRV (mg/kg/d)
										LOAEL)					in 39-EJ-1138- 01D		
	Bis[2-ethylhexyl]phthalate	N/A	Peakall, 1974	ringed dove	0.155	4 weeks (during reproduction)	oral in diet	reproduction		N/A		1.1		ES/ER/TM 86/R3		1.1	---
	Total PCBs	Aroclor 1254	Dahlgren et al., 1972	ring-necked pheasant	1	17 weeks during egg laying	oral via gelatin capsule	reproduction	reduced egg hatchability	0.1	LOAEL-NOAEL	0.18	1.8	ES/ER/TM 86/R3		0.18	1.8
	Aroclor 1016	Aroclor 1254	Dahlgren et al., 1972	ring-necked pheasant	1	17 weeks during egg laying	oral via gelatin capsule	reproduction	reduced egg hatchability	0.1	LOAEL-NOAEL	0.18	1.8	ES/ER/TM 86/R3		0.18	1.8
	Aroclor 1221	Aroclor 1254	Dahlgren et al., 1972	ring-necked pheasant	1	17 weeks during egg laying	oral via gelatin capsule	reproduction	reduced egg hatchability	0.1	LOAEL-NOAEL	0.18	1.8	ES/ER/TM 86/R3		0.18	1.8
	Aroclor 1232	Aroclor 1254	Dahlgren et al., 1972	ring-necked pheasant	1	17 weeks during egg laying	oral via gelatin capsule	reproduction	reduced egg hatchability	0.1	LOAEL-NOAEL	0.18	1.8	ES/ER/TM 86/R3		0.18	1.8
	Aroclor 1242	Aroclor 1254	Dahlgren et al., 1972	ring-necked pheasant	1	17 weeks during egg laying	oral via gelatin capsule	reproduction	reduced egg hatchability	0.1	LOAEL-NOAEL	0.18	1.8	ES/ER/TM 86/R3		0.18	1.8
	Aroclor 1248	Aroclor 1254	Dahlgren et al., 1972	ring-necked pheasant	1	17 weeks during egg laying	oral via gelatin capsule	reproduction	reduced egg hatchability	0.1	LOAEL-NOAEL	0.18	1.8	ES/ER/TM 86/R3		0.18	1.8
	Aroclor 1254	Aroclor 1254	Dahlgren et al., 1972	ring-necked pheasant	1	17 weeks during egg laying	oral via gelatin capsule	reproduction	reduced egg hatchability	0.1	LOAEL-NOAEL	0.18	1.8	ES/ER/TM 86/R3		0.18	1.8
	Aroclor 1260	Aroclor 1254	Dahlgren et al., 1972	ring-necked pheasant	1	17 weeks during egg laying	oral via gelatin capsule	reproduction	reduced egg hatchability	0.1	LOAEL-NOAEL	0.18	1.8	ES/ER/TM 86/R3		0.18	1.8
	Aroclor 1262	Aroclor 1254	Dahlgren et al., 1972	ring-necked pheasant	1	17 weeks during egg laying	oral via gelatin capsule	reproduction	reduced egg hatchability	0.1	LOAEL-NOAEL	0.18	1.8	ES/ER/TM 86/R3		0.18	1.8
Herbicide	Dichloroprop															---	---
Pesticide	Aldrin	N/A	Hall et al., 1971	ring-necked pheasant		6 weeks	oral via gelatin capsule	growth		0.1 (for NOAEL) 0.25 (for LOAEL)	subchronic-chronic	0.007	0.035	39-EJ1138-01J	study and value selected based on an extensive review of available literature documented in 39-EJ1138- 01J	0.007	0.035
	beta-1,2,3,4,5,6-Hexachlorocyclohexane	gamma hexachlorobenzene (lindane)	Chakravarty and Lahiri, 1986; Chakravarty et al., 1986	mallard	1	8 weeks	oral intubation	reproduction	eggshell thickness, egg number, etc.	0.1	for interspecies uncertainty	0.571	0.857	87-MA02T 6- 05C	study and value selected based on an extensive review of available literature documented in 87-MA02T6- 05C	0.571	0.857
	Alpha-Chlordane	Chlordane	Stickel et al., 1983	red-winged blackbird	0.064	84 days	oral in diet	mortality				2.14	10.7	ES/ER/TM 86/R3		2.14	10.7

Table 2-7. Avian Toxicity Reference Values

Chemical Class	Soil Constituent	Form/Surrogate Analyte	Primary Study	Test Species	Test Species Body Weight (kg)	Duration	Exposure Route	General Effect Endpoint	Specific Effect Endpoint	Uncertainty Factors Applied	Uncertainty Factor Type	NOAEL (mg/kg/d)	LOAEL (mg/kg/d)	Secondary Source	Notes	Selected Avian NOAEL TRV (mg/kg/d)	Selected Avian LOAEL TRV (mg/kg/d)
	Gamma-Chlordane	Chlordane	Stickel et al., 1983	red-winged blackbird	0.064	84 days	oral in diet	mortality				2.14	10.7	ES/ER/TM 86/R3		2.14	10.7
	Dichlorodiphenyldichloroethylene	DDT	Cecil et al., 1978	chicken		30 days	oral in diet	growth	body weight			0.227	2.27	OSWER Directive 9285.7-57	value is highest bounded NOAEL lower than the lowest bounded LOAEL value for reproduction, growth or survival; LOAEL is from same study	0.227	---
	Dichlorodiphenyldichloroethylene	DDT	Heath et al., 1969	mallard		1 year	oral in diet	reproduction	reproductive success			0.563	1.892	OSWER Directive 9285.7 57	value is lowest reproductive LOAEL above the NOAEL used for the EcoSSL; NOAEL is from same study	---	1.892
	Dichlorodiphenyltrichloroethane	N/A	Cecil et al., 1978	chicken		30 days	oral in diet	growth	body weight			0.227	2.27	OSWER Directive 9285.7-57	value is highest bounded NOAEL lower than the lowest bounded LOAEL value for reproduction, growth or survival; LOAEL is from same study	0.227	---
	Dichlorodiphenyltrichloroethane	N/A	Heath et al., 1969	mallard		1 year	oral in diet	reproduction	reproductive success			0.563	1.892	OSWER Directive 9285.7-57	value is lowest reproductive LOAEL above the NOAEL used for the EcoSSL; NOAEL is from same study	---	1.892
	Dieldrin	N/A	Nebeker et al., 1992	mallard		24 days	oral in diet	growth	body weight			0.0709	3.78	OSWER Directive 9285.7-56	value is highest bounded NOAEL lower than the lowest bounded LOAEL value for reproduction, growth or survival; LOAEL is from same study	0.0709	---
	Dieldrin	N/A	Wiese et al., 1968	crowned guinea fowl		21 months	oral in diet	reproduction	number of progeny			0.0671	0.223	OSWER Directive 9285.7-56	value is lowest reproductive LOAEL above the NOAEL used for the EcoSSL; NOAEL is from same study	---	0.223
	Endosulfan I	Endosulfan	Abiola, 1992	gray partridge	0.4	4 weeks (during reproduction)	oral in diet	reproduction				10	---	ES/ER/TM 86/R3		10	---
	Endosulfan II	Endosulfan	Abiola, 1992	gray partridge	0.4	4 weeks (during reproduction)	oral in diet	reproduction				10	---	ES/ER/TM 86/R3		10	---
	Endosulfan Sulfate	Endosulfan	Abiola, 1992	gray partridge	0.4	4 weeks (during reproduction)	oral in diet	reproduction				10	---	ES/ER/TM 86/R3		10	---
	Endrin Aldehyde	Endrin	Spann et al., 1986	mallard	1.15	>200 days	oral in diet	reproduction				0.3	---	ES/ER/TM 86/R3		0.3	---
	Methoxychlor															---	---

Table 2-7. Avian Toxicity Reference Values

Chemical Class	Soil Constituent	Form/Surrogate Analyte	Primary Study	Test Species	Test Species Body Weight (kg)	Duration	Exposure Route	General Effect Endpoint	Specific Effect Endpoint	Uncertainty Factors Applied	Uncertainty Factor Type	NOAEL (mg/kg/d)	LOAEL (mg/kg/d)	Secondary Source	Notes	Selected Avian NOAEL TRV (mg/kg/d)	Selected Avian LOAEL TRV (mg/kg/d)

Notes: Uncertainty factors were used to adjust all measured effect concentrations to chronic NOAELS and chronic LOAELs as follows:

LOAEL to NOAEL = 0.1

Subchronic to chronic = 0.1

where:

chronic = >12 weeks or during critical lifestage

subchronic = 4 to 12 weeks

These uncertainty factors are consistent with methods used in development of the EcoSSLs (EPA, 2007a) and are more conservative than uncertainty factors recommended in EPA 540-R-97-006.

* Study information and calculated NOAELs and LOAELs for these sources were taken directly from the cited EcoSSL report developed by EPA. All other primary sources were obtained and reviewed, and TRVs were extracted or developed from the study.

Bold values were selected as the avian TRVs.

Table 2-8. Mammalian Toxicity Reference Values

Chemical Class	Soil Constituent	Form/ Surrogate Analyte	Primary Study	Test Species	Test Species Body Weight (kg)	Duration	Exposure Route	General Effect Endpoint	Specific Effect Endpoint	Uncertainty Factors Applied	Uncertainty Factor Type	NOAEL (mg/kg/d)	LOAEL (mg/kg/d)	Secondary Source	Notes	Selected Mammalian NOAEL TRV (mg/kg/d)	Selected Mammalian LOAEL TRV (mg/kg/d)
Metals	Aluminum	Aluminum Chloride	Ondreička et al., 1966	mouse	0.03	3 generations	oral in water	reproduction	offspring growth	0.1	LOAEL-NOAEL	1.93	19.3	ES/ER/TM-86/R3	Note that soil pH must be <5.5 (EPA, 2003) for Al to be bioavailable	1.93	19.3
	Antimony	Antimony Trichloride	*Rossi et al., 1987	rat	0.33	31 days	oral in water	reproduction	progeny body weight			0.059	0.59	OSWER Directive 9285.7-61	value is highest bounded NOAEL lower than the lowest bounded LOAEL value for reproduction, growth or survival; LOAEL is from same study	0.059	0.59
	Arsenic	Sodium Arsenite	*Neiger and Osweiler, 1989	dog	10.1	8 weeks	oral in diet	growth	reduced body weight			1.04	1.66	OSWER Directive 9285.7-62	value is highest bounded NOAEL lower than the lowest bounded LOAEL value for reproduction, growth or survival; LOAEL is from same study	1.04	1.66
	Barium	Multiple Forms	*Multiple Studies	multiple species								51.8		OSWER Directive 9285.7-63	geometric mean of NOAELs for reproduction and growth	---	---
	Barium	Barium Chloride	NTP, 1994	rat	0.35	105 weeks	oral in water	nephrotoxicity	increased kidney weight			45	75		study selected because NOAEL is similar to EcoSSL, study is of long duration, and a LOAEL was identified.	45	75
	Beryllium	Beryllium Sulfate	*Schroeder and Mitchener, 1975	rat	0.486	lifetime	oral in water	longevity				0.532		OSWER Directive 9285.7-64	same study as ES/E/TM-86/R3, but used different body weight in calculation of NOAEL	0.532	---
	Bismuth															---	---
	Boron	Boric Acid or Borax	Weir and Fischer, 1972	rat	0.35	three generations	oral in diet	reproduction	sterility			28	93.6	ES/ER/TM-86/R3		28	93.6
	Cadmium	Cadmium Acetate	*Yuhas et al., 1979	rat	0.43	2 weeks	oral in water	growth	body weight			0.77	7.7	OSWER Directive 9285.7-65	value is highest bounded NOAEL lower than the lowest bounded LOAEL value for reproduction, growth or survival; LOAEL is from same study	---	---
	Cadmium	Cadmium Chloride	Sutou et al., 1980a and 1980b	rat	0.303	6 weeks during reproduction	oral gavage	reproduction	reduced fetal survival			1	10	ES/ER/TM-86/R3	ORNL TRV for cadmium was selected as it represents reproductive effects, is a longer study, and is comparable to the TRV used for EcoSSLs	1	10
	Chromium (6+)	Multiple forms	*Multiple Studies	multiple species				reproduction and growth				9.24		OSWER Directive 9285.7-66	geometric mean of NOAELs for reproduction and growth	9.24	---
	Chromium (6+)	Sodium Dichromate	Chowdhury and Mitra, 1995	rat	0.3084	90 days	oral gavage	reproduction	testes weight			20	40	OSWER Directive 9285.7-66	lowest bounded reproductive LOAEL above the geometric mean NOAEL from EcoSSL	---	40
	Chromium (3+)	Multiple Forms	*Multiple Studies	multiple species				reproduction and growth				2.4		OSWER Directive 9285.7-66	geometric mean of NOAELs for reproduction and growth	2.4	---
	Chromium	Chromium Sulfate	*Zahid et al., 1990	mouse	0.0249	35 days	oral in	reproduction	sperm cell	0.1	LOAEL-NO	0.962	9.62	OSWER	lowest reproductive LOAEL	---	9.62

Table 2-8. Mammalian Toxicity Reference Values

Chemical Class	Soil Constituent	Form/ Surrogate Analyte	Primary Study	Test Species	Test Species Body Weight (kg)	Duration	Exposure Route	General Effect Endpoint	Specific Effect Endpoint	Uncertainty Factors Applied	Uncertainty Factor Type	NOAEL (mg/kg/d)	LOAEL (mg/kg/d)	Secondary Source	Notes	Selected Mammalian NOAEL TRV (mg/kg/d)	Selected Mammalian LOAEL TRV (mg/kg/d)
	(3+)						diet		counts		AEL			Directive 9285.7-66	above the geometric mean NOAEL from EcoSSL		
	Cobalt	Multiple Forms	*Multiple Studies	multiple species				reproduction and growth				7.33		OSWER Directive 9285.7-67	geometric mean of NOAELs for reproduction and growth	7.33	---
	Cobalt	Cobalt Chloride	*Domingo et al., 1985	rat	0.3	28 days	gavage	reproduction	progeny body weight			5.45	10.9	OSWER Directive 9285.7-67	lowest bounded reproductive LOAEL above the geometric mean NOAEL from EcoSSL	---	10.9
	Copper	Copper Sulfate Pentahydrate	*Allcroft et al., 1961	pig	100	4 weeks	oral in diet	growth	body weight			5.6	9.34	OSWER Directive 9285.7-68	value is highest bounded NOAEL lower than the lowest bounded LOAEL value for reproduction, growth or survival; LOAEL is from same study	5.6	9.34
	Lead	Lead Acetate	*Kimmel et al., 1980	rat	0.3	7 weeks during gestation	oral in water	growth	body weight			4.7	8.9	OSWER Directive 9285.7-68	value is highest bounded NOAEL lower than the lowest bounded LOAEL value for reproduction, growth or survival; LOAEL is from same study	4.7	8.9
	Lithium	Lithium Carbonate	Marathe and Thomas, 1986	rat	0.35	days 6 to 15 of gestation	oral in diet	reproduction	reduced number of offspring			9.4	18.8	ES/ER/TM-86 /R3		9.4	18.8
	Manganese	Multiple Forms	*Multiple Studies	multiple species				reproduction and growth				51.5		OSWER Directive 9285.7-71	geometric mean of NOAELs for reproduction and growth	51.5	---
	Manganese	Manganese Oxide	*Rehnberg et al., 1980	rat	0.0566	20 days	gavage	reproduction, growth	reproductive organ histology, body weight			21	71	OSWER Directive 9285.7-71	lowest bounded growth or reproductive LOAEL above the geometric mean NOAEL from EcoSSL	---	71
	Mercury	Methylmercury Chloride	Verschuuren et al., 1976a	rat	0.35	three generations	oral in diet	reproduction	pup viability			0.032	0.16	ES/ER/TM-86 /R3		0.032	0.16
	Molybdenum	Molybdate (MoO4)	Schroeder and Mitchener, 1971	mouse	0.03	three generations	oral in water	reproduction	reproductive success, number of runts	0.1	LOAEL-NOAEL	0.26	2.6	ES/ER/TM-86 /R3		0.26	2.6
	Nickel	Nickelous Chloride	*Pandey and Srivastava, 2000	mouse	0.025	35 days	oral (other)	reproduction	sperm cell counts			1.7	3.4	OSWER Directive 9285.7-76	value is highest bounded NOAEL lower than the lowest bounded LOAEL value for reproduction, growth or survival; LOAEL is from same study	1.7	3.4
	Selenium	Sodium Selenite	*Mahan and Moxon, 1984	pig	17.8	37 days	oral in diet	growth	body weight			0.143	0.215	OSWER Directive 9285.7-72	value is highest bounded NOAEL lower than the lowest bounded LOAEL value for reproduction, growth or survival; LOAEL is from same study	0.143	0.215
	Silver	Silver Acetate	*Van Vleet, 1976	pig	8.86	40 days	oral in diet	growth	body weight	0.1	LOAEL-NOAEL	6.02	60.2	OSWER Directive 9285.7-77	lowest growth, reproduction, or survival LOAEL, with NOAEL estimated by application of uncertainty factor	6.02	60.2

Table 2-8. Mammalian Toxicity Reference Values

Chemical Class	Soil Constituent	Form/ Surrogate Analyte	Primary Study	Test Species	Test Species Body Weight (kg)	Duration	Exposure Route	General Effect Endpoint	Specific Effect Endpoint	Uncertainty Factors Applied	Uncertainty Factor Type	NOAEL (mg/kg/d)	LOAEL (mg/kg/d)	Secondary Source	Notes	Selected Mammalian NOAEL TRV (mg/kg/d)	Selected Mammalian LOAEL TRV (mg/kg/d)
	Strontium	Strontium chloride	Skoryna, 1981	rat	0.35	3 years	oral in water	growth	body weight			263		ES/ER/TM-86 /R3		263	---
	Thallium	Thallium Sulfate	Formigli et al., 1986	rat	0.365	60 days	drinking water	reproduction	sperm motility	0.05 and 0.25	subchronic LOAEL-chronic NOAEL; subchronic LOAEL-chronic LOAEL	0.015	0.075	ES/ER/TM-86 /R3; 37-EJ1138-01O	study and value selected based on an extensive review of available literature documented in 37-EJ1138-01O	0.015	0.075
	Tin	bis(tibutyltin) oxide	Davis et al., 1987	mouse	0.03	days 6 to 15 of gestation	oral intubation	reproduction	reduced fetal weight and fetal survival			23.4	35	ES/ER/TM-86 /R3		23.4	35
	Uranium	Uranyl Acetate	Domingo et al., 1989	mouse	0.028	gestational days 6-15	drinking water	reproduction	pup survival and body weight	0.1	LOAEL-NOAEL	0.28	2.8		See Appendix H for discussion of the derivation of this TRV	0.28	2.8
	Vanadium	Sodium Orthovanadate	*Sanchez et al., 1991	mouse	0.047	12 days during gestation	gavage	reproduction	offspring development			4.16	8.31	OSWER Directive 9285.7-75	value is highest bounded NOAEL lower than the lowest bounded LOAEL value for reproduction, growth or survival; LOAEL is from same study	4.16	8.31
	Zinc	Various Forms	*Multiple Studies	multiple species				reproduction and growth				75.4		OSWER Directive 9285.7-73	geometric mean of NOAELs for reproduction and growth	75.4	---
	Zinc	Zinc Sulfate	*Miller et al., 1989	cattle	580	14 weeks	oral in diet	reproduction	progeny body weight			37.9	75.9	OSWER Directive 9285.7-73	lowest bounded growth or reproductive LOAEL above the geometric mean NOAEL from EcoSSL	---	75.9
General Inorganics	Ammonia/Ammonium															---	---
	Chloride															---	---
	Cyanide	Potassium Cyanide	Tewe and Maner, 1981	rat	0.273	gestation and lactation	oral in diet	reproduction	juvenile growth			68.7	---	ES/ER/TM-86 /R3		68.7	---
	Fluoride	Sodium Fluoride	Aulerich et al., 1987	mink	1	382 days	oral in diet	reproduction	kit survival			31.37	52.75	ES/ER/TM-86 /R3		31.37	52.75
	Iodine	Potassium Iodide	Aulerich et al., 1978	mink	1	breeding through lactation	oral in diet	reproduction	kit survival			1.37	13.7			1.37	13.7
	Nitrate/Nitrite	Potassium Nitrate	Sleight and Atallah, 1968	guinea pig	0.86	143 to 204 days	oral in water	reproduction	number of live births			507	1130	ES/ER/TM-86 /R3		507	1130
	Phosphate															---	---
	Sulfate/Sulfite															---	---
	Total Organic Carbon															---	---

Table 2-8. Mammalian Toxicity Reference Values

Chemical Class	Soil Constituent	Form/ Surrogate Analyte	Primary Study	Test Species	Test Species Body Weight (kg)	Duration	Exposure Route	General Effect Endpoint	Specific Effect Endpoint	Uncertainty Factors Applied	Uncertainty Factor Type	NOAEL (mg/kg/d)	LOAEL (mg/kg/d)	Secondary Source	Notes	Selected Mammalian NOAEL TRV (mg/kg/d)	Selected Mammalian LOAEL TRV (mg/kg/d)
Volatile Organics	1,1-dichloroethane	1,2-dichloroethane	Lane et al., 1982	mouse	0.035	2 generations	oral in water	reproduction				50	---	ES/ER/TM-86/R3		50	---
	1,1-dichloroethene	N/A	Quast et al., 1983	rat	0.35	2 years	oral in water	mortality, body weight				30	---	ES/ER/TM-86/R3		30	---
	1,1,1-trichloroethane	N/A	Lane et al., 1982	mouse	0.035	2 generations	oral in water	reproduction				1,000	---	ES/ER/TM-86/R3		1,000	---
	1,1,2-trichloroethane	1,1,1-trichloroethane	Lane et al., 1982	mouse	0.035	2 generations	oral in water	reproduction				1,000	---	ES/ER/TM-86/R3		1,000	---
	1,1,2,2-tetrachloroethane	1,1,1,2-tetrachloroethane	NTP, 1983	rat		103 weeks	oral gavage	nephrotoxicity		0.1	LOAEL-NOAEL	8.93	89.3	IRIS	verified in IRIS on December 11, 2009	8.93	89.3
	1,2-dichlorobenzene	N/A	NTP, 1985	rat		2 years	oral gavage	survival and pathology				85.7	---	IRIS	verified in IRIS on December 11, 2009	85.7	---
	1,2-dichloroethane	N/A	Lane et al., 1982	mouse	0.035	2 generations	oral in water	reproduction				50	---	ES/ER/TM-86/R3		50	---
	1,3-dichlorobenzene	1,2-dichlorobenzene	NTP, 1985	rat		2 years	oral gavage	survival and pathology				85.7	---	IRIS	verified in IRIS on December 11, 2009	85.7	---
	2-butanone (Methyl Ethyl Ketone)	N/A	Cox et al., 1975	rat	0.35	2 generations	oral in water	reproduction	reduced litter size and pup survival			1,771	4,571	ES/ER/TM-86/R3		1,771	4,571
	2-hexanone	N/A	O'Donoghue et al., 1978	rat		13 months	oral in water	neurotoxicity				5	36.1	IRIS	verified in IRIS on December 11, 2009; NOAEL is BMDL10 value; LOAEL is BMD10 value	5	36.1
	Benzene	N/A	Wolf et al., 1956	rat	0.175-0.250	187 days	oral gavage	survival and pathology	hemotoxicity			0.7	7			0.7	7
	Butanol	N/A	EPA, 1986	rat		13 weeks	oral gavage	hypoactivity/ataxia				125	500	IRIS	verified in IRIS on December 11, 2009	125	500
	Carbon Tetrachloride	N/A	Alumot et al., 1976a	rat	0.35	2 years	oral in diet	reproduction				16	---	ES/ER/TM-86/R3		16	---
	Chlorobenzene	N/A	Monsanto Co., 1967	dog		13 weeks	oral in capsules	liver pathology				19.5	38.7	IRIS	verified in IRIS on December 11, 2009	19.5	38.7
	Chloroform	N/A	Palmer et al., 1979	rat	0.35	13 weeks	oral intubation	liver, kidney, gonad condition	gonadal atrophy	0.1	subchronic-chronic	15	41	ES/ER/TM-86/R3		15	41
	cis-1,2-dichloroethylene	1,2-dichloroethylene	Palmer et al., 1979	mouse	0.03	90 days	oral in water	body and organ weights				45.2	---	ES/ER/TM-86/R3		45.2	---
	Dichloromethane (Methylene Chloride)	N/A	NCA, 1982	rat	0.35	2 years	oral in water	liver histology				5.85	50	ES/ER/TM-86/R3		5.85	50
	Ethyl	N/A	Wolf et al., 1956	rat	0.175-0.250	182 days	oral	survival and	liver and kidney			136	408			97.1	291

Table 2-8. Mammalian Toxicity Reference Values

Chemical Class	Soil Constituent	Form/ Surrogate Analyte	Primary Study	Test Species	Test Species Body Weight (kg)	Duration	Exposure Route	General Effect Endpoint	Specific Effect Endpoint	Uncertainty Factors Applied	Uncertainty Factor Type	NOAEL (mg/kg/d)	LOAEL (mg/kg/d)	Secondary Source	Notes	Selected Mammalian NOAEL TRV (mg/kg/d)	Selected Mammalian LOAEL TRV (mg/kg/d)
	Benzene						gavage	pathology	histopathology								
	Methyl Isobutyl Ketone	2-butanone (Methyl Ethyl Ketone)	Cox et al., 1975	rat	0.35	2 generations	oral in water	reproduction	reduced litter size and pup survival			1,771	4,571	ES/ER/TM-86 /R3		1771	4571
	n-butyl Benzene	Isopropyl Benzene	Wolf et al., 1956	rat	0.175-0.250	194 days	oral gavage	survival and pathology	increased kidney weight			110	330			110	330
	Tetrachloroethylene	1,1,2,2-tetrachloroethylene	Buben and O'Flaherty, 1985	mouse	0.03	6 weeks	oral gavage	hepatotoxicity		0.1	LOAEL-NOAEL	1.4	7	ES/ER/TM-86 /R3		1.4	7
	Toluene	N/A	Gospe et al., 1994	rat	0.2	gestation days 6 to19	oral gavage	reproduction	maternal weight loss			52	520			52	520
	Trans-1,2-dichloroethylene	1,2-dichloroethylene	Palmer et al., 1979	mouse	0.03	90 days	oral in water	body and organ weights				45.2	---	ES/ER/TM-86 /R3		45.2	---
	Trichloroethylene (TCE)	N/A	Buben and O'Flaherty, 1985	mouse	0.03	6 weeks	oral gavage	hepatotoxicity		0.01	LOAEL-NOAEL subchronic-chronic	0.7	7	ES/ER/TM-86 /R3		0.7	7
	Xylene	Xylene Mixture	NTP, 1986	rat		103 weeks	oral gavage	behavior growth mortality				179	350			179	350
Polycyclic Aromatic Hydrocarbons	Acenaphthene	N/A	EPA, 1989a	mouse	0.03	90 days	oral gavage	hepatotoxicity	liver weight changes and cellular hypertrophy			175	350	IRIS	verified in IRIS on December 9, 2009	175	350
	Acenaphthylene	Acenaphthene	EPA, 1989a	mouse	0.03	90 days	oral gavage	hepatotoxicity	liver weight changes and cellular hypertrophy			175	350	IRIS	verified in IRIS on December 9, 2009	175	350
	Anthracene	N/A	EPA, 1989b	mouse	0.03	90 days	oral gavage	survival and pathology	reduced body weight			1,000	---	IRIS	verified in IRIS on December 9, 2009	1,000	---
	Benzo(a)pyrene	N/A	Mackenzie and Angevine, 1981	mouse	0.03	gestation days 7 to16	oral intubation	reproduction	reduced pregnancy rate and fertility	0.1	LOAEL-NOAEL	1	10	ES/ER/TM-86 /R3; 39-EJ-1138-01P	study and value selected based on an extensive review of available literature documented in 39-EJ-1138-01P	1	10
	Benzo(a)anthracene	Benzo(a)pyrene	Mackenzie and Angevine, 1981	mouse	0.03	gestation days 7 to 16	oral intubation	reproduction	reduced pregnancy rate and fertility	0.1	LOAEL-NOAEL	1	10	ES/ER/TM-86 /R3; 39-EJ-1138-01P	study and value selected based on an extensive review of available literature documented in 39-EJ-1138-01P	1	10
	Benzo(b)fluoranthene	Benzo(a)pyrene	Mackenzie and Angevine, 1981	mouse	0.03	gestation days 7 to 16	oral intubation	reproduction	reduced pregnancy rate and fertility	0.1	LOAEL-NOAEL	1	10	ES/ER/TM-86 /R3; 39-EJ-1138-01P	study and value selected based on an extensive review of available literature documented in 39-EJ-1138-01P	1	10
	Benzo(ghi)perylene	Benzo(a)pyrene	Mackenzie and Angevine, 1981	mouse	0.03	gestation days 7 to 16	oral intubation	reproduction	reduced pregnancy rate and fertility	0.1	LOAEL-NOAEL	1	10	ES/ER/TM-86 /R3; 39-EJ-1138-01P	study and value selected based on an extensive review of available literature documented in 39-EJ-	1	10

Table 2-8. Mammalian Toxicity Reference Values

Chemical Class	Soil Constituent	Form/ Surrogate Analyte	Primary Study	Test Species	Test Species Body Weight (kg)	Duration	Exposure Route	General Effect Endpoint	Specific Effect Endpoint	Uncertainty Factors Applied	Uncertainty Factor Type	NOAEL (mg/kg/d)	LOAEL (mg/kg/d)	Secondary Source	Notes	Selected Mammalian NOAEL TRV (mg/kg/d)	Selected Mammalian LOAEL TRV (mg/kg/d)
															1138-01P		
	Benzo(k)fluoranthene	Benzo(a)pyrene	Mackenzie and Angevine, 1981	mouse	0.03	gestation days 7 to 16	oral intubation	reproduction	reduced pregnancy rate and fertility	0.1	LOAEL-NOAEL	1	10	ES/ER/TM-86/R3; 39-EJ-1138-01P	study and value selected based on an extensive review of available literature documented in 39-EJ-1138-01P	1	10
	Chrysene	Benzo(a)pyrene	Mackenzie and Angevine, 1981	mouse	0.03	gestation days 7 to 16	oral intubation	reproduction	reduced pregnancy rate and fertility	0.1	LOAEL-NOAEL	1	10	ES/ER/TM-86/R3; 39-EJ-1138-01P	study and value selected based on an extensive review of available literature documented in 39-EJ-1138-01P	1	10
	Dibenz(ah)anthracene	Benzo(a)pyrene	Mackenzie and Angevine, 1981	mouse	0.03	gestation days 7 to 16	oral intubation	reproduction	reduced pregnancy rate and fertility	0.1	LOAEL-NOAEL	1	10	ES/ER/TM-86/R3; 39-EJ-1138-01P	study and value selected based on an extensive review of available literature documented in 39-EJ-1138-01P	1	10
	Fluoranthene	N/A	EPA, 1988	mouse	0.03	13 weeks	oral gavage	nephropathy	increased liver weight and pathology			125	250	IRIS	verified in IRIS on December 9, 2009	125	250
	Fluorene	N/A	EPA, 1989c	mouse	0.03	13 weeks	oral gavage	hemotoxicity				125	250	IRIS	verified in IRIS on December 9, 2009	125	250
	Indeno[1,2,3-cd]pyrene	Benzo(a)pyrene	Mackenzie and Angevine, 1981	mouse	0.03	gestation days 7 to 16	oral intubation	reproduction	reduced pregnancy rate and fertility	0.1	LOAEL-NOAEL	1	10	ES/ER/TM-86/R3; 39-EJ-1138-01P	study and value selected based on an extensive review of available literature documented in 39-EJ-1138-01P	1	10
	2-Methylnaphthalene	N/A	Murata et al., 1997	mouse	0.0425	81 weeks	oral in diet	survival and pathology	pulmonary pathology			50.3	113.8			50.3	113.8
	Naphthalene	N/A	NTP, 1991	rat	0.24	days 6 to 15 of gestation	oral gavage	reproduction	maternal weight loss			50	150			50	150
	Phenanthrene	Anthracene	EPA, 1989b	rat	0.03	90 days	oral gavage	survival and pathology	reduced body weight			1,000	---	IRIS	verified in IRIS on December 9, 2009	1,000	---
	Pyrene	N/A	EPA, 1989d	mouse	0.03	13 weeks	oral gavage	nephropathy				75	125	IRIS	verified in IRIS on December 9, 2009	75	125
	Low Molecular Weight PAHs	1-naphthaleneacetic acid	*Verschuuren et al., 1976b	rat	0.247	6 weeks	oral in diet	growth	reduced body weight			65.6	328	OSWER Directive 9285.7-78	value is highest bounded NOAEL lower than the lowest bounded LOAEL value for reproduction, growth or survival; LOAEL is from same study	65.6	328
	High Molecular Weight PAHs	benzo(a)pyrene	*Culp et al., 1998	mouse	0.038	55 weeks	oral in diet	survival	reduced survival			0.615	3.07	OSWER Directive 9285.7-78	value is highest bounded NOAEL lower than the lowest bounded LOAEL value for reproduction, growth or survival; LOAEL is from same study	0.615	3.07
Petroleum	Gasoline Range Organics	JP-8 jet fuel	Cooper and Mattie, 1996	rat	0.35	gestation days 6 to 15	oral gavage	reproduction	adult and fetal weight; fetal mortality			1,000	1,500			1,000	1,500
	TPH (Diesel)	JP-8 jet fuel	Cooper and Mattie, 1996	rat	0.35	gestation days 6 to 15	oral gavage	reproduction	adult and fetal weight; fetal			1,000	1,500			1,000	1,500

Table 2-8. Mammalian Toxicity Reference Values

Chemical Class	Soil Constituent	Form/ Surrogate Analyte	Primary Study	Test Species	Test Species Body Weight (kg)	Duration	Exposure Route	General Effect Endpoint	Specific Effect Endpoint	Uncertainty Factors Applied	Uncertainty Factor Type	NOAEL (mg/kg/d)	LOAEL (mg/kg/d)	Secondary Source	Notes	Selected Mammalian NOAEL TRV (mg/kg/d)	Selected Mammalian LOAEL TRV (mg/kg/d)
									mortality								
	TPH (Kerosene)	JP-8 jet fuel	Cooper and Mattie, 1996	rat	0.35	gestation days 6 to 15	oral gavage	reproduction	adult and fetal weight; fetal mortality			1,000	1,500			1,000	1,500
Semivolatile Organics	Normal Paraffin Hydrocarbons	JP-8 jet fuel	Cooper and Mattie, 1996	rat	0.35	gestation days 6 to 15	oral gavage	reproduction	adult and fetal weight; fetal mortality			1,000	1,500			1,000	1,500
	Phenol	N/A	EPAOTS0573686	rat		gestation days 6 to 15	oral gavage	reproduction	reduced fetal weight	0.1	for interspecies uncertainty	12	36	87-MA02T6-05E	study and value selected based on an extensive review of available literature documented in secondary source	12	36
	2-methylphenol (*o*-cresol)	N/A	Hornshaw et al., 1986	mink	0.958	6 months	oral in diet	reproduction		N/A		313	---	ES/ER/TM-86/R3	calculations have been updated to use body weight and ingestion data from primary source	313	---
	4-methylphenol (*p*-cresol)	2-methylphenol (*o*-cresol)	Hornshaw et al., 1986	mink	0.958	6 months	oral in diet	reproduction		N/A		313	---	ES/ER/TM-86/R3	calculations have been updated to use body weight and ingestion data from primary source	313	---
	2,4-dinitrotoluene	N/A	Ellis et al., 1979	dog		24 months	oral in capsules	hemotoxicity and mortality	hemotoxicity and mortality	N/A		0.67	1.4	39-EJ-1138-01D	NOAEL and LOAEL are LED10 and ED10 values, respectively calculated using EPA benchmark dose software. Study for benchmark calculation selected based on an extensive review of available literature documented in secondary source	0.67	1.4
	Bis[2-ethylhexyl] phthalate	N/A	Lamb et al., 1987	mouse	0.03	105 days (during reproduction)	oral in diet	reproduction		N/A		18.3	183	ES/ER/TM-86/R3		18.3	183
	Total PCBs	Aroclor 1254	McCoy et al., 1995	Oldfield mouse	0.014	12 months	oral in diet	reproduction	reduced number of litters, pup body weight, and pup survival	0.1	LOAEL-NOAEL	0.068	0.68	ES/ER/TM-86/R3		0.068	0.68
	Aroclor 1016	Aroclor 1016	EPA/600/3¬80/033	mink	1	18 months	oral in diet	reproduction	reduced kit growth			1.37	3.43	ES/ER/TM-86/R3		1.37	3.43
	Aroclor 1221	Aroclor 1254	McCoy et al., 1995	Oldfield mouse	0.014	12 months	oral in diet	reproduction	reduced number of litters, pup body weight, and pup survival	0.1	LOAEL-NOAEL	0.068	0.68	ES/ER/TM-86/R3		0.068	0.68
	Aroclor 1232	Aroclor 1254	McCoy et al., 1995	Oldfield mouse	0.014	12 months	oral in diet	reproduction	reduced number of litters, pup body weight, and pup survival	0.1	LOAEL-NOAEL	0.068	0.68	ES/ER/TM-86/R3		0.068	0.68

Table 2-8. Mammalian Toxicity Reference Values

Chemical Class	Soil Constituent	Form/ Surrogate Analyte	Primary Study	Test Species	Test Species Body Weight (kg)	Duration	Exposure Route	General Effect Endpoint	Specific Effect Endpoint	Uncertainty Factors Applied	Uncertainty Factor Type	NOAEL (mg/kg/d)	LOAEL (mg/kg/d)	Secondary Source	Notes	Selected Mammalian NOAEL TRV (mg/kg/d)	Selected Mammalian LOAEL TRV (mg/kg/d)
	Aroclor 1242	Aroclor 1242	Bleavins et al., 1980	mink	1	7 months	oral in diet	reproduction	total reproductive failure	0.1	LOAEL-NOAEL	0.069	0.69	ES/ER/TM-86/R3		0.069	0.69
	Aroclor 1248	Aroclor 1248	Barsotti et al., 1976	Rhesus monkey	5	14 months	oral in diet	reproduction	reduced pregnancy and live birth rates	0.1	LOAEL-NOAEL	0.0087	0.087	ES/ER/TM-86/R3	recalculated: study reports PCB consumption of 0.43 mg PCB/day	0.0087	0.087
	Aroclor 1254	Aroclor 1254	McCoy et al., 1995	Oldfield mouse	0.014	12 months	oral in diet	reproduction	reduced number of litters, pup body weight, and pup survival	0.1	LOAEL-NOAEL	0.068	0.68	ES/ER/TM-86/R3		0.068	0.68
	Aroclor 1260	Aroclor 1254	McCoy et al., 1995	Oldfield mouse	0.014	12 months	oral in diet	reproduction	reduced number of litters, pup body weight, and pup survival	0.1	LOAEL-NOAEL	0.068	0.68	ES/ER/TM-86/R3		0.068	0.68
	Aroclor 1262	Aroclor 1254	McCoy et al., 1995	Oldfield mouse	0.014	12 months	oral in diet	reproduction	reduced number of litters, pup body weight, and pup survival	0.1	LOAEL-NOAEL	0.068	0.68	ES/ER/TM-86/R3		0.068	0.68
Herbicide	Dichloroprop															---	---
Pesticide	Aldrin	N/A	Treon and Cleveland, 1955	rat	0.35	3 generations	oral in diet	reproduction	number of litters and offspring mortality	N/A	---	0.2	1	ES/ER/TM-86/R3		0.2	1
	Beta-1,2,3,4,5,6-Hexachlorocyclohexane	N/A	Van Velsen et al., 1986	rat	0.35	13 weeks	oral in diet	growth, blood chemistry, organ histology	gonadal atrophy in male and female rats	0.1	chronic-subchronic	0.4	2	ES/ER/TM-86/R3		0.4	2
	Alpha-Chlordane	Chlordane	Narotsky and Kavlock, 1995	rat		6 to 19 gestational days	oral gavage	reproduction	post natal pup viability	0.1	LOAEL-NOAEL	2.1	21	87-MA02T6-05A	study and value selected based on an extensive review of available literature documented in secondary source	2.1	21
	Gamma-Chlordane	Chlordane	Narotsky and Kavlock, 1995	rat		6 to 19 gestational days	oral gavage	reproduction	post natal pup viability	0.1	LOAEL-NOAEL	2.1	21	87-MA02T6-05A	study and value selected based on an extensive review of available literature documented in secondary source	2.1	21
	Dichlorodiphenyldichloroethylene	DDT	Wrenn et al., 1970	rat		15 days (during gestation)	oral gavage	reproduction				0.147	0.735	EPA, 2007a	value is highest bounded NOAEL lower than the lowest bounded LOAEL value for reproduction, growth or survival; LOAEL is from same study	0.147	0.735

Table 2-8. Mammalian Toxicity Reference Values

Chemical Class	Soil Constituent	Form/ Surrogate Analyte	Primary Study	Test Species	Test Species Body Weight (kg)	Duration	Exposure Route	General Effect Endpoint	Specific Effect Endpoint	Uncertainty Factors Applied	Uncertainty Factor Type	NOAEL (mg/kg/d)	LOAEL (mg/kg/d)	Secondary Source	Notes	Selected Mammalian NOAEL TRV (mg/kg/d)	Selected Mammalian LOAEL TRV (mg/kg/d)
	Dichlorodiphenyltrichloroethane	N/A	Wrenn et al., 1970	rat		15 days (during gestation)	oral gavage	reproduction				0.147	0.735	EPA, 2007a	value is highest bounded NOAEL lower than the lowest bounded LOAEL value for reproduction, growth or survival; LOAEL is from same study	0.147	0.735
	Dieldrin	N/A	Harr et al., 1970	rat		750 days	oral in diet	reproduction		N/A	---	0.015	0.03	EPA, 2007b	value is highest bounded NOAEL lower than the lowest bounded LOAEL value for reproduction, growth or survival; LOAEL is from same study	0.015	0.03
	Endosulfan I	Endosulfan	Dikshith et al., 1984	rat	0.35	30 days (not during reproduction)	oral intubation	reproduction and blood chemistry		0.1	chronic-subchronic	0.15	---	ES/ER/TM-86/R3	no effects observed at highest dose	0.15	---
	Endosulfan II	Endosulfan	Dikshith et al., 1984	rat	0.35	30 days (not during reproduction)	oral intubation	reproduction and blood chemistry		0.1	chronic-subchronic	0.15	---	ES/ER/TM-86/R3	no effects observed at highest dose	0.15	---
	Endosulfan Sulfate	Endosulfan	Dikshith et al., 1984	rat	0.35	30 days (not during reproduction)	oral intubation	reproduction and blood chemistry		0.1	chronic-subchronic	0.15	---	ES/ER/TM-86/R3	no effects observed at highest dose	0.15	---
	Endrin Aldehyde	Endrin	Good and Ware, 1969	mouse	0.03	120 days (during reproduction)	oral in diet	reproduction	reduced parental survival, litter size, and no. yng/d	0.1	LOAEL-NOAEL	0.092	0.92	ES/ER/TM-86/R3		0.092	0.92
	Methoxychlor	N/A	Gray et al., 1988	rat	0.35	11 months (during reproduction)	oral in diet	reproduction	fertility and litter size reduced	N/A	---	4	8	ES/ER/TM-86/R3		4	8

Notes:

Uncertainty factors were used to adjust all measured effect concentrations to chronic NOAELS and chronic LOAELs as follows:

LOAEL to NOAEL = 0.1

Subchronic to chronic = 0.1

where:

chronic = >12 weeks or during critical lifestage

subchronic = 4 to 12 weeks

These uncertainty factors are consistent with methods used in development of the EcoSSLs (EPA, 2007a) and are more conservative than uncertainty factors recommended in EPA 540-R-97-006.

*Study information and calculated NOAELs and LOAELs for these sources were taken directly from the cited EcoSSL report developed by EPA. All other primary sources were obtained and reviewed, and TRVs were extracted or developed from the study.

Bold values were selected as the mammalian TRVs.

Table 2-9. LOAEL-Based Tier 2 PRGs

Analyte Group	Analyte	California Quail	Western Meadowlark	Killdeer	Red-Tailed Hawk	Great Basin Pocket Mouse	Deer Mouse	Grasshopper Mouse	Badger	Lowest PRG
General Inorganic	Fluoride	NBD	2,686	**845**	11,074	NBD	3,877	4,061	13,833	845
General Inorganic	Nitrogen in Nitrite and Nitrate	NTD	NTD	NTD	NTD	**27**	40	1,284,984	626,035	27
Metal	Silver	4,238	3,973	**983**	20,186	24,465	9,806	14,362	3,0778	983
Metal	Aluminum	19,217	31,220	7,214	74,599	4,883	**3,988**	13,059	7,811	3,988
Metal	Arsenic	4,776	7,403	2,284	40,102	201	**127**	302	847	127
Metal	Boron	54	68	91	2,714	**32**	39	170	2,516	32
Metal	Barium	1,721	2,335	**1,687**	8,101	2,265	2,617	11,873	12,430	1,687
Metal	Beryllium	NTD	NTD	NTD	NTD	**14**	20	181	289	14
Metal	Cadmium	294	103	**29**	1,711	2,203	624	858	4,704	29
Metal	Cobalt	1,397	2,050	**484**	4,798	2,901	2,136	5,610	4,234	484
Metal	Chromium	193	221	**109**	610	544	517	1,424	1765	109
Metal	Copper	423	461	213	12,881	233	**193**	1,217	4,631	193
Metal	Mercury	36	4.7	2.0	92	7.9	**1.6**	1.8	33	1.6
Metal	Lithium	NTD	NTD	NTD	NTD	**1664**	1797	8347	6,522	1,664
Metal	Manganese	20,746	26,026	14,407	150,899	**3,322**	3,467	11,780	21,916	3,322
Metal	Molybdenum	125	117	95	515	5.9	**5.7**	14	38	5.7
Metal	Nickel	2,051	1,127	361	11,625	711	**247**	342	1,520	247

Table 2-9. LOAEL-Based Tier 2 PRGs

Analyte Group	Analyte	California Quail	Western Meadowlark	Killdeer	Red-Tailed Hawk	Great Basin Pocket Mouse	Deer Mouse	Grasshopper Mouse	Badger	Lowest PRG
Metal	Lead	559	664	**156**	2,300	2,672	1,578	3,807	3,966	156
Metal	Antimony	NTD	NTD	NTD	NTD	97	**92**	366	325	92
Metal	Selenium	10	4.9	2.4	24	2.7	**1.4**	1.9	8.8	1.4
Metal	Tin	97	98	**84**	335	130	133	365	693	84
Metal	Thallium	NTD	NTD	NTD	NTD	8.7	**6.2**	12	25	6.2
Metal	Uranium (Calculated Total)	2,002	339	139	82	371	59	57	**22**	22
Metal	Vanadium	81	107	**43**	505	260	297	4,531	3,596	43
Metal	Zinc	6,289	4,662	**856**	906	6,711	3,331	12,666	1,037	856
PAH	Benzo[k]fluoranthene	**0.17**	NBD	NBD	NBD	1.6	NBD	NBD	NBD	0.17
PAH	Fluoranthene	NBD	NBD	**1.3**	NBD	NBD	NBD	1005	NBD	1.3
PAH	Fluorene	NBD	NBD	**8.0**	NBD	NBD	NBD	12	NBD	8.0
PAH	Phenanthrene	NBD	NBD	**48**	NBD	NBD	NBD	292	NBD	48
PCB	PCB	NBD	NBD	36	0.46	NBD	NBD	35	0.18	0.18
Pesticide	Aldrin	0.03	NBD	NBD	**0.0099**	0.58	NBD	NBD	0.29	0.0099
Pesticide	Alpha-Chlordane	**1.15**	NBD	NBD	NBD	1.4	NBD	NBD	NBD	1.15
Pesticide	Beta-1,2,3,4,5,6-Hexachlorocyclohexane	**0.06**	NBD	NBD	NBD	0.09	NBD	NBD	NBD	0.06
Pesticide	Dichlorodiphenyldichloroethylene	0.24	0.33	0.57	NBD	**0.06**	0.08	0.44	NBD	0.06
Pesticide	Dichlorodiphenyltrichloroethane	0.22	0.24	0.25	NBD	**0.05**	0.06	0.19	NBD	0.05

Table 2-9. LOAEL-Based Tier 2 PRGs

Analyte Group	Analyte	California Quail	Western Meadowlark	Killdeer	Red-Tailed Hawk	Great Basin Pocket Mouse	Deer Mouse	Grasshopper Mouse	Badger	Lowest PRG
Pesticide	Dieldrin	0.002	NBD	NBD	NBD	**0.00014**	NBD	NBD	NBD	0.00014
Pesticide	Endosulfan I	3.5	1.16	0.56	NBD	0.03	**0.014**	0.017	NBD	0.014
Pesticide	Endosulfan Sulfate	32	0.044	0.017	NBD	0.3	0.001	**0.0005**	NBD	0.0005
Pesticide	Endrin Aldehyde	**0.06**	NBD	NBD	NBD	0.1	NBD	NBD	NBD	0.06
Pesticide	Gamma-Chlordane	**3.2**	NBD	NBD	NBD	4.0	NBD	NBD	NBD	3.2
Pesticide	Methoxychlor	NTD	NTD	NTD	NTD	0.51	**0.44**	0.9	NBD	0.44
SVOC	Bis[2-ethylhexyl] phthalate	**0.17**	NBD	NBD	1.2	18.5	NBD	NBD	204	0.17
SVOC	Phenol	NTD	NTD	NTD	NTD	**0.5**	NBD	NBD	23	0.5

Table 2-10. NOAEL-Based Tier 2 PRGs

Analyte Group	Analyte	California Quail	Western Meadowlark	Killdeer	Red-Tailed Hawk	Great Basin Pocket Mouse	Deer Mouse	Grasshopper Mouse	Badger	Lowest PRG
General Inorganic	Fluoride	NBD	NBD	NBD	NBD	12,772	2,305	2,415	8,227	2,305
General Inorganic	Nitrogen in Nitrite and Nitrate	NTD	NTD	NTD	NTD	**12**	18	576,537	280,885	12
Metal	Silver	421	396	**98**	2,019	2,432	977	1,436	3,078	98
Metal	Aluminum	19,217	31,220	7,214	74,599	488	**399**	1,306	764	399
Metal	Arsenic	1,102	1,463	427	9,254	126	**70**	140	531	70
Metal	Boron	16	20	26	782	**10**	12	51	753	10
Metal	Barium	859	1,165	**841**	4,041	1,359	1,570	7,124	7,458	841
Metal	Beryllium	NTD	NTD	NTD	NTD	**14**	20	181	289	14
Metal	Cadmium	162	51	**15**	935	87	21	28	335	15
Metal	Cobalt	1,363	2,000	**472**	4,679	1,951	1,436	3,773	2,832	472
Metal	Chromium	184	211	**104**	584	136	129	355	440	104
Metal	Copper	141	86	**16**	3,647	140	92	322	2,606	16
Metal	Mercury	3	0.8	0.4	17	0.5	**0.2**	0.4	7	0.2
Metal	Lithium	NTD	NTD	NTD	NTD	**832**	899	4,174	3,261	832
Metal	Manganese	10,671	13,387	7,410	77,617	**2,409**	2,515	8,545	15,897	2,409
Metal	Molybdenum	13	12	9	52	**0.6**	0.6	1.4	4	0.6
Metal	Nickel	1,134	643	211	6,425	269	**112**	171	687	112

Table 2-10. NOAEL-Based Tier 2 PRGs

Analyte Group	Analyte	California Quail	Western Meadowlark	Killdeer	Red-Tailed Hawk	Great Basin Pocket Mouse	Deer Mouse	Grasshopper Mouse	Badger	Lowest PRG
Metal	Lead	261	291	**72**	966	1,290	751	1,735	1,952	72
Metal	Antimony	NTD	NTD	NTD	NTD	9	**9**	37	32	9
Metal	Selenium	50	2.4	NTD	12	2	**1**	1.3	6	1
Metal	Tin	39	39	**34**	135	87	89	244	463	34
Metal	Thallium	NTD	NTD	NTD	NTD	2	**1.2**	2	3	1.2
Metal	Uranium (Calculated Total)	2,002	339	139	82	37	7	7	**4**	4
Metal	Vanadium	51	69	**22**	253	191	215	2,268	1,800	22
Metal	Zinc	6,236	4,604	**844**	900	6,644	3,287	1,2474	1,030	844
PAH	Benzo[k]fluoranthene	**0.17**	0.3	NBD	NBD	0.2	NBD	NBD	NBD	0.17
PAH	Fluoranthene	NBD	NBD	**1.3**	NBD	NBD	NBD	503	NBD	1.3
PAH	Fluorene	NBD	NBD	**1**	NBD	NBD	NBD	6	NBD	1
PAH	Phenanthrene	NBD	NBD	**5**	NBD	NBD	NBD	292	NBD	5
PCB	PCB	NBD	NBD	3	0.05	NBD	NBD	2	**0.02**	0.02
Pesticide	Aldrin	0.01	NBD	NBD	NBD	0.12	NBD	NBD	**0.1**	0.1
Pesticide	Alpha-Chlordane	0.2	NBD	NBD	NBD	**0.1**	NBD	NBD	NBD	0.1
Pesticide	Beta-1,2,3,4,5,6-Hexachlorocyclohexane	0.04	NBD	NBD	NBD	**0.02**	NBD	NBD	NBD	0.02
Pesticide	Dichlorodiphenyldichloroethylene	0.03	0.04	0.07	NBD	0.01	0.02	**0.1**	NBD	0.01

Table 2-10. NOAEL-Based Tier 2 PRGs

Analyte Group	Analyte	California Quail	Western Meadowlark	Killdeer	Red-Tailed Hawk	Great Basin Pocket Mouse	Deer Mouse	Grasshopper Mouse	Badger	Lowest PRG
Pesticide	Dichlorodiphenyltrichloroethane	0.03	0.03	0.03	NBD	0.01	**0.01**	0.04	NBD	0.01
Pesticide	Dieldrin	0.001	NBD	NBD	NBD	NBD	NBD	NBD	NBD	0.001
Pesticide	Endosulfan I	3.5	1.16	0.56	NBD	0.03	**0.014**	0.017	NBD	0.014
Pesticide	Endosulfan Sulfate	32	0.044	0.017	NBD	0.3	0.0006	**0.0005**	NBD	0.0005
Pesticide	Endrin Aldehyde	**0.06**	NBD	NBD	NBD	NBD	NBD	NBD	NBD	0.06
Pesticide	Gamma-Chlordane	0.6	NBD	NBD	NBD	**0.4**	NBD	NBD	NBD	0.4
Pesticide	Methoxychlor	NTD	NTD	NTD	NTD	**0.3**	0.22	0.4	NBD	0.3
SVOC	Bis[2-ethylhexyl] phthalate	**0.17**	NBD	NBD	1.2	1.8	NBD	NBD	20	0.17
SVOC	Phenol	NTD	NTD	NTD	NTD	**0.2**	NBD	NBD	8	0.2

Table 3-1. Summary of Tier 2 Values and Assigned Confidence

Analyte	Calfornia Quail		Western Meadowlark		Killdeer		Red-Tailed Hawk		Great Basin Pocket Mouse		Deer Mouse		Grasshopper Mouse		Badger		Total Number Low	Total Number Moderate	Total Number Moderate High	Total Number High	Overall Confidence for Analyte
	Tier 2 Value	Confidence	Tier 2 Value	Confidence	Tier 2 Value	Confidence	Tier 2 Value	Confidence	Tier 2 Value	Confidence	Tier 2 Value	Confidence	Tier 2 Value	Confidence	Tier 2 Value	Confidence					
Fluoride	NBD	N/A	2,686	low	845	low	11,074	low	NBD	N/A	**3,877**	low	4,061	low	13,833	low	6	0	0	0	low
Aluminum	19,217	moderate	31,220	moderate	7,214	moderate	74,599	high	4,883	moderate	**3,988**	moderate	13,059	moderate	7,811	high	0	6	0	2	moderate
Antimony	NTD	N/A	NTD	N/A	NTD	N/A	NTD	N/A	97	high	**92**	moderate-high	366	moderate	325	low[1]	1	1	1	1	moderate
Arsenic	4,776	moderate	7,403	moderate-high	2,284	high	40,102	moderate	201	moderate	127	moderate-high	302	high	847	moderate	0	4	2	2	moderate
Barium	1,721	moderate	2,335	moderate	**1,687**	moderate	8,101	moderate	2,265	moderate	2,617	moderate	11,873	moderate	12,430	moderate	0	8	0	0	moderate
Beryllium	NTD	N/A	NTD	N/A	NTD	N/A	NTD	N/A	**14**	high	20	Moderate-high	181	moderate	289	low[1]	1	1	1	1	moderate
Boron	54	moderate	68	moderate-	91	moderate	2,714	moderate	**32**	moderate	39	moderate-	170	moderate	2,516	moderate	2	6	0	0	moderate
Cadmium	294	high	103	moderate	**29**	moderate	1,711	high	2,203	high	624	high	858	high	4,704	high	0	2	0	6	high
Chromium	193	moderate	221	moderate	**109**	moderate	610	low	544	moderate	517	moderate	1,424	moderate	1765	lmoderate	2	6	0	0	moderate
Cobalt	1,397	moderate	2,050	moderate-high	**484**	high	4,798	high	2,901	moderate	2,136	moderate	5,610	moderate	4,234	high	0	4	1	3	high
Copper	423	low	461	moderate	213	high	12,881	high	233	low	**193**	moderate	1,217	high	4,631	high	2	2	0	4	moderate
Lead	559	high	664	high	**156**	high	2,300	high	2,672	high	1,578	high	3,807	high	3,966	high	0	0	0	8	high
Lithium	NTD	N/A	NTD	N/A	NTD	N/A	NTD	N/A	**1,664**	moderate	1,797	moderate	8,347	moderate	6,522	moderate	0	4	0	0	low
Manganese	20,746	moderate	26,026	moderate	14,407	moderate	150,899	moderate	**3,322**	moderate	3,467	moderate	11,780	moderate	21,916	moderate	0	8	0	0	moderate
Mercury	36	high	4.7	moderate-high	2.0	moderate	92	moderate	7.9	high	**1.6**	moderate-high	1.8	moderate	33	moderate	0	4	2	2	moderate
Molybdenum	125	moderate	117	moderate	95	moderate	515	moderate	5.9	moderate	**5.7**	moderate	14	moderate	38	moderate	0	8	0	0	moderate
Nickel	2,051	high	1,127	moderate-high	361	moderate	11,625	high	711	high	**247**	moderate-high	342	moderate	1,520	high	0	2	2	4	high
Selenium	10	high	4.9	moderate-high	2.4	moderate	24	moderate	2.7	high	**1.4**	moderate-high	1.9	moderate	8.8	moderate	0	4	2	2	moderate
Silver	4,238	high	3,973	moderate-high	**983**	moderate	20,186	moderate	24,465	high	9,806	moderate-high	14,362	moderate	30,778	moderate	0	4	2	2	moderate
Thallium	NTD	N/A	NTD	N/A	NTD	N/A	NTD	N/A	8.7	moderate	**6.2**	moderate	12	moderate	25	high	0	3	0	1	low
Tin	97	low	98	low	**84**	low	335	moderate	130	low	133	low	365	low	693	moderate	6	2	0	0	low
Uranium – Calculated Total	2,002	moderate	339	moderate-high	139	high	**82**	moderate	371	moderate	59	moderate-high	57	high	22	high	0	3	2	3	high
Vanadium	81	high	107	moderate-high	43	moderate	505	moderate	260	high	297	moderate-high	4,531	moderate	3,596	moderate	0	4	2	2	moderate
Zinc	6,289	high	4,662	high	856	high	906	moderate	6,711	high	3,331	high	12,666	high	1,037	moderate	0	2	0	6	high
Benzo[k]fluoranthene	**0.17**	low	NBD	N/A	NBD	N/A	NBD	N/A	1.6	low	NBD	N/A	NBD	N/A	NBD	N/A	2	0	0	0	low
Fluoranthene	NBD	N/A	NBD	N/A	**1.3**	low	NBD	N/A	NBD	N/A	NBD	N/A	1,005	low	NBD	N/A	2	0	0	0	low
Fluorene	NBD	N/A	NBD	N/A	**8.0**	low	NBD	N/A	NBD	N/A	NBD	N/A	12	low	NBD	N/A	2	0	0	0	low
Phenanthrene	NBD	N/A	NBD	N/A	**48**	low	NBD	N/A	NBD	N/A	NBD	N/A	292	low	NBD	N/A	2	0	0	0	low
PCB	NBD	N/A	NBD	N/A	36	high	0.46	low	NBD	N/A	NBD	N/A	35	high	0.18	low	2	0	0	2	low
Aldrin	0.03	low	NBD	N/A	NBD	N/A	0.0099	low	0.58	low	NBD	N/A	NBD	N/A	0.29	low	4	0	0	0	low

Table 3-1. Summary of Tier 2 Values and Assigned Confidence

Analyte	Calfornia Quail		Western Meadowlark		Killdeer		Red-Tailed Hawk		Great Basin Pocket Mouse		Deer Mouse		Grasshopper Mouse		Badger		Total Number Low	Total Number Moderate	Total Number Moderate High	Total Number High	Overall Confidence for Analyte
	Tier 2 Value	Confidence	Tier 2 Value	Confidence	Tier 2 Value	Confidence	Tier 2 Value	Confidence	Tier 2 Value	Confidence	Tier 2 Value	Confidence	Tier 2 Value	Confidence	Tier 2 Value	Confidence					
Alpha-Chlordane	**1.15**	low	NBD	N/A	NBD	N/A	NBD	N/A	1.4	low	NBD	N/A	NBD	N/A	NBD	N/A	2	0	0	0	low
Beta-1,2,3,4,5,6-Hexachlorocyclohexane	**0.06**	low	NBD	N/A	NBD	N/A	NBD	N/A	0.09	low	NBD	N/A	NBD	N/A	NBD	N/A	2	0	0	0	low
Dichlorodiphenyldichloroethylene	0.24	low	0.33	low	0.57	low	NBD	N/A	**0.06**	low	0.08	low	0.44	low	NBD	N/A	6	0	0	0	low
Dichlorodiphenyltrichloroethane	0.22	low	0.24	low	0.25	low	NBD	N/A	**0.05**	low	0.06	low	0.19	low	NBD	N/A	6	0	0	0	low
Dieldrin	0.002	low	NBD	N/A	NBD	N/A	NBD	N/A	**0.00014**	low	NBD	N/A	NBD	N/A	NBD	N/A	2	0	0	0	low
Endosulfan I	3.5	low	1.16	low	0.56	low	NBD	N/A	0.03	low	**0.014**	low	0.017	low	NBD	N/A	6	0	0	0	low
Endosulfan Sulfate	32	low	0.044	low	0.017	low	NBD	N/A	0.3	low	0.001	low	**0.0005**	low	NBD	N/A	6	0	0	0	low
Endrin Aldehyde	**0.06**	low	NBD	N/A	NBD	N/A	NBD	N/A	0.1	low	NBD	N/A	NBD	N/A	NBD	N/A	2	0	0	0	low
Gamma-Chlordane	**3.2**	low	NBD	N/A	NBD	N/A	NBD	N/A	4.0	low	NBD	N/A	NBD	N/A	NBD	N/A	2	0	0	0	low
Methoxychlor	NTD	N/A	NTD	N/A	NTD	N/A	NTD	N/A	0.51	low	**0.44**	low	0.9	low	NBD	N/A	3	0	0	0	low
Bis[2-ethylhexyl] phthalate	**0.17**	low	NBD	N/A	NBD	N/A	1.2	moderate	18.5	low	NBD	N/A	NBD	N/A	204	moderate	2	2	0	0	low
Phenol	NTD	N/A	NTD	N/A	NTD	N/A	NTD	N/A	0.5	low	NBD	N/A	NBD	N/A	23	moderate	1	1	0	0	low
Total Number Low		13		6		9		3		15		7		10		3					
Total Number Moderate		8		6		12		13		12		10		17		15					
Total Number Moderate High		0		9		0		0		0		9		0		0					
Total Number High		10		3		7		7		11		4		7		9					
Total number of Tier 2 Values		31		24		28		23		38		30		34		27					

Note: **Bold values** represent lowest PRG for that analyte.

Shaded values are based on NOAELs due to the lack of LOAELs.

NBD = no (or incomplete) bioaccumulation data (for estimation of dietary exposure)

NTD = no toxicity data (for selected analyte)

N/A = not available

1 considered low because they are based on a BAF (with an unknown samples size) applied to estimates of the concentration in the prey of the small mammals

Confidence assigned as follows:

High = estimate of analyte in receptor diet based upon regression model with r^2 >0.1 at p=0.05 with greater than 100 data points

Moderate high = estimate of analyte in receptor diet based upon regression model with r^2 >0.1 at p=0.05 with greater than 100 data points for one dietary item and estimated using a median BAF from between 10 and 100 data points for the other dietary item

Moderate = estimate of analyte in receptor diet based upon median BAF from between 10 and 100 data points

Low = estimate of analyte in receptor diet based upon median BAF from <10 data points

Table 3-2. Analysis of the Lowest Tier 2 Values Derived for Each Analyte

Analyte Group	Analyte	Lowest PRG	Lowest Species	Dominant Pathway	Bioaccumulation Model Notes	Other Notes	Confidence
General Inorganic	Fluoride	845	Killdeer	invert (63%)	BAF; n=2		low
Metal	Aluminum	3,988	Deer Mouse	soil (68%)	plant BAF; n=157 invert BAF; n=91	based on NOAEL (no LOAEL) for birds	moderate
Metal	Antimony	92	Deer Mouse	invert (10%); plant (38%); soil (52%)	plant reg; n=17, r^2=0.795 invert BAF; n=11	regression is a good fit	Moderate-high
Metal	Arsenic	127	Deer Mouse	invert (44%); plant (30%)	plant BAF; n=153 invert reg; n=130, r^2=0.45	regression is a moderate fit	high
Metal	Barium	1,687	Killdeer	soil (57%)	invert BAF; n=115		moderate
Metal	Beryllium	14	Great Basin Pocket Mouse	plant (94%)	plant reg; n=18, r^2=0.734	regression is a good fit; based on NOAEL (no LOAEL) for mammals	high

Table 3-2. Analysis of the Lowest Tier 2 Values Derived for Each Analyte

Analyte Group	Analyte	Lowest PRG	Lowest Species	Dominant Pathway	Bioaccumulation Model Notes	Other Notes	Confidence
Metal	Boron	32	Great Basin Pocket Mouse	plant (99.9%)	plant BAF; n=125 invert BAF; n=80		moderate
Metal	Cadmium	29	Killdeer	invert (83%)	invert reg; n=245, r^2=0.55	regression is a high fit	high
Metal	Chromium	109	Killdeer	soil (55%)	invert BAF; n=96		moderate
Metal	Cobalt	484	Killdeer	soil (87%)	invert BAF; n=46		moderate
Metal	Copper	193	Deer Mouse	invert (41%) plant (52%)	plant BAF; n=326		moderate
Metal	Lead	156	Killdeer	soil (67%)	invert reg; n-211, r^2=0.64	regression is a high fit	high
Metal	Lithium	1,664	Great Basin Pocket Mouse	plant (78%)	plant BAF; n=96		moderate
Metal	Manganese	3,322	Great Basin Pocket Mouse	plant (88%)	plant BAF; n=178		moderate

Table 3-2. Analysis of the Lowest Tier 2 Values Derived for Each Analyte

Analyte Group	Analyte	Lowest PRG	Lowest Species	Dominant Pathway	Bioaccumulation Model Notes	Other Notes	Confidence
Metal	Mercury	1.6	Deer Mouse	invert (72%); plant (25%)	plant reg; n=156, r^2=0.60 invert BAF; n=39	although plant regression has a high fit, invert BAF drives exposure	moderate
Metal	Molybdenum	5.7	Deer Mouse	invert (34%); plant (65%)	plant BAF; n=47 invert BAF; n=41		moderate
Metal	Nickel	247	Deer Mouse	invert (56%); soil (24%)	plant reg; n=230, r^2=0.21 invert BAF-n=82	plant regression is a poor fit	moderate
Metal	Selenium	1.4	Deer Mouse	invert (64%); plant (34%)	plant reg; n=169, r^2=0.61 invert BAF-n=35	plant regression is a high fit	moderate
Metal	Silver	983	Killdeer	soil (68%)	BAF; n=27		moderate
Metal	Thallium	6.2	Deer Mouse	invert (38%); plant (34%)	plant BAF; n=10 invert BAF; n=30		low
Metal	Tin	84	Killdeer	invert (93%)	invert BAF; n=2		low

Table 3-2. Analysis of the Lowest Tier 2 Values Derived for Each Analyte

Analyte Group	Analyte	Lowest PRG	Lowest Species	Dominant Pathway	Bioaccumulation Model Notes	Other Notes	Confidence
Metal	Uranium (Calculated Total)	22	Badger	small mammal (99%)	small mammal reg; n=22, r^2=0.48	based on NOAEL (no LOAEL) for birds	moderate
Metal	Vanadium	43	Killdeer	soil (88%)	invert BAF; n=93		moderate
Metal	Zinc	856	Killdeer	invert (82%)	invert reg; n=259, r^2=0.41	regression is a moderate fit	high
PAH	Benzo[k]fluoranthene	0.17	California Quail	plant (99%)	plant BAF; n=1	based on NOAEL (no LOAEL) for birds	low
PAH	Fluoranthene	1.3	Killdeer	invert (97%)	plant BAF; n=3	based on NOAEL (no LOAEL) for birds	low
PAH	Fluorene	8.0	Killdeer	invert (99%)	plant BAF; n=1		low
PAH	Phenanthrene	48	Killdeer	invert (99%)	plant BAF; n=1	based on NOAEL (no LOAEL) for mammals	low

Table 3-2. Analysis of the Lowest Tier 2 Values Derived for Each Analyte

Analyte Group	Analyte	Lowest PRG	Lowest Species	Dominant Pathway	Bioaccumulation Model Notes	Other Notes	Confidence
PCB	PCB	0.18	Badger	small mammal (99%)	small mammal BAF; n=1		low
Pesticide	Aldrin	0.0099	Red-Tailed Hawk	small mammal (99%)	small mammal BAF; n=1		low
Pesticide	Alpha-Chlordane	1.15	California Quail	plant (99%)	plant BAF; n=1		low
Pesticide	Beta-1,2,3,4,5,6-Hexachlorocyclohexane	0.06	California Quail	plant (99%)	plant BAF; n=1		low
Pesticide	Dichlorodiphenyldichloroethylene	0.06	Great Basin Pocket Mouse	plant (99%)	plant BAF; n=7		low
Pesticide	Dichlorodiphenyltrichloroethane	0.05	Great Basin Pocket Mouse	plant (99%)	plant BAF; n=3		low
Pesticide	Dieldrin	0.00014	Great Basin Pocket Mouse	plant (99%)	plant BAF; n=1		low
Pesticide	Endosulfan I	0.014	Deer Mouse	invert (71%); plant (28%)	plant BAF; n=8 invert BAF; n=2	based on NOAEL (no LOAEL) for both birds and mammals	low

Table 3-2. Analysis of the Lowest Tier 2 Values Derived for Each Analyte

Analyte Group	Analyte	Lowest PRG	Lowest Species	Dominant Pathway	Bioaccumulation Model Notes	Other Notes	Confidence
Pesticide	Endosulfan Sulfate	0.0005	Grasshopper Mouse	invert (99%)	invert BAF; n=1	based on NOAEL (no LOAEL) for both birds and mammals	low
Pesticide	Endrin Aldehyde	0.06	California Quail	plant (99%)	plant BAF; n=1	based on NOAEL (no LOAEL) for birds	low
Pesticide	Gamma-Chlordane	3.2	California Quail	plant (99%)	plant BAF; n=5		low
Pesticide	Methoxychlor	0.44	Deer Mouse	invert (41%); plant (58%)	plant BAF; n=7 invert BAF; n=2		low
SVOC	Bis[2-ethylhexyl] phthalate	0.17	California Quail	plant (99%)	plant BAF; n=21	based on NOAEL (no LOAEL) for birds	low
SVOC	Phenol	0.5	Great Basin Pocket Mouse	plant (99%)	plant BAF; n=2		low

Table 3-3. Summary of Sample Sizes and Frequency of Detection in Soil and Tissue for Hanford-specific Bioaccumulation Data Used for the Tier 2 PRGs.

		Numbers of Samples					Percent of Samples			
Analyte	Media	Total Samples	Nondetect in Soil and Tissue	ND in Soil Detect in Tissue	Detect in Soil ND in Tissue	Detect in Soil Detect in Tissue	Nondetect in Soil and Tissue	ND in Soil Detect in Tissue	Detect in Soil ND in Tissue	Detect in Soil Detect in Tissue
Ag	MOUSE	111	94	7	9	1	85%	6%	8%	1%
Ag	PLANT	150	86	26	34	4	57%	17%	23%	3%
Ag	TERRESTRIAL INVERTEBRATE	82	65	8	9	0	79%	10%	11%	0%
Al	MOUSE	67	0	0	0	67	0%	0%	0%	100%
Al	PLANT	150	0	0	21	129	0%	0%	14%	86%
Al	TERRESTRIAL INVERTEBRATE	61	0	0	0	61	0%	0%	0%	100%
As	MOUSE	111	0	0	99	12	0%	0%	89%	11%
As	PLANT	150	0	0	119	31	0%	0%	79%	21%
As	TERRESTRIAL INVERTEBRATE	82	0	0	10	72	0%	0%	12%	88%
B	MOUSE	111	1	0	56	54	1%	0%	50%	49%
B	PLANT	130	0	2	3	125	0%	2%	2%	96%
B	TERRESTRIAL INVERTEBRATE	82	0	1	1	80	0%	1%	1%	98%
Ba	MOUSE	111	0	0	26	85	0%	0%	23%	77%
Ba	PLANT	150	0	0	0	150	0%	0%	0%	100%
Ba	TERRESTRIAL INVERTEBRATE	82	0	0	0	82	0%	0%	0%	100%
Be	MOUSE	67	1	0	66	0	1%	0%	99%	0%
Be	PLANT	150	2	0	143	5	1%	0%	95%	3%
Be	TERRESTRIAL INVERTEBRATE	61	1	0	60	0	2%	0%	98%	0%
Cd	MOUSE	111	36	3	62	10	32%	3%	56%	9%
Cd	PLANT	150	31	3	90	26	21%	2%	60%	17%
Cd	TERRESTRIAL INVERTEBRATE	82	18	7	19	38	22%	9%	23%	46%
Co	MOUSE	67	1	0	63	3	1%	0%	94%	4%
Co	PLANT	130	2	0	119	9	2%	0%	92%	7%
Co	TERRESTRIAL INVERTEBRATE	61	0	1	44	16	0%	2%	72%	26%
Cr	MOUSE	111	12	1	25	73	11%	1%	23%	66%
Cr	PLANT	150	0	0	23	127	0%	0%	15%	85%
Cr	TERRESTRIAL INVERTEBRATE	82	3	3	14	62	4%	4%	17%	76%
Cu	MOUSE	111	0	0	0	111	0%	0%	0%	100%
Cu	PLANT	150	0	0	4	146	0%	0%	3%	97%
Cu	TERRESTRIAL INVERTEBRATE	82	0	0	0	82	0%	0%	0%	100%
Hg	MOUSE	111	72	2	32	5	65%	2%	29%	5%
Hg	PLANT	150	58	0	81	11	39%	0%	54%	7%
Hg	TERRESTRIAL INVERTEBRATE	82	44	2	27	9	54%	2%	33%	11%

Table 3-3. Summary of Sample Sizes and Frequency of Detection in Soil and Tissue for Hanford-specific Bioaccumulation Data Used for the Tier 2 PRGs.

		Numbers of Samples					Percent of Samples			
Analyte	Media	Total Samples	Nondetect in Soil and Tissue	ND in Soil Detect in Tissue	Detect in Soil ND in Tissue	Detect in Soil Detect in Tissue	Nondetect in Soil and Tissue	ND in Soil Detect in Tissue	Detect in Soil ND in Tissue	Detect in Soil Detect in Tissue
Li	MOUSE	67	0	1	24	42	0%	1%	36%	63%
Li	PLANT	130	0	2	32	96	0%	2%	25%	74%
Li	TERRESTRIAL INVERTEBRATE	61	0	1	30	30	0%	2%	49%	49%
Mn	MOUSE	67	0	0	0	67	0%	0%	0%	100%
Mn	PLANT	150	0	0	0	150	0%	0%	0%	100%
Mn	TERRESTRIAL INVERTEBRATE	61	0	0	0	61	0%	0%	0%	100%
Mo	MOUSE	111	41	7	33	30	37%	6%	30%	27%
Mo	PLANT	130	11	35	37	47	8%	27%	28%	36%
Mo	TERRESTRIAL INVERTEBRATE	82	0	31	10	41	0%	38%	12%	50%
Ni	MOUSE	111	0	0	24	87	0%	0%	22%	78%
Ni	PLANT	150	0	0	33	117	0%	0%	22%	78%
Ni	TERRESTRIAL INVERTEBRATE	82	0	0	34	48	0%	0%	41%	59%
Pb	MOUSE	111	0	0	19	92	0%	0%	17%	83%
Pb	PLANT	150	0	0	117	33	0%	0%	78%	22%
Pb	TERRESTRIAL INVERTEBRATE	82	0	0	48	34	0%	0%	59%	41%
Sb	MOUSE	110	93	3	14	0	85%	3%	13%	0%
Sb	PLANT	148	96	4	29	19	65%	3%	20%	13%
Sb	TERRESTRIAL INVERTEBRATE	81	50	17	11	3	62%	21%	14%	4%
Se	MOUSE	111	14	63	10	24	13%	57%	9%	22%
Se	PLANT	150	87	23	30	10	58%	15%	20%	7%
Se	TERRESTRIAL INVERTEBRATE	82	39	21	9	13	48%	26%	11%	16%
Strontium [elemental]	MOUSE	53	0	0	0	53	0%	0%	0%	100%
Strontium [elemental]	PLANT	130	0	0	0	130	0%	0%	0%	100%
Strontium [elemental]	TERRESTRIAL INVERTEBRATE	47	0	0	0	47	0%	0%	0%	100%
Thallium	MOUSE	111	63	22	13	13	57%	20%	12%	12%
Thallium	PLANT	150	114	0	26	10	76%	0%	17%	7%
Thallium	TERRESTRIAL INVERTEBRATE	82	53	12	10	7	65%	15%	12%	9%
Tin	MOUSE	111	46	32	16	17	41%	29%	14%	15%
Tin	PLANT	130	64	2	57	7	49%	2%	44%	5%
Tin	TERRESTRIAL INVERTEBRATE	82	38	12	30	2	46%	15%	37%	2%
U - Calculated Total Uranium	MOUSE	101	2	0	77	22	2%	0%	76%	22%
U - Calculated Total	PLANT	174	8	2	143	21	5%	1%	82%	12%

Table 3-3. Summary of Sample Sizes and Frequency of Detection in Soil and Tissue for Hanford-specific Bioaccumulation Data Used for the Tier 2 PRGs.

		Numbers of Samples					Percent of Samples			
Analyte	Media	Total Samples	Nondetect in Soil and Tissue	ND in Soil Detect in Tissue	Detect in Soil ND in Tissue	Detect in Soil Detect in Tissue	Nondetect in Soil and Tissue	ND in Soil Detect in Tissue	Detect in Soil ND in Tissue	Detect in Soil Detect in Tissue
Uranium										
U - Calculated Total Uranium	TERRESTRIAL INVERTEBRATE	35	0	0	17	18	0%	0%	49%	51%
Uranium [inorganic]	MOUSE	111	39	5	64	3	35%	5%	58%	3%
Uranium [inorganic]	PLANT	150	78	8	46	18	52%	5%	31%	12%
Uranium [inorganic]	TERRESTRIAL INVERTEBRATE	82	28	11	34	9	34%	13%	41%	11%
V	MOUSE	111	0	0	30	81	0%	0%	27%	73%
V	PLANT	130	0	0	79	51	0%	0%	61%	39%
V	TERRESTRIAL INVERTEBRATE	82	0	0	20	62	0%	0%	24%	76%
Zn	MOUSE	111	0	0	0	111	0%	0%	0%	100%
Zn	PLANT	150	0	0	0	150	0%	0%	0%	100%
Zn	TERRESTRIAL INVERTEBRATE	82	0	0	0	82	0%	0%	0%	100%

Table 3-4. Comparison of BAFs Calculated Using Different Data Sets

Chemical	BAF	Hanford Only	Pooled Data
aluminum	small mammal	0.02 (67)	*0.017* (79)
mercury	small mammal	1.39 (5)	0.09 (23)
silver	Plant	0.05 (4)	*0.019* (14)
thallium	small mammal	0.29 (13)	*0.268* (15)
vanadium	plant	0.04 (51)	*0.024* (72)

Notes:

1) BAFs are presented followed by the number of paired soil and tissue samples in parentheses.

2) BAFS in *italics* (e.g.,aluminum and thallium for small mammals and silver and vanadium for plants) indicates that the median BAF was NOT used to estimate tissue concentration. Instead, a linear regression model was used to estimate tissue concentration based upon soil concentration.

Table 3-5. Comparison of Lowest Tier 2 LOAEL PRG to Values Calculated Using Hanford Only or Pooled Data Bioaccumulation Models.

Bioaccumulation Model and Data Inputs		**PRGs (mg/kg)**				
		aluminum	**mercury**	**silver**	**thallium**	**vanadium**
Lowest Tier 2 LOAEL PRG		3988	1.6	983	6.2	43
Receptor		Deer Mouse	Deer Mouse	Killdeer	Deer Mouse	Killdeer
Driving Pathway		Soil Ingestion	Inverts	Soil Ingestion	Inverts/ Plants	Soil Ingestion
Values Calculated Using Hanford Only or Pooled Plant Bioaccumulation Data						
California Quail	**Hanford Only**			2376		89
	Pooled Data			4238		81
Western Meadow-lark	**Hanford Only**			57		132
	Pooled Data			3974		108
Great Basin Pocket Mouse	**Hanford Only**			7207		1165
	Pooled Data			14362		4531
Deer Mouse	**Hanford Only**			155		1096
	Pooled Data			9806		297
Values Calculated Using Hanford Only or Pooled Small Mammal Bioaccumulation Data						
Red-tailed Hawk	**Hanford Only**	76563	7.4		NTD	
	Pooled Data	74599	92		NTD	
Badger	**Hanford Only**	8106	3.2		6.3	
	Pooled Data	7811	33		25	

Acronyms:						
LOAEL = lowest observed adverse effect level						
NTD - no tox data						
Notes:						
	cells indicate that the prey tissue data for hanford and the broader literature overlapped and thus is not the focus of this uncertainty analysis					
Killdeer and grasshopper mouse are not included as their PRGs are based on invertebrate bioaccumulation, which is not affected by changes to plant and small mammal bioaccumulation.						

Table 4-1. Comparison of Ecological Risk-Based Concentrations in Soil

Analyte Group	Development Tier	Risk-Based Values by Receptor or Class of Organism (mg/kg)								Change in Lowest Risk Based Value Between Tiers	Change in Assumed Tissue Accumulation—Tier 1 to Tier 2		
		California Quail (CQ)	Western Meadowlark (WM)	Killdeer (K)	Red-Tailed Hawk (RH)	Great Basin Pocket Mouse (GBP)	Deer Mouse (DM)	Grasshopper Mouse (GM)	Badger (B)		Plants	Invertebrates	Small Mammals
Aluminum	Generic Lookup	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A				
Aluminum	Tier 1	22,020	18,602	4,921	61,782	6,872	2,708	3,799	7,101	Increase			
Aluminum	Tier 2	19,217	31,220	7,214	74,599	4,883	3,988	13,059	7,811	Increase	Increase	Decrease	Decrease
Antimony	Generic – EcoSSL	N/A—All Avian Wildlife				**0.27**—All Mammalian Wildlife							
Antimony	Tier 1	NTD	NTD	NTD	NTD	97	7	6	167	Increase			
Antimony	Tier 2	NTD	NTD	NTD	NTD	97	92	366	325	Increase	No Change (GBP) Increase (DM)	Decrease	decrease
Arsenic (Total)	Generic – EcoSSL	**43**—All Avian Wildlife				46—All Mammalian Wildlife							
Arsenic (III)	Generic – MTCA	**7**—All Wildlife											
Arsenic (V)	Generic – MTCA	**132**—All Wildlife											
Arsenic (Total)	Tier 1	8,104	10,559	2,132	45,439	459	**190**	318	881	Increase			
Arsenic (Total)	Tier 2	4,776	7,403	2,284	40,102	201	**127**	302	847	Decrease	Increase	Decrease (WM, K, DM); No Change (GM)	Increase
Barium	Generic – EcoSSL	N/A—All Avian Wildlife				2,000—All Mammalian Wildlife							
Barium	Generic – MTCA	**102**—All Wildlife											
Barium	Tier 1	2,464	2,548	**1,323**	28,954	3,470	3,148	7,676	31,405	Increase			
Barium	Tier 2	1,721	2,335	1,687	8,101	**2,265**	2,617	11,873	12,430	Increase	Increase	Decrease	Increase
Beryllium	Generic – EcoSSL	N/A—All Avian Wildlife				**21**—All Mammalian Wildlife							
Beryllium	Tier 1	NTD	NTD	NTD	NTD	**14**	18	101	283	Decrease			
Beryllium	Tier 2	NTD	NTD	NTD	NTD	**14**	20	181	289	Increase	Increase	Increase	decrease

Table 4-1. Comparison of Ecological Risk-Based Concentrations in Soil

Analyte Group	Development Tier	Risk-Based Values by Receptor or Class of Organism (mg/kg)								Change in Lowest Risk Based Value Between Tiers	Change in Assumed Tissue Accumulation—Tier 1 to Tier 2		
		California Quail (CQ)	Western Meadowlark (WM)	Killdeer (K)	Red-Tailed Hawk (RH)	Great Basin Pocket Mouse (GBP)	Deer Mouse (DM)	Grasshopper Mouse (GM)	Badger (B)		Plants	Invertebrates	Small Mammals
Boron	Generic Lookup	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A				
Boron	Tier 1	222	300	485	2,766	**133**	167	949	2,563	Increase			
Boron	Tier 2	54	68	**91**	2,714	32	39	170	2,516	Decrease	Increase	Increase	Increase
Cadmium	Generic – EcoSSL	0.77—All Avian Wildlife				**0.36**—All Mammalian Wildlife							
Cadmium	Generic – MTCA	14—All Wildlife											
Cadmium	Tier 1	278	5	**2**	2,335	2,065	28	24	5,228	Increase			
Cadmium	Tier 2	294	103	**29**	1,711	2,203	624	858	4,704	Increase	Increase (WM, DM); No Change (CQ, GBP)	Decrease	Increase
Chromium (total, +3)	Generic – EcoSSL	**26**—All Avian Wildlife				34—All Mammalian Wildlife							
Chromium (total, +3)	Generic – MTCA	67—All Wildlife											
Chromium (+6)	Generic – EcoSSL	N/A—All Avian Wildlife				130—All Mammalian Wildlife							
Chromium (+6)	Tier 1	NTD	NTD	NTD	NTD	5,340	**1,245**	1,300	16,583	Increase			
Chromium (Total)	Tier 1	349	101	**38**	1,355	1,284	299	313	3,536	Increase			
Chromium (Total)	Tier 2	193	221	**109**	610	544	517	1,424	1,765	Increase	Increase	Decrease	Increase
Cobalt	Generic – EcoSSL	**120**—All Avian Wildlife				230—All Mammalian Wildlife							
Cobalt	Tier 1	1,461	313	**111**	1,633	3,233	388	372	1,869	Decrease			
Cobalt	Tier 2	1,397	2,050	**484**	4,798	2,901	2,136	5,610	4,234	Increase	Increase	Decrease	Decrease
Copper	Generic – EcoSSL	**28**—All Avian Wildlife				49—All Mammalian Wildlife							
Copper	Generic – MTCA	217—All Wildlife											

Table 4-1. Comparison of Ecological Risk-Based Concentrations in Soil

Analyte Group	Development Tier	Risk-Based Values by Receptor or Class of Organism (mg/kg)								Change in Lowest Risk Based Value Between Tiers	Change in Assumed Tissue Accumulation—Tier 1 to Tier 2		
		California Quail (CQ)	Western Meadowlark (WM)	Killdeer (K)	Red-Tailed Hawk (RH)	Great Basin Pocket Mouse (GBP)	Deer Mouse (DM)	Grasshopper Mouse (GM)	Badger (B)		Plants	Invertebrates	Small Mammals
Copper	Tier 1	1,914	272	**107**	13,021	1,894	176	182	4,672	Increase			
Copper	Tier 2	423	461	**213**	12,881	233	193	1,217	4,631	Increase	Increase	Decrease	Increase
Lead	Generic – EcoSSL	**11**—All Avian Wildlife				56—All Mammalian Wildlife							
Lead	Generic – MTCA	118—All Wildlife											
Lead	Tier 1	537	115	**36**	2,433	2,544	332	336	4,108	Increase			
Lead	Tier 2	559	664	**156**	2,300	2,672	1,578	3,807	3,966	Increase	Increase (WM, DM); Decrease (GBP, CQ)	Decrease	Increase
Lithium	Generic Lookup	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A				
Lithium	Tier 1	NTD	NTD	NTD	NTD	6,379	2,517	3,498	**515**	Decrease			
Lithium	Tier 2	NTD	NTD	NTD	NTD	**1,664**	1,797	8,347	6,522	Decrease	Increase	Increase	Decrease
Manganese	Generic – EcoSSL	4300—All Avian Wildlife				4000—All Mammalian Wildlife							
Manganese	Generic – MTCA	**1500**—All Wildlife											
Manganese	Tier 1	31,823	48,820	19,636	221,536	5,828	**5,798**	27,720	28,213	Increase			
Manganese	Tier 2	20,746	26,026	14,407	150,899	**3,322**	3,467	11,780	21,916	Decrease	Increase	Increase	Increase
Mercury (Total)	Generic – MTCA	**5.5**—All Wildlife											
Mercury (Total)	Tier 1	35.5	21.3	3.6	133.9	8.0	**1.9**	3.2	43.4	Decrease			
Mercury (Total)	Tier 2	35.5	4.7	2.0	92.3	7.9	**1.6**	1.8	32.6	Decrease	No Change (CQ, GBP, DM); Decrease (WM)	Increase*	Increase
Molybdenum	Generic – MTCA	**7**—All Wildlife											
Molybdenum	Tier 1	345	270	179	977	17	**14**	28	71	Increase			

Table 4-1. Comparison of Ecological Risk-Based Concentrations in Soil

Analyte Group	Development Tier	Risk-Based Values by Receptor or Class of Organism (mg/kg)								Change in Lowest Risk Based Value Between Tiers	Change in Assumed Tissue Accumulation—Tier 1 to Tier 2		
		California Quail (CQ)	Western Meadowlark (WM)	Killdeer (K)	Red-Tailed Hawk (RH)	Great Basin Pocket Mouse (GBP)	Deer Mouse (DM)	Grasshopper Mouse (GM)	Badger (B)		Plants	Invertebrates	Small Mammals
Molybdenum	Tier 2	125	117	95	515	6	**6**	14	38	Decrease	Increase (WM, DM); No Change (GBP, CQ)	Decrease	Increase
Nickel	Generic – EcoSSL	210—All Avian Wildlife				**130**—All Mammalian Wildlife							
Nickel	Generic – MTCA	980—All Wildlife											
Nickel	Tier 1	1,912	136	53	11,078	676	36	**33**	1,438	Decrease			
Nickel	Tier 2	2,051	1,127	361	11,625	711	**247**	342	1,520	Increase	Increase (WM, DM); Decrease (GBP, CQ)	Decrease	Decrease
Selenium	Generic – EcoSSL	1.2—All Avian Wildlife				0.63—All Mammalian Wildlife							
Selenium	Generic – MTCA	**0.3**—All Wildlife											
Selenium	Tier 1	10.5	8.2	4.3	417.1	3.0	**1.9**	3.2	59.9	Increase			
Selenium	Tier 2	10.3	4.9	2.4	24.3	2.7	**1.4**	1.9	8.8	Decrease	No Change	Increase*	Increase
Silver	Generic – EcoSSL	**4.2**—All Avian Wildlife				14—All Mammalian Wildlife							
Silver	Tier 1	3,453	128	**50**	20,437	14,418	346	300	30,969	Increase			
Silver	Tier 2	4,238	3,973	**983**	20,186	24,465	9,806	14,362	30,778	Increase	Decrease	Decrease	No Change
Thallium	Generic Lookup	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A				
Thallium	Tier 1	NTD	NTD	NTD	NTD	25	**9**	12	13	Increase			
Thallium	Tier 2	NTD	NTD	NTD	NTD	9	**6**	12	25	Decrease	Increase	No Change	Decrease
Tin	Generic Lookup	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A				

Table 4-1. Comparison of Ecological Risk-Based Concentrations in Soil

Analyte Group	Development Tier	Risk-Based Values by Receptor or Class of Organism (mg/kg)								Change in Lowest Risk Based Value Between Tiers	Change in Assumed Tissue Accumulation—Tier 1 to Tier 2		
		California Quail (CQ)	Western Meadowlark (WM)	Killdeer (K)	Red-Tailed Hawk (RH)	Great Basin Pocket Mouse (GBP)	Deer Mouse (DM)	Grasshopper Mouse (GM)	Badger (B)		Plants	Invertebrates	Small Mammals
Tin	Tier 1	**204**	318	575	4,603	279	377	4,025	7,639	Increase			
Tin	Tier 2	97 (not reliable - low confidence)	98 (not reliable - low confidence)	**84** (not reliable - low confidence)	335 (not reliable - low confidence)	130 (not reliable - low confidence)	133 (not reliable - low confidence)	365 (not reliable - low confidence)	693 (not reliable - low confidence)	Decrease	Decrease (WM, DM); No Change (CQ, GBP)	Increase	Increase
Uranium (Inorganic)	Tier 1	2,502	2,691	785	18,730	556	**359**	682	1,549	Increase			
Uranium (Calculated as total of radioisotopes of uranium)	Tier 2	2,002	339	139	82	371	59	57	**22**	Decrease	Increase (CQ, WM, GBP); Decrease (DM)	Increase	Increase
Vanadium	Generic – EcoSSL	**7.8**—All Avian Wildlife				280—All Mammalian Wildlife							
Vanadium	Tier 1	134	116	**31**	537	2,723	1,153	1,668	3,723	Increase			
Vanadium	Tier 2	81	107	**43**	505	260	297	4,531	3,596	Increase	Increase	Decrease	Increase
Zinc	Generic – EcoSSL	**46**—All Avian Wildlife				79—All Mammalian Wildlife							
Zinc	Tier 1	5,015	726	**68**	71,294	4661	644	810	38,866	Increase			
Zinc	Tier 2	6,289	4,662	**856**	906	6,711	3,331	12,666	1,037	Increase	Increase (WM, DM); Decrease (CQ, GBP)	Decrease	Increase

Notes: **Bold font** represents the lowest value for that analyte for that development tier.

Non-Shaded values are based on LOAELS, and Shaded values are based on NOAELs due to the lack of LOAELs. Generic EPA values protective of all avian receptors or mammalian receptors are described in OSWER Directive 9285.7-55, *Guidance for Developing Ecological Soil Screening Levels*.

Generic Ecology values are from WAC 173-340, "Model Toxics Control Act—Cleanup" (MTCA), Table 749-3.

Tier 1 and Tier 2 values are developed using species-specific data for receptors expected to be found at the Hanford Site.

* Changes to selenium and mercury were fairly insignificant but, given the low concentrations relative to other metals, they result in a noticeable change between the Tier 1 and Tier 2 values (<= 0.5 mg/kg).

NBD = no (or incomplete) bioaccumulation data (for estimation of dietary exposure)

NTD = no toxicity data (for selected analyte)

N/A = not available

Increase = value increased from previous development tier

Decrease = value decreased from previous development tier

Table 4-2. Overview of Total Modeled Tissue Accumulation in Tier 2 Calculations Relative to Tier 1

Change in Modeled Tissue Accumulation	Method of Estimating Tissue Concentration	Plants	Invertebrates	Small Mammals
Increase	Regression Model	arsenic, cadmium (WM, DM), , lead (WM, GBP, DM), uranium (CQ, WM, GBP), zinc (WM, DM), *beryllium*,	uranium	arsenic, cadmium, copper, lead, uranium, zinc
Increase	BAF	aluminum, antimony (DM) barium, boron, chromium, cobalt, copper, lithium, manganese, molybdenum, nickel (WM, GBP, DM), strontium, vanadium, *thallium*	aluminum (WM, K), boron, manganese, mercury (WM), selenium (WM), strontium, beryllium, *tin*	aluminum (B), barium, boron, chromium, manganese, mercury, molybdenum (RH), selenium, strontium, vanadium, *tin*
No Change	Regression Model	cadmium (CQ, GBP)	arsenic (DM, GM)	none
No Change	BAF	antimony (CQ, GBP), mercury (CQ, GBP, DM), selenium, *tin (CQ, GBP)*	mercury (K, GM), selenium (K, DM, GM), *thallium*	molybdenum (B), silver

Table 4-2. Overview of Total Modeled Tissue Accumulation in Tier 2 Calculations Relative to Tier 1

Change in Modeled Tissue Accumulation	Method of Estimating Tissue Concentration	Plants	Invertebrates	Small Mammals
Decrease	Regression Model	lead (CQ), uranium (DM), zinc (CQ, GBP)	arsenic (WM, K), cadmium, copper, lead, zinc	*beryllium*
Decrease	BAF	antimony (WM), mercury (WM), nickel (CQ), silver, *tin (WM, DM)*	aluminum (DM, GM), antimony, barium, chromium, coblat, lithium, molybdenum (WM, DM), nickel, silver, vanadium	aluminum (RH), cobalt, lithium, nickel, *antimony*, *thallium*

Note: When the direction of total model tissue concentration for a chemical varied for different receptors, the receptors are listed in parentheses.

Tissue estimates based on regression models have high confidence.

Tissue estimates based on BAFs have moderate or low confidence.

Tissue estimates with low confidence are *italicized*.

Wildlife Codes:

Appendix A

Hanford Site-Specific Bioaccumulation Data Used to Support Tier 2 PRG Development

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Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
1	Silver	7440-22-4	RCBRA 300-49	300	UPLAND	594318.994	116830.934
2	Aluminum	7429-90-5	RCBRA 100-D-48	D/H	UPLAND	573841.527	151914.538
3	Aluminum	7429-90-5	RCBRA 100-D-49	D/H	UPLAND	573938.06	151944.123
4	Aluminum	7429-90-5	RCBRA 100-F-2	IU2/IU6	UPLAND	579728.068	147001.117
5	Aluminum	7429-90-5	RCBRA 116-DR-1&2	D/H	UPLAND	574007.817	152246.748
6	Aluminum	7429-90-5	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
7	Aluminum	7429-90-5	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
8	Aluminum	7429-90-5	RCBRA 1607-D2:1	D/H	UPLAND	573823.924	152260.319
9	Aluminum	7429-90-5	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
10	Aluminum	7429-90-5	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
11	Aluminum	7429-90-5	RCBRA 2a Rip	BC	RIPARIAN	564618.501	145284.526
12	Aluminum	7429-90-5	RCBRA 2c Rip	K	RIPARIAN	567598.2	146210.159
13	Aluminum	7429-90-5	RCBRA 2f Rip	D/H	RIPARIAN	576222.844	154297.511
14	Aluminum	7429-90-5	RCBRA 2j Rip	IU2/IU6	RIPARIAN	579360.971	150092.048
15	Aluminum	7429-90-5	RCBRA 2l Rip	IU2/IU6	RIPARIAN	582341.212	146120.069
16	Aluminum	7429-90-5	RCBRA 300-49	300	UPLAND	594318.994	116830.934
17	Aluminum	7429-90-5	RCBRA 3b Rip	IU2/IU6	RIPARIAN	584961.205	141035.835
18	Aluminum	7429-90-5	RCBRA 4a Rip	IU2/IU6	RIPARIAN	589347.5	137480.985
19	Aluminum	7429-90-5	RCBRA 5c Rip	300	RIPARIAN	594509.985	124869.182
20	Aluminum	7429-90-5	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
21	Aluminum	7429-90-5	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
22	Aluminum	7429-90-5	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
23	Aluminum	7429-90-5	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
24	Aluminum	7429-90-5	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
25	Aluminum	7429-90-5	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
26	Aluminum	7429-90-5	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
27	Aluminum	7429-90-5	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
28	Aluminum	7429-90-5	RCBRA 600-181	IU2/IU6	UPLAND	578303.83	147316.698
29	Aluminum	7429-90-5	RCBRA 600-204	IU2/IU6	UPLAND	580128.485	144762.219
30	Aluminum	7429-90-5	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
31	Aluminum	7429-90-5	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
32	Aluminum	7429-90-5	RCBRA 600-23	IU2/IU6	UPLAND	585523.593	130481.377
33	Aluminum	7429-90-5	RCBRA 618-4	300	UPLAND	593954.946	117064.473
34	Aluminum	7429-90-5	RCBRA 628-1	IU2/IU6	UPLAND	577797.524	148745.681
35	Aluminum	7429-90-5	RCBRA Bev Ref 1 Rip	Outside decision areas	RIPARIAN	542428.846	167701.261
36	Aluminum	7429-90-5	RCBRA Bev Ref 2 Rip	Outside decision areas	RIPARIAN	541493.988	167808.357
37	Aluminum	7429-90-5	RCBRA CP Ref 2	IU2/IU6	UPLAND	563789.959	139793.869
38	Aluminum	7429-90-5	RCBRA JA JONES	300	UPLAND	593874.58	120013.908

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
1	4/21/2006	J11KL9	SOIL and BIOTA	MIS	0.29	mg/kg	MOUSE
2	4/5/2006	J11KV1	SOIL and BIOTA	MIS	5580	mg/kg	MOUSE
3	4/5/2006	J11KV2	SOIL and BIOTA	MIS	5820	mg/kg	MOUSE
4	4/21/2006	J11L22	SOIL and BIOTA	MIS	8390	mg/kg	MOUSE
5	4/3/2006	J11L21	SOIL and BIOTA	MIS	5270	mg/kg	MOUSE
6	4/20/2006	J11KL7	SOIL and BIOTA	MIS	7370	mg/kg	MOUSE
7	4/20/2006	J11KL7	SOIL and BIOTA	MIS-phyt	7350	mg/kg	MOUSE
8	4/5/2006	J11KM0	SOIL and BIOTA	MIS	5690	mg/kg	MOUSE
9	4/5/2006	J11KL5	SOIL and BIOTA	MIS	8680	mg/kg	MOUSE
10	4/5/2006	J11KL5	SOIL and BIOTA	MIS-phyt	10500	mg/kg	MOUSE
11	6/6/2007	J14XP2	SOIL and BIOTA	MIS	7200	mg/kg	MOUSE
12	6/6/2007	J14XP9	SOIL and BIOTA	MIS	9360	mg/kg	MOUSE
13	6/6/2007	J14XP3	SOIL and BIOTA	MIS	8530	mg/kg	MOUSE
14	6/6/2007	J14XP4	SOIL and BIOTA	MIS	10500	mg/kg	MOUSE
15	6/6/2007	J14XP5	SOIL and BIOTA	MIS	5910	mg/kg	MOUSE
16	4/21/2006	J11KL9	SOIL and BIOTA	MIS	6070	mg/kg	MOUSE
17	6/6/2007	J14XP6	SOIL and BIOTA	MIS	7960	mg/kg	MOUSE
18	6/6/2007	J14XP8	SOIL and BIOTA	MIS	11000	mg/kg	MOUSE
19	6/6/2007	J14XP7	SOIL and BIOTA	MIS	6910	mg/kg	MOUSE
20	4/5/2006	J11L25	SOIL and BIOTA	MIS	4670	mg/kg	MOUSE
21	4/5/2006	J11L25	SOIL and BIOTA	MIS-phyt	7480	mg/kg	MOUSE
22	4/5/2006	J11KK8	SOIL and BIOTA	MIS	6100	mg/kg	MOUSE
23	4/5/2006	J11KK8	SOIL and BIOTA	MIS-phyt	7090	mg/kg	MOUSE
24	4/20/2006	J11KK9	SOIL and BIOTA	MIS	6420	mg/kg	MOUSE
25	4/20/2006	J11KK9	SOIL and BIOTA	MIS-phyt	7220	mg/kg	MOUSE
26	4/20/2006	J11KL4	SOIL and BIOTA	MIS	6020	mg/kg	MOUSE
27	4/20/2006	J11KL4	SOIL and BIOTA	MIS-phyt	7540	mg/kg	MOUSE
28	4/20/2006	J11KL2	SOIL and BIOTA	MIS	6050	mg/kg	MOUSE
29	4/20/2006	J11KL0	SOIL and BIOTA	MIS	7280	mg/kg	MOUSE
30	4/20/2006	J11KL1	SOIL and BIOTA	MIS	7330	mg/kg	MOUSE
31	4/20/2006	J11KL1	SOIL and BIOTA	MIS-phyt	8180	mg/kg	MOUSE
32	4/21/2006	J11KK7	SOIL and BIOTA	MIS	5370	mg/kg	MOUSE
33	4/21/2006	J11KL8	SOIL and BIOTA	MIS	5000	mg/kg	MOUSE
34	4/20/2006	J11KL3	SOIL and BIOTA	MIS	6360	mg/kg	MOUSE
35	6/6/2007	J14XN9	SOIL and BIOTA	MIS	8500	mg/kg	MOUSE
36	6/6/2007	J14XP0	SOIL and BIOTA	MIS	8370	mg/kg	MOUSE
37	4/3/2006	J11L36	SOIL and BIOTA	MIS	5670	mg/kg	MOUSE
38	4/21/2006	J11L24	SOIL and BIOTA	MIS	4960	mg/kg	MOUSE

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
1	MULTIPLE CARCASSES	0.12	mg/kg			RCBRA
2	MULTIPLE CARCASSES	40.3	mg/kg	C		RCBRA
3	MULTIPLE CARCASSES	55.7	mg/kg	C		RCBRA
4	MULTIPLE CARCASSES	42.6	mg/kg			RCBRA
5	MULTIPLE CARCASSES	41.9	mg/kg	C		RCBRA
6	MULTIPLE CARCASSES	57.2	mg/kg			RCBRA
7	MULTIPLE CARCASSES	57.2	mg/kg			RCBRA
8	MULTIPLE CARCASSES	39.5	mg/kg	C		RCBRA
9	MULTIPLE CARCASSES	78.6	mg/kg	C		RCBRA
10	MULTIPLE CARCASSES	78.6	mg/kg	C		RCBRA
11	MULTIPLE CARCASSES	32.4	mg/kg		J	RCBRA
12	MULTIPLE CARCASSES	49.2	mg/kg		J	RCBRA
13	MULTIPLE CARCASSES	15.2	mg/kg		J	RCBRA
14	MULTIPLE CARCASSES	50.9	mg/kg		J	RCBRA
15	MULTIPLE CARCASSES	39.3	mg/kg		J	RCBRA
16	MULTIPLE CARCASSES	49.8	mg/kg			RCBRA
17	MULTIPLE CARCASSES	29.2	mg/kg		J	RCBRA
18	MULTIPLE CARCASSES	41.8	mg/kg		J	RCBRA
19	MULTIPLE CARCASSES	42.4	mg/kg		J	RCBRA
20	MULTIPLE CARCASSES	28.5	mg/kg	C		RCBRA
21	MULTIPLE CARCASSES	28.5	mg/kg	C		RCBRA
22	MULTIPLE CARCASSES	26.2	mg/kg	C		RCBRA
23	MULTIPLE CARCASSES	26.2	mg/kg	C		RCBRA
24	MULTIPLE CARCASSES	33.6	mg/kg			RCBRA
25	MULTIPLE CARCASSES	33.6	mg/kg			RCBRA
26	MULTIPLE CARCASSES	29	mg/kg			RCBRA
27	MULTIPLE CARCASSES	29	mg/kg			RCBRA
28	MULTIPLE CARCASSES	30.7	mg/kg			RCBRA
29	MULTIPLE CARCASSES	58.2	mg/kg			RCBRA
30	MULTIPLE CARCASSES	51.4	mg/kg			RCBRA
31	MULTIPLE CARCASSES	51.4	mg/kg			RCBRA
32	MULTIPLE CARCASSES	41.3	mg/kg			RCBRA
33	MULTIPLE CARCASSES	29.5	mg/kg			RCBRA
34	MULTIPLE CARCASSES	29.1	mg/kg			RCBRA
35	MULTIPLE CARCASSES	36.9	mg/kg		J	RCBRA
36	MULTIPLE CARCASSES	115	mg/kg		J	RCBRA
37	MULTIPLE CARCASSES	30.1	mg/kg	C		RCBRA
38	MULTIPLE CARCASSES	69.8	mg/kg			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
39	Aluminum	7429-90-5	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
40	Aluminum	7429-90-5	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
41	Aluminum	7429-90-5	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
42	Aluminum	7429-90-5	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
43	Aluminum	7429-90-5	RCBRA Pit 18	IU2/IU6	UPLAND	580697.058	145311.464
44	Aluminum	7429-90-5	RCBRA Pit 23	IU2/IU6	UPLAND	572381.012	144874.157
45	Aluminum	7429-90-5	RCBRA Pit 24	BC	UPLAND	563395.814	145119.007
46	Aluminum	7429-90-5	RCBRA Pit 9	300	UPLAND	592807.103	120587.7
47	Aluminum	7429-90-5	RCBRA R Ref 11	Outside decision areas	RIPARIAN	559400.735	146458.486
48	Aluminum	7429-90-5	RCBRA R Ref 12	IU2/IU6	RIPARIAN	559201.908	145747.542
49	Aluminum	7429-90-5	RCBRA R Ref 13	Outside decision areas	RIPARIAN	558572.809	145345.115
50	Aluminum	7429-90-5	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
51	Aluminum	7429-90-5	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
52	Aluminum	7429-90-5	RCBRA R Ref 16	Outside decision areas	RIPARIAN	557650.029	144826.748
53	Aluminum	7429-90-5	RCBRA Rip 1	D/H	RIPARIAN	577251.869	153659.195
54	Aluminum	7429-90-5	RCBRA Rip 10	D/H	RIPARIAN	573987.873	153082.19
55	Aluminum	7429-90-5	RCBRA Rip 2	D/H	RIPARIAN	573603.219	152471.6
56	Aluminum	7429-90-5	RCBRA Rip 3	D/H	RIPARIAN	572639.65	151677.812
57	Aluminum	7429-90-5	RCBRA Rip 4	N	RIPARIAN	570558.596	148981.547
58	Aluminum	7429-90-5	RCBRA Rip 5	K	RIPARIAN	569141.025	147521.561
59	Aluminum	7429-90-5	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
60	Aluminum	7429-90-5	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
61	Aluminum	7429-90-5	RCBRA Rip 7	IU2/IU6	RIPARIAN	581326.914	147825.17
62	Aluminum	7429-90-5	RCBRA Rip 8	D/H	RIPARIAN	578698.584	152233.645
63	Aluminum	7429-90-5	RCBRA Rip 9	D/H	RIPARIAN	578153.643	152801.452
64	Aluminum	7429-90-5	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
65	Aluminum	7429-90-5	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
66	Aluminum	7429-90-5	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
67	Aluminum	7429-90-5	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
68	Aluminum	7429-90-5	RCBRA Yak Rdg 2	Outside decision areas	UPLAND	559031.557	135576.407
69	Arsenic	7440-38-2	RCBRA 100-F-2	IU2/IU6	UPLAND	579728.068	147001.117
70	Arsenic	7440-38-2	RCBRA 2c Rip	K	RIPARIAN	567598.2	146210.159
71	Arsenic	7440-38-2	RCBRA 2l Rip	IU2/IU6	RIPARIAN	582341.212	146120.069
72	Arsenic	7440-38-2	RCBRA 3b Rip	IU2/IU6	RIPARIAN	584961.205	141035.835
73	Arsenic	7440-38-2	RCBRA 4a Rip	IU2/IU6	RIPARIAN	589347.5	137480.985
74	Arsenic	7440-38-2	RCBRA 5c Rip	300	RIPARIAN	594509.985	124869.182
75	Arsenic	7440-38-2	RCBRA 600-23	IU2/IU6	UPLAND	585523.593	130481.377
76	Arsenic	7440-38-2	RCBRA Bev Ref 1 Rip	Outside decision areas	RIPARIAN	542428.846	167701.261
77	Arsenic	7440-38-2	RCBRA JA JONES	300	UPLAND	593874.58	120013.908

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
39	4/3/2006	J11KM5	SOIL and BIOTA	MIS	10300	mg/kg	MOUSE
40	4/3/2006	J11KM5	SOIL and BIOTA	MIS-phyt	12000	mg/kg	MOUSE
41	4/20/2006	J11KK5	SOIL and BIOTA	MIS	5900	mg/kg	MOUSE
42	4/20/2006	J11XY0	SOIL and BIOTA	MIS	5900	mg/kg	MOUSE
43	4/20/2006	J11KK6	SOIL and BIOTA	MIS	5610	mg/kg	MOUSE
44	4/3/2006	J11L23	SOIL and BIOTA	MIS	4450	mg/kg	MOUSE
45	4/3/2006	J11KM2	SOIL and BIOTA	MIS	7600	mg/kg	MOUSE
46	4/21/2006	J11KM1	SOIL and BIOTA	MIS	5580	mg/kg	MOUSE
47	3/22/2006	J11924	SOIL and BIOTA	MIS	8080	mg/kg	MOUSE
48	3/23/2006	J11912	SOIL and BIOTA	MIS	7820	mg/kg	MOUSE
49	3/23/2006	J11913	SOIL and BIOTA	MIS	10500	mg/kg	MOUSE
50	6/6/2007	J14XP1	SOIL and BIOTA	MIS	10900	mg/kg	MOUSE
51	3/23/2006	J11925	SOIL and BIOTA	MIS	10900	mg/kg	MOUSE
52	3/23/2006	J11914	SOIL and BIOTA	MIS	8330	mg/kg	MOUSE
53	3/21/2006	J11916	SOIL and BIOTA	MIS	10400	mg/kg	MOUSE
54	3/22/2006	J11923	SOIL and BIOTA	MIS	6220	mg/kg	MOUSE
55	3/21/2006	J11917	SOIL and BIOTA	MIS	8220	mg/kg	MOUSE
56	3/22/2006	J11918	SOIL and BIOTA	MIS	4830	mg/kg	MOUSE
57	3/22/2006	J11910	SOIL and BIOTA	MIS	9950	mg/kg	MOUSE
58	3/22/2006	J11911	SOIL and BIOTA	MIS	10300	mg/kg	MOUSE
59	4/20/2006	J11919	SOIL and BIOTA	MIS	10900	mg/kg	MOUSE
60	4/20/2006	J11XY1	SOIL and BIOTA	MIS	10900	mg/kg	MOUSE
61	3/22/2006	J11920	SOIL and BIOTA	MIS	7290	mg/kg	MOUSE
62	3/22/2006	J11921	SOIL and BIOTA	MIS	7600	mg/kg	MOUSE
63	3/22/2006	J11922	SOIL and BIOTA	MIS	7520	mg/kg	MOUSE
64	4/3/2006	J11KM6	SOIL and BIOTA	MIS	10500	mg/kg	MOUSE
65	4/3/2006	J11KM6	SOIL and BIOTA	MIS-phyt	11900	mg/kg	MOUSE
66	4/3/2006	J11KM4	SOIL and BIOTA	MIS	8900	mg/kg	MOUSE
67	4/3/2006	J11KM4	SOIL and BIOTA	MIS-phyt	10800	mg/kg	MOUSE
68	4/3/2006	J11KM3	SOIL and BIOTA	MIS	11900	mg/kg	MOUSE
69	4/21/2006	J11L22	SOIL and BIOTA	MIS	3.8	mg/kg	MOUSE
70	6/6/2007	J14XP9	SOIL and BIOTA	MIS	7.8	mg/kg	MOUSE
71	6/6/2007	J14XP5	SOIL and BIOTA	MIS	3.7	mg/kg	MOUSE
72	6/6/2007	J14XP6	SOIL and BIOTA	MIS	8	mg/kg	MOUSE
73	6/6/2007	J14XP8	SOIL and BIOTA	MIS	10.2	mg/kg	MOUSE
74	6/6/2007	J14XP7	SOIL and BIOTA	MIS	4.1	mg/kg	MOUSE
75	4/21/2006	J11KK7	SOIL and BIOTA	MIS	2.6	mg/kg	MOUSE
76	6/6/2007	J14XN9	SOIL and BIOTA	MIS	5.1	mg/kg	MOUSE
77	4/21/2006	J11L24	SOIL and BIOTA	MIS	2	mg/kg	MOUSE

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
39	MULTIPLE CARCASSES	70.8	mg/kg	C		RCBRA
40	MULTIPLE CARCASSES	70.8	mg/kg	C		RCBRA
41	MULTIPLE CARCASSES	47.9	mg/kg			RCBRA
42	MULTIPLE CARCASSES	59.9	mg/kg			RCBRA
43	MULTIPLE CARCASSES	17.1	mg/kg			RCBRA
44	MULTIPLE CARCASSES	53.9	mg/kg	C		RCBRA
45	MULTIPLE CARCASSES	36.1	mg/kg	C		RCBRA
46	MULTIPLE CARCASSES	99.8	mg/kg			RCBRA
47	MULTIPLE CARCASSES	32.1	mg/kg			RCBRA
48	MULTIPLE CARCASSES	56.5	mg/kg			RCBRA
49	MULTIPLE CARCASSES	17	mg/kg			RCBRA
50	MULTIPLE CARCASSES	34.3	mg/kg		J	RCBRA
51	MULTIPLE CARCASSES	39.8	mg/kg			RCBRA
52	MULTIPLE CARCASSES	36.6	mg/kg			RCBRA
53	MULTIPLE CARCASSES	42.5	mg/kg			RCBRA
54	MULTIPLE CARCASSES	43.2	mg/kg			RCBRA
55	MULTIPLE CARCASSES	176	mg/kg			RCBRA
56	MULTIPLE CARCASSES	55	mg/kg			RCBRA
57	MULTIPLE CARCASSES	35.5	mg/kg			RCBRA
58	MULTIPLE CARCASSES	56.7	mg/kg			RCBRA
59	MULTIPLE CARCASSES	53.5	mg/kg			RCBRA
60	MULTIPLE CARCASSES	52.6	mg/kg			RCBRA
61	MULTIPLE CARCASSES	50.5	mg/kg			RCBRA
62	MULTIPLE CARCASSES	33.8	mg/kg			RCBRA
63	MULTIPLE CARCASSES	39.9	mg/kg			RCBRA
64	MULTIPLE CARCASSES	40.9	mg/kg	C		RCBRA
65	MULTIPLE CARCASSES	40.9	mg/kg	C		RCBRA
66	MULTIPLE CARCASSES	62.4	mg/kg	C		RCBRA
67	MULTIPLE CARCASSES	62.4	mg/kg	C		RCBRA
68	MULTIPLE CARCASSES	45.1	mg/kg	C		RCBRA
69	MULTIPLE CARCASSES	0.87	mg/kg			RCBRA
70	MULTIPLE CARCASSES	0.42	mg/kg			RCBRA
71	MULTIPLE CARCASSES	0.54	mg/kg			RCBRA
72	MULTIPLE CARCASSES	0.41	mg/kg			RCBRA
73	MULTIPLE CARCASSES	0.41	mg/kg			RCBRA
74	MULTIPLE CARCASSES	0.57	mg/kg			RCBRA
75	MULTIPLE CARCASSES	0.63	mg/kg			RCBRA
76	MULTIPLE CARCASSES	0.42	mg/kg			RCBRA
77	MULTIPLE CARCASSES	0.64	mg/kg			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
78	Arsenic	7440-38-2	RCBRA Pit 9	300	UPLAND	592807.103	120587.7
79	Arsenic	7440-38-2	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
80	Arsenic	7440-38-2	B POND	Outside decision areas	UPLAND	576356.769	136881.272
81	Boron	7440-42-8	RCBRA 100-D-49	D/H	UPLAND	573938.06	151944.123
82	Boron	7440-42-8	RCBRA 100-F-2	IU2/IU6	UPLAND	579728.068	147001.117
83	Boron	7440-42-8	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
84	Boron	7440-42-8	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
85	Boron	7440-42-8	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
86	Boron	7440-42-8	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
87	Boron	7440-42-8	RCBRA 2a Rip	BC	RIPARIAN	564618.501	145284.526
88	Boron	7440-42-8	RCBRA 2j Rip	IU2/IU6	RIPARIAN	579360.971	150092.048
89	Boron	7440-42-8	RCBRA 300-49	300	UPLAND	594318.994	116830.934
90	Boron	7440-42-8	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
91	Boron	7440-42-8	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
92	Boron	7440-42-8	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
93	Boron	7440-42-8	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
94	Boron	7440-42-8	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
95	Boron	7440-42-8	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
96	Boron	7440-42-8	RCBRA 600-181	IU2/IU6	UPLAND	578303.83	147316.698
97	Boron	7440-42-8	RCBRA 600-204	IU2/IU6	UPLAND	580128.485	144762.219
98	Boron	7440-42-8	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
99	Boron	7440-42-8	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
100	Boron	7440-42-8	RCBRA 600-23	IU2/IU6	UPLAND	585523.593	130481.377
101	Boron	7440-42-8	RCBRA 618-4	300	UPLAND	593954.946	117064.473
102	Boron	7440-42-8	RCBRA 628-1	IU2/IU6	UPLAND	577797.524	148745.681
103	Boron	7440-42-8	RCBRA Bev Ref 1 Rip	Outside decision areas	RIPARIAN	542428.846	167701.261
104	Boron	7440-42-8	RCBRA Bev Ref 2 Rip	Outside decision areas	RIPARIAN	541493.988	167808.357
105	Boron	7440-42-8	RCBRA JA JONES	300	UPLAND	593874.58	120013.908
106	Boron	7440-42-8	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
107	Boron	7440-42-8	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
108	Boron	7440-42-8	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
109	Boron	7440-42-8	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
110	Boron	7440-42-8	RCBRA Pit 18	IU2/IU6	UPLAND	580697.058	145311.464
111	Boron	7440-42-8	RCBRA Pit 24	BC	UPLAND	563395.814	145119.007
112	Boron	7440-42-8	RCBRA Pit 9	300	UPLAND	592807.103	120587.7
113	Boron	7440-42-8	RCBRA R Ref 11	Outside decision areas	RIPARIAN	559400.735	146458.486
114	Boron	7440-42-8	RCBRA R Ref 12	IU2/IU6	RIPARIAN	559201.908	145747.542
115	Boron	7440-42-8	RCBRA R Ref 13	Outside decision areas	RIPARIAN	558572.809	145345.115
116	Boron	7440-42-8	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
78	4/21/2006	J11KM1	SOIL and BIOTA	MIS	2.3	mg/kg	MOUSE
79	6/6/2007	J14XP1	SOIL and BIOTA	MIS	6.9	mg/kg	MOUSE
80	5/13/2005	B1CVF1	SOIL and BIOTA	Discrete	4.4	mg/kg	MOUSE
81	4/5/2006	J11KV2	SOIL and BIOTA	MIS	3	mg/kg	MOUSE
82	4/21/2006	J11L22	SOIL and BIOTA	MIS	3.5	mg/kg	MOUSE
83	4/20/2006	J11KL7	SOIL and BIOTA	MIS	2.3	mg/kg	MOUSE
84	4/20/2006	J11KL7	SOIL and BIOTA	MIS-phyt	2.7	mg/kg	MOUSE
85	4/5/2006	J11KL5	SOIL and BIOTA	MIS	25.6	mg/kg	MOUSE
86	4/5/2006	J11KL5	SOIL and BIOTA	MIS-phyt	29.6	mg/kg	MOUSE
87	6/6/2007	J14XP2	SOIL and BIOTA	MIS	0.91	mg/kg	MOUSE
88	6/6/2007	J14XP4	SOIL and BIOTA	MIS	1.5	mg/kg	MOUSE
89	4/21/2006	J11KL9	SOIL and BIOTA	MIS	1.4	mg/kg	MOUSE
90	4/5/2006	J11KK8	SOIL and BIOTA	MIS	1.4	mg/kg	MOUSE
91	4/5/2006	J11KK8	SOIL and BIOTA	MIS-phyt	1.6	mg/kg	MOUSE
92	4/20/2006	J11KK9	SOIL and BIOTA	MIS	3.4	mg/kg	MOUSE
93	4/20/2006	J11KK9	SOIL and BIOTA	MIS-phyt	5.7	mg/kg	MOUSE
94	4/20/2006	J11KL4	SOIL and BIOTA	MIS	2.1	mg/kg	MOUSE
95	4/20/2006	J11KL4	SOIL and BIOTA	MIS-phyt	2.9	mg/kg	MOUSE
96	4/20/2006	J11KL2	SOIL and BIOTA	MIS	1.3	mg/kg	MOUSE
97	4/20/2006	J11KL0	SOIL and BIOTA	MIS	1.5	mg/kg	MOUSE
98	4/20/2006	J11KL1	SOIL and BIOTA	MIS	6.8	mg/kg	MOUSE
99	4/20/2006	J11KL1	SOIL and BIOTA	MIS-phyt	5.2	mg/kg	MOUSE
100	4/21/2006	J11KK7	SOIL and BIOTA	MIS	1.1	mg/kg	MOUSE
101	4/21/2006	J11KL8	SOIL and BIOTA	MIS	0.97	mg/kg	MOUSE
102	4/20/2006	J11KL3	SOIL and BIOTA	MIS	3.1	mg/kg	MOUSE
103	6/6/2007	J14XN9	SOIL and BIOTA	MIS	0.99	mg/kg	MOUSE
104	6/6/2007	J14XP0	SOIL and BIOTA	MIS	1	mg/kg	MOUSE
105	4/21/2006	J11L24	SOIL and BIOTA	MIS	1.5	mg/kg	MOUSE
106	4/3/2006	J11KM5	SOIL and BIOTA	MIS	2.5	mg/kg	MOUSE
107	4/3/2006	J11KM5	SOIL and BIOTA	MIS-phyt	3.1	mg/kg	MOUSE
108	4/20/2006	J11KK5	SOIL and BIOTA	MIS	1.2	mg/kg	MOUSE
109	4/20/2006	J11XY0	SOIL and BIOTA	MIS	1.2	mg/kg	MOUSE
110	4/20/2006	J11KK6	SOIL and BIOTA	MIS	0.85	mg/kg	MOUSE
111	4/3/2006	J11KM2	SOIL and BIOTA	MIS	2.2	mg/kg	MOUSE
112	4/21/2006	J11KM1	SOIL and BIOTA	MIS	1.2	mg/kg	MOUSE
113	3/22/2006	J11924	SOIL and BIOTA	MIS	1.2	mg/kg	MOUSE
114	3/23/2006	J11912	SOIL and BIOTA	MIS	0.53	mg/kg	MOUSE
115	3/23/2006	J11913	SOIL and BIOTA	MIS	2.2	mg/kg	MOUSE
116	6/6/2007	J14XP1	SOIL and BIOTA	MIS	1.6	mg/kg	MOUSE

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
78	MULTIPLE CARCASSES	0.68	mg/kg			RCBRA
79	MULTIPLE CARCASSES	0.4	mg/kg			RCBRA
80	WHOLEORG	0.436	mg/kg			CP
81	MULTIPLE CARCASSES	0.26	mg/kg	C		RCBRA
82	MULTIPLE CARCASSES	0.43	mg/kg			RCBRA
83	MULTIPLE CARCASSES	0.41	mg/kg			RCBRA
84	MULTIPLE CARCASSES	0.41	mg/kg			RCBRA
85	MULTIPLE CARCASSES	1.5	mg/kg	C		RCBRA
86	MULTIPLE CARCASSES	1.5	mg/kg	C		RCBRA
87	MULTIPLE CARCASSES	0.48	mg/kg			RCBRA
88	MULTIPLE CARCASSES	0.35	mg/kg			RCBRA
89	MULTIPLE CARCASSES	0.81	mg/kg			RCBRA
90	MULTIPLE CARCASSES	0.45	mg/kg	C		RCBRA
91	MULTIPLE CARCASSES	0.45	mg/kg	C		RCBRA
92	MULTIPLE CARCASSES	0.45	mg/kg			RCBRA
93	MULTIPLE CARCASSES	0.45	mg/kg			RCBRA
94	MULTIPLE CARCASSES	0.47	mg/kg			RCBRA
95	MULTIPLE CARCASSES	0.47	mg/kg			RCBRA
96	MULTIPLE CARCASSES	0.32	mg/kg			RCBRA
97	MULTIPLE CARCASSES	0.29	mg/kg			RCBRA
98	MULTIPLE CARCASSES	0.57	mg/kg			RCBRA
99	MULTIPLE CARCASSES	0.57	mg/kg			RCBRA
100	MULTIPLE CARCASSES	0.48	mg/kg			RCBRA
101	MULTIPLE CARCASSES	0.31	mg/kg			RCBRA
102	MULTIPLE CARCASSES	0.33	mg/kg			RCBRA
103	MULTIPLE CARCASSES	0.52	mg/kg			RCBRA
104	MULTIPLE CARCASSES	0.75	mg/kg			RCBRA
105	MULTIPLE CARCASSES	0.65	mg/kg			RCBRA
106	MULTIPLE CARCASSES	0.26	mg/kg	C		RCBRA
107	MULTIPLE CARCASSES	0.26	mg/kg	C		RCBRA
108	MULTIPLE CARCASSES	0.33	mg/kg			RCBRA
109	MULTIPLE CARCASSES	0.25	mg/kg			RCBRA
110	MULTIPLE CARCASSES	0.49	mg/kg			RCBRA
111	MULTIPLE CARCASSES	0.3	mg/kg	C		RCBRA
112	MULTIPLE CARCASSES	0.31	mg/kg			RCBRA
113	MULTIPLE CARCASSES	0.71	mg/kg			RCBRA
114	MULTIPLE CARCASSES	0.9	mg/kg			RCBRA
115	MULTIPLE CARCASSES	0.74	mg/kg			RCBRA
116	MULTIPLE CARCASSES	0.44	mg/kg			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
117	Boron	7440-42-8	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
118	Boron	7440-42-8	RCBRA R Ref 16	Outside decision areas	RIPARIAN	557650.029	144826.748
119	Boron	7440-42-8	RCBRA Rip 1	D/H	RIPARIAN	577251.869	153659.195
120	Boron	7440-42-8	RCBRA Rip 10	D/H	RIPARIAN	573987.873	153082.19
121	Boron	7440-42-8	RCBRA Rip 2	D/H	RIPARIAN	573603.219	152471.6
122	Boron	7440-42-8	RCBRA Rip 3	D/H	RIPARIAN	572639.65	151677.812
123	Boron	7440-42-8	RCBRA Rip 4	N	RIPARIAN	570558.596	148981.547
124	Boron	7440-42-8	RCBRA Rip 5	K	RIPARIAN	569141.025	147521.561
125	Boron	7440-42-8	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
126	Boron	7440-42-8	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
127	Boron	7440-42-8	RCBRA Rip 7	IU2/IU6	RIPARIAN	581326.914	147825.17
128	Boron	7440-42-8	RCBRA Rip 8	D/H	RIPARIAN	578698.584	152233.645
129	Boron	7440-42-8	RCBRA Rip 9	D/H	RIPARIAN	578153.643	152801.452
130	Boron	7440-42-8	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764
131	Boron	7440-42-8	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
132	Boron	7440-42-8	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
133	Boron	7440-42-8	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
134	Boron	7440-42-8	U POND	Outside decision areas	UPLAND	566379.63	134457.045
135	Barium	7440-39-3	RCBRA 100-D-48	D/H	UPLAND	573841.527	151914.538
136	Barium	7440-39-3	RCBRA 100-D-49	D/H	UPLAND	573938.06	151944.123
137	Barium	7440-39-3	RCBRA 100-F-2	IU2/IU6	UPLAND	579728.068	147001.117
138	Barium	7440-39-3	RCBRA 116-DR-1&2	D/H	UPLAND	574007.817	152246.748
139	Barium	7440-39-3	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
140	Barium	7440-39-3	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
141	Barium	7440-39-3	RCBRA 1607-D2:1	D/H	UPLAND	573823.924	152260.319
142	Barium	7440-39-3	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
143	Barium	7440-39-3	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
144	Barium	7440-39-3	RCBRA 2a Rip	BC	RIPARIAN	564618.501	145284.526
145	Barium	7440-39-3	RCBRA 2c Rip	K	RIPARIAN	567598.2	146210.159
146	Barium	7440-39-3	RCBRA 2f Rip	D/H	RIPARIAN	576222.844	154297.511
147	Barium	7440-39-3	RCBRA 2j Rip	IU2/IU6	RIPARIAN	579360.971	150092.048
148	Barium	7440-39-3	RCBRA 2l Rip	IU2/IU6	RIPARIAN	582341.212	146120.069
149	Barium	7440-39-3	RCBRA 300-49	300	UPLAND	594318.994	116830.934
150	Barium	7440-39-3	RCBRA 3b Rip	IU2/IU6	RIPARIAN	584961.205	141035.835
151	Barium	7440-39-3	RCBRA 4a Rip	IU2/IU6	RIPARIAN	589347.5	137480.985
152	Barium	7440-39-3	RCBRA 5c Rip	300	RIPARIAN	594509.985	124869.182
153	Barium	7440-39-3	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
154	Barium	7440-39-3	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
155	Barium	7440-39-3	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
117	3/23/2006	J11925	SOIL and BIOTA	MIS	1.6	mg/kg	MOUSE
118	3/23/2006	J11914	SOIL and BIOTA	MIS	0.91	mg/kg	MOUSE
119	3/21/2006	J11916	SOIL and BIOTA	MIS	1.1	mg/kg	MOUSE
120	3/22/2006	J11923	SOIL and BIOTA	MIS	1.2	mg/kg	MOUSE
121	3/21/2006	J11917	SOIL and BIOTA	MIS	0.6	mg/kg	MOUSE
122	3/22/2006	J11918	SOIL and BIOTA	MIS	0.592	mg/kg	MOUSE
123	3/22/2006	J11910	SOIL and BIOTA	MIS	1.2	mg/kg	MOUSE
124	3/22/2006	J11911	SOIL and BIOTA	MIS	1.3	mg/kg	MOUSE
125	4/20/2006	J11919	SOIL and BIOTA	MIS	2.5	mg/kg	MOUSE
126	4/20/2006	J11XY1	SOIL and BIOTA	MIS	2.5	mg/kg	MOUSE
127	3/22/2006	J11920	SOIL and BIOTA	MIS	0.75	mg/kg	MOUSE
128	3/22/2006	J11921	SOIL and BIOTA	MIS	0.74	mg/kg	MOUSE
129	3/22/2006	J11922	SOIL and BIOTA	MIS	1.3	mg/kg	MOUSE
130	5/11/2005	B1CVD1	SOIL and BIOTA	Discrete	1.25	mg/kg	MOUSE
131	6/1/2005	B1CVF8	SOIL and BIOTA	Discrete	0.725	mg/kg	MOUSE
132	5/31/2005	B1CVF7	SOIL and BIOTA	Discrete	0.725	mg/kg	MOUSE
133	5/2/2005	B1CVC2	SOIL and BIOTA	Discrete	1.1	mg/kg	MOUSE
134	4/28/2005	B1CVB6	SOIL and BIOTA	Discrete	0.664	mg/kg	MOUSE
135	4/5/2006	J11KV1	SOIL and BIOTA	MIS	69.5	mg/kg	MOUSE
136	4/5/2006	J11KV2	SOIL and BIOTA	MIS	81.6	mg/kg	MOUSE
137	4/21/2006	J11L22	SOIL and BIOTA	MIS	86.3	mg/kg	MOUSE
138	4/3/2006	J11L21	SOIL and BIOTA	MIS	69.2	mg/kg	MOUSE
139	4/20/2006	J11KL7	SOIL and BIOTA	MIS	75.6	mg/kg	MOUSE
140	4/20/2006	J11KL7	SOIL and BIOTA	MIS-phyt	70.4	mg/kg	MOUSE
141	4/5/2006	J11KM0	SOIL and BIOTA	MIS	59.9	mg/kg	MOUSE
142	4/5/2006	J11KL5	SOIL and BIOTA	MIS	377	mg/kg	MOUSE
143	4/5/2006	J11KL5	SOIL and BIOTA	MIS-phyt	314	mg/kg	MOUSE
144	6/6/2007	J14XP2	SOIL and BIOTA	MIS	70.4	mg/kg	MOUSE
145	6/6/2007	J14XP9	SOIL and BIOTA	MIS	87.8	mg/kg	MOUSE
146	6/6/2007	J14XP3	SOIL and BIOTA	MIS	82.4	mg/kg	MOUSE
147	6/6/2007	J14XP4	SOIL and BIOTA	MIS	87.3	mg/kg	MOUSE
148	6/6/2007	J14XP5	SOIL and BIOTA	MIS	65.1	mg/kg	MOUSE
149	4/21/2006	J11KL9	SOIL and BIOTA	MIS	90	mg/kg	MOUSE
150	6/6/2007	J14XP6	SOIL and BIOTA	MIS	73.7	mg/kg	MOUSE
151	6/6/2007	J14XP8	SOIL and BIOTA	MIS	92.5	mg/kg	MOUSE
152	6/6/2007	J14XP7	SOIL and BIOTA	MIS	70.5	mg/kg	MOUSE
153	4/5/2006	J11L25	SOIL and BIOTA	MIS	54.8	mg/kg	MOUSE
154	4/5/2006	J11L25	SOIL and BIOTA	MIS-phyt	69.2	mg/kg	MOUSE
155	4/5/2006	J11KK8	SOIL and BIOTA	MIS	66.2	mg/kg	MOUSE

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
117	MULTIPLE CARCASSES	0.53	mg/kg			RCBRA
118	MULTIPLE CARCASSES	0.79	mg/kg			RCBRA
119	MULTIPLE CARCASSES	1.3	mg/kg			RCBRA
120	MULTIPLE CARCASSES	0.71	mg/kg			RCBRA
121	MULTIPLE CARCASSES	1	mg/kg			RCBRA
122	MULTIPLE CARCASSES	0.94	mg/kg			RCBRA
123	MULTIPLE CARCASSES	1.7	mg/kg			RCBRA
124	MULTIPLE CARCASSES	2.2	mg/kg			RCBRA
125	MULTIPLE CARCASSES	0.5	mg/kg			RCBRA
126	MULTIPLE CARCASSES	1.3	mg/kg			RCBRA
127	MULTIPLE CARCASSES	0.93	mg/kg			RCBRA
128	MULTIPLE CARCASSES	0.64	mg/kg			RCBRA
129	MULTIPLE CARCASSES	0.81	mg/kg			RCBRA
130	WHOLEORG	4.3	mg/kg			CP
131	WHOLEORG	1.8	mg/kg			CP
132	WHOLEORG	11.5	mg/kg			CP
133	WHOLEORG	2.95	mg/kg			CP
134	WHOLEORG	6.87	mg/kg			CP
135	MULTIPLE CARCASSES	3.8	mg/kg	C		RCBRA
136	MULTIPLE CARCASSES	4.7	mg/kg	C		RCBRA
137	MULTIPLE CARCASSES	2.6	mg/kg			RCBRA
138	MULTIPLE CARCASSES	5.4	mg/kg	C		RCBRA
139	MULTIPLE CARCASSES	4.8	mg/kg			RCBRA
140	MULTIPLE CARCASSES	4.8	mg/kg			RCBRA
141	MULTIPLE CARCASSES	3.2	mg/kg	C		RCBRA
142	MULTIPLE CARCASSES	3.1	mg/kg	C		RCBRA
143	MULTIPLE CARCASSES	3.1	mg/kg	C		RCBRA
144	MULTIPLE CARCASSES	1.6	mg/kg	C		RCBRA
145	MULTIPLE CARCASSES	1.9	mg/kg	C		RCBRA
146	MULTIPLE CARCASSES	0.54	mg/kg	C		RCBRA
147	MULTIPLE CARCASSES	1.9	mg/kg	C		RCBRA
148	MULTIPLE CARCASSES	4.1	mg/kg	C		RCBRA
149	MULTIPLE CARCASSES	3.4	mg/kg			RCBRA
150	MULTIPLE CARCASSES	3.4	mg/kg	C		RCBRA
151	MULTIPLE CARCASSES	2	mg/kg	C		RCBRA
152	MULTIPLE CARCASSES	1.4	mg/kg	C		RCBRA
153	MULTIPLE CARCASSES	2.7	mg/kg	C		RCBRA
154	MULTIPLE CARCASSES	2.7	mg/kg	C		RCBRA
155	MULTIPLE CARCASSES	4.4	mg/kg	C		RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
156	Barium	7440-39-3	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
157	Barium	7440-39-3	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
158	Barium	7440-39-3	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
159	Barium	7440-39-3	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
160	Barium	7440-39-3	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
161	Barium	7440-39-3	RCBRA 600-181	IU2/IU6	UPLAND	578303.83	147316.698
162	Barium	7440-39-3	RCBRA 600-204	IU2/IU6	UPLAND	580128.485	144762.219
163	Barium	7440-39-3	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
164	Barium	7440-39-3	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
165	Barium	7440-39-3	RCBRA 600-23	IU2/IU6	UPLAND	585523.593	130481.377
166	Barium	7440-39-3	RCBRA 618-4	300	UPLAND	593954.946	117064.473
167	Barium	7440-39-3	RCBRA 628-1	IU2/IU6	UPLAND	577797.524	148745.681
168	Barium	7440-39-3	RCBRA Bev Ref 1 Rip	Outside decision areas	RIPARIAN	542428.846	167701.261
169	Barium	7440-39-3	RCBRA Bev Ref 2 Rip	Outside decision areas	RIPARIAN	541493.988	167808.357
170	Barium	7440-39-3	RCBRA CP Ref 2	IU2/IU6	UPLAND	563789.959	139793.869
171	Barium	7440-39-3	RCBRA JA JONES	300	UPLAND	593874.58	120013.908
172	Barium	7440-39-3	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
173	Barium	7440-39-3	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
174	Barium	7440-39-3	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
175	Barium	7440-39-3	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
176	Barium	7440-39-3	RCBRA Pit 18	IU2/IU6	UPLAND	580697.058	145311.464
177	Barium	7440-39-3	RCBRA Pit 23	IU2/IU6	UPLAND	572381.012	144874.157
178	Barium	7440-39-3	RCBRA Pit 24	BC	UPLAND	563395.814	145119.007
179	Barium	7440-39-3	RCBRA Pit 9	300	UPLAND	592807.103	120587.7
180	Barium	7440-39-3	RCBRA R Ref 11	Outside decision areas	RIPARIAN	559400.735	146458.486
181	Barium	7440-39-3	RCBRA R Ref 12	IU2/IU6	RIPARIAN	559201.908	145747.542
182	Barium	7440-39-3	RCBRA R Ref 13	Outside decision areas	RIPARIAN	558572.809	145345.115
183	Barium	7440-39-3	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
184	Barium	7440-39-3	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
185	Barium	7440-39-3	RCBRA R Ref 16	Outside decision areas	RIPARIAN	557650.029	144826.748
186	Barium	7440-39-3	RCBRA Rip 1	D/H	RIPARIAN	577251.869	153659.195
187	Barium	7440-39-3	RCBRA Rip 10	D/H	RIPARIAN	573987.873	153082.19
188	Barium	7440-39-3	RCBRA Rip 2	D/H	RIPARIAN	573603.219	152471.6
189	Barium	7440-39-3	RCBRA Rip 3	D/H	RIPARIAN	572639.65	151677.812
190	Barium	7440-39-3	RCBRA Rip 4	N	RIPARIAN	570558.596	148981.547
191	Barium	7440-39-3	RCBRA Rip 5	K	RIPARIAN	569141.025	147521.561
192	Barium	7440-39-3	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
193	Barium	7440-39-3	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
194	Barium	7440-39-3	RCBRA Rip 7	IU2/IU6	RIPARIAN	581326.914	147825.17

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
156	4/5/2006	J11KK8	SOIL and BIOTA	MIS-phyt	67.5	mg/kg	MOUSE
157	4/20/2006	J11KK9	SOIL and BIOTA	MIS	78.2	mg/kg	MOUSE
158	4/20/2006	J11KK9	SOIL and BIOTA	MIS-phyt	102	mg/kg	MOUSE
159	4/20/2006	J11KL4	SOIL and BIOTA	MIS	70.4	mg/kg	MOUSE
160	4/20/2006	J11KL4	SOIL and BIOTA	MIS-phyt	80	mg/kg	MOUSE
161	4/20/2006	J11KL2	SOIL and BIOTA	MIS	67.7	mg/kg	MOUSE
162	4/20/2006	J11KL0	SOIL and BIOTA	MIS	82	mg/kg	MOUSE
163	4/20/2006	J11KL1	SOIL and BIOTA	MIS	138	mg/kg	MOUSE
164	4/20/2006	J11KL1	SOIL and BIOTA	MIS-phyt	104	mg/kg	MOUSE
165	4/21/2006	J11KK7	SOIL and BIOTA	MIS	70.2	mg/kg	MOUSE
166	4/21/2006	J11KL8	SOIL and BIOTA	MIS	59.2	mg/kg	MOUSE
167	4/20/2006	J11KL3	SOIL and BIOTA	MIS	74.5	mg/kg	MOUSE
168	6/6/2007	J14XN9	SOIL and BIOTA	MIS	76	mg/kg	MOUSE
169	6/6/2007	J14XP0	SOIL and BIOTA	MIS	79.9	mg/kg	MOUSE
170	4/3/2006	J11L36	SOIL and BIOTA	MIS	71	mg/kg	MOUSE
171	4/21/2006	J11L24	SOIL and BIOTA	MIS	70	mg/kg	MOUSE
172	4/3/2006	J11KM5	SOIL and BIOTA	MIS	124	mg/kg	MOUSE
173	4/3/2006	J11KM5	SOIL and BIOTA	MIS-phyt	125	mg/kg	MOUSE
174	4/20/2006	J11KK5	SOIL and BIOTA	MIS	83.5	mg/kg	MOUSE
175	4/20/2006	J11XY0	SOIL and BIOTA	MIS	83.5	mg/kg	MOUSE
176	4/20/2006	J11KK6	SOIL and BIOTA	MIS	55.5	mg/kg	MOUSE
177	4/3/2006	J11L23	SOIL and BIOTA	MIS	51.5	mg/kg	MOUSE
178	4/3/2006	J11KM2	SOIL and BIOTA	MIS	80.4	mg/kg	MOUSE
179	4/21/2006	J11KM1	SOIL and BIOTA	MIS	80.2	mg/kg	MOUSE
180	3/22/2006	J11924	SOIL and BIOTA	MIS	78.6	mg/kg	MOUSE
181	3/23/2006	J11912	SOIL and BIOTA	MIS	80.7	mg/kg	MOUSE
182	3/23/2006	J11913	SOIL and BIOTA	MIS	122	mg/kg	MOUSE
183	6/6/2007	J14XP1	SOIL and BIOTA	MIS	120.5	mg/kg	MOUSE
184	3/23/2006	J11925	SOIL and BIOTA	MIS	120.5	mg/kg	MOUSE
185	3/23/2006	J11914	SOIL and BIOTA	MIS	79.4	mg/kg	MOUSE
186	3/21/2006	J11916	SOIL and BIOTA	MIS	92.1	mg/kg	MOUSE
187	3/22/2006	J11923	SOIL and BIOTA	MIS	73.8	mg/kg	MOUSE
188	3/21/2006	J11917	SOIL and BIOTA	MIS	103	mg/kg	MOUSE
189	3/22/2006	J11918	SOIL and BIOTA	MIS	78.2	mg/kg	MOUSE
190	3/22/2006	J11910	SOIL and BIOTA	MIS	97.6	mg/kg	MOUSE
191	3/22/2006	J11911	SOIL and BIOTA	MIS	100	mg/kg	MOUSE
192	4/20/2006	J11919	SOIL and BIOTA	MIS	153	mg/kg	MOUSE
193	4/20/2006	J11XY1	SOIL and BIOTA	MIS	153	mg/kg	MOUSE
194	3/22/2006	J11920	SOIL and BIOTA	MIS	79.2	mg/kg	MOUSE

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
156	MULTIPLE CARCASSES	4.4	mg/kg	C		RCBRA
157	MULTIPLE CARCASSES	3.8	mg/kg			RCBRA
158	MULTIPLE CARCASSES	3.8	mg/kg			RCBRA
159	MULTIPLE CARCASSES	4.4	mg/kg			RCBRA
160	MULTIPLE CARCASSES	4.4	mg/kg			RCBRA
161	MULTIPLE CARCASSES	3.9	mg/kg			RCBRA
162	MULTIPLE CARCASSES	5	mg/kg			RCBRA
163	MULTIPLE CARCASSES	4.7	mg/kg			RCBRA
164	MULTIPLE CARCASSES	4.7	mg/kg			RCBRA
165	MULTIPLE CARCASSES	4.4	mg/kg			RCBRA
166	MULTIPLE CARCASSES	3	mg/kg			RCBRA
167	MULTIPLE CARCASSES	7.1	mg/kg			RCBRA
168	MULTIPLE CARCASSES	2.4	mg/kg	C		RCBRA
169	MULTIPLE CARCASSES	1.8	mg/kg	C		RCBRA
170	MULTIPLE CARCASSES	6	mg/kg	C		RCBRA
171	MULTIPLE CARCASSES	3.2	mg/kg			RCBRA
172	MULTIPLE CARCASSES	4.5	mg/kg	C		RCBRA
173	MULTIPLE CARCASSES	4.5	mg/kg	C		RCBRA
174	MULTIPLE CARCASSES	2.5	mg/kg			RCBRA
175	MULTIPLE CARCASSES	4	mg/kg			RCBRA
176	MULTIPLE CARCASSES	2.3	mg/kg			RCBRA
177	MULTIPLE CARCASSES	5.7	mg/kg	C		RCBRA
178	MULTIPLE CARCASSES	1.9	mg/kg	C		RCBRA
179	MULTIPLE CARCASSES	2.8	mg/kg			RCBRA
180	MULTIPLE CARCASSES	3.4	mg/kg	C		RCBRA
181	MULTIPLE CARCASSES	3.6	mg/kg	C		RCBRA
182	MULTIPLE CARCASSES	1.5	mg/kg	C		RCBRA
183	MULTIPLE CARCASSES	1.5	mg/kg	C		RCBRA
184	MULTIPLE CARCASSES	3.7	mg/kg	C		RCBRA
185	MULTIPLE CARCASSES	3.2	mg/kg	C		RCBRA
186	MULTIPLE CARCASSES	1.9	mg/kg	C		RCBRA
187	MULTIPLE CARCASSES	3.9	mg/kg	C		RCBRA
188	MULTIPLE CARCASSES	2.3	mg/kg	C		RCBRA
189	MULTIPLE CARCASSES	3.8	mg/kg	C		RCBRA
190	MULTIPLE CARCASSES	3.4	mg/kg	C		RCBRA
191	MULTIPLE CARCASSES	2.8	mg/kg	C		RCBRA
192	MULTIPLE CARCASSES	2.9	mg/kg			RCBRA
193	MULTIPLE CARCASSES	2.2	mg/kg			RCBRA
194	MULTIPLE CARCASSES	2	mg/kg	C		RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
195	Barium	7440-39-3	RCBRA Rip 8	D/H	RIPARIAN	578698.584	152233.645
196	Barium	7440-39-3	RCBRA Rip 9	D/H	RIPARIAN	578153.643	152801.452
197	Barium	7440-39-3	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
198	Barium	7440-39-3	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
199	Barium	7440-39-3	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
200	Barium	7440-39-3	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
201	Barium	7440-39-3	RCBRA Yak Rdg 2	Outside decision areas	UPLAND	559031.557	135576.407
202	Barium	7440-39-3	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764
203	Barium	7440-39-3	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
204	Barium	7440-39-3	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
205	Barium	7440-39-3	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
206	Barium	7440-39-3	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
207	Barium	7440-39-3	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
208	Barium	7440-39-3	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
209	Barium	7440-39-3	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
210	Barium	7440-39-3	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
211	Barium	7440-39-3	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
212	Barium	7440-39-3	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
213	Barium	7440-39-3	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
214	Barium	7440-39-3	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
215	Barium	7440-39-3	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
216	Barium	7440-39-3	U POND	Outside decision areas	UPLAND	566379.63	134457.045
217	Barium	7440-39-3	U POND	Outside decision areas	UPLAND	566379.63	134457.045
218	Barium	7440-39-3	U POND	Outside decision areas	UPLAND	566379.63	134457.045
219	Barium	7440-39-3	U POND	Outside decision areas	UPLAND	566379.63	134457.045
220	Calcium	7440-70-2	RCBRA 100-D-48	D/H	UPLAND	573841.527	151914.538
221	Calcium	7440-70-2	RCBRA 100-D-49	D/H	UPLAND	573938.06	151944.123
222	Calcium	7440-70-2	RCBRA 100-F-2	IU2/IU6	UPLAND	579728.068	147001.117
223	Calcium	7440-70-2	RCBRA 116-DR-1&2	D/H	UPLAND	574007.817	152246.748
224	Calcium	7440-70-2	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
225	Calcium	7440-70-2	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
226	Calcium	7440-70-2	RCBRA 1607-D2:1	D/H	UPLAND	573823.924	152260.319
227	Calcium	7440-70-2	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
228	Calcium	7440-70-2	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
229	Calcium	7440-70-2	RCBRA 2a Rip	BC	RIPARIAN	564618.501	145284.526
230	Calcium	7440-70-2	RCBRA 2c Rip	K	RIPARIAN	567598.2	146210.159
231	Calcium	7440-70-2	RCBRA 2f Rip	D/H	RIPARIAN	576222.844	154297.511
232	Calcium	7440-70-2	RCBRA 2j Rip	IU2/IU6	RIPARIAN	579360.971	150092.048
233	Calcium	7440-70-2	RCBRA 2l Rip	IU2/IU6	RIPARIAN	582341.212	146120.069

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
195	3/22/2006	J11921	SOIL and BIOTA	MIS	71.1	mg/kg	MOUSE
196	3/22/2006	J11922	SOIL and BIOTA	MIS	65.7	mg/kg	MOUSE
197	4/3/2006	J11KM6	SOIL and BIOTA	MIS	110	mg/kg	MOUSE
198	4/3/2006	J11KM6	SOIL and BIOTA	MIS-phyt	113	mg/kg	MOUSE
199	4/3/2006	J11KM4	SOIL and BIOTA	MIS	93.5	mg/kg	MOUSE
200	4/3/2006	J11KM4	SOIL and BIOTA	MIS-phyt	92.6	mg/kg	MOUSE
201	4/3/2006	J11KM3	SOIL and BIOTA	MIS	131	mg/kg	MOUSE
202	5/12/2005	B1CVD8	SOIL and BIOTA	Discrete	88.5	mg/kg	MOUSE
203	6/2/2005	B1CVH0	SOIL and BIOTA	Discrete	88.5	mg/kg	MOUSE
204	5/31/2005	B1CVF7	SOIL and BIOTA	Discrete	88.5	mg/kg	MOUSE
205	6/7/2005	B1CVH1	SOIL and BIOTA	Discrete	88.5	mg/kg	MOUSE
206	6/2/2005	B1CVF9	SOIL and BIOTA	Discrete	88.5	mg/kg	MOUSE
207	4/25/2005	B1CVB3	SOIL and BIOTA	Discrete	88.4	mg/kg	MOUSE
208	4/25/2005	B1CVB4	SOIL and BIOTA	Discrete	88.4	mg/kg	MOUSE
209	4/25/2005	B1CVB2	SOIL and BIOTA	Discrete	88.4	mg/kg	MOUSE
210	5/3/2005	B1CVC3	SOIL and BIOTA	Discrete	100	mg/kg	MOUSE
211	5/2/2005	B1CVC2	SOIL and BIOTA	Discrete	100	mg/kg	MOUSE
212	4/28/2005	B1CVC0	SOIL and BIOTA	Discrete	100	mg/kg	MOUSE
213	4/28/2005	B1CVB9	SOIL and BIOTA	Discrete	100	mg/kg	MOUSE
214	5/4/2005	B1CVC7	SOIL and BIOTA	Discrete	83.7	mg/kg	MOUSE
215	5/3/2005	B1CVC5	SOIL and BIOTA	Discrete	83.7	mg/kg	MOUSE
216	4/28/2005	B1CVB7	SOIL and BIOTA	Discrete	85.8	mg/kg	MOUSE
217	5/2/2005	B1CVB8	SOIL and BIOTA	Discrete	85.8	mg/kg	MOUSE
218	5/11/2005	B1CVD6	SOIL and BIOTA	Discrete	85.8	mg/kg	MOUSE
219	5/11/2005	B1CVD5	SOIL and BIOTA	Discrete	85.8	mg/kg	MOUSE
220	4/5/2006	J11KV1	SOIL and BIOTA	MIS	6850	mg/kg	MOUSE
221	4/5/2006	J11KV2	SOIL and BIOTA	MIS	6110	mg/kg	MOUSE
222	4/21/2006	J11L22	SOIL and BIOTA	MIS	7070	mg/kg	MOUSE
223	4/3/2006	J11L21	SOIL and BIOTA	MIS	5650	mg/kg	MOUSE
224	4/20/2006	J11KL7	SOIL and BIOTA	MIS	3970	mg/kg	MOUSE
225	4/20/2006	J11KL7	SOIL and BIOTA	MIS-phyt	3990	mg/kg	MOUSE
226	4/5/2006	J11KM0	SOIL and BIOTA	MIS	7420	mg/kg	MOUSE
227	4/5/2006	J11KL5	SOIL and BIOTA	MIS	10400	mg/kg	MOUSE
228	4/5/2006	J11KL5	SOIL and BIOTA	MIS-phyt	10000	mg/kg	MOUSE
229	6/6/2007	J14XP2	SOIL and BIOTA	MIS	3240	mg/kg	MOUSE
230	6/6/2007	J14XP9	SOIL and BIOTA	MIS	4460	mg/kg	MOUSE
231	6/6/2007	J14XP3	SOIL and BIOTA	MIS	4250	mg/kg	MOUSE
232	6/6/2007	J14XP4	SOIL and BIOTA	MIS	4960	mg/kg	MOUSE
233	6/6/2007	J14XP5	SOIL and BIOTA	MIS	3930	mg/kg	MOUSE

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
195	MULTIPLE CARCASSES	1.6	mg/kg	C		RCBRA
196	MULTIPLE CARCASSES	3	mg/kg	C		RCBRA
197	MULTIPLE CARCASSES	6.6	mg/kg	C		RCBRA
198	MULTIPLE CARCASSES	6.6	mg/kg	C		RCBRA
199	MULTIPLE CARCASSES	3.6	mg/kg	C		RCBRA
200	MULTIPLE CARCASSES	3.6	mg/kg	C		RCBRA
201	MULTIPLE CARCASSES	3.2	mg/kg	C		RCBRA
202	WHOLEORG	3.45	mg/kg			CP
203	WHOLEORG	5.63	mg/kg			CP
204	WHOLEORG	4.6	mg/kg			CP
205	WHOLEORG	2.68	mg/kg			CP
206	WHOLEORG	5.11	mg/kg			CP
207	WHOLEORG	3.48	mg/kg			CP
208	WHOLEORG	4.73	mg/kg			CP
209	WHOLEORG	4.12	mg/kg			CP
210	WHOLEORG	7.05	mg/kg			CP
211	WHOLEORG	3.76	mg/kg			CP
212	WHOLEORG	5.8	mg/kg			CP
213	WHOLEORG	5.47	mg/kg			CP
214	WHOLEORG	3.71	mg/kg			CP
215	WHOLEORG	3.01	mg/kg			CP
216	WHOLEORG	6.92	mg/kg			CP
217	WHOLEORG	4.29	mg/kg			CP
218	WHOLEORG	4.44	mg/kg			CP
219	WHOLEORG	3.67	mg/kg			CP
220	MULTIPLE CARCASSES	8940	mg/kg			RCBRA
221	MULTIPLE CARCASSES	17400	mg/kg			RCBRA
222	MULTIPLE CARCASSES	6890	mg/kg	C		RCBRA
223	MULTIPLE CARCASSES	18900	mg/kg			RCBRA
224	MULTIPLE CARCASSES	14400	mg/kg	C		RCBRA
225	MULTIPLE CARCASSES	14400	mg/kg	C		RCBRA
226	MULTIPLE CARCASSES	7900	mg/kg			RCBRA
227	MULTIPLE CARCASSES	13500	mg/kg			RCBRA
228	MULTIPLE CARCASSES	13500	mg/kg			RCBRA
229	MULTIPLE CARCASSES	10300	mg/kg	C		RCBRA
230	MULTIPLE CARCASSES	10500	mg/kg	C		RCBRA
231	MULTIPLE CARCASSES	2230	mg/kg	C		RCBRA
232	MULTIPLE CARCASSES	8090	mg/kg	C		RCBRA
233	MULTIPLE CARCASSES	14800	mg/kg	C		RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
234	Calcium	7440-70-2	RCBRA 300-49	300	UPLAND	594318.994	116830.934
235	Calcium	7440-70-2	RCBRA 3b Rip	IU2/IU6	RIPARIAN	584961.205	141035.835
236	Calcium	7440-70-2	RCBRA 4a Rip	IU2/IU6	RIPARIAN	589347.5	137480.985
237	Calcium	7440-70-2	RCBRA 5c Rip	300	RIPARIAN	594509.985	124869.182
238	Calcium	7440-70-2	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
239	Calcium	7440-70-2	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
240	Calcium	7440-70-2	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
241	Calcium	7440-70-2	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
242	Calcium	7440-70-2	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
243	Calcium	7440-70-2	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
244	Calcium	7440-70-2	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
245	Calcium	7440-70-2	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
246	Calcium	7440-70-2	RCBRA 600-181	IU2/IU6	UPLAND	578303.83	147316.698
247	Calcium	7440-70-2	RCBRA 600-204	IU2/IU6	UPLAND	580128.485	144762.219
248	Calcium	7440-70-2	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
249	Calcium	7440-70-2	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
250	Calcium	7440-70-2	RCBRA 600-23	IU2/IU6	UPLAND	585523.593	130481.377
251	Calcium	7440-70-2	RCBRA 618-4	300	UPLAND	593954.946	117064.473
252	Calcium	7440-70-2	RCBRA 628-1	IU2/IU6	UPLAND	577797.524	148745.681
253	Calcium	7440-70-2	RCBRA Bev Ref 1 Rip	Outside decision areas	RIPARIAN	542428.846	167701.261
254	Calcium	7440-70-2	RCBRA Bev Ref 2 Rip	Outside decision areas	RIPARIAN	541493.988	167808.357
255	Calcium	7440-70-2	RCBRA CP Ref 2	IU2/IU6	UPLAND	563789.959	139793.869
256	Calcium	7440-70-2	RCBRA JA JONES	300	UPLAND	593874.58	120013.908
257	Calcium	7440-70-2	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
258	Calcium	7440-70-2	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
259	Calcium	7440-70-2	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
260	Calcium	7440-70-2	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
261	Calcium	7440-70-2	RCBRA Pit 18	IU2/IU6	UPLAND	580697.058	145311.464
262	Calcium	7440-70-2	RCBRA Pit 23	IU2/IU6	UPLAND	572381.012	144874.157
263	Calcium	7440-70-2	RCBRA Pit 24	BC	UPLAND	563395.814	145119.007
264	Calcium	7440-70-2	RCBRA Pit 9	300	UPLAND	592807.103	120587.7
265	Calcium	7440-70-2	RCBRA R Ref 11	Outside decision areas	RIPARIAN	559400.735	146458.486
266	Calcium	7440-70-2	RCBRA R Ref 12	IU2/IU6	RIPARIAN	559201.908	145747.542
267	Calcium	7440-70-2	RCBRA R Ref 13	Outside decision areas	RIPARIAN	558572.809	145345.115
268	Calcium	7440-70-2	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
269	Calcium	7440-70-2	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
270	Calcium	7440-70-2	RCBRA R Ref 16	Outside decision areas	RIPARIAN	557650.029	144826.748
271	Calcium	7440-70-2	RCBRA Rip 1	D/H	RIPARIAN	577251.869	153659.195
272	Calcium	7440-70-2	RCBRA Rip 10	D/H	RIPARIAN	573987.873	153082.19

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
234	4/21/2006	J11KL9	SOIL and BIOTA	MIS	4480	mg/kg	MOUSE
235	6/6/2007	J14XP6	SOIL and BIOTA	MIS	4260	mg/kg	MOUSE
236	6/6/2007	J14XP8	SOIL and BIOTA	MIS	4890	mg/kg	MOUSE
237	6/6/2007	J14XP7	SOIL and BIOTA	MIS	3580	mg/kg	MOUSE
238	4/5/2006	J11L25	SOIL and BIOTA	MIS	3310	mg/kg	MOUSE
239	4/5/2006	J11L25	SOIL and BIOTA	MIS-phyt	4730	mg/kg	MOUSE
240	4/5/2006	J11KK8	SOIL and BIOTA	MIS	3520	mg/kg	MOUSE
241	4/5/2006	J11KK8	SOIL and BIOTA	MIS-phyt	4010	mg/kg	MOUSE
242	4/20/2006	J11KK9	SOIL and BIOTA	MIS	5190	mg/kg	MOUSE
243	4/20/2006	J11KK9	SOIL and BIOTA	MIS-phyt	5960	mg/kg	MOUSE
244	4/20/2006	J11KL4	SOIL and BIOTA	MIS	3700	mg/kg	MOUSE
245	4/20/2006	J11KL4	SOIL and BIOTA	MIS-phyt	4210	mg/kg	MOUSE
246	4/20/2006	J11KL2	SOIL and BIOTA	MIS	3320	mg/kg	MOUSE
247	4/20/2006	J11KL0	SOIL and BIOTA	MIS	3510	mg/kg	MOUSE
248	4/20/2006	J11KL1	SOIL and BIOTA	MIS	5270	mg/kg	MOUSE
249	4/20/2006	J11KL1	SOIL and BIOTA	MIS-phyt	4470	mg/kg	MOUSE
250	4/21/2006	J11KK7	SOIL and BIOTA	MIS	5750	mg/kg	MOUSE
251	4/21/2006	J11KL8	SOIL and BIOTA	MIS	4950	mg/kg	MOUSE
252	4/20/2006	J11KL3	SOIL and BIOTA	MIS	7540	mg/kg	MOUSE
253	6/6/2007	J14XN9	SOIL and BIOTA	MIS	3790	mg/kg	MOUSE
254	6/6/2007	J14XP0	SOIL and BIOTA	MIS	4430	mg/kg	MOUSE
255	4/3/2006	J11L36	SOIL and BIOTA	MIS	2980	mg/kg	MOUSE
256	4/21/2006	J11L24	SOIL and BIOTA	MIS	4480	mg/kg	MOUSE
257	4/3/2006	J11KM5	SOIL and BIOTA	MIS	8060	mg/kg	MOUSE
258	4/3/2006	J11KM5	SOIL and BIOTA	MIS-phyt	9180	mg/kg	MOUSE
259	4/20/2006	J11KK5	SOIL and BIOTA	MIS	8620	mg/kg	MOUSE
260	4/20/2006	J11XY0	SOIL and BIOTA	MIS	8620	mg/kg	MOUSE
261	4/20/2006	J11KK6	SOIL and BIOTA	MIS	5180	mg/kg	MOUSE
262	4/3/2006	J11L23	SOIL and BIOTA	MIS	5020	mg/kg	MOUSE
263	4/3/2006	J11KM2	SOIL and BIOTA	MIS	4230	mg/kg	MOUSE
264	4/21/2006	J11KM1	SOIL and BIOTA	MIS	6380	mg/kg	MOUSE
265	3/22/2006	J11924	SOIL and BIOTA	MIS	4150	mg/kg	MOUSE
266	3/23/2006	J11912	SOIL and BIOTA	MIS	3980	mg/kg	MOUSE
267	3/23/2006	J11913	SOIL and BIOTA	MIS	5640	mg/kg	MOUSE
268	6/6/2007	J14XP1	SOIL and BIOTA	MIS	5225	mg/kg	MOUSE
269	3/23/2006	J11925	SOIL and BIOTA	MIS	5225	mg/kg	MOUSE
270	3/23/2006	J11914	SOIL and BIOTA	MIS	4600	mg/kg	MOUSE
271	3/21/2006	J11916	SOIL and BIOTA	MIS	4980	mg/kg	MOUSE
272	3/22/2006	J11923	SOIL and BIOTA	MIS	3590	mg/kg	MOUSE

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
234	MULTIPLE CARCASSES	10500	mg/kg	C		RCBRA
235	MULTIPLE CARCASSES	15000	mg/kg	C		RCBRA
236	MULTIPLE CARCASSES	10400	mg/kg	C		RCBRA
237	MULTIPLE CARCASSES	8160	mg/kg	C		RCBRA
238	MULTIPLE CARCASSES	14300	mg/kg			RCBRA
239	MULTIPLE CARCASSES	14300	mg/kg			RCBRA
240	MULTIPLE CARCASSES	9790	mg/kg			RCBRA
241	MULTIPLE CARCASSES	9790	mg/kg			RCBRA
242	MULTIPLE CARCASSES	9580	mg/kg	C		RCBRA
243	MULTIPLE CARCASSES	9580	mg/kg	C		RCBRA
244	MULTIPLE CARCASSES	14100	mg/kg	C		RCBRA
245	MULTIPLE CARCASSES	14100	mg/kg	C		RCBRA
246	MULTIPLE CARCASSES	9000	mg/kg	C		RCBRA
247	MULTIPLE CARCASSES	11000	mg/kg	C		RCBRA
248	MULTIPLE CARCASSES	12500	mg/kg	C		RCBRA
249	MULTIPLE CARCASSES	12500	mg/kg	C		RCBRA
250	MULTIPLE CARCASSES	15500	mg/kg	C		RCBRA
251	MULTIPLE CARCASSES	11500	mg/kg	C		RCBRA
252	MULTIPLE CARCASSES	18200	mg/kg	C		RCBRA
253	MULTIPLE CARCASSES	12300	mg/kg	C		RCBRA
254	MULTIPLE CARCASSES	8380	mg/kg	C		RCBRA
255	MULTIPLE CARCASSES	11200	mg/kg			RCBRA
256	MULTIPLE CARCASSES	9080	mg/kg	C		RCBRA
257	MULTIPLE CARCASSES	12800	mg/kg			RCBRA
258	MULTIPLE CARCASSES	12800	mg/kg			RCBRA
259	MULTIPLE CARCASSES	8280	mg/kg	C		RCBRA
260	MULTIPLE CARCASSES	9420	mg/kg	C		RCBRA
261	MULTIPLE CARCASSES	8110	mg/kg	C		RCBRA
262	MULTIPLE CARCASSES	18400	mg/kg			RCBRA
263	MULTIPLE CARCASSES	6810	mg/kg			RCBRA
264	MULTIPLE CARCASSES	9880	mg/kg	C		RCBRA
265	MULTIPLE CARCASSES	10100	mg/kg	C		RCBRA
266	MULTIPLE CARCASSES	14000	mg/kg	C		RCBRA
267	MULTIPLE CARCASSES	6220	mg/kg	C		RCBRA
268	MULTIPLE CARCASSES	6240	mg/kg	C		RCBRA
269	MULTIPLE CARCASSES	11800	mg/kg	C		RCBRA
270	MULTIPLE CARCASSES	9290	mg/kg	C		RCBRA
271	MULTIPLE CARCASSES	8410	mg/kg	C		RCBRA
272	MULTIPLE CARCASSES	18100	mg/kg	C		RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
273	Calcium	7440-70-2	RCBRA Rip 2	D/H	RIPARIAN	573603.219	152471.6
274	Calcium	7440-70-2	RCBRA Rip 3	D/H	RIPARIAN	572639.65	151677.812
275	Calcium	7440-70-2	RCBRA Rip 4	N	RIPARIAN	570558.596	148981.547
276	Calcium	7440-70-2	RCBRA Rip 5	K	RIPARIAN	569141.025	147521.561
277	Calcium	7440-70-2	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
278	Calcium	7440-70-2	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
279	Calcium	7440-70-2	RCBRA Rip 7	IU2/IU6	RIPARIAN	581326.914	147825.17
280	Calcium	7440-70-2	RCBRA Rip 8	D/H	RIPARIAN	578698.584	152233.645
281	Calcium	7440-70-2	RCBRA Rip 9	D/H	RIPARIAN	578153.643	152801.452
282	Calcium	7440-70-2	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
283	Calcium	7440-70-2	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
284	Calcium	7440-70-2	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
285	Calcium	7440-70-2	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
286	Calcium	7440-70-2	RCBRA Yak Rdg 2	Outside decision areas	UPLAND	559031.557	135576.407
287	Calculated Total Uranium	calc_tot_U	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
288	Calculated Total Uranium	calc_tot_U	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
289	Calculated Total Uranium	calc_tot_U	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764
290	Calculated Total Uranium	calc_tot_U	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764
291	Calculated Total Uranium	calc_tot_U	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764
292	Calculated Total Uranium	calc_tot_U	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
293	Calculated Total Uranium	calc_tot_U	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
294	Calculated Total Uranium	calc_tot_U	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
295	Calculated Total Uranium	calc_tot_U	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
296	Calculated Total Uranium	calc_tot_U	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
297	Calculated Total Uranium	calc_tot_U	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
298	Calculated Total Uranium	calc_tot_U	B POND	Outside decision areas	UPLAND	576356.769	136881.272
299	Calculated Total Uranium	calc_tot_U	B POND	Outside decision areas	UPLAND	576356.769	136881.272
300	Calculated Total Uranium	calc_tot_U	B POND	Outside decision areas	UPLAND	576356.769	136881.272
301	Calculated Total Uranium	calc_tot_U	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
302	Calculated Total Uranium	calc_tot_U	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
303	Calculated Total Uranium	calc_tot_U	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
304	Calculated Total Uranium	calc_tot_U	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
305	Calculated Total Uranium	calc_tot_U	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
306	Calculated Total Uranium	calc_tot_U	U POND	Outside decision areas	UPLAND	566379.63	134457.045
307	Calculated Total Uranium	calc_tot_U	U POND	Outside decision areas	UPLAND	566379.63	134457.045
308	Calculated Total Uranium	calc_tot_U	U POND	Outside decision areas	UPLAND	566379.63	134457.045
309	Cadmium	7440-43-9	RCBRA 2j Rip	IU2/IU6	RIPARIAN	579360.971	150092.048
310	Cadmium	7440-43-9	RCBRA 3b Rip	IU2/IU6	RIPARIAN	584961.205	141035.835
311	Cadmium	7440-43-9	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
273	3/21/2006	J11917	SOIL and BIOTA	MIS	4000	mg/kg	MOUSE
274	3/22/2006	J11918	SOIL and BIOTA	MIS	4180	mg/kg	MOUSE
275	3/22/2006	J11910	SOIL and BIOTA	MIS	4500	mg/kg	MOUSE
276	3/22/2006	J11911	SOIL and BIOTA	MIS	5100	mg/kg	MOUSE
277	4/20/2006	J11919	SOIL and BIOTA	MIS	4660	mg/kg	MOUSE
278	4/20/2006	J11XY1	SOIL and BIOTA	MIS	4660	mg/kg	MOUSE
279	3/22/2006	J11920	SOIL and BIOTA	MIS	4290	mg/kg	MOUSE
280	3/22/2006	J11921	SOIL and BIOTA	MIS	4040	mg/kg	MOUSE
281	3/22/2006	J11922	SOIL and BIOTA	MIS	4190	mg/kg	MOUSE
282	4/3/2006	J11KM6	SOIL and BIOTA	MIS	4720	mg/kg	MOUSE
283	4/3/2006	J11KM6	SOIL and BIOTA	MIS-phyt	5110	mg/kg	MOUSE
284	4/3/2006	J11KM4	SOIL and BIOTA	MIS	3020	mg/kg	MOUSE
285	4/3/2006	J11KM4	SOIL and BIOTA	MIS-phyt	3460	mg/kg	MOUSE
286	4/3/2006	J11KM3	SOIL and BIOTA	MIS	6110	mg/kg	MOUSE
287	4/5/2006	J11KK8	SOIL and BIOTA	MIS	0.633324822	mg/kg	MOUSE
288	4/20/2006	J11XY1	SOIL and BIOTA	MIS	4.613362549	mg/kg	MOUSE
289	5/11/2005	B1CVD3	SOIL and BIOTA	Discrete	0.451080745	mg/kg	MOUSE
290	5/11/2005	B1CVD1	SOIL and BIOTA	Discrete	0.451080745	mg/kg	MOUSE
291	5/11/2005	B1F2V6	SOIL and BIOTA	Discrete	0.451080745	mg/kg	MOUSE
292	6/1/2005	B1CVF8	SOIL and BIOTA	Discrete	0.483159075	mg/kg	MOUSE
293	6/2/2005	B1CVF9	SOIL and BIOTA	Discrete	0.483159075	mg/kg	MOUSE
294	6/7/2005	B1CVH1	SOIL and BIOTA	Discrete	0.483159075	mg/kg	MOUSE
295	4/25/2005	B1CVB3	SOIL and BIOTA	Discrete	0.539442144	mg/kg	MOUSE
296	4/25/2005	B1CVB1	SOIL and BIOTA	Discrete	0.539442144	mg/kg	MOUSE
297	4/21/2005	B1CVB0	SOIL and BIOTA	Discrete	0.539442144	mg/kg	MOUSE
298	5/18/2005	B1CVF3	SOIL and BIOTA	Discrete	0.540827812	mg/kg	MOUSE
299	5/13/2005	B1F2V1	SOIL and BIOTA	Discrete	0.540827812	mg/kg	MOUSE
300	5/17/2005	B1CVF2	SOIL and BIOTA	Discrete	0.540827812	mg/kg	MOUSE
301	4/29/2005	B1CVC1	SOIL and BIOTA	Discrete	0.567823211	mg/kg	MOUSE
302	5/2/2005	B1CVC2	SOIL and BIOTA	Discrete	0.567823211	mg/kg	MOUSE
303	5/5/2005	B1CVC4	SOIL and BIOTA	Discrete	0.567823211	mg/kg	MOUSE
304	5/3/2005	B1CVC6	SOIL and BIOTA	Discrete	0.452932597	mg/kg	MOUSE
305	5/3/2005	B1CVC5	SOIL and BIOTA	Discrete	0.452932597	mg/kg	MOUSE
306	4/28/2005	B1CVB7	SOIL and BIOTA	Discrete	0.424095008	mg/kg	MOUSE
307	4/28/2005	B1CVB6	SOIL and BIOTA	Discrete	0.424095008	mg/kg	MOUSE
308	5/11/2005	B1CVD6	SOIL and BIOTA	Discrete	0.424095008	mg/kg	MOUSE
309	6/6/2007	J14XP4	SOIL and BIOTA	MIS	2.4	mg/kg	MOUSE
310	6/6/2007	J14XP6	SOIL and BIOTA	MIS	1.7	mg/kg	MOUSE
311	4/20/2006	J11KK9	SOIL and BIOTA	MIS	0.7	mg/kg	MOUSE

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
273	MULTIPLE CARCASSES	9210	mg/kg	C		RCBRA
274	MULTIPLE CARCASSES	13500	mg/kg	C		RCBRA
275	MULTIPLE CARCASSES	10900	mg/kg	C		RCBRA
276	MULTIPLE CARCASSES	12700	mg/kg	C		RCBRA
277	MULTIPLE CARCASSES	9300	mg/kg	C		RCBRA
278	MULTIPLE CARCASSES	8600	mg/kg	C		RCBRA
279	MULTIPLE CARCASSES	10800	mg/kg	C		RCBRA
280	MULTIPLE CARCASSES	7640	mg/kg	C		RCBRA
281	MULTIPLE CARCASSES	14300	mg/kg	C		RCBRA
282	MULTIPLE CARCASSES	17900	mg/kg			RCBRA
283	MULTIPLE CARCASSES	17900	mg/kg			RCBRA
284	MULTIPLE CARCASSES	11800	mg/kg			RCBRA
285	MULTIPLE CARCASSES	11800	mg/kg			RCBRA
286	MULTIPLE CARCASSES	7450	mg/kg			RCBRA
287	MULTIPLE CARCASSES	1.77685383	mg/kg			RCBRA
288	MULTIPLE CARCASSES	2.871681504	mg/kg			RCBRA
289	WHOLEORG	0.066010605	mg/kg			CP
290	WHOLEORG	0.091076743	mg/kg			CP
291	WHOLEORG	0.113832252	mg/kg			CP
292	WHOLEORG	0.084069542	mg/kg			CP
293	WHOLEORG	0.343931447	mg/kg			CP
294	WHOLEORG	0.080029193	mg/kg			CP
295	WHOLEORG	0.097163492	mg/kg			CP
296	WHOLEORG	0.264366506	mg/kg			CP
297	WHOLEORG	0.148689487	mg/kg			CP
298	WHOLEORG	0.137902784	mg/kg			CP
299	WHOLEORG	0.132283506	mg/kg			CP
300	WHOLEORG	0.066012698	mg/kg			CP
301	WHOLEORG	0.166952151	mg/kg			CP
302	WHOLEORG	0.131226432	mg/kg			CP
303	WHOLEORG	0.149017115	mg/kg			CP
304	WHOLEORG	0.216089142	mg/kg			CP
305	WHOLEORG	0.096630205	mg/kg			CP
306	WHOLEORG	0.219797677	mg/kg			CP
307	WHOLEORG	0.19421049	mg/kg			CP
308	WHOLEORG	0.254382793	mg/kg			CP
309	MULTIPLE CARCASSES	0.05	mg/kg			RCBRA
310	MULTIPLE CARCASSES	0.05	mg/kg			RCBRA
311	MULTIPLE CARCASSES	0.07	mg/kg			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
312	Cadmium	7440-43-9	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
313	Cadmium	7440-43-9	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
314	Cadmium	7440-43-9	RCBRA 600-204	IU2/IU6	UPLAND	580128.485	144762.219
315	Cadmium	7440-43-9	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
316	Cadmium	7440-43-9	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
317	Cadmium	7440-43-9	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
318	Cadmium	7440-43-9	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
319	Cobalt	7440-48-4	RCBRA 100-F-2	IU2/IU6	UPLAND	579728.068	147001.117
320	Cobalt	7440-48-4	RCBRA 2l Rip	IU2/IU6	RIPARIAN	582341.212	146120.069
321	Cobalt	7440-48-4	RCBRA JA JONES	300	UPLAND	593874.58	120013.908
322	Chromium	7440-47-3	RCBRA 100-D-48	D/H	UPLAND	573841.527	151914.538
323	Chromium	7440-47-3	RCBRA 100-D-49	D/H	UPLAND	573938.06	151944.123
324	Chromium	7440-47-3	RCBRA 100-F-2	IU2/IU6	UPLAND	579728.068	147001.117
325	Chromium	7440-47-3	RCBRA 116-DR-1&2	D/H	UPLAND	574007.817	152246.748
326	Chromium	7440-47-3	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
327	Chromium	7440-47-3	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
328	Chromium	7440-47-3	RCBRA 1607-D2:1	D/H	UPLAND	573823.924	152260.319
329	Chromium	7440-47-3	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
330	Chromium	7440-47-3	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
331	Chromium	7440-47-3	RCBRA 2a Rip	BC	RIPARIAN	564618.501	145284.526
332	Chromium	7440-47-3	RCBRA 2c Rip	K	RIPARIAN	567598.2	146210.159
333	Chromium	7440-47-3	RCBRA 2f Rip	D/H	RIPARIAN	576222.844	154297.511
334	Chromium	7440-47-3	RCBRA 2j Rip	IU2/IU6	RIPARIAN	579360.971	150092.048
335	Chromium	7440-47-3	RCBRA 2l Rip	IU2/IU6	RIPARIAN	582341.212	146120.069
336	Chromium	7440-47-3	RCBRA 300-49	300	UPLAND	594318.994	116830.934
337	Chromium	7440-47-3	RCBRA 3b Rip	IU2/IU6	RIPARIAN	584961.205	141035.835
338	Chromium	7440-47-3	RCBRA 4a Rip	IU2/IU6	RIPARIAN	589347.5	137480.985
339	Chromium	7440-47-3	RCBRA 5c Rip	300	RIPARIAN	594509.985	124869.182
340	Chromium	7440-47-3	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
341	Chromium	7440-47-3	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
342	Chromium	7440-47-3	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
343	Chromium	7440-47-3	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
344	Chromium	7440-47-3	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
345	Chromium	7440-47-3	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
346	Chromium	7440-47-3	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
347	Chromium	7440-47-3	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
348	Chromium	7440-47-3	RCBRA 600-181	IU2/IU6	UPLAND	578303.83	147316.698
349	Chromium	7440-47-3	RCBRA 600-204	IU2/IU6	UPLAND	580128.485	144762.219
350	Chromium	7440-47-3	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
312	4/20/2006	J11KK9	SOIL and BIOTA	MIS-phyt	0.53	mg/kg	MOUSE
313	4/20/2006	J11KL4	SOIL and BIOTA	MIS	0.15	mg/kg	MOUSE
314	4/20/2006	J11KL0	SOIL and BIOTA	MIS	0.34	mg/kg	MOUSE
315	4/20/2006	J11KL1	SOIL and BIOTA	MIS	0.16	mg/kg	MOUSE
316	4/25/2005	B1CVB3	SOIL and BIOTA	Discrete	0.199	mg/kg	MOUSE
317	5/2/2005	B1CVC2	SOIL and BIOTA	Discrete	0.206	mg/kg	MOUSE
318	5/9/2005	B1CVD0	SOIL and BIOTA	Discrete	0.197	mg/kg	MOUSE
319	4/21/2006	J11L22	SOIL and BIOTA	MIS	7.4	mg/kg	MOUSE
320	6/6/2007	J14XP5	SOIL and BIOTA	MIS	8	mg/kg	MOUSE
321	4/21/2006	J11L24	SOIL and BIOTA	MIS	6.4	mg/kg	MOUSE
322	4/5/2006	J11KV1	SOIL and BIOTA	MIS	8.9	mg/kg	MOUSE
323	4/5/2006	J11KV2	SOIL and BIOTA	MIS	8.6	mg/kg	MOUSE
324	4/21/2006	J11L22	SOIL and BIOTA	MIS	18	mg/kg	MOUSE
325	4/3/2006	J11L21	SOIL and BIOTA	MIS	8	mg/kg	MOUSE
326	4/20/2006	J11KL7	SOIL and BIOTA	MIS	14.9	mg/kg	MOUSE
327	4/20/2006	J11KL7	SOIL and BIOTA	MIS-phyt	13.2	mg/kg	MOUSE
328	4/5/2006	J11KM0	SOIL and BIOTA	MIS	10.1	mg/kg	MOUSE
329	4/5/2006	J11KL5	SOIL and BIOTA	MIS	11.2	mg/kg	MOUSE
330	4/5/2006	J11KL5	SOIL and BIOTA	MIS-phyt	14.8	mg/kg	MOUSE
331	6/6/2007	J14XP2	SOIL and BIOTA	MIS	38.8	mg/kg	MOUSE
332	6/6/2007	J14XP9	SOIL and BIOTA	MIS	23.1	mg/kg	MOUSE
333	6/6/2007	J14XP3	SOIL and BIOTA	MIS	26.8	mg/kg	MOUSE
334	6/6/2007	J14XP4	SOIL and BIOTA	MIS	33.1	mg/kg	MOUSE
335	6/6/2007	J14XP5	SOIL and BIOTA	MIS	16.9	mg/kg	MOUSE
336	4/21/2006	J11KL9	SOIL and BIOTA	MIS	8.8	mg/kg	MOUSE
337	6/6/2007	J14XP6	SOIL and BIOTA	MIS	24.6	mg/kg	MOUSE
338	6/6/2007	J14XP8	SOIL and BIOTA	MIS	31.4	mg/kg	MOUSE
339	6/6/2007	J14XP7	SOIL and BIOTA	MIS	19.4	mg/kg	MOUSE
340	4/5/2006	J11L25	SOIL and BIOTA	MIS	9.4	mg/kg	MOUSE
341	4/5/2006	J11L25	SOIL and BIOTA	MIS-phyt	14.4	mg/kg	MOUSE
342	4/5/2006	J11KK8	SOIL and BIOTA	MIS	13	mg/kg	MOUSE
343	4/5/2006	J11KK8	SOIL and BIOTA	MIS-phyt	15	mg/kg	MOUSE
344	4/20/2006	J11KK9	SOIL and BIOTA	MIS	17.4	mg/kg	MOUSE
345	4/20/2006	J11KK9	SOIL and BIOTA	MIS-phyt	18.2	mg/kg	MOUSE
346	4/20/2006	J11KL4	SOIL and BIOTA	MIS	10.6	mg/kg	MOUSE
347	4/20/2006	J11KL4	SOIL and BIOTA	MIS-phyt	14.2	mg/kg	MOUSE
348	4/20/2006	J11KL2	SOIL and BIOTA	MIS	8.2	mg/kg	MOUSE
349	4/20/2006	J11KL0	SOIL and BIOTA	MIS	9	mg/kg	MOUSE
350	4/20/2006	J11KL1	SOIL and BIOTA	MIS	9.8	mg/kg	MOUSE

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
312	MULTIPLE CARCASSES	0.07	mg/kg			RCBRA
313	MULTIPLE CARCASSES	0.07	mg/kg			RCBRA
314	MULTIPLE CARCASSES	0.07	mg/kg			RCBRA
315	MULTIPLE CARCASSES	0.07	mg/kg			RCBRA
316	WHOLEORG	0.083	mg/kg			CP
317	WHOLEORG	0.08	mg/kg			CP
318	WHOLEORG	0.09	mg/kg			CP
319	MULTIPLE CARCASSES	0.13	mg/kg			RCBRA
320	MULTIPLE CARCASSES	0.08	mg/kg			RCBRA
321	MULTIPLE CARCASSES	0.2	mg/kg			RCBRA
322	MULTIPLE CARCASSES	0.61	mg/kg			RCBRA
323	MULTIPLE CARCASSES	0.61	mg/kg			RCBRA
324	MULTIPLE CARCASSES	0.66	mg/kg			RCBRA
325	MULTIPLE CARCASSES	0.7	mg/kg			RCBRA
326	MULTIPLE CARCASSES	0.5	mg/kg			RCBRA
327	MULTIPLE CARCASSES	0.5	mg/kg			RCBRA
328	MULTIPLE CARCASSES	0.46	mg/kg			RCBRA
329	MULTIPLE CARCASSES	0.6	mg/kg			RCBRA
330	MULTIPLE CARCASSES	0.6	mg/kg			RCBRA
331	MULTIPLE CARCASSES	0.35	mg/kg			RCBRA
332	MULTIPLE CARCASSES	0.68	mg/kg			RCBRA
333	MULTIPLE CARCASSES	0.13	mg/kg			RCBRA
334	MULTIPLE CARCASSES	0.56	mg/kg			RCBRA
335	MULTIPLE CARCASSES	0.65	mg/kg			RCBRA
336	MULTIPLE CARCASSES	0.73	mg/kg			RCBRA
337	MULTIPLE CARCASSES	0.56	mg/kg			RCBRA
338	MULTIPLE CARCASSES	0.45	mg/kg			RCBRA
339	MULTIPLE CARCASSES	0.46	mg/kg			RCBRA
340	MULTIPLE CARCASSES	0.65	mg/kg			RCBRA
341	MULTIPLE CARCASSES	0.65	mg/kg			RCBRA
342	MULTIPLE CARCASSES	0.41	mg/kg			RCBRA
343	MULTIPLE CARCASSES	0.41	mg/kg			RCBRA
344	MULTIPLE CARCASSES	0.52	mg/kg			RCBRA
345	MULTIPLE CARCASSES	0.52	mg/kg			RCBRA
346	MULTIPLE CARCASSES	0.44	mg/kg			RCBRA
347	MULTIPLE CARCASSES	0.44	mg/kg			RCBRA
348	MULTIPLE CARCASSES	0.37	mg/kg			RCBRA
349	MULTIPLE CARCASSES	0.5	mg/kg			RCBRA
350	MULTIPLE CARCASSES	0.51	mg/kg			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
351	Chromium	7440-47-3	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
352	Chromium	7440-47-3	RCBRA 600-23	IU2/IU6	UPLAND	585523.593	130481.377
353	Chromium	7440-47-3	RCBRA 618-4	300	UPLAND	593954.946	117064.473
354	Chromium	7440-47-3	RCBRA 628-1	IU2/IU6	UPLAND	577797.524	148745.681
355	Chromium	7440-47-3	RCBRA Bev Ref 1 Rip	Outside decision areas	RIPARIAN	542428.846	167701.261
356	Chromium	7440-47-3	RCBRA Bev Ref 2 Rip	Outside decision areas	RIPARIAN	541493.988	167808.357
357	Chromium	7440-47-3	RCBRA CP Ref 2	IU2/IU6	UPLAND	563789.959	139793.869
358	Chromium	7440-47-3	RCBRA JA JONES	300	UPLAND	593874.58	120013.908
359	Chromium	7440-47-3	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
360	Chromium	7440-47-3	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
361	Chromium	7440-47-3	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
362	Chromium	7440-47-3	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
363	Chromium	7440-47-3	RCBRA Pit 18	IU2/IU6	UPLAND	580697.058	145311.464
364	Chromium	7440-47-3	RCBRA Pit 23	IU2/IU6	UPLAND	572381.012	144874.157
365	Chromium	7440-47-3	RCBRA Pit 24	BC	UPLAND	563395.814	145119.007
366	Chromium	7440-47-3	RCBRA Pit 9	300	UPLAND	592807.103	120587.7
367	Chromium	7440-47-3	RCBRA R Ref 11	Outside decision areas	RIPARIAN	559400.735	146458.486
368	Chromium	7440-47-3	RCBRA R Ref 12	IU2/IU6	RIPARIAN	559201.908	145747.542
369	Chromium	7440-47-3	RCBRA R Ref 13	Outside decision areas	RIPARIAN	558572.809	145345.115
370	Chromium	7440-47-3	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
371	Chromium	7440-47-3	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
372	Chromium	7440-47-3	RCBRA R Ref 16	Outside decision areas	RIPARIAN	557650.029	144826.748
373	Chromium	7440-47-3	RCBRA Rip 1	D/H	RIPARIAN	577251.869	153659.195
374	Chromium	7440-47-3	RCBRA Rip 10	D/H	RIPARIAN	573987.873	153082.19
375	Chromium	7440-47-3	RCBRA Rip 2	D/H	RIPARIAN	573603.219	152471.6
376	Chromium	7440-47-3	RCBRA Rip 3	D/H	RIPARIAN	572639.65	151677.812
377	Chromium	7440-47-3	RCBRA Rip 4	N	RIPARIAN	570558.596	148981.547
378	Chromium	7440-47-3	RCBRA Rip 5	K	RIPARIAN	569141.025	147521.561
379	Chromium	7440-47-3	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
380	Chromium	7440-47-3	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
381	Chromium	7440-47-3	RCBRA Rip 7	IU2/IU6	RIPARIAN	581326.914	147825.17
382	Chromium	7440-47-3	RCBRA Rip 8	D/H	RIPARIAN	578698.584	152233.645
383	Chromium	7440-47-3	RCBRA Rip 9	D/H	RIPARIAN	578153.643	152801.452
384	Chromium	7440-47-3	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
385	Chromium	7440-47-3	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
386	Chromium	7440-47-3	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
387	Chromium	7440-47-3	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
388	Chromium	7440-47-3	RCBRA Yak Rdg 2	Outside decision areas	UPLAND	559031.557	135576.407
389	Chromium	7440-47-3	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
351	4/20/2006	J11KL1	SOIL and BIOTA	MIS-phyt	11.2	mg/kg	MOUSE
352	4/21/2006	J11KK7	SOIL and BIOTA	MIS	8.9	mg/kg	MOUSE
353	4/21/2006	J11KL8	SOIL and BIOTA	MIS	7.9	mg/kg	MOUSE
354	4/20/2006	J11KL3	SOIL and BIOTA	MIS	14.6	mg/kg	MOUSE
355	6/6/2007	J14XN9	SOIL and BIOTA	MIS	26.8	mg/kg	MOUSE
356	6/6/2007	J14XP0	SOIL and BIOTA	MIS	20.8	mg/kg	MOUSE
357	4/3/2006	J11L36	SOIL and BIOTA	MIS	8.5	mg/kg	MOUSE
358	4/21/2006	J11L24	SOIL and BIOTA	MIS	7.8	mg/kg	MOUSE
359	4/3/2006	J11KM5	SOIL and BIOTA	MIS	12.8	mg/kg	MOUSE
360	4/3/2006	J11KM5	SOIL and BIOTA	MIS-phyt	14.5	mg/kg	MOUSE
361	4/20/2006	J11KK5	SOIL and BIOTA	MIS	7.3	mg/kg	MOUSE
362	4/20/2006	J11XY0	SOIL and BIOTA	MIS	7.3	mg/kg	MOUSE
363	4/20/2006	J11KK6	SOIL and BIOTA	MIS	9.1	mg/kg	MOUSE
364	4/3/2006	J11L23	SOIL and BIOTA	MIS	5.3	mg/kg	MOUSE
365	4/3/2006	J11KM2	SOIL and BIOTA	MIS	10.1	mg/kg	MOUSE
366	4/21/2006	J11KM1	SOIL and BIOTA	MIS	7.8	mg/kg	MOUSE
367	3/22/2006	J11924	SOIL and BIOTA	MIS	21	mg/kg	MOUSE
368	3/23/2006	J11912	SOIL and BIOTA	MIS	15.4	mg/kg	MOUSE
369	3/23/2006	J11913	SOIL and BIOTA	MIS	23.1	mg/kg	MOUSE
370	6/6/2007	J14XP1	SOIL and BIOTA	MIS	23.55	mg/kg	MOUSE
371	3/23/2006	J11925	SOIL and BIOTA	MIS	23.55	mg/kg	MOUSE
372	3/23/2006	J11914	SOIL and BIOTA	MIS	20.1	mg/kg	MOUSE
373	3/21/2006	J11916	SOIL and BIOTA	MIS	23.8	mg/kg	MOUSE
374	3/22/2006	J11923	SOIL and BIOTA	MIS	29.1	mg/kg	MOUSE
375	3/21/2006	J11917	SOIL and BIOTA	MIS	48.7	mg/kg	MOUSE
376	3/22/2006	J11918	SOIL and BIOTA	MIS	13.7	mg/kg	MOUSE
377	3/22/2006	J11910	SOIL and BIOTA	MIS	66.3	mg/kg	MOUSE
378	3/22/2006	J11911	SOIL and BIOTA	MIS	40.1	mg/kg	MOUSE
379	4/20/2006	J11919	SOIL and BIOTA	MIS	21.5	mg/kg	MOUSE
380	4/20/2006	J11XY1	SOIL and BIOTA	MIS	21.5	mg/kg	MOUSE
381	3/22/2006	J11920	SOIL and BIOTA	MIS	141	mg/kg	MOUSE
382	3/22/2006	J11921	SOIL and BIOTA	MIS	22.2	mg/kg	MOUSE
383	3/22/2006	J11922	SOIL and BIOTA	MIS	28.9	mg/kg	MOUSE
384	4/3/2006	J11KM6	SOIL and BIOTA	MIS	12.2	mg/kg	MOUSE
385	4/3/2006	J11KM6	SOIL and BIOTA	MIS-phyt	14	mg/kg	MOUSE
386	4/3/2006	J11KM4	SOIL and BIOTA	MIS	12.5	mg/kg	MOUSE
387	4/3/2006	J11KM4	SOIL and BIOTA	MIS-phyt	15.6	mg/kg	MOUSE
388	4/3/2006	J11KM3	SOIL and BIOTA	MIS	14	mg/kg	MOUSE
389	5/11/2005	B1CVD1	SOIL and BIOTA	Discrete	9.42	mg/kg	MOUSE

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
351	MULTIPLE CARCASSES	0.51	mg/kg			RCBRA
352	MULTIPLE CARCASSES	0.57	mg/kg			RCBRA
353	MULTIPLE CARCASSES	0.49	mg/kg			RCBRA
354	MULTIPLE CARCASSES	0.51	mg/kg			RCBRA
355	MULTIPLE CARCASSES	0.56	mg/kg			RCBRA
356	MULTIPLE CARCASSES	0.67	mg/kg			RCBRA
357	MULTIPLE CARCASSES	0.48	mg/kg			RCBRA
358	MULTIPLE CARCASSES	0.68	mg/kg			RCBRA
359	MULTIPLE CARCASSES	0.84	mg/kg			RCBRA
360	MULTIPLE CARCASSES	0.84	mg/kg			RCBRA
361	MULTIPLE CARCASSES	0.47	mg/kg			RCBRA
362	MULTIPLE CARCASSES	0.54	mg/kg			RCBRA
363	MULTIPLE CARCASSES	0.37	mg/kg			RCBRA
364	MULTIPLE CARCASSES	0.65	mg/kg			RCBRA
365	MULTIPLE CARCASSES	0.46	mg/kg			RCBRA
366	MULTIPLE CARCASSES	0.54	mg/kg			RCBRA
367	MULTIPLE CARCASSES	0.42	mg/kg			RCBRA
368	MULTIPLE CARCASSES	0.85	mg/kg			RCBRA
369	MULTIPLE CARCASSES	0.91	mg/kg			RCBRA
370	MULTIPLE CARCASSES	0.53	mg/kg			RCBRA
371	MULTIPLE CARCASSES	0.69	mg/kg			RCBRA
372	MULTIPLE CARCASSES	0.72	mg/kg			RCBRA
373	MULTIPLE CARCASSES	0.62	mg/kg			RCBRA
374	MULTIPLE CARCASSES	0.76	mg/kg			RCBRA
375	MULTIPLE CARCASSES	0.8	mg/kg			RCBRA
376	MULTIPLE CARCASSES	0.83	mg/kg			RCBRA
377	MULTIPLE CARCASSES	0.8	mg/kg			RCBRA
378	MULTIPLE CARCASSES	0.63	mg/kg			RCBRA
379	MULTIPLE CARCASSES	0.54	mg/kg			RCBRA
380	MULTIPLE CARCASSES	0.5	mg/kg			RCBRA
381	MULTIPLE CARCASSES	0.87	mg/kg			RCBRA
382	MULTIPLE CARCASSES	0.46	mg/kg			RCBRA
383	MULTIPLE CARCASSES	0.57	mg/kg			RCBRA
384	MULTIPLE CARCASSES	0.74	mg/kg			RCBRA
385	MULTIPLE CARCASSES	0.74	mg/kg			RCBRA
386	MULTIPLE CARCASSES	0.45	mg/kg			RCBRA
387	MULTIPLE CARCASSES	0.45	mg/kg			RCBRA
388	MULTIPLE CARCASSES	0.47	mg/kg			RCBRA
389	WHOLEORG	4.74	mg/kg			CP

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
390	Chromium	7440-47-3	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764
391	Chromium	7440-47-3	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
392	Chromium	7440-47-3	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
393	Chromium	7440-47-3	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
394	Chromium	7440-47-3	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
395	Copper	7440-50-8	RCBRA 100-D-48	D/H	UPLAND	573841.527	151914.538
396	Copper	7440-50-8	RCBRA 100-D-49	D/H	UPLAND	573938.06	151944.123
397	Copper	7440-50-8	RCBRA 100-F-2	IU2/IU6	UPLAND	579728.068	147001.117
398	Copper	7440-50-8	RCBRA 116-DR-1&2	D/H	UPLAND	574007.817	152246.748
399	Copper	7440-50-8	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
400	Copper	7440-50-8	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
401	Copper	7440-50-8	RCBRA 1607-D2:1	D/H	UPLAND	573823.924	152260.319
402	Copper	7440-50-8	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
403	Copper	7440-50-8	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
404	Copper	7440-50-8	RCBRA 2a Rip	BC	RIPARIAN	564618.501	145284.526
405	Copper	7440-50-8	RCBRA 2c Rip	K	RIPARIAN	567598.2	146210.159
406	Copper	7440-50-8	RCBRA 2f Rip	D/H	RIPARIAN	576222.844	154297.511
407	Copper	7440-50-8	RCBRA 2j Rip	IU2/IU6	RIPARIAN	579360.971	150092.048
408	Copper	7440-50-8	RCBRA 2l Rip	IU2/IU6	RIPARIAN	582341.212	146120.069
409	Copper	7440-50-8	RCBRA 300-49	300	UPLAND	594318.994	116830.934
410	Copper	7440-50-8	RCBRA 3b Rip	IU2/IU6	RIPARIAN	584961.205	141035.835
411	Copper	7440-50-8	RCBRA 4a Rip	IU2/IU6	RIPARIAN	589347.5	137480.985
412	Copper	7440-50-8	RCBRA 5c Rip	300	RIPARIAN	594509.985	124869.182
413	Copper	7440-50-8	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
414	Copper	7440-50-8	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
415	Copper	7440-50-8	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
416	Copper	7440-50-8	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
417	Copper	7440-50-8	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
418	Copper	7440-50-8	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
419	Copper	7440-50-8	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
420	Copper	7440-50-8	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
421	Copper	7440-50-8	RCBRA 600-181	IU2/IU6	UPLAND	578303.83	147316.698
422	Copper	7440-50-8	RCBRA 600-204	IU2/IU6	UPLAND	580128.485	144762.219
423	Copper	7440-50-8	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
424	Copper	7440-50-8	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
425	Copper	7440-50-8	RCBRA 600-23	IU2/IU6	UPLAND	585523.593	130481.377
426	Copper	7440-50-8	RCBRA 618-4	300	UPLAND	593954.946	117064.473
427	Copper	7440-50-8	RCBRA 628-1	IU2/IU6	UPLAND	577797.524	148745.681
428	Copper	7440-50-8	RCBRA Bev Ref 1 Rip	Outside decision areas	RIPARIAN	542428.846	167701.261

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
390	5/12/2005	B1CVD8	SOIL and BIOTA	Discrete	9.42	mg/kg	MOUSE
391	4/25/2005	B1CVB4	SOIL and BIOTA	Discrete	11.5	mg/kg	MOUSE
392	4/25/2005	B1CVB2	SOIL and BIOTA	Discrete	11.5	mg/kg	MOUSE
393	5/3/2005	B1CVC3	SOIL and BIOTA	Discrete	16.9	mg/kg	MOUSE
394	5/4/2005	B1CVC7	SOIL and BIOTA	Discrete	8.63	mg/kg	MOUSE
395	4/5/2006	J11KV1	SOIL and BIOTA	MIS	14.5	mg/kg	MOUSE
396	4/5/2006	J11KV2	SOIL and BIOTA	MIS	14.3	mg/kg	MOUSE
397	4/21/2006	J11L22	SOIL and BIOTA	MIS	15.4	mg/kg	MOUSE
398	4/3/2006	J11L21	SOIL and BIOTA	MIS	14.9	mg/kg	MOUSE
399	4/20/2006	J11KL7	SOIL and BIOTA	MIS	11.9	mg/kg	MOUSE
400	4/20/2006	J11KL7	SOIL and BIOTA	MIS-phyt	11.4	mg/kg	MOUSE
401	4/5/2006	J11KM0	SOIL and BIOTA	MIS	13.6	mg/kg	MOUSE
402	4/5/2006	J11KL5	SOIL and BIOTA	MIS	26.1	mg/kg	MOUSE
403	4/5/2006	J11KL5	SOIL and BIOTA	MIS-phyt	24	mg/kg	MOUSE
404	6/6/2007	J14XP2	SOIL and BIOTA	MIS	23.8	mg/kg	MOUSE
405	6/6/2007	J14XP9	SOIL and BIOTA	MIS	33.1	mg/kg	MOUSE
406	6/6/2007	J14XP3	SOIL and BIOTA	MIS	29.9	mg/kg	MOUSE
407	6/6/2007	J14XP4	SOIL and BIOTA	MIS	38.8	mg/kg	MOUSE
408	6/6/2007	J14XP5	SOIL and BIOTA	MIS	17.7	mg/kg	MOUSE
409	4/21/2006	J11KL9	SOIL and BIOTA	MIS	18.7	mg/kg	MOUSE
410	6/6/2007	J14XP6	SOIL and BIOTA	MIS	44.9	mg/kg	MOUSE
411	6/6/2007	J14XP8	SOIL and BIOTA	MIS	43.4	mg/kg	MOUSE
412	6/6/2007	J14XP7	SOIL and BIOTA	MIS	22.9	mg/kg	MOUSE
413	4/5/2006	J11L25	SOIL and BIOTA	MIS	12.7	mg/kg	MOUSE
414	4/5/2006	J11L25	SOIL and BIOTA	MIS-phyt	14.5	mg/kg	MOUSE
415	4/5/2006	J11KK8	SOIL and BIOTA	MIS	13.1	mg/kg	MOUSE
416	4/5/2006	J11KK8	SOIL and BIOTA	MIS-phyt	12	mg/kg	MOUSE
417	4/20/2006	J11KK9	SOIL and BIOTA	MIS	44.5	mg/kg	MOUSE
418	4/20/2006	J11KK9	SOIL and BIOTA	MIS-phyt	38.5	mg/kg	MOUSE
419	4/20/2006	J11KL4	SOIL and BIOTA	MIS	13.4	mg/kg	MOUSE
420	4/20/2006	J11KL4	SOIL and BIOTA	MIS-phyt	14.1	mg/kg	MOUSE
421	4/20/2006	J11KL2	SOIL and BIOTA	MIS	11.1	mg/kg	MOUSE
422	4/20/2006	J11KL0	SOIL and BIOTA	MIS	13.1	mg/kg	MOUSE
423	4/20/2006	J11KL1	SOIL and BIOTA	MIS	12.8	mg/kg	MOUSE
424	4/20/2006	J11KL1	SOIL and BIOTA	MIS-phyt	11.2	mg/kg	MOUSE
425	4/21/2006	J11KK7	SOIL and BIOTA	MIS	12.4	mg/kg	MOUSE
426	4/21/2006	J11KL8	SOIL and BIOTA	MIS	9.7	mg/kg	MOUSE
427	4/20/2006	J11KL3	SOIL and BIOTA	MIS	21.3	mg/kg	MOUSE
428	6/6/2007	J14XN9	SOIL and BIOTA	MIS	32	mg/kg	MOUSE

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
390	WHOLEORG	1.29	mg/kg	B		CP
391	WHOLEORG	2.29	mg/kg	B		CP
392	WHOLEORG	2.32	mg/kg	B		CP
393	WHOLEORG	1.12	mg/kg	B		CP
394	WHOLEORG	1.58	mg/kg	B		CP
395	MULTIPLE CARCASSES	3	mg/kg	C		RCBRA
396	MULTIPLE CARCASSES	2.8	mg/kg	C		RCBRA
397	MULTIPLE CARCASSES	2.7	mg/kg			RCBRA
398	MULTIPLE CARCASSES	2.9	mg/kg	C		RCBRA
399	MULTIPLE CARCASSES	2.8	mg/kg			RCBRA
400	MULTIPLE CARCASSES	2.8	mg/kg			RCBRA
401	MULTIPLE CARCASSES	3.6	mg/kg	C		RCBRA
402	MULTIPLE CARCASSES	3.3	mg/kg	C		RCBRA
403	MULTIPLE CARCASSES	3.3	mg/kg	C		RCBRA
404	MULTIPLE CARCASSES	4.3	mg/kg	C		RCBRA
405	MULTIPLE CARCASSES	6.3	mg/kg	C		RCBRA
406	MULTIPLE CARCASSES	2	mg/kg	C		RCBRA
407	MULTIPLE CARCASSES	15.3	mg/kg	C		RCBRA
408	MULTIPLE CARCASSES	6.8	mg/kg	C		RCBRA
409	MULTIPLE CARCASSES	3.2	mg/kg			RCBRA
410	MULTIPLE CARCASSES	9.5	mg/kg	C		RCBRA
411	MULTIPLE CARCASSES	4.7	mg/kg	C		RCBRA
412	MULTIPLE CARCASSES	9.4	mg/kg	C		RCBRA
413	MULTIPLE CARCASSES	3.3	mg/kg	C		RCBRA
414	MULTIPLE CARCASSES	3.3	mg/kg	C		RCBRA
415	MULTIPLE CARCASSES	2.6	mg/kg	C		RCBRA
416	MULTIPLE CARCASSES	2.6	mg/kg	C		RCBRA
417	MULTIPLE CARCASSES	3	mg/kg			RCBRA
418	MULTIPLE CARCASSES	3	mg/kg			RCBRA
419	MULTIPLE CARCASSES	2.5	mg/kg			RCBRA
420	MULTIPLE CARCASSES	2.5	mg/kg			RCBRA
421	MULTIPLE CARCASSES	2.8	mg/kg			RCBRA
422	MULTIPLE CARCASSES	2.8	mg/kg			RCBRA
423	MULTIPLE CARCASSES	2.6	mg/kg			RCBRA
424	MULTIPLE CARCASSES	2.6	mg/kg			RCBRA
425	MULTIPLE CARCASSES	3.1	mg/kg			RCBRA
426	MULTIPLE CARCASSES	2.8	mg/kg			RCBRA
427	MULTIPLE CARCASSES	3.7	mg/kg			RCBRA
428	MULTIPLE CARCASSES	6.4	mg/kg	C		RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
429	Copper	7440-50-8	RCBRA Bev Ref 2 Rip	Outside decision areas	RIPARIAN	541493.988	167808.357
430	Copper	7440-50-8	RCBRA CP Ref 2	IU2/IU6	UPLAND	563789.959	139793.869
431	Copper	7440-50-8	RCBRA JA JONES	300	UPLAND	593874.58	120013.908
432	Copper	7440-50-8	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
433	Copper	7440-50-8	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
434	Copper	7440-50-8	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
435	Copper	7440-50-8	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
436	Copper	7440-50-8	RCBRA Pit 18	IU2/IU6	UPLAND	580697.058	145311.464
437	Copper	7440-50-8	RCBRA Pit 23	IU2/IU6	UPLAND	572381.012	144874.157
438	Copper	7440-50-8	RCBRA Pit 24	BC	UPLAND	563395.814	145119.007
439	Copper	7440-50-8	RCBRA Pit 9	300	UPLAND	592807.103	120587.7
440	Copper	7440-50-8	RCBRA R Ref 11	Outside decision areas	RIPARIAN	559400.735	146458.486
441	Copper	7440-50-8	RCBRA R Ref 12	IU2/IU6	RIPARIAN	559201.908	145747.542
442	Copper	7440-50-8	RCBRA R Ref 13	Outside decision areas	RIPARIAN	558572.809	145345.115
443	Copper	7440-50-8	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
444	Copper	7440-50-8	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
445	Copper	7440-50-8	RCBRA R Ref 16	Outside decision areas	RIPARIAN	557650.029	144826.748
446	Copper	7440-50-8	RCBRA Rip 1	D/H	RIPARIAN	577251.869	153659.195
447	Copper	7440-50-8	RCBRA Rip 10	D/H	RIPARIAN	573987.873	153082.19
448	Copper	7440-50-8	RCBRA Rip 2	D/H	RIPARIAN	573603.219	152471.6
449	Copper	7440-50-8	RCBRA Rip 3	D/H	RIPARIAN	572639.65	151677.812
450	Copper	7440-50-8	RCBRA Rip 4	N	RIPARIAN	570558.596	148981.547
451	Copper	7440-50-8	RCBRA Rip 5	K	RIPARIAN	569141.025	147521.561
452	Copper	7440-50-8	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
453	Copper	7440-50-8	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
454	Copper	7440-50-8	RCBRA Rip 7	IU2/IU6	RIPARIAN	581326.914	147825.17
455	Copper	7440-50-8	RCBRA Rip 8	D/H	RIPARIAN	578698.584	152233.645
456	Copper	7440-50-8	RCBRA Rip 9	D/H	RIPARIAN	578153.643	152801.452
457	Copper	7440-50-8	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
458	Copper	7440-50-8	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
459	Copper	7440-50-8	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
460	Copper	7440-50-8	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
461	Copper	7440-50-8	RCBRA Yak Rdg 2	Outside decision areas	UPLAND	559031.557	135576.407
462	Copper	7440-50-8	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764
463	Copper	7440-50-8	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764
464	Copper	7440-50-8	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764
465	Copper	7440-50-8	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764
466	Copper	7440-50-8	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764
467	Copper	7440-50-8	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
429	6/6/2007	J14XP0	SOIL and BIOTA	MIS	25.6	mg/kg	MOUSE
430	4/3/2006	J11L36	SOIL and BIOTA	MIS	10.8	mg/kg	MOUSE
431	4/21/2006	J11L24	SOIL and BIOTA	MIS	12.5	mg/kg	MOUSE
432	4/3/2006	J11KM5	SOIL and BIOTA	MIS	19.9	mg/kg	MOUSE
433	4/3/2006	J11KM5	SOIL and BIOTA	MIS-phyt	20.2	mg/kg	MOUSE
434	4/20/2006	J11KK5	SOIL and BIOTA	MIS	13.8	mg/kg	MOUSE
435	4/20/2006	J11XY0	SOIL and BIOTA	MIS	13.8	mg/kg	MOUSE
436	4/20/2006	J11KK6	SOIL and BIOTA	MIS	13.3	mg/kg	MOUSE
437	4/3/2006	J11L23	SOIL and BIOTA	MIS	16	mg/kg	MOUSE
438	4/3/2006	J11KM2	SOIL and BIOTA	MIS	15.7	mg/kg	MOUSE
439	4/21/2006	J11KM1	SOIL and BIOTA	MIS	13.9	mg/kg	MOUSE
440	3/22/2006	J11924	SOIL and BIOTA	MIS	17.1	mg/kg	MOUSE
441	3/23/2006	J11912	SOIL and BIOTA	MIS	19.5	mg/kg	MOUSE
442	3/23/2006	J11913	SOIL and BIOTA	MIS	34.2	mg/kg	MOUSE
443	6/6/2007	J14XP1	SOIL and BIOTA	MIS	37.3	mg/kg	MOUSE
444	3/23/2006	J11925	SOIL and BIOTA	MIS	37.3	mg/kg	MOUSE
445	3/23/2006	J11914	SOIL and BIOTA	MIS	25.1	mg/kg	MOUSE
446	3/21/2006	J11916	SOIL and BIOTA	MIS	34.8	mg/kg	MOUSE
447	3/22/2006	J11923	SOIL and BIOTA	MIS	24.1	mg/kg	MOUSE
448	3/21/2006	J11917	SOIL and BIOTA	MIS	19.8	mg/kg	MOUSE
449	3/22/2006	J11918	SOIL and BIOTA	MIS	19.4	mg/kg	MOUSE
450	3/22/2006	J11910	SOIL and BIOTA	MIS	29.6	mg/kg	MOUSE
451	3/22/2006	J11911	SOIL and BIOTA	MIS	30.2	mg/kg	MOUSE
452	4/20/2006	J11919	SOIL and BIOTA	MIS	30.4	mg/kg	MOUSE
453	4/20/2006	J11XY1	SOIL and BIOTA	MIS	30.4	mg/kg	MOUSE
454	3/22/2006	J11920	SOIL and BIOTA	MIS	31.6	mg/kg	MOUSE
455	3/22/2006	J11921	SOIL and BIOTA	MIS	27.1	mg/kg	MOUSE
456	3/22/2006	J11922	SOIL and BIOTA	MIS	22.5	mg/kg	MOUSE
457	4/3/2006	J11KM6	SOIL and BIOTA	MIS	16.3	mg/kg	MOUSE
458	4/3/2006	J11KM6	SOIL and BIOTA	MIS-phyt	17.5	mg/kg	MOUSE
459	4/3/2006	J11KM4	SOIL and BIOTA	MIS	13.4	mg/kg	MOUSE
460	4/3/2006	J11KM4	SOIL and BIOTA	MIS-phyt	14.3	mg/kg	MOUSE
461	4/3/2006	J11KM3	SOIL and BIOTA	MIS	21.2	mg/kg	MOUSE
462	5/12/2005	B1CVD7	SOIL and BIOTA	Discrete	12.6	mg/kg	MOUSE
463	5/11/2005	B1CVD2	SOIL and BIOTA	Discrete	12.6	mg/kg	MOUSE
464	5/11/2005	B1CVD3	SOIL and BIOTA	Discrete	12.6	mg/kg	MOUSE
465	5/11/2005	B1CVD4	SOIL and BIOTA	Discrete	12.6	mg/kg	MOUSE
466	5/11/2005	B1CVD1	SOIL and BIOTA	Discrete	12.6	mg/kg	MOUSE
467	5/11/2005	B1F2V6	SOIL and BIOTA	Discrete	12.6	mg/kg	MOUSE

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
429	MULTIPLE CARCASSES	5.5	mg/kg	C		RCBRA
430	MULTIPLE CARCASSES	2.7	mg/kg	C		RCBRA
431	MULTIPLE CARCASSES	3.3	mg/kg			RCBRA
432	MULTIPLE CARCASSES	3.2	mg/kg	C		RCBRA
433	MULTIPLE CARCASSES	3.2	mg/kg	C		RCBRA
434	MULTIPLE CARCASSES	3.1	mg/kg			RCBRA
435	MULTIPLE CARCASSES	3.6	mg/kg			RCBRA
436	MULTIPLE CARCASSES	2.8	mg/kg			RCBRA
437	MULTIPLE CARCASSES	2.7	mg/kg	C		RCBRA
438	MULTIPLE CARCASSES	2.9	mg/kg	C		RCBRA
439	MULTIPLE CARCASSES	3.2	mg/kg			RCBRA
440	MULTIPLE CARCASSES	2.9	mg/kg		J	RCBRA
441	MULTIPLE CARCASSES	4.1	mg/kg		J	RCBRA
442	MULTIPLE CARCASSES	3.7	mg/kg		J	RCBRA
443	MULTIPLE CARCASSES	3.8	mg/kg	C		RCBRA
444	MULTIPLE CARCASSES	3	mg/kg		J	RCBRA
445	MULTIPLE CARCASSES	4	mg/kg		J	RCBRA
446	MULTIPLE CARCASSES	3.5	mg/kg		J	RCBRA
447	MULTIPLE CARCASSES	3.8	mg/kg		J	RCBRA
448	MULTIPLE CARCASSES	4.1	mg/kg		J	RCBRA
449	MULTIPLE CARCASSES	4.5	mg/kg		J	RCBRA
450	MULTIPLE CARCASSES	11.1	mg/kg		J	RCBRA
451	MULTIPLE CARCASSES	3.7	mg/kg		J	RCBRA
452	MULTIPLE CARCASSES	2.6	mg/kg			RCBRA
453	MULTIPLE CARCASSES	2.9	mg/kg			RCBRA
454	MULTIPLE CARCASSES	3.7	mg/kg		J	RCBRA
455	MULTIPLE CARCASSES	4	mg/kg		J	RCBRA
456	MULTIPLE CARCASSES	3.1	mg/kg		J	RCBRA
457	MULTIPLE CARCASSES	2.7	mg/kg	C		RCBRA
458	MULTIPLE CARCASSES	2.7	mg/kg	C		RCBRA
459	MULTIPLE CARCASSES	3.1	mg/kg	C		RCBRA
460	MULTIPLE CARCASSES	3.1	mg/kg	C		RCBRA
461	MULTIPLE CARCASSES	2.5	mg/kg	C		RCBRA
462	WHOLEORG	3.5	mg/kg			CP
463	WHOLEORG	3.36	mg/kg			CP
464	WHOLEORG	3.78	mg/kg			CP
465	WHOLEORG	2.84	mg/kg			CP
466	WHOLEORG	4.13	mg/kg			CP
467	WHOLEORG	2.81	mg/kg			CP

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
468	Copper	7440-50-8	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764
469	Copper	7440-50-8	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
470	Copper	7440-50-8	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
471	Copper	7440-50-8	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
472	Copper	7440-50-8	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
473	Copper	7440-50-8	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
474	Copper	7440-50-8	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
475	Copper	7440-50-8	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
476	Copper	7440-50-8	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
477	Copper	7440-50-8	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
478	Copper	7440-50-8	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
479	Copper	7440-50-8	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
480	Copper	7440-50-8	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
481	Copper	7440-50-8	B POND	Outside decision areas	UPLAND	576356.769	136881.272
482	Copper	7440-50-8	B POND	Outside decision areas	UPLAND	576356.769	136881.272
483	Copper	7440-50-8	B POND	Outside decision areas	UPLAND	576356.769	136881.272
484	Copper	7440-50-8	B POND	Outside decision areas	UPLAND	576356.769	136881.272
485	Copper	7440-50-8	B POND	Outside decision areas	UPLAND	576356.769	136881.272
486	Copper	7440-50-8	B POND	Outside decision areas	UPLAND	576356.769	136881.272
487	Copper	7440-50-8	B POND	Outside decision areas	UPLAND	576356.769	136881.272
488	Copper	7440-50-8	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
489	Copper	7440-50-8	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
490	Copper	7440-50-8	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
491	Copper	7440-50-8	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
492	Copper	7440-50-8	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
493	Copper	7440-50-8	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
494	Copper	7440-50-8	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
495	Copper	7440-50-8	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
496	Copper	7440-50-8	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
497	Copper	7440-50-8	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
498	Copper	7440-50-8	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
499	Copper	7440-50-8	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
500	Copper	7440-50-8	U POND	Outside decision areas	UPLAND	566379.63	134457.045
501	Copper	7440-50-8	U POND	Outside decision areas	UPLAND	566379.63	134457.045
502	Copper	7440-50-8	U POND	Outside decision areas	UPLAND	566379.63	134457.045
503	Copper	7440-50-8	U POND	Outside decision areas	UPLAND	566379.63	134457.045
504	Copper	7440-50-8	U POND	Outside decision areas	UPLAND	566379.63	134457.045
505	Copper	7440-50-8	U POND	Outside decision areas	UPLAND	566379.63	134457.045
506	Iron	7439-89-6	RCBRA 100-D-48	D/H	UPLAND	573841.527	151914.538

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
468	5/12/2005	B1CVD8	SOIL and BIOTA	Discrete	12.6	mg/kg	MOUSE
469	6/1/2005	B1CVF8	SOIL and BIOTA	Discrete	12	mg/kg	MOUSE
470	6/2/2005	B1CVH0	SOIL and BIOTA	Discrete	12	mg/kg	MOUSE
471	5/25/2005	B1CVF6	SOIL and BIOTA	Discrete	12	mg/kg	MOUSE
472	5/31/2005	B1CVF7	SOIL and BIOTA	Discrete	12	mg/kg	MOUSE
473	6/2/2005	B1CVF9	SOIL and BIOTA	Discrete	12	mg/kg	MOUSE
474	6/7/2005	B1CVH1	SOIL and BIOTA	Discrete	12	mg/kg	MOUSE
475	4/25/2005	B1CVB3	SOIL and BIOTA	Discrete	12.5	mg/kg	MOUSE
476	4/25/2005	B1CVB4	SOIL and BIOTA	Discrete	12.5	mg/kg	MOUSE
477	4/25/2005	B1CVB1	SOIL and BIOTA	Discrete	12.5	mg/kg	MOUSE
478	4/21/2005	B1CVB0	SOIL and BIOTA	Discrete	12.5	mg/kg	MOUSE
479	4/26/2005	B1CVB5	SOIL and BIOTA	Discrete	12.5	mg/kg	MOUSE
480	4/25/2005	B1CVB2	SOIL and BIOTA	Discrete	12.5	mg/kg	MOUSE
481	5/18/2005	B1CVF3	SOIL and BIOTA	Discrete	13.9	mg/kg	MOUSE
482	5/13/2005	B1CVF1	SOIL and BIOTA	Discrete	13.9	mg/kg	MOUSE
483	5/13/2005	B1CVF0	SOIL and BIOTA	Discrete	13.9	mg/kg	MOUSE
484	5/13/2005	B1F2V1	SOIL and BIOTA	Discrete	13.9	mg/kg	MOUSE
485	5/19/2005	B1CVF5	SOIL and BIOTA	Discrete	13.9	mg/kg	MOUSE
486	5/18/2005	B1CVF4	SOIL and BIOTA	Discrete	13.9	mg/kg	MOUSE
487	5/17/2005	B1CVF2	SOIL and BIOTA	Discrete	13.9	mg/kg	MOUSE
488	4/29/2005	B1CVC1	SOIL and BIOTA	Discrete	18.9	mg/kg	MOUSE
489	5/3/2005	B1CVC3	SOIL and BIOTA	Discrete	18.9	mg/kg	MOUSE
490	5/2/2005	B1CVC2	SOIL and BIOTA	Discrete	18.9	mg/kg	MOUSE
491	4/28/2005	B1CVC0	SOIL and BIOTA	Discrete	18.9	mg/kg	MOUSE
492	5/5/2005	B1CVC4	SOIL and BIOTA	Discrete	18.9	mg/kg	MOUSE
493	4/28/2005	B1CVB9	SOIL and BIOTA	Discrete	18.9	mg/kg	MOUSE
494	5/3/2005	B1CVC6	SOIL and BIOTA	Discrete	10.5	mg/kg	MOUSE
495	5/4/2005	B1CVC7	SOIL and BIOTA	Discrete	10.5	mg/kg	MOUSE
496	5/9/2005	B1CVD0	SOIL and BIOTA	Discrete	10.5	mg/kg	MOUSE
497	5/5/2005	B1CVC8	SOIL and BIOTA	Discrete	10.5	mg/kg	MOUSE
498	5/5/2005	B1CVC9	SOIL and BIOTA	Discrete	10.5	mg/kg	MOUSE
499	5/3/2005	B1CVC5	SOIL and BIOTA	Discrete	10.5	mg/kg	MOUSE
500	4/28/2005	B1CVB7	SOIL and BIOTA	Discrete	13	mg/kg	MOUSE
501	5/2/2005	B1CVB8	SOIL and BIOTA	Discrete	13	mg/kg	MOUSE
502	5/13/2005	B1CVD9	SOIL and BIOTA	Discrete	13	mg/kg	MOUSE
503	4/28/2005	B1CVB6	SOIL and BIOTA	Discrete	13	mg/kg	MOUSE
504	5/11/2005	B1CVD6	SOIL and BIOTA	Discrete	13	mg/kg	MOUSE
505	5/11/2005	B1CVD5	SOIL and BIOTA	Discrete	13	mg/kg	MOUSE
506	4/5/2006	J11KV1	SOIL and BIOTA	MIS	23200	mg/kg	MOUSE

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
468	WHOLEORG	4.13	mg/kg			CP
469	WHOLEORG	2.96	mg/kg			CP
470	WHOLEORG	2.32	mg/kg			CP
471	WHOLEORG	2.92	mg/kg			CP
472	WHOLEORG	2.62	mg/kg			CP
473	WHOLEORG	3.06	mg/kg			CP
474	WHOLEORG	2.29	mg/kg			CP
475	WHOLEORG	4.11	mg/kg			CP
476	WHOLEORG	5.94	mg/kg			CP
477	WHOLEORG	2.68	mg/kg			CP
478	WHOLEORG	2.79	mg/kg			CP
479	WHOLEORG	3.13	mg/kg			CP
480	WHOLEORG	5.27	mg/kg			CP
481	WHOLEORG	2.85	mg/kg			CP
482	WHOLEORG	4.64	mg/kg			CP
483	WHOLEORG	3.9	mg/kg			CP
484	WHOLEORG	4.86	mg/kg			CP
485	WHOLEORG	2.39	mg/kg			CP
486	WHOLEORG	2.76	mg/kg			CP
487	WHOLEORG	3.08	mg/kg			CP
488	WHOLEORG	3.32	mg/kg			CP
489	WHOLEORG	5.37	mg/kg			CP
490	WHOLEORG	2.91	mg/kg			CP
491	WHOLEORG	2.56	mg/kg			CP
492	WHOLEORG	3.8	mg/kg			CP
493	WHOLEORG	3.26	mg/kg			CP
494	WHOLEORG	2.7	mg/kg			CP
495	WHOLEORG	8.45	mg/kg			CP
496	WHOLEORG	2.96	mg/kg			CP
497	WHOLEORG	2.73	mg/kg			CP
498	WHOLEORG	2.8	mg/kg			CP
499	WHOLEORG	2.74	mg/kg			CP
500	WHOLEORG	2.6	mg/kg			CP
501	WHOLEORG	4.67	mg/kg			CP
502	WHOLEORG	4.22	mg/kg			CP
503	WHOLEORG	3.11	mg/kg			CP
504	WHOLEORG	4.2	mg/kg			CP
505	WHOLEORG	3.53	mg/kg			CP
506	MULTIPLE CARCASSES	164	mg/kg			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
507	Iron	7439-89-6	RCBRA 100-D-49	D/H	UPLAND	573938.06	151944.123
508	Iron	7439-89-6	RCBRA 100-F-2	IU2/IU6	UPLAND	579728.068	147001.117
509	Iron	7439-89-6	RCBRA 116-DR-1&2	D/H	UPLAND	574007.817	152246.748
510	Iron	7439-89-6	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
511	Iron	7439-89-6	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
512	Iron	7439-89-6	RCBRA 1607-D2:1	D/H	UPLAND	573823.924	152260.319
513	Iron	7439-89-6	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
514	Iron	7439-89-6	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
515	Iron	7439-89-6	RCBRA 2a Rip	BC	RIPARIAN	564618.501	145284.526
516	Iron	7439-89-6	RCBRA 2c Rip	K	RIPARIAN	567598.2	146210.159
517	Iron	7439-89-6	RCBRA 2f Rip	D/H	RIPARIAN	576222.844	154297.511
518	Iron	7439-89-6	RCBRA 2j Rip	IU2/IU6	RIPARIAN	579360.971	150092.048
519	Iron	7439-89-6	RCBRA 2l Rip	IU2/IU6	RIPARIAN	582341.212	146120.069
520	Iron	7439-89-6	RCBRA 300-49	300	UPLAND	594318.994	116830.934
521	Iron	7439-89-6	RCBRA 3b Rip	IU2/IU6	RIPARIAN	584961.205	141035.835
522	Iron	7439-89-6	RCBRA 4a Rip	IU2/IU6	RIPARIAN	589347.5	137480.985
523	Iron	7439-89-6	RCBRA 5c Rip	300	RIPARIAN	594509.985	124869.182
524	Iron	7439-89-6	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
525	Iron	7439-89-6	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
526	Iron	7439-89-6	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
527	Iron	7439-89-6	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
528	Iron	7439-89-6	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
529	Iron	7439-89-6	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
530	Iron	7439-89-6	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
531	Iron	7439-89-6	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
532	Iron	7439-89-6	RCBRA 600-181	IU2/IU6	UPLAND	578303.83	147316.698
533	Iron	7439-89-6	RCBRA 600-204	IU2/IU6	UPLAND	580128.485	144762.219
534	Iron	7439-89-6	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
535	Iron	7439-89-6	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
536	Iron	7439-89-6	RCBRA 600-23	IU2/IU6	UPLAND	585523.593	130481.377
537	Iron	7439-89-6	RCBRA 618-4	300	UPLAND	593954.946	117064.473
538	Iron	7439-89-6	RCBRA 628-1	IU2/IU6	UPLAND	577797.524	148745.681
539	Iron	7439-89-6	RCBRA Bev Ref 1 Rip	Outside decision areas	RIPARIAN	542428.846	167701.261
540	Iron	7439-89-6	RCBRA Bev Ref 2 Rip	Outside decision areas	RIPARIAN	541493.988	167808.357
541	Iron	7439-89-6	RCBRA CP Ref 2	IU2/IU6	UPLAND	563789.959	139793.869
542	Iron	7439-89-6	RCBRA JA JONES	300	UPLAND	593874.58	120013.908
543	Iron	7439-89-6	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
544	Iron	7439-89-6	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
545	Iron	7439-89-6	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
507	4/5/2006	J11KV2	SOIL and BIOTA	MIS	21700	mg/kg	MOUSE
508	4/21/2006	J11L22	SOIL and BIOTA	MIS	19300	mg/kg	MOUSE
509	4/3/2006	J11L21	SOIL and BIOTA	MIS	20700	mg/kg	MOUSE
510	4/20/2006	J11KL7	SOIL and BIOTA	MIS	17400	mg/kg	MOUSE
511	4/20/2006	J11KL7	SOIL and BIOTA	MIS-phyt	17600	mg/kg	MOUSE
512	4/5/2006	J11KM0	SOIL and BIOTA	MIS	19100	mg/kg	MOUSE
513	4/5/2006	J11KL5	SOIL and BIOTA	MIS	15500	mg/kg	MOUSE
514	4/5/2006	J11KL5	SOIL and BIOTA	MIS-phyt	20200	mg/kg	MOUSE
515	6/6/2007	J14XP2	SOIL and BIOTA	MIS	14500	mg/kg	MOUSE
516	6/6/2007	J14XP9	SOIL and BIOTA	MIS	19500	mg/kg	MOUSE
517	6/6/2007	J14XP3	SOIL and BIOTA	MIS	19800	mg/kg	MOUSE
518	6/6/2007	J14XP4	SOIL and BIOTA	MIS	19800	mg/kg	MOUSE
519	6/6/2007	J14XP5	SOIL and BIOTA	MIS	28600	mg/kg	MOUSE
520	4/21/2006	J11KL9	SOIL and BIOTA	MIS	19500	mg/kg	MOUSE
521	6/6/2007	J14XP6	SOIL and BIOTA	MIS	21000	mg/kg	MOUSE
522	6/6/2007	J14XP8	SOIL and BIOTA	MIS	22300	mg/kg	MOUSE
523	6/6/2007	J14XP7	SOIL and BIOTA	MIS	24700	mg/kg	MOUSE
524	4/5/2006	J11L25	SOIL and BIOTA	MIS	14000	mg/kg	MOUSE
525	4/5/2006	J11L25	SOIL and BIOTA	MIS-phyt	22100	mg/kg	MOUSE
526	4/5/2006	J11KK8	SOIL and BIOTA	MIS	17100	mg/kg	MOUSE
527	4/5/2006	J11KK8	SOIL and BIOTA	MIS-phyt	20700	mg/kg	MOUSE
528	4/20/2006	J11KK9	SOIL and BIOTA	MIS	18500	mg/kg	MOUSE
529	4/20/2006	J11KK9	SOIL and BIOTA	MIS-phyt	21400	mg/kg	MOUSE
530	4/20/2006	J11KL4	SOIL and BIOTA	MIS	14800	mg/kg	MOUSE
531	4/20/2006	J11KL4	SOIL and BIOTA	MIS-phyt	20100	mg/kg	MOUSE
532	4/20/2006	J11KL2	SOIL and BIOTA	MIS	21200	mg/kg	MOUSE
533	4/20/2006	J11KL0	SOIL and BIOTA	MIS	24700	mg/kg	MOUSE
534	4/20/2006	J11KL1	SOIL and BIOTA	MIS	19700	mg/kg	MOUSE
535	4/20/2006	J11KL1	SOIL and BIOTA	MIS-phyt	21900	mg/kg	MOUSE
536	4/21/2006	J11KK7	SOIL and BIOTA	MIS	18700	mg/kg	MOUSE
537	4/21/2006	J11KL8	SOIL and BIOTA	MIS	18300	mg/kg	MOUSE
538	4/20/2006	J11KL3	SOIL and BIOTA	MIS	31500	mg/kg	MOUSE
539	6/6/2007	J14XN9	SOIL and BIOTA	MIS	25600	mg/kg	MOUSE
540	6/6/2007	J14XP0	SOIL and BIOTA	MIS	17800	mg/kg	MOUSE
541	4/3/2006	J11L36	SOIL and BIOTA	MIS	18800	mg/kg	MOUSE
542	4/21/2006	J11L24	SOIL and BIOTA	MIS	18800	mg/kg	MOUSE
543	4/3/2006	J11KM5	SOIL and BIOTA	MIS	26000	mg/kg	MOUSE
544	4/3/2006	J11KM5	SOIL and BIOTA	MIS-phyt	29400	mg/kg	MOUSE
545	4/20/2006	J11KK5	SOIL and BIOTA	MIS	25900	mg/kg	MOUSE

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
507	MULTIPLE CARCASSES	190	mg/kg			RCBRA
508	MULTIPLE CARCASSES	164	mg/kg			RCBRA
509	MULTIPLE CARCASSES	172	mg/kg			RCBRA
510	MULTIPLE CARCASSES	159	mg/kg			RCBRA
511	MULTIPLE CARCASSES	159	mg/kg			RCBRA
512	MULTIPLE CARCASSES	142	mg/kg			RCBRA
513	MULTIPLE CARCASSES	122	mg/kg			RCBRA
514	MULTIPLE CARCASSES	122	mg/kg			RCBRA
515	MULTIPLE CARCASSES	103	mg/kg	C	J	RCBRA
516	MULTIPLE CARCASSES	148	mg/kg	C	J	RCBRA
517	MULTIPLE CARCASSES	32.5	mg/kg	C	J	RCBRA
518	MULTIPLE CARCASSES	115	mg/kg	C	J	RCBRA
519	MULTIPLE CARCASSES	153	mg/kg	C	J	RCBRA
520	MULTIPLE CARCASSES	123	mg/kg			RCBRA
521	MULTIPLE CARCASSES	113	mg/kg	C	J	RCBRA
522	MULTIPLE CARCASSES	114	mg/kg	C	J	RCBRA
523	MULTIPLE CARCASSES	119	mg/kg	C	J	RCBRA
524	MULTIPLE CARCASSES	117	mg/kg			RCBRA
525	MULTIPLE CARCASSES	117	mg/kg			RCBRA
526	MULTIPLE CARCASSES	94.3	mg/kg			RCBRA
527	MULTIPLE CARCASSES	94.3	mg/kg			RCBRA
528	MULTIPLE CARCASSES	118	mg/kg			RCBRA
529	MULTIPLE CARCASSES	118	mg/kg			RCBRA
530	MULTIPLE CARCASSES	112	mg/kg			RCBRA
531	MULTIPLE CARCASSES	112	mg/kg			RCBRA
532	MULTIPLE CARCASSES	115	mg/kg			RCBRA
533	MULTIPLE CARCASSES	160	mg/kg			RCBRA
534	MULTIPLE CARCASSES	114	mg/kg			RCBRA
535	MULTIPLE CARCASSES	114	mg/kg			RCBRA
536	MULTIPLE CARCASSES	132	mg/kg			RCBRA
537	MULTIPLE CARCASSES	116	mg/kg			RCBRA
538	MULTIPLE CARCASSES	131	mg/kg			RCBRA
539	MULTIPLE CARCASSES	103	mg/kg	C	J	RCBRA
540	MULTIPLE CARCASSES	132	mg/kg	C	J	RCBRA
541	MULTIPLE CARCASSES	114	mg/kg			RCBRA
542	MULTIPLE CARCASSES	230	mg/kg			RCBRA
543	MULTIPLE CARCASSES	233	mg/kg			RCBRA
544	MULTIPLE CARCASSES	233	mg/kg			RCBRA
545	MULTIPLE CARCASSES	225	mg/kg			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
546	Iron	7439-89-6	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
547	Iron	7439-89-6	RCBRA Pit 18	IU2/IU6	UPLAND	580697.058	145311.464
548	Iron	7439-89-6	RCBRA Pit 23	IU2/IU6	UPLAND	572381.012	144874.157
549	Iron	7439-89-6	RCBRA Pit 24	BC	UPLAND	563395.814	145119.007
550	Iron	7439-89-6	RCBRA Pit 9	300	UPLAND	592807.103	120587.7
551	Iron	7439-89-6	RCBRA R Ref 11	Outside decision areas	RIPARIAN	559400.735	146458.486
552	Iron	7439-89-6	RCBRA R Ref 12	IU2/IU6	RIPARIAN	559201.908	145747.542
553	Iron	7439-89-6	RCBRA R Ref 13	Outside decision areas	RIPARIAN	558572.809	145345.115
554	Iron	7439-89-6	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
555	Iron	7439-89-6	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
556	Iron	7439-89-6	RCBRA R Ref 16	Outside decision areas	RIPARIAN	557650.029	144826.748
557	Iron	7439-89-6	RCBRA Rip 1	D/H	RIPARIAN	577251.869	153659.195
558	Iron	7439-89-6	RCBRA Rip 10	D/H	RIPARIAN	573987.873	153082.19
559	Iron	7439-89-6	RCBRA Rip 2	D/H	RIPARIAN	573603.219	152471.6
560	Iron	7439-89-6	RCBRA Rip 3	D/H	RIPARIAN	572639.65	151677.812
561	Iron	7439-89-6	RCBRA Rip 4	N	RIPARIAN	570558.596	148981.547
562	Iron	7439-89-6	RCBRA Rip 5	K	RIPARIAN	569141.025	147521.561
563	Iron	7439-89-6	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
564	Iron	7439-89-6	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
565	Iron	7439-89-6	RCBRA Rip 7	IU2/IU6	RIPARIAN	581326.914	147825.17
566	Iron	7439-89-6	RCBRA Rip 8	D/H	RIPARIAN	578698.584	152233.645
567	Iron	7439-89-6	RCBRA Rip 9	D/H	RIPARIAN	578153.643	152801.452
568	Iron	7439-89-6	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
569	Iron	7439-89-6	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
570	Iron	7439-89-6	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
571	Iron	7439-89-6	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
572	Iron	7439-89-6	RCBRA Yak Rdg 2	Outside decision areas	UPLAND	559031.557	135576.407
573	Mecury	7439-97-6	RCBRA R Ref 11	Outside decision areas	RIPARIAN	559400.735	146458.486
574	Mecury	7439-97-6	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
575	Mecury	7439-97-6	RCBRA R Ref 16	Outside decision areas	RIPARIAN	557650.029	144826.748
576	Mecury	7439-97-6	RCBRA Rip 3	D/H	RIPARIAN	572639.65	151677.812
577	Mecury	7439-97-6	RCBRA Rip 5	K	RIPARIAN	569141.025	147521.561
578	Potasium	7440_09_7	RCBRA 100-D-48	D/H	UPLAND	573841.527	151914.538
579	Potasium	7440_09_7	RCBRA 100-D-49	D/H	UPLAND	573938.06	151944.123
580	Potasium	7440_09_7	RCBRA 100-F-2	IU2/IU6	UPLAND	579728.068	147001.117
581	Potasium	7440_09_7	RCBRA 116-DR-1&2	D/H	UPLAND	574007.817	152246.748
582	Potasium	7440_09_7	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
583	Potasium	7440_09_7	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
584	Potasium	7440_09_7	RCBRA 1607-D2:1	D/H	UPLAND	573823.924	152260.319

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
546	4/20/2006	J11XY0	SOIL and BIOTA	MIS	25900	mg/kg	MOUSE
547	4/20/2006	J11KK6	SOIL and BIOTA	MIS	17800	mg/kg	MOUSE
548	4/3/2006	J11L23	SOIL and BIOTA	MIS	20900	mg/kg	MOUSE
549	4/3/2006	J11KM2	SOIL and BIOTA	MIS	22700	mg/kg	MOUSE
550	4/21/2006	J11KM1	SOIL and BIOTA	MIS	23400	mg/kg	MOUSE
551	3/22/2006	J11924	SOIL and BIOTA	MIS	18200	mg/kg	MOUSE
552	3/23/2006	J11912	SOIL and BIOTA	MIS	17900	mg/kg	MOUSE
553	3/23/2006	J11913	SOIL and BIOTA	MIS	23800	mg/kg	MOUSE
554	6/6/2007	J14XP1	SOIL and BIOTA	MIS	23600	mg/kg	MOUSE
555	3/23/2006	J11925	SOIL and BIOTA	MIS	23600	mg/kg	MOUSE
556	3/23/2006	J11914	SOIL and BIOTA	MIS	18100	mg/kg	MOUSE
557	3/21/2006	J11916	SOIL and BIOTA	MIS	21100	mg/kg	MOUSE
558	3/22/2006	J11923	SOIL and BIOTA	MIS	21000	mg/kg	MOUSE
559	3/21/2006	J11917	SOIL and BIOTA	MIS	20000	mg/kg	MOUSE
560	3/22/2006	J11918	SOIL and BIOTA	MIS	22700	mg/kg	MOUSE
561	3/22/2006	J11910	SOIL and BIOTA	MIS	21200	mg/kg	MOUSE
562	3/22/2006	J11911	SOIL and BIOTA	MIS	20300	mg/kg	MOUSE
563	4/20/2006	J11919	SOIL and BIOTA	MIS	24100	mg/kg	MOUSE
564	4/20/2006	J11XY1	SOIL and BIOTA	MIS	24100	mg/kg	MOUSE
565	3/22/2006	J11920	SOIL and BIOTA	MIS	21300	mg/kg	MOUSE
566	3/22/2006	J11921	SOIL and BIOTA	MIS	19300	mg/kg	MOUSE
567	3/22/2006	J11922	SOIL and BIOTA	MIS	18400	mg/kg	MOUSE
568	4/3/2006	J11KM6	SOIL and BIOTA	MIS	27100	mg/kg	MOUSE
569	4/3/2006	J11KM6	SOIL and BIOTA	MIS-phyt	29700	mg/kg	MOUSE
570	4/3/2006	J11KM4	SOIL and BIOTA	MIS	19800	mg/kg	MOUSE
571	4/3/2006	J11KM4	SOIL and BIOTA	MIS-phyt	24400	mg/kg	MOUSE
572	4/3/2006	J11KM3	SOIL and BIOTA	MIS	28000	mg/kg	MOUSE
573	3/22/2006	J11924	SOIL and BIOTA	MIS	0.047785974	mg/kg	MOUSE
574	3/23/2006	J11925	SOIL and BIOTA	MIS	0.067344132	mg/kg	MOUSE
575	3/23/2006	J11914	SOIL and BIOTA	MIS	0.061275324	mg/kg	MOUSE
576	3/22/2006	J11918	SOIL and BIOTA	MIS	0.02665996	mg/kg	MOUSE
577	3/22/2006	J11911	SOIL and BIOTA	MIS	0.061306533	mg/kg	MOUSE
578	4/5/2006	J11KV1	SOIL and BIOTA	MIS	1010	mg/kg	MOUSE
579	4/5/2006	J11KV2	SOIL and BIOTA	MIS	1200	mg/kg	MOUSE
580	4/21/2006	J11L22	SOIL and BIOTA	MIS	2420	mg/kg	MOUSE
581	4/3/2006	J11L21	SOIL and BIOTA	MIS	1120	mg/kg	MOUSE
582	4/20/2006	J11KL7	SOIL and BIOTA	MIS	1600	mg/kg	MOUSE
583	4/20/2006	J11KL7	SOIL and BIOTA	MIS-phyt	1590	mg/kg	MOUSE
584	4/5/2006	J11KM0	SOIL and BIOTA	MIS	1020	mg/kg	MOUSE

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
546	MULTIPLE CARCASSES	216	mg/kg			RCBRA
547	MULTIPLE CARCASSES	88.6	mg/kg			RCBRA
548	MULTIPLE CARCASSES	177	mg/kg			RCBRA
549	MULTIPLE CARCASSES	116	mg/kg			RCBRA
550	MULTIPLE CARCASSES	109	mg/kg			RCBRA
551	MULTIPLE CARCASSES	167	mg/kg			RCBRA
552	MULTIPLE CARCASSES	142	mg/kg			RCBRA
553	MULTIPLE CARCASSES	216	mg/kg			RCBRA
554	MULTIPLE CARCASSES	122	mg/kg	C	J	RCBRA
555	MULTIPLE CARCASSES	82.4	mg/kg			RCBRA
556	MULTIPLE CARCASSES	115	mg/kg			RCBRA
557	MULTIPLE CARCASSES	151	mg/kg			RCBRA
558	MULTIPLE CARCASSES	112	mg/kg			RCBRA
559	MULTIPLE CARCASSES	104	mg/kg			RCBRA
560	MULTIPLE CARCASSES	87.1	mg/kg			RCBRA
561	MULTIPLE CARCASSES	112	mg/kg			RCBRA
562	MULTIPLE CARCASSES	112	mg/kg			RCBRA
563	MULTIPLE CARCASSES	144	mg/kg			RCBRA
564	MULTIPLE CARCASSES	69.5	mg/kg			RCBRA
565	MULTIPLE CARCASSES	128	mg/kg			RCBRA
566	MULTIPLE CARCASSES	188	mg/kg			RCBRA
567	MULTIPLE CARCASSES	109	mg/kg			RCBRA
568	MULTIPLE CARCASSES	158	mg/kg			RCBRA
569	MULTIPLE CARCASSES	158	mg/kg			RCBRA
570	MULTIPLE CARCASSES	117	mg/kg			RCBRA
571	MULTIPLE CARCASSES	117	mg/kg			RCBRA
572	MULTIPLE CARCASSES	192	mg/kg			RCBRA
573	MULTIPLE CARCASSES	0.03	mg/kg			RCBRA
574	MULTIPLE CARCASSES	0.03	mg/kg			RCBRA
575	MULTIPLE CARCASSES	0.02	mg/kg			RCBRA
576	MULTIPLE CARCASSES	0.02	mg/kg			RCBRA
577	MULTIPLE CARCASSES	0.02	mg/kg			RCBRA
578	MULTIPLE CARCASSES	2880	mg/kg			RCBRA
579	MULTIPLE CARCASSES	3020	mg/kg			RCBRA
580	MULTIPLE CARCASSES	2420	mg/kg			RCBRA
581	MULTIPLE CARCASSES	2880	mg/kg			RCBRA
582	MULTIPLE CARCASSES	2590	mg/kg			RCBRA
583	MULTIPLE CARCASSES	2590	mg/kg			RCBRA
584	MULTIPLE CARCASSES	2730	mg/kg			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
585	Potasium	7440_09_7	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
586	Potasium	7440_09_7	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
587	Potasium	7440_09_7	RCBRA 2a Rip	BC	RIPARIAN	564618.501	145284.526
588	Potasium	7440_09_7	RCBRA 2c Rip	K	RIPARIAN	567598.2	146210.159
589	Potasium	7440_09_7	RCBRA 2f Rip	D/H	RIPARIAN	576222.844	154297.511
590	Potasium	7440_09_7	RCBRA 2j Rip	IU2/IU6	RIPARIAN	579360.971	150092.048
591	Potasium	7440_09_7	RCBRA 2l Rip	IU2/IU6	RIPARIAN	582341.212	146120.069
592	Potasium	7440_09_7	RCBRA 300-49	300	UPLAND	594318.994	116830.934
593	Potasium	7440_09_7	RCBRA 3b Rip	IU2/IU6	RIPARIAN	584961.205	141035.835
594	Potasium	7440_09_7	RCBRA 4a Rip	IU2/IU6	RIPARIAN	589347.5	137480.985
595	Potasium	7440_09_7	RCBRA 5c Rip	300	RIPARIAN	594509.985	124869.182
596	Potasium	7440_09_7	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
597	Potasium	7440_09_7	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
598	Potasium	7440_09_7	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
599	Potasium	7440_09_7	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
600	Potasium	7440_09_7	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
601	Potasium	7440_09_7	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
602	Potasium	7440_09_7	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
603	Potasium	7440_09_7	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
604	Potasium	7440_09_7	RCBRA 600-181	IU2/IU6	UPLAND	578303.83	147316.698
605	Potasium	7440_09_7	RCBRA 600-204	IU2/IU6	UPLAND	580128.485	144762.219
606	Potasium	7440_09_7	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
607	Potasium	7440_09_7	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
608	Potasium	7440_09_7	RCBRA 600-23	IU2/IU6	UPLAND	585523.593	130481.377
609	Potasium	7440_09_7	RCBRA 618-4	300	UPLAND	593954.946	117064.473
610	Potasium	7440_09_7	RCBRA 628-1	IU2/IU6	UPLAND	577797.524	148745.681
611	Potasium	7440_09_7	RCBRA Bev Ref 1 Rip	Outside decision areas	RIPARIAN	542428.846	167701.261
612	Potasium	7440_09_7	RCBRA Bev Ref 2 Rip	Outside decision areas	RIPARIAN	541493.988	167808.357
613	Potasium	7440_09_7	RCBRA CP Ref 2	IU2/IU6	UPLAND	563789.959	139793.869
614	Potasium	7440_09_7	RCBRA JA JONES	300	UPLAND	593874.58	120013.908
615	Potasium	7440_09_7	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
616	Potasium	7440_09_7	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
617	Potasium	7440_09_7	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
618	Potasium	7440_09_7	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
619	Potasium	7440_09_7	RCBRA Pit 18	IU2/IU6	UPLAND	580697.058	145311.464
620	Potasium	7440_09_7	RCBRA Pit 23	IU2/IU6	UPLAND	572381.012	144874.157
621	Potasium	7440_09_7	RCBRA Pit 24	BC	UPLAND	563395.814	145119.007
622	Potasium	7440_09_7	RCBRA Pit 9	300	UPLAND	592807.103	120587.7
623	Potasium	7440_09_7	RCBRA R Ref 11	Outside decision areas	RIPARIAN	559400.735	146458.486

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
585	4/5/2006	J11KL5	SOIL and BIOTA	MIS	1180	mg/kg	MOUSE
586	4/5/2006	J11KL5	SOIL and BIOTA	MIS-phyt	1310	mg/kg	MOUSE
587	6/6/2007	J14XP2	SOIL and BIOTA	MIS	883	mg/kg	MOUSE
588	6/6/2007	J14XP9	SOIL and BIOTA	MIS	1110	mg/kg	MOUSE
589	6/6/2007	J14XP3	SOIL and BIOTA	MIS	907	mg/kg	MOUSE
590	6/6/2007	J14XP4	SOIL and BIOTA	MIS	1120	mg/kg	MOUSE
591	6/6/2007	J14XP5	SOIL and BIOTA	MIS	790	mg/kg	MOUSE
592	4/21/2006	J11KL9	SOIL and BIOTA	MIS	1300	mg/kg	MOUSE
593	6/6/2007	J14XP6	SOIL and BIOTA	MIS	889	mg/kg	MOUSE
594	6/6/2007	J14XP8	SOIL and BIOTA	MIS	1110	mg/kg	MOUSE
595	6/6/2007	J14XP7	SOIL and BIOTA	MIS	627	mg/kg	MOUSE
596	4/5/2006	J11L25	SOIL and BIOTA	MIS	1000	mg/kg	MOUSE
597	4/5/2006	J11L25	SOIL and BIOTA	MIS-phyt	1380	mg/kg	MOUSE
598	4/5/2006	J11KK8	SOIL and BIOTA	MIS	1160	mg/kg	MOUSE
599	4/5/2006	J11KK8	SOIL and BIOTA	MIS-phyt	1290	mg/kg	MOUSE
600	4/20/2006	J11KK9	SOIL and BIOTA	MIS	1100	mg/kg	MOUSE
601	4/20/2006	J11KK9	SOIL and BIOTA	MIS-phyt	1190	mg/kg	MOUSE
602	4/20/2006	J11KL4	SOIL and BIOTA	MIS	1290	mg/kg	MOUSE
603	4/20/2006	J11KL4	SOIL and BIOTA	MIS-phyt	1420	mg/kg	MOUSE
604	4/20/2006	J11KL2	SOIL and BIOTA	MIS	1400	mg/kg	MOUSE
605	4/20/2006	J11KL0	SOIL and BIOTA	MIS	1500	mg/kg	MOUSE
606	4/20/2006	J11KL1	SOIL and BIOTA	MIS	1830	mg/kg	MOUSE
607	4/20/2006	J11KL1	SOIL and BIOTA	MIS-phyt	1830	mg/kg	MOUSE
608	4/21/2006	J11KK7	SOIL and BIOTA	MIS	992	mg/kg	MOUSE
609	4/21/2006	J11KL8	SOIL and BIOTA	MIS	898	mg/kg	MOUSE
610	4/20/2006	J11KL3	SOIL and BIOTA	MIS	1370	mg/kg	MOUSE
611	6/6/2007	J14XN9	SOIL and BIOTA	MIS	733	mg/kg	MOUSE
612	6/6/2007	J14XP0	SOIL and BIOTA	MIS	829	mg/kg	MOUSE
613	4/3/2006	J11L36	SOIL and BIOTA	MIS	1210	mg/kg	MOUSE
614	4/21/2006	J11L24	SOIL and BIOTA	MIS	1070	mg/kg	MOUSE
615	4/3/2006	J11KM5	SOIL and BIOTA	MIS	2190	mg/kg	MOUSE
616	4/3/2006	J11KM5	SOIL and BIOTA	MIS-phyt	2300	mg/kg	MOUSE
617	4/20/2006	J11KK5	SOIL and BIOTA	MIS	1060	mg/kg	MOUSE
618	4/20/2006	J11XY0	SOIL and BIOTA	MIS	1060	mg/kg	MOUSE
619	4/20/2006	J11KK6	SOIL and BIOTA	MIS	969	mg/kg	MOUSE
620	4/3/2006	J11L23	SOIL and BIOTA	MIS	852	mg/kg	MOUSE
621	4/3/2006	J11KM2	SOIL and BIOTA	MIS	1920	mg/kg	MOUSE
622	4/21/2006	J11KM1	SOIL and BIOTA	MIS	996	mg/kg	MOUSE
623	3/22/2006	J11924	SOIL and BIOTA	MIS	830	mg/kg	MOUSE

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
585	MULTIPLE CARCASSES	2910	mg/kg			RCBRA
586	MULTIPLE CARCASSES	2910	mg/kg			RCBRA
587	MULTIPLE CARCASSES	2750	mg/kg	C		RCBRA
588	MULTIPLE CARCASSES	2770	mg/kg	C		RCBRA
589	MULTIPLE CARCASSES	731	mg/kg	C		RCBRA
590	MULTIPLE CARCASSES	2920	mg/kg	C		RCBRA
591	MULTIPLE CARCASSES	2720	mg/kg	C		RCBRA
592	MULTIPLE CARCASSES	2570	mg/kg			RCBRA
593	MULTIPLE CARCASSES	2580	mg/kg	C		RCBRA
594	MULTIPLE CARCASSES	2980	mg/kg	C		RCBRA
595	MULTIPLE CARCASSES	2390	mg/kg	C		RCBRA
596	MULTIPLE CARCASSES	3110	mg/kg			RCBRA
597	MULTIPLE CARCASSES	3110	mg/kg			RCBRA
598	MULTIPLE CARCASSES	2680	mg/kg			RCBRA
599	MULTIPLE CARCASSES	2680	mg/kg			RCBRA
600	MULTIPLE CARCASSES	2560	mg/kg			RCBRA
601	MULTIPLE CARCASSES	2560	mg/kg			RCBRA
602	MULTIPLE CARCASSES	2590	mg/kg			RCBRA
603	MULTIPLE CARCASSES	2590	mg/kg			RCBRA
604	MULTIPLE CARCASSES	2370	mg/kg			RCBRA
605	MULTIPLE CARCASSES	2600	mg/kg			RCBRA
606	MULTIPLE CARCASSES	2810	mg/kg			RCBRA
607	MULTIPLE CARCASSES	2810	mg/kg			RCBRA
608	MULTIPLE CARCASSES	2590	mg/kg			RCBRA
609	MULTIPLE CARCASSES	2520	mg/kg			RCBRA
610	MULTIPLE CARCASSES	2630	mg/kg			RCBRA
611	MULTIPLE CARCASSES	2780	mg/kg	C		RCBRA
612	MULTIPLE CARCASSES	2810	mg/kg	C		RCBRA
613	MULTIPLE CARCASSES	2690	mg/kg			RCBRA
614	MULTIPLE CARCASSES	2570	mg/kg			RCBRA
615	MULTIPLE CARCASSES	2920	mg/kg			RCBRA
616	MULTIPLE CARCASSES	2920	mg/kg			RCBRA
617	MULTIPLE CARCASSES	2550	mg/kg			RCBRA
618	MULTIPLE CARCASSES	2560	mg/kg			RCBRA
619	MULTIPLE CARCASSES	2350	mg/kg			RCBRA
620	MULTIPLE CARCASSES	2900	mg/kg			RCBRA
621	MULTIPLE CARCASSES	3080	mg/kg			RCBRA
622	MULTIPLE CARCASSES	2490	mg/kg			RCBRA
623	MULTIPLE CARCASSES	2870	mg/kg			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
624	Potasium	7440_09_7	RCBRA R Ref 12	IU2/IU6	RIPARIAN	559201.908	145747.542
625	Potasium	7440_09_7	RCBRA R Ref 13	Outside decision areas	RIPARIAN	558572.809	145345.115
626	Potasium	7440_09_7	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
627	Potasium	7440_09_7	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
628	Potasium	7440_09_7	RCBRA R Ref 16	Outside decision areas	RIPARIAN	557650.029	144826.748
629	Potasium	7440_09_7	RCBRA Rip 1	D/H	RIPARIAN	577251.869	153659.195
630	Potasium	7440_09_7	RCBRA Rip 10	D/H	RIPARIAN	573987.873	153082.19
631	Potasium	7440_09_7	RCBRA Rip 2	D/H	RIPARIAN	573603.219	152471.6
632	Potasium	7440_09_7	RCBRA Rip 3	D/H	RIPARIAN	572639.65	151677.812
633	Potasium	7440_09_7	RCBRA Rip 4	N	RIPARIAN	570558.596	148981.547
634	Potasium	7440_09_7	RCBRA Rip 5	K	RIPARIAN	569141.025	147521.561
635	Potasium	7440_09_7	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
636	Potasium	7440_09_7	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
637	Potasium	7440_09_7	RCBRA Rip 7	IU2/IU6	RIPARIAN	581326.914	147825.17
638	Potasium	7440_09_7	RCBRA Rip 8	D/H	RIPARIAN	578698.584	152233.645
639	Potasium	7440_09_7	RCBRA Rip 9	D/H	RIPARIAN	578153.643	152801.452
640	Potasium	7440_09_7	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
641	Potasium	7440_09_7	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
642	Potasium	7440_09_7	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
643	Potasium	7440_09_7	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
644	Potasium	7440_09_7	RCBRA Yak Rdg 2	Outside decision areas	UPLAND	559031.557	135576.407
645	Lithium	7439-93-2	RCBRA 100-D-48	D/H	UPLAND	573841.527	151914.538
646	Lithium	7439-93-2	RCBRA 100-D-49	D/H	UPLAND	573938.06	151944.123
647	Lithium	7439-93-2	RCBRA 100-F-2	IU2/IU6	UPLAND	579728.068	147001.117
648	Lithium	7439-93-2	RCBRA 116-DR-1&2	D/H	UPLAND	574007.817	152246.748
649	Lithium	7439-93-2	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
650	Lithium	7439-93-2	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
651	Lithium	7439-93-2	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
652	Lithium	7439-93-2	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
653	Lithium	7439-93-2	RCBRA 300-49	300	UPLAND	594318.994	116830.934
654	Lithium	7439-93-2	RCBRA 3b Rip	IU2/IU6	RIPARIAN	584961.205	141035.835
655	Lithium	7439-93-2	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
656	Lithium	7439-93-2	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
657	Lithium	7439-93-2	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
658	Lithium	7439-93-2	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
659	Lithium	7439-93-2	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
660	Lithium	7439-93-2	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
661	Lithium	7439-93-2	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
662	Lithium	7439-93-2	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
624	3/23/2006	J11912	SOIL and BIOTA	MIS	833	mg/kg	MOUSE
625	3/23/2006	J11913	SOIL and BIOTA	MIS	1120	mg/kg	MOUSE
626	6/6/2007	J14XP1	SOIL and BIOTA	MIS	1120	mg/kg	MOUSE
627	3/23/2006	J11925	SOIL and BIOTA	MIS	1120	mg/kg	MOUSE
628	3/23/2006	J11914	SOIL and BIOTA	MIS	945	mg/kg	MOUSE
629	3/21/2006	J11916	SOIL and BIOTA	MIS	1320	mg/kg	MOUSE
630	3/22/2006	J11923	SOIL and BIOTA	MIS	611	mg/kg	MOUSE
631	3/21/2006	J11917	SOIL and BIOTA	MIS	848	mg/kg	MOUSE
632	3/22/2006	J11918	SOIL and BIOTA	MIS	546	mg/kg	MOUSE
633	3/22/2006	J11910	SOIL and BIOTA	MIS	950	mg/kg	MOUSE
634	3/22/2006	J11911	SOIL and BIOTA	MIS	985	mg/kg	MOUSE
635	4/20/2006	J11919	SOIL and BIOTA	MIS	1470	mg/kg	MOUSE
636	4/20/2006	J11XY1	SOIL and BIOTA	MIS	1470	mg/kg	MOUSE
637	3/22/2006	J11920	SOIL and BIOTA	MIS	826	mg/kg	MOUSE
638	3/22/2006	J11921	SOIL and BIOTA	MIS	824	mg/kg	MOUSE
639	3/22/2006	J11922	SOIL and BIOTA	MIS	802	mg/kg	MOUSE
640	4/3/2006	J11KM6	SOIL and BIOTA	MIS	2280	mg/kg	MOUSE
641	4/3/2006	J11KM6	SOIL and BIOTA	MIS-phyt	2210	mg/kg	MOUSE
642	4/3/2006	J11KM4	SOIL and BIOTA	MIS	2070	mg/kg	MOUSE
643	4/3/2006	J11KM4	SOIL and BIOTA	MIS-phyt	2180	mg/kg	MOUSE
644	4/3/2006	J11KM3	SOIL and BIOTA	MIS	2490	mg/kg	MOUSE
645	4/5/2006	J11KV1	SOIL and BIOTA	MIS	6.2	mg/kg	MOUSE
646	4/5/2006	J11KV2	SOIL and BIOTA	MIS	6.2	mg/kg	MOUSE
647	4/21/2006	J11L22	SOIL and BIOTA	MIS	8.4	mg/kg	MOUSE
648	4/3/2006	J11L21	SOIL and BIOTA	MIS	6	mg/kg	MOUSE
649	4/20/2006	J11KL7	SOIL and BIOTA	MIS	7.5	mg/kg	MOUSE
650	4/20/2006	J11KL7	SOIL and BIOTA	MIS-phyt	7.2	mg/kg	MOUSE
651	4/5/2006	J11KL5	SOIL and BIOTA	MIS	8.3	mg/kg	MOUSE
652	4/5/2006	J11KL5	SOIL and BIOTA	MIS-phyt	9.5	mg/kg	MOUSE
653	4/21/2006	J11KL9	SOIL and BIOTA	MIS	7.2	mg/kg	MOUSE
654	6/6/2007	J14XP6	SOIL and BIOTA	MIS	9.8	mg/kg	MOUSE
655	4/5/2006	J11L25	SOIL and BIOTA	MIS	5.5	mg/kg	MOUSE
656	4/5/2006	J11L25	SOIL and BIOTA	MIS-phyt	7.4	mg/kg	MOUSE
657	4/5/2006	J11KK8	SOIL and BIOTA	MIS	6.7	mg/kg	MOUSE
658	4/5/2006	J11KK8	SOIL and BIOTA	MIS-phyt	7	mg/kg	MOUSE
659	4/20/2006	J11KK9	SOIL and BIOTA	MIS	7.1	mg/kg	MOUSE
660	4/20/2006	J11KK9	SOIL and BIOTA	MIS-phyt	7.1	mg/kg	MOUSE
661	4/20/2006	J11KL4	SOIL and BIOTA	MIS	6.3	mg/kg	MOUSE
662	4/20/2006	J11KL4	SOIL and BIOTA	MIS-phyt	6.9	mg/kg	MOUSE

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
624	MULTIPLE CARCASSES	2940	mg/kg			RCBRA
625	MULTIPLE CARCASSES	2800	mg/kg			RCBRA
626	MULTIPLE CARCASSES	2650	mg/kg	C		RCBRA
627	MULTIPLE CARCASSES	2930	mg/kg			RCBRA
628	MULTIPLE CARCASSES	2990	mg/kg			RCBRA
629	MULTIPLE CARCASSES	3370	mg/kg			RCBRA
630	MULTIPLE CARCASSES	3450	mg/kg			RCBRA
631	MULTIPLE CARCASSES	3270	mg/kg			RCBRA
632	MULTIPLE CARCASSES	3530	mg/kg			RCBRA
633	MULTIPLE CARCASSES	3180	mg/kg			RCBRA
634	MULTIPLE CARCASSES	3100	mg/kg			RCBRA
635	MULTIPLE CARCASSES	2650	mg/kg			RCBRA
636	MULTIPLE CARCASSES	2750	mg/kg			RCBRA
637	MULTIPLE CARCASSES	3340	mg/kg			RCBRA
638	MULTIPLE CARCASSES	3540	mg/kg			RCBRA
639	MULTIPLE CARCASSES	3380	mg/kg			RCBRA
640	MULTIPLE CARCASSES	2930	mg/kg			RCBRA
641	MULTIPLE CARCASSES	2930	mg/kg			RCBRA
642	MULTIPLE CARCASSES	2980	mg/kg			RCBRA
643	MULTIPLE CARCASSES	2980	mg/kg			RCBRA
644	MULTIPLE CARCASSES	2820	mg/kg			RCBRA
645	MULTIPLE CARCASSES	0.07	mg/kg	C		RCBRA
646	MULTIPLE CARCASSES	0.1	mg/kg	C		RCBRA
647	MULTIPLE CARCASSES	0.08	mg/kg			RCBRA
648	MULTIPLE CARCASSES	0.13	mg/kg	C		RCBRA
649	MULTIPLE CARCASSES	0.08	mg/kg			RCBRA
650	MULTIPLE CARCASSES	0.08	mg/kg			RCBRA
651	MULTIPLE CARCASSES	0.1	mg/kg	C		RCBRA
652	MULTIPLE CARCASSES	0.1	mg/kg	C		RCBRA
653	MULTIPLE CARCASSES	0.1	mg/kg			RCBRA
654	MULTIPLE CARCASSES	0.09	mg/kg	C		RCBRA
655	MULTIPLE CARCASSES	0.05	mg/kg	C		RCBRA
656	MULTIPLE CARCASSES	0.05	mg/kg	C		RCBRA
657	MULTIPLE CARCASSES	0.1	mg/kg	C		RCBRA
658	MULTIPLE CARCASSES	0.1	mg/kg	C		RCBRA
659	MULTIPLE CARCASSES	0.05	mg/kg			RCBRA
660	MULTIPLE CARCASSES	0.05	mg/kg			RCBRA
661	MULTIPLE CARCASSES	0.05	mg/kg			RCBRA
662	MULTIPLE CARCASSES	0.05	mg/kg			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
663	Lithium	7439-93-2	RCBRA 600-181	IU2/IU6	UPLAND	578303.83	147316.698
664	Lithium	7439-93-2	RCBRA 600-204	IU2/IU6	UPLAND	580128.485	144762.219
665	Lithium	7439-93-2	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
666	Lithium	7439-93-2	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
667	Lithium	7439-93-2	RCBRA 600-23	IU2/IU6	UPLAND	585523.593	130481.377
668	Lithium	7439-93-2	RCBRA 618-4	300	UPLAND	593954.946	117064.473
669	Lithium	7439-93-2	RCBRA 628-1	IU2/IU6	UPLAND	577797.524	148745.681
670	Lithium	7439-93-2	RCBRA CP Ref 2	IU2/IU6	UPLAND	563789.959	139793.869
671	Lithium	7439-93-2	RCBRA JA JONES	300	UPLAND	593874.58	120013.908
672	Lithium	7439-93-2	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
673	Lithium	7439-93-2	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
674	Lithium	7439-93-2	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
675	Lithium	7439-93-2	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
676	Lithium	7439-93-2	RCBRA Pit 18	IU2/IU6	UPLAND	580697.058	145311.464
677	Lithium	7439-93-2	RCBRA Pit 23	IU2/IU6	UPLAND	572381.012	144874.157
678	Lithium	7439-93-2	RCBRA Pit 24	BC	UPLAND	563395.814	145119.007
679	Lithium	7439-93-2	RCBRA Pit 9	300	UPLAND	592807.103	120587.7
680	Lithium	7439-93-2	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
681	Lithium	7439-93-2	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
682	Lithium	7439-93-2	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
683	Lithium	7439-93-2	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
684	Lithium	7439-93-2	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
685	Lithium	7439-93-2	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
686	Lithium	7439-93-2	RCBRA Yak Rdg 2	Outside decision areas	UPLAND	559031.557	135576.407
687	Magnesium	7439-95-4	RCBRA 100-D-48	D/H	UPLAND	573841.527	151914.538
688	Magnesium	7439-95-4	RCBRA 100-D-49	D/H	UPLAND	573938.06	151944.123
689	Magnesium	7439-95-4	RCBRA 100-F-2	IU2/IU6	UPLAND	579728.068	147001.117
690	Magnesium	7439-95-4	RCBRA 116-DR-1&2	D/H	UPLAND	574007.817	152246.748
691	Magnesium	7439-95-4	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
692	Magnesium	7439-95-4	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
693	Magnesium	7439-95-4	RCBRA 1607-D2:1	D/H	UPLAND	573823.924	152260.319
694	Magnesium	7439-95-4	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
695	Magnesium	7439-95-4	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
696	Magnesium	7439-95-4	RCBRA 2a Rip	BC	RIPARIAN	564618.501	145284.526
697	Magnesium	7439-95-4	RCBRA 2c Rip	K	RIPARIAN	567598.2	146210.159
698	Magnesium	7439-95-4	RCBRA 2f Rip	D/H	RIPARIAN	576222.844	154297.511
699	Magnesium	7439-95-4	RCBRA 2j Rip	IU2/IU6	RIPARIAN	579360.971	150092.048
700	Magnesium	7439-95-4	RCBRA 2l Rip	IU2/IU6	RIPARIAN	582341.212	146120.069
701	Magnesium	7439-95-4	RCBRA 300-49	300	UPLAND	594318.994	116830.934

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
663	4/20/2006	J11KL2	SOIL and BIOTA	MIS	5.7	mg/kg	MOUSE
664	4/20/2006	J11KL0	SOIL and BIOTA	MIS	7.2	mg/kg	MOUSE
665	4/20/2006	J11KL1	SOIL and BIOTA	MIS	8	mg/kg	MOUSE
666	4/20/2006	J11KL1	SOIL and BIOTA	MIS-phyt	8.5	mg/kg	MOUSE
667	4/21/2006	J11KK7	SOIL and BIOTA	MIS	6.9	mg/kg	MOUSE
668	4/21/2006	J11KL8	SOIL and BIOTA	MIS	6.1	mg/kg	MOUSE
669	4/20/2006	J11KL3	SOIL and BIOTA	MIS	6.9	mg/kg	MOUSE
670	4/3/2006	J11L36	SOIL and BIOTA	MIS	5.9	mg/kg	MOUSE
671	4/21/2006	J11L24	SOIL and BIOTA	MIS	5.5	mg/kg	MOUSE
672	4/3/2006	J11KM5	SOIL and BIOTA	MIS	9.7	mg/kg	MOUSE
673	4/3/2006	J11KM5	SOIL and BIOTA	MIS-phyt	11	mg/kg	MOUSE
674	4/20/2006	J11KK5	SOIL and BIOTA	MIS	5.8	mg/kg	MOUSE
675	4/20/2006	J11XY0	SOIL and BIOTA	MIS	5.8	mg/kg	MOUSE
676	4/20/2006	J11KK6	SOIL and BIOTA	MIS	6.8	mg/kg	MOUSE
677	4/3/2006	J11L23	SOIL and BIOTA	MIS	4.5	mg/kg	MOUSE
678	4/3/2006	J11KM2	SOIL and BIOTA	MIS	7.4	mg/kg	MOUSE
679	4/21/2006	J11KM1	SOIL and BIOTA	MIS	5.7	mg/kg	MOUSE
680	4/20/2006	J11919	SOIL and BIOTA	MIS	13.5	mg/kg	MOUSE
681	4/20/2006	J11XY1	SOIL and BIOTA	MIS	13.5	mg/kg	MOUSE
682	4/3/2006	J11KM6	SOIL and BIOTA	MIS	8.9	mg/kg	MOUSE
683	4/3/2006	J11KM6	SOIL and BIOTA	MIS-phyt	9.6	mg/kg	MOUSE
684	4/3/2006	J11KM4	SOIL and BIOTA	MIS	8.3	mg/kg	MOUSE
685	4/3/2006	J11KM4	SOIL and BIOTA	MIS-phyt	9.3	mg/kg	MOUSE
686	4/3/2006	J11KM3	SOIL and BIOTA	MIS	10.9	mg/kg	MOUSE
687	4/5/2006	J11KV1	SOIL and BIOTA	MIS	4730	mg/kg	MOUSE
688	4/5/2006	J11KV2	SOIL and BIOTA	MIS	4490	mg/kg	MOUSE
689	4/21/2006	J11L22	SOIL and BIOTA	MIS	4480	mg/kg	MOUSE
690	4/3/2006	J11L21	SOIL and BIOTA	MIS	4200	mg/kg	MOUSE
691	4/20/2006	J11KL7	SOIL and BIOTA	MIS	4340	mg/kg	MOUSE
692	4/20/2006	J11KL7	SOIL and BIOTA	MIS-phyt	4080	mg/kg	MOUSE
693	4/5/2006	J11KM0	SOIL and BIOTA	MIS	4580	mg/kg	MOUSE
694	4/5/2006	J11KL5	SOIL and BIOTA	MIS	4340	mg/kg	MOUSE
695	4/5/2006	J11KL5	SOIL and BIOTA	MIS-phyt	5040	mg/kg	MOUSE
696	6/6/2007	J14XP2	SOIL and BIOTA	MIS	3800	mg/kg	MOUSE
697	6/6/2007	J14XP9	SOIL and BIOTA	MIS	4950	mg/kg	MOUSE
698	6/6/2007	J14XP3	SOIL and BIOTA	MIS	4570	mg/kg	MOUSE
699	6/6/2007	J14XP4	SOIL and BIOTA	MIS	5370	mg/kg	MOUSE
700	6/6/2007	J14XP5	SOIL and BIOTA	MIS	4540	mg/kg	MOUSE
701	4/21/2006	J11KL9	SOIL and BIOTA	MIS	3920	mg/kg	MOUSE

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
663	MULTIPLE CARCASSES	0.05	mg/kg			RCBRA
664	MULTIPLE CARCASSES	0.06	mg/kg			RCBRA
665	MULTIPLE CARCASSES	0.06	mg/kg			RCBRA
666	MULTIPLE CARCASSES	0.06	mg/kg			RCBRA
667	MULTIPLE CARCASSES	0.09	mg/kg			RCBRA
668	MULTIPLE CARCASSES	0.05	mg/kg			RCBRA
669	MULTIPLE CARCASSES	0.05	mg/kg			RCBRA
670	MULTIPLE CARCASSES	0.08	mg/kg	C		RCBRA
671	MULTIPLE CARCASSES	0.11	mg/kg			RCBRA
672	MULTIPLE CARCASSES	0.13	mg/kg	C		RCBRA
673	MULTIPLE CARCASSES	0.13	mg/kg	C		RCBRA
674	MULTIPLE CARCASSES	0.06	mg/kg			RCBRA
675	MULTIPLE CARCASSES	0.07	mg/kg			RCBRA
676	MULTIPLE CARCASSES	0.06	mg/kg			RCBRA
677	MULTIPLE CARCASSES	0.09	mg/kg	C		RCBRA
678	MULTIPLE CARCASSES	0.07	mg/kg	C		RCBRA
679	MULTIPLE CARCASSES	0.07	mg/kg			RCBRA
680	MULTIPLE CARCASSES	0.06	mg/kg			RCBRA
681	MULTIPLE CARCASSES	0.05	mg/kg			RCBRA
682	MULTIPLE CARCASSES	0.1	mg/kg	C		RCBRA
683	MULTIPLE CARCASSES	0.1	mg/kg	C		RCBRA
684	MULTIPLE CARCASSES	0.06	mg/kg	C		RCBRA
685	MULTIPLE CARCASSES	0.06	mg/kg	C		RCBRA
686	MULTIPLE CARCASSES	0.09	mg/kg	C		RCBRA
687	MULTIPLE CARCASSES	415	mg/kg			RCBRA
688	MULTIPLE CARCASSES	727	mg/kg			RCBRA
689	MULTIPLE CARCASSES	398	mg/kg			RCBRA
690	MULTIPLE CARCASSES	691	mg/kg			RCBRA
691	MULTIPLE CARCASSES	511	mg/kg			RCBRA
692	MULTIPLE CARCASSES	511	mg/kg			RCBRA
693	MULTIPLE CARCASSES	583	mg/kg			RCBRA
694	MULTIPLE CARCASSES	641	mg/kg			RCBRA
695	MULTIPLE CARCASSES	641	mg/kg			RCBRA
696	MULTIPLE CARCASSES	559	mg/kg	C		RCBRA
697	MULTIPLE CARCASSES	575	mg/kg	C		RCBRA
698	MULTIPLE CARCASSES	121	mg/kg	C		RCBRA
699	MULTIPLE CARCASSES	466	mg/kg	C		RCBRA
700	MULTIPLE CARCASSES	614	mg/kg	C		RCBRA
701	MULTIPLE CARCASSES	453	mg/kg			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
702	Magnesium	7439-95-4	RCBRA 3b Rip	IU2/IU6	RIPARIAN	584961.205	141035.835
703	Magnesium	7439-95-4	RCBRA 4a Rip	IU2/IU6	RIPARIAN	589347.5	137480.985
704	Magnesium	7439-95-4	RCBRA 5c Rip	300	RIPARIAN	594509.985	124869.182
705	Magnesium	7439-95-4	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
706	Magnesium	7439-95-4	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
707	Magnesium	7439-95-4	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
708	Magnesium	7439-95-4	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
709	Magnesium	7439-95-4	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
710	Magnesium	7439-95-4	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
711	Magnesium	7439-95-4	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
712	Magnesium	7439-95-4	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
713	Magnesium	7439-95-4	RCBRA 600-181	IU2/IU6	UPLAND	578303.83	147316.698
714	Magnesium	7439-95-4	RCBRA 600-204	IU2/IU6	UPLAND	580128.485	144762.219
715	Magnesium	7439-95-4	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
716	Magnesium	7439-95-4	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
717	Magnesium	7439-95-4	RCBRA 600-23	IU2/IU6	UPLAND	585523.593	130481.377
718	Magnesium	7439-95-4	RCBRA 618-4	300	UPLAND	593954.946	117064.473
719	Magnesium	7439-95-4	RCBRA 628-1	IU2/IU6	UPLAND	577797.524	148745.681
720	Magnesium	7439-95-4	RCBRA Bev Ref 1 Rip	Outside decision areas	RIPARIAN	542428.846	167701.261
721	Magnesium	7439-95-4	RCBRA Bev Ref 2 Rip	Outside decision areas	RIPARIAN	541493.988	167808.357
722	Magnesium	7439-95-4	RCBRA CP Ref 2	IU2/IU6	UPLAND	563789.959	139793.869
723	Magnesium	7439-95-4	RCBRA JA JONES	300	UPLAND	593874.58	120013.908
724	Magnesium	7439-95-4	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
725	Magnesium	7439-95-4	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
726	Magnesium	7439-95-4	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
727	Magnesium	7439-95-4	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
728	Magnesium	7439-95-4	RCBRA Pit 18	IU2/IU6	UPLAND	580697.058	145311.464
729	Magnesium	7439-95-4	RCBRA Pit 23	IU2/IU6	UPLAND	572381.012	144874.157
730	Magnesium	7439-95-4	RCBRA Pit 24	BC	UPLAND	563395.814	145119.007
731	Magnesium	7439-95-4	RCBRA Pit 9	300	UPLAND	592807.103	120587.7
732	Magnesium	7439-95-4	RCBRA R Ref 11	Outside decision areas	RIPARIAN	559400.735	146458.486
733	Magnesium	7439-95-4	RCBRA R Ref 12	IU2/IU6	RIPARIAN	559201.908	145747.542
734	Magnesium	7439-95-4	RCBRA R Ref 13	Outside decision areas	RIPARIAN	558572.809	145345.115
735	Magnesium	7439-95-4	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
736	Magnesium	7439-95-4	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
737	Magnesium	7439-95-4	RCBRA R Ref 16	Outside decision areas	RIPARIAN	557650.029	144826.748
738	Magnesium	7439-95-4	RCBRA Rip 1	D/H	RIPARIAN	577251.869	153659.195
739	Magnesium	7439-95-4	RCBRA Rip 10	D/H	RIPARIAN	573987.873	153082.19
740	Magnesium	7439-95-4	RCBRA Rip 2	D/H	RIPARIAN	573603.219	152471.6

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
702	6/6/2007	J14XP6	SOIL and BIOTA	MIS	4430	mg/kg	MOUSE
703	6/6/2007	J14XP8	SOIL and BIOTA	MIS	5280	mg/kg	MOUSE
704	6/6/2007	J14XP7	SOIL and BIOTA	MIS	3780	mg/kg	MOUSE
705	4/5/2006	J11L25	SOIL and BIOTA	MIS	3220	mg/kg	MOUSE
706	4/5/2006	J11L25	SOIL and BIOTA	MIS-phyt	4470	mg/kg	MOUSE
707	4/5/2006	J11KK8	SOIL and BIOTA	MIS	3820	mg/kg	MOUSE
708	4/5/2006	J11KK8	SOIL and BIOTA	MIS-phyt	4150	mg/kg	MOUSE
709	4/20/2006	J11KK9	SOIL and BIOTA	MIS	4140	mg/kg	MOUSE
710	4/20/2006	J11KK9	SOIL and BIOTA	MIS-phyt	4330	mg/kg	MOUSE
711	4/20/2006	J11KL4	SOIL and BIOTA	MIS	3520	mg/kg	MOUSE
712	4/20/2006	J11KL4	SOIL and BIOTA	MIS-phyt	3870	mg/kg	MOUSE
713	4/20/2006	J11KL2	SOIL and BIOTA	MIS	3860	mg/kg	MOUSE
714	4/20/2006	J11KL0	SOIL and BIOTA	MIS	4500	mg/kg	MOUSE
715	4/20/2006	J11KL1	SOIL and BIOTA	MIS	4310	mg/kg	MOUSE
716	4/20/2006	J11KL1	SOIL and BIOTA	MIS-phyt	4450	mg/kg	MOUSE
717	4/21/2006	J11KK7	SOIL and BIOTA	MIS	3830	mg/kg	MOUSE
718	4/21/2006	J11KL8	SOIL and BIOTA	MIS	3720	mg/kg	MOUSE
719	4/20/2006	J11KL3	SOIL and BIOTA	MIS	4020	mg/kg	MOUSE
720	6/6/2007	J14XN9	SOIL and BIOTA	MIS	4150	mg/kg	MOUSE
721	6/6/2007	J14XP0	SOIL and BIOTA	MIS	4880	mg/kg	MOUSE
722	4/3/2006	J11L36	SOIL and BIOTA	MIS	3780	mg/kg	MOUSE
723	4/21/2006	J11L24	SOIL and BIOTA	MIS	3580	mg/kg	MOUSE
724	4/3/2006	J11KM5	SOIL and BIOTA	MIS	5850	mg/kg	MOUSE
725	4/3/2006	J11KM5	SOIL and BIOTA	MIS-phyt	6010	mg/kg	MOUSE
726	4/20/2006	J11KK5	SOIL and BIOTA	MIS	4800	mg/kg	MOUSE
727	4/20/2006	J11XY0	SOIL and BIOTA	MIS	4800	mg/kg	MOUSE
728	4/20/2006	J11KK6	SOIL and BIOTA	MIS	4050	mg/kg	MOUSE
729	4/3/2006	J11L23	SOIL and BIOTA	MIS	3850	mg/kg	MOUSE
730	4/3/2006	J11KM2	SOIL and BIOTA	MIS	4270	mg/kg	MOUSE
731	4/21/2006	J11KM1	SOIL and BIOTA	MIS	4100	mg/kg	MOUSE
732	3/22/2006	J11924	SOIL and BIOTA	MIS	4510	mg/kg	MOUSE
733	3/23/2006	J11912	SOIL and BIOTA	MIS	4200	mg/kg	MOUSE
734	3/23/2006	J11913	SOIL and BIOTA	MIS	5500	mg/kg	MOUSE
735	6/6/2007	J14XP1	SOIL and BIOTA	MIS	5700	mg/kg	MOUSE
736	3/23/2006	J11925	SOIL and BIOTA	MIS	5700	mg/kg	MOUSE
737	3/23/2006	J11914	SOIL and BIOTA	MIS	4870	mg/kg	MOUSE
738	3/21/2006	J11916	SOIL and BIOTA	MIS	5360	mg/kg	MOUSE
739	3/22/2006	J11923	SOIL and BIOTA	MIS	3590	mg/kg	MOUSE
740	3/21/2006	J11917	SOIL and BIOTA	MIS	4750	mg/kg	MOUSE

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
702	MULTIPLE CARCASSES	597	mg/kg	C		RCBRA
703	MULTIPLE CARCASSES	636	mg/kg	C		RCBRA
704	MULTIPLE CARCASSES	471	mg/kg	C		RCBRA
705	MULTIPLE CARCASSES	597	mg/kg			RCBRA
706	MULTIPLE CARCASSES	597	mg/kg			RCBRA
707	MULTIPLE CARCASSES	471	mg/kg			RCBRA
708	MULTIPLE CARCASSES	471	mg/kg			RCBRA
709	MULTIPLE CARCASSES	432	mg/kg			RCBRA
710	MULTIPLE CARCASSES	432	mg/kg			RCBRA
711	MULTIPLE CARCASSES	481	mg/kg			RCBRA
712	MULTIPLE CARCASSES	481	mg/kg			RCBRA
713	MULTIPLE CARCASSES	431	mg/kg			RCBRA
714	MULTIPLE CARCASSES	502	mg/kg			RCBRA
715	MULTIPLE CARCASSES	555	mg/kg			RCBRA
716	MULTIPLE CARCASSES	555	mg/kg			RCBRA
717	MULTIPLE CARCASSES	579	mg/kg			RCBRA
718	MULTIPLE CARCASSES	456	mg/kg			RCBRA
719	MULTIPLE CARCASSES	691	mg/kg			RCBRA
720	MULTIPLE CARCASSES	559	mg/kg	C		RCBRA
721	MULTIPLE CARCASSES	475	mg/kg	C		RCBRA
722	MULTIPLE CARCASSES	429	mg/kg			RCBRA
723	MULTIPLE CARCASSES	374	mg/kg			RCBRA
724	MULTIPLE CARCASSES	565	mg/kg			RCBRA
725	MULTIPLE CARCASSES	565	mg/kg			RCBRA
726	MULTIPLE CARCASSES	404	mg/kg			RCBRA
727	MULTIPLE CARCASSES	466	mg/kg			RCBRA
728	MULTIPLE CARCASSES	391	mg/kg			RCBRA
729	MULTIPLE CARCASSES	656	mg/kg			RCBRA
730	MULTIPLE CARCASSES	354	mg/kg			RCBRA
731	MULTIPLE CARCASSES	436	mg/kg			RCBRA
732	MULTIPLE CARCASSES	474	mg/kg			RCBRA
733	MULTIPLE CARCASSES	564	mg/kg			RCBRA
734	MULTIPLE CARCASSES	339	mg/kg			RCBRA
735	MULTIPLE CARCASSES	458	mg/kg	C		RCBRA
736	MULTIPLE CARCASSES	468	mg/kg			RCBRA
737	MULTIPLE CARCASSES	451	mg/kg			RCBRA
738	MULTIPLE CARCASSES	494	mg/kg			RCBRA
739	MULTIPLE CARCASSES	788	mg/kg			RCBRA
740	MULTIPLE CARCASSES	567	mg/kg			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
741	Magnesium	7439-95-4	RCBRA Rip 3	D/H	RIPARIAN	572639.65	151677.812
742	Magnesium	7439-95-4	RCBRA Rip 4	N	RIPARIAN	570558.596	148981.547
743	Magnesium	7439-95-4	RCBRA Rip 5	K	RIPARIAN	569141.025	147521.561
744	Magnesium	7439-95-4	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
745	Magnesium	7439-95-4	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
746	Magnesium	7439-95-4	RCBRA Rip 7	IU2/IU6	RIPARIAN	581326.914	147825.17
747	Magnesium	7439-95-4	RCBRA Rip 8	D/H	RIPARIAN	578698.584	152233.645
748	Magnesium	7439-95-4	RCBRA Rip 9	D/H	RIPARIAN	578153.643	152801.452
749	Magnesium	7439-95-4	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
750	Magnesium	7439-95-4	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
751	Magnesium	7439-95-4	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
752	Magnesium	7439-95-4	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
753	Magnesium	7439-95-4	RCBRA Yak Rdg 2	Outside decision areas	UPLAND	559031.557	135576.407
754	Manganese	7439-96-5	RCBRA 100-D-48	D/H	UPLAND	573841.527	151914.538
755	Manganese	7439-96-5	RCBRA 100-D-49	D/H	UPLAND	573938.06	151944.123
756	Manganese	7439-96-5	RCBRA 100-F-2	IU2/IU6	UPLAND	579728.068	147001.117
757	Manganese	7439-96-5	RCBRA 116-DR-1&2	D/H	UPLAND	574007.817	152246.748
758	Manganese	7439-96-5	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
759	Manganese	7439-96-5	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
760	Manganese	7439-96-5	RCBRA 1607-D2:1	D/H	UPLAND	573823.924	152260.319
761	Manganese	7439-96-5	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
762	Manganese	7439-96-5	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
763	Manganese	7439-96-5	RCBRA 2a Rip	BC	RIPARIAN	564618.501	145284.526
764	Manganese	7439-96-5	RCBRA 2c Rip	K	RIPARIAN	567598.2	146210.159
765	Manganese	7439-96-5	RCBRA 2f Rip	D/H	RIPARIAN	576222.844	154297.511
766	Manganese	7439-96-5	RCBRA 2j Rip	IU2/IU6	RIPARIAN	579360.971	150092.048
767	Manganese	7439-96-5	RCBRA 2l Rip	IU2/IU6	RIPARIAN	582341.212	146120.069
768	Manganese	7439-96-5	RCBRA 300-49	300	UPLAND	594318.994	116830.934
769	Manganese	7439-96-5	RCBRA 3b Rip	IU2/IU6	RIPARIAN	584961.205	141035.835
770	Manganese	7439-96-5	RCBRA 4a Rip	IU2/IU6	RIPARIAN	589347.5	137480.985
771	Manganese	7439-96-5	RCBRA 5c Rip	300	RIPARIAN	594509.985	124869.182
772	Manganese	7439-96-5	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
773	Manganese	7439-96-5	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
774	Manganese	7439-96-5	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
775	Manganese	7439-96-5	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
776	Manganese	7439-96-5	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
777	Manganese	7439-96-5	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
778	Manganese	7439-96-5	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
779	Manganese	7439-96-5	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
741	3/22/2006	J11918	SOIL and BIOTA	MIS	4090	mg/kg	MOUSE
742	3/22/2006	J11910	SOIL and BIOTA	MIS	4650	mg/kg	MOUSE
743	3/22/2006	J11911	SOIL and BIOTA	MIS	5260	mg/kg	MOUSE
744	4/20/2006	J11919	SOIL and BIOTA	MIS	4930	mg/kg	MOUSE
745	4/20/2006	J11XY1	SOIL and BIOTA	MIS	4930	mg/kg	MOUSE
746	3/22/2006	J11920	SOIL and BIOTA	MIS	4150	mg/kg	MOUSE
747	3/22/2006	J11921	SOIL and BIOTA	MIS	4270	mg/kg	MOUSE
748	3/22/2006	J11922	SOIL and BIOTA	MIS	4440	mg/kg	MOUSE
749	4/3/2006	J11KM6	SOIL and BIOTA	MIS	4920	mg/kg	MOUSE
750	4/3/2006	J11KM6	SOIL and BIOTA	MIS-phyt	5140	mg/kg	MOUSE
751	4/3/2006	J11KM4	SOIL and BIOTA	MIS	3930	mg/kg	MOUSE
752	4/3/2006	J11KM4	SOIL and BIOTA	MIS-phyt	4290	mg/kg	MOUSE
753	4/3/2006	J11KM3	SOIL and BIOTA	MIS	6110	mg/kg	MOUSE
754	4/5/2006	J11KV1	SOIL and BIOTA	MIS	321	mg/kg	MOUSE
755	4/5/2006	J11KV2	SOIL and BIOTA	MIS	328	mg/kg	MOUSE
756	4/21/2006	J11L22	SOIL and BIOTA	MIS	368	mg/kg	MOUSE
757	4/3/2006	J11L21	SOIL and BIOTA	MIS	315	mg/kg	MOUSE
758	4/20/2006	J11KL7	SOIL and BIOTA	MIS	281	mg/kg	MOUSE
759	4/20/2006	J11KL7	SOIL and BIOTA	MIS-phyt	273	mg/kg	MOUSE
760	4/5/2006	J11KM0	SOIL and BIOTA	MIS	286	mg/kg	MOUSE
761	4/5/2006	J11KL5	SOIL and BIOTA	MIS	265	mg/kg	MOUSE
762	4/5/2006	J11KL5	SOIL and BIOTA	MIS-phyt	314	mg/kg	MOUSE
763	6/6/2007	J14XP2	SOIL and BIOTA	MIS	166	mg/kg	MOUSE
764	6/6/2007	J14XP9	SOIL and BIOTA	MIS	269	mg/kg	MOUSE
765	6/6/2007	J14XP3	SOIL and BIOTA	MIS	227	mg/kg	MOUSE
766	6/6/2007	J14XP4	SOIL and BIOTA	MIS	219	mg/kg	MOUSE
767	6/6/2007	J14XP5	SOIL and BIOTA	MIS	284	mg/kg	MOUSE
768	4/21/2006	J11KL9	SOIL and BIOTA	MIS	310	mg/kg	MOUSE
769	6/6/2007	J14XP6	SOIL and BIOTA	MIS	218	mg/kg	MOUSE
770	6/6/2007	J14XP8	SOIL and BIOTA	MIS	257	mg/kg	MOUSE
771	6/6/2007	J14XP7	SOIL and BIOTA	MIS	194	mg/kg	MOUSE
772	4/5/2006	J11L25	SOIL and BIOTA	MIS	249	mg/kg	MOUSE
773	4/5/2006	J11L25	SOIL and BIOTA	MIS-phyt	328	mg/kg	MOUSE
774	4/5/2006	J11KK8	SOIL and BIOTA	MIS	274	mg/kg	MOUSE
775	4/5/2006	J11KK8	SOIL and BIOTA	MIS-phyt	302	mg/kg	MOUSE
776	4/20/2006	J11KK9	SOIL and BIOTA	MIS	280	mg/kg	MOUSE
777	4/20/2006	J11KK9	SOIL and BIOTA	MIS-phyt	303	mg/kg	MOUSE
778	4/20/2006	J11KL4	SOIL and BIOTA	MIS	258	mg/kg	MOUSE
779	4/20/2006	J11KL4	SOIL and BIOTA	MIS-phyt	290	mg/kg	MOUSE

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
741	MULTIPLE CARCASSES	690	mg/kg			RCBRA
742	MULTIPLE CARCASSES	603	mg/kg			RCBRA
743	MULTIPLE CARCASSES	520	mg/kg			RCBRA
744	MULTIPLE CARCASSES	363	mg/kg			RCBRA
745	MULTIPLE CARCASSES	494	mg/kg			RCBRA
746	MULTIPLE CARCASSES	593	mg/kg			RCBRA
747	MULTIPLE CARCASSES	481	mg/kg			RCBRA
748	MULTIPLE CARCASSES	665	mg/kg			RCBRA
749	MULTIPLE CARCASSES	605	mg/kg			RCBRA
750	MULTIPLE CARCASSES	605	mg/kg			RCBRA
751	MULTIPLE CARCASSES	549	mg/kg			RCBRA
752	MULTIPLE CARCASSES	549	mg/kg			RCBRA
753	MULTIPLE CARCASSES	394	mg/kg			RCBRA
754	MULTIPLE CARCASSES	4.5	mg/kg			RCBRA
755	MULTIPLE CARCASSES	7	mg/kg			RCBRA
756	MULTIPLE CARCASSES	5.2	mg/kg			RCBRA
757	MULTIPLE CARCASSES	4.9	mg/kg			RCBRA
758	MULTIPLE CARCASSES	3.7	mg/kg			RCBRA
759	MULTIPLE CARCASSES	3.7	mg/kg			RCBRA
760	MULTIPLE CARCASSES	6.6	mg/kg			RCBRA
761	MULTIPLE CARCASSES	6.1	mg/kg			RCBRA
762	MULTIPLE CARCASSES	6.1	mg/kg			RCBRA
763	MULTIPLE CARCASSES	3.5	mg/kg			RCBRA
764	MULTIPLE CARCASSES	4.9	mg/kg			RCBRA
765	MULTIPLE CARCASSES	1	mg/kg			RCBRA
766	MULTIPLE CARCASSES	4.1	mg/kg			RCBRA
767	MULTIPLE CARCASSES	4.5	mg/kg			RCBRA
768	MULTIPLE CARCASSES	4.1	mg/kg			RCBRA
769	MULTIPLE CARCASSES	3.5	mg/kg			RCBRA
770	MULTIPLE CARCASSES	5.7	mg/kg			RCBRA
771	MULTIPLE CARCASSES	4.4	mg/kg			RCBRA
772	MULTIPLE CARCASSES	5.5	mg/kg			RCBRA
773	MULTIPLE CARCASSES	5.5	mg/kg			RCBRA
774	MULTIPLE CARCASSES	3	mg/kg			RCBRA
775	MULTIPLE CARCASSES	3	mg/kg			RCBRA
776	MULTIPLE CARCASSES	4	mg/kg			RCBRA
777	MULTIPLE CARCASSES	4	mg/kg			RCBRA
778	MULTIPLE CARCASSES	2.9	mg/kg			RCBRA
779	MULTIPLE CARCASSES	2.9	mg/kg			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
780	Manganese	7439-96-5	RCBRA 600-181	IU2/IU6	UPLAND	578303.83	147316.698
781	Manganese	7439-96-5	RCBRA 600-204	IU2/IU6	UPLAND	580128.485	144762.219
782	Manganese	7439-96-5	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
783	Manganese	7439-96-5	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
784	Manganese	7439-96-5	RCBRA 600-23	IU2/IU6	UPLAND	585523.593	130481.377
785	Manganese	7439-96-5	RCBRA 618-4	300	UPLAND	593954.946	117064.473
786	Manganese	7439-96-5	RCBRA 628-1	IU2/IU6	UPLAND	577797.524	148745.681
787	Manganese	7439-96-5	RCBRA Bev Ref 1 Rip	Outside decision areas	RIPARIAN	542428.846	167701.261
788	Manganese	7439-96-5	RCBRA Bev Ref 2 Rip	Outside decision areas	RIPARIAN	541493.988	167808.357
789	Manganese	7439-96-5	RCBRA CP Ref 2	IU2/IU6	UPLAND	563789.959	139793.869
790	Manganese	7439-96-5	RCBRA JA JONES	300	UPLAND	593874.58	120013.908
791	Manganese	7439-96-5	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
792	Manganese	7439-96-5	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
793	Manganese	7439-96-5	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
794	Manganese	7439-96-5	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
795	Manganese	7439-96-5	RCBRA Pit 18	IU2/IU6	UPLAND	580697.058	145311.464
796	Manganese	7439-96-5	RCBRA Pit 23	IU2/IU6	UPLAND	572381.012	144874.157
797	Manganese	7439-96-5	RCBRA Pit 24	BC	UPLAND	563395.814	145119.007
798	Manganese	7439-96-5	RCBRA Pit 9	300	UPLAND	592807.103	120587.7
799	Manganese	7439-96-5	RCBRA R Ref 11	Outside decision areas	RIPARIAN	559400.735	146458.486
800	Manganese	7439-96-5	RCBRA R Ref 12	IU2/IU6	RIPARIAN	559201.908	145747.542
801	Manganese	7439-96-5	RCBRA R Ref 13	Outside decision areas	RIPARIAN	558572.809	145345.115
802	Manganese	7439-96-5	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
803	Manganese	7439-96-5	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
804	Manganese	7439-96-5	RCBRA R Ref 16	Outside decision areas	RIPARIAN	557650.029	144826.748
805	Manganese	7439-96-5	RCBRA Rip 1	D/H	RIPARIAN	577251.869	153659.195
806	Manganese	7439-96-5	RCBRA Rip 10	D/H	RIPARIAN	573987.873	153082.19
807	Manganese	7439-96-5	RCBRA Rip 2	D/H	RIPARIAN	573603.219	152471.6
808	Manganese	7439-96-5	RCBRA Rip 3	D/H	RIPARIAN	572639.65	151677.812
809	Manganese	7439-96-5	RCBRA Rip 4	N	RIPARIAN	570558.596	148981.547
810	Manganese	7439-96-5	RCBRA Rip 5	K	RIPARIAN	569141.025	147521.561
811	Manganese	7439-96-5	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
812	Manganese	7439-96-5	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
813	Manganese	7439-96-5	RCBRA Rip 7	IU2/IU6	RIPARIAN	581326.914	147825.17
814	Manganese	7439-96-5	RCBRA Rip 8	D/H	RIPARIAN	578698.584	152233.645
815	Manganese	7439-96-5	RCBRA Rip 9	D/H	RIPARIAN	578153.643	152801.452
816	Manganese	7439-96-5	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
817	Manganese	7439-96-5	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
818	Manganese	7439-96-5	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
780	4/20/2006	J11KL2	SOIL and BIOTA	MIS	326	mg/kg	MOUSE
781	4/20/2006	J11KL0	SOIL and BIOTA	MIS	413	mg/kg	MOUSE
782	4/20/2006	J11KL1	SOIL and BIOTA	MIS	330	mg/kg	MOUSE
783	4/20/2006	J11KL1	SOIL and BIOTA	MIS-phyt	355	mg/kg	MOUSE
784	4/21/2006	J11KK7	SOIL and BIOTA	MIS	269	mg/kg	MOUSE
785	4/21/2006	J11KL8	SOIL and BIOTA	MIS	283	mg/kg	MOUSE
786	4/20/2006	J11KL3	SOIL and BIOTA	MIS	396	mg/kg	MOUSE
787	6/6/2007	J14XN9	SOIL and BIOTA	MIS	188	mg/kg	MOUSE
788	6/6/2007	J14XP0	SOIL and BIOTA	MIS	240	mg/kg	MOUSE
789	4/3/2006	J11L36	SOIL and BIOTA	MIS	339	mg/kg	MOUSE
790	4/21/2006	J11L24	SOIL and BIOTA	MIS	311	mg/kg	MOUSE
791	4/3/2006	J11KM5	SOIL and BIOTA	MIS	506	mg/kg	MOUSE
792	4/3/2006	J11KM5	SOIL and BIOTA	MIS-phyt	528	mg/kg	MOUSE
793	4/20/2006	J11KK5	SOIL and BIOTA	MIS	377	mg/kg	MOUSE
794	4/20/2006	J11XY0	SOIL and BIOTA	MIS	377	mg/kg	MOUSE
795	4/20/2006	J11KK6	SOIL and BIOTA	MIS	283	mg/kg	MOUSE
796	4/3/2006	J11L23	SOIL and BIOTA	MIS	305	mg/kg	MOUSE
797	4/3/2006	J11KM2	SOIL and BIOTA	MIS	386	mg/kg	MOUSE
798	4/21/2006	J11KM1	SOIL and BIOTA	MIS	350	mg/kg	MOUSE
799	3/22/2006	J11924	SOIL and BIOTA	MIS	224	mg/kg	MOUSE
800	3/23/2006	J11912	SOIL and BIOTA	MIS	341	mg/kg	MOUSE
801	3/23/2006	J11913	SOIL and BIOTA	MIS	562	mg/kg	MOUSE
802	6/6/2007	J14XP1	SOIL and BIOTA	MIS	556	mg/kg	MOUSE
803	3/23/2006	J11925	SOIL and BIOTA	MIS	556	mg/kg	MOUSE
804	3/23/2006	J11914	SOIL and BIOTA	MIS	286	mg/kg	MOUSE
805	3/21/2006	J11916	SOIL and BIOTA	MIS	304	mg/kg	MOUSE
806	3/22/2006	J11923	SOIL and BIOTA	MIS	266	mg/kg	MOUSE
807	3/21/2006	J11917	SOIL and BIOTA	MIS	369	mg/kg	MOUSE
808	3/22/2006	J11918	SOIL and BIOTA	MIS	357	mg/kg	MOUSE
809	3/22/2006	J11910	SOIL and BIOTA	MIS	252	mg/kg	MOUSE
810	3/22/2006	J11911	SOIL and BIOTA	MIS	402	mg/kg	MOUSE
811	4/20/2006	J11919	SOIL and BIOTA	MIS	408	mg/kg	MOUSE
812	4/20/2006	J11XY1	SOIL and BIOTA	MIS	408	mg/kg	MOUSE
813	3/22/2006	J11920	SOIL and BIOTA	MIS	255	mg/kg	MOUSE
814	3/22/2006	J11921	SOIL and BIOTA	MIS	305	mg/kg	MOUSE
815	3/22/2006	J11922	SOIL and BIOTA	MIS	267	mg/kg	MOUSE
816	4/3/2006	J11KM6	SOIL and BIOTA	MIS	509	mg/kg	MOUSE
817	4/3/2006	J11KM6	SOIL and BIOTA	MIS-phyt	528	mg/kg	MOUSE
818	4/3/2006	J11KM4	SOIL and BIOTA	MIS	398	mg/kg	MOUSE

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
780	MULTIPLE CARCASSES	4.2	mg/kg			RCBRA
781	MULTIPLE CARCASSES	5.1	mg/kg			RCBRA
782	MULTIPLE CARCASSES	8.2	mg/kg			RCBRA
783	MULTIPLE CARCASSES	8.2	mg/kg			RCBRA
784	MULTIPLE CARCASSES	3.7	mg/kg			RCBRA
785	MULTIPLE CARCASSES	3.6	mg/kg			RCBRA
786	MULTIPLE CARCASSES	7.9	mg/kg			RCBRA
787	MULTIPLE CARCASSES	4	mg/kg			RCBRA
788	MULTIPLE CARCASSES	4.2	mg/kg			RCBRA
789	MULTIPLE CARCASSES	3.5	mg/kg			RCBRA
790	MULTIPLE CARCASSES	5.9	mg/kg			RCBRA
791	MULTIPLE CARCASSES	7.4	mg/kg			RCBRA
792	MULTIPLE CARCASSES	7.4	mg/kg			RCBRA
793	MULTIPLE CARCASSES	4.1	mg/kg			RCBRA
794	MULTIPLE CARCASSES	6.8	mg/kg			RCBRA
795	MULTIPLE CARCASSES	2.3	mg/kg			RCBRA
796	MULTIPLE CARCASSES	5.7	mg/kg			RCBRA
797	MULTIPLE CARCASSES	3.2	mg/kg			RCBRA
798	MULTIPLE CARCASSES	4.6	mg/kg			RCBRA
799	MULTIPLE CARCASSES	3.7	mg/kg			RCBRA
800	MULTIPLE CARCASSES	4.1	mg/kg			RCBRA
801	MULTIPLE CARCASSES	2.1	mg/kg			RCBRA
802	MULTIPLE CARCASSES	4.4	mg/kg			RCBRA
803	MULTIPLE CARCASSES	4.1	mg/kg			RCBRA
804	MULTIPLE CARCASSES	3.2	mg/kg			RCBRA
805	MULTIPLE CARCASSES	5.1	mg/kg			RCBRA
806	MULTIPLE CARCASSES	4.6	mg/kg			RCBRA
807	MULTIPLE CARCASSES	5.9	mg/kg			RCBRA
808	MULTIPLE CARCASSES	5.5	mg/kg			RCBRA
809	MULTIPLE CARCASSES	4.2	mg/kg			RCBRA
810	MULTIPLE CARCASSES	4.2	mg/kg			RCBRA
811	MULTIPLE CARCASSES	3.1	mg/kg			RCBRA
812	MULTIPLE CARCASSES	4.1	mg/kg			RCBRA
813	MULTIPLE CARCASSES	4.4	mg/kg			RCBRA
814	MULTIPLE CARCASSES	3.1	mg/kg			RCBRA
815	MULTIPLE CARCASSES	4.9	mg/kg			RCBRA
816	MULTIPLE CARCASSES	5.2	mg/kg			RCBRA
817	MULTIPLE CARCASSES	5.2	mg/kg			RCBRA
818	MULTIPLE CARCASSES	4.7	mg/kg			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
819	Manganese	7439-96-5	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
820	Manganese	7439-96-5	RCBRA Yak Rdg 2	Outside decision areas	UPLAND	559031.557	135576.407
821	Molybdenum	7439-98-7	RCBRA 100-F-2	IU2/IU6	UPLAND	579728.068	147001.117
822	Molybdenum	7439-98-7	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
823	Molybdenum	7439-98-7	RCBRA 2a Rip	BC	RIPARIAN	564618.501	145284.526
824	Molybdenum	7439-98-7	RCBRA 2c Rip	K	RIPARIAN	567598.2	146210.159
825	Molybdenum	7439-98-7	RCBRA 2f Rip	D/H	RIPARIAN	576222.844	154297.511
826	Molybdenum	7439-98-7	RCBRA 2j Rip	IU2/IU6	RIPARIAN	579360.971	150092.048
827	Molybdenum	7439-98-7	RCBRA 2l Rip	IU2/IU6	RIPARIAN	582341.212	146120.069
828	Molybdenum	7439-98-7	RCBRA 3b Rip	IU2/IU6	RIPARIAN	584961.205	141035.835
829	Molybdenum	7439-98-7	RCBRA 4a Rip	IU2/IU6	RIPARIAN	589347.5	137480.985
830	Molybdenum	7439-98-7	RCBRA 5c Rip	300	RIPARIAN	594509.985	124869.182
831	Molybdenum	7439-98-7	RCBRA 628-1	IU2/IU6	UPLAND	577797.524	148745.681
832	Molybdenum	7439-98-7	RCBRA Bev Ref 1 Rip	Outside decision areas	RIPARIAN	542428.846	167701.261
833	Molybdenum	7439-98-7	RCBRA Bev Ref 2 Rip	Outside decision areas	RIPARIAN	541493.988	167808.357
834	Molybdenum	7439-98-7	RCBRA JA JONES	300	UPLAND	593874.58	120013.908
835	Molybdenum	7439-98-7	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
836	Molybdenum	7439-98-7	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
837	Molybdenum	7439-98-7	RCBRA Pit 18	IU2/IU6	UPLAND	580697.058	145311.464
838	Molybdenum	7439-98-7	RCBRA Pit 9	300	UPLAND	592807.103	120587.7
839	Molybdenum	7439-98-7	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
840	Molybdenum	7439-98-7	RCBRA Rip 1	D/H	RIPARIAN	577251.869	153659.195
841	Molybdenum	7439-98-7	RCBRA Rip 2	D/H	RIPARIAN	573603.219	152471.6
842	Molybdenum	7439-98-7	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
843	Molybdenum	7439-98-7	RCBRA Rip 7	IU2/IU6	RIPARIAN	581326.914	147825.17
844	Molybdenum	7439-98-7	RCBRA Rip 9	D/H	RIPARIAN	578153.643	152801.452
845	Molybdenum	7439-98-7	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
846	Molybdenum	7439-98-7	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
847	Molybdenum	7439-98-7	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
848	Molybdenum	7439-98-7	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
849	Molybdenum	7439-98-7	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
850	Molybdenum	7439-98-7	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
851	Sodium	7440-23-5	RCBRA 100-D-48	D/H	UPLAND	573841.527	151914.538
852	Sodium	7440-23-5	RCBRA 100-D-49	D/H	UPLAND	573938.06	151944.123
853	Sodium	7440-23-5	RCBRA 100-F-2	IU2/IU6	UPLAND	579728.068	147001.117
854	Sodium	7440-23-5	RCBRA 116-DR-1&2	D/H	UPLAND	574007.817	152246.748
855	Sodium	7440-23-5	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
856	Sodium	7440-23-5	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
857	Sodium	7440-23-5	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
819	4/3/2006	J11KM4	SOIL and BIOTA	MIS-phyt	440	mg/kg	MOUSE
820	4/3/2006	J11KM3	SOIL and BIOTA	MIS	546	mg/kg	MOUSE
821	4/21/2006	J11L22	SOIL and BIOTA	MIS	0.191	mg/kg	MOUSE
822	4/20/2006	J11KL7	SOIL and BIOTA	MIS-phyt	0.45	mg/kg	MOUSE
823	6/6/2007	J14XP2	SOIL and BIOTA	MIS	0.7	mg/kg	MOUSE
824	6/6/2007	J14XP9	SOIL and BIOTA	MIS	0.48	mg/kg	MOUSE
825	6/6/2007	J14XP3	SOIL and BIOTA	MIS	0.7	mg/kg	MOUSE
826	6/6/2007	J14XP4	SOIL and BIOTA	MIS	0.96	mg/kg	MOUSE
827	6/6/2007	J14XP5	SOIL and BIOTA	MIS	0.52	mg/kg	MOUSE
828	6/6/2007	J14XP6	SOIL and BIOTA	MIS	0.78	mg/kg	MOUSE
829	6/6/2007	J14XP8	SOIL and BIOTA	MIS	1.1	mg/kg	MOUSE
830	6/6/2007	J14XP7	SOIL and BIOTA	MIS	0.57	mg/kg	MOUSE
831	4/20/2006	J11KL3	SOIL and BIOTA	MIS	1	mg/kg	MOUSE
832	6/6/2007	J14XN9	SOIL and BIOTA	MIS	0.89	mg/kg	MOUSE
833	6/6/2007	J14XP0	SOIL and BIOTA	MIS	0.48	mg/kg	MOUSE
834	4/21/2006	J11L24	SOIL and BIOTA	MIS	0.401	mg/kg	MOUSE
835	4/20/2006	J11KK5	SOIL and BIOTA	MIS	0.45	mg/kg	MOUSE
836	4/20/2006	J11XY0	SOIL and BIOTA	MIS	0.45	mg/kg	MOUSE
837	4/20/2006	J11KK6	SOIL and BIOTA	MIS	0.59	mg/kg	MOUSE
838	4/21/2006	J11KM1	SOIL and BIOTA	MIS	0.54	mg/kg	MOUSE
839	6/6/2007	J14XP1	SOIL and BIOTA	MIS	0.725	mg/kg	MOUSE
840	3/21/2006	J11916	SOIL and BIOTA	MIS	0.56	mg/kg	MOUSE
841	3/21/2006	J11917	SOIL and BIOTA	MIS	0.445	mg/kg	MOUSE
842	4/20/2006	J11XY1	SOIL and BIOTA	MIS	0.52	mg/kg	MOUSE
843	3/22/2006	J11920	SOIL and BIOTA	MIS	0.83	mg/kg	MOUSE
844	3/22/2006	J11922	SOIL and BIOTA	MIS	0.43	mg/kg	MOUSE
845	4/25/2005	B1CVB4	SOIL and BIOTA	Discrete	0.568	mg/kg	MOUSE
846	4/25/2005	B1CVB1	SOIL and BIOTA	Discrete	0.568	mg/kg	MOUSE
847	4/25/2005	B1CVB2	SOIL and BIOTA	Discrete	0.568	mg/kg	MOUSE
848	5/5/2005	B1CVC4	SOIL and BIOTA	Discrete	0.41	mg/kg	MOUSE
849	5/4/2005	B1CVC7	SOIL and BIOTA	Discrete	0.381	mg/kg	MOUSE
850	5/9/2005	B1CVD0	SOIL and BIOTA	Discrete	0.381	mg/kg	MOUSE
851	4/5/2006	J11KV1	SOIL and BIOTA	MIS	178	mg/kg	MOUSE
852	4/5/2006	J11KV2	SOIL and BIOTA	MIS	158	mg/kg	MOUSE
853	4/21/2006	J11L22	SOIL and BIOTA	MIS	139	mg/kg	MOUSE
854	4/3/2006	J11L21	SOIL and BIOTA	MIS	158	mg/kg	MOUSE
855	4/20/2006	J11KL7	SOIL and BIOTA	MIS	153	mg/kg	MOUSE
856	4/20/2006	J11KL7	SOIL and BIOTA	MIS-phyt	176	mg/kg	MOUSE
857	4/5/2006	J11KL5	SOIL and BIOTA	MIS	385	mg/kg	MOUSE

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
819	MULTIPLE CARCASSES	4.7	mg/kg			RCBRA
820	MULTIPLE CARCASSES	4.4	mg/kg			RCBRA
821	MULTIPLE CARCASSES	0.28	mg/kg			RCBRA
822	MULTIPLE CARCASSES	0.29	mg/kg			RCBRA
823	MULTIPLE CARCASSES	0.37	mg/kg			RCBRA
824	MULTIPLE CARCASSES	0.39	mg/kg			RCBRA
825	MULTIPLE CARCASSES	0.23	mg/kg			RCBRA
826	MULTIPLE CARCASSES	0.37	mg/kg			RCBRA
827	MULTIPLE CARCASSES	0.32	mg/kg			RCBRA
828	MULTIPLE CARCASSES	0.32	mg/kg			RCBRA
829	MULTIPLE CARCASSES	0.29	mg/kg			RCBRA
830	MULTIPLE CARCASSES	0.16	mg/kg			RCBRA
831	MULTIPLE CARCASSES	0.36	mg/kg			RCBRA
832	MULTIPLE CARCASSES	0.25	mg/kg			RCBRA
833	MULTIPLE CARCASSES	0.42	mg/kg			RCBRA
834	MULTIPLE CARCASSES	0.36	mg/kg			RCBRA
835	MULTIPLE CARCASSES	0.3	mg/kg			RCBRA
836	MULTIPLE CARCASSES	0.28	mg/kg			RCBRA
837	MULTIPLE CARCASSES	0.31	mg/kg			RCBRA
838	MULTIPLE CARCASSES	0.33	mg/kg			RCBRA
839	MULTIPLE CARCASSES	0.28	mg/kg			RCBRA
840	MULTIPLE CARCASSES	0.3	mg/kg			RCBRA
841	MULTIPLE CARCASSES	0.29	mg/kg			RCBRA
842	MULTIPLE CARCASSES	0.34	mg/kg			RCBRA
843	MULTIPLE CARCASSES	0.32	mg/kg			RCBRA
844	MULTIPLE CARCASSES	0.28	mg/kg			RCBRA
845	WHOLEORG	0.405	mg/kg	B		CP
846	WHOLEORG	0.402	mg/kg			CP
847	WHOLEORG	0.341	mg/kg	B		CP
848	WHOLEORG	0.161	mg/kg			CP
849	WHOLEORG	0.362	mg/kg	B		CP
850	WHOLEORG	0.391	mg/kg			CP
851	MULTIPLE CARCASSES	1470	mg/kg			RCBRA
852	MULTIPLE CARCASSES	1550	mg/kg			RCBRA
853	MULTIPLE CARCASSES	1180	mg/kg			RCBRA
854	MULTIPLE CARCASSES	1500	mg/kg			RCBRA
855	MULTIPLE CARCASSES	1490	mg/kg			RCBRA
856	MULTIPLE CARCASSES	1490	mg/kg			RCBRA
857	MULTIPLE CARCASSES	1560	mg/kg			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
858	Sodium	7440-23-5	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
859	Sodium	7440-23-5	RCBRA 2a Rip	BC	RIPARIAN	564618.501	145284.526
860	Sodium	7440-23-5	RCBRA 2c Rip	K	RIPARIAN	567598.2	146210.159
861	Sodium	7440-23-5	RCBRA 2f Rip	D/H	RIPARIAN	576222.844	154297.511
862	Sodium	7440-23-5	RCBRA 2j Rip	IU2/IU6	RIPARIAN	579360.971	150092.048
863	Sodium	7440-23-5	RCBRA 2l Rip	IU2/IU6	RIPARIAN	582341.212	146120.069
864	Sodium	7440-23-5	RCBRA 300-49	300	UPLAND	594318.994	116830.934
865	Sodium	7440-23-5	RCBRA 3b Rip	IU2/IU6	RIPARIAN	584961.205	141035.835
866	Sodium	7440-23-5	RCBRA 4a Rip	IU2/IU6	RIPARIAN	589347.5	137480.985
867	Sodium	7440-23-5	RCBRA 5c Rip	300	RIPARIAN	594509.985	124869.182
868	Sodium	7440-23-5	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
869	Sodium	7440-23-5	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
870	Sodium	7440-23-5	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
871	Sodium	7440-23-5	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
872	Sodium	7440-23-5	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
873	Sodium	7440-23-5	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
874	Sodium	7440-23-5	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
875	Sodium	7440-23-5	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
876	Sodium	7440-23-5	RCBRA 600-181	IU2/IU6	UPLAND	578303.83	147316.698
877	Sodium	7440-23-5	RCBRA 600-204	IU2/IU6	UPLAND	580128.485	144762.219
878	Sodium	7440-23-5	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
879	Sodium	7440-23-5	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
880	Sodium	7440-23-5	RCBRA 600-23	IU2/IU6	UPLAND	585523.593	130481.377
881	Sodium	7440-23-5	RCBRA 618-4	300	UPLAND	593954.946	117064.473
882	Sodium	7440-23-5	RCBRA 628-1	IU2/IU6	UPLAND	577797.524	148745.681
883	Sodium	7440-23-5	RCBRA Bev Ref 1 Rip	Outside decision areas	RIPARIAN	542428.846	167701.261
884	Sodium	7440-23-5	RCBRA Bev Ref 2 Rip	Outside decision areas	RIPARIAN	541493.988	167808.357
885	Sodium	7440-23-5	RCBRA CP Ref 2	IU2/IU6	UPLAND	563789.959	139793.869
886	Sodium	7440-23-5	RCBRA JA JONES	300	UPLAND	593874.58	120013.908
887	Sodium	7440-23-5	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
888	Sodium	7440-23-5	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
889	Sodium	7440-23-5	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
890	Sodium	7440-23-5	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
891	Sodium	7440-23-5	RCBRA Pit 18	IU2/IU6	UPLAND	580697.058	145311.464
892	Sodium	7440-23-5	RCBRA Pit 23	IU2/IU6	UPLAND	572381.012	144874.157
893	Sodium	7440-23-5	RCBRA Pit 24	BC	UPLAND	563395.814	145119.007
894	Sodium	7440-23-5	RCBRA Pit 9	300	UPLAND	592807.103	120587.7
895	Sodium	7440-23-5	RCBRA R Ref 11	Outside decision areas	RIPARIAN	559400.735	146458.486
896	Sodium	7440-23-5	RCBRA R Ref 12	IU2/IU6	RIPARIAN	559201.908	145747.542

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
858	4/5/2006	J11KL5	SOIL and BIOTA	MIS-phyt	466	mg/kg	MOUSE
859	6/6/2007	J14XP2	SOIL and BIOTA	MIS	132	mg/kg	MOUSE
860	6/6/2007	J14XP9	SOIL and BIOTA	MIS	206	mg/kg	MOUSE
861	6/6/2007	J14XP3	SOIL and BIOTA	MIS	180	mg/kg	MOUSE
862	6/6/2007	J14XP4	SOIL and BIOTA	MIS	229	mg/kg	MOUSE
863	6/6/2007	J14XP5	SOIL and BIOTA	MIS	173	mg/kg	MOUSE
864	4/21/2006	J11KL9	SOIL and BIOTA	MIS	120	mg/kg	MOUSE
865	6/6/2007	J14XP6	SOIL and BIOTA	MIS	227	mg/kg	MOUSE
866	6/6/2007	J14XP8	SOIL and BIOTA	MIS	208	mg/kg	MOUSE
867	6/6/2007	J14XP7	SOIL and BIOTA	MIS	127	mg/kg	MOUSE
868	4/5/2006	J11L25	SOIL and BIOTA	MIS	99.6	mg/kg	MOUSE
869	4/5/2006	J11L25	SOIL and BIOTA	MIS-phyt	174	mg/kg	MOUSE
870	4/5/2006	J11KK8	SOIL and BIOTA	MIS	123	mg/kg	MOUSE
871	4/5/2006	J11KK8	SOIL and BIOTA	MIS-phyt	163	mg/kg	MOUSE
872	4/20/2006	J11KK9	SOIL and BIOTA	MIS	176	mg/kg	MOUSE
873	4/20/2006	J11KK9	SOIL and BIOTA	MIS-phyt	231	mg/kg	MOUSE
874	4/20/2006	J11KL4	SOIL and BIOTA	MIS	132	mg/kg	MOUSE
875	4/20/2006	J11KL4	SOIL and BIOTA	MIS-phyt	205	mg/kg	MOUSE
876	4/20/2006	J11KL2	SOIL and BIOTA	MIS	127	mg/kg	MOUSE
877	4/20/2006	J11KL0	SOIL and BIOTA	MIS	137	mg/kg	MOUSE
878	4/20/2006	J11KL1	SOIL and BIOTA	MIS	141	mg/kg	MOUSE
879	4/20/2006	J11KL1	SOIL and BIOTA	MIS-phyt	173	mg/kg	MOUSE
880	4/21/2006	J11KK7	SOIL and BIOTA	MIS	170	mg/kg	MOUSE
881	4/21/2006	J11KL8	SOIL and BIOTA	MIS	97.3	mg/kg	MOUSE
882	4/20/2006	J11KL3	SOIL and BIOTA	MIS	148	mg/kg	MOUSE
883	6/6/2007	J14XN9	SOIL and BIOTA	MIS	178	mg/kg	MOUSE
884	6/6/2007	J14XP0	SOIL and BIOTA	MIS	163	mg/kg	MOUSE
885	4/3/2006	J11L36	SOIL and BIOTA	MIS	97.7	mg/kg	MOUSE
886	4/21/2006	J11L24	SOIL and BIOTA	MIS	102	mg/kg	MOUSE
887	4/3/2006	J11KM5	SOIL and BIOTA	MIS	170	mg/kg	MOUSE
888	4/3/2006	J11KM5	SOIL and BIOTA	MIS-phyt	221	mg/kg	MOUSE
889	4/20/2006	J11KK5	SOIL and BIOTA	MIS	207	mg/kg	MOUSE
890	4/20/2006	J11XY0	SOIL and BIOTA	MIS	207	mg/kg	MOUSE
891	4/20/2006	J11KK6	SOIL and BIOTA	MIS	165	mg/kg	MOUSE
892	4/3/2006	J11L23	SOIL and BIOTA	MIS	153	mg/kg	MOUSE
893	4/3/2006	J11KM2	SOIL and BIOTA	MIS	162	mg/kg	MOUSE
894	4/21/2006	J11KM1	SOIL and BIOTA	MIS	232	mg/kg	MOUSE
895	3/22/2006	J11924	SOIL and BIOTA	MIS	164	mg/kg	MOUSE
896	3/23/2006	J11912	SOIL and BIOTA	MIS	188	mg/kg	MOUSE

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
858	MULTIPLE CARCASSES	1560	mg/kg			RCBRA
859	MULTIPLE CARCASSES	1290	mg/kg	C		RCBRA
860	MULTIPLE CARCASSES	1330	mg/kg	C		RCBRA
861	MULTIPLE CARCASSES	331	mg/kg	C		RCBRA
862	MULTIPLE CARCASSES	1330	mg/kg	C		RCBRA
863	MULTIPLE CARCASSES	1550	mg/kg	C		RCBRA
864	MULTIPLE CARCASSES	1350	mg/kg			RCBRA
865	MULTIPLE CARCASSES	1430	mg/kg	C		RCBRA
866	MULTIPLE CARCASSES	1420	mg/kg	C		RCBRA
867	MULTIPLE CARCASSES	1150	mg/kg	C		RCBRA
868	MULTIPLE CARCASSES	1610	mg/kg			RCBRA
869	MULTIPLE CARCASSES	1610	mg/kg			RCBRA
870	MULTIPLE CARCASSES	1340	mg/kg			RCBRA
871	MULTIPLE CARCASSES	1340	mg/kg			RCBRA
872	MULTIPLE CARCASSES	1350	mg/kg			RCBRA
873	MULTIPLE CARCASSES	1350	mg/kg			RCBRA
874	MULTIPLE CARCASSES	1420	mg/kg			RCBRA
875	MULTIPLE CARCASSES	1420	mg/kg			RCBRA
876	MULTIPLE CARCASSES	1240	mg/kg			RCBRA
877	MULTIPLE CARCASSES	1280	mg/kg			RCBRA
878	MULTIPLE CARCASSES	1370	mg/kg			RCBRA
879	MULTIPLE CARCASSES	1370	mg/kg			RCBRA
880	MULTIPLE CARCASSES	1350	mg/kg			RCBRA
881	MULTIPLE CARCASSES	1250	mg/kg			RCBRA
882	MULTIPLE CARCASSES	1430	mg/kg			RCBRA
883	MULTIPLE CARCASSES	1430	mg/kg	C		RCBRA
884	MULTIPLE CARCASSES	1300	mg/kg	C		RCBRA
885	MULTIPLE CARCASSES	1490	mg/kg			RCBRA
886	MULTIPLE CARCASSES	1320	mg/kg			RCBRA
887	MULTIPLE CARCASSES	1560	mg/kg			RCBRA
888	MULTIPLE CARCASSES	1560	mg/kg			RCBRA
889	MULTIPLE CARCASSES	1200	mg/kg			RCBRA
890	MULTIPLE CARCASSES	1310	mg/kg			RCBRA
891	MULTIPLE CARCASSES	1080	mg/kg			RCBRA
892	MULTIPLE CARCASSES	1590	mg/kg			RCBRA
893	MULTIPLE CARCASSES	1430	mg/kg			RCBRA
894	MULTIPLE CARCASSES	1320	mg/kg			RCBRA
895	MULTIPLE CARCASSES	1440	mg/kg			RCBRA
896	MULTIPLE CARCASSES	1640	mg/kg			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
897	Sodium	7440-23-5	RCBRA R Ref 13	Outside decision areas	RIPARIAN	558572.809	145345.115
898	Sodium	7440-23-5	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
899	Sodium	7440-23-5	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
900	Sodium	7440-23-5	RCBRA R Ref 16	Outside decision areas	RIPARIAN	557650.029	144826.748
901	Sodium	7440-23-5	RCBRA Rip 1	D/H	RIPARIAN	577251.869	153659.195
902	Sodium	7440-23-5	RCBRA Rip 10	D/H	RIPARIAN	573987.873	153082.19
903	Sodium	7440-23-5	RCBRA Rip 2	D/H	RIPARIAN	573603.219	152471.6
904	Sodium	7440-23-5	RCBRA Rip 3	D/H	RIPARIAN	572639.65	151677.812
905	Sodium	7440-23-5	RCBRA Rip 4	N	RIPARIAN	570558.596	148981.547
906	Sodium	7440-23-5	RCBRA Rip 5	K	RIPARIAN	569141.025	147521.561
907	Sodium	7440-23-5	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
908	Sodium	7440-23-5	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
909	Sodium	7440-23-5	RCBRA Rip 7	IU2/IU6	RIPARIAN	581326.914	147825.17
910	Sodium	7440-23-5	RCBRA Rip 8	D/H	RIPARIAN	578698.584	152233.645
911	Sodium	7440-23-5	RCBRA Rip 9	D/H	RIPARIAN	578153.643	152801.452
912	Sodium	7440-23-5	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
913	Sodium	7440-23-5	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
914	Sodium	7440-23-5	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
915	Sodium	7440-23-5	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
916	Sodium	7440-23-5	RCBRA Yak Rdg 2	Outside decision areas	UPLAND	559031.557	135576.407
917	Nickel	7440-02-0	RCBRA 100-D-48	D/H	UPLAND	573841.527	151914.538
918	Nickel	7440-02-0	RCBRA 100-D-49	D/H	UPLAND	573938.06	151944.123
919	Nickel	7440-02-0	RCBRA 100-F-2	IU2/IU6	UPLAND	579728.068	147001.117
920	Nickel	7440-02-0	RCBRA 2c Rip	K	RIPARIAN	567598.2	146210.159
921	Nickel	7440-02-0	RCBRA 2f Rip	D/H	RIPARIAN	576222.844	154297.511
922	Nickel	7440-02-0	RCBRA 2j Rip	IU2/IU6	RIPARIAN	579360.971	150092.048
923	Nickel	7440-02-0	RCBRA 2l Rip	IU2/IU6	RIPARIAN	582341.212	146120.069
924	Nickel	7440-02-0	RCBRA 300-49	300	UPLAND	594318.994	116830.934
925	Nickel	7440-02-0	RCBRA 3b Rip	IU2/IU6	RIPARIAN	584961.205	141035.835
926	Nickel	7440-02-0	RCBRA 4a Rip	IU2/IU6	RIPARIAN	589347.5	137480.985
927	Nickel	7440-02-0	RCBRA 5c Rip	300	RIPARIAN	594509.985	124869.182
928	Nickel	7440-02-0	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
929	Nickel	7440-02-0	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
930	Nickel	7440-02-0	RCBRA 600-204	IU2/IU6	UPLAND	580128.485	144762.219
931	Nickel	7440-02-0	RCBRA 618-4	300	UPLAND	593954.946	117064.473
932	Nickel	7440-02-0	RCBRA Bev Ref 1 Rip	Outside decision areas	RIPARIAN	542428.846	167701.261
933	Nickel	7440-02-0	RCBRA Bev Ref 2 Rip	Outside decision areas	RIPARIAN	541493.988	167808.357
934	Nickel	7440-02-0	RCBRA CP Ref 2	IU2/IU6	UPLAND	563789.959	139793.869
935	Nickel	7440-02-0	RCBRA JA JONES	300	UPLAND	593874.58	120013.908

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
897	3/23/2006	J11913	SOIL and BIOTA	MIS	215	mg/kg	MOUSE
898	6/6/2007	J14XP1	SOIL and BIOTA	MIS	243	mg/kg	MOUSE
899	3/23/2006	J11925	SOIL and BIOTA	MIS	243	mg/kg	MOUSE
900	3/23/2006	J11914	SOIL and BIOTA	MIS	149	mg/kg	MOUSE
901	3/21/2006	J11916	SOIL and BIOTA	MIS	233	mg/kg	MOUSE
902	3/22/2006	J11923	SOIL and BIOTA	MIS	144	mg/kg	MOUSE
903	3/21/2006	J11917	SOIL and BIOTA	MIS	150	mg/kg	MOUSE
904	3/22/2006	J11918	SOIL and BIOTA	MIS	133	mg/kg	MOUSE
905	3/22/2006	J11910	SOIL and BIOTA	MIS	197	mg/kg	MOUSE
906	3/22/2006	J11911	SOIL and BIOTA	MIS	231	mg/kg	MOUSE
907	4/20/2006	J11919	SOIL and BIOTA	MIS	161	mg/kg	MOUSE
908	4/20/2006	J11XY1	SOIL and BIOTA	MIS	161	mg/kg	MOUSE
909	3/22/2006	J11920	SOIL and BIOTA	MIS	189	mg/kg	MOUSE
910	3/22/2006	J11921	SOIL and BIOTA	MIS	224	mg/kg	MOUSE
911	3/22/2006	J11922	SOIL and BIOTA	MIS	218	mg/kg	MOUSE
912	4/3/2006	J11KM6	SOIL and BIOTA	MIS	215	mg/kg	MOUSE
913	4/3/2006	J11KM6	SOIL and BIOTA	MIS-phyt	259	mg/kg	MOUSE
914	4/3/2006	J11KM4	SOIL and BIOTA	MIS	127	mg/kg	MOUSE
915	4/3/2006	J11KM4	SOIL and BIOTA	MIS-phyt	176	mg/kg	MOUSE
916	4/3/2006	J11KM3	SOIL and BIOTA	MIS	172	mg/kg	MOUSE
917	4/5/2006	J11KV1	SOIL and BIOTA	MIS	11	mg/kg	MOUSE
918	4/5/2006	J11KV2	SOIL and BIOTA	MIS	10.5	mg/kg	MOUSE
919	4/21/2006	J11L22	SOIL and BIOTA	MIS	13.1	mg/kg	MOUSE
920	6/6/2007	J14XP9	SOIL and BIOTA	MIS	19	mg/kg	MOUSE
921	6/6/2007	J14XP3	SOIL and BIOTA	MIS	16.9	mg/kg	MOUSE
922	6/6/2007	J14XP4	SOIL and BIOTA	MIS	21.2	mg/kg	MOUSE
923	6/6/2007	J14XP5	SOIL and BIOTA	MIS	12	mg/kg	MOUSE
924	4/21/2006	J11KL9	SOIL and BIOTA	MIS	9.8	mg/kg	MOUSE
925	6/6/2007	J14XP6	SOIL and BIOTA	MIS	17	mg/kg	MOUSE
926	6/6/2007	J14XP8	SOIL and BIOTA	MIS	22.9	mg/kg	MOUSE
927	6/6/2007	J14XP7	SOIL and BIOTA	MIS	13.5	mg/kg	MOUSE
928	4/20/2006	J11KK9	SOIL and BIOTA	MIS	14.1	mg/kg	MOUSE
929	4/20/2006	J11KK9	SOIL and BIOTA	MIS-phyt	14.5	mg/kg	MOUSE
930	4/20/2006	J11KL0	SOIL and BIOTA	MIS	9.9	mg/kg	MOUSE
931	4/21/2006	J11KL8	SOIL and BIOTA	MIS	9.6	mg/kg	MOUSE
932	6/6/2007	J14XN9	SOIL and BIOTA	MIS	16.9	mg/kg	MOUSE
933	6/6/2007	J14XP0	SOIL and BIOTA	MIS	19.1	mg/kg	MOUSE
934	4/3/2006	J11L36	SOIL and BIOTA	MIS	10.1	mg/kg	MOUSE
935	4/21/2006	J11L24	SOIL and BIOTA	MIS	10	mg/kg	MOUSE

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
897	MULTIPLE CARCASSES	1430	mg/kg			RCBRA
898	MULTIPLE CARCASSES	1270	mg/kg	C		RCBRA
899	MULTIPLE CARCASSES	1470	mg/kg			RCBRA
900	MULTIPLE CARCASSES	1560	mg/kg			RCBRA
901	MULTIPLE CARCASSES	1750	mg/kg			RCBRA
902	MULTIPLE CARCASSES	1790	mg/kg			RCBRA
903	MULTIPLE CARCASSES	1580	mg/kg			RCBRA
904	MULTIPLE CARCASSES	1860	mg/kg			RCBRA
905	MULTIPLE CARCASSES	2080	mg/kg			RCBRA
906	MULTIPLE CARCASSES	1780	mg/kg			RCBRA
907	MULTIPLE CARCASSES	1310	mg/kg			RCBRA
908	MULTIPLE CARCASSES	1290	mg/kg			RCBRA
909	MULTIPLE CARCASSES	2500	mg/kg			RCBRA
910	MULTIPLE CARCASSES	1680	mg/kg			RCBRA
911	MULTIPLE CARCASSES	3400	mg/kg			RCBRA
912	MULTIPLE CARCASSES	1690	mg/kg			RCBRA
913	MULTIPLE CARCASSES	1690	mg/kg			RCBRA
914	MULTIPLE CARCASSES	1440	mg/kg			RCBRA
915	MULTIPLE CARCASSES	1440	mg/kg			RCBRA
916	MULTIPLE CARCASSES	1450	mg/kg			RCBRA
917	MULTIPLE CARCASSES	0.24	mg/kg			RCBRA
918	MULTIPLE CARCASSES	0.24	mg/kg			RCBRA
919	MULTIPLE CARCASSES	0.35	mg/kg	C		RCBRA
920	MULTIPLE CARCASSES	1	mg/kg			RCBRA
921	MULTIPLE CARCASSES	0.33	mg/kg			RCBRA
922	MULTIPLE CARCASSES	2.8	mg/kg			RCBRA
923	MULTIPLE CARCASSES	1.1	mg/kg			RCBRA
924	MULTIPLE CARCASSES	0.34	mg/kg	C		RCBRA
925	MULTIPLE CARCASSES	2.1	mg/kg			RCBRA
926	MULTIPLE CARCASSES	0.54	mg/kg			RCBRA
927	MULTIPLE CARCASSES	1.7	mg/kg			RCBRA
928	MULTIPLE CARCASSES	1	mg/kg	C		RCBRA
929	MULTIPLE CARCASSES	1	mg/kg	C		RCBRA
930	MULTIPLE CARCASSES	0.27	mg/kg	C		RCBRA
931	MULTIPLE CARCASSES	0.34	mg/kg	C		RCBRA
932	MULTIPLE CARCASSES	1.2	mg/kg			RCBRA
933	MULTIPLE CARCASSES	1	mg/kg			RCBRA
934	MULTIPLE CARCASSES	0.36	mg/kg			RCBRA
935	MULTIPLE CARCASSES	0.37	mg/kg	C		RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
936	Nickel	7440-02-0	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
937	Nickel	7440-02-0	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
938	Nickel	7440-02-0	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
939	Nickel	7440-02-0	RCBRA Pit 23	IU2/IU6	UPLAND	572381.012	144874.157
940	Nickel	7440-02-0	RCBRA Pit 9	300	UPLAND	592807.103	120587.7
941	Nickel	7440-02-0	RCBRA R Ref 11	Outside decision areas	RIPARIAN	559400.735	146458.486
942	Nickel	7440-02-0	RCBRA R Ref 12	IU2/IU6	RIPARIAN	559201.908	145747.542
943	Nickel	7440-02-0	RCBRA R Ref 13	Outside decision areas	RIPARIAN	558572.809	145345.115
944	Nickel	7440-02-0	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
945	Nickel	7440-02-0	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
946	Nickel	7440-02-0	RCBRA R Ref 16	Outside decision areas	RIPARIAN	557650.029	144826.748
947	Nickel	7440-02-0	RCBRA Rip 1	D/H	RIPARIAN	577251.869	153659.195
948	Nickel	7440-02-0	RCBRA Rip 10	D/H	RIPARIAN	573987.873	153082.19
949	Nickel	7440-02-0	RCBRA Rip 2	D/H	RIPARIAN	573603.219	152471.6
950	Nickel	7440-02-0	RCBRA Rip 3	D/H	RIPARIAN	572639.65	151677.812
951	Nickel	7440-02-0	RCBRA Rip 4	N	RIPARIAN	570558.596	148981.547
952	Nickel	7440-02-0	RCBRA Rip 5	K	RIPARIAN	569141.025	147521.561
953	Nickel	7440-02-0	RCBRA Rip 7	IU2/IU6	RIPARIAN	581326.914	147825.17
954	Nickel	7440-02-0	RCBRA Rip 9	D/H	RIPARIAN	578153.643	152801.452
955	Nickel	7440-02-0	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
956	Nickel	7440-02-0	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
957	Nickel	7440-02-0	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
958	Nickel	7440-02-0	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
959	Nickel	7440-02-0	RCBRA Yak Rdg 2	Outside decision areas	UPLAND	559031.557	135576.407
960	Nickel	7440-02-0	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764
961	Nickel	7440-02-0	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764
962	Nickel	7440-02-0	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764
963	Nickel	7440-02-0	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764
964	Nickel	7440-02-0	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764
965	Nickel	7440-02-0	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764
966	Nickel	7440-02-0	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764
967	Nickel	7440-02-0	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
968	Nickel	7440-02-0	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
969	Nickel	7440-02-0	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
970	Nickel	7440-02-0	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
971	Nickel	7440-02-0	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
972	Nickel	7440-02-0	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
973	Nickel	7440-02-0	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
974	Nickel	7440-02-0	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
936	4/3/2006	J11KM5	SOIL and BIOTA	MIS	14.6	mg/kg	MOUSE
937	4/3/2006	J11KM5	SOIL and BIOTA	MIS-phyt	15.3	mg/kg	MOUSE
938	4/20/2006	J11XY0	SOIL and BIOTA	MIS	9.3	mg/kg	MOUSE
939	4/3/2006	J11L23	SOIL and BIOTA	MIS	7.9	mg/kg	MOUSE
940	4/21/2006	J11KM1	SOIL and BIOTA	MIS	9.2	mg/kg	MOUSE
941	3/22/2006	J11924	SOIL and BIOTA	MIS	17.6	mg/kg	MOUSE
942	3/23/2006	J11912	SOIL and BIOTA	MIS	16.5	mg/kg	MOUSE
943	3/23/2006	J11913	SOIL and BIOTA	MIS	24.5	mg/kg	MOUSE
944	6/6/2007	J14XP1	SOIL and BIOTA	MIS	23.35	mg/kg	MOUSE
945	3/23/2006	J11925	SOIL and BIOTA	MIS	23.35	mg/kg	MOUSE
946	3/23/2006	J11914	SOIL and BIOTA	MIS	18.3	mg/kg	MOUSE
947	3/21/2006	J11916	SOIL and BIOTA	MIS	19.1	mg/kg	MOUSE
948	3/22/2006	J11923	SOIL and BIOTA	MIS	16.2	mg/kg	MOUSE
949	3/21/2006	J11917	SOIL and BIOTA	MIS	15.2	mg/kg	MOUSE
950	3/22/2006	J11918	SOIL and BIOTA	MIS	12.6	mg/kg	MOUSE
951	3/22/2006	J11910	SOIL and BIOTA	MIS	19.8	mg/kg	MOUSE
952	3/22/2006	J11911	SOIL and BIOTA	MIS	22.1	mg/kg	MOUSE
953	3/22/2006	J11920	SOIL and BIOTA	MIS	15.5	mg/kg	MOUSE
954	3/22/2006	J11922	SOIL and BIOTA	MIS	14.4	mg/kg	MOUSE
955	4/3/2006	J11KM6	SOIL and BIOTA	MIS	13.7	mg/kg	MOUSE
956	4/3/2006	J11KM6	SOIL and BIOTA	MIS-phyt	14.8	mg/kg	MOUSE
957	4/3/2006	J11KM4	SOIL and BIOTA	MIS	12	mg/kg	MOUSE
958	4/3/2006	J11KM4	SOIL and BIOTA	MIS-phyt	13.6	mg/kg	MOUSE
959	4/3/2006	J11KM3	SOIL and BIOTA	MIS	16.5	mg/kg	MOUSE
960	5/12/2005	B1CVD7	SOIL and BIOTA	Discrete	11.1	mg/kg	MOUSE
961	5/11/2005	B1CVD2	SOIL and BIOTA	Discrete	11.1	mg/kg	MOUSE
962	5/11/2005	B1CVD3	SOIL and BIOTA	Discrete	11.1	mg/kg	MOUSE
963	5/11/2005	B1CVD4	SOIL and BIOTA	Discrete	11.1	mg/kg	MOUSE
964	5/11/2005	B1CVD1	SOIL and BIOTA	Discrete	11.1	mg/kg	MOUSE
965	5/11/2005	B1F2V6	SOIL and BIOTA	Discrete	11.1	mg/kg	MOUSE
966	5/12/2005	B1CVD8	SOIL and BIOTA	Discrete	11.1	mg/kg	MOUSE
967	6/1/2005	B1CVF8	SOIL and BIOTA	Discrete	9.78	mg/kg	MOUSE
968	5/25/2005	B1CVF6	SOIL and BIOTA	Discrete	9.78	mg/kg	MOUSE
969	6/2/2005	B1CVH0	SOIL and BIOTA	Discrete	9.78	mg/kg	MOUSE
970	5/31/2005	B1CVF7	SOIL and BIOTA	Discrete	9.78	mg/kg	MOUSE
971	6/2/2005	B1CVF9	SOIL and BIOTA	Discrete	9.78	mg/kg	MOUSE
972	6/7/2005	B1CVH1	SOIL and BIOTA	Discrete	9.78	mg/kg	MOUSE
973	4/25/2005	B1CVB3	SOIL and BIOTA	Discrete	11	mg/kg	MOUSE
974	4/25/2005	B1CVB4	SOIL and BIOTA	Discrete	11	mg/kg	MOUSE

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
936	MULTIPLE CARCASSES	0.96	mg/kg			RCBRA
937	MULTIPLE CARCASSES	0.96	mg/kg			RCBRA
938	MULTIPLE CARCASSES	0.27	mg/kg	C		RCBRA
939	MULTIPLE CARCASSES	0.29	mg/kg			RCBRA
940	MULTIPLE CARCASSES	0.29	mg/kg	C		RCBRA
941	MULTIPLE CARCASSES	0.24	mg/kg			RCBRA
942	MULTIPLE CARCASSES	0.51	mg/kg			RCBRA
943	MULTIPLE CARCASSES	1.4	mg/kg			RCBRA
944	MULTIPLE CARCASSES	0.61	mg/kg			RCBRA
945	MULTIPLE CARCASSES	0.36	mg/kg			RCBRA
946	MULTIPLE CARCASSES	0.58	mg/kg			RCBRA
947	MULTIPLE CARCASSES	0.38	mg/kg			RCBRA
948	MULTIPLE CARCASSES	0.47	mg/kg			RCBRA
949	MULTIPLE CARCASSES	0.93	mg/kg			RCBRA
950	MULTIPLE CARCASSES	1.4	mg/kg			RCBRA
951	MULTIPLE CARCASSES	1.1	mg/kg			RCBRA
952	MULTIPLE CARCASSES	0.35	mg/kg			RCBRA
953	MULTIPLE CARCASSES	1.2	mg/kg			RCBRA
954	MULTIPLE CARCASSES	0.31	mg/kg			RCBRA
955	MULTIPLE CARCASSES	2.9	mg/kg			RCBRA
956	MULTIPLE CARCASSES	2.9	mg/kg			RCBRA
957	MULTIPLE CARCASSES	0.54	mg/kg			RCBRA
958	MULTIPLE CARCASSES	0.54	mg/kg			RCBRA
959	MULTIPLE CARCASSES	0.34	mg/kg			RCBRA
960	WHOLEORG	0.478	mg/kg			CP
961	WHOLEORG	0.616	mg/kg			CP
962	WHOLEORG	0.693	mg/kg			CP
963	WHOLEORG	1.08	mg/kg			CP
964	WHOLEORG	2.14	mg/kg			CP
965	WHOLEORG	0.614	mg/kg			CP
966	WHOLEORG	1.68	mg/kg	B		CP
967	WHOLEORG	0.644	mg/kg			CP
968	WHOLEORG	0.594	mg/kg			CP
969	WHOLEORG	0.403	mg/kg			CP
970	WHOLEORG	0.396	mg/kg			CP
971	WHOLEORG	0.484	mg/kg			CP
972	WHOLEORG	0.573	mg/kg			CP
973	WHOLEORG	0.486	mg/kg			CP
974	WHOLEORG	1.4	mg/kg	B		CP

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
975	Nickel	7440-02-0	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
976	Nickel	7440-02-0	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
977	Nickel	7440-02-0	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
978	Nickel	7440-02-0	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
979	Nickel	7440-02-0	B POND	Outside decision areas	UPLAND	576356.769	136881.272
980	Nickel	7440-02-0	B POND	Outside decision areas	UPLAND	576356.769	136881.272
981	Nickel	7440-02-0	B POND	Outside decision areas	UPLAND	576356.769	136881.272
982	Nickel	7440-02-0	B POND	Outside decision areas	UPLAND	576356.769	136881.272
983	Nickel	7440-02-0	B POND	Outside decision areas	UPLAND	576356.769	136881.272
984	Nickel	7440-02-0	B POND	Outside decision areas	UPLAND	576356.769	136881.272
985	Nickel	7440-02-0	B POND	Outside decision areas	UPLAND	576356.769	136881.272
986	Nickel	7440-02-0	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
987	Nickel	7440-02-0	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
988	Nickel	7440-02-0	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
989	Nickel	7440-02-0	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
990	Nickel	7440-02-0	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
991	Nickel	7440-02-0	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
992	Nickel	7440-02-0	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
993	Nickel	7440-02-0	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
994	Nickel	7440-02-0	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
995	Nickel	7440-02-0	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
996	Nickel	7440-02-0	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
997	Nickel	7440-02-0	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
998	Nickel	7440-02-0	U POND	Outside decision areas	UPLAND	566379.63	134457.045
999	Nickel	7440-02-0	U POND	Outside decision areas	UPLAND	566379.63	134457.045
1000	Nickel	7440-02-0	U POND	Outside decision areas	UPLAND	566379.63	134457.045
1001	Nickel	7440-02-0	U POND	Outside decision areas	UPLAND	566379.63	134457.045
1002	Nickel	7440-02-0	U POND	Outside decision areas	UPLAND	566379.63	134457.045
1003	Nickel	7440-02-0	U POND	Outside decision areas	UPLAND	566379.63	134457.045
1004	Phosphorus	7723-14-0	RCBRA 100-D-48	D/H	UPLAND	573841.527	151914.538
1005	Phosphorus	7723-14-0	RCBRA 100-D-49	D/H	UPLAND	573938.06	151944.123
1006	Phosphorus	7723-14-0	RCBRA 100-F-2	IU2/IU6	UPLAND	579728.068	147001.117
1007	Phosphorus	7723-14-0	RCBRA 116-DR-1&2	D/H	UPLAND	574007.817	152246.748
1008	Phosphorus	7723-14-0	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
1009	Phosphorus	7723-14-0	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
1010	Phosphorus	7723-14-0	RCBRA 1607-D2:1	D/H	UPLAND	573823.924	152260.319
1011	Phosphorus	7723-14-0	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
1012	Phosphorus	7723-14-0	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
1013	Phosphorus	7723-14-0	RCBRA 2a Rip	BC	RIPARIAN	564618.501	145284.526

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
975	4/25/2005	B1CVB1	SOIL and BIOTA	Discrete	11	mg/kg	MOUSE
976	4/21/2005	B1CVB0	SOIL and BIOTA	Discrete	11	mg/kg	MOUSE
977	4/26/2005	B1CVB5	SOIL and BIOTA	Discrete	11	mg/kg	MOUSE
978	4/25/2005	B1CVB2	SOIL and BIOTA	Discrete	11	mg/kg	MOUSE
979	5/18/2005	B1CVF3	SOIL and BIOTA	Discrete	11.9	mg/kg	MOUSE
980	5/13/2005	B1CVF1	SOIL and BIOTA	Discrete	11.9	mg/kg	MOUSE
981	5/13/2005	B1CVF0	SOIL and BIOTA	Discrete	11.9	mg/kg	MOUSE
982	5/19/2005	B1CVF5	SOIL and BIOTA	Discrete	11.9	mg/kg	MOUSE
983	5/13/2005	B1F2V1	SOIL and BIOTA	Discrete	11.9	mg/kg	MOUSE
984	5/17/2005	B1CVF2	SOIL and BIOTA	Discrete	11.9	mg/kg	MOUSE
985	5/18/2005	B1CVF4	SOIL and BIOTA	Discrete	11.9	mg/kg	MOUSE
986	4/29/2005	B1CVC1	SOIL and BIOTA	Discrete	18.1	mg/kg	MOUSE
987	5/3/2005	B1CVC3	SOIL and BIOTA	Discrete	18.1	mg/kg	MOUSE
988	5/2/2005	B1CVC2	SOIL and BIOTA	Discrete	18.1	mg/kg	MOUSE
989	5/5/2005	B1CVC4	SOIL and BIOTA	Discrete	18.1	mg/kg	MOUSE
990	4/28/2005	B1CVC0	SOIL and BIOTA	Discrete	18.1	mg/kg	MOUSE
991	4/28/2005	B1CVB9	SOIL and BIOTA	Discrete	18.1	mg/kg	MOUSE
992	5/3/2005	B1CVC6	SOIL and BIOTA	Discrete	8.6	mg/kg	MOUSE
993	5/9/2005	B1CVD0	SOIL and BIOTA	Discrete	8.6	mg/kg	MOUSE
994	5/4/2005	B1CVC7	SOIL and BIOTA	Discrete	8.6	mg/kg	MOUSE
995	5/5/2005	B1CVC8	SOIL and BIOTA	Discrete	8.6	mg/kg	MOUSE
996	5/5/2005	B1CVC9	SOIL and BIOTA	Discrete	8.6	mg/kg	MOUSE
997	5/3/2005	B1CVC5	SOIL and BIOTA	Discrete	8.6	mg/kg	MOUSE
998	4/28/2005	B1CVB7	SOIL and BIOTA	Discrete	11.4	mg/kg	MOUSE
999	5/13/2005	B1CVD9	SOIL and BIOTA	Discrete	11.4	mg/kg	MOUSE
1000	5/2/2005	B1CVB8	SOIL and BIOTA	Discrete	11.4	mg/kg	MOUSE
1001	4/28/2005	B1CVB6	SOIL and BIOTA	Discrete	11.4	mg/kg	MOUSE
1002	5/11/2005	B1CVD6	SOIL and BIOTA	Discrete	11.4	mg/kg	MOUSE
1003	5/11/2005	B1CVD5	SOIL and BIOTA	Discrete	11.4	mg/kg	MOUSE
1004	4/5/2006	J11KV1	SOIL and BIOTA	MIS	1090	mg/kg	MOUSE
1005	4/5/2006	J11KV2	SOIL and BIOTA	MIS	1030	mg/kg	MOUSE
1006	4/21/2006	J11L22	SOIL and BIOTA	MIS	906	mg/kg	MOUSE
1007	4/3/2006	J11L21	SOIL and BIOTA	MIS	991	mg/kg	MOUSE
1008	4/20/2006	J11KL7	SOIL and BIOTA	MIS	679	mg/kg	MOUSE
1009	4/20/2006	J11KL7	SOIL and BIOTA	MIS-phyt	745	mg/kg	MOUSE
1010	4/5/2006	J11KM0	SOIL and BIOTA	MIS	897	mg/kg	MOUSE
1011	4/5/2006	J11KL5	SOIL and BIOTA	MIS	1090	mg/kg	MOUSE
1012	4/5/2006	J11KL5	SOIL and BIOTA	MIS-phyt	971	mg/kg	MOUSE
1013	6/6/2007	J14XP2	SOIL and BIOTA	MIS	588	mg/kg	MOUSE

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
975	WHOLEORG	0.254	mg/kg			CP
976	WHOLEORG	0.223	mg/kg			CP
977	WHOLEORG	0.428	mg/kg			CP
978	WHOLEORG	1.64	mg/kg	B		CP
979	WHOLEORG	0.829	mg/kg			CP
980	WHOLEORG	0.51	mg/kg			CP
981	WHOLEORG	2.08	mg/kg			CP
982	WHOLEORG	0.594	mg/kg			CP
983	WHOLEORG	2.54	mg/kg			CP
984	WHOLEORG	0.551	mg/kg			CP
985	WHOLEORG	1.47	mg/kg			CP
986	WHOLEORG	1.05	mg/kg			CP
987	WHOLEORG	0.948	mg/kg	B		CP
988	WHOLEORG	0.531	mg/kg			CP
989	WHOLEORG	0.756	mg/kg			CP
990	WHOLEORG	0.563	mg/kg			CP
991	WHOLEORG	0.56	mg/kg			CP
992	WHOLEORG	3	mg/kg			CP
993	WHOLEORG	0.838	mg/kg			CP
994	WHOLEORG	1.12	mg/kg	B		CP
995	WHOLEORG	0.354	mg/kg			CP
996	WHOLEORG	0.292	mg/kg			CP
997	WHOLEORG	0.66	mg/kg			CP
998	WHOLEORG	0.784	mg/kg			CP
999	WHOLEORG	0.962	mg/kg			CP
1000	WHOLEORG	0.727	mg/kg			CP
1001	WHOLEORG	1.13	mg/kg			CP
1002	WHOLEORG	1.39	mg/kg			CP
1003	WHOLEORG	0.539	mg/kg			CP
1004	MULTIPLE CARCASSES	5270	mg/kg			RCBRA
1005	MULTIPLE CARCASSES	9420	mg/kg			RCBRA
1006	MULTIPLE CARCASSES	5450	mg/kg			RCBRA
1007	MULTIPLE CARCASSES	10600	mg/kg			RCBRA
1008	MULTIPLE CARCASSES	9300	mg/kg			RCBRA
1009	MULTIPLE CARCASSES	9300	mg/kg			RCBRA
1010	MULTIPLE CARCASSES	5590	mg/kg			RCBRA
1011	MULTIPLE CARCASSES	8010	mg/kg			RCBRA
1012	MULTIPLE CARCASSES	8010	mg/kg			RCBRA
1013	MULTIPLE CARCASSES	7200	mg/kg			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
1014	Phosphorus	7723-14-0	RCBRA 2c Rip	K	RIPARIAN	567598.2	146210.159
1015	Phosphorus	7723-14-0	RCBRA 2f Rip	D/H	RIPARIAN	576222.844	154297.511
1016	Phosphorus	7723-14-0	RCBRA 2j Rip	IU2/IU6	RIPARIAN	579360.971	150092.048
1017	Phosphorus	7723-14-0	RCBRA 2l Rip	IU2/IU6	RIPARIAN	582341.212	146120.069
1018	Phosphorus	7723-14-0	RCBRA 300-49	300	UPLAND	594318.994	116830.934
1019	Phosphorus	7723-14-0	RCBRA 3b Rip	IU2/IU6	RIPARIAN	584961.205	141035.835
1020	Phosphorus	7723-14-0	RCBRA 4a Rip	IU2/IU6	RIPARIAN	589347.5	137480.985
1021	Phosphorus	7723-14-0	RCBRA 5c Rip	300	RIPARIAN	594509.985	124869.182
1022	Phosphorus	7723-14-0	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
1023	Phosphorus	7723-14-0	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
1024	Phosphorus	7723-14-0	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
1025	Phosphorus	7723-14-0	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
1026	Phosphorus	7723-14-0	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
1027	Phosphorus	7723-14-0	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
1028	Phosphorus	7723-14-0	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
1029	Phosphorus	7723-14-0	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
1030	Phosphorus	7723-14-0	RCBRA 600-181	IU2/IU6	UPLAND	578303.83	147316.698
1031	Phosphorus	7723-14-0	RCBRA 600-204	IU2/IU6	UPLAND	580128.485	144762.219
1032	Phosphorus	7723-14-0	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
1033	Phosphorus	7723-14-0	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
1034	Phosphorus	7723-14-0	RCBRA 600-23	IU2/IU6	UPLAND	585523.593	130481.377
1035	Phosphorus	7723-14-0	RCBRA 618-4	300	UPLAND	593954.946	117064.473
1036	Phosphorus	7723-14-0	RCBRA 628-1	IU2/IU6	UPLAND	577797.524	148745.681
1037	Phosphorus	7723-14-0	RCBRA Bev Ref 1 Rip	Outside decision areas	RIPARIAN	542428.846	167701.261
1038	Phosphorus	7723-14-0	RCBRA Bev Ref 2 Rip	Outside decision areas	RIPARIAN	541493.988	167808.357
1039	Phosphorus	7723-14-0	RCBRA CP Ref 2	IU2/IU6	UPLAND	563789.959	139793.869
1040	Phosphorus	7723-14-0	RCBRA JA JONES	300	UPLAND	593874.58	120013.908
1041	Phosphorus	7723-14-0	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
1042	Phosphorus	7723-14-0	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
1043	Phosphorus	7723-14-0	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
1044	Phosphorus	7723-14-0	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
1045	Phosphorus	7723-14-0	RCBRA Pit 18	IU2/IU6	UPLAND	580697.058	145311.464
1046	Phosphorus	7723-14-0	RCBRA Pit 23	IU2/IU6	UPLAND	572381.012	144874.157
1047	Phosphorus	7723-14-0	RCBRA Pit 24	BC	UPLAND	563395.814	145119.007
1048	Phosphorus	7723-14-0	RCBRA Pit 9	300	UPLAND	592807.103	120587.7
1049	Phosphorus	7723-14-0	RCBRA R Ref 11	Outside decision areas	RIPARIAN	559400.735	146458.486
1050	Phosphorus	7723-14-0	RCBRA R Ref 12	IU2/IU6	RIPARIAN	559201.908	145747.542
1051	Phosphorus	7723-14-0	RCBRA R Ref 13	Outside decision areas	RIPARIAN	558572.809	145345.115
1052	Phosphorus	7723-14-0	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
1014	6/6/2007	J14XP9	SOIL and BIOTA	MIS	759	mg/kg	MOUSE
1015	6/6/2007	J14XP3	SOIL and BIOTA	MIS	748	mg/kg	MOUSE
1016	6/6/2007	J14XP4	SOIL and BIOTA	MIS	727	mg/kg	MOUSE
1017	6/6/2007	J14XP5	SOIL and BIOTA	MIS	1000	mg/kg	MOUSE
1018	4/21/2006	J11KL9	SOIL and BIOTA	MIS	769	mg/kg	MOUSE
1019	6/6/2007	J14XP6	SOIL and BIOTA	MIS	749	mg/kg	MOUSE
1020	6/6/2007	J14XP8	SOIL and BIOTA	MIS	895	mg/kg	MOUSE
1021	6/6/2007	J14XP7	SOIL and BIOTA	MIS	744	mg/kg	MOUSE
1022	4/5/2006	J11L25	SOIL and BIOTA	MIS	655	mg/kg	MOUSE
1023	4/5/2006	J11L25	SOIL and BIOTA	MIS-phyt	771	mg/kg	MOUSE
1024	4/5/2006	J11KK8	SOIL and BIOTA	MIS	711	mg/kg	MOUSE
1025	4/5/2006	J11KK8	SOIL and BIOTA	MIS-phyt	734	mg/kg	MOUSE
1026	4/20/2006	J11KK9	SOIL and BIOTA	MIS	722	mg/kg	MOUSE
1027	4/20/2006	J11KK9	SOIL and BIOTA	MIS-phyt	740	mg/kg	MOUSE
1028	4/20/2006	J11KL4	SOIL and BIOTA	MIS	621	mg/kg	MOUSE
1029	4/20/2006	J11KL4	SOIL and BIOTA	MIS-phyt	663	mg/kg	MOUSE
1030	4/20/2006	J11KL2	SOIL and BIOTA	MIS	916	mg/kg	MOUSE
1031	4/20/2006	J11KL0	SOIL and BIOTA	MIS	992	mg/kg	MOUSE
1032	4/20/2006	J11KL1	SOIL and BIOTA	MIS	868	mg/kg	MOUSE
1033	4/20/2006	J11KL1	SOIL and BIOTA	MIS-phyt	780	mg/kg	MOUSE
1034	4/21/2006	J11KK7	SOIL and BIOTA	MIS	787	mg/kg	MOUSE
1035	4/21/2006	J11KL8	SOIL and BIOTA	MIS	712	mg/kg	MOUSE
1036	4/20/2006	J11KL3	SOIL and BIOTA	MIS	723	mg/kg	MOUSE
1037	6/6/2007	J14XN9	SOIL and BIOTA	MIS	568	mg/kg	MOUSE
1038	6/6/2007	J14XP0	SOIL and BIOTA	MIS	846	mg/kg	MOUSE
1039	4/3/2006	J11L36	SOIL and BIOTA	MIS	743	mg/kg	MOUSE
1040	4/21/2006	J11L24	SOIL and BIOTA	MIS	782	mg/kg	MOUSE
1041	4/3/2006	J11KM5	SOIL and BIOTA	MIS	737	mg/kg	MOUSE
1042	4/3/2006	J11KM5	SOIL and BIOTA	MIS-phyt	776	mg/kg	MOUSE
1043	4/20/2006	J11KK5	SOIL and BIOTA	MIS	1050	mg/kg	MOUSE
1044	4/20/2006	J11XY0	SOIL and BIOTA	MIS	1050	mg/kg	MOUSE
1045	4/20/2006	J11KK6	SOIL and BIOTA	MIS	669	mg/kg	MOUSE
1046	4/3/2006	J11L23	SOIL and BIOTA	MIS	1170	mg/kg	MOUSE
1047	4/3/2006	J11KM2	SOIL and BIOTA	MIS	921	mg/kg	MOUSE
1048	4/21/2006	J11KM1	SOIL and BIOTA	MIS	1040	mg/kg	MOUSE
1049	3/22/2006	J11924	SOIL and BIOTA	MIS	725	mg/kg	MOUSE
1050	3/23/2006	J11912	SOIL and BIOTA	MIS	724	mg/kg	MOUSE
1051	3/23/2006	J11913	SOIL and BIOTA	MIS	992	mg/kg	MOUSE
1052	6/6/2007	J14XP1	SOIL and BIOTA	MIS	798.5	mg/kg	MOUSE

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
1014	MULTIPLE CARCASSES	7670	mg/kg			RCBRA
1015	MULTIPLE CARCASSES	1730	mg/kg			RCBRA
1016	MULTIPLE CARCASSES	5930	mg/kg			RCBRA
1017	MULTIPLE CARCASSES	9500	mg/kg			RCBRA
1018	MULTIPLE CARCASSES	7550	mg/kg			RCBRA
1019	MULTIPLE CARCASSES	9490	mg/kg			RCBRA
1020	MULTIPLE CARCASSES	7540	mg/kg			RCBRA
1021	MULTIPLE CARCASSES	5820	mg/kg			RCBRA
1022	MULTIPLE CARCASSES	8060	mg/kg			RCBRA
1023	MULTIPLE CARCASSES	8060	mg/kg			RCBRA
1024	MULTIPLE CARCASSES	6060	mg/kg			RCBRA
1025	MULTIPLE CARCASSES	6060	mg/kg			RCBRA
1026	MULTIPLE CARCASSES	6820	mg/kg			RCBRA
1027	MULTIPLE CARCASSES	6820	mg/kg			RCBRA
1028	MULTIPLE CARCASSES	9110	mg/kg			RCBRA
1029	MULTIPLE CARCASSES	9110	mg/kg			RCBRA
1030	MULTIPLE CARCASSES	6700	mg/kg			RCBRA
1031	MULTIPLE CARCASSES	7690	mg/kg			RCBRA
1032	MULTIPLE CARCASSES	8410	mg/kg			RCBRA
1033	MULTIPLE CARCASSES	8410	mg/kg			RCBRA
1034	MULTIPLE CARCASSES	11300	mg/kg			RCBRA
1035	MULTIPLE CARCASSES	7950	mg/kg			RCBRA
1036	MULTIPLE CARCASSES	12500	mg/kg			RCBRA
1037	MULTIPLE CARCASSES	8070	mg/kg			RCBRA
1038	MULTIPLE CARCASSES	6050	mg/kg			RCBRA
1039	MULTIPLE CARCASSES	6620	mg/kg			RCBRA
1040	MULTIPLE CARCASSES	6500	mg/kg			RCBRA
1041	MULTIPLE CARCASSES	7290	mg/kg			RCBRA
1042	MULTIPLE CARCASSES	7290	mg/kg			RCBRA
1043	MULTIPLE CARCASSES	6300	mg/kg			RCBRA
1044	MULTIPLE CARCASSES	6890	mg/kg			RCBRA
1045	MULTIPLE CARCASSES	6430	mg/kg			RCBRA
1046	MULTIPLE CARCASSES	10300	mg/kg			RCBRA
1047	MULTIPLE CARCASSES	4350	mg/kg			RCBRA
1048	MULTIPLE CARCASSES	7440	mg/kg			RCBRA
1049	MULTIPLE CARCASSES	6940	mg/kg			RCBRA
1050	MULTIPLE CARCASSES	8640	mg/kg			RCBRA
1051	MULTIPLE CARCASSES	4850	mg/kg			RCBRA
1052	MULTIPLE CARCASSES	5060	mg/kg			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
1053	Phosphorus	7723-14-0	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
1054	Phosphorus	7723-14-0	RCBRA R Ref 16	Outside decision areas	RIPARIAN	557650.029	144826.748
1055	Phosphorus	7723-14-0	RCBRA Rip 1	D/H	RIPARIAN	577251.869	153659.195
1056	Phosphorus	7723-14-0	RCBRA Rip 10	D/H	RIPARIAN	573987.873	153082.19
1057	Phosphorus	7723-14-0	RCBRA Rip 2	D/H	RIPARIAN	573603.219	152471.6
1058	Phosphorus	7723-14-0	RCBRA Rip 3	D/H	RIPARIAN	572639.65	151677.812
1059	Phosphorus	7723-14-0	RCBRA Rip 4	N	RIPARIAN	570558.596	148981.547
1060	Phosphorus	7723-14-0	RCBRA Rip 5	K	RIPARIAN	569141.025	147521.561
1061	Phosphorus	7723-14-0	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
1062	Phosphorus	7723-14-0	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
1063	Phosphorus	7723-14-0	RCBRA Rip 7	IU2/IU6	RIPARIAN	581326.914	147825.17
1064	Phosphorus	7723-14-0	RCBRA Rip 8	D/H	RIPARIAN	578698.584	152233.645
1065	Phosphorus	7723-14-0	RCBRA Rip 9	D/H	RIPARIAN	578153.643	152801.452
1066	Phosphorus	7723-14-0	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
1067	Phosphorus	7723-14-0	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
1068	Phosphorus	7723-14-0	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
1069	Phosphorus	7723-14-0	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
1070	Phosphorus	7723-14-0	RCBRA Yak Rdg 2	Outside decision areas	UPLAND	559031.557	135576.407
1071	Lead	7439-92-1	RCBRA 100-D-48	D/H	UPLAND	573841.527	151914.538
1072	Lead	7439-92-1	RCBRA 100-D-49	D/H	UPLAND	573938.06	151944.123
1073	Lead	7439-92-1	RCBRA 100-F-2	IU2/IU6	UPLAND	579728.068	147001.117
1074	Lead	7439-92-1	RCBRA 116-DR-1&2	D/H	UPLAND	574007.817	152246.748
1075	Lead	7439-92-1	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
1076	Lead	7439-92-1	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
1077	Lead	7439-92-1	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
1078	Lead	7439-92-1	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
1079	Lead	7439-92-1	RCBRA 2c Rip	K	RIPARIAN	567598.2	146210.159
1080	Lead	7439-92-1	RCBRA 2j Rip	IU2/IU6	RIPARIAN	579360.971	150092.048
1081	Lead	7439-92-1	RCBRA 300-49	300	UPLAND	594318.994	116830.934
1082	Lead	7439-92-1	RCBRA 3b Rip	IU2/IU6	RIPARIAN	584961.205	141035.835
1083	Lead	7439-92-1	RCBRA 4a Rip	IU2/IU6	RIPARIAN	589347.5	137480.985
1084	Lead	7439-92-1	RCBRA 5c Rip	300	RIPARIAN	594509.985	124869.182
1085	Lead	7439-92-1	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
1086	Lead	7439-92-1	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
1087	Lead	7439-92-1	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
1088	Lead	7439-92-1	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
1089	Lead	7439-92-1	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
1090	Lead	7439-92-1	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
1091	Lead	7439-92-1	RCBRA 600-204	IU2/IU6	UPLAND	580128.485	144762.219

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
1053	3/23/2006	J11925	SOIL and BIOTA	MIS	798.5	mg/kg	MOUSE
1054	3/23/2006	J11914	SOIL and BIOTA	MIS	856	mg/kg	MOUSE
1055	3/21/2006	J11916	SOIL and BIOTA	MIS	826	mg/kg	MOUSE
1056	3/22/2006	J11923	SOIL and BIOTA	MIS	776	mg/kg	MOUSE
1057	3/21/2006	J11917	SOIL and BIOTA	MIS	882	mg/kg	MOUSE
1058	3/22/2006	J11918	SOIL and BIOTA	MIS	1140	mg/kg	MOUSE
1059	3/22/2006	J11910	SOIL and BIOTA	MIS	797	mg/kg	MOUSE
1060	3/22/2006	J11911	SOIL and BIOTA	MIS	859	mg/kg	MOUSE
1061	4/20/2006	J11919	SOIL and BIOTA	MIS	920	mg/kg	MOUSE
1062	4/20/2006	J11XY1	SOIL and BIOTA	MIS	920	mg/kg	MOUSE
1063	3/22/2006	J11920	SOIL and BIOTA	MIS	809	mg/kg	MOUSE
1064	3/22/2006	J11921	SOIL and BIOTA	MIS	663	mg/kg	MOUSE
1065	3/22/2006	J11922	SOIL and BIOTA	MIS	677	mg/kg	MOUSE
1066	4/3/2006	J11KM6	SOIL and BIOTA	MIS	1060	mg/kg	MOUSE
1067	4/3/2006	J11KM6	SOIL and BIOTA	MIS-phyt	1000	mg/kg	MOUSE
1068	4/3/2006	J11KM4	SOIL and BIOTA	MIS	720	mg/kg	MOUSE
1069	4/3/2006	J11KM4	SOIL and BIOTA	MIS-phyt	724	mg/kg	MOUSE
1070	4/3/2006	J11KM3	SOIL and BIOTA	MIS	783	mg/kg	MOUSE
1071	4/5/2006	J11KV1	SOIL and BIOTA	MIS	3.7	mg/kg	MOUSE
1072	4/5/2006	J11KV2	SOIL and BIOTA	MIS	4.2	mg/kg	MOUSE
1073	4/21/2006	J11L22	SOIL and BIOTA	MIS	10.2	mg/kg	MOUSE
1074	4/3/2006	J11L21	SOIL and BIOTA	MIS	5	mg/kg	MOUSE
1075	4/20/2006	J11KL7	SOIL and BIOTA	MIS	51.7	mg/kg	MOUSE
1076	4/20/2006	J11KL7	SOIL and BIOTA	MIS-phyt	95.8	mg/kg	MOUSE
1077	4/5/2006	J11KL5	SOIL and BIOTA	MIS	26.3	mg/kg	MOUSE
1078	4/5/2006	J11KL5	SOIL and BIOTA	MIS-phyt	77.2	mg/kg	MOUSE
1079	6/6/2007	J14XP9	SOIL and BIOTA	MIS	56.5	mg/kg	MOUSE
1080	6/6/2007	J14XP4	SOIL and BIOTA	MIS	68.6	mg/kg	MOUSE
1081	4/21/2006	J11KL9	SOIL and BIOTA	MIS	5.7	mg/kg	MOUSE
1082	6/6/2007	J14XP6	SOIL and BIOTA	MIS	55.3	mg/kg	MOUSE
1083	6/6/2007	J14XP8	SOIL and BIOTA	MIS	60.9	mg/kg	MOUSE
1084	6/6/2007	J14XP7	SOIL and BIOTA	MIS	17.8	mg/kg	MOUSE
1085	4/5/2006	J11L25	SOIL and BIOTA	MIS	29.4	mg/kg	MOUSE
1086	4/5/2006	J11L25	SOIL and BIOTA	MIS-phyt	13.2	mg/kg	MOUSE
1087	4/20/2006	J11KK9	SOIL and BIOTA	MIS	98.1	mg/kg	MOUSE
1088	4/20/2006	J11KK9	SOIL and BIOTA	MIS-phyt	102	mg/kg	MOUSE
1089	4/20/2006	J11KL4	SOIL and BIOTA	MIS	40.9	mg/kg	MOUSE
1090	4/20/2006	J11KL4	SOIL and BIOTA	MIS-phyt	62.8	mg/kg	MOUSE
1091	4/20/2006	J11KL0	SOIL and BIOTA	MIS	5.5	mg/kg	MOUSE

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
1053	MULTIPLE CARCASSES	7740	mg/kg			RCBRA
1054	MULTIPLE CARCASSES	6080	mg/kg			RCBRA
1055	MULTIPLE CARCASSES	6120	mg/kg			RCBRA
1056	MULTIPLE CARCASSES	11900	mg/kg			RCBRA
1057	MULTIPLE CARCASSES	6620	mg/kg			RCBRA
1058	MULTIPLE CARCASSES	8700	mg/kg			RCBRA
1059	MULTIPLE CARCASSES	7520	mg/kg			RCBRA
1060	MULTIPLE CARCASSES	8050	mg/kg			RCBRA
1061	MULTIPLE CARCASSES	6690	mg/kg			RCBRA
1062	MULTIPLE CARCASSES	6830	mg/kg			RCBRA
1063	MULTIPLE CARCASSES	7540	mg/kg			RCBRA
1064	MULTIPLE CARCASSES	6120	mg/kg			RCBRA
1065	MULTIPLE CARCASSES	8970	mg/kg			RCBRA
1066	MULTIPLE CARCASSES	9490	mg/kg			RCBRA
1067	MULTIPLE CARCASSES	9490	mg/kg			RCBRA
1068	MULTIPLE CARCASSES	7090	mg/kg			RCBRA
1069	MULTIPLE CARCASSES	7090	mg/kg			RCBRA
1070	MULTIPLE CARCASSES	4550	mg/kg			RCBRA
1071	MULTIPLE CARCASSES	0.33	mg/kg			RCBRA
1072	MULTIPLE CARCASSES	0.46	mg/kg			RCBRA
1073	MULTIPLE CARCASSES	1.3	mg/kg			RCBRA
1074	MULTIPLE CARCASSES	0.33	mg/kg			RCBRA
1075	MULTIPLE CARCASSES	1.8	mg/kg			RCBRA
1076	MULTIPLE CARCASSES	1.8	mg/kg			RCBRA
1077	MULTIPLE CARCASSES	1.5	mg/kg			RCBRA
1078	MULTIPLE CARCASSES	1.5	mg/kg			RCBRA
1079	MULTIPLE CARCASSES	0.49	mg/kg			RCBRA
1080	MULTIPLE CARCASSES	0.65	mg/kg			RCBRA
1081	MULTIPLE CARCASSES	0.32	mg/kg			RCBRA
1082	MULTIPLE CARCASSES	0.54	mg/kg			RCBRA
1083	MULTIPLE CARCASSES	0.5	mg/kg			RCBRA
1084	MULTIPLE CARCASSES	0.63	mg/kg			RCBRA
1085	MULTIPLE CARCASSES	1.2	mg/kg			RCBRA
1086	MULTIPLE CARCASSES	1.2	mg/kg			RCBRA
1087	MULTIPLE CARCASSES	1.3	mg/kg			RCBRA
1088	MULTIPLE CARCASSES	1.3	mg/kg			RCBRA
1089	MULTIPLE CARCASSES	0.8	mg/kg			RCBRA
1090	MULTIPLE CARCASSES	0.8	mg/kg			RCBRA
1091	MULTIPLE CARCASSES	0.64	mg/kg			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
1092	Lead	7439-92-1	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
1093	Lead	7439-92-1	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
1094	Lead	7439-92-1	RCBRA Bev Ref 1 Rip	Outside decision areas	RIPARIAN	542428.846	167701.261
1095	Lead	7439-92-1	RCBRA Bev Ref 2 Rip	Outside decision areas	RIPARIAN	541493.988	167808.357
1096	Lead	7439-92-1	RCBRA JA JONES	300	UPLAND	593874.58	120013.908
1097	Lead	7439-92-1	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
1098	Lead	7439-92-1	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
1099	Lead	7439-92-1	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
1100	Lead	7439-92-1	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
1101	Lead	7439-92-1	RCBRA Pit 23	IU2/IU6	UPLAND	572381.012	144874.157
1102	Lead	7439-92-1	RCBRA Pit 24	BC	UPLAND	563395.814	145119.007
1103	Lead	7439-92-1	RCBRA Pit 9	300	UPLAND	592807.103	120587.7
1104	Lead	7439-92-1	RCBRA R Ref 11	Outside decision areas	RIPARIAN	559400.735	146458.486
1105	Lead	7439-92-1	RCBRA R Ref 12	IU2/IU6	RIPARIAN	559201.908	145747.542
1106	Lead	7439-92-1	RCBRA R Ref 13	Outside decision areas	RIPARIAN	558572.809	145345.115
1107	Lead	7439-92-1	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
1108	Lead	7439-92-1	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
1109	Lead	7439-92-1	RCBRA R Ref 16	Outside decision areas	RIPARIAN	557650.029	144826.748
1110	Lead	7439-92-1	RCBRA Rip 1	D/H	RIPARIAN	577251.869	153659.195
1111	Lead	7439-92-1	RCBRA Rip 10	D/H	RIPARIAN	573987.873	153082.19
1112	Lead	7439-92-1	RCBRA Rip 2	D/H	RIPARIAN	573603.219	152471.6
1113	Lead	7439-92-1	RCBRA Rip 3	D/H	RIPARIAN	572639.65	151677.812
1114	Lead	7439-92-1	RCBRA Rip 4	N	RIPARIAN	570558.596	148981.547
1115	Lead	7439-92-1	RCBRA Rip 5	K	RIPARIAN	569141.025	147521.561
1116	Lead	7439-92-1	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
1117	Lead	7439-92-1	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
1118	Lead	7439-92-1	RCBRA Rip 7	IU2/IU6	RIPARIAN	581326.914	147825.17
1119	Lead	7439-92-1	RCBRA Rip 8	D/H	RIPARIAN	578698.584	152233.645
1120	Lead	7439-92-1	RCBRA Rip 9	D/H	RIPARIAN	578153.643	152801.452
1121	Lead	7439-92-1	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
1122	Lead	7439-92-1	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
1123	Lead	7439-92-1	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764
1124	Lead	7439-92-1	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764
1125	Lead	7439-92-1	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764
1126	Lead	7439-92-1	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764
1127	Lead	7439-92-1	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764
1128	Lead	7439-92-1	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764
1129	Lead	7439-92-1	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764
1130	Lead	7439-92-1	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
1092	4/20/2006	J11KL1	SOIL and BIOTA	MIS	23.4	mg/kg	MOUSE
1093	4/20/2006	J11KL1	SOIL and BIOTA	MIS-phyt	30.3	mg/kg	MOUSE
1094	6/6/2007	J14XN9	SOIL and BIOTA	MIS	25.8	mg/kg	MOUSE
1095	6/6/2007	J14XP0	SOIL and BIOTA	MIS	17.9	mg/kg	MOUSE
1096	4/21/2006	J11L24	SOIL and BIOTA	MIS	7.3	mg/kg	MOUSE
1097	4/3/2006	J11KM5	SOIL and BIOTA	MIS	8.4	mg/kg	MOUSE
1098	4/3/2006	J11KM5	SOIL and BIOTA	MIS-phyt	8.4	mg/kg	MOUSE
1099	4/20/2006	J11KK5	SOIL and BIOTA	MIS	4.8	mg/kg	MOUSE
1100	4/20/2006	J11XY0	SOIL and BIOTA	MIS	4.8	mg/kg	MOUSE
1101	4/3/2006	J11L23	SOIL and BIOTA	MIS	4.2	mg/kg	MOUSE
1102	4/3/2006	J11KM2	SOIL and BIOTA	MIS	6.5	mg/kg	MOUSE
1103	4/21/2006	J11KM1	SOIL and BIOTA	MIS	3.8	mg/kg	MOUSE
1104	3/22/2006	J11924	SOIL and BIOTA	MIS	14.9	mg/kg	MOUSE
1105	3/23/2006	J11912	SOIL and BIOTA	MIS	22.2	mg/kg	MOUSE
1106	3/23/2006	J11913	SOIL and BIOTA	MIS	58.2	mg/kg	MOUSE
1107	6/6/2007	J14XP1	SOIL and BIOTA	MIS	40.65	mg/kg	MOUSE
1108	3/23/2006	J11925	SOIL and BIOTA	MIS	40.65	mg/kg	MOUSE
1109	3/23/2006	J11914	SOIL and BIOTA	MIS	27.4	mg/kg	MOUSE
1110	3/21/2006	J11916	SOIL and BIOTA	MIS	85.1	mg/kg	MOUSE
1111	3/22/2006	J11923	SOIL and BIOTA	MIS	37.2	mg/kg	MOUSE
1112	3/21/2006	J11917	SOIL and BIOTA	MIS	14.1	mg/kg	MOUSE
1113	3/22/2006	J11918	SOIL and BIOTA	MIS	16.1	mg/kg	MOUSE
1114	3/22/2006	J11910	SOIL and BIOTA	MIS	40.4	mg/kg	MOUSE
1115	3/22/2006	J11911	SOIL and BIOTA	MIS	46.7	mg/kg	MOUSE
1116	4/20/2006	J11919	SOIL and BIOTA	MIS	29.6	mg/kg	MOUSE
1117	4/20/2006	J11XY1	SOIL and BIOTA	MIS	29.6	mg/kg	MOUSE
1118	3/22/2006	J11920	SOIL and BIOTA	MIS	47.1	mg/kg	MOUSE
1119	3/22/2006	J11921	SOIL and BIOTA	MIS	35	mg/kg	MOUSE
1120	3/22/2006	J11922	SOIL and BIOTA	MIS	31.8	mg/kg	MOUSE
1121	4/3/2006	J11KM6	SOIL and BIOTA	MIS	6.6	mg/kg	MOUSE
1122	4/3/2006	J11KM6	SOIL and BIOTA	MIS-phyt	6.5	mg/kg	MOUSE
1123	5/12/2005	B1CVD7	SOIL and BIOTA	Discrete	5.64	mg/kg	MOUSE
1124	5/11/2005	B1CVD2	SOIL and BIOTA	Discrete	5.64	mg/kg	MOUSE
1125	5/11/2005	B1CVD4	SOIL and BIOTA	Discrete	5.64	mg/kg	MOUSE
1126	5/11/2005	B1CVD3	SOIL and BIOTA	Discrete	5.64	mg/kg	MOUSE
1127	5/11/2005	B1CVD1	SOIL and BIOTA	Discrete	5.64	mg/kg	MOUSE
1128	5/11/2005	B1F2V6	SOIL and BIOTA	Discrete	5.64	mg/kg	MOUSE
1129	5/12/2005	B1CVD8	SOIL and BIOTA	Discrete	5.64	mg/kg	MOUSE
1130	6/1/2005	B1CVF8	SOIL and BIOTA	Discrete	5.23	mg/kg	MOUSE

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
1092	MULTIPLE CARCASSES	0.57	mg/kg			RCBRA
1093	MULTIPLE CARCASSES	0.57	mg/kg			RCBRA
1094	MULTIPLE CARCASSES	0.33	mg/kg			RCBRA
1095	MULTIPLE CARCASSES	0.56	mg/kg			RCBRA
1096	MULTIPLE CARCASSES	0.31	mg/kg			RCBRA
1097	MULTIPLE CARCASSES	0.51	mg/kg			RCBRA
1098	MULTIPLE CARCASSES	0.51	mg/kg			RCBRA
1099	MULTIPLE CARCASSES	0.32	mg/kg			RCBRA
1100	MULTIPLE CARCASSES	0.32	mg/kg			RCBRA
1101	MULTIPLE CARCASSES	0.61	mg/kg			RCBRA
1102	MULTIPLE CARCASSES	0.43	mg/kg			RCBRA
1103	MULTIPLE CARCASSES	0.31	mg/kg			RCBRA
1104	MULTIPLE CARCASSES	0.36	mg/kg			RCBRA
1105	MULTIPLE CARCASSES	0.73	mg/kg			RCBRA
1106	MULTIPLE CARCASSES	0.35	mg/kg			RCBRA
1107	MULTIPLE CARCASSES	0.35	mg/kg			RCBRA
1108	MULTIPLE CARCASSES	0.4	mg/kg			RCBRA
1109	MULTIPLE CARCASSES	1.2	mg/kg			RCBRA
1110	MULTIPLE CARCASSES	0.69	mg/kg			RCBRA
1111	MULTIPLE CARCASSES	0.57	mg/kg			RCBRA
1112	MULTIPLE CARCASSES	0.57	mg/kg			RCBRA
1113	MULTIPLE CARCASSES	0.48	mg/kg			RCBRA
1114	MULTIPLE CARCASSES	0.38	mg/kg			RCBRA
1115	MULTIPLE CARCASSES	0.35	mg/kg			RCBRA
1116	MULTIPLE CARCASSES	0.43	mg/kg			RCBRA
1117	MULTIPLE CARCASSES	0.57	mg/kg			RCBRA
1118	MULTIPLE CARCASSES	0.66	mg/kg			RCBRA
1119	MULTIPLE CARCASSES	0.44	mg/kg			RCBRA
1120	MULTIPLE CARCASSES	0.42	mg/kg			RCBRA
1121	MULTIPLE CARCASSES	0.31	mg/kg			RCBRA
1122	MULTIPLE CARCASSES	0.31	mg/kg			RCBRA
1123	WHOLEORG	0.334	mg/kg			CP
1124	WHOLEORG	0.227	mg/kg			CP
1125	WHOLEORG	0.858	mg/kg			CP
1126	WHOLEORG	0.414	mg/kg			CP
1127	WHOLEORG	0.576	mg/kg			CP
1128	WHOLEORG	0.764	mg/kg			CP
1129	WHOLEORG	1	mg/kg	B		CP
1130	WHOLEORG	0.151	mg/kg			CP

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
1131	Lead	7439-92-1	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
1132	Lead	7439-92-1	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
1133	Lead	7439-92-1	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
1134	Lead	7439-92-1	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
1135	Lead	7439-92-1	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
1136	Lead	7439-92-1	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
1137	Lead	7439-92-1	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
1138	Lead	7439-92-1	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
1139	Lead	7439-92-1	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
1140	Lead	7439-92-1	B POND	Outside decision areas	UPLAND	576356.769	136881.272
1141	Lead	7439-92-1	B POND	Outside decision areas	UPLAND	576356.769	136881.272
1142	Lead	7439-92-1	B POND	Outside decision areas	UPLAND	576356.769	136881.272
1143	Lead	7439-92-1	B POND	Outside decision areas	UPLAND	576356.769	136881.272
1144	Lead	7439-92-1	B POND	Outside decision areas	UPLAND	576356.769	136881.272
1145	Lead	7439-92-1	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
1146	Lead	7439-92-1	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
1147	Lead	7439-92-1	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
1148	Lead	7439-92-1	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
1149	Lead	7439-92-1	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
1150	Lead	7439-92-1	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
1151	Lead	7439-92-1	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
1152	Lead	7439-92-1	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
1153	Lead	7439-92-1	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
1154	Lead	7439-92-1	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
1155	Lead	7439-92-1	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
1156	Lead	7439-92-1	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
1157	Lead	7439-92-1	U POND	Outside decision areas	UPLAND	566379.63	134457.045
1158	Lead	7439-92-1	U POND	Outside decision areas	UPLAND	566379.63	134457.045
1159	Lead	7439-92-1	U POND	Outside decision areas	UPLAND	566379.63	134457.045
1160	Lead	7439-92-1	U POND	Outside decision areas	UPLAND	566379.63	134457.045
1161	Lead	7439-92-1	U POND	Outside decision areas	UPLAND	566379.63	134457.045
1162	Lead	7439-92-1	U POND	Outside decision areas	UPLAND	566379.63	134457.045
1163	Selenium	7782-49-2	RCBRA 2c Rip	K	RIPARIAN	567598.2	146210.159
1164	Selenium	7782-49-2	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
1165	Selenium	7782-49-2	RCBRA R Ref 11	Outside decision areas	RIPARIAN	559400.735	146458.486
1166	Selenium	7782-49-2	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
1167	Selenium	7782-49-2	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
1168	Selenium	7782-49-2	RCBRA Rip 1	D/H	RIPARIAN	577251.869	153659.195
1169	Selenium	7782-49-2	RCBRA Rip 3	D/H	RIPARIAN	572639.65	151677.812

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
1131	6/2/2005	B1CVH0	SOIL and BIOTA	Discrete	5.23	mg/kg	MOUSE
1132	5/25/2005	B1CVF6	SOIL and BIOTA	Discrete	5.23	mg/kg	MOUSE
1133	5/31/2005	B1CVF7	SOIL and BIOTA	Discrete	5.23	mg/kg	MOUSE
1134	4/25/2005	B1CVB3	SOIL and BIOTA	Discrete	8.11	mg/kg	MOUSE
1135	4/25/2005	B1CVB4	SOIL and BIOTA	Discrete	8.11	mg/kg	MOUSE
1136	4/25/2005	B1CVB1	SOIL and BIOTA	Discrete	8.11	mg/kg	MOUSE
1137	4/21/2005	B1CVB0	SOIL and BIOTA	Discrete	8.11	mg/kg	MOUSE
1138	4/26/2005	B1CVB5	SOIL and BIOTA	Discrete	8.11	mg/kg	MOUSE
1139	4/25/2005	B1CVB2	SOIL and BIOTA	Discrete	8.11	mg/kg	MOUSE
1140	5/18/2005	B1CVF3	SOIL and BIOTA	Discrete	7.08	mg/kg	MOUSE
1141	5/13/2005	B1CVF1	SOIL and BIOTA	Discrete	7.08	mg/kg	MOUSE
1142	5/19/2005	B1CVF5	SOIL and BIOTA	Discrete	7.08	mg/kg	MOUSE
1143	5/18/2005	B1CVF4	SOIL and BIOTA	Discrete	7.08	mg/kg	MOUSE
1144	5/17/2005	B1CVF2	SOIL and BIOTA	Discrete	7.08	mg/kg	MOUSE
1145	4/29/2005	B1CVC1	SOIL and BIOTA	Discrete	8.69	mg/kg	MOUSE
1146	5/3/2005	B1CVC3	SOIL and BIOTA	Discrete	8.69	mg/kg	MOUSE
1147	5/2/2005	B1CVC2	SOIL and BIOTA	Discrete	8.69	mg/kg	MOUSE
1148	5/5/2005	B1CVC4	SOIL and BIOTA	Discrete	8.69	mg/kg	MOUSE
1149	4/28/2005	B1CVC0	SOIL and BIOTA	Discrete	8.69	mg/kg	MOUSE
1150	4/28/2005	B1CVB9	SOIL and BIOTA	Discrete	8.69	mg/kg	MOUSE
1151	5/3/2005	B1CVC6	SOIL and BIOTA	Discrete	5.95	mg/kg	MOUSE
1152	5/9/2005	B1CVD0	SOIL and BIOTA	Discrete	5.95	mg/kg	MOUSE
1153	5/4/2005	B1CVC7	SOIL and BIOTA	Discrete	5.95	mg/kg	MOUSE
1154	5/5/2005	B1CVC8	SOIL and BIOTA	Discrete	5.95	mg/kg	MOUSE
1155	5/5/2005	B1CVC9	SOIL and BIOTA	Discrete	5.95	mg/kg	MOUSE
1156	5/3/2005	B1CVC5	SOIL and BIOTA	Discrete	5.95	mg/kg	MOUSE
1157	4/28/2005	B1CVB7	SOIL and BIOTA	Discrete	5.17	mg/kg	MOUSE
1158	5/13/2005	B1CVD9	SOIL and BIOTA	Discrete	5.17	mg/kg	MOUSE
1159	5/2/2005	B1CVB8	SOIL and BIOTA	Discrete	5.17	mg/kg	MOUSE
1160	4/28/2005	B1CVB6	SOIL and BIOTA	Discrete	5.17	mg/kg	MOUSE
1161	5/11/2005	B1CVD6	SOIL and BIOTA	Discrete	5.17	mg/kg	MOUSE
1162	5/11/2005	B1CVD5	SOIL and BIOTA	Discrete	5.17	mg/kg	MOUSE
1163	6/6/2007	J14XP9	SOIL and BIOTA	MIS	0.9	mg/kg	MOUSE
1164	4/5/2006	J11L25	SOIL and BIOTA	MIS	0.24	mg/kg	MOUSE
1165	3/22/2006	J11924	SOIL and BIOTA	MIS	1	mg/kg	MOUSE
1166	6/6/2007	J14XP1	SOIL and BIOTA	MIS	0.84	mg/kg	MOUSE
1167	3/23/2006	J11925	SOIL and BIOTA	MIS	0.84	mg/kg	MOUSE
1168	3/21/2006	J11916	SOIL and BIOTA	MIS	0.86	mg/kg	MOUSE
1169	3/22/2006	J11918	SOIL and BIOTA	MIS	0.67	mg/kg	MOUSE

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
1131	WHOLEORG	0.193	mg/kg			CP
1132	WHOLEORG	0.178	mg/kg			CP
1133	WHOLEORG	0.22	mg/kg			CP
1134	WHOLEORG	4.08	mg/kg			CP
1135	WHOLEORG	0.995	mg/kg	B		CP
1136	WHOLEORG	0.532	mg/kg			CP
1137	WHOLEORG	0.243	mg/kg			CP
1138	WHOLEORG	0.509	mg/kg			CP
1139	WHOLEORG	1.29	mg/kg	B		CP
1140	WHOLEORG	0.652	mg/kg			CP
1141	WHOLEORG	1.08	mg/kg			CP
1142	WHOLEORG	0.5	mg/kg			CP
1143	WHOLEORG	0.286	mg/kg			CP
1144	WHOLEORG	0.384	mg/kg			CP
1145	WHOLEORG	0.235	mg/kg			CP
1146	WHOLEORG	0.199	mg/kg	B		CP
1147	WHOLEORG	0.344	mg/kg			CP
1148	WHOLEORG	0.281	mg/kg			CP
1149	WHOLEORG	0.235	mg/kg			CP
1150	WHOLEORG	0.24	mg/kg			CP
1151	WHOLEORG	0.733	mg/kg			CP
1152	WHOLEORG	0.257	mg/kg			CP
1153	WHOLEORG	0.299	mg/kg	B		CP
1154	WHOLEORG	0.192	mg/kg			CP
1155	WHOLEORG	0.27	mg/kg			CP
1156	WHOLEORG	0.4	mg/kg			CP
1157	WHOLEORG	0.277	mg/kg			CP
1158	WHOLEORG	0.525	mg/kg			CP
1159	WHOLEORG	0.323	mg/kg			CP
1160	WHOLEORG	0.263	mg/kg			CP
1161	WHOLEORG	0.592	mg/kg			CP
1162	WHOLEORG	0.28	mg/kg			CP
1163	MULTIPLE CARCASSES	0.63	mg/kg			RCBRA
1164	MULTIPLE CARCASSES	0.84	mg/kg			RCBRA
1165	MULTIPLE CARCASSES	0.79	mg/kg			RCBRA
1166	MULTIPLE CARCASSES	0.6	mg/kg			RCBRA
1167	MULTIPLE CARCASSES	0.5	mg/kg			RCBRA
1168	MULTIPLE CARCASSES	0.99	mg/kg			RCBRA
1169	MULTIPLE CARCASSES	0.81	mg/kg			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
1170	Selenium	7782-49-2	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
1171	Selenium	7782-49-2	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
1172	Selenium	7782-49-2	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
1173	Selenium	7782-49-2	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
1174	Selenium	7782-49-2	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
1175	Selenium	7782-49-2	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
1176	Selenium	7782-49-2	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
1177	Selenium	7782-49-2	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
1178	Selenium	7782-49-2	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
1179	Selenium	7782-49-2	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
1180	Selenium	7782-49-2	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
1181	Selenium	7782-49-2	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
1182	Selenium	7782-49-2	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
1183	Selenium	7782-49-2	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
1184	Selenium	7782-49-2	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
1185	Selenium	7782-49-2	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
1186	Selenium	7782-49-2	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
1187	Silicon	7440-21-3	RCBRA 100-D-48	D/H	UPLAND	573841.527	151914.538
1188	Silicon	7440-21-3	RCBRA 100-D-49	D/H	UPLAND	573938.06	151944.123
1189	Silicon	7440-21-3	RCBRA 100-F-2	IU2/IU6	UPLAND	579728.068	147001.117
1190	Silicon	7440-21-3	RCBRA 116-DR-1&2	D/H	UPLAND	574007.817	152246.748
1191	Silicon	7440-21-3	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
1192	Silicon	7440-21-3	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
1193	Silicon	7440-21-3	RCBRA 1607-D2:1	D/H	UPLAND	573823.924	152260.319
1194	Silicon	7440-21-3	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
1195	Silicon	7440-21-3	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
1196	Silicon	7440-21-3	RCBRA 2a Rip	BC	RIPARIAN	564618.501	145284.526
1197	Silicon	7440-21-3	RCBRA 2c Rip	K	RIPARIAN	567598.2	146210.159
1198	Silicon	7440-21-3	RCBRA 2f Rip	D/H	RIPARIAN	576222.844	154297.511
1199	Silicon	7440-21-3	RCBRA 2j Rip	IU2/IU6	RIPARIAN	579360.971	150092.048
1200	Silicon	7440-21-3	RCBRA 2l Rip	IU2/IU6	RIPARIAN	582341.212	146120.069
1201	Silicon	7440-21-3	RCBRA 300-49	300	UPLAND	594318.994	116830.934
1202	Silicon	7440-21-3	RCBRA 3b Rip	IU2/IU6	RIPARIAN	584961.205	141035.835
1203	Silicon	7440-21-3	RCBRA 4a Rip	IU2/IU6	RIPARIAN	589347.5	137480.985
1204	Silicon	7440-21-3	RCBRA 5c Rip	300	RIPARIAN	594509.985	124869.182
1205	Silicon	7440-21-3	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
1206	Silicon	7440-21-3	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
1207	Silicon	7440-21-3	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
1208	Silicon	7440-21-3	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
1170	4/3/2006	J11KM6	SOIL and BIOTA	MIS-phyt	1.2	mg/kg	MOUSE
1171	6/1/2005	B1CVF8	SOIL and BIOTA	Discrete	0.637	mg/kg	MOUSE
1172	4/25/2005	B1CVB3	SOIL and BIOTA	Discrete	0.569	mg/kg	MOUSE
1173	4/25/2005	B1CVB4	SOIL and BIOTA	Discrete	0.569	mg/kg	MOUSE
1174	4/25/2005	B1CVB1	SOIL and BIOTA	Discrete	0.569	mg/kg	MOUSE
1175	4/21/2005	B1CVB0	SOIL and BIOTA	Discrete	0.569	mg/kg	MOUSE
1176	4/26/2005	B1CVB5	SOIL and BIOTA	Discrete	0.569	mg/kg	MOUSE
1177	4/25/2005	B1CVB2	SOIL and BIOTA	Discrete	0.569	mg/kg	MOUSE
1178	5/2/2005	B1CVC2	SOIL and BIOTA	Discrete	0.625	mg/kg	MOUSE
1179	5/5/2005	B1CVC4	SOIL and BIOTA	Discrete	0.625	mg/kg	MOUSE
1180	4/28/2005	B1CVC0	SOIL and BIOTA	Discrete	0.625	mg/kg	MOUSE
1181	4/28/2005	B1CVB9	SOIL and BIOTA	Discrete	0.625	mg/kg	MOUSE
1182	5/3/2005	B1CVC6	SOIL and BIOTA	Discrete	0.63	mg/kg	MOUSE
1183	5/9/2005	B1CVD0	SOIL and BIOTA	Discrete	0.63	mg/kg	MOUSE
1184	5/5/2005	B1CVC8	SOIL and BIOTA	Discrete	0.63	mg/kg	MOUSE
1185	5/3/2005	B1CVC5	SOIL and BIOTA	Discrete	0.63	mg/kg	MOUSE
1186	5/5/2005	B1CVC9	SOIL and BIOTA	Discrete	0.63	mg/kg	MOUSE
1187	4/5/2006	J11KV1	SOIL and BIOTA	MIS	283	mg/kg	MOUSE
1188	4/5/2006	J11KV2	SOIL and BIOTA	MIS	272	mg/kg	MOUSE
1189	4/21/2006	J11L22	SOIL and BIOTA	MIS	291	mg/kg	MOUSE
1190	4/3/2006	J11L21	SOIL and BIOTA	MIS	279	mg/kg	MOUSE
1191	4/20/2006	J11KL7	SOIL and BIOTA	MIS	266	mg/kg	MOUSE
1192	4/20/2006	J11KL7	SOIL and BIOTA	MIS-phyt	197	mg/kg	MOUSE
1193	4/5/2006	J11KM0	SOIL and BIOTA	MIS	256	mg/kg	MOUSE
1194	4/5/2006	J11KL5	SOIL and BIOTA	MIS	393	mg/kg	MOUSE
1195	4/5/2006	J11KL5	SOIL and BIOTA	MIS-phyt	123	mg/kg	MOUSE
1196	6/6/2007	J14XP2	SOIL and BIOTA	MIS	230.13	mg/kg	MOUSE
1197	6/6/2007	J14XP9	SOIL and BIOTA	MIS	329	mg/kg	MOUSE
1198	6/6/2007	J14XP3	SOIL and BIOTA	MIS	342	mg/kg	MOUSE
1199	6/6/2007	J14XP4	SOIL and BIOTA	MIS	388	mg/kg	MOUSE
1200	6/6/2007	J14XP5	SOIL and BIOTA	MIS	225	mg/kg	MOUSE
1201	4/21/2006	J11KL9	SOIL and BIOTA	MIS	258	mg/kg	MOUSE
1202	6/6/2007	J14XP6	SOIL and BIOTA	MIS	315	mg/kg	MOUSE
1203	6/6/2007	J14XP8	SOIL and BIOTA	MIS	280	mg/kg	MOUSE
1204	6/6/2007	J14XP7	SOIL and BIOTA	MIS	203	mg/kg	MOUSE
1205	4/5/2006	J11L25	SOIL and BIOTA	MIS	286	mg/kg	MOUSE
1206	4/5/2006	J11L25	SOIL and BIOTA	MIS-phyt	173	mg/kg	MOUSE
1207	4/5/2006	J11KK8	SOIL and BIOTA	MIS	246	mg/kg	MOUSE
1208	4/5/2006	J11KK8	SOIL and BIOTA	MIS-phyt	172	mg/kg	MOUSE

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
1170	MULTIPLE CARCASSES	0.64	mg/kg			RCBRA
1171	WHOLEORG	0.36	mg/kg			CP
1172	WHOLEORG	0.422	mg/kg			CP
1173	WHOLEORG	0.53	mg/kg	B		CP
1174	WHOLEORG	0.362	mg/kg			CP
1175	WHOLEORG	0.367	mg/kg			CP
1176	WHOLEORG	0.354	mg/kg			CP
1177	WHOLEORG	0.465	mg/kg	B		CP
1178	WHOLEORG	0.314	mg/kg			CP
1179	WHOLEORG	0.403	mg/kg			CP
1180	WHOLEORG	0.294	mg/kg			CP
1181	WHOLEORG	0.336	mg/kg			CP
1182	WHOLEORG	0.313	mg/kg			CP
1183	WHOLEORG	0.416	mg/kg			CP
1184	WHOLEORG	0.345	mg/kg			CP
1185	WHOLEORG	0.339	mg/kg			CP
1186	WHOLEORG	0.338	mg/kg			CP
1187	MULTIPLE CARCASSES	73.5	mg/kg			RCBRA
1188	MULTIPLE CARCASSES	69.3	mg/kg			RCBRA
1189	MULTIPLE CARCASSES	70.3	mg/kg			RCBRA
1190	MULTIPLE CARCASSES	54.5	mg/kg			RCBRA
1191	MULTIPLE CARCASSES	78.4	mg/kg			RCBRA
1192	MULTIPLE CARCASSES	78.4	mg/kg			RCBRA
1193	MULTIPLE CARCASSES	52.6	mg/kg			RCBRA
1194	MULTIPLE CARCASSES	44.8	mg/kg			RCBRA
1195	MULTIPLE CARCASSES	44.8	mg/kg			RCBRA
1196	MULTIPLE CARCASSES	34.7	mg/kg		J	RCBRA
1197	MULTIPLE CARCASSES	67.6	mg/kg		J	RCBRA
1198	MULTIPLE CARCASSES	18.9	mg/kg		J	RCBRA
1199	MULTIPLE CARCASSES	55.2	mg/kg		J	RCBRA
1200	MULTIPLE CARCASSES	76.1	mg/kg		J	RCBRA
1201	MULTIPLE CARCASSES	63	mg/kg			RCBRA
1202	MULTIPLE CARCASSES	50	mg/kg		J	RCBRA
1203	MULTIPLE CARCASSES	38.6	mg/kg		J	RCBRA
1204	MULTIPLE CARCASSES	57.6	mg/kg		J	RCBRA
1205	MULTIPLE CARCASSES	42.2	mg/kg			RCBRA
1206	MULTIPLE CARCASSES	42.2	mg/kg			RCBRA
1207	MULTIPLE CARCASSES	42.9	mg/kg			RCBRA
1208	MULTIPLE CARCASSES	42.9	mg/kg			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
1209	Silicon	7440-21-3	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
1210	Silicon	7440-21-3	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
1211	Silicon	7440-21-3	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
1212	Silicon	7440-21-3	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
1213	Silicon	7440-21-3	RCBRA 600-181	IU2/IU6	UPLAND	578303.83	147316.698
1214	Silicon	7440-21-3	RCBRA 600-204	IU2/IU6	UPLAND	580128.485	144762.219
1215	Silicon	7440-21-3	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
1216	Silicon	7440-21-3	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
1217	Silicon	7440-21-3	RCBRA 600-23	IU2/IU6	UPLAND	585523.593	130481.377
1218	Silicon	7440-21-3	RCBRA 618-4	300	UPLAND	593954.946	117064.473
1219	Silicon	7440-21-3	RCBRA 628-1	IU2/IU6	UPLAND	577797.524	148745.681
1220	Silicon	7440-21-3	RCBRA Bev Ref 1 Rip	Outside decision areas	RIPARIAN	542428.846	167701.261
1221	Silicon	7440-21-3	RCBRA Bev Ref 2 Rip	Outside decision areas	RIPARIAN	541493.988	167808.357
1222	Silicon	7440-21-3	RCBRA CP Ref 2	IU2/IU6	UPLAND	563789.959	139793.869
1223	Silicon	7440-21-3	RCBRA JA JONES	300	UPLAND	593874.58	120013.908
1224	Silicon	7440-21-3	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
1225	Silicon	7440-21-3	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
1226	Silicon	7440-21-3	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
1227	Silicon	7440-21-3	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
1228	Silicon	7440-21-3	RCBRA Pit 18	IU2/IU6	UPLAND	580697.058	145311.464
1229	Silicon	7440-21-3	RCBRA Pit 23	IU2/IU6	UPLAND	572381.012	144874.157
1230	Silicon	7440-21-3	RCBRA Pit 24	BC	UPLAND	563395.814	145119.007
1231	Silicon	7440-21-3	RCBRA Pit 9	300	UPLAND	592807.103	120587.7
1232	Silicon	7440-21-3	RCBRA R Ref 11	Outside decision areas	RIPARIAN	559400.735	146458.486
1233	Silicon	7440-21-3	RCBRA R Ref 12	IU2/IU6	RIPARIAN	559201.908	145747.542
1234	Silicon	7440-21-3	RCBRA R Ref 13	Outside decision areas	RIPARIAN	558572.809	145345.115
1235	Silicon	7440-21-3	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
1236	Silicon	7440-21-3	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
1237	Silicon	7440-21-3	RCBRA R Ref 16	Outside decision areas	RIPARIAN	557650.029	144826.748
1238	Silicon	7440-21-3	RCBRA Rip 1	D/H	RIPARIAN	577251.869	153659.195
1239	Silicon	7440-21-3	RCBRA Rip 10	D/H	RIPARIAN	573987.873	153082.19
1240	Silicon	7440-21-3	RCBRA Rip 2	D/H	RIPARIAN	573603.219	152471.6
1241	Silicon	7440-21-3	RCBRA Rip 3	D/H	RIPARIAN	572639.65	151677.812
1242	Silicon	7440-21-3	RCBRA Rip 4	N	RIPARIAN	570558.596	148981.547
1243	Silicon	7440-21-3	RCBRA Rip 5	K	RIPARIAN	569141.025	147521.561
1244	Silicon	7440-21-3	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
1245	Silicon	7440-21-3	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
1246	Silicon	7440-21-3	RCBRA Rip 7	IU2/IU6	RIPARIAN	581326.914	147825.17
1247	Silicon	7440-21-3	RCBRA Rip 8	D/H	RIPARIAN	578698.584	152233.645

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
1209	4/20/2006	J11KK9	SOIL and BIOTA	MIS	255	mg/kg	MOUSE
1210	4/20/2006	J11KK9	SOIL and BIOTA	MIS-phyt	164	mg/kg	MOUSE
1211	4/20/2006	J11KL4	SOIL and BIOTA	MIS	266	mg/kg	MOUSE
1212	4/20/2006	J11KL4	SOIL and BIOTA	MIS-phyt	144	mg/kg	MOUSE
1213	4/20/2006	J11KL2	SOIL and BIOTA	MIS	238	mg/kg	MOUSE
1214	4/20/2006	J11KL0	SOIL and BIOTA	MIS	288	mg/kg	MOUSE
1215	4/20/2006	J11KL1	SOIL and BIOTA	MIS	361	mg/kg	MOUSE
1216	4/20/2006	J11KL1	SOIL and BIOTA	MIS-phyt	239	mg/kg	MOUSE
1217	4/21/2006	J11KK7	SOIL and BIOTA	MIS	194	mg/kg	MOUSE
1218	4/21/2006	J11KL8	SOIL and BIOTA	MIS	235	mg/kg	MOUSE
1219	4/20/2006	J11KL3	SOIL and BIOTA	MIS	320	mg/kg	MOUSE
1220	6/6/2007	J14XN9	SOIL and BIOTA	MIS	330	mg/kg	MOUSE
1221	6/6/2007	J14XP0	SOIL and BIOTA	MIS	278	mg/kg	MOUSE
1222	4/3/2006	J11L36	SOIL and BIOTA	MIS	395	mg/kg	MOUSE
1223	4/21/2006	J11L24	SOIL and BIOTA	MIS	380	mg/kg	MOUSE
1224	4/3/2006	J11KM5	SOIL and BIOTA	MIS	391	mg/kg	MOUSE
1225	4/3/2006	J11KM5	SOIL and BIOTA	MIS-phyt	181	mg/kg	MOUSE
1226	4/20/2006	J11KK5	SOIL and BIOTA	MIS	199	mg/kg	MOUSE
1227	4/20/2006	J11XY0	SOIL and BIOTA	MIS	199	mg/kg	MOUSE
1228	4/20/2006	J11KK6	SOIL and BIOTA	MIS	266	mg/kg	MOUSE
1229	4/3/2006	J11L23	SOIL and BIOTA	MIS	272	mg/kg	MOUSE
1230	4/3/2006	J11KM2	SOIL and BIOTA	MIS	292	mg/kg	MOUSE
1231	4/21/2006	J11KM1	SOIL and BIOTA	MIS	268	mg/kg	MOUSE
1232	3/22/2006	J11924	SOIL and BIOTA	MIS	305	mg/kg	MOUSE
1233	3/23/2006	J11912	SOIL and BIOTA	MIS	323	mg/kg	MOUSE
1234	3/23/2006	J11913	SOIL and BIOTA	MIS	290	mg/kg	MOUSE
1235	6/6/2007	J14XP1	SOIL and BIOTA	MIS	292	mg/kg	MOUSE
1236	3/23/2006	J11925	SOIL and BIOTA	MIS	292	mg/kg	MOUSE
1237	3/23/2006	J11914	SOIL and BIOTA	MIS	296	mg/kg	MOUSE
1238	3/21/2006	J11916	SOIL and BIOTA	MIS	408	mg/kg	MOUSE
1239	3/22/2006	J11923	SOIL and BIOTA	MIS	372	mg/kg	MOUSE
1240	3/21/2006	J11917	SOIL and BIOTA	MIS	312	mg/kg	MOUSE
1241	3/22/2006	J11918	SOIL and BIOTA	MIS	170	mg/kg	MOUSE
1242	3/22/2006	J11910	SOIL and BIOTA	MIS	328	mg/kg	MOUSE
1243	3/22/2006	J11911	SOIL and BIOTA	MIS	275	mg/kg	MOUSE
1244	4/20/2006	J11919	SOIL and BIOTA	MIS	289	mg/kg	MOUSE
1245	4/20/2006	J11XY1	SOIL and BIOTA	MIS	289	mg/kg	MOUSE
1246	3/22/2006	J11920	SOIL and BIOTA	MIS	298	mg/kg	MOUSE
1247	3/22/2006	J11921	SOIL and BIOTA	MIS	376	mg/kg	MOUSE

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
1209	MULTIPLE CARCASSES	56.2	mg/kg			RCBRA
1210	MULTIPLE CARCASSES	56.2	mg/kg			RCBRA
1211	MULTIPLE CARCASSES	51.6	mg/kg			RCBRA
1212	MULTIPLE CARCASSES	51.6	mg/kg			RCBRA
1213	MULTIPLE CARCASSES	57.3	mg/kg			RCBRA
1214	MULTIPLE CARCASSES	66.7	mg/kg			RCBRA
1215	MULTIPLE CARCASSES	62.2	mg/kg			RCBRA
1216	MULTIPLE CARCASSES	62.2	mg/kg			RCBRA
1217	MULTIPLE CARCASSES	62.4	mg/kg			RCBRA
1218	MULTIPLE CARCASSES	43.9	mg/kg			RCBRA
1219	MULTIPLE CARCASSES	62.7	mg/kg			RCBRA
1220	MULTIPLE CARCASSES	42.4	mg/kg		J	RCBRA
1221	MULTIPLE CARCASSES	74.6	mg/kg		J	RCBRA
1222	MULTIPLE CARCASSES	56.8	mg/kg			RCBRA
1223	MULTIPLE CARCASSES	93.7	mg/kg			RCBRA
1224	MULTIPLE CARCASSES	91.7	mg/kg			RCBRA
1225	MULTIPLE CARCASSES	91.7	mg/kg			RCBRA
1226	MULTIPLE CARCASSES	75.4	mg/kg			RCBRA
1227	MULTIPLE CARCASSES	91.3	mg/kg			RCBRA
1228	MULTIPLE CARCASSES	42.3	mg/kg			RCBRA
1229	MULTIPLE CARCASSES	67.5	mg/kg			RCBRA
1230	MULTIPLE CARCASSES	44.6	mg/kg			RCBRA
1231	MULTIPLE CARCASSES	49.1	mg/kg			RCBRA
1232	MULTIPLE CARCASSES	45.1	mg/kg		J	RCBRA
1233	MULTIPLE CARCASSES	41.7	mg/kg		J	RCBRA
1234	MULTIPLE CARCASSES	25.3	mg/kg		J	RCBRA
1235	MULTIPLE CARCASSES	57.5	mg/kg		J	RCBRA
1236	MULTIPLE CARCASSES	43.9	mg/kg		J	RCBRA
1237	MULTIPLE CARCASSES	49.2	mg/kg		J	RCBRA
1238	MULTIPLE CARCASSES	54.9	mg/kg		J	RCBRA
1239	MULTIPLE CARCASSES	41.3	mg/kg		J	RCBRA
1240	MULTIPLE CARCASSES	46.4	mg/kg		J	RCBRA
1241	MULTIPLE CARCASSES	38.2	mg/kg		J	RCBRA
1242	MULTIPLE CARCASSES	40.1	mg/kg		J	RCBRA
1243	MULTIPLE CARCASSES	28.5	mg/kg		J	RCBRA
1244	MULTIPLE CARCASSES	63.6	mg/kg			RCBRA
1245	MULTIPLE CARCASSES	36.4	mg/kg			RCBRA
1246	MULTIPLE CARCASSES	55.8	mg/kg		J	RCBRA
1247	MULTIPLE CARCASSES	35.4	mg/kg		J	RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
1248	Silicon	7440-21-3	RCBRA Rip 9	D/H	RIPARIAN	578153.643	152801.452
1249	Silicon	7440-21-3	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
1250	Silicon	7440-21-3	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
1251	Silicon	7440-21-3	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
1252	Silicon	7440-21-3	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
1253	Silicon	7440-21-3	RCBRA Yak Rdg 2	Outside decision areas	UPLAND	559031.557	135576.407
1254	Strontium [elemental]	7440-24-6	RCBRA 100-D-48	D/H	UPLAND	573841.527	151914.538
1255	Strontium [elemental]	7440-24-6	RCBRA 100-D-49	D/H	UPLAND	573938.06	151944.123
1256	Strontium [elemental]	7440-24-6	RCBRA 100-F-2	IU2/IU6	UPLAND	579728.068	147001.117
1257	Strontium [elemental]	7440-24-6	RCBRA 116-DR-1&2	D/H	UPLAND	574007.817	152246.748
1258	Strontium [elemental]	7440-24-6	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
1259	Strontium [elemental]	7440-24-6	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
1260	Strontium [elemental]	7440-24-6	RCBRA 1607-D2:1	D/H	UPLAND	573823.924	152260.319
1261	Strontium [elemental]	7440-24-6	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
1262	Strontium [elemental]	7440-24-6	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
1263	Strontium [elemental]	7440-24-6	RCBRA 2a Rip	BC	RIPARIAN	564618.501	145284.526
1264	Strontium [elemental]	7440-24-6	RCBRA 2c Rip	K	RIPARIAN	567598.2	146210.159
1265	Strontium [elemental]	7440-24-6	RCBRA 2f Rip	D/H	RIPARIAN	576222.844	154297.511
1266	Strontium [elemental]	7440-24-6	RCBRA 2j Rip	IU2/IU6	RIPARIAN	579360.971	150092.048
1267	Strontium [elemental]	7440-24-6	RCBRA 2l Rip	IU2/IU6	RIPARIAN	582341.212	146120.069
1268	Strontium [elemental]	7440-24-6	RCBRA 300-49	300	UPLAND	594318.994	116830.934
1269	Strontium [elemental]	7440-24-6	RCBRA 3b Rip	IU2/IU6	RIPARIAN	584961.205	141035.835
1270	Strontium [elemental]	7440-24-6	RCBRA 4a Rip	IU2/IU6	RIPARIAN	589347.5	137480.985
1271	Strontium [elemental]	7440-24-6	RCBRA 5c Rip	300	RIPARIAN	594509.985	124869.182
1272	Strontium [elemental]	7440-24-6	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
1273	Strontium [elemental]	7440-24-6	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
1274	Strontium [elemental]	7440-24-6	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
1275	Strontium [elemental]	7440-24-6	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
1276	Strontium [elemental]	7440-24-6	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
1277	Strontium [elemental]	7440-24-6	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
1278	Strontium [elemental]	7440-24-6	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
1279	Strontium [elemental]	7440-24-6	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
1280	Strontium [elemental]	7440-24-6	RCBRA 600-181	IU2/IU6	UPLAND	578303.83	147316.698
1281	Strontium [elemental]	7440-24-6	RCBRA 600-204	IU2/IU6	UPLAND	580128.485	144762.219
1282	Strontium [elemental]	7440-24-6	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
1283	Strontium [elemental]	7440-24-6	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
1284	Strontium [elemental]	7440-24-6	RCBRA 600-23	IU2/IU6	UPLAND	585523.593	130481.377
1285	Strontium [elemental]	7440-24-6	RCBRA 618-4	300	UPLAND	593954.946	117064.473
1286	Strontium [elemental]	7440-24-6	RCBRA 628-1	IU2/IU6	UPLAND	577797.524	148745.681

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
1248	3/22/2006	J11922	SOIL and BIOTA	MIS	336	mg/kg	MOUSE
1249	4/3/2006	J11KM6	SOIL and BIOTA	MIS	270	mg/kg	MOUSE
1250	4/3/2006	J11KM6	SOIL and BIOTA	MIS-phyt	145	mg/kg	MOUSE
1251	4/3/2006	J11KM4	SOIL and BIOTA	MIS	357	mg/kg	MOUSE
1252	4/3/2006	J11KM4	SOIL and BIOTA	MIS-phyt	126	mg/kg	MOUSE
1253	4/3/2006	J11KM3	SOIL and BIOTA	MIS	386	mg/kg	MOUSE
1254	4/5/2006	J11KV1	SOIL and BIOTA	MIS	29.7	mg/kg	MOUSE
1255	4/5/2006	J11KV2	SOIL and BIOTA	MIS	31.4	mg/kg	MOUSE
1256	4/21/2006	J11L22	SOIL and BIOTA	MIS	38.9	mg/kg	MOUSE
1257	4/3/2006	J11L21	SOIL and BIOTA	MIS	24.7	mg/kg	MOUSE
1258	4/20/2006	J11KL7	SOIL and BIOTA	MIS	27.7	mg/kg	MOUSE
1259	4/20/2006	J11KL7	SOIL and BIOTA	MIS-phyt	26.9	mg/kg	MOUSE
1260	4/5/2006	J11KM0	SOIL and BIOTA	MIS	33.3	mg/kg	MOUSE
1261	4/5/2006	J11KL5	SOIL and BIOTA	MIS	245	mg/kg	MOUSE
1262	4/5/2006	J11KL5	SOIL and BIOTA	MIS-phyt	180	mg/kg	MOUSE
1263	6/6/2007	J14XP2	SOIL and BIOTA	MIS	22.6	mg/kg	MOUSE
1264	6/6/2007	J14XP9	SOIL and BIOTA	MIS	30.3	mg/kg	MOUSE
1265	6/6/2007	J14XP3	SOIL and BIOTA	MIS	26.6	mg/kg	MOUSE
1266	6/6/2007	J14XP4	SOIL and BIOTA	MIS	33.3	mg/kg	MOUSE
1267	6/6/2007	J14XP5	SOIL and BIOTA	MIS	18.3	mg/kg	MOUSE
1268	4/21/2006	J11KL9	SOIL and BIOTA	MIS	22.2	mg/kg	MOUSE
1269	6/6/2007	J14XP6	SOIL and BIOTA	MIS	25.3	mg/kg	MOUSE
1270	6/6/2007	J14XP8	SOIL and BIOTA	MIS	32.3	mg/kg	MOUSE
1271	6/6/2007	J14XP7	SOIL and BIOTA	MIS	21.2	mg/kg	MOUSE
1272	4/5/2006	J11L25	SOIL and BIOTA	MIS	17.9	mg/kg	MOUSE
1273	4/5/2006	J11L25	SOIL and BIOTA	MIS-phyt	25.5	mg/kg	MOUSE
1274	4/5/2006	J11KK8	SOIL and BIOTA	MIS	20.3	mg/kg	MOUSE
1275	4/5/2006	J11KK8	SOIL and BIOTA	MIS-phyt	23.1	mg/kg	MOUSE
1276	4/20/2006	J11KK9	SOIL and BIOTA	MIS	29.6	mg/kg	MOUSE
1277	4/20/2006	J11KK9	SOIL and BIOTA	MIS-phyt	37.8	mg/kg	MOUSE
1278	4/20/2006	J11KL4	SOIL and BIOTA	MIS	24.1	mg/kg	MOUSE
1279	4/20/2006	J11KL4	SOIL and BIOTA	MIS-phyt	29.3	mg/kg	MOUSE
1280	4/20/2006	J11KL2	SOIL and BIOTA	MIS	18.3	mg/kg	MOUSE
1281	4/20/2006	J11KL0	SOIL and BIOTA	MIS	18.2	mg/kg	MOUSE
1282	4/20/2006	J11KL1	SOIL and BIOTA	MIS	52.1	mg/kg	MOUSE
1283	4/20/2006	J11KL1	SOIL and BIOTA	MIS-phyt	37.4	mg/kg	MOUSE
1284	4/21/2006	J11KK7	SOIL and BIOTA	MIS	24.1	mg/kg	MOUSE
1285	4/21/2006	J11KL8	SOIL and BIOTA	MIS	18.9	mg/kg	MOUSE
1286	4/20/2006	J11KL3	SOIL and BIOTA	MIS	30.7	mg/kg	MOUSE

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
1248	MULTIPLE CARCASSES	43.1	mg/kg		J	RCBRA
1249	MULTIPLE CARCASSES	74.4	mg/kg			RCBRA
1250	MULTIPLE CARCASSES	74.4	mg/kg			RCBRA
1251	MULTIPLE CARCASSES	43.5	mg/kg			RCBRA
1252	MULTIPLE CARCASSES	43.5	mg/kg			RCBRA
1253	MULTIPLE CARCASSES	71.5	mg/kg			RCBRA
1254	MULTIPLE CARCASSES	6.8	mg/kg	C		RCBRA
1255	MULTIPLE CARCASSES	16.3	mg/kg	C		RCBRA
1256	MULTIPLE CARCASSES	6.4	mg/kg			RCBRA
1257	MULTIPLE CARCASSES	17.8	mg/kg	C		RCBRA
1258	MULTIPLE CARCASSES	16.3	mg/kg			RCBRA
1259	MULTIPLE CARCASSES	16.3	mg/kg			RCBRA
1260	MULTIPLE CARCASSES	5.2	mg/kg	C		RCBRA
1261	MULTIPLE CARCASSES	10.4	mg/kg	C		RCBRA
1262	MULTIPLE CARCASSES	10.4	mg/kg	C		RCBRA
1263	MULTIPLE CARCASSES	5.5	mg/kg	C		RCBRA
1264	MULTIPLE CARCASSES	6.3	mg/kg	C		RCBRA
1265	MULTIPLE CARCASSES	1.3	mg/kg	C		RCBRA
1266	MULTIPLE CARCASSES	5.6	mg/kg	C		RCBRA
1267	MULTIPLE CARCASSES	9.3	mg/kg	C		RCBRA
1268	MULTIPLE CARCASSES	6.9	mg/kg			RCBRA
1269	MULTIPLE CARCASSES	10.6	mg/kg	C		RCBRA
1270	MULTIPLE CARCASSES	7	mg/kg	C		RCBRA
1271	MULTIPLE CARCASSES	3.7	mg/kg	C		RCBRA
1272	MULTIPLE CARCASSES	7.6	mg/kg	C		RCBRA
1273	MULTIPLE CARCASSES	7.6	mg/kg	C		RCBRA
1274	MULTIPLE CARCASSES	10.9	mg/kg	C		RCBRA
1275	MULTIPLE CARCASSES	10.9	mg/kg	C		RCBRA
1276	MULTIPLE CARCASSES	8.2	mg/kg			RCBRA
1277	MULTIPLE CARCASSES	8.2	mg/kg			RCBRA
1278	MULTIPLE CARCASSES	11.7	mg/kg			RCBRA
1279	MULTIPLE CARCASSES	11.7	mg/kg			RCBRA
1280	MULTIPLE CARCASSES	7.3	mg/kg			RCBRA
1281	MULTIPLE CARCASSES	11.8	mg/kg			RCBRA
1282	MULTIPLE CARCASSES	11.2	mg/kg			RCBRA
1283	MULTIPLE CARCASSES	11.2	mg/kg			RCBRA
1284	MULTIPLE CARCASSES	10.7	mg/kg			RCBRA
1285	MULTIPLE CARCASSES	7.2	mg/kg			RCBRA
1286	MULTIPLE CARCASSES	18.7	mg/kg			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
1287	Strontium [elemental]	7440-24-6	RCBRA Bev Ref 1 Rip	Outside decision areas	RIPARIAN	542428.846	167701.261
1288	Strontium [elemental]	7440-24-6	RCBRA Bev Ref 2 Rip	Outside decision areas	RIPARIAN	541493.988	167808.357
1289	Strontium [elemental]	7440-24-6	RCBRA CP Ref 2	IU2/IU6	UPLAND	563789.959	139793.869
1290	Strontium [elemental]	7440-24-6	RCBRA JA JONES	300	UPLAND	593874.58	120013.908
1291	Strontium [elemental]	7440-24-6	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
1292	Strontium [elemental]	7440-24-6	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
1293	Strontium [elemental]	7440-24-6	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
1294	Strontium [elemental]	7440-24-6	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
1295	Strontium [elemental]	7440-24-6	RCBRA Pit 18	IU2/IU6	UPLAND	580697.058	145311.464
1296	Strontium [elemental]	7440-24-6	RCBRA Pit 23	IU2/IU6	UPLAND	572381.012	144874.157
1297	Strontium [elemental]	7440-24-6	RCBRA Pit 24	BC	UPLAND	563395.814	145119.007
1298	Strontium [elemental]	7440-24-6	RCBRA Pit 9	300	UPLAND	592807.103	120587.7
1299	Strontium [elemental]	7440-24-6	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
1300	Strontium [elemental]	7440-24-6	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
1301	Strontium [elemental]	7440-24-6	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
1302	Strontium [elemental]	7440-24-6	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
1303	Strontium [elemental]	7440-24-6	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
1304	Strontium [elemental]	7440-24-6	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
1305	Strontium [elemental]	7440-24-6	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
1306	Strontium [elemental]	7440-24-6	RCBRA Yak Rdg 2	Outside decision areas	UPLAND	559031.557	135576.407
1307	Tin	7440-31-5	RCBRA 100-F-2	IU2/IU6	UPLAND	579728.068	147001.117
1308	Tin	7440-31-5	RCBRA 116-DR-1&2	D/H	UPLAND	574007.817	152246.748
1309	Tin	7440-31-5	RCBRA 300-49	300	UPLAND	594318.994	116830.934
1310	Tin	7440-31-5	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
1311	Tin	7440-31-5	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
1312	Tin	7440-31-5	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
1313	Tin	7440-31-5	RCBRA 628-1	IU2/IU6	UPLAND	577797.524	148745.681
1314	Tin	7440-31-5	RCBRA CP Ref 2	IU2/IU6	UPLAND	563789.959	139793.869
1315	Tin	7440-31-5	RCBRA JA JONES	300	UPLAND	593874.58	120013.908
1316	Tin	7440-31-5	RCBRA R Ref 12	IU2/IU6	RIPARIAN	559201.908	145747.542
1317	Tin	7440-31-5	RCBRA R Ref 16	Outside decision areas	RIPARIAN	557650.029	144826.748
1318	Tin	7440-31-5	RCBRA Rip 1	D/H	RIPARIAN	577251.869	153659.195
1319	Tin	7440-31-5	RCBRA Rip 10	D/H	RIPARIAN	573987.873	153082.19
1320	Tin	7440-31-5	RCBRA Rip 3	D/H	RIPARIAN	572639.65	151677.812
1321	Tin	7440-31-5	RCBRA Rip 4	N	RIPARIAN	570558.596	148981.547
1322	Tin	7440-31-5	RCBRA Rip 5	K	RIPARIAN	569141.025	147521.561
1323	Tin	7440-31-5	RCBRA Rip 7	IU2/IU6	RIPARIAN	581326.914	147825.17
1324	Thallium	7440-28-0	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
1325	Thallium	7440-28-0	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
1287	6/6/2007	J14XN9	SOIL and BIOTA	MIS	24.7	mg/kg	MOUSE
1288	6/6/2007	J14XP0	SOIL and BIOTA	MIS	29.8	mg/kg	MOUSE
1289	4/3/2006	J11L36	SOIL and BIOTA	MIS	16.5	mg/kg	MOUSE
1290	4/21/2006	J11L24	SOIL and BIOTA	MIS	19.4	mg/kg	MOUSE
1291	4/3/2006	J11KM5	SOIL and BIOTA	MIS	29.8	mg/kg	MOUSE
1292	4/3/2006	J11KM5	SOIL and BIOTA	MIS-phyt	32.6	mg/kg	MOUSE
1293	4/20/2006	J11KK5	SOIL and BIOTA	MIS	26	mg/kg	MOUSE
1294	4/20/2006	J11XY0	SOIL and BIOTA	MIS	26	mg/kg	MOUSE
1295	4/20/2006	J11KK6	SOIL and BIOTA	MIS	23.5	mg/kg	MOUSE
1296	4/3/2006	J11L23	SOIL and BIOTA	MIS	19.6	mg/kg	MOUSE
1297	4/3/2006	J11KM2	SOIL and BIOTA	MIS	22.9	mg/kg	MOUSE
1298	4/21/2006	J11KM1	SOIL and BIOTA	MIS	21.5	mg/kg	MOUSE
1299	6/6/2007	J14XP1	SOIL and BIOTA	MIS	35.25	mg/kg	MOUSE
1300	4/20/2006	J11919	SOIL and BIOTA	MIS	32.2	mg/kg	MOUSE
1301	4/20/2006	J11XY1	SOIL and BIOTA	MIS	32.2	mg/kg	MOUSE
1302	4/3/2006	J11KM6	SOIL and BIOTA	MIS	24.9	mg/kg	MOUSE
1303	4/3/2006	J11KM6	SOIL and BIOTA	MIS-phyt	27.9	mg/kg	MOUSE
1304	4/3/2006	J11KM4	SOIL and BIOTA	MIS	22.8	mg/kg	MOUSE
1305	4/3/2006	J11KM4	SOIL and BIOTA	MIS-phyt	25.4	mg/kg	MOUSE
1306	4/3/2006	J11KM3	SOIL and BIOTA	MIS	29.5	mg/kg	MOUSE
1307	4/21/2006	J11L22	SOIL and BIOTA	MIS	1.2	mg/kg	MOUSE
1308	4/3/2006	J11L21	SOIL and BIOTA	MIS	1.7	mg/kg	MOUSE
1309	4/21/2006	J11KL9	SOIL and BIOTA	MIS	7.5	mg/kg	MOUSE
1310	4/5/2006	J11L25	SOIL and BIOTA	MIS	0.74	mg/kg	MOUSE
1311	4/20/2006	J11KK9	SOIL and BIOTA	MIS	18	mg/kg	MOUSE
1312	4/20/2006	J11KK9	SOIL and BIOTA	MIS-phyt	14.2	mg/kg	MOUSE
1313	4/20/2006	J11KL3	SOIL and BIOTA	MIS	1.85	mg/kg	MOUSE
1314	4/3/2006	J11L36	SOIL and BIOTA	MIS	1.1095	mg/kg	MOUSE
1315	4/21/2006	J11L24	SOIL and BIOTA	MIS	1.7	mg/kg	MOUSE
1316	3/23/2006	J11912	SOIL and BIOTA	MIS	1.6	mg/kg	MOUSE
1317	3/23/2006	J11914	SOIL and BIOTA	MIS	3.6	mg/kg	MOUSE
1318	3/21/2006	J11916	SOIL and BIOTA	MIS	2.45	mg/kg	MOUSE
1319	3/22/2006	J11923	SOIL and BIOTA	MIS	3.2	mg/kg	MOUSE
1320	3/22/2006	J11918	SOIL and BIOTA	MIS	3.5	mg/kg	MOUSE
1321	3/22/2006	J11910	SOIL and BIOTA	MIS	3	mg/kg	MOUSE
1322	3/22/2006	J11911	SOIL and BIOTA	MIS	1.8	mg/kg	MOUSE
1323	3/22/2006	J11920	SOIL and BIOTA	MIS	4.95	mg/kg	MOUSE
1324	4/25/2005	B1CVB3	SOIL and BIOTA	Discrete	0.196	mg/kg	MOUSE
1325	4/25/2005	B1CVB1	SOIL and BIOTA	Discrete	0.196	mg/kg	MOUSE

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
1287	MULTIPLE CARCASSES	7.4	mg/kg	C		RCBRA
1288	MULTIPLE CARCASSES	4.8	mg/kg	C		RCBRA
1289	MULTIPLE CARCASSES	8.7	mg/kg	C		RCBRA
1290	MULTIPLE CARCASSES	5.1	mg/kg			RCBRA
1291	MULTIPLE CARCASSES	7.2	mg/kg	C		RCBRA
1292	MULTIPLE CARCASSES	7.2	mg/kg	C		RCBRA
1293	MULTIPLE CARCASSES	4.2	mg/kg			RCBRA
1294	MULTIPLE CARCASSES	7.4	mg/kg			RCBRA
1295	MULTIPLE CARCASSES	4.3	mg/kg			RCBRA
1296	MULTIPLE CARCASSES	12.7	mg/kg	C		RCBRA
1297	MULTIPLE CARCASSES	3.2	mg/kg	C		RCBRA
1298	MULTIPLE CARCASSES	6	mg/kg			RCBRA
1299	MULTIPLE CARCASSES	4	mg/kg	C		RCBRA
1300	MULTIPLE CARCASSES	5.5	mg/kg			RCBRA
1301	MULTIPLE CARCASSES	6.8	mg/kg			RCBRA
1302	MULTIPLE CARCASSES	10.2	mg/kg	C		RCBRA
1303	MULTIPLE CARCASSES	10.2	mg/kg	C		RCBRA
1304	MULTIPLE CARCASSES	5.6	mg/kg	C		RCBRA
1305	MULTIPLE CARCASSES	5.6	mg/kg	C		RCBRA
1306	MULTIPLE CARCASSES	4.2	mg/kg	C		RCBRA
1307	MULTIPLE CARCASSES	1.3	mg/kg			RCBRA
1308	MULTIPLE CARCASSES	1.1	mg/kg	C		RCBRA
1309	MULTIPLE CARCASSES	1.4	mg/kg			RCBRA
1310	MULTIPLE CARCASSES	1.2	mg/kg	C		RCBRA
1311	MULTIPLE CARCASSES	1.5	mg/kg			RCBRA
1312	MULTIPLE CARCASSES	1.5	mg/kg			RCBRA
1313	MULTIPLE CARCASSES	1.1	mg/kg			RCBRA
1314	MULTIPLE CARCASSES	1.5	mg/kg	C		RCBRA
1315	MULTIPLE CARCASSES	1.2	mg/kg			RCBRA
1316	MULTIPLE CARCASSES	1.1	mg/kg			RCBRA
1317	MULTIPLE CARCASSES	1.2	mg/kg			RCBRA
1318	MULTIPLE CARCASSES	1.1	mg/kg			RCBRA
1319	MULTIPLE CARCASSES	1.1	mg/kg			RCBRA
1320	MULTIPLE CARCASSES	1.1	mg/kg			RCBRA
1321	MULTIPLE CARCASSES	1.2	mg/kg			RCBRA
1322	MULTIPLE CARCASSES	1.3	mg/kg			RCBRA
1323	MULTIPLE CARCASSES	1.1	mg/kg			RCBRA
1324	WHOLEORG	0.013	mg/kg			CP
1325	WHOLEORG	0.041	mg/kg			CP

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
1326	Thallium	7440-28-0	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
1327	Thallium	7440-28-0	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
1328	Thallium	7440-28-0	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
1329	Thallium	7440-28-0	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
1330	Thallium	7440-28-0	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
1331	Thallium	7440-28-0	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
1332	Thallium	7440-28-0	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
1333	Thallium	7440-28-0	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
1334	Thallium	7440-28-0	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
1335	Thallium	7440-28-0	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
1336	Thallium	7440-28-0	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
1337	Uranium [inorganic]	7440-61-1	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
1338	Uranium [inorganic]	7440-61-1	RCBRA Rip 4	N	RIPARIAN	570558.596	148981.547
1339	Uranium [inorganic]	7440-61-1	RCBRA Rip 5	K	RIPARIAN	569141.025	147521.561
1340	Vanadium	7440-62-2	RCBRA 100-D-48	D/H	UPLAND	573841.527	151914.538
1341	Vanadium	7440-62-2	RCBRA 100-D-49	D/H	UPLAND	573938.06	151944.123
1342	Vanadium	7440-62-2	RCBRA 100-F-2	IU2/IU6	UPLAND	579728.068	147001.117
1343	Vanadium	7440-62-2	RCBRA 116-DR-1&2	D/H	UPLAND	574007.817	152246.748
1344	Vanadium	7440-62-2	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
1345	Vanadium	7440-62-2	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
1346	Vanadium	7440-62-2	RCBRA 1607-D2:1	D/H	UPLAND	573823.924	152260.319
1347	Vanadium	7440-62-2	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
1348	Vanadium	7440-62-2	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
1349	Vanadium	7440-62-2	RCBRA 2c Rip	K	RIPARIAN	567598.2	146210.159
1350	Vanadium	7440-62-2	RCBRA 2j Rip	IU2/IU6	RIPARIAN	579360.971	150092.048
1351	Vanadium	7440-62-2	RCBRA 2l Rip	IU2/IU6	RIPARIAN	582341.212	146120.069
1352	Vanadium	7440-62-2	RCBRA 300-49	300	UPLAND	594318.994	116830.934
1353	Vanadium	7440-62-2	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
1354	Vanadium	7440-62-2	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
1355	Vanadium	7440-62-2	RCBRA 600-181	IU2/IU6	UPLAND	578303.83	147316.698
1356	Vanadium	7440-62-2	RCBRA 600-204	IU2/IU6	UPLAND	580128.485	144762.219
1357	Vanadium	7440-62-2	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
1358	Vanadium	7440-62-2	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
1359	Vanadium	7440-62-2	RCBRA 600-23	IU2/IU6	UPLAND	585523.593	130481.377
1360	Vanadium	7440-62-2	RCBRA CP Ref 2	IU2/IU6	UPLAND	563789.959	139793.869
1361	Vanadium	7440-62-2	RCBRA JA JONES	300	UPLAND	593874.58	120013.908
1362	Vanadium	7440-62-2	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
1363	Vanadium	7440-62-2	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
1364	Vanadium	7440-62-2	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
1326	4/26/2005	B1CVB5	SOIL and BIOTA	Discrete	0.196	mg/kg	MOUSE
1327	4/29/2005	B1CVC1	SOIL and BIOTA	Discrete	0.14	mg/kg	MOUSE
1328	5/2/2005	B1CVC2	SOIL and BIOTA	Discrete	0.14	mg/kg	MOUSE
1329	5/5/2005	B1CVC4	SOIL and BIOTA	Discrete	0.14	mg/kg	MOUSE
1330	4/28/2005	B1CVC0	SOIL and BIOTA	Discrete	0.14	mg/kg	MOUSE
1331	4/28/2005	B1CVB9	SOIL and BIOTA	Discrete	0.14	mg/kg	MOUSE
1332	5/3/2005	B1CVC6	SOIL and BIOTA	Discrete	0.13	mg/kg	MOUSE
1333	5/9/2005	B1CVD0	SOIL and BIOTA	Discrete	0.13	mg/kg	MOUSE
1334	5/5/2005	B1CVC8	SOIL and BIOTA	Discrete	0.13	mg/kg	MOUSE
1335	5/3/2005	B1CVC5	SOIL and BIOTA	Discrete	0.13	mg/kg	MOUSE
1336	5/5/2005	B1CVC9	SOIL and BIOTA	Discrete	0.13	mg/kg	MOUSE
1337	3/23/2006	J11925	SOIL and BIOTA	MIS	2.1	mg/kg	MOUSE
1338	3/22/2006	J11910	SOIL and BIOTA	MIS	1.5	mg/kg	MOUSE
1339	3/22/2006	J11911	SOIL and BIOTA	MIS	2.2	mg/kg	MOUSE
1340	4/5/2006	J11KV1	SOIL and BIOTA	MIS	58.8	mg/kg	MOUSE
1341	4/5/2006	J11KV2	SOIL and BIOTA	MIS	53.5	mg/kg	MOUSE
1342	4/21/2006	J11L22	SOIL and BIOTA	MIS	42.6	mg/kg	MOUSE
1343	4/3/2006	J11L21	SOIL and BIOTA	MIS	48.7	mg/kg	MOUSE
1344	4/20/2006	J11KL7	SOIL and BIOTA	MIS	39.6	mg/kg	MOUSE
1345	4/20/2006	J11KL7	SOIL and BIOTA	MIS-phyt	39.5	mg/kg	MOUSE
1346	4/5/2006	J11KM0	SOIL and BIOTA	MIS	43.9	mg/kg	MOUSE
1347	4/5/2006	J11KL5	SOIL and BIOTA	MIS	44.5	mg/kg	MOUSE
1348	4/5/2006	J11KL5	SOIL and BIOTA	MIS-phyt	55.2	mg/kg	MOUSE
1349	6/6/2007	J14XP9	SOIL and BIOTA	MIS	39.7	mg/kg	MOUSE
1350	6/6/2007	J14XP4	SOIL and BIOTA	MIS	41.6	mg/kg	MOUSE
1351	6/6/2007	J14XP5	SOIL and BIOTA	MIS	84.4	mg/kg	MOUSE
1352	4/21/2006	J11KL9	SOIL and BIOTA	MIS	47.2	mg/kg	MOUSE
1353	4/5/2006	J11KK8	SOIL and BIOTA	MIS	39.6	mg/kg	MOUSE
1354	4/5/2006	J11KK8	SOIL and BIOTA	MIS-phyt	49.2	mg/kg	MOUSE
1355	4/20/2006	J11KL2	SOIL and BIOTA	MIS	51.7	mg/kg	MOUSE
1356	4/20/2006	J11KL0	SOIL and BIOTA	MIS	62.2	mg/kg	MOUSE
1357	4/20/2006	J11KL1	SOIL and BIOTA	MIS	43.6	mg/kg	MOUSE
1358	4/20/2006	J11KL1	SOIL and BIOTA	MIS-phyt	52.8	mg/kg	MOUSE
1359	4/21/2006	J11KK7	SOIL and BIOTA	MIS	46.4	mg/kg	MOUSE
1360	4/3/2006	J11L36	SOIL and BIOTA	MIS	42.6	mg/kg	MOUSE
1361	4/21/2006	J11L24	SOIL and BIOTA	MIS	45.1	mg/kg	MOUSE
1362	4/3/2006	J11KM5	SOIL and BIOTA	MIS	56.5	mg/kg	MOUSE
1363	4/3/2006	J11KM5	SOIL and BIOTA	MIS-phyt	67.1	mg/kg	MOUSE
1364	4/20/2006	J11KK5	SOIL and BIOTA	MIS	69.1	mg/kg	MOUSE

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
1326	WHOLEORG	0.008	mg/kg			CP
1327	WHOLEORG	0.016	mg/kg			CP
1328	WHOLEORG	0.01	mg/kg			CP
1329	WHOLEORG	0.012	mg/kg			CP
1330	WHOLEORG	0.011	mg/kg			CP
1331	WHOLEORG	0.012	mg/kg			CP
1332	WHOLEORG	0.012	mg/kg			CP
1333	WHOLEORG	0.043	mg/kg			CP
1334	WHOLEORG	0.019	mg/kg			CP
1335	WHOLEORG	0.016	mg/kg			CP
1336	WHOLEORG	0.021	mg/kg			CP
1337	MULTIPLE CARCASSES	1.2	mg/kg			RCBRA
1338	MULTIPLE CARCASSES	0.98	mg/kg			RCBRA
1339	MULTIPLE CARCASSES	1.4	mg/kg			RCBRA
1340	MULTIPLE CARCASSES	0.16	mg/kg	C		RCBRA
1341	MULTIPLE CARCASSES	0.25	mg/kg	C		RCBRA
1342	MULTIPLE CARCASSES	0.26	mg/kg			RCBRA
1343	MULTIPLE CARCASSES	0.2	mg/kg	C		RCBRA
1344	MULTIPLE CARCASSES	0.24	mg/kg			RCBRA
1345	MULTIPLE CARCASSES	0.24	mg/kg			RCBRA
1346	MULTIPLE CARCASSES	0.15	mg/kg	C		RCBRA
1347	MULTIPLE CARCASSES	0.16	mg/kg	C		RCBRA
1348	MULTIPLE CARCASSES	0.16	mg/kg	C		RCBRA
1349	MULTIPLE CARCASSES	0.11	mg/kg			RCBRA
1350	MULTIPLE CARCASSES	0.08	mg/kg			RCBRA
1351	MULTIPLE CARCASSES	0.13	mg/kg			RCBRA
1352	MULTIPLE CARCASSES	0.22	mg/kg			RCBRA
1353	MULTIPLE CARCASSES	0.14	mg/kg	C		RCBRA
1354	MULTIPLE CARCASSES	0.14	mg/kg	C		RCBRA
1355	MULTIPLE CARCASSES	0.11	mg/kg			RCBRA
1356	MULTIPLE CARCASSES	0.09	mg/kg			RCBRA
1357	MULTIPLE CARCASSES	0.12	mg/kg			RCBRA
1358	MULTIPLE CARCASSES	0.12	mg/kg			RCBRA
1359	MULTIPLE CARCASSES	0.12	mg/kg			RCBRA
1360	MULTIPLE CARCASSES	0.18	mg/kg	C		RCBRA
1361	MULTIPLE CARCASSES	0.47	mg/kg			RCBRA
1362	MULTIPLE CARCASSES	0.4	mg/kg	C		RCBRA
1363	MULTIPLE CARCASSES	0.4	mg/kg	C		RCBRA
1364	MULTIPLE CARCASSES	0.25	mg/kg			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
1365	Vanadium	7440-62-2	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
1366	Vanadium	7440-62-2	RCBRA Pit 23	IU2/IU6	UPLAND	572381.012	144874.157
1367	Vanadium	7440-62-2	RCBRA Pit 9	300	UPLAND	592807.103	120587.7
1368	Vanadium	7440-62-2	RCBRA R Ref 12	IU2/IU6	RIPARIAN	559201.908	145747.542
1369	Vanadium	7440-62-2	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
1370	Vanadium	7440-62-2	RCBRA R Ref 16	Outside decision areas	RIPARIAN	557650.029	144826.748
1371	Vanadium	7440-62-2	RCBRA Rip 1	D/H	RIPARIAN	577251.869	153659.195
1372	Vanadium	7440-62-2	RCBRA Rip 4	N	RIPARIAN	570558.596	148981.547
1373	Vanadium	7440-62-2	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
1374	Vanadium	7440-62-2	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
1375	Vanadium	7440-62-2	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
1376	Vanadium	7440-62-2	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
1377	Vanadium	7440-62-2	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
1378	Vanadium	7440-62-2	RCBRA Yak Rdg 2	Outside decision areas	UPLAND	559031.557	135576.407
1379	Vanadium	7440-62-2	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764
1380	Vanadium	7440-62-2	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764
1381	Vanadium	7440-62-2	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764
1382	Vanadium	7440-62-2	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764
1383	Vanadium	7440-62-2	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764
1384	Vanadium	7440-62-2	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764
1385	Vanadium	7440-62-2	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764
1386	Vanadium	7440-62-2	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
1387	Vanadium	7440-62-2	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
1388	Vanadium	7440-62-2	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
1389	Vanadium	7440-62-2	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
1390	Vanadium	7440-62-2	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
1391	Vanadium	7440-62-2	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
1392	Vanadium	7440-62-2	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
1393	Vanadium	7440-62-2	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
1394	Vanadium	7440-62-2	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
1395	Vanadium	7440-62-2	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
1396	Vanadium	7440-62-2	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
1397	Vanadium	7440-62-2	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
1398	Vanadium	7440-62-2	B POND	Outside decision areas	UPLAND	576356.769	136881.272
1399	Vanadium	7440-62-2	B POND	Outside decision areas	UPLAND	576356.769	136881.272
1400	Vanadium	7440-62-2	B POND	Outside decision areas	UPLAND	576356.769	136881.272
1401	Vanadium	7440-62-2	B POND	Outside decision areas	UPLAND	576356.769	136881.272
1402	Vanadium	7440-62-2	B POND	Outside decision areas	UPLAND	576356.769	136881.272
1403	Vanadium	7440-62-2	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
1365	4/20/2006	J11XY0	SOIL and BIOTA	MIS	69.1	mg/kg	MOUSE
1366	4/3/2006	J11L23	SOIL and BIOTA	MIS	46.5	mg/kg	MOUSE
1367	4/21/2006	J11KM1	SOIL and BIOTA	MIS	66.7	mg/kg	MOUSE
1368	3/23/2006	J11912	SOIL and BIOTA	MIS	40.6	mg/kg	MOUSE
1369	6/6/2007	J14XP1	SOIL and BIOTA	MIS	51.6	mg/kg	MOUSE
1370	3/23/2006	J11914	SOIL and BIOTA	MIS	36.6	mg/kg	MOUSE
1371	3/21/2006	J11916	SOIL and BIOTA	MIS	42.5	mg/kg	MOUSE
1372	3/22/2006	J11910	SOIL and BIOTA	MIS	51.8	mg/kg	MOUSE
1373	4/20/2006	J11919	SOIL and BIOTA	MIS	53	mg/kg	MOUSE
1374	4/3/2006	J11KM6	SOIL and BIOTA	MIS	58.6	mg/kg	MOUSE
1375	4/3/2006	J11KM6	SOIL and BIOTA	MIS-phyt	68.8	mg/kg	MOUSE
1376	4/3/2006	J11KM4	SOIL and BIOTA	MIS	41.7	mg/kg	MOUSE
1377	4/3/2006	J11KM4	SOIL and BIOTA	MIS-phyt	55.3	mg/kg	MOUSE
1378	4/3/2006	J11KM3	SOIL and BIOTA	MIS	58.1	mg/kg	MOUSE
1379	5/12/2005	B1CVD7	SOIL and BIOTA	Discrete	41.3	mg/kg	MOUSE
1380	5/11/2005	B1CVD2	SOIL and BIOTA	Discrete	41.3	mg/kg	MOUSE
1381	5/11/2005	B1CVD4	SOIL and BIOTA	Discrete	41.3	mg/kg	MOUSE
1382	5/11/2005	B1CVD3	SOIL and BIOTA	Discrete	41.3	mg/kg	MOUSE
1383	5/11/2005	B1CVD1	SOIL and BIOTA	Discrete	41.3	mg/kg	MOUSE
1384	5/11/2005	B1F2V6	SOIL and BIOTA	Discrete	41.3	mg/kg	MOUSE
1385	5/12/2005	B1CVD8	SOIL and BIOTA	Discrete	41.3	mg/kg	MOUSE
1386	6/1/2005	B1CVF8	SOIL and BIOTA	Discrete	57.3	mg/kg	MOUSE
1387	5/25/2005	B1CVF6	SOIL and BIOTA	Discrete	57.3	mg/kg	MOUSE
1388	6/2/2005	B1CVH0	SOIL and BIOTA	Discrete	57.3	mg/kg	MOUSE
1389	5/31/2005	B1CVF7	SOIL and BIOTA	Discrete	57.3	mg/kg	MOUSE
1390	6/2/2005	B1CVF9	SOIL and BIOTA	Discrete	57.3	mg/kg	MOUSE
1391	6/7/2005	B1CVH1	SOIL and BIOTA	Discrete	57.3	mg/kg	MOUSE
1392	4/25/2005	B1CVB3	SOIL and BIOTA	Discrete	45.8	mg/kg	MOUSE
1393	4/25/2005	B1CVB4	SOIL and BIOTA	Discrete	45.8	mg/kg	MOUSE
1394	4/25/2005	B1CVB1	SOIL and BIOTA	Discrete	45.8	mg/kg	MOUSE
1395	4/21/2005	B1CVB0	SOIL and BIOTA	Discrete	45.8	mg/kg	MOUSE
1396	4/26/2005	B1CVB5	SOIL and BIOTA	Discrete	45.8	mg/kg	MOUSE
1397	4/25/2005	B1CVB2	SOIL and BIOTA	Discrete	45.8	mg/kg	MOUSE
1398	5/18/2005	B1CVF3	SOIL and BIOTA	Discrete	43.9	mg/kg	MOUSE
1399	5/13/2005	B1CVF1	SOIL and BIOTA	Discrete	43.9	mg/kg	MOUSE
1400	5/19/2005	B1CVF5	SOIL and BIOTA	Discrete	43.9	mg/kg	MOUSE
1401	5/17/2005	B1CVF2	SOIL and BIOTA	Discrete	43.9	mg/kg	MOUSE
1402	5/18/2005	B1CVF4	SOIL and BIOTA	Discrete	43.9	mg/kg	MOUSE
1403	4/29/2005	B1CVC1	SOIL and BIOTA	Discrete	37.2	mg/kg	MOUSE

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
1365	MULTIPLE CARCASSES	0.22	mg/kg			RCBRA
1366	MULTIPLE CARCASSES	0.2	mg/kg	C		RCBRA
1367	MULTIPLE CARCASSES	0.18	mg/kg			RCBRA
1368	MULTIPLE CARCASSES	0.14	mg/kg			RCBRA
1369	MULTIPLE CARCASSES	0.08	mg/kg			RCBRA
1370	MULTIPLE CARCASSES	0.1	mg/kg			RCBRA
1371	MULTIPLE CARCASSES	0.1	mg/kg			RCBRA
1372	MULTIPLE CARCASSES	0.1	mg/kg			RCBRA
1373	MULTIPLE CARCASSES	0.12	mg/kg			RCBRA
1374	MULTIPLE CARCASSES	0.21	mg/kg	C		RCBRA
1375	MULTIPLE CARCASSES	0.21	mg/kg	C		RCBRA
1376	MULTIPLE CARCASSES	0.14	mg/kg	C		RCBRA
1377	MULTIPLE CARCASSES	0.14	mg/kg	C		RCBRA
1378	MULTIPLE CARCASSES	0.18	mg/kg	C		RCBRA
1379	WHOLEORG	0.272	mg/kg			CP
1380	WHOLEORG	0.229	mg/kg			CP
1381	WHOLEORG	0.291	mg/kg			CP
1382	WHOLEORG	0.26	mg/kg			CP
1383	WHOLEORG	0.279	mg/kg			CP
1384	WHOLEORG	0.261	mg/kg			CP
1385	WHOLEORG	0.512	mg/kg	B		CP
1386	WHOLEORG	0.251	mg/kg			CP
1387	WHOLEORG	0.386	mg/kg			CP
1388	WHOLEORG	0.282	mg/kg			CP
1389	WHOLEORG	0.274	mg/kg			CP
1390	WHOLEORG	0.366	mg/kg			CP
1391	WHOLEORG	0.271	mg/kg			CP
1392	WHOLEORG	0.82	mg/kg			CP
1393	WHOLEORG	1.03	mg/kg	B		CP
1394	WHOLEORG	0.144	mg/kg			CP
1395	WHOLEORG	0.225	mg/kg			CP
1396	WHOLEORG	0.219	mg/kg			CP
1397	WHOLEORG	0.824	mg/kg	B		CP
1398	WHOLEORG	0.53	mg/kg			CP
1399	WHOLEORG	0.276	mg/kg			CP
1400	WHOLEORG	0.325	mg/kg			CP
1401	WHOLEORG	0.482	mg/kg			CP
1402	WHOLEORG	0.161	mg/kg			CP
1403	WHOLEORG	0.286	mg/kg			CP

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
1404	Vanadium	7440-62-2	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
1405	Vanadium	7440-62-2	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
1406	Vanadium	7440-62-2	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
1407	Vanadium	7440-62-2	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
1408	Vanadium	7440-62-2	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
1409	Vanadium	7440-62-2	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
1410	Vanadium	7440-62-2	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
1411	Vanadium	7440-62-2	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
1412	Vanadium	7440-62-2	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
1413	Vanadium	7440-62-2	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
1414	Vanadium	7440-62-2	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
1415	Vanadium	7440-62-2	U POND	Outside decision areas	UPLAND	566379.63	134457.045
1416	Vanadium	7440-62-2	U POND	Outside decision areas	UPLAND	566379.63	134457.045
1417	Vanadium	7440-62-2	U POND	Outside decision areas	UPLAND	566379.63	134457.045
1418	Vanadium	7440-62-2	U POND	Outside decision areas	UPLAND	566379.63	134457.045
1419	Vanadium	7440-62-2	U POND	Outside decision areas	UPLAND	566379.63	134457.045
1420	Vanadium	7440-62-2	U POND	Outside decision areas	UPLAND	566379.63	134457.045
1421	Zinc	7440-66-6	RCBRA 100-D-48	D/H	UPLAND	573841.527	151914.538
1422	Zinc	7440-66-6	RCBRA 100-D-49	D/H	UPLAND	573938.06	151944.123
1423	Zinc	7440-66-6	RCBRA 100-F-2	IU2/IU6	UPLAND	579728.068	147001.117
1424	Zinc	7440-66-6	RCBRA 116-DR-1&2	D/H	UPLAND	574007.817	152246.748
1425	Zinc	7440-66-6	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
1426	Zinc	7440-66-6	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
1427	Zinc	7440-66-6	RCBRA 1607-D2:1	D/H	UPLAND	573823.924	152260.319
1428	Zinc	7440-66-6	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
1429	Zinc	7440-66-6	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
1430	Zinc	7440-66-6	RCBRA 2a Rip	BC	RIPARIAN	564618.501	145284.526
1431	Zinc	7440-66-6	RCBRA 2c Rip	K	RIPARIAN	567598.2	146210.159
1432	Zinc	7440-66-6	RCBRA 2f Rip	D/H	RIPARIAN	576222.844	154297.511
1433	Zinc	7440-66-6	RCBRA 2j Rip	IU2/IU6	RIPARIAN	579360.971	150092.048
1434	Zinc	7440-66-6	RCBRA 2l Rip	IU2/IU6	RIPARIAN	582341.212	146120.069
1435	Zinc	7440-66-6	RCBRA 300-49	300	UPLAND	594318.994	116830.934
1436	Zinc	7440-66-6	RCBRA 3b Rip	IU2/IU6	RIPARIAN	584961.205	141035.835
1437	Zinc	7440-66-6	RCBRA 4a Rip	IU2/IU6	RIPARIAN	589347.5	137480.985
1438	Zinc	7440-66-6	RCBRA 5c Rip	300	RIPARIAN	594509.985	124869.182
1439	Zinc	7440-66-6	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
1440	Zinc	7440-66-6	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
1441	Zinc	7440-66-6	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
1442	Zinc	7440-66-6	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
1404	5/3/2005	B1CVC3	SOIL and BIOTA	Discrete	37.2	mg/kg	MOUSE
1405	5/2/2005	B1CVC2	SOIL and BIOTA	Discrete	37.2	mg/kg	MOUSE
1406	5/5/2005	B1CVC4	SOIL and BIOTA	Discrete	37.2	mg/kg	MOUSE
1407	4/28/2005	B1CVC0	SOIL and BIOTA	Discrete	37.2	mg/kg	MOUSE
1408	4/28/2005	B1CVB9	SOIL and BIOTA	Discrete	37.2	mg/kg	MOUSE
1409	5/3/2005	B1CVC6	SOIL and BIOTA	Discrete	45.6	mg/kg	MOUSE
1410	5/4/2005	B1CVC7	SOIL and BIOTA	Discrete	45.6	mg/kg	MOUSE
1411	5/9/2005	B1CVD0	SOIL and BIOTA	Discrete	45.6	mg/kg	MOUSE
1412	5/5/2005	B1CVC8	SOIL and BIOTA	Discrete	45.6	mg/kg	MOUSE
1413	5/5/2005	B1CVC9	SOIL and BIOTA	Discrete	45.6	mg/kg	MOUSE
1414	5/3/2005	B1CVC5	SOIL and BIOTA	Discrete	45.6	mg/kg	MOUSE
1415	4/28/2005	B1CVB7	SOIL and BIOTA	Discrete	48.2	mg/kg	MOUSE
1416	5/13/2005	B1CVD9	SOIL and BIOTA	Discrete	48.2	mg/kg	MOUSE
1417	5/2/2005	B1CVB8	SOIL and BIOTA	Discrete	48.2	mg/kg	MOUSE
1418	4/28/2005	B1CVB6	SOIL and BIOTA	Discrete	48.2	mg/kg	MOUSE
1419	5/11/2005	B1CVD6	SOIL and BIOTA	Discrete	48.2	mg/kg	MOUSE
1420	5/11/2005	B1CVD5	SOIL and BIOTA	Discrete	48.2	mg/kg	MOUSE
1421	4/5/2006	J11KV1	SOIL and BIOTA	MIS	45.5	mg/kg	MOUSE
1422	4/5/2006	J11KV2	SOIL and BIOTA	MIS	43.4	mg/kg	MOUSE
1423	4/21/2006	J11L22	SOIL and BIOTA	MIS	53.7	mg/kg	MOUSE
1424	4/3/2006	J11L21	SOIL and BIOTA	MIS	41.4	mg/kg	MOUSE
1425	4/20/2006	J11KL7	SOIL and BIOTA	MIS	39.9	mg/kg	MOUSE
1426	4/20/2006	J11KL7	SOIL and BIOTA	MIS-phyt	39.9	mg/kg	MOUSE
1427	4/5/2006	J11KM0	SOIL and BIOTA	MIS	38.3	mg/kg	MOUSE
1428	4/5/2006	J11KL5	SOIL and BIOTA	MIS	56.8	mg/kg	MOUSE
1429	4/5/2006	J11KL5	SOIL and BIOTA	MIS-phyt	72.8	mg/kg	MOUSE
1430	6/6/2007	J14XP2	SOIL and BIOTA	MIS	108	mg/kg	MOUSE
1431	6/6/2007	J14XP9	SOIL and BIOTA	MIS	338	mg/kg	MOUSE
1432	6/6/2007	J14XP3	SOIL and BIOTA	MIS	218	mg/kg	MOUSE
1433	6/6/2007	J14XP4	SOIL and BIOTA	MIS	377	mg/kg	MOUSE
1434	6/6/2007	J14XP5	SOIL and BIOTA	MIS	139	mg/kg	MOUSE
1435	4/21/2006	J11KL9	SOIL and BIOTA	MIS	47.7	mg/kg	MOUSE
1436	6/6/2007	J14XP6	SOIL and BIOTA	MIS	348	mg/kg	MOUSE
1437	6/6/2007	J14XP8	SOIL and BIOTA	MIS	342	mg/kg	MOUSE
1438	6/6/2007	J14XP7	SOIL and BIOTA	MIS	120	mg/kg	MOUSE
1439	4/5/2006	J11L25	SOIL and BIOTA	MIS	35.1	mg/kg	MOUSE
1440	4/5/2006	J11L25	SOIL and BIOTA	MIS-phyt	45.2	mg/kg	MOUSE
1441	4/5/2006	J11KK8	SOIL and BIOTA	MIS	45.4	mg/kg	MOUSE
1442	4/5/2006	J11KK8	SOIL and BIOTA	MIS-phyt	145	mg/kg	MOUSE

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
1404	WHOLEORG	0.503	mg/kg	B		CP
1405	WHOLEORG	0.39	mg/kg			CP
1406	WHOLEORG	0.243	mg/kg			CP
1407	WHOLEORG	0.337	mg/kg			CP
1408	WHOLEORG	0.371	mg/kg			CP
1409	WHOLEORG	0.203	mg/kg			CP
1410	WHOLEORG	0.514	mg/kg	B		CP
1411	WHOLEORG	0.416	mg/kg			CP
1412	WHOLEORG	0.177	mg/kg			CP
1413	WHOLEORG	0.293	mg/kg			CP
1414	WHOLEORG	0.249	mg/kg			CP
1415	WHOLEORG	0.774	mg/kg			CP
1416	WHOLEORG	0.509	mg/kg			CP
1417	WHOLEORG	0.456	mg/kg			CP
1418	WHOLEORG	0.345	mg/kg			CP
1419	WHOLEORG	1.35	mg/kg			CP
1420	WHOLEORG	0.418	mg/kg			CP
1421	MULTIPLE CARCASSES	67.5	mg/kg			RCBRA
1422	MULTIPLE CARCASSES	78.6	mg/kg			RCBRA
1423	MULTIPLE CARCASSES	61.6	mg/kg			RCBRA
1424	MULTIPLE CARCASSES	78.3	mg/kg			RCBRA
1425	MULTIPLE CARCASSES	40	mg/kg			RCBRA
1426	MULTIPLE CARCASSES	40	mg/kg			RCBRA
1427	MULTIPLE CARCASSES	98.7	mg/kg			RCBRA
1428	MULTIPLE CARCASSES	83.1	mg/kg			RCBRA
1429	MULTIPLE CARCASSES	83.1	mg/kg			RCBRA
1430	MULTIPLE CARCASSES	69.5	mg/kg	C		RCBRA
1431	MULTIPLE CARCASSES	95.4	mg/kg	C		RCBRA
1432	MULTIPLE CARCASSES	17.7	mg/kg	C		RCBRA
1433	MULTIPLE CARCASSES	77.3	mg/kg	C		RCBRA
1434	MULTIPLE CARCASSES	79.9	mg/kg	C		RCBRA
1435	MULTIPLE CARCASSES	67.9	mg/kg			RCBRA
1436	MULTIPLE CARCASSES	73.8	mg/kg	C		RCBRA
1437	MULTIPLE CARCASSES	130	mg/kg	C		RCBRA
1438	MULTIPLE CARCASSES	80.8	mg/kg	C		RCBRA
1439	MULTIPLE CARCASSES	106	mg/kg			RCBRA
1440	MULTIPLE CARCASSES	106	mg/kg			RCBRA
1441	MULTIPLE CARCASSES	46.6	mg/kg			RCBRA
1442	MULTIPLE CARCASSES	46.6	mg/kg			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
1443	Zinc	7440-66-6	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
1444	Zinc	7440-66-6	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
1445	Zinc	7440-66-6	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
1446	Zinc	7440-66-6	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
1447	Zinc	7440-66-6	RCBRA 600-181	IU2/IU6	UPLAND	578303.83	147316.698
1448	Zinc	7440-66-6	RCBRA 600-204	IU2/IU6	UPLAND	580128.485	144762.219
1449	Zinc	7440-66-6	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
1450	Zinc	7440-66-6	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
1451	Zinc	7440-66-6	RCBRA 600-23	IU2/IU6	UPLAND	585523.593	130481.377
1452	Zinc	7440-66-6	RCBRA 618-4	300	UPLAND	593954.946	117064.473
1453	Zinc	7440-66-6	RCBRA 628-1	IU2/IU6	UPLAND	577797.524	148745.681
1454	Zinc	7440-66-6	RCBRA Bev Ref 1 Rip	Outside decision areas	RIPARIAN	542428.846	167701.261
1455	Zinc	7440-66-6	RCBRA Bev Ref 2 Rip	Outside decision areas	RIPARIAN	541493.988	167808.357
1456	Zinc	7440-66-6	RCBRA CP Ref 2	IU2/IU6	UPLAND	563789.959	139793.869
1457	Zinc	7440-66-6	RCBRA JA JONES	300	UPLAND	593874.58	120013.908
1458	Zinc	7440-66-6	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
1459	Zinc	7440-66-6	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
1460	Zinc	7440-66-6	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
1461	Zinc	7440-66-6	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
1462	Zinc	7440-66-6	RCBRA Pit 18	IU2/IU6	UPLAND	580697.058	145311.464
1463	Zinc	7440-66-6	RCBRA Pit 23	IU2/IU6	UPLAND	572381.012	144874.157
1464	Zinc	7440-66-6	RCBRA Pit 24	BC	UPLAND	563395.814	145119.007
1465	Zinc	7440-66-6	RCBRA Pit 9	300	UPLAND	592807.103	120587.7
1466	Zinc	7440-66-6	RCBRA R Ref 11	Outside decision areas	RIPARIAN	559400.735	146458.486
1467	Zinc	7440-66-6	RCBRA R Ref 12	IU2/IU6	RIPARIAN	559201.908	145747.542
1468	Zinc	7440-66-6	RCBRA R Ref 13	Outside decision areas	RIPARIAN	558572.809	145345.115
1469	Zinc	7440-66-6	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
1470	Zinc	7440-66-6	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
1471	Zinc	7440-66-6	RCBRA R Ref 16	Outside decision areas	RIPARIAN	557650.029	144826.748
1472	Zinc	7440-66-6	RCBRA Rip 1	D/H	RIPARIAN	577251.869	153659.195
1473	Zinc	7440-66-6	RCBRA Rip 10	D/H	RIPARIAN	573987.873	153082.19
1474	Zinc	7440-66-6	RCBRA Rip 2	D/H	RIPARIAN	573603.219	152471.6
1475	Zinc	7440-66-6	RCBRA Rip 3	D/H	RIPARIAN	572639.65	151677.812
1476	Zinc	7440-66-6	RCBRA Rip 4	N	RIPARIAN	570558.596	148981.547
1477	Zinc	7440-66-6	RCBRA Rip 5	K	RIPARIAN	569141.025	147521.561
1478	Zinc	7440-66-6	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
1479	Zinc	7440-66-6	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
1480	Zinc	7440-66-6	RCBRA Rip 7	IU2/IU6	RIPARIAN	581326.914	147825.17
1481	Zinc	7440-66-6	RCBRA Rip 8	D/H	RIPARIAN	578698.584	152233.645

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
1443	4/20/2006	J11KK9	SOIL and BIOTA	MIS	75.5	mg/kg	MOUSE
1444	4/20/2006	J11KK9	SOIL and BIOTA	MIS-phyt	79.9	mg/kg	MOUSE
1445	4/20/2006	J11KL4	SOIL and BIOTA	MIS	62.9	mg/kg	MOUSE
1446	4/20/2006	J11KL4	SOIL and BIOTA	MIS-phyt	62.9	mg/kg	MOUSE
1447	4/20/2006	J11KL2	SOIL and BIOTA	MIS	43.3	mg/kg	MOUSE
1448	4/20/2006	J11KL0	SOIL and BIOTA	MIS	50.2	mg/kg	MOUSE
1449	4/20/2006	J11KL1	SOIL and BIOTA	MIS	45.2	mg/kg	MOUSE
1450	4/20/2006	J11KL1	SOIL and BIOTA	MIS-phyt	48	mg/kg	MOUSE
1451	4/21/2006	J11KK7	SOIL and BIOTA	MIS	38.2	mg/kg	MOUSE
1452	4/21/2006	J11KL8	SOIL and BIOTA	MIS	34.2	mg/kg	MOUSE
1453	4/20/2006	J11KL3	SOIL and BIOTA	MIS	53.8	mg/kg	MOUSE
1454	6/6/2007	J14XN9	SOIL and BIOTA	MIS	150	mg/kg	MOUSE
1455	6/6/2007	J14XP0	SOIL and BIOTA	MIS	103	mg/kg	MOUSE
1456	4/3/2006	J11L36	SOIL and BIOTA	MIS	39.5	mg/kg	MOUSE
1457	4/21/2006	J11L24	SOIL and BIOTA	MIS	43.2	mg/kg	MOUSE
1458	4/3/2006	J11KM5	SOIL and BIOTA	MIS	50.5	mg/kg	MOUSE
1459	4/3/2006	J11KM5	SOIL and BIOTA	MIS-phyt	52.6	mg/kg	MOUSE
1460	4/20/2006	J11KK5	SOIL and BIOTA	MIS	49.2	mg/kg	MOUSE
1461	4/20/2006	J11XY0	SOIL and BIOTA	MIS	49.2	mg/kg	MOUSE
1462	4/20/2006	J11KK6	SOIL and BIOTA	MIS	37.7	mg/kg	MOUSE
1463	4/3/2006	J11L23	SOIL and BIOTA	MIS	39.9	mg/kg	MOUSE
1464	4/3/2006	J11KM2	SOIL and BIOTA	MIS	48.6	mg/kg	MOUSE
1465	4/21/2006	J11KM1	SOIL and BIOTA	MIS	46.6	mg/kg	MOUSE
1466	3/22/2006	J11924	SOIL and BIOTA	MIS	122	mg/kg	MOUSE
1467	3/23/2006	J11912	SOIL and BIOTA	MIS	171	mg/kg	MOUSE
1468	3/23/2006	J11913	SOIL and BIOTA	MIS	285	mg/kg	MOUSE
1469	6/6/2007	J14XP1	SOIL and BIOTA	MIS	305	mg/kg	MOUSE
1470	3/23/2006	J11925	SOIL and BIOTA	MIS	305	mg/kg	MOUSE
1471	3/23/2006	J11914	SOIL and BIOTA	MIS	168	mg/kg	MOUSE
1472	3/21/2006	J11916	SOIL and BIOTA	MIS	393	mg/kg	MOUSE
1473	3/22/2006	J11923	SOIL and BIOTA	MIS	214	mg/kg	MOUSE
1474	3/21/2006	J11917	SOIL and BIOTA	MIS	124	mg/kg	MOUSE
1475	3/22/2006	J11918	SOIL and BIOTA	MIS	131	mg/kg	MOUSE
1476	3/22/2006	J11910	SOIL and BIOTA	MIS	219	mg/kg	MOUSE
1477	3/22/2006	J11911	SOIL and BIOTA	MIS	311	mg/kg	MOUSE
1478	4/20/2006	J11919	SOIL and BIOTA	MIS	201	mg/kg	MOUSE
1479	4/20/2006	J11XY1	SOIL and BIOTA	MIS	201	mg/kg	MOUSE
1480	3/22/2006	J11920	SOIL and BIOTA	MIS	207	mg/kg	MOUSE
1481	3/22/2006	J11921	SOIL and BIOTA	MIS	218	mg/kg	MOUSE

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
1443	MULTIPLE CARCASSES	47.7	mg/kg			RCBRA
1444	MULTIPLE CARCASSES	47.7	mg/kg			RCBRA
1445	MULTIPLE CARCASSES	71.7	mg/kg			RCBRA
1446	MULTIPLE CARCASSES	71.7	mg/kg			RCBRA
1447	MULTIPLE CARCASSES	61.4	mg/kg			RCBRA
1448	MULTIPLE CARCASSES	65.7	mg/kg			RCBRA
1449	MULTIPLE CARCASSES	84.2	mg/kg			RCBRA
1450	MULTIPLE CARCASSES	84.2	mg/kg			RCBRA
1451	MULTIPLE CARCASSES	49.5	mg/kg			RCBRA
1452	MULTIPLE CARCASSES	48.7	mg/kg			RCBRA
1453	MULTIPLE CARCASSES	52.6	mg/kg			RCBRA
1454	MULTIPLE CARCASSES	66.2	mg/kg	C		RCBRA
1455	MULTIPLE CARCASSES	73.9	mg/kg	C		RCBRA
1456	MULTIPLE CARCASSES	41.4	mg/kg			RCBRA
1457	MULTIPLE CARCASSES	71	mg/kg			RCBRA
1458	MULTIPLE CARCASSES	61.9	mg/kg			RCBRA
1459	MULTIPLE CARCASSES	61.9	mg/kg			RCBRA
1460	MULTIPLE CARCASSES	55.9	mg/kg			RCBRA
1461	MULTIPLE CARCASSES	108	mg/kg			RCBRA
1462	MULTIPLE CARCASSES	47.7	mg/kg			RCBRA
1463	MULTIPLE CARCASSES	67.1	mg/kg			RCBRA
1464	MULTIPLE CARCASSES	59.5	mg/kg			RCBRA
1465	MULTIPLE CARCASSES	80.1	mg/kg			RCBRA
1466	MULTIPLE CARCASSES	58.2	mg/kg		J	RCBRA
1467	MULTIPLE CARCASSES	89.9	mg/kg		J	RCBRA
1468	MULTIPLE CARCASSES	56.5	mg/kg		J	RCBRA
1469	MULTIPLE CARCASSES	75.3	mg/kg	C		RCBRA
1470	MULTIPLE CARCASSES	72.9	mg/kg		J	RCBRA
1471	MULTIPLE CARCASSES	120	mg/kg		J	RCBRA
1472	MULTIPLE CARCASSES	92.4	mg/kg		J	RCBRA
1473	MULTIPLE CARCASSES	71.9	mg/kg		J	RCBRA
1474	MULTIPLE CARCASSES	86.9	mg/kg		J	RCBRA
1475	MULTIPLE CARCASSES	106	mg/kg		J	RCBRA
1476	MULTIPLE CARCASSES	117	mg/kg		J	RCBRA
1477	MULTIPLE CARCASSES	70	mg/kg		J	RCBRA
1478	MULTIPLE CARCASSES	76.9	mg/kg			RCBRA
1479	MULTIPLE CARCASSES	67.6	mg/kg			RCBRA
1480	MULTIPLE CARCASSES	65.5	mg/kg		J	RCBRA
1481	MULTIPLE CARCASSES	63.5	mg/kg		J	RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
1482	Zinc	7440-66-6	RCBRA Rip 9	D/H	RIPARIAN	578153.643	152801.452
1483	Zinc	7440-66-6	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
1484	Zinc	7440-66-6	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
1485	Zinc	7440-66-6	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
1486	Zinc	7440-66-6	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
1487	Zinc	7440-66-6	RCBRA Yak Rdg 2	Outside decision areas	UPLAND	559031.557	135576.407
1488	Zinc	7440-66-6	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764
1489	Zinc	7440-66-6	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764
1490	Zinc	7440-66-6	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764
1491	Zinc	7440-66-6	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764
1492	Zinc	7440-66-6	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764
1493	Zinc	7440-66-6	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764
1494	Zinc	7440-66-6	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764
1495	Zinc	7440-66-6	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
1496	Zinc	7440-66-6	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
1497	Zinc	7440-66-6	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
1498	Zinc	7440-66-6	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
1499	Zinc	7440-66-6	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
1500	Zinc	7440-66-6	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
1501	Zinc	7440-66-6	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
1502	Zinc	7440-66-6	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
1503	Zinc	7440-66-6	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
1504	Zinc	7440-66-6	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
1505	Zinc	7440-66-6	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
1506	Zinc	7440-66-6	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
1507	Zinc	7440-66-6	B POND	Outside decision areas	UPLAND	576356.769	136881.272
1508	Zinc	7440-66-6	B POND	Outside decision areas	UPLAND	576356.769	136881.272
1509	Zinc	7440-66-6	B POND	Outside decision areas	UPLAND	576356.769	136881.272
1510	Zinc	7440-66-6	B POND	Outside decision areas	UPLAND	576356.769	136881.272
1511	Zinc	7440-66-6	B POND	Outside decision areas	UPLAND	576356.769	136881.272
1512	Zinc	7440-66-6	B POND	Outside decision areas	UPLAND	576356.769	136881.272
1513	Zinc	7440-66-6	B POND	Outside decision areas	UPLAND	576356.769	136881.272
1514	Zinc	7440-66-6	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
1515	Zinc	7440-66-6	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
1516	Zinc	7440-66-6	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
1517	Zinc	7440-66-6	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
1518	Zinc	7440-66-6	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
1519	Zinc	7440-66-6	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
1520	Zinc	7440-66-6	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
1482	3/22/2006	J11922	SOIL and BIOTA	MIS	197	mg/kg	MOUSE
1483	4/3/2006	J11KM6	SOIL and BIOTA	MIS	53.5	mg/kg	MOUSE
1484	4/3/2006	J11KM6	SOIL and BIOTA	MIS-phyt	53.7	mg/kg	MOUSE
1485	4/3/2006	J11KM4	SOIL and BIOTA	MIS	43.2	mg/kg	MOUSE
1486	4/3/2006	J11KM4	SOIL and BIOTA	MIS-phyt	48.3	mg/kg	MOUSE
1487	4/3/2006	J11KM3	SOIL and BIOTA	MIS	56.9	mg/kg	MOUSE
1488	5/12/2005	B1CVD7	SOIL and BIOTA	Discrete	40.6	mg/kg	MOUSE
1489	5/11/2005	B1CVD2	SOIL and BIOTA	Discrete	40.6	mg/kg	MOUSE
1490	5/11/2005	B1CVD4	SOIL and BIOTA	Discrete	40.6	mg/kg	MOUSE
1491	5/11/2005	B1CVD3	SOIL and BIOTA	Discrete	40.6	mg/kg	MOUSE
1492	5/11/2005	B1CVD1	SOIL and BIOTA	Discrete	40.6	mg/kg	MOUSE
1493	5/11/2005	B1F2V6	SOIL and BIOTA	Discrete	40.6	mg/kg	MOUSE
1494	5/12/2005	B1CVD8	SOIL and BIOTA	Discrete	40.6	mg/kg	MOUSE
1495	6/1/2005	B1CVF8	SOIL and BIOTA	Discrete	48.6	mg/kg	MOUSE
1496	5/25/2005	B1CVF6	SOIL and BIOTA	Discrete	48.6	mg/kg	MOUSE
1497	6/2/2005	B1CVH0	SOIL and BIOTA	Discrete	48.6	mg/kg	MOUSE
1498	5/31/2005	B1CVF7	SOIL and BIOTA	Discrete	48.6	mg/kg	MOUSE
1499	6/7/2005	B1CVH1	SOIL and BIOTA	Discrete	48.6	mg/kg	MOUSE
1500	6/2/2005	B1CVF9	SOIL and BIOTA	Discrete	48.6	mg/kg	MOUSE
1501	4/25/2005	B1CVB3	SOIL and BIOTA	Discrete	73.6	mg/kg	MOUSE
1502	4/25/2005	B1CVB4	SOIL and BIOTA	Discrete	73.6	mg/kg	MOUSE
1503	4/25/2005	B1CVB1	SOIL and BIOTA	Discrete	73.6	mg/kg	MOUSE
1504	4/21/2005	B1CVB0	SOIL and BIOTA	Discrete	73.6	mg/kg	MOUSE
1505	4/26/2005	B1CVB5	SOIL and BIOTA	Discrete	73.6	mg/kg	MOUSE
1506	4/25/2005	B1CVB2	SOIL and BIOTA	Discrete	73.6	mg/kg	MOUSE
1507	5/18/2005	B1CVF3	SOIL and BIOTA	Discrete	46	mg/kg	MOUSE
1508	5/13/2005	B1CVF1	SOIL and BIOTA	Discrete	46	mg/kg	MOUSE
1509	5/13/2005	B1CVF0	SOIL and BIOTA	Discrete	46	mg/kg	MOUSE
1510	5/13/2005	B1F2V1	SOIL and BIOTA	Discrete	46	mg/kg	MOUSE
1511	5/19/2005	B1CVF5	SOIL and BIOTA	Discrete	46	mg/kg	MOUSE
1512	5/18/2005	B1CVF4	SOIL and BIOTA	Discrete	46	mg/kg	MOUSE
1513	5/17/2005	B1CVF2	SOIL and BIOTA	Discrete	46	mg/kg	MOUSE
1514	4/29/2005	B1CVC1	SOIL and BIOTA	Discrete	74.5	mg/kg	MOUSE
1515	5/3/2005	B1CVC3	SOIL and BIOTA	Discrete	74.5	mg/kg	MOUSE
1516	5/2/2005	B1CVC2	SOIL and BIOTA	Discrete	74.5	mg/kg	MOUSE
1517	5/5/2005	B1CVC4	SOIL and BIOTA	Discrete	74.5	mg/kg	MOUSE
1518	4/28/2005	B1CVC0	SOIL and BIOTA	Discrete	74.5	mg/kg	MOUSE
1519	4/28/2005	B1CVB9	SOIL and BIOTA	Discrete	74.5	mg/kg	MOUSE
1520	5/3/2005	B1CVC6	SOIL and BIOTA	Discrete	70.7	mg/kg	MOUSE

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
1482	MULTIPLE CARCASSES	61.8	mg/kg		J	RCBRA
1483	MULTIPLE CARCASSES	73	mg/kg			RCBRA
1484	MULTIPLE CARCASSES	73	mg/kg			RCBRA
1485	MULTIPLE CARCASSES	61.6	mg/kg			RCBRA
1486	MULTIPLE CARCASSES	61.6	mg/kg			RCBRA
1487	MULTIPLE CARCASSES	46.5	mg/kg			RCBRA
1488	WHOLEORG	128	mg/kg			CP
1489	WHOLEORG	61.7	mg/kg			CP
1490	WHOLEORG	144	mg/kg			CP
1491	WHOLEORG	174	mg/kg			CP
1492	WHOLEORG	108	mg/kg			CP
1493	WHOLEORG	120	mg/kg			CP
1494	WHOLEORG	204	mg/kg			CP
1495	WHOLEORG	85.9	mg/kg			CP
1496	WHOLEORG	48.8	mg/kg			CP
1497	WHOLEORG	58	mg/kg			CP
1498	WHOLEORG	46.4	mg/kg			CP
1499	WHOLEORG	40.4	mg/kg			CP
1500	WHOLEORG	48.2	mg/kg			CP
1501	WHOLEORG	839	mg/kg			CP
1502	WHOLEORG	609	mg/kg			CP
1503	WHOLEORG	244	mg/kg			CP
1504	WHOLEORG	108	mg/kg			CP
1505	WHOLEORG	313	mg/kg			CP
1506	WHOLEORG	465	mg/kg			CP
1507	WHOLEORG	119	mg/kg			CP
1508	WHOLEORG	193	mg/kg			CP
1509	WHOLEORG	45.9	mg/kg			CP
1510	WHOLEORG	44.7	mg/kg			CP
1511	WHOLEORG	82.5	mg/kg			CP
1512	WHOLEORG	147	mg/kg			CP
1513	WHOLEORG	76.8	mg/kg			CP
1514	WHOLEORG	65.7	mg/kg			CP
1515	WHOLEORG	108	mg/kg			CP
1516	WHOLEORG	186	mg/kg			CP
1517	WHOLEORG	126	mg/kg			CP
1518	WHOLEORG	99.7	mg/kg			CP
1519	WHOLEORG	76	mg/kg			CP
1520	WHOLEORG	127	mg/kg			CP

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
1521	Zinc	7440-66-6	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
1522	Zinc	7440-66-6	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
1523	Zinc	7440-66-6	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
1524	Zinc	7440-66-6	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
1525	Zinc	7440-66-6	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
1526	Zinc	7440-66-6	U POND	Outside decision areas	UPLAND	566379.63	134457.045
1527	Zinc	7440-66-6	U POND	Outside decision areas	UPLAND	566379.63	134457.045
1528	Zinc	7440-66-6	U POND	Outside decision areas	UPLAND	566379.63	134457.045
1529	Zinc	7440-66-6	U POND	Outside decision areas	UPLAND	566379.63	134457.045
1530	Zinc	7440-66-6	U POND	Outside decision areas	UPLAND	566379.63	134457.045
1531	Zinc	7440-66-6	U POND	Outside decision areas	UPLAND	566379.63	134457.045
1532	Aldrin	309-00-2	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
1533	Aroclor-1260	11096-82-5	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
1534	Bis[2-ethylhexyl] phthalate	117-81-7	RCBRA 100-F-2	IU2/IU6	UPLAND	579728.068	147001.117
1535	Bis[2-ethylhexyl] phthalate	117-81-7	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
1536	Bis[2-ethylhexyl] phthalate	117-81-7	RCBRA 2l Rip	IU2/IU6	RIPARIAN	582341.212	146120.069
1537	Bis[2-ethylhexyl] phthalate	117-81-7	RCBRA 300-49	300	UPLAND	594318.994	116830.934
1538	Bis[2-ethylhexyl] phthalate	117-81-7	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
1539	Bis[2-ethylhexyl] phthalate	117-81-7	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
1540	Bis[2-ethylhexyl] phthalate	117-81-7	RCBRA 600-181	IU2/IU6	UPLAND	578303.83	147316.698
1541	Bis[2-ethylhexyl] phthalate	117-81-7	RCBRA 600-204	IU2/IU6	UPLAND	580128.485	144762.219
1542	Bis[2-ethylhexyl] phthalate	117-81-7	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
1543	Bis[2-ethylhexyl] phthalate	117-81-7	RCBRA 600-23	IU2/IU6	UPLAND	585523.593	130481.377
1544	Bis[2-ethylhexyl] phthalate	117-81-7	RCBRA 618-4	300	UPLAND	593954.946	117064.473
1545	Bis[2-ethylhexyl] phthalate	117-81-7	RCBRA CP Ref 2	IU2/IU6	UPLAND	563789.959	139793.869
1546	Bis[2-ethylhexyl] phthalate	117-81-7	RCBRA JA JONES	300	UPLAND	593874.58	120013.908
1547	Bis[2-ethylhexyl] phthalate	117-81-7	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
1548	Bis[2-ethylhexyl] phthalate	117-81-7	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
1549	Bis[2-ethylhexyl] phthalate	117-81-7	RCBRA Pit 18	IU2/IU6	UPLAND	580697.058	145311.464
1550	Bis[2-ethylhexyl] phthalate	117-81-7	RCBRA Pit 9	300	UPLAND	592807.103	120587.7
1551	Bis[2-ethylhexyl] phthalate	117-81-7	RCBRA R Ref 11	Outside decision areas	RIPARIAN	559400.735	146458.486
1552	Bis[2-ethylhexyl] phthalate	117-81-7	RCBRA R Ref 12	IU2/IU6	RIPARIAN	559201.908	145747.542
1553	Bis[2-ethylhexyl] phthalate	117-81-7	RCBRA R Ref 13	Outside decision areas	RIPARIAN	558572.809	145345.115
1554	Bis[2-ethylhexyl] phthalate	117-81-7	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
1555	Bis[2-ethylhexyl] phthalate	117-81-7	RCBRA R Ref 16	Outside decision areas	RIPARIAN	557650.029	144826.748
1556	Bis[2-ethylhexyl] phthalate	117-81-7	RCBRA Rip 1	D/H	RIPARIAN	577251.869	153659.195
1557	Bis[2-ethylhexyl] phthalate	117-81-7	RCBRA Rip 10	D/H	RIPARIAN	573987.873	153082.19
1558	Bis[2-ethylhexyl] phthalate	117-81-7	RCBRA Rip 2	D/H	RIPARIAN	573603.219	152471.6
1559	Bis[2-ethylhexyl] phthalate	117-81-7	RCBRA Rip 3	D/H	RIPARIAN	572639.65	151677.812

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
1521	5/9/2005	B1CVD0	SOIL and BIOTA	Discrete	70.7	mg/kg	MOUSE
1522	5/4/2005	B1CVC7	SOIL and BIOTA	Discrete	70.7	mg/kg	MOUSE
1523	5/5/2005	B1CVC8	SOIL and BIOTA	Discrete	70.7	mg/kg	MOUSE
1524	5/5/2005	B1CVC9	SOIL and BIOTA	Discrete	70.7	mg/kg	MOUSE
1525	5/3/2005	B1CVC5	SOIL and BIOTA	Discrete	70.7	mg/kg	MOUSE
1526	4/28/2005	B1CVB7	SOIL and BIOTA	Discrete	42.8	mg/kg	MOUSE
1527	5/2/2005	B1CVB8	SOIL and BIOTA	Discrete	42.8	mg/kg	MOUSE
1528	5/13/2005	B1CVD9	SOIL and BIOTA	Discrete	42.8	mg/kg	MOUSE
1529	4/28/2005	B1CVB6	SOIL and BIOTA	Discrete	42.8	mg/kg	MOUSE
1530	5/11/2005	B1CVD6	SOIL and BIOTA	Discrete	42.8	mg/kg	MOUSE
1531	5/11/2005	B1CVD5	SOIL and BIOTA	Discrete	42.8	mg/kg	MOUSE
1532	4/5/2006	J11KK8	SOIL and BIOTA	MIS	0.0005	mg/kg	MOUSE
1533	4/20/2006	J11919	SOIL and BIOTA	MIS	0.0068	mg/kg	MOUSE
1534	4/21/2006	J11L22	SOIL and BIOTA	MIS	0.05	mg/kg	MOUSE
1535	4/20/2006	J11KL7	SOIL and BIOTA	MIS	0.052	mg/kg	MOUSE
1536	6/6/2007	J14XP5	SOIL and BIOTA	MIS	0.033	mg/kg	MOUSE
1537	4/21/2006	J11KL9	SOIL and BIOTA	MIS	0.048	mg/kg	MOUSE
1538	4/5/2006	J11L25	SOIL and BIOTA	MIS	0.32	mg/kg	MOUSE
1539	4/5/2006	J11KK8	SOIL and BIOTA	MIS	0.032	mg/kg	MOUSE
1540	4/20/2006	J11KL2	SOIL and BIOTA	MIS	0.0275	mg/kg	MOUSE
1541	4/20/2006	J11KL0	SOIL and BIOTA	MIS	0.075	mg/kg	MOUSE
1542	4/20/2006	J11KL1	SOIL and BIOTA	MIS	0.076	mg/kg	MOUSE
1543	4/21/2006	J11KK7	SOIL and BIOTA	MIS	0.038	mg/kg	MOUSE
1544	4/21/2006	J11KL8	SOIL and BIOTA	MIS	0.025	mg/kg	MOUSE
1545	4/3/2006	J11L36	SOIL and BIOTA	MIS	0.04374	mg/kg	MOUSE
1546	4/21/2006	J11L24	SOIL and BIOTA	MIS	0.486201	mg/kg	MOUSE
1547	4/20/2006	J11KK5	SOIL and BIOTA	MIS	0.022	mg/kg	MOUSE
1548	4/20/2006	J11XY0	SOIL and BIOTA	MIS	0.022	mg/kg	MOUSE
1549	4/20/2006	J11KK6	SOIL and BIOTA	MIS	0.045	mg/kg	MOUSE
1550	4/21/2006	J11KM1	SOIL and BIOTA	MIS	0.026	mg/kg	MOUSE
1551	3/22/2006	J11924	SOIL and BIOTA	MIS	0.039	mg/kg	MOUSE
1552	3/23/2006	J11912	SOIL and BIOTA	MIS	0.081	mg/kg	MOUSE
1553	3/23/2006	J11913	SOIL and BIOTA	MIS	0.049695	mg/kg	MOUSE
1554	3/23/2006	J11925	SOIL and BIOTA	MIS	0.0565	mg/kg	MOUSE
1555	3/23/2006	J11914	SOIL and BIOTA	MIS	0.022	mg/kg	MOUSE
1556	3/21/2006	J11916	SOIL and BIOTA	MIS	0.0335	mg/kg	MOUSE
1557	3/22/2006	J11923	SOIL and BIOTA	MIS	0.093035	mg/kg	MOUSE
1558	3/21/2006	J11917	SOIL and BIOTA	MIS	0.04	mg/kg	MOUSE
1559	3/22/2006	J11918	SOIL and BIOTA	MIS	0.033557	mg/kg	MOUSE

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
1521	WHOLEORG	104	mg/kg			CP
1522	WHOLEORG	114	mg/kg			CP
1523	WHOLEORG	64	mg/kg			CP
1524	WHOLEORG	123	mg/kg			CP
1525	WHOLEORG	190	mg/kg			CP
1526	WHOLEORG	73.3	mg/kg			CP
1527	WHOLEORG	99.7	mg/kg			CP
1528	WHOLEORG	96.3	mg/kg			CP
1529	WHOLEORG	92.7	mg/kg			CP
1530	WHOLEORG	267	mg/kg			CP
1531	WHOLEORG	53.8	mg/kg			CP
1532	MULTIPLE CARCASSES	0.016	mg/kg	JD		RCBRA
1533	MULTIPLE CARCASSES	0.24	mg/kg			RCBRA
1534	MULTIPLE CARCASSES	2	mg/kg	J		RCBRA
1535	MULTIPLE CARCASSES	0.33	mg/kg	J		RCBRA
1536	MULTIPLE CARCASSES	14	mg/kg	B	J	RCBRA
1537	MULTIPLE CARCASSES	0.21	mg/kg	J		RCBRA
1538	MULTIPLE CARCASSES	0.19	mg/kg	JB		RCBRA
1539	MULTIPLE CARCASSES	0.23	mg/kg	JB		RCBRA
1540	MULTIPLE CARCASSES	0.18	mg/kg	J		RCBRA
1541	MULTIPLE CARCASSES	0.18	mg/kg	J		RCBRA
1542	MULTIPLE CARCASSES	0.18	mg/kg	J		RCBRA
1543	MULTIPLE CARCASSES	0.32	mg/kg	J		RCBRA
1544	MULTIPLE CARCASSES	0.64	mg/kg	JB		RCBRA
1545	MULTIPLE CARCASSES	2	mg/kg	JB		RCBRA
1546	MULTIPLE CARCASSES	0.22	mg/kg	J		RCBRA
1547	MULTIPLE CARCASSES	0.19	mg/kg	J		RCBRA
1548	MULTIPLE CARCASSES	0.84	mg/kg	J		RCBRA
1549	MULTIPLE CARCASSES	0.29	mg/kg	JB		RCBRA
1550	MULTIPLE CARCASSES	0.17	mg/kg	J		RCBRA
1551	MULTIPLE CARCASSES	0.97	mg/kg	J	J	RCBRA
1552	MULTIPLE CARCASSES	1.6	mg/kg	J	J	RCBRA
1553	MULTIPLE CARCASSES	0.41	mg/kg	J	J	RCBRA
1554	MULTIPLE CARCASSES	0.77	mg/kg	J	J	RCBRA
1555	MULTIPLE CARCASSES	0.47	mg/kg	J	J	RCBRA
1556	MULTIPLE CARCASSES	0.24	mg/kg	J	J	RCBRA
1557	MULTIPLE CARCASSES	1.7	mg/kg	J	J	RCBRA
1558	MULTIPLE CARCASSES	0.23	mg/kg	J	J	RCBRA
1559	MULTIPLE CARCASSES	0.36	mg/kg	J	J	RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
1560	Bis[2-ethylhexyl] phthalate	117-81-7	RCBRA Rip 4	N	RIPARIAN	570558.596	148981.547
1561	Bis[2-ethylhexyl] phthalate	117-81-7	RCBRA Rip 5	K	RIPARIAN	569141.025	147521.561
1562	Bis[2-ethylhexyl] phthalate	117-81-7	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
1563	Bis[2-ethylhexyl] phthalate	117-81-7	RCBRA Rip 7	IU2/IU6	RIPARIAN	581326.914	147825.17
1564	Bis[2-ethylhexyl] phthalate	117-81-7	RCBRA Rip 8	D/H	RIPARIAN	578698.584	152233.645
1565	Bis[2-ethylhexyl] phthalate	117-81-7	RCBRA Rip 9	D/H	RIPARIAN	578153.643	152801.452
1566	Bis[2-ethylhexyl] phthalate	117-81-7	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
1567	Bis[2-ethylhexyl] phthalate	117-81-7	RCBRA Yak Rdg 2	Outside decision areas	UPLAND	559031.557	135576.407
1568	Delta-BHC	319-86-8	RCBRA 5c Rip	300	RIPARIAN	594509.985	124869.182
1569	Delta-BHC	319-86-8	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
1570	Di-n-butylphthalate	84-74-2	RCBRA 600-204	IU2/IU6	UPLAND	580128.485	144762.219
1571	Di-n-butylphthalate	84-74-2	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
1572	Di-n-butylphthalate	84-74-2	RCBRA JA JONES	300	UPLAND	593874.58	120013.908
1573	Di-n-butylphthalate	84-74-2	RCBRA Pit 18	IU2/IU6	UPLAND	580697.058	145311.464
1574	Di-n-butylphthalate	84-74-2	RCBRA Pit 9	300	UPLAND	592807.103	120587.7
1575	Di-n-butylphthalate	84-74-2	RCBRA R Ref 11	Outside decision areas	RIPARIAN	559400.735	146458.486
1576	Di-n-butylphthalate	84-74-2	RCBRA R Ref 12	IU2/IU6	RIPARIAN	559201.908	145747.542
1577	Di-n-butylphthalate	84-74-2	RCBRA Rip 10	D/H	RIPARIAN	573987.873	153082.19
1578	Di-n-butylphthalate	84-74-2	RCBRA Rip 3	D/H	RIPARIAN	572639.65	151677.812
1579	Di-n-butylphthalate	84-74-2	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
1580	Di-n-butylphthalate	84-74-2	RCBRA Rip 7	IU2/IU6	RIPARIAN	581326.914	147825.17
1581	Di-n-butylphthalate	84-74-2	RCBRA Rip 8	D/H	RIPARIAN	578698.584	152233.645
1582	Phenol	108-95-2	RCBRA 2c Rip	K	RIPARIAN	567598.2	146210.159
1583	Phenol	108-95-2	RCBRA 2l Rip	IU2/IU6	RIPARIAN	582341.212	146120.069
1584	Phenol	108-95-2	RCBRA 3b Rip	IU2/IU6	RIPARIAN	584961.205	141035.835
1585	Phenol	108-95-2	RCBRA 4a Rip	IU2/IU6	RIPARIAN	589347.5	137480.985
1586	Phenol	108-95-2	RCBRA 5c Rip	300	RIPARIAN	594509.985	124869.182
1587	Phenol	108-95-2	RCBRA Pit 24	BC	UPLAND	563395.814	145119.007
1588	Phenol	108-95-2	RCBRA R Ref 11	Outside decision areas	RIPARIAN	559400.735	146458.486
1589	Phenol	108-95-2	RCBRA R Ref 12	IU2/IU6	RIPARIAN	559201.908	145747.542
1590	Phenol	108-95-2	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
1591	Phenol	108-95-2	RCBRA R Ref 16	Outside decision areas	RIPARIAN	557650.029	144826.748
1592	Phenol	108-95-2	RCBRA Rip 10	D/H	RIPARIAN	573987.873	153082.19
1593	Phenol	108-95-2	RCBRA Rip 3	D/H	RIPARIAN	572639.65	151677.812
1594	Phenol	108-95-2	RCBRA Rip 8	D/H	RIPARIAN	578698.584	152233.645
1595	Phenol	108-95-2	RCBRA Rip 9	D/H	RIPARIAN	578153.643	152801.452
1596	Americium-241	14596-10-2	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
1597	Americium-241	14596-10-2	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
1598	Americium-241	14596-10-2	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
1560	3/22/2006	J11910	SOIL and BIOTA	MIS	0.065	mg/kg	MOUSE
1561	3/22/2006	J11911	SOIL and BIOTA	MIS	0.078	mg/kg	MOUSE
1562	4/20/2006	J11XY1	SOIL and BIOTA	MIS	0.0425	mg/kg	MOUSE
1563	3/22/2006	J11920	SOIL and BIOTA	MIS	0.099	mg/kg	MOUSE
1564	3/22/2006	J11921	SOIL and BIOTA	MIS	0.1	mg/kg	MOUSE
1565	3/22/2006	J11922	SOIL and BIOTA	MIS	0.037	mg/kg	MOUSE
1566	4/3/2006	J11KM6	SOIL and BIOTA	MIS	0.023	mg/kg	MOUSE
1567	4/3/2006	J11KM3	SOIL and BIOTA	MIS	0.0195	mg/kg	MOUSE
1568	6/6/2007	J14XP7	SOIL and BIOTA	MIS	0.001	mg/kg	MOUSE
1569	6/6/2007	J14XP1	SOIL and BIOTA	MIS	0.0018	mg/kg	MOUSE
1570	4/20/2006	J11KL0	SOIL and BIOTA	MIS	0.162	mg/kg	MOUSE
1571	4/20/2006	J11KL1	SOIL and BIOTA	MIS	0.0765	mg/kg	MOUSE
1572	4/21/2006	J11L24	SOIL and BIOTA	MIS	0.044294	mg/kg	MOUSE
1573	4/20/2006	J11KK6	SOIL and BIOTA	MIS	0.079	mg/kg	MOUSE
1574	4/21/2006	J11KM1	SOIL and BIOTA	MIS	0.023	mg/kg	MOUSE
1575	3/22/2006	J11924	SOIL and BIOTA	MIS	0.033	mg/kg	MOUSE
1576	3/23/2006	J11912	SOIL and BIOTA	MIS	0.0535	mg/kg	MOUSE
1577	3/22/2006	J11923	SOIL and BIOTA	MIS	0.020454	mg/kg	MOUSE
1578	3/22/2006	J11918	SOIL and BIOTA	MIS	0.018187	mg/kg	MOUSE
1579	4/20/2006	J11919	SOIL and BIOTA	MIS	0.025	mg/kg	MOUSE
1580	3/22/2006	J11920	SOIL and BIOTA	MIS	0.0365	mg/kg	MOUSE
1581	3/22/2006	J11921	SOIL and BIOTA	MIS	0.043	mg/kg	MOUSE
1582	6/6/2007	J14XP9	SOIL and BIOTA	MIS	0.043	mg/kg	MOUSE
1583	6/6/2007	J14XP5	SOIL and BIOTA	MIS	0.041	mg/kg	MOUSE
1584	6/6/2007	J14XP6	SOIL and BIOTA	MIS	0.019	mg/kg	MOUSE
1585	6/6/2007	J14XP8	SOIL and BIOTA	MIS	0.12	mg/kg	MOUSE
1586	6/6/2007	J14XP7	SOIL and BIOTA	MIS	0.1	mg/kg	MOUSE
1587	4/3/2006	J11KM2	SOIL and BIOTA	MIS	0.018387	mg/kg	MOUSE
1588	3/22/2006	J11924	SOIL and BIOTA	MIS	0.0355	mg/kg	MOUSE
1589	3/23/2006	J11912	SOIL and BIOTA	MIS	0.022	mg/kg	MOUSE
1590	3/23/2006	J11925	SOIL and BIOTA	MIS	0.0435	mg/kg	MOUSE
1591	3/23/2006	J11914	SOIL and BIOTA	MIS	0.024	mg/kg	MOUSE
1592	3/22/2006	J11923	SOIL and BIOTA	MIS	0.0267555	mg/kg	MOUSE
1593	3/22/2006	J11918	SOIL and BIOTA	MIS	0.018954	mg/kg	MOUSE
1594	3/22/2006	J11921	SOIL and BIOTA	MIS	0.019	mg/kg	MOUSE
1595	3/22/2006	J11922	SOIL and BIOTA	MIS	0.0205	mg/kg	MOUSE
1596	6/2/2005	B1CVH0	SOIL and BIOTA	Discrete	0.033	pCi/g	MOUSE
1597	5/9/2005	B1CVD0	SOIL and BIOTA	Discrete	0.026	pCi/g	MOUSE
1598	5/5/2005	B1CVC8	SOIL and BIOTA	Discrete	0.026	pCi/g	MOUSE

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
1560	MULTIPLE CARCASSES	0.38	mg/kg	J	J	RCBRA
1561	MULTIPLE CARCASSES	0.57	mg/kg	J	J	RCBRA
1562	MULTIPLE CARCASSES	0.256533	mg/kg	J		RCBRA
1563	MULTIPLE CARCASSES	0.92	mg/kg	J	J	RCBRA
1564	MULTIPLE CARCASSES	0.47	mg/kg	J	J	RCBRA
1565	MULTIPLE CARCASSES	0.65	mg/kg	J	J	RCBRA
1566	MULTIPLE CARCASSES	0.19	mg/kg	JB		RCBRA
1567	MULTIPLE CARCASSES	0.25	mg/kg	JB		RCBRA
1568	MULTIPLE CARCASSES	0.021	mg/kg	DX	J	RCBRA
1569	MULTIPLE CARCASSES	0.033	mg/kg	D	J	RCBRA
1570	MULTIPLE CARCASSES	0.17	mg/kg	J		RCBRA
1571	MULTIPLE CARCASSES	0.23	mg/kg	J		RCBRA
1572	MULTIPLE CARCASSES	0.23	mg/kg	J		RCBRA
1573	MULTIPLE CARCASSES	0.24	mg/kg	J		RCBRA
1574	MULTIPLE CARCASSES	0.16	mg/kg	J		RCBRA
1575	MULTIPLE CARCASSES	0.27	mg/kg	JB	J	RCBRA
1576	MULTIPLE CARCASSES	0.29	mg/kg	JB	J	RCBRA
1577	MULTIPLE CARCASSES	0.24	mg/kg	JB	J	RCBRA
1578	MULTIPLE CARCASSES	0.18	mg/kg	JB	J	RCBRA
1579	MULTIPLE CARCASSES	0.25	mg/kg	J		RCBRA
1580	MULTIPLE CARCASSES	0.3	mg/kg	JB	J	RCBRA
1581	MULTIPLE CARCASSES	0.23	mg/kg	JB	J	RCBRA
1582	MULTIPLE CARCASSES	0.26	mg/kg	J	J	RCBRA
1583	MULTIPLE CARCASSES	0.62	mg/kg	J	J	RCBRA
1584	MULTIPLE CARCASSES	0.55	mg/kg	J	J	RCBRA
1585	MULTIPLE CARCASSES	0.4	mg/kg	J	J	RCBRA
1586	MULTIPLE CARCASSES	0.33	mg/kg	J	J	RCBRA
1587	MULTIPLE CARCASSES	0.26	mg/kg	J		RCBRA
1588	MULTIPLE CARCASSES	0.17	mg/kg	J	J	RCBRA
1589	MULTIPLE CARCASSES	0.38	mg/kg	J	J	RCBRA
1590	MULTIPLE CARCASSES	0.23	mg/kg	J	J	RCBRA
1591	MULTIPLE CARCASSES	1.2	mg/kg	J	J	RCBRA
1592	MULTIPLE CARCASSES	0.38	mg/kg	J	J	RCBRA
1593	MULTIPLE CARCASSES	0.56	mg/kg	J	J	RCBRA
1594	MULTIPLE CARCASSES	0.25	mg/kg	J	J	RCBRA
1595	MULTIPLE CARCASSES	0.38	mg/kg	J	J	RCBRA
1596	WHOLEORG	0.24	pCi/g			CP
1597	WHOLEORG	0.098	pCi/g			CP
1598	WHOLEORG	0.09	pCi/g		J	CP

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
1599	Americium-241	14596-10-2	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
1600	Cesium-137	10045-97-3	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764
1601	Cesium-137	10045-97-3	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764
1602	Cesium-137	10045-97-3	BCCA HIGH B	Outside decision areas	UPLAND	573574.343	133774.04
1603	Cesium-137	10045-97-3	BCCA HIGH B	Outside decision areas	UPLAND	573574.343	133774.04
1604	Cesium-137	10045-97-3	BCCA HIGH B	Outside decision areas	UPLAND	573574.343	133774.04
1605	Cesium-137	10045-97-3	BCCA HIGH B	Outside decision areas	UPLAND	573574.343	133774.04
1606	Cesium-137	10045-97-3	BCCA HIGH B	Outside decision areas	UPLAND	573574.343	133774.04
1607	Cesium-137	10045-97-3	BCCA HIGH B	Outside decision areas	UPLAND	573574.343	133774.04
1608	Plutonium-239/240	PU-239/240	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
1609	Plutonium-239/240	PU-239/240	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
1610	Plutonium-239/240	PU-239/240	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
1611	Plutonium-239/240	PU-239/240	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
1612	Plutonium-239/240	PU-239/240	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
1613	Plutonium-239/240	PU-239/240	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
1614	Potassium-40	13966-00-2	RCBRA 100-F-2	IU2/IU6	UPLAND	579728.068	147001.117
1615	Potassium-40	13966-00-2	RCBRA 116-DR-1&2	D/H	UPLAND	574007.817	152246.748
1616	Potassium-40	13966-00-2	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
1617	Potassium-40	13966-00-2	RCBRA 300-49	300	UPLAND	594318.994	116830.934
1618	Potassium-40	13966-00-2	RCBRA 3b Rip	IU2/IU6	RIPARIAN	584961.205	141035.835
1619	Potassium-40	13966-00-2	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
1620	Potassium-40	13966-00-2	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
1621	Potassium-40	13966-00-2	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
1622	Potassium-40	13966-00-2	RCBRA 600-181	IU2/IU6	UPLAND	578303.83	147316.698
1623	Potassium-40	13966-00-2	RCBRA 600-204	IU2/IU6	UPLAND	580128.485	144762.219
1624	Potassium-40	13966-00-2	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
1625	Potassium-40	13966-00-2	RCBRA 600-23	IU2/IU6	UPLAND	585523.593	130481.377
1626	Potassium-40	13966-00-2	RCBRA 618-4	300	UPLAND	593954.946	117064.473
1627	Potassium-40	13966-00-2	RCBRA 628-1	IU2/IU6	UPLAND	577797.524	148745.681
1628	Potassium-40	13966-00-2	RCBRA Bev Ref 2 Rip	Outside decision areas	RIPARIAN	541493.988	167808.357
1629	Potassium-40	13966-00-2	RCBRA CP Ref 2	IU2/IU6	UPLAND	563789.959	139793.869
1630	Potassium-40	13966-00-2	RCBRA JA JONES	300	UPLAND	593874.58	120013.908
1631	Potassium-40	13966-00-2	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
1632	Potassium-40	13966-00-2	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
1633	Potassium-40	13966-00-2	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
1634	Potassium-40	13966-00-2	RCBRA Pit 18	IU2/IU6	UPLAND	580697.058	145311.464
1635	Potassium-40	13966-00-2	RCBRA Pit 24	BC	UPLAND	563395.814	145119.007
1636	Potassium-40	13966-00-2	RCBRA Pit 9	300	UPLAND	592807.103	120587.7
1637	Potassium-40	13966-00-2	RCBRA R Ref 12	IU2/IU6	RIPARIAN	559201.908	145747.542

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
1599	5/5/2005	B1CVC9	SOIL and BIOTA	Discrete	0.026	pCi/g	MOUSE
1600	5/11/2005	B1CVD4	SOIL and BIOTA	Discrete	3.19	pCi/g	MOUSE
1601	5/11/2005	B1F2V6	SOIL and BIOTA	Discrete	3.19	pCi/g	MOUSE
1602	7/27/2006	B1KKB9	SOIL and BIOTA	Discrete	11.5	pCi/g	MOUSE
1603	8/1/2006	B1KKC0	SOIL and BIOTA	Discrete	11.5	pCi/g	MOUSE
1604	7/26/2006	B1KKB8	SOIL and BIOTA	Discrete	11.5	pCi/g	MOUSE
1605	8/1/2006	B1KKC2	SOIL and BIOTA	Discrete	11.5	pCi/g	MOUSE
1606	8/2/2006	B1KKC3	SOIL and BIOTA	Discrete	11.5	pCi/g	MOUSE
1607	8/1/2006	B1KKC1	SOIL and BIOTA	Discrete	11.5	pCi/g	MOUSE
1608	6/2/2005	B1CVF9	SOIL and BIOTA	Discrete	0.15	pCi/g	MOUSE
1609	4/25/2005	B1CVB3	SOIL and BIOTA	Discrete	0.093	pCi/g	MOUSE
1610	4/25/2005	B1CVB1	SOIL and BIOTA	Discrete	0.093	pCi/g	MOUSE
1611	4/28/2005	B1CVB9	SOIL and BIOTA	Discrete	0.012	pCi/g	MOUSE
1612	5/9/2005	B1CVD0	SOIL and BIOTA	Discrete	0.022	pCi/g	MOUSE
1613	5/5/2005	B1CVC9	SOIL and BIOTA	Discrete	0.022	pCi/g	MOUSE
1614	4/21/2006	J11L22	SOIL and BIOTA	MIS	6.72	pCi/g	MOUSE
1615	4/3/2006	J11L21	SOIL and BIOTA	MIS	8.32	pCi/g	MOUSE
1616	4/20/2006	J11KL7	SOIL and BIOTA	MIS	11.7	pCi/g	MOUSE
1617	4/21/2006	J11KL9	SOIL and BIOTA	MIS	10.7	pCi/g	MOUSE
1618	6/6/2007	J14XP6	SOIL and BIOTA	MIS	12	pCi/g	MOUSE
1619	4/5/2006	J11L25	SOIL and BIOTA	MIS	10.7	pCi/g	MOUSE
1620	4/20/2006	J11KK9	SOIL and BIOTA	MIS	9.48	pCi/g	MOUSE
1621	4/20/2006	J11KL4	SOIL and BIOTA	MIS	12.7	pCi/g	MOUSE
1622	4/20/2006	J11KL2	SOIL and BIOTA	MIS	8.84	pCi/g	MOUSE
1623	4/20/2006	J11KL0	SOIL and BIOTA	MIS	10.2	pCi/g	MOUSE
1624	4/20/2006	J11KL1	SOIL and BIOTA	MIS	12.2	pCi/g	MOUSE
1625	4/21/2006	J11KK7	SOIL and BIOTA	MIS	11.4	pCi/g	MOUSE
1626	4/21/2006	J11KL8	SOIL and BIOTA	MIS	12.3	pCi/g	MOUSE
1627	4/20/2006	J11KL3	SOIL and BIOTA	MIS	11.2	pCi/g	MOUSE
1628	6/6/2007	J14XP0	SOIL and BIOTA	MIS	15.2	pCi/g	MOUSE
1629	4/3/2006	J11L36	SOIL and BIOTA	MIS	8.87	pCi/g	MOUSE
1630	4/21/2006	J11L24	SOIL and BIOTA	MIS	10.7	pCi/g	MOUSE
1631	4/3/2006	J11KM5	SOIL and BIOTA	MIS	12.2	pCi/g	MOUSE
1632	4/20/2006	J11KK5	SOIL and BIOTA	MIS	8.96	pCi/g	MOUSE
1633	4/20/2006	J11XY0	SOIL and BIOTA	MIS	8.96	pCi/g	MOUSE
1634	4/20/2006	J11KK6	SOIL and BIOTA	MIS	10.8	pCi/g	MOUSE
1635	4/3/2006	J11KM2	SOIL and BIOTA	MIS	10.6	pCi/g	MOUSE
1636	4/21/2006	J11KM1	SOIL and BIOTA	MIS	9.96	pCi/g	MOUSE
1637	3/23/2006	J11912	SOIL and BIOTA	MIS	9.89	pCi/g	MOUSE

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
1599	WHOLEORG	0.082	pCi/g			CP
1600	WHOLEORG	7	pCi/g			CP
1601	WHOLEORG	7	pCi/g			CP
1602	WHOLEORG	0.686	pCi/g			CP
1603	WHOLEORG	0.628	pCi/g			CP
1604	WHOLEORG	1.92	pCi/g			CP
1605	WHOLEORG	0.442	pCi/g			CP
1606	WHOLEORG	1.37	pCi/g			CP
1607	WHOLEORG	0.197	pCi/g			CP
1608	WHOLEORG	0.073	pCi/g			CP
1609	WHOLEORG	0.065	pCi/g		J	CP
1610	WHOLEORG	0.043	pCi/g			CP
1611	WHOLEORG	0.014	pCi/g		J	CP
1612	WHOLEORG	0.058	pCi/g			CP
1613	WHOLEORG	0.035	pCi/g			CP
1614	MULTIPLE CARCASSES	2.37	pCi/g			RCBRA
1615	MULTIPLE CARCASSES	3.02	pCi/g			RCBRA
1616	MULTIPLE CARCASSES	2.03	pCi/g			RCBRA
1617	MULTIPLE CARCASSES	2.6	pCi/g			RCBRA
1618	MULTIPLE CARCASSES	2.3	pCi/g			RCBRA
1619	MULTIPLE CARCASSES	2.64	pCi/g			RCBRA
1620	MULTIPLE CARCASSES	4.34	pCi/g			RCBRA
1621	MULTIPLE CARCASSES	3.15	pCi/g			RCBRA
1622	MULTIPLE CARCASSES	3.16	pCi/g			RCBRA
1623	MULTIPLE CARCASSES	2.75	pCi/g			RCBRA
1624	MULTIPLE CARCASSES	2.88	pCi/g			RCBRA
1625	MULTIPLE CARCASSES	2.92	pCi/g			RCBRA
1626	MULTIPLE CARCASSES	2.96	pCi/g			RCBRA
1627	MULTIPLE CARCASSES	2.82	pCi/g			RCBRA
1628	MULTIPLE CARCASSES	2.28	pCi/g			RCBRA
1629	MULTIPLE CARCASSES	2.95	pCi/g			RCBRA
1630	MULTIPLE CARCASSES	3.19	pCi/g			RCBRA
1631	MULTIPLE CARCASSES	2.37	pCi/g			RCBRA
1632	MULTIPLE CARCASSES	2.93	pCi/g			RCBRA
1633	MULTIPLE CARCASSES	3.48	pCi/g			RCBRA
1634	MULTIPLE CARCASSES	2.62	pCi/g			RCBRA
1635	MULTIPLE CARCASSES	3.28	pCi/g			RCBRA
1636	MULTIPLE CARCASSES	2.68	pCi/g			RCBRA
1637	MULTIPLE CARCASSES	2.91	pCi/g			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
1638	Potassium-40	13966-00-2	RCBRA R Ref 13	Outside decision areas	RIPARIAN	558572.809	145345.115
1639	Potassium-40	13966-00-2	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
1640	Potassium-40	13966-00-2	RCBRA Rip 1	D/H	RIPARIAN	577251.869	153659.195
1641	Potassium-40	13966-00-2	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
1642	Potassium-40	13966-00-2	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
1643	Potassium-40	13966-00-2	RCBRA Rip 7	IU2/IU6	RIPARIAN	581326.914	147825.17
1644	Potassium-40	13966-00-2	RCBRA Rip 8	D/H	RIPARIAN	578698.584	152233.645
1645	Potassium-40	13966-00-2	RCBRA Rip 9	D/H	RIPARIAN	578153.643	152801.452
1646	Potassium-40	13966-00-2	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
1647	Radium-226	13982-63-3	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764
1648	Radium-226	13982-63-3	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
1649	Radium-226	13982-63-3	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
1650	Radium-226	13982-63-3	B POND	Outside decision areas	UPLAND	576356.769	136881.272
1651	Radium-226	13982-63-3	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
1652	Radium-228	15262-20-1	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764
1653	Strontium-90	10098-97-2	BCCA HIGH A	Outside decision areas	UPLAND	573574.343	133774.04
1654	Strontium-90	10098-97-2	BCCA HIGH B	Outside decision areas	UPLAND	573574.343	133774.04
1655	Strontium-90	10098-97-2	BCCA HIGH B	Outside decision areas	UPLAND	573574.343	133774.04
1656	Strontium-90	10098-97-2	BCCA HIGH B	Outside decision areas	UPLAND	573574.343	133774.04
1657	Strontium-90	10098-97-2	BCCA HIGH B	Outside decision areas	UPLAND	573574.343	133774.04
1658	Strontium-90	10098-97-2	BCCA HIGH B	Outside decision areas	UPLAND	573574.343	133774.04
1659	Strontium-90	10098-97-2	BCCA HIGH B	Outside decision areas	UPLAND	573574.343	133774.04
1660	Strontium-90	10098-97-2	BCCA LOW	Outside decision areas	UPLAND	575540.167	134072.931
1661	Strontium-90	10098-97-2	BCCA MED	Outside decision areas	UPLAND	573927.1	132389.2
1662	Strontium-90	10098-97-2	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
1663	Thorium-228	14274-82-9	RCBRA 2a Rip	BC	RIPARIAN	564618.501	145284.526
1664	Thorium-228	14274-82-9	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
1665	Thorium-230	14269-63-7	RCBRA 2c Rip	K	RIPARIAN	567598.2	146210.159
1666	Thorium-230	14269-63-7	RCBRA R Ref 11	Outside decision areas	RIPARIAN	559400.735	146458.486
1667	Thorium-230	14269-63-7	RCBRA R Ref 13	Outside decision areas	RIPARIAN	558572.809	145345.115
1668	Thorium-230	14269-63-7	RCBRA R Ref 16	Outside decision areas	RIPARIAN	557650.029	144826.748
1669	Thorium-230	14269-63-7	RCBRA Rip 4	N	RIPARIAN	570558.596	148981.547
1670	Thorium-230	14269-63-7	RCBRA Rip 9	D/H	RIPARIAN	578153.643	152801.452
1671	Thorium-232	TH-232	RCBRA 2a Rip	BC	RIPARIAN	564618.501	145284.526
1672	Thorium-232	TH-232	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
1673	Uranium-233/234	13966-29-5	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
1674	Uranium-233/234	13966-29-5	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
1675	Uranium-233/234	13966-29-5	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764
1676	Uranium-233/234	13966-29-5	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
1638	3/23/2006	J11913	SOIL and BIOTA	MIS	10	pCi/g	MOUSE
1639	3/23/2006	J11925	SOIL and BIOTA	MIS	11.95	pCi/g	MOUSE
1640	3/21/2006	J11916	SOIL and BIOTA	MIS	11.7	pCi/g	MOUSE
1641	4/20/2006	J11919	SOIL and BIOTA	MIS	11.2	pCi/g	MOUSE
1642	4/20/2006	J11XY1	SOIL and BIOTA	MIS	11.2	pCi/g	MOUSE
1643	3/22/2006	J11920	SOIL and BIOTA	MIS	11.8	pCi/g	MOUSE
1644	3/22/2006	J11921	SOIL and BIOTA	MIS	11.4	pCi/g	MOUSE
1645	3/22/2006	J11922	SOIL and BIOTA	MIS	11.9	pCi/g	MOUSE
1646	4/3/2006	J11KM4	SOIL and BIOTA	MIS	12.2	pCi/g	MOUSE
1647	5/11/2005	B1F2V6	SOIL and BIOTA	Discrete	0.688	pCi/g	MOUSE
1648	4/25/2005	B1CVB4	SOIL and BIOTA	Discrete	0.544	pCi/g	MOUSE
1649	4/25/2005	B1CVB2	SOIL and BIOTA	Discrete	0.544	pCi/g	MOUSE
1650	5/13/2005	B1F2V1	SOIL and BIOTA	Discrete	0.531	pCi/g	MOUSE
1651	5/3/2005	B1CVC3	SOIL and BIOTA	Discrete	0.641	pCi/g	MOUSE
1652	5/11/2005	B1CVD4	SOIL and BIOTA	Discrete	0.835	pCi/g	MOUSE
1653	6/21/2005	B1D9D8	SOIL and BIOTA	Discrete	12.4	pCi/g	MOUSE
1654	8/1/2006	B1KKC0	SOIL and BIOTA	Discrete	30.7	pCi/g	MOUSE
1655	7/27/2006	B1KKB9	SOIL and BIOTA	Discrete	30.7	pCi/g	MOUSE
1656	7/26/2006	B1KKB8	SOIL and BIOTA	Discrete	30.7	pCi/g	MOUSE
1657	8/1/2006	B1KKC2	SOIL and BIOTA	Discrete	30.7	pCi/g	MOUSE
1658	8/2/2006	B1KKC3	SOIL and BIOTA	Discrete	30.7	pCi/g	MOUSE
1659	8/1/2006	B1KKC1	SOIL and BIOTA	Discrete	30.7	pCi/g	MOUSE
1660	6/14/2005	B1D9D3	SOIL and BIOTA	Discrete	0.049	pCi/g	MOUSE
1661	6/9/2005	B1D9C8	SOIL and BIOTA	Discrete	0.256	pCi/g	MOUSE
1662	7/25/2006	B1KK80	SOIL and BIOTA	Discrete	0.18	pCi/g	MOUSE
1663	6/6/2007	J14XP2	SOIL and BIOTA	MIS	0.7065	pCi/g	MOUSE
1664	4/20/2006	J11XY1	SOIL and BIOTA	MIS	0.58	pCi/g	MOUSE
1665	6/6/2007	J14XP9	SOIL and BIOTA	MIS	0.3315	pCi/g	MOUSE
1666	3/22/2006	J11924	SOIL and BIOTA	MIS	0.48	pCi/g	MOUSE
1667	3/23/2006	J11913	SOIL and BIOTA	MIS	0.346	pCi/g	MOUSE
1668	3/23/2006	J11914	SOIL and BIOTA	MIS	0.316	pCi/g	MOUSE
1669	3/22/2006	J11910	SOIL and BIOTA	MIS	0.4875	pCi/g	MOUSE
1670	3/22/2006	J11922	SOIL and BIOTA	MIS	0.786	pCi/g	MOUSE
1671	6/6/2007	J14XP2	SOIL and BIOTA	MIS	0.544	pCi/g	MOUSE
1672	4/20/2006	J11XY1	SOIL and BIOTA	MIS	0.746	pCi/g	MOUSE
1673	4/5/2006	J11KK8	SOIL and BIOTA	MIS	0.2015	pCi/g	MOUSE
1674	4/20/2006	J11XY1	SOIL and BIOTA	MIS	1.58	pCi/g	MOUSE
1675	5/11/2005	B1CVD2	SOIL and BIOTA	Discrete	0.14	pCi/g	MOUSE
1676	5/11/2005	B1CVD1	SOIL and BIOTA	Discrete	0.14	pCi/g	MOUSE

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
1638	MULTIPLE CARCASSES	1.83	pCi/g			RCBRA
1639	MULTIPLE CARCASSES	3.22	pCi/g			RCBRA
1640	MULTIPLE CARCASSES	3.44	pCi/g			RCBRA
1641	MULTIPLE CARCASSES	3.4	pCi/g			RCBRA
1642	MULTIPLE CARCASSES	4.15	pCi/g			RCBRA
1643	MULTIPLE CARCASSES	3.16	pCi/g			RCBRA
1644	MULTIPLE CARCASSES	3.46	pCi/g			RCBRA
1645	MULTIPLE CARCASSES	2.43	pCi/g			RCBRA
1646	MULTIPLE CARCASSES	2.74	pCi/g			RCBRA
1647	WHOLEORG	74.5	pCi/g			CP
1648	WHOLEORG	0.237	pCi/g			CP
1649	WHOLEORG	0.249	pCi/g			CP
1650	WHOLEORG	35	pCi/g			CP
1651	WHOLEORG	0.304	pCi/g			CP
1652	WHOLEORG	2.1	pCi/g			CP
1653	WHOLEORG	24.4	pCi/g		J	CP
1654	WHOLEORG	5.39	pCi/g			CP
1655	WHOLEORG	17.2	pCi/g			CP
1656	WHOLEORG	17.5	pCi/g			CP
1657	WHOLEORG	4.73	pCi/g			CP
1658	WHOLEORG	16.9	pCi/g			CP
1659	WHOLEORG	7.71	pCi/g			CP
1660	WHOLEORG	1.12	pCi/g			CP
1661	WHOLEORG	0.3	pCi/g			CP
1662	WHOLEORG	0.306	pCi/g			CP
1663	MULTIPLE CARCASSES	0.18	pCi/g		J	RCBRA
1664	MULTIPLE CARCASSES	0.112	pCi/g			RCBRA
1665	MULTIPLE CARCASSES	0.362	pCi/g			RCBRA
1666	MULTIPLE CARCASSES	0.417	pCi/g			RCBRA
1667	MULTIPLE CARCASSES	0.786	pCi/g			RCBRA
1668	MULTIPLE CARCASSES	0.291	pCi/g			RCBRA
1669	MULTIPLE CARCASSES	0.301	pCi/g			RCBRA
1670	MULTIPLE CARCASSES	0.392	pCi/g			RCBRA
1671	MULTIPLE CARCASSES	0.119	pCi/g		J	RCBRA
1672	MULTIPLE CARCASSES	0.15	pCi/g			RCBRA
1673	MULTIPLE CARCASSES	0.423	pCi/g			RCBRA
1674	MULTIPLE CARCASSES	1.16	pCi/g			RCBRA
1675	WHOLEORG	0.044	pCi/g			CP
1676	WHOLEORG	0.033	pCi/g			CP

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
1677	Uranium-233/234	13966-29-5	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764
1678	Uranium-233/234	13966-29-5	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
1679	Uranium-233/234	13966-29-5	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
1680	Uranium-233/234	13966-29-5	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
1681	Uranium-233/234	13966-29-5	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
1682	Uranium-233/234	13966-29-5	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
1683	Uranium-233/234	13966-29-5	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
1684	Uranium-233/234	13966-29-5	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
1685	Uranium-233/234	13966-29-5	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
1686	Uranium-233/234	13966-29-5	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
1687	Uranium-233/234	13966-29-5	B POND	Outside decision areas	UPLAND	576356.769	136881.272
1688	Uranium-233/234	13966-29-5	B POND	Outside decision areas	UPLAND	576356.769	136881.272
1689	Uranium-233/234	13966-29-5	B POND	Outside decision areas	UPLAND	576356.769	136881.272
1690	Uranium-233/234	13966-29-5	B POND	Outside decision areas	UPLAND	576356.769	136881.272
1691	Uranium-233/234	13966-29-5	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
1692	Uranium-233/234	13966-29-5	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
1693	Uranium-233/234	13966-29-5	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
1694	Uranium-233/234	13966-29-5	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
1695	Uranium-233/234	13966-29-5	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
1696	Uranium-233/234	13966-29-5	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
1697	Uranium-233/234	13966-29-5	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
1698	Uranium-233/234	13966-29-5	U POND	Outside decision areas	UPLAND	566379.63	134457.045
1699	Uranium-233/234	13966-29-5	U POND	Outside decision areas	UPLAND	566379.63	134457.045
1700	Uranium-233/234	13966-29-5	U POND	Outside decision areas	UPLAND	566379.63	134457.045
1701	Uranium-233/234	13966-29-5	U POND	Outside decision areas	UPLAND	566379.63	134457.045
1702	Uranium-233/234	13966-29-5	U POND	Outside decision areas	UPLAND	566379.63	134457.045
1703	Uranium-235	15117-96-1	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
1704	Uranium-235	15117-96-1	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
1705	Uranium-235	15117-96-1	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
1706	Uranium-235	15117-96-1	B POND	Outside decision areas	UPLAND	576356.769	136881.272
1707	Uranium-235	15117-96-1	B POND	Outside decision areas	UPLAND	576356.769	136881.272
1708	Uranium-235	15117-96-1	B POND	Outside decision areas	UPLAND	576356.769	136881.272
1709	Uranium-235	15117-96-1	B POND	Outside decision areas	UPLAND	576356.769	136881.272
1710	Uranium-235	15117-96-1	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
1711	Uranium-235	15117-96-1	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
1712	Uranium-235	15117-96-1	U POND	Outside decision areas	UPLAND	566379.63	134457.045
1713	Uranium-235	15117-96-1	U POND	Outside decision areas	UPLAND	566379.63	134457.045
1714	Uranium-235	15117-96-1	U POND	Outside decision areas	UPLAND	566379.63	134457.045
1715	Uranium-238	U-238	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
1677	5/11/2005	B1F2V6	SOIL and BIOTA	Discrete	0.14	pCi/g	MOUSE
1678	6/1/2005	B1CVF8	SOIL and BIOTA	Discrete	0.15	pCi/g	MOUSE
1679	5/25/2005	B1CVF6	SOIL and BIOTA	Discrete	0.15	pCi/g	MOUSE
1680	6/2/2005	B1CVH0	SOIL and BIOTA	Discrete	0.15	pCi/g	MOUSE
1681	5/31/2005	B1CVF7	SOIL and BIOTA	Discrete	0.15	pCi/g	MOUSE
1682	6/2/2005	B1CVF9	SOIL and BIOTA	Discrete	0.15	pCi/g	MOUSE
1683	6/7/2005	B1CVH1	SOIL and BIOTA	Discrete	0.15	pCi/g	MOUSE
1684	4/25/2005	B1CVB1	SOIL and BIOTA	Discrete	0.15	pCi/g	MOUSE
1685	4/21/2005	B1CVB0	SOIL and BIOTA	Discrete	0.15	pCi/g	MOUSE
1686	4/26/2005	B1CVB5	SOIL and BIOTA	Discrete	0.15	pCi/g	MOUSE
1687	5/13/2005	B1CVF1	SOIL and BIOTA	Discrete	0.13	pCi/g	MOUSE
1688	5/13/2005	B1F2V1	SOIL and BIOTA	Discrete	0.13	pCi/g	MOUSE
1689	5/19/2005	B1CVF5	SOIL and BIOTA	Discrete	0.13	pCi/g	MOUSE
1690	5/18/2005	B1CVF4	SOIL and BIOTA	Discrete	0.13	pCi/g	MOUSE
1691	4/29/2005	B1CVC1	SOIL and BIOTA	Discrete	0.2	pCi/g	MOUSE
1692	5/2/2005	B1CVC2	SOIL and BIOTA	Discrete	0.2	pCi/g	MOUSE
1693	5/5/2005	B1CVC4	SOIL and BIOTA	Discrete	0.2	pCi/g	MOUSE
1694	5/3/2005	B1CVC6	SOIL and BIOTA	Discrete	0.14	pCi/g	MOUSE
1695	5/9/2005	B1CVD0	SOIL and BIOTA	Discrete	0.14	pCi/g	MOUSE
1696	5/5/2005	B1CVC8	SOIL and BIOTA	Discrete	0.14	pCi/g	MOUSE
1697	5/5/2005	B1CVC9	SOIL and BIOTA	Discrete	0.14	pCi/g	MOUSE
1698	4/28/2005	B1CVB7	SOIL and BIOTA	Discrete	0.13	pCi/g	MOUSE
1699	5/2/2005	B1CVB8	SOIL and BIOTA	Discrete	0.13	pCi/g	MOUSE
1700	4/28/2005	B1CVB6	SOIL and BIOTA	Discrete	0.13	pCi/g	MOUSE
1701	5/11/2005	B1CVD6	SOIL and BIOTA	Discrete	0.13	pCi/g	MOUSE
1702	5/11/2005	B1CVD5	SOIL and BIOTA	Discrete	0.13	pCi/g	MOUSE
1703	6/2/2005	B1CVF9	SOIL and BIOTA	Discrete	0.015	pCi/g	MOUSE
1704	4/25/2005	B1CVB3	SOIL and BIOTA	Discrete	0.008	pCi/g	MOUSE
1705	4/26/2005	B1CVB5	SOIL and BIOTA	Discrete	0.008	pCi/g	MOUSE
1706	5/18/2005	B1CVF3	SOIL and BIOTA	Discrete	0.011	pCi/g	MOUSE
1707	5/13/2005	B1CVF0	SOIL and BIOTA	Discrete	0.011	pCi/g	MOUSE
1708	5/13/2005	B1F2V1	SOIL and BIOTA	Discrete	0.011	pCi/g	MOUSE
1709	5/18/2005	B1CVF4	SOIL and BIOTA	Discrete	0.011	pCi/g	MOUSE
1710	5/2/2005	B1CVC2	SOIL and BIOTA	Discrete	0.011	pCi/g	MOUSE
1711	5/3/2005	B1CVC6	SOIL and BIOTA	Discrete	0.014	pCi/g	MOUSE
1712	4/28/2005	B1CVB7	SOIL and BIOTA	Discrete	0.016	pCi/g	MOUSE
1713	4/28/2005	B1CVB6	SOIL and BIOTA	Discrete	0.016	pCi/g	MOUSE
1714	5/11/2005	B1CVD6	SOIL and BIOTA	Discrete	0.016	pCi/g	MOUSE
1715	4/5/2006	J11KK8	SOIL and BIOTA	MIS	0.211	pCi/g	MOUSE

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
1677	WHOLEORG	0.059	pCi/g			CP
1678	WHOLEORG	0.054	pCi/g			CP
1679	WHOLEORG	0.062	pCi/g			CP
1680	WHOLEORG	0.063	pCi/g			CP
1681	WHOLEORG	0.072	pCi/g			CP
1682	WHOLEORG	0.1	pCi/g			CP
1683	WHOLEORG	0.017	pCi/g			CP
1684	WHOLEORG	0.091	pCi/g			CP
1685	WHOLEORG	0.076	pCi/g			CP
1686	WHOLEORG	0.097	pCi/g			CP
1687	WHOLEORG	0.063	pCi/g			CP
1688	WHOLEORG	0.052	pCi/g			CP
1689	WHOLEORG	0.022	pCi/g			CP
1690	WHOLEORG	0.04	pCi/g			CP
1691	WHOLEORG	0.13	pCi/g			CP
1692	WHOLEORG	0.059	pCi/g			CP
1693	WHOLEORG	0.057	pCi/g			CP
1694	WHOLEORG	0.11	pCi/g			CP
1695	WHOLEORG	0.042	pCi/g			CP
1696	WHOLEORG	0.09	pCi/g		J	CP
1697	WHOLEORG	0.032	pCi/g			CP
1698	WHOLEORG	0.14	pCi/g			CP
1699	WHOLEORG	0.058	pCi/g			CP
1700	WHOLEORG	0.19	pCi/g			CP
1701	WHOLEORG	0.11	pCi/g			CP
1702	WHOLEORG	0.17	pCi/g			CP
1703	WHOLEORG	0.1	pCi/g			CP
1704	WHOLEORG	0.017	pCi/g		J	CP
1705	WHOLEORG	0.031	pCi/g			CP
1706	WHOLEORG	0.06	pCi/g			CP
1707	WHOLEORG	0.051	pCi/g			CP
1708	WHOLEORG	0.035	pCi/g			CP
1709	WHOLEORG	0.022	pCi/g			CP
1710	WHOLEORG	0.052	pCi/g			CP
1711	WHOLEORG	0.036	pCi/g			CP
1712	WHOLEORG	0.044	pCi/g			CP
1713	WHOLEORG	0.053	pCi/g			CP
1714	WHOLEORG	0.048	pCi/g			CP
1715	MULTIPLE CARCASSES	0.597	pCi/g			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
1716	Uranium-238	U-238	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
1717	Uranium-238	U-238	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764
1718	Uranium-238	U-238	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764
1719	Uranium-238	U-238	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764
1720	Uranium-238	U-238	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
1721	Uranium-238	U-238	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
1722	Uranium-238	U-238	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
1723	Uranium-238	U-238	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
1724	Uranium-238	U-238	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
1725	Uranium-238	U-238	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
1726	Uranium-238	U-238	B POND	Outside decision areas	UPLAND	576356.769	136881.272
1727	Uranium-238	U-238	B POND	Outside decision areas	UPLAND	576356.769	136881.272
1728	Uranium-238	U-238	B POND	Outside decision areas	UPLAND	576356.769	136881.272
1729	Uranium-238	U-238	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
1730	Uranium-238	U-238	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
1731	Uranium-238	U-238	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
1732	Uranium-238	U-238	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
1733	Uranium-238	U-238	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
1734	Uranium-238	U-238	U POND	Outside decision areas	UPLAND	566379.63	134457.045
1735	Uranium-238	U-238	U POND	Outside decision areas	UPLAND	566379.63	134457.045
1736	Uranium-238	U-238	U POND	Outside decision areas	UPLAND	566379.63	134457.045
1737	Silver	7440-22-4	VERNITA BRIDGE 1	Outside decision areas	UPLAND	558823	145536
1738	Silver	7440-22-4	VERNITA BRIDGE 2	Outside decision areas	UPLAND	558844	145558
1739	Silver	7440-22-4	VERNITA BRIDGE 4	IU2/IU6	UPLAND	559347	145849
1740	Silver	7440-22-4	VERNITA BRIDGE 4	IU2/IU6	UPLAND	559347	145849
1741	Aluminum	7429-90-5	RCBRA 100-D-48	D/H	UPLAND	573841.527	151914.538
1742	Aluminum	7429-90-5	RCBRA 100-D-49	D/H	UPLAND	573938.06	151944.123
1743	Aluminum	7429-90-5	RCBRA 100-F-2	IU2/IU6	UPLAND	579728.068	147001.117
1744	Aluminum	7429-90-5	RCBRA 116-DR-1&2	D/H	UPLAND	574007.817	152246.748
1745	Aluminum	7429-90-5	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
1746	Aluminum	7429-90-5	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
1747	Aluminum	7429-90-5	RCBRA 116-N-3	N	UPLAND	571995.702	149793.039
1748	Aluminum	7429-90-5	RCBRA 1607-D2:1	D/H	UPLAND	573823.924	152260.319
1749	Aluminum	7429-90-5	RCBRA 2c Rip	K	RIPARIAN	567598.2	146210.159
1750	Aluminum	7429-90-5	RCBRA 300-49	300	UPLAND	594318.994	116830.934
1751	Aluminum	7429-90-5	RCBRA 5c Rip	300	RIPARIAN	594509.985	124869.182
1752	Aluminum	7429-90-5	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
1753	Aluminum	7429-90-5	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
1754	Aluminum	7429-90-5	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
1716	4/20/2006	J11XY1	SOIL and BIOTA	MIS	1.55	pCi/g	MOUSE
1717	5/11/2005	B1CVD3	SOIL and BIOTA	Discrete	0.15	pCi/g	MOUSE
1718	5/11/2005	B1CVD1	SOIL and BIOTA	Discrete	0.15	pCi/g	MOUSE
1719	5/11/2005	B1F2V6	SOIL and BIOTA	Discrete	0.15	pCi/g	MOUSE
1720	6/1/2005	B1CVF8	SOIL and BIOTA	Discrete	0.16	pCi/g	MOUSE
1721	6/7/2005	B1CVH1	SOIL and BIOTA	Discrete	0.16	pCi/g	MOUSE
1722	6/2/2005	B1CVF9	SOIL and BIOTA	Discrete	0.16	pCi/g	MOUSE
1723	4/25/2005	B1CVB3	SOIL and BIOTA	Discrete	0.18	pCi/g	MOUSE
1724	4/25/2005	B1CVB1	SOIL and BIOTA	Discrete	0.18	pCi/g	MOUSE
1725	4/21/2005	B1CVB0	SOIL and BIOTA	Discrete	0.18	pCi/g	MOUSE
1726	5/18/2005	B1CVF3	SOIL and BIOTA	Discrete	0.18	pCi/g	MOUSE
1727	5/13/2005	B1F2V1	SOIL and BIOTA	Discrete	0.18	pCi/g	MOUSE
1728	5/17/2005	B1CVF2	SOIL and BIOTA	Discrete	0.18	pCi/g	MOUSE
1729	4/29/2005	B1CVC1	SOIL and BIOTA	Discrete	0.19	pCi/g	MOUSE
1730	5/2/2005	B1CVC2	SOIL and BIOTA	Discrete	0.19	pCi/g	MOUSE
1731	5/5/2005	B1CVC4	SOIL and BIOTA	Discrete	0.19	pCi/g	MOUSE
1732	5/3/2005	B1CVC6	SOIL and BIOTA	Discrete	0.15	pCi/g	MOUSE
1733	5/3/2005	B1CVC5	SOIL and BIOTA	Discrete	0.15	pCi/g	MOUSE
1734	4/28/2005	B1CVB7	SOIL and BIOTA	Discrete	0.14	pCi/g	MOUSE
1735	4/28/2005	B1CVB6	SOIL and BIOTA	Discrete	0.14	pCi/g	MOUSE
1736	5/11/2005	B1CVD6	SOIL and BIOTA	Discrete	0.14	pCi/g	MOUSE
1737	8/19/2004	B1B5N6	SOIL and BIOTA	Discrete	0.3515	mg/kg	PLANT
1738	8/19/2004	B1B5P7	SOIL and BIOTA	Discrete	0.3005	mg/kg	PLANT
1739	8/24/2004	B1B5V0	SOIL and BIOTA	Discrete	0.302	mg/kg	PLANT
1740	8/24/2004	B1B5T9	SOIL and BIOTA	Discrete	0.302	mg/kg	PLANT
1741	5/18/2006	J11X42	SOIL and BIOTA	MIS	5580	mg/kg	PLANT
1742	5/18/2006	J11X54	SOIL and BIOTA	MIS	5820	mg/kg	PLANT
1743	5/10/2006	J11X61	SOIL and BIOTA	MIS	8390	mg/kg	PLANT
1744	5/19/2006	J11X56	SOIL and BIOTA	MIS	5270	mg/kg	PLANT
1745	5/16/2006	J11X48	SOIL and BIOTA	MIS	7370	mg/kg	PLANT
1746	5/16/2006	J11X48	SOIL and BIOTA	MIS-phyt	7350	mg/kg	PLANT
1747	5/19/2006	J11X46	SOIL and BIOTA	MIS	5910	mg/kg	PLANT
1748	5/22/2006	J11X58	SOIL and BIOTA	MIS	5690	mg/kg	PLANT
1749	5/21/2007	J152B8	SOIL and BIOTA	MIS	9360	mg/kg	PLANT
1750	4/26/2006	J11X52	SOIL and BIOTA	MIS	6070	mg/kg	PLANT
1751	5/24/2007	J152B4	SOIL and BIOTA	MIS	6910	mg/kg	PLANT
1752	5/12/2006	J11X84	SOIL and BIOTA	MIS	4670	mg/kg	PLANT
1753	5/12/2006	J11X84	SOIL and BIOTA	MIS-phyt	7480	mg/kg	PLANT
1754	5/12/2006	J11X77	SOIL and BIOTA	MIS	6100	mg/kg	PLANT

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
1716	MULTIPLE CARCASSES	0.96	pCi/g			RCBRA
1717	WHOLEORG	0.02	pCi/g			CP
1718	WHOLEORG	0.025	pCi/g			CP
1719	WHOLEORG	0.037	pCi/g			CP
1720	WHOLEORG	0.027	pCi/g			CP
1721	WHOLEORG	0.023	pCi/g			CP
1722	WHOLEORG	0.1	pCi/g			CP
1723	WHOLEORG	0.03	pCi/g		J	CP
1724	WHOLEORG	0.084	pCi/g			CP
1725	WHOLEORG	0.047	pCi/g			CP
1726	WHOLEORG	0.037	pCi/g			CP
1727	WHOLEORG	0.039	pCi/g			CP
1728	WHOLEORG	0.02	pCi/g			CP
1729	WHOLEORG	0.048	pCi/g			CP
1730	WHOLEORG	0.036	pCi/g			CP
1731	WHOLEORG	0.044	pCi/g			CP
1732	WHOLEORG	0.067	pCi/g			CP
1733	WHOLEORG	0.032	pCi/g			CP
1734	WHOLEORG	0.067	pCi/g			CP
1735	WHOLEORG	0.057	pCi/g			CP
1736	WHOLEORG	0.078	pCi/g			CP
1737	SHOOTS	0.002268	mg/kg	X		PNNL
1738	SHOOTS	0.005376	mg/kg	X		PNNL
1739	SHOOTS	0.003024	mg/kg	X		PNNL
1740	SHOOTS	0.003066	mg/kg	X		PNNL
1741	CURRENT YRS GROWTH	24.5	mg/kg			RCBRA
1742	CURRENT YRS GROWTH	28.4	mg/kg			RCBRA
1743	CURRENT YRS GROWTH	5.4	mg/kg			RCBRA
1744	CURRENT YRS GROWTH	50.3	mg/kg			RCBRA
1745	CURRENT YRS GROWTH	22.8	mg/kg			RCBRA
1746	CURRENT YRS GROWTH	22.8	mg/kg			RCBRA
1747	CURRENT YRS GROWTH	43.4	mg/kg			RCBRA
1748	CURRENT YRS GROWTH	25.5	mg/kg			RCBRA
1749	CURRENT YRS GROWTH	4.2	mg/kg			RCBRA
1750	CURRENT YRS GROWTH	19.4	mg/kg	C		RCBRA
1751	CURRENT YRS GROWTH	4.2	mg/kg			RCBRA
1752	CURRENT YRS GROWTH	8.8	mg/kg			RCBRA
1753	CURRENT YRS GROWTH	8.8	mg/kg			RCBRA
1754	CURRENT YRS GROWTH	10.9	mg/kg			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
1755	Aluminum	7429-90-5	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
1756	Aluminum	7429-90-5	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
1757	Aluminum	7429-90-5	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
1758	Aluminum	7429-90-5	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
1759	Aluminum	7429-90-5	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
1760	Aluminum	7429-90-5	RCBRA 600-181	IU2/IU6	UPLAND	578303.83	147316.698
1761	Aluminum	7429-90-5	RCBRA 600-204	IU2/IU6	UPLAND	580128.485	144762.219
1762	Aluminum	7429-90-5	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
1763	Aluminum	7429-90-5	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
1764	Aluminum	7429-90-5	RCBRA 600-23	IU2/IU6	UPLAND	585523.593	130481.377
1765	Aluminum	7429-90-5	RCBRA 618-4	300	UPLAND	593954.946	117064.473
1766	Aluminum	7429-90-5	RCBRA 628-1	IU2/IU6	UPLAND	577797.524	148745.681
1767	Aluminum	7429-90-5	RCBRA JA JONES	300	UPLAND	593874.58	120013.908
1768	Aluminum	7429-90-5	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
1769	Aluminum	7429-90-5	RCBRA Pit 18	IU2/IU6	UPLAND	580697.058	145311.464
1770	Aluminum	7429-90-5	RCBRA Pit 23	IU2/IU6	UPLAND	572381.012	144874.157
1771	Aluminum	7429-90-5	RCBRA Pit 24	BC	UPLAND	563395.814	145119.007
1772	Aluminum	7429-90-5	RCBRA Pit 9	300	UPLAND	592807.103	120587.7
1773	Aluminum	7429-90-5	RCBRA R Ref 11	Outside decision areas	RIPARIAN	559400.735	146458.486
1774	Aluminum	7429-90-5	RCBRA R Ref 12	IU2/IU6	RIPARIAN	559201.908	145747.542
1775	Aluminum	7429-90-5	RCBRA R Ref 13	Outside decision areas	RIPARIAN	558572.809	145345.115
1776	Aluminum	7429-90-5	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
1777	Aluminum	7429-90-5	RCBRA R Ref 16	Outside decision areas	RIPARIAN	557650.029	144826.748
1778	Aluminum	7429-90-5	RCBRA Rip 1	D/H	RIPARIAN	577251.869	153659.195
1779	Aluminum	7429-90-5	RCBRA Rip 2	D/H	RIPARIAN	573603.219	152471.6
1780	Aluminum	7429-90-5	RCBRA Rip 4	N	RIPARIAN	570558.596	148981.547
1781	Aluminum	7429-90-5	RCBRA Rip 5	K	RIPARIAN	569141.025	147521.561
1782	Aluminum	7429-90-5	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
1783	Aluminum	7429-90-5	RCBRA Rip 7	IU2/IU6	RIPARIAN	581326.914	147825.17
1784	Aluminum	7429-90-5	RCBRA Rip 8	D/H	RIPARIAN	578698.584	152233.645
1785	Aluminum	7429-90-5	RCBRA Rip 9	D/H	RIPARIAN	578153.643	152801.452
1786	Aluminum	7429-90-5	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
1787	Aluminum	7429-90-5	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
1788	Aluminum	7429-90-5	RCBRA Yak Rdg 2	Outside decision areas	UPLAND	559031.557	135576.407
1789	Aluminum	7429-90-5	RCBRA 100-D-48	D/H	UPLAND	573841.527	151914.538
1790	Aluminum	7429-90-5	RCBRA 100-D-49	D/H	UPLAND	573938.06	151944.123
1791	Aluminum	7429-90-5	RCBRA 100-F-2	IU2/IU6	UPLAND	579728.068	147001.117
1792	Aluminum	7429-90-5	RCBRA 116-DR-1&2	D/H	UPLAND	574007.817	152246.748
1793	Aluminum	7429-90-5	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
1755	5/12/2006	J11X77	SOIL and BIOTA	MIS-phyt	7090	mg/kg	PLANT
1756	5/16/2006	J11X79	SOIL and BIOTA	MIS	6420	mg/kg	PLANT
1757	5/16/2006	J11X79	SOIL and BIOTA	MIS-phyt	7220	mg/kg	PLANT
1758	5/16/2006	J11X90	SOIL and BIOTA	MIS	6020	mg/kg	PLANT
1759	5/16/2006	J11X90	SOIL and BIOTA	MIS-phyt	7540	mg/kg	PLANT
1760	5/18/2006	J11X86	SOIL and BIOTA	MIS	6050	mg/kg	PLANT
1761	5/18/2006	J11X81	SOIL and BIOTA	MIS	7280	mg/kg	PLANT
1762	5/15/2006	J11X82	SOIL and BIOTA	MIS	7330	mg/kg	PLANT
1763	5/15/2006	J11X82	SOIL and BIOTA	MIS-phyt	8180	mg/kg	PLANT
1764	5/12/2006	J11X72	SOIL and BIOTA	MIS	5370	mg/kg	PLANT
1765	5/12/2006	J11X51	SOIL and BIOTA	MIS	5000	mg/kg	PLANT
1766	5/12/2006	J11X89	SOIL and BIOTA	MIS	6360	mg/kg	PLANT
1767	5/10/2006	J11X74	SOIL and BIOTA	MIS	4960	mg/kg	PLANT
1768	5/15/2006	J11X66	SOIL and BIOTA	MIS	5900	mg/kg	PLANT
1769	5/18/2006	J11X69	SOIL and BIOTA	MIS	5610	mg/kg	PLANT
1770	5/22/2006	J11X63	SOIL and BIOTA	MIS	4450	mg/kg	PLANT
1771	5/19/2006	J11X70	SOIL and BIOTA	MIS	7600	mg/kg	PLANT
1772	5/12/2006	J11X64	SOIL and BIOTA	MIS	5580	mg/kg	PLANT
1773	5/9/2006	J11WY8	SOIL and BIOTA	MIS	8080	mg/kg	PLANT
1774	5/9/2006	J11WX0	SOIL and BIOTA	MIS	7820	mg/kg	PLANT
1775	8/10/2006	J11WY9	SOIL and BIOTA	MIS	10500	mg/kg	PLANT
1776	5/9/2006	J11X02	SOIL and BIOTA	MIS	10900	mg/kg	PLANT
1777	5/9/2006	J11X04	SOIL and BIOTA	MIS	8330	mg/kg	PLANT
1778	5/16/2006	J11WX1	SOIL and BIOTA	MIS	10400	mg/kg	PLANT
1779	5/19/2006	J11WX4	SOIL and BIOTA	MIS	8220	mg/kg	PLANT
1780	5/9/2006	J11WW6	SOIL and BIOTA	MIS	9950	mg/kg	PLANT
1781	5/9/2006	J11WW8	SOIL and BIOTA	MIS	10300	mg/kg	PLANT
1782	5/22/2006	J11XP0	SOIL and BIOTA	MIS	10900	mg/kg	PLANT
1783	5/9/2006	J11WY0	SOIL and BIOTA	MIS	7290	mg/kg	PLANT
1784	5/16/2006	J11WY2	SOIL and BIOTA	MIS	7600	mg/kg	PLANT
1785	5/16/2006	J11WY4	SOIL and BIOTA	MIS	7520	mg/kg	PLANT
1786	5/15/2006	J11X96	SOIL and BIOTA	MIS	8900	mg/kg	PLANT
1787	5/15/2006	J11X96	SOIL and BIOTA	MIS-phyt	10800	mg/kg	PLANT
1788	5/16/2006	J11X94	SOIL and BIOTA	MIS	11900	mg/kg	PLANT
1789	5/18/2006	J11X43	SOIL and BIOTA	MIS	5580	mg/kg	PLANT
1790	5/18/2006	J11X55	SOIL and BIOTA	MIS	5820	mg/kg	PLANT
1791	5/10/2006	J11X60	SOIL and BIOTA	MIS	8390	mg/kg	PLANT
1792	5/19/2006	J11X57	SOIL and BIOTA	MIS	5270	mg/kg	PLANT
1793	5/16/2006	J11X49	SOIL and BIOTA	MIS	7370	mg/kg	PLANT

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
1755	CURRENT YRS GROWTH	10.9	mg/kg			RCBRA
1756	CURRENT YRS GROWTH	19.9	mg/kg			RCBRA
1757	CURRENT YRS GROWTH	19.9	mg/kg			RCBRA
1758	CURRENT YRS GROWTH	23.1	mg/kg			RCBRA
1759	CURRENT YRS GROWTH	23.1	mg/kg			RCBRA
1760	CURRENT YRS GROWTH	22.6	mg/kg			RCBRA
1761	CURRENT YRS GROWTH	22.6	mg/kg			RCBRA
1762	CURRENT YRS GROWTH	16.7	mg/kg			RCBRA
1763	CURRENT YRS GROWTH	16.7	mg/kg			RCBRA
1764	CURRENT YRS GROWTH	39.3	mg/kg			RCBRA
1765	CURRENT YRS GROWTH	16.2	mg/kg			RCBRA
1766	CURRENT YRS GROWTH	18.4	mg/kg			RCBRA
1767	CURRENT YRS GROWTH	23.5	mg/kg			RCBRA
1768	CURRENT YRS GROWTH	38.9	mg/kg			RCBRA
1769	CURRENT YRS GROWTH	29.4	mg/kg			RCBRA
1770	CURRENT YRS GROWTH	24.3	mg/kg			RCBRA
1771	CURRENT YRS GROWTH	9.1	mg/kg			RCBRA
1772	CURRENT YRS GROWTH	6.8	mg/kg			RCBRA
1773	CURRENT YRS GROWTH	108	mg/kg	C	J	RCBRA
1774	CURRENT YRS GROWTH	269	mg/kg	C	J	RCBRA
1775	CURRENT YRS GROWTH	470	mg/kg		J	RCBRA
1776	CURRENT YRS GROWTH	150	mg/kg	C		RCBRA
1777	CURRENT YRS GROWTH	138	mg/kg	C		RCBRA
1778	CURRENT YRS GROWTH	63.7	mg/kg			RCBRA
1779	CURRENT YRS GROWTH	66.3	mg/kg			RCBRA
1780	CURRENT YRS GROWTH	43.1	mg/kg	C	J	RCBRA
1781	CURRENT YRS GROWTH	168	mg/kg	C	J	RCBRA
1782	CURRENT YRS GROWTH	35.9	mg/kg			RCBRA
1783	CURRENT YRS GROWTH	27.4	mg/kg	C	J	RCBRA
1784	CURRENT YRS GROWTH	296	mg/kg			RCBRA
1785	CURRENT YRS GROWTH	69.5	mg/kg			RCBRA
1786	CURRENT YRS GROWTH	7.9	mg/kg			RCBRA
1787	CURRENT YRS GROWTH	7.9	mg/kg			RCBRA
1788	CURRENT YRS GROWTH	32.7	mg/kg			RCBRA
1789	CURRENT YRS GROWTH	96.7	mg/kg			RCBRA
1790	CURRENT YRS GROWTH	69	mg/kg			RCBRA
1791	CURRENT YRS GROWTH	12.8	mg/kg			RCBRA
1792	CURRENT YRS GROWTH	112	mg/kg			RCBRA
1793	CURRENT YRS GROWTH	49.2	mg/kg			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
1794	Aluminum	7429-90-5	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
1795	Aluminum	7429-90-5	RCBRA 116-N-3	N	UPLAND	571995.702	149793.039
1796	Aluminum	7429-90-5	RCBRA 1607-D2:1	D/H	UPLAND	573823.924	152260.319
1797	Aluminum	7429-90-5	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
1798	Aluminum	7429-90-5	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
1799	Aluminum	7429-90-5	RCBRA 300-49	300	UPLAND	594318.994	116830.934
1800	Aluminum	7429-90-5	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
1801	Aluminum	7429-90-5	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
1802	Aluminum	7429-90-5	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
1803	Aluminum	7429-90-5	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
1804	Aluminum	7429-90-5	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
1805	Aluminum	7429-90-5	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
1806	Aluminum	7429-90-5	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
1807	Aluminum	7429-90-5	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
1808	Aluminum	7429-90-5	RCBRA 600-181	IU2/IU6	UPLAND	578303.83	147316.698
1809	Aluminum	7429-90-5	RCBRA 600-204	IU2/IU6	UPLAND	580128.485	144762.219
1810	Aluminum	7429-90-5	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
1811	Aluminum	7429-90-5	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
1812	Aluminum	7429-90-5	RCBRA 600-23	IU2/IU6	UPLAND	585523.593	130481.377
1813	Aluminum	7429-90-5	RCBRA 618-4	300	UPLAND	593954.946	117064.473
1814	Aluminum	7429-90-5	RCBRA 628-1	IU2/IU6	UPLAND	577797.524	148745.681
1815	Aluminum	7429-90-5	RCBRA JA JONES	300	UPLAND	593874.58	120013.908
1816	Aluminum	7429-90-5	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
1817	Aluminum	7429-90-5	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
1818	Aluminum	7429-90-5	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
1819	Aluminum	7429-90-5	RCBRA Pit 18	IU2/IU6	UPLAND	580697.058	145311.464
1820	Aluminum	7429-90-5	RCBRA Pit 23	IU2/IU6	UPLAND	572381.012	144874.157
1821	Aluminum	7429-90-5	RCBRA Pit 24	BC	UPLAND	563395.814	145119.007
1822	Aluminum	7429-90-5	RCBRA Pit 9	300	UPLAND	592807.103	120587.7
1823	Aluminum	7429-90-5	RCBRA R Ref 11	Outside decision areas	RIPARIAN	559400.735	146458.486
1824	Aluminum	7429-90-5	RCBRA R Ref 12	IU2/IU6	RIPARIAN	559201.908	145747.542
1825	Aluminum	7429-90-5	RCBRA R Ref 13	Outside decision areas	RIPARIAN	558572.809	145345.115
1826	Aluminum	7429-90-5	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
1827	Aluminum	7429-90-5	RCBRA R Ref 16	Outside decision areas	RIPARIAN	557650.029	144826.748
1828	Aluminum	7429-90-5	RCBRA Rip 1	D/H	RIPARIAN	577251.869	153659.195
1829	Aluminum	7429-90-5	RCBRA Rip 10	D/H	RIPARIAN	573987.873	153082.19
1830	Aluminum	7429-90-5	RCBRA Rip 2	D/H	RIPARIAN	573603.219	152471.6
1831	Aluminum	7429-90-5	RCBRA Rip 3	D/H	RIPARIAN	572639.65	151677.812
1832	Aluminum	7429-90-5	RCBRA Rip 4	N	RIPARIAN	570558.596	148981.547

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
1794	5/16/2006	J11X49	SOIL and BIOTA	MIS-phyt	7350	mg/kg	PLANT
1795	5/19/2006	J11X47	SOIL and BIOTA	MIS	5910	mg/kg	PLANT
1796	5/22/2006	J11X59	SOIL and BIOTA	MIS	5690	mg/kg	PLANT
1797	5/12/2006	J11X45	SOIL and BIOTA	MIS	8680	mg/kg	PLANT
1798	5/12/2006	J11X45	SOIL and BIOTA	MIS-phyt	10500	mg/kg	PLANT
1799	4/26/2006	J11X53	SOIL and BIOTA	MIS	6070	mg/kg	PLANT
1800	5/12/2006	J11X85	SOIL and BIOTA	MIS	4670	mg/kg	PLANT
1801	5/12/2006	J11X85	SOIL and BIOTA	MIS-phyt	7480	mg/kg	PLANT
1802	5/12/2006	J11X76	SOIL and BIOTA	MIS	6100	mg/kg	PLANT
1803	5/12/2006	J11X76	SOIL and BIOTA	MIS-phyt	7090	mg/kg	PLANT
1804	5/16/2006	J11X78	SOIL and BIOTA	MIS	6420	mg/kg	PLANT
1805	5/16/2006	J11X78	SOIL and BIOTA	MIS-phyt	7220	mg/kg	PLANT
1806	5/16/2006	J11X91	SOIL and BIOTA	MIS	6020	mg/kg	PLANT
1807	5/16/2006	J11X91	SOIL and BIOTA	MIS-phyt	7540	mg/kg	PLANT
1808	5/18/2006	J11X87	SOIL and BIOTA	MIS	6050	mg/kg	PLANT
1809	5/18/2006	J11X80	SOIL and BIOTA	MIS	7280	mg/kg	PLANT
1810	5/15/2006	J11X83	SOIL and BIOTA	MIS	7330	mg/kg	PLANT
1811	5/15/2006	J11X83	SOIL and BIOTA	MIS-phyt	8180	mg/kg	PLANT
1812	5/12/2006	J11X73	SOIL and BIOTA	MIS	5370	mg/kg	PLANT
1813	5/12/2006	J11X50	SOIL and BIOTA	MIS	5000	mg/kg	PLANT
1814	5/12/2006	J11X88	SOIL and BIOTA	MIS	6360	mg/kg	PLANT
1815	5/10/2006	J11X75	SOIL and BIOTA	MIS	4960	mg/kg	PLANT
1816	5/18/2006	J11X99	SOIL and BIOTA	MIS	10300	mg/kg	PLANT
1817	5/18/2006	J11X99	SOIL and BIOTA	MIS-phyt	12000	mg/kg	PLANT
1818	5/15/2006	J11X67	SOIL and BIOTA	MIS	5900	mg/kg	PLANT
1819	5/18/2006	J11X68	SOIL and BIOTA	MIS	5610	mg/kg	PLANT
1820	5/22/2006	J11X62	SOIL and BIOTA	MIS	4450	mg/kg	PLANT
1821	5/19/2006	J11X71	SOIL and BIOTA	MIS	7600	mg/kg	PLANT
1822	5/12/2006	J11X65	SOIL and BIOTA	MIS	5580	mg/kg	PLANT
1823	5/9/2006	J11WY7	SOIL and BIOTA	MIS	8080	mg/kg	PLANT
1824	5/9/2006	J11WW9	SOIL and BIOTA	MIS	7820	mg/kg	PLANT
1825	8/10/2006	J11X00	SOIL and BIOTA	MIS	10500	mg/kg	PLANT
1826	5/9/2006	J11X01	SOIL and BIOTA	MIS	10900	mg/kg	PLANT
1827	5/9/2006	J11X03	SOIL and BIOTA	MIS	8330	mg/kg	PLANT
1828	5/16/2006	J11WX2	SOIL and BIOTA	MIS	10400	mg/kg	PLANT
1829	5/9/2006	J11WY5	SOIL and BIOTA	MIS	6220	mg/kg	PLANT
1830	5/19/2006	J11WX3	SOIL and BIOTA	MIS	8220	mg/kg	PLANT
1831	5/9/2006	J11WX5	SOIL and BIOTA	MIS	4830	mg/kg	PLANT
1832	5/9/2006	J11WW5	SOIL and BIOTA	MIS	9950	mg/kg	PLANT

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
1794	CURRENT YRS GROWTH	49.2	mg/kg			RCBRA
1795	CURRENT YRS GROWTH	124	mg/kg			RCBRA
1796	CURRENT YRS GROWTH	125	mg/kg			RCBRA
1797	CURRENT YRS GROWTH	41.4	mg/kg	C	J	RCBRA
1798	CURRENT YRS GROWTH	41.4	mg/kg	C	J	RCBRA
1799	CURRENT YRS GROWTH	49.2	mg/kg	C		RCBRA
1800	CURRENT YRS GROWTH	14.5	mg/kg			RCBRA
1801	CURRENT YRS GROWTH	14.5	mg/kg			RCBRA
1802	CURRENT YRS GROWTH	11.6	mg/kg			RCBRA
1803	CURRENT YRS GROWTH	11.6	mg/kg			RCBRA
1804	CURRENT YRS GROWTH	65.9	mg/kg			RCBRA
1805	CURRENT YRS GROWTH	65.9	mg/kg			RCBRA
1806	CURRENT YRS GROWTH	131	mg/kg			RCBRA
1807	CURRENT YRS GROWTH	131	mg/kg			RCBRA
1808	CURRENT YRS GROWTH	48.1	mg/kg			RCBRA
1809	CURRENT YRS GROWTH	118	mg/kg			RCBRA
1810	CURRENT YRS GROWTH	28.6	mg/kg			RCBRA
1811	CURRENT YRS GROWTH	28.6	mg/kg			RCBRA
1812	CURRENT YRS GROWTH	82.3	mg/kg			RCBRA
1813	CURRENT YRS GROWTH	7.2	mg/kg			RCBRA
1814	CURRENT YRS GROWTH	14.4	mg/kg			RCBRA
1815	CURRENT YRS GROWTH	51.3	mg/kg			RCBRA
1816	CURRENT YRS GROWTH	24.3	mg/kg			RCBRA
1817	CURRENT YRS GROWTH	24.3	mg/kg			RCBRA
1818	CURRENT YRS GROWTH	77.2	mg/kg			RCBRA
1819	CURRENT YRS GROWTH	93.7	mg/kg			RCBRA
1820	CURRENT YRS GROWTH	131	mg/kg			RCBRA
1821	CURRENT YRS GROWTH	134	mg/kg			RCBRA
1822	CURRENT YRS GROWTH	22.5	mg/kg			RCBRA
1823	CURRENT YRS GROWTH	28.6	mg/kg	C	J	RCBRA
1824	CURRENT YRS GROWTH	26.1	mg/kg	C	J	RCBRA
1825	CURRENT YRS GROWTH	32.2	mg/kg		J	RCBRA
1826	CURRENT YRS GROWTH	29.2	mg/kg	C	J	RCBRA
1827	CURRENT YRS GROWTH	41.9	mg/kg	C		RCBRA
1828	CURRENT YRS GROWTH	33.2	mg/kg			RCBRA
1829	CURRENT YRS GROWTH	44.9	mg/kg	C	J	RCBRA
1830	CURRENT YRS GROWTH	141	mg/kg			RCBRA
1831	CURRENT YRS GROWTH	43	mg/kg	C	J	RCBRA
1832	CURRENT YRS GROWTH	33.8	mg/kg	C	J	RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
1833	Aluminum	7429-90-5	RCBRA Rip 5	K	RIPARIAN	569141.025	147521.561
1834	Aluminum	7429-90-5	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
1835	Aluminum	7429-90-5	RCBRA Rip 7	IU2/IU6	RIPARIAN	581326.914	147825.17
1836	Aluminum	7429-90-5	RCBRA Rip 8	D/H	RIPARIAN	578698.584	152233.645
1837	Aluminum	7429-90-5	RCBRA Rip 9	D/H	RIPARIAN	578153.643	152801.452
1838	Aluminum	7429-90-5	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
1839	Aluminum	7429-90-5	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
1840	Aluminum	7429-90-5	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
1841	Aluminum	7429-90-5	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
1842	Aluminum	7429-90-5	RCBRA Yak Rdg 2	Outside decision areas	UPLAND	559031.557	135576.407
1843	Aluminum	7429-90-5	RCBRA 2a Rip	BC	RIPARIAN	564618.501	145284.526
1844	Aluminum	7429-90-5	RCBRA 2c Rip	K	RIPARIAN	567598.2	146210.159
1845	Aluminum	7429-90-5	RCBRA 2j Rip	IU2/IU6	RIPARIAN	579360.971	150092.048
1846	Aluminum	7429-90-5	RCBRA 2l Rip	IU2/IU6	RIPARIAN	582341.212	146120.069
1847	Aluminum	7429-90-5	RCBRA 3b Rip	IU2/IU6	RIPARIAN	584961.205	141035.835
1848	Aluminum	7429-90-5	RCBRA 4a Rip	IU2/IU6	RIPARIAN	589347.5	137480.985
1849	Aluminum	7429-90-5	RCBRA 5c Rip	300	RIPARIAN	594509.985	124869.182
1850	Aluminum	7429-90-5	VERNITA BRIDGE 1	Outside decision areas	UPLAND	558823	145536
1851	Aluminum	7429-90-5	VERNITA BRIDGE 1	Outside decision areas	UPLAND	558823	145536
1852	Aluminum	7429-90-5	VERNITA BRIDGE 1	Outside decision areas	UPLAND	558823	145536
1853	Aluminum	7429-90-5	VERNITA BRIDGE 1	Outside decision areas	UPLAND	558823	145536
1854	Aluminum	7429-90-5	VERNITA BRIDGE 2	Outside decision areas	UPLAND	558844	145558
1855	Aluminum	7429-90-5	VERNITA BRIDGE 2	Outside decision areas	UPLAND	558844	145558
1856	Aluminum	7429-90-5	VERNITA BRIDGE 2	Outside decision areas	UPLAND	558844	145558
1857	Aluminum	7429-90-5	VERNITA BRIDGE 3	IU2/IU6	UPLAND	559089	145707
1858	Aluminum	7429-90-5	VERNITA BRIDGE 3	IU2/IU6	UPLAND	559089	145707
1859	Aluminum	7429-90-5	VERNITA BRIDGE 3	IU2/IU6	UPLAND	559089	145707
1860	Aluminum	7429-90-5	VERNITA BRIDGE 3	IU2/IU6	UPLAND	559089	145707
1861	Aluminum	7429-90-5	VERNITA BRIDGE 3	IU2/IU6	UPLAND	559089	145707
1862	Aluminum	7429-90-5	VERNITA BRIDGE 4	IU2/IU6	UPLAND	559347	145849
1863	Aluminum	7429-90-5	VERNITA BRIDGE 4	IU2/IU6	UPLAND	559347	145849
1864	Aluminum	7429-90-5	VERNITA BRIDGE 4	IU2/IU6	UPLAND	559347	145849
1865	Aluminum	7429-90-5	VERNITA BRIDGE 4	IU2/IU6	UPLAND	559347	145849
1866	Aluminum	7429-90-5	VERNITA BRIDGE 5	IU2/IU6	UPLAND	559606	145999
1867	Aluminum	7429-90-5	VERNITA BRIDGE 5	IU2/IU6	UPLAND	559606	145999
1868	Aluminum	7429-90-5	VERNITA BRIDGE 5	IU2/IU6	UPLAND	559606	145999
1869	Aluminum	7429-90-5	VERNITA BRIDGE 5	IU2/IU6	UPLAND	559606	145999
1870	Arsenic	7440-38-2	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
1871	Arsenic	7440-38-2	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
1833	5/9/2006	J11WW7	SOIL and BIOTA	MIS	10300	mg/kg	PLANT
1834	5/22/2006	J11WX7	SOIL and BIOTA	MIS	10900	mg/kg	PLANT
1835	5/9/2006	J11WX9	SOIL and BIOTA	MIS	7290	mg/kg	PLANT
1836	5/16/2006	J11WY1	SOIL and BIOTA	MIS	7600	mg/kg	PLANT
1837	5/16/2006	J11WY3	SOIL and BIOTA	MIS	7520	mg/kg	PLANT
1838	5/18/2006	J11XB1	SOIL and BIOTA	MIS	10500	mg/kg	PLANT
1839	5/18/2006	J11XB1	SOIL and BIOTA	MIS-phyt	11900	mg/kg	PLANT
1840	5/15/2006	J11X97	SOIL and BIOTA	MIS	8900	mg/kg	PLANT
1841	5/15/2006	J11X97	SOIL and BIOTA	MIS-phyt	10800	mg/kg	PLANT
1842	5/16/2006	J11X95	SOIL and BIOTA	MIS	11900	mg/kg	PLANT
1843	5/23/2007	J15299	SOIL and BIOTA	MIS	7200	mg/kg	PLANT
1844	5/21/2007	J152B9	SOIL and BIOTA	MIS	9360	mg/kg	PLANT
1845	5/21/2007	J15297	SOIL and BIOTA	MIS	10500	mg/kg	PLANT
1846	5/24/2007	J152B1	SOIL and BIOTA	MIS	5910	mg/kg	PLANT
1847	5/23/2007	J152B3	SOIL and BIOTA	MIS	7960	mg/kg	PLANT
1848	5/24/2007	J152B7	SOIL and BIOTA	MIS	11000	mg/kg	PLANT
1849	5/24/2007	J152B5	SOIL and BIOTA	MIS	6910	mg/kg	PLANT
1850	8/19/2004	B1B5N4	SOIL and BIOTA	Discrete	41449	mg/kg	PLANT
1851	8/19/2004	B1B5N5	SOIL and BIOTA	Discrete	41449	mg/kg	PLANT
1852	8/19/2004	B1B5N6	SOIL and BIOTA	Discrete	41449	mg/kg	PLANT
1853	8/19/2004	B1B5N3	SOIL and BIOTA	Discrete	41449	mg/kg	PLANT
1854	8/19/2004	B1B5P5	SOIL and BIOTA	Discrete	39295.5	mg/kg	PLANT
1855	8/19/2004	B1B5P6	SOIL and BIOTA	Discrete	39295.5	mg/kg	PLANT
1856	8/19/2004	B1B5P7	SOIL and BIOTA	Discrete	39295.5	mg/kg	PLANT
1857	8/19/2004	B1B5R8	SOIL and BIOTA	Discrete	42304.5	mg/kg	PLANT
1858	8/19/2004	B1B5R7	SOIL and BIOTA	Discrete	42304.5	mg/kg	PLANT
1859	8/19/2004	B1B5R5	SOIL and BIOTA	Discrete	42304.5	mg/kg	PLANT
1860	8/20/2004	B1B5R9	SOIL and BIOTA	Discrete	42304.5	mg/kg	PLANT
1861	8/19/2004	B1B5R6	SOIL and BIOTA	Discrete	42304.5	mg/kg	PLANT
1862	8/24/2004	B1B5V0	SOIL and BIOTA	Discrete	40462.5	mg/kg	PLANT
1863	8/24/2004	B1B5V3	SOIL and BIOTA	Discrete	40462.5	mg/kg	PLANT
1864	8/24/2004	B1B5T9	SOIL and BIOTA	Discrete	40462.5	mg/kg	PLANT
1865	8/24/2004	B1B5V1	SOIL and BIOTA	Discrete	40462.5	mg/kg	PLANT
1866	8/24/2004	B1B5W3	SOIL and BIOTA	Discrete	39548.5	mg/kg	PLANT
1867	8/24/2004	B1B5W5	SOIL and BIOTA	Discrete	39548.5	mg/kg	PLANT
1868	8/24/2004	B1B5W6	SOIL and BIOTA	Discrete	39548.5	mg/kg	PLANT
1869	8/24/2004	B1B5W4	SOIL and BIOTA	Discrete	39548.5	mg/kg	PLANT
1870	5/16/2006	J11X48	SOIL and BIOTA	MIS	10.7	mg/kg	PLANT
1871	5/16/2006	J11X48	SOIL and BIOTA	MIS-phyt	15.3	mg/kg	PLANT

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
1833	CURRENT YRS GROWTH	85.9	mg/kg	C	J	RCBRA
1834	CURRENT YRS GROWTH	71.2	mg/kg			RCBRA
1835	CURRENT YRS GROWTH	57.6	mg/kg	C	J	RCBRA
1836	CURRENT YRS GROWTH	22.6	mg/kg			RCBRA
1837	CURRENT YRS GROWTH	154	mg/kg			RCBRA
1838	CURRENT YRS GROWTH	23.6	mg/kg			RCBRA
1839	CURRENT YRS GROWTH	23.6	mg/kg			RCBRA
1840	CURRENT YRS GROWTH	14.4	mg/kg			RCBRA
1841	CURRENT YRS GROWTH	14.4	mg/kg			RCBRA
1842	CURRENT YRS GROWTH	31	mg/kg			RCBRA
1843	CURRENT YRS GROWTH	12.1	mg/kg			RCBRA
1844	CURRENT YRS GROWTH	3.7	mg/kg			RCBRA
1845	CURRENT YRS GROWTH	9	mg/kg			RCBRA
1846	CURRENT YRS GROWTH	14.7	mg/kg			RCBRA
1847	CURRENT YRS GROWTH	16.4	mg/kg			RCBRA
1848	CURRENT YRS GROWTH	16.4	mg/kg			RCBRA
1849	CURRENT YRS GROWTH	9.2	mg/kg			RCBRA
1850	SHOOTS	12.81	mg/kg	X		PNNL
1851	SHOOTS	39.9	mg/kg	X		PNNL
1852	SHOOTS	32.76	mg/kg	X		PNNL
1853	SHOOTS	66.78	mg/kg	X		PNNL
1854	SHOOTS	1.7787	mg/kg	X		PNNL
1855	SHOOTS	104.37	mg/kg	X		PNNL
1856	SHOOTS	10.122	mg/kg	X		PNNL
1857	SHOOTS	13.146	mg/kg	X		PNNL
1858	SHOOTS	23.94	mg/kg	X		PNNL
1859	SHOOTS	19.257	mg/kg	X		PNNL
1860	SHOOTS	19.236	mg/kg	X		PNNL
1861	SHOOTS	14.343	mg/kg	X		PNNL
1862	SHOOTS	103.53	mg/kg	X		PNNL
1863	SHOOTS	20.265	mg/kg	X		PNNL
1864	SHOOTS	14.826	mg/kg	X		PNNL
1865	SHOOTS	23.52	mg/kg	X		PNNL
1866	SHOOTS	0.8925	mg/kg	BX		PNNL
1867	SHOOTS	20.034	mg/kg	X		PNNL
1868	SHOOTS	10.773	mg/kg	X		PNNL
1869	SHOOTS	37.17	mg/kg	X		PNNL
1870	CURRENT YRS GROWTH	1.8	mg/kg			RCBRA
1871	CURRENT YRS GROWTH	1.8	mg/kg			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
1872	Arsenic	7440-38-2	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
1873	Arsenic	7440-38-2	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
1874	Arsenic	7440-38-2	RCBRA 300-49	300	UPLAND	594318.994	116830.934
1875	Arsenic	7440-38-2	RCBRA R Ref 13	Outside decision areas	RIPARIAN	558572.809	145345.115
1876	Arsenic	7440-38-2	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
1877	Arsenic	7440-38-2	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
1878	Arsenic	7440-38-2	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
1879	Arsenic	7440-38-2	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
1880	Arsenic	7440-38-2	RCBRA JA JONES	300	UPLAND	593874.58	120013.908
1881	Arsenic	7440-38-2	RCBRA Pit 23	IU2/IU6	UPLAND	572381.012	144874.157
1882	Arsenic	7440-38-2	RCBRA Yak Rdg 2	Outside decision areas	UPLAND	559031.557	135576.407
1883	Arsenic	7440-38-2	VERNITA BRIDGE 1	Outside decision areas	UPLAND	558823	145536
1884	Arsenic	7440-38-2	VERNITA BRIDGE 1	Outside decision areas	UPLAND	558823	145536
1885	Arsenic	7440-38-2	VERNITA BRIDGE 1	Outside decision areas	UPLAND	558823	145536
1886	Arsenic	7440-38-2	VERNITA BRIDGE 1	Outside decision areas	UPLAND	558823	145536
1887	Arsenic	7440-38-2	VERNITA BRIDGE 2	Outside decision areas	UPLAND	558844	145558
1888	Arsenic	7440-38-2	VERNITA BRIDGE 2	Outside decision areas	UPLAND	558844	145558
1889	Arsenic	7440-38-2	VERNITA BRIDGE 2	Outside decision areas	UPLAND	558844	145558
1890	Arsenic	7440-38-2	VERNITA BRIDGE 3	IU2/IU6	UPLAND	559089	145707
1891	Arsenic	7440-38-2	VERNITA BRIDGE 3	IU2/IU6	UPLAND	559089	145707
1892	Arsenic	7440-38-2	VERNITA BRIDGE 3	IU2/IU6	UPLAND	559089	145707
1893	Arsenic	7440-38-2	VERNITA BRIDGE 3	IU2/IU6	UPLAND	559089	145707
1894	Arsenic	7440-38-2	VERNITA BRIDGE 3	IU2/IU6	UPLAND	559089	145707
1895	Arsenic	7440-38-2	VERNITA BRIDGE 4	IU2/IU6	UPLAND	559347	145849
1896	Arsenic	7440-38-2	VERNITA BRIDGE 4	IU2/IU6	UPLAND	559347	145849
1897	Arsenic	7440-38-2	VERNITA BRIDGE 4	IU2/IU6	UPLAND	559347	145849
1898	Arsenic	7440-38-2	VERNITA BRIDGE 5	IU2/IU6	UPLAND	559606	145999
1899	Arsenic	7440-38-2	VERNITA BRIDGE 5	IU2/IU6	UPLAND	559606	145999
1900	Arsenic	7440-38-2	VERNITA BRIDGE 5	IU2/IU6	UPLAND	559606	145999
1901	Boron	7440-42-8	RCBRA 100-D-48	D/H	UPLAND	573841.527	151914.538
1902	Boron	7440-42-8	RCBRA 100-D-49	D/H	UPLAND	573938.06	151944.123
1903	Boron	7440-42-8	RCBRA 100-F-2	IU2/IU6	UPLAND	579728.068	147001.117
1904	Boron	7440-42-8	RCBRA 116-DR-1&2	D/H	UPLAND	574007.817	152246.748
1905	Boron	7440-42-8	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
1906	Boron	7440-42-8	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
1907	Boron	7440-42-8	RCBRA 116-N-3	N	UPLAND	571995.702	149793.039
1908	Boron	7440-42-8	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
1909	Boron	7440-42-8	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
1910	Boron	7440-42-8	RCBRA 2c Rip	K	RIPARIAN	567598.2	146210.159

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
1872	5/12/2006	J11X44	SOIL and BIOTA	MIS	6.8	mg/kg	PLANT
1873	5/12/2006	J11X44	SOIL and BIOTA	MIS-phyt	15.9	mg/kg	PLANT
1874	4/26/2006	J11X52	SOIL and BIOTA	MIS	2.5	mg/kg	PLANT
1875	8/10/2006	J11WY9	SOIL and BIOTA	MIS	9.7	mg/kg	PLANT
1876	5/16/2006	J11X78	SOIL and BIOTA	MIS	2.7	mg/kg	PLANT
1877	5/16/2006	J11X78	SOIL and BIOTA	MIS-phyt	3	mg/kg	PLANT
1878	5/16/2006	J11X91	SOIL and BIOTA	MIS	8	mg/kg	PLANT
1879	5/16/2006	J11X91	SOIL and BIOTA	MIS-phyt	9.1	mg/kg	PLANT
1880	5/10/2006	J11X75	SOIL and BIOTA	MIS	2	mg/kg	PLANT
1881	5/22/2006	J11X62	SOIL and BIOTA	MIS	2.2	mg/kg	PLANT
1882	5/16/2006	J11X95	SOIL and BIOTA	MIS	4	mg/kg	PLANT
1883	8/19/2004	B1B5N4	SOIL and BIOTA	Discrete	10.305	mg/kg	PLANT
1884	8/19/2004	B1B5N5	SOIL and BIOTA	Discrete	10.305	mg/kg	PLANT
1885	8/19/2004	B1B5N6	SOIL and BIOTA	Discrete	10.305	mg/kg	PLANT
1886	8/19/2004	B1B5N3	SOIL and BIOTA	Discrete	10.305	mg/kg	PLANT
1887	8/19/2004	B1B5P6	SOIL and BIOTA	Discrete	5.03	mg/kg	PLANT
1888	8/19/2004	B1B5P5	SOIL and BIOTA	Discrete	5.03	mg/kg	PLANT
1889	8/19/2004	B1B5P7	SOIL and BIOTA	Discrete	5.03	mg/kg	PLANT
1890	8/19/2004	B1B5R8	SOIL and BIOTA	Discrete	6.61	mg/kg	PLANT
1891	8/19/2004	B1B5R7	SOIL and BIOTA	Discrete	6.61	mg/kg	PLANT
1892	8/20/2004	B1B5R9	SOIL and BIOTA	Discrete	6.61	mg/kg	PLANT
1893	8/19/2004	B1B5R5	SOIL and BIOTA	Discrete	6.61	mg/kg	PLANT
1894	8/19/2004	B1B5R6	SOIL and BIOTA	Discrete	6.61	mg/kg	PLANT
1895	8/24/2004	B1B5V0	SOIL and BIOTA	Discrete	7.495	mg/kg	PLANT
1896	8/24/2004	B1B5V3	SOIL and BIOTA	Discrete	7.495	mg/kg	PLANT
1897	8/24/2004	B1B5V1	SOIL and BIOTA	Discrete	7.495	mg/kg	PLANT
1898	8/24/2004	B1B5W3	SOIL and BIOTA	Discrete	10.25	mg/kg	PLANT
1899	8/24/2004	B1B5W5	SOIL and BIOTA	Discrete	10.25	mg/kg	PLANT
1900	8/24/2004	B1B5W4	SOIL and BIOTA	Discrete	10.25	mg/kg	PLANT
1901	5/18/2006	J11X42	SOIL and BIOTA	MIS	1.9	mg/kg	PLANT
1902	5/18/2006	J11X54	SOIL and BIOTA	MIS	3	mg/kg	PLANT
1903	5/10/2006	J11X61	SOIL and BIOTA	MIS	3.5	mg/kg	PLANT
1904	5/19/2006	J11X56	SOIL and BIOTA	MIS	1.7	mg/kg	PLANT
1905	5/16/2006	J11X48	SOIL and BIOTA	MIS	2.3	mg/kg	PLANT
1906	5/16/2006	J11X48	SOIL and BIOTA	MIS-phyt	2.7	mg/kg	PLANT
1907	5/19/2006	J11X46	SOIL and BIOTA	MIS	1.3	mg/kg	PLANT
1908	5/12/2006	J11X44	SOIL and BIOTA	MIS	25.6	mg/kg	PLANT
1909	5/12/2006	J11X44	SOIL and BIOTA	MIS-phyt	29.6	mg/kg	PLANT
1910	5/21/2007	J152B8	SOIL and BIOTA	MIS	0.94	mg/kg	PLANT

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
1872	CURRENT YRS GROWTH	0.6	mg/kg			RCBRA
1873	CURRENT YRS GROWTH	0.6	mg/kg			RCBRA
1874	CURRENT YRS GROWTH	1.8	mg/kg			RCBRA
1875	CURRENT YRS GROWTH	0.84	mg/kg			RCBRA
1876	CURRENT YRS GROWTH	1.6	mg/kg			RCBRA
1877	CURRENT YRS GROWTH	1.6	mg/kg			RCBRA
1878	CURRENT YRS GROWTH	2.2	mg/kg			RCBRA
1879	CURRENT YRS GROWTH	2.2	mg/kg			RCBRA
1880	CURRENT YRS GROWTH	0.83	mg/kg			RCBRA
1881	CURRENT YRS GROWTH	1.6	mg/kg			RCBRA
1882	CURRENT YRS GROWTH	1.6	mg/kg			RCBRA
1883	SHOOTS	0.1134	mg/kg	X		PNNL
1884	SHOOTS	0.16905	mg/kg	X		PNNL
1885	SHOOTS	0.05271	mg/kg	X		PNNL
1886	SHOOTS	0.08169	mg/kg	X		PNNL
1887	SHOOTS	0.2184	mg/kg	X		PNNL
1888	SHOOTS	0.18963	mg/kg	X		PNNL
1889	SHOOTS	0.05166	mg/kg	X		PNNL
1890	SHOOTS	0.06468	mg/kg	X		PNNL
1891	SHOOTS	0.08883	mg/kg	X		PNNL
1892	SHOOTS	0.10983	mg/kg	X		PNNL
1893	SHOOTS	0.14973	mg/kg	X		PNNL
1894	SHOOTS	0.11298	mg/kg	X		PNNL
1895	SHOOTS	0.13566	mg/kg	X		PNNL
1896	SHOOTS	0.08652	mg/kg	X		PNNL
1897	SHOOTS	0.10269	mg/kg	X		PNNL
1898	SHOOTS	0.10941	mg/kg	X		PNNL
1899	SHOOTS	0.03087	mg/kg	X		PNNL
1900	SHOOTS	0.03885	mg/kg	X		PNNL
1901	CURRENT YRS GROWTH	14	mg/kg			RCBRA
1902	CURRENT YRS GROWTH	47.7	mg/kg			RCBRA
1903	CURRENT YRS GROWTH	2.5	mg/kg			RCBRA
1904	CURRENT YRS GROWTH	7.4	mg/kg			RCBRA
1905	CURRENT YRS GROWTH	6.3	mg/kg			RCBRA
1906	CURRENT YRS GROWTH	6.3	mg/kg			RCBRA
1907	CURRENT YRS GROWTH	7.3	mg/kg			RCBRA
1908	CURRENT YRS GROWTH	11.3	mg/kg			RCBRA
1909	CURRENT YRS GROWTH	11.3	mg/kg			RCBRA
1910	CURRENT YRS GROWTH	0.87	mg/kg			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
1911	Boron	7440-42-8	RCBRA 2f Rip	D/H	RIPARIAN	576222.844	154297.511
1912	Boron	7440-42-8	RCBRA 2j Rip	IU2/IU6	RIPARIAN	579360.971	150092.048
1913	Boron	7440-42-8	RCBRA 300-49	300	UPLAND	594318.994	116830.934
1914	Boron	7440-42-8	RCBRA 3b Rip	IU2/IU6	RIPARIAN	584961.205	141035.835
1915	Boron	7440-42-8	RCBRA 4a Rip	IU2/IU6	RIPARIAN	589347.5	137480.985
1916	Boron	7440-42-8	RCBRA 5c Rip	300	RIPARIAN	594509.985	124869.182
1917	Boron	7440-42-8	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
1918	Boron	7440-42-8	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
1919	Boron	7440-42-8	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
1920	Boron	7440-42-8	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
1921	Boron	7440-42-8	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
1922	Boron	7440-42-8	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
1923	Boron	7440-42-8	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
1924	Boron	7440-42-8	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
1925	Boron	7440-42-8	RCBRA 600-181	IU2/IU6	UPLAND	578303.83	147316.698
1926	Boron	7440-42-8	RCBRA 600-204	IU2/IU6	UPLAND	580128.485	144762.219
1927	Boron	7440-42-8	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
1928	Boron	7440-42-8	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
1929	Boron	7440-42-8	RCBRA 600-23	IU2/IU6	UPLAND	585523.593	130481.377
1930	Boron	7440-42-8	RCBRA 618-4	300	UPLAND	593954.946	117064.473
1931	Boron	7440-42-8	RCBRA 628-1	IU2/IU6	UPLAND	577797.524	148745.681
1932	Boron	7440-42-8	RCBRA Bev Ref 1 Rip	Outside decision areas	RIPARIAN	542428.846	167701.261
1933	Boron	7440-42-8	RCBRA Bev Ref 2 Rip	Outside decision areas	RIPARIAN	541493.988	167808.357
1934	Boron	7440-42-8	RCBRA JA JONES	300	UPLAND	593874.58	120013.908
1935	Boron	7440-42-8	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
1936	Boron	7440-42-8	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
1937	Boron	7440-42-8	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
1938	Boron	7440-42-8	RCBRA Pit 18	IU2/IU6	UPLAND	580697.058	145311.464
1939	Boron	7440-42-8	RCBRA Pit 23	IU2/IU6	UPLAND	572381.012	144874.157
1940	Boron	7440-42-8	RCBRA Pit 24	BC	UPLAND	563395.814	145119.007
1941	Boron	7440-42-8	RCBRA Pit 9	300	UPLAND	592807.103	120587.7
1942	Boron	7440-42-8	RCBRA R Ref 11	Outside decision areas	RIPARIAN	559400.735	146458.486
1943	Boron	7440-42-8	RCBRA R Ref 12	IU2/IU6	RIPARIAN	559201.908	145747.542
1944	Boron	7440-42-8	RCBRA R Ref 13	Outside decision areas	RIPARIAN	558572.809	145345.115
1945	Boron	7440-42-8	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
1946	Boron	7440-42-8	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
1947	Boron	7440-42-8	RCBRA R Ref 16	Outside decision areas	RIPARIAN	557650.029	144826.748
1948	Boron	7440-42-8	RCBRA Rip 1	D/H	RIPARIAN	577251.869	153659.195
1949	Boron	7440-42-8	RCBRA Rip 10	D/H	RIPARIAN	573987.873	153082.19

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
1911	5/7/2007	J15295	SOIL and BIOTA	MIS	1.2	mg/kg	PLANT
1912	5/21/2007	J15296	SOIL and BIOTA	MIS	1.5	mg/kg	PLANT
1913	4/26/2006	J11X52	SOIL and BIOTA	MIS	1.4	mg/kg	PLANT
1914	5/23/2007	J152B2	SOIL and BIOTA	MIS	0.98	mg/kg	PLANT
1915	5/24/2007	J152B6	SOIL and BIOTA	MIS	0.82	mg/kg	PLANT
1916	5/24/2007	J152B4	SOIL and BIOTA	MIS	0.53	mg/kg	PLANT
1917	5/12/2006	J11X84	SOIL and BIOTA	MIS	1.3	mg/kg	PLANT
1918	5/12/2006	J11X84	SOIL and BIOTA	MIS-phyt	2	mg/kg	PLANT
1919	5/12/2006	J11X77	SOIL and BIOTA	MIS	1.4	mg/kg	PLANT
1920	5/12/2006	J11X77	SOIL and BIOTA	MIS-phyt	1.6	mg/kg	PLANT
1921	5/16/2006	J11X79	SOIL and BIOTA	MIS	3.4	mg/kg	PLANT
1922	5/16/2006	J11X79	SOIL and BIOTA	MIS-phyt	5.7	mg/kg	PLANT
1923	5/16/2006	J11X90	SOIL and BIOTA	MIS	2.1	mg/kg	PLANT
1924	5/16/2006	J11X90	SOIL and BIOTA	MIS-phyt	2.9	mg/kg	PLANT
1925	5/18/2006	J11X86	SOIL and BIOTA	MIS	1.3	mg/kg	PLANT
1926	5/18/2006	J11X81	SOIL and BIOTA	MIS	1.5	mg/kg	PLANT
1927	5/15/2006	J11X82	SOIL and BIOTA	MIS	6.8	mg/kg	PLANT
1928	5/15/2006	J11X82	SOIL and BIOTA	MIS-phyt	5.2	mg/kg	PLANT
1929	5/12/2006	J11X72	SOIL and BIOTA	MIS	1.1	mg/kg	PLANT
1930	5/12/2006	J11X51	SOIL and BIOTA	MIS	0.97	mg/kg	PLANT
1931	5/12/2006	J11X89	SOIL and BIOTA	MIS	3.1	mg/kg	PLANT
1932	5/10/2007	J15289	SOIL and BIOTA	MIS	0.99	mg/kg	PLANT
1933	5/8/2007	J15291	SOIL and BIOTA	MIS	1	mg/kg	PLANT
1934	5/10/2006	J11X74	SOIL and BIOTA	MIS	1.5	mg/kg	PLANT
1935	5/18/2006	J11X98	SOIL and BIOTA	MIS	2.5	mg/kg	PLANT
1936	5/18/2006	J11X98	SOIL and BIOTA	MIS-phyt	3.1	mg/kg	PLANT
1937	5/15/2006	J11X66	SOIL and BIOTA	MIS	1.2	mg/kg	PLANT
1938	5/18/2006	J11X69	SOIL and BIOTA	MIS	0.85	mg/kg	PLANT
1939	5/22/2006	J11X63	SOIL and BIOTA	MIS	1.2	mg/kg	PLANT
1940	5/19/2006	J11X70	SOIL and BIOTA	MIS	2.2	mg/kg	PLANT
1941	5/12/2006	J11X64	SOIL and BIOTA	MIS	1.2	mg/kg	PLANT
1942	5/9/2006	J11WY8	SOIL and BIOTA	MIS	1.2	mg/kg	PLANT
1943	5/9/2006	J11WX0	SOIL and BIOTA	MIS	0.53	mg/kg	PLANT
1944	8/10/2006	J11WY9	SOIL and BIOTA	MIS	2.2	mg/kg	PLANT
1945	5/9/2006	J11X02	SOIL and BIOTA	MIS	1.6	mg/kg	PLANT
1946	5/8/2007	J15293	SOIL and BIOTA	MIS	1.6	mg/kg	PLANT
1947	5/9/2006	J11X04	SOIL and BIOTA	MIS	0.91	mg/kg	PLANT
1948	5/16/2006	J11WX1	SOIL and BIOTA	MIS	1.1	mg/kg	PLANT
1949	5/9/2006	J11WY6	SOIL and BIOTA	MIS	1.2	mg/kg	PLANT

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
1911	CURRENT YRS GROWTH	0.57	mg/kg			RCBRA
1912	CURRENT YRS GROWTH	0.5	mg/kg			RCBRA
1913	CURRENT YRS GROWTH	10.6	mg/kg	C		RCBRA
1914	CURRENT YRS GROWTH	0.87	mg/kg			RCBRA
1915	CURRENT YRS GROWTH	0.49	mg/kg			RCBRA
1916	CURRENT YRS GROWTH	1.1	mg/kg			RCBRA
1917	CURRENT YRS GROWTH	7.2	mg/kg			RCBRA
1918	CURRENT YRS GROWTH	7.2	mg/kg			RCBRA
1919	CURRENT YRS GROWTH	19.6	mg/kg			RCBRA
1920	CURRENT YRS GROWTH	19.6	mg/kg			RCBRA
1921	CURRENT YRS GROWTH	14.6	mg/kg			RCBRA
1922	CURRENT YRS GROWTH	14.6	mg/kg			RCBRA
1923	CURRENT YRS GROWTH	14.3	mg/kg			RCBRA
1924	CURRENT YRS GROWTH	14.3	mg/kg			RCBRA
1925	CURRENT YRS GROWTH	11.5	mg/kg			RCBRA
1926	CURRENT YRS GROWTH	12	mg/kg			RCBRA
1927	CURRENT YRS GROWTH	7.6	mg/kg			RCBRA
1928	CURRENT YRS GROWTH	7.6	mg/kg			RCBRA
1929	CURRENT YRS GROWTH	10.6	mg/kg			RCBRA
1930	CURRENT YRS GROWTH	3.5	mg/kg			RCBRA
1931	CURRENT YRS GROWTH	5.4	mg/kg			RCBRA
1932	CURRENT YRS GROWTH	0.52	mg/kg			RCBRA
1933	CURRENT YRS GROWTH	0.75	mg/kg			RCBRA
1934	CURRENT YRS GROWTH	2.4	mg/kg			RCBRA
1935	CURRENT YRS GROWTH	10.9	mg/kg			RCBRA
1936	CURRENT YRS GROWTH	10.9	mg/kg			RCBRA
1937	CURRENT YRS GROWTH	6.3	mg/kg			RCBRA
1938	CURRENT YRS GROWTH	11.5	mg/kg			RCBRA
1939	CURRENT YRS GROWTH	5.4	mg/kg			RCBRA
1940	CURRENT YRS GROWTH	9	mg/kg			RCBRA
1941	CURRENT YRS GROWTH	3.5	mg/kg			RCBRA
1942	CURRENT YRS GROWTH	0.55	mg/kg			RCBRA
1943	CURRENT YRS GROWTH	0.71	mg/kg			RCBRA
1944	CURRENT YRS GROWTH	1.2	mg/kg			RCBRA
1945	CURRENT YRS GROWTH	0.36	mg/kg			RCBRA
1946	CURRENT YRS GROWTH	0.64	mg/kg			RCBRA
1947	CURRENT YRS GROWTH	0.38	mg/kg			RCBRA
1948	CURRENT YRS GROWTH	7.2	mg/kg			RCBRA
1949	CURRENT YRS GROWTH	1.1	mg/kg			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
1950	Boron	7440-42-8	RCBRA Rip 2	D/H	RIPARIAN	573603.219	152471.6
1951	Boron	7440-42-8	RCBRA Rip 3	D/H	RIPARIAN	572639.65	151677.812
1952	Boron	7440-42-8	RCBRA Rip 4	N	RIPARIAN	570558.596	148981.547
1953	Boron	7440-42-8	RCBRA Rip 5	K	RIPARIAN	569141.025	147521.561
1954	Boron	7440-42-8	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
1955	Boron	7440-42-8	RCBRA Rip 7	IU2/IU6	RIPARIAN	581326.914	147825.17
1956	Boron	7440-42-8	RCBRA Rip 8	D/H	RIPARIAN	578698.584	152233.645
1957	Boron	7440-42-8	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
1958	Boron	7440-42-8	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
1959	Boron	7440-42-8	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
1960	Boron	7440-42-8	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
1961	Boron	7440-42-8	RCBRA Yak Rdg 2	Outside decision areas	UPLAND	559031.557	135576.407
1962	Boron	7440-42-8	RCBRA 100-D-48	D/H	UPLAND	573841.527	151914.538
1963	Boron	7440-42-8	RCBRA 100-D-49	D/H	UPLAND	573938.06	151944.123
1964	Boron	7440-42-8	RCBRA 100-F-2	IU2/IU6	UPLAND	579728.068	147001.117
1965	Boron	7440-42-8	RCBRA 116-DR-1&2	D/H	UPLAND	574007.817	152246.748
1966	Boron	7440-42-8	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
1967	Boron	7440-42-8	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
1968	Boron	7440-42-8	RCBRA 116-N-3	N	UPLAND	571995.702	149793.039
1969	Boron	7440-42-8	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
1970	Boron	7440-42-8	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
1971	Boron	7440-42-8	RCBRA 300-49	300	UPLAND	594318.994	116830.934
1972	Boron	7440-42-8	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
1973	Boron	7440-42-8	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
1974	Boron	7440-42-8	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
1975	Boron	7440-42-8	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
1976	Boron	7440-42-8	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
1977	Boron	7440-42-8	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
1978	Boron	7440-42-8	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
1979	Boron	7440-42-8	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
1980	Boron	7440-42-8	RCBRA 600-181	IU2/IU6	UPLAND	578303.83	147316.698
1981	Boron	7440-42-8	RCBRA 600-204	IU2/IU6	UPLAND	580128.485	144762.219
1982	Boron	7440-42-8	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
1983	Boron	7440-42-8	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
1984	Boron	7440-42-8	RCBRA 600-23	IU2/IU6	UPLAND	585523.593	130481.377
1985	Boron	7440-42-8	RCBRA 618-4	300	UPLAND	593954.946	117064.473
1986	Boron	7440-42-8	RCBRA 628-1	IU2/IU6	UPLAND	577797.524	148745.681
1987	Boron	7440-42-8	RCBRA JA JONES	300	UPLAND	593874.58	120013.908
1988	Boron	7440-42-8	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
1950	5/19/2006	J11WX4	SOIL and BIOTA	MIS	0.6	mg/kg	PLANT
1951	5/9/2006	J11WX6	SOIL and BIOTA	MIS	0.592	mg/kg	PLANT
1952	5/9/2006	J11WW6	SOIL and BIOTA	MIS	1.2	mg/kg	PLANT
1953	5/9/2006	J11WW8	SOIL and BIOTA	MIS	1.3	mg/kg	PLANT
1954	5/22/2006	J11XP0	SOIL and BIOTA	MIS	2.5	mg/kg	PLANT
1955	5/9/2006	J11WY0	SOIL and BIOTA	MIS	0.75	mg/kg	PLANT
1956	5/16/2006	J11WY2	SOIL and BIOTA	MIS	0.74	mg/kg	PLANT
1957	5/18/2006	J11XB0	SOIL and BIOTA	MIS	2	mg/kg	PLANT
1958	5/18/2006	J11XB0	SOIL and BIOTA	MIS-phyt	2.3	mg/kg	PLANT
1959	5/15/2006	J11X96	SOIL and BIOTA	MIS	1.5	mg/kg	PLANT
1960	5/15/2006	J11X96	SOIL and BIOTA	MIS-phyt	2	mg/kg	PLANT
1961	5/16/2006	J11X94	SOIL and BIOTA	MIS	2	mg/kg	PLANT
1962	5/18/2006	J11X43	SOIL and BIOTA	MIS	1.9	mg/kg	PLANT
1963	5/18/2006	J11X55	SOIL and BIOTA	MIS	3	mg/kg	PLANT
1964	5/10/2006	J11X60	SOIL and BIOTA	MIS	3.5	mg/kg	PLANT
1965	5/19/2006	J11X57	SOIL and BIOTA	MIS	1.7	mg/kg	PLANT
1966	5/16/2006	J11X49	SOIL and BIOTA	MIS	2.3	mg/kg	PLANT
1967	5/16/2006	J11X49	SOIL and BIOTA	MIS-phyt	2.7	mg/kg	PLANT
1968	5/19/2006	J11X47	SOIL and BIOTA	MIS	1.3	mg/kg	PLANT
1969	5/12/2006	J11X45	SOIL and BIOTA	MIS	25.6	mg/kg	PLANT
1970	5/12/2006	J11X45	SOIL and BIOTA	MIS-phyt	29.6	mg/kg	PLANT
1971	4/26/2006	J11X53	SOIL and BIOTA	MIS	1.4	mg/kg	PLANT
1972	5/12/2006	J11X85	SOIL and BIOTA	MIS	1.3	mg/kg	PLANT
1973	5/12/2006	J11X85	SOIL and BIOTA	MIS-phyt	2	mg/kg	PLANT
1974	5/12/2006	J11X76	SOIL and BIOTA	MIS	1.4	mg/kg	PLANT
1975	5/12/2006	J11X76	SOIL and BIOTA	MIS-phyt	1.6	mg/kg	PLANT
1976	5/16/2006	J11X78	SOIL and BIOTA	MIS	3.4	mg/kg	PLANT
1977	5/16/2006	J11X78	SOIL and BIOTA	MIS-phyt	5.7	mg/kg	PLANT
1978	5/16/2006	J11X91	SOIL and BIOTA	MIS	2.1	mg/kg	PLANT
1979	5/16/2006	J11X91	SOIL and BIOTA	MIS-phyt	2.9	mg/kg	PLANT
1980	5/18/2006	J11X87	SOIL and BIOTA	MIS	1.3	mg/kg	PLANT
1981	5/18/2006	J11X80	SOIL and BIOTA	MIS	1.5	mg/kg	PLANT
1982	5/15/2006	J11X83	SOIL and BIOTA	MIS	6.8	mg/kg	PLANT
1983	5/15/2006	J11X83	SOIL and BIOTA	MIS-phyt	5.2	mg/kg	PLANT
1984	5/12/2006	J11X73	SOIL and BIOTA	MIS	1.1	mg/kg	PLANT
1985	5/12/2006	J11X50	SOIL and BIOTA	MIS	0.97	mg/kg	PLANT
1986	5/12/2006	J11X88	SOIL and BIOTA	MIS	3.1	mg/kg	PLANT
1987	5/10/2006	J11X75	SOIL and BIOTA	MIS	1.5	mg/kg	PLANT
1988	5/18/2006	J11X99	SOIL and BIOTA	MIS	2.5	mg/kg	PLANT

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
1950	CURRENT YRS GROWTH	4.4	mg/kg			RCBRA
1951	CURRENT YRS GROWTH	0.95	mg/kg			RCBRA
1952	CURRENT YRS GROWTH	0.31	mg/kg			RCBRA
1953	CURRENT YRS GROWTH	0.49	mg/kg			RCBRA
1954	CURRENT YRS GROWTH	2.5	mg/kg			RCBRA
1955	CURRENT YRS GROWTH	0.8	mg/kg			RCBRA
1956	CURRENT YRS GROWTH	1.5	mg/kg			RCBRA
1957	CURRENT YRS GROWTH	11.8	mg/kg			RCBRA
1958	CURRENT YRS GROWTH	11.8	mg/kg			RCBRA
1959	CURRENT YRS GROWTH	8	mg/kg			RCBRA
1960	CURRENT YRS GROWTH	8	mg/kg			RCBRA
1961	CURRENT YRS GROWTH	7.2	mg/kg			RCBRA
1962	CURRENT YRS GROWTH	90.1	mg/kg			RCBRA
1963	CURRENT YRS GROWTH	57.2	mg/kg			RCBRA
1964	CURRENT YRS GROWTH	3.3	mg/kg			RCBRA
1965	CURRENT YRS GROWTH	68.5	mg/kg			RCBRA
1966	CURRENT YRS GROWTH	17	mg/kg			RCBRA
1967	CURRENT YRS GROWTH	17	mg/kg			RCBRA
1968	CURRENT YRS GROWTH	22.1	mg/kg			RCBRA
1969	CURRENT YRS GROWTH	25.1	mg/kg			RCBRA
1970	CURRENT YRS GROWTH	25.1	mg/kg			RCBRA
1971	CURRENT YRS GROWTH	26.2	mg/kg	C		RCBRA
1972	CURRENT YRS GROWTH	4.9	mg/kg			RCBRA
1973	CURRENT YRS GROWTH	4.9	mg/kg			RCBRA
1974	CURRENT YRS GROWTH	4.7	mg/kg			RCBRA
1975	CURRENT YRS GROWTH	4.7	mg/kg			RCBRA
1976	CURRENT YRS GROWTH	62.3	mg/kg			RCBRA
1977	CURRENT YRS GROWTH	62.3	mg/kg			RCBRA
1978	CURRENT YRS GROWTH	59.6	mg/kg			RCBRA
1979	CURRENT YRS GROWTH	59.6	mg/kg			RCBRA
1980	CURRENT YRS GROWTH	25.2	mg/kg			RCBRA
1981	CURRENT YRS GROWTH	42.4	mg/kg			RCBRA
1982	CURRENT YRS GROWTH	117	mg/kg			RCBRA
1983	CURRENT YRS GROWTH	117	mg/kg			RCBRA
1984	CURRENT YRS GROWTH	2.8	mg/kg			RCBRA
1985	CURRENT YRS GROWTH	4.9	mg/kg			RCBRA
1986	CURRENT YRS GROWTH	3.7	mg/kg			RCBRA
1987	CURRENT YRS GROWTH	18	mg/kg			RCBRA
1988	CURRENT YRS GROWTH	18.5	mg/kg			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
1989	Boron	7440-42-8	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
1990	Boron	7440-42-8	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
1991	Boron	7440-42-8	RCBRA Pit 18	IU2/IU6	UPLAND	580697.058	145311.464
1992	Boron	7440-42-8	RCBRA Pit 23	IU2/IU6	UPLAND	572381.012	144874.157
1993	Boron	7440-42-8	RCBRA Pit 24	BC	UPLAND	563395.814	145119.007
1994	Boron	7440-42-8	RCBRA Pit 9	300	UPLAND	592807.103	120587.7
1995	Boron	7440-42-8	RCBRA R Ref 11	Outside decision areas	RIPARIAN	559400.735	146458.486
1996	Boron	7440-42-8	RCBRA R Ref 12	IU2/IU6	RIPARIAN	559201.908	145747.542
1997	Boron	7440-42-8	RCBRA R Ref 13	Outside decision areas	RIPARIAN	558572.809	145345.115
1998	Boron	7440-42-8	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
1999	Boron	7440-42-8	RCBRA R Ref 16	Outside decision areas	RIPARIAN	557650.029	144826.748
2000	Boron	7440-42-8	RCBRA Rip 1	D/H	RIPARIAN	577251.869	153659.195
2001	Boron	7440-42-8	RCBRA Rip 10	D/H	RIPARIAN	573987.873	153082.19
2002	Boron	7440-42-8	RCBRA Rip 2	D/H	RIPARIAN	573603.219	152471.6
2003	Boron	7440-42-8	RCBRA Rip 3	D/H	RIPARIAN	572639.65	151677.812
2004	Boron	7440-42-8	RCBRA Rip 4	N	RIPARIAN	570558.596	148981.547
2005	Boron	7440-42-8	RCBRA Rip 5	K	RIPARIAN	569141.025	147521.561
2006	Boron	7440-42-8	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
2007	Boron	7440-42-8	RCBRA Rip 7	IU2/IU6	RIPARIAN	581326.914	147825.17
2008	Boron	7440-42-8	RCBRA Rip 8	D/H	RIPARIAN	578698.584	152233.645
2009	Boron	7440-42-8	RCBRA Rip 9	D/H	RIPARIAN	578153.643	152801.452
2010	Boron	7440-42-8	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
2011	Boron	7440-42-8	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
2012	Boron	7440-42-8	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
2013	Boron	7440-42-8	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
2014	Boron	7440-42-8	RCBRA Yak Rdg 2	Outside decision areas	UPLAND	559031.557	135576.407
2015	Boron	7440-42-8	RCBRA 2a Rip	BC	RIPARIAN	564618.501	145284.526
2016	Boron	7440-42-8	RCBRA 2c Rip	K	RIPARIAN	567598.2	146210.159
2017	Boron	7440-42-8	RCBRA 2f Rip	D/H	RIPARIAN	576222.844	154297.511
2018	Boron	7440-42-8	RCBRA 2j Rip	IU2/IU6	RIPARIAN	579360.971	150092.048
2019	Boron	7440-42-8	RCBRA 2l Rip	IU2/IU6	RIPARIAN	582341.212	146120.069
2020	Boron	7440-42-8	RCBRA 3b Rip	IU2/IU6	RIPARIAN	584961.205	141035.835
2021	Boron	7440-42-8	RCBRA 4a Rip	IU2/IU6	RIPARIAN	589347.5	137480.985
2022	Boron	7440-42-8	RCBRA 5c Rip	300	RIPARIAN	594509.985	124869.182
2023	Boron	7440-42-8	RCBRA Bev Ref 1 Rip	Outside decision areas	RIPARIAN	542428.846	167701.261
2024	Boron	7440-42-8	RCBRA Bev Ref 2 Rip	Outside decision areas	RIPARIAN	541493.988	167808.357
2025	Boron	7440-42-8	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
2026	Barium	7440-39-3	RCBRA 100-D-48	D/H	UPLAND	573841.527	151914.538
2027	Barium	7440-39-3	RCBRA 100-D-49	D/H	UPLAND	573938.06	151944.123

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
1989	5/18/2006	J11X99	SOIL and BIOTA	MIS-phyt	3.1	mg/kg	PLANT
1990	5/15/2006	J11X67	SOIL and BIOTA	MIS	1.2	mg/kg	PLANT
1991	5/18/2006	J11X68	SOIL and BIOTA	MIS	0.85	mg/kg	PLANT
1992	5/22/2006	J11X62	SOIL and BIOTA	MIS	1.2	mg/kg	PLANT
1993	5/19/2006	J11X71	SOIL and BIOTA	MIS	2.2	mg/kg	PLANT
1994	5/12/2006	J11X65	SOIL and BIOTA	MIS	1.2	mg/kg	PLANT
1995	5/9/2006	J11WY7	SOIL and BIOTA	MIS	1.2	mg/kg	PLANT
1996	5/9/2006	J11WW9	SOIL and BIOTA	MIS	0.53	mg/kg	PLANT
1997	8/10/2006	J11X00	SOIL and BIOTA	MIS	2.2	mg/kg	PLANT
1998	5/9/2006	J11X01	SOIL and BIOTA	MIS	1.6	mg/kg	PLANT
1999	5/9/2006	J11X03	SOIL and BIOTA	MIS	0.91	mg/kg	PLANT
2000	5/16/2006	J11WX2	SOIL and BIOTA	MIS	1.1	mg/kg	PLANT
2001	5/9/2006	J11WY5	SOIL and BIOTA	MIS	1.2	mg/kg	PLANT
2002	5/19/2006	J11WX3	SOIL and BIOTA	MIS	0.6	mg/kg	PLANT
2003	5/9/2006	J11WX5	SOIL and BIOTA	MIS	0.592	mg/kg	PLANT
2004	5/9/2006	J11WW5	SOIL and BIOTA	MIS	1.2	mg/kg	PLANT
2005	5/9/2006	J11WW7	SOIL and BIOTA	MIS	1.3	mg/kg	PLANT
2006	5/22/2006	J11WX7	SOIL and BIOTA	MIS	2.5	mg/kg	PLANT
2007	5/9/2006	J11WX9	SOIL and BIOTA	MIS	0.75	mg/kg	PLANT
2008	5/16/2006	J11WY1	SOIL and BIOTA	MIS	0.74	mg/kg	PLANT
2009	5/16/2006	J11WY3	SOIL and BIOTA	MIS	1.3	mg/kg	PLANT
2010	5/18/2006	J11XB1	SOIL and BIOTA	MIS	2	mg/kg	PLANT
2011	5/18/2006	J11XB1	SOIL and BIOTA	MIS-phyt	2.3	mg/kg	PLANT
2012	5/15/2006	J11X97	SOIL and BIOTA	MIS	1.5	mg/kg	PLANT
2013	5/15/2006	J11X97	SOIL and BIOTA	MIS-phyt	2	mg/kg	PLANT
2014	5/16/2006	J11X95	SOIL and BIOTA	MIS	2	mg/kg	PLANT
2015	5/23/2007	J15299	SOIL and BIOTA	MIS	0.91	mg/kg	PLANT
2016	5/21/2007	J152B9	SOIL and BIOTA	MIS	0.94	mg/kg	PLANT
2017	5/7/2007	J15294	SOIL and BIOTA	MIS	1.2	mg/kg	PLANT
2018	5/21/2007	J15297	SOIL and BIOTA	MIS	1.5	mg/kg	PLANT
2019	5/24/2007	J152B1	SOIL and BIOTA	MIS	0.88	mg/kg	PLANT
2020	5/23/2007	J152B3	SOIL and BIOTA	MIS	0.98	mg/kg	PLANT
2021	5/24/2007	J152B7	SOIL and BIOTA	MIS	0.82	mg/kg	PLANT
2022	5/24/2007	J152B5	SOIL and BIOTA	MIS	0.53	mg/kg	PLANT
2023	5/10/2007	J15288	SOIL and BIOTA	MIS	0.99	mg/kg	PLANT
2024	5/8/2007	J15290	SOIL and BIOTA	MIS	1	mg/kg	PLANT
2025	5/8/2007	J15292	SOIL and BIOTA	MIS	1.6	mg/kg	PLANT
2026	5/18/2006	J11X42	SOIL and BIOTA	MIS	69.5	mg/kg	PLANT
2027	5/18/2006	J11X54	SOIL and BIOTA	MIS	81.6	mg/kg	PLANT

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
1989	CURRENT YRS GROWTH	18.5	mg/kg			RCBRA
1990	CURRENT YRS GROWTH	29.8	mg/kg			RCBRA
1991	CURRENT YRS GROWTH	32.5	mg/kg			RCBRA
1992	CURRENT YRS GROWTH	52	mg/kg			RCBRA
1993	CURRENT YRS GROWTH	40.3	mg/kg			RCBRA
1994	CURRENT YRS GROWTH	14.9	mg/kg			RCBRA
1995	CURRENT YRS GROWTH	5.7	mg/kg			RCBRA
1996	CURRENT YRS GROWTH	5.9	mg/kg			RCBRA
1997	CURRENT YRS GROWTH	25.5	mg/kg			RCBRA
1998	CURRENT YRS GROWTH	5.6	mg/kg			RCBRA
1999	CURRENT YRS GROWTH	7.2	mg/kg			RCBRA
2000	CURRENT YRS GROWTH	32.6	mg/kg			RCBRA
2001	CURRENT YRS GROWTH	5.4	mg/kg			RCBRA
2002	CURRENT YRS GROWTH	22.5	mg/kg			RCBRA
2003	CURRENT YRS GROWTH	4.7	mg/kg			RCBRA
2004	CURRENT YRS GROWTH	8	mg/kg			RCBRA
2005	CURRENT YRS GROWTH	5.9	mg/kg			RCBRA
2006	CURRENT YRS GROWTH	39.7	mg/kg			RCBRA
2007	CURRENT YRS GROWTH	4.4	mg/kg			RCBRA
2008	CURRENT YRS GROWTH	24.5	mg/kg			RCBRA
2009	CURRENT YRS GROWTH	19.8	mg/kg			RCBRA
2010	CURRENT YRS GROWTH	16.1	mg/kg			RCBRA
2011	CURRENT YRS GROWTH	16.1	mg/kg			RCBRA
2012	CURRENT YRS GROWTH	20.5	mg/kg			RCBRA
2013	CURRENT YRS GROWTH	20.5	mg/kg			RCBRA
2014	CURRENT YRS GROWTH	15.8	mg/kg			RCBRA
2015	CURRENT YRS GROWTH	3.8	mg/kg			RCBRA
2016	CURRENT YRS GROWTH	3.7	mg/kg			RCBRA
2017	CURRENT YRS GROWTH	4.9	mg/kg			RCBRA
2018	CURRENT YRS GROWTH	4.2	mg/kg			RCBRA
2019	CURRENT YRS GROWTH	7.3	mg/kg			RCBRA
2020	CURRENT YRS GROWTH	6.4	mg/kg			RCBRA
2021	CURRENT YRS GROWTH	8.3	mg/kg			RCBRA
2022	CURRENT YRS GROWTH	3.4	mg/kg			RCBRA
2023	CURRENT YRS GROWTH	4.2	mg/kg			RCBRA
2024	CURRENT YRS GROWTH	4.2	mg/kg			RCBRA
2025	CURRENT YRS GROWTH	3.8	mg/kg			RCBRA
2026	CURRENT YRS GROWTH	13	mg/kg			RCBRA
2027	CURRENT YRS GROWTH	15.2	mg/kg			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
2028	Barium	7440-39-3	RCBRA 100-F-2	IU2/IU6	UPLAND	579728.068	147001.117
2029	Barium	7440-39-3	RCBRA 116-DR-1&2	D/H	UPLAND	574007.817	152246.748
2030	Barium	7440-39-3	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
2031	Barium	7440-39-3	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
2032	Barium	7440-39-3	RCBRA 116-N-3	N	UPLAND	571995.702	149793.039
2033	Barium	7440-39-3	RCBRA 1607-D2:1	D/H	UPLAND	573823.924	152260.319
2034	Barium	7440-39-3	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
2035	Barium	7440-39-3	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
2036	Barium	7440-39-3	RCBRA 2a Rip	BC	RIPARIAN	564618.501	145284.526
2037	Barium	7440-39-3	RCBRA 2c Rip	K	RIPARIAN	567598.2	146210.159
2038	Barium	7440-39-3	RCBRA 2f Rip	D/H	RIPARIAN	576222.844	154297.511
2039	Barium	7440-39-3	RCBRA 2j Rip	IU2/IU6	RIPARIAN	579360.971	150092.048
2040	Barium	7440-39-3	RCBRA 2l Rip	IU2/IU6	RIPARIAN	582341.212	146120.069
2041	Barium	7440-39-3	RCBRA 300-49	300	UPLAND	594318.994	116830.934
2042	Barium	7440-39-3	RCBRA 3b Rip	IU2/IU6	RIPARIAN	584961.205	141035.835
2043	Barium	7440-39-3	RCBRA 4a Rip	IU2/IU6	RIPARIAN	589347.5	137480.985
2044	Barium	7440-39-3	RCBRA 5c Rip	300	RIPARIAN	594509.985	124869.182
2045	Barium	7440-39-3	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
2046	Barium	7440-39-3	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
2047	Barium	7440-39-3	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
2048	Barium	7440-39-3	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
2049	Barium	7440-39-3	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
2050	Barium	7440-39-3	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
2051	Barium	7440-39-3	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
2052	Barium	7440-39-3	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
2053	Barium	7440-39-3	RCBRA 600-181	IU2/IU6	UPLAND	578303.83	147316.698
2054	Barium	7440-39-3	RCBRA 600-204	IU2/IU6	UPLAND	580128.485	144762.219
2055	Barium	7440-39-3	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
2056	Barium	7440-39-3	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
2057	Barium	7440-39-3	RCBRA 600-23	IU2/IU6	UPLAND	585523.593	130481.377
2058	Barium	7440-39-3	RCBRA 618-4	300	UPLAND	593954.946	117064.473
2059	Barium	7440-39-3	RCBRA 628-1	IU2/IU6	UPLAND	577797.524	148745.681
2060	Barium	7440-39-3	RCBRA Bev Ref 1 Rip	Outside decision areas	RIPARIAN	542428.846	167701.261
2061	Barium	7440-39-3	RCBRA Bev Ref 2 Rip	Outside decision areas	RIPARIAN	541493.988	167808.357
2062	Barium	7440-39-3	RCBRA JA JONES	300	UPLAND	593874.58	120013.908
2063	Barium	7440-39-3	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
2064	Barium	7440-39-3	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
2065	Barium	7440-39-3	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
2066	Barium	7440-39-3	RCBRA Pit 18	IU2/IU6	UPLAND	580697.058	145311.464

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
2028	5/10/2006	J11X61	SOIL and BIOTA	MIS	86.3	mg/kg	PLANT
2029	5/19/2006	J11X56	SOIL and BIOTA	MIS	69.2	mg/kg	PLANT
2030	5/16/2006	J11X48	SOIL and BIOTA	MIS	75.6	mg/kg	PLANT
2031	5/16/2006	J11X48	SOIL and BIOTA	MIS-phyt	70.4	mg/kg	PLANT
2032	5/19/2006	J11X46	SOIL and BIOTA	MIS	53.4	mg/kg	PLANT
2033	5/22/2006	J11X58	SOIL and BIOTA	MIS	59.9	mg/kg	PLANT
2034	5/12/2006	J11X44	SOIL and BIOTA	MIS	377	mg/kg	PLANT
2035	5/12/2006	J11X44	SOIL and BIOTA	MIS-phyt	314	mg/kg	PLANT
2036	5/23/2007	J15298	SOIL and BIOTA	MIS	70.4	mg/kg	PLANT
2037	5/21/2007	J152B8	SOIL and BIOTA	MIS	87.8	mg/kg	PLANT
2038	5/7/2007	J15295	SOIL and BIOTA	MIS	82.4	mg/kg	PLANT
2039	5/21/2007	J15296	SOIL and BIOTA	MIS	87.3	mg/kg	PLANT
2040	5/24/2007	J152B0	SOIL and BIOTA	MIS	65.1	mg/kg	PLANT
2041	4/26/2006	J11X52	SOIL and BIOTA	MIS	90	mg/kg	PLANT
2042	5/23/2007	J152B2	SOIL and BIOTA	MIS	73.7	mg/kg	PLANT
2043	5/24/2007	J152B6	SOIL and BIOTA	MIS	92.5	mg/kg	PLANT
2044	5/24/2007	J152B4	SOIL and BIOTA	MIS	70.5	mg/kg	PLANT
2045	5/12/2006	J11X84	SOIL and BIOTA	MIS	54.8	mg/kg	PLANT
2046	5/12/2006	J11X84	SOIL and BIOTA	MIS-phyt	69.2	mg/kg	PLANT
2047	5/12/2006	J11X77	SOIL and BIOTA	MIS	66.2	mg/kg	PLANT
2048	5/12/2006	J11X77	SOIL and BIOTA	MIS-phyt	67.5	mg/kg	PLANT
2049	5/16/2006	J11X79	SOIL and BIOTA	MIS	78.2	mg/kg	PLANT
2050	5/16/2006	J11X79	SOIL and BIOTA	MIS-phyt	102	mg/kg	PLANT
2051	5/16/2006	J11X90	SOIL and BIOTA	MIS	70.4	mg/kg	PLANT
2052	5/16/2006	J11X90	SOIL and BIOTA	MIS-phyt	80	mg/kg	PLANT
2053	5/18/2006	J11X86	SOIL and BIOTA	MIS	67.7	mg/kg	PLANT
2054	5/18/2006	J11X81	SOIL and BIOTA	MIS	82	mg/kg	PLANT
2055	5/15/2006	J11X82	SOIL and BIOTA	MIS	138	mg/kg	PLANT
2056	5/15/2006	J11X82	SOIL and BIOTA	MIS-phyt	104	mg/kg	PLANT
2057	5/12/2006	J11X72	SOIL and BIOTA	MIS	70.2	mg/kg	PLANT
2058	5/12/2006	J11X51	SOIL and BIOTA	MIS	59.2	mg/kg	PLANT
2059	5/12/2006	J11X89	SOIL and BIOTA	MIS	74.5	mg/kg	PLANT
2060	5/10/2007	J15289	SOIL and BIOTA	MIS	76	mg/kg	PLANT
2061	5/8/2007	J15291	SOIL and BIOTA	MIS	79.9	mg/kg	PLANT
2062	5/10/2006	J11X74	SOIL and BIOTA	MIS	70	mg/kg	PLANT
2063	5/18/2006	J11X98	SOIL and BIOTA	MIS	124	mg/kg	PLANT
2064	5/18/2006	J11X98	SOIL and BIOTA	MIS-phyt	125	mg/kg	PLANT
2065	5/15/2006	J11X66	SOIL and BIOTA	MIS	83.5	mg/kg	PLANT
2066	5/18/2006	J11X69	SOIL and BIOTA	MIS	55.5	mg/kg	PLANT

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
2028	CURRENT YRS GROWTH	5.1	mg/kg	C		RCBRA
2029	CURRENT YRS GROWTH	17	mg/kg			RCBRA
2030	CURRENT YRS GROWTH	13.3	mg/kg			RCBRA
2031	CURRENT YRS GROWTH	13.3	mg/kg			RCBRA
2032	CURRENT YRS GROWTH	18.3	mg/kg			RCBRA
2033	CURRENT YRS GROWTH	12.2	mg/kg			RCBRA
2034	CURRENT YRS GROWTH	4.8	mg/kg			RCBRA
2035	CURRENT YRS GROWTH	4.8	mg/kg			RCBRA
2036	CURRENT YRS GROWTH	1.4	mg/kg	C		RCBRA
2037	CURRENT YRS GROWTH	3.5	mg/kg	C		RCBRA
2038	CURRENT YRS GROWTH	2.4	mg/kg	C		RCBRA
2039	CURRENT YRS GROWTH	2.8	mg/kg	C		RCBRA
2040	CURRENT YRS GROWTH	1.5	mg/kg	C		RCBRA
2041	CURRENT YRS GROWTH	17.1	mg/kg	C		RCBRA
2042	CURRENT YRS GROWTH	1.8	mg/kg	C		RCBRA
2043	CURRENT YRS GROWTH	1.5	mg/kg	C		RCBRA
2044	CURRENT YRS GROWTH	4.3	mg/kg	C		RCBRA
2045	CURRENT YRS GROWTH	4.5	mg/kg	C		RCBRA
2046	CURRENT YRS GROWTH	4.5	mg/kg	C		RCBRA
2047	CURRENT YRS GROWTH	4.1	mg/kg	C		RCBRA
2048	CURRENT YRS GROWTH	4.1	mg/kg	C		RCBRA
2049	CURRENT YRS GROWTH	18.8	mg/kg			RCBRA
2050	CURRENT YRS GROWTH	18.8	mg/kg			RCBRA
2051	CURRENT YRS GROWTH	14.3	mg/kg			RCBRA
2052	CURRENT YRS GROWTH	14.3	mg/kg			RCBRA
2053	CURRENT YRS GROWTH	13.7	mg/kg			RCBRA
2054	CURRENT YRS GROWTH	23.6	mg/kg			RCBRA
2055	CURRENT YRS GROWTH	18.6	mg/kg			RCBRA
2056	CURRENT YRS GROWTH	18.6	mg/kg			RCBRA
2057	CURRENT YRS GROWTH	2	mg/kg	C		RCBRA
2058	CURRENT YRS GROWTH	7.1	mg/kg	C		RCBRA
2059	CURRENT YRS GROWTH	4.6	mg/kg	C		RCBRA
2060	CURRENT YRS GROWTH	1.3	mg/kg	C		RCBRA
2061	CURRENT YRS GROWTH	1.5	mg/kg	C		RCBRA
2062	CURRENT YRS GROWTH	6.7	mg/kg	C		RCBRA
2063	CURRENT YRS GROWTH	18.1	mg/kg			RCBRA
2064	CURRENT YRS GROWTH	18.1	mg/kg			RCBRA
2065	CURRENT YRS GROWTH	15.4	mg/kg			RCBRA
2066	CURRENT YRS GROWTH	25.7	mg/kg			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
2067	Barium	7440-39-3	RCBRA Pit 23	IU2/IU6	UPLAND	572381.012	144874.157
2068	Barium	7440-39-3	RCBRA Pit 24	BC	UPLAND	563395.814	145119.007
2069	Barium	7440-39-3	RCBRA Pit 9	300	UPLAND	592807.103	120587.7
2070	Barium	7440-39-3	RCBRA R Ref 11	Outside decision areas	RIPARIAN	559400.735	146458.486
2071	Barium	7440-39-3	RCBRA R Ref 12	IU2/IU6	RIPARIAN	559201.908	145747.542
2072	Barium	7440-39-3	RCBRA R Ref 13	Outside decision areas	RIPARIAN	558572.809	145345.115
2073	Barium	7440-39-3	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
2074	Barium	7440-39-3	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
2075	Barium	7440-39-3	RCBRA R Ref 16	Outside decision areas	RIPARIAN	557650.029	144826.748
2076	Barium	7440-39-3	RCBRA Rip 1	D/H	RIPARIAN	577251.869	153659.195
2077	Barium	7440-39-3	RCBRA Rip 10	D/H	RIPARIAN	573987.873	153082.19
2078	Barium	7440-39-3	RCBRA Rip 2	D/H	RIPARIAN	573603.219	152471.6
2079	Barium	7440-39-3	RCBRA Rip 3	D/H	RIPARIAN	572639.65	151677.812
2080	Barium	7440-39-3	RCBRA Rip 4	N	RIPARIAN	570558.596	148981.547
2081	Barium	7440-39-3	RCBRA Rip 5	K	RIPARIAN	569141.025	147521.561
2082	Barium	7440-39-3	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
2083	Barium	7440-39-3	RCBRA Rip 7	IU2/IU6	RIPARIAN	581326.914	147825.17
2084	Barium	7440-39-3	RCBRA Rip 8	D/H	RIPARIAN	578698.584	152233.645
2085	Barium	7440-39-3	RCBRA Rip 9	D/H	RIPARIAN	578153.643	152801.452
2086	Barium	7440-39-3	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
2087	Barium	7440-39-3	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
2088	Barium	7440-39-3	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
2089	Barium	7440-39-3	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
2090	Barium	7440-39-3	RCBRA Yak Rdg 2	Outside decision areas	UPLAND	559031.557	135576.407
2091	Barium	7440-39-3	RCBRA 100-D-48	D/H	UPLAND	573841.527	151914.538
2092	Barium	7440-39-3	RCBRA 100-D-49	D/H	UPLAND	573938.06	151944.123
2093	Barium	7440-39-3	RCBRA 100-F-2	IU2/IU6	UPLAND	579728.068	147001.117
2094	Barium	7440-39-3	RCBRA 116-DR-1&2	D/H	UPLAND	574007.817	152246.748
2095	Barium	7440-39-3	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
2096	Barium	7440-39-3	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
2097	Barium	7440-39-3	RCBRA 116-N-3	N	UPLAND	571995.702	149793.039
2098	Barium	7440-39-3	RCBRA 1607-D2:1	D/H	UPLAND	573823.924	152260.319
2099	Barium	7440-39-3	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
2100	Barium	7440-39-3	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
2101	Barium	7440-39-3	RCBRA 300-49	300	UPLAND	594318.994	116830.934
2102	Barium	7440-39-3	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
2103	Barium	7440-39-3	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
2104	Barium	7440-39-3	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
2105	Barium	7440-39-3	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
2067	5/22/2006	J11X63	SOIL and BIOTA	MIS	51.5	mg/kg	PLANT
2068	5/19/2006	J11X70	SOIL and BIOTA	MIS	80.4	mg/kg	PLANT
2069	5/12/2006	J11X64	SOIL and BIOTA	MIS	80.2	mg/kg	PLANT
2070	5/9/2006	J11WY8	SOIL and BIOTA	MIS	78.6	mg/kg	PLANT
2071	5/9/2006	J11WX0	SOIL and BIOTA	MIS	80.7	mg/kg	PLANT
2072	8/10/2006	J11WY9	SOIL and BIOTA	MIS	122	mg/kg	PLANT
2073	5/9/2006	J11X02	SOIL and BIOTA	MIS	120.5	mg/kg	PLANT
2074	5/8/2007	J15293	SOIL and BIOTA	MIS	120.5	mg/kg	PLANT
2075	5/9/2006	J11X04	SOIL and BIOTA	MIS	79.4	mg/kg	PLANT
2076	5/16/2006	J11WX1	SOIL and BIOTA	MIS	92.1	mg/kg	PLANT
2077	5/9/2006	J11WY6	SOIL and BIOTA	MIS	73.8	mg/kg	PLANT
2078	5/19/2006	J11WX4	SOIL and BIOTA	MIS	103	mg/kg	PLANT
2079	5/9/2006	J11WX6	SOIL and BIOTA	MIS	78.2	mg/kg	PLANT
2080	5/9/2006	J11WW6	SOIL and BIOTA	MIS	97.6	mg/kg	PLANT
2081	5/9/2006	J11WW8	SOIL and BIOTA	MIS	100	mg/kg	PLANT
2082	5/22/2006	J11XP0	SOIL and BIOTA	MIS	153	mg/kg	PLANT
2083	5/9/2006	J11WY0	SOIL and BIOTA	MIS	79.2	mg/kg	PLANT
2084	5/16/2006	J11WY2	SOIL and BIOTA	MIS	71.1	mg/kg	PLANT
2085	5/16/2006	J11WY4	SOIL and BIOTA	MIS	65.7	mg/kg	PLANT
2086	5/18/2006	J11XB0	SOIL and BIOTA	MIS	110	mg/kg	PLANT
2087	5/18/2006	J11XB0	SOIL and BIOTA	MIS-phyt	113	mg/kg	PLANT
2088	5/15/2006	J11X96	SOIL and BIOTA	MIS	93.5	mg/kg	PLANT
2089	5/15/2006	J11X96	SOIL and BIOTA	MIS-phyt	92.6	mg/kg	PLANT
2090	5/16/2006	J11X94	SOIL and BIOTA	MIS	131	mg/kg	PLANT
2091	5/18/2006	J11X43	SOIL and BIOTA	MIS	69.5	mg/kg	PLANT
2092	5/18/2006	J11X55	SOIL and BIOTA	MIS	81.6	mg/kg	PLANT
2093	5/10/2006	J11X60	SOIL and BIOTA	MIS	86.3	mg/kg	PLANT
2094	5/19/2006	J11X57	SOIL and BIOTA	MIS	69.2	mg/kg	PLANT
2095	5/16/2006	J11X49	SOIL and BIOTA	MIS	75.6	mg/kg	PLANT
2096	5/16/2006	J11X49	SOIL and BIOTA	MIS-phyt	70.4	mg/kg	PLANT
2097	5/19/2006	J11X47	SOIL and BIOTA	MIS	53.4	mg/kg	PLANT
2098	5/22/2006	J11X59	SOIL and BIOTA	MIS	59.9	mg/kg	PLANT
2099	5/12/2006	J11X45	SOIL and BIOTA	MIS	377	mg/kg	PLANT
2100	5/12/2006	J11X45	SOIL and BIOTA	MIS-phyt	314	mg/kg	PLANT
2101	4/26/2006	J11X53	SOIL and BIOTA	MIS	90	mg/kg	PLANT
2102	5/12/2006	J11X85	SOIL and BIOTA	MIS	54.8	mg/kg	PLANT
2103	5/12/2006	J11X85	SOIL and BIOTA	MIS-phyt	69.2	mg/kg	PLANT
2104	5/12/2006	J11X76	SOIL and BIOTA	MIS	66.2	mg/kg	PLANT
2105	5/12/2006	J11X76	SOIL and BIOTA	MIS-phyt	67.5	mg/kg	PLANT

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
2067	CURRENT YRS GROWTH	16.2	mg/kg			RCBRA
2068	CURRENT YRS GROWTH	17.9	mg/kg			RCBRA
2069	CURRENT YRS GROWTH	6.3	mg/kg	C		RCBRA
2070	CURRENT YRS GROWTH	3.3	mg/kg			RCBRA
2071	CURRENT YRS GROWTH	6.9	mg/kg			RCBRA
2072	CURRENT YRS GROWTH	12	mg/kg			RCBRA
2073	CURRENT YRS GROWTH	4.7	mg/kg			RCBRA
2074	CURRENT YRS GROWTH	1.8	mg/kg	C		RCBRA
2075	CURRENT YRS GROWTH	4	mg/kg			RCBRA
2076	CURRENT YRS GROWTH	25.8	mg/kg			RCBRA
2077	CURRENT YRS GROWTH	3.7	mg/kg			RCBRA
2078	CURRENT YRS GROWTH	13.5	mg/kg			RCBRA
2079	CURRENT YRS GROWTH	3.2	mg/kg			RCBRA
2080	CURRENT YRS GROWTH	2.2	mg/kg			RCBRA
2081	CURRENT YRS GROWTH	5.2	mg/kg			RCBRA
2082	CURRENT YRS GROWTH	12.3	mg/kg			RCBRA
2083	CURRENT YRS GROWTH	4.6	mg/kg			RCBRA
2084	CURRENT YRS GROWTH	18.1	mg/kg			RCBRA
2085	CURRENT YRS GROWTH	15.9	mg/kg			RCBRA
2086	CURRENT YRS GROWTH	9.9	mg/kg			RCBRA
2087	CURRENT YRS GROWTH	9.9	mg/kg			RCBRA
2088	CURRENT YRS GROWTH	12	mg/kg			RCBRA
2089	CURRENT YRS GROWTH	12	mg/kg			RCBRA
2090	CURRENT YRS GROWTH	38.5	mg/kg			RCBRA
2091	CURRENT YRS GROWTH	6	mg/kg			RCBRA
2092	CURRENT YRS GROWTH	5.6	mg/kg			RCBRA
2093	CURRENT YRS GROWTH	1.2	mg/kg	C		RCBRA
2094	CURRENT YRS GROWTH	5.4	mg/kg			RCBRA
2095	CURRENT YRS GROWTH	21.5	mg/kg			RCBRA
2096	CURRENT YRS GROWTH	21.5	mg/kg			RCBRA
2097	CURRENT YRS GROWTH	7.8	mg/kg			RCBRA
2098	CURRENT YRS GROWTH	5.4	mg/kg			RCBRA
2099	CURRENT YRS GROWTH	2.5	mg/kg			RCBRA
2100	CURRENT YRS GROWTH	2.5	mg/kg			RCBRA
2101	CURRENT YRS GROWTH	11.1	mg/kg	C		RCBRA
2102	CURRENT YRS GROWTH	2.4	mg/kg	C		RCBRA
2103	CURRENT YRS GROWTH	2.4	mg/kg	C		RCBRA
2104	CURRENT YRS GROWTH	2.8	mg/kg	C		RCBRA
2105	CURRENT YRS GROWTH	2.8	mg/kg	C		RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
2106	Barium	7440-39-3	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
2107	Barium	7440-39-3	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
2108	Barium	7440-39-3	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
2109	Barium	7440-39-3	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
2110	Barium	7440-39-3	RCBRA 600-181	IU2/IU6	UPLAND	578303.83	147316.698
2111	Barium	7440-39-3	RCBRA 600-204	IU2/IU6	UPLAND	580128.485	144762.219
2112	Barium	7440-39-3	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
2113	Barium	7440-39-3	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
2114	Barium	7440-39-3	RCBRA 600-23	IU2/IU6	UPLAND	585523.593	130481.377
2115	Barium	7440-39-3	RCBRA 618-4	300	UPLAND	593954.946	117064.473
2116	Barium	7440-39-3	RCBRA 628-1	IU2/IU6	UPLAND	577797.524	148745.681
2117	Barium	7440-39-3	RCBRA JA JONES	300	UPLAND	593874.58	120013.908
2118	Barium	7440-39-3	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
2119	Barium	7440-39-3	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
2120	Barium	7440-39-3	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
2121	Barium	7440-39-3	RCBRA Pit 18	IU2/IU6	UPLAND	580697.058	145311.464
2122	Barium	7440-39-3	RCBRA Pit 23	IU2/IU6	UPLAND	572381.012	144874.157
2123	Barium	7440-39-3	RCBRA Pit 24	BC	UPLAND	563395.814	145119.007
2124	Barium	7440-39-3	RCBRA Pit 9	300	UPLAND	592807.103	120587.7
2125	Barium	7440-39-3	RCBRA R Ref 11	Outside decision areas	RIPARIAN	559400.735	146458.486
2126	Barium	7440-39-3	RCBRA R Ref 12	IU2/IU6	RIPARIAN	559201.908	145747.542
2127	Barium	7440-39-3	RCBRA R Ref 13	Outside decision areas	RIPARIAN	558572.809	145345.115
2128	Barium	7440-39-3	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
2129	Barium	7440-39-3	RCBRA R Ref 16	Outside decision areas	RIPARIAN	557650.029	144826.748
2130	Barium	7440-39-3	RCBRA Rip 1	D/H	RIPARIAN	577251.869	153659.195
2131	Barium	7440-39-3	RCBRA Rip 10	D/H	RIPARIAN	573987.873	153082.19
2132	Barium	7440-39-3	RCBRA Rip 2	D/H	RIPARIAN	573603.219	152471.6
2133	Barium	7440-39-3	RCBRA Rip 3	D/H	RIPARIAN	572639.65	151677.812
2134	Barium	7440-39-3	RCBRA Rip 4	N	RIPARIAN	570558.596	148981.547
2135	Barium	7440-39-3	RCBRA Rip 5	K	RIPARIAN	569141.025	147521.561
2136	Barium	7440-39-3	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
2137	Barium	7440-39-3	RCBRA Rip 7	IU2/IU6	RIPARIAN	581326.914	147825.17
2138	Barium	7440-39-3	RCBRA Rip 8	D/H	RIPARIAN	578698.584	152233.645
2139	Barium	7440-39-3	RCBRA Rip 9	D/H	RIPARIAN	578153.643	152801.452
2140	Barium	7440-39-3	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
2141	Barium	7440-39-3	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
2142	Barium	7440-39-3	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
2143	Barium	7440-39-3	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
2144	Barium	7440-39-3	RCBRA Yak Rdg 2	Outside decision areas	UPLAND	559031.557	135576.407

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
2106	5/16/2006	J11X78	SOIL and BIOTA	MIS	78.2	mg/kg	PLANT
2107	5/16/2006	J11X78	SOIL and BIOTA	MIS-phyt	102	mg/kg	PLANT
2108	5/16/2006	J11X91	SOIL and BIOTA	MIS	70.4	mg/kg	PLANT
2109	5/16/2006	J11X91	SOIL and BIOTA	MIS-phyt	80	mg/kg	PLANT
2110	5/18/2006	J11X87	SOIL and BIOTA	MIS	67.7	mg/kg	PLANT
2111	5/18/2006	J11X80	SOIL and BIOTA	MIS	82	mg/kg	PLANT
2112	5/15/2006	J11X83	SOIL and BIOTA	MIS	138	mg/kg	PLANT
2113	5/15/2006	J11X83	SOIL and BIOTA	MIS-phyt	104	mg/kg	PLANT
2114	5/12/2006	J11X73	SOIL and BIOTA	MIS	70.2	mg/kg	PLANT
2115	5/12/2006	J11X50	SOIL and BIOTA	MIS	59.2	mg/kg	PLANT
2116	5/12/2006	J11X88	SOIL and BIOTA	MIS	74.5	mg/kg	PLANT
2117	5/10/2006	J11X75	SOIL and BIOTA	MIS	70	mg/kg	PLANT
2118	5/18/2006	J11X99	SOIL and BIOTA	MIS	124	mg/kg	PLANT
2119	5/18/2006	J11X99	SOIL and BIOTA	MIS-phyt	125	mg/kg	PLANT
2120	5/15/2006	J11X67	SOIL and BIOTA	MIS	83.5	mg/kg	PLANT
2121	5/18/2006	J11X68	SOIL and BIOTA	MIS	55.5	mg/kg	PLANT
2122	5/22/2006	J11X62	SOIL and BIOTA	MIS	51.5	mg/kg	PLANT
2123	5/19/2006	J11X71	SOIL and BIOTA	MIS	80.4	mg/kg	PLANT
2124	5/12/2006	J11X65	SOIL and BIOTA	MIS	80.2	mg/kg	PLANT
2125	5/9/2006	J11WY7	SOIL and BIOTA	MIS	78.6	mg/kg	PLANT
2126	5/9/2006	J11WW9	SOIL and BIOTA	MIS	80.7	mg/kg	PLANT
2127	8/10/2006	J11X00	SOIL and BIOTA	MIS	122	mg/kg	PLANT
2128	5/9/2006	J11X01	SOIL and BIOTA	MIS	120.5	mg/kg	PLANT
2129	5/9/2006	J11X03	SOIL and BIOTA	MIS	79.4	mg/kg	PLANT
2130	5/16/2006	J11WX2	SOIL and BIOTA	MIS	92.1	mg/kg	PLANT
2131	5/9/2006	J11WY5	SOIL and BIOTA	MIS	73.8	mg/kg	PLANT
2132	5/19/2006	J11WX3	SOIL and BIOTA	MIS	103	mg/kg	PLANT
2133	5/9/2006	J11WX5	SOIL and BIOTA	MIS	78.2	mg/kg	PLANT
2134	5/9/2006	J11WW5	SOIL and BIOTA	MIS	97.6	mg/kg	PLANT
2135	5/9/2006	J11WW7	SOIL and BIOTA	MIS	100	mg/kg	PLANT
2136	5/22/2006	J11WX7	SOIL and BIOTA	MIS	153	mg/kg	PLANT
2137	5/9/2006	J11WX9	SOIL and BIOTA	MIS	79.2	mg/kg	PLANT
2138	5/16/2006	J11WY1	SOIL and BIOTA	MIS	71.1	mg/kg	PLANT
2139	5/16/2006	J11WY3	SOIL and BIOTA	MIS	65.7	mg/kg	PLANT
2140	5/18/2006	J11XB1	SOIL and BIOTA	MIS	110	mg/kg	PLANT
2141	5/18/2006	J11XB1	SOIL and BIOTA	MIS-phyt	113	mg/kg	PLANT
2142	5/15/2006	J11X97	SOIL and BIOTA	MIS	93.5	mg/kg	PLANT
2143	5/15/2006	J11X97	SOIL and BIOTA	MIS-phyt	92.6	mg/kg	PLANT
2144	5/16/2006	J11X95	SOIL and BIOTA	MIS	131	mg/kg	PLANT

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
2106	CURRENT YRS GROWTH	6.2	mg/kg			RCBRA
2107	CURRENT YRS GROWTH	6.2	mg/kg			RCBRA
2108	CURRENT YRS GROWTH	6.2	mg/kg			RCBRA
2109	CURRENT YRS GROWTH	6.2	mg/kg			RCBRA
2110	CURRENT YRS GROWTH	12.5	mg/kg			RCBRA
2111	CURRENT YRS GROWTH	6.9	mg/kg			RCBRA
2112	CURRENT YRS GROWTH	5.7	mg/kg			RCBRA
2113	CURRENT YRS GROWTH	5.7	mg/kg			RCBRA
2114	CURRENT YRS GROWTH	8.5	mg/kg	C		RCBRA
2115	CURRENT YRS GROWTH	4.6	mg/kg	C		RCBRA
2116	CURRENT YRS GROWTH	1.7	mg/kg	C		RCBRA
2117	CURRENT YRS GROWTH	2.7	mg/kg	C		RCBRA
2118	CURRENT YRS GROWTH	10.3	mg/kg			RCBRA
2119	CURRENT YRS GROWTH	10.3	mg/kg			RCBRA
2120	CURRENT YRS GROWTH	5.9	mg/kg			RCBRA
2121	CURRENT YRS GROWTH	5	mg/kg			RCBRA
2122	CURRENT YRS GROWTH	5.7	mg/kg			RCBRA
2123	CURRENT YRS GROWTH	6.1	mg/kg			RCBRA
2124	CURRENT YRS GROWTH	1.3	mg/kg	C		RCBRA
2125	CURRENT YRS GROWTH	4.1	mg/kg			RCBRA
2126	CURRENT YRS GROWTH	2.8	mg/kg			RCBRA
2127	CURRENT YRS GROWTH	8.9	mg/kg			RCBRA
2128	CURRENT YRS GROWTH	3.6	mg/kg			RCBRA
2129	CURRENT YRS GROWTH	3.6	mg/kg			RCBRA
2130	CURRENT YRS GROWTH	4.5	mg/kg			RCBRA
2131	CURRENT YRS GROWTH	3.8	mg/kg			RCBRA
2132	CURRENT YRS GROWTH	26	mg/kg			RCBRA
2133	CURRENT YRS GROWTH	4	mg/kg			RCBRA
2134	CURRENT YRS GROWTH	3.8	mg/kg			RCBRA
2135	CURRENT YRS GROWTH	4.8	mg/kg			RCBRA
2136	CURRENT YRS GROWTH	18.4	mg/kg			RCBRA
2137	CURRENT YRS GROWTH	3.4	mg/kg			RCBRA
2138	CURRENT YRS GROWTH	4.6	mg/kg			RCBRA
2139	CURRENT YRS GROWTH	16.7	mg/kg			RCBRA
2140	CURRENT YRS GROWTH	9.4	mg/kg			RCBRA
2141	CURRENT YRS GROWTH	9.4	mg/kg			RCBRA
2142	CURRENT YRS GROWTH	6.7	mg/kg			RCBRA
2143	CURRENT YRS GROWTH	6.7	mg/kg			RCBRA
2144	CURRENT YRS GROWTH	6.9	mg/kg			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
2145	Barium	7440-39-3	RCBRA 2a Rip	BC	RIPARIAN	564618.501	145284.526
2146	Barium	7440-39-3	RCBRA 2c Rip	K	RIPARIAN	567598.2	146210.159
2147	Barium	7440-39-3	RCBRA 2f Rip	D/H	RIPARIAN	576222.844	154297.511
2148	Barium	7440-39-3	RCBRA 2j Rip	IU2/IU6	RIPARIAN	579360.971	150092.048
2149	Barium	7440-39-3	RCBRA 2l Rip	IU2/IU6	RIPARIAN	582341.212	146120.069
2150	Barium	7440-39-3	RCBRA 3b Rip	IU2/IU6	RIPARIAN	584961.205	141035.835
2151	Barium	7440-39-3	RCBRA 4a Rip	IU2/IU6	RIPARIAN	589347.5	137480.985
2152	Barium	7440-39-3	RCBRA 5c Rip	300	RIPARIAN	594509.985	124869.182
2153	Barium	7440-39-3	RCBRA Bev Ref 1 Rip	Outside decision areas	RIPARIAN	542428.846	167701.261
2154	Barium	7440-39-3	RCBRA Bev Ref 2 Rip	Outside decision areas	RIPARIAN	541493.988	167808.357
2155	Barium	7440-39-3	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
2156	Barium	7440-39-3	VERNITA BRIDGE 1	Outside decision areas	UPLAND	558823	145536
2157	Barium	7440-39-3	VERNITA BRIDGE 1	Outside decision areas	UPLAND	558823	145536
2158	Barium	7440-39-3	VERNITA BRIDGE 1	Outside decision areas	UPLAND	558823	145536
2159	Barium	7440-39-3	VERNITA BRIDGE 1	Outside decision areas	UPLAND	558823	145536
2160	Barium	7440-39-3	VERNITA BRIDGE 2	Outside decision areas	UPLAND	558844	145558
2161	Barium	7440-39-3	VERNITA BRIDGE 2	Outside decision areas	UPLAND	558844	145558
2162	Barium	7440-39-3	VERNITA BRIDGE 2	Outside decision areas	UPLAND	558844	145558
2163	Barium	7440-39-3	VERNITA BRIDGE 3	IU2/IU6	UPLAND	559089	145707
2164	Barium	7440-39-3	VERNITA BRIDGE 3	IU2/IU6	UPLAND	559089	145707
2165	Barium	7440-39-3	VERNITA BRIDGE 3	IU2/IU6	UPLAND	559089	145707
2166	Barium	7440-39-3	VERNITA BRIDGE 3	IU2/IU6	UPLAND	559089	145707
2167	Barium	7440-39-3	VERNITA BRIDGE 3	IU2/IU6	UPLAND	559089	145707
2168	Barium	7440-39-3	VERNITA BRIDGE 4	IU2/IU6	UPLAND	559347	145849
2169	Barium	7440-39-3	VERNITA BRIDGE 4	IU2/IU6	UPLAND	559347	145849
2170	Barium	7440-39-3	VERNITA BRIDGE 4	IU2/IU6	UPLAND	559347	145849
2171	Barium	7440-39-3	VERNITA BRIDGE 4	IU2/IU6	UPLAND	559347	145849
2172	Barium	7440-39-3	VERNITA BRIDGE 5	IU2/IU6	UPLAND	559606	145999
2173	Barium	7440-39-3	VERNITA BRIDGE 5	IU2/IU6	UPLAND	559606	145999
2174	Barium	7440-39-3	VERNITA BRIDGE 5	IU2/IU6	UPLAND	559606	145999
2175	Barium	7440-39-3	VERNITA BRIDGE 5	IU2/IU6	UPLAND	559606	145999
2176	Beryllium	7440-41-7	RCBRA R Ref 12	IU2/IU6	RIPARIAN	559201.908	145747.542
2177	Beryllium	7440-41-7	RCBRA R Ref 13	Outside decision areas	RIPARIAN	558572.809	145345.115
2178	Beryllium	7440-41-7	RCBRA Rip 5	K	RIPARIAN	569141.025	147521.561
2179	Beryllium	7440-41-7	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
2180	Beryllium	7440-41-7	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
2181	Calcium	7440-70-2	RCBRA 100-D-48	D/H	UPLAND	573841.527	151914.538
2182	Calcium	7440-70-2	RCBRA 100-D-49	D/H	UPLAND	573938.06	151944.123
2183	Calcium	7440-70-2	RCBRA 100-F-2	IU2/IU6	UPLAND	579728.068	147001.117

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
2145	5/23/2007	J15299	SOIL and BIOTA	MIS	70.4	mg/kg	PLANT
2146	5/21/2007	J152B9	SOIL and BIOTA	MIS	87.8	mg/kg	PLANT
2147	5/7/2007	J15294	SOIL and BIOTA	MIS	82.4	mg/kg	PLANT
2148	5/21/2007	J15297	SOIL and BIOTA	MIS	87.3	mg/kg	PLANT
2149	5/24/2007	J152B1	SOIL and BIOTA	MIS	65.1	mg/kg	PLANT
2150	5/23/2007	J152B3	SOIL and BIOTA	MIS	73.7	mg/kg	PLANT
2151	5/24/2007	J152B7	SOIL and BIOTA	MIS	92.5	mg/kg	PLANT
2152	5/24/2007	J152B5	SOIL and BIOTA	MIS	70.5	mg/kg	PLANT
2153	5/10/2007	J15288	SOIL and BIOTA	MIS	76	mg/kg	PLANT
2154	5/8/2007	J15290	SOIL and BIOTA	MIS	79.9	mg/kg	PLANT
2155	5/8/2007	J15292	SOIL and BIOTA	MIS	120.5	mg/kg	PLANT
2156	8/19/2004	B1B5N5	SOIL and BIOTA	Discrete	420	mg/kg	PLANT
2157	8/19/2004	B1B5N4	SOIL and BIOTA	Discrete	420	mg/kg	PLANT
2158	8/19/2004	B1B5N6	SOIL and BIOTA	Discrete	420	mg/kg	PLANT
2159	8/19/2004	B1B5N3	SOIL and BIOTA	Discrete	420	mg/kg	PLANT
2160	8/19/2004	B1B5P5	SOIL and BIOTA	Discrete	373	mg/kg	PLANT
2161	8/19/2004	B1B5P6	SOIL and BIOTA	Discrete	373	mg/kg	PLANT
2162	8/19/2004	B1B5P7	SOIL and BIOTA	Discrete	373	mg/kg	PLANT
2163	8/19/2004	B1B5R8	SOIL and BIOTA	Discrete	385.15	mg/kg	PLANT
2164	8/19/2004	B1B5R7	SOIL and BIOTA	Discrete	385.15	mg/kg	PLANT
2165	8/20/2004	B1B5R9	SOIL and BIOTA	Discrete	385.15	mg/kg	PLANT
2166	8/19/2004	B1B5R5	SOIL and BIOTA	Discrete	385.15	mg/kg	PLANT
2167	8/19/2004	B1B5R6	SOIL and BIOTA	Discrete	385.15	mg/kg	PLANT
2168	8/24/2004	B1B5V0	SOIL and BIOTA	Discrete	391.15	mg/kg	PLANT
2169	8/24/2004	B1B5T9	SOIL and BIOTA	Discrete	391.15	mg/kg	PLANT
2170	8/24/2004	B1B5V3	SOIL and BIOTA	Discrete	391.15	mg/kg	PLANT
2171	8/24/2004	B1B5V1	SOIL and BIOTA	Discrete	391.15	mg/kg	PLANT
2172	8/24/2004	B1B5W3	SOIL and BIOTA	Discrete	389.35	mg/kg	PLANT
2173	8/24/2004	B1B5W5	SOIL and BIOTA	Discrete	389.35	mg/kg	PLANT
2174	8/24/2004	B1B5W4	SOIL and BIOTA	Discrete	389.35	mg/kg	PLANT
2175	8/24/2004	B1B5W6	SOIL and BIOTA	Discrete	389.35	mg/kg	PLANT
2176	5/9/2006	J11WX0	SOIL and BIOTA	MIS	0.29	mg/kg	PLANT
2177	8/10/2006	J11WY9	SOIL and BIOTA	MIS	0.36	mg/kg	PLANT
2178	5/9/2006	J11WW8	SOIL and BIOTA	MIS	0.42	mg/kg	PLANT
2179	5/12/2006	J11X45	SOIL and BIOTA	MIS	0.52	mg/kg	PLANT
2180	5/12/2006	J11X45	SOIL and BIOTA	MIS-phyt	0.75	mg/kg	PLANT
2181	5/18/2006	J11X42	SOIL and BIOTA	MIS	6850	mg/kg	PLANT
2182	5/18/2006	J11X54	SOIL and BIOTA	MIS	6110	mg/kg	PLANT
2183	5/10/2006	J11X61	SOIL and BIOTA	MIS	7070	mg/kg	PLANT

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
2145	CURRENT YRS GROWTH	1.3	mg/kg	C		RCBRA
2146	CURRENT YRS GROWTH	7.3	mg/kg	C		RCBRA
2147	CURRENT YRS GROWTH	3.7	mg/kg	C		RCBRA
2148	CURRENT YRS GROWTH	2.6	mg/kg	C		RCBRA
2149	CURRENT YRS GROWTH	2.8	mg/kg	C		RCBRA
2150	CURRENT YRS GROWTH	3	mg/kg	C		RCBRA
2151	CURRENT YRS GROWTH	12.8	mg/kg	C		RCBRA
2152	CURRENT YRS GROWTH	2.2	mg/kg	C		RCBRA
2153	CURRENT YRS GROWTH	1.6	mg/kg	C		RCBRA
2154	CURRENT YRS GROWTH	2.2	mg/kg	C		RCBRA
2155	CURRENT YRS GROWTH	2.8	mg/kg	C		RCBRA
2156	SHOOTS	3.906	mg/kg	X		PNNL
2157	SHOOTS	10.941	mg/kg	X		PNNL
2158	SHOOTS	30.24	mg/kg	X		PNNL
2159	SHOOTS	16.905	mg/kg	X		PNNL
2160	SHOOTS	9.66	mg/kg	X		PNNL
2161	SHOOTS	31.08	mg/kg	X		PNNL
2162	SHOOTS	18.753	mg/kg	X		PNNL
2163	SHOOTS	14.91	mg/kg	X		PNNL
2164	SHOOTS	8.463	mg/kg	X		PNNL
2165	SHOOTS	6.489	mg/kg	X		PNNL
2166	SHOOTS	12.558	mg/kg	X		PNNL
2167	SHOOTS	17.682	mg/kg	X		PNNL
2168	SHOOTS	15.519	mg/kg	X		PNNL
2169	SHOOTS	12.684	mg/kg	X		PNNL
2170	SHOOTS	7.434	mg/kg	X		PNNL
2171	SHOOTS	2.73	mg/kg	X		PNNL
2172	SHOOTS	2.73	mg/kg	X		PNNL
2173	SHOOTS	5.565	mg/kg	X		PNNL
2174	SHOOTS	44.1	mg/kg	X		PNNL
2175	SHOOTS	12.18	mg/kg	X		PNNL
2176	CURRENT YRS GROWTH	0.03	mg/kg			RCBRA
2177	CURRENT YRS GROWTH	0.02	mg/kg			RCBRA
2178	CURRENT YRS GROWTH	0.02	mg/kg			RCBRA
2179	CURRENT YRS GROWTH	0.02	mg/kg			RCBRA
2180	CURRENT YRS GROWTH	0.02	mg/kg			RCBRA
2181	CURRENT YRS GROWTH	3220	mg/kg	C		RCBRA
2182	CURRENT YRS GROWTH	3130	mg/kg	C		RCBRA
2183	CURRENT YRS GROWTH	762	mg/kg	C		RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
2184	Calcium	7440-70-2	RCBRA 116-DR-1&2	D/H	UPLAND	574007.817	152246.748
2185	Calcium	7440-70-2	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
2186	Calcium	7440-70-2	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
2187	Calcium	7440-70-2	RCBRA 116-N-3	N	UPLAND	571995.702	149793.039
2188	Calcium	7440-70-2	RCBRA 1607-D2:1	D/H	UPLAND	573823.924	152260.319
2189	Calcium	7440-70-2	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
2190	Calcium	7440-70-2	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
2191	Calcium	7440-70-2	RCBRA 2a Rip	BC	RIPARIAN	564618.501	145284.526
2192	Calcium	7440-70-2	RCBRA 2c Rip	K	RIPARIAN	567598.2	146210.159
2193	Calcium	7440-70-2	RCBRA 2f Rip	D/H	RIPARIAN	576222.844	154297.511
2194	Calcium	7440-70-2	RCBRA 2j Rip	IU2/IU6	RIPARIAN	579360.971	150092.048
2195	Calcium	7440-70-2	RCBRA 2l Rip	IU2/IU6	RIPARIAN	582341.212	146120.069
2196	Calcium	7440-70-2	RCBRA 300-49	300	UPLAND	594318.994	116830.934
2197	Calcium	7440-70-2	RCBRA 3b Rip	IU2/IU6	RIPARIAN	584961.205	141035.835
2198	Calcium	7440-70-2	RCBRA 4a Rip	IU2/IU6	RIPARIAN	589347.5	137480.985
2199	Calcium	7440-70-2	RCBRA 5c Rip	300	RIPARIAN	594509.985	124869.182
2200	Calcium	7440-70-2	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
2201	Calcium	7440-70-2	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
2202	Calcium	7440-70-2	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
2203	Calcium	7440-70-2	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
2204	Calcium	7440-70-2	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
2205	Calcium	7440-70-2	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
2206	Calcium	7440-70-2	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
2207	Calcium	7440-70-2	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
2208	Calcium	7440-70-2	RCBRA 600-181	IU2/IU6	UPLAND	578303.83	147316.698
2209	Calcium	7440-70-2	RCBRA 600-204	IU2/IU6	UPLAND	580128.485	144762.219
2210	Calcium	7440-70-2	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
2211	Calcium	7440-70-2	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
2212	Calcium	7440-70-2	RCBRA 600-23	IU2/IU6	UPLAND	585523.593	130481.377
2213	Calcium	7440-70-2	RCBRA 618-4	300	UPLAND	593954.946	117064.473
2214	Calcium	7440-70-2	RCBRA 628-1	IU2/IU6	UPLAND	577797.524	148745.681
2215	Calcium	7440-70-2	RCBRA Bev Ref 1 Rip	Outside decision areas	RIPARIAN	542428.846	167701.261
2216	Calcium	7440-70-2	RCBRA Bev Ref 2 Rip	Outside decision areas	RIPARIAN	541493.988	167808.357
2217	Calcium	7440-70-2	RCBRA JA JONES	300	UPLAND	593874.58	120013.908
2218	Calcium	7440-70-2	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
2219	Calcium	7440-70-2	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
2220	Calcium	7440-70-2	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
2221	Calcium	7440-70-2	RCBRA Pit 18	IU2/IU6	UPLAND	580697.058	145311.464
2222	Calcium	7440-70-2	RCBRA Pit 23	IU2/IU6	UPLAND	572381.012	144874.157

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
2184	5/19/2006	J11X56	SOIL and BIOTA	MIS	5650	mg/kg	PLANT
2185	5/16/2006	J11X48	SOIL and BIOTA	MIS	3970	mg/kg	PLANT
2186	5/16/2006	J11X48	SOIL and BIOTA	MIS-phyt	3990	mg/kg	PLANT
2187	5/19/2006	J11X46	SOIL and BIOTA	MIS	7410	mg/kg	PLANT
2188	5/22/2006	J11X58	SOIL and BIOTA	MIS	7420	mg/kg	PLANT
2189	5/12/2006	J11X44	SOIL and BIOTA	MIS	10400	mg/kg	PLANT
2190	5/12/2006	J11X44	SOIL and BIOTA	MIS-phyt	10000	mg/kg	PLANT
2191	5/23/2007	J15298	SOIL and BIOTA	MIS	3240	mg/kg	PLANT
2192	5/21/2007	J152B8	SOIL and BIOTA	MIS	4460	mg/kg	PLANT
2193	5/7/2007	J15295	SOIL and BIOTA	MIS	4250	mg/kg	PLANT
2194	5/21/2007	J15296	SOIL and BIOTA	MIS	4960	mg/kg	PLANT
2195	5/24/2007	J152B0	SOIL and BIOTA	MIS	3930	mg/kg	PLANT
2196	4/26/2006	J11X52	SOIL and BIOTA	MIS	4480	mg/kg	PLANT
2197	5/23/2007	J152B2	SOIL and BIOTA	MIS	4260	mg/kg	PLANT
2198	5/24/2007	J152B6	SOIL and BIOTA	MIS	4890	mg/kg	PLANT
2199	5/24/2007	J152B4	SOIL and BIOTA	MIS	3580	mg/kg	PLANT
2200	5/12/2006	J11X84	SOIL and BIOTA	MIS	3310	mg/kg	PLANT
2201	5/12/2006	J11X84	SOIL and BIOTA	MIS-phyt	4730	mg/kg	PLANT
2202	5/12/2006	J11X77	SOIL and BIOTA	MIS	3520	mg/kg	PLANT
2203	5/12/2006	J11X77	SOIL and BIOTA	MIS-phyt	4010	mg/kg	PLANT
2204	5/16/2006	J11X79	SOIL and BIOTA	MIS	5190	mg/kg	PLANT
2205	5/16/2006	J11X79	SOIL and BIOTA	MIS-phyt	5960	mg/kg	PLANT
2206	5/16/2006	J11X90	SOIL and BIOTA	MIS	3700	mg/kg	PLANT
2207	5/16/2006	J11X90	SOIL and BIOTA	MIS-phyt	4210	mg/kg	PLANT
2208	5/18/2006	J11X86	SOIL and BIOTA	MIS	3320	mg/kg	PLANT
2209	5/18/2006	J11X81	SOIL and BIOTA	MIS	3510	mg/kg	PLANT
2210	5/15/2006	J11X82	SOIL and BIOTA	MIS	5270	mg/kg	PLANT
2211	5/15/2006	J11X82	SOIL and BIOTA	MIS-phyt	4470	mg/kg	PLANT
2212	5/12/2006	J11X72	SOIL and BIOTA	MIS	5750	mg/kg	PLANT
2213	5/12/2006	J11X51	SOIL and BIOTA	MIS	4950	mg/kg	PLANT
2214	5/12/2006	J11X89	SOIL and BIOTA	MIS	7540	mg/kg	PLANT
2215	5/10/2007	J15289	SOIL and BIOTA	MIS	3790	mg/kg	PLANT
2216	5/8/2007	J15291	SOIL and BIOTA	MIS	4430	mg/kg	PLANT
2217	5/10/2006	J11X74	SOIL and BIOTA	MIS	4480	mg/kg	PLANT
2218	5/18/2006	J11X98	SOIL and BIOTA	MIS	8060	mg/kg	PLANT
2219	5/18/2006	J11X98	SOIL and BIOTA	MIS-phyt	9180	mg/kg	PLANT
2220	5/15/2006	J11X66	SOIL and BIOTA	MIS	8620	mg/kg	PLANT
2221	5/18/2006	J11X69	SOIL and BIOTA	MIS	5180	mg/kg	PLANT
2222	5/22/2006	J11X63	SOIL and BIOTA	MIS	5020	mg/kg	PLANT

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
2184	CURRENT YRS GROWTH	5060	mg/kg	C		RCBRA
2185	CURRENT YRS GROWTH	1840	mg/kg	C		RCBRA
2186	CURRENT YRS GROWTH	1840	mg/kg	C		RCBRA
2187	CURRENT YRS GROWTH	2740	mg/kg	C		RCBRA
2188	CURRENT YRS GROWTH	2770	mg/kg	C		RCBRA
2189	CURRENT YRS GROWTH	795	mg/kg			RCBRA
2190	CURRENT YRS GROWTH	795	mg/kg			RCBRA
2191	CURRENT YRS GROWTH	261	mg/kg	C		RCBRA
2192	CURRENT YRS GROWTH	722	mg/kg	C		RCBRA
2193	CURRENT YRS GROWTH	666	mg/kg			RCBRA
2194	CURRENT YRS GROWTH	512	mg/kg	C		RCBRA
2195	CURRENT YRS GROWTH	322	mg/kg	C		RCBRA
2196	CURRENT YRS GROWTH	3570	mg/kg			RCBRA
2197	CURRENT YRS GROWTH	373	mg/kg	C		RCBRA
2198	CURRENT YRS GROWTH	586	mg/kg	C		RCBRA
2199	CURRENT YRS GROWTH	780	mg/kg	C		RCBRA
2200	CURRENT YRS GROWTH	1020	mg/kg	C		RCBRA
2201	CURRENT YRS GROWTH	1020	mg/kg	C		RCBRA
2202	CURRENT YRS GROWTH	730	mg/kg	C		RCBRA
2203	CURRENT YRS GROWTH	730	mg/kg	C		RCBRA
2204	CURRENT YRS GROWTH	2660	mg/kg	C		RCBRA
2205	CURRENT YRS GROWTH	2660	mg/kg	C		RCBRA
2206	CURRENT YRS GROWTH	3220	mg/kg	C		RCBRA
2207	CURRENT YRS GROWTH	3220	mg/kg	C		RCBRA
2208	CURRENT YRS GROWTH	1830	mg/kg	C		RCBRA
2209	CURRENT YRS GROWTH	2720	mg/kg	C		RCBRA
2210	CURRENT YRS GROWTH	2840	mg/kg	C		RCBRA
2211	CURRENT YRS GROWTH	2840	mg/kg	C		RCBRA
2212	CURRENT YRS GROWTH	2280	mg/kg	C		RCBRA
2213	CURRENT YRS GROWTH	756	mg/kg	C		RCBRA
2214	CURRENT YRS GROWTH	866	mg/kg	C		RCBRA
2215	CURRENT YRS GROWTH	235	mg/kg			RCBRA
2216	CURRENT YRS GROWTH	474	mg/kg			RCBRA
2217	CURRENT YRS GROWTH	1260	mg/kg	C		RCBRA
2218	CURRENT YRS GROWTH	2700	mg/kg			RCBRA
2219	CURRENT YRS GROWTH	2700	mg/kg			RCBRA
2220	CURRENT YRS GROWTH	2670	mg/kg	C		RCBRA
2221	CURRENT YRS GROWTH	4170	mg/kg	C		RCBRA
2222	CURRENT YRS GROWTH	2310	mg/kg	C		RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
2223	Calcium	7440-70-2	RCBRA Pit 24	BC	UPLAND	563395.814	145119.007
2224	Calcium	7440-70-2	RCBRA Pit 9	300	UPLAND	592807.103	120587.7
2225	Calcium	7440-70-2	RCBRA R Ref 11	Outside decision areas	RIPARIAN	559400.735	146458.486
2226	Calcium	7440-70-2	RCBRA R Ref 12	IU2/IU6	RIPARIAN	559201.908	145747.542
2227	Calcium	7440-70-2	RCBRA R Ref 13	Outside decision areas	RIPARIAN	558572.809	145345.115
2228	Calcium	7440-70-2	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
2229	Calcium	7440-70-2	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
2230	Calcium	7440-70-2	RCBRA R Ref 16	Outside decision areas	RIPARIAN	557650.029	144826.748
2231	Calcium	7440-70-2	RCBRA Rip 1	D/H	RIPARIAN	577251.869	153659.195
2232	Calcium	7440-70-2	RCBRA Rip 10	D/H	RIPARIAN	573987.873	153082.19
2233	Calcium	7440-70-2	RCBRA Rip 2	D/H	RIPARIAN	573603.219	152471.6
2234	Calcium	7440-70-2	RCBRA Rip 3	D/H	RIPARIAN	572639.65	151677.812
2235	Calcium	7440-70-2	RCBRA Rip 4	N	RIPARIAN	570558.596	148981.547
2236	Calcium	7440-70-2	RCBRA Rip 5	K	RIPARIAN	569141.025	147521.561
2237	Calcium	7440-70-2	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
2238	Calcium	7440-70-2	RCBRA Rip 7	IU2/IU6	RIPARIAN	581326.914	147825.17
2239	Calcium	7440-70-2	RCBRA Rip 8	D/H	RIPARIAN	578698.584	152233.645
2240	Calcium	7440-70-2	RCBRA Rip 9	D/H	RIPARIAN	578153.643	152801.452
2241	Calcium	7440-70-2	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
2242	Calcium	7440-70-2	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
2243	Calcium	7440-70-2	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
2244	Calcium	7440-70-2	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
2245	Calcium	7440-70-2	RCBRA Yak Rdg 2	Outside decision areas	UPLAND	559031.557	135576.407
2246	Calcium	7440-70-2	RCBRA 100-D-48	D/H	UPLAND	573841.527	151914.538
2247	Calcium	7440-70-2	RCBRA 100-D-49	D/H	UPLAND	573938.06	151944.123
2248	Calcium	7440-70-2	RCBRA 100-F-2	IU2/IU6	UPLAND	579728.068	147001.117
2249	Calcium	7440-70-2	RCBRA 116-DR-1&2	D/H	UPLAND	574007.817	152246.748
2250	Calcium	7440-70-2	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
2251	Calcium	7440-70-2	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
2252	Calcium	7440-70-2	RCBRA 116-N-3	N	UPLAND	571995.702	149793.039
2253	Calcium	7440-70-2	RCBRA 1607-D2:1	D/H	UPLAND	573823.924	152260.319
2254	Calcium	7440-70-2	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
2255	Calcium	7440-70-2	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
2256	Calcium	7440-70-2	RCBRA 300-49	300	UPLAND	594318.994	116830.934
2257	Calcium	7440-70-2	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
2258	Calcium	7440-70-2	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
2259	Calcium	7440-70-2	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
2260	Calcium	7440-70-2	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
2261	Calcium	7440-70-2	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
2223	5/19/2006	J11X70	SOIL and BIOTA	MIS	4230	mg/kg	PLANT
2224	5/12/2006	J11X64	SOIL and BIOTA	MIS	6380	mg/kg	PLANT
2225	5/9/2006	J11WY8	SOIL and BIOTA	MIS	4150	mg/kg	PLANT
2226	5/9/2006	J11WX0	SOIL and BIOTA	MIS	3980	mg/kg	PLANT
2227	8/10/2006	J11WY9	SOIL and BIOTA	MIS	5640	mg/kg	PLANT
2228	5/9/2006	J11X02	SOIL and BIOTA	MIS	5225	mg/kg	PLANT
2229	5/8/2007	J15293	SOIL and BIOTA	MIS	5225	mg/kg	PLANT
2230	5/9/2006	J11X04	SOIL and BIOTA	MIS	4600	mg/kg	PLANT
2231	5/16/2006	J11WX1	SOIL and BIOTA	MIS	4980	mg/kg	PLANT
2232	5/9/2006	J11WY6	SOIL and BIOTA	MIS	3590	mg/kg	PLANT
2233	5/19/2006	J11WX4	SOIL and BIOTA	MIS	4000	mg/kg	PLANT
2234	5/9/2006	J11WX6	SOIL and BIOTA	MIS	4180	mg/kg	PLANT
2235	5/9/2006	J11WW6	SOIL and BIOTA	MIS	4500	mg/kg	PLANT
2236	5/9/2006	J11WW8	SOIL and BIOTA	MIS	5100	mg/kg	PLANT
2237	5/22/2006	J11XP0	SOIL and BIOTA	MIS	4660	mg/kg	PLANT
2238	5/9/2006	J11WY0	SOIL and BIOTA	MIS	4290	mg/kg	PLANT
2239	5/16/2006	J11WY2	SOIL and BIOTA	MIS	4040	mg/kg	PLANT
2240	5/16/2006	J11WY4	SOIL and BIOTA	MIS	4190	mg/kg	PLANT
2241	5/18/2006	J11XB0	SOIL and BIOTA	MIS	4720	mg/kg	PLANT
2242	5/18/2006	J11XB0	SOIL and BIOTA	MIS-phyt	5110	mg/kg	PLANT
2243	5/15/2006	J11X96	SOIL and BIOTA	MIS	3020	mg/kg	PLANT
2244	5/15/2006	J11X96	SOIL and BIOTA	MIS-phyt	3460	mg/kg	PLANT
2245	5/16/2006	J11X94	SOIL and BIOTA	MIS	6110	mg/kg	PLANT
2246	5/18/2006	J11X43	SOIL and BIOTA	MIS	6850	mg/kg	PLANT
2247	5/18/2006	J11X55	SOIL and BIOTA	MIS	6110	mg/kg	PLANT
2248	5/10/2006	J11X60	SOIL and BIOTA	MIS	7070	mg/kg	PLANT
2249	5/19/2006	J11X57	SOIL and BIOTA	MIS	5650	mg/kg	PLANT
2250	5/16/2006	J11X49	SOIL and BIOTA	MIS	3970	mg/kg	PLANT
2251	5/16/2006	J11X49	SOIL and BIOTA	MIS-phyt	3990	mg/kg	PLANT
2252	5/19/2006	J11X47	SOIL and BIOTA	MIS	7410	mg/kg	PLANT
2253	5/22/2006	J11X59	SOIL and BIOTA	MIS	7420	mg/kg	PLANT
2254	5/12/2006	J11X45	SOIL and BIOTA	MIS	10400	mg/kg	PLANT
2255	5/12/2006	J11X45	SOIL and BIOTA	MIS-phyt	10000	mg/kg	PLANT
2256	4/26/2006	J11X53	SOIL and BIOTA	MIS	4480	mg/kg	PLANT
2257	5/12/2006	J11X85	SOIL and BIOTA	MIS	3310	mg/kg	PLANT
2258	5/12/2006	J11X85	SOIL and BIOTA	MIS-phyt	4730	mg/kg	PLANT
2259	5/12/2006	J11X76	SOIL and BIOTA	MIS	3520	mg/kg	PLANT
2260	5/12/2006	J11X76	SOIL and BIOTA	MIS-phyt	4010	mg/kg	PLANT
2261	5/16/2006	J11X78	SOIL and BIOTA	MIS	5190	mg/kg	PLANT

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
2223	CURRENT YRS GROWTH	1820	mg/kg	C		RCBRA
2224	CURRENT YRS GROWTH	1030	mg/kg	C		RCBRA
2225	CURRENT YRS GROWTH	839	mg/kg			RCBRA
2226	CURRENT YRS GROWTH	1010	mg/kg			RCBRA
2227	CURRENT YRS GROWTH	1500	mg/kg		J	RCBRA
2228	CURRENT YRS GROWTH	634	mg/kg			RCBRA
2229	CURRENT YRS GROWTH	500	mg/kg			RCBRA
2230	CURRENT YRS GROWTH	669	mg/kg			RCBRA
2231	CURRENT YRS GROWTH	6420	mg/kg	C		RCBRA
2232	CURRENT YRS GROWTH	859	mg/kg			RCBRA
2233	CURRENT YRS GROWTH	4830	mg/kg			RCBRA
2234	CURRENT YRS GROWTH	1060	mg/kg			RCBRA
2235	CURRENT YRS GROWTH	480	mg/kg			RCBRA
2236	CURRENT YRS GROWTH	853	mg/kg			RCBRA
2237	CURRENT YRS GROWTH	6070	mg/kg			RCBRA
2238	CURRENT YRS GROWTH	983	mg/kg			RCBRA
2239	CURRENT YRS GROWTH	2040	mg/kg	C		RCBRA
2240	CURRENT YRS GROWTH	2540	mg/kg	C		RCBRA
2241	CURRENT YRS GROWTH	2460	mg/kg			RCBRA
2242	CURRENT YRS GROWTH	2460	mg/kg			RCBRA
2243	CURRENT YRS GROWTH	2250	mg/kg	C		RCBRA
2244	CURRENT YRS GROWTH	2250	mg/kg	C		RCBRA
2245	CURRENT YRS GROWTH	6300	mg/kg	C		RCBRA
2246	CURRENT YRS GROWTH	6940	mg/kg	C		RCBRA
2247	CURRENT YRS GROWTH	5620	mg/kg	C		RCBRA
2248	CURRENT YRS GROWTH	3440	mg/kg	C		RCBRA
2249	CURRENT YRS GROWTH	6320	mg/kg	C		RCBRA
2250	CURRENT YRS GROWTH	19400	mg/kg	C		RCBRA
2251	CURRENT YRS GROWTH	19400	mg/kg	C		RCBRA
2252	CURRENT YRS GROWTH	17900	mg/kg	C		RCBRA
2253	CURRENT YRS GROWTH	7980	mg/kg	C		RCBRA
2254	CURRENT YRS GROWTH	2530	mg/kg			RCBRA
2255	CURRENT YRS GROWTH	2530	mg/kg			RCBRA
2256	CURRENT YRS GROWTH	11000	mg/kg			RCBRA
2257	CURRENT YRS GROWTH	4500	mg/kg	C		RCBRA
2258	CURRENT YRS GROWTH	4500	mg/kg	C		RCBRA
2259	CURRENT YRS GROWTH	4310	mg/kg	C		RCBRA
2260	CURRENT YRS GROWTH	4310	mg/kg	C		RCBRA
2261	CURRENT YRS GROWTH	6830	mg/kg	C		RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
2262	Calcium	7440-70-2	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
2263	Calcium	7440-70-2	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
2264	Calcium	7440-70-2	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
2265	Calcium	7440-70-2	RCBRA 600-181	IU2/IU6	UPLAND	578303.83	147316.698
2266	Calcium	7440-70-2	RCBRA 600-204	IU2/IU6	UPLAND	580128.485	144762.219
2267	Calcium	7440-70-2	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
2268	Calcium	7440-70-2	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
2269	Calcium	7440-70-2	RCBRA 600-23	IU2/IU6	UPLAND	585523.593	130481.377
2270	Calcium	7440-70-2	RCBRA 618-4	300	UPLAND	593954.946	117064.473
2271	Calcium	7440-70-2	RCBRA 628-1	IU2/IU6	UPLAND	577797.524	148745.681
2272	Calcium	7440-70-2	RCBRA JA JONES	300	UPLAND	593874.58	120013.908
2273	Calcium	7440-70-2	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
2274	Calcium	7440-70-2	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
2275	Calcium	7440-70-2	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
2276	Calcium	7440-70-2	RCBRA Pit 18	IU2/IU6	UPLAND	580697.058	145311.464
2277	Calcium	7440-70-2	RCBRA Pit 23	IU2/IU6	UPLAND	572381.012	144874.157
2278	Calcium	7440-70-2	RCBRA Pit 24	BC	UPLAND	563395.814	145119.007
2279	Calcium	7440-70-2	RCBRA Pit 9	300	UPLAND	592807.103	120587.7
2280	Calcium	7440-70-2	RCBRA R Ref 11	Outside decision areas	RIPARIAN	559400.735	146458.486
2281	Calcium	7440-70-2	RCBRA R Ref 12	IU2/IU6	RIPARIAN	559201.908	145747.542
2282	Calcium	7440-70-2	RCBRA R Ref 13	Outside decision areas	RIPARIAN	558572.809	145345.115
2283	Calcium	7440-70-2	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
2284	Calcium	7440-70-2	RCBRA R Ref 16	Outside decision areas	RIPARIAN	557650.029	144826.748
2285	Calcium	7440-70-2	RCBRA Rip 1	D/H	RIPARIAN	577251.869	153659.195
2286	Calcium	7440-70-2	RCBRA Rip 10	D/H	RIPARIAN	573987.873	153082.19
2287	Calcium	7440-70-2	RCBRA Rip 2	D/H	RIPARIAN	573603.219	152471.6
2288	Calcium	7440-70-2	RCBRA Rip 3	D/H	RIPARIAN	572639.65	151677.812
2289	Calcium	7440-70-2	RCBRA Rip 4	N	RIPARIAN	570558.596	148981.547
2290	Calcium	7440-70-2	RCBRA Rip 5	K	RIPARIAN	569141.025	147521.561
2291	Calcium	7440-70-2	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
2292	Calcium	7440-70-2	RCBRA Rip 7	IU2/IU6	RIPARIAN	581326.914	147825.17
2293	Calcium	7440-70-2	RCBRA Rip 8	D/H	RIPARIAN	578698.584	152233.645
2294	Calcium	7440-70-2	RCBRA Rip 9	D/H	RIPARIAN	578153.643	152801.452
2295	Calcium	7440-70-2	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
2296	Calcium	7440-70-2	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
2297	Calcium	7440-70-2	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
2298	Calcium	7440-70-2	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
2299	Calcium	7440-70-2	RCBRA Yak Rdg 2	Outside decision areas	UPLAND	559031.557	135576.407
2300	Calcium	7440-70-2	RCBRA 2a Rip	BC	RIPARIAN	564618.501	145284.526

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
2262	5/16/2006	J11X78	SOIL and BIOTA	MIS-phyt	5960	mg/kg	PLANT
2263	5/16/2006	J11X91	SOIL and BIOTA	MIS	3700	mg/kg	PLANT
2264	5/16/2006	J11X91	SOIL and BIOTA	MIS-phyt	4210	mg/kg	PLANT
2265	5/18/2006	J11X87	SOIL and BIOTA	MIS	3320	mg/kg	PLANT
2266	5/18/2006	J11X80	SOIL and BIOTA	MIS	3510	mg/kg	PLANT
2267	5/15/2006	J11X83	SOIL and BIOTA	MIS	5270	mg/kg	PLANT
2268	5/15/2006	J11X83	SOIL and BIOTA	MIS-phyt	4470	mg/kg	PLANT
2269	5/12/2006	J11X73	SOIL and BIOTA	MIS	5750	mg/kg	PLANT
2270	5/12/2006	J11X50	SOIL and BIOTA	MIS	4950	mg/kg	PLANT
2271	5/12/2006	J11X88	SOIL and BIOTA	MIS	7540	mg/kg	PLANT
2272	5/10/2006	J11X75	SOIL and BIOTA	MIS	4480	mg/kg	PLANT
2273	5/18/2006	J11X99	SOIL and BIOTA	MIS	8060	mg/kg	PLANT
2274	5/18/2006	J11X99	SOIL and BIOTA	MIS-phyt	9180	mg/kg	PLANT
2275	5/15/2006	J11X67	SOIL and BIOTA	MIS	8620	mg/kg	PLANT
2276	5/18/2006	J11X68	SOIL and BIOTA	MIS	5180	mg/kg	PLANT
2277	5/22/2006	J11X62	SOIL and BIOTA	MIS	5020	mg/kg	PLANT
2278	5/19/2006	J11X71	SOIL and BIOTA	MIS	4230	mg/kg	PLANT
2279	5/12/2006	J11X65	SOIL and BIOTA	MIS	6380	mg/kg	PLANT
2280	5/9/2006	J11WY7	SOIL and BIOTA	MIS	4150	mg/kg	PLANT
2281	5/9/2006	J11WW9	SOIL and BIOTA	MIS	3980	mg/kg	PLANT
2282	8/10/2006	J11X00	SOIL and BIOTA	MIS	5640	mg/kg	PLANT
2283	5/9/2006	J11X01	SOIL and BIOTA	MIS	5225	mg/kg	PLANT
2284	5/9/2006	J11X03	SOIL and BIOTA	MIS	4600	mg/kg	PLANT
2285	5/16/2006	J11WX2	SOIL and BIOTA	MIS	4980	mg/kg	PLANT
2286	5/9/2006	J11WY5	SOIL and BIOTA	MIS	3590	mg/kg	PLANT
2287	5/19/2006	J11WX3	SOIL and BIOTA	MIS	4000	mg/kg	PLANT
2288	5/9/2006	J11WX5	SOIL and BIOTA	MIS	4180	mg/kg	PLANT
2289	5/9/2006	J11WW5	SOIL and BIOTA	MIS	4500	mg/kg	PLANT
2290	5/9/2006	J11WW7	SOIL and BIOTA	MIS	5100	mg/kg	PLANT
2291	5/22/2006	J11WX7	SOIL and BIOTA	MIS	4660	mg/kg	PLANT
2292	5/9/2006	J11WX9	SOIL and BIOTA	MIS	4290	mg/kg	PLANT
2293	5/16/2006	J11WY1	SOIL and BIOTA	MIS	4040	mg/kg	PLANT
2294	5/16/2006	J11WY3	SOIL and BIOTA	MIS	4190	mg/kg	PLANT
2295	5/18/2006	J11XB1	SOIL and BIOTA	MIS	4720	mg/kg	PLANT
2296	5/18/2006	J11XB1	SOIL and BIOTA	MIS-phyt	5110	mg/kg	PLANT
2297	5/15/2006	J11X97	SOIL and BIOTA	MIS	3020	mg/kg	PLANT
2298	5/15/2006	J11X97	SOIL and BIOTA	MIS-phyt	3460	mg/kg	PLANT
2299	5/16/2006	J11X95	SOIL and BIOTA	MIS	6110	mg/kg	PLANT
2300	5/23/2007	J15299	SOIL and BIOTA	MIS	3240	mg/kg	PLANT

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
2262	CURRENT YRS GROWTH	6830	mg/kg	C		RCBRA
2263	CURRENT YRS GROWTH	6850	mg/kg	C		RCBRA
2264	CURRENT YRS GROWTH	6850	mg/kg	C		RCBRA
2265	CURRENT YRS GROWTH	20500	mg/kg	C		RCBRA
2266	CURRENT YRS GROWTH	6390	mg/kg	C		RCBRA
2267	CURRENT YRS GROWTH	13000	mg/kg	C		RCBRA
2268	CURRENT YRS GROWTH	13000	mg/kg	C		RCBRA
2269	CURRENT YRS GROWTH	1700	mg/kg	C		RCBRA
2270	CURRENT YRS GROWTH	2950	mg/kg	C		RCBRA
2271	CURRENT YRS GROWTH	2160	mg/kg	C		RCBRA
2272	CURRENT YRS GROWTH	2520	mg/kg	C		RCBRA
2273	CURRENT YRS GROWTH	7560	mg/kg			RCBRA
2274	CURRENT YRS GROWTH	7560	mg/kg			RCBRA
2275	CURRENT YRS GROWTH	6270	mg/kg	C		RCBRA
2276	CURRENT YRS GROWTH	5830	mg/kg	C		RCBRA
2277	CURRENT YRS GROWTH	6580	mg/kg	C		RCBRA
2278	CURRENT YRS GROWTH	6280	mg/kg	C		RCBRA
2279	CURRENT YRS GROWTH	1730	mg/kg	C		RCBRA
2280	CURRENT YRS GROWTH	2670	mg/kg			RCBRA
2281	CURRENT YRS GROWTH	2280	mg/kg			RCBRA
2282	CURRENT YRS GROWTH	8170	mg/kg		J	RCBRA
2283	CURRENT YRS GROWTH	2240	mg/kg			RCBRA
2284	CURRENT YRS GROWTH	3030	mg/kg			RCBRA
2285	CURRENT YRS GROWTH	5840	mg/kg	C		RCBRA
2286	CURRENT YRS GROWTH	2100	mg/kg			RCBRA
2287	CURRENT YRS GROWTH	13200	mg/kg			RCBRA
2288	CURRENT YRS GROWTH	1810	mg/kg			RCBRA
2289	CURRENT YRS GROWTH	3020	mg/kg			RCBRA
2290	CURRENT YRS GROWTH	3220	mg/kg			RCBRA
2291	CURRENT YRS GROWTH	11200	mg/kg			RCBRA
2292	CURRENT YRS GROWTH	1610	mg/kg			RCBRA
2293	CURRENT YRS GROWTH	6250	mg/kg	C		RCBRA
2294	CURRENT YRS GROWTH	9910	mg/kg	C		RCBRA
2295	CURRENT YRS GROWTH	9350	mg/kg			RCBRA
2296	CURRENT YRS GROWTH	9350	mg/kg			RCBRA
2297	CURRENT YRS GROWTH	9900	mg/kg	C		RCBRA
2298	CURRENT YRS GROWTH	9900	mg/kg	C		RCBRA
2299	CURRENT YRS GROWTH	7960	mg/kg	C		RCBRA
2300	CURRENT YRS GROWTH	1800	mg/kg	C		RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
2301	Calcium	7440-70-2	RCBRA 2c Rip	K	RIPARIAN	567598.2	146210.159
2302	Calcium	7440-70-2	RCBRA 2f Rip	D/H	RIPARIAN	576222.844	154297.511
2303	Calcium	7440-70-2	RCBRA 2j Rip	IU2/IU6	RIPARIAN	579360.971	150092.048
2304	Calcium	7440-70-2	RCBRA 2l Rip	IU2/IU6	RIPARIAN	582341.212	146120.069
2305	Calcium	7440-70-2	RCBRA 3b Rip	IU2/IU6	RIPARIAN	584961.205	141035.835
2306	Calcium	7440-70-2	RCBRA 4a Rip	IU2/IU6	RIPARIAN	589347.5	137480.985
2307	Calcium	7440-70-2	RCBRA 5c Rip	300	RIPARIAN	594509.985	124869.182
2308	Calcium	7440-70-2	RCBRA Bev Ref 1 Rip	Outside decision areas	RIPARIAN	542428.846	167701.261
2309	Calcium	7440-70-2	RCBRA Bev Ref 2 Rip	Outside decision areas	RIPARIAN	541493.988	167808.357
2310	Calcium	7440-70-2	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
2311	Calculated Total Uranium	calc_tot_U	RCBRA 2l Rip	IU2/IU6	RIPARIAN	582341.212	146120.069
2312	Calculated Total Uranium	calc_tot_U	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
2313	Calculated Total Uranium	calc_tot_U	BROADMOOR, PASCO	Outside decision areas	UPLAND	598174.6351	105885.7264
2314	Calculated Total Uranium	calc_tot_U	BYERS LANDING	Outside decision areas	UPLAND	596516.284	114702.974
2315	Calculated Total Uranium	calc_tot_U	BYERS LANDING	Outside decision areas	UPLAND	596516.284	114702.974
2316	Calculated Total Uranium	calc_tot_U	BYERS LANDING	Outside decision areas	UPLAND	596516.284	114702.974
2317	Calculated Total Uranium	calc_tot_U	E OF 200 W GATE	Outside decision areas	UPLAND	568454.589	136067.85
2318	Calculated Total Uranium	calc_tot_U	FINLEY RR TRACK	Outside decision areas	UPLAND	614935.848	90642.51583
2319	Calculated Total Uranium	calc_tot_U	KENNEWICK	Outside decision areas	UPLAND	604219.7672	97327.74495
2320	Calculated Total Uranium	calc_tot_U	MESA	Outside decision areas	UPLAND	613658.9896	125036.8087
2321	Calculated Total Uranium	calc_tot_U	PASCO	Outside decision areas	UPLAND	605872.96	102133.5171
2322	Calculated Total Uranium	calc_tot_U	RINGOLD AREA	Outside decision areas	UPLAND	595854.333	129775.653
2323	Calculated Total Uranium	calc_tot_U	RINGOLD AREA	Outside decision areas	UPLAND	595854.333	129775.653
2324	Calculated Total Uranium	calc_tot_U	RINGOLD AREA	Outside decision areas	UPLAND	595854.333	129775.653
2325	Calculated Total Uranium	calc_tot_U	RIVERSHORE ROAD	IU2/IU6	UPLAND	563789.959	139793.869
2326	Calculated Total Uranium	calc_tot_U	RIVRVIEW-HARRIS	Outside decision areas	UPLAND	597112.528	104439.135
2327	Calculated Total Uranium	calc_tot_U	RIVRVIEW-HARRIS	Outside decision areas	UPLAND	597112.528	104439.135
2328	Calculated Total Uranium	calc_tot_U	SAGEMOOR FARM	Outside decision areas	UPLAND	596362.99	116036.357
2329	Calculated Total Uranium	calc_tot_U	SAGEMOOR FARM	Outside decision areas	UPLAND	596362.99	116036.357
2330	Calculated Total Uranium	calc_tot_U	SAGEMOOR FARM	Outside decision areas	UPLAND	596362.99	116036.357
2331	Calculated Total Uranium	calc_tot_U	YAKIMA DELTA	Outside decision areas	UPLAND	595639.1166	103220.1046
2332	Cadmium	7440-43-9	RCBRA Bev Ref 1 Rip	Outside decision areas	RIPARIAN	542428.846	167701.261
2333	Cadmium	7440-43-9	RCBRA R Ref 12	IU2/IU6	RIPARIAN	559201.908	145747.542
2334	Cadmium	7440-43-9	RCBRA Rip 8	D/H	RIPARIAN	578698.584	152233.645
2335	Cadmium	7440-43-9	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
2336	Cadmium	7440-43-9	RCBRA Rip 1	D/H	RIPARIAN	577251.869	153659.195
2337	Cadmium	7440-43-9	RCBRA Rip 8	D/H	RIPARIAN	578698.584	152233.645
2338	Cadmium	7440-43-9	VERNITA BRIDGE 1	Outside decision areas	UPLAND	558823	145536
2339	Cadmium	7440-43-9	VERNITA BRIDGE 1	Outside decision areas	UPLAND	558823	145536

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
2301	5/21/2007	J152B9	SOIL and BIOTA	MIS	4460	mg/kg	PLANT
2302	5/7/2007	J15294	SOIL and BIOTA	MIS	4250	mg/kg	PLANT
2303	5/21/2007	J15297	SOIL and BIOTA	MIS	4960	mg/kg	PLANT
2304	5/24/2007	J152B1	SOIL and BIOTA	MIS	3930	mg/kg	PLANT
2305	5/23/2007	J152B3	SOIL and BIOTA	MIS	4260	mg/kg	PLANT
2306	5/24/2007	J152B7	SOIL and BIOTA	MIS	4890	mg/kg	PLANT
2307	5/24/2007	J152B5	SOIL and BIOTA	MIS	3580	mg/kg	PLANT
2308	5/10/2007	J15288	SOIL and BIOTA	MIS	3790	mg/kg	PLANT
2309	5/8/2007	J15290	SOIL and BIOTA	MIS	4430	mg/kg	PLANT
2310	5/8/2007	J15292	SOIL and BIOTA	MIS	5225	mg/kg	PLANT
2311	5/24/2007	J152B0	SOIL and BIOTA	MIS	0.698197746	mg/kg	PLANT
2312	5/16/2006	J11X79	SOIL and BIOTA	MIS	0.549827513	mg/kg	PLANT
2313	8/16/2000	B103T3	SOIL and BIOTA	Discrete	0.399166839	mg/kg	PLANT
2314	6/8/2001	B11JF5	SOIL and BIOTA	Discrete	0.518909998	mg/kg	PLANT
2315	8/21/1997	S0LVP0	SOIL and BIOTA	Discrete	0.518909998	mg/kg	PLANT
2316	8/17/1994	B0BYX8	SOIL and BIOTA	Discrete	0.518909998	mg/kg	PLANT
2317	6/3/1993	E12389	SOIL and BIOTA	Discrete	0.711419525	mg/kg	PLANT
2318	8/10/2000	B103R0	SOIL and BIOTA	Discrete	0.349341591	mg/kg	PLANT
2319	8/16/2000	B103T9	SOIL and BIOTA	Discrete	0.670983607	mg/kg	PLANT
2320	8/17/2000	B103V5	SOIL and BIOTA	Discrete	0.273703961	mg/kg	PLANT
2321	8/16/2000	B103R9	SOIL and BIOTA	Discrete	0.563780846	mg/kg	PLANT
2322	6/8/2001	B11JF3	SOIL and BIOTA	Discrete	1.522788521	mg/kg	PLANT
2323	8/17/1994	B0BYX6	SOIL and BIOTA	Discrete	1.522788521	mg/kg	PLANT
2324	6/29/1993	E12406	SOIL and BIOTA	Discrete	1.522788521	mg/kg	PLANT
2325	8/21/1997	S0LVN8	SOIL and BIOTA	Discrete	0.661978635	mg/kg	PLANT
2326	8/17/1994	B0BYX9	SOIL and BIOTA	Discrete	1.452683207	mg/kg	PLANT
2327	6/11/1993	E12402	SOIL and BIOTA	Discrete	1.452683207	mg/kg	PLANT
2328	6/8/2001	B11JF4	SOIL and BIOTA	Discrete	1.947183793	mg/kg	PLANT
2329	6/14/1993	E12399	SOIL and BIOTA	Discrete	1.947183793	mg/kg	PLANT
2330	8/17/1994	B0BYX7	SOIL and BIOTA	Discrete	1.947183793	mg/kg	PLANT
2331	8/16/2000	B103T5	SOIL and BIOTA	Discrete	0.476682957	mg/kg	PLANT
2332	5/10/2007	J15289	SOIL and BIOTA	MIS	0.5	mg/kg	PLANT
2333	5/9/2006	J11WX0	SOIL and BIOTA	MIS	0.88	mg/kg	PLANT
2334	5/16/2006	J11WY2	SOIL and BIOTA	MIS	1.1	mg/kg	PLANT
2335	5/12/2006	J11X45	SOIL and BIOTA	MIS	0.248	mg/kg	PLANT
2336	5/16/2006	J11WX2	SOIL and BIOTA	MIS	2.2	mg/kg	PLANT
2337	5/16/2006	J11WY1	SOIL and BIOTA	MIS	1.1	mg/kg	PLANT
2338	8/19/2004	B1B5N5	SOIL and BIOTA	Discrete	0.9355	mg/kg	PLANT
2339	8/19/2004	B1B5N4	SOIL and BIOTA	Discrete	0.9355	mg/kg	PLANT

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
2301	CURRENT YRS GROWTH	1800	mg/kg	C		RCBRA
2302	CURRENT YRS GROWTH	2200	mg/kg			RCBRA
2303	CURRENT YRS GROWTH	2160	mg/kg	C		RCBRA
2304	CURRENT YRS GROWTH	2540	mg/kg	C		RCBRA
2305	CURRENT YRS GROWTH	2290	mg/kg	C		RCBRA
2306	CURRENT YRS GROWTH	3330	mg/kg	C		RCBRA
2307	CURRENT YRS GROWTH	1890	mg/kg	C		RCBRA
2308	CURRENT YRS GROWTH	1860	mg/kg			RCBRA
2309	CURRENT YRS GROWTH	1940	mg/kg			RCBRA
2310	CURRENT YRS GROWTH	2070	mg/kg			RCBRA
2311	CURRENT YRS GROWTH	0.984163216	mg/kg			RCBRA
2312	CURRENT YRS GROWTH	0.078640465	mg/kg			RCBRA
2313	STEM_LEAVES	0.003674207	mg/kg			PNNL
2314	STEM_LEAVES	0.007022015	mg/kg			PNNL
2315	STEM_LEAVES	0.007314382	mg/kg			PNNL
2316	STEM_LEAVES	0.008760111	mg/kg			PNNL
2317	WHOLEORG	0.00124162	mg/kg			PNNL
2318	STEM_LEAVES	0.003569612	mg/kg			PNNL
2319	STEM_LEAVES	0.003111827	mg/kg			PNNL
2320	STEM_LEAVES	0.005443546	mg/kg			PNNL
2321	STEM_LEAVES	0.005221036	mg/kg			PNNL
2322	STEM_LEAVES	0.004654378	mg/kg			PNNL
2323	STEM_LEAVES	0.013254659	mg/kg			PNNL
2324	WHOLEORG	0.002003781	mg/kg			PNNL
2325	STEM_LEAVES	0.003437781	mg/kg			PNNL
2326	STEM_LEAVES	0.002736144	mg/kg			PNNL
2327	WHOLEORG	0.002793976	mg/kg			PNNL
2328	STEM_LEAVES	0.004056632	mg/kg			PNNL
2329	WHOLEORG	0.002231861	mg/kg			PNNL
2330	STEM_LEAVES	0.003318886	mg/kg			PNNL
2331	STEM_LEAVES	0.007613438	mg/kg			PNNL
2332	CURRENT YRS GROWTH	0.03	mg/kg	C		RCBRA
2333	CURRENT YRS GROWTH	0.07	mg/kg			RCBRA
2334	CURRENT YRS GROWTH	0.36	mg/kg			RCBRA
2335	CURRENT YRS GROWTH	0.14	mg/kg			RCBRA
2336	CURRENT YRS GROWTH	1.1	mg/kg			RCBRA
2337	CURRENT YRS GROWTH	0.51	mg/kg			RCBRA
2338	SHOOTS	0.15561	mg/kg	X		PNNL
2339	SHOOTS	0.0315	mg/kg	X		PNNL

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
2340	Cadmium	7440-43-9	VERNITA BRIDGE 1	Outside decision areas	UPLAND	558823	145536
2341	Cadmium	7440-43-9	VERNITA BRIDGE 1	Outside decision areas	UPLAND	558823	145536
2342	Cadmium	7440-43-9	VERNITA BRIDGE 2	Outside decision areas	UPLAND	558844	145558
2343	Cadmium	7440-43-9	VERNITA BRIDGE 2	Outside decision areas	UPLAND	558844	145558
2344	Cadmium	7440-43-9	VERNITA BRIDGE 2	Outside decision areas	UPLAND	558844	145558
2345	Cadmium	7440-43-9	VERNITA BRIDGE 3	IU2/IU6	UPLAND	559089	145707
2346	Cadmium	7440-43-9	VERNITA BRIDGE 3	IU2/IU6	UPLAND	559089	145707
2347	Cadmium	7440-43-9	VERNITA BRIDGE 3	IU2/IU6	UPLAND	559089	145707
2348	Cadmium	7440-43-9	VERNITA BRIDGE 3	IU2/IU6	UPLAND	559089	145707
2349	Cadmium	7440-43-9	VERNITA BRIDGE 3	IU2/IU6	UPLAND	559089	145707
2350	Cadmium	7440-43-9	VERNITA BRIDGE 4	IU2/IU6	UPLAND	559347	145849
2351	Cadmium	7440-43-9	VERNITA BRIDGE 4	IU2/IU6	UPLAND	559347	145849
2352	Cadmium	7440-43-9	VERNITA BRIDGE 4	IU2/IU6	UPLAND	559347	145849
2353	Cadmium	7440-43-9	VERNITA BRIDGE 4	IU2/IU6	UPLAND	559347	145849
2354	Cadmium	7440-43-9	VERNITA BRIDGE 5	IU2/IU6	UPLAND	559606	145999
2355	Cadmium	7440-43-9	VERNITA BRIDGE 5	IU2/IU6	UPLAND	559606	145999
2356	Cadmium	7440-43-9	VERNITA BRIDGE 5	IU2/IU6	UPLAND	559606	145999
2357	Cadmium	7440-43-9	VERNITA BRIDGE 5	IU2/IU6	UPLAND	559606	145999
2358	Cobalt	7440-48-4	RCBRA R Ref 12	IU2/IU6	RIPARIAN	559201.908	145747.542
2359	Cobalt	7440-48-4	RCBRA R Ref 13	Outside decision areas	RIPARIAN	558572.809	145345.115
2360	Cobalt	7440-48-4	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
2361	Cobalt	7440-48-4	RCBRA Rip 5	K	RIPARIAN	569141.025	147521.561
2362	Cobalt	7440-48-4	RCBRA Rip 8	D/H	RIPARIAN	578698.584	152233.645
2363	Cobalt	7440-48-4	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
2364	Cobalt	7440-48-4	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
2365	Cobalt	7440-48-4	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
2366	Cobalt	7440-48-4	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
2367	Chromium	7440-47-3	RCBRA 100-D-48	D/H	UPLAND	573841.527	151914.538
2368	Chromium	7440-47-3	RCBRA 100-D-49	D/H	UPLAND	573938.06	151944.123
2369	Chromium	7440-47-3	RCBRA 100-F-2	IU2/IU6	UPLAND	579728.068	147001.117
2370	Chromium	7440-47-3	RCBRA 116-DR-1&2	D/H	UPLAND	574007.817	152246.748
2371	Chromium	7440-47-3	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
2372	Chromium	7440-47-3	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
2373	Chromium	7440-47-3	RCBRA 116-N-3	N	UPLAND	571995.702	149793.039
2374	Chromium	7440-47-3	RCBRA 1607-D2:1	D/H	UPLAND	573823.924	152260.319
2375	Chromium	7440-47-3	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
2376	Chromium	7440-47-3	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
2377	Chromium	7440-47-3	RCBRA 2f Rip	D/H	RIPARIAN	576222.844	154297.511
2378	Chromium	7440-47-3	RCBRA 2l Rip	IU2/IU6	RIPARIAN	582341.212	146120.069

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
2340	8/19/2004	B1B5N6	SOIL and BIOTA	Discrete	0.9355	mg/kg	PLANT
2341	8/19/2004	B1B5N3	SOIL and BIOTA	Discrete	0.9355	mg/kg	PLANT
2342	8/19/2004	B1B5P5	SOIL and BIOTA	Discrete	1.23	mg/kg	PLANT
2343	8/19/2004	B1B5P6	SOIL and BIOTA	Discrete	1.23	mg/kg	PLANT
2344	8/19/2004	B1B5P7	SOIL and BIOTA	Discrete	1.23	mg/kg	PLANT
2345	8/19/2004	B1B5R8	SOIL and BIOTA	Discrete	1.625	mg/kg	PLANT
2346	8/19/2004	B1B5R7	SOIL and BIOTA	Discrete	1.625	mg/kg	PLANT
2347	8/20/2004	B1B5R9	SOIL and BIOTA	Discrete	1.625	mg/kg	PLANT
2348	8/19/2004	B1B5R5	SOIL and BIOTA	Discrete	1.625	mg/kg	PLANT
2349	8/19/2004	B1B5R6	SOIL and BIOTA	Discrete	1.625	mg/kg	PLANT
2350	8/24/2004	B1B5V0	SOIL and BIOTA	Discrete	1.49	mg/kg	PLANT
2351	8/24/2004	B1B5T9	SOIL and BIOTA	Discrete	1.49	mg/kg	PLANT
2352	8/24/2004	B1B5V3	SOIL and BIOTA	Discrete	1.49	mg/kg	PLANT
2353	8/24/2004	B1B5V1	SOIL and BIOTA	Discrete	1.49	mg/kg	PLANT
2354	8/24/2004	B1B5W3	SOIL and BIOTA	Discrete	2.105	mg/kg	PLANT
2355	8/24/2004	B1B5W5	SOIL and BIOTA	Discrete	2.105	mg/kg	PLANT
2356	8/24/2004	B1B5W6	SOIL and BIOTA	Discrete	2.105	mg/kg	PLANT
2357	8/24/2004	B1B5W4	SOIL and BIOTA	Discrete	2.105	mg/kg	PLANT
2358	5/9/2006	J11WX0	SOIL and BIOTA	MIS	6.2	mg/kg	PLANT
2359	8/10/2006	J11WY9	SOIL and BIOTA	MIS	9.5	mg/kg	PLANT
2360	5/9/2006	J11X02	SOIL and BIOTA	MIS	8.25	mg/kg	PLANT
2361	5/9/2006	J11WW8	SOIL and BIOTA	MIS	7.7	mg/kg	PLANT
2362	5/16/2006	J11WY2	SOIL and BIOTA	MIS	6	mg/kg	PLANT
2363	5/16/2006	J11X91	SOIL and BIOTA	MIS	5.3	mg/kg	PLANT
2364	5/16/2006	J11X91	SOIL and BIOTA	MIS-phyt	6.2	mg/kg	PLANT
2365	5/15/2006	J11X97	SOIL and BIOTA	MIS	8	mg/kg	PLANT
2366	5/15/2006	J11X97	SOIL and BIOTA	MIS-phyt	8.2	mg/kg	PLANT
2367	5/18/2006	J11X42	SOIL and BIOTA	MIS	8.9	mg/kg	PLANT
2368	5/18/2006	J11X54	SOIL and BIOTA	MIS	8.6	mg/kg	PLANT
2369	5/10/2006	J11X61	SOIL and BIOTA	MIS	18	mg/kg	PLANT
2370	5/19/2006	J11X56	SOIL and BIOTA	MIS	8	mg/kg	PLANT
2371	5/16/2006	J11X48	SOIL and BIOTA	MIS	14.9	mg/kg	PLANT
2372	5/16/2006	J11X48	SOIL and BIOTA	MIS-phyt	13.2	mg/kg	PLANT
2373	5/19/2006	J11X46	SOIL and BIOTA	MIS	8.8	mg/kg	PLANT
2374	5/22/2006	J11X58	SOIL and BIOTA	MIS	10.1	mg/kg	PLANT
2375	5/12/2006	J11X44	SOIL and BIOTA	MIS	11.2	mg/kg	PLANT
2376	5/12/2006	J11X44	SOIL and BIOTA	MIS-phyt	14.8	mg/kg	PLANT
2377	5/7/2007	J15295	SOIL and BIOTA	MIS	26.8	mg/kg	PLANT
2378	5/24/2007	J152B0	SOIL and BIOTA	MIS	16.9	mg/kg	PLANT

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
2340	SHOOTS	0.011487	mg/kg	X		PNNL
2341	SHOOTS	0.02835	mg/kg	X		PNNL
2342	SHOOTS	0.11613	mg/kg	X		PNNL
2343	SHOOTS	0.06405	mg/kg	X		PNNL
2344	SHOOTS	0.02772	mg/kg	X		PNNL
2345	SHOOTS	0.006594	mg/kg	X		PNNL
2346	SHOOTS	0.0798	mg/kg	X		PNNL
2347	SHOOTS	0.003507	mg/kg	X		PNNL
2348	SHOOTS	0.008127	mg/kg	X		PNNL
2349	SHOOTS	0.05964	mg/kg	X		PNNL
2350	SHOOTS	0.13881	mg/kg	X		PNNL
2351	SHOOTS	0.02457	mg/kg	X		PNNL
2352	SHOOTS	0.013755	mg/kg	X		PNNL
2353	SHOOTS	0.3066	mg/kg	X		PNNL
2354	SHOOTS	0.007728	mg/kg	X		PNNL
2355	SHOOTS	0.2562	mg/kg	X		PNNL
2356	SHOOTS	0.009198	mg/kg	X		PNNL
2357	SHOOTS	0.126	mg/kg	X		PNNL
2358	CURRENT YRS GROWTH	0.21	mg/kg			RCBRA
2359	CURRENT YRS GROWTH	0.32	mg/kg			RCBRA
2360	CURRENT YRS GROWTH	0.14	mg/kg			RCBRA
2361	CURRENT YRS GROWTH	0.18	mg/kg			RCBRA
2362	CURRENT YRS GROWTH	0.34	mg/kg			RCBRA
2363	CURRENT YRS GROWTH	0.37	mg/kg			RCBRA
2364	CURRENT YRS GROWTH	0.37	mg/kg			RCBRA
2365	CURRENT YRS GROWTH	0.53	mg/kg			RCBRA
2366	CURRENT YRS GROWTH	0.53	mg/kg			RCBRA
2367	CURRENT YRS GROWTH	1.9	mg/kg			RCBRA
2368	CURRENT YRS GROWTH	0.85	mg/kg			RCBRA
2369	CURRENT YRS GROWTH	0.18	mg/kg			RCBRA
2370	CURRENT YRS GROWTH	0.53	mg/kg			RCBRA
2371	CURRENT YRS GROWTH	0.42	mg/kg			RCBRA
2372	CURRENT YRS GROWTH	0.42	mg/kg			RCBRA
2373	CURRENT YRS GROWTH	0.75	mg/kg			RCBRA
2374	CURRENT YRS GROWTH	0.54	mg/kg			RCBRA
2375	CURRENT YRS GROWTH	0.48	mg/kg			RCBRA
2376	CURRENT YRS GROWTH	0.48	mg/kg			RCBRA
2377	CURRENT YRS GROWTH	0.65	mg/kg	C		RCBRA
2378	CURRENT YRS GROWTH	1.3	mg/kg	C		RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
2379	Chromium	7440-47-3	RCBRA 300-49	300	UPLAND	594318.994	116830.934
2380	Chromium	7440-47-3	RCBRA 3b Rip	IU2/IU6	RIPARIAN	584961.205	141035.835
2381	Chromium	7440-47-3	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
2382	Chromium	7440-47-3	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
2383	Chromium	7440-47-3	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
2384	Chromium	7440-47-3	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
2385	Chromium	7440-47-3	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
2386	Chromium	7440-47-3	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
2387	Chromium	7440-47-3	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
2388	Chromium	7440-47-3	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
2389	Chromium	7440-47-3	RCBRA 600-181	IU2/IU6	UPLAND	578303.83	147316.698
2390	Chromium	7440-47-3	RCBRA 600-204	IU2/IU6	UPLAND	580128.485	144762.219
2391	Chromium	7440-47-3	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
2392	Chromium	7440-47-3	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
2393	Chromium	7440-47-3	RCBRA 600-23	IU2/IU6	UPLAND	585523.593	130481.377
2394	Chromium	7440-47-3	RCBRA 618-4	300	UPLAND	593954.946	117064.473
2395	Chromium	7440-47-3	RCBRA 628-1	IU2/IU6	UPLAND	577797.524	148745.681
2396	Chromium	7440-47-3	RCBRA JA JONES	300	UPLAND	593874.58	120013.908
2397	Chromium	7440-47-3	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
2398	Chromium	7440-47-3	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
2399	Chromium	7440-47-3	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
2400	Chromium	7440-47-3	RCBRA Pit 18	IU2/IU6	UPLAND	580697.058	145311.464
2401	Chromium	7440-47-3	RCBRA Pit 23	IU2/IU6	UPLAND	572381.012	144874.157
2402	Chromium	7440-47-3	RCBRA Pit 24	BC	UPLAND	563395.814	145119.007
2403	Chromium	7440-47-3	RCBRA Pit 9	300	UPLAND	592807.103	120587.7
2404	Chromium	7440-47-3	RCBRA R Ref 11	Outside decision areas	RIPARIAN	559400.735	146458.486
2405	Chromium	7440-47-3	RCBRA R Ref 12	IU2/IU6	RIPARIAN	559201.908	145747.542
2406	Chromium	7440-47-3	RCBRA R Ref 13	Outside decision areas	RIPARIAN	558572.809	145345.115
2407	Chromium	7440-47-3	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
2408	Chromium	7440-47-3	RCBRA R Ref 16	Outside decision areas	RIPARIAN	557650.029	144826.748
2409	Chromium	7440-47-3	RCBRA Rip 1	D/H	RIPARIAN	577251.869	153659.195
2410	Chromium	7440-47-3	RCBRA Rip 10	D/H	RIPARIAN	573987.873	153082.19
2411	Chromium	7440-47-3	RCBRA Rip 2	D/H	RIPARIAN	573603.219	152471.6
2412	Chromium	7440-47-3	RCBRA Rip 3	D/H	RIPARIAN	572639.65	151677.812
2413	Chromium	7440-47-3	RCBRA Rip 4	N	RIPARIAN	570558.596	148981.547
2414	Chromium	7440-47-3	RCBRA Rip 5	K	RIPARIAN	569141.025	147521.561
2415	Chromium	7440-47-3	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
2416	Chromium	7440-47-3	RCBRA Rip 7	IU2/IU6	RIPARIAN	581326.914	147825.17
2417	Chromium	7440-47-3	RCBRA Rip 8	D/H	RIPARIAN	578698.584	152233.645

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
2379	4/26/2006	J11X52	SOIL and BIOTA	MIS	8.8	mg/kg	PLANT
2380	5/23/2007	J152B2	SOIL and BIOTA	MIS	24.6	mg/kg	PLANT
2381	5/12/2006	J11X84	SOIL and BIOTA	MIS	9.4	mg/kg	PLANT
2382	5/12/2006	J11X84	SOIL and BIOTA	MIS-phyt	14.4	mg/kg	PLANT
2383	5/12/2006	J11X77	SOIL and BIOTA	MIS	13	mg/kg	PLANT
2384	5/12/2006	J11X77	SOIL and BIOTA	MIS-phyt	15	mg/kg	PLANT
2385	5/16/2006	J11X79	SOIL and BIOTA	MIS	17.4	mg/kg	PLANT
2386	5/16/2006	J11X79	SOIL and BIOTA	MIS-phyt	18.2	mg/kg	PLANT
2387	5/16/2006	J11X90	SOIL and BIOTA	MIS	10.6	mg/kg	PLANT
2388	5/16/2006	J11X90	SOIL and BIOTA	MIS-phyt	14.2	mg/kg	PLANT
2389	5/18/2006	J11X86	SOIL and BIOTA	MIS	8.2	mg/kg	PLANT
2390	5/18/2006	J11X81	SOIL and BIOTA	MIS	9	mg/kg	PLANT
2391	5/15/2006	J11X82	SOIL and BIOTA	MIS	9.8	mg/kg	PLANT
2392	5/15/2006	J11X82	SOIL and BIOTA	MIS-phyt	11.2	mg/kg	PLANT
2393	5/12/2006	J11X72	SOIL and BIOTA	MIS	8.9	mg/kg	PLANT
2394	5/12/2006	J11X51	SOIL and BIOTA	MIS	7.9	mg/kg	PLANT
2395	5/12/2006	J11X89	SOIL and BIOTA	MIS	14.6	mg/kg	PLANT
2396	5/10/2006	J11X74	SOIL and BIOTA	MIS	7.8	mg/kg	PLANT
2397	5/18/2006	J11X98	SOIL and BIOTA	MIS	12.8	mg/kg	PLANT
2398	5/18/2006	J11X98	SOIL and BIOTA	MIS-phyt	14.5	mg/kg	PLANT
2399	5/15/2006	J11X66	SOIL and BIOTA	MIS	7.3	mg/kg	PLANT
2400	5/18/2006	J11X69	SOIL and BIOTA	MIS	9.1	mg/kg	PLANT
2401	5/22/2006	J11X63	SOIL and BIOTA	MIS	5.3	mg/kg	PLANT
2402	5/19/2006	J11X70	SOIL and BIOTA	MIS	10.1	mg/kg	PLANT
2403	5/12/2006	J11X64	SOIL and BIOTA	MIS	7.8	mg/kg	PLANT
2404	5/9/2006	J11WY8	SOIL and BIOTA	MIS	21	mg/kg	PLANT
2405	5/9/2006	J11WX0	SOIL and BIOTA	MIS	15.4	mg/kg	PLANT
2406	8/10/2006	J11WY9	SOIL and BIOTA	MIS	23.1	mg/kg	PLANT
2407	5/9/2006	J11X02	SOIL and BIOTA	MIS	23.55	mg/kg	PLANT
2408	5/9/2006	J11X04	SOIL and BIOTA	MIS	20.1	mg/kg	PLANT
2409	5/16/2006	J11WX1	SOIL and BIOTA	MIS	23.8	mg/kg	PLANT
2410	5/9/2006	J11WY6	SOIL and BIOTA	MIS	29.1	mg/kg	PLANT
2411	5/19/2006	J11WX4	SOIL and BIOTA	MIS	48.7	mg/kg	PLANT
2412	5/9/2006	J11WX6	SOIL and BIOTA	MIS	13.7	mg/kg	PLANT
2413	5/9/2006	J11WW6	SOIL and BIOTA	MIS	66.3	mg/kg	PLANT
2414	5/9/2006	J11WW8	SOIL and BIOTA	MIS	40.1	mg/kg	PLANT
2415	5/22/2006	J11XP0	SOIL and BIOTA	MIS	21.5	mg/kg	PLANT
2416	5/9/2006	J11WY0	SOIL and BIOTA	MIS	141	mg/kg	PLANT
2417	5/16/2006	J11WY2	SOIL and BIOTA	MIS	22.2	mg/kg	PLANT

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
2379	CURRENT YRS GROWTH	1.2	mg/kg			RCBRA
2380	CURRENT YRS GROWTH	0.1	mg/kg	C		RCBRA
2381	CURRENT YRS GROWTH	0.22	mg/kg			RCBRA
2382	CURRENT YRS GROWTH	0.22	mg/kg			RCBRA
2383	CURRENT YRS GROWTH	0.16	mg/kg			RCBRA
2384	CURRENT YRS GROWTH	0.16	mg/kg			RCBRA
2385	CURRENT YRS GROWTH	0.89	mg/kg			RCBRA
2386	CURRENT YRS GROWTH	0.89	mg/kg			RCBRA
2387	CURRENT YRS GROWTH	1.6	mg/kg			RCBRA
2388	CURRENT YRS GROWTH	1.6	mg/kg			RCBRA
2389	CURRENT YRS GROWTH	0.44	mg/kg			RCBRA
2390	CURRENT YRS GROWTH	0.81	mg/kg			RCBRA
2391	CURRENT YRS GROWTH	1.7	mg/kg			RCBRA
2392	CURRENT YRS GROWTH	1.7	mg/kg			RCBRA
2393	CURRENT YRS GROWTH	0.16	mg/kg			RCBRA
2394	CURRENT YRS GROWTH	0.38	mg/kg			RCBRA
2395	CURRENT YRS GROWTH	0.27	mg/kg			RCBRA
2396	CURRENT YRS GROWTH	0.39	mg/kg			RCBRA
2397	CURRENT YRS GROWTH	0.78	mg/kg			RCBRA
2398	CURRENT YRS GROWTH	0.78	mg/kg			RCBRA
2399	CURRENT YRS GROWTH	1.5	mg/kg			RCBRA
2400	CURRENT YRS GROWTH	0.65	mg/kg			RCBRA
2401	CURRENT YRS GROWTH	0.31	mg/kg			RCBRA
2402	CURRENT YRS GROWTH	0.67	mg/kg			RCBRA
2403	CURRENT YRS GROWTH	0.22	mg/kg			RCBRA
2404	CURRENT YRS GROWTH	0.46	mg/kg			RCBRA
2405	CURRENT YRS GROWTH	0.78	mg/kg			RCBRA
2406	CURRENT YRS GROWTH	1.3	mg/kg	C		RCBRA
2407	CURRENT YRS GROWTH	0.68	mg/kg			RCBRA
2408	CURRENT YRS GROWTH	0.59	mg/kg			RCBRA
2409	CURRENT YRS GROWTH	2.1	mg/kg			RCBRA
2410	CURRENT YRS GROWTH	0.54	mg/kg			RCBRA
2411	CURRENT YRS GROWTH	3	mg/kg			RCBRA
2412	CURRENT YRS GROWTH	0.28	mg/kg			RCBRA
2413	CURRENT YRS GROWTH	0.26	mg/kg			RCBRA
2414	CURRENT YRS GROWTH	0.63	mg/kg			RCBRA
2415	CURRENT YRS GROWTH	1.6	mg/kg			RCBRA
2416	CURRENT YRS GROWTH	0.56	mg/kg			RCBRA
2417	CURRENT YRS GROWTH	1.9	mg/kg			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
2418	Chromium	7440-47-3	RCBRA Rip 9	D/H	RIPARIAN	578153.643	152801.452
2419	Chromium	7440-47-3	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
2420	Chromium	7440-47-3	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
2421	Chromium	7440-47-3	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
2422	Chromium	7440-47-3	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
2423	Chromium	7440-47-3	RCBRA Yak Rdg 2	Outside decision areas	UPLAND	559031.557	135576.407
2424	Chromium	7440-47-3	RCBRA 100-D-48	D/H	UPLAND	573841.527	151914.538
2425	Chromium	7440-47-3	RCBRA 100-D-49	D/H	UPLAND	573938.06	151944.123
2426	Chromium	7440-47-3	RCBRA 116-DR-1&2	D/H	UPLAND	574007.817	152246.748
2427	Chromium	7440-47-3	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
2428	Chromium	7440-47-3	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
2429	Chromium	7440-47-3	RCBRA 116-N-3	N	UPLAND	571995.702	149793.039
2430	Chromium	7440-47-3	RCBRA 1607-D2:1	D/H	UPLAND	573823.924	152260.319
2431	Chromium	7440-47-3	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
2432	Chromium	7440-47-3	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
2433	Chromium	7440-47-3	RCBRA 300-49	300	UPLAND	594318.994	116830.934
2434	Chromium	7440-47-3	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
2435	Chromium	7440-47-3	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
2436	Chromium	7440-47-3	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
2437	Chromium	7440-47-3	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
2438	Chromium	7440-47-3	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
2439	Chromium	7440-47-3	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
2440	Chromium	7440-47-3	RCBRA 600-181	IU2/IU6	UPLAND	578303.83	147316.698
2441	Chromium	7440-47-3	RCBRA 600-204	IU2/IU6	UPLAND	580128.485	144762.219
2442	Chromium	7440-47-3	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
2443	Chromium	7440-47-3	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
2444	Chromium	7440-47-3	RCBRA 600-23	IU2/IU6	UPLAND	585523.593	130481.377
2445	Chromium	7440-47-3	RCBRA 618-4	300	UPLAND	593954.946	117064.473
2446	Chromium	7440-47-3	RCBRA 628-1	IU2/IU6	UPLAND	577797.524	148745.681
2447	Chromium	7440-47-3	RCBRA JA JONES	300	UPLAND	593874.58	120013.908
2448	Chromium	7440-47-3	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
2449	Chromium	7440-47-3	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
2450	Chromium	7440-47-3	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
2451	Chromium	7440-47-3	RCBRA Pit 18	IU2/IU6	UPLAND	580697.058	145311.464
2452	Chromium	7440-47-3	RCBRA Pit 23	IU2/IU6	UPLAND	572381.012	144874.157
2453	Chromium	7440-47-3	RCBRA Pit 24	BC	UPLAND	563395.814	145119.007
2454	Chromium	7440-47-3	RCBRA Pit 9	300	UPLAND	592807.103	120587.7
2455	Chromium	7440-47-3	RCBRA R Ref 11	Outside decision areas	RIPARIAN	559400.735	146458.486
2456	Chromium	7440-47-3	RCBRA R Ref 12	IU2/IU6	RIPARIAN	559201.908	145747.542

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
2418	5/16/2006	J11WY4	SOIL and BIOTA	MIS	28.9	mg/kg	PLANT
2419	5/18/2006	J11XB0	SOIL and BIOTA	MIS	12.2	mg/kg	PLANT
2420	5/18/2006	J11XB0	SOIL and BIOTA	MIS-phyt	14	mg/kg	PLANT
2421	5/15/2006	J11X96	SOIL and BIOTA	MIS	12.5	mg/kg	PLANT
2422	5/15/2006	J11X96	SOIL and BIOTA	MIS-phyt	15.6	mg/kg	PLANT
2423	5/16/2006	J11X94	SOIL and BIOTA	MIS	14	mg/kg	PLANT
2424	5/18/2006	J11X43	SOIL and BIOTA	MIS	8.9	mg/kg	PLANT
2425	5/18/2006	J11X55	SOIL and BIOTA	MIS	8.6	mg/kg	PLANT
2426	5/19/2006	J11X57	SOIL and BIOTA	MIS	8	mg/kg	PLANT
2427	5/16/2006	J11X49	SOIL and BIOTA	MIS	14.9	mg/kg	PLANT
2428	5/16/2006	J11X49	SOIL and BIOTA	MIS-phyt	13.2	mg/kg	PLANT
2429	5/19/2006	J11X47	SOIL and BIOTA	MIS	8.8	mg/kg	PLANT
2430	5/22/2006	J11X59	SOIL and BIOTA	MIS	10.1	mg/kg	PLANT
2431	5/12/2006	J11X45	SOIL and BIOTA	MIS	11.2	mg/kg	PLANT
2432	5/12/2006	J11X45	SOIL and BIOTA	MIS-phyt	14.8	mg/kg	PLANT
2433	4/26/2006	J11X53	SOIL and BIOTA	MIS	8.8	mg/kg	PLANT
2434	5/12/2006	J11X85	SOIL and BIOTA	MIS	9.4	mg/kg	PLANT
2435	5/12/2006	J11X85	SOIL and BIOTA	MIS-phyt	14.4	mg/kg	PLANT
2436	5/16/2006	J11X78	SOIL and BIOTA	MIS	17.4	mg/kg	PLANT
2437	5/16/2006	J11X78	SOIL and BIOTA	MIS-phyt	18.2	mg/kg	PLANT
2438	5/16/2006	J11X91	SOIL and BIOTA	MIS	10.6	mg/kg	PLANT
2439	5/16/2006	J11X91	SOIL and BIOTA	MIS-phyt	14.2	mg/kg	PLANT
2440	5/18/2006	J11X87	SOIL and BIOTA	MIS	8.2	mg/kg	PLANT
2441	5/18/2006	J11X80	SOIL and BIOTA	MIS	9	mg/kg	PLANT
2442	5/15/2006	J11X83	SOIL and BIOTA	MIS	9.8	mg/kg	PLANT
2443	5/15/2006	J11X83	SOIL and BIOTA	MIS-phyt	11.2	mg/kg	PLANT
2444	5/12/2006	J11X73	SOIL and BIOTA	MIS	8.9	mg/kg	PLANT
2445	5/12/2006	J11X50	SOIL and BIOTA	MIS	7.9	mg/kg	PLANT
2446	5/12/2006	J11X88	SOIL and BIOTA	MIS	14.6	mg/kg	PLANT
2447	5/10/2006	J11X75	SOIL and BIOTA	MIS	7.8	mg/kg	PLANT
2448	5/18/2006	J11X99	SOIL and BIOTA	MIS	12.8	mg/kg	PLANT
2449	5/18/2006	J11X99	SOIL and BIOTA	MIS-phyt	14.5	mg/kg	PLANT
2450	5/15/2006	J11X67	SOIL and BIOTA	MIS	7.3	mg/kg	PLANT
2451	5/18/2006	J11X68	SOIL and BIOTA	MIS	9.1	mg/kg	PLANT
2452	5/22/2006	J11X62	SOIL and BIOTA	MIS	5.3	mg/kg	PLANT
2453	5/19/2006	J11X71	SOIL and BIOTA	MIS	10.1	mg/kg	PLANT
2454	5/12/2006	J11X65	SOIL and BIOTA	MIS	7.8	mg/kg	PLANT
2455	5/9/2006	J11WY7	SOIL and BIOTA	MIS	21	mg/kg	PLANT
2456	5/9/2006	J11WW9	SOIL and BIOTA	MIS	15.4	mg/kg	PLANT

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
2418	CURRENT YRS GROWTH	1.3	mg/kg			RCBRA
2419	CURRENT YRS GROWTH	0.99	mg/kg			RCBRA
2420	CURRENT YRS GROWTH	0.99	mg/kg			RCBRA
2421	CURRENT YRS GROWTH	0.81	mg/kg			RCBRA
2422	CURRENT YRS GROWTH	0.81	mg/kg			RCBRA
2423	CURRENT YRS GROWTH	1.4	mg/kg			RCBRA
2424	CURRENT YRS GROWTH	0.66	mg/kg			RCBRA
2425	CURRENT YRS GROWTH	0.44	mg/kg			RCBRA
2426	CURRENT YRS GROWTH	0.85	mg/kg			RCBRA
2427	CURRENT YRS GROWTH	3.3	mg/kg			RCBRA
2428	CURRENT YRS GROWTH	3.3	mg/kg			RCBRA
2429	CURRENT YRS GROWTH	1.3	mg/kg			RCBRA
2430	CURRENT YRS GROWTH	0.79	mg/kg			RCBRA
2431	CURRENT YRS GROWTH	0.28	mg/kg			RCBRA
2432	CURRENT YRS GROWTH	0.28	mg/kg			RCBRA
2433	CURRENT YRS GROWTH	0.69	mg/kg			RCBRA
2434	CURRENT YRS GROWTH	0.19	mg/kg			RCBRA
2435	CURRENT YRS GROWTH	0.19	mg/kg			RCBRA
2436	CURRENT YRS GROWTH	0.55	mg/kg			RCBRA
2437	CURRENT YRS GROWTH	0.55	mg/kg			RCBRA
2438	CURRENT YRS GROWTH	1.1	mg/kg			RCBRA
2439	CURRENT YRS GROWTH	1.1	mg/kg			RCBRA
2440	CURRENT YRS GROWTH	1.4	mg/kg			RCBRA
2441	CURRENT YRS GROWTH	0.54	mg/kg			RCBRA
2442	CURRENT YRS GROWTH	2.1	mg/kg			RCBRA
2443	CURRENT YRS GROWTH	2.1	mg/kg			RCBRA
2444	CURRENT YRS GROWTH	0.4	mg/kg			RCBRA
2445	CURRENT YRS GROWTH	0.22	mg/kg			RCBRA
2446	CURRENT YRS GROWTH	0.19	mg/kg			RCBRA
2447	CURRENT YRS GROWTH	1.3	mg/kg			RCBRA
2448	CURRENT YRS GROWTH	0.7	mg/kg			RCBRA
2449	CURRENT YRS GROWTH	0.7	mg/kg			RCBRA
2450	CURRENT YRS GROWTH	0.42	mg/kg			RCBRA
2451	CURRENT YRS GROWTH	0.42	mg/kg			RCBRA
2452	CURRENT YRS GROWTH	0.53	mg/kg			RCBRA
2453	CURRENT YRS GROWTH	0.51	mg/kg			RCBRA
2454	CURRENT YRS GROWTH	0.19	mg/kg			RCBRA
2455	CURRENT YRS GROWTH	0.16	mg/kg			RCBRA
2456	CURRENT YRS GROWTH	0.18	mg/kg			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
2457	Chromium	7440-47-3	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
2458	Chromium	7440-47-3	RCBRA R Ref 16	Outside decision areas	RIPARIAN	557650.029	144826.748
2459	Chromium	7440-47-3	RCBRA Rip 1	D/H	RIPARIAN	577251.869	153659.195
2460	Chromium	7440-47-3	RCBRA Rip 10	D/H	RIPARIAN	573987.873	153082.19
2461	Chromium	7440-47-3	RCBRA Rip 2	D/H	RIPARIAN	573603.219	152471.6
2462	Chromium	7440-47-3	RCBRA Rip 3	D/H	RIPARIAN	572639.65	151677.812
2463	Chromium	7440-47-3	RCBRA Rip 4	N	RIPARIAN	570558.596	148981.547
2464	Chromium	7440-47-3	RCBRA Rip 5	K	RIPARIAN	569141.025	147521.561
2465	Chromium	7440-47-3	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
2466	Chromium	7440-47-3	RCBRA Rip 7	IU2/IU6	RIPARIAN	581326.914	147825.17
2467	Chromium	7440-47-3	RCBRA Rip 8	D/H	RIPARIAN	578698.584	152233.645
2468	Chromium	7440-47-3	RCBRA Rip 9	D/H	RIPARIAN	578153.643	152801.452
2469	Chromium	7440-47-3	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
2470	Chromium	7440-47-3	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
2471	Chromium	7440-47-3	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
2472	Chromium	7440-47-3	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
2473	Chromium	7440-47-3	RCBRA Yak Rdg 2	Outside decision areas	UPLAND	559031.557	135576.407
2474	Chromium	7440-47-3	VERNITA BRIDGE 1	Outside decision areas	UPLAND	558823	145536
2475	Chromium	7440-47-3	VERNITA BRIDGE 1	Outside decision areas	UPLAND	558823	145536
2476	Chromium	7440-47-3	VERNITA BRIDGE 1	Outside decision areas	UPLAND	558823	145536
2477	Chromium	7440-47-3	VERNITA BRIDGE 1	Outside decision areas	UPLAND	558823	145536
2478	Chromium	7440-47-3	VERNITA BRIDGE 2	Outside decision areas	UPLAND	558844	145558
2479	Chromium	7440-47-3	VERNITA BRIDGE 2	Outside decision areas	UPLAND	558844	145558
2480	Chromium	7440-47-3	VERNITA BRIDGE 2	Outside decision areas	UPLAND	558844	145558
2481	Chromium	7440-47-3	VERNITA BRIDGE 3	IU2/IU6	UPLAND	559089	145707
2482	Chromium	7440-47-3	VERNITA BRIDGE 3	IU2/IU6	UPLAND	559089	145707
2483	Chromium	7440-47-3	VERNITA BRIDGE 3	IU2/IU6	UPLAND	559089	145707
2484	Chromium	7440-47-3	VERNITA BRIDGE 3	IU2/IU6	UPLAND	559089	145707
2485	Chromium	7440-47-3	VERNITA BRIDGE 3	IU2/IU6	UPLAND	559089	145707
2486	Chromium	7440-47-3	VERNITA BRIDGE 4	IU2/IU6	UPLAND	559347	145849
2487	Chromium	7440-47-3	VERNITA BRIDGE 4	IU2/IU6	UPLAND	559347	145849
2488	Chromium	7440-47-3	VERNITA BRIDGE 4	IU2/IU6	UPLAND	559347	145849
2489	Chromium	7440-47-3	VERNITA BRIDGE 4	IU2/IU6	UPLAND	559347	145849
2490	Chromium	7440-47-3	VERNITA BRIDGE 5	IU2/IU6	UPLAND	559606	145999
2491	Chromium	7440-47-3	VERNITA BRIDGE 5	IU2/IU6	UPLAND	559606	145999
2492	Chromium	7440-47-3	VERNITA BRIDGE 5	IU2/IU6	UPLAND	559606	145999
2493	Chromium	7440-47-3	VERNITA BRIDGE 5	IU2/IU6	UPLAND	559606	145999
2494	Copper	7440-50-8	RCBRA 100-D-48	D/H	UPLAND	573841.527	151914.538
2495	Copper	7440-50-8	RCBRA 100-D-49	D/H	UPLAND	573938.06	151944.123

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
2457	5/9/2006	J11X01	SOIL and BIOTA	MIS	23.55	mg/kg	PLANT
2458	5/9/2006	J11X03	SOIL and BIOTA	MIS	20.1	mg/kg	PLANT
2459	5/16/2006	J11WX2	SOIL and BIOTA	MIS	23.8	mg/kg	PLANT
2460	5/9/2006	J11WY5	SOIL and BIOTA	MIS	29.1	mg/kg	PLANT
2461	5/19/2006	J11WX3	SOIL and BIOTA	MIS	48.7	mg/kg	PLANT
2462	5/9/2006	J11WX5	SOIL and BIOTA	MIS	13.7	mg/kg	PLANT
2463	5/9/2006	J11WW5	SOIL and BIOTA	MIS	66.3	mg/kg	PLANT
2464	5/9/2006	J11WW7	SOIL and BIOTA	MIS	40.1	mg/kg	PLANT
2465	5/22/2006	J11WX7	SOIL and BIOTA	MIS	21.5	mg/kg	PLANT
2466	5/9/2006	J11WX9	SOIL and BIOTA	MIS	141	mg/kg	PLANT
2467	5/16/2006	J11WY1	SOIL and BIOTA	MIS	22.2	mg/kg	PLANT
2468	5/16/2006	J11WY3	SOIL and BIOTA	MIS	28.9	mg/kg	PLANT
2469	5/18/2006	J11XB1	SOIL and BIOTA	MIS	12.2	mg/kg	PLANT
2470	5/18/2006	J11XB1	SOIL and BIOTA	MIS-phyt	14	mg/kg	PLANT
2471	5/15/2006	J11X97	SOIL and BIOTA	MIS	12.5	mg/kg	PLANT
2472	5/15/2006	J11X97	SOIL and BIOTA	MIS-phyt	15.6	mg/kg	PLANT
2473	5/16/2006	J11X95	SOIL and BIOTA	MIS	14	mg/kg	PLANT
2474	8/19/2004	B1B5N5	SOIL and BIOTA	Discrete	39.05	mg/kg	PLANT
2475	8/19/2004	B1B5N4	SOIL and BIOTA	Discrete	39.05	mg/kg	PLANT
2476	8/19/2004	B1B5N6	SOIL and BIOTA	Discrete	39.05	mg/kg	PLANT
2477	8/19/2004	B1B5N3	SOIL and BIOTA	Discrete	39.05	mg/kg	PLANT
2478	8/19/2004	B1B5P6	SOIL and BIOTA	Discrete	45.45	mg/kg	PLANT
2479	8/19/2004	B1B5P5	SOIL and BIOTA	Discrete	45.45	mg/kg	PLANT
2480	8/19/2004	B1B5P7	SOIL and BIOTA	Discrete	45.45	mg/kg	PLANT
2481	8/19/2004	B1B5R8	SOIL and BIOTA	Discrete	50.5	mg/kg	PLANT
2482	8/19/2004	B1B5R7	SOIL and BIOTA	Discrete	50.5	mg/kg	PLANT
2483	8/20/2004	B1B5R9	SOIL and BIOTA	Discrete	50.5	mg/kg	PLANT
2484	8/19/2004	B1B5R5	SOIL and BIOTA	Discrete	50.5	mg/kg	PLANT
2485	8/19/2004	B1B5R6	SOIL and BIOTA	Discrete	50.5	mg/kg	PLANT
2486	8/24/2004	B1B5V0	SOIL and BIOTA	Discrete	51.6	mg/kg	PLANT
2487	8/24/2004	B1B5T9	SOIL and BIOTA	Discrete	51.6	mg/kg	PLANT
2488	8/24/2004	B1B5V3	SOIL and BIOTA	Discrete	51.6	mg/kg	PLANT
2489	8/24/2004	B1B5V1	SOIL and BIOTA	Discrete	51.6	mg/kg	PLANT
2490	8/24/2004	B1B5W3	SOIL and BIOTA	Discrete	42.5	mg/kg	PLANT
2491	8/24/2004	B1B5W5	SOIL and BIOTA	Discrete	42.5	mg/kg	PLANT
2492	8/24/2004	B1B5W4	SOIL and BIOTA	Discrete	42.5	mg/kg	PLANT
2493	8/24/2004	B1B5W6	SOIL and BIOTA	Discrete	42.5	mg/kg	PLANT
2494	5/18/2006	J11X42	SOIL and BIOTA	MIS	14.5	mg/kg	PLANT
2495	5/18/2006	J11X54	SOIL and BIOTA	MIS	14.3	mg/kg	PLANT

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
2457	CURRENT YRS GROWTH	0.3	mg/kg			RCBRA
2458	CURRENT YRS GROWTH	0.26	mg/kg			RCBRA
2459	CURRENT YRS GROWTH	0.99	mg/kg			RCBRA
2460	CURRENT YRS GROWTH	0.24	mg/kg			RCBRA
2461	CURRENT YRS GROWTH	0.92	mg/kg			RCBRA
2462	CURRENT YRS GROWTH	0.18	mg/kg			RCBRA
2463	CURRENT YRS GROWTH	0.19	mg/kg			RCBRA
2464	CURRENT YRS GROWTH	0.3	mg/kg			RCBRA
2465	CURRENT YRS GROWTH	0.56	mg/kg			RCBRA
2466	CURRENT YRS GROWTH	0.21	mg/kg			RCBRA
2467	CURRENT YRS GROWTH	0.67	mg/kg			RCBRA
2468	CURRENT YRS GROWTH	1.3	mg/kg			RCBRA
2469	CURRENT YRS GROWTH	1.2	mg/kg			RCBRA
2470	CURRENT YRS GROWTH	1.2	mg/kg			RCBRA
2471	CURRENT YRS GROWTH	1.8	mg/kg			RCBRA
2472	CURRENT YRS GROWTH	1.8	mg/kg			RCBRA
2473	CURRENT YRS GROWTH	1.3	mg/kg			RCBRA
2474	SHOOTS	0.10437	mg/kg	X		PNNL
2475	SHOOTS	0.07203	mg/kg	X		PNNL
2476	SHOOTS	0.09807	mg/kg	X		PNNL
2477	SHOOTS	0.19866	mg/kg	X		PNNL
2478	SHOOTS	0.2499	mg/kg	X		PNNL
2479	SHOOTS	0.15729	mg/kg	X		PNNL
2480	SHOOTS	0.08841	mg/kg	X		PNNL
2481	SHOOTS	0.07182	mg/kg	X		PNNL
2482	SHOOTS	0.07287	mg/kg	X		PNNL
2483	SHOOTS	0.06111	mg/kg	X		PNNL
2484	SHOOTS	0.06594	mg/kg	X		PNNL
2485	SHOOTS	0.06846	mg/kg	X		PNNL
2486	SHOOTS	0.19005	mg/kg	X		PNNL
2487	SHOOTS	0.06846	mg/kg	X		PNNL
2488	SHOOTS	0.05103	mg/kg	X		PNNL
2489	SHOOTS	0.05817	mg/kg	X		PNNL
2490	SHOOTS	0.05019	mg/kg	X		PNNL
2491	SHOOTS	0.0588	mg/kg	X		PNNL
2492	SHOOTS	0.09429	mg/kg	X		PNNL
2493	SHOOTS	0.05103	mg/kg	X		PNNL
2494	CURRENT YRS GROWTH	5.7	mg/kg			RCBRA
2495	CURRENT YRS GROWTH	5	mg/kg			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
2496	Copper	7440-50-8	RCBRA 100-F-2	IU2/IU6	UPLAND	579728.068	147001.117
2497	Copper	7440-50-8	RCBRA 116-DR-1&2	D/H	UPLAND	574007.817	152246.748
2498	Copper	7440-50-8	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
2499	Copper	7440-50-8	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
2500	Copper	7440-50-8	RCBRA 116-N-3	N	UPLAND	571995.702	149793.039
2501	Copper	7440-50-8	RCBRA 1607-D2:1	D/H	UPLAND	573823.924	152260.319
2502	Copper	7440-50-8	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
2503	Copper	7440-50-8	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
2504	Copper	7440-50-8	RCBRA 2c Rip	K	RIPARIAN	567598.2	146210.159
2505	Copper	7440-50-8	RCBRA 2f Rip	D/H	RIPARIAN	576222.844	154297.511
2506	Copper	7440-50-8	RCBRA 2j Rip	IU2/IU6	RIPARIAN	579360.971	150092.048
2507	Copper	7440-50-8	RCBRA 300-49	300	UPLAND	594318.994	116830.934
2508	Copper	7440-50-8	RCBRA 3b Rip	IU2/IU6	RIPARIAN	584961.205	141035.835
2509	Copper	7440-50-8	RCBRA 5c Rip	300	RIPARIAN	594509.985	124869.182
2510	Copper	7440-50-8	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
2511	Copper	7440-50-8	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
2512	Copper	7440-50-8	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
2513	Copper	7440-50-8	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
2514	Copper	7440-50-8	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
2515	Copper	7440-50-8	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
2516	Copper	7440-50-8	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
2517	Copper	7440-50-8	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
2518	Copper	7440-50-8	RCBRA 600-181	IU2/IU6	UPLAND	578303.83	147316.698
2519	Copper	7440-50-8	RCBRA 600-204	IU2/IU6	UPLAND	580128.485	144762.219
2520	Copper	7440-50-8	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
2521	Copper	7440-50-8	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
2522	Copper	7440-50-8	RCBRA 600-23	IU2/IU6	UPLAND	585523.593	130481.377
2523	Copper	7440-50-8	RCBRA 618-4	300	UPLAND	593954.946	117064.473
2524	Copper	7440-50-8	RCBRA 628-1	IU2/IU6	UPLAND	577797.524	148745.681
2525	Copper	7440-50-8	RCBRA Bev Ref 1 Rip	Outside decision areas	RIPARIAN	542428.846	167701.261
2526	Copper	7440-50-8	RCBRA Bev Ref 2 Rip	Outside decision areas	RIPARIAN	541493.988	167808.357
2527	Copper	7440-50-8	RCBRA JA JONES	300	UPLAND	593874.58	120013.908
2528	Copper	7440-50-8	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
2529	Copper	7440-50-8	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
2530	Copper	7440-50-8	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
2531	Copper	7440-50-8	RCBRA Pit 18	IU2/IU6	UPLAND	580697.058	145311.464
2532	Copper	7440-50-8	RCBRA Pit 23	IU2/IU6	UPLAND	572381.012	144874.157
2533	Copper	7440-50-8	RCBRA Pit 24	BC	UPLAND	563395.814	145119.007
2534	Copper	7440-50-8	RCBRA Pit 9	300	UPLAND	592807.103	120587.7

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
2496	5/10/2006	J11X61	SOIL and BIOTA	MIS	15.4	mg/kg	PLANT
2497	5/19/2006	J11X56	SOIL and BIOTA	MIS	14.9	mg/kg	PLANT
2498	5/16/2006	J11X48	SOIL and BIOTA	MIS	11.9	mg/kg	PLANT
2499	5/16/2006	J11X48	SOIL and BIOTA	MIS-phyt	11.4	mg/kg	PLANT
2500	5/19/2006	J11X46	SOIL and BIOTA	MIS	16.8	mg/kg	PLANT
2501	5/22/2006	J11X58	SOIL and BIOTA	MIS	13.6	mg/kg	PLANT
2502	5/12/2006	J11X44	SOIL and BIOTA	MIS	26.1	mg/kg	PLANT
2503	5/12/2006	J11X44	SOIL and BIOTA	MIS-phyt	24	mg/kg	PLANT
2504	5/21/2007	J152B8	SOIL and BIOTA	MIS	33.1	mg/kg	PLANT
2505	5/7/2007	J15295	SOIL and BIOTA	MIS	29.9	mg/kg	PLANT
2506	5/21/2007	J15296	SOIL and BIOTA	MIS	38.8	mg/kg	PLANT
2507	4/26/2006	J11X52	SOIL and BIOTA	MIS	18.7	mg/kg	PLANT
2508	5/23/2007	J152B2	SOIL and BIOTA	MIS	44.9	mg/kg	PLANT
2509	5/24/2007	J152B4	SOIL and BIOTA	MIS	22.9	mg/kg	PLANT
2510	5/12/2006	J11X84	SOIL and BIOTA	MIS	12.7	mg/kg	PLANT
2511	5/12/2006	J11X84	SOIL and BIOTA	MIS-phyt	14.5	mg/kg	PLANT
2512	5/12/2006	J11X77	SOIL and BIOTA	MIS	13.1	mg/kg	PLANT
2513	5/12/2006	J11X77	SOIL and BIOTA	MIS-phyt	12	mg/kg	PLANT
2514	5/16/2006	J11X79	SOIL and BIOTA	MIS	44.5	mg/kg	PLANT
2515	5/16/2006	J11X79	SOIL and BIOTA	MIS-phyt	38.5	mg/kg	PLANT
2516	5/16/2006	J11X90	SOIL and BIOTA	MIS	13.4	mg/kg	PLANT
2517	5/16/2006	J11X90	SOIL and BIOTA	MIS-phyt	14.1	mg/kg	PLANT
2518	5/18/2006	J11X86	SOIL and BIOTA	MIS	11.1	mg/kg	PLANT
2519	5/18/2006	J11X81	SOIL and BIOTA	MIS	13.1	mg/kg	PLANT
2520	5/15/2006	J11X82	SOIL and BIOTA	MIS	12.8	mg/kg	PLANT
2521	5/15/2006	J11X82	SOIL and BIOTA	MIS-phyt	11.2	mg/kg	PLANT
2522	5/12/2006	J11X72	SOIL and BIOTA	MIS	12.4	mg/kg	PLANT
2523	5/12/2006	J11X51	SOIL and BIOTA	MIS	9.7	mg/kg	PLANT
2524	5/12/2006	J11X89	SOIL and BIOTA	MIS	21.3	mg/kg	PLANT
2525	5/10/2007	J15289	SOIL and BIOTA	MIS	32	mg/kg	PLANT
2526	5/8/2007	J15291	SOIL and BIOTA	MIS	25.6	mg/kg	PLANT
2527	5/10/2006	J11X74	SOIL and BIOTA	MIS	12.5	mg/kg	PLANT
2528	5/18/2006	J11X98	SOIL and BIOTA	MIS	19.9	mg/kg	PLANT
2529	5/18/2006	J11X98	SOIL and BIOTA	MIS-phyt	20.2	mg/kg	PLANT
2530	5/15/2006	J11X66	SOIL and BIOTA	MIS	13.8	mg/kg	PLANT
2531	5/18/2006	J11X69	SOIL and BIOTA	MIS	13.3	mg/kg	PLANT
2532	5/22/2006	J11X63	SOIL and BIOTA	MIS	16	mg/kg	PLANT
2533	5/19/2006	J11X70	SOIL and BIOTA	MIS	15.7	mg/kg	PLANT
2534	5/12/2006	J11X64	SOIL and BIOTA	MIS	13.9	mg/kg	PLANT

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
2496	CURRENT YRS GROWTH	2	mg/kg			RCBRA
2497	CURRENT YRS GROWTH	4.9	mg/kg			RCBRA
2498	CURRENT YRS GROWTH	2.9	mg/kg			RCBRA
2499	CURRENT YRS GROWTH	2.9	mg/kg			RCBRA
2500	CURRENT YRS GROWTH	3.8	mg/kg			RCBRA
2501	CURRENT YRS GROWTH	3.9	mg/kg			RCBRA
2502	CURRENT YRS GROWTH	2.2	mg/kg	C		RCBRA
2503	CURRENT YRS GROWTH	2.2	mg/kg	C		RCBRA
2504	CURRENT YRS GROWTH	1.7	mg/kg	C		RCBRA
2505	CURRENT YRS GROWTH	2.1	mg/kg	C		RCBRA
2506	CURRENT YRS GROWTH	1.6	mg/kg	C		RCBRA
2507	CURRENT YRS GROWTH	5.5	mg/kg	C		RCBRA
2508	CURRENT YRS GROWTH	1.2	mg/kg	C		RCBRA
2509	CURRENT YRS GROWTH	2	mg/kg	C		RCBRA
2510	CURRENT YRS GROWTH	1.4	mg/kg			RCBRA
2511	CURRENT YRS GROWTH	1.4	mg/kg			RCBRA
2512	CURRENT YRS GROWTH	1.6	mg/kg			RCBRA
2513	CURRENT YRS GROWTH	1.6	mg/kg			RCBRA
2514	CURRENT YRS GROWTH	6.2	mg/kg			RCBRA
2515	CURRENT YRS GROWTH	6.2	mg/kg			RCBRA
2516	CURRENT YRS GROWTH	6.1	mg/kg			RCBRA
2517	CURRENT YRS GROWTH	6.1	mg/kg			RCBRA
2518	CURRENT YRS GROWTH	4.6	mg/kg			RCBRA
2519	CURRENT YRS GROWTH	4.7	mg/kg			RCBRA
2520	CURRENT YRS GROWTH	3.9	mg/kg			RCBRA
2521	CURRENT YRS GROWTH	3.9	mg/kg			RCBRA
2522	CURRENT YRS GROWTH	2.2	mg/kg			RCBRA
2523	CURRENT YRS GROWTH	1.7	mg/kg			RCBRA
2524	CURRENT YRS GROWTH	1.9	mg/kg			RCBRA
2525	CURRENT YRS GROWTH	1.3	mg/kg	C		RCBRA
2526	CURRENT YRS GROWTH	1.7	mg/kg	C		RCBRA
2527	CURRENT YRS GROWTH	1.4	mg/kg			RCBRA
2528	CURRENT YRS GROWTH	6.1	mg/kg			RCBRA
2529	CURRENT YRS GROWTH	6.1	mg/kg			RCBRA
2530	CURRENT YRS GROWTH	6.2	mg/kg			RCBRA
2531	CURRENT YRS GROWTH	5.9	mg/kg			RCBRA
2532	CURRENT YRS GROWTH	3.9	mg/kg			RCBRA
2533	CURRENT YRS GROWTH	3.4	mg/kg			RCBRA
2534	CURRENT YRS GROWTH	1.2	mg/kg			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
2535	Copper	7440-50-8	RCBRA R Ref 11	Outside decision areas	RIPARIAN	559400.735	146458.486
2536	Copper	7440-50-8	RCBRA R Ref 12	IU2/IU6	RIPARIAN	559201.908	145747.542
2537	Copper	7440-50-8	RCBRA R Ref 13	Outside decision areas	RIPARIAN	558572.809	145345.115
2538	Copper	7440-50-8	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
2539	Copper	7440-50-8	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
2540	Copper	7440-50-8	RCBRA R Ref 16	Outside decision areas	RIPARIAN	557650.029	144826.748
2541	Copper	7440-50-8	RCBRA Rip 1	D/H	RIPARIAN	577251.869	153659.195
2542	Copper	7440-50-8	RCBRA Rip 10	D/H	RIPARIAN	573987.873	153082.19
2543	Copper	7440-50-8	RCBRA Rip 2	D/H	RIPARIAN	573603.219	152471.6
2544	Copper	7440-50-8	RCBRA Rip 3	D/H	RIPARIAN	572639.65	151677.812
2545	Copper	7440-50-8	RCBRA Rip 5	K	RIPARIAN	569141.025	147521.561
2546	Copper	7440-50-8	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
2547	Copper	7440-50-8	RCBRA Rip 7	IU2/IU6	RIPARIAN	581326.914	147825.17
2548	Copper	7440-50-8	RCBRA Rip 8	D/H	RIPARIAN	578698.584	152233.645
2549	Copper	7440-50-8	RCBRA Rip 9	D/H	RIPARIAN	578153.643	152801.452
2550	Copper	7440-50-8	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
2551	Copper	7440-50-8	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
2552	Copper	7440-50-8	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
2553	Copper	7440-50-8	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
2554	Copper	7440-50-8	RCBRA Yak Rdg 2	Outside decision areas	UPLAND	559031.557	135576.407
2555	Copper	7440-50-8	RCBRA 100-D-48	D/H	UPLAND	573841.527	151914.538
2556	Copper	7440-50-8	RCBRA 100-D-49	D/H	UPLAND	573938.06	151944.123
2557	Copper	7440-50-8	RCBRA 100-F-2	IU2/IU6	UPLAND	579728.068	147001.117
2558	Copper	7440-50-8	RCBRA 116-DR-1&2	D/H	UPLAND	574007.817	152246.748
2559	Copper	7440-50-8	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
2560	Copper	7440-50-8	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
2561	Copper	7440-50-8	RCBRA 116-N-3	N	UPLAND	571995.702	149793.039
2562	Copper	7440-50-8	RCBRA 1607-D2:1	D/H	UPLAND	573823.924	152260.319
2563	Copper	7440-50-8	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
2564	Copper	7440-50-8	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
2565	Copper	7440-50-8	RCBRA 300-49	300	UPLAND	594318.994	116830.934
2566	Copper	7440-50-8	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
2567	Copper	7440-50-8	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
2568	Copper	7440-50-8	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
2569	Copper	7440-50-8	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
2570	Copper	7440-50-8	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
2571	Copper	7440-50-8	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
2572	Copper	7440-50-8	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
2573	Copper	7440-50-8	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
2535	5/9/2006	J11WY8	SOIL and BIOTA	MIS	17.1	mg/kg	PLANT
2536	5/9/2006	J11WX0	SOIL and BIOTA	MIS	19.5	mg/kg	PLANT
2537	8/10/2006	J11WY9	SOIL and BIOTA	MIS	34.2	mg/kg	PLANT
2538	5/9/2006	J11X02	SOIL and BIOTA	MIS	37.3	mg/kg	PLANT
2539	5/8/2007	J15293	SOIL and BIOTA	MIS	37.3	mg/kg	PLANT
2540	5/9/2006	J11X04	SOIL and BIOTA	MIS	25.1	mg/kg	PLANT
2541	5/16/2006	J11WX1	SOIL and BIOTA	MIS	34.8	mg/kg	PLANT
2542	5/9/2006	J11WY6	SOIL and BIOTA	MIS	24.1	mg/kg	PLANT
2543	5/19/2006	J11WX4	SOIL and BIOTA	MIS	19.8	mg/kg	PLANT
2544	5/9/2006	J11WX6	SOIL and BIOTA	MIS	19.4	mg/kg	PLANT
2545	5/9/2006	J11WW8	SOIL and BIOTA	MIS	30.2	mg/kg	PLANT
2546	5/22/2006	J11XP0	SOIL and BIOTA	MIS	30.4	mg/kg	PLANT
2547	5/9/2006	J11WY0	SOIL and BIOTA	MIS	31.6	mg/kg	PLANT
2548	5/16/2006	J11WY2	SOIL and BIOTA	MIS	27.1	mg/kg	PLANT
2549	5/16/2006	J11WY4	SOIL and BIOTA	MIS	22.5	mg/kg	PLANT
2550	5/18/2006	J11XB0	SOIL and BIOTA	MIS	16.3	mg/kg	PLANT
2551	5/18/2006	J11XB0	SOIL and BIOTA	MIS-phyt	17.5	mg/kg	PLANT
2552	5/15/2006	J11X96	SOIL and BIOTA	MIS	13.4	mg/kg	PLANT
2553	5/15/2006	J11X96	SOIL and BIOTA	MIS-phyt	14.3	mg/kg	PLANT
2554	5/16/2006	J11X94	SOIL and BIOTA	MIS	21.2	mg/kg	PLANT
2555	5/18/2006	J11X43	SOIL and BIOTA	MIS	14.5	mg/kg	PLANT
2556	5/18/2006	J11X55	SOIL and BIOTA	MIS	14.3	mg/kg	PLANT
2557	5/10/2006	J11X60	SOIL and BIOTA	MIS	15.4	mg/kg	PLANT
2558	5/19/2006	J11X57	SOIL and BIOTA	MIS	14.9	mg/kg	PLANT
2559	5/16/2006	J11X49	SOIL and BIOTA	MIS	11.9	mg/kg	PLANT
2560	5/16/2006	J11X49	SOIL and BIOTA	MIS-phyt	11.4	mg/kg	PLANT
2561	5/19/2006	J11X47	SOIL and BIOTA	MIS	16.8	mg/kg	PLANT
2562	5/22/2006	J11X59	SOIL and BIOTA	MIS	13.6	mg/kg	PLANT
2563	5/12/2006	J11X45	SOIL and BIOTA	MIS	26.1	mg/kg	PLANT
2564	5/12/2006	J11X45	SOIL and BIOTA	MIS-phyt	24	mg/kg	PLANT
2565	4/26/2006	J11X53	SOIL and BIOTA	MIS	18.7	mg/kg	PLANT
2566	5/12/2006	J11X85	SOIL and BIOTA	MIS	12.7	mg/kg	PLANT
2567	5/12/2006	J11X85	SOIL and BIOTA	MIS-phyt	14.5	mg/kg	PLANT
2568	5/12/2006	J11X76	SOIL and BIOTA	MIS	13.1	mg/kg	PLANT
2569	5/12/2006	J11X76	SOIL and BIOTA	MIS-phyt	12	mg/kg	PLANT
2570	5/16/2006	J11X78	SOIL and BIOTA	MIS	44.5	mg/kg	PLANT
2571	5/16/2006	J11X78	SOIL and BIOTA	MIS-phyt	38.5	mg/kg	PLANT
2572	5/16/2006	J11X91	SOIL and BIOTA	MIS	13.4	mg/kg	PLANT
2573	5/16/2006	J11X91	SOIL and BIOTA	MIS-phyt	14.1	mg/kg	PLANT

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
2535	CURRENT YRS GROWTH	1.9	mg/kg	C		RCBRA
2536	CURRENT YRS GROWTH	2	mg/kg	C		RCBRA
2537	CURRENT YRS GROWTH	3.4	mg/kg			RCBRA
2538	CURRENT YRS GROWTH	1.8	mg/kg	C		RCBRA
2539	CURRENT YRS GROWTH	2.3	mg/kg	C		RCBRA
2540	CURRENT YRS GROWTH	2	mg/kg	C		RCBRA
2541	CURRENT YRS GROWTH	7.7	mg/kg			RCBRA
2542	CURRENT YRS GROWTH	1.8	mg/kg	C		RCBRA
2543	CURRENT YRS GROWTH	9	mg/kg			RCBRA
2544	CURRENT YRS GROWTH	2.1	mg/kg	C		RCBRA
2545	CURRENT YRS GROWTH	1.6	mg/kg	C		RCBRA
2546	CURRENT YRS GROWTH	4.7	mg/kg			RCBRA
2547	CURRENT YRS GROWTH	1.6	mg/kg	C		RCBRA
2548	CURRENT YRS GROWTH	4.8	mg/kg			RCBRA
2549	CURRENT YRS GROWTH	6.6	mg/kg			RCBRA
2550	CURRENT YRS GROWTH	5.1	mg/kg			RCBRA
2551	CURRENT YRS GROWTH	5.1	mg/kg			RCBRA
2552	CURRENT YRS GROWTH	5.3	mg/kg			RCBRA
2553	CURRENT YRS GROWTH	5.3	mg/kg			RCBRA
2554	CURRENT YRS GROWTH	4.7	mg/kg			RCBRA
2555	CURRENT YRS GROWTH	8.8	mg/kg			RCBRA
2556	CURRENT YRS GROWTH	6	mg/kg			RCBRA
2557	CURRENT YRS GROWTH	0.98	mg/kg			RCBRA
2558	CURRENT YRS GROWTH	8.3	mg/kg			RCBRA
2559	CURRENT YRS GROWTH	5	mg/kg			RCBRA
2560	CURRENT YRS GROWTH	5	mg/kg			RCBRA
2561	CURRENT YRS GROWTH	3.4	mg/kg			RCBRA
2562	CURRENT YRS GROWTH	7.9	mg/kg			RCBRA
2563	CURRENT YRS GROWTH	3.1	mg/kg	C		RCBRA
2564	CURRENT YRS GROWTH	3.1	mg/kg	C		RCBRA
2565	CURRENT YRS GROWTH	5.2	mg/kg	C		RCBRA
2566	CURRENT YRS GROWTH	0.42	mg/kg			RCBRA
2567	CURRENT YRS GROWTH	0.42	mg/kg			RCBRA
2568	CURRENT YRS GROWTH	0.37	mg/kg			RCBRA
2569	CURRENT YRS GROWTH	0.37	mg/kg			RCBRA
2570	CURRENT YRS GROWTH	13.4	mg/kg			RCBRA
2571	CURRENT YRS GROWTH	13.4	mg/kg			RCBRA
2572	CURRENT YRS GROWTH	7.5	mg/kg			RCBRA
2573	CURRENT YRS GROWTH	7.5	mg/kg			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
2574	Copper	7440-50-8	RCBRA 600-181	IU2/IU6	UPLAND	578303.83	147316.698
2575	Copper	7440-50-8	RCBRA 600-204	IU2/IU6	UPLAND	580128.485	144762.219
2576	Copper	7440-50-8	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
2577	Copper	7440-50-8	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
2578	Copper	7440-50-8	RCBRA 600-23	IU2/IU6	UPLAND	585523.593	130481.377
2579	Copper	7440-50-8	RCBRA 618-4	300	UPLAND	593954.946	117064.473
2580	Copper	7440-50-8	RCBRA 628-1	IU2/IU6	UPLAND	577797.524	148745.681
2581	Copper	7440-50-8	RCBRA JA JONES	300	UPLAND	593874.58	120013.908
2582	Copper	7440-50-8	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
2583	Copper	7440-50-8	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
2584	Copper	7440-50-8	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
2585	Copper	7440-50-8	RCBRA Pit 18	IU2/IU6	UPLAND	580697.058	145311.464
2586	Copper	7440-50-8	RCBRA Pit 23	IU2/IU6	UPLAND	572381.012	144874.157
2587	Copper	7440-50-8	RCBRA Pit 24	BC	UPLAND	563395.814	145119.007
2588	Copper	7440-50-8	RCBRA Pit 9	300	UPLAND	592807.103	120587.7
2589	Copper	7440-50-8	RCBRA R Ref 11	Outside decision areas	RIPARIAN	559400.735	146458.486
2590	Copper	7440-50-8	RCBRA R Ref 12	IU2/IU6	RIPARIAN	559201.908	145747.542
2591	Copper	7440-50-8	RCBRA R Ref 13	Outside decision areas	RIPARIAN	558572.809	145345.115
2592	Copper	7440-50-8	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
2593	Copper	7440-50-8	RCBRA R Ref 16	Outside decision areas	RIPARIAN	557650.029	144826.748
2594	Copper	7440-50-8	RCBRA Rip 1	D/H	RIPARIAN	577251.869	153659.195
2595	Copper	7440-50-8	RCBRA Rip 10	D/H	RIPARIAN	573987.873	153082.19
2596	Copper	7440-50-8	RCBRA Rip 2	D/H	RIPARIAN	573603.219	152471.6
2597	Copper	7440-50-8	RCBRA Rip 3	D/H	RIPARIAN	572639.65	151677.812
2598	Copper	7440-50-8	RCBRA Rip 4	N	RIPARIAN	570558.596	148981.547
2599	Copper	7440-50-8	RCBRA Rip 5	K	RIPARIAN	569141.025	147521.561
2600	Copper	7440-50-8	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
2601	Copper	7440-50-8	RCBRA Rip 7	IU2/IU6	RIPARIAN	581326.914	147825.17
2602	Copper	7440-50-8	RCBRA Rip 8	D/H	RIPARIAN	578698.584	152233.645
2603	Copper	7440-50-8	RCBRA Rip 9	D/H	RIPARIAN	578153.643	152801.452
2604	Copper	7440-50-8	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
2605	Copper	7440-50-8	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
2606	Copper	7440-50-8	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
2607	Copper	7440-50-8	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
2608	Copper	7440-50-8	RCBRA Yak Rdg 2	Outside decision areas	UPLAND	559031.557	135576.407
2609	Copper	7440-50-8	RCBRA 2a Rip	BC	RIPARIAN	564618.501	145284.526
2610	Copper	7440-50-8	RCBRA 2c Rip	K	RIPARIAN	567598.2	146210.159
2611	Copper	7440-50-8	RCBRA 2f Rip	D/H	RIPARIAN	576222.844	154297.511
2612	Copper	7440-50-8	RCBRA 2j Rip	IU2/IU6	RIPARIAN	579360.971	150092.048

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
2574	5/18/2006	J11X87	SOIL and BIOTA	MIS	11.1	mg/kg	PLANT
2575	5/18/2006	J11X80	SOIL and BIOTA	MIS	13.1	mg/kg	PLANT
2576	5/15/2006	J11X83	SOIL and BIOTA	MIS	12.8	mg/kg	PLANT
2577	5/15/2006	J11X83	SOIL and BIOTA	MIS-phyt	11.2	mg/kg	PLANT
2578	5/12/2006	J11X73	SOIL and BIOTA	MIS	12.4	mg/kg	PLANT
2579	5/12/2006	J11X50	SOIL and BIOTA	MIS	9.7	mg/kg	PLANT
2580	5/12/2006	J11X88	SOIL and BIOTA	MIS	21.3	mg/kg	PLANT
2581	5/10/2006	J11X75	SOIL and BIOTA	MIS	12.5	mg/kg	PLANT
2582	5/18/2006	J11X99	SOIL and BIOTA	MIS	19.9	mg/kg	PLANT
2583	5/18/2006	J11X99	SOIL and BIOTA	MIS-phyt	20.2	mg/kg	PLANT
2584	5/15/2006	J11X67	SOIL and BIOTA	MIS	13.8	mg/kg	PLANT
2585	5/18/2006	J11X68	SOIL and BIOTA	MIS	13.3	mg/kg	PLANT
2586	5/22/2006	J11X62	SOIL and BIOTA	MIS	16	mg/kg	PLANT
2587	5/19/2006	J11X71	SOIL and BIOTA	MIS	15.7	mg/kg	PLANT
2588	5/12/2006	J11X65	SOIL and BIOTA	MIS	13.9	mg/kg	PLANT
2589	5/9/2006	J11WY7	SOIL and BIOTA	MIS	17.1	mg/kg	PLANT
2590	5/9/2006	J11WW9	SOIL and BIOTA	MIS	19.5	mg/kg	PLANT
2591	8/10/2006	J11X00	SOIL and BIOTA	MIS	34.2	mg/kg	PLANT
2592	5/9/2006	J11X01	SOIL and BIOTA	MIS	37.3	mg/kg	PLANT
2593	5/9/2006	J11X03	SOIL and BIOTA	MIS	25.1	mg/kg	PLANT
2594	5/16/2006	J11WX2	SOIL and BIOTA	MIS	34.8	mg/kg	PLANT
2595	5/9/2006	J11WY5	SOIL and BIOTA	MIS	24.1	mg/kg	PLANT
2596	5/19/2006	J11WX3	SOIL and BIOTA	MIS	19.8	mg/kg	PLANT
2597	5/9/2006	J11WX5	SOIL and BIOTA	MIS	19.4	mg/kg	PLANT
2598	5/9/2006	J11WW5	SOIL and BIOTA	MIS	29.6	mg/kg	PLANT
2599	5/9/2006	J11WW7	SOIL and BIOTA	MIS	30.2	mg/kg	PLANT
2600	5/22/2006	J11WX7	SOIL and BIOTA	MIS	30.4	mg/kg	PLANT
2601	5/9/2006	J11WX9	SOIL and BIOTA	MIS	31.6	mg/kg	PLANT
2602	5/16/2006	J11WY1	SOIL and BIOTA	MIS	27.1	mg/kg	PLANT
2603	5/16/2006	J11WY3	SOIL and BIOTA	MIS	22.5	mg/kg	PLANT
2604	5/18/2006	J11XB1	SOIL and BIOTA	MIS	16.3	mg/kg	PLANT
2605	5/18/2006	J11XB1	SOIL and BIOTA	MIS-phyt	17.5	mg/kg	PLANT
2606	5/15/2006	J11X97	SOIL and BIOTA	MIS	13.4	mg/kg	PLANT
2607	5/15/2006	J11X97	SOIL and BIOTA	MIS-phyt	14.3	mg/kg	PLANT
2608	5/16/2006	J11X95	SOIL and BIOTA	MIS	21.2	mg/kg	PLANT
2609	5/23/2007	J15299	SOIL and BIOTA	MIS	23.8	mg/kg	PLANT
2610	5/21/2007	J152B9	SOIL and BIOTA	MIS	33.1	mg/kg	PLANT
2611	5/7/2007	J15294	SOIL and BIOTA	MIS	29.9	mg/kg	PLANT
2612	5/21/2007	J15297	SOIL and BIOTA	MIS	38.8	mg/kg	PLANT

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
2574	CURRENT YRS GROWTH	4.3	mg/kg			RCBRA
2575	CURRENT YRS GROWTH	8.4	mg/kg			RCBRA
2576	CURRENT YRS GROWTH	6.1	mg/kg			RCBRA
2577	CURRENT YRS GROWTH	6.1	mg/kg			RCBRA
2578	CURRENT YRS GROWTH	2	mg/kg			RCBRA
2579	CURRENT YRS GROWTH	1.1	mg/kg			RCBRA
2580	CURRENT YRS GROWTH	1.2	mg/kg			RCBRA
2581	CURRENT YRS GROWTH	3.1	mg/kg			RCBRA
2582	CURRENT YRS GROWTH	3.6	mg/kg			RCBRA
2583	CURRENT YRS GROWTH	3.6	mg/kg			RCBRA
2584	CURRENT YRS GROWTH	5.7	mg/kg			RCBRA
2585	CURRENT YRS GROWTH	13.3	mg/kg			RCBRA
2586	CURRENT YRS GROWTH	5.8	mg/kg			RCBRA
2587	CURRENT YRS GROWTH	5.3	mg/kg			RCBRA
2588	CURRENT YRS GROWTH	2.6	mg/kg			RCBRA
2589	CURRENT YRS GROWTH	1.8	mg/kg	C		RCBRA
2590	CURRENT YRS GROWTH	1.7	mg/kg	C		RCBRA
2591	CURRENT YRS GROWTH	1.8	mg/kg			RCBRA
2592	CURRENT YRS GROWTH	1.4	mg/kg	C		RCBRA
2593	CURRENT YRS GROWTH	2.2	mg/kg	C		RCBRA
2594	CURRENT YRS GROWTH	9	mg/kg			RCBRA
2595	CURRENT YRS GROWTH	2.5	mg/kg	C		RCBRA
2596	CURRENT YRS GROWTH	9.8	mg/kg			RCBRA
2597	CURRENT YRS GROWTH	1.9	mg/kg	C		RCBRA
2598	CURRENT YRS GROWTH	1.8	mg/kg	C		RCBRA
2599	CURRENT YRS GROWTH	2.3	mg/kg	C		RCBRA
2600	CURRENT YRS GROWTH	5.2	mg/kg			RCBRA
2601	CURRENT YRS GROWTH	1.9	mg/kg	C		RCBRA
2602	CURRENT YRS GROWTH	9.8	mg/kg			RCBRA
2603	CURRENT YRS GROWTH	7.7	mg/kg			RCBRA
2604	CURRENT YRS GROWTH	2.7	mg/kg			RCBRA
2605	CURRENT YRS GROWTH	2.7	mg/kg			RCBRA
2606	CURRENT YRS GROWTH	3.2	mg/kg			RCBRA
2607	CURRENT YRS GROWTH	3.2	mg/kg			RCBRA
2608	CURRENT YRS GROWTH	4.2	mg/kg			RCBRA
2609	CURRENT YRS GROWTH	3	mg/kg	C		RCBRA
2610	CURRENT YRS GROWTH	2.5	mg/kg	C		RCBRA
2611	CURRENT YRS GROWTH	2.4	mg/kg	C		RCBRA
2612	CURRENT YRS GROWTH	1.8	mg/kg	C		RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
2613	Copper	7440-50-8	RCBRA 2l Rip	IU2/IU6	RIPARIAN	582341.212	146120.069
2614	Copper	7440-50-8	RCBRA 3b Rip	IU2/IU6	RIPARIAN	584961.205	141035.835
2615	Copper	7440-50-8	RCBRA 4a Rip	IU2/IU6	RIPARIAN	589347.5	137480.985
2616	Copper	7440-50-8	RCBRA 5c Rip	300	RIPARIAN	594509.985	124869.182
2617	Copper	7440-50-8	RCBRA Bev Ref 1 Rip	Outside decision areas	RIPARIAN	542428.846	167701.261
2618	Copper	7440-50-8	RCBRA Bev Ref 2 Rip	Outside decision areas	RIPARIAN	541493.988	167808.357
2619	Copper	7440-50-8	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
2620	Copper	7440-50-8	VERNITA BRIDGE 1	Outside decision areas	UPLAND	558823	145536
2621	Copper	7440-50-8	VERNITA BRIDGE 1	Outside decision areas	UPLAND	558823	145536
2622	Copper	7440-50-8	VERNITA BRIDGE 1	Outside decision areas	UPLAND	558823	145536
2623	Copper	7440-50-8	VERNITA BRIDGE 1	Outside decision areas	UPLAND	558823	145536
2624	Copper	7440-50-8	VERNITA BRIDGE 2	Outside decision areas	UPLAND	558844	145558
2625	Copper	7440-50-8	VERNITA BRIDGE 2	Outside decision areas	UPLAND	558844	145558
2626	Copper	7440-50-8	VERNITA BRIDGE 2	Outside decision areas	UPLAND	558844	145558
2627	Copper	7440-50-8	VERNITA BRIDGE 3	IU2/IU6	UPLAND	559089	145707
2628	Copper	7440-50-8	VERNITA BRIDGE 3	IU2/IU6	UPLAND	559089	145707
2629	Copper	7440-50-8	VERNITA BRIDGE 3	IU2/IU6	UPLAND	559089	145707
2630	Copper	7440-50-8	VERNITA BRIDGE 3	IU2/IU6	UPLAND	559089	145707
2631	Copper	7440-50-8	VERNITA BRIDGE 3	IU2/IU6	UPLAND	559089	145707
2632	Copper	7440-50-8	VERNITA BRIDGE 4	IU2/IU6	UPLAND	559347	145849
2633	Copper	7440-50-8	VERNITA BRIDGE 4	IU2/IU6	UPLAND	559347	145849
2634	Copper	7440-50-8	VERNITA BRIDGE 4	IU2/IU6	UPLAND	559347	145849
2635	Copper	7440-50-8	VERNITA BRIDGE 4	IU2/IU6	UPLAND	559347	145849
2636	Copper	7440-50-8	VERNITA BRIDGE 5	IU2/IU6	UPLAND	559606	145999
2637	Copper	7440-50-8	VERNITA BRIDGE 5	IU2/IU6	UPLAND	559606	145999
2638	Copper	7440-50-8	VERNITA BRIDGE 5	IU2/IU6	UPLAND	559606	145999
2639	Copper	7440-50-8	VERNITA BRIDGE 5	IU2/IU6	UPLAND	559606	145999
2640	Iron	7439-89-6	RCBRA 100-D-48	D/H	UPLAND	573841.527	151914.538
2641	Iron	7439-89-6	RCBRA 100-D-49	D/H	UPLAND	573938.06	151944.123
2642	Iron	7439-89-6	RCBRA 100-F-2	IU2/IU6	UPLAND	579728.068	147001.117
2643	Iron	7439-89-6	RCBRA 116-DR-1&2	D/H	UPLAND	574007.817	152246.748
2644	Iron	7439-89-6	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
2645	Iron	7439-89-6	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
2646	Iron	7439-89-6	RCBRA 116-N-3	N	UPLAND	571995.702	149793.039
2647	Iron	7439-89-6	RCBRA 1607-D2:1	D/H	UPLAND	573823.924	152260.319
2648	Iron	7439-89-6	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
2649	Iron	7439-89-6	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
2650	Iron	7439-89-6	RCBRA 300-49	300	UPLAND	594318.994	116830.934
2651	Iron	7439-89-6	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
2613	5/24/2007	J152B1	SOIL and BIOTA	MIS	17.7	mg/kg	PLANT
2614	5/23/2007	J152B3	SOIL and BIOTA	MIS	44.9	mg/kg	PLANT
2615	5/24/2007	J152B7	SOIL and BIOTA	MIS	43.4	mg/kg	PLANT
2616	5/24/2007	J152B5	SOIL and BIOTA	MIS	22.9	mg/kg	PLANT
2617	5/10/2007	J15288	SOIL and BIOTA	MIS	32	mg/kg	PLANT
2618	5/8/2007	J15290	SOIL and BIOTA	MIS	25.6	mg/kg	PLANT
2619	5/8/2007	J15292	SOIL and BIOTA	MIS	37.3	mg/kg	PLANT
2620	8/19/2004	B1B5N4	SOIL and BIOTA	Discrete	24.35	mg/kg	PLANT
2621	8/19/2004	B1B5N5	SOIL and BIOTA	Discrete	24.35	mg/kg	PLANT
2622	8/19/2004	B1B5N6	SOIL and BIOTA	Discrete	24.35	mg/kg	PLANT
2623	8/19/2004	B1B5N3	SOIL and BIOTA	Discrete	24.35	mg/kg	PLANT
2624	8/19/2004	B1B5P6	SOIL and BIOTA	Discrete	22.6	mg/kg	PLANT
2625	8/19/2004	B1B5P5	SOIL and BIOTA	Discrete	22.6	mg/kg	PLANT
2626	8/19/2004	B1B5P7	SOIL and BIOTA	Discrete	22.6	mg/kg	PLANT
2627	8/19/2004	B1B5R8	SOIL and BIOTA	Discrete	24.85	mg/kg	PLANT
2628	8/19/2004	B1B5R7	SOIL and BIOTA	Discrete	24.85	mg/kg	PLANT
2629	8/20/2004	B1B5R9	SOIL and BIOTA	Discrete	24.85	mg/kg	PLANT
2630	8/19/2004	B1B5R5	SOIL and BIOTA	Discrete	24.85	mg/kg	PLANT
2631	8/19/2004	B1B5R6	SOIL and BIOTA	Discrete	24.85	mg/kg	PLANT
2632	8/24/2004	B1B5V0	SOIL and BIOTA	Discrete	24.8	mg/kg	PLANT
2633	8/24/2004	B1B5V3	SOIL and BIOTA	Discrete	24.8	mg/kg	PLANT
2634	8/24/2004	B1B5T9	SOIL and BIOTA	Discrete	24.8	mg/kg	PLANT
2635	8/24/2004	B1B5V1	SOIL and BIOTA	Discrete	24.8	mg/kg	PLANT
2636	8/24/2004	B1B5W3	SOIL and BIOTA	Discrete	30.05	mg/kg	PLANT
2637	8/24/2004	B1B5W5	SOIL and BIOTA	Discrete	30.05	mg/kg	PLANT
2638	8/24/2004	B1B5W4	SOIL and BIOTA	Discrete	30.05	mg/kg	PLANT
2639	8/24/2004	B1B5W6	SOIL and BIOTA	Discrete	30.05	mg/kg	PLANT
2640	5/18/2006	J11X42	SOIL and BIOTA	MIS	23200	mg/kg	PLANT
2641	5/18/2006	J11X54	SOIL and BIOTA	MIS	21700	mg/kg	PLANT
2642	5/10/2006	J11X61	SOIL and BIOTA	MIS	19300	mg/kg	PLANT
2643	5/19/2006	J11X56	SOIL and BIOTA	MIS	20700	mg/kg	PLANT
2644	5/16/2006	J11X48	SOIL and BIOTA	MIS	17400	mg/kg	PLANT
2645	5/16/2006	J11X48	SOIL and BIOTA	MIS-phyt	17600	mg/kg	PLANT
2646	5/19/2006	J11X46	SOIL and BIOTA	MIS	24500	mg/kg	PLANT
2647	5/22/2006	J11X58	SOIL and BIOTA	MIS	19100	mg/kg	PLANT
2648	5/12/2006	J11X44	SOIL and BIOTA	MIS	15500	mg/kg	PLANT
2649	5/12/2006	J11X44	SOIL and BIOTA	MIS-phyt	20200	mg/kg	PLANT
2650	4/26/2006	J11X52	SOIL and BIOTA	MIS	19500	mg/kg	PLANT
2651	5/12/2006	J11X84	SOIL and BIOTA	MIS	14000	mg/kg	PLANT

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
2613	CURRENT YRS GROWTH	2.1	mg/kg	C		RCBRA
2614	CURRENT YRS GROWTH	1.7	mg/kg	C		RCBRA
2615	CURRENT YRS GROWTH	1.8	mg/kg	C		RCBRA
2616	CURRENT YRS GROWTH	1.7	mg/kg	C		RCBRA
2617	CURRENT YRS GROWTH	3.1	mg/kg	C		RCBRA
2618	CURRENT YRS GROWTH	3	mg/kg	C		RCBRA
2619	CURRENT YRS GROWTH	2.1	mg/kg	C		RCBRA
2620	SHOOTS	2.0727	mg/kg	CX		PNNL
2621	SHOOTS	2.814	mg/kg	CX		PNNL
2622	SHOOTS	0.8022	mg/kg	CX		PNNL
2623	SHOOTS	0.6258	mg/kg	CX		PNNL
2624	SHOOTS	3.822	mg/kg	CX		PNNL
2625	SHOOTS	1.1613	mg/kg	CX		PNNL
2626	SHOOTS	0.7875	mg/kg	CX		PNNL
2627	SHOOTS	1.554	mg/kg	CX		PNNL
2628	SHOOTS	1.6233	mg/kg	CX		PNNL
2629	SHOOTS	0.399	mg/kg	CX		PNNL
2630	SHOOTS	0.7308	mg/kg	CX		PNNL
2631	SHOOTS	2.121	mg/kg	CX		PNNL
2632	SHOOTS	1.5855	mg/kg	CX		PNNL
2633	SHOOTS	0.399	mg/kg	CX		PNNL
2634	SHOOTS	1.4511	mg/kg	CX		PNNL
2635	SHOOTS	3.339	mg/kg	CX		PNNL
2636	SHOOTS	1.9215	mg/kg	CX		PNNL
2637	SHOOTS	2.751	mg/kg	CX		PNNL
2638	SHOOTS	2.478	mg/kg	CX		PNNL
2639	SHOOTS	0.735	mg/kg	CX		PNNL
2640	CURRENT YRS GROWTH	81.5	mg/kg			RCBRA
2641	CURRENT YRS GROWTH	100	mg/kg			RCBRA
2642	CURRENT YRS GROWTH	26.5	mg/kg			RCBRA
2643	CURRENT YRS GROWTH	133	mg/kg			RCBRA
2644	CURRENT YRS GROWTH	87.3	mg/kg	C		RCBRA
2645	CURRENT YRS GROWTH	87.3	mg/kg	C		RCBRA
2646	CURRENT YRS GROWTH	113	mg/kg			RCBRA
2647	CURRENT YRS GROWTH	89.6	mg/kg			RCBRA
2648	CURRENT YRS GROWTH	26.7	mg/kg		J	RCBRA
2649	CURRENT YRS GROWTH	26.7	mg/kg		J	RCBRA
2650	CURRENT YRS GROWTH	75.4	mg/kg			RCBRA
2651	CURRENT YRS GROWTH	34.8	mg/kg			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
2652	Iron	7439-89-6	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
2653	Iron	7439-89-6	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
2654	Iron	7439-89-6	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
2655	Iron	7439-89-6	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
2656	Iron	7439-89-6	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
2657	Iron	7439-89-6	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
2658	Iron	7439-89-6	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
2659	Iron	7439-89-6	RCBRA 600-181	IU2/IU6	UPLAND	578303.83	147316.698
2660	Iron	7439-89-6	RCBRA 600-204	IU2/IU6	UPLAND	580128.485	144762.219
2661	Iron	7439-89-6	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
2662	Iron	7439-89-6	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
2663	Iron	7439-89-6	RCBRA 600-23	IU2/IU6	UPLAND	585523.593	130481.377
2664	Iron	7439-89-6	RCBRA 618-4	300	UPLAND	593954.946	117064.473
2665	Iron	7439-89-6	RCBRA 628-1	IU2/IU6	UPLAND	577797.524	148745.681
2666	Iron	7439-89-6	RCBRA JA JONES	300	UPLAND	593874.58	120013.908
2667	Iron	7439-89-6	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
2668	Iron	7439-89-6	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
2669	Iron	7439-89-6	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
2670	Iron	7439-89-6	RCBRA Pit 18	IU2/IU6	UPLAND	580697.058	145311.464
2671	Iron	7439-89-6	RCBRA Pit 23	IU2/IU6	UPLAND	572381.012	144874.157
2672	Iron	7439-89-6	RCBRA Pit 24	BC	UPLAND	563395.814	145119.007
2673	Iron	7439-89-6	RCBRA Pit 9	300	UPLAND	592807.103	120587.7
2674	Iron	7439-89-6	RCBRA R Ref 11	Outside decision areas	RIPARIAN	559400.735	146458.486
2675	Iron	7439-89-6	RCBRA R Ref 12	IU2/IU6	RIPARIAN	559201.908	145747.542
2676	Iron	7439-89-6	RCBRA R Ref 13	Outside decision areas	RIPARIAN	558572.809	145345.115
2677	Iron	7439-89-6	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
2678	Iron	7439-89-6	RCBRA R Ref 16	Outside decision areas	RIPARIAN	557650.029	144826.748
2679	Iron	7439-89-6	RCBRA Rip 1	D/H	RIPARIAN	577251.869	153659.195
2680	Iron	7439-89-6	RCBRA Rip 10	D/H	RIPARIAN	573987.873	153082.19
2681	Iron	7439-89-6	RCBRA Rip 2	D/H	RIPARIAN	573603.219	152471.6
2682	Iron	7439-89-6	RCBRA Rip 3	D/H	RIPARIAN	572639.65	151677.812
2683	Iron	7439-89-6	RCBRA Rip 4	N	RIPARIAN	570558.596	148981.547
2684	Iron	7439-89-6	RCBRA Rip 5	K	RIPARIAN	569141.025	147521.561
2685	Iron	7439-89-6	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
2686	Iron	7439-89-6	RCBRA Rip 7	IU2/IU6	RIPARIAN	581326.914	147825.17
2687	Iron	7439-89-6	RCBRA Rip 8	D/H	RIPARIAN	578698.584	152233.645
2688	Iron	7439-89-6	RCBRA Rip 9	D/H	RIPARIAN	578153.643	152801.452
2689	Iron	7439-89-6	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
2690	Iron	7439-89-6	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
2652	5/12/2006	J11X84	SOIL and BIOTA	MIS-phyt	22100	mg/kg	PLANT
2653	5/12/2006	J11X77	SOIL and BIOTA	MIS	17100	mg/kg	PLANT
2654	5/12/2006	J11X77	SOIL and BIOTA	MIS-phyt	20700	mg/kg	PLANT
2655	5/16/2006	J11X79	SOIL and BIOTA	MIS	18500	mg/kg	PLANT
2656	5/16/2006	J11X79	SOIL and BIOTA	MIS-phyt	21400	mg/kg	PLANT
2657	5/16/2006	J11X90	SOIL and BIOTA	MIS	14800	mg/kg	PLANT
2658	5/16/2006	J11X90	SOIL and BIOTA	MIS-phyt	20100	mg/kg	PLANT
2659	5/18/2006	J11X86	SOIL and BIOTA	MIS	21200	mg/kg	PLANT
2660	5/18/2006	J11X81	SOIL and BIOTA	MIS	24700	mg/kg	PLANT
2661	5/15/2006	J11X82	SOIL and BIOTA	MIS	19700	mg/kg	PLANT
2662	5/15/2006	J11X82	SOIL and BIOTA	MIS-phyt	21900	mg/kg	PLANT
2663	5/12/2006	J11X72	SOIL and BIOTA	MIS	18700	mg/kg	PLANT
2664	5/12/2006	J11X51	SOIL and BIOTA	MIS	18300	mg/kg	PLANT
2665	5/12/2006	J11X89	SOIL and BIOTA	MIS	31500	mg/kg	PLANT
2666	5/10/2006	J11X74	SOIL and BIOTA	MIS	18800	mg/kg	PLANT
2667	5/18/2006	J11X98	SOIL and BIOTA	MIS	26000	mg/kg	PLANT
2668	5/18/2006	J11X98	SOIL and BIOTA	MIS-phyt	29400	mg/kg	PLANT
2669	5/15/2006	J11X66	SOIL and BIOTA	MIS	25900	mg/kg	PLANT
2670	5/18/2006	J11X69	SOIL and BIOTA	MIS	17800	mg/kg	PLANT
2671	5/22/2006	J11X63	SOIL and BIOTA	MIS	20900	mg/kg	PLANT
2672	5/19/2006	J11X70	SOIL and BIOTA	MIS	22700	mg/kg	PLANT
2673	5/12/2006	J11X64	SOIL and BIOTA	MIS	23400	mg/kg	PLANT
2674	5/9/2006	J11WY8	SOIL and BIOTA	MIS	18200	mg/kg	PLANT
2675	5/9/2006	J11WX0	SOIL and BIOTA	MIS	17900	mg/kg	PLANT
2676	8/10/2006	J11WY9	SOIL and BIOTA	MIS	23800	mg/kg	PLANT
2677	5/9/2006	J11X02	SOIL and BIOTA	MIS	23600	mg/kg	PLANT
2678	5/9/2006	J11X04	SOIL and BIOTA	MIS	18100	mg/kg	PLANT
2679	5/16/2006	J11WX1	SOIL and BIOTA	MIS	21100	mg/kg	PLANT
2680	5/9/2006	J11WY6	SOIL and BIOTA	MIS	21000	mg/kg	PLANT
2681	5/19/2006	J11WX4	SOIL and BIOTA	MIS	20000	mg/kg	PLANT
2682	5/9/2006	J11WX6	SOIL and BIOTA	MIS	22700	mg/kg	PLANT
2683	5/9/2006	J11WW6	SOIL and BIOTA	MIS	21200	mg/kg	PLANT
2684	5/9/2006	J11WW8	SOIL and BIOTA	MIS	20300	mg/kg	PLANT
2685	5/22/2006	J11XP0	SOIL and BIOTA	MIS	24100	mg/kg	PLANT
2686	5/9/2006	J11WY0	SOIL and BIOTA	MIS	21300	mg/kg	PLANT
2687	5/16/2006	J11WY2	SOIL and BIOTA	MIS	19300	mg/kg	PLANT
2688	5/16/2006	J11WY4	SOIL and BIOTA	MIS	18400	mg/kg	PLANT
2689	5/18/2006	J11XB0	SOIL and BIOTA	MIS	27100	mg/kg	PLANT
2690	5/18/2006	J11XB0	SOIL and BIOTA	MIS-phyt	29700	mg/kg	PLANT

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
2652	CURRENT YRS GROWTH	34.8	mg/kg			RCBRA
2653	CURRENT YRS GROWTH	38.3	mg/kg			RCBRA
2654	CURRENT YRS GROWTH	38.3	mg/kg			RCBRA
2655	CURRENT YRS GROWTH	74.7	mg/kg	C		RCBRA
2656	CURRENT YRS GROWTH	74.7	mg/kg	C		RCBRA
2657	CURRENT YRS GROWTH	91.6	mg/kg	C		RCBRA
2658	CURRENT YRS GROWTH	91.6	mg/kg	C		RCBRA
2659	CURRENT YRS GROWTH	79.1	mg/kg			RCBRA
2660	CURRENT YRS GROWTH	80.1	mg/kg			RCBRA
2661	CURRENT YRS GROWTH	80	mg/kg	C		RCBRA
2662	CURRENT YRS GROWTH	80	mg/kg	C		RCBRA
2663	CURRENT YRS GROWTH	108	mg/kg			RCBRA
2664	CURRENT YRS GROWTH	48.6	mg/kg			RCBRA
2665	CURRENT YRS GROWTH	54	mg/kg			RCBRA
2666	CURRENT YRS GROWTH	71.7	mg/kg			RCBRA
2667	CURRENT YRS GROWTH	51.8	mg/kg			RCBRA
2668	CURRENT YRS GROWTH	51.8	mg/kg			RCBRA
2669	CURRENT YRS GROWTH	297	mg/kg	C		RCBRA
2670	CURRENT YRS GROWTH	99	mg/kg			RCBRA
2671	CURRENT YRS GROWTH	67.1	mg/kg			RCBRA
2672	CURRENT YRS GROWTH	39.8	mg/kg			RCBRA
2673	CURRENT YRS GROWTH	25.7	mg/kg			RCBRA
2674	CURRENT YRS GROWTH	217	mg/kg		J	RCBRA
2675	CURRENT YRS GROWTH	517	mg/kg		J	RCBRA
2676	CURRENT YRS GROWTH	850	mg/kg			RCBRA
2677	CURRENT YRS GROWTH	319	mg/kg		J	RCBRA
2678	CURRENT YRS GROWTH	272	mg/kg		J	RCBRA
2679	CURRENT YRS GROWTH	214	mg/kg	C		RCBRA
2680	CURRENT YRS GROWTH	49.5	mg/kg		J	RCBRA
2681	CURRENT YRS GROWTH	380	mg/kg			RCBRA
2682	CURRENT YRS GROWTH	34.6	mg/kg		J	RCBRA
2683	CURRENT YRS GROWTH	131	mg/kg		J	RCBRA
2684	CURRENT YRS GROWTH	342	mg/kg		J	RCBRA
2685	CURRENT YRS GROWTH	164	mg/kg			RCBRA
2686	CURRENT YRS GROWTH	62.4	mg/kg		J	RCBRA
2687	CURRENT YRS GROWTH	604	mg/kg	C		RCBRA
2688	CURRENT YRS GROWTH	196	mg/kg	C		RCBRA
2689	CURRENT YRS GROWTH	51.2	mg/kg			RCBRA
2690	CURRENT YRS GROWTH	51.2	mg/kg			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
2691	Iron	7439-89-6	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
2692	Iron	7439-89-6	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
2693	Iron	7439-89-6	RCBRA Yak Rdg 2	Outside decision areas	UPLAND	559031.557	135576.407
2694	Iron	7439-89-6	RCBRA 100-D-48	D/H	UPLAND	573841.527	151914.538
2695	Iron	7439-89-6	RCBRA 100-D-49	D/H	UPLAND	573938.06	151944.123
2696	Iron	7439-89-6	RCBRA 100-F-2	IU2/IU6	UPLAND	579728.068	147001.117
2697	Iron	7439-89-6	RCBRA 116-DR-1&2	D/H	UPLAND	574007.817	152246.748
2698	Iron	7439-89-6	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
2699	Iron	7439-89-6	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
2700	Iron	7439-89-6	RCBRA 116-N-3	N	UPLAND	571995.702	149793.039
2701	Iron	7439-89-6	RCBRA 1607-D2:1	D/H	UPLAND	573823.924	152260.319
2702	Iron	7439-89-6	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
2703	Iron	7439-89-6	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
2704	Iron	7439-89-6	RCBRA 300-49	300	UPLAND	594318.994	116830.934
2705	Iron	7439-89-6	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
2706	Iron	7439-89-6	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
2707	Iron	7439-89-6	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
2708	Iron	7439-89-6	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
2709	Iron	7439-89-6	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
2710	Iron	7439-89-6	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
2711	Iron	7439-89-6	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
2712	Iron	7439-89-6	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
2713	Iron	7439-89-6	RCBRA 600-181	IU2/IU6	UPLAND	578303.83	147316.698
2714	Iron	7439-89-6	RCBRA 600-204	IU2/IU6	UPLAND	580128.485	144762.219
2715	Iron	7439-89-6	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
2716	Iron	7439-89-6	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
2717	Iron	7439-89-6	RCBRA 600-23	IU2/IU6	UPLAND	585523.593	130481.377
2718	Iron	7439-89-6	RCBRA 618-4	300	UPLAND	593954.946	117064.473
2719	Iron	7439-89-6	RCBRA 628-1	IU2/IU6	UPLAND	577797.524	148745.681
2720	Iron	7439-89-6	RCBRA JA JONES	300	UPLAND	593874.58	120013.908
2721	Iron	7439-89-6	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
2722	Iron	7439-89-6	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
2723	Iron	7439-89-6	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
2724	Iron	7439-89-6	RCBRA Pit 18	IU2/IU6	UPLAND	580697.058	145311.464
2725	Iron	7439-89-6	RCBRA Pit 23	IU2/IU6	UPLAND	572381.012	144874.157
2726	Iron	7439-89-6	RCBRA Pit 24	BC	UPLAND	563395.814	145119.007
2727	Iron	7439-89-6	RCBRA Pit 9	300	UPLAND	592807.103	120587.7
2728	Iron	7439-89-6	RCBRA R Ref 11	Outside decision areas	RIPARIAN	559400.735	146458.486
2729	Iron	7439-89-6	RCBRA R Ref 12	IU2/IU6	RIPARIAN	559201.908	145747.542

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
2691	5/15/2006	J11X96	SOIL and BIOTA	MIS	19800	mg/kg	PLANT
2692	5/15/2006	J11X96	SOIL and BIOTA	MIS-phyt	24400	mg/kg	PLANT
2693	5/16/2006	J11X94	SOIL and BIOTA	MIS	28000	mg/kg	PLANT
2694	5/18/2006	J11X43	SOIL and BIOTA	MIS	23200	mg/kg	PLANT
2695	5/18/2006	J11X55	SOIL and BIOTA	MIS	21700	mg/kg	PLANT
2696	5/10/2006	J11X60	SOIL and BIOTA	MIS	19300	mg/kg	PLANT
2697	5/19/2006	J11X57	SOIL and BIOTA	MIS	20700	mg/kg	PLANT
2698	5/16/2006	J11X49	SOIL and BIOTA	MIS	17400	mg/kg	PLANT
2699	5/16/2006	J11X49	SOIL and BIOTA	MIS-phyt	17600	mg/kg	PLANT
2700	5/19/2006	J11X47	SOIL and BIOTA	MIS	24500	mg/kg	PLANT
2701	5/22/2006	J11X59	SOIL and BIOTA	MIS	19100	mg/kg	PLANT
2702	5/12/2006	J11X45	SOIL and BIOTA	MIS	15500	mg/kg	PLANT
2703	5/12/2006	J11X45	SOIL and BIOTA	MIS-phyt	20200	mg/kg	PLANT
2704	4/26/2006	J11X53	SOIL and BIOTA	MIS	19500	mg/kg	PLANT
2705	5/12/2006	J11X85	SOIL and BIOTA	MIS	14000	mg/kg	PLANT
2706	5/12/2006	J11X85	SOIL and BIOTA	MIS-phyt	22100	mg/kg	PLANT
2707	5/12/2006	J11X76	SOIL and BIOTA	MIS	17100	mg/kg	PLANT
2708	5/12/2006	J11X76	SOIL and BIOTA	MIS-phyt	20700	mg/kg	PLANT
2709	5/16/2006	J11X78	SOIL and BIOTA	MIS	18500	mg/kg	PLANT
2710	5/16/2006	J11X78	SOIL and BIOTA	MIS-phyt	21400	mg/kg	PLANT
2711	5/16/2006	J11X91	SOIL and BIOTA	MIS	14800	mg/kg	PLANT
2712	5/16/2006	J11X91	SOIL and BIOTA	MIS-phyt	20100	mg/kg	PLANT
2713	5/18/2006	J11X87	SOIL and BIOTA	MIS	21200	mg/kg	PLANT
2714	5/18/2006	J11X80	SOIL and BIOTA	MIS	24700	mg/kg	PLANT
2715	5/15/2006	J11X83	SOIL and BIOTA	MIS	19700	mg/kg	PLANT
2716	5/15/2006	J11X83	SOIL and BIOTA	MIS-phyt	21900	mg/kg	PLANT
2717	5/12/2006	J11X73	SOIL and BIOTA	MIS	18700	mg/kg	PLANT
2718	5/12/2006	J11X50	SOIL and BIOTA	MIS	18300	mg/kg	PLANT
2719	5/12/2006	J11X88	SOIL and BIOTA	MIS	31500	mg/kg	PLANT
2720	5/10/2006	J11X75	SOIL and BIOTA	MIS	18800	mg/kg	PLANT
2721	5/18/2006	J11X99	SOIL and BIOTA	MIS	26000	mg/kg	PLANT
2722	5/18/2006	J11X99	SOIL and BIOTA	MIS-phyt	29400	mg/kg	PLANT
2723	5/15/2006	J11X67	SOIL and BIOTA	MIS	25900	mg/kg	PLANT
2724	5/18/2006	J11X68	SOIL and BIOTA	MIS	17800	mg/kg	PLANT
2725	5/22/2006	J11X62	SOIL and BIOTA	MIS	20900	mg/kg	PLANT
2726	5/19/2006	J11X71	SOIL and BIOTA	MIS	22700	mg/kg	PLANT
2727	5/12/2006	J11X65	SOIL and BIOTA	MIS	23400	mg/kg	PLANT
2728	5/9/2006	J11WY7	SOIL and BIOTA	MIS	18200	mg/kg	PLANT
2729	5/9/2006	J11WW9	SOIL and BIOTA	MIS	17900	mg/kg	PLANT

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
2691	CURRENT YRS GROWTH	93.3	mg/kg	C		RCBRA
2692	CURRENT YRS GROWTH	93.3	mg/kg	C		RCBRA
2693	CURRENT YRS GROWTH	177	mg/kg	C		RCBRA
2694	CURRENT YRS GROWTH	256	mg/kg			RCBRA
2695	CURRENT YRS GROWTH	175	mg/kg			RCBRA
2696	CURRENT YRS GROWTH	38.4	mg/kg			RCBRA
2697	CURRENT YRS GROWTH	297	mg/kg			RCBRA
2698	CURRENT YRS GROWTH	233	mg/kg	C		RCBRA
2699	CURRENT YRS GROWTH	233	mg/kg	C		RCBRA
2700	CURRENT YRS GROWTH	329	mg/kg			RCBRA
2701	CURRENT YRS GROWTH	345	mg/kg			RCBRA
2702	CURRENT YRS GROWTH	98.2	mg/kg		J	RCBRA
2703	CURRENT YRS GROWTH	98.2	mg/kg		J	RCBRA
2704	CURRENT YRS GROWTH	151	mg/kg			RCBRA
2705	CURRENT YRS GROWTH	44.7	mg/kg			RCBRA
2706	CURRENT YRS GROWTH	44.7	mg/kg			RCBRA
2707	CURRENT YRS GROWTH	38.7	mg/kg			RCBRA
2708	CURRENT YRS GROWTH	38.7	mg/kg			RCBRA
2709	CURRENT YRS GROWTH	190	mg/kg	C		RCBRA
2710	CURRENT YRS GROWTH	190	mg/kg	C		RCBRA
2711	CURRENT YRS GROWTH	393	mg/kg	C		RCBRA
2712	CURRENT YRS GROWTH	393	mg/kg	C		RCBRA
2713	CURRENT YRS GROWTH	171	mg/kg			RCBRA
2714	CURRENT YRS GROWTH	307	mg/kg			RCBRA
2715	CURRENT YRS GROWTH	156	mg/kg	C		RCBRA
2716	CURRENT YRS GROWTH	156	mg/kg	C		RCBRA
2717	CURRENT YRS GROWTH	196	mg/kg			RCBRA
2718	CURRENT YRS GROWTH	25	mg/kg			RCBRA
2719	CURRENT YRS GROWTH	47.3	mg/kg			RCBRA
2720	CURRENT YRS GROWTH	164	mg/kg			RCBRA
2721	CURRENT YRS GROWTH	81.1	mg/kg			RCBRA
2722	CURRENT YRS GROWTH	81.1	mg/kg			RCBRA
2723	CURRENT YRS GROWTH	266	mg/kg	C		RCBRA
2724	CURRENT YRS GROWTH	243	mg/kg			RCBRA
2725	CURRENT YRS GROWTH	370	mg/kg			RCBRA
2726	CURRENT YRS GROWTH	401	mg/kg			RCBRA
2727	CURRENT YRS GROWTH	65.1	mg/kg			RCBRA
2728	CURRENT YRS GROWTH	101	mg/kg		J	RCBRA
2729	CURRENT YRS GROWTH	69.3	mg/kg		J	RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
2730	Iron	7439-89-6	RCBRA R Ref 13	Outside decision areas	RIPARIAN	558572.809	145345.115
2731	Iron	7439-89-6	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
2732	Iron	7439-89-6	RCBRA R Ref 16	Outside decision areas	RIPARIAN	557650.029	144826.748
2733	Iron	7439-89-6	RCBRA Rip 1	D/H	RIPARIAN	577251.869	153659.195
2734	Iron	7439-89-6	RCBRA Rip 10	D/H	RIPARIAN	573987.873	153082.19
2735	Iron	7439-89-6	RCBRA Rip 2	D/H	RIPARIAN	573603.219	152471.6
2736	Iron	7439-89-6	RCBRA Rip 3	D/H	RIPARIAN	572639.65	151677.812
2737	Iron	7439-89-6	RCBRA Rip 4	N	RIPARIAN	570558.596	148981.547
2738	Iron	7439-89-6	RCBRA Rip 5	K	RIPARIAN	569141.025	147521.561
2739	Iron	7439-89-6	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
2740	Iron	7439-89-6	RCBRA Rip 7	IU2/IU6	RIPARIAN	581326.914	147825.17
2741	Iron	7439-89-6	RCBRA Rip 8	D/H	RIPARIAN	578698.584	152233.645
2742	Iron	7439-89-6	RCBRA Rip 9	D/H	RIPARIAN	578153.643	152801.452
2743	Iron	7439-89-6	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
2744	Iron	7439-89-6	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
2745	Iron	7439-89-6	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
2746	Iron	7439-89-6	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
2747	Iron	7439-89-6	RCBRA Yak Rdg 2	Outside decision areas	UPLAND	559031.557	135576.407
2748	Iron	7439-89-6	RCBRA 2f Rip	D/H	RIPARIAN	576222.844	154297.511
2749	Iron	7439-89-6	RCBRA Bev Ref 1 Rip	Outside decision areas	RIPARIAN	542428.846	167701.261
2750	Iron	7439-89-6	RCBRA Bev Ref 2 Rip	Outside decision areas	RIPARIAN	541493.988	167808.357
2751	Mecury	7439-97-6	VERNITA BRIDGE 1	Outside decision areas	UPLAND	558823	145536
2752	Mecury	7439-97-6	VERNITA BRIDGE 1	Outside decision areas	UPLAND	558823	145536
2753	Mecury	7439-97-6	VERNITA BRIDGE 2	Outside decision areas	UPLAND	558844	145558
2754	Mecury	7439-97-6	VERNITA BRIDGE 3	IU2/IU6	UPLAND	559089	145707
2755	Mecury	7439-97-6	VERNITA BRIDGE 3	IU2/IU6	UPLAND	559089	145707
2756	Mecury	7439-97-6	VERNITA BRIDGE 3	IU2/IU6	UPLAND	559089	145707
2757	Mecury	7439-97-6	VERNITA BRIDGE 3	IU2/IU6	UPLAND	559089	145707
2758	Mecury	7439-97-6	VERNITA BRIDGE 5	IU2/IU6	UPLAND	559606	145999
2759	Mecury	7439-97-6	VERNITA BRIDGE 5	IU2/IU6	UPLAND	559606	145999
2760	Mecury	7439-97-6	VERNITA BRIDGE 5	IU2/IU6	UPLAND	559606	145999
2761	Mecury	7439-97-6	VERNITA BRIDGE 5	IU2/IU6	UPLAND	559606	145999
2762	Potasium	7440_09_7	RCBRA 100-D-48	D/H	UPLAND	573841.527	151914.538
2763	Potasium	7440_09_7	RCBRA 100-D-49	D/H	UPLAND	573938.06	151944.123
2764	Potasium	7440_09_7	RCBRA 100-F-2	IU2/IU6	UPLAND	579728.068	147001.117
2765	Potasium	7440_09_7	RCBRA 116-DR-1&2	D/H	UPLAND	574007.817	152246.748
2766	Potasium	7440_09_7	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
2767	Potasium	7440_09_7	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
2768	Potasium	7440_09_7	RCBRA 116-N-3	N	UPLAND	571995.702	149793.039

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
2730	8/10/2006	J11X00	SOIL and BIOTA	MIS	23800	mg/kg	PLANT
2731	5/9/2006	J11X01	SOIL and BIOTA	MIS	23600	mg/kg	PLANT
2732	5/9/2006	J11X03	SOIL and BIOTA	MIS	18100	mg/kg	PLANT
2733	5/16/2006	J11WX2	SOIL and BIOTA	MIS	21100	mg/kg	PLANT
2734	5/9/2006	J11WY5	SOIL and BIOTA	MIS	21000	mg/kg	PLANT
2735	5/19/2006	J11WX3	SOIL and BIOTA	MIS	20000	mg/kg	PLANT
2736	5/9/2006	J11WX5	SOIL and BIOTA	MIS	22700	mg/kg	PLANT
2737	5/9/2006	J11WW5	SOIL and BIOTA	MIS	21200	mg/kg	PLANT
2738	5/9/2006	J11WW7	SOIL and BIOTA	MIS	20300	mg/kg	PLANT
2739	5/22/2006	J11WX7	SOIL and BIOTA	MIS	24100	mg/kg	PLANT
2740	5/9/2006	J11WX9	SOIL and BIOTA	MIS	21300	mg/kg	PLANT
2741	5/16/2006	J11WY1	SOIL and BIOTA	MIS	19300	mg/kg	PLANT
2742	5/16/2006	J11WY3	SOIL and BIOTA	MIS	18400	mg/kg	PLANT
2743	5/18/2006	J11XB1	SOIL and BIOTA	MIS	27100	mg/kg	PLANT
2744	5/18/2006	J11XB1	SOIL and BIOTA	MIS-phyt	29700	mg/kg	PLANT
2745	5/15/2006	J11X97	SOIL and BIOTA	MIS	19800	mg/kg	PLANT
2746	5/15/2006	J11X97	SOIL and BIOTA	MIS-phyt	24400	mg/kg	PLANT
2747	5/16/2006	J11X95	SOIL and BIOTA	MIS	28000	mg/kg	PLANT
2748	5/7/2007	J15294	SOIL and BIOTA	MIS	19800	mg/kg	PLANT
2749	5/10/2007	J15288	SOIL and BIOTA	MIS	25600	mg/kg	PLANT
2750	5/8/2007	J15290	SOIL and BIOTA	MIS	17800	mg/kg	PLANT
2751	8/19/2004	B1B5N5	SOIL and BIOTA	Discrete	0.02725	mg/kg	PLANT
2752	8/19/2004	B1B5N3	SOIL and BIOTA	Discrete	0.02725	mg/kg	PLANT
2753	8/19/2004	B1B5P7	SOIL and BIOTA	Discrete	0.0321	mg/kg	PLANT
2754	8/19/2004	B1B5R8	SOIL and BIOTA	Discrete	0.0571	mg/kg	PLANT
2755	8/19/2004	B1B5R7	SOIL and BIOTA	Discrete	0.0571	mg/kg	PLANT
2756	8/20/2004	B1B5R9	SOIL and BIOTA	Discrete	0.0571	mg/kg	PLANT
2757	8/19/2004	B1B5R6	SOIL and BIOTA	Discrete	0.0571	mg/kg	PLANT
2758	8/24/2004	B1B5W3	SOIL and BIOTA	Discrete	0.0693	mg/kg	PLANT
2759	8/24/2004	B1B5W5	SOIL and BIOTA	Discrete	0.0693	mg/kg	PLANT
2760	8/24/2004	B1B5W6	SOIL and BIOTA	Discrete	0.0693	mg/kg	PLANT
2761	8/24/2004	B1B5W4	SOIL and BIOTA	Discrete	0.0693	mg/kg	PLANT
2762	5/18/2006	J11X42	SOIL and BIOTA	MIS	1010	mg/kg	PLANT
2763	5/18/2006	J11X54	SOIL and BIOTA	MIS	1200	mg/kg	PLANT
2764	5/10/2006	J11X61	SOIL and BIOTA	MIS	2420	mg/kg	PLANT
2765	5/19/2006	J11X56	SOIL and BIOTA	MIS	1120	mg/kg	PLANT
2766	5/16/2006	J11X48	SOIL and BIOTA	MIS	1600	mg/kg	PLANT
2767	5/16/2006	J11X48	SOIL and BIOTA	MIS-phyt	1590	mg/kg	PLANT
2768	5/19/2006	J11X46	SOIL and BIOTA	MIS	1360	mg/kg	PLANT

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
2730	CURRENT YRS GROWTH	75.8	mg/kg			RCBRA
2731	CURRENT YRS GROWTH	109	mg/kg		J	RCBRA
2732	CURRENT YRS GROWTH	100	mg/kg		J	RCBRA
2733	CURRENT YRS GROWTH	198	mg/kg	C		RCBRA
2734	CURRENT YRS GROWTH	126	mg/kg		J	RCBRA
2735	CURRENT YRS GROWTH	471	mg/kg			RCBRA
2736	CURRENT YRS GROWTH	120	mg/kg		J	RCBRA
2737	CURRENT YRS GROWTH	90.9	mg/kg		J	RCBRA
2738	CURRENT YRS GROWTH	189	mg/kg		J	RCBRA
2739	CURRENT YRS GROWTH	252	mg/kg			RCBRA
2740	CURRENT YRS GROWTH	150	mg/kg		J	RCBRA
2741	CURRENT YRS GROWTH	186	mg/kg	C		RCBRA
2742	CURRENT YRS GROWTH	522	mg/kg	C		RCBRA
2743	CURRENT YRS GROWTH	78.6	mg/kg			RCBRA
2744	CURRENT YRS GROWTH	78.6	mg/kg			RCBRA
2745	CURRENT YRS GROWTH	68.3	mg/kg	C		RCBRA
2746	CURRENT YRS GROWTH	68.3	mg/kg	C		RCBRA
2747	CURRENT YRS GROWTH	164	mg/kg	C		RCBRA
2748	CURRENT YRS GROWTH	59.2	mg/kg	C	J	RCBRA
2749	CURRENT YRS GROWTH	60.3	mg/kg	C		RCBRA
2750	CURRENT YRS GROWTH	58	mg/kg	C	J	RCBRA
2751	SHOOTS	0.02961	mg/kg	X		PNNL
2752	SHOOTS	0.013818	mg/kg	X		PNNL
2753	SHOOTS	0.013104	mg/kg	X		PNNL
2754	SHOOTS	0.02163	mg/kg	X		PNNL
2755	SHOOTS	0.0546	mg/kg	X		PNNL
2756	SHOOTS	0.04452	mg/kg	X		PNNL
2757	SHOOTS	0.017493	mg/kg	X		PNNL
2758	SHOOTS	0.02352	mg/kg	X		PNNL
2759	SHOOTS	0.018984	mg/kg	X		PNNL
2760	SHOOTS	0.017682	mg/kg	X		PNNL
2761	SHOOTS	0.010941	mg/kg	X		PNNL
2762	CURRENT YRS GROWTH	13800	mg/kg	C		RCBRA
2763	CURRENT YRS GROWTH	14700	mg/kg	C		RCBRA
2764	CURRENT YRS GROWTH	5600	mg/kg			RCBRA
2765	CURRENT YRS GROWTH	18400	mg/kg	C		RCBRA
2766	CURRENT YRS GROWTH	9900	mg/kg			RCBRA
2767	CURRENT YRS GROWTH	9900	mg/kg			RCBRA
2768	CURRENT YRS GROWTH	12200	mg/kg	C		RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
2769	Potasium	7440_09_7	RCBRA 1607-D2:1	D/H	UPLAND	573823.924	152260.319
2770	Potasium	7440_09_7	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
2771	Potasium	7440_09_7	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
2772	Potasium	7440_09_7	RCBRA 2a Rip	BC	RIPARIAN	564618.501	145284.526
2773	Potasium	7440_09_7	RCBRA 2c Rip	K	RIPARIAN	567598.2	146210.159
2774	Potasium	7440_09_7	RCBRA 2f Rip	D/H	RIPARIAN	576222.844	154297.511
2775	Potasium	7440_09_7	RCBRA 2j Rip	IU2/IU6	RIPARIAN	579360.971	150092.048
2776	Potasium	7440_09_7	RCBRA 2l Rip	IU2/IU6	RIPARIAN	582341.212	146120.069
2777	Potasium	7440_09_7	RCBRA 300-49	300	UPLAND	594318.994	116830.934
2778	Potasium	7440_09_7	RCBRA 3b Rip	IU2/IU6	RIPARIAN	584961.205	141035.835
2779	Potasium	7440_09_7	RCBRA 4a Rip	IU2/IU6	RIPARIAN	589347.5	137480.985
2780	Potasium	7440_09_7	RCBRA 5c Rip	300	RIPARIAN	594509.985	124869.182
2781	Potasium	7440_09_7	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
2782	Potasium	7440_09_7	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
2783	Potasium	7440_09_7	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
2784	Potasium	7440_09_7	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
2785	Potasium	7440_09_7	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
2786	Potasium	7440_09_7	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
2787	Potasium	7440_09_7	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
2788	Potasium	7440_09_7	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
2789	Potasium	7440_09_7	RCBRA 600-181	IU2/IU6	UPLAND	578303.83	147316.698
2790	Potasium	7440_09_7	RCBRA 600-204	IU2/IU6	UPLAND	580128.485	144762.219
2791	Potasium	7440_09_7	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
2792	Potasium	7440_09_7	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
2793	Potasium	7440_09_7	RCBRA 600-23	IU2/IU6	UPLAND	585523.593	130481.377
2794	Potasium	7440_09_7	RCBRA 618-4	300	UPLAND	593954.946	117064.473
2795	Potasium	7440_09_7	RCBRA 628-1	IU2/IU6	UPLAND	577797.524	148745.681
2796	Potasium	7440_09_7	RCBRA Bev Ref 1 Rip	Outside decision areas	RIPARIAN	542428.846	167701.261
2797	Potasium	7440_09_7	RCBRA Bev Ref 2 Rip	Outside decision areas	RIPARIAN	541493.988	167808.357
2798	Potasium	7440_09_7	RCBRA JA JONES	300	UPLAND	593874.58	120013.908
2799	Potasium	7440_09_7	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
2800	Potasium	7440_09_7	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
2801	Potasium	7440_09_7	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
2802	Potasium	7440_09_7	RCBRA Pit 18	IU2/IU6	UPLAND	580697.058	145311.464
2803	Potasium	7440_09_7	RCBRA Pit 23	IU2/IU6	UPLAND	572381.012	144874.157
2804	Potasium	7440_09_7	RCBRA Pit 24	BC	UPLAND	563395.814	145119.007
2805	Potasium	7440_09_7	RCBRA Pit 9	300	UPLAND	592807.103	120587.7
2806	Potasium	7440_09_7	RCBRA R Ref 11	Outside decision areas	RIPARIAN	559400.735	146458.486
2807	Potasium	7440_09_7	RCBRA R Ref 12	IU2/IU6	RIPARIAN	559201.908	145747.542

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
2769	5/22/2006	J11X58	SOIL and BIOTA	MIS	1020	mg/kg	PLANT
2770	5/12/2006	J11X44	SOIL and BIOTA	MIS	1180	mg/kg	PLANT
2771	5/12/2006	J11X44	SOIL and BIOTA	MIS-phyt	1310	mg/kg	PLANT
2772	5/23/2007	J15298	SOIL and BIOTA	MIS	883	mg/kg	PLANT
2773	5/21/2007	J152B8	SOIL and BIOTA	MIS	1110	mg/kg	PLANT
2774	5/7/2007	J15295	SOIL and BIOTA	MIS	907	mg/kg	PLANT
2775	5/21/2007	J15296	SOIL and BIOTA	MIS	1120	mg/kg	PLANT
2776	5/24/2007	J152B0	SOIL and BIOTA	MIS	790	mg/kg	PLANT
2777	4/26/2006	J11X52	SOIL and BIOTA	MIS	1300	mg/kg	PLANT
2778	5/23/2007	J152B2	SOIL and BIOTA	MIS	889	mg/kg	PLANT
2779	5/24/2007	J152B6	SOIL and BIOTA	MIS	1110	mg/kg	PLANT
2780	5/24/2007	J152B4	SOIL and BIOTA	MIS	627	mg/kg	PLANT
2781	5/12/2006	J11X84	SOIL and BIOTA	MIS	1000	mg/kg	PLANT
2782	5/12/2006	J11X84	SOIL and BIOTA	MIS-phyt	1380	mg/kg	PLANT
2783	5/12/2006	J11X77	SOIL and BIOTA	MIS	1160	mg/kg	PLANT
2784	5/12/2006	J11X77	SOIL and BIOTA	MIS-phyt	1290	mg/kg	PLANT
2785	5/16/2006	J11X79	SOIL and BIOTA	MIS	1100	mg/kg	PLANT
2786	5/16/2006	J11X79	SOIL and BIOTA	MIS-phyt	1190	mg/kg	PLANT
2787	5/16/2006	J11X90	SOIL and BIOTA	MIS	1290	mg/kg	PLANT
2788	5/16/2006	J11X90	SOIL and BIOTA	MIS-phyt	1420	mg/kg	PLANT
2789	5/18/2006	J11X86	SOIL and BIOTA	MIS	1400	mg/kg	PLANT
2790	5/18/2006	J11X81	SOIL and BIOTA	MIS	1500	mg/kg	PLANT
2791	5/15/2006	J11X82	SOIL and BIOTA	MIS	1830	mg/kg	PLANT
2792	5/15/2006	J11X82	SOIL and BIOTA	MIS-phyt	1830	mg/kg	PLANT
2793	5/12/2006	J11X72	SOIL and BIOTA	MIS	992	mg/kg	PLANT
2794	5/12/2006	J11X51	SOIL and BIOTA	MIS	898	mg/kg	PLANT
2795	5/12/2006	J11X89	SOIL and BIOTA	MIS	1370	mg/kg	PLANT
2796	5/10/2007	J15289	SOIL and BIOTA	MIS	733	mg/kg	PLANT
2797	5/8/2007	J15291	SOIL and BIOTA	MIS	829	mg/kg	PLANT
2798	5/10/2006	J11X74	SOIL and BIOTA	MIS	1070	mg/kg	PLANT
2799	5/18/2006	J11X98	SOIL and BIOTA	MIS	2190	mg/kg	PLANT
2800	5/18/2006	J11X98	SOIL and BIOTA	MIS-phyt	2300	mg/kg	PLANT
2801	5/15/2006	J11X66	SOIL and BIOTA	MIS	1060	mg/kg	PLANT
2802	5/18/2006	J11X69	SOIL and BIOTA	MIS	969	mg/kg	PLANT
2803	5/22/2006	J11X63	SOIL and BIOTA	MIS	852	mg/kg	PLANT
2804	5/19/2006	J11X70	SOIL and BIOTA	MIS	1920	mg/kg	PLANT
2805	5/12/2006	J11X64	SOIL and BIOTA	MIS	996	mg/kg	PLANT
2806	5/9/2006	J11WY8	SOIL and BIOTA	MIS	830	mg/kg	PLANT
2807	5/9/2006	J11WX0	SOIL and BIOTA	MIS	833	mg/kg	PLANT

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
2769	CURRENT YRS GROWTH	15100	mg/kg	C		RCBRA
2770	CURRENT YRS GROWTH	5090	mg/kg			RCBRA
2771	CURRENT YRS GROWTH	5090	mg/kg			RCBRA
2772	CURRENT YRS GROWTH	5660	mg/kg			RCBRA
2773	CURRENT YRS GROWTH	6490	mg/kg			RCBRA
2774	CURRENT YRS GROWTH	6600	mg/kg			RCBRA
2775	CURRENT YRS GROWTH	7550	mg/kg			RCBRA
2776	CURRENT YRS GROWTH	5310	mg/kg			RCBRA
2777	CURRENT YRS GROWTH	11200	mg/kg			RCBRA
2778	CURRENT YRS GROWTH	6380	mg/kg			RCBRA
2779	CURRENT YRS GROWTH	5780	mg/kg			RCBRA
2780	CURRENT YRS GROWTH	6890	mg/kg			RCBRA
2781	CURRENT YRS GROWTH	4080	mg/kg			RCBRA
2782	CURRENT YRS GROWTH	4080	mg/kg			RCBRA
2783	CURRENT YRS GROWTH	4270	mg/kg			RCBRA
2784	CURRENT YRS GROWTH	4270	mg/kg			RCBRA
2785	CURRENT YRS GROWTH	16400	mg/kg			RCBRA
2786	CURRENT YRS GROWTH	16400	mg/kg			RCBRA
2787	CURRENT YRS GROWTH	24400	mg/kg			RCBRA
2788	CURRENT YRS GROWTH	24400	mg/kg			RCBRA
2789	CURRENT YRS GROWTH	14400	mg/kg	C		RCBRA
2790	CURRENT YRS GROWTH	17500	mg/kg	C		RCBRA
2791	CURRENT YRS GROWTH	23000	mg/kg			RCBRA
2792	CURRENT YRS GROWTH	23000	mg/kg			RCBRA
2793	CURRENT YRS GROWTH	5560	mg/kg			RCBRA
2794	CURRENT YRS GROWTH	4960	mg/kg			RCBRA
2795	CURRENT YRS GROWTH	4160	mg/kg			RCBRA
2796	CURRENT YRS GROWTH	5710	mg/kg			RCBRA
2797	CURRENT YRS GROWTH	6610	mg/kg			RCBRA
2798	CURRENT YRS GROWTH	6020	mg/kg			RCBRA
2799	CURRENT YRS GROWTH	11600	mg/kg	C		RCBRA
2800	CURRENT YRS GROWTH	11600	mg/kg	C		RCBRA
2801	CURRENT YRS GROWTH	16300	mg/kg			RCBRA
2802	CURRENT YRS GROWTH	14600	mg/kg	C		RCBRA
2803	CURRENT YRS GROWTH	10800	mg/kg	C		RCBRA
2804	CURRENT YRS GROWTH	10900	mg/kg	C		RCBRA
2805	CURRENT YRS GROWTH	5030	mg/kg			RCBRA
2806	CURRENT YRS GROWTH	4880	mg/kg			RCBRA
2807	CURRENT YRS GROWTH	3800	mg/kg			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
2808	Potasium	7440_09_7	RCBRA R Ref 13	Outside decision areas	RIPARIAN	558572.809	145345.115
2809	Potasium	7440_09_7	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
2810	Potasium	7440_09_7	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
2811	Potasium	7440_09_7	RCBRA R Ref 16	Outside decision areas	RIPARIAN	557650.029	144826.748
2812	Potasium	7440_09_7	RCBRA Rip 1	D/H	RIPARIAN	577251.869	153659.195
2813	Potasium	7440_09_7	RCBRA Rip 10	D/H	RIPARIAN	573987.873	153082.19
2814	Potasium	7440_09_7	RCBRA Rip 2	D/H	RIPARIAN	573603.219	152471.6
2815	Potasium	7440_09_7	RCBRA Rip 3	D/H	RIPARIAN	572639.65	151677.812
2816	Potasium	7440_09_7	RCBRA Rip 4	N	RIPARIAN	570558.596	148981.547
2817	Potasium	7440_09_7	RCBRA Rip 5	K	RIPARIAN	569141.025	147521.561
2818	Potasium	7440_09_7	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
2819	Potasium	7440_09_7	RCBRA Rip 7	IU2/IU6	RIPARIAN	581326.914	147825.17
2820	Potasium	7440_09_7	RCBRA Rip 8	D/H	RIPARIAN	578698.584	152233.645
2821	Potasium	7440_09_7	RCBRA Rip 9	D/H	RIPARIAN	578153.643	152801.452
2822	Potasium	7440_09_7	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
2823	Potasium	7440_09_7	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
2824	Potasium	7440_09_7	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
2825	Potasium	7440_09_7	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
2826	Potasium	7440_09_7	RCBRA Yak Rdg 2	Outside decision areas	UPLAND	559031.557	135576.407
2827	Potasium	7440_09_7	RCBRA 100-D-48	D/H	UPLAND	573841.527	151914.538
2828	Potasium	7440_09_7	RCBRA 100-D-49	D/H	UPLAND	573938.06	151944.123
2829	Potasium	7440_09_7	RCBRA 100-F-2	IU2/IU6	UPLAND	579728.068	147001.117
2830	Potasium	7440_09_7	RCBRA 116-DR-1&2	D/H	UPLAND	574007.817	152246.748
2831	Potasium	7440_09_7	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
2832	Potasium	7440_09_7	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
2833	Potasium	7440_09_7	RCBRA 116-N-3	N	UPLAND	571995.702	149793.039
2834	Potasium	7440_09_7	RCBRA 1607-D2:1	D/H	UPLAND	573823.924	152260.319
2835	Potasium	7440_09_7	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
2836	Potasium	7440_09_7	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
2837	Potasium	7440_09_7	RCBRA 300-49	300	UPLAND	594318.994	116830.934
2838	Potasium	7440_09_7	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
2839	Potasium	7440_09_7	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
2840	Potasium	7440_09_7	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
2841	Potasium	7440_09_7	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
2842	Potasium	7440_09_7	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
2843	Potasium	7440_09_7	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
2844	Potasium	7440_09_7	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
2845	Potasium	7440_09_7	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
2846	Potasium	7440_09_7	RCBRA 600-181	IU2/IU6	UPLAND	578303.83	147316.698

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
2808	8/10/2006	J11WY9	SOIL and BIOTA	MIS	1120	mg/kg	PLANT
2809	5/9/2006	J11X02	SOIL and BIOTA	MIS	1120	mg/kg	PLANT
2810	5/8/2007	J15293	SOIL and BIOTA	MIS	1120	mg/kg	PLANT
2811	5/9/2006	J11X04	SOIL and BIOTA	MIS	945	mg/kg	PLANT
2812	5/16/2006	J11WX1	SOIL and BIOTA	MIS	1320	mg/kg	PLANT
2813	5/9/2006	J11WY6	SOIL and BIOTA	MIS	611	mg/kg	PLANT
2814	5/19/2006	J11WX4	SOIL and BIOTA	MIS	848	mg/kg	PLANT
2815	5/9/2006	J11WX6	SOIL and BIOTA	MIS	546	mg/kg	PLANT
2816	5/9/2006	J11WW6	SOIL and BIOTA	MIS	950	mg/kg	PLANT
2817	5/9/2006	J11WW8	SOIL and BIOTA	MIS	985	mg/kg	PLANT
2818	5/22/2006	J11XP0	SOIL and BIOTA	MIS	1470	mg/kg	PLANT
2819	5/9/2006	J11WY0	SOIL and BIOTA	MIS	826	mg/kg	PLANT
2820	5/16/2006	J11WY2	SOIL and BIOTA	MIS	824	mg/kg	PLANT
2821	5/16/2006	J11WY4	SOIL and BIOTA	MIS	802	mg/kg	PLANT
2822	5/18/2006	J11XB0	SOIL and BIOTA	MIS	2280	mg/kg	PLANT
2823	5/18/2006	J11XB0	SOIL and BIOTA	MIS-phyt	2210	mg/kg	PLANT
2824	5/15/2006	J11X96	SOIL and BIOTA	MIS	2070	mg/kg	PLANT
2825	5/15/2006	J11X96	SOIL and BIOTA	MIS-phyt	2180	mg/kg	PLANT
2826	5/16/2006	J11X94	SOIL and BIOTA	MIS	2490	mg/kg	PLANT
2827	5/18/2006	J11X43	SOIL and BIOTA	MIS	1010	mg/kg	PLANT
2828	5/18/2006	J11X55	SOIL and BIOTA	MIS	1200	mg/kg	PLANT
2829	5/10/2006	J11X60	SOIL and BIOTA	MIS	2420	mg/kg	PLANT
2830	5/19/2006	J11X57	SOIL and BIOTA	MIS	1120	mg/kg	PLANT
2831	5/16/2006	J11X49	SOIL and BIOTA	MIS	1600	mg/kg	PLANT
2832	5/16/2006	J11X49	SOIL and BIOTA	MIS-phyt	1590	mg/kg	PLANT
2833	5/19/2006	J11X47	SOIL and BIOTA	MIS	1360	mg/kg	PLANT
2834	5/22/2006	J11X59	SOIL and BIOTA	MIS	1020	mg/kg	PLANT
2835	5/12/2006	J11X45	SOIL and BIOTA	MIS	1180	mg/kg	PLANT
2836	5/12/2006	J11X45	SOIL and BIOTA	MIS-phyt	1310	mg/kg	PLANT
2837	4/26/2006	J11X53	SOIL and BIOTA	MIS	1300	mg/kg	PLANT
2838	5/12/2006	J11X85	SOIL and BIOTA	MIS	1000	mg/kg	PLANT
2839	5/12/2006	J11X85	SOIL and BIOTA	MIS-phyt	1380	mg/kg	PLANT
2840	5/12/2006	J11X76	SOIL and BIOTA	MIS	1160	mg/kg	PLANT
2841	5/12/2006	J11X76	SOIL and BIOTA	MIS-phyt	1290	mg/kg	PLANT
2842	5/16/2006	J11X78	SOIL and BIOTA	MIS	1100	mg/kg	PLANT
2843	5/16/2006	J11X78	SOIL and BIOTA	MIS-phyt	1190	mg/kg	PLANT
2844	5/16/2006	J11X91	SOIL and BIOTA	MIS	1290	mg/kg	PLANT
2845	5/16/2006	J11X91	SOIL and BIOTA	MIS-phyt	1420	mg/kg	PLANT
2846	5/18/2006	J11X87	SOIL and BIOTA	MIS	1400	mg/kg	PLANT

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
2808	CURRENT YRS GROWTH	6460	mg/kg	C		RCBRA
2809	CURRENT YRS GROWTH	5400	mg/kg			RCBRA
2810	CURRENT YRS GROWTH	7640	mg/kg			RCBRA
2811	CURRENT YRS GROWTH	5310	mg/kg			RCBRA
2812	CURRENT YRS GROWTH	29900	mg/kg			RCBRA
2813	CURRENT YRS GROWTH	7110	mg/kg			RCBRA
2814	CURRENT YRS GROWTH	31900	mg/kg	C		RCBRA
2815	CURRENT YRS GROWTH	7710	mg/kg			RCBRA
2816	CURRENT YRS GROWTH	4770	mg/kg			RCBRA
2817	CURRENT YRS GROWTH	3840	mg/kg			RCBRA
2818	CURRENT YRS GROWTH	12400	mg/kg	C		RCBRA
2819	CURRENT YRS GROWTH	6160	mg/kg			RCBRA
2820	CURRENT YRS GROWTH	7550	mg/kg			RCBRA
2821	CURRENT YRS GROWTH	30000	mg/kg			RCBRA
2822	CURRENT YRS GROWTH	10000	mg/kg	C		RCBRA
2823	CURRENT YRS GROWTH	10000	mg/kg	C		RCBRA
2824	CURRENT YRS GROWTH	10100	mg/kg			RCBRA
2825	CURRENT YRS GROWTH	10100	mg/kg			RCBRA
2826	CURRENT YRS GROWTH	16600	mg/kg			RCBRA
2827	CURRENT YRS GROWTH	19100	mg/kg	C		RCBRA
2828	CURRENT YRS GROWTH	21900	mg/kg	C		RCBRA
2829	CURRENT YRS GROWTH	5720	mg/kg			RCBRA
2830	CURRENT YRS GROWTH	20300	mg/kg	C		RCBRA
2831	CURRENT YRS GROWTH	22700	mg/kg			RCBRA
2832	CURRENT YRS GROWTH	22700	mg/kg			RCBRA
2833	CURRENT YRS GROWTH	22000	mg/kg	C		RCBRA
2834	CURRENT YRS GROWTH	23300	mg/kg	C		RCBRA
2835	CURRENT YRS GROWTH	6800	mg/kg			RCBRA
2836	CURRENT YRS GROWTH	6800	mg/kg			RCBRA
2837	CURRENT YRS GROWTH	15700	mg/kg			RCBRA
2838	CURRENT YRS GROWTH	2390	mg/kg			RCBRA
2839	CURRENT YRS GROWTH	2390	mg/kg			RCBRA
2840	CURRENT YRS GROWTH	3230	mg/kg			RCBRA
2841	CURRENT YRS GROWTH	3230	mg/kg			RCBRA
2842	CURRENT YRS GROWTH	19500	mg/kg			RCBRA
2843	CURRENT YRS GROWTH	19500	mg/kg			RCBRA
2844	CURRENT YRS GROWTH	16800	mg/kg			RCBRA
2845	CURRENT YRS GROWTH	16800	mg/kg			RCBRA
2846	CURRENT YRS GROWTH	21600	mg/kg	C		RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
2847	Potasium	7440_09_7	RCBRA 600-204	IU2/IU6	UPLAND	580128.485	144762.219
2848	Potasium	7440_09_7	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
2849	Potasium	7440_09_7	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
2850	Potasium	7440_09_7	RCBRA 600-23	IU2/IU6	UPLAND	585523.593	130481.377
2851	Potasium	7440_09_7	RCBRA 618-4	300	UPLAND	593954.946	117064.473
2852	Potasium	7440_09_7	RCBRA 628-1	IU2/IU6	UPLAND	577797.524	148745.681
2853	Potasium	7440_09_7	RCBRA JA JONES	300	UPLAND	593874.58	120013.908
2854	Potasium	7440_09_7	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
2855	Potasium	7440_09_7	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
2856	Potasium	7440_09_7	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
2857	Potasium	7440_09_7	RCBRA Pit 18	IU2/IU6	UPLAND	580697.058	145311.464
2858	Potasium	7440_09_7	RCBRA Pit 23	IU2/IU6	UPLAND	572381.012	144874.157
2859	Potasium	7440_09_7	RCBRA Pit 24	BC	UPLAND	563395.814	145119.007
2860	Potasium	7440_09_7	RCBRA Pit 9	300	UPLAND	592807.103	120587.7
2861	Potasium	7440_09_7	RCBRA R Ref 11	Outside decision areas	RIPARIAN	559400.735	146458.486
2862	Potasium	7440_09_7	RCBRA R Ref 12	IU2/IU6	RIPARIAN	559201.908	145747.542
2863	Potasium	7440_09_7	RCBRA R Ref 13	Outside decision areas	RIPARIAN	558572.809	145345.115
2864	Potasium	7440_09_7	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
2865	Potasium	7440_09_7	RCBRA R Ref 16	Outside decision areas	RIPARIAN	557650.029	144826.748
2866	Potasium	7440_09_7	RCBRA Rip 1	D/H	RIPARIAN	577251.869	153659.195
2867	Potasium	7440_09_7	RCBRA Rip 10	D/H	RIPARIAN	573987.873	153082.19
2868	Potasium	7440_09_7	RCBRA Rip 2	D/H	RIPARIAN	573603.219	152471.6
2869	Potasium	7440_09_7	RCBRA Rip 3	D/H	RIPARIAN	572639.65	151677.812
2870	Potasium	7440_09_7	RCBRA Rip 4	N	RIPARIAN	570558.596	148981.547
2871	Potasium	7440_09_7	RCBRA Rip 5	K	RIPARIAN	569141.025	147521.561
2872	Potasium	7440_09_7	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
2873	Potasium	7440_09_7	RCBRA Rip 7	IU2/IU6	RIPARIAN	581326.914	147825.17
2874	Potasium	7440_09_7	RCBRA Rip 8	D/H	RIPARIAN	578698.584	152233.645
2875	Potasium	7440_09_7	RCBRA Rip 9	D/H	RIPARIAN	578153.643	152801.452
2876	Potasium	7440_09_7	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
2877	Potasium	7440_09_7	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
2878	Potasium	7440_09_7	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
2879	Potasium	7440_09_7	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
2880	Potasium	7440_09_7	RCBRA Yak Rdg 2	Outside decision areas	UPLAND	559031.557	135576.407
2881	Potasium	7440_09_7	RCBRA 2a Rip	BC	RIPARIAN	564618.501	145284.526
2882	Potasium	7440_09_7	RCBRA 2c Rip	K	RIPARIAN	567598.2	146210.159
2883	Potasium	7440_09_7	RCBRA 2f Rip	D/H	RIPARIAN	576222.844	154297.511
2884	Potasium	7440_09_7	RCBRA 2j Rip	IU2/IU6	RIPARIAN	579360.971	150092.048
2885	Potasium	7440_09_7	RCBRA 2l Rip	IU2/IU6	RIPARIAN	582341.212	146120.069

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
2847	5/18/2006	J11X80	SOIL and BIOTA	MIS	1500	mg/kg	PLANT
2848	5/15/2006	J11X83	SOIL and BIOTA	MIS	1830	mg/kg	PLANT
2849	5/15/2006	J11X83	SOIL and BIOTA	MIS-phyt	1830	mg/kg	PLANT
2850	5/12/2006	J11X73	SOIL and BIOTA	MIS	992	mg/kg	PLANT
2851	5/12/2006	J11X50	SOIL and BIOTA	MIS	898	mg/kg	PLANT
2852	5/12/2006	J11X88	SOIL and BIOTA	MIS	1370	mg/kg	PLANT
2853	5/10/2006	J11X75	SOIL and BIOTA	MIS	1070	mg/kg	PLANT
2854	5/18/2006	J11X99	SOIL and BIOTA	MIS	2190	mg/kg	PLANT
2855	5/18/2006	J11X99	SOIL and BIOTA	MIS-phyt	2300	mg/kg	PLANT
2856	5/15/2006	J11X67	SOIL and BIOTA	MIS	1060	mg/kg	PLANT
2857	5/18/2006	J11X68	SOIL and BIOTA	MIS	969	mg/kg	PLANT
2858	5/22/2006	J11X62	SOIL and BIOTA	MIS	852	mg/kg	PLANT
2859	5/19/2006	J11X71	SOIL and BIOTA	MIS	1920	mg/kg	PLANT
2860	5/12/2006	J11X65	SOIL and BIOTA	MIS	996	mg/kg	PLANT
2861	5/9/2006	J11WY7	SOIL and BIOTA	MIS	830	mg/kg	PLANT
2862	5/9/2006	J11WW9	SOIL and BIOTA	MIS	833	mg/kg	PLANT
2863	8/10/2006	J11X00	SOIL and BIOTA	MIS	1120	mg/kg	PLANT
2864	5/9/2006	J11X01	SOIL and BIOTA	MIS	1120	mg/kg	PLANT
2865	5/9/2006	J11X03	SOIL and BIOTA	MIS	945	mg/kg	PLANT
2866	5/16/2006	J11WX2	SOIL and BIOTA	MIS	1320	mg/kg	PLANT
2867	5/9/2006	J11WY5	SOIL and BIOTA	MIS	611	mg/kg	PLANT
2868	5/19/2006	J11WX3	SOIL and BIOTA	MIS	848	mg/kg	PLANT
2869	5/9/2006	J11WX5	SOIL and BIOTA	MIS	546	mg/kg	PLANT
2870	5/9/2006	J11WW5	SOIL and BIOTA	MIS	950	mg/kg	PLANT
2871	5/9/2006	J11WW7	SOIL and BIOTA	MIS	985	mg/kg	PLANT
2872	5/22/2006	J11WX7	SOIL and BIOTA	MIS	1470	mg/kg	PLANT
2873	5/9/2006	J11WX9	SOIL and BIOTA	MIS	826	mg/kg	PLANT
2874	5/16/2006	J11WY1	SOIL and BIOTA	MIS	824	mg/kg	PLANT
2875	5/16/2006	J11WY3	SOIL and BIOTA	MIS	802	mg/kg	PLANT
2876	5/18/2006	J11XB1	SOIL and BIOTA	MIS	2280	mg/kg	PLANT
2877	5/18/2006	J11XB1	SOIL and BIOTA	MIS-phyt	2210	mg/kg	PLANT
2878	5/15/2006	J11X97	SOIL and BIOTA	MIS	2070	mg/kg	PLANT
2879	5/15/2006	J11X97	SOIL and BIOTA	MIS-phyt	2180	mg/kg	PLANT
2880	5/16/2006	J11X95	SOIL and BIOTA	MIS	2490	mg/kg	PLANT
2881	5/23/2007	J15299	SOIL and BIOTA	MIS	883	mg/kg	PLANT
2882	5/21/2007	J152B9	SOIL and BIOTA	MIS	1110	mg/kg	PLANT
2883	5/7/2007	J15294	SOIL and BIOTA	MIS	907	mg/kg	PLANT
2884	5/21/2007	J15297	SOIL and BIOTA	MIS	1120	mg/kg	PLANT
2885	5/24/2007	J152B1	SOIL and BIOTA	MIS	790	mg/kg	PLANT

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
2847	CURRENT YRS GROWTH	15600	mg/kg	C		RCBRA
2848	CURRENT YRS GROWTH	24100	mg/kg			RCBRA
2849	CURRENT YRS GROWTH	24100	mg/kg			RCBRA
2850	CURRENT YRS GROWTH	5040	mg/kg			RCBRA
2851	CURRENT YRS GROWTH	3960	mg/kg			RCBRA
2852	CURRENT YRS GROWTH	3770	mg/kg			RCBRA
2853	CURRENT YRS GROWTH	5380	mg/kg			RCBRA
2854	CURRENT YRS GROWTH	13800	mg/kg	C		RCBRA
2855	CURRENT YRS GROWTH	13800	mg/kg	C		RCBRA
2856	CURRENT YRS GROWTH	14200	mg/kg			RCBRA
2857	CURRENT YRS GROWTH	15100	mg/kg	C		RCBRA
2858	CURRENT YRS GROWTH	16200	mg/kg	C		RCBRA
2859	CURRENT YRS GROWTH	14300	mg/kg	C		RCBRA
2860	CURRENT YRS GROWTH	7490	mg/kg			RCBRA
2861	CURRENT YRS GROWTH	5460	mg/kg			RCBRA
2862	CURRENT YRS GROWTH	5760	mg/kg			RCBRA
2863	CURRENT YRS GROWTH	5750	mg/kg	C		RCBRA
2864	CURRENT YRS GROWTH	4250	mg/kg			RCBRA
2865	CURRENT YRS GROWTH	5170	mg/kg			RCBRA
2866	CURRENT YRS GROWTH	31500	mg/kg			RCBRA
2867	CURRENT YRS GROWTH	5850	mg/kg			RCBRA
2868	CURRENT YRS GROWTH	22100	mg/kg	C		RCBRA
2869	CURRENT YRS GROWTH	5500	mg/kg			RCBRA
2870	CURRENT YRS GROWTH	5000	mg/kg			RCBRA
2871	CURRENT YRS GROWTH	4850	mg/kg			RCBRA
2872	CURRENT YRS GROWTH	17200	mg/kg	C		RCBRA
2873	CURRENT YRS GROWTH	5440	mg/kg			RCBRA
2874	CURRENT YRS GROWTH	32200	mg/kg			RCBRA
2875	CURRENT YRS GROWTH	21800	mg/kg			RCBRA
2876	CURRENT YRS GROWTH	10600	mg/kg	C		RCBRA
2877	CURRENT YRS GROWTH	10600	mg/kg	C		RCBRA
2878	CURRENT YRS GROWTH	14700	mg/kg			RCBRA
2879	CURRENT YRS GROWTH	14700	mg/kg			RCBRA
2880	CURRENT YRS GROWTH	13100	mg/kg			RCBRA
2881	CURRENT YRS GROWTH	5270	mg/kg			RCBRA
2882	CURRENT YRS GROWTH	3900	mg/kg			RCBRA
2883	CURRENT YRS GROWTH	5170	mg/kg			RCBRA
2884	CURRENT YRS GROWTH	4490	mg/kg			RCBRA
2885	CURRENT YRS GROWTH	3750	mg/kg			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
2886	Potasium	7440_09_7	RCBRA 3b Rip	IU2/IU6	RIPARIAN	584961.205	141035.835
2887	Potasium	7440_09_7	RCBRA 4a Rip	IU2/IU6	RIPARIAN	589347.5	137480.985
2888	Potasium	7440_09_7	RCBRA 5c Rip	300	RIPARIAN	594509.985	124869.182
2889	Potasium	7440_09_7	RCBRA Bev Ref 1 Rip	Outside decision areas	RIPARIAN	542428.846	167701.261
2890	Potasium	7440_09_7	RCBRA Bev Ref 2 Rip	Outside decision areas	RIPARIAN	541493.988	167808.357
2891	Potasium	7440_09_7	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
2892	Lithium	7439-93-2	RCBRA 100-D-48	D/H	UPLAND	573841.527	151914.538
2893	Lithium	7439-93-2	RCBRA 100-D-49	D/H	UPLAND	573938.06	151944.123
2894	Lithium	7439-93-2	RCBRA 100-F-2	IU2/IU6	UPLAND	579728.068	147001.117
2895	Lithium	7439-93-2	RCBRA 116-DR-1&2	D/H	UPLAND	574007.817	152246.748
2896	Lithium	7439-93-2	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
2897	Lithium	7439-93-2	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
2898	Lithium	7439-93-2	RCBRA 116-N-3	N	UPLAND	571995.702	149793.039
2899	Lithium	7439-93-2	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
2900	Lithium	7439-93-2	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
2901	Lithium	7439-93-2	RCBRA 300-49	300	UPLAND	594318.994	116830.934
2902	Lithium	7439-93-2	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
2903	Lithium	7439-93-2	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
2904	Lithium	7439-93-2	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
2905	Lithium	7439-93-2	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
2906	Lithium	7439-93-2	RCBRA 600-204	IU2/IU6	UPLAND	580128.485	144762.219
2907	Lithium	7439-93-2	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
2908	Lithium	7439-93-2	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
2909	Lithium	7439-93-2	RCBRA 600-23	IU2/IU6	UPLAND	585523.593	130481.377
2910	Lithium	7439-93-2	RCBRA 618-4	300	UPLAND	593954.946	117064.473
2911	Lithium	7439-93-2	RCBRA 628-1	IU2/IU6	UPLAND	577797.524	148745.681
2912	Lithium	7439-93-2	RCBRA JA JONES	300	UPLAND	593874.58	120013.908
2913	Lithium	7439-93-2	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
2914	Lithium	7439-93-2	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
2915	Lithium	7439-93-2	RCBRA Pit 18	IU2/IU6	UPLAND	580697.058	145311.464
2916	Lithium	7439-93-2	RCBRA Pit 23	IU2/IU6	UPLAND	572381.012	144874.157
2917	Lithium	7439-93-2	RCBRA Pit 24	BC	UPLAND	563395.814	145119.007
2918	Lithium	7439-93-2	RCBRA Pit 9	300	UPLAND	592807.103	120587.7
2919	Lithium	7439-93-2	RCBRA R Ref 11	Outside decision areas	RIPARIAN	559400.735	146458.486
2920	Lithium	7439-93-2	RCBRA R Ref 12	IU2/IU6	RIPARIAN	559201.908	145747.542
2921	Lithium	7439-93-2	RCBRA R Ref 13	Outside decision areas	RIPARIAN	558572.809	145345.115
2922	Lithium	7439-93-2	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
2923	Lithium	7439-93-2	RCBRA R Ref 16	Outside decision areas	RIPARIAN	557650.029	144826.748
2924	Lithium	7439-93-2	RCBRA Rip 1	D/H	RIPARIAN	577251.869	153659.195

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
2886	5/23/2007	J152B3	SOIL and BIOTA	MIS	889	mg/kg	PLANT
2887	5/24/2007	J152B7	SOIL and BIOTA	MIS	1110	mg/kg	PLANT
2888	5/24/2007	J152B5	SOIL and BIOTA	MIS	627	mg/kg	PLANT
2889	5/10/2007	J15288	SOIL and BIOTA	MIS	733	mg/kg	PLANT
2890	5/8/2007	J15290	SOIL and BIOTA	MIS	829	mg/kg	PLANT
2891	5/8/2007	J15292	SOIL and BIOTA	MIS	1120	mg/kg	PLANT
2892	5/18/2006	J11X42	SOIL and BIOTA	MIS	6.2	mg/kg	PLANT
2893	5/18/2006	J11X54	SOIL and BIOTA	MIS	6.2	mg/kg	PLANT
2894	5/10/2006	J11X61	SOIL and BIOTA	MIS	8.4	mg/kg	PLANT
2895	5/19/2006	J11X56	SOIL and BIOTA	MIS	6	mg/kg	PLANT
2896	5/16/2006	J11X48	SOIL and BIOTA	MIS	7.5	mg/kg	PLANT
2897	5/16/2006	J11X48	SOIL and BIOTA	MIS-phyt	7.2	mg/kg	PLANT
2898	5/19/2006	J11X46	SOIL and BIOTA	MIS	6.3	mg/kg	PLANT
2899	5/12/2006	J11X44	SOIL and BIOTA	MIS	8.3	mg/kg	PLANT
2900	5/12/2006	J11X44	SOIL and BIOTA	MIS-phyt	9.5	mg/kg	PLANT
2901	4/26/2006	J11X52	SOIL and BIOTA	MIS	7.2	mg/kg	PLANT
2902	5/12/2006	J11X84	SOIL and BIOTA	MIS	5.5	mg/kg	PLANT
2903	5/12/2006	J11X84	SOIL and BIOTA	MIS-phyt	7.4	mg/kg	PLANT
2904	5/12/2006	J11X77	SOIL and BIOTA	MIS	6.7	mg/kg	PLANT
2905	5/12/2006	J11X77	SOIL and BIOTA	MIS-phyt	7	mg/kg	PLANT
2906	5/18/2006	J11X81	SOIL and BIOTA	MIS	7.2	mg/kg	PLANT
2907	5/15/2006	J11X82	SOIL and BIOTA	MIS	8	mg/kg	PLANT
2908	5/15/2006	J11X82	SOIL and BIOTA	MIS-phyt	8.5	mg/kg	PLANT
2909	5/12/2006	J11X72	SOIL and BIOTA	MIS	6.9	mg/kg	PLANT
2910	5/12/2006	J11X51	SOIL and BIOTA	MIS	6.1	mg/kg	PLANT
2911	5/12/2006	J11X89	SOIL and BIOTA	MIS	6.9	mg/kg	PLANT
2912	5/10/2006	J11X74	SOIL and BIOTA	MIS	5.5	mg/kg	PLANT
2913	5/18/2006	J11X98	SOIL and BIOTA	MIS	9.7	mg/kg	PLANT
2914	5/18/2006	J11X98	SOIL and BIOTA	MIS-phyt	11	mg/kg	PLANT
2915	5/18/2006	J11X69	SOIL and BIOTA	MIS	6.8	mg/kg	PLANT
2916	5/22/2006	J11X63	SOIL and BIOTA	MIS	4.5	mg/kg	PLANT
2917	5/19/2006	J11X70	SOIL and BIOTA	MIS	7.4	mg/kg	PLANT
2918	5/12/2006	J11X64	SOIL and BIOTA	MIS	5.7	mg/kg	PLANT
2919	5/9/2006	J11WY8	SOIL and BIOTA	MIS	10.5	mg/kg	PLANT
2920	5/9/2006	J11WX0	SOIL and BIOTA	MIS	9	mg/kg	PLANT
2921	8/10/2006	J11WY9	SOIL and BIOTA	MIS	13.5	mg/kg	PLANT
2922	5/9/2006	J11X02	SOIL and BIOTA	MIS	12.1	mg/kg	PLANT
2923	5/9/2006	J11X04	SOIL and BIOTA	MIS	11.3	mg/kg	PLANT
2924	5/16/2006	J11WX1	SOIL and BIOTA	MIS	12.7	mg/kg	PLANT

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
2886	CURRENT YRS GROWTH	3870	mg/kg			RCBRA
2887	CURRENT YRS GROWTH	4700	mg/kg			RCBRA
2888	CURRENT YRS GROWTH	2940	mg/kg			RCBRA
2889	CURRENT YRS GROWTH	5140	mg/kg			RCBRA
2890	CURRENT YRS GROWTH	4890	mg/kg			RCBRA
2891	CURRENT YRS GROWTH	4750	mg/kg			RCBRA
2892	CURRENT YRS GROWTH	0.31	mg/kg	C		RCBRA
2893	CURRENT YRS GROWTH	0.87	mg/kg	C		RCBRA
2894	CURRENT YRS GROWTH	0.08	mg/kg			RCBRA
2895	CURRENT YRS GROWTH	0.42	mg/kg	C		RCBRA
2896	CURRENT YRS GROWTH	0.07	mg/kg			RCBRA
2897	CURRENT YRS GROWTH	0.07	mg/kg			RCBRA
2898	CURRENT YRS GROWTH	0.15	mg/kg	C		RCBRA
2899	CURRENT YRS GROWTH	0.05	mg/kg			RCBRA
2900	CURRENT YRS GROWTH	0.05	mg/kg			RCBRA
2901	CURRENT YRS GROWTH	0.76	mg/kg	C		RCBRA
2902	CURRENT YRS GROWTH	0.04	mg/kg			RCBRA
2903	CURRENT YRS GROWTH	0.04	mg/kg			RCBRA
2904	CURRENT YRS GROWTH	0.03	mg/kg			RCBRA
2905	CURRENT YRS GROWTH	0.03	mg/kg			RCBRA
2906	CURRENT YRS GROWTH	0.11	mg/kg	C		RCBRA
2907	CURRENT YRS GROWTH	0.24	mg/kg			RCBRA
2908	CURRENT YRS GROWTH	0.24	mg/kg			RCBRA
2909	CURRENT YRS GROWTH	0.09	mg/kg			RCBRA
2910	CURRENT YRS GROWTH	0.05	mg/kg			RCBRA
2911	CURRENT YRS GROWTH	0.04	mg/kg			RCBRA
2912	CURRENT YRS GROWTH	0.06	mg/kg			RCBRA
2913	CURRENT YRS GROWTH	0.11	mg/kg	C		RCBRA
2914	CURRENT YRS GROWTH	0.11	mg/kg	C		RCBRA
2915	CURRENT YRS GROWTH	0.11	mg/kg	C		RCBRA
2916	CURRENT YRS GROWTH	0.06	mg/kg	C		RCBRA
2917	CURRENT YRS GROWTH	0.12	mg/kg	C		RCBRA
2918	CURRENT YRS GROWTH	0.05	mg/kg			RCBRA
2919	CURRENT YRS GROWTH	0.11	mg/kg			RCBRA
2920	CURRENT YRS GROWTH	0.3	mg/kg			RCBRA
2921	CURRENT YRS GROWTH	0.62	mg/kg	C		RCBRA
2922	CURRENT YRS GROWTH	0.23	mg/kg			RCBRA
2923	CURRENT YRS GROWTH	0.21	mg/kg			RCBRA
2924	CURRENT YRS GROWTH	0.19	mg/kg			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
2925	Lithium	7439-93-2	RCBRA Rip 2	D/H	RIPARIAN	573603.219	152471.6
2926	Lithium	7439-93-2	RCBRA Rip 3	D/H	RIPARIAN	572639.65	151677.812
2927	Lithium	7439-93-2	RCBRA Rip 4	N	RIPARIAN	570558.596	148981.547
2928	Lithium	7439-93-2	RCBRA Rip 5	K	RIPARIAN	569141.025	147521.561
2929	Lithium	7439-93-2	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
2930	Lithium	7439-93-2	RCBRA Rip 7	IU2/IU6	RIPARIAN	581326.914	147825.17
2931	Lithium	7439-93-2	RCBRA Rip 8	D/H	RIPARIAN	578698.584	152233.645
2932	Lithium	7439-93-2	RCBRA Rip 9	D/H	RIPARIAN	578153.643	152801.452
2933	Lithium	7439-93-2	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
2934	Lithium	7439-93-2	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
2935	Lithium	7439-93-2	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
2936	Lithium	7439-93-2	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
2937	Lithium	7439-93-2	RCBRA Yak Rdg 2	Outside decision areas	UPLAND	559031.557	135576.407
2938	Lithium	7439-93-2	RCBRA 100-D-48	D/H	UPLAND	573841.527	151914.538
2939	Lithium	7439-93-2	RCBRA 100-D-49	D/H	UPLAND	573938.06	151944.123
2940	Lithium	7439-93-2	RCBRA 100-F-2	IU2/IU6	UPLAND	579728.068	147001.117
2941	Lithium	7439-93-2	RCBRA 116-DR-1&2	D/H	UPLAND	574007.817	152246.748
2942	Lithium	7439-93-2	RCBRA 116-N-3	N	UPLAND	571995.702	149793.039
2943	Lithium	7439-93-2	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
2944	Lithium	7439-93-2	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
2945	Lithium	7439-93-2	RCBRA 300-49	300	UPLAND	594318.994	116830.934
2946	Lithium	7439-93-2	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
2947	Lithium	7439-93-2	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
2948	Lithium	7439-93-2	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
2949	Lithium	7439-93-2	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
2950	Lithium	7439-93-2	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
2951	Lithium	7439-93-2	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
2952	Lithium	7439-93-2	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
2953	Lithium	7439-93-2	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
2954	Lithium	7439-93-2	RCBRA 600-181	IU2/IU6	UPLAND	578303.83	147316.698
2955	Lithium	7439-93-2	RCBRA 600-204	IU2/IU6	UPLAND	580128.485	144762.219
2956	Lithium	7439-93-2	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
2957	Lithium	7439-93-2	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
2958	Lithium	7439-93-2	RCBRA 600-23	IU2/IU6	UPLAND	585523.593	130481.377
2959	Lithium	7439-93-2	RCBRA 618-4	300	UPLAND	593954.946	117064.473
2960	Lithium	7439-93-2	RCBRA 628-1	IU2/IU6	UPLAND	577797.524	148745.681
2961	Lithium	7439-93-2	RCBRA JA JONES	300	UPLAND	593874.58	120013.908
2962	Lithium	7439-93-2	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
2963	Lithium	7439-93-2	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
2925	5/19/2006	J11WX4	SOIL and BIOTA	MIS	10.7	mg/kg	PLANT
2926	5/9/2006	J11WX6	SOIL and BIOTA	MIS	5.1	mg/kg	PLANT
2927	5/9/2006	J11WW6	SOIL and BIOTA	MIS	11.7	mg/kg	PLANT
2928	5/9/2006	J11WW8	SOIL and BIOTA	MIS	12	mg/kg	PLANT
2929	5/22/2006	J11XP0	SOIL and BIOTA	MIS	13.5	mg/kg	PLANT
2930	5/9/2006	J11WY0	SOIL and BIOTA	MIS	8.8	mg/kg	PLANT
2931	5/16/2006	J11WY2	SOIL and BIOTA	MIS	9.8	mg/kg	PLANT
2932	5/16/2006	J11WY4	SOIL and BIOTA	MIS	8.7	mg/kg	PLANT
2933	5/18/2006	J11XB0	SOIL and BIOTA	MIS	8.9	mg/kg	PLANT
2934	5/18/2006	J11XB0	SOIL and BIOTA	MIS-phyt	9.6	mg/kg	PLANT
2935	5/15/2006	J11X96	SOIL and BIOTA	MIS	8.3	mg/kg	PLANT
2936	5/15/2006	J11X96	SOIL and BIOTA	MIS-phyt	9.3	mg/kg	PLANT
2937	5/16/2006	J11X94	SOIL and BIOTA	MIS	10.9	mg/kg	PLANT
2938	5/18/2006	J11X43	SOIL and BIOTA	MIS	6.2	mg/kg	PLANT
2939	5/18/2006	J11X55	SOIL and BIOTA	MIS	6.2	mg/kg	PLANT
2940	5/10/2006	J11X60	SOIL and BIOTA	MIS	8.4	mg/kg	PLANT
2941	5/19/2006	J11X57	SOIL and BIOTA	MIS	6	mg/kg	PLANT
2942	5/19/2006	J11X47	SOIL and BIOTA	MIS	6.3	mg/kg	PLANT
2943	5/12/2006	J11X45	SOIL and BIOTA	MIS	8.3	mg/kg	PLANT
2944	5/12/2006	J11X45	SOIL and BIOTA	MIS-phyt	9.5	mg/kg	PLANT
2945	4/26/2006	J11X53	SOIL and BIOTA	MIS	7.2	mg/kg	PLANT
2946	5/12/2006	J11X85	SOIL and BIOTA	MIS	5.5	mg/kg	PLANT
2947	5/12/2006	J11X85	SOIL and BIOTA	MIS-phyt	7.4	mg/kg	PLANT
2948	5/12/2006	J11X76	SOIL and BIOTA	MIS	6.7	mg/kg	PLANT
2949	5/12/2006	J11X76	SOIL and BIOTA	MIS-phyt	7	mg/kg	PLANT
2950	5/16/2006	J11X78	SOIL and BIOTA	MIS	7.1	mg/kg	PLANT
2951	5/16/2006	J11X78	SOIL and BIOTA	MIS-phyt	7.1	mg/kg	PLANT
2952	5/16/2006	J11X91	SOIL and BIOTA	MIS	6.3	mg/kg	PLANT
2953	5/16/2006	J11X91	SOIL and BIOTA	MIS-phyt	6.9	mg/kg	PLANT
2954	5/18/2006	J11X87	SOIL and BIOTA	MIS	5.7	mg/kg	PLANT
2955	5/18/2006	J11X80	SOIL and BIOTA	MIS	7.2	mg/kg	PLANT
2956	5/15/2006	J11X83	SOIL and BIOTA	MIS	8	mg/kg	PLANT
2957	5/15/2006	J11X83	SOIL and BIOTA	MIS-phyt	8.5	mg/kg	PLANT
2958	5/12/2006	J11X73	SOIL and BIOTA	MIS	6.9	mg/kg	PLANT
2959	5/12/2006	J11X50	SOIL and BIOTA	MIS	6.1	mg/kg	PLANT
2960	5/12/2006	J11X88	SOIL and BIOTA	MIS	6.9	mg/kg	PLANT
2961	5/10/2006	J11X75	SOIL and BIOTA	MIS	5.5	mg/kg	PLANT
2962	5/18/2006	J11X99	SOIL and BIOTA	MIS	9.7	mg/kg	PLANT
2963	5/18/2006	J11X99	SOIL and BIOTA	MIS-phyt	11	mg/kg	PLANT

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
2925	CURRENT YRS GROWTH	0.26	mg/kg	C		RCBRA
2926	CURRENT YRS GROWTH	0.03	mg/kg			RCBRA
2927	CURRENT YRS GROWTH	0.05	mg/kg			RCBRA
2928	CURRENT YRS GROWTH	0.21	mg/kg			RCBRA
2929	CURRENT YRS GROWTH	0.14	mg/kg	C		RCBRA
2930	CURRENT YRS GROWTH	0.03	mg/kg			RCBRA
2931	CURRENT YRS GROWTH	0.37	mg/kg			RCBRA
2932	CURRENT YRS GROWTH	0.26	mg/kg			RCBRA
2933	CURRENT YRS GROWTH	0.19	mg/kg	C		RCBRA
2934	CURRENT YRS GROWTH	0.19	mg/kg	C		RCBRA
2935	CURRENT YRS GROWTH	0.13	mg/kg			RCBRA
2936	CURRENT YRS GROWTH	0.13	mg/kg			RCBRA
2937	CURRENT YRS GROWTH	0.18	mg/kg			RCBRA
2938	CURRENT YRS GROWTH	0.41	mg/kg	C		RCBRA
2939	CURRENT YRS GROWTH	0.23	mg/kg	C		RCBRA
2940	CURRENT YRS GROWTH	0.06	mg/kg			RCBRA
2941	CURRENT YRS GROWTH	0.28	mg/kg	C		RCBRA
2942	CURRENT YRS GROWTH	0.52	mg/kg	C		RCBRA
2943	CURRENT YRS GROWTH	0.09	mg/kg			RCBRA
2944	CURRENT YRS GROWTH	0.09	mg/kg			RCBRA
2945	CURRENT YRS GROWTH	0.37	mg/kg	C		RCBRA
2946	CURRENT YRS GROWTH	0.08	mg/kg			RCBRA
2947	CURRENT YRS GROWTH	0.08	mg/kg			RCBRA
2948	CURRENT YRS GROWTH	0.07	mg/kg			RCBRA
2949	CURRENT YRS GROWTH	0.07	mg/kg			RCBRA
2950	CURRENT YRS GROWTH	0.16	mg/kg			RCBRA
2951	CURRENT YRS GROWTH	0.16	mg/kg			RCBRA
2952	CURRENT YRS GROWTH	0.46	mg/kg			RCBRA
2953	CURRENT YRS GROWTH	0.46	mg/kg			RCBRA
2954	CURRENT YRS GROWTH	0.28	mg/kg	C		RCBRA
2955	CURRENT YRS GROWTH	0.21	mg/kg	C		RCBRA
2956	CURRENT YRS GROWTH	0.84	mg/kg			RCBRA
2957	CURRENT YRS GROWTH	0.84	mg/kg			RCBRA
2958	CURRENT YRS GROWTH	0.12	mg/kg			RCBRA
2959	CURRENT YRS GROWTH	0.08	mg/kg			RCBRA
2960	CURRENT YRS GROWTH	0.05	mg/kg			RCBRA
2961	CURRENT YRS GROWTH	0.13	mg/kg			RCBRA
2962	CURRENT YRS GROWTH	0.14	mg/kg	C		RCBRA
2963	CURRENT YRS GROWTH	0.14	mg/kg	C		RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
2964	Lithium	7439-93-2	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
2965	Lithium	7439-93-2	RCBRA Pit 18	IU2/IU6	UPLAND	580697.058	145311.464
2966	Lithium	7439-93-2	RCBRA Pit 23	IU2/IU6	UPLAND	572381.012	144874.157
2967	Lithium	7439-93-2	RCBRA Pit 24	BC	UPLAND	563395.814	145119.007
2968	Lithium	7439-93-2	RCBRA Pit 9	300	UPLAND	592807.103	120587.7
2969	Lithium	7439-93-2	RCBRA R Ref 12	IU2/IU6	RIPARIAN	559201.908	145747.542
2970	Lithium	7439-93-2	RCBRA R Ref 13	Outside decision areas	RIPARIAN	558572.809	145345.115
2971	Lithium	7439-93-2	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
2972	Lithium	7439-93-2	RCBRA R Ref 16	Outside decision areas	RIPARIAN	557650.029	144826.748
2973	Lithium	7439-93-2	RCBRA Rip 1	D/H	RIPARIAN	577251.869	153659.195
2974	Lithium	7439-93-2	RCBRA Rip 10	D/H	RIPARIAN	573987.873	153082.19
2975	Lithium	7439-93-2	RCBRA Rip 2	D/H	RIPARIAN	573603.219	152471.6
2976	Lithium	7439-93-2	RCBRA Rip 3	D/H	RIPARIAN	572639.65	151677.812
2977	Lithium	7439-93-2	RCBRA Rip 4	N	RIPARIAN	570558.596	148981.547
2978	Lithium	7439-93-2	RCBRA Rip 5	K	RIPARIAN	569141.025	147521.561
2979	Lithium	7439-93-2	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
2980	Lithium	7439-93-2	RCBRA Rip 7	IU2/IU6	RIPARIAN	581326.914	147825.17
2981	Lithium	7439-93-2	RCBRA Rip 8	D/H	RIPARIAN	578698.584	152233.645
2982	Lithium	7439-93-2	RCBRA Rip 9	D/H	RIPARIAN	578153.643	152801.452
2983	Lithium	7439-93-2	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
2984	Lithium	7439-93-2	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
2985	Lithium	7439-93-2	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
2986	Lithium	7439-93-2	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
2987	Lithium	7439-93-2	RCBRA Yak Rdg 2	Outside decision areas	UPLAND	559031.557	135576.407
2988	Magnesium	7439-95-4	RCBRA 100-D-48	D/H	UPLAND	573841.527	151914.538
2989	Magnesium	7439-95-4	RCBRA 100-D-49	D/H	UPLAND	573938.06	151944.123
2990	Magnesium	7439-95-4	RCBRA 100-F-2	IU2/IU6	UPLAND	579728.068	147001.117
2991	Magnesium	7439-95-4	RCBRA 116-DR-1&2	D/H	UPLAND	574007.817	152246.748
2992	Magnesium	7439-95-4	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
2993	Magnesium	7439-95-4	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
2994	Magnesium	7439-95-4	RCBRA 116-N-3	N	UPLAND	571995.702	149793.039
2995	Magnesium	7439-95-4	RCBRA 1607-D2:1	D/H	UPLAND	573823.924	152260.319
2996	Magnesium	7439-95-4	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
2997	Magnesium	7439-95-4	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
2998	Magnesium	7439-95-4	RCBRA 2a Rip	BC	RIPARIAN	564618.501	145284.526
2999	Magnesium	7439-95-4	RCBRA 2c Rip	K	RIPARIAN	567598.2	146210.159
3000	Magnesium	7439-95-4	RCBRA 2f Rip	D/H	RIPARIAN	576222.844	154297.511
3001	Magnesium	7439-95-4	RCBRA 2j Rip	IU2/IU6	RIPARIAN	579360.971	150092.048
3002	Magnesium	7439-95-4	RCBRA 2l Rip	IU2/IU6	RIPARIAN	582341.212	146120.069

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
2964	5/15/2006	J11X67	SOIL and BIOTA	MIS	5.8	mg/kg	PLANT
2965	5/18/2006	J11X68	SOIL and BIOTA	MIS	6.8	mg/kg	PLANT
2966	5/22/2006	J11X62	SOIL and BIOTA	MIS	4.5	mg/kg	PLANT
2967	5/19/2006	J11X71	SOIL and BIOTA	MIS	7.4	mg/kg	PLANT
2968	5/12/2006	J11X65	SOIL and BIOTA	MIS	5.7	mg/kg	PLANT
2969	5/9/2006	J11WW9	SOIL and BIOTA	MIS	9	mg/kg	PLANT
2970	8/10/2006	J11X00	SOIL and BIOTA	MIS	13.5	mg/kg	PLANT
2971	5/9/2006	J11X01	SOIL and BIOTA	MIS	12.1	mg/kg	PLANT
2972	5/9/2006	J11X03	SOIL and BIOTA	MIS	11.3	mg/kg	PLANT
2973	5/16/2006	J11WX2	SOIL and BIOTA	MIS	12.7	mg/kg	PLANT
2974	5/9/2006	J11WY5	SOIL and BIOTA	MIS	7.9	mg/kg	PLANT
2975	5/19/2006	J11WX3	SOIL and BIOTA	MIS	10.7	mg/kg	PLANT
2976	5/9/2006	J11WX5	SOIL and BIOTA	MIS	5.1	mg/kg	PLANT
2977	5/9/2006	J11WW5	SOIL and BIOTA	MIS	11.7	mg/kg	PLANT
2978	5/9/2006	J11WW7	SOIL and BIOTA	MIS	12	mg/kg	PLANT
2979	5/22/2006	J11WX7	SOIL and BIOTA	MIS	13.5	mg/kg	PLANT
2980	5/9/2006	J11WX9	SOIL and BIOTA	MIS	8.8	mg/kg	PLANT
2981	5/16/2006	J11WY1	SOIL and BIOTA	MIS	9.8	mg/kg	PLANT
2982	5/16/2006	J11WY3	SOIL and BIOTA	MIS	8.7	mg/kg	PLANT
2983	5/18/2006	J11XB1	SOIL and BIOTA	MIS	8.9	mg/kg	PLANT
2984	5/18/2006	J11XB1	SOIL and BIOTA	MIS-phyt	9.6	mg/kg	PLANT
2985	5/15/2006	J11X97	SOIL and BIOTA	MIS	8.3	mg/kg	PLANT
2986	5/15/2006	J11X97	SOIL and BIOTA	MIS-phyt	9.3	mg/kg	PLANT
2987	5/16/2006	J11X95	SOIL and BIOTA	MIS	10.9	mg/kg	PLANT
2988	5/18/2006	J11X42	SOIL and BIOTA	MIS	4730	mg/kg	PLANT
2989	5/18/2006	J11X54	SOIL and BIOTA	MIS	4490	mg/kg	PLANT
2990	5/10/2006	J11X61	SOIL and BIOTA	MIS	4480	mg/kg	PLANT
2991	5/19/2006	J11X56	SOIL and BIOTA	MIS	4200	mg/kg	PLANT
2992	5/16/2006	J11X48	SOIL and BIOTA	MIS	4340	mg/kg	PLANT
2993	5/16/2006	J11X48	SOIL and BIOTA	MIS-phyt	4080	mg/kg	PLANT
2994	5/19/2006	J11X46	SOIL and BIOTA	MIS	4820	mg/kg	PLANT
2995	5/22/2006	J11X58	SOIL and BIOTA	MIS	4580	mg/kg	PLANT
2996	5/12/2006	J11X44	SOIL and BIOTA	MIS	4340	mg/kg	PLANT
2997	5/12/2006	J11X44	SOIL and BIOTA	MIS-phyt	5040	mg/kg	PLANT
2998	5/23/2007	J15298	SOIL and BIOTA	MIS	3800	mg/kg	PLANT
2999	5/21/2007	J152B8	SOIL and BIOTA	MIS	4950	mg/kg	PLANT
3000	5/7/2007	J15295	SOIL and BIOTA	MIS	4570	mg/kg	PLANT
3001	5/21/2007	J15296	SOIL and BIOTA	MIS	5370	mg/kg	PLANT
3002	5/24/2007	J152B0	SOIL and BIOTA	MIS	4540	mg/kg	PLANT

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
2964	CURRENT YRS GROWTH	0.15	mg/kg			RCBRA
2965	CURRENT YRS GROWTH	0.31	mg/kg	C		RCBRA
2966	CURRENT YRS GROWTH	0.26	mg/kg	C		RCBRA
2967	CURRENT YRS GROWTH	0.27	mg/kg	C		RCBRA
2968	CURRENT YRS GROWTH	0.07	mg/kg			RCBRA
2969	CURRENT YRS GROWTH	0.03	mg/kg			RCBRA
2970	CURRENT YRS GROWTH	0.12	mg/kg	C		RCBRA
2971	CURRENT YRS GROWTH	0.08	mg/kg			RCBRA
2972	CURRENT YRS GROWTH	0.08	mg/kg			RCBRA
2973	CURRENT YRS GROWTH	0.15	mg/kg			RCBRA
2974	CURRENT YRS GROWTH	0.04	mg/kg			RCBRA
2975	CURRENT YRS GROWTH	0.26	mg/kg	C		RCBRA
2976	CURRENT YRS GROWTH	0.05	mg/kg			RCBRA
2977	CURRENT YRS GROWTH	0.03	mg/kg			RCBRA
2978	CURRENT YRS GROWTH	0.1	mg/kg			RCBRA
2979	CURRENT YRS GROWTH	0.22	mg/kg	C		RCBRA
2980	CURRENT YRS GROWTH	0.05	mg/kg			RCBRA
2981	CURRENT YRS GROWTH	0.14	mg/kg			RCBRA
2982	CURRENT YRS GROWTH	0.17	mg/kg			RCBRA
2983	CURRENT YRS GROWTH	0.28	mg/kg	C		RCBRA
2984	CURRENT YRS GROWTH	0.28	mg/kg	C		RCBRA
2985	CURRENT YRS GROWTH	0.43	mg/kg			RCBRA
2986	CURRENT YRS GROWTH	0.43	mg/kg			RCBRA
2987	CURRENT YRS GROWTH	0.16	mg/kg			RCBRA
2988	CURRENT YRS GROWTH	1330	mg/kg			RCBRA
2989	CURRENT YRS GROWTH	1420	mg/kg			RCBRA
2990	CURRENT YRS GROWTH	377	mg/kg	C		RCBRA
2991	CURRENT YRS GROWTH	1390	mg/kg			RCBRA
2992	CURRENT YRS GROWTH	869	mg/kg			RCBRA
2993	CURRENT YRS GROWTH	869	mg/kg			RCBRA
2994	CURRENT YRS GROWTH	1110	mg/kg			RCBRA
2995	CURRENT YRS GROWTH	901	mg/kg			RCBRA
2996	CURRENT YRS GROWTH	452	mg/kg			RCBRA
2997	CURRENT YRS GROWTH	452	mg/kg			RCBRA
2998	CURRENT YRS GROWTH	167	mg/kg			RCBRA
2999	CURRENT YRS GROWTH	386	mg/kg			RCBRA
3000	CURRENT YRS GROWTH	372	mg/kg	C		RCBRA
3001	CURRENT YRS GROWTH	296	mg/kg			RCBRA
3002	CURRENT YRS GROWTH	172	mg/kg			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
3003	Magnesium	7439-95-4	RCBRA 300-49	300	UPLAND	594318.994	116830.934
3004	Magnesium	7439-95-4	RCBRA 3b Rip	IU2/IU6	RIPARIAN	584961.205	141035.835
3005	Magnesium	7439-95-4	RCBRA 4a Rip	IU2/IU6	RIPARIAN	589347.5	137480.985
3006	Magnesium	7439-95-4	RCBRA 5c Rip	300	RIPARIAN	594509.985	124869.182
3007	Magnesium	7439-95-4	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
3008	Magnesium	7439-95-4	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
3009	Magnesium	7439-95-4	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
3010	Magnesium	7439-95-4	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
3011	Magnesium	7439-95-4	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
3012	Magnesium	7439-95-4	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
3013	Magnesium	7439-95-4	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
3014	Magnesium	7439-95-4	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
3015	Magnesium	7439-95-4	RCBRA 600-181	IU2/IU6	UPLAND	578303.83	147316.698
3016	Magnesium	7439-95-4	RCBRA 600-204	IU2/IU6	UPLAND	580128.485	144762.219
3017	Magnesium	7439-95-4	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
3018	Magnesium	7439-95-4	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
3019	Magnesium	7439-95-4	RCBRA 600-23	IU2/IU6	UPLAND	585523.593	130481.377
3020	Magnesium	7439-95-4	RCBRA 618-4	300	UPLAND	593954.946	117064.473
3021	Magnesium	7439-95-4	RCBRA 628-1	IU2/IU6	UPLAND	577797.524	148745.681
3022	Magnesium	7439-95-4	RCBRA Bev Ref 1 Rip	Outside decision areas	RIPARIAN	542428.846	167701.261
3023	Magnesium	7439-95-4	RCBRA Bev Ref 2 Rip	Outside decision areas	RIPARIAN	541493.988	167808.357
3024	Magnesium	7439-95-4	RCBRA JA JONES	300	UPLAND	593874.58	120013.908
3025	Magnesium	7439-95-4	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
3026	Magnesium	7439-95-4	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
3027	Magnesium	7439-95-4	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
3028	Magnesium	7439-95-4	RCBRA Pit 18	IU2/IU6	UPLAND	580697.058	145311.464
3029	Magnesium	7439-95-4	RCBRA Pit 23	IU2/IU6	UPLAND	572381.012	144874.157
3030	Magnesium	7439-95-4	RCBRA Pit 24	BC	UPLAND	563395.814	145119.007
3031	Magnesium	7439-95-4	RCBRA Pit 9	300	UPLAND	592807.103	120587.7
3032	Magnesium	7439-95-4	RCBRA R Ref 11	Outside decision areas	RIPARIAN	559400.735	146458.486
3033	Magnesium	7439-95-4	RCBRA R Ref 12	IU2/IU6	RIPARIAN	559201.908	145747.542
3034	Magnesium	7439-95-4	RCBRA R Ref 13	Outside decision areas	RIPARIAN	558572.809	145345.115
3035	Magnesium	7439-95-4	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
3036	Magnesium	7439-95-4	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
3037	Magnesium	7439-95-4	RCBRA R Ref 16	Outside decision areas	RIPARIAN	557650.029	144826.748
3038	Magnesium	7439-95-4	RCBRA Rip 1	D/H	RIPARIAN	577251.869	153659.195
3039	Magnesium	7439-95-4	RCBRA Rip 10	D/H	RIPARIAN	573987.873	153082.19
3040	Magnesium	7439-95-4	RCBRA Rip 2	D/H	RIPARIAN	573603.219	152471.6
3041	Magnesium	7439-95-4	RCBRA Rip 3	D/H	RIPARIAN	572639.65	151677.812

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
3003	4/26/2006	J11X52	SOIL and BIOTA	MIS	3920	mg/kg	PLANT
3004	5/23/2007	J152B2	SOIL and BIOTA	MIS	4430	mg/kg	PLANT
3005	5/24/2007	J152B6	SOIL and BIOTA	MIS	5280	mg/kg	PLANT
3006	5/24/2007	J152B4	SOIL and BIOTA	MIS	3780	mg/kg	PLANT
3007	5/12/2006	J11X84	SOIL and BIOTA	MIS	3220	mg/kg	PLANT
3008	5/12/2006	J11X84	SOIL and BIOTA	MIS-phyt	4470	mg/kg	PLANT
3009	5/12/2006	J11X77	SOIL and BIOTA	MIS	3820	mg/kg	PLANT
3010	5/12/2006	J11X77	SOIL and BIOTA	MIS-phyt	4150	mg/kg	PLANT
3011	5/16/2006	J11X79	SOIL and BIOTA	MIS	4140	mg/kg	PLANT
3012	5/16/2006	J11X79	SOIL and BIOTA	MIS-phyt	4330	mg/kg	PLANT
3013	5/16/2006	J11X90	SOIL and BIOTA	MIS	3520	mg/kg	PLANT
3014	5/16/2006	J11X90	SOIL and BIOTA	MIS-phyt	3870	mg/kg	PLANT
3015	5/18/2006	J11X86	SOIL and BIOTA	MIS	3860	mg/kg	PLANT
3016	5/18/2006	J11X81	SOIL and BIOTA	MIS	4500	mg/kg	PLANT
3017	5/15/2006	J11X82	SOIL and BIOTA	MIS	4310	mg/kg	PLANT
3018	5/15/2006	J11X82	SOIL and BIOTA	MIS-phyt	4450	mg/kg	PLANT
3019	5/12/2006	J11X72	SOIL and BIOTA	MIS	3830	mg/kg	PLANT
3020	5/12/2006	J11X51	SOIL and BIOTA	MIS	3720	mg/kg	PLANT
3021	5/12/2006	J11X89	SOIL and BIOTA	MIS	4020	mg/kg	PLANT
3022	5/10/2007	J15289	SOIL and BIOTA	MIS	4150	mg/kg	PLANT
3023	5/8/2007	J15291	SOIL and BIOTA	MIS	4880	mg/kg	PLANT
3024	5/10/2006	J11X74	SOIL and BIOTA	MIS	3580	mg/kg	PLANT
3025	5/18/2006	J11X98	SOIL and BIOTA	MIS	5850	mg/kg	PLANT
3026	5/18/2006	J11X98	SOIL and BIOTA	MIS-phyt	6010	mg/kg	PLANT
3027	5/15/2006	J11X66	SOIL and BIOTA	MIS	4800	mg/kg	PLANT
3028	5/18/2006	J11X69	SOIL and BIOTA	MIS	4050	mg/kg	PLANT
3029	5/22/2006	J11X63	SOIL and BIOTA	MIS	3850	mg/kg	PLANT
3030	5/19/2006	J11X70	SOIL and BIOTA	MIS	4270	mg/kg	PLANT
3031	5/12/2006	J11X64	SOIL and BIOTA	MIS	4100	mg/kg	PLANT
3032	5/9/2006	J11WY8	SOIL and BIOTA	MIS	4510	mg/kg	PLANT
3033	5/9/2006	J11WX0	SOIL and BIOTA	MIS	4200	mg/kg	PLANT
3034	8/10/2006	J11WY9	SOIL and BIOTA	MIS	5500	mg/kg	PLANT
3035	5/9/2006	J11X02	SOIL and BIOTA	MIS	5700	mg/kg	PLANT
3036	5/8/2007	J15293	SOIL and BIOTA	MIS	5700	mg/kg	PLANT
3037	5/9/2006	J11X04	SOIL and BIOTA	MIS	4870	mg/kg	PLANT
3038	5/16/2006	J11WX1	SOIL and BIOTA	MIS	5360	mg/kg	PLANT
3039	5/9/2006	J11WY6	SOIL and BIOTA	MIS	3590	mg/kg	PLANT
3040	5/19/2006	J11WX4	SOIL and BIOTA	MIS	4750	mg/kg	PLANT
3041	5/9/2006	J11WX6	SOIL and BIOTA	MIS	4090	mg/kg	PLANT

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
3003	CURRENT YRS GROWTH	1190	mg/kg			RCBRA
3004	CURRENT YRS GROWTH	218	mg/kg			RCBRA
3005	CURRENT YRS GROWTH	282	mg/kg			RCBRA
3006	CURRENT YRS GROWTH	368	mg/kg			RCBRA
3007	CURRENT YRS GROWTH	420	mg/kg	C		RCBRA
3008	CURRENT YRS GROWTH	420	mg/kg	C		RCBRA
3009	CURRENT YRS GROWTH	407	mg/kg	C		RCBRA
3010	CURRENT YRS GROWTH	407	mg/kg	C		RCBRA
3011	CURRENT YRS GROWTH	1020	mg/kg			RCBRA
3012	CURRENT YRS GROWTH	1020	mg/kg			RCBRA
3013	CURRENT YRS GROWTH	1320	mg/kg			RCBRA
3014	CURRENT YRS GROWTH	1320	mg/kg			RCBRA
3015	CURRENT YRS GROWTH	1010	mg/kg			RCBRA
3016	CURRENT YRS GROWTH	1120	mg/kg			RCBRA
3017	CURRENT YRS GROWTH	1190	mg/kg			RCBRA
3018	CURRENT YRS GROWTH	1190	mg/kg			RCBRA
3019	CURRENT YRS GROWTH	597	mg/kg	C		RCBRA
3020	CURRENT YRS GROWTH	406	mg/kg	C		RCBRA
3021	CURRENT YRS GROWTH	360	mg/kg	C		RCBRA
3022	CURRENT YRS GROWTH	164	mg/kg	C		RCBRA
3023	CURRENT YRS GROWTH	353	mg/kg	C		RCBRA
3024	CURRENT YRS GROWTH	289	mg/kg	C		RCBRA
3025	CURRENT YRS GROWTH	1520	mg/kg			RCBRA
3026	CURRENT YRS GROWTH	1520	mg/kg			RCBRA
3027	CURRENT YRS GROWTH	1170	mg/kg			RCBRA
3028	CURRENT YRS GROWTH	1530	mg/kg			RCBRA
3029	CURRENT YRS GROWTH	1100	mg/kg			RCBRA
3030	CURRENT YRS GROWTH	1050	mg/kg			RCBRA
3031	CURRENT YRS GROWTH	409	mg/kg	C		RCBRA
3032	CURRENT YRS GROWTH	341	mg/kg			RCBRA
3033	CURRENT YRS GROWTH	511	mg/kg			RCBRA
3034	CURRENT YRS GROWTH	766	mg/kg			RCBRA
3035	CURRENT YRS GROWTH	402	mg/kg			RCBRA
3036	CURRENT YRS GROWTH	441	mg/kg	C		RCBRA
3037	CURRENT YRS GROWTH	412	mg/kg			RCBRA
3038	CURRENT YRS GROWTH	2990	mg/kg			RCBRA
3039	CURRENT YRS GROWTH	352	mg/kg			RCBRA
3040	CURRENT YRS GROWTH	2530	mg/kg			RCBRA
3041	CURRENT YRS GROWTH	603	mg/kg			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
3042	Magnesium	7439-95-4	RCBRA Rip 4	N	RIPARIAN	570558.596	148981.547
3043	Magnesium	7439-95-4	RCBRA Rip 5	K	RIPARIAN	569141.025	147521.561
3044	Magnesium	7439-95-4	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
3045	Magnesium	7439-95-4	RCBRA Rip 7	IU2/IU6	RIPARIAN	581326.914	147825.17
3046	Magnesium	7439-95-4	RCBRA Rip 8	D/H	RIPARIAN	578698.584	152233.645
3047	Magnesium	7439-95-4	RCBRA Rip 9	D/H	RIPARIAN	578153.643	152801.452
3048	Magnesium	7439-95-4	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
3049	Magnesium	7439-95-4	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
3050	Magnesium	7439-95-4	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
3051	Magnesium	7439-95-4	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
3052	Magnesium	7439-95-4	RCBRA Yak Rdg 2	Outside decision areas	UPLAND	559031.557	135576.407
3053	Magnesium	7439-95-4	RCBRA 100-D-48	D/H	UPLAND	573841.527	151914.538
3054	Magnesium	7439-95-4	RCBRA 100-D-49	D/H	UPLAND	573938.06	151944.123
3055	Magnesium	7439-95-4	RCBRA 100-F-2	IU2/IU6	UPLAND	579728.068	147001.117
3056	Magnesium	7439-95-4	RCBRA 116-DR-1&2	D/H	UPLAND	574007.817	152246.748
3057	Magnesium	7439-95-4	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
3058	Magnesium	7439-95-4	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
3059	Magnesium	7439-95-4	RCBRA 116-N-3	N	UPLAND	571995.702	149793.039
3060	Magnesium	7439-95-4	RCBRA 1607-D2:1	D/H	UPLAND	573823.924	152260.319
3061	Magnesium	7439-95-4	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
3062	Magnesium	7439-95-4	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
3063	Magnesium	7439-95-4	RCBRA 300-49	300	UPLAND	594318.994	116830.934
3064	Magnesium	7439-95-4	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
3065	Magnesium	7439-95-4	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
3066	Magnesium	7439-95-4	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
3067	Magnesium	7439-95-4	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
3068	Magnesium	7439-95-4	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
3069	Magnesium	7439-95-4	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
3070	Magnesium	7439-95-4	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
3071	Magnesium	7439-95-4	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
3072	Magnesium	7439-95-4	RCBRA 600-181	IU2/IU6	UPLAND	578303.83	147316.698
3073	Magnesium	7439-95-4	RCBRA 600-204	IU2/IU6	UPLAND	580128.485	144762.219
3074	Magnesium	7439-95-4	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
3075	Magnesium	7439-95-4	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
3076	Magnesium	7439-95-4	RCBRA 600-23	IU2/IU6	UPLAND	585523.593	130481.377
3077	Magnesium	7439-95-4	RCBRA 618-4	300	UPLAND	593954.946	117064.473
3078	Magnesium	7439-95-4	RCBRA 628-1	IU2/IU6	UPLAND	577797.524	148745.681
3079	Magnesium	7439-95-4	RCBRA JA JONES	300	UPLAND	593874.58	120013.908
3080	Magnesium	7439-95-4	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
3042	5/9/2006	J11WW6	SOIL and BIOTA	MIS	4650	mg/kg	PLANT
3043	5/9/2006	J11WW8	SOIL and BIOTA	MIS	5260	mg/kg	PLANT
3044	5/22/2006	J11XP0	SOIL and BIOTA	MIS	4930	mg/kg	PLANT
3045	5/9/2006	J11WY0	SOIL and BIOTA	MIS	4150	mg/kg	PLANT
3046	5/16/2006	J11WY2	SOIL and BIOTA	MIS	4270	mg/kg	PLANT
3047	5/16/2006	J11WY4	SOIL and BIOTA	MIS	4440	mg/kg	PLANT
3048	5/18/2006	J11XB0	SOIL and BIOTA	MIS	4920	mg/kg	PLANT
3049	5/18/2006	J11XB0	SOIL and BIOTA	MIS-phyt	5140	mg/kg	PLANT
3050	5/15/2006	J11X96	SOIL and BIOTA	MIS	3930	mg/kg	PLANT
3051	5/15/2006	J11X96	SOIL and BIOTA	MIS-phyt	4290	mg/kg	PLANT
3052	5/16/2006	J11X94	SOIL and BIOTA	MIS	6110	mg/kg	PLANT
3053	5/18/2006	J11X43	SOIL and BIOTA	MIS	4730	mg/kg	PLANT
3054	5/18/2006	J11X55	SOIL and BIOTA	MIS	4490	mg/kg	PLANT
3055	5/10/2006	J11X60	SOIL and BIOTA	MIS	4480	mg/kg	PLANT
3056	5/19/2006	J11X57	SOIL and BIOTA	MIS	4200	mg/kg	PLANT
3057	5/16/2006	J11X49	SOIL and BIOTA	MIS	4340	mg/kg	PLANT
3058	5/16/2006	J11X49	SOIL and BIOTA	MIS-phyt	4080	mg/kg	PLANT
3059	5/19/2006	J11X47	SOIL and BIOTA	MIS	4820	mg/kg	PLANT
3060	5/22/2006	J11X59	SOIL and BIOTA	MIS	4580	mg/kg	PLANT
3061	5/12/2006	J11X45	SOIL and BIOTA	MIS	4340	mg/kg	PLANT
3062	5/12/2006	J11X45	SOIL and BIOTA	MIS-phyt	5040	mg/kg	PLANT
3063	4/26/2006	J11X53	SOIL and BIOTA	MIS	3920	mg/kg	PLANT
3064	5/12/2006	J11X85	SOIL and BIOTA	MIS	3220	mg/kg	PLANT
3065	5/12/2006	J11X85	SOIL and BIOTA	MIS-phyt	4470	mg/kg	PLANT
3066	5/12/2006	J11X76	SOIL and BIOTA	MIS	3820	mg/kg	PLANT
3067	5/12/2006	J11X76	SOIL and BIOTA	MIS-phyt	4150	mg/kg	PLANT
3068	5/16/2006	J11X78	SOIL and BIOTA	MIS	4140	mg/kg	PLANT
3069	5/16/2006	J11X78	SOIL and BIOTA	MIS-phyt	4330	mg/kg	PLANT
3070	5/16/2006	J11X91	SOIL and BIOTA	MIS	3520	mg/kg	PLANT
3071	5/16/2006	J11X91	SOIL and BIOTA	MIS-phyt	3870	mg/kg	PLANT
3072	5/18/2006	J11X87	SOIL and BIOTA	MIS	3860	mg/kg	PLANT
3073	5/18/2006	J11X80	SOIL and BIOTA	MIS	4500	mg/kg	PLANT
3074	5/15/2006	J11X83	SOIL and BIOTA	MIS	4310	mg/kg	PLANT
3075	5/15/2006	J11X83	SOIL and BIOTA	MIS-phyt	4450	mg/kg	PLANT
3076	5/12/2006	J11X73	SOIL and BIOTA	MIS	3830	mg/kg	PLANT
3077	5/12/2006	J11X50	SOIL and BIOTA	MIS	3720	mg/kg	PLANT
3078	5/12/2006	J11X88	SOIL and BIOTA	MIS	4020	mg/kg	PLANT
3079	5/10/2006	J11X75	SOIL and BIOTA	MIS	3580	mg/kg	PLANT
3080	5/18/2006	J11X99	SOIL and BIOTA	MIS	5850	mg/kg	PLANT

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
3042	CURRENT YRS GROWTH	374	mg/kg			RCBRA
3043	CURRENT YRS GROWTH	509	mg/kg			RCBRA
3044	CURRENT YRS GROWTH	2730	mg/kg			RCBRA
3045	CURRENT YRS GROWTH	419	mg/kg			RCBRA
3046	CURRENT YRS GROWTH	932	mg/kg			RCBRA
3047	CURRENT YRS GROWTH	1150	mg/kg			RCBRA
3048	CURRENT YRS GROWTH	1550	mg/kg			RCBRA
3049	CURRENT YRS GROWTH	1550	mg/kg			RCBRA
3050	CURRENT YRS GROWTH	1400	mg/kg			RCBRA
3051	CURRENT YRS GROWTH	1400	mg/kg			RCBRA
3052	CURRENT YRS GROWTH	1360	mg/kg			RCBRA
3053	CURRENT YRS GROWTH	1550	mg/kg			RCBRA
3054	CURRENT YRS GROWTH	1300	mg/kg			RCBRA
3055	CURRENT YRS GROWTH	666	mg/kg	C		RCBRA
3056	CURRENT YRS GROWTH	1450	mg/kg			RCBRA
3057	CURRENT YRS GROWTH	2920	mg/kg			RCBRA
3058	CURRENT YRS GROWTH	2920	mg/kg			RCBRA
3059	CURRENT YRS GROWTH	2440	mg/kg			RCBRA
3060	CURRENT YRS GROWTH	2020	mg/kg			RCBRA
3061	CURRENT YRS GROWTH	619	mg/kg			RCBRA
3062	CURRENT YRS GROWTH	619	mg/kg			RCBRA
3063	CURRENT YRS GROWTH	2270	mg/kg			RCBRA
3064	CURRENT YRS GROWTH	729	mg/kg	C		RCBRA
3065	CURRENT YRS GROWTH	729	mg/kg	C		RCBRA
3066	CURRENT YRS GROWTH	556	mg/kg	C		RCBRA
3067	CURRENT YRS GROWTH	556	mg/kg	C		RCBRA
3068	CURRENT YRS GROWTH	1440	mg/kg			RCBRA
3069	CURRENT YRS GROWTH	1440	mg/kg			RCBRA
3070	CURRENT YRS GROWTH	1690	mg/kg			RCBRA
3071	CURRENT YRS GROWTH	1690	mg/kg			RCBRA
3072	CURRENT YRS GROWTH	3390	mg/kg			RCBRA
3073	CURRENT YRS GROWTH	1600	mg/kg			RCBRA
3074	CURRENT YRS GROWTH	3110	mg/kg			RCBRA
3075	CURRENT YRS GROWTH	3110	mg/kg			RCBRA
3076	CURRENT YRS GROWTH	327	mg/kg	C		RCBRA
3077	CURRENT YRS GROWTH	536	mg/kg	C		RCBRA
3078	CURRENT YRS GROWTH	510	mg/kg	C		RCBRA
3079	CURRENT YRS GROWTH	537	mg/kg	C		RCBRA
3080	CURRENT YRS GROWTH	2170	mg/kg			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
3081	Magnesium	7439-95-4	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
3082	Magnesium	7439-95-4	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
3083	Magnesium	7439-95-4	RCBRA Pit 18	IU2/IU6	UPLAND	580697.058	145311.464
3084	Magnesium	7439-95-4	RCBRA Pit 23	IU2/IU6	UPLAND	572381.012	144874.157
3085	Magnesium	7439-95-4	RCBRA Pit 24	BC	UPLAND	563395.814	145119.007
3086	Magnesium	7439-95-4	RCBRA Pit 9	300	UPLAND	592807.103	120587.7
3087	Magnesium	7439-95-4	RCBRA R Ref 11	Outside decision areas	RIPARIAN	559400.735	146458.486
3088	Magnesium	7439-95-4	RCBRA R Ref 12	IU2/IU6	RIPARIAN	559201.908	145747.542
3089	Magnesium	7439-95-4	RCBRA R Ref 13	Outside decision areas	RIPARIAN	558572.809	145345.115
3090	Magnesium	7439-95-4	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
3091	Magnesium	7439-95-4	RCBRA R Ref 16	Outside decision areas	RIPARIAN	557650.029	144826.748
3092	Magnesium	7439-95-4	RCBRA Rip 1	D/H	RIPARIAN	577251.869	153659.195
3093	Magnesium	7439-95-4	RCBRA Rip 10	D/H	RIPARIAN	573987.873	153082.19
3094	Magnesium	7439-95-4	RCBRA Rip 2	D/H	RIPARIAN	573603.219	152471.6
3095	Magnesium	7439-95-4	RCBRA Rip 3	D/H	RIPARIAN	572639.65	151677.812
3096	Magnesium	7439-95-4	RCBRA Rip 4	N	RIPARIAN	570558.596	148981.547
3097	Magnesium	7439-95-4	RCBRA Rip 5	K	RIPARIAN	569141.025	147521.561
3098	Magnesium	7439-95-4	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
3099	Magnesium	7439-95-4	RCBRA Rip 7	IU2/IU6	RIPARIAN	581326.914	147825.17
3100	Magnesium	7439-95-4	RCBRA Rip 8	D/H	RIPARIAN	578698.584	152233.645
3101	Magnesium	7439-95-4	RCBRA Rip 9	D/H	RIPARIAN	578153.643	152801.452
3102	Magnesium	7439-95-4	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
3103	Magnesium	7439-95-4	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
3104	Magnesium	7439-95-4	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
3105	Magnesium	7439-95-4	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
3106	Magnesium	7439-95-4	RCBRA Yak Rdg 2	Outside decision areas	UPLAND	559031.557	135576.407
3107	Magnesium	7439-95-4	RCBRA 2a Rip	BC	RIPARIAN	564618.501	145284.526
3108	Magnesium	7439-95-4	RCBRA 2c Rip	K	RIPARIAN	567598.2	146210.159
3109	Magnesium	7439-95-4	RCBRA 2f Rip	D/H	RIPARIAN	576222.844	154297.511
3110	Magnesium	7439-95-4	RCBRA 2j Rip	IU2/IU6	RIPARIAN	579360.971	150092.048
3111	Magnesium	7439-95-4	RCBRA 2l Rip	IU2/IU6	RIPARIAN	582341.212	146120.069
3112	Magnesium	7439-95-4	RCBRA 3b Rip	IU2/IU6	RIPARIAN	584961.205	141035.835
3113	Magnesium	7439-95-4	RCBRA 4a Rip	IU2/IU6	RIPARIAN	589347.5	137480.985
3114	Magnesium	7439-95-4	RCBRA 5c Rip	300	RIPARIAN	594509.985	124869.182
3115	Magnesium	7439-95-4	RCBRA Bev Ref 1 Rip	Outside decision areas	RIPARIAN	542428.846	167701.261
3116	Magnesium	7439-95-4	RCBRA Bev Ref 2 Rip	Outside decision areas	RIPARIAN	541493.988	167808.357
3117	Magnesium	7439-95-4	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
3118	Manganese	7439-96-5	RCBRA 100-D-48	D/H	UPLAND	573841.527	151914.538
3119	Manganese	7439-96-5	RCBRA 100-D-49	D/H	UPLAND	573938.06	151944.123

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
3081	5/18/2006	J11X99	SOIL and BIOTA	MIS-phyt	6010	mg/kg	PLANT
3082	5/15/2006	J11X67	SOIL and BIOTA	MIS	4800	mg/kg	PLANT
3083	5/18/2006	J11X68	SOIL and BIOTA	MIS	4050	mg/kg	PLANT
3084	5/22/2006	J11X62	SOIL and BIOTA	MIS	3850	mg/kg	PLANT
3085	5/19/2006	J11X71	SOIL and BIOTA	MIS	4270	mg/kg	PLANT
3086	5/12/2006	J11X65	SOIL and BIOTA	MIS	4100	mg/kg	PLANT
3087	5/9/2006	J11WY7	SOIL and BIOTA	MIS	4510	mg/kg	PLANT
3088	5/9/2006	J11WW9	SOIL and BIOTA	MIS	4200	mg/kg	PLANT
3089	8/10/2006	J11X00	SOIL and BIOTA	MIS	5500	mg/kg	PLANT
3090	5/9/2006	J11X01	SOIL and BIOTA	MIS	5700	mg/kg	PLANT
3091	5/9/2006	J11X03	SOIL and BIOTA	MIS	4870	mg/kg	PLANT
3092	5/16/2006	J11WX2	SOIL and BIOTA	MIS	5360	mg/kg	PLANT
3093	5/9/2006	J11WY5	SOIL and BIOTA	MIS	3590	mg/kg	PLANT
3094	5/19/2006	J11WX3	SOIL and BIOTA	MIS	4750	mg/kg	PLANT
3095	5/9/2006	J11WX5	SOIL and BIOTA	MIS	4090	mg/kg	PLANT
3096	5/9/2006	J11WW5	SOIL and BIOTA	MIS	4650	mg/kg	PLANT
3097	5/9/2006	J11WW7	SOIL and BIOTA	MIS	5260	mg/kg	PLANT
3098	5/22/2006	J11WX7	SOIL and BIOTA	MIS	4930	mg/kg	PLANT
3099	5/9/2006	J11WX9	SOIL and BIOTA	MIS	4150	mg/kg	PLANT
3100	5/16/2006	J11WY1	SOIL and BIOTA	MIS	4270	mg/kg	PLANT
3101	5/16/2006	J11WY3	SOIL and BIOTA	MIS	4440	mg/kg	PLANT
3102	5/18/2006	J11XB1	SOIL and BIOTA	MIS	4920	mg/kg	PLANT
3103	5/18/2006	J11XB1	SOIL and BIOTA	MIS-phyt	5140	mg/kg	PLANT
3104	5/15/2006	J11X97	SOIL and BIOTA	MIS	3930	mg/kg	PLANT
3105	5/15/2006	J11X97	SOIL and BIOTA	MIS-phyt	4290	mg/kg	PLANT
3106	5/16/2006	J11X95	SOIL and BIOTA	MIS	6110	mg/kg	PLANT
3107	5/23/2007	J15299	SOIL and BIOTA	MIS	3800	mg/kg	PLANT
3108	5/21/2007	J152B9	SOIL and BIOTA	MIS	4950	mg/kg	PLANT
3109	5/7/2007	J15294	SOIL and BIOTA	MIS	4570	mg/kg	PLANT
3110	5/21/2007	J15297	SOIL and BIOTA	MIS	5370	mg/kg	PLANT
3111	5/24/2007	J152B1	SOIL and BIOTA	MIS	4540	mg/kg	PLANT
3112	5/23/2007	J152B3	SOIL and BIOTA	MIS	4430	mg/kg	PLANT
3113	5/24/2007	J152B7	SOIL and BIOTA	MIS	5280	mg/kg	PLANT
3114	5/24/2007	J152B5	SOIL and BIOTA	MIS	3780	mg/kg	PLANT
3115	5/10/2007	J15288	SOIL and BIOTA	MIS	4150	mg/kg	PLANT
3116	5/8/2007	J15290	SOIL and BIOTA	MIS	4880	mg/kg	PLANT
3117	5/8/2007	J15292	SOIL and BIOTA	MIS	5700	mg/kg	PLANT
3118	5/18/2006	J11X42	SOIL and BIOTA	MIS	321	mg/kg	PLANT
3119	5/18/2006	J11X54	SOIL and BIOTA	MIS	328	mg/kg	PLANT

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
3081	CURRENT YRS GROWTH	2170	mg/kg			RCBRA
3082	CURRENT YRS GROWTH	1120	mg/kg			RCBRA
3083	CURRENT YRS GROWTH	2090	mg/kg			RCBRA
3084	CURRENT YRS GROWTH	1330	mg/kg			RCBRA
3085	CURRENT YRS GROWTH	1200	mg/kg			RCBRA
3086	CURRENT YRS GROWTH	574	mg/kg	C		RCBRA
3087	CURRENT YRS GROWTH	659	mg/kg			RCBRA
3088	CURRENT YRS GROWTH	640	mg/kg			RCBRA
3089	CURRENT YRS GROWTH	1670	mg/kg			RCBRA
3090	CURRENT YRS GROWTH	572	mg/kg			RCBRA
3091	CURRENT YRS GROWTH	707	mg/kg			RCBRA
3092	CURRENT YRS GROWTH	1140	mg/kg			RCBRA
3093	CURRENT YRS GROWTH	654	mg/kg			RCBRA
3094	CURRENT YRS GROWTH	3070	mg/kg			RCBRA
3095	CURRENT YRS GROWTH	550	mg/kg			RCBRA
3096	CURRENT YRS GROWTH	629	mg/kg			RCBRA
3097	CURRENT YRS GROWTH	793	mg/kg			RCBRA
3098	CURRENT YRS GROWTH	2090	mg/kg			RCBRA
3099	CURRENT YRS GROWTH	592	mg/kg			RCBRA
3100	CURRENT YRS GROWTH	1380	mg/kg			RCBRA
3101	CURRENT YRS GROWTH	2840	mg/kg			RCBRA
3102	CURRENT YRS GROWTH	1690	mg/kg			RCBRA
3103	CURRENT YRS GROWTH	1690	mg/kg			RCBRA
3104	CURRENT YRS GROWTH	2030	mg/kg			RCBRA
3105	CURRENT YRS GROWTH	2030	mg/kg			RCBRA
3106	CURRENT YRS GROWTH	1830	mg/kg			RCBRA
3107	CURRENT YRS GROWTH	606	mg/kg			RCBRA
3108	CURRENT YRS GROWTH	695	mg/kg			RCBRA
3109	CURRENT YRS GROWTH	660	mg/kg	C		RCBRA
3110	CURRENT YRS GROWTH	686	mg/kg			RCBRA
3111	CURRENT YRS GROWTH	768	mg/kg			RCBRA
3112	CURRENT YRS GROWTH	765	mg/kg			RCBRA
3113	CURRENT YRS GROWTH	666	mg/kg			RCBRA
3114	CURRENT YRS GROWTH	604	mg/kg			RCBRA
3115	CURRENT YRS GROWTH	552	mg/kg	C		RCBRA
3116	CURRENT YRS GROWTH	555	mg/kg	C		RCBRA
3117	CURRENT YRS GROWTH	659	mg/kg	C		RCBRA
3118	CURRENT YRS GROWTH	28.9	mg/kg			RCBRA
3119	CURRENT YRS GROWTH	30.4	mg/kg			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
3120	Manganese	7439-96-5	RCBRA 100-F-2	IU2/IU6	UPLAND	579728.068	147001.117
3121	Manganese	7439-96-5	RCBRA 116-DR-1&2	D/H	UPLAND	574007.817	152246.748
3122	Manganese	7439-96-5	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
3123	Manganese	7439-96-5	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
3124	Manganese	7439-96-5	RCBRA 116-N-3	N	UPLAND	571995.702	149793.039
3125	Manganese	7439-96-5	RCBRA 1607-D2:1	D/H	UPLAND	573823.924	152260.319
3126	Manganese	7439-96-5	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
3127	Manganese	7439-96-5	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
3128	Manganese	7439-96-5	RCBRA 2a Rip	BC	RIPARIAN	564618.501	145284.526
3129	Manganese	7439-96-5	RCBRA 2c Rip	K	RIPARIAN	567598.2	146210.159
3130	Manganese	7439-96-5	RCBRA 2f Rip	D/H	RIPARIAN	576222.844	154297.511
3131	Manganese	7439-96-5	RCBRA 2j Rip	IU2/IU6	RIPARIAN	579360.971	150092.048
3132	Manganese	7439-96-5	RCBRA 2l Rip	IU2/IU6	RIPARIAN	582341.212	146120.069
3133	Manganese	7439-96-5	RCBRA 300-49	300	UPLAND	594318.994	116830.934
3134	Manganese	7439-96-5	RCBRA 3b Rip	IU2/IU6	RIPARIAN	584961.205	141035.835
3135	Manganese	7439-96-5	RCBRA 4a Rip	IU2/IU6	RIPARIAN	589347.5	137480.985
3136	Manganese	7439-96-5	RCBRA 5c Rip	300	RIPARIAN	594509.985	124869.182
3137	Manganese	7439-96-5	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
3138	Manganese	7439-96-5	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
3139	Manganese	7439-96-5	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
3140	Manganese	7439-96-5	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
3141	Manganese	7439-96-5	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
3142	Manganese	7439-96-5	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
3143	Manganese	7439-96-5	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
3144	Manganese	7439-96-5	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
3145	Manganese	7439-96-5	RCBRA 600-181	IU2/IU6	UPLAND	578303.83	147316.698
3146	Manganese	7439-96-5	RCBRA 600-204	IU2/IU6	UPLAND	580128.485	144762.219
3147	Manganese	7439-96-5	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
3148	Manganese	7439-96-5	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
3149	Manganese	7439-96-5	RCBRA 600-23	IU2/IU6	UPLAND	585523.593	130481.377
3150	Manganese	7439-96-5	RCBRA 618-4	300	UPLAND	593954.946	117064.473
3151	Manganese	7439-96-5	RCBRA 628-1	IU2/IU6	UPLAND	577797.524	148745.681
3152	Manganese	7439-96-5	RCBRA Bev Ref 1 Rip	Outside decision areas	RIPARIAN	542428.846	167701.261
3153	Manganese	7439-96-5	RCBRA Bev Ref 2 Rip	Outside decision areas	RIPARIAN	541493.988	167808.357
3154	Manganese	7439-96-5	RCBRA JA JONES	300	UPLAND	593874.58	120013.908
3155	Manganese	7439-96-5	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
3156	Manganese	7439-96-5	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
3157	Manganese	7439-96-5	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
3158	Manganese	7439-96-5	RCBRA Pit 18	IU2/IU6	UPLAND	580697.058	145311.464

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
3120	5/10/2006	J11X61	SOIL and BIOTA	MIS	368	mg/kg	PLANT
3121	5/19/2006	J11X56	SOIL and BIOTA	MIS	315	mg/kg	PLANT
3122	5/16/2006	J11X48	SOIL and BIOTA	MIS	281	mg/kg	PLANT
3123	5/16/2006	J11X48	SOIL and BIOTA	MIS-phyt	273	mg/kg	PLANT
3124	5/19/2006	J11X46	SOIL and BIOTA	MIS	337	mg/kg	PLANT
3125	5/22/2006	J11X58	SOIL and BIOTA	MIS	286	mg/kg	PLANT
3126	5/12/2006	J11X44	SOIL and BIOTA	MIS	265	mg/kg	PLANT
3127	5/12/2006	J11X44	SOIL and BIOTA	MIS-phyt	314	mg/kg	PLANT
3128	5/23/2007	J15298	SOIL and BIOTA	MIS	166	mg/kg	PLANT
3129	5/21/2007	J152B8	SOIL and BIOTA	MIS	269	mg/kg	PLANT
3130	5/7/2007	J15295	SOIL and BIOTA	MIS	227	mg/kg	PLANT
3131	5/21/2007	J15296	SOIL and BIOTA	MIS	219	mg/kg	PLANT
3132	5/24/2007	J152B0	SOIL and BIOTA	MIS	284	mg/kg	PLANT
3133	4/26/2006	J11X52	SOIL and BIOTA	MIS	310	mg/kg	PLANT
3134	5/23/2007	J152B2	SOIL and BIOTA	MIS	218	mg/kg	PLANT
3135	5/24/2007	J152B6	SOIL and BIOTA	MIS	257	mg/kg	PLANT
3136	5/24/2007	J152B4	SOIL and BIOTA	MIS	194	mg/kg	PLANT
3137	5/12/2006	J11X84	SOIL and BIOTA	MIS	249	mg/kg	PLANT
3138	5/12/2006	J11X84	SOIL and BIOTA	MIS-phyt	328	mg/kg	PLANT
3139	5/12/2006	J11X77	SOIL and BIOTA	MIS	274	mg/kg	PLANT
3140	5/12/2006	J11X77	SOIL and BIOTA	MIS-phyt	302	mg/kg	PLANT
3141	5/16/2006	J11X79	SOIL and BIOTA	MIS	280	mg/kg	PLANT
3142	5/16/2006	J11X79	SOIL and BIOTA	MIS-phyt	303	mg/kg	PLANT
3143	5/16/2006	J11X90	SOIL and BIOTA	MIS	258	mg/kg	PLANT
3144	5/16/2006	J11X90	SOIL and BIOTA	MIS-phyt	290	mg/kg	PLANT
3145	5/18/2006	J11X86	SOIL and BIOTA	MIS	326	mg/kg	PLANT
3146	5/18/2006	J11X81	SOIL and BIOTA	MIS	413	mg/kg	PLANT
3147	5/15/2006	J11X82	SOIL and BIOTA	MIS	330	mg/kg	PLANT
3148	5/15/2006	J11X82	SOIL and BIOTA	MIS-phyt	355	mg/kg	PLANT
3149	5/12/2006	J11X72	SOIL and BIOTA	MIS	269	mg/kg	PLANT
3150	5/12/2006	J11X51	SOIL and BIOTA	MIS	283	mg/kg	PLANT
3151	5/12/2006	J11X89	SOIL and BIOTA	MIS	396	mg/kg	PLANT
3152	5/10/2007	J15289	SOIL and BIOTA	MIS	188	mg/kg	PLANT
3153	5/8/2007	J15291	SOIL and BIOTA	MIS	240	mg/kg	PLANT
3154	5/10/2006	J11X74	SOIL and BIOTA	MIS	311	mg/kg	PLANT
3155	5/18/2006	J11X98	SOIL and BIOTA	MIS	506	mg/kg	PLANT
3156	5/18/2006	J11X98	SOIL and BIOTA	MIS-phyt	528	mg/kg	PLANT
3157	5/15/2006	J11X66	SOIL and BIOTA	MIS	377	mg/kg	PLANT
3158	5/18/2006	J11X69	SOIL and BIOTA	MIS	283	mg/kg	PLANT

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
3120	CURRENT YRS GROWTH	10	mg/kg			RCBRA
3121	CURRENT YRS GROWTH	39	mg/kg			RCBRA
3122	CURRENT YRS GROWTH	19.8	mg/kg			RCBRA
3123	CURRENT YRS GROWTH	19.8	mg/kg			RCBRA
3124	CURRENT YRS GROWTH	26	mg/kg			RCBRA
3125	CURRENT YRS GROWTH	26	mg/kg			RCBRA
3126	CURRENT YRS GROWTH	10	mg/kg			RCBRA
3127	CURRENT YRS GROWTH	10	mg/kg			RCBRA
3128	CURRENT YRS GROWTH	3.5	mg/kg			RCBRA
3129	CURRENT YRS GROWTH	3.8	mg/kg			RCBRA
3130	CURRENT YRS GROWTH	4.7	mg/kg	C		RCBRA
3131	CURRENT YRS GROWTH	4.8	mg/kg			RCBRA
3132	CURRENT YRS GROWTH	3.1	mg/kg			RCBRA
3133	CURRENT YRS GROWTH	27	mg/kg			RCBRA
3134	CURRENT YRS GROWTH	3.7	mg/kg			RCBRA
3135	CURRENT YRS GROWTH	3	mg/kg			RCBRA
3136	CURRENT YRS GROWTH	4.1	mg/kg			RCBRA
3137	CURRENT YRS GROWTH	10.6	mg/kg			RCBRA
3138	CURRENT YRS GROWTH	10.6	mg/kg			RCBRA
3139	CURRENT YRS GROWTH	7.3	mg/kg			RCBRA
3140	CURRENT YRS GROWTH	7.3	mg/kg			RCBRA
3141	CURRENT YRS GROWTH	28.7	mg/kg			RCBRA
3142	CURRENT YRS GROWTH	28.7	mg/kg			RCBRA
3143	CURRENT YRS GROWTH	30.3	mg/kg			RCBRA
3144	CURRENT YRS GROWTH	30.3	mg/kg			RCBRA
3145	CURRENT YRS GROWTH	12.9	mg/kg			RCBRA
3146	CURRENT YRS GROWTH	31.9	mg/kg			RCBRA
3147	CURRENT YRS GROWTH	27.9	mg/kg			RCBRA
3148	CURRENT YRS GROWTH	27.9	mg/kg			RCBRA
3149	CURRENT YRS GROWTH	13	mg/kg			RCBRA
3150	CURRENT YRS GROWTH	9.4	mg/kg			RCBRA
3151	CURRENT YRS GROWTH	7.2	mg/kg			RCBRA
3152	CURRENT YRS GROWTH	2.3	mg/kg	C		RCBRA
3153	CURRENT YRS GROWTH	3.3	mg/kg	C		RCBRA
3154	CURRENT YRS GROWTH	7.2	mg/kg			RCBRA
3155	CURRENT YRS GROWTH	30.7	mg/kg			RCBRA
3156	CURRENT YRS GROWTH	30.7	mg/kg			RCBRA
3157	CURRENT YRS GROWTH	20.3	mg/kg			RCBRA
3158	CURRENT YRS GROWTH	54.3	mg/kg			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
3159	Manganese	7439-96-5	RCBRA Pit 23	IU2/IU6	UPLAND	572381.012	144874.157
3160	Manganese	7439-96-5	RCBRA Pit 24	BC	UPLAND	563395.814	145119.007
3161	Manganese	7439-96-5	RCBRA Pit 9	300	UPLAND	592807.103	120587.7
3162	Manganese	7439-96-5	RCBRA R Ref 11	Outside decision areas	RIPARIAN	559400.735	146458.486
3163	Manganese	7439-96-5	RCBRA R Ref 12	IU2/IU6	RIPARIAN	559201.908	145747.542
3164	Manganese	7439-96-5	RCBRA R Ref 13	Outside decision areas	RIPARIAN	558572.809	145345.115
3165	Manganese	7439-96-5	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
3166	Manganese	7439-96-5	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
3167	Manganese	7439-96-5	RCBRA R Ref 16	Outside decision areas	RIPARIAN	557650.029	144826.748
3168	Manganese	7439-96-5	RCBRA Rip 1	D/H	RIPARIAN	577251.869	153659.195
3169	Manganese	7439-96-5	RCBRA Rip 10	D/H	RIPARIAN	573987.873	153082.19
3170	Manganese	7439-96-5	RCBRA Rip 2	D/H	RIPARIAN	573603.219	152471.6
3171	Manganese	7439-96-5	RCBRA Rip 3	D/H	RIPARIAN	572639.65	151677.812
3172	Manganese	7439-96-5	RCBRA Rip 4	N	RIPARIAN	570558.596	148981.547
3173	Manganese	7439-96-5	RCBRA Rip 5	K	RIPARIAN	569141.025	147521.561
3174	Manganese	7439-96-5	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
3175	Manganese	7439-96-5	RCBRA Rip 7	IU2/IU6	RIPARIAN	581326.914	147825.17
3176	Manganese	7439-96-5	RCBRA Rip 8	D/H	RIPARIAN	578698.584	152233.645
3177	Manganese	7439-96-5	RCBRA Rip 9	D/H	RIPARIAN	578153.643	152801.452
3178	Manganese	7439-96-5	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
3179	Manganese	7439-96-5	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
3180	Manganese	7439-96-5	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
3181	Manganese	7439-96-5	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
3182	Manganese	7439-96-5	RCBRA Yak Rdg 2	Outside decision areas	UPLAND	559031.557	135576.407
3183	Manganese	7439-96-5	RCBRA 100-D-48	D/H	UPLAND	573841.527	151914.538
3184	Manganese	7439-96-5	RCBRA 100-D-49	D/H	UPLAND	573938.06	151944.123
3185	Manganese	7439-96-5	RCBRA 100-F-2	IU2/IU6	UPLAND	579728.068	147001.117
3186	Manganese	7439-96-5	RCBRA 116-DR-1&2	D/H	UPLAND	574007.817	152246.748
3187	Manganese	7439-96-5	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
3188	Manganese	7439-96-5	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
3189	Manganese	7439-96-5	RCBRA 116-N-3	N	UPLAND	571995.702	149793.039
3190	Manganese	7439-96-5	RCBRA 1607-D2:1	D/H	UPLAND	573823.924	152260.319
3191	Manganese	7439-96-5	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
3192	Manganese	7439-96-5	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
3193	Manganese	7439-96-5	RCBRA 300-49	300	UPLAND	594318.994	116830.934
3194	Manganese	7439-96-5	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
3195	Manganese	7439-96-5	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
3196	Manganese	7439-96-5	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
3197	Manganese	7439-96-5	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
3159	5/22/2006	J11X63	SOIL and BIOTA	MIS	305	mg/kg	PLANT
3160	5/19/2006	J11X70	SOIL and BIOTA	MIS	386	mg/kg	PLANT
3161	5/12/2006	J11X64	SOIL and BIOTA	MIS	350	mg/kg	PLANT
3162	5/9/2006	J11WY8	SOIL and BIOTA	MIS	224	mg/kg	PLANT
3163	5/9/2006	J11WX0	SOIL and BIOTA	MIS	341	mg/kg	PLANT
3164	8/10/2006	J11WY9	SOIL and BIOTA	MIS	562	mg/kg	PLANT
3165	5/9/2006	J11X02	SOIL and BIOTA	MIS	556	mg/kg	PLANT
3166	5/8/2007	J15293	SOIL and BIOTA	MIS	556	mg/kg	PLANT
3167	5/9/2006	J11X04	SOIL and BIOTA	MIS	286	mg/kg	PLANT
3168	5/16/2006	J11WX1	SOIL and BIOTA	MIS	304	mg/kg	PLANT
3169	5/9/2006	J11WY6	SOIL and BIOTA	MIS	266	mg/kg	PLANT
3170	5/19/2006	J11WX4	SOIL and BIOTA	MIS	369	mg/kg	PLANT
3171	5/9/2006	J11WX6	SOIL and BIOTA	MIS	357	mg/kg	PLANT
3172	5/9/2006	J11WW6	SOIL and BIOTA	MIS	252	mg/kg	PLANT
3173	5/9/2006	J11WW8	SOIL and BIOTA	MIS	402	mg/kg	PLANT
3174	5/22/2006	J11XP0	SOIL and BIOTA	MIS	408	mg/kg	PLANT
3175	5/9/2006	J11WY0	SOIL and BIOTA	MIS	255	mg/kg	PLANT
3176	5/16/2006	J11WY2	SOIL and BIOTA	MIS	305	mg/kg	PLANT
3177	5/16/2006	J11WY4	SOIL and BIOTA	MIS	267	mg/kg	PLANT
3178	5/18/2006	J11XB0	SOIL and BIOTA	MIS	509	mg/kg	PLANT
3179	5/18/2006	J11XB0	SOIL and BIOTA	MIS-phyt	528	mg/kg	PLANT
3180	5/15/2006	J11X96	SOIL and BIOTA	MIS	398	mg/kg	PLANT
3181	5/15/2006	J11X96	SOIL and BIOTA	MIS-phyt	440	mg/kg	PLANT
3182	5/16/2006	J11X94	SOIL and BIOTA	MIS	546	mg/kg	PLANT
3183	5/18/2006	J11X43	SOIL and BIOTA	MIS	321	mg/kg	PLANT
3184	5/18/2006	J11X55	SOIL and BIOTA	MIS	328	mg/kg	PLANT
3185	5/10/2006	J11X60	SOIL and BIOTA	MIS	368	mg/kg	PLANT
3186	5/19/2006	J11X57	SOIL and BIOTA	MIS	315	mg/kg	PLANT
3187	5/16/2006	J11X49	SOIL and BIOTA	MIS	281	mg/kg	PLANT
3188	5/16/2006	J11X49	SOIL and BIOTA	MIS-phyt	273	mg/kg	PLANT
3189	5/19/2006	J11X47	SOIL and BIOTA	MIS	337	mg/kg	PLANT
3190	5/22/2006	J11X59	SOIL and BIOTA	MIS	286	mg/kg	PLANT
3191	5/12/2006	J11X45	SOIL and BIOTA	MIS	265	mg/kg	PLANT
3192	5/12/2006	J11X45	SOIL and BIOTA	MIS-phyt	314	mg/kg	PLANT
3193	4/26/2006	J11X53	SOIL and BIOTA	MIS	310	mg/kg	PLANT
3194	5/12/2006	J11X85	SOIL and BIOTA	MIS	249	mg/kg	PLANT
3195	5/12/2006	J11X85	SOIL and BIOTA	MIS-phyt	328	mg/kg	PLANT
3196	5/12/2006	J11X76	SOIL and BIOTA	MIS	274	mg/kg	PLANT
3197	5/12/2006	J11X76	SOIL and BIOTA	MIS-phyt	302	mg/kg	PLANT

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
3159	CURRENT YRS GROWTH	41.2	mg/kg			RCBRA
3160	CURRENT YRS GROWTH	22.1	mg/kg			RCBRA
3161	CURRENT YRS GROWTH	7.5	mg/kg			RCBRA
3162	CURRENT YRS GROWTH	18.4	mg/kg			RCBRA
3163	CURRENT YRS GROWTH	24.4	mg/kg			RCBRA
3164	CURRENT YRS GROWTH	34.8	mg/kg		J	RCBRA
3165	CURRENT YRS GROWTH	18.6	mg/kg			RCBRA
3166	CURRENT YRS GROWTH	3.8	mg/kg	C		RCBRA
3167	CURRENT YRS GROWTH	17.2	mg/kg			RCBRA
3168	CURRENT YRS GROWTH	41.7	mg/kg			RCBRA
3169	CURRENT YRS GROWTH	6.2	mg/kg			RCBRA
3170	CURRENT YRS GROWTH	36.5	mg/kg			RCBRA
3171	CURRENT YRS GROWTH	6.5	mg/kg			RCBRA
3172	CURRENT YRS GROWTH	7.8	mg/kg			RCBRA
3173	CURRENT YRS GROWTH	17.5	mg/kg			RCBRA
3174	CURRENT YRS GROWTH	26.6	mg/kg			RCBRA
3175	CURRENT YRS GROWTH	8.6	mg/kg			RCBRA
3176	CURRENT YRS GROWTH	53.8	mg/kg			RCBRA
3177	CURRENT YRS GROWTH	17.9	mg/kg			RCBRA
3178	CURRENT YRS GROWTH	38.6	mg/kg			RCBRA
3179	CURRENT YRS GROWTH	38.6	mg/kg			RCBRA
3180	CURRENT YRS GROWTH	87.5	mg/kg			RCBRA
3181	CURRENT YRS GROWTH	87.5	mg/kg			RCBRA
3182	CURRENT YRS GROWTH	62.5	mg/kg			RCBRA
3183	CURRENT YRS GROWTH	37.7	mg/kg			RCBRA
3184	CURRENT YRS GROWTH	44.4	mg/kg			RCBRA
3185	CURRENT YRS GROWTH	8.4	mg/kg			RCBRA
3186	CURRENT YRS GROWTH	51.4	mg/kg			RCBRA
3187	CURRENT YRS GROWTH	36.1	mg/kg			RCBRA
3188	CURRENT YRS GROWTH	36.1	mg/kg			RCBRA
3189	CURRENT YRS GROWTH	28.3	mg/kg			RCBRA
3190	CURRENT YRS GROWTH	57.2	mg/kg			RCBRA
3191	CURRENT YRS GROWTH	22.7	mg/kg			RCBRA
3192	CURRENT YRS GROWTH	22.7	mg/kg			RCBRA
3193	CURRENT YRS GROWTH	48.2	mg/kg			RCBRA
3194	CURRENT YRS GROWTH	4.1	mg/kg			RCBRA
3195	CURRENT YRS GROWTH	4.1	mg/kg			RCBRA
3196	CURRENT YRS GROWTH	7.3	mg/kg			RCBRA
3197	CURRENT YRS GROWTH	7.3	mg/kg			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
3198	Manganese	7439-96-5	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
3199	Manganese	7439-96-5	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
3200	Manganese	7439-96-5	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
3201	Manganese	7439-96-5	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
3202	Manganese	7439-96-5	RCBRA 600-181	IU2/IU6	UPLAND	578303.83	147316.698
3203	Manganese	7439-96-5	RCBRA 600-204	IU2/IU6	UPLAND	580128.485	144762.219
3204	Manganese	7439-96-5	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
3205	Manganese	7439-96-5	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
3206	Manganese	7439-96-5	RCBRA 600-23	IU2/IU6	UPLAND	585523.593	130481.377
3207	Manganese	7439-96-5	RCBRA 618-4	300	UPLAND	593954.946	117064.473
3208	Manganese	7439-96-5	RCBRA 628-1	IU2/IU6	UPLAND	577797.524	148745.681
3209	Manganese	7439-96-5	RCBRA JA JONES	300	UPLAND	593874.58	120013.908
3210	Manganese	7439-96-5	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
3211	Manganese	7439-96-5	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
3212	Manganese	7439-96-5	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
3213	Manganese	7439-96-5	RCBRA Pit 18	IU2/IU6	UPLAND	580697.058	145311.464
3214	Manganese	7439-96-5	RCBRA Pit 23	IU2/IU6	UPLAND	572381.012	144874.157
3215	Manganese	7439-96-5	RCBRA Pit 24	BC	UPLAND	563395.814	145119.007
3216	Manganese	7439-96-5	RCBRA Pit 9	300	UPLAND	592807.103	120587.7
3217	Manganese	7439-96-5	RCBRA R Ref 11	Outside decision areas	RIPARIAN	559400.735	146458.486
3218	Manganese	7439-96-5	RCBRA R Ref 12	IU2/IU6	RIPARIAN	559201.908	145747.542
3219	Manganese	7439-96-5	RCBRA R Ref 13	Outside decision areas	RIPARIAN	558572.809	145345.115
3220	Manganese	7439-96-5	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
3221	Manganese	7439-96-5	RCBRA R Ref 16	Outside decision areas	RIPARIAN	557650.029	144826.748
3222	Manganese	7439-96-5	RCBRA Rip 1	D/H	RIPARIAN	577251.869	153659.195
3223	Manganese	7439-96-5	RCBRA Rip 10	D/H	RIPARIAN	573987.873	153082.19
3224	Manganese	7439-96-5	RCBRA Rip 2	D/H	RIPARIAN	573603.219	152471.6
3225	Manganese	7439-96-5	RCBRA Rip 3	D/H	RIPARIAN	572639.65	151677.812
3226	Manganese	7439-96-5	RCBRA Rip 4	N	RIPARIAN	570558.596	148981.547
3227	Manganese	7439-96-5	RCBRA Rip 5	K	RIPARIAN	569141.025	147521.561
3228	Manganese	7439-96-5	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
3229	Manganese	7439-96-5	RCBRA Rip 7	IU2/IU6	RIPARIAN	581326.914	147825.17
3230	Manganese	7439-96-5	RCBRA Rip 8	D/H	RIPARIAN	578698.584	152233.645
3231	Manganese	7439-96-5	RCBRA Rip 9	D/H	RIPARIAN	578153.643	152801.452
3232	Manganese	7439-96-5	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
3233	Manganese	7439-96-5	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
3234	Manganese	7439-96-5	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
3235	Manganese	7439-96-5	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
3236	Manganese	7439-96-5	RCBRA Yak Rdg 2	Outside decision areas	UPLAND	559031.557	135576.407

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
3198	5/16/2006	J11X78	SOIL and BIOTA	MIS	280	mg/kg	PLANT
3199	5/16/2006	J11X78	SOIL and BIOTA	MIS-phyt	303	mg/kg	PLANT
3200	5/16/2006	J11X91	SOIL and BIOTA	MIS	258	mg/kg	PLANT
3201	5/16/2006	J11X91	SOIL and BIOTA	MIS-phyt	290	mg/kg	PLANT
3202	5/18/2006	J11X87	SOIL and BIOTA	MIS	326	mg/kg	PLANT
3203	5/18/2006	J11X80	SOIL and BIOTA	MIS	413	mg/kg	PLANT
3204	5/15/2006	J11X83	SOIL and BIOTA	MIS	330	mg/kg	PLANT
3205	5/15/2006	J11X83	SOIL and BIOTA	MIS-phyt	355	mg/kg	PLANT
3206	5/12/2006	J11X73	SOIL and BIOTA	MIS	269	mg/kg	PLANT
3207	5/12/2006	J11X50	SOIL and BIOTA	MIS	283	mg/kg	PLANT
3208	5/12/2006	J11X88	SOIL and BIOTA	MIS	396	mg/kg	PLANT
3209	5/10/2006	J11X75	SOIL and BIOTA	MIS	311	mg/kg	PLANT
3210	5/18/2006	J11X99	SOIL and BIOTA	MIS	506	mg/kg	PLANT
3211	5/18/2006	J11X99	SOIL and BIOTA	MIS-phyt	528	mg/kg	PLANT
3212	5/15/2006	J11X67	SOIL and BIOTA	MIS	377	mg/kg	PLANT
3213	5/18/2006	J11X68	SOIL and BIOTA	MIS	283	mg/kg	PLANT
3214	5/22/2006	J11X62	SOIL and BIOTA	MIS	305	mg/kg	PLANT
3215	5/19/2006	J11X71	SOIL and BIOTA	MIS	386	mg/kg	PLANT
3216	5/12/2006	J11X65	SOIL and BIOTA	MIS	350	mg/kg	PLANT
3217	5/9/2006	J11WY7	SOIL and BIOTA	MIS	224	mg/kg	PLANT
3218	5/9/2006	J11WW9	SOIL and BIOTA	MIS	341	mg/kg	PLANT
3219	8/10/2006	J11X00	SOIL and BIOTA	MIS	562	mg/kg	PLANT
3220	5/9/2006	J11X01	SOIL and BIOTA	MIS	556	mg/kg	PLANT
3221	5/9/2006	J11X03	SOIL and BIOTA	MIS	286	mg/kg	PLANT
3222	5/16/2006	J11WX2	SOIL and BIOTA	MIS	304	mg/kg	PLANT
3223	5/9/2006	J11WY5	SOIL and BIOTA	MIS	266	mg/kg	PLANT
3224	5/19/2006	J11WX3	SOIL and BIOTA	MIS	369	mg/kg	PLANT
3225	5/9/2006	J11WX5	SOIL and BIOTA	MIS	357	mg/kg	PLANT
3226	5/9/2006	J11WW5	SOIL and BIOTA	MIS	252	mg/kg	PLANT
3227	5/9/2006	J11WW7	SOIL and BIOTA	MIS	402	mg/kg	PLANT
3228	5/22/2006	J11WX7	SOIL and BIOTA	MIS	408	mg/kg	PLANT
3229	5/9/2006	J11WX9	SOIL and BIOTA	MIS	255	mg/kg	PLANT
3230	5/16/2006	J11WY1	SOIL and BIOTA	MIS	305	mg/kg	PLANT
3231	5/16/2006	J11WY3	SOIL and BIOTA	MIS	267	mg/kg	PLANT
3232	5/18/2006	J11XB1	SOIL and BIOTA	MIS	509	mg/kg	PLANT
3233	5/18/2006	J11XB1	SOIL and BIOTA	MIS-phyt	528	mg/kg	PLANT
3234	5/15/2006	J11X97	SOIL and BIOTA	MIS	398	mg/kg	PLANT
3235	5/15/2006	J11X97	SOIL and BIOTA	MIS-phyt	440	mg/kg	PLANT
3236	5/16/2006	J11X95	SOIL and BIOTA	MIS	546	mg/kg	PLANT

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
3198	CURRENT YRS GROWTH	39.8	mg/kg			RCBRA
3199	CURRENT YRS GROWTH	39.8	mg/kg			RCBRA
3200	CURRENT YRS GROWTH	28.6	mg/kg			RCBRA
3201	CURRENT YRS GROWTH	28.6	mg/kg			RCBRA
3202	CURRENT YRS GROWTH	37.4	mg/kg			RCBRA
3203	CURRENT YRS GROWTH	44.9	mg/kg			RCBRA
3204	CURRENT YRS GROWTH	53.9	mg/kg			RCBRA
3205	CURRENT YRS GROWTH	53.9	mg/kg			RCBRA
3206	CURRENT YRS GROWTH	14	mg/kg			RCBRA
3207	CURRENT YRS GROWTH	10.1	mg/kg			RCBRA
3208	CURRENT YRS GROWTH	5.6	mg/kg			RCBRA
3209	CURRENT YRS GROWTH	11.9	mg/kg			RCBRA
3210	CURRENT YRS GROWTH	17.1	mg/kg			RCBRA
3211	CURRENT YRS GROWTH	17.1	mg/kg			RCBRA
3212	CURRENT YRS GROWTH	49.9	mg/kg			RCBRA
3213	CURRENT YRS GROWTH	26.3	mg/kg			RCBRA
3214	CURRENT YRS GROWTH	56.1	mg/kg			RCBRA
3215	CURRENT YRS GROWTH	38.2	mg/kg			RCBRA
3216	CURRENT YRS GROWTH	11.1	mg/kg			RCBRA
3217	CURRENT YRS GROWTH	6.5	mg/kg			RCBRA
3218	CURRENT YRS GROWTH	5.9	mg/kg			RCBRA
3219	CURRENT YRS GROWTH	9.2	mg/kg		J	RCBRA
3220	CURRENT YRS GROWTH	5.4	mg/kg			RCBRA
3221	CURRENT YRS GROWTH	7.6	mg/kg			RCBRA
3222	CURRENT YRS GROWTH	12.8	mg/kg			RCBRA
3223	CURRENT YRS GROWTH	6.4	mg/kg			RCBRA
3224	CURRENT YRS GROWTH	33.4	mg/kg			RCBRA
3225	CURRENT YRS GROWTH	6.4	mg/kg			RCBRA
3226	CURRENT YRS GROWTH	6	mg/kg			RCBRA
3227	CURRENT YRS GROWTH	10.8	mg/kg			RCBRA
3228	CURRENT YRS GROWTH	19.9	mg/kg			RCBRA
3229	CURRENT YRS GROWTH	5.5	mg/kg			RCBRA
3230	CURRENT YRS GROWTH	18.5	mg/kg			RCBRA
3231	CURRENT YRS GROWTH	31	mg/kg			RCBRA
3232	CURRENT YRS GROWTH	18.3	mg/kg			RCBRA
3233	CURRENT YRS GROWTH	18.3	mg/kg			RCBRA
3234	CURRENT YRS GROWTH	18.9	mg/kg			RCBRA
3235	CURRENT YRS GROWTH	18.9	mg/kg			RCBRA
3236	CURRENT YRS GROWTH	15.2	mg/kg			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
3237	Manganese	7439-96-5	RCBRA 2a Rip	BC	RIPARIAN	564618.501	145284.526
3238	Manganese	7439-96-5	RCBRA 2c Rip	K	RIPARIAN	567598.2	146210.159
3239	Manganese	7439-96-5	RCBRA 2f Rip	D/H	RIPARIAN	576222.844	154297.511
3240	Manganese	7439-96-5	RCBRA 2j Rip	IU2/IU6	RIPARIAN	579360.971	150092.048
3241	Manganese	7439-96-5	RCBRA 2l Rip	IU2/IU6	RIPARIAN	582341.212	146120.069
3242	Manganese	7439-96-5	RCBRA 3b Rip	IU2/IU6	RIPARIAN	584961.205	141035.835
3243	Manganese	7439-96-5	RCBRA 4a Rip	IU2/IU6	RIPARIAN	589347.5	137480.985
3244	Manganese	7439-96-5	RCBRA 5c Rip	300	RIPARIAN	594509.985	124869.182
3245	Manganese	7439-96-5	RCBRA Bev Ref 1 Rip	Outside decision areas	RIPARIAN	542428.846	167701.261
3246	Manganese	7439-96-5	RCBRA Bev Ref 2 Rip	Outside decision areas	RIPARIAN	541493.988	167808.357
3247	Manganese	7439-96-5	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
3248	Manganese	7439-96-5	VERNITA BRIDGE 1	Outside decision areas	UPLAND	558823	145536
3249	Manganese	7439-96-5	VERNITA BRIDGE 1	Outside decision areas	UPLAND	558823	145536
3250	Manganese	7439-96-5	VERNITA BRIDGE 1	Outside decision areas	UPLAND	558823	145536
3251	Manganese	7439-96-5	VERNITA BRIDGE 1	Outside decision areas	UPLAND	558823	145536
3252	Manganese	7439-96-5	VERNITA BRIDGE 2	Outside decision areas	UPLAND	558844	145558
3253	Manganese	7439-96-5	VERNITA BRIDGE 2	Outside decision areas	UPLAND	558844	145558
3254	Manganese	7439-96-5	VERNITA BRIDGE 2	Outside decision areas	UPLAND	558844	145558
3255	Manganese	7439-96-5	VERNITA BRIDGE 3	IU2/IU6	UPLAND	559089	145707
3256	Manganese	7439-96-5	VERNITA BRIDGE 3	IU2/IU6	UPLAND	559089	145707
3257	Manganese	7439-96-5	VERNITA BRIDGE 3	IU2/IU6	UPLAND	559089	145707
3258	Manganese	7439-96-5	VERNITA BRIDGE 3	IU2/IU6	UPLAND	559089	145707
3259	Manganese	7439-96-5	VERNITA BRIDGE 3	IU2/IU6	UPLAND	559089	145707
3260	Manganese	7439-96-5	VERNITA BRIDGE 4	IU2/IU6	UPLAND	559347	145849
3261	Manganese	7439-96-5	VERNITA BRIDGE 4	IU2/IU6	UPLAND	559347	145849
3262	Manganese	7439-96-5	VERNITA BRIDGE 4	IU2/IU6	UPLAND	559347	145849
3263	Manganese	7439-96-5	VERNITA BRIDGE 4	IU2/IU6	UPLAND	559347	145849
3264	Manganese	7439-96-5	VERNITA BRIDGE 5	IU2/IU6	UPLAND	559606	145999
3265	Manganese	7439-96-5	VERNITA BRIDGE 5	IU2/IU6	UPLAND	559606	145999
3266	Manganese	7439-96-5	VERNITA BRIDGE 5	IU2/IU6	UPLAND	559606	145999
3267	Manganese	7439-96-5	VERNITA BRIDGE 5	IU2/IU6	UPLAND	559606	145999
3268	Molybdenum	7439-98-7	RCBRA 100-F-2	IU2/IU6	UPLAND	579728.068	147001.117
3269	Molybdenum	7439-98-7	RCBRA 116-DR-1&2	D/H	UPLAND	574007.817	152246.748
3270	Molybdenum	7439-98-7	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
3271	Molybdenum	7439-98-7	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
3272	Molybdenum	7439-98-7	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
3273	Molybdenum	7439-98-7	RCBRA 2f Rip	D/H	RIPARIAN	576222.844	154297.511
3274	Molybdenum	7439-98-7	RCBRA 5c Rip	300	RIPARIAN	594509.985	124869.182
3275	Molybdenum	7439-98-7	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
3237	5/23/2007	J15299	SOIL and BIOTA	MIS	166	mg/kg	PLANT
3238	5/21/2007	J152B9	SOIL and BIOTA	MIS	269	mg/kg	PLANT
3239	5/7/2007	J15294	SOIL and BIOTA	MIS	227	mg/kg	PLANT
3240	5/21/2007	J15297	SOIL and BIOTA	MIS	219	mg/kg	PLANT
3241	5/24/2007	J152B1	SOIL and BIOTA	MIS	284	mg/kg	PLANT
3242	5/23/2007	J152B3	SOIL and BIOTA	MIS	218	mg/kg	PLANT
3243	5/24/2007	J152B7	SOIL and BIOTA	MIS	257	mg/kg	PLANT
3244	5/24/2007	J152B5	SOIL and BIOTA	MIS	194	mg/kg	PLANT
3245	5/10/2007	J15288	SOIL and BIOTA	MIS	188	mg/kg	PLANT
3246	5/8/2007	J15290	SOIL and BIOTA	MIS	240	mg/kg	PLANT
3247	5/8/2007	J15292	SOIL and BIOTA	MIS	556	mg/kg	PLANT
3248	8/19/2004	B1B5N5	SOIL and BIOTA	Discrete	644.5	mg/kg	PLANT
3249	8/19/2004	B1B5N4	SOIL and BIOTA	Discrete	644.5	mg/kg	PLANT
3250	8/19/2004	B1B5N6	SOIL and BIOTA	Discrete	644.5	mg/kg	PLANT
3251	8/19/2004	B1B5N3	SOIL and BIOTA	Discrete	644.5	mg/kg	PLANT
3252	8/19/2004	B1B5P5	SOIL and BIOTA	Discrete	761	mg/kg	PLANT
3253	8/19/2004	B1B5P6	SOIL and BIOTA	Discrete	761	mg/kg	PLANT
3254	8/19/2004	B1B5P7	SOIL and BIOTA	Discrete	761	mg/kg	PLANT
3255	8/19/2004	B1B5R8	SOIL and BIOTA	Discrete	471.5	mg/kg	PLANT
3256	8/19/2004	B1B5R7	SOIL and BIOTA	Discrete	471.5	mg/kg	PLANT
3257	8/20/2004	B1B5R9	SOIL and BIOTA	Discrete	471.5	mg/kg	PLANT
3258	8/19/2004	B1B5R5	SOIL and BIOTA	Discrete	471.5	mg/kg	PLANT
3259	8/19/2004	B1B5R6	SOIL and BIOTA	Discrete	471.5	mg/kg	PLANT
3260	8/24/2004	B1B5V0	SOIL and BIOTA	Discrete	511.5	mg/kg	PLANT
3261	8/24/2004	B1B5V3	SOIL and BIOTA	Discrete	511.5	mg/kg	PLANT
3262	8/24/2004	B1B5T9	SOIL and BIOTA	Discrete	511.5	mg/kg	PLANT
3263	8/24/2004	B1B5V1	SOIL and BIOTA	Discrete	511.5	mg/kg	PLANT
3264	8/24/2004	B1B5W3	SOIL and BIOTA	Discrete	645.5	mg/kg	PLANT
3265	8/24/2004	B1B5W5	SOIL and BIOTA	Discrete	645.5	mg/kg	PLANT
3266	8/24/2004	B1B5W6	SOIL and BIOTA	Discrete	645.5	mg/kg	PLANT
3267	8/24/2004	B1B5W4	SOIL and BIOTA	Discrete	645.5	mg/kg	PLANT
3268	5/10/2006	J11X61	SOIL and BIOTA	MIS	0.191	mg/kg	PLANT
3269	5/19/2006	J11X56	SOIL and BIOTA	MIS	0.3245	mg/kg	PLANT
3270	5/16/2006	J11X48	SOIL and BIOTA	MIS-phyt	0.45	mg/kg	PLANT
3271	5/12/2006	J11X44	SOIL and BIOTA	MIS	0.79	mg/kg	PLANT
3272	5/12/2006	J11X44	SOIL and BIOTA	MIS-phyt	0.88	mg/kg	PLANT
3273	5/7/2007	J15295	SOIL and BIOTA	MIS	0.7	mg/kg	PLANT
3274	5/24/2007	J152B4	SOIL and BIOTA	MIS	0.57	mg/kg	PLANT
3275	5/12/2006	J11X84	SOIL and BIOTA	MIS	0.2	mg/kg	PLANT

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
3237	CURRENT YRS GROWTH	5.7	mg/kg			RCBRA
3238	CURRENT YRS GROWTH	4.6	mg/kg			RCBRA
3239	CURRENT YRS GROWTH	5.6	mg/kg	C		RCBRA
3240	CURRENT YRS GROWTH	6.2	mg/kg			RCBRA
3241	CURRENT YRS GROWTH	5.9	mg/kg			RCBRA
3242	CURRENT YRS GROWTH	7	mg/kg			RCBRA
3243	CURRENT YRS GROWTH	5.7	mg/kg			RCBRA
3244	CURRENT YRS GROWTH	4.8	mg/kg			RCBRA
3245	CURRENT YRS GROWTH	5.1	mg/kg	C		RCBRA
3246	CURRENT YRS GROWTH	4.3	mg/kg	C		RCBRA
3247	CURRENT YRS GROWTH	6.3	mg/kg	C		RCBRA
3248	SHOOTS	15.288	mg/kg	CX		PNNL
3249	SHOOTS	2.793	mg/kg	CX		PNNL
3250	SHOOTS	19.845	mg/kg	CX		PNNL
3251	SHOOTS	7.833	mg/kg	CX		PNNL
3252	SHOOTS	10.983	mg/kg	CX		PNNL
3253	SHOOTS	6.258	mg/kg	CX		PNNL
3254	SHOOTS	15.561	mg/kg	CX		PNNL
3255	SHOOTS	11.193	mg/kg	CX		PNNL
3256	SHOOTS	8.421	mg/kg	CX		PNNL
3257	SHOOTS	2.31	mg/kg	CX		PNNL
3258	SHOOTS	3.171	mg/kg	CX		PNNL
3259	SHOOTS	3.297	mg/kg	CX		PNNL
3260	SHOOTS	6.783	mg/kg	CX		PNNL
3261	SHOOTS	11.109	mg/kg	CX		PNNL
3262	SHOOTS	4.368	mg/kg	CX		PNNL
3263	SHOOTS	12.831	mg/kg	CX		PNNL
3264	SHOOTS	9.051	mg/kg	CX		PNNL
3265	SHOOTS	16.779	mg/kg	CX		PNNL
3266	SHOOTS	11.445	mg/kg	CX		PNNL
3267	SHOOTS	6.258	mg/kg	CX		PNNL
3268	CURRENT YRS GROWTH	0.74	mg/kg			RCBRA
3269	CURRENT YRS GROWTH	0.92	mg/kg			RCBRA
3270	CURRENT YRS GROWTH	1.5	mg/kg			RCBRA
3271	CURRENT YRS GROWTH	0.77	mg/kg			RCBRA
3272	CURRENT YRS GROWTH	0.77	mg/kg			RCBRA
3273	CURRENT YRS GROWTH	0.17	mg/kg			RCBRA
3274	CURRENT YRS GROWTH	0.19	mg/kg			RCBRA
3275	CURRENT YRS GROWTH	0.43	mg/kg			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
3276	Molybdenum	7439-98-7	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
3277	Molybdenum	7439-98-7	RCBRA 628-1	IU2/IU6	UPLAND	577797.524	148745.681
3278	Molybdenum	7439-98-7	RCBRA Bev Ref 2 Rip	Outside decision areas	RIPARIAN	541493.988	167808.357
3279	Molybdenum	7439-98-7	RCBRA JA JONES	300	UPLAND	593874.58	120013.908
3280	Molybdenum	7439-98-7	RCBRA Pit 23	IU2/IU6	UPLAND	572381.012	144874.157
3281	Molybdenum	7439-98-7	RCBRA Pit 9	300	UPLAND	592807.103	120587.7
3282	Molybdenum	7439-98-7	RCBRA R Ref 13	Outside decision areas	RIPARIAN	558572.809	145345.115
3283	Molybdenum	7439-98-7	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
3284	Molybdenum	7439-98-7	RCBRA Rip 3	D/H	RIPARIAN	572639.65	151677.812
3285	Molybdenum	7439-98-7	RCBRA Rip 8	D/H	RIPARIAN	578698.584	152233.645
3286	Molybdenum	7439-98-7	RCBRA 100-F-2	IU2/IU6	UPLAND	579728.068	147001.117
3287	Molybdenum	7439-98-7	RCBRA 116-DR-1&2	D/H	UPLAND	574007.817	152246.748
3288	Molybdenum	7439-98-7	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
3289	Molybdenum	7439-98-7	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
3290	Molybdenum	7439-98-7	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
3291	Molybdenum	7439-98-7	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
3292	Molybdenum	7439-98-7	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
3293	Molybdenum	7439-98-7	RCBRA 618-4	300	UPLAND	593954.946	117064.473
3294	Molybdenum	7439-98-7	RCBRA 628-1	IU2/IU6	UPLAND	577797.524	148745.681
3295	Molybdenum	7439-98-7	RCBRA R Ref 11	Outside decision areas	RIPARIAN	559400.735	146458.486
3296	Molybdenum	7439-98-7	RCBRA R Ref 12	IU2/IU6	RIPARIAN	559201.908	145747.542
3297	Molybdenum	7439-98-7	RCBRA R Ref 13	Outside decision areas	RIPARIAN	558572.809	145345.115
3298	Molybdenum	7439-98-7	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
3299	Molybdenum	7439-98-7	RCBRA R Ref 16	Outside decision areas	RIPARIAN	557650.029	144826.748
3300	Molybdenum	7439-98-7	RCBRA Rip 10	D/H	RIPARIAN	573987.873	153082.19
3301	Molybdenum	7439-98-7	RCBRA Rip 2	D/H	RIPARIAN	573603.219	152471.6
3302	Molybdenum	7439-98-7	RCBRA Rip 4	N	RIPARIAN	570558.596	148981.547
3303	Molybdenum	7439-98-7	RCBRA Rip 5	K	RIPARIAN	569141.025	147521.561
3304	Molybdenum	7439-98-7	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
3305	Molybdenum	7439-98-7	RCBRA 2a Rip	BC	RIPARIAN	564618.501	145284.526
3306	Molybdenum	7439-98-7	RCBRA 2c Rip	K	RIPARIAN	567598.2	146210.159
3307	Molybdenum	7439-98-7	RCBRA 2f Rip	D/H	RIPARIAN	576222.844	154297.511
3308	Molybdenum	7439-98-7	RCBRA 2j Rip	IU2/IU6	RIPARIAN	579360.971	150092.048
3309	Molybdenum	7439-98-7	RCBRA 2l Rip	IU2/IU6	RIPARIAN	582341.212	146120.069
3310	Molybdenum	7439-98-7	RCBRA 3b Rip	IU2/IU6	RIPARIAN	584961.205	141035.835
3311	Molybdenum	7439-98-7	RCBRA 4a Rip	IU2/IU6	RIPARIAN	589347.5	137480.985
3312	Molybdenum	7439-98-7	RCBRA Bev Ref 1 Rip	Outside decision areas	RIPARIAN	542428.846	167701.261
3313	Molybdenum	7439-98-7	RCBRA Bev Ref 2 Rip	Outside decision areas	RIPARIAN	541493.988	167808.357
3314	Molybdenum	7439-98-7	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
3276	5/12/2006	J11X77	SOIL and BIOTA	MIS	0.48	mg/kg	PLANT
3277	5/12/2006	J11X89	SOIL and BIOTA	MIS	1	mg/kg	PLANT
3278	5/8/2007	J15291	SOIL and BIOTA	MIS	0.48	mg/kg	PLANT
3279	5/10/2006	J11X74	SOIL and BIOTA	MIS	0.401	mg/kg	PLANT
3280	5/22/2006	J11X63	SOIL and BIOTA	MIS	0.25	mg/kg	PLANT
3281	5/12/2006	J11X64	SOIL and BIOTA	MIS	0.54	mg/kg	PLANT
3282	8/10/2006	J11WY9	SOIL and BIOTA	MIS	0.75	mg/kg	PLANT
3283	5/8/2007	J15293	SOIL and BIOTA	MIS	0.725	mg/kg	PLANT
3284	5/9/2006	J11WX6	SOIL and BIOTA	MIS	0.4675	mg/kg	PLANT
3285	5/16/2006	J11WY2	SOIL and BIOTA	MIS	0.72	mg/kg	PLANT
3286	5/10/2006	J11X60	SOIL and BIOTA	MIS	0.191	mg/kg	PLANT
3287	5/19/2006	J11X57	SOIL and BIOTA	MIS	0.3245	mg/kg	PLANT
3288	5/12/2006	J11X45	SOIL and BIOTA	MIS	0.79	mg/kg	PLANT
3289	5/12/2006	J11X45	SOIL and BIOTA	MIS-phyt	0.88	mg/kg	PLANT
3290	5/12/2006	J11X85	SOIL and BIOTA	MIS	0.2	mg/kg	PLANT
3291	5/12/2006	J11X76	SOIL and BIOTA	MIS	0.48	mg/kg	PLANT
3292	5/16/2006	J11X78	SOIL and BIOTA	MIS	0.78	mg/kg	PLANT
3293	5/12/2006	J11X50	SOIL and BIOTA	MIS	0.48	mg/kg	PLANT
3294	5/12/2006	J11X88	SOIL and BIOTA	MIS	1	mg/kg	PLANT
3295	5/9/2006	J11WY7	SOIL and BIOTA	MIS	0.51	mg/kg	PLANT
3296	5/9/2006	J11WW9	SOIL and BIOTA	MIS	0.62	mg/kg	PLANT
3297	8/10/2006	J11X00	SOIL and BIOTA	MIS	0.75	mg/kg	PLANT
3298	5/9/2006	J11X01	SOIL and BIOTA	MIS	0.725	mg/kg	PLANT
3299	5/9/2006	J11X03	SOIL and BIOTA	MIS	0.54	mg/kg	PLANT
3300	5/9/2006	J11WY5	SOIL and BIOTA	MIS	0.617	mg/kg	PLANT
3301	5/19/2006	J11WX3	SOIL and BIOTA	MIS	0.445	mg/kg	PLANT
3302	5/9/2006	J11WW5	SOIL and BIOTA	MIS	1.1	mg/kg	PLANT
3303	5/9/2006	J11WW7	SOIL and BIOTA	MIS	0.91	mg/kg	PLANT
3304	5/22/2006	J11WX7	SOIL and BIOTA	MIS	0.52	mg/kg	PLANT
3305	5/23/2007	J15299	SOIL and BIOTA	MIS	0.7	mg/kg	PLANT
3306	5/21/2007	J152B9	SOIL and BIOTA	MIS	0.48	mg/kg	PLANT
3307	5/7/2007	J15294	SOIL and BIOTA	MIS	0.7	mg/kg	PLANT
3308	5/21/2007	J15297	SOIL and BIOTA	MIS	0.96	mg/kg	PLANT
3309	5/24/2007	J152B1	SOIL and BIOTA	MIS	0.52	mg/kg	PLANT
3310	5/23/2007	J152B3	SOIL and BIOTA	MIS	0.78	mg/kg	PLANT
3311	5/24/2007	J152B7	SOIL and BIOTA	MIS	1.1	mg/kg	PLANT
3312	5/10/2007	J15288	SOIL and BIOTA	MIS	0.89	mg/kg	PLANT
3313	5/8/2007	J15290	SOIL and BIOTA	MIS	0.48	mg/kg	PLANT
3314	5/8/2007	J15292	SOIL and BIOTA	MIS	0.725	mg/kg	PLANT

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
3276	CURRENT YRS GROWTH	0.5	mg/kg			RCBRA
3277	CURRENT YRS GROWTH	0.67	mg/kg			RCBRA
3278	CURRENT YRS GROWTH	0.19	mg/kg			RCBRA
3279	CURRENT YRS GROWTH	1.4	mg/kg			RCBRA
3280	CURRENT YRS GROWTH	1.1	mg/kg			RCBRA
3281	CURRENT YRS GROWTH	0.44	mg/kg			RCBRA
3282	CURRENT YRS GROWTH	0.47	mg/kg			RCBRA
3283	CURRENT YRS GROWTH	0.14	mg/kg			RCBRA
3284	CURRENT YRS GROWTH	0.29	mg/kg			RCBRA
3285	CURRENT YRS GROWTH	0.83	mg/kg			RCBRA
3286	CURRENT YRS GROWTH	0.3	mg/kg			RCBRA
3287	CURRENT YRS GROWTH	0.88	mg/kg			RCBRA
3288	CURRENT YRS GROWTH	0.38	mg/kg			RCBRA
3289	CURRENT YRS GROWTH	0.38	mg/kg			RCBRA
3290	CURRENT YRS GROWTH	0.33	mg/kg			RCBRA
3291	CURRENT YRS GROWTH	0.37	mg/kg			RCBRA
3292	CURRENT YRS GROWTH	1.1	mg/kg			RCBRA
3293	CURRENT YRS GROWTH	0.43	mg/kg			RCBRA
3294	CURRENT YRS GROWTH	0.43	mg/kg			RCBRA
3295	CURRENT YRS GROWTH	0.38	mg/kg			RCBRA
3296	CURRENT YRS GROWTH	0.37	mg/kg			RCBRA
3297	CURRENT YRS GROWTH	0.96	mg/kg			RCBRA
3298	CURRENT YRS GROWTH	0.47	mg/kg			RCBRA
3299	CURRENT YRS GROWTH	0.49	mg/kg			RCBRA
3300	CURRENT YRS GROWTH	0.35	mg/kg			RCBRA
3301	CURRENT YRS GROWTH	1.5	mg/kg			RCBRA
3302	CURRENT YRS GROWTH	0.35	mg/kg			RCBRA
3303	CURRENT YRS GROWTH	0.57	mg/kg			RCBRA
3304	CURRENT YRS GROWTH	1.7	mg/kg			RCBRA
3305	CURRENT YRS GROWTH	0.4	mg/kg			RCBRA
3306	CURRENT YRS GROWTH	0.23	mg/kg			RCBRA
3307	CURRENT YRS GROWTH	0.42	mg/kg			RCBRA
3308	CURRENT YRS GROWTH	0.47	mg/kg			RCBRA
3309	CURRENT YRS GROWTH	0.4	mg/kg			RCBRA
3310	CURRENT YRS GROWTH	0.28	mg/kg			RCBRA
3311	CURRENT YRS GROWTH	0.17	mg/kg			RCBRA
3312	CURRENT YRS GROWTH	0.49	mg/kg			RCBRA
3313	CURRENT YRS GROWTH	0.46	mg/kg			RCBRA
3314	CURRENT YRS GROWTH	0.4	mg/kg			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
3315	Sodium	7440-23-5	RCBRA 100-D-48	D/H	UPLAND	573841.527	151914.538
3316	Sodium	7440-23-5	RCBRA 100-D-49	D/H	UPLAND	573938.06	151944.123
3317	Sodium	7440-23-5	RCBRA 100-F-2	IU2/IU6	UPLAND	579728.068	147001.117
3318	Sodium	7440-23-5	RCBRA 116-DR-1&2	D/H	UPLAND	574007.817	152246.748
3319	Sodium	7440-23-5	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
3320	Sodium	7440-23-5	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
3321	Sodium	7440-23-5	RCBRA 116-N-3	N	UPLAND	571995.702	149793.039
3322	Sodium	7440-23-5	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
3323	Sodium	7440-23-5	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
3324	Sodium	7440-23-5	RCBRA 300-49	300	UPLAND	594318.994	116830.934
3325	Sodium	7440-23-5	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
3326	Sodium	7440-23-5	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
3327	Sodium	7440-23-5	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
3328	Sodium	7440-23-5	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
3329	Sodium	7440-23-5	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
3330	Sodium	7440-23-5	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
3331	Sodium	7440-23-5	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
3332	Sodium	7440-23-5	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
3333	Sodium	7440-23-5	RCBRA 600-181	IU2/IU6	UPLAND	578303.83	147316.698
3334	Sodium	7440-23-5	RCBRA 600-204	IU2/IU6	UPLAND	580128.485	144762.219
3335	Sodium	7440-23-5	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
3336	Sodium	7440-23-5	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
3337	Sodium	7440-23-5	RCBRA 600-23	IU2/IU6	UPLAND	585523.593	130481.377
3338	Sodium	7440-23-5	RCBRA 618-4	300	UPLAND	593954.946	117064.473
3339	Sodium	7440-23-5	RCBRA 628-1	IU2/IU6	UPLAND	577797.524	148745.681
3340	Sodium	7440-23-5	RCBRA JA JONES	300	UPLAND	593874.58	120013.908
3341	Sodium	7440-23-5	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
3342	Sodium	7440-23-5	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
3343	Sodium	7440-23-5	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
3344	Sodium	7440-23-5	RCBRA Pit 18	IU2/IU6	UPLAND	580697.058	145311.464
3345	Sodium	7440-23-5	RCBRA Pit 23	IU2/IU6	UPLAND	572381.012	144874.157
3346	Sodium	7440-23-5	RCBRA Pit 24	BC	UPLAND	563395.814	145119.007
3347	Sodium	7440-23-5	RCBRA Pit 9	300	UPLAND	592807.103	120587.7
3348	Sodium	7440-23-5	RCBRA R Ref 11	Outside decision areas	RIPARIAN	559400.735	146458.486
3349	Sodium	7440-23-5	RCBRA R Ref 12	IU2/IU6	RIPARIAN	559201.908	145747.542
3350	Sodium	7440-23-5	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
3351	Sodium	7440-23-5	RCBRA R Ref 16	Outside decision areas	RIPARIAN	557650.029	144826.748
3352	Sodium	7440-23-5	RCBRA Rip 1	D/H	RIPARIAN	577251.869	153659.195
3353	Sodium	7440-23-5	RCBRA Rip 10	D/H	RIPARIAN	573987.873	153082.19

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
3315	5/18/2006	J11X42	SOIL and BIOTA	MIS	178	mg/kg	PLANT
3316	5/18/2006	J11X54	SOIL and BIOTA	MIS	158	mg/kg	PLANT
3317	5/10/2006	J11X61	SOIL and BIOTA	MIS	139	mg/kg	PLANT
3318	5/19/2006	J11X56	SOIL and BIOTA	MIS	158	mg/kg	PLANT
3319	5/16/2006	J11X48	SOIL and BIOTA	MIS	153	mg/kg	PLANT
3320	5/16/2006	J11X48	SOIL and BIOTA	MIS-phyt	176	mg/kg	PLANT
3321	5/19/2006	J11X46	SOIL and BIOTA	MIS	212	mg/kg	PLANT
3322	5/12/2006	J11X44	SOIL and BIOTA	MIS	385	mg/kg	PLANT
3323	5/12/2006	J11X44	SOIL and BIOTA	MIS-phyt	466	mg/kg	PLANT
3324	4/26/2006	J11X52	SOIL and BIOTA	MIS	120	mg/kg	PLANT
3325	5/12/2006	J11X84	SOIL and BIOTA	MIS	99.6	mg/kg	PLANT
3326	5/12/2006	J11X84	SOIL and BIOTA	MIS-phyt	174	mg/kg	PLANT
3327	5/12/2006	J11X77	SOIL and BIOTA	MIS	123	mg/kg	PLANT
3328	5/12/2006	J11X77	SOIL and BIOTA	MIS-phyt	163	mg/kg	PLANT
3329	5/16/2006	J11X79	SOIL and BIOTA	MIS	176	mg/kg	PLANT
3330	5/16/2006	J11X79	SOIL and BIOTA	MIS-phyt	231	mg/kg	PLANT
3331	5/16/2006	J11X90	SOIL and BIOTA	MIS	132	mg/kg	PLANT
3332	5/16/2006	J11X90	SOIL and BIOTA	MIS-phyt	205	mg/kg	PLANT
3333	5/18/2006	J11X86	SOIL and BIOTA	MIS	127	mg/kg	PLANT
3334	5/18/2006	J11X81	SOIL and BIOTA	MIS	137	mg/kg	PLANT
3335	5/15/2006	J11X82	SOIL and BIOTA	MIS	141	mg/kg	PLANT
3336	5/15/2006	J11X82	SOIL and BIOTA	MIS-phyt	173	mg/kg	PLANT
3337	5/12/2006	J11X72	SOIL and BIOTA	MIS	170	mg/kg	PLANT
3338	5/12/2006	J11X51	SOIL and BIOTA	MIS	97.3	mg/kg	PLANT
3339	5/12/2006	J11X89	SOIL and BIOTA	MIS	148	mg/kg	PLANT
3340	5/10/2006	J11X74	SOIL and BIOTA	MIS	102	mg/kg	PLANT
3341	5/18/2006	J11X98	SOIL and BIOTA	MIS	170	mg/kg	PLANT
3342	5/18/2006	J11X98	SOIL and BIOTA	MIS-phyt	221	mg/kg	PLANT
3343	5/15/2006	J11X66	SOIL and BIOTA	MIS	207	mg/kg	PLANT
3344	5/18/2006	J11X69	SOIL and BIOTA	MIS	165	mg/kg	PLANT
3345	5/22/2006	J11X63	SOIL and BIOTA	MIS	153	mg/kg	PLANT
3346	5/19/2006	J11X70	SOIL and BIOTA	MIS	162	mg/kg	PLANT
3347	5/12/2006	J11X64	SOIL and BIOTA	MIS	232	mg/kg	PLANT
3348	5/9/2006	J11WY8	SOIL and BIOTA	MIS	164	mg/kg	PLANT
3349	5/9/2006	J11WX0	SOIL and BIOTA	MIS	188	mg/kg	PLANT
3350	5/9/2006	J11X02	SOIL and BIOTA	MIS	243	mg/kg	PLANT
3351	5/9/2006	J11X04	SOIL and BIOTA	MIS	149	mg/kg	PLANT
3352	5/16/2006	J11WX1	SOIL and BIOTA	MIS	233	mg/kg	PLANT
3353	5/9/2006	J11WY6	SOIL and BIOTA	MIS	144	mg/kg	PLANT

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
3315	CURRENT YRS GROWTH	34.3	mg/kg	C		RCBRA
3316	CURRENT YRS GROWTH	40.5	mg/kg	C		RCBRA
3317	CURRENT YRS GROWTH	15.6	mg/kg	C		RCBRA
3318	CURRENT YRS GROWTH	34.3	mg/kg	C		RCBRA
3319	CURRENT YRS GROWTH	18.6	mg/kg			RCBRA
3320	CURRENT YRS GROWTH	18.6	mg/kg			RCBRA
3321	CURRENT YRS GROWTH	28.7	mg/kg	C		RCBRA
3322	CURRENT YRS GROWTH	48.9	mg/kg			RCBRA
3323	CURRENT YRS GROWTH	48.9	mg/kg			RCBRA
3324	CURRENT YRS GROWTH	29	mg/kg			RCBRA
3325	CURRENT YRS GROWTH	14.1	mg/kg	C		RCBRA
3326	CURRENT YRS GROWTH	14.1	mg/kg	C		RCBRA
3327	CURRENT YRS GROWTH	17.9	mg/kg	C		RCBRA
3328	CURRENT YRS GROWTH	17.9	mg/kg	C		RCBRA
3329	CURRENT YRS GROWTH	29.2	mg/kg			RCBRA
3330	CURRENT YRS GROWTH	29.2	mg/kg			RCBRA
3331	CURRENT YRS GROWTH	45.4	mg/kg			RCBRA
3332	CURRENT YRS GROWTH	45.4	mg/kg			RCBRA
3333	CURRENT YRS GROWTH	33.5	mg/kg	C		RCBRA
3334	CURRENT YRS GROWTH	47.6	mg/kg	C		RCBRA
3335	CURRENT YRS GROWTH	34.9	mg/kg			RCBRA
3336	CURRENT YRS GROWTH	34.9	mg/kg			RCBRA
3337	CURRENT YRS GROWTH	10.5	mg/kg	C		RCBRA
3338	CURRENT YRS GROWTH	10.5	mg/kg	C		RCBRA
3339	CURRENT YRS GROWTH	10.8	mg/kg	C		RCBRA
3340	CURRENT YRS GROWTH	7.9	mg/kg	C		RCBRA
3341	CURRENT YRS GROWTH	27.9	mg/kg			RCBRA
3342	CURRENT YRS GROWTH	27.9	mg/kg			RCBRA
3343	CURRENT YRS GROWTH	32.2	mg/kg			RCBRA
3344	CURRENT YRS GROWTH	36	mg/kg	C		RCBRA
3345	CURRENT YRS GROWTH	21.7	mg/kg	C		RCBRA
3346	CURRENT YRS GROWTH	25.5	mg/kg	C		RCBRA
3347	CURRENT YRS GROWTH	7.8	mg/kg	C		RCBRA
3348	CURRENT YRS GROWTH	26.7	mg/kg			RCBRA
3349	CURRENT YRS GROWTH	52.6	mg/kg			RCBRA
3350	CURRENT YRS GROWTH	20.1	mg/kg			RCBRA
3351	CURRENT YRS GROWTH	18.7	mg/kg			RCBRA
3352	CURRENT YRS GROWTH	38.4	mg/kg			RCBRA
3353	CURRENT YRS GROWTH	6.8	mg/kg			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
3354	Sodium	7440-23-5	RCBRA Rip 2	D/H	RIPARIAN	573603.219	152471.6
3355	Sodium	7440-23-5	RCBRA Rip 3	D/H	RIPARIAN	572639.65	151677.812
3356	Sodium	7440-23-5	RCBRA Rip 4	N	RIPARIAN	570558.596	148981.547
3357	Sodium	7440-23-5	RCBRA Rip 5	K	RIPARIAN	569141.025	147521.561
3358	Sodium	7440-23-5	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
3359	Sodium	7440-23-5	RCBRA Rip 7	IU2/IU6	RIPARIAN	581326.914	147825.17
3360	Sodium	7440-23-5	RCBRA Rip 8	D/H	RIPARIAN	578698.584	152233.645
3361	Sodium	7440-23-5	RCBRA Rip 9	D/H	RIPARIAN	578153.643	152801.452
3362	Sodium	7440-23-5	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
3363	Sodium	7440-23-5	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
3364	Sodium	7440-23-5	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
3365	Sodium	7440-23-5	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
3366	Sodium	7440-23-5	RCBRA Yak Rdg 2	Outside decision areas	UPLAND	559031.557	135576.407
3367	Sodium	7440-23-5	RCBRA 100-D-48	D/H	UPLAND	573841.527	151914.538
3368	Sodium	7440-23-5	RCBRA 100-D-49	D/H	UPLAND	573938.06	151944.123
3369	Sodium	7440-23-5	RCBRA 100-F-2	IU2/IU6	UPLAND	579728.068	147001.117
3370	Sodium	7440-23-5	RCBRA 116-DR-1&2	D/H	UPLAND	574007.817	152246.748
3371	Sodium	7440-23-5	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
3372	Sodium	7440-23-5	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
3373	Sodium	7440-23-5	RCBRA 116-N-3	N	UPLAND	571995.702	149793.039
3374	Sodium	7440-23-5	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
3375	Sodium	7440-23-5	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
3376	Sodium	7440-23-5	RCBRA 300-49	300	UPLAND	594318.994	116830.934
3377	Sodium	7440-23-5	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
3378	Sodium	7440-23-5	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
3379	Sodium	7440-23-5	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
3380	Sodium	7440-23-5	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
3381	Sodium	7440-23-5	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
3382	Sodium	7440-23-5	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
3383	Sodium	7440-23-5	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
3384	Sodium	7440-23-5	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
3385	Sodium	7440-23-5	RCBRA 600-181	IU2/IU6	UPLAND	578303.83	147316.698
3386	Sodium	7440-23-5	RCBRA 600-204	IU2/IU6	UPLAND	580128.485	144762.219
3387	Sodium	7440-23-5	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
3388	Sodium	7440-23-5	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
3389	Sodium	7440-23-5	RCBRA 600-23	IU2/IU6	UPLAND	585523.593	130481.377
3390	Sodium	7440-23-5	RCBRA 618-4	300	UPLAND	593954.946	117064.473
3391	Sodium	7440-23-5	RCBRA 628-1	IU2/IU6	UPLAND	577797.524	148745.681
3392	Sodium	7440-23-5	RCBRA JA JONES	300	UPLAND	593874.58	120013.908

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
3354	5/19/2006	J11WX4	SOIL and BIOTA	MIS	150	mg/kg	PLANT
3355	5/9/2006	J11WX6	SOIL and BIOTA	MIS	133	mg/kg	PLANT
3356	5/9/2006	J11WW6	SOIL and BIOTA	MIS	197	mg/kg	PLANT
3357	5/9/2006	J11WW8	SOIL and BIOTA	MIS	231	mg/kg	PLANT
3358	5/22/2006	J11XP0	SOIL and BIOTA	MIS	161	mg/kg	PLANT
3359	5/9/2006	J11WY0	SOIL and BIOTA	MIS	189	mg/kg	PLANT
3360	5/16/2006	J11WY2	SOIL and BIOTA	MIS	224	mg/kg	PLANT
3361	5/16/2006	J11WY4	SOIL and BIOTA	MIS	218	mg/kg	PLANT
3362	5/18/2006	J11XB0	SOIL and BIOTA	MIS	215	mg/kg	PLANT
3363	5/18/2006	J11XB0	SOIL and BIOTA	MIS-phyt	259	mg/kg	PLANT
3364	5/15/2006	J11X96	SOIL and BIOTA	MIS	127	mg/kg	PLANT
3365	5/15/2006	J11X96	SOIL and BIOTA	MIS-phyt	176	mg/kg	PLANT
3366	5/16/2006	J11X94	SOIL and BIOTA	MIS	172	mg/kg	PLANT
3367	5/18/2006	J11X43	SOIL and BIOTA	MIS	178	mg/kg	PLANT
3368	5/18/2006	J11X55	SOIL and BIOTA	MIS	158	mg/kg	PLANT
3369	5/10/2006	J11X60	SOIL and BIOTA	MIS	139	mg/kg	PLANT
3370	5/19/2006	J11X57	SOIL and BIOTA	MIS	158	mg/kg	PLANT
3371	5/16/2006	J11X49	SOIL and BIOTA	MIS	153	mg/kg	PLANT
3372	5/16/2006	J11X49	SOIL and BIOTA	MIS-phyt	176	mg/kg	PLANT
3373	5/19/2006	J11X47	SOIL and BIOTA	MIS	212	mg/kg	PLANT
3374	5/12/2006	J11X45	SOIL and BIOTA	MIS	385	mg/kg	PLANT
3375	5/12/2006	J11X45	SOIL and BIOTA	MIS-phyt	466	mg/kg	PLANT
3376	4/26/2006	J11X53	SOIL and BIOTA	MIS	120	mg/kg	PLANT
3377	5/12/2006	J11X85	SOIL and BIOTA	MIS	99.6	mg/kg	PLANT
3378	5/12/2006	J11X85	SOIL and BIOTA	MIS-phyt	174	mg/kg	PLANT
3379	5/12/2006	J11X76	SOIL and BIOTA	MIS	123	mg/kg	PLANT
3380	5/12/2006	J11X76	SOIL and BIOTA	MIS-phyt	163	mg/kg	PLANT
3381	5/16/2006	J11X78	SOIL and BIOTA	MIS	176	mg/kg	PLANT
3382	5/16/2006	J11X78	SOIL and BIOTA	MIS-phyt	231	mg/kg	PLANT
3383	5/16/2006	J11X91	SOIL and BIOTA	MIS	132	mg/kg	PLANT
3384	5/16/2006	J11X91	SOIL and BIOTA	MIS-phyt	205	mg/kg	PLANT
3385	5/18/2006	J11X87	SOIL and BIOTA	MIS	127	mg/kg	PLANT
3386	5/18/2006	J11X80	SOIL and BIOTA	MIS	137	mg/kg	PLANT
3387	5/15/2006	J11X83	SOIL and BIOTA	MIS	141	mg/kg	PLANT
3388	5/15/2006	J11X83	SOIL and BIOTA	MIS-phyt	173	mg/kg	PLANT
3389	5/12/2006	J11X73	SOIL and BIOTA	MIS	170	mg/kg	PLANT
3390	5/12/2006	J11X50	SOIL and BIOTA	MIS	97.3	mg/kg	PLANT
3391	5/12/2006	J11X88	SOIL and BIOTA	MIS	148	mg/kg	PLANT
3392	5/10/2006	J11X75	SOIL and BIOTA	MIS	102	mg/kg	PLANT

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
3354	CURRENT YRS GROWTH	63.5	mg/kg			RCBRA
3355	CURRENT YRS GROWTH	8.8	mg/kg			RCBRA
3356	CURRENT YRS GROWTH	9.7	mg/kg			RCBRA
3357	CURRENT YRS GROWTH	40.9	mg/kg			RCBRA
3358	CURRENT YRS GROWTH	50.8	mg/kg			RCBRA
3359	CURRENT YRS GROWTH	12.6	mg/kg			RCBRA
3360	CURRENT YRS GROWTH	45.2	mg/kg			RCBRA
3361	CURRENT YRS GROWTH	40.2	mg/kg			RCBRA
3362	CURRENT YRS GROWTH	23.9	mg/kg			RCBRA
3363	CURRENT YRS GROWTH	23.9	mg/kg			RCBRA
3364	CURRENT YRS GROWTH	18.4	mg/kg			RCBRA
3365	CURRENT YRS GROWTH	18.4	mg/kg			RCBRA
3366	CURRENT YRS GROWTH	29.6	mg/kg			RCBRA
3367	CURRENT YRS GROWTH	38.5	mg/kg	C		RCBRA
3368	CURRENT YRS GROWTH	36.3	mg/kg	C		RCBRA
3369	CURRENT YRS GROWTH	21.7	mg/kg	C		RCBRA
3370	CURRENT YRS GROWTH	52.7	mg/kg	C		RCBRA
3371	CURRENT YRS GROWTH	59.3	mg/kg			RCBRA
3372	CURRENT YRS GROWTH	59.3	mg/kg			RCBRA
3373	CURRENT YRS GROWTH	72.9	mg/kg	C		RCBRA
3374	CURRENT YRS GROWTH	9.6	mg/kg			RCBRA
3375	CURRENT YRS GROWTH	9.6	mg/kg			RCBRA
3376	CURRENT YRS GROWTH	79.5	mg/kg			RCBRA
3377	CURRENT YRS GROWTH	11.3	mg/kg	C		RCBRA
3378	CURRENT YRS GROWTH	11.3	mg/kg	C		RCBRA
3379	CURRENT YRS GROWTH	9.1	mg/kg	C		RCBRA
3380	CURRENT YRS GROWTH	9.1	mg/kg	C		RCBRA
3381	CURRENT YRS GROWTH	26.9	mg/kg			RCBRA
3382	CURRENT YRS GROWTH	26.9	mg/kg			RCBRA
3383	CURRENT YRS GROWTH	28.8	mg/kg			RCBRA
3384	CURRENT YRS GROWTH	28.8	mg/kg			RCBRA
3385	CURRENT YRS GROWTH	71.6	mg/kg	C		RCBRA
3386	CURRENT YRS GROWTH	35.2	mg/kg	C		RCBRA
3387	CURRENT YRS GROWTH	47	mg/kg			RCBRA
3388	CURRENT YRS GROWTH	47	mg/kg			RCBRA
3389	CURRENT YRS GROWTH	20.9	mg/kg	C		RCBRA
3390	CURRENT YRS GROWTH	9.8	mg/kg	C		RCBRA
3391	CURRENT YRS GROWTH	15.1	mg/kg	C		RCBRA
3392	CURRENT YRS GROWTH	13.8	mg/kg	C		RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
3393	Sodium	7440-23-5	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
3394	Sodium	7440-23-5	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
3395	Sodium	7440-23-5	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
3396	Sodium	7440-23-5	RCBRA Pit 18	IU2/IU6	UPLAND	580697.058	145311.464
3397	Sodium	7440-23-5	RCBRA Pit 23	IU2/IU6	UPLAND	572381.012	144874.157
3398	Sodium	7440-23-5	RCBRA Pit 24	BC	UPLAND	563395.814	145119.007
3399	Sodium	7440-23-5	RCBRA Pit 9	300	UPLAND	592807.103	120587.7
3400	Sodium	7440-23-5	RCBRA R Ref 11	Outside decision areas	RIPARIAN	559400.735	146458.486
3401	Sodium	7440-23-5	RCBRA R Ref 12	IU2/IU6	RIPARIAN	559201.908	145747.542
3402	Sodium	7440-23-5	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
3403	Sodium	7440-23-5	RCBRA R Ref 16	Outside decision areas	RIPARIAN	557650.029	144826.748
3404	Sodium	7440-23-5	RCBRA Rip 1	D/H	RIPARIAN	577251.869	153659.195
3405	Sodium	7440-23-5	RCBRA Rip 10	D/H	RIPARIAN	573987.873	153082.19
3406	Sodium	7440-23-5	RCBRA Rip 2	D/H	RIPARIAN	573603.219	152471.6
3407	Sodium	7440-23-5	RCBRA Rip 3	D/H	RIPARIAN	572639.65	151677.812
3408	Sodium	7440-23-5	RCBRA Rip 4	N	RIPARIAN	570558.596	148981.547
3409	Sodium	7440-23-5	RCBRA Rip 5	K	RIPARIAN	569141.025	147521.561
3410	Sodium	7440-23-5	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
3411	Sodium	7440-23-5	RCBRA Rip 7	IU2/IU6	RIPARIAN	581326.914	147825.17
3412	Sodium	7440-23-5	RCBRA Rip 8	D/H	RIPARIAN	578698.584	152233.645
3413	Sodium	7440-23-5	RCBRA Rip 9	D/H	RIPARIAN	578153.643	152801.452
3414	Sodium	7440-23-5	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
3415	Sodium	7440-23-5	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
3416	Sodium	7440-23-5	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
3417	Sodium	7440-23-5	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
3418	Sodium	7440-23-5	RCBRA Yak Rdg 2	Outside decision areas	UPLAND	559031.557	135576.407
3419	Nickel	7440-02-0	RCBRA 100-F-2	IU2/IU6	UPLAND	579728.068	147001.117
3420	Nickel	7440-02-0	RCBRA 116-DR-1&2	D/H	UPLAND	574007.817	152246.748
3421	Nickel	7440-02-0	RCBRA 1607-D2:1	D/H	UPLAND	573823.924	152260.319
3422	Nickel	7440-02-0	RCBRA 2c Rip	K	RIPARIAN	567598.2	146210.159
3423	Nickel	7440-02-0	RCBRA 2f Rip	D/H	RIPARIAN	576222.844	154297.511
3424	Nickel	7440-02-0	RCBRA 2l Rip	IU2/IU6	RIPARIAN	582341.212	146120.069
3425	Nickel	7440-02-0	RCBRA 300-49	300	UPLAND	594318.994	116830.934
3426	Nickel	7440-02-0	RCBRA 4a Rip	IU2/IU6	RIPARIAN	589347.5	137480.985
3427	Nickel	7440-02-0	RCBRA 5c Rip	300	RIPARIAN	594509.985	124869.182
3428	Nickel	7440-02-0	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
3429	Nickel	7440-02-0	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
3430	Nickel	7440-02-0	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
3431	Nickel	7440-02-0	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
3393	5/18/2006	J11X99	SOIL and BIOTA	MIS	170	mg/kg	PLANT
3394	5/18/2006	J11X99	SOIL and BIOTA	MIS-phyt	221	mg/kg	PLANT
3395	5/15/2006	J11X67	SOIL and BIOTA	MIS	207	mg/kg	PLANT
3396	5/18/2006	J11X68	SOIL and BIOTA	MIS	165	mg/kg	PLANT
3397	5/22/2006	J11X62	SOIL and BIOTA	MIS	153	mg/kg	PLANT
3398	5/19/2006	J11X71	SOIL and BIOTA	MIS	162	mg/kg	PLANT
3399	5/12/2006	J11X65	SOIL and BIOTA	MIS	232	mg/kg	PLANT
3400	5/9/2006	J11WY7	SOIL and BIOTA	MIS	164	mg/kg	PLANT
3401	5/9/2006	J11WW9	SOIL and BIOTA	MIS	188	mg/kg	PLANT
3402	5/9/2006	J11X01	SOIL and BIOTA	MIS	243	mg/kg	PLANT
3403	5/9/2006	J11X03	SOIL and BIOTA	MIS	149	mg/kg	PLANT
3404	5/16/2006	J11WX2	SOIL and BIOTA	MIS	233	mg/kg	PLANT
3405	5/9/2006	J11WY5	SOIL and BIOTA	MIS	144	mg/kg	PLANT
3406	5/19/2006	J11WX3	SOIL and BIOTA	MIS	150	mg/kg	PLANT
3407	5/9/2006	J11WX5	SOIL and BIOTA	MIS	133	mg/kg	PLANT
3408	5/9/2006	J11WW5	SOIL and BIOTA	MIS	197	mg/kg	PLANT
3409	5/9/2006	J11WW7	SOIL and BIOTA	MIS	231	mg/kg	PLANT
3410	5/22/2006	J11WX7	SOIL and BIOTA	MIS	161	mg/kg	PLANT
3411	5/9/2006	J11WX9	SOIL and BIOTA	MIS	189	mg/kg	PLANT
3412	5/16/2006	J11WY1	SOIL and BIOTA	MIS	224	mg/kg	PLANT
3413	5/16/2006	J11WY3	SOIL and BIOTA	MIS	218	mg/kg	PLANT
3414	5/18/2006	J11XB1	SOIL and BIOTA	MIS	215	mg/kg	PLANT
3415	5/18/2006	J11XB1	SOIL and BIOTA	MIS-phyt	259	mg/kg	PLANT
3416	5/15/2006	J11X97	SOIL and BIOTA	MIS	127	mg/kg	PLANT
3417	5/15/2006	J11X97	SOIL and BIOTA	MIS-phyt	176	mg/kg	PLANT
3418	5/16/2006	J11X95	SOIL and BIOTA	MIS	172	mg/kg	PLANT
3419	5/10/2006	J11X61	SOIL and BIOTA	MIS	13.1	mg/kg	PLANT
3420	5/19/2006	J11X56	SOIL and BIOTA	MIS	10.3	mg/kg	PLANT
3421	5/22/2006	J11X58	SOIL and BIOTA	MIS	11.1	mg/kg	PLANT
3422	5/21/2007	J152B8	SOIL and BIOTA	MIS	19	mg/kg	PLANT
3423	5/7/2007	J15295	SOIL and BIOTA	MIS	16.9	mg/kg	PLANT
3424	5/24/2007	J152B0	SOIL and BIOTA	MIS	12	mg/kg	PLANT
3425	4/26/2006	J11X52	SOIL and BIOTA	MIS	9.8	mg/kg	PLANT
3426	5/24/2007	J152B6	SOIL and BIOTA	MIS	22.9	mg/kg	PLANT
3427	5/24/2007	J152B4	SOIL and BIOTA	MIS	13.5	mg/kg	PLANT
3428	5/12/2006	J11X84	SOIL and BIOTA	MIS	10.7	mg/kg	PLANT
3429	5/12/2006	J11X84	SOIL and BIOTA	MIS-phyt	13.5	mg/kg	PLANT
3430	5/12/2006	J11X77	SOIL and BIOTA	MIS	12.1	mg/kg	PLANT
3431	5/12/2006	J11X77	SOIL and BIOTA	MIS-phyt	13.1	mg/kg	PLANT

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
3393	CURRENT YRS GROWTH	29.2	mg/kg			RCBRA
3394	CURRENT YRS GROWTH	29.2	mg/kg			RCBRA
3395	CURRENT YRS GROWTH	22.6	mg/kg			RCBRA
3396	CURRENT YRS GROWTH	33.7	mg/kg	C		RCBRA
3397	CURRENT YRS GROWTH	42.7	mg/kg	C		RCBRA
3398	CURRENT YRS GROWTH	50	mg/kg	C		RCBRA
3399	CURRENT YRS GROWTH	9.7	mg/kg	C		RCBRA
3400	CURRENT YRS GROWTH	11.3	mg/kg			RCBRA
3401	CURRENT YRS GROWTH	11	mg/kg			RCBRA
3402	CURRENT YRS GROWTH	9.9	mg/kg			RCBRA
3403	CURRENT YRS GROWTH	13.6	mg/kg			RCBRA
3404	CURRENT YRS GROWTH	41.8	mg/kg			RCBRA
3405	CURRENT YRS GROWTH	9.1	mg/kg			RCBRA
3406	CURRENT YRS GROWTH	59	mg/kg			RCBRA
3407	CURRENT YRS GROWTH	12.5	mg/kg			RCBRA
3408	CURRENT YRS GROWTH	12.5	mg/kg			RCBRA
3409	CURRENT YRS GROWTH	16.8	mg/kg			RCBRA
3410	CURRENT YRS GROWTH	37.8	mg/kg			RCBRA
3411	CURRENT YRS GROWTH	10.3	mg/kg			RCBRA
3412	CURRENT YRS GROWTH	40	mg/kg			RCBRA
3413	CURRENT YRS GROWTH	43.9	mg/kg			RCBRA
3414	CURRENT YRS GROWTH	32.6	mg/kg			RCBRA
3415	CURRENT YRS GROWTH	32.6	mg/kg			RCBRA
3416	CURRENT YRS GROWTH	48.4	mg/kg			RCBRA
3417	CURRENT YRS GROWTH	48.4	mg/kg			RCBRA
3418	CURRENT YRS GROWTH	24.5	mg/kg			RCBRA
3419	CURRENT YRS GROWTH	0.3	mg/kg			RCBRA
3420	CURRENT YRS GROWTH	4.1	mg/kg			RCBRA
3421	CURRENT YRS GROWTH	2.3	mg/kg			RCBRA
3422	CURRENT YRS GROWTH	0.26	mg/kg			RCBRA
3423	CURRENT YRS GROWTH	0.37	mg/kg			RCBRA
3424	CURRENT YRS GROWTH	0.26	mg/kg			RCBRA
3425	CURRENT YRS GROWTH	1.6	mg/kg			RCBRA
3426	CURRENT YRS GROWTH	0.26	mg/kg			RCBRA
3427	CURRENT YRS GROWTH	0.27	mg/kg			RCBRA
3428	CURRENT YRS GROWTH	0.4	mg/kg			RCBRA
3429	CURRENT YRS GROWTH	0.4	mg/kg			RCBRA
3430	CURRENT YRS GROWTH	0.59	mg/kg			RCBRA
3431	CURRENT YRS GROWTH	0.59	mg/kg			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
3432	Nickel	7440-02-0	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
3433	Nickel	7440-02-0	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
3434	Nickel	7440-02-0	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
3435	Nickel	7440-02-0	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
3436	Nickel	7440-02-0	RCBRA 600-181	IU2/IU6	UPLAND	578303.83	147316.698
3437	Nickel	7440-02-0	RCBRA 600-204	IU2/IU6	UPLAND	580128.485	144762.219
3438	Nickel	7440-02-0	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
3439	Nickel	7440-02-0	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
3440	Nickel	7440-02-0	RCBRA 600-23	IU2/IU6	UPLAND	585523.593	130481.377
3441	Nickel	7440-02-0	RCBRA 618-4	300	UPLAND	593954.946	117064.473
3442	Nickel	7440-02-0	RCBRA 628-1	IU2/IU6	UPLAND	577797.524	148745.681
3443	Nickel	7440-02-0	RCBRA JA JONES	300	UPLAND	593874.58	120013.908
3444	Nickel	7440-02-0	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
3445	Nickel	7440-02-0	RCBRA Pit 23	IU2/IU6	UPLAND	572381.012	144874.157
3446	Nickel	7440-02-0	RCBRA Pit 24	BC	UPLAND	563395.814	145119.007
3447	Nickel	7440-02-0	RCBRA Pit 9	300	UPLAND	592807.103	120587.7
3448	Nickel	7440-02-0	RCBRA R Ref 11	Outside decision areas	RIPARIAN	559400.735	146458.486
3449	Nickel	7440-02-0	RCBRA R Ref 12	IU2/IU6	RIPARIAN	559201.908	145747.542
3450	Nickel	7440-02-0	RCBRA R Ref 13	Outside decision areas	RIPARIAN	558572.809	145345.115
3451	Nickel	7440-02-0	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
3452	Nickel	7440-02-0	RCBRA R Ref 16	Outside decision areas	RIPARIAN	557650.029	144826.748
3453	Nickel	7440-02-0	RCBRA Rip 1	D/H	RIPARIAN	577251.869	153659.195
3454	Nickel	7440-02-0	RCBRA Rip 10	D/H	RIPARIAN	573987.873	153082.19
3455	Nickel	7440-02-0	RCBRA Rip 2	D/H	RIPARIAN	573603.219	152471.6
3456	Nickel	7440-02-0	RCBRA Rip 3	D/H	RIPARIAN	572639.65	151677.812
3457	Nickel	7440-02-0	RCBRA Rip 4	N	RIPARIAN	570558.596	148981.547
3458	Nickel	7440-02-0	RCBRA Rip 5	K	RIPARIAN	569141.025	147521.561
3459	Nickel	7440-02-0	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
3460	Nickel	7440-02-0	RCBRA Rip 7	IU2/IU6	RIPARIAN	581326.914	147825.17
3461	Nickel	7440-02-0	RCBRA Rip 8	D/H	RIPARIAN	578698.584	152233.645
3462	Nickel	7440-02-0	RCBRA Rip 9	D/H	RIPARIAN	578153.643	152801.452
3463	Nickel	7440-02-0	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
3464	Nickel	7440-02-0	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
3465	Nickel	7440-02-0	RCBRA Yak Rdg 2	Outside decision areas	UPLAND	559031.557	135576.407
3466	Nickel	7440-02-0	RCBRA 100-D-48	D/H	UPLAND	573841.527	151914.538
3467	Nickel	7440-02-0	RCBRA 100-D-49	D/H	UPLAND	573938.06	151944.123
3468	Nickel	7440-02-0	RCBRA 116-DR-1&2	D/H	UPLAND	574007.817	152246.748
3469	Nickel	7440-02-0	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
3470	Nickel	7440-02-0	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
3432	5/16/2006	J11X79	SOIL and BIOTA	MIS	14.1	mg/kg	PLANT
3433	5/16/2006	J11X79	SOIL and BIOTA	MIS-phyt	14.5	mg/kg	PLANT
3434	5/16/2006	J11X90	SOIL and BIOTA	MIS	10.7	mg/kg	PLANT
3435	5/16/2006	J11X90	SOIL and BIOTA	MIS-phyt	12.2	mg/kg	PLANT
3436	5/18/2006	J11X86	SOIL and BIOTA	MIS	10	mg/kg	PLANT
3437	5/18/2006	J11X81	SOIL and BIOTA	MIS	9.9	mg/kg	PLANT
3438	5/15/2006	J11X82	SOIL and BIOTA	MIS	11	mg/kg	PLANT
3439	5/15/2006	J11X82	SOIL and BIOTA	MIS-phyt	10.9	mg/kg	PLANT
3440	5/12/2006	J11X72	SOIL and BIOTA	MIS	9.5	mg/kg	PLANT
3441	5/12/2006	J11X51	SOIL and BIOTA	MIS	9.6	mg/kg	PLANT
3442	5/12/2006	J11X89	SOIL and BIOTA	MIS	14.3	mg/kg	PLANT
3443	5/10/2006	J11X74	SOIL and BIOTA	MIS	10	mg/kg	PLANT
3444	5/15/2006	J11X66	SOIL and BIOTA	MIS	9.3	mg/kg	PLANT
3445	5/22/2006	J11X63	SOIL and BIOTA	MIS	7.9	mg/kg	PLANT
3446	5/19/2006	J11X70	SOIL and BIOTA	MIS	10.6	mg/kg	PLANT
3447	5/12/2006	J11X64	SOIL and BIOTA	MIS	9.2	mg/kg	PLANT
3448	5/9/2006	J11WY8	SOIL and BIOTA	MIS	17.6	mg/kg	PLANT
3449	5/9/2006	J11WX0	SOIL and BIOTA	MIS	16.5	mg/kg	PLANT
3450	8/10/2006	J11WY9	SOIL and BIOTA	MIS	24.5	mg/kg	PLANT
3451	5/9/2006	J11X02	SOIL and BIOTA	MIS	23.35	mg/kg	PLANT
3452	5/9/2006	J11X04	SOIL and BIOTA	MIS	18.3	mg/kg	PLANT
3453	5/16/2006	J11WX1	SOIL and BIOTA	MIS	19.1	mg/kg	PLANT
3454	5/9/2006	J11WY6	SOIL and BIOTA	MIS	16.2	mg/kg	PLANT
3455	5/19/2006	J11WX4	SOIL and BIOTA	MIS	15.2	mg/kg	PLANT
3456	5/9/2006	J11WX6	SOIL and BIOTA	MIS	12.6	mg/kg	PLANT
3457	5/9/2006	J11WW6	SOIL and BIOTA	MIS	19.8	mg/kg	PLANT
3458	5/9/2006	J11WW8	SOIL and BIOTA	MIS	22.1	mg/kg	PLANT
3459	5/22/2006	J11XP0	SOIL and BIOTA	MIS	19.5	mg/kg	PLANT
3460	5/9/2006	J11WY0	SOIL and BIOTA	MIS	15.5	mg/kg	PLANT
3461	5/16/2006	J11WY2	SOIL and BIOTA	MIS	16.4	mg/kg	PLANT
3462	5/16/2006	J11WY4	SOIL and BIOTA	MIS	14.4	mg/kg	PLANT
3463	5/15/2006	J11X96	SOIL and BIOTA	MIS	12	mg/kg	PLANT
3464	5/15/2006	J11X96	SOIL and BIOTA	MIS-phyt	13.6	mg/kg	PLANT
3465	5/16/2006	J11X94	SOIL and BIOTA	MIS	16.5	mg/kg	PLANT
3466	5/18/2006	J11X43	SOIL and BIOTA	MIS	11	mg/kg	PLANT
3467	5/18/2006	J11X55	SOIL and BIOTA	MIS	10.5	mg/kg	PLANT
3468	5/19/2006	J11X57	SOIL and BIOTA	MIS	10.3	mg/kg	PLANT
3469	5/16/2006	J11X49	SOIL and BIOTA	MIS	11.4	mg/kg	PLANT
3470	5/16/2006	J11X49	SOIL and BIOTA	MIS-phyt	11.3	mg/kg	PLANT

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
3432	CURRENT YRS GROWTH	1.2	mg/kg			RCBRA
3433	CURRENT YRS GROWTH	1.2	mg/kg			RCBRA
3434	CURRENT YRS GROWTH	1.5	mg/kg			RCBRA
3435	CURRENT YRS GROWTH	1.5	mg/kg			RCBRA
3436	CURRENT YRS GROWTH	0.82	mg/kg			RCBRA
3437	CURRENT YRS GROWTH	0.99	mg/kg			RCBRA
3438	CURRENT YRS GROWTH	1.4	mg/kg			RCBRA
3439	CURRENT YRS GROWTH	1.4	mg/kg			RCBRA
3440	CURRENT YRS GROWTH	0.37	mg/kg			RCBRA
3441	CURRENT YRS GROWTH	0.61	mg/kg			RCBRA
3442	CURRENT YRS GROWTH	0.37	mg/kg			RCBRA
3443	CURRENT YRS GROWTH	0.44	mg/kg			RCBRA
3444	CURRENT YRS GROWTH	2.3	mg/kg			RCBRA
3445	CURRENT YRS GROWTH	0.52	mg/kg			RCBRA
3446	CURRENT YRS GROWTH	0.86	mg/kg			RCBRA
3447	CURRENT YRS GROWTH	0.53	mg/kg			RCBRA
3448	CURRENT YRS GROWTH	0.63	mg/kg			RCBRA
3449	CURRENT YRS GROWTH	1.5	mg/kg			RCBRA
3450	CURRENT YRS GROWTH	2.1	mg/kg			RCBRA
3451	CURRENT YRS GROWTH	0.6	mg/kg			RCBRA
3452	CURRENT YRS GROWTH	0.73	mg/kg			RCBRA
3453	CURRENT YRS GROWTH	1.7	mg/kg			RCBRA
3454	CURRENT YRS GROWTH	0.34	mg/kg			RCBRA
3455	CURRENT YRS GROWTH	8.4	mg/kg			RCBRA
3456	CURRENT YRS GROWTH	0.45	mg/kg			RCBRA
3457	CURRENT YRS GROWTH	0.38	mg/kg			RCBRA
3458	CURRENT YRS GROWTH	1.1	mg/kg			RCBRA
3459	CURRENT YRS GROWTH	1.4	mg/kg			RCBRA
3460	CURRENT YRS GROWTH	0.58	mg/kg			RCBRA
3461	CURRENT YRS GROWTH	2.1	mg/kg			RCBRA
3462	CURRENT YRS GROWTH	2.4	mg/kg			RCBRA
3463	CURRENT YRS GROWTH	0.61	mg/kg			RCBRA
3464	CURRENT YRS GROWTH	0.61	mg/kg			RCBRA
3465	CURRENT YRS GROWTH	1.1	mg/kg			RCBRA
3466	CURRENT YRS GROWTH	1.1	mg/kg			RCBRA
3467	CURRENT YRS GROWTH	1.8	mg/kg			RCBRA
3468	CURRENT YRS GROWTH	1.4	mg/kg			RCBRA
3469	CURRENT YRS GROWTH	2.8	mg/kg			RCBRA
3470	CURRENT YRS GROWTH	2.8	mg/kg			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
3471	Nickel	7440-02-0	RCBRA 1607-D2:1	D/H	UPLAND	573823.924	152260.319
3472	Nickel	7440-02-0	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
3473	Nickel	7440-02-0	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
3474	Nickel	7440-02-0	RCBRA 300-49	300	UPLAND	594318.994	116830.934
3475	Nickel	7440-02-0	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
3476	Nickel	7440-02-0	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
3477	Nickel	7440-02-0	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
3478	Nickel	7440-02-0	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
3479	Nickel	7440-02-0	RCBRA 600-204	IU2/IU6	UPLAND	580128.485	144762.219
3480	Nickel	7440-02-0	RCBRA 600-23	IU2/IU6	UPLAND	585523.593	130481.377
3481	Nickel	7440-02-0	RCBRA 618-4	300	UPLAND	593954.946	117064.473
3482	Nickel	7440-02-0	RCBRA 628-1	IU2/IU6	UPLAND	577797.524	148745.681
3483	Nickel	7440-02-0	RCBRA JA JONES	300	UPLAND	593874.58	120013.908
3484	Nickel	7440-02-0	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
3485	Nickel	7440-02-0	RCBRA Pit 18	IU2/IU6	UPLAND	580697.058	145311.464
3486	Nickel	7440-02-0	RCBRA Pit 23	IU2/IU6	UPLAND	572381.012	144874.157
3487	Nickel	7440-02-0	RCBRA Pit 9	300	UPLAND	592807.103	120587.7
3488	Nickel	7440-02-0	RCBRA R Ref 11	Outside decision areas	RIPARIAN	559400.735	146458.486
3489	Nickel	7440-02-0	RCBRA R Ref 12	IU2/IU6	RIPARIAN	559201.908	145747.542
3490	Nickel	7440-02-0	RCBRA R Ref 13	Outside decision areas	RIPARIAN	558572.809	145345.115
3491	Nickel	7440-02-0	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
3492	Nickel	7440-02-0	RCBRA R Ref 16	Outside decision areas	RIPARIAN	557650.029	144826.748
3493	Nickel	7440-02-0	RCBRA Rip 10	D/H	RIPARIAN	573987.873	153082.19
3494	Nickel	7440-02-0	RCBRA Rip 2	D/H	RIPARIAN	573603.219	152471.6
3495	Nickel	7440-02-0	RCBRA Rip 3	D/H	RIPARIAN	572639.65	151677.812
3496	Nickel	7440-02-0	RCBRA Rip 4	N	RIPARIAN	570558.596	148981.547
3497	Nickel	7440-02-0	RCBRA Rip 5	K	RIPARIAN	569141.025	147521.561
3498	Nickel	7440-02-0	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
3499	Nickel	7440-02-0	RCBRA Rip 7	IU2/IU6	RIPARIAN	581326.914	147825.17
3500	Nickel	7440-02-0	RCBRA Rip 8	D/H	RIPARIAN	578698.584	152233.645
3501	Nickel	7440-02-0	RCBRA Rip 9	D/H	RIPARIAN	578153.643	152801.452
3502	Nickel	7440-02-0	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
3503	Nickel	7440-02-0	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
3504	Nickel	7440-02-0	RCBRA Yak Rdg 2	Outside decision areas	UPLAND	559031.557	135576.407
3505	Nickel	7440-02-0	RCBRA 2a Rip	BC	RIPARIAN	564618.501	145284.526
3506	Nickel	7440-02-0	RCBRA 2c Rip	K	RIPARIAN	567598.2	146210.159
3507	Nickel	7440-02-0	RCBRA 2f Rip	D/H	RIPARIAN	576222.844	154297.511
3508	Nickel	7440-02-0	RCBRA 2j Rip	IU2/IU6	RIPARIAN	579360.971	150092.048
3509	Nickel	7440-02-0	RCBRA 2l Rip	IU2/IU6	RIPARIAN	582341.212	146120.069

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
3471	5/22/2006	J11X59	SOIL and BIOTA	MIS	11.1	mg/kg	PLANT
3472	5/12/2006	J11X45	SOIL and BIOTA	MIS	14.4	mg/kg	PLANT
3473	5/12/2006	J11X45	SOIL and BIOTA	MIS-phyt	16.1	mg/kg	PLANT
3474	4/26/2006	J11X53	SOIL and BIOTA	MIS	9.8	mg/kg	PLANT
3475	5/16/2006	J11X78	SOIL and BIOTA	MIS	14.1	mg/kg	PLANT
3476	5/16/2006	J11X78	SOIL and BIOTA	MIS-phyt	14.5	mg/kg	PLANT
3477	5/16/2006	J11X91	SOIL and BIOTA	MIS	10.7	mg/kg	PLANT
3478	5/16/2006	J11X91	SOIL and BIOTA	MIS-phyt	12.2	mg/kg	PLANT
3479	5/18/2006	J11X80	SOIL and BIOTA	MIS	9.9	mg/kg	PLANT
3480	5/12/2006	J11X73	SOIL and BIOTA	MIS	9.5	mg/kg	PLANT
3481	5/12/2006	J11X50	SOIL and BIOTA	MIS	9.6	mg/kg	PLANT
3482	5/12/2006	J11X88	SOIL and BIOTA	MIS	14.3	mg/kg	PLANT
3483	5/10/2006	J11X75	SOIL and BIOTA	MIS	10	mg/kg	PLANT
3484	5/15/2006	J11X67	SOIL and BIOTA	MIS	9.3	mg/kg	PLANT
3485	5/18/2006	J11X68	SOIL and BIOTA	MIS	9.9	mg/kg	PLANT
3486	5/22/2006	J11X62	SOIL and BIOTA	MIS	7.9	mg/kg	PLANT
3487	5/12/2006	J11X65	SOIL and BIOTA	MIS	9.2	mg/kg	PLANT
3488	5/9/2006	J11WY7	SOIL and BIOTA	MIS	17.6	mg/kg	PLANT
3489	5/9/2006	J11WW9	SOIL and BIOTA	MIS	16.5	mg/kg	PLANT
3490	8/10/2006	J11X00	SOIL and BIOTA	MIS	24.5	mg/kg	PLANT
3491	5/9/2006	J11X01	SOIL and BIOTA	MIS	23.35	mg/kg	PLANT
3492	5/9/2006	J11X03	SOIL and BIOTA	MIS	18.3	mg/kg	PLANT
3493	5/9/2006	J11WY5	SOIL and BIOTA	MIS	16.2	mg/kg	PLANT
3494	5/19/2006	J11WX3	SOIL and BIOTA	MIS	15.2	mg/kg	PLANT
3495	5/9/2006	J11WX5	SOIL and BIOTA	MIS	12.6	mg/kg	PLANT
3496	5/9/2006	J11WW5	SOIL and BIOTA	MIS	19.8	mg/kg	PLANT
3497	5/9/2006	J11WW7	SOIL and BIOTA	MIS	22.1	mg/kg	PLANT
3498	5/22/2006	J11WX7	SOIL and BIOTA	MIS	19.5	mg/kg	PLANT
3499	5/9/2006	J11WX9	SOIL and BIOTA	MIS	15.5	mg/kg	PLANT
3500	5/16/2006	J11WY1	SOIL and BIOTA	MIS	16.4	mg/kg	PLANT
3501	5/16/2006	J11WY3	SOIL and BIOTA	MIS	14.4	mg/kg	PLANT
3502	5/15/2006	J11X97	SOIL and BIOTA	MIS	12	mg/kg	PLANT
3503	5/15/2006	J11X97	SOIL and BIOTA	MIS-phyt	13.6	mg/kg	PLANT
3504	5/16/2006	J11X95	SOIL and BIOTA	MIS	16.5	mg/kg	PLANT
3505	5/23/2007	J15299	SOIL and BIOTA	MIS	16	mg/kg	PLANT
3506	5/21/2007	J152B9	SOIL and BIOTA	MIS	19	mg/kg	PLANT
3507	5/7/2007	J15294	SOIL and BIOTA	MIS	16.9	mg/kg	PLANT
3508	5/21/2007	J15297	SOIL and BIOTA	MIS	21.2	mg/kg	PLANT
3509	5/24/2007	J152B1	SOIL and BIOTA	MIS	12	mg/kg	PLANT

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
3471	CURRENT YRS GROWTH	2.2	mg/kg			RCBRA
3472	CURRENT YRS GROWTH	0.32	mg/kg			RCBRA
3473	CURRENT YRS GROWTH	0.32	mg/kg			RCBRA
3474	CURRENT YRS GROWTH	1.1	mg/kg			RCBRA
3475	CURRENT YRS GROWTH	1.6	mg/kg			RCBRA
3476	CURRENT YRS GROWTH	1.6	mg/kg			RCBRA
3477	CURRENT YRS GROWTH	2.4	mg/kg			RCBRA
3478	CURRENT YRS GROWTH	2.4	mg/kg			RCBRA
3479	CURRENT YRS GROWTH	1.1	mg/kg			RCBRA
3480	CURRENT YRS GROWTH	0.81	mg/kg			RCBRA
3481	CURRENT YRS GROWTH	0.24	mg/kg			RCBRA
3482	CURRENT YRS GROWTH	0.43	mg/kg			RCBRA
3483	CURRENT YRS GROWTH	0.83	mg/kg			RCBRA
3484	CURRENT YRS GROWTH	1	mg/kg			RCBRA
3485	CURRENT YRS GROWTH	1	mg/kg			RCBRA
3486	CURRENT YRS GROWTH	1.8	mg/kg			RCBRA
3487	CURRENT YRS GROWTH	0.65	mg/kg			RCBRA
3488	CURRENT YRS GROWTH	0.45	mg/kg			RCBRA
3489	CURRENT YRS GROWTH	1.3	mg/kg			RCBRA
3490	CURRENT YRS GROWTH	0.28	mg/kg			RCBRA
3491	CURRENT YRS GROWTH	0.34	mg/kg			RCBRA
3492	CURRENT YRS GROWTH	0.66	mg/kg			RCBRA
3493	CURRENT YRS GROWTH	1.3	mg/kg			RCBRA
3494	CURRENT YRS GROWTH	4.6	mg/kg			RCBRA
3495	CURRENT YRS GROWTH	0.73	mg/kg			RCBRA
3496	CURRENT YRS GROWTH	0.73	mg/kg			RCBRA
3497	CURRENT YRS GROWTH	1.9	mg/kg			RCBRA
3498	CURRENT YRS GROWTH	2.4	mg/kg			RCBRA
3499	CURRENT YRS GROWTH	0.84	mg/kg			RCBRA
3500	CURRENT YRS GROWTH	2.6	mg/kg			RCBRA
3501	CURRENT YRS GROWTH	3.4	mg/kg			RCBRA
3502	CURRENT YRS GROWTH	1.2	mg/kg			RCBRA
3503	CURRENT YRS GROWTH	1.2	mg/kg			RCBRA
3504	CURRENT YRS GROWTH	0.87	mg/kg			RCBRA
3505	CURRENT YRS GROWTH	0.78	mg/kg			RCBRA
3506	CURRENT YRS GROWTH	0.74	mg/kg			RCBRA
3507	CURRENT YRS GROWTH	0.46	mg/kg			RCBRA
3508	CURRENT YRS GROWTH	0.42	mg/kg			RCBRA
3509	CURRENT YRS GROWTH	0.45	mg/kg			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
3510	Nickel	7440-02-0	RCBRA 3b Rip	IU2/IU6	RIPARIAN	584961.205	141035.835
3511	Nickel	7440-02-0	RCBRA 4a Rip	IU2/IU6	RIPARIAN	589347.5	137480.985
3512	Nickel	7440-02-0	RCBRA 5c Rip	300	RIPARIAN	594509.985	124869.182
3513	Nickel	7440-02-0	RCBRA Bev Ref 1 Rip	Outside decision areas	RIPARIAN	542428.846	167701.261
3514	Nickel	7440-02-0	RCBRA Bev Ref 2 Rip	Outside decision areas	RIPARIAN	541493.988	167808.357
3515	Nickel	7440-02-0	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
3516	Nickel	7440-02-0	VERNITA BRIDGE 1	Outside decision areas	UPLAND	558823	145536
3517	Nickel	7440-02-0	VERNITA BRIDGE 1	Outside decision areas	UPLAND	558823	145536
3518	Nickel	7440-02-0	VERNITA BRIDGE 1	Outside decision areas	UPLAND	558823	145536
3519	Nickel	7440-02-0	VERNITA BRIDGE 1	Outside decision areas	UPLAND	558823	145536
3520	Nickel	7440-02-0	VERNITA BRIDGE 2	Outside decision areas	UPLAND	558844	145558
3521	Nickel	7440-02-0	VERNITA BRIDGE 2	Outside decision areas	UPLAND	558844	145558
3522	Nickel	7440-02-0	VERNITA BRIDGE 2	Outside decision areas	UPLAND	558844	145558
3523	Nickel	7440-02-0	VERNITA BRIDGE 3	IU2/IU6	UPLAND	559089	145707
3524	Nickel	7440-02-0	VERNITA BRIDGE 3	IU2/IU6	UPLAND	559089	145707
3525	Nickel	7440-02-0	VERNITA BRIDGE 3	IU2/IU6	UPLAND	559089	145707
3526	Nickel	7440-02-0	VERNITA BRIDGE 3	IU2/IU6	UPLAND	559089	145707
3527	Nickel	7440-02-0	VERNITA BRIDGE 3	IU2/IU6	UPLAND	559089	145707
3528	Nickel	7440-02-0	VERNITA BRIDGE 4	IU2/IU6	UPLAND	559347	145849
3529	Nickel	7440-02-0	VERNITA BRIDGE 4	IU2/IU6	UPLAND	559347	145849
3530	Nickel	7440-02-0	VERNITA BRIDGE 4	IU2/IU6	UPLAND	559347	145849
3531	Nickel	7440-02-0	VERNITA BRIDGE 4	IU2/IU6	UPLAND	559347	145849
3532	Nickel	7440-02-0	VERNITA BRIDGE 5	IU2/IU6	UPLAND	559606	145999
3533	Nickel	7440-02-0	VERNITA BRIDGE 5	IU2/IU6	UPLAND	559606	145999
3534	Nickel	7440-02-0	VERNITA BRIDGE 5	IU2/IU6	UPLAND	559606	145999
3535	Nickel	7440-02-0	VERNITA BRIDGE 5	IU2/IU6	UPLAND	559606	145999
3536	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	RCBRA 2c Rip	K	RIPARIAN	567598.2	146210.159
3537	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	RCBRA 2j Rip	IU2/IU6	RIPARIAN	579360.971	150092.048
3538	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	RCBRA 2l Rip	IU2/IU6	RIPARIAN	582341.212	146120.069
3539	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	RCBRA 4a Rip	IU2/IU6	RIPARIAN	589347.5	137480.985
3540	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	RCBRA 5c Rip	300	RIPARIAN	594509.985	124869.182
3541	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	RCBRA 2c Rip	K	RIPARIAN	567598.2	146210.159
3542	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	RCBRA 2j Rip	IU2/IU6	RIPARIAN	579360.971	150092.048
3543	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	RCBRA 2l Rip	IU2/IU6	RIPARIAN	582341.212	146120.069
3544	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	RCBRA 4a Rip	IU2/IU6	RIPARIAN	589347.5	137480.985
3545	Nitrogen in Nitrite and Nitrate	NO2+NO3-N	RCBRA 5c Rip	300	RIPARIAN	594509.985	124869.182
3546	Phosphorus	7723-14-0	RCBRA 100-D-48	D/H	UPLAND	573841.527	151914.538
3547	Phosphorus	7723-14-0	RCBRA 100-D-49	D/H	UPLAND	573938.06	151944.123
3548	Phosphorus	7723-14-0	RCBRA 100-F-2	IU2/IU6	UPLAND	579728.068	147001.117

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
3510	5/23/2007	J152B3	SOIL and BIOTA	MIS	17	mg/kg	PLANT
3511	5/24/2007	J152B7	SOIL and BIOTA	MIS	22.9	mg/kg	PLANT
3512	5/24/2007	J152B5	SOIL and BIOTA	MIS	13.5	mg/kg	PLANT
3513	5/10/2007	J15288	SOIL and BIOTA	MIS	16.9	mg/kg	PLANT
3514	5/8/2007	J15290	SOIL and BIOTA	MIS	19.1	mg/kg	PLANT
3515	5/8/2007	J15292	SOIL and BIOTA	MIS	23.35	mg/kg	PLANT
3516	8/19/2004	B1B5N4	SOIL and BIOTA	Discrete	21.75	mg/kg	PLANT
3517	8/19/2004	B1B5N5	SOIL and BIOTA	Discrete	21.75	mg/kg	PLANT
3518	8/19/2004	B1B5N6	SOIL and BIOTA	Discrete	21.75	mg/kg	PLANT
3519	8/19/2004	B1B5N3	SOIL and BIOTA	Discrete	21.75	mg/kg	PLANT
3520	8/19/2004	B1B5P6	SOIL and BIOTA	Discrete	21.15	mg/kg	PLANT
3521	8/19/2004	B1B5P5	SOIL and BIOTA	Discrete	21.15	mg/kg	PLANT
3522	8/19/2004	B1B5P7	SOIL and BIOTA	Discrete	21.15	mg/kg	PLANT
3523	8/19/2004	B1B5R8	SOIL and BIOTA	Discrete	24.15	mg/kg	PLANT
3524	8/19/2004	B1B5R7	SOIL and BIOTA	Discrete	24.15	mg/kg	PLANT
3525	8/19/2004	B1B5R5	SOIL and BIOTA	Discrete	24.15	mg/kg	PLANT
3526	8/20/2004	B1B5R9	SOIL and BIOTA	Discrete	24.15	mg/kg	PLANT
3527	8/19/2004	B1B5R6	SOIL and BIOTA	Discrete	24.15	mg/kg	PLANT
3528	8/24/2004	B1B5V0	SOIL and BIOTA	Discrete	23.75	mg/kg	PLANT
3529	8/24/2004	B1B5T9	SOIL and BIOTA	Discrete	23.75	mg/kg	PLANT
3530	8/24/2004	B1B5V3	SOIL and BIOTA	Discrete	23.75	mg/kg	PLANT
3531	8/24/2004	B1B5V1	SOIL and BIOTA	Discrete	23.75	mg/kg	PLANT
3532	8/24/2004	B1B5W3	SOIL and BIOTA	Discrete	24.85	mg/kg	PLANT
3533	8/24/2004	B1B5W5	SOIL and BIOTA	Discrete	24.85	mg/kg	PLANT
3534	8/24/2004	B1B5W4	SOIL and BIOTA	Discrete	24.85	mg/kg	PLANT
3535	8/24/2004	B1B5W6	SOIL and BIOTA	Discrete	24.85	mg/kg	PLANT
3536	5/21/2007	J152B8	SOIL and BIOTA	MIS	4	mg/kg	PLANT
3537	5/21/2007	J15296	SOIL and BIOTA	MIS	0.97	mg/kg	PLANT
3538	5/24/2007	J152B0	SOIL and BIOTA	MIS	2.1	mg/kg	PLANT
3539	5/24/2007	J152B6	SOIL and BIOTA	MIS	0.83	mg/kg	PLANT
3540	5/24/2007	J152B4	SOIL and BIOTA	MIS	1.3	mg/kg	PLANT
3541	5/21/2007	J152B9	SOIL and BIOTA	MIS	4	mg/kg	PLANT
3542	5/21/2007	J15297	SOIL and BIOTA	MIS	0.97	mg/kg	PLANT
3543	5/24/2007	J152B1	SOIL and BIOTA	MIS	2.1	mg/kg	PLANT
3544	5/24/2007	J152B7	SOIL and BIOTA	MIS	0.83	mg/kg	PLANT
3545	5/24/2007	J152B5	SOIL and BIOTA	MIS	1.3	mg/kg	PLANT
3546	5/18/2006	J11X42	SOIL and BIOTA	MIS	1090	mg/kg	PLANT
3547	5/18/2006	J11X54	SOIL and BIOTA	MIS	1030	mg/kg	PLANT
3548	5/10/2006	J11X61	SOIL and BIOTA	MIS	906	mg/kg	PLANT

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
3510	CURRENT YRS GROWTH	0.54	mg/kg			RCBRA
3511	CURRENT YRS GROWTH	0.46	mg/kg			RCBRA
3512	CURRENT YRS GROWTH	0.47	mg/kg			RCBRA
3513	CURRENT YRS GROWTH	0.82	mg/kg			RCBRA
3514	CURRENT YRS GROWTH	1	mg/kg			RCBRA
3515	CURRENT YRS GROWTH	0.47	mg/kg			RCBRA
3516	SHOOTS	0.17577	mg/kg	X		PNNL
3517	SHOOTS	0.2499	mg/kg	X		PNNL
3518	SHOOTS	0.6321	mg/kg	X		PNNL
3519	SHOOTS	0.2751	mg/kg	X		PNNL
3520	SHOOTS	0.3633	mg/kg	X		PNNL
3521	SHOOTS	0.17115	mg/kg	X		PNNL
3522	SHOOTS	0.4767	mg/kg	X		PNNL
3523	SHOOTS	0.3906	mg/kg	X		PNNL
3524	SHOOTS	0.20391	mg/kg	X		PNNL
3525	SHOOTS	0.15981	mg/kg	X		PNNL
3526	SHOOTS	0.14511	mg/kg	X		PNNL
3527	SHOOTS	0.2142	mg/kg	X		PNNL
3528	SHOOTS	0.2898	mg/kg	X		PNNL
3529	SHOOTS	0.2709	mg/kg	X		PNNL
3530	SHOOTS	0.4326	mg/kg	X		PNNL
3531	SHOOTS	0.2457	mg/kg	X		PNNL
3532	SHOOTS	0.2142	mg/kg	X		PNNL
3533	SHOOTS	0.19551	mg/kg	X		PNNL
3534	SHOOTS	0.2919	mg/kg	X		PNNL
3535	SHOOTS	0.3339	mg/kg	X		PNNL
3536	CURRENT YRS GROWTH	8.2	mg/kg			RCBRA
3537	CURRENT YRS GROWTH	96.9	mg/kg			RCBRA
3538	CURRENT YRS GROWTH	41.3	mg/kg			RCBRA
3539	CURRENT YRS GROWTH	436	mg/kg			RCBRA
3540	CURRENT YRS GROWTH	231	mg/kg			RCBRA
3541	CURRENT YRS GROWTH	97.6	mg/kg			RCBRA
3542	CURRENT YRS GROWTH	87.5	mg/kg			RCBRA
3543	CURRENT YRS GROWTH	111	mg/kg			RCBRA
3544	CURRENT YRS GROWTH	234	mg/kg			RCBRA
3545	CURRENT YRS GROWTH	58.5	mg/kg			RCBRA
3546	CURRENT YRS GROWTH	2410	mg/kg			RCBRA
3547	CURRENT YRS GROWTH	2730	mg/kg			RCBRA
3548	CURRENT YRS GROWTH	880	mg/kg			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
3549	Phosphorus	7723-14-0	RCBRA 116-DR-1&2	D/H	UPLAND	574007.817	152246.748
3550	Phosphorus	7723-14-0	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
3551	Phosphorus	7723-14-0	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
3552	Phosphorus	7723-14-0	RCBRA 116-N-3	N	UPLAND	571995.702	149793.039
3553	Phosphorus	7723-14-0	RCBRA 1607-D2:1	D/H	UPLAND	573823.924	152260.319
3554	Phosphorus	7723-14-0	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
3555	Phosphorus	7723-14-0	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
3556	Phosphorus	7723-14-0	RCBRA 2a Rip	BC	RIPARIAN	564618.501	145284.526
3557	Phosphorus	7723-14-0	RCBRA 2c Rip	K	RIPARIAN	567598.2	146210.159
3558	Phosphorus	7723-14-0	RCBRA 2f Rip	D/H	RIPARIAN	576222.844	154297.511
3559	Phosphorus	7723-14-0	RCBRA 2j Rip	IU2/IU6	RIPARIAN	579360.971	150092.048
3560	Phosphorus	7723-14-0	RCBRA 2l Rip	IU2/IU6	RIPARIAN	582341.212	146120.069
3561	Phosphorus	7723-14-0	RCBRA 300-49	300	UPLAND	594318.994	116830.934
3562	Phosphorus	7723-14-0	RCBRA 3b Rip	IU2/IU6	RIPARIAN	584961.205	141035.835
3563	Phosphorus	7723-14-0	RCBRA 4a Rip	IU2/IU6	RIPARIAN	589347.5	137480.985
3564	Phosphorus	7723-14-0	RCBRA 5c Rip	300	RIPARIAN	594509.985	124869.182
3565	Phosphorus	7723-14-0	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
3566	Phosphorus	7723-14-0	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
3567	Phosphorus	7723-14-0	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
3568	Phosphorus	7723-14-0	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
3569	Phosphorus	7723-14-0	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
3570	Phosphorus	7723-14-0	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
3571	Phosphorus	7723-14-0	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
3572	Phosphorus	7723-14-0	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
3573	Phosphorus	7723-14-0	RCBRA 600-181	IU2/IU6	UPLAND	578303.83	147316.698
3574	Phosphorus	7723-14-0	RCBRA 600-204	IU2/IU6	UPLAND	580128.485	144762.219
3575	Phosphorus	7723-14-0	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
3576	Phosphorus	7723-14-0	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
3577	Phosphorus	7723-14-0	RCBRA 600-23	IU2/IU6	UPLAND	585523.593	130481.377
3578	Phosphorus	7723-14-0	RCBRA 618-4	300	UPLAND	593954.946	117064.473
3579	Phosphorus	7723-14-0	RCBRA 628-1	IU2/IU6	UPLAND	577797.524	148745.681
3580	Phosphorus	7723-14-0	RCBRA Bev Ref 1 Rip	Outside decision areas	RIPARIAN	542428.846	167701.261
3581	Phosphorus	7723-14-0	RCBRA Bev Ref 2 Rip	Outside decision areas	RIPARIAN	541493.988	167808.357
3582	Phosphorus	7723-14-0	RCBRA JA JONES	300	UPLAND	593874.58	120013.908
3583	Phosphorus	7723-14-0	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
3584	Phosphorus	7723-14-0	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
3585	Phosphorus	7723-14-0	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
3586	Phosphorus	7723-14-0	RCBRA Pit 18	IU2/IU6	UPLAND	580697.058	145311.464
3587	Phosphorus	7723-14-0	RCBRA Pit 23	IU2/IU6	UPLAND	572381.012	144874.157

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
3549	5/19/2006	J11X56	SOIL and BIOTA	MIS	991	mg/kg	PLANT
3550	5/16/2006	J11X48	SOIL and BIOTA	MIS	679	mg/kg	PLANT
3551	5/16/2006	J11X48	SOIL and BIOTA	MIS-phyt	745	mg/kg	PLANT
3552	5/19/2006	J11X46	SOIL and BIOTA	MIS	1160	mg/kg	PLANT
3553	5/22/2006	J11X58	SOIL and BIOTA	MIS	897	mg/kg	PLANT
3554	5/12/2006	J11X44	SOIL and BIOTA	MIS	1090	mg/kg	PLANT
3555	5/12/2006	J11X44	SOIL and BIOTA	MIS-phyt	971	mg/kg	PLANT
3556	5/23/2007	J15298	SOIL and BIOTA	MIS	588	mg/kg	PLANT
3557	5/21/2007	J152B8	SOIL and BIOTA	MIS	759	mg/kg	PLANT
3558	5/7/2007	J15295	SOIL and BIOTA	MIS	748	mg/kg	PLANT
3559	5/21/2007	J15296	SOIL and BIOTA	MIS	727	mg/kg	PLANT
3560	5/24/2007	J152B0	SOIL and BIOTA	MIS	1000	mg/kg	PLANT
3561	4/26/2006	J11X52	SOIL and BIOTA	MIS	769	mg/kg	PLANT
3562	5/23/2007	J152B2	SOIL and BIOTA	MIS	749	mg/kg	PLANT
3563	5/24/2007	J152B6	SOIL and BIOTA	MIS	895	mg/kg	PLANT
3564	5/24/2007	J152B4	SOIL and BIOTA	MIS	744	mg/kg	PLANT
3565	5/12/2006	J11X84	SOIL and BIOTA	MIS	655	mg/kg	PLANT
3566	5/12/2006	J11X84	SOIL and BIOTA	MIS-phyt	771	mg/kg	PLANT
3567	5/12/2006	J11X77	SOIL and BIOTA	MIS	711	mg/kg	PLANT
3568	5/12/2006	J11X77	SOIL and BIOTA	MIS-phyt	734	mg/kg	PLANT
3569	5/16/2006	J11X79	SOIL and BIOTA	MIS	722	mg/kg	PLANT
3570	5/16/2006	J11X79	SOIL and BIOTA	MIS-phyt	740	mg/kg	PLANT
3571	5/16/2006	J11X90	SOIL and BIOTA	MIS	621	mg/kg	PLANT
3572	5/16/2006	J11X90	SOIL and BIOTA	MIS-phyt	663	mg/kg	PLANT
3573	5/18/2006	J11X86	SOIL and BIOTA	MIS	916	mg/kg	PLANT
3574	5/18/2006	J11X81	SOIL and BIOTA	MIS	992	mg/kg	PLANT
3575	5/15/2006	J11X82	SOIL and BIOTA	MIS	868	mg/kg	PLANT
3576	5/15/2006	J11X82	SOIL and BIOTA	MIS-phyt	780	mg/kg	PLANT
3577	5/12/2006	J11X72	SOIL and BIOTA	MIS	787	mg/kg	PLANT
3578	5/12/2006	J11X51	SOIL and BIOTA	MIS	712	mg/kg	PLANT
3579	5/12/2006	J11X89	SOIL and BIOTA	MIS	723	mg/kg	PLANT
3580	5/10/2007	J15289	SOIL and BIOTA	MIS	568	mg/kg	PLANT
3581	5/8/2007	J15291	SOIL and BIOTA	MIS	846	mg/kg	PLANT
3582	5/10/2006	J11X74	SOIL and BIOTA	MIS	782	mg/kg	PLANT
3583	5/18/2006	J11X98	SOIL and BIOTA	MIS	737	mg/kg	PLANT
3584	5/18/2006	J11X98	SOIL and BIOTA	MIS-phyt	776	mg/kg	PLANT
3585	5/15/2006	J11X66	SOIL and BIOTA	MIS	1050	mg/kg	PLANT
3586	5/18/2006	J11X69	SOIL and BIOTA	MIS	669	mg/kg	PLANT
3587	5/22/2006	J11X63	SOIL and BIOTA	MIS	1170	mg/kg	PLANT

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
3549	CURRENT YRS GROWTH	1500	mg/kg			RCBRA
3550	CURRENT YRS GROWTH	2510	mg/kg			RCBRA
3551	CURRENT YRS GROWTH	2510	mg/kg			RCBRA
3552	CURRENT YRS GROWTH	2240	mg/kg			RCBRA
3553	CURRENT YRS GROWTH	1350	mg/kg			RCBRA
3554	CURRENT YRS GROWTH	1040	mg/kg		J	RCBRA
3555	CURRENT YRS GROWTH	1040	mg/kg		J	RCBRA
3556	CURRENT YRS GROWTH	598	mg/kg			RCBRA
3557	CURRENT YRS GROWTH	669	mg/kg			RCBRA
3558	CURRENT YRS GROWTH	699	mg/kg			RCBRA
3559	CURRENT YRS GROWTH	686	mg/kg			RCBRA
3560	CURRENT YRS GROWTH	451	mg/kg			RCBRA
3561	CURRENT YRS GROWTH	2130	mg/kg			RCBRA
3562	CURRENT YRS GROWTH	622	mg/kg			RCBRA
3563	CURRENT YRS GROWTH	487	mg/kg			RCBRA
3564	CURRENT YRS GROWTH	659	mg/kg			RCBRA
3565	CURRENT YRS GROWTH	740	mg/kg			RCBRA
3566	CURRENT YRS GROWTH	740	mg/kg			RCBRA
3567	CURRENT YRS GROWTH	866	mg/kg			RCBRA
3568	CURRENT YRS GROWTH	866	mg/kg			RCBRA
3569	CURRENT YRS GROWTH	2770	mg/kg			RCBRA
3570	CURRENT YRS GROWTH	2770	mg/kg			RCBRA
3571	CURRENT YRS GROWTH	2930	mg/kg			RCBRA
3572	CURRENT YRS GROWTH	2930	mg/kg			RCBRA
3573	CURRENT YRS GROWTH	2770	mg/kg			RCBRA
3574	CURRENT YRS GROWTH	2550	mg/kg			RCBRA
3575	CURRENT YRS GROWTH	2870	mg/kg			RCBRA
3576	CURRENT YRS GROWTH	2870	mg/kg			RCBRA
3577	CURRENT YRS GROWTH	669	mg/kg			RCBRA
3578	CURRENT YRS GROWTH	968	mg/kg			RCBRA
3579	CURRENT YRS GROWTH	613	mg/kg			RCBRA
3580	CURRENT YRS GROWTH	508	mg/kg			RCBRA
3581	CURRENT YRS GROWTH	544	mg/kg			RCBRA
3582	CURRENT YRS GROWTH	807	mg/kg			RCBRA
3583	CURRENT YRS GROWTH	2870	mg/kg			RCBRA
3584	CURRENT YRS GROWTH	2870	mg/kg			RCBRA
3585	CURRENT YRS GROWTH	2570	mg/kg			RCBRA
3586	CURRENT YRS GROWTH	1860	mg/kg			RCBRA
3587	CURRENT YRS GROWTH	2090	mg/kg			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
3588	Phosphorus	7723-14-0	RCBRA Pit 24	BC	UPLAND	563395.814	145119.007
3589	Phosphorus	7723-14-0	RCBRA Pit 9	300	UPLAND	592807.103	120587.7
3590	Phosphorus	7723-14-0	RCBRA R Ref 11	Outside decision areas	RIPARIAN	559400.735	146458.486
3591	Phosphorus	7723-14-0	RCBRA R Ref 12	IU2/IU6	RIPARIAN	559201.908	145747.542
3592	Phosphorus	7723-14-0	RCBRA R Ref 13	Outside decision areas	RIPARIAN	558572.809	145345.115
3593	Phosphorus	7723-14-0	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
3594	Phosphorus	7723-14-0	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
3595	Phosphorus	7723-14-0	RCBRA R Ref 16	Outside decision areas	RIPARIAN	557650.029	144826.748
3596	Phosphorus	7723-14-0	RCBRA Rip 1	D/H	RIPARIAN	577251.869	153659.195
3597	Phosphorus	7723-14-0	RCBRA Rip 10	D/H	RIPARIAN	573987.873	153082.19
3598	Phosphorus	7723-14-0	RCBRA Rip 2	D/H	RIPARIAN	573603.219	152471.6
3599	Phosphorus	7723-14-0	RCBRA Rip 3	D/H	RIPARIAN	572639.65	151677.812
3600	Phosphorus	7723-14-0	RCBRA Rip 4	N	RIPARIAN	570558.596	148981.547
3601	Phosphorus	7723-14-0	RCBRA Rip 5	K	RIPARIAN	569141.025	147521.561
3602	Phosphorus	7723-14-0	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
3603	Phosphorus	7723-14-0	RCBRA Rip 7	IU2/IU6	RIPARIAN	581326.914	147825.17
3604	Phosphorus	7723-14-0	RCBRA Rip 8	D/H	RIPARIAN	578698.584	152233.645
3605	Phosphorus	7723-14-0	RCBRA Rip 9	D/H	RIPARIAN	578153.643	152801.452
3606	Phosphorus	7723-14-0	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
3607	Phosphorus	7723-14-0	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
3608	Phosphorus	7723-14-0	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
3609	Phosphorus	7723-14-0	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
3610	Phosphorus	7723-14-0	RCBRA Yak Rdg 2	Outside decision areas	UPLAND	559031.557	135576.407
3611	Phosphorus	7723-14-0	RCBRA 100-D-48	D/H	UPLAND	573841.527	151914.538
3612	Phosphorus	7723-14-0	RCBRA 100-D-49	D/H	UPLAND	573938.06	151944.123
3613	Phosphorus	7723-14-0	RCBRA 100-F-2	IU2/IU6	UPLAND	579728.068	147001.117
3614	Phosphorus	7723-14-0	RCBRA 116-DR-1&2	D/H	UPLAND	574007.817	152246.748
3615	Phosphorus	7723-14-0	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
3616	Phosphorus	7723-14-0	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
3617	Phosphorus	7723-14-0	RCBRA 116-N-3	N	UPLAND	571995.702	149793.039
3618	Phosphorus	7723-14-0	RCBRA 1607-D2:1	D/H	UPLAND	573823.924	152260.319
3619	Phosphorus	7723-14-0	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
3620	Phosphorus	7723-14-0	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
3621	Phosphorus	7723-14-0	RCBRA 300-49	300	UPLAND	594318.994	116830.934
3622	Phosphorus	7723-14-0	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
3623	Phosphorus	7723-14-0	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
3624	Phosphorus	7723-14-0	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
3625	Phosphorus	7723-14-0	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
3626	Phosphorus	7723-14-0	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
3588	5/19/2006	J11X70	SOIL and BIOTA	MIS	921	mg/kg	PLANT
3589	5/12/2006	J11X64	SOIL and BIOTA	MIS	1040	mg/kg	PLANT
3590	5/9/2006	J11WY8	SOIL and BIOTA	MIS	725	mg/kg	PLANT
3591	5/9/2006	J11WX0	SOIL and BIOTA	MIS	724	mg/kg	PLANT
3592	8/10/2006	J11WY9	SOIL and BIOTA	MIS	992	mg/kg	PLANT
3593	5/9/2006	J11X02	SOIL and BIOTA	MIS	798.5	mg/kg	PLANT
3594	5/8/2007	J15293	SOIL and BIOTA	MIS	798.5	mg/kg	PLANT
3595	5/9/2006	J11X04	SOIL and BIOTA	MIS	856	mg/kg	PLANT
3596	5/16/2006	J11WX1	SOIL and BIOTA	MIS	826	mg/kg	PLANT
3597	5/9/2006	J11WY6	SOIL and BIOTA	MIS	776	mg/kg	PLANT
3598	5/19/2006	J11WX4	SOIL and BIOTA	MIS	882	mg/kg	PLANT
3599	5/9/2006	J11WX6	SOIL and BIOTA	MIS	1140	mg/kg	PLANT
3600	5/9/2006	J11WW6	SOIL and BIOTA	MIS	797	mg/kg	PLANT
3601	5/9/2006	J11WW8	SOIL and BIOTA	MIS	859	mg/kg	PLANT
3602	5/22/2006	J11XP0	SOIL and BIOTA	MIS	920	mg/kg	PLANT
3603	5/9/2006	J11WY0	SOIL and BIOTA	MIS	809	mg/kg	PLANT
3604	5/16/2006	J11WY2	SOIL and BIOTA	MIS	663	mg/kg	PLANT
3605	5/16/2006	J11WY4	SOIL and BIOTA	MIS	677	mg/kg	PLANT
3606	5/18/2006	J11XB0	SOIL and BIOTA	MIS	1060	mg/kg	PLANT
3607	5/18/2006	J11XB0	SOIL and BIOTA	MIS-phyt	1000	mg/kg	PLANT
3608	5/15/2006	J11X96	SOIL and BIOTA	MIS	720	mg/kg	PLANT
3609	5/15/2006	J11X96	SOIL and BIOTA	MIS-phyt	724	mg/kg	PLANT
3610	5/16/2006	J11X94	SOIL and BIOTA	MIS	783	mg/kg	PLANT
3611	5/18/2006	J11X43	SOIL and BIOTA	MIS	1090	mg/kg	PLANT
3612	5/18/2006	J11X55	SOIL and BIOTA	MIS	1030	mg/kg	PLANT
3613	5/10/2006	J11X60	SOIL and BIOTA	MIS	906	mg/kg	PLANT
3614	5/19/2006	J11X57	SOIL and BIOTA	MIS	991	mg/kg	PLANT
3615	5/16/2006	J11X49	SOIL and BIOTA	MIS	679	mg/kg	PLANT
3616	5/16/2006	J11X49	SOIL and BIOTA	MIS-phyt	745	mg/kg	PLANT
3617	5/19/2006	J11X47	SOIL and BIOTA	MIS	1160	mg/kg	PLANT
3618	5/22/2006	J11X59	SOIL and BIOTA	MIS	897	mg/kg	PLANT
3619	5/12/2006	J11X45	SOIL and BIOTA	MIS	1090	mg/kg	PLANT
3620	5/12/2006	J11X45	SOIL and BIOTA	MIS-phyt	971	mg/kg	PLANT
3621	4/26/2006	J11X53	SOIL and BIOTA	MIS	769	mg/kg	PLANT
3622	5/12/2006	J11X85	SOIL and BIOTA	MIS	655	mg/kg	PLANT
3623	5/12/2006	J11X85	SOIL and BIOTA	MIS-phyt	771	mg/kg	PLANT
3624	5/12/2006	J11X76	SOIL and BIOTA	MIS	711	mg/kg	PLANT
3625	5/12/2006	J11X76	SOIL and BIOTA	MIS-phyt	734	mg/kg	PLANT
3626	5/16/2006	J11X78	SOIL and BIOTA	MIS	722	mg/kg	PLANT

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
3588	CURRENT YRS GROWTH	2080	mg/kg			RCBRA
3589	CURRENT YRS GROWTH	832	mg/kg			RCBRA
3590	CURRENT YRS GROWTH	478	mg/kg		J	RCBRA
3591	CURRENT YRS GROWTH	335	mg/kg		J	RCBRA
3592	CURRENT YRS GROWTH	502	mg/kg			RCBRA
3593	CURRENT YRS GROWTH	452	mg/kg		J	RCBRA
3594	CURRENT YRS GROWTH	618	mg/kg			RCBRA
3595	CURRENT YRS GROWTH	620	mg/kg		J	RCBRA
3596	CURRENT YRS GROWTH	2900	mg/kg			RCBRA
3597	CURRENT YRS GROWTH	689	mg/kg		J	RCBRA
3598	CURRENT YRS GROWTH	3130	mg/kg			RCBRA
3599	CURRENT YRS GROWTH	677	mg/kg		J	RCBRA
3600	CURRENT YRS GROWTH	282	mg/kg		J	RCBRA
3601	CURRENT YRS GROWTH	334	mg/kg		J	RCBRA
3602	CURRENT YRS GROWTH	1110	mg/kg			RCBRA
3603	CURRENT YRS GROWTH	529	mg/kg		J	RCBRA
3604	CURRENT YRS GROWTH	1310	mg/kg			RCBRA
3605	CURRENT YRS GROWTH	2410	mg/kg			RCBRA
3606	CURRENT YRS GROWTH	2670	mg/kg			RCBRA
3607	CURRENT YRS GROWTH	2670	mg/kg			RCBRA
3608	CURRENT YRS GROWTH	2460	mg/kg			RCBRA
3609	CURRENT YRS GROWTH	2460	mg/kg			RCBRA
3610	CURRENT YRS GROWTH	2070	mg/kg			RCBRA
3611	CURRENT YRS GROWTH	2200	mg/kg			RCBRA
3612	CURRENT YRS GROWTH	2640	mg/kg			RCBRA
3613	CURRENT YRS GROWTH	713	mg/kg			RCBRA
3614	CURRENT YRS GROWTH	2100	mg/kg			RCBRA
3615	CURRENT YRS GROWTH	3970	mg/kg			RCBRA
3616	CURRENT YRS GROWTH	3970	mg/kg			RCBRA
3617	CURRENT YRS GROWTH	3570	mg/kg			RCBRA
3618	CURRENT YRS GROWTH	2300	mg/kg			RCBRA
3619	CURRENT YRS GROWTH	676	mg/kg		J	RCBRA
3620	CURRENT YRS GROWTH	676	mg/kg		J	RCBRA
3621	CURRENT YRS GROWTH	3760	mg/kg			RCBRA
3622	CURRENT YRS GROWTH	503	mg/kg			RCBRA
3623	CURRENT YRS GROWTH	503	mg/kg			RCBRA
3624	CURRENT YRS GROWTH	622	mg/kg			RCBRA
3625	CURRENT YRS GROWTH	622	mg/kg			RCBRA
3626	CURRENT YRS GROWTH	3020	mg/kg			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
3627	Phosphorus	7723-14-0	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
3628	Phosphorus	7723-14-0	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
3629	Phosphorus	7723-14-0	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
3630	Phosphorus	7723-14-0	RCBRA 600-181	IU2/IU6	UPLAND	578303.83	147316.698
3631	Phosphorus	7723-14-0	RCBRA 600-204	IU2/IU6	UPLAND	580128.485	144762.219
3632	Phosphorus	7723-14-0	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
3633	Phosphorus	7723-14-0	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
3634	Phosphorus	7723-14-0	RCBRA 600-23	IU2/IU6	UPLAND	585523.593	130481.377
3635	Phosphorus	7723-14-0	RCBRA 618-4	300	UPLAND	593954.946	117064.473
3636	Phosphorus	7723-14-0	RCBRA 628-1	IU2/IU6	UPLAND	577797.524	148745.681
3637	Phosphorus	7723-14-0	RCBRA JA JONES	300	UPLAND	593874.58	120013.908
3638	Phosphorus	7723-14-0	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
3639	Phosphorus	7723-14-0	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
3640	Phosphorus	7723-14-0	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
3641	Phosphorus	7723-14-0	RCBRA Pit 18	IU2/IU6	UPLAND	580697.058	145311.464
3642	Phosphorus	7723-14-0	RCBRA Pit 23	IU2/IU6	UPLAND	572381.012	144874.157
3643	Phosphorus	7723-14-0	RCBRA Pit 24	BC	UPLAND	563395.814	145119.007
3644	Phosphorus	7723-14-0	RCBRA Pit 9	300	UPLAND	592807.103	120587.7
3645	Phosphorus	7723-14-0	RCBRA R Ref 11	Outside decision areas	RIPARIAN	559400.735	146458.486
3646	Phosphorus	7723-14-0	RCBRA R Ref 12	IU2/IU6	RIPARIAN	559201.908	145747.542
3647	Phosphorus	7723-14-0	RCBRA R Ref 13	Outside decision areas	RIPARIAN	558572.809	145345.115
3648	Phosphorus	7723-14-0	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
3649	Phosphorus	7723-14-0	RCBRA R Ref 16	Outside decision areas	RIPARIAN	557650.029	144826.748
3650	Phosphorus	7723-14-0	RCBRA Rip 1	D/H	RIPARIAN	577251.869	153659.195
3651	Phosphorus	7723-14-0	RCBRA Rip 10	D/H	RIPARIAN	573987.873	153082.19
3652	Phosphorus	7723-14-0	RCBRA Rip 2	D/H	RIPARIAN	573603.219	152471.6
3653	Phosphorus	7723-14-0	RCBRA Rip 3	D/H	RIPARIAN	572639.65	151677.812
3654	Phosphorus	7723-14-0	RCBRA Rip 4	N	RIPARIAN	570558.596	148981.547
3655	Phosphorus	7723-14-0	RCBRA Rip 5	K	RIPARIAN	569141.025	147521.561
3656	Phosphorus	7723-14-0	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
3657	Phosphorus	7723-14-0	RCBRA Rip 7	IU2/IU6	RIPARIAN	581326.914	147825.17
3658	Phosphorus	7723-14-0	RCBRA Rip 8	D/H	RIPARIAN	578698.584	152233.645
3659	Phosphorus	7723-14-0	RCBRA Rip 9	D/H	RIPARIAN	578153.643	152801.452
3660	Phosphorus	7723-14-0	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
3661	Phosphorus	7723-14-0	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
3662	Phosphorus	7723-14-0	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
3663	Phosphorus	7723-14-0	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
3664	Phosphorus	7723-14-0	RCBRA Yak Rdg 2	Outside decision areas	UPLAND	559031.557	135576.407
3665	Phosphorus	7723-14-0	RCBRA 2a Rip	BC	RIPARIAN	564618.501	145284.526

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
3627	5/16/2006	J11X78	SOIL and BIOTA	MIS-phyt	740	mg/kg	PLANT
3628	5/16/2006	J11X91	SOIL and BIOTA	MIS	621	mg/kg	PLANT
3629	5/16/2006	J11X91	SOIL and BIOTA	MIS-phyt	663	mg/kg	PLANT
3630	5/18/2006	J11X87	SOIL and BIOTA	MIS	916	mg/kg	PLANT
3631	5/18/2006	J11X80	SOIL and BIOTA	MIS	992	mg/kg	PLANT
3632	5/15/2006	J11X83	SOIL and BIOTA	MIS	868	mg/kg	PLANT
3633	5/15/2006	J11X83	SOIL and BIOTA	MIS-phyt	780	mg/kg	PLANT
3634	5/12/2006	J11X73	SOIL and BIOTA	MIS	787	mg/kg	PLANT
3635	5/12/2006	J11X50	SOIL and BIOTA	MIS	712	mg/kg	PLANT
3636	5/12/2006	J11X88	SOIL and BIOTA	MIS	723	mg/kg	PLANT
3637	5/10/2006	J11X75	SOIL and BIOTA	MIS	782	mg/kg	PLANT
3638	5/18/2006	J11X99	SOIL and BIOTA	MIS	737	mg/kg	PLANT
3639	5/18/2006	J11X99	SOIL and BIOTA	MIS-phyt	776	mg/kg	PLANT
3640	5/15/2006	J11X67	SOIL and BIOTA	MIS	1050	mg/kg	PLANT
3641	5/18/2006	J11X68	SOIL and BIOTA	MIS	669	mg/kg	PLANT
3642	5/22/2006	J11X62	SOIL and BIOTA	MIS	1170	mg/kg	PLANT
3643	5/19/2006	J11X71	SOIL and BIOTA	MIS	921	mg/kg	PLANT
3644	5/12/2006	J11X65	SOIL and BIOTA	MIS	1040	mg/kg	PLANT
3645	5/9/2006	J11WY7	SOIL and BIOTA	MIS	725	mg/kg	PLANT
3646	5/9/2006	J11WW9	SOIL and BIOTA	MIS	724	mg/kg	PLANT
3647	8/10/2006	J11X00	SOIL and BIOTA	MIS	992	mg/kg	PLANT
3648	5/9/2006	J11X01	SOIL and BIOTA	MIS	798.5	mg/kg	PLANT
3649	5/9/2006	J11X03	SOIL and BIOTA	MIS	856	mg/kg	PLANT
3650	5/16/2006	J11WX2	SOIL and BIOTA	MIS	826	mg/kg	PLANT
3651	5/9/2006	J11WY5	SOIL and BIOTA	MIS	776	mg/kg	PLANT
3652	5/19/2006	J11WX3	SOIL and BIOTA	MIS	882	mg/kg	PLANT
3653	5/9/2006	J11WX5	SOIL and BIOTA	MIS	1140	mg/kg	PLANT
3654	5/9/2006	J11WW5	SOIL and BIOTA	MIS	797	mg/kg	PLANT
3655	5/9/2006	J11WW7	SOIL and BIOTA	MIS	859	mg/kg	PLANT
3656	5/22/2006	J11WX7	SOIL and BIOTA	MIS	920	mg/kg	PLANT
3657	5/9/2006	J11WX9	SOIL and BIOTA	MIS	809	mg/kg	PLANT
3658	5/16/2006	J11WY1	SOIL and BIOTA	MIS	663	mg/kg	PLANT
3659	5/16/2006	J11WY3	SOIL and BIOTA	MIS	677	mg/kg	PLANT
3660	5/18/2006	J11XB1	SOIL and BIOTA	MIS	1060	mg/kg	PLANT
3661	5/18/2006	J11XB1	SOIL and BIOTA	MIS-phyt	1000	mg/kg	PLANT
3662	5/15/2006	J11X97	SOIL and BIOTA	MIS	720	mg/kg	PLANT
3663	5/15/2006	J11X97	SOIL and BIOTA	MIS-phyt	724	mg/kg	PLANT
3664	5/16/2006	J11X95	SOIL and BIOTA	MIS	783	mg/kg	PLANT
3665	5/23/2007	J15299	SOIL and BIOTA	MIS	588	mg/kg	PLANT

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
3627	CURRENT YRS GROWTH	3020	mg/kg			RCBRA
3628	CURRENT YRS GROWTH	2410	mg/kg			RCBRA
3629	CURRENT YRS GROWTH	2410	mg/kg			RCBRA
3630	CURRENT YRS GROWTH	4050	mg/kg			RCBRA
3631	CURRENT YRS GROWTH	2000	mg/kg			RCBRA
3632	CURRENT YRS GROWTH	4710	mg/kg			RCBRA
3633	CURRENT YRS GROWTH	4710	mg/kg			RCBRA
3634	CURRENT YRS GROWTH	768	mg/kg			RCBRA
3635	CURRENT YRS GROWTH	777	mg/kg			RCBRA
3636	CURRENT YRS GROWTH	1020	mg/kg			RCBRA
3637	CURRENT YRS GROWTH	616	mg/kg			RCBRA
3638	CURRENT YRS GROWTH	3030	mg/kg			RCBRA
3639	CURRENT YRS GROWTH	3030	mg/kg			RCBRA
3640	CURRENT YRS GROWTH	1660	mg/kg			RCBRA
3641	CURRENT YRS GROWTH	1820	mg/kg			RCBRA
3642	CURRENT YRS GROWTH	1480	mg/kg			RCBRA
3643	CURRENT YRS GROWTH	1700	mg/kg			RCBRA
3644	CURRENT YRS GROWTH	972	mg/kg			RCBRA
3645	CURRENT YRS GROWTH	828	mg/kg		J	RCBRA
3646	CURRENT YRS GROWTH	783	mg/kg		J	RCBRA
3647	CURRENT YRS GROWTH	618	mg/kg			RCBRA
3648	CURRENT YRS GROWTH	631	mg/kg		J	RCBRA
3649	CURRENT YRS GROWTH	895	mg/kg		J	RCBRA
3650	CURRENT YRS GROWTH	3470	mg/kg			RCBRA
3651	CURRENT YRS GROWTH	1440	mg/kg			RCBRA
3652	CURRENT YRS GROWTH	7260	mg/kg			RCBRA
3653	CURRENT YRS GROWTH	1160	mg/kg		J	RCBRA
3654	CURRENT YRS GROWTH	738	mg/kg		J	RCBRA
3655	CURRENT YRS GROWTH	929	mg/kg		J	RCBRA
3656	CURRENT YRS GROWTH	4130	mg/kg			RCBRA
3657	CURRENT YRS GROWTH	1020	mg/kg			RCBRA
3658	CURRENT YRS GROWTH	3270	mg/kg			RCBRA
3659	CURRENT YRS GROWTH	6310	mg/kg			RCBRA
3660	CURRENT YRS GROWTH	1810	mg/kg			RCBRA
3661	CURRENT YRS GROWTH	1810	mg/kg			RCBRA
3662	CURRENT YRS GROWTH	2850	mg/kg			RCBRA
3663	CURRENT YRS GROWTH	2850	mg/kg			RCBRA
3664	CURRENT YRS GROWTH	2070	mg/kg			RCBRA
3665	CURRENT YRS GROWTH	1560	mg/kg			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
3666	Phosphorus	7723-14-0	RCBRA 2c Rip	K	RIPARIAN	567598.2	146210.159
3667	Phosphorus	7723-14-0	RCBRA 2f Rip	D/H	RIPARIAN	576222.844	154297.511
3668	Phosphorus	7723-14-0	RCBRA 2j Rip	IU2/IU6	RIPARIAN	579360.971	150092.048
3669	Phosphorus	7723-14-0	RCBRA 2l Rip	IU2/IU6	RIPARIAN	582341.212	146120.069
3670	Phosphorus	7723-14-0	RCBRA 3b Rip	IU2/IU6	RIPARIAN	584961.205	141035.835
3671	Phosphorus	7723-14-0	RCBRA 4a Rip	IU2/IU6	RIPARIAN	589347.5	137480.985
3672	Phosphorus	7723-14-0	RCBRA 5c Rip	300	RIPARIAN	594509.985	124869.182
3673	Phosphorus	7723-14-0	RCBRA Bev Ref 1 Rip	Outside decision areas	RIPARIAN	542428.846	167701.261
3674	Phosphorus	7723-14-0	RCBRA Bev Ref 2 Rip	Outside decision areas	RIPARIAN	541493.988	167808.357
3675	Phosphorus	7723-14-0	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
3676	Lead	7439-92-1	RCBRA R Ref 11	Outside decision areas	RIPARIAN	559400.735	146458.486
3677	Lead	7439-92-1	RCBRA R Ref 12	IU2/IU6	RIPARIAN	559201.908	145747.542
3678	Lead	7439-92-1	RCBRA R Ref 13	Outside decision areas	RIPARIAN	558572.809	145345.115
3679	Lead	7439-92-1	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
3680	Lead	7439-92-1	RCBRA R Ref 16	Outside decision areas	RIPARIAN	557650.029	144826.748
3681	Lead	7439-92-1	RCBRA Rip 10	D/H	RIPARIAN	573987.873	153082.19
3682	Lead	7439-92-1	RCBRA Rip 5	K	RIPARIAN	569141.025	147521.561
3683	Lead	7439-92-1	RCBRA Rip 8	D/H	RIPARIAN	578698.584	152233.645
3684	Lead	7439-92-1	RCBRA 116-DR-1&2	D/H	UPLAND	574007.817	152246.748
3685	Lead	7439-92-1	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
3686	Lead	7439-92-1	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
3687	Lead	7439-92-1	RCBRA 600-23	IU2/IU6	UPLAND	585523.593	130481.377
3688	Lead	7439-92-1	RCBRA Rip 5	K	RIPARIAN	569141.025	147521.561
3689	Lead	7439-92-1	RCBRA 4a Rip	IU2/IU6	RIPARIAN	589347.5	137480.985
3690	Lead	7439-92-1	VERNITA BRIDGE 1	Outside decision areas	UPLAND	558823	145536
3691	Lead	7439-92-1	VERNITA BRIDGE 1	Outside decision areas	UPLAND	558823	145536
3692	Lead	7439-92-1	VERNITA BRIDGE 1	Outside decision areas	UPLAND	558823	145536
3693	Lead	7439-92-1	VERNITA BRIDGE 1	Outside decision areas	UPLAND	558823	145536
3694	Lead	7439-92-1	VERNITA BRIDGE 2	Outside decision areas	UPLAND	558844	145558
3695	Lead	7439-92-1	VERNITA BRIDGE 2	Outside decision areas	UPLAND	558844	145558
3696	Lead	7439-92-1	VERNITA BRIDGE 2	Outside decision areas	UPLAND	558844	145558
3697	Lead	7439-92-1	VERNITA BRIDGE 3	IU2/IU6	UPLAND	559089	145707
3698	Lead	7439-92-1	VERNITA BRIDGE 3	IU2/IU6	UPLAND	559089	145707
3699	Lead	7439-92-1	VERNITA BRIDGE 3	IU2/IU6	UPLAND	559089	145707
3700	Lead	7439-92-1	VERNITA BRIDGE 3	IU2/IU6	UPLAND	559089	145707
3701	Lead	7439-92-1	VERNITA BRIDGE 3	IU2/IU6	UPLAND	559089	145707
3702	Lead	7439-92-1	VERNITA BRIDGE 4	IU2/IU6	UPLAND	559347	145849
3703	Lead	7439-92-1	VERNITA BRIDGE 4	IU2/IU6	UPLAND	559347	145849
3704	Lead	7439-92-1	VERNITA BRIDGE 4	IU2/IU6	UPLAND	559347	145849

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
3666	5/21/2007	J152B9	SOIL and BIOTA	MIS	759	mg/kg	PLANT
3667	5/7/2007	J15294	SOIL and BIOTA	MIS	748	mg/kg	PLANT
3668	5/21/2007	J15297	SOIL and BIOTA	MIS	727	mg/kg	PLANT
3669	5/24/2007	J152B1	SOIL and BIOTA	MIS	1000	mg/kg	PLANT
3670	5/23/2007	J152B3	SOIL and BIOTA	MIS	749	mg/kg	PLANT
3671	5/24/2007	J152B7	SOIL and BIOTA	MIS	895	mg/kg	PLANT
3672	5/24/2007	J152B5	SOIL and BIOTA	MIS	744	mg/kg	PLANT
3673	5/10/2007	J15288	SOIL and BIOTA	MIS	568	mg/kg	PLANT
3674	5/8/2007	J15290	SOIL and BIOTA	MIS	846	mg/kg	PLANT
3675	5/8/2007	J15292	SOIL and BIOTA	MIS	798.5	mg/kg	PLANT
3676	5/9/2006	J11WY8	SOIL and BIOTA	MIS	14.9	mg/kg	PLANT
3677	5/9/2006	J11WX0	SOIL and BIOTA	MIS	22.2	mg/kg	PLANT
3678	8/10/2006	J11WY9	SOIL and BIOTA	MIS	58.2	mg/kg	PLANT
3679	5/9/2006	J11X02	SOIL and BIOTA	MIS	40.65	mg/kg	PLANT
3680	5/9/2006	J11X04	SOIL and BIOTA	MIS	27.4	mg/kg	PLANT
3681	5/9/2006	J11WY6	SOIL and BIOTA	MIS	37.2	mg/kg	PLANT
3682	5/9/2006	J11WW8	SOIL and BIOTA	MIS	46.7	mg/kg	PLANT
3683	5/16/2006	J11WY2	SOIL and BIOTA	MIS	35	mg/kg	PLANT
3684	5/19/2006	J11X57	SOIL and BIOTA	MIS	5	mg/kg	PLANT
3685	5/12/2006	J11X45	SOIL and BIOTA	MIS	26.3	mg/kg	PLANT
3686	5/12/2006	J11X45	SOIL and BIOTA	MIS-phyt	77.2	mg/kg	PLANT
3687	5/12/2006	J11X73	SOIL and BIOTA	MIS	6	mg/kg	PLANT
3688	5/9/2006	J11WW7	SOIL and BIOTA	MIS	46.7	mg/kg	PLANT
3689	5/24/2007	J152B7	SOIL and BIOTA	MIS	60.9	mg/kg	PLANT
3690	8/19/2004	B1B5N4	SOIL and BIOTA	Discrete	26.2	mg/kg	PLANT
3691	8/19/2004	B1B5N5	SOIL and BIOTA	Discrete	26.2	mg/kg	PLANT
3692	8/19/2004	B1B5N6	SOIL and BIOTA	Discrete	26.2	mg/kg	PLANT
3693	8/19/2004	B1B5N3	SOIL and BIOTA	Discrete	26.2	mg/kg	PLANT
3694	8/19/2004	B1B5P5	SOIL and BIOTA	Discrete	42.15	mg/kg	PLANT
3695	8/19/2004	B1B5P6	SOIL and BIOTA	Discrete	42.15	mg/kg	PLANT
3696	8/19/2004	B1B5P7	SOIL and BIOTA	Discrete	42.15	mg/kg	PLANT
3697	8/19/2004	B1B5R8	SOIL and BIOTA	Discrete	49.45	mg/kg	PLANT
3698	8/19/2004	B1B5R7	SOIL and BIOTA	Discrete	49.45	mg/kg	PLANT
3699	8/19/2004	B1B5R5	SOIL and BIOTA	Discrete	49.45	mg/kg	PLANT
3700	8/20/2004	B1B5R9	SOIL and BIOTA	Discrete	49.45	mg/kg	PLANT
3701	8/19/2004	B1B5R6	SOIL and BIOTA	Discrete	49.45	mg/kg	PLANT
3702	8/24/2004	B1B5V0	SOIL and BIOTA	Discrete	48.85	mg/kg	PLANT
3703	8/24/2004	B1B5T9	SOIL and BIOTA	Discrete	48.85	mg/kg	PLANT
3704	8/24/2004	B1B5V3	SOIL and BIOTA	Discrete	48.85	mg/kg	PLANT

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
3666	CURRENT YRS GROWTH	1120	mg/kg			RCBRA
3667	CURRENT YRS GROWTH	1780	mg/kg			RCBRA
3668	CURRENT YRS GROWTH	1520	mg/kg			RCBRA
3669	CURRENT YRS GROWTH	750	mg/kg			RCBRA
3670	CURRENT YRS GROWTH	917	mg/kg			RCBRA
3671	CURRENT YRS GROWTH	585	mg/kg			RCBRA
3672	CURRENT YRS GROWTH	724	mg/kg			RCBRA
3673	CURRENT YRS GROWTH	1490	mg/kg			RCBRA
3674	CURRENT YRS GROWTH	1350	mg/kg			RCBRA
3675	CURRENT YRS GROWTH	1560	mg/kg			RCBRA
3676	CURRENT YRS GROWTH	0.39	mg/kg			RCBRA
3677	CURRENT YRS GROWTH	0.75	mg/kg			RCBRA
3678	CURRENT YRS GROWTH	1.7	mg/kg			RCBRA
3679	CURRENT YRS GROWTH	0.69	mg/kg			RCBRA
3680	CURRENT YRS GROWTH	0.73	mg/kg			RCBRA
3681	CURRENT YRS GROWTH	0.46	mg/kg			RCBRA
3682	CURRENT YRS GROWTH	0.49	mg/kg			RCBRA
3683	CURRENT YRS GROWTH	0.94	mg/kg			RCBRA
3684	CURRENT YRS GROWTH	0.97	mg/kg			RCBRA
3685	CURRENT YRS GROWTH	0.39	mg/kg			RCBRA
3686	CURRENT YRS GROWTH	0.39	mg/kg			RCBRA
3687	CURRENT YRS GROWTH	0.41	mg/kg			RCBRA
3688	CURRENT YRS GROWTH	0.37	mg/kg			RCBRA
3689	CURRENT YRS GROWTH	0.34	mg/kg			RCBRA
3690	SHOOTS	0.017976	mg/kg	X		PNNL
3691	SHOOTS	0.02562	mg/kg	X		PNNL
3692	SHOOTS	0.05124	mg/kg	X		PNNL
3693	SHOOTS	0.1071	mg/kg	X		PNNL
3694	SHOOTS	0.019803	mg/kg	X		PNNL
3695	SHOOTS	0.15456	mg/kg	X		PNNL
3696	SHOOTS	0.03402	mg/kg	X		PNNL
3697	SHOOTS	0.019614	mg/kg	X		PNNL
3698	SHOOTS	0.018123	mg/kg	X		PNNL
3699	SHOOTS	0.02709	mg/kg	X		PNNL
3700	SHOOTS	0.016107	mg/kg	X		PNNL
3701	SHOOTS	0.02772	mg/kg	X		PNNL
3702	SHOOTS	0.18732	mg/kg	X		PNNL
3703	SHOOTS	0.02583	mg/kg	X		PNNL
3704	SHOOTS	0.016359	mg/kg	X		PNNL

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
3705	Lead	7439-92-1	VERNITA BRIDGE 4	IU2/IU6	UPLAND	559347	145849
3706	Lead	7439-92-1	VERNITA BRIDGE 5	IU2/IU6	UPLAND	559606	145999
3707	Lead	7439-92-1	VERNITA BRIDGE 5	IU2/IU6	UPLAND	559606	145999
3708	Lead	7439-92-1	VERNITA BRIDGE 5	IU2/IU6	UPLAND	559606	145999
3709	Antimony	7440-36-0	VERNITA BRIDGE 1	Outside decision areas	UPLAND	558823	145536
3710	Antimony	7440-36-0	VERNITA BRIDGE 1	Outside decision areas	UPLAND	558823	145536
3711	Antimony	7440-36-0	VERNITA BRIDGE 1	Outside decision areas	UPLAND	558823	145536
3712	Antimony	7440-36-0	VERNITA BRIDGE 2	Outside decision areas	UPLAND	558844	145558
3713	Antimony	7440-36-0	VERNITA BRIDGE 2	Outside decision areas	UPLAND	558844	145558
3714	Antimony	7440-36-0	VERNITA BRIDGE 2	Outside decision areas	UPLAND	558844	145558
3715	Antimony	7440-36-0	VERNITA BRIDGE 3	IU2/IU6	UPLAND	559089	145707
3716	Antimony	7440-36-0	VERNITA BRIDGE 3	IU2/IU6	UPLAND	559089	145707
3717	Antimony	7440-36-0	VERNITA BRIDGE 3	IU2/IU6	UPLAND	559089	145707
3718	Antimony	7440-36-0	VERNITA BRIDGE 3	IU2/IU6	UPLAND	559089	145707
3719	Antimony	7440-36-0	VERNITA BRIDGE 3	IU2/IU6	UPLAND	559089	145707
3720	Antimony	7440-36-0	VERNITA BRIDGE 4	IU2/IU6	UPLAND	559347	145849
3721	Antimony	7440-36-0	VERNITA BRIDGE 4	IU2/IU6	UPLAND	559347	145849
3722	Antimony	7440-36-0	VERNITA BRIDGE 4	IU2/IU6	UPLAND	559347	145849
3723	Antimony	7440-36-0	VERNITA BRIDGE 4	IU2/IU6	UPLAND	559347	145849
3724	Antimony	7440-36-0	VERNITA BRIDGE 5	IU2/IU6	UPLAND	559606	145999
3725	Antimony	7440-36-0	VERNITA BRIDGE 5	IU2/IU6	UPLAND	559606	145999
3726	Antimony	7440-36-0	VERNITA BRIDGE 5	IU2/IU6	UPLAND	559606	145999
3727	Antimony	7440-36-0	VERNITA BRIDGE 5	IU2/IU6	UPLAND	559606	145999
3728	Selenium	7782-49-2	RCBRA 100-F-2	IU2/IU6	UPLAND	579728.068	147001.117
3729	Selenium	7782-49-2	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
3730	Selenium	7782-49-2	RCBRA JA JONES	300	UPLAND	593874.58	120013.908
3731	Selenium	7782-49-2	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
3732	Selenium	7782-49-2	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
3733	Selenium	7782-49-2	VERNITA BRIDGE 2	Outside decision areas	UPLAND	558844	145558
3734	Selenium	7782-49-2	VERNITA BRIDGE 2	Outside decision areas	UPLAND	558844	145558
3735	Selenium	7782-49-2	VERNITA BRIDGE 3	IU2/IU6	UPLAND	559089	145707
3736	Selenium	7782-49-2	VERNITA BRIDGE 5	IU2/IU6	UPLAND	559606	145999
3737	Selenium	7782-49-2	VERNITA BRIDGE 5	IU2/IU6	UPLAND	559606	145999
3738	Silicon	7440-21-3	RCBRA 100-D-48	D/H	UPLAND	573841.527	151914.538
3739	Silicon	7440-21-3	RCBRA 100-D-49	D/H	UPLAND	573938.06	151944.123
3740	Silicon	7440-21-3	RCBRA 100-F-2	IU2/IU6	UPLAND	579728.068	147001.117
3741	Silicon	7440-21-3	RCBRA 116-DR-1&2	D/H	UPLAND	574007.817	152246.748
3742	Silicon	7440-21-3	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
3743	Silicon	7440-21-3	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
3705	8/24/2004	B1B5V1	SOIL and BIOTA	Discrete	48.85	mg/kg	PLANT
3706	8/24/2004	B1B5W5	SOIL and BIOTA	Discrete	51.7	mg/kg	PLANT
3707	8/24/2004	B1B5W4	SOIL and BIOTA	Discrete	51.7	mg/kg	PLANT
3708	8/24/2004	B1B5W6	SOIL and BIOTA	Discrete	51.7	mg/kg	PLANT
3709	8/19/2004	B1B5N5	SOIL and BIOTA	Discrete	0.381	mg/kg	PLANT
3710	8/19/2004	B1B5N6	SOIL and BIOTA	Discrete	0.381	mg/kg	PLANT
3711	8/19/2004	B1B5N3	SOIL and BIOTA	Discrete	0.381	mg/kg	PLANT
3712	8/19/2004	B1B5P5	SOIL and BIOTA	Discrete	0.403	mg/kg	PLANT
3713	8/19/2004	B1B5P6	SOIL and BIOTA	Discrete	0.403	mg/kg	PLANT
3714	8/19/2004	B1B5P7	SOIL and BIOTA	Discrete	0.403	mg/kg	PLANT
3715	8/19/2004	B1B5R8	SOIL and BIOTA	Discrete	0.4225	mg/kg	PLANT
3716	8/19/2004	B1B5R7	SOIL and BIOTA	Discrete	0.4225	mg/kg	PLANT
3717	8/19/2004	B1B5R5	SOIL and BIOTA	Discrete	0.4225	mg/kg	PLANT
3718	8/20/2004	B1B5R9	SOIL and BIOTA	Discrete	0.4225	mg/kg	PLANT
3719	8/19/2004	B1B5R6	SOIL and BIOTA	Discrete	0.4225	mg/kg	PLANT
3720	8/24/2004	B1B5V0	SOIL and BIOTA	Discrete	0.4515	mg/kg	PLANT
3721	8/24/2004	B1B5T9	SOIL and BIOTA	Discrete	0.4515	mg/kg	PLANT
3722	8/24/2004	B1B5V3	SOIL and BIOTA	Discrete	0.4515	mg/kg	PLANT
3723	8/24/2004	B1B5V1	SOIL and BIOTA	Discrete	0.4515	mg/kg	PLANT
3724	8/24/2004	B1B5W3	SOIL and BIOTA	Discrete	0.5635	mg/kg	PLANT
3725	8/24/2004	B1B5W5	SOIL and BIOTA	Discrete	0.5635	mg/kg	PLANT
3726	8/24/2004	B1B5W6	SOIL and BIOTA	Discrete	0.5635	mg/kg	PLANT
3727	8/24/2004	B1B5W4	SOIL and BIOTA	Discrete	0.5635	mg/kg	PLANT
3728	5/10/2006	J11X61	SOIL and BIOTA	MIS	0.306	mg/kg	PLANT
3729	5/18/2006	J11XB0	SOIL and BIOTA	MIS-phyt	1.2	mg/kg	PLANT
3730	5/10/2006	J11X75	SOIL and BIOTA	MIS	0.73	mg/kg	PLANT
3731	5/9/2006	J11X01	SOIL and BIOTA	MIS	0.84	mg/kg	PLANT
3732	5/18/2006	J11XB1	SOIL and BIOTA	MIS-phyt	1.2	mg/kg	PLANT
3733	8/19/2004	B1B5P5	SOIL and BIOTA	Discrete	0.222	mg/kg	PLANT
3734	8/19/2004	B1B5P7	SOIL and BIOTA	Discrete	0.222	mg/kg	PLANT
3735	8/19/2004	B1B5R7	SOIL and BIOTA	Discrete	0.2505	mg/kg	PLANT
3736	8/24/2004	B1B5W5	SOIL and BIOTA	Discrete	0.446	mg/kg	PLANT
3737	8/24/2004	B1B5W6	SOIL and BIOTA	Discrete	0.446	mg/kg	PLANT
3738	5/18/2006	J11X42	SOIL and BIOTA	MIS	283	mg/kg	PLANT
3739	5/18/2006	J11X54	SOIL and BIOTA	MIS	272	mg/kg	PLANT
3740	5/10/2006	J11X61	SOIL and BIOTA	MIS	291	mg/kg	PLANT
3741	5/19/2006	J11X56	SOIL and BIOTA	MIS	279	mg/kg	PLANT
3742	5/16/2006	J11X48	SOIL and BIOTA	MIS	266	mg/kg	PLANT
3743	5/16/2006	J11X48	SOIL and BIOTA	MIS-phyt	197	mg/kg	PLANT

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
3705	SHOOTS	0.012096	mg/kg	X		PNNL
3706	SHOOTS	0.014238	mg/kg	X		PNNL
3707	SHOOTS	0.05061	mg/kg	X		PNNL
3708	SHOOTS	0.02247	mg/kg	X		PNNL
3709	SHOOTS	0.003045	mg/kg	CX		PNNL
3710	SHOOTS	0.003003	mg/kg	CX		PNNL
3711	SHOOTS	0.005187	mg/kg	CX		PNNL
3712	SHOOTS	0.001743	mg/kg	CX		PNNL
3713	SHOOTS	0.006657	mg/kg	CX		PNNL
3714	SHOOTS	0.003213	mg/kg	CX		PNNL
3715	SHOOTS	0.006552	mg/kg	CX		PNNL
3716	SHOOTS	0.003843	mg/kg	CX		PNNL
3717	SHOOTS	0.004326	mg/kg	CX		PNNL
3718	SHOOTS	0.002583	mg/kg	CX		PNNL
3719	SHOOTS	0.004347	mg/kg	CX		PNNL
3720	SHOOTS	0.007077	mg/kg	CX		PNNL
3721	SHOOTS	0.005901	mg/kg	CX		PNNL
3722	SHOOTS	0.003276	mg/kg	CX		PNNL
3723	SHOOTS	0.00315	mg/kg	CX		PNNL
3724	SHOOTS	0.003045	mg/kg	CX		PNNL
3725	SHOOTS	0.003171	mg/kg	CX		PNNL
3726	SHOOTS	0.003276	mg/kg	CX		PNNL
3727	SHOOTS	0.003822	mg/kg	CX		PNNL
3728	CURRENT YRS GROWTH	0.46	mg/kg			RCBRA
3729	CURRENT YRS GROWTH	1.1	mg/kg			RCBRA
3730	CURRENT YRS GROWTH	0.46	mg/kg			RCBRA
3731	CURRENT YRS GROWTH	0.64	mg/kg			RCBRA
3732	CURRENT YRS GROWTH	1.9	mg/kg			RCBRA
3733	SHOOTS	0.05019	mg/kg	X		PNNL
3734	SHOOTS	0.1386	mg/kg	X		PNNL
3735	SHOOTS	0.08106	mg/kg	X		PNNL
3736	SHOOTS	0.06069	mg/kg	X		PNNL
3737	SHOOTS	0.12831	mg/kg	X		PNNL
3738	CURRENT YRS GROWTH	708	mg/kg			RCBRA
3739	CURRENT YRS GROWTH	616	mg/kg			RCBRA
3740	CURRENT YRS GROWTH	135	mg/kg		J	RCBRA
3741	CURRENT YRS GROWTH	407	mg/kg			RCBRA
3742	CURRENT YRS GROWTH	356	mg/kg			RCBRA
3743	CURRENT YRS GROWTH	356	mg/kg			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
3744	Silicon	7440-21-3	RCBRA 116-N-3	N	UPLAND	571995.702	149793.039
3745	Silicon	7440-21-3	RCBRA 1607-D2:1	D/H	UPLAND	573823.924	152260.319
3746	Silicon	7440-21-3	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
3747	Silicon	7440-21-3	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
3748	Silicon	7440-21-3	RCBRA 2a Rip	BC	RIPARIAN	564618.501	145284.526
3749	Silicon	7440-21-3	RCBRA 2c Rip	K	RIPARIAN	567598.2	146210.159
3750	Silicon	7440-21-3	RCBRA 2f Rip	D/H	RIPARIAN	576222.844	154297.511
3751	Silicon	7440-21-3	RCBRA 2j Rip	IU2/IU6	RIPARIAN	579360.971	150092.048
3752	Silicon	7440-21-3	RCBRA 2l Rip	IU2/IU6	RIPARIAN	582341.212	146120.069
3753	Silicon	7440-21-3	RCBRA 300-49	300	UPLAND	594318.994	116830.934
3754	Silicon	7440-21-3	RCBRA 3b Rip	IU2/IU6	RIPARIAN	584961.205	141035.835
3755	Silicon	7440-21-3	RCBRA 4a Rip	IU2/IU6	RIPARIAN	589347.5	137480.985
3756	Silicon	7440-21-3	RCBRA 5c Rip	300	RIPARIAN	594509.985	124869.182
3757	Silicon	7440-21-3	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
3758	Silicon	7440-21-3	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
3759	Silicon	7440-21-3	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
3760	Silicon	7440-21-3	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
3761	Silicon	7440-21-3	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
3762	Silicon	7440-21-3	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
3763	Silicon	7440-21-3	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
3764	Silicon	7440-21-3	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
3765	Silicon	7440-21-3	RCBRA 600-181	IU2/IU6	UPLAND	578303.83	147316.698
3766	Silicon	7440-21-3	RCBRA 600-204	IU2/IU6	UPLAND	580128.485	144762.219
3767	Silicon	7440-21-3	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
3768	Silicon	7440-21-3	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
3769	Silicon	7440-21-3	RCBRA 600-23	IU2/IU6	UPLAND	585523.593	130481.377
3770	Silicon	7440-21-3	RCBRA 618-4	300	UPLAND	593954.946	117064.473
3771	Silicon	7440-21-3	RCBRA 628-1	IU2/IU6	UPLAND	577797.524	148745.681
3772	Silicon	7440-21-3	RCBRA Bev Ref 1 Rip	Outside decision areas	RIPARIAN	542428.846	167701.261
3773	Silicon	7440-21-3	RCBRA Bev Ref 2 Rip	Outside decision areas	RIPARIAN	541493.988	167808.357
3774	Silicon	7440-21-3	RCBRA JA JONES	300	UPLAND	593874.58	120013.908
3775	Silicon	7440-21-3	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
3776	Silicon	7440-21-3	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
3777	Silicon	7440-21-3	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
3778	Silicon	7440-21-3	RCBRA Pit 18	IU2/IU6	UPLAND	580697.058	145311.464
3779	Silicon	7440-21-3	RCBRA Pit 23	IU2/IU6	UPLAND	572381.012	144874.157
3780	Silicon	7440-21-3	RCBRA Pit 24	BC	UPLAND	563395.814	145119.007
3781	Silicon	7440-21-3	RCBRA Pit 9	300	UPLAND	592807.103	120587.7
3782	Silicon	7440-21-3	RCBRA R Ref 11	Outside decision areas	RIPARIAN	559400.735	146458.486

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
3744	5/19/2006	J11X46	SOIL and BIOTA	MIS	216	mg/kg	PLANT
3745	5/22/2006	J11X58	SOIL and BIOTA	MIS	256	mg/kg	PLANT
3746	5/12/2006	J11X44	SOIL and BIOTA	MIS	393	mg/kg	PLANT
3747	5/12/2006	J11X44	SOIL and BIOTA	MIS-phyt	123	mg/kg	PLANT
3748	5/23/2007	J15298	SOIL and BIOTA	MIS	230.13	mg/kg	PLANT
3749	5/21/2007	J152B8	SOIL and BIOTA	MIS	329	mg/kg	PLANT
3750	5/7/2007	J15295	SOIL and BIOTA	MIS	342	mg/kg	PLANT
3751	5/21/2007	J15296	SOIL and BIOTA	MIS	388	mg/kg	PLANT
3752	5/24/2007	J152B0	SOIL and BIOTA	MIS	225	mg/kg	PLANT
3753	4/26/2006	J11X52	SOIL and BIOTA	MIS	258	mg/kg	PLANT
3754	5/23/2007	J152B2	SOIL and BIOTA	MIS	315	mg/kg	PLANT
3755	5/24/2007	J152B6	SOIL and BIOTA	MIS	280	mg/kg	PLANT
3756	5/24/2007	J152B4	SOIL and BIOTA	MIS	203	mg/kg	PLANT
3757	5/12/2006	J11X84	SOIL and BIOTA	MIS	286	mg/kg	PLANT
3758	5/12/2006	J11X84	SOIL and BIOTA	MIS-phyt	173	mg/kg	PLANT
3759	5/12/2006	J11X77	SOIL and BIOTA	MIS	246	mg/kg	PLANT
3760	5/12/2006	J11X77	SOIL and BIOTA	MIS-phyt	172	mg/kg	PLANT
3761	5/16/2006	J11X79	SOIL and BIOTA	MIS	255	mg/kg	PLANT
3762	5/16/2006	J11X79	SOIL and BIOTA	MIS-phyt	164	mg/kg	PLANT
3763	5/16/2006	J11X90	SOIL and BIOTA	MIS	266	mg/kg	PLANT
3764	5/16/2006	J11X90	SOIL and BIOTA	MIS-phyt	144	mg/kg	PLANT
3765	5/18/2006	J11X86	SOIL and BIOTA	MIS	238	mg/kg	PLANT
3766	5/18/2006	J11X81	SOIL and BIOTA	MIS	288	mg/kg	PLANT
3767	5/15/2006	J11X82	SOIL and BIOTA	MIS	361	mg/kg	PLANT
3768	5/15/2006	J11X82	SOIL and BIOTA	MIS-phyt	239	mg/kg	PLANT
3769	5/12/2006	J11X72	SOIL and BIOTA	MIS	194	mg/kg	PLANT
3770	5/12/2006	J11X51	SOIL and BIOTA	MIS	235	mg/kg	PLANT
3771	5/12/2006	J11X89	SOIL and BIOTA	MIS	320	mg/kg	PLANT
3772	5/10/2007	J15289	SOIL and BIOTA	MIS	330	mg/kg	PLANT
3773	5/8/2007	J15291	SOIL and BIOTA	MIS	278	mg/kg	PLANT
3774	5/10/2006	J11X74	SOIL and BIOTA	MIS	380	mg/kg	PLANT
3775	5/18/2006	J11X98	SOIL and BIOTA	MIS	391	mg/kg	PLANT
3776	5/18/2006	J11X98	SOIL and BIOTA	MIS-phyt	181	mg/kg	PLANT
3777	5/15/2006	J11X66	SOIL and BIOTA	MIS	199	mg/kg	PLANT
3778	5/18/2006	J11X69	SOIL and BIOTA	MIS	266	mg/kg	PLANT
3779	5/22/2006	J11X63	SOIL and BIOTA	MIS	272	mg/kg	PLANT
3780	5/19/2006	J11X70	SOIL and BIOTA	MIS	292	mg/kg	PLANT
3781	5/12/2006	J11X64	SOIL and BIOTA	MIS	268	mg/kg	PLANT
3782	5/9/2006	J11WY8	SOIL and BIOTA	MIS	305	mg/kg	PLANT

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
3744	CURRENT YRS GROWTH	760	mg/kg			RCBRA
3745	CURRENT YRS GROWTH	522	mg/kg			RCBRA
3746	CURRENT YRS GROWTH	170	mg/kg		J	RCBRA
3747	CURRENT YRS GROWTH	170	mg/kg		J	RCBRA
3748	CURRENT YRS GROWTH	131	mg/kg	C	J	RCBRA
3749	CURRENT YRS GROWTH	277	mg/kg	C	J	RCBRA
3750	CURRENT YRS GROWTH	202	mg/kg	C	J	RCBRA
3751	CURRENT YRS GROWTH	250	mg/kg	C	J	RCBRA
3752	CURRENT YRS GROWTH	131	mg/kg	C	J	RCBRA
3753	CURRENT YRS GROWTH	502	mg/kg			RCBRA
3754	CURRENT YRS GROWTH	187	mg/kg	C	J	RCBRA
3755	CURRENT YRS GROWTH	118	mg/kg	C	J	RCBRA
3756	CURRENT YRS GROWTH	247	mg/kg	C	J	RCBRA
3757	CURRENT YRS GROWTH	162	mg/kg		J	RCBRA
3758	CURRENT YRS GROWTH	162	mg/kg		J	RCBRA
3759	CURRENT YRS GROWTH	210	mg/kg		J	RCBRA
3760	CURRENT YRS GROWTH	210	mg/kg		J	RCBRA
3761	CURRENT YRS GROWTH	393	mg/kg			RCBRA
3762	CURRENT YRS GROWTH	393	mg/kg			RCBRA
3763	CURRENT YRS GROWTH	471	mg/kg			RCBRA
3764	CURRENT YRS GROWTH	471	mg/kg			RCBRA
3765	CURRENT YRS GROWTH	754	mg/kg			RCBRA
3766	CURRENT YRS GROWTH	556	mg/kg			RCBRA
3767	CURRENT YRS GROWTH	348	mg/kg			RCBRA
3768	CURRENT YRS GROWTH	348	mg/kg			RCBRA
3769	CURRENT YRS GROWTH	73	mg/kg		J	RCBRA
3770	CURRENT YRS GROWTH	250	mg/kg		J	RCBRA
3771	CURRENT YRS GROWTH	225	mg/kg		J	RCBRA
3772	CURRENT YRS GROWTH	185	mg/kg	C	J	RCBRA
3773	CURRENT YRS GROWTH	231	mg/kg	C	J	RCBRA
3774	CURRENT YRS GROWTH	141	mg/kg		J	RCBRA
3775	CURRENT YRS GROWTH	610	mg/kg			RCBRA
3776	CURRENT YRS GROWTH	610	mg/kg			RCBRA
3777	CURRENT YRS GROWTH	617	mg/kg			RCBRA
3778	CURRENT YRS GROWTH	495	mg/kg			RCBRA
3779	CURRENT YRS GROWTH	605	mg/kg			RCBRA
3780	CURRENT YRS GROWTH	693	mg/kg			RCBRA
3781	CURRENT YRS GROWTH	244	mg/kg		J	RCBRA
3782	CURRENT YRS GROWTH	167	mg/kg		J	RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
3783	Silicon	7440-21-3	RCBRA R Ref 12	IU2/IU6	RIPARIAN	559201.908	145747.542
3784	Silicon	7440-21-3	RCBRA R Ref 13	Outside decision areas	RIPARIAN	558572.809	145345.115
3785	Silicon	7440-21-3	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
3786	Silicon	7440-21-3	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
3787	Silicon	7440-21-3	RCBRA R Ref 16	Outside decision areas	RIPARIAN	557650.029	144826.748
3788	Silicon	7440-21-3	RCBRA Rip 1	D/H	RIPARIAN	577251.869	153659.195
3789	Silicon	7440-21-3	RCBRA Rip 10	D/H	RIPARIAN	573987.873	153082.19
3790	Silicon	7440-21-3	RCBRA Rip 2	D/H	RIPARIAN	573603.219	152471.6
3791	Silicon	7440-21-3	RCBRA Rip 3	D/H	RIPARIAN	572639.65	151677.812
3792	Silicon	7440-21-3	RCBRA Rip 4	N	RIPARIAN	570558.596	148981.547
3793	Silicon	7440-21-3	RCBRA Rip 5	K	RIPARIAN	569141.025	147521.561
3794	Silicon	7440-21-3	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
3795	Silicon	7440-21-3	RCBRA Rip 7	IU2/IU6	RIPARIAN	581326.914	147825.17
3796	Silicon	7440-21-3	RCBRA Rip 8	D/H	RIPARIAN	578698.584	152233.645
3797	Silicon	7440-21-3	RCBRA Rip 9	D/H	RIPARIAN	578153.643	152801.452
3798	Silicon	7440-21-3	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
3799	Silicon	7440-21-3	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
3800	Silicon	7440-21-3	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
3801	Silicon	7440-21-3	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
3802	Silicon	7440-21-3	RCBRA Yak Rdg 2	Outside decision areas	UPLAND	559031.557	135576.407
3803	Silicon	7440-21-3	RCBRA 100-D-48	D/H	UPLAND	573841.527	151914.538
3804	Silicon	7440-21-3	RCBRA 100-D-49	D/H	UPLAND	573938.06	151944.123
3805	Silicon	7440-21-3	RCBRA 100-F-2	IU2/IU6	UPLAND	579728.068	147001.117
3806	Silicon	7440-21-3	RCBRA 116-DR-1&2	D/H	UPLAND	574007.817	152246.748
3807	Silicon	7440-21-3	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
3808	Silicon	7440-21-3	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
3809	Silicon	7440-21-3	RCBRA 116-N-3	N	UPLAND	571995.702	149793.039
3810	Silicon	7440-21-3	RCBRA 1607-D2:1	D/H	UPLAND	573823.924	152260.319
3811	Silicon	7440-21-3	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
3812	Silicon	7440-21-3	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
3813	Silicon	7440-21-3	RCBRA 300-49	300	UPLAND	594318.994	116830.934
3814	Silicon	7440-21-3	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
3815	Silicon	7440-21-3	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
3816	Silicon	7440-21-3	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
3817	Silicon	7440-21-3	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
3818	Silicon	7440-21-3	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
3819	Silicon	7440-21-3	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
3820	Silicon	7440-21-3	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
3821	Silicon	7440-21-3	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
3783	5/9/2006	J11WX0	SOIL and BIOTA	MIS	323	mg/kg	PLANT
3784	8/10/2006	J11WY9	SOIL and BIOTA	MIS	290	mg/kg	PLANT
3785	5/9/2006	J11X02	SOIL and BIOTA	MIS	292	mg/kg	PLANT
3786	5/8/2007	J15293	SOIL and BIOTA	MIS	292	mg/kg	PLANT
3787	5/9/2006	J11X04	SOIL and BIOTA	MIS	296	mg/kg	PLANT
3788	5/16/2006	J11WX1	SOIL and BIOTA	MIS	408	mg/kg	PLANT
3789	5/9/2006	J11WY6	SOIL and BIOTA	MIS	372	mg/kg	PLANT
3790	5/19/2006	J11WX4	SOIL and BIOTA	MIS	312	mg/kg	PLANT
3791	5/9/2006	J11WX6	SOIL and BIOTA	MIS	170	mg/kg	PLANT
3792	5/9/2006	J11WW6	SOIL and BIOTA	MIS	328	mg/kg	PLANT
3793	5/9/2006	J11WW8	SOIL and BIOTA	MIS	275	mg/kg	PLANT
3794	5/22/2006	J11XP0	SOIL and BIOTA	MIS	289	mg/kg	PLANT
3795	5/9/2006	J11WY0	SOIL and BIOTA	MIS	298	mg/kg	PLANT
3796	5/16/2006	J11WY2	SOIL and BIOTA	MIS	376	mg/kg	PLANT
3797	5/16/2006	J11WY4	SOIL and BIOTA	MIS	336	mg/kg	PLANT
3798	5/18/2006	J11XB0	SOIL and BIOTA	MIS	270	mg/kg	PLANT
3799	5/18/2006	J11XB0	SOIL and BIOTA	MIS-phyt	145	mg/kg	PLANT
3800	5/15/2006	J11X96	SOIL and BIOTA	MIS	357	mg/kg	PLANT
3801	5/15/2006	J11X96	SOIL and BIOTA	MIS-phyt	126	mg/kg	PLANT
3802	5/16/2006	J11X94	SOIL and BIOTA	MIS	386	mg/kg	PLANT
3803	5/18/2006	J11X43	SOIL and BIOTA	MIS	283	mg/kg	PLANT
3804	5/18/2006	J11X55	SOIL and BIOTA	MIS	272	mg/kg	PLANT
3805	5/10/2006	J11X60	SOIL and BIOTA	MIS	291	mg/kg	PLANT
3806	5/19/2006	J11X57	SOIL and BIOTA	MIS	279	mg/kg	PLANT
3807	5/16/2006	J11X49	SOIL and BIOTA	MIS	266	mg/kg	PLANT
3808	5/16/2006	J11X49	SOIL and BIOTA	MIS-phyt	197	mg/kg	PLANT
3809	5/19/2006	J11X47	SOIL and BIOTA	MIS	216	mg/kg	PLANT
3810	5/22/2006	J11X59	SOIL and BIOTA	MIS	256	mg/kg	PLANT
3811	5/12/2006	J11X45	SOIL and BIOTA	MIS	393	mg/kg	PLANT
3812	5/12/2006	J11X45	SOIL and BIOTA	MIS-phyt	123	mg/kg	PLANT
3813	4/26/2006	J11X53	SOIL and BIOTA	MIS	258	mg/kg	PLANT
3814	5/12/2006	J11X85	SOIL and BIOTA	MIS	286	mg/kg	PLANT
3815	5/12/2006	J11X85	SOIL and BIOTA	MIS-phyt	173	mg/kg	PLANT
3816	5/12/2006	J11X76	SOIL and BIOTA	MIS	246	mg/kg	PLANT
3817	5/12/2006	J11X76	SOIL and BIOTA	MIS-phyt	172	mg/kg	PLANT
3818	5/16/2006	J11X78	SOIL and BIOTA	MIS	255	mg/kg	PLANT
3819	5/16/2006	J11X78	SOIL and BIOTA	MIS-phyt	164	mg/kg	PLANT
3820	5/16/2006	J11X91	SOIL and BIOTA	MIS	266	mg/kg	PLANT
3821	5/16/2006	J11X91	SOIL and BIOTA	MIS-phyt	144	mg/kg	PLANT

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
3783	CURRENT YRS GROWTH	259	mg/kg		J	RCBRA
3784	CURRENT YRS GROWTH	244	mg/kg		J	RCBRA
3785	CURRENT YRS GROWTH	183	mg/kg		J	RCBRA
3786	CURRENT YRS GROWTH	437	mg/kg	C	J	RCBRA
3787	CURRENT YRS GROWTH	222	mg/kg		J	RCBRA
3788	CURRENT YRS GROWTH	812	mg/kg			RCBRA
3789	CURRENT YRS GROWTH	182	mg/kg		J	RCBRA
3790	CURRENT YRS GROWTH	613	mg/kg			RCBRA
3791	CURRENT YRS GROWTH	232	mg/kg		J	RCBRA
3792	CURRENT YRS GROWTH	142	mg/kg		J	RCBRA
3793	CURRENT YRS GROWTH	224	mg/kg		J	RCBRA
3794	CURRENT YRS GROWTH	832	mg/kg			RCBRA
3795	CURRENT YRS GROWTH	213	mg/kg		J	RCBRA
3796	CURRENT YRS GROWTH	569	mg/kg			RCBRA
3797	CURRENT YRS GROWTH	828	mg/kg			RCBRA
3798	CURRENT YRS GROWTH	607	mg/kg			RCBRA
3799	CURRENT YRS GROWTH	607	mg/kg			RCBRA
3800	CURRENT YRS GROWTH	558	mg/kg			RCBRA
3801	CURRENT YRS GROWTH	558	mg/kg			RCBRA
3802	CURRENT YRS GROWTH	389	mg/kg			RCBRA
3803	CURRENT YRS GROWTH	192	mg/kg			RCBRA
3804	CURRENT YRS GROWTH	139	mg/kg			RCBRA
3805	CURRENT YRS GROWTH	31	mg/kg		J	RCBRA
3806	CURRENT YRS GROWTH	219	mg/kg			RCBRA
3807	CURRENT YRS GROWTH	126	mg/kg			RCBRA
3808	CURRENT YRS GROWTH	126	mg/kg			RCBRA
3809	CURRENT YRS GROWTH	293	mg/kg			RCBRA
3810	CURRENT YRS GROWTH	254	mg/kg			RCBRA
3811	CURRENT YRS GROWTH	63.7	mg/kg		J	RCBRA
3812	CURRENT YRS GROWTH	63.7	mg/kg		J	RCBRA
3813	CURRENT YRS GROWTH	115	mg/kg			RCBRA
3814	CURRENT YRS GROWTH	34.7	mg/kg		J	RCBRA
3815	CURRENT YRS GROWTH	34.7	mg/kg		J	RCBRA
3816	CURRENT YRS GROWTH	37.6	mg/kg		J	RCBRA
3817	CURRENT YRS GROWTH	37.6	mg/kg		J	RCBRA
3818	CURRENT YRS GROWTH	140	mg/kg			RCBRA
3819	CURRENT YRS GROWTH	140	mg/kg			RCBRA
3820	CURRENT YRS GROWTH	238	mg/kg			RCBRA
3821	CURRENT YRS GROWTH	238	mg/kg			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
3822	Silicon	7440-21-3	RCBRA 600-181	IU2/IU6	UPLAND	578303.83	147316.698
3823	Silicon	7440-21-3	RCBRA 600-204	IU2/IU6	UPLAND	580128.485	144762.219
3824	Silicon	7440-21-3	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
3825	Silicon	7440-21-3	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
3826	Silicon	7440-21-3	RCBRA 600-23	IU2/IU6	UPLAND	585523.593	130481.377
3827	Silicon	7440-21-3	RCBRA 618-4	300	UPLAND	593954.946	117064.473
3828	Silicon	7440-21-3	RCBRA 628-1	IU2/IU6	UPLAND	577797.524	148745.681
3829	Silicon	7440-21-3	RCBRA JA JONES	300	UPLAND	593874.58	120013.908
3830	Silicon	7440-21-3	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
3831	Silicon	7440-21-3	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
3832	Silicon	7440-21-3	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
3833	Silicon	7440-21-3	RCBRA Pit 18	IU2/IU6	UPLAND	580697.058	145311.464
3834	Silicon	7440-21-3	RCBRA Pit 23	IU2/IU6	UPLAND	572381.012	144874.157
3835	Silicon	7440-21-3	RCBRA Pit 24	BC	UPLAND	563395.814	145119.007
3836	Silicon	7440-21-3	RCBRA Pit 9	300	UPLAND	592807.103	120587.7
3837	Silicon	7440-21-3	RCBRA R Ref 11	Outside decision areas	RIPARIAN	559400.735	146458.486
3838	Silicon	7440-21-3	RCBRA R Ref 12	IU2/IU6	RIPARIAN	559201.908	145747.542
3839	Silicon	7440-21-3	RCBRA R Ref 13	Outside decision areas	RIPARIAN	558572.809	145345.115
3840	Silicon	7440-21-3	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
3841	Silicon	7440-21-3	RCBRA R Ref 16	Outside decision areas	RIPARIAN	557650.029	144826.748
3842	Silicon	7440-21-3	RCBRA Rip 1	D/H	RIPARIAN	577251.869	153659.195
3843	Silicon	7440-21-3	RCBRA Rip 10	D/H	RIPARIAN	573987.873	153082.19
3844	Silicon	7440-21-3	RCBRA Rip 2	D/H	RIPARIAN	573603.219	152471.6
3845	Silicon	7440-21-3	RCBRA Rip 3	D/H	RIPARIAN	572639.65	151677.812
3846	Silicon	7440-21-3	RCBRA Rip 4	N	RIPARIAN	570558.596	148981.547
3847	Silicon	7440-21-3	RCBRA Rip 5	K	RIPARIAN	569141.025	147521.561
3848	Silicon	7440-21-3	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
3849	Silicon	7440-21-3	RCBRA Rip 7	IU2/IU6	RIPARIAN	581326.914	147825.17
3850	Silicon	7440-21-3	RCBRA Rip 8	D/H	RIPARIAN	578698.584	152233.645
3851	Silicon	7440-21-3	RCBRA Rip 9	D/H	RIPARIAN	578153.643	152801.452
3852	Silicon	7440-21-3	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
3853	Silicon	7440-21-3	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
3854	Silicon	7440-21-3	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
3855	Silicon	7440-21-3	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
3856	Silicon	7440-21-3	RCBRA Yak Rdg 2	Outside decision areas	UPLAND	559031.557	135576.407
3857	Silicon	7440-21-3	RCBRA 2a Rip	BC	RIPARIAN	564618.501	145284.526
3858	Silicon	7440-21-3	RCBRA 2c Rip	K	RIPARIAN	567598.2	146210.159
3859	Silicon	7440-21-3	RCBRA 2f Rip	D/H	RIPARIAN	576222.844	154297.511
3860	Silicon	7440-21-3	RCBRA 2j Rip	IU2/IU6	RIPARIAN	579360.971	150092.048

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
3822	5/18/2006	J11X87	SOIL and BIOTA	MIS	238	mg/kg	PLANT
3823	5/18/2006	J11X80	SOIL and BIOTA	MIS	288	mg/kg	PLANT
3824	5/15/2006	J11X83	SOIL and BIOTA	MIS	361	mg/kg	PLANT
3825	5/15/2006	J11X83	SOIL and BIOTA	MIS-phyt	239	mg/kg	PLANT
3826	5/12/2006	J11X73	SOIL and BIOTA	MIS	194	mg/kg	PLANT
3827	5/12/2006	J11X50	SOIL and BIOTA	MIS	235	mg/kg	PLANT
3828	5/12/2006	J11X88	SOIL and BIOTA	MIS	320	mg/kg	PLANT
3829	5/10/2006	J11X75	SOIL and BIOTA	MIS	380	mg/kg	PLANT
3830	5/18/2006	J11X99	SOIL and BIOTA	MIS	391	mg/kg	PLANT
3831	5/18/2006	J11X99	SOIL and BIOTA	MIS-phyt	181	mg/kg	PLANT
3832	5/15/2006	J11X67	SOIL and BIOTA	MIS	199	mg/kg	PLANT
3833	5/18/2006	J11X68	SOIL and BIOTA	MIS	266	mg/kg	PLANT
3834	5/22/2006	J11X62	SOIL and BIOTA	MIS	272	mg/kg	PLANT
3835	5/19/2006	J11X71	SOIL and BIOTA	MIS	292	mg/kg	PLANT
3836	5/12/2006	J11X65	SOIL and BIOTA	MIS	268	mg/kg	PLANT
3837	5/9/2006	J11WY7	SOIL and BIOTA	MIS	305	mg/kg	PLANT
3838	5/9/2006	J11WW9	SOIL and BIOTA	MIS	323	mg/kg	PLANT
3839	8/10/2006	J11X00	SOIL and BIOTA	MIS	290	mg/kg	PLANT
3840	5/9/2006	J11X01	SOIL and BIOTA	MIS	292	mg/kg	PLANT
3841	5/9/2006	J11X03	SOIL and BIOTA	MIS	296	mg/kg	PLANT
3842	5/16/2006	J11WX2	SOIL and BIOTA	MIS	408	mg/kg	PLANT
3843	5/9/2006	J11WY5	SOIL and BIOTA	MIS	372	mg/kg	PLANT
3844	5/19/2006	J11WX3	SOIL and BIOTA	MIS	312	mg/kg	PLANT
3845	5/9/2006	J11WX5	SOIL and BIOTA	MIS	170	mg/kg	PLANT
3846	5/9/2006	J11WW5	SOIL and BIOTA	MIS	328	mg/kg	PLANT
3847	5/9/2006	J11WW7	SOIL and BIOTA	MIS	275	mg/kg	PLANT
3848	5/22/2006	J11WX7	SOIL and BIOTA	MIS	289	mg/kg	PLANT
3849	5/9/2006	J11WX9	SOIL and BIOTA	MIS	298	mg/kg	PLANT
3850	5/16/2006	J11WY1	SOIL and BIOTA	MIS	376	mg/kg	PLANT
3851	5/16/2006	J11WY3	SOIL and BIOTA	MIS	336	mg/kg	PLANT
3852	5/18/2006	J11XB1	SOIL and BIOTA	MIS	270	mg/kg	PLANT
3853	5/18/2006	J11XB1	SOIL and BIOTA	MIS-phyt	145	mg/kg	PLANT
3854	5/15/2006	J11X97	SOIL and BIOTA	MIS	357	mg/kg	PLANT
3855	5/15/2006	J11X97	SOIL and BIOTA	MIS-phyt	126	mg/kg	PLANT
3856	5/16/2006	J11X95	SOIL and BIOTA	MIS	386	mg/kg	PLANT
3857	5/23/2007	J15299	SOIL and BIOTA	MIS	230.13	mg/kg	PLANT
3858	5/21/2007	J152B9	SOIL and BIOTA	MIS	329	mg/kg	PLANT
3859	5/7/2007	J15294	SOIL and BIOTA	MIS	342	mg/kg	PLANT
3860	5/21/2007	J15297	SOIL and BIOTA	MIS	388	mg/kg	PLANT

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
3822	CURRENT YRS GROWTH	173	mg/kg			RCBRA
3823	CURRENT YRS GROWTH	219	mg/kg			RCBRA
3824	CURRENT YRS GROWTH	120	mg/kg			RCBRA
3825	CURRENT YRS GROWTH	120	mg/kg			RCBRA
3826	CURRENT YRS GROWTH	281	mg/kg		J	RCBRA
3827	CURRENT YRS GROWTH	27	mg/kg		J	RCBRA
3828	CURRENT YRS GROWTH	32.2	mg/kg		J	RCBRA
3829	CURRENT YRS GROWTH	92.5	mg/kg		J	RCBRA
3830	CURRENT YRS GROWTH	94.5	mg/kg			RCBRA
3831	CURRENT YRS GROWTH	94.5	mg/kg			RCBRA
3832	CURRENT YRS GROWTH	136	mg/kg			RCBRA
3833	CURRENT YRS GROWTH	200	mg/kg			RCBRA
3834	CURRENT YRS GROWTH	227	mg/kg			RCBRA
3835	CURRENT YRS GROWTH	254	mg/kg			RCBRA
3836	CURRENT YRS GROWTH	47.3	mg/kg		J	RCBRA
3837	CURRENT YRS GROWTH	72.1	mg/kg		J	RCBRA
3838	CURRENT YRS GROWTH	84.1	mg/kg		J	RCBRA
3839	CURRENT YRS GROWTH	163	mg/kg		J	RCBRA
3840	CURRENT YRS GROWTH	74	mg/kg		J	RCBRA
3841	CURRENT YRS GROWTH	107	mg/kg		J	RCBRA
3842	CURRENT YRS GROWTH	66.5	mg/kg			RCBRA
3843	CURRENT YRS GROWTH	85.3	mg/kg		J	RCBRA
3844	CURRENT YRS GROWTH	407	mg/kg			RCBRA
3845	CURRENT YRS GROWTH	94.1	mg/kg		J	RCBRA
3846	CURRENT YRS GROWTH	95.2	mg/kg		J	RCBRA
3847	CURRENT YRS GROWTH	102	mg/kg		J	RCBRA
3848	CURRENT YRS GROWTH	302	mg/kg			RCBRA
3849	CURRENT YRS GROWTH	103	mg/kg		J	RCBRA
3850	CURRENT YRS GROWTH	75.5	mg/kg			RCBRA
3851	CURRENT YRS GROWTH	404	mg/kg			RCBRA
3852	CURRENT YRS GROWTH	78.3	mg/kg			RCBRA
3853	CURRENT YRS GROWTH	78.3	mg/kg			RCBRA
3854	CURRENT YRS GROWTH	70.8	mg/kg			RCBRA
3855	CURRENT YRS GROWTH	70.8	mg/kg			RCBRA
3856	CURRENT YRS GROWTH	68.8	mg/kg			RCBRA
3857	CURRENT YRS GROWTH	83.4	mg/kg	C	J	RCBRA
3858	CURRENT YRS GROWTH	63	mg/kg	C	J	RCBRA
3859	CURRENT YRS GROWTH	87.3	mg/kg	C	J	RCBRA
3860	CURRENT YRS GROWTH	84.5	mg/kg	C	J	RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
3861	Silicon	7440-21-3	RCBRA 2l Rip	IU2/IU6	RIPARIAN	582341.212	146120.069
3862	Silicon	7440-21-3	RCBRA 3b Rip	IU2/IU6	RIPARIAN	584961.205	141035.835
3863	Silicon	7440-21-3	RCBRA 4a Rip	IU2/IU6	RIPARIAN	589347.5	137480.985
3864	Silicon	7440-21-3	RCBRA 5c Rip	300	RIPARIAN	594509.985	124869.182
3865	Silicon	7440-21-3	RCBRA Bev Ref 1 Rip	Outside decision areas	RIPARIAN	542428.846	167701.261
3866	Silicon	7440-21-3	RCBRA Bev Ref 2 Rip	Outside decision areas	RIPARIAN	541493.988	167808.357
3867	Silicon	7440-21-3	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
3868	Strontium [elemental]	7440-24-6	RCBRA 100-D-48	D/H	UPLAND	573841.527	151914.538
3869	Strontium [elemental]	7440-24-6	RCBRA 100-D-49	D/H	UPLAND	573938.06	151944.123
3870	Strontium [elemental]	7440-24-6	RCBRA 100-F-2	IU2/IU6	UPLAND	579728.068	147001.117
3871	Strontium [elemental]	7440-24-6	RCBRA 116-DR-1&2	D/H	UPLAND	574007.817	152246.748
3872	Strontium [elemental]	7440-24-6	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
3873	Strontium [elemental]	7440-24-6	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
3874	Strontium [elemental]	7440-24-6	RCBRA 116-N-3	N	UPLAND	571995.702	149793.039
3875	Strontium [elemental]	7440-24-6	RCBRA 1607-D2:1	D/H	UPLAND	573823.924	152260.319
3876	Strontium [elemental]	7440-24-6	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
3877	Strontium [elemental]	7440-24-6	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
3878	Strontium [elemental]	7440-24-6	RCBRA 2a Rip	BC	RIPARIAN	564618.501	145284.526
3879	Strontium [elemental]	7440-24-6	RCBRA 2c Rip	K	RIPARIAN	567598.2	146210.159
3880	Strontium [elemental]	7440-24-6	RCBRA 2f Rip	D/H	RIPARIAN	576222.844	154297.511
3881	Strontium [elemental]	7440-24-6	RCBRA 2j Rip	IU2/IU6	RIPARIAN	579360.971	150092.048
3882	Strontium [elemental]	7440-24-6	RCBRA 2l Rip	IU2/IU6	RIPARIAN	582341.212	146120.069
3883	Strontium [elemental]	7440-24-6	RCBRA 300-49	300	UPLAND	594318.994	116830.934
3884	Strontium [elemental]	7440-24-6	RCBRA 3b Rip	IU2/IU6	RIPARIAN	584961.205	141035.835
3885	Strontium [elemental]	7440-24-6	RCBRA 4a Rip	IU2/IU6	RIPARIAN	589347.5	137480.985
3886	Strontium [elemental]	7440-24-6	RCBRA 5c Rip	300	RIPARIAN	594509.985	124869.182
3887	Strontium [elemental]	7440-24-6	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
3888	Strontium [elemental]	7440-24-6	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
3889	Strontium [elemental]	7440-24-6	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
3890	Strontium [elemental]	7440-24-6	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
3891	Strontium [elemental]	7440-24-6	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
3892	Strontium [elemental]	7440-24-6	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
3893	Strontium [elemental]	7440-24-6	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
3894	Strontium [elemental]	7440-24-6	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
3895	Strontium [elemental]	7440-24-6	RCBRA 600-181	IU2/IU6	UPLAND	578303.83	147316.698
3896	Strontium [elemental]	7440-24-6	RCBRA 600-204	IU2/IU6	UPLAND	580128.485	144762.219
3897	Strontium [elemental]	7440-24-6	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
3898	Strontium [elemental]	7440-24-6	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
3899	Strontium [elemental]	7440-24-6	RCBRA 600-23	IU2/IU6	UPLAND	585523.593	130481.377

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
3861	5/24/2007	J152B1	SOIL and BIOTA	MIS	225	mg/kg	PLANT
3862	5/23/2007	J152B3	SOIL and BIOTA	MIS	315	mg/kg	PLANT
3863	5/24/2007	J152B7	SOIL and BIOTA	MIS	280	mg/kg	PLANT
3864	5/24/2007	J152B5	SOIL and BIOTA	MIS	203	mg/kg	PLANT
3865	5/10/2007	J15288	SOIL and BIOTA	MIS	330	mg/kg	PLANT
3866	5/8/2007	J15290	SOIL and BIOTA	MIS	278	mg/kg	PLANT
3867	5/8/2007	J15292	SOIL and BIOTA	MIS	292	mg/kg	PLANT
3868	5/18/2006	J11X42	SOIL and BIOTA	MIS	29.7	mg/kg	PLANT
3869	5/18/2006	J11X54	SOIL and BIOTA	MIS	31.4	mg/kg	PLANT
3870	5/10/2006	J11X61	SOIL and BIOTA	MIS	38.9	mg/kg	PLANT
3871	5/19/2006	J11X56	SOIL and BIOTA	MIS	24.7	mg/kg	PLANT
3872	5/16/2006	J11X48	SOIL and BIOTA	MIS	27.7	mg/kg	PLANT
3873	5/16/2006	J11X48	SOIL and BIOTA	MIS-phyt	26.9	mg/kg	PLANT
3874	5/19/2006	J11X46	SOIL and BIOTA	MIS	27.9	mg/kg	PLANT
3875	5/22/2006	J11X58	SOIL and BIOTA	MIS	33.3	mg/kg	PLANT
3876	5/12/2006	J11X44	SOIL and BIOTA	MIS	245	mg/kg	PLANT
3877	5/12/2006	J11X44	SOIL and BIOTA	MIS-phyt	180	mg/kg	PLANT
3878	5/23/2007	J15298	SOIL and BIOTA	MIS	22.6	mg/kg	PLANT
3879	5/21/2007	J152B8	SOIL and BIOTA	MIS	30.3	mg/kg	PLANT
3880	5/7/2007	J15295	SOIL and BIOTA	MIS	26.6	mg/kg	PLANT
3881	5/21/2007	J15296	SOIL and BIOTA	MIS	33.3	mg/kg	PLANT
3882	5/24/2007	J152B0	SOIL and BIOTA	MIS	18.3	mg/kg	PLANT
3883	4/26/2006	J11X52	SOIL and BIOTA	MIS	22.2	mg/kg	PLANT
3884	5/23/2007	J152B2	SOIL and BIOTA	MIS	25.3	mg/kg	PLANT
3885	5/24/2007	J152B6	SOIL and BIOTA	MIS	32.3	mg/kg	PLANT
3886	5/24/2007	J152B4	SOIL and BIOTA	MIS	21.2	mg/kg	PLANT
3887	5/12/2006	J11X84	SOIL and BIOTA	MIS	17.9	mg/kg	PLANT
3888	5/12/2006	J11X84	SOIL and BIOTA	MIS-phyt	25.5	mg/kg	PLANT
3889	5/12/2006	J11X77	SOIL and BIOTA	MIS	20.3	mg/kg	PLANT
3890	5/12/2006	J11X77	SOIL and BIOTA	MIS-phyt	23.1	mg/kg	PLANT
3891	5/16/2006	J11X79	SOIL and BIOTA	MIS	29.6	mg/kg	PLANT
3892	5/16/2006	J11X79	SOIL and BIOTA	MIS-phyt	37.8	mg/kg	PLANT
3893	5/16/2006	J11X90	SOIL and BIOTA	MIS	24.1	mg/kg	PLANT
3894	5/16/2006	J11X90	SOIL and BIOTA	MIS-phyt	29.3	mg/kg	PLANT
3895	5/18/2006	J11X86	SOIL and BIOTA	MIS	18.3	mg/kg	PLANT
3896	5/18/2006	J11X81	SOIL and BIOTA	MIS	18.2	mg/kg	PLANT
3897	5/15/2006	J11X82	SOIL and BIOTA	MIS	52.1	mg/kg	PLANT
3898	5/15/2006	J11X82	SOIL and BIOTA	MIS-phyt	37.4	mg/kg	PLANT
3899	5/12/2006	J11X72	SOIL and BIOTA	MIS	24.1	mg/kg	PLANT

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
3861	CURRENT YRS GROWTH	98.3	mg/kg	C	J	RCBRA
3862	CURRENT YRS GROWTH	92.9	mg/kg	C	J	RCBRA
3863	CURRENT YRS GROWTH	125	mg/kg	C	J	RCBRA
3864	CURRENT YRS GROWTH	61.4	mg/kg	C	J	RCBRA
3865	CURRENT YRS GROWTH	66.5	mg/kg	C	J	RCBRA
3866	CURRENT YRS GROWTH	76.3	mg/kg	C	J	RCBRA
3867	CURRENT YRS GROWTH	80	mg/kg	C	J	RCBRA
3868	CURRENT YRS GROWTH	12.1	mg/kg			RCBRA
3869	CURRENT YRS GROWTH	14.9	mg/kg			RCBRA
3870	CURRENT YRS GROWTH	4.5	mg/kg	C		RCBRA
3871	CURRENT YRS GROWTH	20.9	mg/kg			RCBRA
3872	CURRENT YRS GROWTH	8	mg/kg	C		RCBRA
3873	CURRENT YRS GROWTH	8	mg/kg	C		RCBRA
3874	CURRENT YRS GROWTH	12.8	mg/kg			RCBRA
3875	CURRENT YRS GROWTH	11.9	mg/kg			RCBRA
3876	CURRENT YRS GROWTH	4.2	mg/kg			RCBRA
3877	CURRENT YRS GROWTH	4.2	mg/kg			RCBRA
3878	CURRENT YRS GROWTH	1.2	mg/kg	C		RCBRA
3879	CURRENT YRS GROWTH	2.8	mg/kg	C		RCBRA
3880	CURRENT YRS GROWTH	2.6	mg/kg	C		RCBRA
3881	CURRENT YRS GROWTH	2.2	mg/kg	C		RCBRA
3882	CURRENT YRS GROWTH	1.3	mg/kg	C		RCBRA
3883	CURRENT YRS GROWTH	12.4	mg/kg	C		RCBRA
3884	CURRENT YRS GROWTH	1.5	mg/kg	C		RCBRA
3885	CURRENT YRS GROWTH	2.6	mg/kg	C		RCBRA
3886	CURRENT YRS GROWTH	2.7	mg/kg	C		RCBRA
3887	CURRENT YRS GROWTH	5	mg/kg	C		RCBRA
3888	CURRENT YRS GROWTH	5	mg/kg	C		RCBRA
3889	CURRENT YRS GROWTH	3.7	mg/kg	C		RCBRA
3890	CURRENT YRS GROWTH	3.7	mg/kg	C		RCBRA
3891	CURRENT YRS GROWTH	12.4	mg/kg	C		RCBRA
3892	CURRENT YRS GROWTH	12.4	mg/kg	C		RCBRA
3893	CURRENT YRS GROWTH	17.9	mg/kg	C		RCBRA
3894	CURRENT YRS GROWTH	17.9	mg/kg	C		RCBRA
3895	CURRENT YRS GROWTH	7	mg/kg			RCBRA
3896	CURRENT YRS GROWTH	9.9	mg/kg			RCBRA
3897	CURRENT YRS GROWTH	13.3	mg/kg	C		RCBRA
3898	CURRENT YRS GROWTH	13.3	mg/kg	C		RCBRA
3899	CURRENT YRS GROWTH	8	mg/kg	C		RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
3900	Strontium [elemental]	7440-24-6	RCBRA 618-4	300	UPLAND	593954.946	117064.473
3901	Strontium [elemental]	7440-24-6	RCBRA 628-1	IU2/IU6	UPLAND	577797.524	148745.681
3902	Strontium [elemental]	7440-24-6	RCBRA Bev Ref 1 Rip	Outside decision areas	RIPARIAN	542428.846	167701.261
3903	Strontium [elemental]	7440-24-6	RCBRA Bev Ref 2 Rip	Outside decision areas	RIPARIAN	541493.988	167808.357
3904	Strontium [elemental]	7440-24-6	RCBRA JA JONES	300	UPLAND	593874.58	120013.908
3905	Strontium [elemental]	7440-24-6	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
3906	Strontium [elemental]	7440-24-6	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
3907	Strontium [elemental]	7440-24-6	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
3908	Strontium [elemental]	7440-24-6	RCBRA Pit 18	IU2/IU6	UPLAND	580697.058	145311.464
3909	Strontium [elemental]	7440-24-6	RCBRA Pit 23	IU2/IU6	UPLAND	572381.012	144874.157
3910	Strontium [elemental]	7440-24-6	RCBRA Pit 24	BC	UPLAND	563395.814	145119.007
3911	Strontium [elemental]	7440-24-6	RCBRA Pit 9	300	UPLAND	592807.103	120587.7
3912	Strontium [elemental]	7440-24-6	RCBRA R Ref 11	Outside decision areas	RIPARIAN	559400.735	146458.486
3913	Strontium [elemental]	7440-24-6	RCBRA R Ref 12	IU2/IU6	RIPARIAN	559201.908	145747.542
3914	Strontium [elemental]	7440-24-6	RCBRA R Ref 13	Outside decision areas	RIPARIAN	558572.809	145345.115
3915	Strontium [elemental]	7440-24-6	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
3916	Strontium [elemental]	7440-24-6	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
3917	Strontium [elemental]	7440-24-6	RCBRA R Ref 16	Outside decision areas	RIPARIAN	557650.029	144826.748
3918	Strontium [elemental]	7440-24-6	RCBRA Rip 1	D/H	RIPARIAN	577251.869	153659.195
3919	Strontium [elemental]	7440-24-6	RCBRA Rip 10	D/H	RIPARIAN	573987.873	153082.19
3920	Strontium [elemental]	7440-24-6	RCBRA Rip 2	D/H	RIPARIAN	573603.219	152471.6
3921	Strontium [elemental]	7440-24-6	RCBRA Rip 3	D/H	RIPARIAN	572639.65	151677.812
3922	Strontium [elemental]	7440-24-6	RCBRA Rip 4	N	RIPARIAN	570558.596	148981.547
3923	Strontium [elemental]	7440-24-6	RCBRA Rip 5	K	RIPARIAN	569141.025	147521.561
3924	Strontium [elemental]	7440-24-6	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
3925	Strontium [elemental]	7440-24-6	RCBRA Rip 7	IU2/IU6	RIPARIAN	581326.914	147825.17
3926	Strontium [elemental]	7440-24-6	RCBRA Rip 8	D/H	RIPARIAN	578698.584	152233.645
3927	Strontium [elemental]	7440-24-6	RCBRA Rip 9	D/H	RIPARIAN	578153.643	152801.452
3928	Strontium [elemental]	7440-24-6	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
3929	Strontium [elemental]	7440-24-6	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
3930	Strontium [elemental]	7440-24-6	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
3931	Strontium [elemental]	7440-24-6	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
3932	Strontium [elemental]	7440-24-6	RCBRA Yak Rdg 2	Outside decision areas	UPLAND	559031.557	135576.407
3933	Strontium [elemental]	7440-24-6	RCBRA 100-D-48	D/H	UPLAND	573841.527	151914.538
3934	Strontium [elemental]	7440-24-6	RCBRA 100-D-49	D/H	UPLAND	573938.06	151944.123
3935	Strontium [elemental]	7440-24-6	RCBRA 100-F-2	IU2/IU6	UPLAND	579728.068	147001.117
3936	Strontium [elemental]	7440-24-6	RCBRA 116-DR-1&2	D/H	UPLAND	574007.817	152246.748
3937	Strontium [elemental]	7440-24-6	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
3938	Strontium [elemental]	7440-24-6	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
3900	5/12/2006	J11X51	SOIL and BIOTA	MIS	18.9	mg/kg	PLANT
3901	5/12/2006	J11X89	SOIL and BIOTA	MIS	30.7	mg/kg	PLANT
3902	5/10/2007	J15289	SOIL and BIOTA	MIS	24.7	mg/kg	PLANT
3903	5/8/2007	J15291	SOIL and BIOTA	MIS	29.8	mg/kg	PLANT
3904	5/10/2006	J11X74	SOIL and BIOTA	MIS	19.4	mg/kg	PLANT
3905	5/18/2006	J11X98	SOIL and BIOTA	MIS	29.8	mg/kg	PLANT
3906	5/18/2006	J11X98	SOIL and BIOTA	MIS-phyt	32.6	mg/kg	PLANT
3907	5/15/2006	J11X66	SOIL and BIOTA	MIS	26	mg/kg	PLANT
3908	5/18/2006	J11X69	SOIL and BIOTA	MIS	23.5	mg/kg	PLANT
3909	5/22/2006	J11X63	SOIL and BIOTA	MIS	19.6	mg/kg	PLANT
3910	5/19/2006	J11X70	SOIL and BIOTA	MIS	22.9	mg/kg	PLANT
3911	5/12/2006	J11X64	SOIL and BIOTA	MIS	21.5	mg/kg	PLANT
3912	5/9/2006	J11WY8	SOIL and BIOTA	MIS	27.7	mg/kg	PLANT
3913	5/9/2006	J11WX0	SOIL and BIOTA	MIS	24	mg/kg	PLANT
3914	8/10/2006	J11WY9	SOIL and BIOTA	MIS	34.7	mg/kg	PLANT
3915	5/9/2006	J11X02	SOIL and BIOTA	MIS	35.25	mg/kg	PLANT
3916	5/8/2007	J15293	SOIL and BIOTA	MIS	35.25	mg/kg	PLANT
3917	5/9/2006	J11X04	SOIL and BIOTA	MIS	29.6	mg/kg	PLANT
3918	5/16/2006	J11WX1	SOIL and BIOTA	MIS	33.3	mg/kg	PLANT
3919	5/9/2006	J11WY6	SOIL and BIOTA	MIS	22.6	mg/kg	PLANT
3920	5/19/2006	J11WX4	SOIL and BIOTA	MIS	25.2	mg/kg	PLANT
3921	5/9/2006	J11WX6	SOIL and BIOTA	MIS	21.2	mg/kg	PLANT
3922	5/9/2006	J11WW6	SOIL and BIOTA	MIS	30.3	mg/kg	PLANT
3923	5/9/2006	J11WW8	SOIL and BIOTA	MIS	33.6	mg/kg	PLANT
3924	5/22/2006	J11XP0	SOIL and BIOTA	MIS	32.2	mg/kg	PLANT
3925	5/9/2006	J11WY0	SOIL and BIOTA	MIS	23.8	mg/kg	PLANT
3926	5/16/2006	J11WY2	SOIL and BIOTA	MIS	24.1	mg/kg	PLANT
3927	5/16/2006	J11WY4	SOIL and BIOTA	MIS	25.5	mg/kg	PLANT
3928	5/18/2006	J11XB0	SOIL and BIOTA	MIS	24.9	mg/kg	PLANT
3929	5/18/2006	J11XB0	SOIL and BIOTA	MIS-phyt	27.9	mg/kg	PLANT
3930	5/15/2006	J11X96	SOIL and BIOTA	MIS	22.8	mg/kg	PLANT
3931	5/15/2006	J11X96	SOIL and BIOTA	MIS-phyt	25.4	mg/kg	PLANT
3932	5/16/2006	J11X94	SOIL and BIOTA	MIS	29.5	mg/kg	PLANT
3933	5/18/2006	J11X43	SOIL and BIOTA	MIS	29.7	mg/kg	PLANT
3934	5/18/2006	J11X55	SOIL and BIOTA	MIS	31.4	mg/kg	PLANT
3935	5/10/2006	J11X60	SOIL and BIOTA	MIS	38.9	mg/kg	PLANT
3936	5/19/2006	J11X57	SOIL and BIOTA	MIS	24.7	mg/kg	PLANT
3937	5/16/2006	J11X49	SOIL and BIOTA	MIS	27.7	mg/kg	PLANT
3938	5/16/2006	J11X49	SOIL and BIOTA	MIS-phyt	26.9	mg/kg	PLANT

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
3900	CURRENT YRS GROWTH	2.3	mg/kg	C		RCBRA
3901	CURRENT YRS GROWTH	4.3	mg/kg	C		RCBRA
3902	CURRENT YRS GROWTH	1.1	mg/kg	C		RCBRA
3903	CURRENT YRS GROWTH	1.7	mg/kg	C		RCBRA
3904	CURRENT YRS GROWTH	4.2	mg/kg	C		RCBRA
3905	CURRENT YRS GROWTH	11.9	mg/kg			RCBRA
3906	CURRENT YRS GROWTH	11.9	mg/kg			RCBRA
3907	CURRENT YRS GROWTH	11.6	mg/kg	C		RCBRA
3908	CURRENT YRS GROWTH	19.1	mg/kg			RCBRA
3909	CURRENT YRS GROWTH	10.4	mg/kg			RCBRA
3910	CURRENT YRS GROWTH	8.4	mg/kg			RCBRA
3911	CURRENT YRS GROWTH	3.4	mg/kg	C		RCBRA
3912	CURRENT YRS GROWTH	3.6	mg/kg			RCBRA
3913	CURRENT YRS GROWTH	5.2	mg/kg			RCBRA
3914	CURRENT YRS GROWTH	8.7	mg/kg			RCBRA
3915	CURRENT YRS GROWTH	3.5	mg/kg			RCBRA
3916	CURRENT YRS GROWTH	1.8	mg/kg	C		RCBRA
3917	CURRENT YRS GROWTH	3.2	mg/kg			RCBRA
3918	CURRENT YRS GROWTH	24.6	mg/kg	C		RCBRA
3919	CURRENT YRS GROWTH	3.2	mg/kg			RCBRA
3920	CURRENT YRS GROWTH	18.6	mg/kg			RCBRA
3921	CURRENT YRS GROWTH	3.9	mg/kg			RCBRA
3922	CURRENT YRS GROWTH	2.6	mg/kg			RCBRA
3923	CURRENT YRS GROWTH	4.5	mg/kg			RCBRA
3924	CURRENT YRS GROWTH	23.4	mg/kg			RCBRA
3925	CURRENT YRS GROWTH	4.1	mg/kg			RCBRA
3926	CURRENT YRS GROWTH	10.7	mg/kg	C		RCBRA
3927	CURRENT YRS GROWTH	10.9	mg/kg	C		RCBRA
3928	CURRENT YRS GROWTH	10.2	mg/kg			RCBRA
3929	CURRENT YRS GROWTH	10.2	mg/kg			RCBRA
3930	CURRENT YRS GROWTH	10.7	mg/kg	C		RCBRA
3931	CURRENT YRS GROWTH	10.7	mg/kg	C		RCBRA
3932	CURRENT YRS GROWTH	24	mg/kg	C		RCBRA
3933	CURRENT YRS GROWTH	27.5	mg/kg			RCBRA
3934	CURRENT YRS GROWTH	21.7	mg/kg			RCBRA
3935	CURRENT YRS GROWTH	14.9	mg/kg	C		RCBRA
3936	CURRENT YRS GROWTH	29.3	mg/kg			RCBRA
3937	CURRENT YRS GROWTH	92.4	mg/kg	C		RCBRA
3938	CURRENT YRS GROWTH	92.4	mg/kg	C		RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
3939	Strontium [elemental]	7440-24-6	RCBRA 116-N-3	N	UPLAND	571995.702	149793.039
3940	Strontium [elemental]	7440-24-6	RCBRA 1607-D2:1	D/H	UPLAND	573823.924	152260.319
3941	Strontium [elemental]	7440-24-6	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
3942	Strontium [elemental]	7440-24-6	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
3943	Strontium [elemental]	7440-24-6	RCBRA 300-49	300	UPLAND	594318.994	116830.934
3944	Strontium [elemental]	7440-24-6	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
3945	Strontium [elemental]	7440-24-6	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
3946	Strontium [elemental]	7440-24-6	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
3947	Strontium [elemental]	7440-24-6	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
3948	Strontium [elemental]	7440-24-6	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
3949	Strontium [elemental]	7440-24-6	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
3950	Strontium [elemental]	7440-24-6	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
3951	Strontium [elemental]	7440-24-6	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
3952	Strontium [elemental]	7440-24-6	RCBRA 600-181	IU2/IU6	UPLAND	578303.83	147316.698
3953	Strontium [elemental]	7440-24-6	RCBRA 600-204	IU2/IU6	UPLAND	580128.485	144762.219
3954	Strontium [elemental]	7440-24-6	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
3955	Strontium [elemental]	7440-24-6	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
3956	Strontium [elemental]	7440-24-6	RCBRA 600-23	IU2/IU6	UPLAND	585523.593	130481.377
3957	Strontium [elemental]	7440-24-6	RCBRA 618-4	300	UPLAND	593954.946	117064.473
3958	Strontium [elemental]	7440-24-6	RCBRA 628-1	IU2/IU6	UPLAND	577797.524	148745.681
3959	Strontium [elemental]	7440-24-6	RCBRA JA JONES	300	UPLAND	593874.58	120013.908
3960	Strontium [elemental]	7440-24-6	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
3961	Strontium [elemental]	7440-24-6	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
3962	Strontium [elemental]	7440-24-6	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
3963	Strontium [elemental]	7440-24-6	RCBRA Pit 18	IU2/IU6	UPLAND	580697.058	145311.464
3964	Strontium [elemental]	7440-24-6	RCBRA Pit 23	IU2/IU6	UPLAND	572381.012	144874.157
3965	Strontium [elemental]	7440-24-6	RCBRA Pit 24	BC	UPLAND	563395.814	145119.007
3966	Strontium [elemental]	7440-24-6	RCBRA Pit 9	300	UPLAND	592807.103	120587.7
3967	Strontium [elemental]	7440-24-6	RCBRA R Ref 11	Outside decision areas	RIPARIAN	559400.735	146458.486
3968	Strontium [elemental]	7440-24-6	RCBRA R Ref 12	IU2/IU6	RIPARIAN	559201.908	145747.542
3969	Strontium [elemental]	7440-24-6	RCBRA R Ref 13	Outside decision areas	RIPARIAN	558572.809	145345.115
3970	Strontium [elemental]	7440-24-6	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
3971	Strontium [elemental]	7440-24-6	RCBRA R Ref 16	Outside decision areas	RIPARIAN	557650.029	144826.748
3972	Strontium [elemental]	7440-24-6	RCBRA Rip 1	D/H	RIPARIAN	577251.869	153659.195
3973	Strontium [elemental]	7440-24-6	RCBRA Rip 10	D/H	RIPARIAN	573987.873	153082.19
3974	Strontium [elemental]	7440-24-6	RCBRA Rip 2	D/H	RIPARIAN	573603.219	152471.6
3975	Strontium [elemental]	7440-24-6	RCBRA Rip 3	D/H	RIPARIAN	572639.65	151677.812
3976	Strontium [elemental]	7440-24-6	RCBRA Rip 4	N	RIPARIAN	570558.596	148981.547
3977	Strontium [elemental]	7440-24-6	RCBRA Rip 5	K	RIPARIAN	569141.025	147521.561

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
3939	5/19/2006	J11X47	SOIL and BIOTA	MIS	27.9	mg/kg	PLANT
3940	5/22/2006	J11X59	SOIL and BIOTA	MIS	33.3	mg/kg	PLANT
3941	5/12/2006	J11X45	SOIL and BIOTA	MIS	245	mg/kg	PLANT
3942	5/12/2006	J11X45	SOIL and BIOTA	MIS-phyt	180	mg/kg	PLANT
3943	4/26/2006	J11X53	SOIL and BIOTA	MIS	22.2	mg/kg	PLANT
3944	5/12/2006	J11X85	SOIL and BIOTA	MIS	17.9	mg/kg	PLANT
3945	5/12/2006	J11X85	SOIL and BIOTA	MIS-phyt	25.5	mg/kg	PLANT
3946	5/12/2006	J11X76	SOIL and BIOTA	MIS	20.3	mg/kg	PLANT
3947	5/12/2006	J11X76	SOIL and BIOTA	MIS-phyt	23.1	mg/kg	PLANT
3948	5/16/2006	J11X78	SOIL and BIOTA	MIS	29.6	mg/kg	PLANT
3949	5/16/2006	J11X78	SOIL and BIOTA	MIS-phyt	37.8	mg/kg	PLANT
3950	5/16/2006	J11X91	SOIL and BIOTA	MIS	24.1	mg/kg	PLANT
3951	5/16/2006	J11X91	SOIL and BIOTA	MIS-phyt	29.3	mg/kg	PLANT
3952	5/18/2006	J11X87	SOIL and BIOTA	MIS	18.3	mg/kg	PLANT
3953	5/18/2006	J11X80	SOIL and BIOTA	MIS	18.2	mg/kg	PLANT
3954	5/15/2006	J11X83	SOIL and BIOTA	MIS	52.1	mg/kg	PLANT
3955	5/15/2006	J11X83	SOIL and BIOTA	MIS-phyt	37.4	mg/kg	PLANT
3956	5/12/2006	J11X73	SOIL and BIOTA	MIS	24.1	mg/kg	PLANT
3957	5/12/2006	J11X50	SOIL and BIOTA	MIS	18.9	mg/kg	PLANT
3958	5/12/2006	J11X88	SOIL and BIOTA	MIS	30.7	mg/kg	PLANT
3959	5/10/2006	J11X75	SOIL and BIOTA	MIS	19.4	mg/kg	PLANT
3960	5/18/2006	J11X99	SOIL and BIOTA	MIS	29.8	mg/kg	PLANT
3961	5/18/2006	J11X99	SOIL and BIOTA	MIS-phyt	32.6	mg/kg	PLANT
3962	5/15/2006	J11X67	SOIL and BIOTA	MIS	26	mg/kg	PLANT
3963	5/18/2006	J11X68	SOIL and BIOTA	MIS	23.5	mg/kg	PLANT
3964	5/22/2006	J11X62	SOIL and BIOTA	MIS	19.6	mg/kg	PLANT
3965	5/19/2006	J11X71	SOIL and BIOTA	MIS	22.9	mg/kg	PLANT
3966	5/12/2006	J11X65	SOIL and BIOTA	MIS	21.5	mg/kg	PLANT
3967	5/9/2006	J11WY7	SOIL and BIOTA	MIS	27.7	mg/kg	PLANT
3968	5/9/2006	J11WW9	SOIL and BIOTA	MIS	24	mg/kg	PLANT
3969	8/10/2006	J11X00	SOIL and BIOTA	MIS	34.7	mg/kg	PLANT
3970	5/9/2006	J11X01	SOIL and BIOTA	MIS	35.25	mg/kg	PLANT
3971	5/9/2006	J11X03	SOIL and BIOTA	MIS	29.6	mg/kg	PLANT
3972	5/16/2006	J11WX2	SOIL and BIOTA	MIS	33.3	mg/kg	PLANT
3973	5/9/2006	J11WY5	SOIL and BIOTA	MIS	22.6	mg/kg	PLANT
3974	5/19/2006	J11WX3	SOIL and BIOTA	MIS	25.2	mg/kg	PLANT
3975	5/9/2006	J11WX5	SOIL and BIOTA	MIS	21.2	mg/kg	PLANT
3976	5/9/2006	J11WW5	SOIL and BIOTA	MIS	30.3	mg/kg	PLANT
3977	5/9/2006	J11WW7	SOIL and BIOTA	MIS	33.6	mg/kg	PLANT

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
3939	CURRENT YRS GROWTH	65.4	mg/kg			RCBRA
3940	CURRENT YRS GROWTH	29.5	mg/kg			RCBRA
3941	CURRENT YRS GROWTH	9.8	mg/kg			RCBRA
3942	CURRENT YRS GROWTH	9.8	mg/kg			RCBRA
3943	CURRENT YRS GROWTH	26.4	mg/kg	C		RCBRA
3944	CURRENT YRS GROWTH	18.6	mg/kg	C		RCBRA
3945	CURRENT YRS GROWTH	18.6	mg/kg	C		RCBRA
3946	CURRENT YRS GROWTH	16.4	mg/kg	C		RCBRA
3947	CURRENT YRS GROWTH	16.4	mg/kg	C		RCBRA
3948	CURRENT YRS GROWTH	39	mg/kg	C		RCBRA
3949	CURRENT YRS GROWTH	39	mg/kg	C		RCBRA
3950	CURRENT YRS GROWTH	36.4	mg/kg	C		RCBRA
3951	CURRENT YRS GROWTH	36.4	mg/kg	C		RCBRA
3952	CURRENT YRS GROWTH	76	mg/kg			RCBRA
3953	CURRENT YRS GROWTH	21	mg/kg			RCBRA
3954	CURRENT YRS GROWTH	70.3	mg/kg	C		RCBRA
3955	CURRENT YRS GROWTH	70.3	mg/kg	C		RCBRA
3956	CURRENT YRS GROWTH	5.9	mg/kg	C		RCBRA
3957	CURRENT YRS GROWTH	8.7	mg/kg	C		RCBRA
3958	CURRENT YRS GROWTH	6.8	mg/kg	C		RCBRA
3959	CURRENT YRS GROWTH	10.4	mg/kg	C		RCBRA
3960	CURRENT YRS GROWTH	29.2	mg/kg			RCBRA
3961	CURRENT YRS GROWTH	29.2	mg/kg			RCBRA
3962	CURRENT YRS GROWTH	25.1	mg/kg	C		RCBRA
3963	CURRENT YRS GROWTH	46.1	mg/kg			RCBRA
3964	CURRENT YRS GROWTH	21.8	mg/kg			RCBRA
3965	CURRENT YRS GROWTH	22.7	mg/kg			RCBRA
3966	CURRENT YRS GROWTH	4.4	mg/kg	C		RCBRA
3967	CURRENT YRS GROWTH	9.6	mg/kg			RCBRA
3968	CURRENT YRS GROWTH	7.2	mg/kg			RCBRA
3969	CURRENT YRS GROWTH	28.4	mg/kg			RCBRA
3970	CURRENT YRS GROWTH	7.7	mg/kg			RCBRA
3971	CURRENT YRS GROWTH	8.6	mg/kg			RCBRA
3972	CURRENT YRS GROWTH	19.8	mg/kg	C		RCBRA
3973	CURRENT YRS GROWTH	7.7	mg/kg			RCBRA
3974	CURRENT YRS GROWTH	48.7	mg/kg			RCBRA
3975	CURRENT YRS GROWTH	6.7	mg/kg			RCBRA
3976	CURRENT YRS GROWTH	8.6	mg/kg			RCBRA
3977	CURRENT YRS GROWTH	10.8	mg/kg			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
3978	Strontium [elemental]	7440-24-6	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
3979	Strontium [elemental]	7440-24-6	RCBRA Rip 7	IU2/IU6	RIPARIAN	581326.914	147825.17
3980	Strontium [elemental]	7440-24-6	RCBRA Rip 8	D/H	RIPARIAN	578698.584	152233.645
3981	Strontium [elemental]	7440-24-6	RCBRA Rip 9	D/H	RIPARIAN	578153.643	152801.452
3982	Strontium [elemental]	7440-24-6	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
3983	Strontium [elemental]	7440-24-6	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
3984	Strontium [elemental]	7440-24-6	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
3985	Strontium [elemental]	7440-24-6	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
3986	Strontium [elemental]	7440-24-6	RCBRA Yak Rdg 2	Outside decision areas	UPLAND	559031.557	135576.407
3987	Strontium [elemental]	7440-24-6	RCBRA 2a Rip	BC	RIPARIAN	564618.501	145284.526
3988	Strontium [elemental]	7440-24-6	RCBRA 2c Rip	K	RIPARIAN	567598.2	146210.159
3989	Strontium [elemental]	7440-24-6	RCBRA 2f Rip	D/H	RIPARIAN	576222.844	154297.511
3990	Strontium [elemental]	7440-24-6	RCBRA 2j Rip	IU2/IU6	RIPARIAN	579360.971	150092.048
3991	Strontium [elemental]	7440-24-6	RCBRA 2l Rip	IU2/IU6	RIPARIAN	582341.212	146120.069
3992	Strontium [elemental]	7440-24-6	RCBRA 3b Rip	IU2/IU6	RIPARIAN	584961.205	141035.835
3993	Strontium [elemental]	7440-24-6	RCBRA 4a Rip	IU2/IU6	RIPARIAN	589347.5	137480.985
3994	Strontium [elemental]	7440-24-6	RCBRA 5c Rip	300	RIPARIAN	594509.985	124869.182
3995	Strontium [elemental]	7440-24-6	RCBRA Bev Ref 1 Rip	Outside decision areas	RIPARIAN	542428.846	167701.261
3996	Strontium [elemental]	7440-24-6	RCBRA Bev Ref 2 Rip	Outside decision areas	RIPARIAN	541493.988	167808.357
3997	Strontium [elemental]	7440-24-6	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
3998	Thorium	7440-29-1	VERNITA BRIDGE 1	Outside decision areas	UPLAND	558823	145536
3999	Thorium	7440-29-1	VERNITA BRIDGE 1	Outside decision areas	UPLAND	558823	145536
4000	Thorium	7440-29-1	VERNITA BRIDGE 1	Outside decision areas	UPLAND	558823	145536
4001	Thorium	7440-29-1	VERNITA BRIDGE 2	Outside decision areas	UPLAND	558844	145558
4002	Thorium	7440-29-1	VERNITA BRIDGE 4	IU2/IU6	UPLAND	559347	145849
4003	Thorium	7440-29-1	VERNITA BRIDGE 5	IU2/IU6	UPLAND	559606	145999
4004	Tin	7440-31-5	RCBRA 300-49	300	UPLAND	594318.994	116830.934
4005	Tin	7440-31-5	RCBRA 300-49	300	UPLAND	594318.994	116830.934
4006	Tin	7440-31-5	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
4007	Tin	7440-31-5	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
4008	Tin	7440-31-5	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
4009	Tin	7440-31-5	RCBRA R Ref 13	Outside decision areas	RIPARIAN	558572.809	145345.115
4010	Tin	7440-31-5	RCBRA Rip 9	D/H	RIPARIAN	578153.643	152801.452
4011	Thallium	7440-28-0	VERNITA BRIDGE 1	Outside decision areas	UPLAND	558823	145536
4012	Thallium	7440-28-0	VERNITA BRIDGE 1	Outside decision areas	UPLAND	558823	145536
4013	Thallium	7440-28-0	VERNITA BRIDGE 2	Outside decision areas	UPLAND	558844	145558
4014	Thallium	7440-28-0	VERNITA BRIDGE 2	Outside decision areas	UPLAND	558844	145558
4015	Thallium	7440-28-0	VERNITA BRIDGE 3	IU2/IU6	UPLAND	559089	145707
4016	Thallium	7440-28-0	VERNITA BRIDGE 3	IU2/IU6	UPLAND	559089	145707

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
3978	5/22/2006	J11WX7	SOIL and BIOTA	MIS	32.2	mg/kg	PLANT
3979	5/9/2006	J11WX9	SOIL and BIOTA	MIS	23.8	mg/kg	PLANT
3980	5/16/2006	J11WY1	SOIL and BIOTA	MIS	24.1	mg/kg	PLANT
3981	5/16/2006	J11WY3	SOIL and BIOTA	MIS	25.5	mg/kg	PLANT
3982	5/18/2006	J11XB1	SOIL and BIOTA	MIS	24.9	mg/kg	PLANT
3983	5/18/2006	J11XB1	SOIL and BIOTA	MIS-phyt	27.9	mg/kg	PLANT
3984	5/15/2006	J11X97	SOIL and BIOTA	MIS	22.8	mg/kg	PLANT
3985	5/15/2006	J11X97	SOIL and BIOTA	MIS-phyt	25.4	mg/kg	PLANT
3986	5/16/2006	J11X95	SOIL and BIOTA	MIS	29.5	mg/kg	PLANT
3987	5/23/2007	J15299	SOIL and BIOTA	MIS	22.6	mg/kg	PLANT
3988	5/21/2007	J152B9	SOIL and BIOTA	MIS	30.3	mg/kg	PLANT
3989	5/7/2007	J15294	SOIL and BIOTA	MIS	26.6	mg/kg	PLANT
3990	5/21/2007	J15297	SOIL and BIOTA	MIS	33.3	mg/kg	PLANT
3991	5/24/2007	J152B1	SOIL and BIOTA	MIS	18.3	mg/kg	PLANT
3992	5/23/2007	J152B3	SOIL and BIOTA	MIS	25.3	mg/kg	PLANT
3993	5/24/2007	J152B7	SOIL and BIOTA	MIS	32.3	mg/kg	PLANT
3994	5/24/2007	J152B5	SOIL and BIOTA	MIS	21.2	mg/kg	PLANT
3995	5/10/2007	J15288	SOIL and BIOTA	MIS	24.7	mg/kg	PLANT
3996	5/8/2007	J15290	SOIL and BIOTA	MIS	29.8	mg/kg	PLANT
3997	5/8/2007	J15292	SOIL and BIOTA	MIS	35.25	mg/kg	PLANT
3998	8/19/2004	B1B5N5	SOIL and BIOTA	Discrete	6.375	mg/kg	PLANT
3999	8/19/2004	B1B5N6	SOIL and BIOTA	Discrete	6.375	mg/kg	PLANT
4000	8/19/2004	B1B5N3	SOIL and BIOTA	Discrete	6.375	mg/kg	PLANT
4001	8/19/2004	B1B5P6	SOIL and BIOTA	Discrete	5.265	mg/kg	PLANT
4002	8/24/2004	B1B5V0	SOIL and BIOTA	Discrete	6.2	mg/kg	PLANT
4003	8/24/2004	B1B5W4	SOIL and BIOTA	Discrete	6.6	mg/kg	PLANT
4004	4/26/2006	J11X52	SOIL and BIOTA	MIS	7.5	mg/kg	PLANT
4005	4/26/2006	J11X53	SOIL and BIOTA	MIS	7.5	mg/kg	PLANT
4006	5/16/2006	J11X78	SOIL and BIOTA	MIS	18	mg/kg	PLANT
4007	5/16/2006	J11X78	SOIL and BIOTA	MIS-phyt	14.2	mg/kg	PLANT
4008	5/16/2006	J11X91	SOIL and BIOTA	MIS	1.6	mg/kg	PLANT
4009	8/10/2006	J11X00	SOIL and BIOTA	MIS	3.3	mg/kg	PLANT
4010	5/16/2006	J11WY3	SOIL and BIOTA	MIS	1.6	mg/kg	PLANT
4011	8/19/2004	B1B5N6	SOIL and BIOTA	Discrete	0.456	mg/kg	PLANT
4012	8/19/2004	B1B5N3	SOIL and BIOTA	Discrete	0.456	mg/kg	PLANT
4013	8/19/2004	B1B5P6	SOIL and BIOTA	Discrete	0.475	mg/kg	PLANT
4014	8/19/2004	B1B5P7	SOIL and BIOTA	Discrete	0.475	mg/kg	PLANT
4015	8/19/2004	B1B5R8	SOIL and BIOTA	Discrete	0.5515	mg/kg	PLANT
4016	8/19/2004	B1B5R6	SOIL and BIOTA	Discrete	0.5515	mg/kg	PLANT

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
3978	CURRENT YRS GROWTH	30.2	mg/kg			RCBRA
3979	CURRENT YRS GROWTH	6	mg/kg			RCBRA
3980	CURRENT YRS GROWTH	19.7	mg/kg	C		RCBRA
3981	CURRENT YRS GROWTH	33.2	mg/kg	C		RCBRA
3982	CURRENT YRS GROWTH	46.1	mg/kg			RCBRA
3983	CURRENT YRS GROWTH	46.1	mg/kg			RCBRA
3984	CURRENT YRS GROWTH	37.8	mg/kg	C		RCBRA
3985	CURRENT YRS GROWTH	37.8	mg/kg	C		RCBRA
3986	CURRENT YRS GROWTH	32.6	mg/kg	C		RCBRA
3987	CURRENT YRS GROWTH	3.8	mg/kg	C		RCBRA
3988	CURRENT YRS GROWTH	3.4	mg/kg	C		RCBRA
3989	CURRENT YRS GROWTH	9.5	mg/kg	C		RCBRA
3990	CURRENT YRS GROWTH	7.8	mg/kg	C		RCBRA
3991	CURRENT YRS GROWTH	7.4	mg/kg	C		RCBRA
3992	CURRENT YRS GROWTH	6.7	mg/kg	C		RCBRA
3993	CURRENT YRS GROWTH	11.4	mg/kg	C		RCBRA
3994	CURRENT YRS GROWTH	5.4	mg/kg	C		RCBRA
3995	CURRENT YRS GROWTH	4.7	mg/kg	C		RCBRA
3996	CURRENT YRS GROWTH	5.8	mg/kg	C		RCBRA
3997	CURRENT YRS GROWTH	7.3	mg/kg	C		RCBRA
3998	SHOOTS	0.005292	mg/kg	X		PNNL
3999	SHOOTS	0.006027	mg/kg	X		PNNL
4000	SHOOTS	0.012075	mg/kg	X		PNNL
4001	SHOOTS	0.015456	mg/kg	X		PNNL
4002	SHOOTS	0.017388	mg/kg	X		PNNL
4003	SHOOTS	0.005586	mg/kg	X		PNNL
4004	CURRENT YRS GROWTH	2.8	mg/kg	C		RCBRA
4005	CURRENT YRS GROWTH	6.1	mg/kg	C		RCBRA
4006	CURRENT YRS GROWTH	2.8	mg/kg			RCBRA
4007	CURRENT YRS GROWTH	2.8	mg/kg			RCBRA
4008	CURRENT YRS GROWTH	3.3	mg/kg			RCBRA
4009	CURRENT YRS GROWTH	1.5	mg/kg	C		RCBRA
4010	CURRENT YRS GROWTH	5.2	mg/kg			RCBRA
4011	SHOOTS	0.010017	mg/kg	X		PNNL
4012	SHOOTS	0.005817	mg/kg	X		PNNL
4013	SHOOTS	0.008169	mg/kg	X		PNNL
4014	SHOOTS	0.002268	mg/kg	X		PNNL
4015	SHOOTS	0.002289	mg/kg	X		PNNL
4016	SHOOTS	0.010521	mg/kg	X		PNNL

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
4017	Thallium	7440-28-0	VERNITA BRIDGE 4	IU2/IU6	UPLAND	559347	145849
4018	Thallium	7440-28-0	VERNITA BRIDGE 4	IU2/IU6	UPLAND	559347	145849
4019	Thallium	7440-28-0	VERNITA BRIDGE 5	IU2/IU6	UPLAND	559606	145999
4020	Thallium	7440-28-0	VERNITA BRIDGE 5	IU2/IU6	UPLAND	559606	145999
4021	Uranium [inorganic]	7440-61-1	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
4022	Uranium [inorganic]	7440-61-1	RCBRA 300-49	300	UPLAND	594318.994	116830.934
4023	Uranium [inorganic]	7440-61-1	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
4024	Uranium [inorganic]	7440-61-1	RCBRA 300-49	300	UPLAND	594318.994	116830.934
4025	Uranium [inorganic]	7440-61-1	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
4026	Uranium [inorganic]	7440-61-1	VERNITA BRIDGE 1	Outside decision areas	UPLAND	558823	145536
4027	Uranium [inorganic]	7440-61-1	VERNITA BRIDGE 1	Outside decision areas	UPLAND	558823	145536
4028	Uranium [inorganic]	7440-61-1	VERNITA BRIDGE 1	Outside decision areas	UPLAND	558823	145536
4029	Uranium [inorganic]	7440-61-1	VERNITA BRIDGE 2	Outside decision areas	UPLAND	558844	145558
4030	Uranium [inorganic]	7440-61-1	VERNITA BRIDGE 2	Outside decision areas	UPLAND	558844	145558
4031	Uranium [inorganic]	7440-61-1	VERNITA BRIDGE 3	IU2/IU6	UPLAND	559089	145707
4032	Uranium [inorganic]	7440-61-1	VERNITA BRIDGE 3	IU2/IU6	UPLAND	559089	145707
4033	Uranium [inorganic]	7440-61-1	VERNITA BRIDGE 3	IU2/IU6	UPLAND	559089	145707
4034	Uranium [inorganic]	7440-61-1	VERNITA BRIDGE 4	IU2/IU6	UPLAND	559347	145849
4035	Uranium [inorganic]	7440-61-1	VERNITA BRIDGE 4	IU2/IU6	UPLAND	559347	145849
4036	Uranium [inorganic]	7440-61-1	VERNITA BRIDGE 4	IU2/IU6	UPLAND	559347	145849
4037	Uranium [inorganic]	7440-61-1	VERNITA BRIDGE 5	IU2/IU6	UPLAND	559606	145999
4038	Uranium [inorganic]	7440-61-1	VERNITA BRIDGE 5	IU2/IU6	UPLAND	559606	145999
4039	Vanadium	7440-62-2	RCBRA 116-DR-1&2	D/H	UPLAND	574007.817	152246.748
4040	Vanadium	7440-62-2	RCBRA 300-49	300	UPLAND	594318.994	116830.934
4041	Vanadium	7440-62-2	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
4042	Vanadium	7440-62-2	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
4043	Vanadium	7440-62-2	RCBRA 600-23	IU2/IU6	UPLAND	585523.593	130481.377
4044	Vanadium	7440-62-2	RCBRA JA JONES	300	UPLAND	593874.58	120013.908
4045	Vanadium	7440-62-2	RCBRA R Ref 11	Outside decision areas	RIPARIAN	559400.735	146458.486
4046	Vanadium	7440-62-2	RCBRA R Ref 12	IU2/IU6	RIPARIAN	559201.908	145747.542
4047	Vanadium	7440-62-2	RCBRA R Ref 13	Outside decision areas	RIPARIAN	558572.809	145345.115
4048	Vanadium	7440-62-2	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
4049	Vanadium	7440-62-2	RCBRA R Ref 16	Outside decision areas	RIPARIAN	557650.029	144826.748
4050	Vanadium	7440-62-2	RCBRA Rip 4	N	RIPARIAN	570558.596	148981.547
4051	Vanadium	7440-62-2	RCBRA Rip 5	K	RIPARIAN	569141.025	147521.561
4052	Vanadium	7440-62-2	RCBRA Rip 8	D/H	RIPARIAN	578698.584	152233.645
4053	Vanadium	7440-62-2	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
4054	Vanadium	7440-62-2	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
4055	Vanadium	7440-62-2	RCBRA Yak Rdg 2	Outside decision areas	UPLAND	559031.557	135576.407

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
4017	8/24/2004	B1B5V0	SOIL and BIOTA	Discrete	0.6205	mg/kg	PLANT
4018	8/24/2004	B1B5T9	SOIL and BIOTA	Discrete	0.6205	mg/kg	PLANT
4019	8/24/2004	B1B5W6	SOIL and BIOTA	Discrete	0.71	mg/kg	PLANT
4020	8/24/2004	B1B5W4	SOIL and BIOTA	Discrete	0.71	mg/kg	PLANT
4021	5/16/2006	J11X48	SOIL and BIOTA	MIS	1.4	mg/kg	PLANT
4022	4/26/2006	J11X52	SOIL and BIOTA	MIS	2.1	mg/kg	PLANT
4023	5/16/2006	J11X49	SOIL and BIOTA	MIS	1.4	mg/kg	PLANT
4024	4/26/2006	J11X53	SOIL and BIOTA	MIS	2.1	mg/kg	PLANT
4025	5/16/2006	J11X78	SOIL and BIOTA	MIS	2.4	mg/kg	PLANT
4026	8/19/2004	B1B5N4	SOIL and BIOTA	Discrete	5.485	mg/kg	PLANT
4027	8/19/2004	B1B5N6	SOIL and BIOTA	Discrete	5.485	mg/kg	PLANT
4028	8/19/2004	B1B5N3	SOIL and BIOTA	Discrete	5.485	mg/kg	PLANT
4029	8/19/2004	B1B5P6	SOIL and BIOTA	Discrete	2.185	mg/kg	PLANT
4030	8/19/2004	B1B5P7	SOIL and BIOTA	Discrete	2.185	mg/kg	PLANT
4031	8/19/2004	B1B5R8	SOIL and BIOTA	Discrete	2.58	mg/kg	PLANT
4032	8/19/2004	B1B5R5	SOIL and BIOTA	Discrete	2.58	mg/kg	PLANT
4033	8/19/2004	B1B5R6	SOIL and BIOTA	Discrete	2.58	mg/kg	PLANT
4034	8/24/2004	B1B5V0	SOIL and BIOTA	Discrete	3.185	mg/kg	PLANT
4035	8/24/2004	B1B5T9	SOIL and BIOTA	Discrete	3.185	mg/kg	PLANT
4036	8/24/2004	B1B5V1	SOIL and BIOTA	Discrete	3.185	mg/kg	PLANT
4037	8/24/2004	B1B5W5	SOIL and BIOTA	Discrete	4.015	mg/kg	PLANT
4038	8/24/2004	B1B5W4	SOIL and BIOTA	Discrete	4.015	mg/kg	PLANT
4039	5/19/2006	J11X56	SOIL and BIOTA	MIS	48.7	mg/kg	PLANT
4040	4/26/2006	J11X52	SOIL and BIOTA	MIS	47.2	mg/kg	PLANT
4041	5/15/2006	J11X82	SOIL and BIOTA	MIS	43.6	mg/kg	PLANT
4042	5/15/2006	J11X82	SOIL and BIOTA	MIS-phyt	52.8	mg/kg	PLANT
4043	5/12/2006	J11X72	SOIL and BIOTA	MIS	46.4	mg/kg	PLANT
4044	5/10/2006	J11X74	SOIL and BIOTA	MIS	45.1	mg/kg	PLANT
4045	5/9/2006	J11WY8	SOIL and BIOTA	MIS	40	mg/kg	PLANT
4046	5/9/2006	J11WX0	SOIL and BIOTA	MIS	40.6	mg/kg	PLANT
4047	8/10/2006	J11WY9	SOIL and BIOTA	MIS	51	mg/kg	PLANT
4048	5/9/2006	J11X02	SOIL and BIOTA	MIS	51.6	mg/kg	PLANT
4049	5/9/2006	J11X04	SOIL and BIOTA	MIS	36.6	mg/kg	PLANT
4050	5/9/2006	J11WW6	SOIL and BIOTA	MIS	51.8	mg/kg	PLANT
4051	5/9/2006	J11WW8	SOIL and BIOTA	MIS	44.1	mg/kg	PLANT
4052	5/16/2006	J11WY2	SOIL and BIOTA	MIS	44.9	mg/kg	PLANT
4053	5/15/2006	J11X96	SOIL and BIOTA	MIS	41.7	mg/kg	PLANT
4054	5/15/2006	J11X96	SOIL and BIOTA	MIS-phyt	55.3	mg/kg	PLANT
4055	5/16/2006	J11X94	SOIL and BIOTA	MIS	58.1	mg/kg	PLANT

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
4017	SHOOTS	0.017073	mg/kg	X		PNNL
4018	SHOOTS	0.002604	mg/kg	X		PNNL
4019	SHOOTS	0.00252	mg/kg	X		PNNL
4020	SHOOTS	0.005838	mg/kg	X		PNNL
4021	CURRENT YRS GROWTH	2.8	mg/kg			RCBRA
4022	CURRENT YRS GROWTH	4.6	mg/kg	C		RCBRA
4023	CURRENT YRS GROWTH	7.9	mg/kg			RCBRA
4024	CURRENT YRS GROWTH	9.9	mg/kg	C		RCBRA
4025	CURRENT YRS GROWTH	2.2	mg/kg			RCBRA
4026	SHOOTS	0.002373	mg/kg	X		PNNL
4027	SHOOTS	0.002814	mg/kg	X		PNNL
4028	SHOOTS	0.005502	mg/kg	X		PNNL
4029	SHOOTS	0.016317	mg/kg	X		PNNL
4030	SHOOTS	0.0020286	mg/kg	BX		PNNL
4031	SHOOTS	0.0012432	mg/kg	BX		PNNL
4032	SHOOTS	0.0002646	mg/kg	BX		PNNL
4033	SHOOTS	0.0018522	mg/kg	BX		PNNL
4034	SHOOTS	0.007308	mg/kg	X		PNNL
4035	SHOOTS	0.00273	mg/kg	X		PNNL
4036	SHOOTS	0.0008526	mg/kg	BX		PNNL
4037	SHOOTS	0.0008988	mg/kg	BX		PNNL
4038	SHOOTS	0.005397	mg/kg	X		PNNL
4039	CURRENT YRS GROWTH	0.26	mg/kg			RCBRA
4040	CURRENT YRS GROWTH	0.29	mg/kg	C		RCBRA
4041	CURRENT YRS GROWTH	0.47	mg/kg			RCBRA
4042	CURRENT YRS GROWTH	0.47	mg/kg			RCBRA
4043	CURRENT YRS GROWTH	0.14	mg/kg			RCBRA
4044	CURRENT YRS GROWTH	0.1	mg/kg			RCBRA
4045	CURRENT YRS GROWTH	0.32	mg/kg			RCBRA
4046	CURRENT YRS GROWTH	0.96	mg/kg			RCBRA
4047	CURRENT YRS GROWTH	1.7	mg/kg			RCBRA
4048	CURRENT YRS GROWTH	0.55	mg/kg			RCBRA
4049	CURRENT YRS GROWTH	0.47	mg/kg			RCBRA
4050	CURRENT YRS GROWTH	0.1	mg/kg			RCBRA
4051	CURRENT YRS GROWTH	0.55	mg/kg			RCBRA
4052	CURRENT YRS GROWTH	0.95	mg/kg			RCBRA
4053	CURRENT YRS GROWTH	0.22	mg/kg			RCBRA
4054	CURRENT YRS GROWTH	0.22	mg/kg			RCBRA
4055	CURRENT YRS GROWTH	0.26	mg/kg			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
4056	Vanadium	7440-62-2	RCBRA 100-D-48	D/H	UPLAND	573841.527	151914.538
4057	Vanadium	7440-62-2	RCBRA 100-D-49	D/H	UPLAND	573938.06	151944.123
4058	Vanadium	7440-62-2	RCBRA 116-DR-1&2	D/H	UPLAND	574007.817	152246.748
4059	Vanadium	7440-62-2	RCBRA 116-N-3	N	UPLAND	571995.702	149793.039
4060	Vanadium	7440-62-2	RCBRA 1607-D2:1	D/H	UPLAND	573823.924	152260.319
4061	Vanadium	7440-62-2	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
4062	Vanadium	7440-62-2	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
4063	Vanadium	7440-62-2	RCBRA 300-49	300	UPLAND	594318.994	116830.934
4064	Vanadium	7440-62-2	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
4065	Vanadium	7440-62-2	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
4066	Vanadium	7440-62-2	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
4067	Vanadium	7440-62-2	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
4068	Vanadium	7440-62-2	RCBRA 600-204	IU2/IU6	UPLAND	580128.485	144762.219
4069	Vanadium	7440-62-2	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
4070	Vanadium	7440-62-2	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
4071	Vanadium	7440-62-2	RCBRA 600-23	IU2/IU6	UPLAND	585523.593	130481.377
4072	Vanadium	7440-62-2	RCBRA JA JONES	300	UPLAND	593874.58	120013.908
4073	Vanadium	7440-62-2	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
4074	Vanadium	7440-62-2	RCBRA Pit 18	IU2/IU6	UPLAND	580697.058	145311.464
4075	Vanadium	7440-62-2	RCBRA Pit 23	IU2/IU6	UPLAND	572381.012	144874.157
4076	Vanadium	7440-62-2	RCBRA Pit 24	BC	UPLAND	563395.814	145119.007
4077	Vanadium	7440-62-2	RCBRA R Ref 13	Outside decision areas	RIPARIAN	558572.809	145345.115
4078	Vanadium	7440-62-2	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
4079	Vanadium	7440-62-2	RCBRA R Ref 16	Outside decision areas	RIPARIAN	557650.029	144826.748
4080	Vanadium	7440-62-2	RCBRA Rip 10	D/H	RIPARIAN	573987.873	153082.19
4081	Vanadium	7440-62-2	RCBRA Rip 2	D/H	RIPARIAN	573603.219	152471.6
4082	Vanadium	7440-62-2	RCBRA Rip 3	D/H	RIPARIAN	572639.65	151677.812
4083	Vanadium	7440-62-2	RCBRA Rip 5	K	RIPARIAN	569141.025	147521.561
4084	Vanadium	7440-62-2	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
4085	Vanadium	7440-62-2	RCBRA Rip 7	IU2/IU6	RIPARIAN	581326.914	147825.17
4086	Vanadium	7440-62-2	RCBRA Rip 9	D/H	RIPARIAN	578153.643	152801.452
4087	Vanadium	7440-62-2	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
4088	Vanadium	7440-62-2	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
4089	Vanadium	7440-62-2	RCBRA Yak Rdg 2	Outside decision areas	UPLAND	559031.557	135576.407
4090	Zinc	7440-66-6	RCBRA 100-D-48	D/H	UPLAND	573841.527	151914.538
4091	Zinc	7440-66-6	RCBRA 100-D-49	D/H	UPLAND	573938.06	151944.123
4092	Zinc	7440-66-6	RCBRA 100-F-2	IU2/IU6	UPLAND	579728.068	147001.117
4093	Zinc	7440-66-6	RCBRA 116-DR-1&2	D/H	UPLAND	574007.817	152246.748
4094	Zinc	7440-66-6	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
4056	5/18/2006	J11X43	SOIL and BIOTA	MIS	58.8	mg/kg	PLANT
4057	5/18/2006	J11X55	SOIL and BIOTA	MIS	53.5	mg/kg	PLANT
4058	5/19/2006	J11X57	SOIL and BIOTA	MIS	48.7	mg/kg	PLANT
4059	5/19/2006	J11X47	SOIL and BIOTA	MIS	62.4	mg/kg	PLANT
4060	5/22/2006	J11X59	SOIL and BIOTA	MIS	43.9	mg/kg	PLANT
4061	5/12/2006	J11X45	SOIL and BIOTA	MIS	44.5	mg/kg	PLANT
4062	5/12/2006	J11X45	SOIL and BIOTA	MIS-phyt	55.2	mg/kg	PLANT
4063	4/26/2006	J11X53	SOIL and BIOTA	MIS	47.2	mg/kg	PLANT
4064	5/16/2006	J11X78	SOIL and BIOTA	MIS	43.2	mg/kg	PLANT
4065	5/16/2006	J11X78	SOIL and BIOTA	MIS-phyt	50.6	mg/kg	PLANT
4066	5/16/2006	J11X91	SOIL and BIOTA	MIS	33.5	mg/kg	PLANT
4067	5/16/2006	J11X91	SOIL and BIOTA	MIS-phyt	47.2	mg/kg	PLANT
4068	5/18/2006	J11X80	SOIL and BIOTA	MIS	62.2	mg/kg	PLANT
4069	5/15/2006	J11X83	SOIL and BIOTA	MIS	43.6	mg/kg	PLANT
4070	5/15/2006	J11X83	SOIL and BIOTA	MIS-phyt	52.8	mg/kg	PLANT
4071	5/12/2006	J11X73	SOIL and BIOTA	MIS	46.4	mg/kg	PLANT
4072	5/10/2006	J11X75	SOIL and BIOTA	MIS	45.1	mg/kg	PLANT
4073	5/15/2006	J11X67	SOIL and BIOTA	MIS	69.1	mg/kg	PLANT
4074	5/18/2006	J11X68	SOIL and BIOTA	MIS	45.7	mg/kg	PLANT
4075	5/22/2006	J11X62	SOIL and BIOTA	MIS	46.5	mg/kg	PLANT
4076	5/19/2006	J11X71	SOIL and BIOTA	MIS	51.3	mg/kg	PLANT
4077	8/10/2006	J11X00	SOIL and BIOTA	MIS	51	mg/kg	PLANT
4078	5/9/2006	J11X01	SOIL and BIOTA	MIS	51.6	mg/kg	PLANT
4079	5/9/2006	J11X03	SOIL and BIOTA	MIS	36.6	mg/kg	PLANT
4080	5/9/2006	J11WY5	SOIL and BIOTA	MIS	48.9	mg/kg	PLANT
4081	5/19/2006	J11WX3	SOIL and BIOTA	MIS	42.5	mg/kg	PLANT
4082	5/9/2006	J11WX5	SOIL and BIOTA	MIS	57.5	mg/kg	PLANT
4083	5/9/2006	J11WW7	SOIL and BIOTA	MIS	44.1	mg/kg	PLANT
4084	5/22/2006	J11WX7	SOIL and BIOTA	MIS	53	mg/kg	PLANT
4085	5/9/2006	J11WX9	SOIL and BIOTA	MIS	52.9	mg/kg	PLANT
4086	5/16/2006	J11WY3	SOIL and BIOTA	MIS	41.3	mg/kg	PLANT
4087	5/15/2006	J11X97	SOIL and BIOTA	MIS	41.7	mg/kg	PLANT
4088	5/15/2006	J11X97	SOIL and BIOTA	MIS-phyt	55.3	mg/kg	PLANT
4089	5/16/2006	J11X95	SOIL and BIOTA	MIS	58.1	mg/kg	PLANT
4090	5/18/2006	J11X42	SOIL and BIOTA	MIS	45.5	mg/kg	PLANT
4091	5/18/2006	J11X54	SOIL and BIOTA	MIS	43.4	mg/kg	PLANT
4092	5/10/2006	J11X61	SOIL and BIOTA	MIS	53.7	mg/kg	PLANT
4093	5/19/2006	J11X56	SOIL and BIOTA	MIS	41.4	mg/kg	PLANT
4094	5/16/2006	J11X48	SOIL and BIOTA	MIS	39.9	mg/kg	PLANT

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
4056	CURRENT YRS GROWTH	0.4	mg/kg			RCBRA
4057	CURRENT YRS GROWTH	0.44	mg/kg			RCBRA
4058	CURRENT YRS GROWTH	0.53	mg/kg			RCBRA
4059	CURRENT YRS GROWTH	0.73	mg/kg			RCBRA
4060	CURRENT YRS GROWTH	0.65	mg/kg			RCBRA
4061	CURRENT YRS GROWTH	0.17	mg/kg			RCBRA
4062	CURRENT YRS GROWTH	0.17	mg/kg			RCBRA
4063	CURRENT YRS GROWTH	0.52	mg/kg	C		RCBRA
4064	CURRENT YRS GROWTH	0.25	mg/kg			RCBRA
4065	CURRENT YRS GROWTH	0.25	mg/kg			RCBRA
4066	CURRENT YRS GROWTH	0.98	mg/kg			RCBRA
4067	CURRENT YRS GROWTH	0.98	mg/kg			RCBRA
4068	CURRENT YRS GROWTH	0.71	mg/kg			RCBRA
4069	CURRENT YRS GROWTH	0.65	mg/kg			RCBRA
4070	CURRENT YRS GROWTH	0.65	mg/kg			RCBRA
4071	CURRENT YRS GROWTH	0.37	mg/kg			RCBRA
4072	CURRENT YRS GROWTH	0.26	mg/kg			RCBRA
4073	CURRENT YRS GROWTH	0.31	mg/kg			RCBRA
4074	CURRENT YRS GROWTH	0.61	mg/kg			RCBRA
4075	CURRENT YRS GROWTH	0.78	mg/kg			RCBRA
4076	CURRENT YRS GROWTH	0.91	mg/kg			RCBRA
4077	CURRENT YRS GROWTH	0.19	mg/kg			RCBRA
4078	CURRENT YRS GROWTH	0.12	mg/kg			RCBRA
4079	CURRENT YRS GROWTH	0.18	mg/kg			RCBRA
4080	CURRENT YRS GROWTH	0.14	mg/kg			RCBRA
4081	CURRENT YRS GROWTH	0.7	mg/kg			RCBRA
4082	CURRENT YRS GROWTH	0.16	mg/kg			RCBRA
4083	CURRENT YRS GROWTH	0.28	mg/kg			RCBRA
4084	CURRENT YRS GROWTH	0.45	mg/kg			RCBRA
4085	CURRENT YRS GROWTH	0.18	mg/kg			RCBRA
4086	CURRENT YRS GROWTH	0.6	mg/kg			RCBRA
4087	CURRENT YRS GROWTH	0.42	mg/kg			RCBRA
4088	CURRENT YRS GROWTH	0.42	mg/kg			RCBRA
4089	CURRENT YRS GROWTH	0.33	mg/kg			RCBRA
4090	CURRENT YRS GROWTH	17.4	mg/kg			RCBRA
4091	CURRENT YRS GROWTH	20.6	mg/kg			RCBRA
4092	CURRENT YRS GROWTH	4.3	mg/kg	C		RCBRA
4093	CURRENT YRS GROWTH	21.3	mg/kg			RCBRA
4094	CURRENT YRS GROWTH	19.7	mg/kg			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
4095	Zinc	7440-66-6	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
4096	Zinc	7440-66-6	RCBRA 116-N-3	N	UPLAND	571995.702	149793.039
4097	Zinc	7440-66-6	RCBRA 1607-D2:1	D/H	UPLAND	573823.924	152260.319
4098	Zinc	7440-66-6	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
4099	Zinc	7440-66-6	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
4100	Zinc	7440-66-6	RCBRA 2a Rip	BC	RIPARIAN	564618.501	145284.526
4101	Zinc	7440-66-6	RCBRA 2c Rip	K	RIPARIAN	567598.2	146210.159
4102	Zinc	7440-66-6	RCBRA 2f Rip	D/H	RIPARIAN	576222.844	154297.511
4103	Zinc	7440-66-6	RCBRA 2j Rip	IU2/IU6	RIPARIAN	579360.971	150092.048
4104	Zinc	7440-66-6	RCBRA 2l Rip	IU2/IU6	RIPARIAN	582341.212	146120.069
4105	Zinc	7440-66-6	RCBRA 300-49	300	UPLAND	594318.994	116830.934
4106	Zinc	7440-66-6	RCBRA 3b Rip	IU2/IU6	RIPARIAN	584961.205	141035.835
4107	Zinc	7440-66-6	RCBRA 4a Rip	IU2/IU6	RIPARIAN	589347.5	137480.985
4108	Zinc	7440-66-6	RCBRA 5c Rip	300	RIPARIAN	594509.985	124869.182
4109	Zinc	7440-66-6	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
4110	Zinc	7440-66-6	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
4111	Zinc	7440-66-6	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
4112	Zinc	7440-66-6	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
4113	Zinc	7440-66-6	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
4114	Zinc	7440-66-6	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
4115	Zinc	7440-66-6	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
4116	Zinc	7440-66-6	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
4117	Zinc	7440-66-6	RCBRA 600-181	IU2/IU6	UPLAND	578303.83	147316.698
4118	Zinc	7440-66-6	RCBRA 600-204	IU2/IU6	UPLAND	580128.485	144762.219
4119	Zinc	7440-66-6	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
4120	Zinc	7440-66-6	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
4121	Zinc	7440-66-6	RCBRA 600-23	IU2/IU6	UPLAND	585523.593	130481.377
4122	Zinc	7440-66-6	RCBRA 618-4	300	UPLAND	593954.946	117064.473
4123	Zinc	7440-66-6	RCBRA 628-1	IU2/IU6	UPLAND	577797.524	148745.681
4124	Zinc	7440-66-6	RCBRA Bev Ref 1 Rip	Outside decision areas	RIPARIAN	542428.846	167701.261
4125	Zinc	7440-66-6	RCBRA Bev Ref 2 Rip	Outside decision areas	RIPARIAN	541493.988	167808.357
4126	Zinc	7440-66-6	RCBRA JA JONES	300	UPLAND	593874.58	120013.908
4127	Zinc	7440-66-6	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
4128	Zinc	7440-66-6	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
4129	Zinc	7440-66-6	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
4130	Zinc	7440-66-6	RCBRA Pit 18	IU2/IU6	UPLAND	580697.058	145311.464
4131	Zinc	7440-66-6	RCBRA Pit 23	IU2/IU6	UPLAND	572381.012	144874.157
4132	Zinc	7440-66-6	RCBRA Pit 24	BC	UPLAND	563395.814	145119.007
4133	Zinc	7440-66-6	RCBRA Pit 9	300	UPLAND	592807.103	120587.7

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
4095	5/16/2006	J11X48	SOIL and BIOTA	MIS-phyt	39.9	mg/kg	PLANT
4096	5/19/2006	J11X46	SOIL and BIOTA	MIS	46.5	mg/kg	PLANT
4097	5/22/2006	J11X58	SOIL and BIOTA	MIS	38.3	mg/kg	PLANT
4098	5/12/2006	J11X44	SOIL and BIOTA	MIS	56.8	mg/kg	PLANT
4099	5/12/2006	J11X44	SOIL and BIOTA	MIS-phyt	72.8	mg/kg	PLANT
4100	5/23/2007	J15298	SOIL and BIOTA	MIS	108	mg/kg	PLANT
4101	5/21/2007	J152B8	SOIL and BIOTA	MIS	338	mg/kg	PLANT
4102	5/7/2007	J15295	SOIL and BIOTA	MIS	218	mg/kg	PLANT
4103	5/21/2007	J15296	SOIL and BIOTA	MIS	377	mg/kg	PLANT
4104	5/24/2007	J152B0	SOIL and BIOTA	MIS	139	mg/kg	PLANT
4105	4/26/2006	J11X52	SOIL and BIOTA	MIS	47.7	mg/kg	PLANT
4106	5/23/2007	J152B2	SOIL and BIOTA	MIS	348	mg/kg	PLANT
4107	5/24/2007	J152B6	SOIL and BIOTA	MIS	342	mg/kg	PLANT
4108	5/24/2007	J152B4	SOIL and BIOTA	MIS	120	mg/kg	PLANT
4109	5/12/2006	J11X84	SOIL and BIOTA	MIS	35.1	mg/kg	PLANT
4110	5/12/2006	J11X84	SOIL and BIOTA	MIS-phyt	45.2	mg/kg	PLANT
4111	5/12/2006	J11X77	SOIL and BIOTA	MIS	45.4	mg/kg	PLANT
4112	5/12/2006	J11X77	SOIL and BIOTA	MIS-phyt	145	mg/kg	PLANT
4113	5/16/2006	J11X79	SOIL and BIOTA	MIS	75.5	mg/kg	PLANT
4114	5/16/2006	J11X79	SOIL and BIOTA	MIS-phyt	79.9	mg/kg	PLANT
4115	5/16/2006	J11X90	SOIL and BIOTA	MIS	62.9	mg/kg	PLANT
4116	5/16/2006	J11X90	SOIL and BIOTA	MIS-phyt	62.9	mg/kg	PLANT
4117	5/18/2006	J11X86	SOIL and BIOTA	MIS	43.3	mg/kg	PLANT
4118	5/18/2006	J11X81	SOIL and BIOTA	MIS	50.2	mg/kg	PLANT
4119	5/15/2006	J11X82	SOIL and BIOTA	MIS	45.2	mg/kg	PLANT
4120	5/15/2006	J11X82	SOIL and BIOTA	MIS-phyt	48	mg/kg	PLANT
4121	5/12/2006	J11X72	SOIL and BIOTA	MIS	38.2	mg/kg	PLANT
4122	5/12/2006	J11X51	SOIL and BIOTA	MIS	34.2	mg/kg	PLANT
4123	5/12/2006	J11X89	SOIL and BIOTA	MIS	53.8	mg/kg	PLANT
4124	5/10/2007	J15289	SOIL and BIOTA	MIS	150	mg/kg	PLANT
4125	5/8/2007	J15291	SOIL and BIOTA	MIS	103	mg/kg	PLANT
4126	5/10/2006	J11X74	SOIL and BIOTA	MIS	43.2	mg/kg	PLANT
4127	5/18/2006	J11X98	SOIL and BIOTA	MIS	50.5	mg/kg	PLANT
4128	5/18/2006	J11X98	SOIL and BIOTA	MIS-phyt	52.6	mg/kg	PLANT
4129	5/15/2006	J11X66	SOIL and BIOTA	MIS	49.2	mg/kg	PLANT
4130	5/18/2006	J11X69	SOIL and BIOTA	MIS	37.7	mg/kg	PLANT
4131	5/22/2006	J11X63	SOIL and BIOTA	MIS	39.9	mg/kg	PLANT
4132	5/19/2006	J11X70	SOIL and BIOTA	MIS	48.6	mg/kg	PLANT
4133	5/12/2006	J11X64	SOIL and BIOTA	MIS	46.6	mg/kg	PLANT

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
4095	CURRENT YRS GROWTH	19.7	mg/kg			RCBRA
4096	CURRENT YRS GROWTH	13.6	mg/kg			RCBRA
4097	CURRENT YRS GROWTH	12.3	mg/kg			RCBRA
4098	CURRENT YRS GROWTH	14.2	mg/kg			RCBRA
4099	CURRENT YRS GROWTH	14.2	mg/kg			RCBRA
4100	CURRENT YRS GROWTH	7.7	mg/kg	C		RCBRA
4101	CURRENT YRS GROWTH	11.5	mg/kg	C		RCBRA
4102	CURRENT YRS GROWTH	11.3	mg/kg	C		RCBRA
4103	CURRENT YRS GROWTH	10.5	mg/kg	C		RCBRA
4104	CURRENT YRS GROWTH	6.9	mg/kg	C		RCBRA
4105	CURRENT YRS GROWTH	23.4	mg/kg			RCBRA
4106	CURRENT YRS GROWTH	7.9	mg/kg	C		RCBRA
4107	CURRENT YRS GROWTH	7.6	mg/kg	C		RCBRA
4108	CURRENT YRS GROWTH	10.6	mg/kg	C		RCBRA
4109	CURRENT YRS GROWTH	5.5	mg/kg	C		RCBRA
4110	CURRENT YRS GROWTH	5.5	mg/kg	C		RCBRA
4111	CURRENT YRS GROWTH	5	mg/kg	C		RCBRA
4112	CURRENT YRS GROWTH	5	mg/kg	C		RCBRA
4113	CURRENT YRS GROWTH	18.7	mg/kg			RCBRA
4114	CURRENT YRS GROWTH	18.7	mg/kg			RCBRA
4115	CURRENT YRS GROWTH	34.1	mg/kg			RCBRA
4116	CURRENT YRS GROWTH	34.1	mg/kg			RCBRA
4117	CURRENT YRS GROWTH	13.9	mg/kg			RCBRA
4118	CURRENT YRS GROWTH	13.8	mg/kg			RCBRA
4119	CURRENT YRS GROWTH	15.6	mg/kg			RCBRA
4120	CURRENT YRS GROWTH	15.6	mg/kg			RCBRA
4121	CURRENT YRS GROWTH	10.9	mg/kg	C		RCBRA
4122	CURRENT YRS GROWTH	4.5	mg/kg	C		RCBRA
4123	CURRENT YRS GROWTH	3.7	mg/kg	C		RCBRA
4124	CURRENT YRS GROWTH	6.8	mg/kg	C		RCBRA
4125	CURRENT YRS GROWTH	9.8	mg/kg	C		RCBRA
4126	CURRENT YRS GROWTH	10.6	mg/kg	C		RCBRA
4127	CURRENT YRS GROWTH	17.9	mg/kg			RCBRA
4128	CURRENT YRS GROWTH	17.9	mg/kg			RCBRA
4129	CURRENT YRS GROWTH	13	mg/kg			RCBRA
4130	CURRENT YRS GROWTH	13.4	mg/kg			RCBRA
4131	CURRENT YRS GROWTH	11.1	mg/kg			RCBRA
4132	CURRENT YRS GROWTH	8.8	mg/kg			RCBRA
4133	CURRENT YRS GROWTH	4.4	mg/kg	C		RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
4134	Zinc	7440-66-6	RCBRA R Ref 11	Outside decision areas	RIPARIAN	559400.735	146458.486
4135	Zinc	7440-66-6	RCBRA R Ref 12	IU2/IU6	RIPARIAN	559201.908	145747.542
4136	Zinc	7440-66-6	RCBRA R Ref 13	Outside decision areas	RIPARIAN	558572.809	145345.115
4137	Zinc	7440-66-6	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
4138	Zinc	7440-66-6	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
4139	Zinc	7440-66-6	RCBRA R Ref 16	Outside decision areas	RIPARIAN	557650.029	144826.748
4140	Zinc	7440-66-6	RCBRA Rip 1	D/H	RIPARIAN	577251.869	153659.195
4141	Zinc	7440-66-6	RCBRA Rip 10	D/H	RIPARIAN	573987.873	153082.19
4142	Zinc	7440-66-6	RCBRA Rip 2	D/H	RIPARIAN	573603.219	152471.6
4143	Zinc	7440-66-6	RCBRA Rip 3	D/H	RIPARIAN	572639.65	151677.812
4144	Zinc	7440-66-6	RCBRA Rip 4	N	RIPARIAN	570558.596	148981.547
4145	Zinc	7440-66-6	RCBRA Rip 5	K	RIPARIAN	569141.025	147521.561
4146	Zinc	7440-66-6	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
4147	Zinc	7440-66-6	RCBRA Rip 7	IU2/IU6	RIPARIAN	581326.914	147825.17
4148	Zinc	7440-66-6	RCBRA Rip 8	D/H	RIPARIAN	578698.584	152233.645
4149	Zinc	7440-66-6	RCBRA Rip 9	D/H	RIPARIAN	578153.643	152801.452
4150	Zinc	7440-66-6	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
4151	Zinc	7440-66-6	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
4152	Zinc	7440-66-6	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
4153	Zinc	7440-66-6	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
4154	Zinc	7440-66-6	RCBRA Yak Rdg 2	Outside decision areas	UPLAND	559031.557	135576.407
4155	Zinc	7440-66-6	RCBRA 100-D-48	D/H	UPLAND	573841.527	151914.538
4156	Zinc	7440-66-6	RCBRA 100-D-49	D/H	UPLAND	573938.06	151944.123
4157	Zinc	7440-66-6	RCBRA 100-F-2	IU2/IU6	UPLAND	579728.068	147001.117
4158	Zinc	7440-66-6	RCBRA 116-DR-1&2	D/H	UPLAND	574007.817	152246.748
4159	Zinc	7440-66-6	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
4160	Zinc	7440-66-6	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
4161	Zinc	7440-66-6	RCBRA 116-N-3	N	UPLAND	571995.702	149793.039
4162	Zinc	7440-66-6	RCBRA 1607-D2:1	D/H	UPLAND	573823.924	152260.319
4163	Zinc	7440-66-6	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
4164	Zinc	7440-66-6	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
4165	Zinc	7440-66-6	RCBRA 300-49	300	UPLAND	594318.994	116830.934
4166	Zinc	7440-66-6	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
4167	Zinc	7440-66-6	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
4168	Zinc	7440-66-6	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
4169	Zinc	7440-66-6	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
4170	Zinc	7440-66-6	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
4171	Zinc	7440-66-6	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
4172	Zinc	7440-66-6	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
4134	5/9/2006	J11WY8	SOIL and BIOTA	MIS	122	mg/kg	PLANT
4135	5/9/2006	J11WX0	SOIL and BIOTA	MIS	171	mg/kg	PLANT
4136	8/10/2006	J11WY9	SOIL and BIOTA	MIS	285	mg/kg	PLANT
4137	5/9/2006	J11X02	SOIL and BIOTA	MIS	305	mg/kg	PLANT
4138	5/8/2007	J15293	SOIL and BIOTA	MIS	305	mg/kg	PLANT
4139	5/9/2006	J11X04	SOIL and BIOTA	MIS	168	mg/kg	PLANT
4140	5/16/2006	J11WX1	SOIL and BIOTA	MIS	393	mg/kg	PLANT
4141	5/9/2006	J11WY6	SOIL and BIOTA	MIS	214	mg/kg	PLANT
4142	5/19/2006	J11WX4	SOIL and BIOTA	MIS	124	mg/kg	PLANT
4143	5/9/2006	J11WX6	SOIL and BIOTA	MIS	131	mg/kg	PLANT
4144	5/9/2006	J11WW6	SOIL and BIOTA	MIS	219	mg/kg	PLANT
4145	5/9/2006	J11WW8	SOIL and BIOTA	MIS	311	mg/kg	PLANT
4146	5/22/2006	J11XP0	SOIL and BIOTA	MIS	201	mg/kg	PLANT
4147	5/9/2006	J11WY0	SOIL and BIOTA	MIS	207	mg/kg	PLANT
4148	5/16/2006	J11WY2	SOIL and BIOTA	MIS	218	mg/kg	PLANT
4149	5/16/2006	J11WY4	SOIL and BIOTA	MIS	197	mg/kg	PLANT
4150	5/18/2006	J11XB0	SOIL and BIOTA	MIS	53.5	mg/kg	PLANT
4151	5/18/2006	J11XB0	SOIL and BIOTA	MIS-phyt	53.7	mg/kg	PLANT
4152	5/15/2006	J11X96	SOIL and BIOTA	MIS	43.2	mg/kg	PLANT
4153	5/15/2006	J11X96	SOIL and BIOTA	MIS-phyt	48.3	mg/kg	PLANT
4154	5/16/2006	J11X94	SOIL and BIOTA	MIS	56.9	mg/kg	PLANT
4155	5/18/2006	J11X43	SOIL and BIOTA	MIS	45.5	mg/kg	PLANT
4156	5/18/2006	J11X55	SOIL and BIOTA	MIS	43.4	mg/kg	PLANT
4157	5/10/2006	J11X60	SOIL and BIOTA	MIS	53.7	mg/kg	PLANT
4158	5/19/2006	J11X57	SOIL and BIOTA	MIS	41.4	mg/kg	PLANT
4159	5/16/2006	J11X49	SOIL and BIOTA	MIS	39.9	mg/kg	PLANT
4160	5/16/2006	J11X49	SOIL and BIOTA	MIS-phyt	39.9	mg/kg	PLANT
4161	5/19/2006	J11X47	SOIL and BIOTA	MIS	46.5	mg/kg	PLANT
4162	5/22/2006	J11X59	SOIL and BIOTA	MIS	38.3	mg/kg	PLANT
4163	5/12/2006	J11X45	SOIL and BIOTA	MIS	56.8	mg/kg	PLANT
4164	5/12/2006	J11X45	SOIL and BIOTA	MIS-phyt	72.8	mg/kg	PLANT
4165	4/26/2006	J11X53	SOIL and BIOTA	MIS	47.7	mg/kg	PLANT
4166	5/12/2006	J11X85	SOIL and BIOTA	MIS	35.1	mg/kg	PLANT
4167	5/12/2006	J11X85	SOIL and BIOTA	MIS-phyt	45.2	mg/kg	PLANT
4168	5/12/2006	J11X76	SOIL and BIOTA	MIS	45.4	mg/kg	PLANT
4169	5/12/2006	J11X76	SOIL and BIOTA	MIS-phyt	145	mg/kg	PLANT
4170	5/16/2006	J11X78	SOIL and BIOTA	MIS	75.5	mg/kg	PLANT
4171	5/16/2006	J11X78	SOIL and BIOTA	MIS-phyt	79.9	mg/kg	PLANT
4172	5/16/2006	J11X91	SOIL and BIOTA	MIS	62.9	mg/kg	PLANT

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
4134	CURRENT YRS GROWTH	7	mg/kg			RCBRA
4135	CURRENT YRS GROWTH	12	mg/kg			RCBRA
4136	CURRENT YRS GROWTH	24.8	mg/kg			RCBRA
4137	CURRENT YRS GROWTH	12.4	mg/kg			RCBRA
4138	CURRENT YRS GROWTH	11.2	mg/kg	C		RCBRA
4139	CURRENT YRS GROWTH	13.6	mg/kg			RCBRA
4140	CURRENT YRS GROWTH	41.3	mg/kg			RCBRA
4141	CURRENT YRS GROWTH	9	mg/kg			RCBRA
4142	CURRENT YRS GROWTH	53.2	mg/kg			RCBRA
4143	CURRENT YRS GROWTH	14.7	mg/kg			RCBRA
4144	CURRENT YRS GROWTH	11	mg/kg			RCBRA
4145	CURRENT YRS GROWTH	9.3	mg/kg			RCBRA
4146	CURRENT YRS GROWTH	33.8	mg/kg			RCBRA
4147	CURRENT YRS GROWTH	6.4	mg/kg			RCBRA
4148	CURRENT YRS GROWTH	72.6	mg/kg			RCBRA
4149	CURRENT YRS GROWTH	53.6	mg/kg			RCBRA
4150	CURRENT YRS GROWTH	14.9	mg/kg			RCBRA
4151	CURRENT YRS GROWTH	14.9	mg/kg			RCBRA
4152	CURRENT YRS GROWTH	17.2	mg/kg			RCBRA
4153	CURRENT YRS GROWTH	17.2	mg/kg			RCBRA
4154	CURRENT YRS GROWTH	43.8	mg/kg			RCBRA
4155	CURRENT YRS GROWTH	29.9	mg/kg			RCBRA
4156	CURRENT YRS GROWTH	25.3	mg/kg			RCBRA
4157	CURRENT YRS GROWTH	4.7	mg/kg	C		RCBRA
4158	CURRENT YRS GROWTH	19.5	mg/kg			RCBRA
4159	CURRENT YRS GROWTH	23.6	mg/kg			RCBRA
4160	CURRENT YRS GROWTH	23.6	mg/kg			RCBRA
4161	CURRENT YRS GROWTH	24.1	mg/kg			RCBRA
4162	CURRENT YRS GROWTH	34.3	mg/kg			RCBRA
4163	CURRENT YRS GROWTH	15.5	mg/kg			RCBRA
4164	CURRENT YRS GROWTH	15.5	mg/kg			RCBRA
4165	CURRENT YRS GROWTH	34.8	mg/kg			RCBRA
4166	CURRENT YRS GROWTH	3	mg/kg	C		RCBRA
4167	CURRENT YRS GROWTH	3	mg/kg	C		RCBRA
4168	CURRENT YRS GROWTH	3.1	mg/kg	C		RCBRA
4169	CURRENT YRS GROWTH	3.1	mg/kg	C		RCBRA
4170	CURRENT YRS GROWTH	41.5	mg/kg			RCBRA
4171	CURRENT YRS GROWTH	41.5	mg/kg			RCBRA
4172	CURRENT YRS GROWTH	43.5	mg/kg			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
4173	Zinc	7440-66-6	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
4174	Zinc	7440-66-6	RCBRA 600-181	IU2/IU6	UPLAND	578303.83	147316.698
4175	Zinc	7440-66-6	RCBRA 600-204	IU2/IU6	UPLAND	580128.485	144762.219
4176	Zinc	7440-66-6	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
4177	Zinc	7440-66-6	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
4178	Zinc	7440-66-6	RCBRA 600-23	IU2/IU6	UPLAND	585523.593	130481.377
4179	Zinc	7440-66-6	RCBRA 618-4	300	UPLAND	593954.946	117064.473
4180	Zinc	7440-66-6	RCBRA 628-1	IU2/IU6	UPLAND	577797.524	148745.681
4181	Zinc	7440-66-6	RCBRA JA JONES	300	UPLAND	593874.58	120013.908
4182	Zinc	7440-66-6	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
4183	Zinc	7440-66-6	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
4184	Zinc	7440-66-6	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
4185	Zinc	7440-66-6	RCBRA Pit 18	IU2/IU6	UPLAND	580697.058	145311.464
4186	Zinc	7440-66-6	RCBRA Pit 23	IU2/IU6	UPLAND	572381.012	144874.157
4187	Zinc	7440-66-6	RCBRA Pit 24	BC	UPLAND	563395.814	145119.007
4188	Zinc	7440-66-6	RCBRA Pit 9	300	UPLAND	592807.103	120587.7
4189	Zinc	7440-66-6	RCBRA R Ref 11	Outside decision areas	RIPARIAN	559400.735	146458.486
4190	Zinc	7440-66-6	RCBRA R Ref 12	IU2/IU6	RIPARIAN	559201.908	145747.542
4191	Zinc	7440-66-6	RCBRA R Ref 13	Outside decision areas	RIPARIAN	558572.809	145345.115
4192	Zinc	7440-66-6	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
4193	Zinc	7440-66-6	RCBRA R Ref 16	Outside decision areas	RIPARIAN	557650.029	144826.748
4194	Zinc	7440-66-6	RCBRA Rip 1	D/H	RIPARIAN	577251.869	153659.195
4195	Zinc	7440-66-6	RCBRA Rip 10	D/H	RIPARIAN	573987.873	153082.19
4196	Zinc	7440-66-6	RCBRA Rip 2	D/H	RIPARIAN	573603.219	152471.6
4197	Zinc	7440-66-6	RCBRA Rip 3	D/H	RIPARIAN	572639.65	151677.812
4198	Zinc	7440-66-6	RCBRA Rip 4	N	RIPARIAN	570558.596	148981.547
4199	Zinc	7440-66-6	RCBRA Rip 5	K	RIPARIAN	569141.025	147521.561
4200	Zinc	7440-66-6	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
4201	Zinc	7440-66-6	RCBRA Rip 7	IU2/IU6	RIPARIAN	581326.914	147825.17
4202	Zinc	7440-66-6	RCBRA Rip 8	D/H	RIPARIAN	578698.584	152233.645
4203	Zinc	7440-66-6	RCBRA Rip 9	D/H	RIPARIAN	578153.643	152801.452
4204	Zinc	7440-66-6	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
4205	Zinc	7440-66-6	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
4206	Zinc	7440-66-6	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
4207	Zinc	7440-66-6	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
4208	Zinc	7440-66-6	RCBRA Yak Rdg 2	Outside decision areas	UPLAND	559031.557	135576.407
4209	Zinc	7440-66-6	RCBRA 2a Rip	BC	RIPARIAN	564618.501	145284.526
4210	Zinc	7440-66-6	RCBRA 2c Rip	K	RIPARIAN	567598.2	146210.159
4211	Zinc	7440-66-6	RCBRA 2f Rip	D/H	RIPARIAN	576222.844	154297.511

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
4173	5/16/2006	J11X91	SOIL and BIOTA	MIS-phyt	62.9	mg/kg	PLANT
4174	5/18/2006	J11X87	SOIL and BIOTA	MIS	43.3	mg/kg	PLANT
4175	5/18/2006	J11X80	SOIL and BIOTA	MIS	50.2	mg/kg	PLANT
4176	5/15/2006	J11X83	SOIL and BIOTA	MIS	45.2	mg/kg	PLANT
4177	5/15/2006	J11X83	SOIL and BIOTA	MIS-phyt	48	mg/kg	PLANT
4178	5/12/2006	J11X73	SOIL and BIOTA	MIS	38.2	mg/kg	PLANT
4179	5/12/2006	J11X50	SOIL and BIOTA	MIS	34.2	mg/kg	PLANT
4180	5/12/2006	J11X88	SOIL and BIOTA	MIS	53.8	mg/kg	PLANT
4181	5/10/2006	J11X75	SOIL and BIOTA	MIS	43.2	mg/kg	PLANT
4182	5/18/2006	J11X99	SOIL and BIOTA	MIS	50.5	mg/kg	PLANT
4183	5/18/2006	J11X99	SOIL and BIOTA	MIS-phyt	52.6	mg/kg	PLANT
4184	5/15/2006	J11X67	SOIL and BIOTA	MIS	49.2	mg/kg	PLANT
4185	5/18/2006	J11X68	SOIL and BIOTA	MIS	37.7	mg/kg	PLANT
4186	5/22/2006	J11X62	SOIL and BIOTA	MIS	39.9	mg/kg	PLANT
4187	5/19/2006	J11X71	SOIL and BIOTA	MIS	48.6	mg/kg	PLANT
4188	5/12/2006	J11X65	SOIL and BIOTA	MIS	46.6	mg/kg	PLANT
4189	5/9/2006	J11WY7	SOIL and BIOTA	MIS	122	mg/kg	PLANT
4190	5/9/2006	J11WW9	SOIL and BIOTA	MIS	171	mg/kg	PLANT
4191	8/10/2006	J11X00	SOIL and BIOTA	MIS	285	mg/kg	PLANT
4192	5/9/2006	J11X01	SOIL and BIOTA	MIS	305	mg/kg	PLANT
4193	5/9/2006	J11X03	SOIL and BIOTA	MIS	168	mg/kg	PLANT
4194	5/16/2006	J11WX2	SOIL and BIOTA	MIS	393	mg/kg	PLANT
4195	5/9/2006	J11WY5	SOIL and BIOTA	MIS	214	mg/kg	PLANT
4196	5/19/2006	J11WX3	SOIL and BIOTA	MIS	124	mg/kg	PLANT
4197	5/9/2006	J11WX5	SOIL and BIOTA	MIS	131	mg/kg	PLANT
4198	5/9/2006	J11WW5	SOIL and BIOTA	MIS	219	mg/kg	PLANT
4199	5/9/2006	J11WW7	SOIL and BIOTA	MIS	311	mg/kg	PLANT
4200	5/22/2006	J11WX7	SOIL and BIOTA	MIS	201	mg/kg	PLANT
4201	5/9/2006	J11WX9	SOIL and BIOTA	MIS	207	mg/kg	PLANT
4202	5/16/2006	J11WY1	SOIL and BIOTA	MIS	218	mg/kg	PLANT
4203	5/16/2006	J11WY3	SOIL and BIOTA	MIS	197	mg/kg	PLANT
4204	5/18/2006	J11XB1	SOIL and BIOTA	MIS	53.5	mg/kg	PLANT
4205	5/18/2006	J11XB1	SOIL and BIOTA	MIS-phyt	53.7	mg/kg	PLANT
4206	5/15/2006	J11X97	SOIL and BIOTA	MIS	43.2	mg/kg	PLANT
4207	5/15/2006	J11X97	SOIL and BIOTA	MIS-phyt	48.3	mg/kg	PLANT
4208	5/16/2006	J11X95	SOIL and BIOTA	MIS	56.9	mg/kg	PLANT
4209	5/23/2007	J15299	SOIL and BIOTA	MIS	108	mg/kg	PLANT
4210	5/21/2007	J152B9	SOIL and BIOTA	MIS	338	mg/kg	PLANT
4211	5/7/2007	J15294	SOIL and BIOTA	MIS	218	mg/kg	PLANT

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
4173	CURRENT YRS GROWTH	43.5	mg/kg			RCBRA
4174	CURRENT YRS GROWTH	31.3	mg/kg			RCBRA
4175	CURRENT YRS GROWTH	27.8	mg/kg			RCBRA
4176	CURRENT YRS GROWTH	41.6	mg/kg			RCBRA
4177	CURRENT YRS GROWTH	41.6	mg/kg			RCBRA
4178	CURRENT YRS GROWTH	13.3	mg/kg	C		RCBRA
4179	CURRENT YRS GROWTH	5.4	mg/kg	C		RCBRA
4180	CURRENT YRS GROWTH	6.6	mg/kg	C		RCBRA
4181	CURRENT YRS GROWTH	9.6	mg/kg	C		RCBRA
4182	CURRENT YRS GROWTH	14.5	mg/kg			RCBRA
4183	CURRENT YRS GROWTH	14.5	mg/kg			RCBRA
4184	CURRENT YRS GROWTH	12.2	mg/kg			RCBRA
4185	CURRENT YRS GROWTH	28.2	mg/kg			RCBRA
4186	CURRENT YRS GROWTH	12.9	mg/kg			RCBRA
4187	CURRENT YRS GROWTH	15.6	mg/kg			RCBRA
4188	CURRENT YRS GROWTH	11.2	mg/kg	C		RCBRA
4189	CURRENT YRS GROWTH	5.7	mg/kg			RCBRA
4190	CURRENT YRS GROWTH	5.3	mg/kg			RCBRA
4191	CURRENT YRS GROWTH	6.9	mg/kg			RCBRA
4192	CURRENT YRS GROWTH	6.3	mg/kg			RCBRA
4193	CURRENT YRS GROWTH	7.5	mg/kg			RCBRA
4194	CURRENT YRS GROWTH	32.3	mg/kg			RCBRA
4195	CURRENT YRS GROWTH	11.2	mg/kg			RCBRA
4196	CURRENT YRS GROWTH	52.4	mg/kg			RCBRA
4197	CURRENT YRS GROWTH	9.3	mg/kg			RCBRA
4198	CURRENT YRS GROWTH	5.9	mg/kg			RCBRA
4199	CURRENT YRS GROWTH	8.8	mg/kg			RCBRA
4200	CURRENT YRS GROWTH	29.4	mg/kg			RCBRA
4201	CURRENT YRS GROWTH	8	mg/kg			RCBRA
4202	CURRENT YRS GROWTH	43.9	mg/kg			RCBRA
4203	CURRENT YRS GROWTH	40.7	mg/kg			RCBRA
4204	CURRENT YRS GROWTH	7	mg/kg			RCBRA
4205	CURRENT YRS GROWTH	7	mg/kg			RCBRA
4206	CURRENT YRS GROWTH	15	mg/kg			RCBRA
4207	CURRENT YRS GROWTH	15	mg/kg			RCBRA
4208	CURRENT YRS GROWTH	10	mg/kg			RCBRA
4209	CURRENT YRS GROWTH	15.4	mg/kg	C		RCBRA
4210	CURRENT YRS GROWTH	10.5	mg/kg	C		RCBRA
4211	CURRENT YRS GROWTH	13	mg/kg	C		RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
4212	Zinc	7440-66-6	RCBRA 2j Rip	IU2/IU6	RIPARIAN	579360.971	150092.048
4213	Zinc	7440-66-6	RCBRA 2l Rip	IU2/IU6	RIPARIAN	582341.212	146120.069
4214	Zinc	7440-66-6	RCBRA 3b Rip	IU2/IU6	RIPARIAN	584961.205	141035.835
4215	Zinc	7440-66-6	RCBRA 4a Rip	IU2/IU6	RIPARIAN	589347.5	137480.985
4216	Zinc	7440-66-6	RCBRA 5c Rip	300	RIPARIAN	594509.985	124869.182
4217	Zinc	7440-66-6	RCBRA Bev Ref 1 Rip	Outside decision areas	RIPARIAN	542428.846	167701.261
4218	Zinc	7440-66-6	RCBRA Bev Ref 2 Rip	Outside decision areas	RIPARIAN	541493.988	167808.357
4219	Zinc	7440-66-6	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
4220	Zinc	7440-66-6	VERNITA BRIDGE 1	Outside decision areas	UPLAND	558823	145536
4221	Zinc	7440-66-6	VERNITA BRIDGE 1	Outside decision areas	UPLAND	558823	145536
4222	Zinc	7440-66-6	VERNITA BRIDGE 1	Outside decision areas	UPLAND	558823	145536
4223	Zinc	7440-66-6	VERNITA BRIDGE 1	Outside decision areas	UPLAND	558823	145536
4224	Zinc	7440-66-6	VERNITA BRIDGE 2	Outside decision areas	UPLAND	558844	145558
4225	Zinc	7440-66-6	VERNITA BRIDGE 2	Outside decision areas	UPLAND	558844	145558
4226	Zinc	7440-66-6	VERNITA BRIDGE 2	Outside decision areas	UPLAND	558844	145558
4227	Zinc	7440-66-6	VERNITA BRIDGE 3	IU2/IU6	UPLAND	559089	145707
4228	Zinc	7440-66-6	VERNITA BRIDGE 3	IU2/IU6	UPLAND	559089	145707
4229	Zinc	7440-66-6	VERNITA BRIDGE 3	IU2/IU6	UPLAND	559089	145707
4230	Zinc	7440-66-6	VERNITA BRIDGE 3	IU2/IU6	UPLAND	559089	145707
4231	Zinc	7440-66-6	VERNITA BRIDGE 3	IU2/IU6	UPLAND	559089	145707
4232	Zinc	7440-66-6	VERNITA BRIDGE 4	IU2/IU6	UPLAND	559347	145849
4233	Zinc	7440-66-6	VERNITA BRIDGE 4	IU2/IU6	UPLAND	559347	145849
4234	Zinc	7440-66-6	VERNITA BRIDGE 4	IU2/IU6	UPLAND	559347	145849
4235	Zinc	7440-66-6	VERNITA BRIDGE 4	IU2/IU6	UPLAND	559347	145849
4236	Zinc	7440-66-6	VERNITA BRIDGE 5	IU2/IU6	UPLAND	559606	145999
4237	Zinc	7440-66-6	VERNITA BRIDGE 5	IU2/IU6	UPLAND	559606	145999
4238	Zinc	7440-66-6	VERNITA BRIDGE 5	IU2/IU6	UPLAND	559606	145999
4239	Zinc	7440-66-6	VERNITA BRIDGE 5	IU2/IU6	UPLAND	559606	145999
4240	Aldrin	309-00-2	RCBRA 5c Rip	300	RIPARIAN	594509.985	124869.182
4241	Alpha-BHC	319-84-6	RCBRA 5c Rip	300	RIPARIAN	594509.985	124869.182
4242	Alpha-BHC	319-84-6	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
4243	Alpha-BHC	319-84-6	RCBRA 5c Rip	300	RIPARIAN	594509.985	124869.182
4244	alpha-Chlordane	5103-71-9	RCBRA 5c Rip	300	RIPARIAN	594509.985	124869.182
4245	Benzo[k]fluoranthene	207-08-9	RCBRA Rip 9	D/H	RIPARIAN	578153.643	152801.452
4246	ta-1,2,3,4,5,6-Hexachlorocyclohexa	319-85-7	RCBRA 1607-D2:1	D/H	UPLAND	573823.924	152260.319
4247	Bis[2-ethylhexyl] phthalate	117-81-7	RCBRA Bev Ref 1 Rip	Outside decision areas	RIPARIAN	542428.846	167701.261
4248	Bis[2-ethylhexyl] phthalate	117-81-7	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
4249	Bis[2-ethylhexyl] phthalate	117-81-7	RCBRA R Ref 11	Outside decision areas	RIPARIAN	559400.735	146458.486
4250	Bis[2-ethylhexyl] phthalate	117-81-7	RCBRA R Ref 12	IU2/IU6	RIPARIAN	559201.908	145747.542

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
4212	5/21/2007	J15297	SOIL and BIOTA	MIS	377	mg/kg	PLANT
4213	5/24/2007	J152B1	SOIL and BIOTA	MIS	139	mg/kg	PLANT
4214	5/23/2007	J152B3	SOIL and BIOTA	MIS	348	mg/kg	PLANT
4215	5/24/2007	J152B7	SOIL and BIOTA	MIS	342	mg/kg	PLANT
4216	5/24/2007	J152B5	SOIL and BIOTA	MIS	120	mg/kg	PLANT
4217	5/10/2007	J15288	SOIL and BIOTA	MIS	150	mg/kg	PLANT
4218	5/8/2007	J15290	SOIL and BIOTA	MIS	103	mg/kg	PLANT
4219	5/8/2007	J15292	SOIL and BIOTA	MIS	305	mg/kg	PLANT
4220	8/19/2004	B1B5N5	SOIL and BIOTA	Discrete	195.5	mg/kg	PLANT
4221	8/19/2004	B1B5N4	SOIL and BIOTA	Discrete	195.5	mg/kg	PLANT
4222	8/19/2004	B1B5N6	SOIL and BIOTA	Discrete	195.5	mg/kg	PLANT
4223	8/19/2004	B1B5N3	SOIL and BIOTA	Discrete	195.5	mg/kg	PLANT
4224	8/19/2004	B1B5P6	SOIL and BIOTA	Discrete	236	mg/kg	PLANT
4225	8/19/2004	B1B5P5	SOIL and BIOTA	Discrete	236	mg/kg	PLANT
4226	8/19/2004	B1B5P7	SOIL and BIOTA	Discrete	236	mg/kg	PLANT
4227	8/19/2004	B1B5R8	SOIL and BIOTA	Discrete	299	mg/kg	PLANT
4228	8/19/2004	B1B5R7	SOIL and BIOTA	Discrete	299	mg/kg	PLANT
4229	8/19/2004	B1B5R5	SOIL and BIOTA	Discrete	299	mg/kg	PLANT
4230	8/20/2004	B1B5R9	SOIL and BIOTA	Discrete	299	mg/kg	PLANT
4231	8/19/2004	B1B5R6	SOIL and BIOTA	Discrete	299	mg/kg	PLANT
4232	8/24/2004	B1B5V0	SOIL and BIOTA	Discrete	355.5	mg/kg	PLANT
4233	8/24/2004	B1B5T9	SOIL and BIOTA	Discrete	355.5	mg/kg	PLANT
4234	8/24/2004	B1B5V3	SOIL and BIOTA	Discrete	355.5	mg/kg	PLANT
4235	8/24/2004	B1B5V1	SOIL and BIOTA	Discrete	355.5	mg/kg	PLANT
4236	8/24/2004	B1B5W3	SOIL and BIOTA	Discrete	344	mg/kg	PLANT
4237	8/24/2004	B1B5W5	SOIL and BIOTA	Discrete	344	mg/kg	PLANT
4238	8/24/2004	B1B5W6	SOIL and BIOTA	Discrete	344	mg/kg	PLANT
4239	8/24/2004	B1B5W4	SOIL and BIOTA	Discrete	344	mg/kg	PLANT
4240	5/24/2007	J152B5	SOIL and BIOTA	MIS	0.00185	mg/kg	PLANT
4241	5/24/2007	J152B4	SOIL and BIOTA	MIS	0.0024	mg/kg	PLANT
4242	5/15/2006	J11X83	SOIL and BIOTA	MIS	0.0004	mg/kg	PLANT
4243	5/24/2007	J152B5	SOIL and BIOTA	MIS	0.0024	mg/kg	PLANT
4244	5/24/2007	J152B5	SOIL and BIOTA	MIS	0.0004	mg/kg	PLANT
4245	5/16/2006	J11WY3	SOIL and BIOTA	MIS	0.1245	mg/kg	PLANT
4246	5/22/2006	J11X59	SOIL and BIOTA	MIS	0.0032	mg/kg	PLANT
4247	5/10/2007	J15289	SOIL and BIOTA	MIS	0.028	mg/kg	PLANT
4248	5/18/2006	J11X98	SOIL and BIOTA	MIS	0.031	mg/kg	PLANT
4249	5/9/2006	J11WY8	SOIL and BIOTA	MIS	0.039	mg/kg	PLANT
4250	5/9/2006	J11WX0	SOIL and BIOTA	MIS	0.081	mg/kg	PLANT

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
4212	CURRENT YRS GROWTH	11.7	mg/kg	C		RCBRA
4213	CURRENT YRS GROWTH	9.9	mg/kg	C		RCBRA
4214	CURRENT YRS GROWTH	9.3	mg/kg	C		RCBRA
4215	CURRENT YRS GROWTH	8	mg/kg	C		RCBRA
4216	CURRENT YRS GROWTH	7.6	mg/kg	C		RCBRA
4217	CURRENT YRS GROWTH	20	mg/kg	C		RCBRA
4218	CURRENT YRS GROWTH	11.1	mg/kg	C		RCBRA
4219	CURRENT YRS GROWTH	10.6	mg/kg	C		RCBRA
4220	SHOOTS	10.353	mg/kg	X		PNNL
4221	SHOOTS	9.618	mg/kg	X		PNNL
4222	SHOOTS	12.495	mg/kg	X		PNNL
4223	SHOOTS	12.411	mg/kg	X		PNNL
4224	SHOOTS	10.038	mg/kg	X		PNNL
4225	SHOOTS	24.36	mg/kg	X		PNNL
4226	SHOOTS	11.802	mg/kg	X		PNNL
4227	SHOOTS	8.421	mg/kg	X		PNNL
4228	SHOOTS	4.809	mg/kg	X		PNNL
4229	SHOOTS	4.641	mg/kg	X		PNNL
4230	SHOOTS	2.94	mg/kg	X		PNNL
4231	SHOOTS	11.088	mg/kg	X		PNNL
4232	SHOOTS	10.479	mg/kg	X		PNNL
4233	SHOOTS	4.851	mg/kg	X		PNNL
4234	SHOOTS	2.877	mg/kg	X		PNNL
4235	SHOOTS	10.71	mg/kg	X		PNNL
4236	SHOOTS	9.093	mg/kg	X		PNNL
4237	SHOOTS	8.379	mg/kg	X		PNNL
4238	SHOOTS	5.901	mg/kg	X		PNNL
4239	SHOOTS	19.971	mg/kg	X		PNNL
4240	CURRENT YRS GROWTH	0.0054	mg/kg	JXD	J	RCBRA
4241	CURRENT YRS GROWTH	0.003	mg/kg	JD		RCBRA
4242	CURRENT YRS GROWTH	0.028	mg/kg	JD		RCBRA
4243	CURRENT YRS GROWTH	0.0056	mg/kg	JD		RCBRA
4244	CURRENT YRS GROWTH	0.01	mg/kg	D	J	RCBRA
4245	CURRENT YRS GROWTH	1.3	mg/kg	J		RCBRA
4246	CURRENT YRS GROWTH	0.12	mg/kg	DX		RCBRA
4247	CURRENT YRS GROWTH	1.1	mg/kg	J		RCBRA
4248	CURRENT YRS GROWTH	1.1	mg/kg	JD		RCBRA
4249	CURRENT YRS GROWTH	0.72	mg/kg	JBD	J	RCBRA
4250	CURRENT YRS GROWTH	0.54	mg/kg	JBD	J	RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
4251	Bis[2-ethylhexyl] phthalate	117-81-7	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
4252	Bis[2-ethylhexyl] phthalate	117-81-7	RCBRA R Ref 16	Outside decision areas	RIPARIAN	557650.029	144826.748
4253	Bis[2-ethylhexyl] phthalate	117-81-7	RCBRA Rip 10	D/H	RIPARIAN	573987.873	153082.19
4254	Bis[2-ethylhexyl] phthalate	117-81-7	RCBRA Rip 4	N	RIPARIAN	570558.596	148981.547
4255	Bis[2-ethylhexyl] phthalate	117-81-7	RCBRA Yak Rdg 2	Outside decision areas	UPLAND	559031.557	135576.407
4256	Bis[2-ethylhexyl] phthalate	117-81-7	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
4257	Bis[2-ethylhexyl] phthalate	117-81-7	RCBRA JA JONES	300	UPLAND	593874.58	120013.908
4258	Bis[2-ethylhexyl] phthalate	117-81-7	RCBRA Rip 2	D/H	RIPARIAN	573603.219	152471.6
4259	Bis[2-ethylhexyl] phthalate	117-81-7	RCBRA Rip 4	N	RIPARIAN	570558.596	148981.547
4260	Bis[2-ethylhexyl] phthalate	117-81-7	RCBRA Rip 5	K	RIPARIAN	569141.025	147521.561
4261	Bis[2-ethylhexyl] phthalate	117-81-7	RCBRA Rip 7	IU2/IU6	RIPARIAN	581326.914	147825.17
4262	Bis[2-ethylhexyl] phthalate	117-81-7	RCBRA Rip 8	D/H	RIPARIAN	578698.584	152233.645
4263	Bis[2-ethylhexyl] phthalate	117-81-7	RCBRA Rip 9	D/H	RIPARIAN	578153.643	152801.452
4264	Bis[2-ethylhexyl] phthalate	117-81-7	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
4265	Bis[2-ethylhexyl] phthalate	117-81-7	RCBRA Bev Ref 1 Rip	Outside decision areas	RIPARIAN	542428.846	167701.261
4266	Bis[2-ethylhexyl] phthalate	117-81-7	RCBRA Bev Ref 2 Rip	Outside decision areas	RIPARIAN	541493.988	167808.357
4267	Bis[2-ethylhexyl] phthalate	117-81-7	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
4268	Delta-BHC	319-86-8	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
4269	Delta-BHC	319-86-8	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
4270	Dichlorodiphenyldichloroethane	72-54-8	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
4271	Dichlorodiphenyldichloroethylene	72-55-9	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
4272	Dichlorodiphenyldichloroethylene	72-55-9	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
4273	Dichlorodiphenyldichloroethylene	72-55-9	RCBRA JA JONES	300	UPLAND	593874.58	120013.908
4274	Dichlorodiphenyldichloroethylene	72-55-9	RCBRA Rip 5	K	RIPARIAN	569141.025	147521.561
4275	Dichlorodiphenyldichloroethylene	72-55-9	RCBRA Rip 8	D/H	RIPARIAN	578698.584	152233.645
4276	Dichlorodiphenyldichloroethylene	72-55-9	RCBRA 2f Rip	D/H	RIPARIAN	576222.844	154297.511
4277	Dichlorodiphenyldichloroethylene	72-55-9	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
4278	Dichlorodiphenyltrichloroethane	50-29-3	RCBRA 2f Rip	D/H	RIPARIAN	576222.844	154297.511
4279	Dichlorodiphenyltrichloroethane	50-29-3	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
4280	Dichlorodiphenyltrichloroethane	50-29-3	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
4281	Dieldrin	60-57-1	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
4282	Di-n-butylphthalate	84-74-2	RCBRA Rip 10	D/H	RIPARIAN	573987.873	153082.19
4283	Di-n-butylphthalate	84-74-2	RCBRA Rip 10	D/H	RIPARIAN	573987.873	153082.19
4284	Di-n-butylphthalate	84-74-2	RCBRA Bev Ref 2 Rip	Outside decision areas	RIPARIAN	541493.988	167808.357
4285	Endosulfan I	959-98-8	RCBRA 2f Rip	D/H	RIPARIAN	576222.844	154297.511
4286	Endosulfan I	959-98-8	RCBRA 5c Rip	300	RIPARIAN	594509.985	124869.182
4287	Endosulfan I	959-98-8	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
4288	Endosulfan I	959-98-8	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
4289	Endosulfan I	959-98-8	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
4251	5/9/2006	J11X02	SOIL and BIOTA	MIS	0.0565	mg/kg	PLANT
4252	5/9/2006	J11X04	SOIL and BIOTA	MIS	0.022	mg/kg	PLANT
4253	5/9/2006	J11WY6	SOIL and BIOTA	MIS	0.093035	mg/kg	PLANT
4254	5/9/2006	J11WW6	SOIL and BIOTA	MIS	0.065	mg/kg	PLANT
4255	5/16/2006	J11X94	SOIL and BIOTA	MIS	0.0195	mg/kg	PLANT
4256	5/15/2006	J11X83	SOIL and BIOTA	MIS	0.076	mg/kg	PLANT
4257	5/10/2006	J11X75	SOIL and BIOTA	MIS	0.486201	mg/kg	PLANT
4258	5/19/2006	J11WX3	SOIL and BIOTA	MIS	0.04	mg/kg	PLANT
4259	5/9/2006	J11WW5	SOIL and BIOTA	MIS	0.065	mg/kg	PLANT
4260	5/9/2006	J11WW7	SOIL and BIOTA	MIS	0.078	mg/kg	PLANT
4261	5/9/2006	J11WX9	SOIL and BIOTA	MIS	0.099	mg/kg	PLANT
4262	5/16/2006	J11WY1	SOIL and BIOTA	MIS	0.1	mg/kg	PLANT
4263	5/16/2006	J11WY3	SOIL and BIOTA	MIS	0.037	mg/kg	PLANT
4264	5/18/2006	J11XB1	SOIL and BIOTA	MIS	0.023	mg/kg	PLANT
4265	5/10/2007	J15288	SOIL and BIOTA	MIS	0.028	mg/kg	PLANT
4266	5/8/2007	J15290	SOIL and BIOTA	MIS	0.0465	mg/kg	PLANT
4267	5/8/2007	J15292	SOIL and BIOTA	MIS	0.0565	mg/kg	PLANT
4268	5/8/2007	J15293	SOIL and BIOTA	MIS	0.0018	mg/kg	PLANT
4269	5/8/2007	J15292	SOIL and BIOTA	MIS	0.0018	mg/kg	PLANT
4270	5/16/2006	J11X78	SOIL and BIOTA	MIS	0.0022	mg/kg	PLANT
4271	5/12/2006	J11X45	SOIL and BIOTA	MIS	0.01	mg/kg	PLANT
4272	5/16/2006	J11X78	SOIL and BIOTA	MIS	0.0027	mg/kg	PLANT
4273	5/10/2006	J11X75	SOIL and BIOTA	MIS	0.002108	mg/kg	PLANT
4274	5/9/2006	J11WW7	SOIL and BIOTA	MIS	0.00082	mg/kg	PLANT
4275	5/16/2006	J11WY1	SOIL and BIOTA	MIS	0.0004	mg/kg	PLANT
4276	5/7/2007	J15294	SOIL and BIOTA	MIS	0.0015	mg/kg	PLANT
4277	5/8/2007	J15292	SOIL and BIOTA	MIS	0.00105	mg/kg	PLANT
4278	5/7/2007	J15295	SOIL and BIOTA	MIS	0.00115	mg/kg	PLANT
4279	5/8/2007	J15293	SOIL and BIOTA	MIS	0.00058	mg/kg	PLANT
4280	5/8/2007	J15292	SOIL and BIOTA	MIS	0.00058	mg/kg	PLANT
4281	5/16/2006	J11X78	SOIL and BIOTA	MIS	0.0009	mg/kg	PLANT
4282	5/9/2006	J11WY6	SOIL and BIOTA	MIS	0.020454	mg/kg	PLANT
4283	5/9/2006	J11WY5	SOIL and BIOTA	MIS	0.020454	mg/kg	PLANT
4284	5/8/2007	J15290	SOIL and BIOTA	MIS	0.0435	mg/kg	PLANT
4285	5/7/2007	J15295	SOIL and BIOTA	MIS	0.0068	mg/kg	PLANT
4286	5/24/2007	J152B4	SOIL and BIOTA	MIS	0.00067	mg/kg	PLANT
4287	5/8/2007	J15293	SOIL and BIOTA	MIS	0.0027	mg/kg	PLANT
4288	5/22/2006	J11XP0	SOIL and BIOTA	MIS	0.0014	mg/kg	PLANT
4289	5/22/2006	J11WX7	SOIL and BIOTA	MIS	0.0014	mg/kg	PLANT

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
4251	CURRENT YRS GROWTH	1	mg/kg	JBD	J	RCBRA
4252	CURRENT YRS GROWTH	0.93	mg/kg	JBD	J	RCBRA
4253	CURRENT YRS GROWTH	0.23	mg/kg	JB	J	RCBRA
4254	CURRENT YRS GROWTH	1.1	mg/kg	JBD	J	RCBRA
4255	CURRENT YRS GROWTH	0.97	mg/kg	JB		RCBRA
4256	CURRENT YRS GROWTH	0.75	mg/kg	JB		RCBRA
4257	CURRENT YRS GROWTH	1.4	mg/kg	JBD	J	RCBRA
4258	CURRENT YRS GROWTH	2.3	mg/kg	JD		RCBRA
4259	CURRENT YRS GROWTH	0.31	mg/kg	JBD	J	RCBRA
4260	CURRENT YRS GROWTH	0.27	mg/kg	JB	J	RCBRA
4261	CURRENT YRS GROWTH	0.3	mg/kg	JB	J	RCBRA
4262	CURRENT YRS GROWTH	1	mg/kg	JB		RCBRA
4263	CURRENT YRS GROWTH	1.3	mg/kg	JB		RCBRA
4264	CURRENT YRS GROWTH	1.3	mg/kg	JD		RCBRA
4265	CURRENT YRS GROWTH	0.53	mg/kg	J		RCBRA
4266	CURRENT YRS GROWTH	0.57	mg/kg	J		RCBRA
4267	CURRENT YRS GROWTH	0.53	mg/kg	J		RCBRA
4268	CURRENT YRS GROWTH	0.008	mg/kg	JX		RCBRA
4269	CURRENT YRS GROWTH	0.011	mg/kg	JX	J	RCBRA
4270	CURRENT YRS GROWTH	0.031	mg/kg	D		RCBRA
4271	CURRENT YRS GROWTH	0.032	mg/kg	D	J	RCBRA
4272	CURRENT YRS GROWTH	0.55	mg/kg	D		RCBRA
4273	CURRENT YRS GROWTH	0.044	mg/kg	D	J	RCBRA
4274	CURRENT YRS GROWTH	0.073	mg/kg	D	J	RCBRA
4275	CURRENT YRS GROWTH	0.15	mg/kg	D		RCBRA
4276	CURRENT YRS GROWTH	0.012	mg/kg	JX		RCBRA
4277	CURRENT YRS GROWTH	0.011	mg/kg	J	J	RCBRA
4278	CURRENT YRS GROWTH	0.027	mg/kg	X	J	RCBRA
4279	CURRENT YRS GROWTH	0.013	mg/kg	J	J	RCBRA
4280	CURRENT YRS GROWTH	0.033	mg/kg		J	RCBRA
4281	CURRENT YRS GROWTH	0.34	mg/kg	D		RCBRA
4282	CURRENT YRS GROWTH	0.25	mg/kg	JB	J	RCBRA
4283	CURRENT YRS GROWTH	0.92	mg/kg	JBD	J	RCBRA
4284	CURRENT YRS GROWTH	0.33	mg/kg	J		RCBRA
4285	CURRENT YRS GROWTH	0.029	mg/kg	X		RCBRA
4286	CURRENT YRS GROWTH	0.0074	mg/kg	JXD	J	RCBRA
4287	CURRENT YRS GROWTH	0.0067	mg/kg	JX		RCBRA
4288	CURRENT YRS GROWTH	0.042	mg/kg	JD		RCBRA
4289	CURRENT YRS GROWTH	0.044	mg/kg	JD		RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
4290	Endosulfan I	959-98-8	RCBRA 2f Rip	D/H	RIPARIAN	576222.844	154297.511
4291	Endosulfan I	959-98-8	RCBRA 5c Rip	300	RIPARIAN	594509.985	124869.182
4292	Endosulfan I	959-98-8	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
4293	Endosulfan sulfate	1031-07-8	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
4294	Endrin aldehyde	7421-93-4	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
4295	Endrin ketone	53494-70-5	RCBRA 1607-D2:1	D/H	UPLAND	573823.924	152260.319
4296	Gamma-BHC [Lindane]	58-89-9	RCBRA 5c Rip	300	RIPARIAN	594509.985	124869.182
4297	Gamma-BHC [Lindane]	58-89-9	RCBRA 5c Rip	300	RIPARIAN	594509.985	124869.182
4298	gamma-Chlordane	5566-34-7	RCBRA 5c Rip	300	RIPARIAN	594509.985	124869.182
4299	gamma-Chlordane	5566-34-7	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
4300	gamma-Chlordane	5566-34-7	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
4301	gamma-Chlordane	5566-34-7	RCBRA JA JONES	300	UPLAND	593874.58	120013.908
4302	gamma-Chlordane	5566-34-7	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
4303	Heptachlor	76-44-8	RCBRA Pit 18	IU2/IU6	UPLAND	580697.058	145311.464
4304	Methoxychlor	72-43-5	RCBRA 1607-D2:1	D/H	UPLAND	573823.924	152260.319
4305	Methoxychlor	72-43-5	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
4306	Methoxychlor	72-43-5	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
4307	Methoxychlor	72-43-5	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
4308	Methoxychlor	72-43-5	RCBRA 2f Rip	D/H	RIPARIAN	576222.844	154297.511
4309	Methoxychlor	72-43-5	RCBRA Bev Ref 2 Rip	Outside decision areas	RIPARIAN	541493.988	167808.357
4310	Methoxychlor	72-43-5	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
4311	Phenol	108-95-2	RCBRA Rip 10	D/H	RIPARIAN	573987.873	153082.19
4312	Phenol	108-95-2	RCBRA Rip 8	D/H	RIPARIAN	578698.584	152233.645
4313	Beryllium-7	13966-02-4	200 ESE	Outside decision areas	UPLAND	576339.864	134596.72
4314	Beryllium-7	13966-02-4	400 E	300	UPLAND	587921.702	123300.446
4315	Beryllium-7	13966-02-4	BYERS LANDING	Outside decision areas	UPLAND	596516.284	114702.974
4316	Beryllium-7	13966-02-4	BYERS LANDING	Outside decision areas	UPLAND	596516.284	114702.974
4317	Beryllium-7	13966-02-4	BYERS LANDING	Outside decision areas	UPLAND	596516.284	114702.974
4318	Beryllium-7	13966-02-4	BYERS LANDING	Outside decision areas	UPLAND	596516.284	114702.974
4319	Beryllium-7	13966-02-4	BYERS LANDING	Outside decision areas	UPLAND	596516.284	114702.974
4320	Beryllium-7	13966-02-4	BYERS LANDING	Outside decision areas	UPLAND	596516.284	114702.974
4321	Beryllium-7	13966-02-4	BYERS LANDING	Outside decision areas	UPLAND	596516.284	114702.974
4322	Beryllium-7	13966-02-4	BYERS LANDING	Outside decision areas	UPLAND	596516.284	114702.974
4323	Beryllium-7	13966-02-4	E OF 200 E	Outside decision areas	UPLAND	576878.952	135735.541
4324	Beryllium-7	13966-02-4	E OF 200 W GATE	Outside decision areas	UPLAND	568454.589	136067.85
4325	Beryllium-7	13966-02-4	E OF 200 W GATE	Outside decision areas	UPLAND	568454.589	136067.85
4326	Beryllium-7	13966-02-4	E OF 200 W GATE	Outside decision areas	UPLAND	568454.589	136067.85
4327	Beryllium-7	13966-02-4	E OF 200 W GATE	Outside decision areas	UPLAND	568454.589	136067.85
4328	Beryllium-7	13966-02-4	E OF 200 W GATE	Outside decision areas	UPLAND	568454.589	136067.85

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
4290	5/7/2007	J15294	SOIL and BIOTA	MIS	0.0068	mg/kg	PLANT
4291	5/24/2007	J152B5	SOIL and BIOTA	MIS	0.00067	mg/kg	PLANT
4292	5/8/2007	J15292	SOIL and BIOTA	MIS	0.0027	mg/kg	PLANT
4293	5/16/2006	J11X78	SOIL and BIOTA	MIS	0.018	mg/kg	PLANT
4294	5/16/2006	J11X79	SOIL and BIOTA	MIS	0.0018	mg/kg	PLANT
4295	5/22/2006	J11X58	SOIL and BIOTA	MIS	0.0014665	mg/kg	PLANT
4296	5/24/2007	J152B4	SOIL and BIOTA	MIS	0.00175	mg/kg	PLANT
4297	5/24/2007	J152B5	SOIL and BIOTA	MIS	0.00175	mg/kg	PLANT
4298	5/24/2007	J152B4	SOIL and BIOTA	MIS	0.0016	mg/kg	PLANT
4299	5/12/2006	J11X77	SOIL and BIOTA	MIS	0.0024	mg/kg	PLANT
4300	5/15/2006	J11X82	SOIL and BIOTA	MIS	0.0007	mg/kg	PLANT
4301	5/10/2006	J11X74	SOIL and BIOTA	MIS	0.003884	mg/kg	PLANT
4302	5/15/2006	J11X83	SOIL and BIOTA	MIS	0.0007	mg/kg	PLANT
4303	5/18/2006	J11X68	SOIL and BIOTA	MIS	0.00057	mg/kg	PLANT
4304	5/22/2006	J11X58	SOIL and BIOTA	MIS	0.0032	mg/kg	PLANT
4305	5/8/2007	J15293	SOIL and BIOTA	MIS	0.0086	mg/kg	PLANT
4306	5/18/2006	J11XB0	SOIL and BIOTA	MIS	0.0016	mg/kg	PLANT
4307	5/16/2006	J11X91	SOIL and BIOTA	MIS	0.0023	mg/kg	PLANT
4308	5/7/2007	J15294	SOIL and BIOTA	MIS	0.00195	mg/kg	PLANT
4309	5/8/2007	J15290	SOIL and BIOTA	MIS	0.00205	mg/kg	PLANT
4310	5/8/2007	J15292	SOIL and BIOTA	MIS	0.0086	mg/kg	PLANT
4311	5/9/2006	J11WY5	SOIL and BIOTA	MIS	0.0267555	mg/kg	PLANT
4312	5/16/2006	J11WY1	SOIL and BIOTA	MIS	0.019	mg/kg	PLANT
4313	7/31/1991	E11782	SOIL and BIOTA	Discrete	0.176	pCi/g	PLANT
4314	8/13/1991	E11772	SOIL and BIOTA	Discrete	0.2275	pCi/g	PLANT
4315	6/8/2001	B11JF5	SOIL and BIOTA	Discrete	0.297	pCi/g	PLANT
4316	8/6/1998	B0P9V6	SOIL and BIOTA	Discrete	0.297	pCi/g	PLANT
4317	8/8/1991	E11764	SOIL and BIOTA	Discrete	0.297	pCi/g	PLANT
4318	6/3/2004	B199L2	SOIL and BIOTA	Discrete	0.297	pCi/g	PLANT
4319	6/23/1992	E12111	SOIL and BIOTA	Discrete	0.297	pCi/g	PLANT
4320	8/21/1997	S0LVP0	SOIL and BIOTA	Discrete	0.297	pCi/g	PLANT
4321	6/29/1993	E12406	SOIL and BIOTA	Discrete	0.297	pCi/g	PLANT
4322	8/17/1994	B0BYX8	SOIL and BIOTA	Discrete	0.297	pCi/g	PLANT
4323	7/31/1991	E11782	SOIL and BIOTA	Discrete	0.2115	pCi/g	PLANT
4324	6/1/2004	B199K4	SOIL and BIOTA	Discrete	0.165	pCi/g	PLANT
4325	8/24/1994	B0BYX3	SOIL and BIOTA	Discrete	0.165	pCi/g	PLANT
4326	8/13/1991	E11771	SOIL and BIOTA	Discrete	0.165	pCi/g	PLANT
4327	6/22/2001	B11JD8	SOIL and BIOTA	Discrete	0.165	pCi/g	PLANT
4328	6/3/1993	E12389	SOIL and BIOTA	Discrete	0.165	pCi/g	PLANT

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
4290	CURRENT YRS GROWTH	0.01	mg/kg	JX		RCBRA
4291	CURRENT YRS GROWTH	0.01	mg/kg	XD	J	RCBRA
4292	CURRENT YRS GROWTH	0.011	mg/kg	J	J	RCBRA
4293	CURRENT YRS GROWTH	0.015	mg/kg	JD		RCBRA
4294	CURRENT YRS GROWTH	0.026	mg/kg	D		RCBRA
4295	CURRENT YRS GROWTH	0.032	mg/kg	JDX		RCBRA
4296	CURRENT YRS GROWTH	0.0056	mg/kg	JXD		RCBRA
4297	CURRENT YRS GROWTH	0.0056	mg/kg	JXD		RCBRA
4298	CURRENT YRS GROWTH	0.0142	mg/kg	XD		RCBRA
4299	CURRENT YRS GROWTH	0.0095	mg/kg	JD	J	RCBRA
4300	CURRENT YRS GROWTH	0.02	mg/kg	JD		RCBRA
4301	CURRENT YRS GROWTH	0.0093	mg/kg	JD	J	RCBRA
4302	CURRENT YRS GROWTH	0.023	mg/kg	JD		RCBRA
4303	CURRENT YRS GROWTH	0.15	mg/kg	DX		RCBRA
4304	CURRENT YRS GROWTH	0.086	mg/kg	DX		RCBRA
4305	CURRENT YRS GROWTH	0.015	mg/kg	J	J	RCBRA
4306	CURRENT YRS GROWTH	0.085	mg/kg	D		RCBRA
4307	CURRENT YRS GROWTH	0.087	mg/kg	D		RCBRA
4308	CURRENT YRS GROWTH	0.064	mg/kg		J	RCBRA
4309	CURRENT YRS GROWTH	0.036	mg/kg		J	RCBRA
4310	CURRENT YRS GROWTH	0.02	mg/kg	JX	J	RCBRA
4311	CURRENT YRS GROWTH	1.2	mg/kg	JD	J	RCBRA
4312	CURRENT YRS GROWTH	4.1	mg/kg	J		RCBRA
4313	WHOLEORG	0.5385	pCi/g			PNNL
4314	WHOLEORG	0.648	pCi/g			PNNL
4315	STEM_LEAVES	0.297	pCi/g			PNNL
4316	STEM_LEAVES	0.3135	pCi/g			PNNL
4317	WHOLEORG	0.516	pCi/g			PNNL
4318	STEM_LEAVES	0.3225	pCi/g			PNNL
4319	WHOLEORG	0.57	pCi/g			PNNL
4320	STEM_LEAVES	0.1104	pCi/g			PNNL
4321	WHOLEORG	0.7485	pCi/g			PNNL
4322	STEM_LEAVES	0.231	pCi/g			PNNL
4323	WHOLEORG	0.5385	pCi/g			PNNL
4324	STEM_LEAVES	0.4905	pCi/g			PNNL
4325	STEM_LEAVES	0.4035	pCi/g			PNNL
4326	WHOLEORG	0.6885	pCi/g			PNNL
4327	STEM_LEAVES	0.3735	pCi/g			PNNL
4328	WHOLEORG	0.7965	pCi/g			PNNL

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
4329	Beryllium-7	13966-02-4	E OF 200 W GATE	Outside decision areas	UPLAND	568454.589	136067.85
4330	Beryllium-7	13966-02-4	NE OF 100 N AREA	D/H	UPLAND	572613.532	151143.61
4331	Beryllium-7	13966-02-4	NE OF 100 N AREA	D/H	UPLAND	572613.532	151143.61
4332	Beryllium-7	13966-02-4	NE OF 100 N AREA	D/H	UPLAND	572613.532	151143.61
4333	Beryllium-7	13966-02-4	NE OF 100 N AREA	D/H	UPLAND	572613.532	151143.61
4334	Beryllium-7	13966-02-4	NE OF 100 N AREA	D/H	UPLAND	572613.532	151143.61
4335	Beryllium-7	13966-02-4	RINGOLD AREA	Outside decision areas	UPLAND	595854.333	129775.653
4336	Beryllium-7	13966-02-4	RINGOLD AREA	Outside decision areas	UPLAND	595854.333	129775.653
4337	Beryllium-7	13966-02-4	RINGOLD AREA	Outside decision areas	UPLAND	595854.333	129775.653
4338	Beryllium-7	13966-02-4	RINGOLD AREA	Outside decision areas	UPLAND	595854.333	129775.653
4339	Beryllium-7	13966-02-4	RINGOLD AREA	Outside decision areas	UPLAND	595854.333	129775.653
4340	Beryllium-7	13966-02-4	RINGOLD AREA	Outside decision areas	UPLAND	595854.333	129775.653
4341	Beryllium-7	13966-02-4	S OF 200 E	Outside decision areas	UPLAND	575240.919	131779.847
4342	Beryllium-7	13966-02-4	SAGEMOOR FARM	Outside decision areas	UPLAND	596362.99	116036.357
4343	Beryllium-7	13966-02-4	SAGEMOOR FARM	Outside decision areas	UPLAND	596362.99	116036.357
4344	Beryllium-7	13966-02-4	SAGEMOOR FARM	Outside decision areas	UPLAND	596362.99	116036.357
4345	Beryllium-7	13966-02-4	SAGEMOOR FARM	Outside decision areas	UPLAND	596362.99	116036.357
4346	Beryllium-7	13966-02-4	SAGEMOOR FARM	Outside decision areas	UPLAND	596362.99	116036.357
4347	Beryllium-7	13966-02-4	SAGEMOOR FARM	Outside decision areas	UPLAND	596362.99	116036.357
4348	Beryllium-7	13966-02-4	SAGEMOOR FARM	Outside decision areas	UPLAND	596362.99	116036.357
4349	Beryllium-7	13966-02-4	SAGEMOOR FARM	Outside decision areas	UPLAND	596362.99	116036.357
4350	Cesium-137	10045-97-3	100-N SPRING SHORELINE	N	UPLAND	571423.474	150006.656
4351	Cesium-137	10045-97-3	100-N SPRING SHORELINE	N	UPLAND	571423.474	150006.656
4352	Cesium-137	10045-97-3	200 ENC	Outside decision areas	UPLAND	573686.735	137776.371
4353	Cesium-137	10045-97-3	200 ESE	Outside decision areas	UPLAND	576339.864	134596.72
4354	Cesium-137	10045-97-3	400 E	300	UPLAND	587921.702	123300.446
4355	Cesium-137	10045-97-3	BENTON CITY	Outside decision areas	UPLAND	577999.247	111907.899
4356	Cesium-137	10045-97-3	BYERS LANDING	Outside decision areas	UPLAND	596516.284	114702.974
4357	Cesium-137	10045-97-3	E OF 100 N AREA	D/H	UPLAND	573358.727	149412.917
4358	Cesium-137	10045-97-3	E OF 100 N AREA	D/H	UPLAND	573358.727	149412.917
4359	Cesium-137	10045-97-3	E OF 200 E	Outside decision areas	UPLAND	576878.952	135735.541
4360	Cesium-137	10045-97-3	E OF 200 W GATE	Outside decision areas	UPLAND	568454.589	136067.85
4361	Cesium-137	10045-97-3	E OF 200 W GATE	Outside decision areas	UPLAND	568454.589	136067.85
4362	Cesium-137	10045-97-3	E OF 200 W GATE	Outside decision areas	UPLAND	568454.589	136067.85
4363	Cesium-137	10045-97-3	E OF 200 W GATE	Outside decision areas	UPLAND	568454.589	136067.85
4364	Cesium-137	10045-97-3	E OF 200 W GATE	Outside decision areas	UPLAND	568454.589	136067.85
4365	Cesium-137	10045-97-3	NE OF 100 N AREA	D/H	UPLAND	572613.532	151143.61
4366	Cesium-137	10045-97-3	RINGOLD AREA	Outside decision areas	UPLAND	595854.333	129775.653
4367	Cesium-137	10045-97-3	S OF 200 E	Outside decision areas	UPLAND	575240.919	131779.847

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
4329	8/12/1998	B0P9T7	SOIL and BIOTA	Discrete	0.165	pCi/g	PLANT
4330	7/13/2001	B11JD3	SOIL and BIOTA	Discrete	0.519	pCi/g	PLANT
4331	8/19/1993	E12442	SOIL and BIOTA	Discrete	0.519	pCi/g	PLANT
4332	8/14/1991	E11761	SOIL and BIOTA	Discrete	0.519	pCi/g	PLANT
4333	7/20/1998	B0P9T2	SOIL and BIOTA	Discrete	0.519	pCi/g	PLANT
4334	6/16/2004	B199K0	SOIL and BIOTA	Discrete	0.519	pCi/g	PLANT
4335	6/8/2001	B11JF3	SOIL and BIOTA	Discrete	0.389	pCi/g	PLANT
4336	7/24/1998	B0P9V4	SOIL and BIOTA	Discrete	0.389	pCi/g	PLANT
4337	7/28/1992	E12128	SOIL and BIOTA	Discrete	0.389	pCi/g	PLANT
4338	8/17/1994	B0BYX6	SOIL and BIOTA	Discrete	0.389	pCi/g	PLANT
4339	6/29/1993	E12406	SOIL and BIOTA	Discrete	0.389	pCi/g	PLANT
4340	8/8/1991	E11764	SOIL and BIOTA	Discrete	0.389	pCi/g	PLANT
4341	8/13/1991	E11771	SOIL and BIOTA	Discrete	0.2605	pCi/g	PLANT
4342	8/6/1998	B0P9V5	SOIL and BIOTA	Discrete	0.2825	pCi/g	PLANT
4343	6/8/2001	B11JF4	SOIL and BIOTA	Discrete	0.2825	pCi/g	PLANT
4344	6/14/1993	E12399	SOIL and BIOTA	Discrete	0.2825	pCi/g	PLANT
4345	7/27/1992	E12127	SOIL and BIOTA	Discrete	0.2825	pCi/g	PLANT
4346	8/8/1991	E11764	SOIL and BIOTA	Discrete	0.2825	pCi/g	PLANT
4347	10/4/1990	E11672	SOIL and BIOTA	Discrete	0.2825	pCi/g	PLANT
4348	8/17/1994	B0BYX7	SOIL and BIOTA	Discrete	0.2825	pCi/g	PLANT
4349	6/3/2004	B199L1	SOIL and BIOTA	Discrete	0.2825	pCi/g	PLANT
4350	7/31/1991	E11783	SOIL and BIOTA	Discrete	0.128	pCi/g	PLANT
4351	10/21/1993	E12487	SOIL and BIOTA	Discrete	0.128	pCi/g	PLANT
4352	8/13/1991	E11772	SOIL and BIOTA	Discrete	10.9	pCi/g	PLANT
4353	7/31/1991	E11782	SOIL and BIOTA	Discrete	0.424	pCi/g	PLANT
4354	8/13/1991	E11772	SOIL and BIOTA	Discrete	0.08855	pCi/g	PLANT
4355	10/3/1990	E11667	SOIL and BIOTA	Discrete	0.721	pCi/g	PLANT
4356	10/4/1990	E11671	SOIL and BIOTA	Discrete	0.162	pCi/g	PLANT
4357	8/17/1994	B0BYX1	SOIL and BIOTA	Discrete	0.0761	pCi/g	PLANT
4358	8/14/1991	E11761	SOIL and BIOTA	Discrete	0.0761	pCi/g	PLANT
4359	7/31/1991	E11782	SOIL and BIOTA	Discrete	1.13	pCi/g	PLANT
4360	8/24/1994	B0BYX3	SOIL and BIOTA	Discrete	1.47	pCi/g	PLANT
4361	8/13/1991	E11771	SOIL and BIOTA	Discrete	1.47	pCi/g	PLANT
4362	6/22/2001	B11JD8	SOIL and BIOTA	Discrete	1.47	pCi/g	PLANT
4363	10/4/1990	E11775	SOIL and BIOTA	Discrete	1.47	pCi/g	PLANT
4364	6/3/1993	E12389	SOIL and BIOTA	Discrete	1.47	pCi/g	PLANT
4365	8/14/1991	E11761	SOIL and BIOTA	Discrete	0.274	pCi/g	PLANT
4366	10/8/1990	E11671	SOIL and BIOTA	Discrete	0.378	pCi/g	PLANT
4367	8/13/1991	E11771	SOIL and BIOTA	Discrete	0.177	pCi/g	PLANT

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
4329	STEM_LEAVES	0.3615	pCi/g			PNNL
4330	STEM_LEAVES	0.492	pCi/g			PNNL
4331	WHOLEORG	0.3165	pCi/g			PNNL
4332	WHOLEORG	0.447	pCi/g			PNNL
4333	STEM_LEAVES	0.4875	pCi/g			PNNL
4334	STEM_LEAVES	0.6945	pCi/g			PNNL
4335	STEM_LEAVES	0.339	pCi/g			PNNL
4336	STEM_LEAVES	0.45	pCi/g			PNNL
4337	WHOLEORG	0.4095	pCi/g			PNNL
4338	STEM_LEAVES	0.2835	pCi/g			PNNL
4339	WHOLEORG	0.993	pCi/g			PNNL
4340	WHOLEORG	0.4965	pCi/g			PNNL
4341	WHOLEORG	0.375	pCi/g			PNNL
4342	STEM_LEAVES	0.2745	pCi/g			PNNL
4343	STEM_LEAVES	0.285	pCi/g			PNNL
4344	WHOLEORG	0.453	pCi/g			PNNL
4345	WHOLEORG	0.6885	pCi/g			PNNL
4346	WHOLEORG	0.441	pCi/g			PNNL
4347	WHOLEORG	0.4995	pCi/g			PNNL
4348	STEM_LEAVES	0.2385	pCi/g			PNNL
4349	STEM_LEAVES	0.2085	pCi/g			PNNL
4350	WHOLEORG	0.00525	pCi/g			PNNL
4351	WHOLEORG	0.007305	pCi/g			PNNL
4352	WHOLEORG	0.007995	pCi/g			PNNL
4353	WHOLEORG	0.010575	pCi/g			PNNL
4354	WHOLEORG	0.001755	pCi/g			PNNL
4355	WHOLEORG	0.004245	pCi/g			PNNL
4356	WHOLEORG	0.003585	pCi/g			PNNL
4357	STEM_LEAVES	0.00303	pCi/g			PNNL
4358	WHOLEORG	0.001875	pCi/g			PNNL
4359	WHOLEORG	0.0246	pCi/g			PNNL
4360	STEM_LEAVES	0.004095	pCi/g			PNNL
4361	WHOLEORG	0.006705	pCi/g			PNNL
4362	STEM_LEAVES	0.00825	pCi/g			PNNL
4363	WHOLEORG	0.01575	pCi/g			PNNL
4364	WHOLEORG	0.003585	pCi/g			PNNL
4365	WHOLEORG	0.002085	pCi/g			PNNL
4366	WHOLEORG	0.004995	pCi/g			PNNL
4367	WHOLEORG	0.005505	pCi/g			PNNL

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
4368	Cesium-137	10045-97-3	S OF 200 W	Outside decision areas	UPLAND	568340.41	131238.537
4369	Cesium-137	10045-97-3	SAGEMOOR FARM	Outside decision areas	UPLAND	596362.99	116036.357
4370	Cesium-137	10045-97-3	SAGEMOOR FARM	Outside decision areas	UPLAND	596362.99	116036.357
4371	Cesium-137	10045-97-3	SUNNYSIDE	Outside decision areas	UPLAND	542329.106	118862.754
4372	Cesium-137	10045-97-3	SUNNYSIDE	Outside decision areas	UPLAND	542329.106	118862.754
4373	Cesium-137	10045-97-3	SW OF BC CRIBS	Outside decision areas	UPLAND	572473.237	131023.533
4374	Cesium-137	10045-97-3	TAYLOR FLATS NO 2	Outside decision areas	UPLAND	595154.466	117862.601
4375	Cesium-137	10045-97-3	WASHTUCNA	Outside decision areas	UPLAND	667289.771	160899.27
4376	Cobalt-60	10198-40-0	RIVRVIEW-HARRIS	Outside decision areas	UPLAND	597112.528	104439.135
4377	Lead-212	15092-94-1	BYERS LANDING	Outside decision areas	UPLAND	596516.284	114702.974
4378	Lead-212	15092-94-1	E OF 200 E	Outside decision areas	UPLAND	576878.952	135735.541
4379	Lead-212	15092-94-1	MC NARY DAM	Outside decision areas	UPLAND	593616.792	66537.692
4380	Lead-212	15092-94-1	OTHELLO	Outside decision areas	UPLAND	599861.7627	163446.1827
4381	Lead-212	15092-94-1	RINGOLD AREA	Outside decision areas	UPLAND	595854.333	129775.653
4382	Lead-212	15092-94-1	SAGEMOOR FARM	Outside decision areas	UPLAND	596362.99	116036.357
4383	Lead-212	15092-94-1	SUNNYSIDE	Outside decision areas	UPLAND	542329.106	118862.754
4384	Lead-212	15092-94-1	TAYLOR FLATS NO 2	Outside decision areas	UPLAND	595154.466	117862.601
4385	Lead-212	15092-94-1	WALLA WALLA	Outside decision areas	UPLAND	672372.132	113292.34
4386	Lead-212	15092-94-1	WASHTUCNA	Outside decision areas	UPLAND	667289.771	160899.27
4387	Lead-214	15067-28-4	OTHELLO	Outside decision areas	UPLAND	599861.7627	163446.1827
4388	Plutonium-238	13981-16-3	E OF 200 W GATE	Outside decision areas	UPLAND	568454.589	136067.85
4389	Plutonium-238	13981-16-3	E OF 200 W GATE	Outside decision areas	UPLAND	568454.589	136067.85
4390	Plutonium-238	13981-16-3	E OF 200 W GATE	Outside decision areas	UPLAND	568454.589	136067.85
4391	Plutonium-238	13981-16-3	MC NARY DAM	Outside decision areas	UPLAND	593616.792	66537.692
4392	Plutonium-238	13981-16-3	RINGOLD AREA	Outside decision areas	UPLAND	595854.333	129775.653
4393	Plutonium-238	13981-16-3	RIVRVIEW-HARRIS	Outside decision areas	UPLAND	597112.528	104439.135
4394	Plutonium-238	13981-16-3	SAGEMOOR FARM	Outside decision areas	UPLAND	596362.99	116036.357
4395	Plutonium-238	13981-16-3	SW OF BC CRIBS	Outside decision areas	UPLAND	572473.237	131023.533
4396	Plutonium-238	13981-16-3	WALLA WALLA	Outside decision areas	UPLAND	672372.132	113292.34
4397	Plutonium-239/240	PU-239/240	100-N SPRING SHORELINE	N	UPLAND	571423.474	150006.656
4398	Plutonium-239/240	PU-239/240	200 ENC	Outside decision areas	UPLAND	573686.735	137776.371
4399	Plutonium-239/240	PU-239/240	400 E	300	UPLAND	587921.702	123300.446
4400	Plutonium-239/240	PU-239/240	BASIN CITY	Outside decision areas	UPLAND	601212.248	142279.828
4401	Plutonium-239/240	PU-239/240	BENTON CITY	Outside decision areas	UPLAND	577999.247	111907.899
4402	Plutonium-239/240	PU-239/240	BERG RANCH	Outside decision areas	UPLAND	527257.503	127698.089
4403	Plutonium-239/240	PU-239/240	BROADMOOR, PASCO	Outside decision areas	UPLAND	598174.6351	105885.7264
4404	Plutonium-239/240	PU-239/240	BYERS LANDING	Outside decision areas	UPLAND	596516.284	114702.974
4405	Plutonium-239/240	PU-239/240	BYERS LANDING	Outside decision areas	UPLAND	596516.284	114702.974
4406	Plutonium-239/240	PU-239/240	BYERS LANDING	Outside decision areas	UPLAND	596516.284	114702.974

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
4368	8/13/1991	E11771	SOIL and BIOTA	Discrete	0.22	pCi/g	PLANT
4369	7/27/1992	E12127	SOIL and BIOTA	Discrete	0.3215	pCi/g	PLANT
4370	10/4/1990	E11672	SOIL and BIOTA	Discrete	0.3215	pCi/g	PLANT
4371	6/17/1993	E12398	SOIL and BIOTA	Discrete	0.403	pCi/g	PLANT
4372	10/3/1990	E11667	SOIL and BIOTA	Discrete	0.403	pCi/g	PLANT
4373	8/13/1991	E11771	SOIL and BIOTA	Discrete	0.1457	pCi/g	PLANT
4374	10/4/1990	E11672	SOIL and BIOTA	Discrete	0.139	pCi/g	PLANT
4375	10/3/1990	E03331	SOIL and BIOTA	Discrete	0.252	pCi/g	PLANT
4376	8/8/1991	E11764	SOIL and BIOTA	Discrete	0.0622	pCi/g	PLANT
4377	10/4/1990	E11671	SOIL and BIOTA	Discrete	0.874	pCi/g	PLANT
4378	7/31/1991	E11782	SOIL and BIOTA	Discrete	0.776	pCi/g	PLANT
4379	10/3/1990	E03331	SOIL and BIOTA	Discrete	0.723	pCi/g	PLANT
4380	10/5/1990	E03331	SOIL and BIOTA	Discrete	0.687	pCi/g	PLANT
4381	10/8/1990	E11671	SOIL and BIOTA	Discrete	0.9955	pCi/g	PLANT
4382	10/4/1990	E11672	SOIL and BIOTA	Discrete	0.7405	pCi/g	PLANT
4383	10/3/1990	E11667	SOIL and BIOTA	Discrete	0.771	pCi/g	PLANT
4384	10/4/1990	E11672	SOIL and BIOTA	Discrete	0.807	pCi/g	PLANT
4385	10/3/1990	E03331	SOIL and BIOTA	Discrete	1.32	pCi/g	PLANT
4386	10/3/1990	E03331	SOIL and BIOTA	Discrete	1.23	pCi/g	PLANT
4387	10/5/1990	E03331	SOIL and BIOTA	Discrete	0.694	pCi/g	PLANT
4388	8/24/1994	B0BYX3	SOIL and BIOTA	Discrete	0.00386	pCi/g	PLANT
4389	6/1/2004	B199K4	SOIL and BIOTA	Discrete	0.00386	pCi/g	PLANT
4390	10/4/1990	E11775	SOIL and BIOTA	Discrete	0.00386	pCi/g	PLANT
4391	10/3/1990	E03331	SOIL and BIOTA	Discrete	0.000262	pCi/g	PLANT
4392	10/8/1990	E11671	SOIL and BIOTA	Discrete	0.0007405	pCi/g	PLANT
4393	6/8/2001	B11JF6	SOIL and BIOTA	Discrete	0.000326	pCi/g	PLANT
4394	10/4/1990	E11672	SOIL and BIOTA	Discrete	0.0003445	pCi/g	PLANT
4395	8/13/1991	E11771	SOIL and BIOTA	Discrete	0.000304	pCi/g	PLANT
4396	10/3/1990	E03331	SOIL and BIOTA	Discrete	0.00244	pCi/g	PLANT
4397	7/31/1991	E11783	SOIL and BIOTA	Discrete	0.008685	pCi/g	PLANT
4398	8/13/1991	E11772	SOIL and BIOTA	Discrete	0.0201	pCi/g	PLANT
4399	8/13/1991	E11772	SOIL and BIOTA	Discrete	0.00425	pCi/g	PLANT
4400	8/17/2000	B103R7	SOIL and BIOTA	Discrete	0.002705	pCi/g	PLANT
4401	10/3/1990	E11667	SOIL and BIOTA	Discrete	0.0188	pCi/g	PLANT
4402	10/8/1990	E11671	SOIL and BIOTA	Discrete	0.0124	pCi/g	PLANT
4403	8/16/2000	B103T3	SOIL and BIOTA	Discrete	0.009985	pCi/g	PLANT
4404	6/8/2001	B11JF5	SOIL and BIOTA	Discrete	0.0111	pCi/g	PLANT
4405	8/6/1998	B0P9V6	SOIL and BIOTA	Discrete	0.0111	pCi/g	PLANT
4406	10/4/1990	E11671	SOIL and BIOTA	Discrete	0.0111	pCi/g	PLANT

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
4368	WHOLEORG	0.01605	pCi/g			PNNL
4369	WHOLEORG	0.001965	pCi/g			PNNL
4370	WHOLEORG	0.006705	pCi/g			PNNL
4371	WHOLEORG	0.004725	pCi/g			PNNL
4372	WHOLEORG	0.003	pCi/g			PNNL
4373	WHOLEORG	0.00249	pCi/g			PNNL
4374	WHOLEORG	0.0045	pCi/g			PNNL
4375	WHOLEORG	0.00318	pCi/g			PNNL
4376	WHOLEORG	0.00195	pCi/g			PNNL
4377	WHOLEORG	0.03135	pCi/g			PNNL
4378	WHOLEORG	0.0093	pCi/g			PNNL
4379	WHOLEORG	0.01107	pCi/g			PNNL
4380	WHOLEORG	0.00483	pCi/g			PNNL
4381	WHOLEORG	0.007275	pCi/g			PNNL
4382	WHOLEORG	0.00774	pCi/g			PNNL
4383	WHOLEORG	0.00375	pCi/g			PNNL
4384	WHOLEORG	0.0054	pCi/g			PNNL
4385	WHOLEORG	0.007785	pCi/g			PNNL
4386	WHOLEORG	0.010515	pCi/g			PNNL
4387	WHOLEORG	0.00531	pCi/g			PNNL
4388	STEM_LEAVES	0.0010995	pCi/g			PNNL
4389	STEM_LEAVES	0.0000204	pCi/g			PNNL
4390	WHOLEORG	0.0001089	pCi/g			PNNL
4391	WHOLEORG	0.00004545	pCi/g			PNNL
4392	WHOLEORG	0.00002415	pCi/g			PNNL
4393	STEM_LEAVES	0.0000405	pCi/g			PNNL
4394	WHOLEORG	0.00002025	pCi/g			PNNL
4395	WHOLEORG	0.0000216	pCi/g			PNNL
4396	WHOLEORG	0.00001755	pCi/g			PNNL
4397	WHOLEORG	0.000024	pCi/g			PNNL
4398	WHOLEORG	0.0004785	pCi/g			PNNL
4399	WHOLEORG	0.0000423	pCi/g			PNNL
4400	STEM_LEAVES	0.0000327	pCi/g	J		PNNL
4401	WHOLEORG	0.0001065	pCi/g			PNNL
4402	WHOLEORG	0.00005595	pCi/g			PNNL
4403	STEM_LEAVES	0.0000582	pCi/g	J		PNNL
4404	STEM_LEAVES	0.0000768	pCi/g			PNNL
4405	STEM_LEAVES	0.0000252	pCi/g			PNNL
4406	WHOLEORG	0.00011175	pCi/g			PNNL

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
4407	Plutonium-239/240	PU-239/240	E OF 200 E	Outside decision areas	UPLAND	576878.952	135735.541
4408	Plutonium-239/240	PU-239/240	E OF 200 W GATE	Outside decision areas	UPLAND	568454.589	136067.85
4409	Plutonium-239/240	PU-239/240	E OF 200 W GATE	Outside decision areas	UPLAND	568454.589	136067.85
4410	Plutonium-239/240	PU-239/240	E OF 200 W GATE	Outside decision areas	UPLAND	568454.589	136067.85
4411	Plutonium-239/240	PU-239/240	E OF 200 W GATE	Outside decision areas	UPLAND	568454.589	136067.85
4412	Plutonium-239/240	PU-239/240	E OF 200 W GATE	Outside decision areas	UPLAND	568454.589	136067.85
4413	Plutonium-239/240	PU-239/240	E OF 200 W GATE	Outside decision areas	UPLAND	568454.589	136067.85
4414	Plutonium-239/240	PU-239/240	E OF 200 W GATE	Outside decision areas	UPLAND	568454.589	136067.85
4415	Plutonium-239/240	PU-239/240	MC NARY DAM	Outside decision areas	UPLAND	593616.792	66537.692
4416	Plutonium-239/240	PU-239/240	MESA	Outside decision areas	UPLAND	613658.9896	125036.8087
4417	Plutonium-239/240	PU-239/240	NE OF 100 N AREA	D/H	UPLAND	572613.532	151143.61
4418	Plutonium-239/240	PU-239/240	OTHELLO	Outside decision areas	UPLAND	599861.7627	163446.1827
4419	Plutonium-239/240	PU-239/240	OTHELLO	Outside decision areas	UPLAND	599861.7627	163446.1827
4420	Plutonium-239/240	PU-239/240	OTHELLO	Outside decision areas	UPLAND	604480.4171	165170.4671
4421	Plutonium-239/240	PU-239/240	PASCO AIRPORT	Outside decision areas	UPLAND	607075.4805	103528.0557
4422	Plutonium-239/240	PU-239/240	RINGOLD AREA	Outside decision areas	UPLAND	595854.333	129775.653
4423	Plutonium-239/240	PU-239/240	RINGOLD AREA	Outside decision areas	UPLAND	595854.333	129775.653
4424	Plutonium-239/240	PU-239/240	RIVRVIEW-HARRIS	Outside decision areas	UPLAND	597112.528	104439.135
4425	Plutonium-239/240	PU-239/240	RIVRVIEW-HARRIS	Outside decision areas	UPLAND	597112.528	104439.135
4426	Plutonium-239/240	PU-239/240	RIVRVIEW-HARRIS	Outside decision areas	UPLAND	597112.528	104439.135
4427	Plutonium-239/240	PU-239/240	S OF 200 W	Outside decision areas	UPLAND	568340.41	131238.537
4428	Plutonium-239/240	PU-239/240	SAGEMOOR FARM	Outside decision areas	UPLAND	596362.99	116036.357
4429	Plutonium-239/240	PU-239/240	SAGEMOOR FARM	Outside decision areas	UPLAND	596362.99	116036.357
4430	Plutonium-239/240	PU-239/240	SAGEMOOR FARM	Outside decision areas	UPLAND	596362.99	116036.357
4431	Plutonium-239/240	PU-239/240	SAGEMOOR FARM	Outside decision areas	UPLAND	596362.99	116036.357
4432	Plutonium-239/240	PU-239/240	SAGEMOOR FARM	Outside decision areas	UPLAND	596362.99	116036.357
4433	Plutonium-239/240	PU-239/240	SAGEMOOR FARM	Outside decision areas	UPLAND	596362.99	116036.357
4434	Plutonium-239/240	PU-239/240	SOUTH 300 AREA	300	UPLAND	593957.334	113882.4562
4435	Plutonium-239/240	PU-239/240	SUNNYSIDE	Outside decision areas	UPLAND	542322.0793	118841.586
4436	Plutonium-239/240	PU-239/240	SUNNYSIDE	Outside decision areas	UPLAND	542329.106	118862.754
4437	Plutonium-239/240	PU-239/240	SUNNYSIDE	Outside decision areas	UPLAND	542329.106	118862.754
4438	Plutonium-239/240	PU-239/240	SW OF BC CRIBS	Outside decision areas	UPLAND	572473.237	131023.533
4439	Plutonium-239/240	PU-239/240	TAYLOR FLATS NO 2	Outside decision areas	UPLAND	595154.466	117862.601
4440	Plutonium-239/240	PU-239/240	TOPPENISH	Outside decision areas	UPLAND	485012.892	154200.719
4441	Plutonium-239/240	PU-239/240	TRI-CITY COLISEUM	Outside decision areas	UPLAND	598930.5812	99207.81003
4442	Plutonium-239/240	PU-239/240	WAHLUKE SLOPE	Outside decision areas	UPLAND	565650.578	156360.718
4443	Plutonium-239/240	PU-239/240	WALLA WALLA	Outside decision areas	UPLAND	672372.132	113292.34
4444	Plutonium-239/240	PU-239/240	WANAPUM	Outside decision areas	UPLAND	541816.41	171206.4974
4445	Plutonium-239/240	PU-239/240	WANAPUM	Outside decision areas	UPLAND	547954.8303	170874.337

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
4407	7/31/1991	E11782	SOIL and BIOTA	Discrete	0.0133	pCi/g	PLANT
4408	8/24/1994	B0BYX3	SOIL and BIOTA	Discrete	0.391	pCi/g	PLANT
4409	6/1/2004	B199K4	SOIL and BIOTA	Discrete	0.391	pCi/g	PLANT
4410	8/13/1991	E11771	SOIL and BIOTA	Discrete	0.391	pCi/g	PLANT
4411	6/22/2001	B11JD8	SOIL and BIOTA	Discrete	0.391	pCi/g	PLANT
4412	10/4/1990	E11775	SOIL and BIOTA	Discrete	0.391	pCi/g	PLANT
4413	6/3/1993	E12389	SOIL and BIOTA	Discrete	0.391	pCi/g	PLANT
4414	8/12/1998	B0P9T7	SOIL and BIOTA	Discrete	0.391	pCi/g	PLANT
4415	10/3/1990	E03331	SOIL and BIOTA	Discrete	0.003885	pCi/g	PLANT
4416	8/17/2000	B103V5	SOIL and BIOTA	Discrete	0.00222	pCi/g	PLANT
4417	7/13/2001	B11JD3	SOIL and BIOTA	Discrete	0.00626	pCi/g	PLANT
4418	8/17/2000	B103R5	SOIL and BIOTA	Discrete	0.00765	pCi/g	PLANT
4419	10/5/1990	E03331	SOIL and BIOTA	Discrete	0.00765	pCi/g	PLANT
4420	6/2/2004	B199P3	SOIL and BIOTA	Discrete	0.00583	pCi/g	PLANT
4421	8/16/2000	B103T1	SOIL and BIOTA	Discrete	0.0002345	pCi/g	PLANT
4422	6/8/2001	B11JF3	SOIL and BIOTA	Discrete	0.00768	pCi/g	PLANT
4423	6/29/1993	E12406	SOIL and BIOTA	Discrete	0.00768	pCi/g	PLANT
4424	6/8/2001	B11JF6	SOIL and BIOTA	Discrete	0.00355	pCi/g	PLANT
4425	6/11/1993	E12402	SOIL and BIOTA	Discrete	0.00355	pCi/g	PLANT
4426	10/4/1990	E11672	SOIL and BIOTA	Discrete	0.00355	pCi/g	PLANT
4427	8/13/1991	E11771	SOIL and BIOTA	Discrete	0.015195	pCi/g	PLANT
4428	8/6/1998	B0P9V5	SOIL and BIOTA	Discrete	0.00633	pCi/g	PLANT
4429	6/8/2001	B11JF4	SOIL and BIOTA	Discrete	0.00633	pCi/g	PLANT
4430	6/14/1993	E12399	SOIL and BIOTA	Discrete	0.00633	pCi/g	PLANT
4431	7/27/1992	E12127	SOIL and BIOTA	Discrete	0.00633	pCi/g	PLANT
4432	10/4/1990	E11672	SOIL and BIOTA	Discrete	0.00633	pCi/g	PLANT
4433	8/17/1994	B0BYX7	SOIL and BIOTA	Discrete	0.00633	pCi/g	PLANT
4434	10/2/1990	E11672	SOIL and BIOTA	Discrete	0.00456	pCi/g	PLANT
4435	6/9/2004	B199L4	SOIL and BIOTA	Discrete	0.00839	pCi/g	PLANT
4436	6/22/2001	B11JF7	SOIL and BIOTA	Discrete	0.01098	pCi/g	PLANT
4437	10/3/1990	E11667	SOIL and BIOTA	Discrete	0.01098	pCi/g	PLANT
4438	8/13/1991	E11771	SOIL and BIOTA	Discrete	0.00379	pCi/g	PLANT
4439	10/4/1990	E11672	SOIL and BIOTA	Discrete	0.0052	pCi/g	PLANT
4440	6/22/2001	B11J75	SOIL and BIOTA	Discrete	0.00126	pCi/g	PLANT
4441	8/16/2000	B103T7	SOIL and BIOTA	Discrete	0.007185	pCi/g	PLANT
4442	10/3/1990	E11671	SOIL and BIOTA	Discrete	0.003955	pCi/g	PLANT
4443	10/3/1990	E03331	SOIL and BIOTA	Discrete	0.00306	pCi/g	PLANT
4444	6/4/2004	B199P5	SOIL and BIOTA	Discrete	0.0155	pCi/g	PLANT
4445	8/14/2000	B103V0	SOIL and BIOTA	Discrete	0.0055	pCi/g	PLANT

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
4407	WHOLEORG	0.000144	pCi/g			PNNL
4408	STEM_LEAVES	0.000993	pCi/g			PNNL
4409	STEM_LEAVES	0.001149	pCi/g			PNNL
4410	WHOLEORG	0.00002505	pCi/g			PNNL
4411	STEM_LEAVES	0.001035	pCi/g			PNNL
4412	WHOLEORG	0.006195	pCi/g			PNNL
4413	WHOLEORG	0.0000975	pCi/g			PNNL
4414	STEM_LEAVES	0.0005775	pCi/g			PNNL
4415	WHOLEORG	0.000201	pCi/g			PNNL
4416	STEM_LEAVES	0.0000522	pCi/g	J		PNNL
4417	STEM_LEAVES	0.00005385	pCi/g			PNNL
4418	STEM_LEAVES	0.00003825	pCi/g	J		PNNL
4419	WHOLEORG	0.0000411	pCi/g			PNNL
4420	STEM_LEAVES	0.0004605	pCi/g			PNNL
4421	STEM_LEAVES	0.0000234	pCi/g	J		PNNL
4422	STEM_LEAVES	0.000174	pCi/g			PNNL
4423	WHOLEORG	0.00003885	pCi/g			PNNL
4424	STEM_LEAVES	0.0001755	pCi/g			PNNL
4425	WHOLEORG	0.00003015	pCi/g			PNNL
4426	WHOLEORG	0.0000519	pCi/g			PNNL
4427	WHOLEORG	0.00007905	pCi/g			PNNL
4428	STEM_LEAVES	0.0000474	pCi/g			PNNL
4429	STEM_LEAVES	0.00013545	pCi/g			PNNL
4430	WHOLEORG	0.00002235	pCi/g			PNNL
4431	WHOLEORG	0.00004155	pCi/g			PNNL
4432	WHOLEORG	0.00004245	pCi/g			PNNL
4433	STEM_LEAVES	0.00005685	pCi/g			PNNL
4434	WHOLEORG	0.00008145	pCi/g			PNNL
4435	STEM_LEAVES	0.0000594	pCi/g			PNNL
4436	STEM_LEAVES	0.000201	pCi/g			PNNL
4437	WHOLEORG	0.00006075	pCi/g			PNNL
4438	WHOLEORG	0.00007065	pCi/g			PNNL
4439	WHOLEORG	0.0000594	pCi/g			PNNL
4440	STEM_LEAVES	0.00003375	pCi/g			PNNL
4441	STEM_LEAVES	0.00004965	pCi/g	J		PNNL
4442	WHOLEORG	0.00002625	pCi/g			PNNL
4443	WHOLEORG	0.0000492	pCi/g			PNNL
4444	STEM_LEAVES	0.0000327	pCi/g			PNNL
4445	STEM_LEAVES	0.00002655	pCi/g	J		PNNL

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
4446	Plutonium-239/240	PU-239/240	WASHTUCNA	Outside decision areas	UPLAND	667289.771	160899.27
4447	Plutonium-239/240	PU-239/240	YAKIMA BARRICADE	IU2/IU6	UPLAND	559316.663	138652.09
4448	Plutonium-239/240	PU-239/240	YAKIMA DELTA	Outside decision areas	UPLAND	595639.1166	103220.1046
4449	Potassium-40	13966-00-2	RCBRA 100-D-48	D/H	UPLAND	573841.527	151914.538
4450	Potassium-40	13966-00-2	RCBRA 100-D-49	D/H	UPLAND	573938.06	151944.123
4451	Potassium-40	13966-00-2	RCBRA 100-F-2	IU2/IU6	UPLAND	579728.068	147001.117
4452	Potassium-40	13966-00-2	RCBRA 116-DR-1&2	D/H	UPLAND	574007.817	152246.748
4453	Potassium-40	13966-00-2	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
4454	Potassium-40	13966-00-2	RCBRA 116-N-3	N	UPLAND	571995.702	149793.039
4455	Potassium-40	13966-00-2	RCBRA 1607-D2:1	D/H	UPLAND	573823.924	152260.319
4456	Potassium-40	13966-00-2	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
4457	Potassium-40	13966-00-2	RCBRA 2l Rip	IU2/IU6	RIPARIAN	582341.212	146120.069
4458	Potassium-40	13966-00-2	RCBRA 4a Rip	IU2/IU6	RIPARIAN	589347.5	137480.985
4459	Potassium-40	13966-00-2	RCBRA 5c Rip	300	RIPARIAN	594509.985	124869.182
4460	Potassium-40	13966-00-2	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
4461	Potassium-40	13966-00-2	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
4462	Potassium-40	13966-00-2	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
4463	Potassium-40	13966-00-2	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
4464	Potassium-40	13966-00-2	RCBRA 600-181	IU2/IU6	UPLAND	578303.83	147316.698
4465	Potassium-40	13966-00-2	RCBRA 600-204	IU2/IU6	UPLAND	580128.485	144762.219
4466	Potassium-40	13966-00-2	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
4467	Potassium-40	13966-00-2	RCBRA 600-23	IU2/IU6	UPLAND	585523.593	130481.377
4468	Potassium-40	13966-00-2	RCBRA 618-4	300	UPLAND	593954.946	117064.473
4469	Potassium-40	13966-00-2	RCBRA 628-1	IU2/IU6	UPLAND	577797.524	148745.681
4470	Potassium-40	13966-00-2	RCBRA JA JONES	300	UPLAND	593874.58	120013.908
4471	Potassium-40	13966-00-2	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
4472	Potassium-40	13966-00-2	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
4473	Potassium-40	13966-00-2	RCBRA Pit 18	IU2/IU6	UPLAND	580697.058	145311.464
4474	Potassium-40	13966-00-2	RCBRA Pit 23	IU2/IU6	UPLAND	572381.012	144874.157
4475	Potassium-40	13966-00-2	RCBRA Pit 24	BC	UPLAND	563395.814	145119.007
4476	Potassium-40	13966-00-2	RCBRA Pit 9	300	UPLAND	592807.103	120587.7
4477	Potassium-40	13966-00-2	RCBRA R Ref 11	Outside decision areas	RIPARIAN	559400.735	146458.486
4478	Potassium-40	13966-00-2	RCBRA R Ref 12	IU2/IU6	RIPARIAN	559201.908	145747.542
4479	Potassium-40	13966-00-2	RCBRA R Ref 13	Outside decision areas	RIPARIAN	558572.809	145345.115
4480	Potassium-40	13966-00-2	RCBRA R Ref 16	Outside decision areas	RIPARIAN	557650.029	144826.748
4481	Potassium-40	13966-00-2	RCBRA Rip 1	D/H	RIPARIAN	577251.869	153659.195
4482	Potassium-40	13966-00-2	RCBRA Rip 10	D/H	RIPARIAN	573987.873	153082.19
4483	Potassium-40	13966-00-2	RCBRA Rip 2	D/H	RIPARIAN	573603.219	152471.6
4484	Potassium-40	13966-00-2	RCBRA Rip 3	D/H	RIPARIAN	572639.65	151677.812

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
4446	10/3/1990	E03331	SOIL and BIOTA	Discrete	0.006195	pCi/g	PLANT
4447	6/9/1993	E12399	SOIL and BIOTA	Discrete	0.00775	pCi/g	PLANT
4448	8/16/2000	B103T5	SOIL and BIOTA	Discrete	0.000457	pCi/g	PLANT
4449	5/18/2006	J11X42	SOIL and BIOTA	MIS	9.28	pCi/g	PLANT
4450	5/18/2006	J11X54	SOIL and BIOTA	MIS	9.93	pCi/g	PLANT
4451	5/10/2006	J11X61	SOIL and BIOTA	MIS	6.72	pCi/g	PLANT
4452	5/19/2006	J11X56	SOIL and BIOTA	MIS	8.32	pCi/g	PLANT
4453	5/16/2006	J11X48	SOIL and BIOTA	MIS	11.7	pCi/g	PLANT
4454	5/19/2006	J11X46	SOIL and BIOTA	MIS	10.5	pCi/g	PLANT
4455	5/22/2006	J11X58	SOIL and BIOTA	MIS	10	pCi/g	PLANT
4456	5/12/2006	J11X44	SOIL and BIOTA	MIS	10.8	pCi/g	PLANT
4457	5/24/2007	J152B0	SOIL and BIOTA	MIS	9.66	pCi/g	PLANT
4458	5/24/2007	J152B6	SOIL and BIOTA	MIS	11.05	pCi/g	PLANT
4459	5/24/2007	J152B4	SOIL and BIOTA	MIS	12.8	pCi/g	PLANT
4460	5/12/2006	J11X84	SOIL and BIOTA	MIS	10.7	pCi/g	PLANT
4461	5/12/2006	J11X77	SOIL and BIOTA	MIS	11.1	pCi/g	PLANT
4462	5/16/2006	J11X79	SOIL and BIOTA	MIS	9.48	pCi/g	PLANT
4463	5/16/2006	J11X90	SOIL and BIOTA	MIS	12.7	pCi/g	PLANT
4464	5/18/2006	J11X86	SOIL and BIOTA	MIS	8.84	pCi/g	PLANT
4465	5/18/2006	J11X81	SOIL and BIOTA	MIS	10.2	pCi/g	PLANT
4466	5/15/2006	J11X82	SOIL and BIOTA	MIS	12.2	pCi/g	PLANT
4467	5/12/2006	J11X72	SOIL and BIOTA	MIS	11.4	pCi/g	PLANT
4468	5/12/2006	J11X51	SOIL and BIOTA	MIS	12.3	pCi/g	PLANT
4469	5/12/2006	J11X89	SOIL and BIOTA	MIS	11.2	pCi/g	PLANT
4470	5/10/2006	J11X74	SOIL and BIOTA	MIS	10.7	pCi/g	PLANT
4471	5/18/2006	J11X98	SOIL and BIOTA	MIS	12.2	pCi/g	PLANT
4472	5/15/2006	J11X66	SOIL and BIOTA	MIS	8.96	pCi/g	PLANT
4473	5/18/2006	J11X69	SOIL and BIOTA	MIS	10.8	pCi/g	PLANT
4474	5/22/2006	J11X63	SOIL and BIOTA	MIS	8.2	pCi/g	PLANT
4475	5/19/2006	J11X70	SOIL and BIOTA	MIS	10.6	pCi/g	PLANT
4476	5/12/2006	J11X64	SOIL and BIOTA	MIS	9.96	pCi/g	PLANT
4477	5/9/2006	J11WY8	SOIL and BIOTA	MIS	12.9	pCi/g	PLANT
4478	5/9/2006	J11WX0	SOIL and BIOTA	MIS	9.89	pCi/g	PLANT
4479	8/10/2006	J11WY9	SOIL and BIOTA	MIS	10	pCi/g	PLANT
4480	5/9/2006	J11X04	SOIL and BIOTA	MIS	12.5	pCi/g	PLANT
4481	5/16/2006	J11WX1	SOIL and BIOTA	MIS	11.7	pCi/g	PLANT
4482	5/9/2006	J11WY6	SOIL and BIOTA	MIS	7.435	pCi/g	PLANT
4483	5/19/2006	J11WX4	SOIL and BIOTA	MIS	10.6	pCi/g	PLANT
4484	5/9/2006	J11WX6	SOIL and BIOTA	MIS	7.41	pCi/g	PLANT

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
4446	WHOLEORG	0.0001386	pCi/g			PNNL
4447	WHOLEORG	0.00003255	pCi/g			PNNL
4448	STEM_LEAVES	0.0001275	pCi/g			PNNL
4449	CURRENT YRS GROWTH	13.1	pCi/g			RCBRA
4450	CURRENT YRS GROWTH	6.4	pCi/g			RCBRA
4451	CURRENT YRS GROWTH	7.4	pCi/g			RCBRA
4452	CURRENT YRS GROWTH	6.56	pCi/g			RCBRA
4453	CURRENT YRS GROWTH	3.75	pCi/g			RCBRA
4454	CURRENT YRS GROWTH	4.7	pCi/g			RCBRA
4455	CURRENT YRS GROWTH	6.72	pCi/g			RCBRA
4456	CURRENT YRS GROWTH	2.66	pCi/g			RCBRA
4457	CURRENT YRS GROWTH	4.23	pCi/g			RCBRA
4458	CURRENT YRS GROWTH	5.36	pCi/g			RCBRA
4459	CURRENT YRS GROWTH	7.16	pCi/g			RCBRA
4460	CURRENT YRS GROWTH	5.79	pCi/g			RCBRA
4461	CURRENT YRS GROWTH	4.27	pCi/g			RCBRA
4462	CURRENT YRS GROWTH	4.03	pCi/g			RCBRA
4463	CURRENT YRS GROWTH	9.69	pCi/g			RCBRA
4464	CURRENT YRS GROWTH	4.81	pCi/g			RCBRA
4465	CURRENT YRS GROWTH	5.59	pCi/g			RCBRA
4466	CURRENT YRS GROWTH	7.32	pCi/g			RCBRA
4467	CURRENT YRS GROWTH	4.69	pCi/g			RCBRA
4468	CURRENT YRS GROWTH	4.18	pCi/g			RCBRA
4469	CURRENT YRS GROWTH	5.16	pCi/g			RCBRA
4470	CURRENT YRS GROWTH	9.94	pCi/g			RCBRA
4471	CURRENT YRS GROWTH	5.93	pCi/g			RCBRA
4472	CURRENT YRS GROWTH	6.06	pCi/g			RCBRA
4473	CURRENT YRS GROWTH	8.7	pCi/g			RCBRA
4474	CURRENT YRS GROWTH	10.2	pCi/g			RCBRA
4475	CURRENT YRS GROWTH	5.95	pCi/g			RCBRA
4476	CURRENT YRS GROWTH	7.8	pCi/g			RCBRA
4477	CURRENT YRS GROWTH	4.36	pCi/g			RCBRA
4478	CURRENT YRS GROWTH	4.69	pCi/g			RCBRA
4479	CURRENT YRS GROWTH	6.16	pCi/g			RCBRA
4480	CURRENT YRS GROWTH	4.67	pCi/g			RCBRA
4481	CURRENT YRS GROWTH	7.33	pCi/g			RCBRA
4482	CURRENT YRS GROWTH	10.4	pCi/g			RCBRA
4483	CURRENT YRS GROWTH	5.43	pCi/g			RCBRA
4484	CURRENT YRS GROWTH	8.19	pCi/g			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
4485	Potassium-40	13966-00-2	RCBRA Rip 4	N	RIPARIAN	570558.596	148981.547
4486	Potassium-40	13966-00-2	RCBRA Rip 5	K	RIPARIAN	569141.025	147521.561
4487	Potassium-40	13966-00-2	RCBRA Rip 7	IU2/IU6	RIPARIAN	581326.914	147825.17
4488	Potassium-40	13966-00-2	RCBRA Rip 8	D/H	RIPARIAN	578698.584	152233.645
4489	Potassium-40	13966-00-2	RCBRA Rip 9	D/H	RIPARIAN	578153.643	152801.452
4490	Potassium-40	13966-00-2	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
4491	Potassium-40	13966-00-2	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
4492	Potassium-40	13966-00-2	RCBRA Yak Rdg 2	Outside decision areas	UPLAND	559031.557	135576.407
4493	Potassium-40	13966-00-2	RCBRA 100-D-48	D/H	UPLAND	573841.527	151914.538
4494	Potassium-40	13966-00-2	RCBRA 100-D-49	D/H	UPLAND	573938.06	151944.123
4495	Potassium-40	13966-00-2	RCBRA 100-F-2	IU2/IU6	UPLAND	579728.068	147001.117
4496	Potassium-40	13966-00-2	RCBRA 116-DR-1&2	D/H	UPLAND	574007.817	152246.748
4497	Potassium-40	13966-00-2	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
4498	Potassium-40	13966-00-2	RCBRA 116-N-3	N	UPLAND	571995.702	149793.039
4499	Potassium-40	13966-00-2	RCBRA 1607-D2:1	D/H	UPLAND	573823.924	152260.319
4500	Potassium-40	13966-00-2	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
4501	Potassium-40	13966-00-2	RCBRA 300-49	300	UPLAND	594318.994	116830.934
4502	Potassium-40	13966-00-2	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
4503	Potassium-40	13966-00-2	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
4504	Potassium-40	13966-00-2	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
4505	Potassium-40	13966-00-2	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
4506	Potassium-40	13966-00-2	RCBRA 600-181	IU2/IU6	UPLAND	578303.83	147316.698
4507	Potassium-40	13966-00-2	RCBRA 600-204	IU2/IU6	UPLAND	580128.485	144762.219
4508	Potassium-40	13966-00-2	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
4509	Potassium-40	13966-00-2	RCBRA 600-23	IU2/IU6	UPLAND	585523.593	130481.377
4510	Potassium-40	13966-00-2	RCBRA 618-4	300	UPLAND	593954.946	117064.473
4511	Potassium-40	13966-00-2	RCBRA 628-1	IU2/IU6	UPLAND	577797.524	148745.681
4512	Potassium-40	13966-00-2	RCBRA JA JONES	300	UPLAND	593874.58	120013.908
4513	Potassium-40	13966-00-2	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
4514	Potassium-40	13966-00-2	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
4515	Potassium-40	13966-00-2	RCBRA Pit 18	IU2/IU6	UPLAND	580697.058	145311.464
4516	Potassium-40	13966-00-2	RCBRA Pit 23	IU2/IU6	UPLAND	572381.012	144874.157
4517	Potassium-40	13966-00-2	RCBRA Pit 24	BC	UPLAND	563395.814	145119.007
4518	Potassium-40	13966-00-2	RCBRA Pit 9	300	UPLAND	592807.103	120587.7
4519	Potassium-40	13966-00-2	RCBRA R Ref 11	Outside decision areas	RIPARIAN	559400.735	146458.486
4520	Potassium-40	13966-00-2	RCBRA R Ref 12	IU2/IU6	RIPARIAN	559201.908	145747.542
4521	Potassium-40	13966-00-2	RCBRA R Ref 13	Outside decision areas	RIPARIAN	558572.809	145345.115
4522	Potassium-40	13966-00-2	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
4523	Potassium-40	13966-00-2	RCBRA R Ref 16	Outside decision areas	RIPARIAN	557650.029	144826.748

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
4485	5/9/2006	J11WW6	SOIL and BIOTA	MIS	15.2	pCi/g	PLANT
4486	5/9/2006	J11WW8	SOIL and BIOTA	MIS	13.8	pCi/g	PLANT
4487	5/9/2006	J11WY0	SOIL and BIOTA	MIS	11.8	pCi/g	PLANT
4488	5/16/2006	J11WY2	SOIL and BIOTA	MIS	11.4	pCi/g	PLANT
4489	5/16/2006	J11WY4	SOIL and BIOTA	MIS	11.9	pCi/g	PLANT
4490	5/18/2006	J11XB0	SOIL and BIOTA	MIS	10.8	pCi/g	PLANT
4491	5/15/2006	J11X96	SOIL and BIOTA	MIS	12.2	pCi/g	PLANT
4492	5/16/2006	J11X94	SOIL and BIOTA	MIS	10.2	pCi/g	PLANT
4493	5/18/2006	J11X43	SOIL and BIOTA	MIS	9.28	pCi/g	PLANT
4494	5/18/2006	J11X55	SOIL and BIOTA	MIS	9.93	pCi/g	PLANT
4495	5/10/2006	J11X60	SOIL and BIOTA	MIS	6.72	pCi/g	PLANT
4496	5/19/2006	J11X57	SOIL and BIOTA	MIS	8.32	pCi/g	PLANT
4497	5/16/2006	J11X49	SOIL and BIOTA	MIS	11.7	pCi/g	PLANT
4498	5/19/2006	J11X47	SOIL and BIOTA	MIS	10.5	pCi/g	PLANT
4499	5/22/2006	J11X59	SOIL and BIOTA	MIS	10	pCi/g	PLANT
4500	5/12/2006	J11X45	SOIL and BIOTA	MIS	10.8	pCi/g	PLANT
4501	4/26/2006	J11X53	SOIL and BIOTA	MIS	10.7	pCi/g	PLANT
4502	5/12/2006	J11X85	SOIL and BIOTA	MIS	10.7	pCi/g	PLANT
4503	5/12/2006	J11X76	SOIL and BIOTA	MIS	11.1	pCi/g	PLANT
4504	5/16/2006	J11X78	SOIL and BIOTA	MIS	9.48	pCi/g	PLANT
4505	5/16/2006	J11X91	SOIL and BIOTA	MIS	12.7	pCi/g	PLANT
4506	5/18/2006	J11X87	SOIL and BIOTA	MIS	8.84	pCi/g	PLANT
4507	5/18/2006	J11X80	SOIL and BIOTA	MIS	10.2	pCi/g	PLANT
4508	5/15/2006	J11X83	SOIL and BIOTA	MIS	12.2	pCi/g	PLANT
4509	5/12/2006	J11X73	SOIL and BIOTA	MIS	11.4	pCi/g	PLANT
4510	5/12/2006	J11X50	SOIL and BIOTA	MIS	12.3	pCi/g	PLANT
4511	5/12/2006	J11X88	SOIL and BIOTA	MIS	11.2	pCi/g	PLANT
4512	5/10/2006	J11X75	SOIL and BIOTA	MIS	10.7	pCi/g	PLANT
4513	5/18/2006	J11X99	SOIL and BIOTA	MIS	12.2	pCi/g	PLANT
4514	5/15/2006	J11X67	SOIL and BIOTA	MIS	8.96	pCi/g	PLANT
4515	5/18/2006	J11X68	SOIL and BIOTA	MIS	10.8	pCi/g	PLANT
4516	5/22/2006	J11X62	SOIL and BIOTA	MIS	8.2	pCi/g	PLANT
4517	5/19/2006	J11X71	SOIL and BIOTA	MIS	10.6	pCi/g	PLANT
4518	5/12/2006	J11X65	SOIL and BIOTA	MIS	9.96	pCi/g	PLANT
4519	5/9/2006	J11WY7	SOIL and BIOTA	MIS	12.9	pCi/g	PLANT
4520	5/9/2006	J11WW9	SOIL and BIOTA	MIS	9.89	pCi/g	PLANT
4521	8/10/2006	J11X00	SOIL and BIOTA	MIS	10	pCi/g	PLANT
4522	5/9/2006	J11X01	SOIL and BIOTA	MIS	11.95	pCi/g	PLANT
4523	5/9/2006	J11X03	SOIL and BIOTA	MIS	12.5	pCi/g	PLANT

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
4485	CURRENT YRS GROWTH	9.78	pCi/g			RCBRA
4486	CURRENT YRS GROWTH	5.38	pCi/g			RCBRA
4487	CURRENT YRS GROWTH	6.38	pCi/g			RCBRA
4488	CURRENT YRS GROWTH	2.55	pCi/g			RCBRA
4489	CURRENT YRS GROWTH	6.55	pCi/g			RCBRA
4490	CURRENT YRS GROWTH	10.6	pCi/g			RCBRA
4491	CURRENT YRS GROWTH	8.7	pCi/g			RCBRA
4492	CURRENT YRS GROWTH	6.31	pCi/g			RCBRA
4493	CURRENT YRS GROWTH	6.51	pCi/g			RCBRA
4494	CURRENT YRS GROWTH	7.08	pCi/g			RCBRA
4495	CURRENT YRS GROWTH	5.47	pCi/g			RCBRA
4496	CURRENT YRS GROWTH	6.51	pCi/g			RCBRA
4497	CURRENT YRS GROWTH	5.22	pCi/g			RCBRA
4498	CURRENT YRS GROWTH	9.29	pCi/g			RCBRA
4499	CURRENT YRS GROWTH	11.7	pCi/g			RCBRA
4500	CURRENT YRS GROWTH	10.5	pCi/g			RCBRA
4501	CURRENT YRS GROWTH	4.33	pCi/g			RCBRA
4502	CURRENT YRS GROWTH	2.76	pCi/g			RCBRA
4503	CURRENT YRS GROWTH	2.97	pCi/g			RCBRA
4504	CURRENT YRS GROWTH	10.2	pCi/g			RCBRA
4505	CURRENT YRS GROWTH	5.66	pCi/g			RCBRA
4506	CURRENT YRS GROWTH	3.61	pCi/g			RCBRA
4507	CURRENT YRS GROWTH	10.8	pCi/g			RCBRA
4508	CURRENT YRS GROWTH	4.61	pCi/g			RCBRA
4509	CURRENT YRS GROWTH	3.53	pCi/g			RCBRA
4510	CURRENT YRS GROWTH	3.85	pCi/g			RCBRA
4511	CURRENT YRS GROWTH	4.14	pCi/g			RCBRA
4512	CURRENT YRS GROWTH	6.1	pCi/g			RCBRA
4513	CURRENT YRS GROWTH	3.15	pCi/g			RCBRA
4514	CURRENT YRS GROWTH	5.75	pCi/g			RCBRA
4515	CURRENT YRS GROWTH	5.51	pCi/g			RCBRA
4516	CURRENT YRS GROWTH	6.67	pCi/g			RCBRA
4517	CURRENT YRS GROWTH	11	pCi/g			RCBRA
4518	CURRENT YRS GROWTH	6.21	pCi/g			RCBRA
4519	CURRENT YRS GROWTH	9.05	pCi/g			RCBRA
4520	CURRENT YRS GROWTH	4.93	pCi/g			RCBRA
4521	CURRENT YRS GROWTH	8.36	pCi/g			RCBRA
4522	CURRENT YRS GROWTH	4.62	pCi/g			RCBRA
4523	CURRENT YRS GROWTH	3.7	pCi/g			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
4524	Potassium-40	13966-00-2	RCBRA Rip 1	D/H	RIPARIAN	577251.869	153659.195
4525	Potassium-40	13966-00-2	RCBRA Rip 10	D/H	RIPARIAN	573987.873	153082.19
4526	Potassium-40	13966-00-2	RCBRA Rip 2	D/H	RIPARIAN	573603.219	152471.6
4527	Potassium-40	13966-00-2	RCBRA Rip 3	D/H	RIPARIAN	572639.65	151677.812
4528	Potassium-40	13966-00-2	RCBRA Rip 4	N	RIPARIAN	570558.596	148981.547
4529	Potassium-40	13966-00-2	RCBRA Rip 5	K	RIPARIAN	569141.025	147521.561
4530	Potassium-40	13966-00-2	RCBRA Rip 7	IU2/IU6	RIPARIAN	581326.914	147825.17
4531	Potassium-40	13966-00-2	RCBRA Rip 8	D/H	RIPARIAN	578698.584	152233.645
4532	Potassium-40	13966-00-2	RCBRA Rip 9	D/H	RIPARIAN	578153.643	152801.452
4533	Potassium-40	13966-00-2	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
4534	Potassium-40	13966-00-2	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
4535	Potassium-40	13966-00-2	RCBRA Yak Rdg 2	Outside decision areas	UPLAND	559031.557	135576.407
4536	Potassium-40	13966-00-2	RCBRA 2f Rip	D/H	RIPARIAN	576222.844	154297.511
4537	Potassium-40	13966-00-2	RCBRA 2j Rip	IU2/IU6	RIPARIAN	579360.971	150092.048
4538	Potassium-40	13966-00-2	RCBRA 2l Rip	IU2/IU6	RIPARIAN	582341.212	146120.069
4539	Potassium-40	13966-00-2	RCBRA 5c Rip	300	RIPARIAN	594509.985	124869.182
4540	Potassium-40	13966-00-2	RCBRA Bev Ref 1 Rip	Outside decision areas	RIPARIAN	542428.846	167701.261
4541	Potassium-40	13966-00-2	RCBRA Bev Ref 2 Rip	Outside decision areas	RIPARIAN	541493.988	167808.357
4542	Potassium-40	13966-00-2	100 K AREA	K	UPLAND	569672.5219	146419.3565
4543	Potassium-40	13966-00-2	100-N SPRING SHORELINE	N	UPLAND	571423.474	150006.656
4544	Potassium-40	13966-00-2	100-N SPRING SHORELINE	N	UPLAND	571423.474	150006.656
4545	Potassium-40	13966-00-2	100-N SPRING SHORELINE	N	UPLAND	571423.474	150006.656
4546	Potassium-40	13966-00-2	100-N SPRING SHORELINE	N	UPLAND	571423.474	150006.656
4547	Potassium-40	13966-00-2	100-N SPRING SHORELINE	N	UPLAND	571423.474	150006.656
4548	Potassium-40	13966-00-2	200 ENC	Outside decision areas	UPLAND	573686.735	137776.371
4549	Potassium-40	13966-00-2	200 ESE	Outside decision areas	UPLAND	576339.864	134596.72
4550	Potassium-40	13966-00-2	400 E	300	UPLAND	587921.702	123300.446
4551	Potassium-40	13966-00-2	BASIN CITY	Outside decision areas	UPLAND	601212.248	142279.828
4552	Potassium-40	13966-00-2	BENTON CITY	Outside decision areas	UPLAND	577999.247	111907.899
4553	Potassium-40	13966-00-2	BERG RANCH	Outside decision areas	UPLAND	527257.503	127698.089
4554	Potassium-40	13966-00-2	BROADMOOR, PASCO	Outside decision areas	UPLAND	598174.6351	105885.7264
4555	Potassium-40	13966-00-2	BYERS LANDING	Outside decision areas	UPLAND	596516.284	114702.974
4556	Potassium-40	13966-00-2	BYERS LANDING	Outside decision areas	UPLAND	596516.284	114702.974
4557	Potassium-40	13966-00-2	BYERS LANDING	Outside decision areas	UPLAND	596516.284	114702.974
4558	Potassium-40	13966-00-2	BYERS LANDING	Outside decision areas	UPLAND	596516.284	114702.974
4559	Potassium-40	13966-00-2	BYERS LANDING	Outside decision areas	UPLAND	596516.284	114702.974
4560	Potassium-40	13966-00-2	BYERS LANDING	Outside decision areas	UPLAND	596516.284	114702.974
4561	Potassium-40	13966-00-2	BYERS LANDING	Outside decision areas	UPLAND	596516.284	114702.974
4562	Potassium-40	13966-00-2	BYERS LANDING	Outside decision areas	UPLAND	596516.284	114702.974

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
4524	5/16/2006	J11WX2	SOIL and BIOTA	MIS	11.7	pCi/g	PLANT
4525	5/9/2006	J11WY5	SOIL and BIOTA	MIS	7.435	pCi/g	PLANT
4526	5/19/2006	J11WX3	SOIL and BIOTA	MIS	10.6	pCi/g	PLANT
4527	5/9/2006	J11WX5	SOIL and BIOTA	MIS	7.41	pCi/g	PLANT
4528	5/9/2006	J11WW5	SOIL and BIOTA	MIS	15.2	pCi/g	PLANT
4529	5/9/2006	J11WW7	SOIL and BIOTA	MIS	13.8	pCi/g	PLANT
4530	5/9/2006	J11WX9	SOIL and BIOTA	MIS	11.8	pCi/g	PLANT
4531	5/16/2006	J11WY1	SOIL and BIOTA	MIS	11.4	pCi/g	PLANT
4532	5/16/2006	J11WY3	SOIL and BIOTA	MIS	11.9	pCi/g	PLANT
4533	5/18/2006	J11XB1	SOIL and BIOTA	MIS	10.8	pCi/g	PLANT
4534	5/15/2006	J11X97	SOIL and BIOTA	MIS	12.2	pCi/g	PLANT
4535	5/16/2006	J11X95	SOIL and BIOTA	MIS	10.2	pCi/g	PLANT
4536	5/7/2007	J15294	SOIL and BIOTA	MIS	10.8	pCi/g	PLANT
4537	5/21/2007	J15297	SOIL and BIOTA	MIS	10.7	pCi/g	PLANT
4538	5/24/2007	J152B1	SOIL and BIOTA	MIS	9.66	pCi/g	PLANT
4539	5/24/2007	J152B5	SOIL and BIOTA	MIS	12.8	pCi/g	PLANT
4540	5/10/2007	J15288	SOIL and BIOTA	MIS	12.6	pCi/g	PLANT
4541	5/8/2007	J15290	SOIL and BIOTA	MIS	15.2	pCi/g	PLANT
4542	8/2/2004	B199J8	SOIL and BIOTA	Discrete	10.9	pCi/g	PLANT
4543	6/7/2004	B199K3	SOIL and BIOTA	Discrete	14.8	pCi/g	PLANT
4544	7/31/1991	E11783	SOIL and BIOTA	Discrete	14.8	pCi/g	PLANT
4545	7/17/1998	B0P9T5	SOIL and BIOTA	Discrete	14.8	pCi/g	PLANT
4546	10/21/1993	E12487	SOIL and BIOTA	Discrete	14.8	pCi/g	PLANT
4547	6/30/1992	E12120	SOIL and BIOTA	Discrete	14.8	pCi/g	PLANT
4548	8/13/1991	E11772	SOIL and BIOTA	Discrete	15.5	pCi/g	PLANT
4549	7/31/1991	E11782	SOIL and BIOTA	Discrete	14.4	pCi/g	PLANT
4550	8/13/1991	E11772	SOIL and BIOTA	Discrete	15.3	pCi/g	PLANT
4551	8/17/2000	B103R7	SOIL and BIOTA	Discrete	17.2	pCi/g	PLANT
4552	10/3/1990	E11667	SOIL and BIOTA	Discrete	16.6	pCi/g	PLANT
4553	10/8/1990	E11671	SOIL and BIOTA	Discrete	14.45	pCi/g	PLANT
4554	8/16/2000	B103T3	SOIL and BIOTA	Discrete	16.2	pCi/g	PLANT
4555	6/8/2001	B11JF5	SOIL and BIOTA	Discrete	15.4	pCi/g	PLANT
4556	8/6/1998	B0P9V6	SOIL and BIOTA	Discrete	15.4	pCi/g	PLANT
4557	8/8/1991	E11764	SOIL and BIOTA	Discrete	15.4	pCi/g	PLANT
4558	6/3/2004	B199L2	SOIL and BIOTA	Discrete	15.4	pCi/g	PLANT
4559	6/23/1992	E12111	SOIL and BIOTA	Discrete	15.4	pCi/g	PLANT
4560	8/21/1997	S0LVP0	SOIL and BIOTA	Discrete	15.4	pCi/g	PLANT
4561	6/29/1993	E12406	SOIL and BIOTA	Discrete	15.4	pCi/g	PLANT
4562	10/4/1990	E11671	SOIL and BIOTA	Discrete	15.4	pCi/g	PLANT

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
4524	CURRENT YRS GROWTH	5.74	pCi/g			RCBRA
4525	CURRENT YRS GROWTH	4.96	pCi/g			RCBRA
4526	CURRENT YRS GROWTH	5.43	pCi/g			RCBRA
4527	CURRENT YRS GROWTH	3.19	pCi/g			RCBRA
4528	CURRENT YRS GROWTH	3.33	pCi/g			RCBRA
4529	CURRENT YRS GROWTH	4.16	pCi/g			RCBRA
4530	CURRENT YRS GROWTH	4.27	pCi/g			RCBRA
4531	CURRENT YRS GROWTH	7.04	pCi/g			RCBRA
4532	CURRENT YRS GROWTH	4.64	pCi/g			RCBRA
4533	CURRENT YRS GROWTH	5.73	pCi/g			RCBRA
4534	CURRENT YRS GROWTH	4.85	pCi/g			RCBRA
4535	CURRENT YRS GROWTH	5.1	pCi/g			RCBRA
4536	CURRENT YRS GROWTH	4.48	pCi/g			RCBRA
4537	CURRENT YRS GROWTH	4.04	pCi/g			RCBRA
4538	CURRENT YRS GROWTH	3.14	pCi/g			RCBRA
4539	CURRENT YRS GROWTH	2.11	pCi/g			RCBRA
4540	CURRENT YRS GROWTH	4.56	pCi/g			RCBRA
4541	CURRENT YRS GROWTH	4.68	pCi/g			RCBRA
4542	STEM_LEAVES	2.475	pCi/g			PNNL
4543	STEM_LEAVES	3.105	pCi/g			PNNL
4544	WHOLEORG	3.705	pCi/g			PNNL
4545	STEM_LEAVES	2.97	pCi/g			PNNL
4546	WHOLEORG	1.665	pCi/g			PNNL
4547	WHOLEORG	2.34	pCi/g			PNNL
4548	WHOLEORG	1.83	pCi/g			PNNL
4549	WHOLEORG	3.735	pCi/g			PNNL
4550	WHOLEORG	1.755	pCi/g			PNNL
4551	STEM_LEAVES	1.965	pCi/g			PNNL
4552	WHOLEORG	2.43	pCi/g			PNNL
4553	WHOLEORG	2.445	pCi/g			PNNL
4554	STEM_LEAVES	2.205	pCi/g			PNNL
4555	STEM_LEAVES	2.49	pCi/g			PNNL
4556	STEM_LEAVES	3.06	pCi/g			PNNL
4557	WHOLEORG	2.325	pCi/g			PNNL
4558	STEM_LEAVES	2.85	pCi/g			PNNL
4559	WHOLEORG	2.835	pCi/g			PNNL
4560	STEM_LEAVES	3.885	pCi/g			PNNL
4561	WHOLEORG	2.7	pCi/g			PNNL
4562	WHOLEORG	2.985	pCi/g			PNNL

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
4563	Potassium-40	13966-00-2	BYERS LANDING	Outside decision areas	UPLAND	596516.284	114702.974
4564	Potassium-40	13966-00-2	E OF 100 N AREA	D/H	UPLAND	573358.727	149412.917
4565	Potassium-40	13966-00-2	E OF 100 N AREA	D/H	UPLAND	573358.727	149412.917
4566	Potassium-40	13966-00-2	E OF 100 N AREA	D/H	UPLAND	573358.727	149412.917
4567	Potassium-40	13966-00-2	E OF 100 N AREA	D/H	UPLAND	573358.727	149412.917
4568	Potassium-40	13966-00-2	E OF 100 N AREA	D/H	UPLAND	573358.727	149412.917
4569	Potassium-40	13966-00-2	E OF 200 E	Outside decision areas	UPLAND	576878.952	135735.541
4570	Potassium-40	13966-00-2	E OF 200 W GATE	Outside decision areas	UPLAND	568454.589	136067.85
4571	Potassium-40	13966-00-2	E OF 200 W GATE	Outside decision areas	UPLAND	568454.589	136067.85
4572	Potassium-40	13966-00-2	E OF 200 W GATE	Outside decision areas	UPLAND	568454.589	136067.85
4573	Potassium-40	13966-00-2	E OF 200 W GATE	Outside decision areas	UPLAND	568454.589	136067.85
4574	Potassium-40	13966-00-2	E OF 200 W GATE	Outside decision areas	UPLAND	568454.589	136067.85
4575	Potassium-40	13966-00-2	E OF 200 W GATE	Outside decision areas	UPLAND	568454.589	136067.85
4576	Potassium-40	13966-00-2	E OF 200 W GATE	Outside decision areas	UPLAND	568454.589	136067.85
4577	Potassium-40	13966-00-2	FINLEY RR TRACK	Outside decision areas	UPLAND	614935.848	90642.51583
4578	Potassium-40	13966-00-2	GEORGE	Outside decision areas	UPLAND	539480.109	187657.4044
4579	Potassium-40	13966-00-2	GEORGE	Outside decision areas	UPLAND	549093.9293	192484.3998
4580	Potassium-40	13966-00-2	HTS	IU2/IU6	UPLAND	584211.778	139885.112
4581	Potassium-40	13966-00-2	KENNEWICK	Outside decision areas	UPLAND	604219.7672	97327.74495
4582	Potassium-40	13966-00-2	MC NARY DAM	Outside decision areas	UPLAND	593616.792	66537.692
4583	Potassium-40	13966-00-2	MESA	Outside decision areas	UPLAND	613658.9896	125036.8087
4584	Potassium-40	13966-00-2	NE OF 100 N AREA	D/H	UPLAND	572613.532	151143.61
4585	Potassium-40	13966-00-2	NE OF 100 N AREA	D/H	UPLAND	572613.532	151143.61
4586	Potassium-40	13966-00-2	NE OF 100 N AREA	D/H	UPLAND	572613.532	151143.61
4587	Potassium-40	13966-00-2	NE OF 100 N AREA	D/H	UPLAND	572613.532	151143.61
4588	Potassium-40	13966-00-2	NE OF 100 N AREA	D/H	UPLAND	572613.532	151143.61
4589	Potassium-40	13966-00-2	OTHELLO	Outside decision areas	UPLAND	599861.7627	163446.1827
4590	Potassium-40	13966-00-2	OTHELLO	Outside decision areas	UPLAND	599861.7627	163446.1827
4591	Potassium-40	13966-00-2	OTHELLO	Outside decision areas	UPLAND	604480.4171	165170.4671
4592	Potassium-40	13966-00-2	PASCO	Outside decision areas	UPLAND	605872.96	102133.5171
4593	Potassium-40	13966-00-2	PASCO AIRPORT	Outside decision areas	UPLAND	607075.4805	103528.0557
4594	Potassium-40	13966-00-2	RINGOLD AREA	Outside decision areas	UPLAND	595854.333	129775.653
4595	Potassium-40	13966-00-2	RINGOLD AREA	Outside decision areas	UPLAND	595854.333	129775.653
4596	Potassium-40	13966-00-2	RINGOLD AREA	Outside decision areas	UPLAND	595854.333	129775.653
4597	Potassium-40	13966-00-2	RINGOLD AREA	Outside decision areas	UPLAND	595854.333	129775.653
4598	Potassium-40	13966-00-2	RINGOLD AREA	Outside decision areas	UPLAND	595854.333	129775.653
4599	Potassium-40	13966-00-2	RINGOLD AREA	Outside decision areas	UPLAND	595854.333	129775.653
4600	Potassium-40	13966-00-2	RINGOLD AREA	Outside decision areas	UPLAND	595854.333	129775.653
4601	Potassium-40	13966-00-2	RIVERSHORE ROAD	IU2/IU6	UPLAND	563789.959	139793.869

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
4563	8/17/1994	B0BYX8	SOIL and BIOTA	Discrete	15.4	pCi/g	PLANT
4564	7/17/1998	B0P9T3	SOIL and BIOTA	Discrete	12.5	pCi/g	PLANT
4565	8/17/1994	B0BYX1	SOIL and BIOTA	Discrete	12.5	pCi/g	PLANT
4566	8/2/2004	B199K2	SOIL and BIOTA	Discrete	12.5	pCi/g	PLANT
4567	8/19/1993	E12442	SOIL and BIOTA	Discrete	12.5	pCi/g	PLANT
4568	8/14/1991	E11761	SOIL and BIOTA	Discrete	12.5	pCi/g	PLANT
4569	7/31/1991	E11782	SOIL and BIOTA	Discrete	14	pCi/g	PLANT
4570	6/1/2004	B199K4	SOIL and BIOTA	Discrete	13.1	pCi/g	PLANT
4571	8/24/1994	B0BYX3	SOIL and BIOTA	Discrete	13.1	pCi/g	PLANT
4572	8/13/1991	E11771	SOIL and BIOTA	Discrete	13.1	pCi/g	PLANT
4573	6/22/2001	B11JD8	SOIL and BIOTA	Discrete	13.1	pCi/g	PLANT
4574	10/4/1990	E11775	SOIL and BIOTA	Discrete	13.1	pCi/g	PLANT
4575	6/3/1993	E12389	SOIL and BIOTA	Discrete	13.1	pCi/g	PLANT
4576	8/12/1998	B0P9T7	SOIL and BIOTA	Discrete	13.1	pCi/g	PLANT
4577	8/10/2000	B103R0	SOIL and BIOTA	Discrete	17.7	pCi/g	PLANT
4578	8/14/2000	B103V2	SOIL and BIOTA	Discrete	13.6	pCi/g	PLANT
4579	6/4/2004	B199P1	SOIL and BIOTA	Discrete	14	pCi/g	PLANT
4580	6/7/2004	B199K7	SOIL and BIOTA	Discrete	10.3	pCi/g	PLANT
4581	8/16/2000	B103T9	SOIL and BIOTA	Discrete	15.75	pCi/g	PLANT
4582	10/3/1990	E03331	SOIL and BIOTA	Discrete	14.9	pCi/g	PLANT
4583	8/17/2000	B103V5	SOIL and BIOTA	Discrete	15.75	pCi/g	PLANT
4584	7/13/2001	B11JD3	SOIL and BIOTA	Discrete	15.1	pCi/g	PLANT
4585	8/19/1993	E12442	SOIL and BIOTA	Discrete	15.1	pCi/g	PLANT
4586	8/14/1991	E11761	SOIL and BIOTA	Discrete	15.1	pCi/g	PLANT
4587	6/16/2004	B199K0	SOIL and BIOTA	Discrete	15.1	pCi/g	PLANT
4588	7/20/1998	B0P9T2	SOIL and BIOTA	Discrete	15.1	pCi/g	PLANT
4589	8/17/2000	B103R5	SOIL and BIOTA	Discrete	14.1	pCi/g	PLANT
4590	10/5/1990	E03331	SOIL and BIOTA	Discrete	14.1	pCi/g	PLANT
4591	6/2/2004	B199P3	SOIL and BIOTA	Discrete	13	pCi/g	PLANT
4592	8/16/2000	B103R9	SOIL and BIOTA	Discrete	14.35	pCi/g	PLANT
4593	8/16/2000	B103T1	SOIL and BIOTA	Discrete	14.15	pCi/g	PLANT
4594	6/8/2001	B11JF3	SOIL and BIOTA	Discrete	18.5	pCi/g	PLANT
4595	7/24/1998	B0P9V4	SOIL and BIOTA	Discrete	18.5	pCi/g	PLANT
4596	7/28/1992	E12128	SOIL and BIOTA	Discrete	18.5	pCi/g	PLANT
4597	10/8/1990	E11671	SOIL and BIOTA	Discrete	18.5	pCi/g	PLANT
4598	8/17/1994	B0BYX6	SOIL and BIOTA	Discrete	18.5	pCi/g	PLANT
4599	6/29/1993	E12406	SOIL and BIOTA	Discrete	18.5	pCi/g	PLANT
4600	8/8/1991	E11764	SOIL and BIOTA	Discrete	18.5	pCi/g	PLANT
4601	8/21/1997	S0LVN8	SOIL and BIOTA	Discrete	15.2	pCi/g	PLANT

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
4563	STEM_LEAVES	2.1	pCi/g			PNNL
4564	STEM_LEAVES	1.845	pCi/g			PNNL
4565	STEM_LEAVES	1.494	pCi/g			PNNL
4566	STEM_LEAVES	2.895	pCi/g			PNNL
4567	WHOLEORG	2.175	pCi/g			PNNL
4568	WHOLEORG	2.205	pCi/g			PNNL
4569	WHOLEORG	3.225	pCi/g			PNNL
4570	STEM_LEAVES	2.34	pCi/g			PNNL
4571	STEM_LEAVES	1.605	pCi/g			PNNL
4572	WHOLEORG	1.86	pCi/g			PNNL
4573	STEM_LEAVES	3.465	pCi/g			PNNL
4574	WHOLEORG	1.755	pCi/g			PNNL
4575	WHOLEORG	3.72	pCi/g			PNNL
4576	STEM_LEAVES	1.68	pCi/g			PNNL
4577	STEM_LEAVES	2.655	pCi/g			PNNL
4578	STEM_LEAVES	1.3305	pCi/g			PNNL
4579	STEM_LEAVES	2.685	pCi/g			PNNL
4580	STEM_LEAVES	2.55	pCi/g			PNNL
4581	STEM_LEAVES	2.295	pCi/g			PNNL
4582	WHOLEORG	2.655	pCi/g			PNNL
4583	STEM_LEAVES	2.925	pCi/g			PNNL
4584	STEM_LEAVES	2.13	pCi/g			PNNL
4585	WHOLEORG	2.22	pCi/g			PNNL
4586	WHOLEORG	1.725	pCi/g			PNNL
4587	STEM_LEAVES	2.97	pCi/g			PNNL
4588	STEM_LEAVES	2.16	pCi/g			PNNL
4589	STEM_LEAVES	2.745	pCi/g			PNNL
4590	WHOLEORG	3.87	pCi/g			PNNL
4591	STEM_LEAVES	2.31	pCi/g			PNNL
4592	STEM_LEAVES	2.505	pCi/g			PNNL
4593	STEM_LEAVES	2.58	pCi/g			PNNL
4594	STEM_LEAVES	2.82	pCi/g			PNNL
4595	STEM_LEAVES	3.435	pCi/g			PNNL
4596	WHOLEORG	2.61	pCi/g			PNNL
4597	WHOLEORG	3.735	pCi/g			PNNL
4598	STEM_LEAVES	2.595	pCi/g			PNNL
4599	WHOLEORG	2.97	pCi/g			PNNL
4600	WHOLEORG	2.04	pCi/g			PNNL
4601	STEM_LEAVES	2.43	pCi/g			PNNL

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
4602	Potassium-40	13966-00-2	RIVRVIEW-HARRIS	Outside decision areas	UPLAND	597112.528	104439.135
4603	Potassium-40	13966-00-2	RIVRVIEW-HARRIS	Outside decision areas	UPLAND	597112.528	104439.135
4604	Potassium-40	13966-00-2	RIVRVIEW-HARRIS	Outside decision areas	UPLAND	597112.528	104439.135
4605	Potassium-40	13966-00-2	RIVRVIEW-HARRIS	Outside decision areas	UPLAND	597112.528	104439.135
4606	Potassium-40	13966-00-2	RIVRVIEW-HARRIS	Outside decision areas	UPLAND	597112.528	104439.135
4607	Potassium-40	13966-00-2	RIVRVIEW-HARRIS	Outside decision areas	UPLAND	597112.528	104439.135
4608	Potassium-40	13966-00-2	RIVRVIEW-HARRIS	Outside decision areas	UPLAND	597112.528	104439.135
4609	Potassium-40	13966-00-2	RIVRVIEW-HARRIS	Outside decision areas	UPLAND	597112.528	104439.135
4610	Potassium-40	13966-00-2	S OF 200 E	Outside decision areas	UPLAND	575240.919	131779.847
4611	Potassium-40	13966-00-2	S OF 200 W	Outside decision areas	UPLAND	568340.41	131238.537
4612	Potassium-40	13966-00-2	SAGEMOOR FARM	Outside decision areas	UPLAND	596362.99	116036.357
4613	Potassium-40	13966-00-2	SAGEMOOR FARM	Outside decision areas	UPLAND	596362.99	116036.357
4614	Potassium-40	13966-00-2	SAGEMOOR FARM	Outside decision areas	UPLAND	596362.99	116036.357
4615	Potassium-40	13966-00-2	SAGEMOOR FARM	Outside decision areas	UPLAND	596362.99	116036.357
4616	Potassium-40	13966-00-2	SAGEMOOR FARM	Outside decision areas	UPLAND	596362.99	116036.357
4617	Potassium-40	13966-00-2	SAGEMOOR FARM	Outside decision areas	UPLAND	596362.99	116036.357
4618	Potassium-40	13966-00-2	SAGEMOOR FARM	Outside decision areas	UPLAND	596362.99	116036.357
4619	Potassium-40	13966-00-2	SAGEMOOR FARM	Outside decision areas	UPLAND	596362.99	116036.357
4620	Potassium-40	13966-00-2	SOUTH 300 AREA	300	UPLAND	593957.334	113882.4562
4621	Potassium-40	13966-00-2	SOUTH 300 AREA	300	UPLAND	593957.334	113882.4562
4622	Potassium-40	13966-00-2	SUNNYSIDE	Outside decision areas	UPLAND	540080.59	113245.9183
4623	Potassium-40	13966-00-2	SUNNYSIDE	Outside decision areas	UPLAND	542322.0793	118841.586
4624	Potassium-40	13966-00-2	SUNNYSIDE	Outside decision areas	UPLAND	542329.106	118862.754
4625	Potassium-40	13966-00-2	SUNNYSIDE	Outside decision areas	UPLAND	542329.106	118862.754
4626	Potassium-40	13966-00-2	SUNNYSIDE	Outside decision areas	UPLAND	542329.106	118862.754
4627	Potassium-40	13966-00-2	SUNNYSIDE	Outside decision areas	UPLAND	542329.106	118862.754
4628	Potassium-40	13966-00-2	SUNNYSIDE	Outside decision areas	UPLAND	542329.106	118862.754
4629	Potassium-40	13966-00-2	SW OF BC CRIBS	Outside decision areas	UPLAND	572473.237	131023.533
4630	Potassium-40	13966-00-2	TAYLOR FLATS NO 2	Outside decision areas	UPLAND	595154.466	117862.601
4631	Potassium-40	13966-00-2	TOPPENISH	Outside decision areas	UPLAND	485012.892	154200.719
4632	Potassium-40	13966-00-2	TOPPENISH	Outside decision areas	UPLAND	485012.892	154200.719
4633	Potassium-40	13966-00-2	TOPPENISH	Outside decision areas	UPLAND	506330.26	122151.7881
4634	Potassium-40	13966-00-2	TRI-CITY COLISEUM	Outside decision areas	UPLAND	598930.5812	99207.81003
4635	Potassium-40	13966-00-2	W END OF FIR ROAD	Outside decision areas	UPLAND	596046.639	124424.244
4636	Potassium-40	13966-00-2	WAHLUKE SLOPE	Outside decision areas	UPLAND	565650.578	156360.718
4637	Potassium-40	13966-00-2	WALLA WALLA	Outside decision areas	UPLAND	672372.132	113292.34
4638	Potassium-40	13966-00-2	WANAPUM	Outside decision areas	UPLAND	541816.41	171206.4974
4639	Potassium-40	13966-00-2	WANAPUM	Outside decision areas	UPLAND	547954.8303	170874.337
4640	Potassium-40	13966-00-2	WASHTUCNA	Outside decision areas	UPLAND	667289.771	160899.27

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
4602	6/3/2004	B199L3	SOIL and BIOTA	Discrete	18.9	pCi/g	PLANT
4603	8/21/1998	B0P9V8	SOIL and BIOTA	Discrete	18.9	pCi/g	PLANT
4604	8/17/1994	B0BYX9	SOIL and BIOTA	Discrete	18.9	pCi/g	PLANT
4605	8/8/1991	E11764	SOIL and BIOTA	Discrete	18.9	pCi/g	PLANT
4606	7/28/1992	E12127	SOIL and BIOTA	Discrete	18.9	pCi/g	PLANT
4607	6/8/2001	B11JF6	SOIL and BIOTA	Discrete	18.9	pCi/g	PLANT
4608	6/11/1993	E12402	SOIL and BIOTA	Discrete	18.9	pCi/g	PLANT
4609	10/4/1990	E11672	SOIL and BIOTA	Discrete	18.9	pCi/g	PLANT
4610	8/13/1991	E11771	SOIL and BIOTA	Discrete	17.25	pCi/g	PLANT
4611	8/13/1991	E11771	SOIL and BIOTA	Discrete	15.85	pCi/g	PLANT
4612	8/6/1998	B0P9V5	SOIL and BIOTA	Discrete	16.7	pCi/g	PLANT
4613	6/8/2001	B11JF4	SOIL and BIOTA	Discrete	16.7	pCi/g	PLANT
4614	6/14/1993	E12399	SOIL and BIOTA	Discrete	16.7	pCi/g	PLANT
4615	7/27/1992	E12127	SOIL and BIOTA	Discrete	16.7	pCi/g	PLANT
4616	8/8/1991	E11764	SOIL and BIOTA	Discrete	16.7	pCi/g	PLANT
4617	10/4/1990	E11672	SOIL and BIOTA	Discrete	16.7	pCi/g	PLANT
4618	8/17/1994	B0BYX7	SOIL and BIOTA	Discrete	16.7	pCi/g	PLANT
4619	6/3/2004	B199L1	SOIL and BIOTA	Discrete	16.7	pCi/g	PLANT
4620	8/8/1991	E11764	SOIL and BIOTA	Discrete	15.5	pCi/g	PLANT
4621	10/2/1990	E11672	SOIL and BIOTA	Discrete	15.5	pCi/g	PLANT
4622	8/25/2000	B108V5	SOIL and BIOTA	Discrete	13.75	pCi/g	PLANT
4623	6/9/2004	B199L4	SOIL and BIOTA	Discrete	12.9	pCi/g	PLANT
4624	8/27/1998	B0P9W0	SOIL and BIOTA	Discrete	13.4	pCi/g	PLANT
4625	7/1/1992	E12120	SOIL and BIOTA	Discrete	13.4	pCi/g	PLANT
4626	6/17/1993	E12398	SOIL and BIOTA	Discrete	13.4	pCi/g	PLANT
4627	6/22/2001	B11JF7	SOIL and BIOTA	Discrete	13.4	pCi/g	PLANT
4628	10/3/1990	E11667	SOIL and BIOTA	Discrete	13.4	pCi/g	PLANT
4629	8/13/1991	E11771	SOIL and BIOTA	Discrete	16.45	pCi/g	PLANT
4630	10/4/1990	E11672	SOIL and BIOTA	Discrete	18.3	pCi/g	PLANT
4631	6/22/2001	B11J75	SOIL and BIOTA	Discrete	16.1	pCi/g	PLANT
4632	8/27/1998	B0P9M1	SOIL and BIOTA	Discrete	16.1	pCi/g	PLANT
4633	6/9/2004	B199C3	SOIL and BIOTA	Discrete	11	pCi/g	PLANT
4634	8/16/2000	B103T7	SOIL and BIOTA	Discrete	14.9	pCi/g	PLANT
4635	10/4/1990	E11672	SOIL and BIOTA	Discrete	18	pCi/g	PLANT
4636	10/3/1990	E11671	SOIL and BIOTA	Discrete	14.1	pCi/g	PLANT
4637	10/3/1990	E03331	SOIL and BIOTA	Discrete	21.2	pCi/g	PLANT
4638	6/4/2004	B199P5	SOIL and BIOTA	Discrete	14.2	pCi/g	PLANT
4639	8/14/2000	B103V0	SOIL and BIOTA	Discrete	13.7	pCi/g	PLANT
4640	10/3/1990	E03331	SOIL and BIOTA	Discrete	15.4	pCi/g	PLANT

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
4602	STEM_LEAVES	2.34	pCi/g			PNNL
4603	STEM_LEAVES	2.16	pCi/g			PNNL
4604	STEM_LEAVES	2.325	pCi/g			PNNL
4605	WHOLEORG	1.2705	pCi/g			PNNL
4606	WHOLEORG	2.145	pCi/g			PNNL
4607	STEM_LEAVES	3.255	pCi/g			PNNL
4608	WHOLEORG	3.12	pCi/g			PNNL
4609	WHOLEORG	1.56	pCi/g			PNNL
4610	WHOLEORG	2.04	pCi/g			PNNL
4611	WHOLEORG	1.92	pCi/g			PNNL
4612	STEM_LEAVES	2.175	pCi/g			PNNL
4613	STEM_LEAVES	3.39	pCi/g			PNNL
4614	WHOLEORG	3.555	pCi/g			PNNL
4615	WHOLEORG	2.265	pCi/g			PNNL
4616	WHOLEORG	2.19	pCi/g			PNNL
4617	WHOLEORG	4.305	pCi/g			PNNL
4618	STEM_LEAVES	1.74	pCi/g			PNNL
4619	STEM_LEAVES	3	pCi/g			PNNL
4620	WHOLEORG	2.085	pCi/g			PNNL
4621	WHOLEORG	2.73	pCi/g			PNNL
4622	STEM_LEAVES	3.075	pCi/g			PNNL
4623	STEM_LEAVES	2.355	pCi/g			PNNL
4624	STEM_LEAVES	1.491	pCi/g			PNNL
4625	WHOLEORG	1.935	pCi/g			PNNL
4626	WHOLEORG	2.85	pCi/g			PNNL
4627	STEM_LEAVES	2.025	pCi/g			PNNL
4628	WHOLEORG	1.95	pCi/g			PNNL
4629	WHOLEORG	1.74	pCi/g			PNNL
4630	WHOLEORG	3.735	pCi/g			PNNL
4631	STEM_LEAVES	2.835	pCi/g			PNNL
4632	STEM_LEAVES	2.07	pCi/g			PNNL
4633	STEM_LEAVES	2.775	pCi/g			PNNL
4634	STEM_LEAVES	1.785	pCi/g			PNNL
4635	WHOLEORG	2.745	pCi/g			PNNL
4636	WHOLEORG	2.4	pCi/g			PNNL
4637	WHOLEORG	3.3	pCi/g			PNNL
4638	STEM_LEAVES	2.685	pCi/g			PNNL
4639	STEM_LEAVES	1.59	pCi/g			PNNL
4640	WHOLEORG	3.78	pCi/g			PNNL

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
4641	Potassium-40	13966-00-2	WSU	Outside decision areas	UPLAND	595053.0102	111937.3126
4642	Potassium-40	13966-00-2	YAKIMA BARRICADE	IU2/IU6	UPLAND	559316.663	138652.09
4643	Potassium-40	13966-00-2	YAKIMA DELTA	Outside decision areas	UPLAND	595639.1166	103220.1046
4644	Strontium-90	10098-97-2	100-NR-2 SP	N	RIPARIAN	571280	149896.8
4645	Strontium-90	10098-97-2	100-NR-2 SP	N	RIPARIAN	571446.23	150120.34
4646	Strontium-90	10098-97-2	RCBRA 2f Rip	D/H	RIPARIAN	576222.844	154297.511
4647	Strontium-90	10098-97-2	100-N SPRING SHORELINE	N	UPLAND	571423.474	150006.656
4648	Strontium-90	10098-97-2	100-N SPRING SHORELINE	N	UPLAND	571423.474	150006.656
4649	Strontium-90	10098-97-2	100-N SPRING SHORELINE	N	UPLAND	571423.474	150006.656
4650	Strontium-90	10098-97-2	100-N SPRING SHORELINE	N	UPLAND	571423.474	150006.656
4651	Strontium-90	10098-97-2	200 ENC	Outside decision areas	UPLAND	573686.735	137776.371
4652	Strontium-90	10098-97-2	200 ESE	Outside decision areas	UPLAND	576339.864	134596.72
4653	Strontium-90	10098-97-2	400 E	300	UPLAND	587921.702	123300.446
4654	Strontium-90	10098-97-2	BENTON CITY	Outside decision areas	UPLAND	577999.247	111907.899
4655	Strontium-90	10098-97-2	BERG RANCH	Outside decision areas	UPLAND	527257.503	127698.089
4656	Strontium-90	10098-97-2	BYERS LANDING	Outside decision areas	UPLAND	596516.284	114702.974
4657	Strontium-90	10098-97-2	BYERS LANDING	Outside decision areas	UPLAND	596516.284	114702.974
4658	Strontium-90	10098-97-2	BYERS LANDING	Outside decision areas	UPLAND	596516.284	114702.974
4659	Strontium-90	10098-97-2	BYERS LANDING	Outside decision areas	UPLAND	596516.284	114702.974
4660	Strontium-90	10098-97-2	BYERS LANDING	Outside decision areas	UPLAND	596516.284	114702.974
4661	Strontium-90	10098-97-2	BYERS LANDING	Outside decision areas	UPLAND	596516.284	114702.974
4662	Strontium-90	10098-97-2	BYERS LANDING	Outside decision areas	UPLAND	596516.284	114702.974
4663	Strontium-90	10098-97-2	E OF 200 E	Outside decision areas	UPLAND	576878.952	135735.541
4664	Strontium-90	10098-97-2	E OF 200 W GATE	Outside decision areas	UPLAND	568454.589	136067.85
4665	Strontium-90	10098-97-2	E OF 200 W GATE	Outside decision areas	UPLAND	568454.589	136067.85
4666	Strontium-90	10098-97-2	E OF 200 W GATE	Outside decision areas	UPLAND	568454.589	136067.85
4667	Strontium-90	10098-97-2	E OF 200 W GATE	Outside decision areas	UPLAND	568454.589	136067.85
4668	Strontium-90	10098-97-2	E OF 200 W GATE	Outside decision areas	UPLAND	568454.589	136067.85
4669	Strontium-90	10098-97-2	MC NARY DAM	Outside decision areas	UPLAND	593616.792	66537.692
4670	Strontium-90	10098-97-2	NE OF 100 N AREA	D/H	UPLAND	572613.532	151143.61
4671	Strontium-90	10098-97-2	NE OF 100 N AREA	D/H	UPLAND	572613.532	151143.61
4672	Strontium-90	10098-97-2	NE OF 100 N AREA	D/H	UPLAND	572613.532	151143.61
4673	Strontium-90	10098-97-2	OTHELLO	Outside decision areas	UPLAND	599861.7627	163446.1827
4674	Strontium-90	10098-97-2	RINGOLD AREA	Outside decision areas	UPLAND	595854.333	129775.653
4675	Strontium-90	10098-97-2	RINGOLD AREA	Outside decision areas	UPLAND	595854.333	129775.653
4676	Strontium-90	10098-97-2	RINGOLD AREA	Outside decision areas	UPLAND	595854.333	129775.653
4677	Strontium-90	10098-97-2	RINGOLD AREA	Outside decision areas	UPLAND	595854.333	129775.653
4678	Strontium-90	10098-97-2	RINGOLD AREA	Outside decision areas	UPLAND	595854.333	129775.653
4679	Strontium-90	10098-97-2	RIVERSHORE ROAD	IU2/IU6	UPLAND	563789.959	139793.869

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
4641	8/30/2000	B10998	SOIL and BIOTA	Discrete	15.6	pCi/g	PLANT
4642	6/9/1993	E12399	SOIL and BIOTA	Discrete	14.55	pCi/g	PLANT
4643	8/16/2000	B103T5	SOIL and BIOTA	Discrete	15.9	pCi/g	PLANT
4644	6/23/2005	B1D426	SOIL and BIOTA	Discrete	0.0984	pCi/g	PLANT
4645	6/23/2005	B1D412	SOIL and BIOTA	Discrete	5.37	pCi/g	PLANT
4646	5/7/2007	J15295	SOIL and BIOTA	MIS	0.355	pCi/g	PLANT
4647	7/31/1991	E11783	SOIL and BIOTA	Discrete	0.194	pCi/g	PLANT
4648	7/17/1998	B0P9T5	SOIL and BIOTA	Discrete	0.194	pCi/g	PLANT
4649	10/21/1993	E12487	SOIL and BIOTA	Discrete	0.194	pCi/g	PLANT
4650	6/30/1992	E12120	SOIL and BIOTA	Discrete	0.194	pCi/g	PLANT
4651	8/13/1991	E11772	SOIL and BIOTA	Discrete	0.538	pCi/g	PLANT
4652	7/31/1991	E11782	SOIL and BIOTA	Discrete	0.17	pCi/g	PLANT
4653	8/13/1991	E11772	SOIL and BIOTA	Discrete	0.0406	pCi/g	PLANT
4654	10/3/1990	E11667	SOIL and BIOTA	Discrete	0.12875	pCi/g	PLANT
4655	10/8/1990	E11671	SOIL and BIOTA	Discrete	0.138	pCi/g	PLANT
4656	8/6/1998	B0P9V6	SOIL and BIOTA	Discrete	0.121	pCi/g	PLANT
4657	8/8/1991	E11764	SOIL and BIOTA	Discrete	0.121	pCi/g	PLANT
4658	6/23/1992	E12111	SOIL and BIOTA	Discrete	0.121	pCi/g	PLANT
4659	8/21/1997	S0LVP0	SOIL and BIOTA	Discrete	0.121	pCi/g	PLANT
4660	6/29/1993	E12406	SOIL and BIOTA	Discrete	0.121	pCi/g	PLANT
4661	10/4/1990	E11671	SOIL and BIOTA	Discrete	0.121	pCi/g	PLANT
4662	8/17/1994	B0BYX8	SOIL and BIOTA	Discrete	0.121	pCi/g	PLANT
4663	7/31/1991	E11782	SOIL and BIOTA	Discrete	0.2965	pCi/g	PLANT
4664	8/24/1994	B0BYX3	SOIL and BIOTA	Discrete	0.374	pCi/g	PLANT
4665	8/13/1991	E11771	SOIL and BIOTA	Discrete	0.374	pCi/g	PLANT
4666	10/4/1990	E11775	SOIL and BIOTA	Discrete	0.374	pCi/g	PLANT
4667	6/3/1993	E12389	SOIL and BIOTA	Discrete	0.374	pCi/g	PLANT
4668	8/12/1998	B0P9T7	SOIL and BIOTA	Discrete	0.374	pCi/g	PLANT
4669	10/3/1990	E03331	SOIL and BIOTA	Discrete	0.0789	pCi/g	PLANT
4670	7/13/2001	B11JD3	SOIL and BIOTA	Discrete	0.0693	pCi/g	PLANT
4671	8/19/1993	E12442	SOIL and BIOTA	Discrete	0.0693	pCi/g	PLANT
4672	8/14/1991	E11761	SOIL and BIOTA	Discrete	0.0693	pCi/g	PLANT
4673	10/5/1990	E03331	SOIL and BIOTA	Discrete	0.0787	pCi/g	PLANT
4674	7/24/1998	B0P9V4	SOIL and BIOTA	Discrete	0.0599	pCi/g	PLANT
4675	10/8/1990	E11671	SOIL and BIOTA	Discrete	0.0599	pCi/g	PLANT
4676	8/17/1994	B0BYX6	SOIL and BIOTA	Discrete	0.0599	pCi/g	PLANT
4677	6/29/1993	E12406	SOIL and BIOTA	Discrete	0.0599	pCi/g	PLANT
4678	8/8/1991	E11764	SOIL and BIOTA	Discrete	0.0599	pCi/g	PLANT
4679	8/21/1997	S0LVN8	SOIL and BIOTA	Discrete	0.0126	pCi/g	PLANT

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
4641	STEM_LEAVES	1.92	pCi/g			PNNL
4642	WHOLEORG	2.925	pCi/g			PNNL
4643	STEM_LEAVES	2.565	pCi/g			PNNL
4644	SHOOT	0.15456	pCi/g			NR2
4645	SHOOT	1.2957	pCi/g			NR2
4646	CURRENT YRS GROWTH	0.484	pCi/g			RCBRA
4647	WHOLEORG	0.0177	pCi/g			PNNL
4648	STEM_LEAVES	0.00291	pCi/g			PNNL
4649	WHOLEORG	0.0612	pCi/g			PNNL
4650	WHOLEORG	0.00231	pCi/g			PNNL
4651	WHOLEORG	0.018	pCi/g			PNNL
4652	WHOLEORG	0.014505	pCi/g			PNNL
4653	WHOLEORG	0.011505	pCi/g			PNNL
4654	WHOLEORG	0.005895	pCi/g			PNNL
4655	WHOLEORG	0.0177	pCi/g			PNNL
4656	STEM_LEAVES	0.00387	pCi/g			PNNL
4657	WHOLEORG	0.005325	pCi/g			PNNL
4658	WHOLEORG	0.00042	pCi/g			PNNL
4659	STEM_LEAVES	0.00555	pCi/g			PNNL
4660	WHOLEORG	0.001575	pCi/g			PNNL
4661	WHOLEORG	0.02415	pCi/g			PNNL
4662	STEM_LEAVES	0.005685	pCi/g			PNNL
4663	WHOLEORG	0.0366	pCi/g			PNNL
4664	STEM_LEAVES	0.02505	pCi/g			PNNL
4665	WHOLEORG	0.003915	pCi/g			PNNL
4666	WHOLEORG	0.004485	pCi/g			PNNL
4667	WHOLEORG	0.00507	pCi/g			PNNL
4668	STEM_LEAVES	0.00516	pCi/g			PNNL
4669	WHOLEORG	0.001815	pCi/g			PNNL
4670	STEM_LEAVES	0.014145	pCi/g			PNNL
4671	WHOLEORG	0.001482	pCi/g			PNNL
4672	WHOLEORG	0.003105	pCi/g			PNNL
4673	WHOLEORG	0.00486	pCi/g			PNNL
4674	STEM_LEAVES	0.00207	pCi/g			PNNL
4675	WHOLEORG	0.00213	pCi/g			PNNL
4676	STEM_LEAVES	0.007335	pCi/g			PNNL
4677	WHOLEORG	0.002445	pCi/g			PNNL
4678	WHOLEORG	0.0171	pCi/g			PNNL
4679	STEM_LEAVES	0.00516	pCi/g			PNNL

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
4680	Strontium-90	10098-97-2	RIVRVIEW-HARRIS	Outside decision areas	UPLAND	597112.528	104439.135
4681	Strontium-90	10098-97-2	RIVRVIEW-HARRIS	Outside decision areas	UPLAND	597112.528	104439.135
4682	Strontium-90	10098-97-2	RIVRVIEW-HARRIS	Outside decision areas	UPLAND	597112.528	104439.135
4683	Strontium-90	10098-97-2	RIVRVIEW-HARRIS	Outside decision areas	UPLAND	597112.528	104439.135
4684	Strontium-90	10098-97-2	RIVRVIEW-HARRIS	Outside decision areas	UPLAND	597112.528	104439.135
4685	Strontium-90	10098-97-2	RIVRVIEW-HARRIS	Outside decision areas	UPLAND	597112.528	104439.135
4686	Strontium-90	10098-97-2	S OF 200 E	Outside decision areas	UPLAND	575240.919	131779.847
4687	Strontium-90	10098-97-2	S OF 200 W	Outside decision areas	UPLAND	568340.41	131238.537
4688	Strontium-90	10098-97-2	SAGEMOOR FARM	Outside decision areas	UPLAND	596362.99	116036.357
4689	Strontium-90	10098-97-2	SAGEMOOR FARM	Outside decision areas	UPLAND	596362.99	116036.357
4690	Strontium-90	10098-97-2	SAGEMOOR FARM	Outside decision areas	UPLAND	596362.99	116036.357
4691	Strontium-90	10098-97-2	SAGEMOOR FARM	Outside decision areas	UPLAND	596362.99	116036.357
4692	Strontium-90	10098-97-2	SAGEMOOR FARM	Outside decision areas	UPLAND	596362.99	116036.357
4693	Strontium-90	10098-97-2	SAGEMOOR FARM	Outside decision areas	UPLAND	596362.99	116036.357
4694	Strontium-90	10098-97-2	SUNNYSIDE	Outside decision areas	UPLAND	542329.106	118862.754
4695	Strontium-90	10098-97-2	SUNNYSIDE	Outside decision areas	UPLAND	542329.106	118862.754
4696	Strontium-90	10098-97-2	SUNNYSIDE	Outside decision areas	UPLAND	542329.106	118862.754
4697	Strontium-90	10098-97-2	SUNNYSIDE	Outside decision areas	UPLAND	542329.106	118862.754
4698	Strontium-90	10098-97-2	SW OF BC CRIBS	Outside decision areas	UPLAND	572473.237	131023.533
4699	Strontium-90	10098-97-2	TAYLOR FLATS NO 2	Outside decision areas	UPLAND	595154.466	117862.601
4700	Strontium-90	10098-97-2	W END OF FIR ROAD	Outside decision areas	UPLAND	596046.639	124424.244
4701	Strontium-90	10098-97-2	WAHLUKE SLOPE	Outside decision areas	UPLAND	565650.578	156360.718
4702	Strontium-90	10098-97-2	WALLA WALLA	Outside decision areas	UPLAND	672372.132	113292.34
4703	Strontium-90	10098-97-2	WASHTUCNA	Outside decision areas	UPLAND	667289.771	160899.27
4704	Strontium-90	10098-97-2	YAKIMA BARRICADE	IU2/IU6	UPLAND	559316.663	138652.09
4705	Thorium-228	14274-82-9	RCBRA Rip 2	D/H	RIPARIAN	573603.219	152471.6
4706	Thorium-230	14269-63-7	RCBRA 2l Rip	IU2/IU6	RIPARIAN	582341.212	146120.069
4707	Thorium-230	14269-63-7	RCBRA 4a Rip	IU2/IU6	RIPARIAN	589347.5	137480.985
4708	Thorium-230	14269-63-7	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
4709	Thorium-230	14269-63-7	RCBRA Bev Ref 2 Rip	Outside decision areas	RIPARIAN	541493.988	167808.357
4710	Thorium-230	14269-63-7	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
4711	Thorium-230	14269-63-7	RCBRA Rip 4	N	RIPARIAN	570558.596	148981.547
4712	Thorium-230	14269-63-7	RCBRA Rip 5	K	RIPARIAN	569141.025	147521.561
4713	Thorium-230	14269-63-7	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
4714	Thorium-230	14269-63-7	RCBRA Yak Rdg 2	Outside decision areas	UPLAND	559031.557	135576.407
4715	Thorium-230	14269-63-7	RCBRA 300-49	300	UPLAND	594318.994	116830.934
4716	Thorium-230	14269-63-7	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
4717	Thorium-230	14269-63-7	RCBRA McGee	Outside decision areas	UPLAND	555600.76	138034.185
4718	Thorium-230	14269-63-7	RCBRA R Ref 11	Outside decision areas	RIPARIAN	559400.735	146458.486

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
4680	8/21/1998	B0P9V8	SOIL and BIOTA	Discrete	0.0535	pCi/g	PLANT
4681	8/17/1994	B0BYX9	SOIL and BIOTA	Discrete	0.0535	pCi/g	PLANT
4682	7/28/1992	E12127	SOIL and BIOTA	Discrete	0.0535	pCi/g	PLANT
4683	8/8/1991	E11764	SOIL and BIOTA	Discrete	0.0535	pCi/g	PLANT
4684	6/11/1993	E12402	SOIL and BIOTA	Discrete	0.0535	pCi/g	PLANT
4685	10/4/1990	E11672	SOIL and BIOTA	Discrete	0.0535	pCi/g	PLANT
4686	8/13/1991	E11771	SOIL and BIOTA	Discrete	0.134	pCi/g	PLANT
4687	8/13/1991	E11771	SOIL and BIOTA	Discrete	0.0817	pCi/g	PLANT
4688	8/6/1998	B0P9V5	SOIL and BIOTA	Discrete	0.06955	pCi/g	PLANT
4689	6/14/1993	E12399	SOIL and BIOTA	Discrete	0.06955	pCi/g	PLANT
4690	7/27/1992	E12127	SOIL and BIOTA	Discrete	0.06955	pCi/g	PLANT
4691	8/8/1991	E11764	SOIL and BIOTA	Discrete	0.06955	pCi/g	PLANT
4692	10/4/1990	E11672	SOIL and BIOTA	Discrete	0.06955	pCi/g	PLANT
4693	8/17/1994	B0BYX7	SOIL and BIOTA	Discrete	0.06955	pCi/g	PLANT
4694	8/27/1998	B0P9W0	SOIL and BIOTA	Discrete	0.0843	pCi/g	PLANT
4695	6/17/1993	E12398	SOIL and BIOTA	Discrete	0.0843	pCi/g	PLANT
4696	7/1/1992	E12120	SOIL and BIOTA	Discrete	0.0843	pCi/g	PLANT
4697	10/3/1990	E11667	SOIL and BIOTA	Discrete	0.0843	pCi/g	PLANT
4698	8/13/1991	E11771	SOIL and BIOTA	Discrete	0.1025	pCi/g	PLANT
4699	10/4/1990	E11672	SOIL and BIOTA	Discrete	0.0458	pCi/g	PLANT
4700	10/4/1990	E11672	SOIL and BIOTA	Discrete	0.03485	pCi/g	PLANT
4701	10/3/1990	E11671	SOIL and BIOTA	Discrete	0.0507	pCi/g	PLANT
4702	10/3/1990	E03331	SOIL and BIOTA	Discrete	0.0455	pCi/g	PLANT
4703	10/3/1990	E03331	SOIL and BIOTA	Discrete	0.0506	pCi/g	PLANT
4704	6/9/1993	E12399	SOIL and BIOTA	Discrete	0.0954	pCi/g	PLANT
4705	5/19/2006	J11WX3	SOIL and BIOTA	MIS	0.461	pCi/g	PLANT
4706	5/24/2007	J152B0	SOIL and BIOTA	MIS	0.296	pCi/g	PLANT
4707	5/24/2007	J152B6	SOIL and BIOTA	MIS	0.391	pCi/g	PLANT
4708	5/16/2006	J11X90	SOIL and BIOTA	MIS	0.328	pCi/g	PLANT
4709	5/8/2007	J15291	SOIL and BIOTA	MIS	0.252	pCi/g	PLANT
4710	5/8/2007	J15293	SOIL and BIOTA	MIS	0.351	pCi/g	PLANT
4711	5/9/2006	J11WW6	SOIL and BIOTA	MIS	0.4875	pCi/g	PLANT
4712	5/9/2006	J11WW8	SOIL and BIOTA	MIS	0.424	pCi/g	PLANT
4713	5/15/2006	J11X96	SOIL and BIOTA	MIS	0.937	pCi/g	PLANT
4714	5/16/2006	J11X94	SOIL and BIOTA	MIS	0.925	pCi/g	PLANT
4715	4/26/2006	J11X53	SOIL and BIOTA	MIS	0.4235	pCi/g	PLANT
4716	5/15/2006	J11X83	SOIL and BIOTA	MIS	0.816	pCi/g	PLANT
4717	5/18/2006	J11X99	SOIL and BIOTA	MIS	0.3825	pCi/g	PLANT
4718	5/9/2006	J11WY7	SOIL and BIOTA	MIS	0.48	pCi/g	PLANT

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
4680	STEM_LEAVES	0.005505	pCi/g			PNNL
4681	STEM_LEAVES	0.00549	pCi/g			PNNL
4682	WHOLEORG	0.002715	pCi/g			PNNL
4683	WHOLEORG	0.003285	pCi/g			PNNL
4684	WHOLEORG	0.001491	pCi/g			PNNL
4685	WHOLEORG	0.004425	pCi/g			PNNL
4686	WHOLEORG	0.007995	pCi/g			PNNL
4687	WHOLEORG	0.012165	pCi/g			PNNL
4688	STEM_LEAVES	0.002505	pCi/g			PNNL
4689	WHOLEORG	0.001845	pCi/g			PNNL
4690	WHOLEORG	0.002235	pCi/g			PNNL
4691	WHOLEORG	0.00471	pCi/g			PNNL
4692	WHOLEORG	0.01905	pCi/g			PNNL
4693	STEM_LEAVES	0.01038	pCi/g			PNNL
4694	STEM_LEAVES	0.006675	pCi/g			PNNL
4695	WHOLEORG	0.0024	pCi/g			PNNL
4696	WHOLEORG	0.00216	pCi/g			PNNL
4697	WHOLEORG	0.00741	pCi/g			PNNL
4698	WHOLEORG	0.00987	pCi/g			PNNL
4699	WHOLEORG	0.00306	pCi/g			PNNL
4700	WHOLEORG	0.003135	pCi/g			PNNL
4701	WHOLEORG	0.0327	pCi/g			PNNL
4702	WHOLEORG	0.009915	pCi/g			PNNL
4703	WHOLEORG	0.00624	pCi/g			PNNL
4704	WHOLEORG	0.00198	pCi/g			PNNL
4705	CURRENT YRS GROWTH	0.112	pCi/g			RCBRA
4706	CURRENT YRS GROWTH	0.304	pCi/g			RCBRA
4707	CURRENT YRS GROWTH	0.227	pCi/g			RCBRA
4708	CURRENT YRS GROWTH	0.424	pCi/g			RCBRA
4709	CURRENT YRS GROWTH	0.326	pCi/g			RCBRA
4710	CURRENT YRS GROWTH	0.417	pCi/g			RCBRA
4711	CURRENT YRS GROWTH	0.302	pCi/g			RCBRA
4712	CURRENT YRS GROWTH	0.322	pCi/g			RCBRA
4713	CURRENT YRS GROWTH	0.334	pCi/g			RCBRA
4714	CURRENT YRS GROWTH	0.384	pCi/g			RCBRA
4715	CURRENT YRS GROWTH	0.347	pCi/g			RCBRA
4716	CURRENT YRS GROWTH	0.372	pCi/g			RCBRA
4717	CURRENT YRS GROWTH	0.469	pCi/g			RCBRA
4718	CURRENT YRS GROWTH	0.269	pCi/g			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
4719	Thorium-230	14269-63-7	RCBRA R Ref 12	IU2/IU6	RIPARIAN	559201.908	145747.542
4720	Thorium-230	14269-63-7	RCBRA Rip 4	N	RIPARIAN	570558.596	148981.547
4721	Thorium-230	14269-63-7	RCBRA 2j Rip	IU2/IU6	RIPARIAN	579360.971	150092.048
4722	Thorium-230	14269-63-7	RCBRA 3b Rip	IU2/IU6	RIPARIAN	584961.205	141035.835
4723	Uranium-233/234	13966-29-5	RCBRA 2l Rip	IU2/IU6	RIPARIAN	582341.212	146120.069
4724	Uranium-233/234	13966-29-5	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
4725	Uranium-233/234	13966-29-5	BYERS LANDING	Outside decision areas	UPLAND	596516.284	114702.974
4726	Uranium-233/234	13966-29-5	BYERS LANDING	Outside decision areas	UPLAND	596516.284	114702.974
4727	Uranium-233/234	13966-29-5	BYERS LANDING	Outside decision areas	UPLAND	596516.284	114702.974
4728	Uranium-233/234	13966-29-5	E OF 200 W GATE	Outside decision areas	UPLAND	568454.589	136067.85
4729	Uranium-233/234	13966-29-5	E OF 200 W GATE	Outside decision areas	UPLAND	568454.589	136067.85
4730	Uranium-233/234	13966-29-5	MESA	Outside decision areas	UPLAND	613658.9896	125036.8087
4731	Uranium-233/234	13966-29-5	NE OF 100 N AREA	D/H	UPLAND	572613.532	151143.61
4732	Uranium-233/234	13966-29-5	PASCO	Outside decision areas	UPLAND	605872.96	102133.5171
4733	Uranium-233/234	13966-29-5	RINGOLD AREA	Outside decision areas	UPLAND	595854.333	129775.653
4734	Uranium-233/234	13966-29-5	RINGOLD AREA	Outside decision areas	UPLAND	595854.333	129775.653
4735	Uranium-233/234	13966-29-5	RINGOLD AREA	Outside decision areas	UPLAND	595854.333	129775.653
4736	Uranium-233/234	13966-29-5	RIVERSHORE ROAD	IU2/IU6	UPLAND	563789.959	139793.869
4737	Uranium-233/234	13966-29-5	RIVRVIEW-HARRIS	Outside decision areas	UPLAND	597112.528	104439.135
4738	Uranium-233/234	13966-29-5	RIVRVIEW-HARRIS	Outside decision areas	UPLAND	597112.528	104439.135
4739	Uranium-233/234	13966-29-5	RIVRVIEW-HARRIS	Outside decision areas	UPLAND	597112.528	104439.135
4740	Uranium-233/234	13966-29-5	SAGEMOOR FARM	Outside decision areas	UPLAND	596362.99	116036.357
4741	Uranium-233/234	13966-29-5	SAGEMOOR FARM	Outside decision areas	UPLAND	596362.99	116036.357
4742	Uranium-233/234	13966-29-5	SAGEMOOR FARM	Outside decision areas	UPLAND	596362.99	116036.357
4743	Uranium-233/234	13966-29-5	YAKIMA DELTA	Outside decision areas	UPLAND	595639.1166	103220.1046
4744	Uranium-235	15117-96-1	SAGEMOOR FARM	Outside decision areas	UPLAND	596362.99	116036.357
4745	Uranium-238	U-238	RCBRA 2l Rip	IU2/IU6	RIPARIAN	582341.212	146120.069
4746	Uranium-238	U-238	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
4747	Uranium-238	U-238	BROADMOOR, PASCO	Outside decision areas	UPLAND	598174.6351	105885.7264
4748	Uranium-238	U-238	BYERS LANDING	Outside decision areas	UPLAND	596516.284	114702.974
4749	Uranium-238	U-238	BYERS LANDING	Outside decision areas	UPLAND	596516.284	114702.974
4750	Uranium-238	U-238	BYERS LANDING	Outside decision areas	UPLAND	596516.284	114702.974
4751	Uranium-238	U-238	E OF 200 W GATE	Outside decision areas	UPLAND	568454.589	136067.85
4752	Uranium-238	U-238	FINLEY RR TRACK	Outside decision areas	UPLAND	614935.848	90642.51583
4753	Uranium-238	U-238	KENNEWICK	Outside decision areas	UPLAND	604219.7672	97327.74495
4754	Uranium-238	U-238	MESA	Outside decision areas	UPLAND	613658.9896	125036.8087
4755	Uranium-238	U-238	OTHELLO	Outside decision areas	UPLAND	599861.7627	163446.1827
4756	Uranium-238	U-238	PASCO	Outside decision areas	UPLAND	605872.96	102133.5171
4757	Uranium-238	U-238	RINGOLD AREA	Outside decision areas	UPLAND	595854.333	129775.653

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
4719	5/9/2006	J11WW9	SOIL and BIOTA	MIS	0.47	pCi/g	PLANT
4720	5/9/2006	J11WW5	SOIL and BIOTA	MIS	0.4875	pCi/g	PLANT
4721	5/21/2007	J15297	SOIL and BIOTA	MIS	0.308	pCi/g	PLANT
4722	5/23/2007	J152B3	SOIL and BIOTA	MIS	0.364	pCi/g	PLANT
4723	5/24/2007	J152B0	SOIL and BIOTA	MIS	0.389	pCi/g	PLANT
4724	5/15/2006	J11X96	SOIL and BIOTA	MIS	0.2765	pCi/g	PLANT
4725	6/8/2001	B11JF5	SOIL and BIOTA	Discrete	0.1795	pCi/g	PLANT
4726	8/21/1997	S0LVP0	SOIL and BIOTA	Discrete	0.1795	pCi/g	PLANT
4727	8/17/1994	B0BYX8	SOIL and BIOTA	Discrete	0.1795	pCi/g	PLANT
4728	8/24/1994	B0BYX3	SOIL and BIOTA	Discrete	0.219	pCi/g	PLANT
4729	6/22/2001	B11JD8	SOIL and BIOTA	Discrete	0.219	pCi/g	PLANT
4730	8/17/2000	B103V5	SOIL and BIOTA	Discrete	0.0899	pCi/g	PLANT
4731	7/13/2001	B11JD3	SOIL and BIOTA	Discrete	0.165	pCi/g	PLANT
4732	8/16/2000	B103R9	SOIL and BIOTA	Discrete	0.1895	pCi/g	PLANT
4733	6/8/2001	B11JF3	SOIL and BIOTA	Discrete	0.5185	pCi/g	PLANT
4734	8/17/1994	B0BYX6	SOIL and BIOTA	Discrete	0.5185	pCi/g	PLANT
4735	6/29/1993	E12406	SOIL and BIOTA	Discrete	0.5185	pCi/g	PLANT
4736	8/21/1997	S0LVN8	SOIL and BIOTA	Discrete	0.2	pCi/g	PLANT
4737	8/21/1998	B0P9V8	SOIL and BIOTA	Discrete	0.121	pCi/g	PLANT
4738	8/17/1994	B0BYX9	SOIL and BIOTA	Discrete	0.121	pCi/g	PLANT
4739	6/11/1993	E12402	SOIL and BIOTA	Discrete	0.121	pCi/g	PLANT
4740	6/8/2001	B11JF4	SOIL and BIOTA	Discrete	0.668	pCi/g	PLANT
4741	6/14/1993	E12399	SOIL and BIOTA	Discrete	0.668	pCi/g	PLANT
4742	8/17/1994	B0BYX7	SOIL and BIOTA	Discrete	0.668	pCi/g	PLANT
4743	8/16/2000	B103T5	SOIL and BIOTA	Discrete	0.1525	pCi/g	PLANT
4744	6/14/1993	E12399	SOIL and BIOTA	Discrete	0.0287	pCi/g	PLANT
4745	5/24/2007	J152B0	SOIL and BIOTA	MIS	0.231	pCi/g	PLANT
4746	5/16/2006	J11X79	SOIL and BIOTA	MIS	0.181	pCi/g	PLANT
4747	8/16/2000	B103T3	SOIL and BIOTA	Discrete	0.1335	pCi/g	PLANT
4748	6/8/2001	B11JF5	SOIL and BIOTA	Discrete	0.173	pCi/g	PLANT
4749	8/21/1997	S0LVP0	SOIL and BIOTA	Discrete	0.173	pCi/g	PLANT
4750	8/17/1994	B0BYX8	SOIL and BIOTA	Discrete	0.173	pCi/g	PLANT
4751	6/3/1993	E12389	SOIL and BIOTA	Discrete	0.238	pCi/g	PLANT
4752	8/10/2000	B103R0	SOIL and BIOTA	Discrete	0.117	pCi/g	PLANT
4753	8/16/2000	B103T9	SOIL and BIOTA	Discrete	0.2245	pCi/g	PLANT
4754	8/17/2000	B103V5	SOIL and BIOTA	Discrete	0.0908	pCi/g	PLANT
4755	10/5/1990	E03331	SOIL and BIOTA	Discrete	0.153	pCi/g	PLANT
4756	8/16/2000	B103R9	SOIL and BIOTA	Discrete	0.1885	pCi/g	PLANT
4757	6/8/2001	B11JF3	SOIL and BIOTA	Discrete	0.509	pCi/g	PLANT

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
4719	CURRENT YRS GROWTH	0.257	pCi/g			RCBRA
4720	CURRENT YRS GROWTH	0.287	pCi/g			RCBRA
4721	CURRENT YRS GROWTH	0.321	pCi/g		J	RCBRA
4722	CURRENT YRS GROWTH	0.235	pCi/g			RCBRA
4723	CURRENT YRS GROWTH	0.225	pCi/g			RCBRA
4724	CURRENT YRS GROWTH	0.029	pCi/g			RCBRA
4725	STEM_LEAVES	0.00315	pCi/g			PNNL
4726	STEM_LEAVES	0.00306	pCi/g			PNNL
4727	STEM_LEAVES	0.003645	pCi/g			PNNL
4728	STEM_LEAVES	0.002625	pCi/g			PNNL
4729	STEM_LEAVES	0.0010575	pCi/g			PNNL
4730	STEM_LEAVES	0.001815	pCi/g	J		PNNL
4731	STEM_LEAVES	0.001545	pCi/g			PNNL
4732	STEM_LEAVES	0.001935	pCi/g	J		PNNL
4733	STEM_LEAVES	0.002175	pCi/g			PNNL
4734	STEM_LEAVES	0.00306	pCi/g			PNNL
4735	WHOLEORG	0.00192	pCi/g			PNNL
4736	STEM_LEAVES	0.001188	pCi/g			PNNL
4737	STEM_LEAVES	0.001845	pCi/g			PNNL
4738	STEM_LEAVES	0.00168	pCi/g			PNNL
4739	WHOLEORG	0.0011595	pCi/g			PNNL
4740	STEM_LEAVES	0.001755	pCi/g			PNNL
4741	WHOLEORG	0.0007125	pCi/g			PNNL
4742	STEM_LEAVES	0.0008475	pCi/g			PNNL
4743	STEM_LEAVES	0.001515	pCi/g	J		PNNL
4744	WHOLEORG	0.0003945	pCi/g			PNNL
4745	CURRENT YRS GROWTH	0.326	pCi/g			RCBRA
4746	CURRENT YRS GROWTH	0.023	pCi/g			RCBRA
4747	STEM_LEAVES	0.00126	pCi/g	J		PNNL
4748	STEM_LEAVES	0.00234	pCi/g			PNNL
4749	STEM_LEAVES	0.002415	pCi/g			PNNL
4750	STEM_LEAVES	0.002925	pCi/g			PNNL
4751	WHOLEORG	0.0003915	pCi/g			PNNL
4752	STEM_LEAVES	0.001203	pCi/g	J		PNNL
4753	STEM_LEAVES	0.0010815	pCi/g	J		PNNL
4754	STEM_LEAVES	0.0018	pCi/g	J		PNNL
4755	WHOLEORG	0.00531	pCi/g			PNNL
4756	STEM_LEAVES	0.00174	pCi/g	J		PNNL
4757	STEM_LEAVES	0.001575	pCi/g			PNNL

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
4758	Uranium-238	U-238	RINGOLD AREA	Outside decision areas	UPLAND	595854.333	129775.653
4759	Uranium-238	U-238	RINGOLD AREA	Outside decision areas	UPLAND	595854.333	129775.653
4760	Uranium-238	U-238	RIVERSHORE ROAD	IU2/IU6	UPLAND	563789.959	139793.869
4761	Uranium-238	U-238	RIVRVIEW-HARRIS	Outside decision areas	UPLAND	597112.528	104439.135
4762	Uranium-238	U-238	RIVRVIEW-HARRIS	Outside decision areas	UPLAND	597112.528	104439.135
4763	Uranium-238	U-238	SAGEMOOR FARM	Outside decision areas	UPLAND	596362.99	116036.357
4764	Uranium-238	U-238	SAGEMOOR FARM	Outside decision areas	UPLAND	596362.99	116036.357
4765	Uranium-238	U-238	SAGEMOOR FARM	Outside decision areas	UPLAND	596362.99	116036.357
4766	Uranium-238	U-238	YAKIMA DELTA	Outside decision areas	UPLAND	595639.1166	103220.1046
4767	Aluminum	7429-90-5	RCBRA 100-D-48	D/H	UPLAND	573841.527	151914.538
4768	Aluminum	7429-90-5	RCBRA 100-D-49	D/H	UPLAND	573938.06	151944.123
4769	Aluminum	7429-90-5	RCBRA 100-F-2	IU2/IU6	UPLAND	579728.068	147001.117
4770	Aluminum	7429-90-5	RCBRA 116-DR-1&2	D/H	UPLAND	574007.817	152246.748
4771	Aluminum	7429-90-5	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
4772	Aluminum	7429-90-5	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
4773	Aluminum	7429-90-5	RCBRA 1607-D2:1	D/H	UPLAND	573823.924	152260.319
4774	Aluminum	7429-90-5	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
4775	Aluminum	7429-90-5	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
4776	Aluminum	7429-90-5	RCBRA 2a Rip	BC	RIPARIAN	564618.501	145284.526
4777	Aluminum	7429-90-5	RCBRA 2c Rip	K	RIPARIAN	567598.2	146210.159
4778	Aluminum	7429-90-5	RCBRA 2f Rip	D/H	RIPARIAN	576222.844	154297.511
4779	Aluminum	7429-90-5	RCBRA 2j Rip	IU2/IU6	RIPARIAN	579360.971	150092.048
4780	Aluminum	7429-90-5	RCBRA 2l Rip	IU2/IU6	RIPARIAN	582341.212	146120.069
4781	Aluminum	7429-90-5	RCBRA 300-49	300	UPLAND	594318.994	116830.934
4782	Aluminum	7429-90-5	RCBRA 3b Rip	IU2/IU6	RIPARIAN	584961.205	141035.835
4783	Aluminum	7429-90-5	RCBRA 4a Rip	IU2/IU6	RIPARIAN	589347.5	137480.985
4784	Aluminum	7429-90-5	RCBRA 5c Rip	300	RIPARIAN	594509.985	124869.182
4785	Aluminum	7429-90-5	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
4786	Aluminum	7429-90-5	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
4787	Aluminum	7429-90-5	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
4788	Aluminum	7429-90-5	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
4789	Aluminum	7429-90-5	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
4790	Aluminum	7429-90-5	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
4791	Aluminum	7429-90-5	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
4792	Aluminum	7429-90-5	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
4793	Aluminum	7429-90-5	RCBRA 600-181	IU2/IU6	UPLAND	578303.83	147316.698
4794	Aluminum	7429-90-5	RCBRA 600-204	IU2/IU6	UPLAND	580128.485	144762.219
4795	Aluminum	7429-90-5	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
4796	Aluminum	7429-90-5	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
4758	8/17/1994	B0BYX6	SOIL and BIOTA	Discrete	0.509	pCi/g	PLANT
4759	6/29/1993	E12406	SOIL and BIOTA	Discrete	0.509	pCi/g	PLANT
4760	8/21/1997	S0LVN8	SOIL and BIOTA	Discrete	0.221	pCi/g	PLANT
4761	8/17/1994	B0BYX9	SOIL and BIOTA	Discrete	0.4845	pCi/g	PLANT
4762	6/11/1993	E12402	SOIL and BIOTA	Discrete	0.4845	pCi/g	PLANT
4763	6/8/2001	B11JF4	SOIL and BIOTA	Discrete	0.65	pCi/g	PLANT
4764	6/14/1993	E12399	SOIL and BIOTA	Discrete	0.65	pCi/g	PLANT
4765	8/17/1994	B0BYX7	SOIL and BIOTA	Discrete	0.65	pCi/g	PLANT
4766	8/16/2000	B103T5	SOIL and BIOTA	Discrete	0.1595	pCi/g	PLANT
4767	4/3/2006	J11KV5	SOIL and BIOTA	MIS	5580	mg/kg	TERRESTRIAL INVERTEBRATE
4768	4/3/2006	J11KV6	SOIL and BIOTA	MIS	5820	mg/kg	TERRESTRIAL INVERTEBRATE
4769	4/25/2006	J11L32	SOIL and BIOTA	MIS	8390	mg/kg	TERRESTRIAL INVERTEBRATE
4770	4/3/2006	J11L31	SOIL and BIOTA	MIS	5270	mg/kg	TERRESTRIAL INVERTEBRATE
4771	4/17/2006	J11KT1	SOIL and BIOTA	MIS	7370	mg/kg	TERRESTRIAL INVERTEBRATE
4772	4/17/2006	J11KT1	SOIL and BIOTA	MIS-phyt	7350	mg/kg	TERRESTRIAL INVERTEBRATE
4773	4/3/2006	J11KT4	SOIL and BIOTA	MIS	5690	mg/kg	TERRESTRIAL INVERTEBRATE
4774	4/3/2006	J11KR9	SOIL and BIOTA	MIS	8680	mg/kg	TERRESTRIAL INVERTEBRATE
4775	4/3/2006	J11KR9	SOIL and BIOTA	MIS-phyt	10500	mg/kg	TERRESTRIAL INVERTEBRATE
4776	6/11/2007	J14Y56	SOIL and BIOTA	MIS	7200	mg/kg	TERRESTRIAL INVERTEBRATE
4777	6/13/2007	J14Y63	SOIL and BIOTA	MIS	9360	mg/kg	TERRESTRIAL INVERTEBRATE
4778	6/13/2007	J14Y57	SOIL and BIOTA	MIS	8530	mg/kg	TERRESTRIAL INVERTEBRATE
4779	6/13/2007	J14Y58	SOIL and BIOTA	MIS	10500	mg/kg	TERRESTRIAL INVERTEBRATE
4780	6/13/2007	J14Y59	SOIL and BIOTA	MIS	5910	mg/kg	TERRESTRIAL INVERTEBRATE
4781	4/25/2006	J11KT3	SOIL and BIOTA	MIS	6070	mg/kg	TERRESTRIAL INVERTEBRATE
4782	6/11/2007	J14Y60	SOIL and BIOTA	MIS	7960	mg/kg	TERRESTRIAL INVERTEBRATE
4783	6/13/2007	J14Y62	SOIL and BIOTA	MIS	11000	mg/kg	TERRESTRIAL INVERTEBRATE
4784	6/7/2007	J14Y61	SOIL and BIOTA	MIS	6910	mg/kg	TERRESTRIAL INVERTEBRATE
4785	4/3/2006	J11L35	SOIL and BIOTA	MIS	4670	mg/kg	TERRESTRIAL INVERTEBRATE
4786	4/3/2006	J11L35	SOIL and BIOTA	MIS-phyt	7480	mg/kg	TERRESTRIAL INVERTEBRATE
4787	4/3/2006	J11KR2	SOIL and BIOTA	MIS	6100	mg/kg	TERRESTRIAL INVERTEBRATE
4788	4/3/2006	J11KR2	SOIL and BIOTA	MIS-phyt	7090	mg/kg	TERRESTRIAL INVERTEBRATE
4789	4/25/2006	J11KR3	SOIL and BIOTA	MIS	6420	mg/kg	TERRESTRIAL INVERTEBRATE
4790	4/25/2006	J11KR3	SOIL and BIOTA	MIS-phyt	7220	mg/kg	TERRESTRIAL INVERTEBRATE
4791	4/25/2006	J11XX9	SOIL and BIOTA	MIS	6020	mg/kg	TERRESTRIAL INVERTEBRATE
4792	4/25/2006	J11XX9	SOIL and BIOTA	MIS-phyt	7540	mg/kg	TERRESTRIAL INVERTEBRATE
4793	4/17/2006	J11KR6	SOIL and BIOTA	MIS	6050	mg/kg	TERRESTRIAL INVERTEBRATE
4794	4/25/2006	J11KR4	SOIL and BIOTA	MIS	7280	mg/kg	TERRESTRIAL INVERTEBRATE
4795	4/25/2006	J11KR5	SOIL and BIOTA	MIS	7330	mg/kg	TERRESTRIAL INVERTEBRATE
4796	4/25/2006	J11KR5	SOIL and BIOTA	MIS-phyt	8180	mg/kg	TERRESTRIAL INVERTEBRATE

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
4758	STEM_LEAVES	0.00441	pCi/g			PNNL
4759	WHOLEORG	0.00063	pCi/g			PNNL
4760	STEM_LEAVES	0.001146	pCi/g			PNNL
4761	STEM_LEAVES	0.0009375	pCi/g			PNNL
4762	WHOLEORG	0.0009165	pCi/g			PNNL
4763	STEM_LEAVES	0.0013305	pCi/g			PNNL
4764	WHOLEORG	0.0006885	pCi/g			PNNL
4765	STEM_LEAVES	0.0011445	pCi/g			PNNL
4766	STEM_LEAVES	0.00252	pCi/g	J		PNNL
4767	MULTIPLE WHOLE ORG	30.2	mg/kg			RCBRA
4768	MULTIPLE WHOLE ORG	52.3	mg/kg			RCBRA
4769	MULTIPLE WHOLE ORG	15.5	mg/kg			RCBRA
4770	MULTIPLE WHOLE ORG	57	mg/kg			RCBRA
4771	MULTIPLE WHOLE ORG	27.3	mg/kg			RCBRA
4772	MULTIPLE WHOLE ORG	27.3	mg/kg			RCBRA
4773	MULTIPLE WHOLE ORG	34.3	mg/kg			RCBRA
4774	MULTIPLE WHOLE ORG	36	mg/kg			RCBRA
4775	MULTIPLE WHOLE ORG	36	mg/kg			RCBRA
4776	MULTIPLE WHOLE ORG	37.3	mg/kg			RCBRA
4777	MULTIPLE WHOLE ORG	54.2	mg/kg			RCBRA
4778	MULTIPLE WHOLE ORG	71.8	mg/kg			RCBRA
4779	MULTIPLE WHOLE ORG	48.8	mg/kg			RCBRA
4780	MULTIPLE WHOLE ORG	91.2	mg/kg			RCBRA
4781	MULTIPLE WHOLE ORG	14.5	mg/kg			RCBRA
4782	MULTIPLE WHOLE ORG	29.9	mg/kg			RCBRA
4783	MULTIPLE WHOLE ORG	84.6	mg/kg			RCBRA
4784	MULTIPLE WHOLE ORG	30.6	mg/kg			RCBRA
4785	MULTIPLE WHOLE ORG	23.7	mg/kg			RCBRA
4786	MULTIPLE WHOLE ORG	23.7	mg/kg			RCBRA
4787	MULTIPLE WHOLE ORG	38.1	mg/kg			RCBRA
4788	MULTIPLE WHOLE ORG	38.1	mg/kg			RCBRA
4789	MULTIPLE WHOLE ORG	18.9	mg/kg			RCBRA
4790	MULTIPLE WHOLE ORG	18.9	mg/kg			RCBRA
4791	MULTIPLE WHOLE ORG	19	mg/kg			RCBRA
4792	MULTIPLE WHOLE ORG	19	mg/kg			RCBRA
4793	MULTIPLE WHOLE ORG	24.9	mg/kg			RCBRA
4794	MULTIPLE WHOLE ORG	17.4	mg/kg			RCBRA
4795	MULTIPLE WHOLE ORG	33.6	mg/kg			RCBRA
4796	MULTIPLE WHOLE ORG	33.6	mg/kg			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
4797	Aluminum	7429-90-5	RCBRA 618-4	300	UPLAND	593954.946	117064.473
4798	Aluminum	7429-90-5	RCBRA 628-1	IU2/IU6	UPLAND	577797.524	148745.681
4799	Aluminum	7429-90-5	RCBRA Bev Ref 1 Rip	Outside decision areas	RIPARIAN	542428.846	167701.261
4800	Aluminum	7429-90-5	RCBRA Bev Ref 2 Rip	Outside decision areas	RIPARIAN	541493.988	167808.357
4801	Aluminum	7429-90-5	RCBRA JA JONES	300	UPLAND	593874.58	120013.908
4802	Aluminum	7429-90-5	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
4803	Aluminum	7429-90-5	RCBRA Pit 18	IU2/IU6	UPLAND	580697.058	145311.464
4804	Aluminum	7429-90-5	RCBRA Pit 23	IU2/IU6	UPLAND	572381.012	144874.157
4805	Aluminum	7429-90-5	RCBRA Pit 24	BC	UPLAND	563395.814	145119.007
4806	Aluminum	7429-90-5	RCBRA Pit 9	300	UPLAND	592807.103	120587.7
4807	Aluminum	7429-90-5	RCBRA R Ref 11	Outside decision areas	RIPARIAN	559400.735	146458.486
4808	Aluminum	7429-90-5	RCBRA R Ref 12	IU2/IU6	RIPARIAN	559201.908	145747.542
4809	Aluminum	7429-90-5	RCBRA R Ref 13	Outside decision areas	RIPARIAN	558572.809	145345.115
4810	Aluminum	7429-90-5	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
4811	Aluminum	7429-90-5	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
4812	Aluminum	7429-90-5	RCBRA R Ref 16	Outside decision areas	RIPARIAN	557650.029	144826.748
4813	Aluminum	7429-90-5	RCBRA Rip 1	D/H	RIPARIAN	577251.869	153659.195
4814	Aluminum	7429-90-5	RCBRA Rip 10	D/H	RIPARIAN	573987.873	153082.19
4815	Aluminum	7429-90-5	RCBRA Rip 2	D/H	RIPARIAN	573603.219	152471.6
4816	Aluminum	7429-90-5	RCBRA Rip 3	D/H	RIPARIAN	572639.65	151677.812
4817	Aluminum	7429-90-5	RCBRA Rip 4	N	RIPARIAN	570558.596	148981.547
4818	Aluminum	7429-90-5	RCBRA Rip 5	K	RIPARIAN	569141.025	147521.561
4819	Aluminum	7429-90-5	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
4820	Aluminum	7429-90-5	RCBRA Rip 7	IU2/IU6	RIPARIAN	581326.914	147825.17
4821	Aluminum	7429-90-5	RCBRA Rip 8	D/H	RIPARIAN	578698.584	152233.645
4822	Aluminum	7429-90-5	RCBRA Rip 9	D/H	RIPARIAN	578153.643	152801.452
4823	Aluminum	7429-90-5	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
4824	Aluminum	7429-90-5	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
4825	Aluminum	7429-90-5	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
4826	Aluminum	7429-90-5	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
4827	Aluminum	7429-90-5	RCBRA Yak Rdg 2	Outside decision areas	UPLAND	559031.557	135576.407
4828	Arsenic	7440-38-2	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764
4829	Arsenic	7440-38-2	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764
4830	Arsenic	7440-38-2	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764
4831	Arsenic	7440-38-2	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
4832	Arsenic	7440-38-2	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
4833	Arsenic	7440-38-2	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
4834	Arsenic	7440-38-2	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
4835	Arsenic	7440-38-2	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
4797	4/26/2006	J11KT2	SOIL and BIOTA	MIS	5000	mg/kg	TERRESTRIAL INVERTEBRATE
4798	4/25/2006	J11XX8	SOIL and BIOTA	MIS	6360	mg/kg	TERRESTRIAL INVERTEBRATE
4799	6/13/2007	J14Y53	SOIL and BIOTA	MIS	8500	mg/kg	TERRESTRIAL INVERTEBRATE
4800	6/13/2007	J14Y54	SOIL and BIOTA	MIS	8370	mg/kg	TERRESTRIAL INVERTEBRATE
4801	4/25/2006	J11L34	SOIL and BIOTA	MIS	4960	mg/kg	TERRESTRIAL INVERTEBRATE
4802	4/17/2006	J11KP9	SOIL and BIOTA	MIS	5900	mg/kg	TERRESTRIAL INVERTEBRATE
4803	4/17/2006	J11KR0	SOIL and BIOTA	MIS	5610	mg/kg	TERRESTRIAL INVERTEBRATE
4804	4/3/2006	J11L33	SOIL and BIOTA	MIS	4450	mg/kg	TERRESTRIAL INVERTEBRATE
4805	4/3/2006	J11KT6	SOIL and BIOTA	MIS	7600	mg/kg	TERRESTRIAL INVERTEBRATE
4806	4/25/2006	J11KT5	SOIL and BIOTA	MIS	5580	mg/kg	TERRESTRIAL INVERTEBRATE
4807	3/20/2006	J11960	SOIL and BIOTA	MIS	8080	mg/kg	TERRESTRIAL INVERTEBRATE
4808	3/20/2006	J11961	SOIL and BIOTA	MIS	7820	mg/kg	TERRESTRIAL INVERTEBRATE
4809	3/20/2006	J11962	SOIL and BIOTA	MIS	10500	mg/kg	TERRESTRIAL INVERTEBRATE
4810	3/20/2006	J11963	SOIL and BIOTA	MIS	10900	mg/kg	TERRESTRIAL INVERTEBRATE
4811	6/13/2007	J14Y55	SOIL and BIOTA	MIS	10900	mg/kg	TERRESTRIAL INVERTEBRATE
4812	3/20/2006	J11964	SOIL and BIOTA	MIS	8330	mg/kg	TERRESTRIAL INVERTEBRATE
4813	3/16/2006	J11950	SOIL and BIOTA	MIS	10400	mg/kg	TERRESTRIAL INVERTEBRATE
4814	3/16/2006	J11959	SOIL and BIOTA	MIS	6220	mg/kg	TERRESTRIAL INVERTEBRATE
4815	3/16/2006	J11951	SOIL and BIOTA	MIS	8220	mg/kg	TERRESTRIAL INVERTEBRATE
4816	3/16/2006	J11952	SOIL and BIOTA	MIS	4830	mg/kg	TERRESTRIAL INVERTEBRATE
4817	3/16/2006	J11953	SOIL and BIOTA	MIS	9950	mg/kg	TERRESTRIAL INVERTEBRATE
4818	3/16/2006	J11954	SOIL and BIOTA	MIS	10300	mg/kg	TERRESTRIAL INVERTEBRATE
4819	4/25/2006	J11955	SOIL and BIOTA	MIS	10900	mg/kg	TERRESTRIAL INVERTEBRATE
4820	3/16/2006	J11956	SOIL and BIOTA	MIS	7290	mg/kg	TERRESTRIAL INVERTEBRATE
4821	3/16/2006	J11957	SOIL and BIOTA	MIS	7600	mg/kg	TERRESTRIAL INVERTEBRATE
4822	3/16/2006	J11958	SOIL and BIOTA	MIS	7520	mg/kg	TERRESTRIAL INVERTEBRATE
4823	4/3/2006	J11KV0	SOIL and BIOTA	MIS	10500	mg/kg	TERRESTRIAL INVERTEBRATE
4824	4/3/2006	J11KV0	SOIL and BIOTA	MIS-phyt	11900	mg/kg	TERRESTRIAL INVERTEBRATE
4825	4/3/2006	J11KT8	SOIL and BIOTA	MIS	8900	mg/kg	TERRESTRIAL INVERTEBRATE
4826	4/3/2006	J11KT8	SOIL and BIOTA	MIS-phyt	10800	mg/kg	TERRESTRIAL INVERTEBRATE
4827	4/3/2006	J11KT7	SOIL and BIOTA	MIS	11900	mg/kg	TERRESTRIAL INVERTEBRATE
4828	9/13/2005	B1CV56	SOIL and BIOTA	Discrete	2.37	mg/kg	TERRESTRIAL INVERTEBRATE
4829	9/13/2005	B1CV57	SOIL and BIOTA	Discrete	2.37	mg/kg	TERRESTRIAL INVERTEBRATE
4830	9/13/2005	B1CV55	SOIL and BIOTA	Discrete	2.37	mg/kg	TERRESTRIAL INVERTEBRATE
4831	6/15/2005	B1CTY2	SOIL and BIOTA	Discrete	2.64	mg/kg	TERRESTRIAL INVERTEBRATE
4832	6/15/2005	B1CTY3	SOIL and BIOTA	Discrete	2.64	mg/kg	TERRESTRIAL INVERTEBRATE
4833	6/15/2005	B1CTY4	SOIL and BIOTA	Discrete	2.64	mg/kg	TERRESTRIAL INVERTEBRATE
4834	9/13/2005	B1CV54	SOIL and BIOTA	Discrete	2.57	mg/kg	TERRESTRIAL INVERTEBRATE
4835	9/13/2005	B1CV53	SOIL and BIOTA	Discrete	2.57	mg/kg	TERRESTRIAL INVERTEBRATE

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
4797	MULTIPLE WHOLE ORG	53.8	mg/kg			RCBRA
4798	MULTIPLE WHOLE ORG	34.4	mg/kg			RCBRA
4799	MULTIPLE WHOLE ORG	13.3	mg/kg			RCBRA
4800	MULTIPLE WHOLE ORG	18.6	mg/kg			RCBRA
4801	MULTIPLE WHOLE ORG	15.2	mg/kg			RCBRA
4802	MULTIPLE WHOLE ORG	49.7	mg/kg			RCBRA
4803	MULTIPLE WHOLE ORG	34.4	mg/kg			RCBRA
4804	MULTIPLE WHOLE ORG	24.6	mg/kg			RCBRA
4805	MULTIPLE WHOLE ORG	19.2	mg/kg			RCBRA
4806	MULTIPLE WHOLE ORG	12.4	mg/kg			RCBRA
4807	MULTIPLE WHOLE ORG	17	mg/kg			RCBRA
4808	MULTIPLE WHOLE ORG	17.1	mg/kg			RCBRA
4809	MULTIPLE WHOLE ORG	18.7	mg/kg			RCBRA
4810	MULTIPLE WHOLE ORG	20.4	mg/kg			RCBRA
4811	MULTIPLE WHOLE ORG	38.9	mg/kg			RCBRA
4812	MULTIPLE WHOLE ORG	21.9	mg/kg			RCBRA
4813	MULTIPLE WHOLE ORG	14.1	mg/kg			RCBRA
4814	MULTIPLE WHOLE ORG	11.2	mg/kg			RCBRA
4815	MULTIPLE WHOLE ORG	18.5	mg/kg			RCBRA
4816	MULTIPLE WHOLE ORG	8	mg/kg			RCBRA
4817	MULTIPLE WHOLE ORG	14.9	mg/kg			RCBRA
4818	MULTIPLE WHOLE ORG	12.5	mg/kg			RCBRA
4819	MULTIPLE WHOLE ORG	16	mg/kg			RCBRA
4820	MULTIPLE WHOLE ORG	4.5	mg/kg			RCBRA
4821	MULTIPLE WHOLE ORG	10.1	mg/kg			RCBRA
4822	MULTIPLE WHOLE ORG	11.3	mg/kg			RCBRA
4823	MULTIPLE WHOLE ORG	21.4	mg/kg			RCBRA
4824	MULTIPLE WHOLE ORG	21.4	mg/kg			RCBRA
4825	MULTIPLE WHOLE ORG	11.6	mg/kg			RCBRA
4826	MULTIPLE WHOLE ORG	11.6	mg/kg			RCBRA
4827	MULTIPLE WHOLE ORG	29.9	mg/kg			RCBRA
4828	CARCASS	0.212	mg/kg			CP
4829	CARCASS	0.257	mg/kg			CP
4830	CARCASS	0.231	mg/kg			CP
4831	CARCASS	0.562	mg/kg			CP
4832	CARCASS	0.61	mg/kg			CP
4833	CARCASS	1.1	mg/kg			CP
4834	CARCASS	2.22	mg/kg			CP
4835	CARCASS	1.79	mg/kg			CP

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
4836	Arsenic	7440-38-2	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
4837	Arsenic	7440-38-2	B POND	Outside decision areas	UPLAND	576356.769	136881.272
4838	Arsenic	7440-38-2	B POND	Outside decision areas	UPLAND	576356.769	136881.272
4839	Arsenic	7440-38-2	B POND	Outside decision areas	UPLAND	576356.769	136881.272
4840	Arsenic	7440-38-2	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
4841	Arsenic	7440-38-2	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
4842	Arsenic	7440-38-2	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
4843	Arsenic	7440-38-2	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
4844	Arsenic	7440-38-2	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
4845	Arsenic	7440-38-2	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
4846	Arsenic	7440-38-2	U POND	Outside decision areas	UPLAND	566379.63	134457.045
4847	Arsenic	7440-38-2	U POND	Outside decision areas	UPLAND	566379.63	134457.045
4848	Arsenic	7440-38-2	U POND	Outside decision areas	UPLAND	566379.63	134457.045
4849	Arsenic	7440-38-2	RCBRA 100-D-48	D/H	UPLAND	573841.527	151914.538
4850	Arsenic	7440-38-2	RCBRA 100-D-49	D/H	UPLAND	573938.06	151944.123
4851	Arsenic	7440-38-2	RCBRA 100-F-2	IU2/IU6	UPLAND	579728.068	147001.117
4852	Arsenic	7440-38-2	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
4853	Arsenic	7440-38-2	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
4854	Arsenic	7440-38-2	RCBRA 1607-D2:1	D/H	UPLAND	573823.924	152260.319
4855	Arsenic	7440-38-2	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
4856	Arsenic	7440-38-2	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
4857	Arsenic	7440-38-2	RCBRA 2a Rip	BC	RIPARIAN	564618.501	145284.526
4858	Arsenic	7440-38-2	RCBRA 2c Rip	K	RIPARIAN	567598.2	146210.159
4859	Arsenic	7440-38-2	RCBRA 2f Rip	D/H	RIPARIAN	576222.844	154297.511
4860	Arsenic	7440-38-2	RCBRA 2j Rip	IU2/IU6	RIPARIAN	579360.971	150092.048
4861	Arsenic	7440-38-2	RCBRA 2l Rip	IU2/IU6	RIPARIAN	582341.212	146120.069
4862	Arsenic	7440-38-2	RCBRA 300-49	300	UPLAND	594318.994	116830.934
4863	Arsenic	7440-38-2	RCBRA 3b Rip	IU2/IU6	RIPARIAN	584961.205	141035.835
4864	Arsenic	7440-38-2	RCBRA 4a Rip	IU2/IU6	RIPARIAN	589347.5	137480.985
4865	Arsenic	7440-38-2	RCBRA 5c Rip	300	RIPARIAN	594509.985	124869.182
4866	Arsenic	7440-38-2	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
4867	Arsenic	7440-38-2	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
4868	Arsenic	7440-38-2	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
4869	Arsenic	7440-38-2	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
4870	Arsenic	7440-38-2	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
4871	Arsenic	7440-38-2	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
4872	Arsenic	7440-38-2	RCBRA 600-181	IU2/IU6	UPLAND	578303.83	147316.698
4873	Arsenic	7440-38-2	RCBRA 600-204	IU2/IU6	UPLAND	580128.485	144762.219
4874	Arsenic	7440-38-2	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
4836	9/13/2005	B1CV52	SOIL and BIOTA	Discrete	2.57	mg/kg	TERRESTRIAL INVERTEBRATE
4837	6/15/2005	B1CV47	SOIL and BIOTA	Discrete	4.4	mg/kg	TERRESTRIAL INVERTEBRATE
4838	6/15/2005	B1CV48	SOIL and BIOTA	Discrete	4.4	mg/kg	TERRESTRIAL INVERTEBRATE
4839	6/15/2005	B1CV46	SOIL and BIOTA	Discrete	4.4	mg/kg	TERRESTRIAL INVERTEBRATE
4840	6/15/2005	B1CTY6	SOIL and BIOTA	Discrete	4.31	mg/kg	TERRESTRIAL INVERTEBRATE
4841	6/15/2005	B1CTY7	SOIL and BIOTA	Discrete	4.31	mg/kg	TERRESTRIAL INVERTEBRATE
4842	6/15/2005	B1CTY5	SOIL and BIOTA	Discrete	4.31	mg/kg	TERRESTRIAL INVERTEBRATE
4843	6/15/2005	B1CV44	SOIL and BIOTA	Discrete	2.16	mg/kg	TERRESTRIAL INVERTEBRATE
4844	6/15/2005	B1CTY8	SOIL and BIOTA	Discrete	2.16	mg/kg	TERRESTRIAL INVERTEBRATE
4845	6/15/2005	B1CV45	SOIL and BIOTA	Discrete	2.16	mg/kg	TERRESTRIAL INVERTEBRATE
4846	9/13/2005	B1CV50	SOIL and BIOTA	Discrete	2.49	mg/kg	TERRESTRIAL INVERTEBRATE
4847	9/13/2005	B1CV51	SOIL and BIOTA	Discrete	2.49	mg/kg	TERRESTRIAL INVERTEBRATE
4848	9/13/2005	B1CV49	SOIL and BIOTA	Discrete	2.49	mg/kg	TERRESTRIAL INVERTEBRATE
4849	4/3/2006	J11KV5	SOIL and BIOTA	MIS	2.4	mg/kg	TERRESTRIAL INVERTEBRATE
4850	4/3/2006	J11KV6	SOIL and BIOTA	MIS	2.4	mg/kg	TERRESTRIAL INVERTEBRATE
4851	4/25/2006	J11L32	SOIL and BIOTA	MIS	3.8	mg/kg	TERRESTRIAL INVERTEBRATE
4852	4/17/2006	J11KT1	SOIL and BIOTA	MIS	10.7	mg/kg	TERRESTRIAL INVERTEBRATE
4853	4/17/2006	J11KT1	SOIL and BIOTA	MIS-phyt	15.3	mg/kg	TERRESTRIAL INVERTEBRATE
4854	4/3/2006	J11KT4	SOIL and BIOTA	MIS	2.9	mg/kg	TERRESTRIAL INVERTEBRATE
4855	4/3/2006	J11KR9	SOIL and BIOTA	MIS	6.8	mg/kg	TERRESTRIAL INVERTEBRATE
4856	4/3/2006	J11KR9	SOIL and BIOTA	MIS-phyt	15.9	mg/kg	TERRESTRIAL INVERTEBRATE
4857	6/11/2007	J14Y56	SOIL and BIOTA	MIS	3	mg/kg	TERRESTRIAL INVERTEBRATE
4858	6/13/2007	J14Y63	SOIL and BIOTA	MIS	7.8	mg/kg	TERRESTRIAL INVERTEBRATE
4859	6/13/2007	J14Y57	SOIL and BIOTA	MIS	6.7	mg/kg	TERRESTRIAL INVERTEBRATE
4860	6/13/2007	J14Y58	SOIL and BIOTA	MIS	7.2	mg/kg	TERRESTRIAL INVERTEBRATE
4861	6/13/2007	J14Y59	SOIL and BIOTA	MIS	3.7	mg/kg	TERRESTRIAL INVERTEBRATE
4862	4/25/2006	J11KT3	SOIL and BIOTA	MIS	2.5	mg/kg	TERRESTRIAL INVERTEBRATE
4863	6/11/2007	J14Y60	SOIL and BIOTA	MIS	8	mg/kg	TERRESTRIAL INVERTEBRATE
4864	6/13/2007	J14Y62	SOIL and BIOTA	MIS	10.2	mg/kg	TERRESTRIAL INVERTEBRATE
4865	6/7/2007	J14Y61	SOIL and BIOTA	MIS	4.1	mg/kg	TERRESTRIAL INVERTEBRATE
4866	4/3/2006	J11L35	SOIL and BIOTA	MIS	2.1	mg/kg	TERRESTRIAL INVERTEBRATE
4867	4/3/2006	J11L35	SOIL and BIOTA	MIS-phyt	3.1	mg/kg	TERRESTRIAL INVERTEBRATE
4868	4/25/2006	J11KR3	SOIL and BIOTA	MIS	2.7	mg/kg	TERRESTRIAL INVERTEBRATE
4869	4/25/2006	J11KR3	SOIL and BIOTA	MIS-phyt	3	mg/kg	TERRESTRIAL INVERTEBRATE
4870	4/25/2006	J11XX9	SOIL and BIOTA	MIS	8	mg/kg	TERRESTRIAL INVERTEBRATE
4871	4/25/2006	J11XX9	SOIL and BIOTA	MIS-phyt	9.1	mg/kg	TERRESTRIAL INVERTEBRATE
4872	4/17/2006	J11KR6	SOIL and BIOTA	MIS	2.1	mg/kg	TERRESTRIAL INVERTEBRATE
4873	4/25/2006	J11KR4	SOIL and BIOTA	MIS	2.7	mg/kg	TERRESTRIAL INVERTEBRATE
4874	4/25/2006	J11KR5	SOIL and BIOTA	MIS	5.9	mg/kg	TERRESTRIAL INVERTEBRATE

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
4836	CARCASS	1.8	mg/kg			CP
4837	CARCASS	1.33	mg/kg			CP
4838	CARCASS	0.919	mg/kg			CP
4839	CARCASS	0.55	mg/kg			CP
4840	CARCASS	0.413	mg/kg			CP
4841	CARCASS	0.502	mg/kg			CP
4842	CARCASS	0.533	mg/kg			CP
4843	CARCASS	0.353	mg/kg			CP
4844	CARCASS	0.485	mg/kg			CP
4845	CARCASS	0.528	mg/kg			CP
4846	CARCASS	0.575	mg/kg			CP
4847	CARCASS	0.4	mg/kg			CP
4848	CARCASS	0.496	mg/kg			CP
4849	MULTIPLE WHOLE ORG	0.95	mg/kg			RCBRA
4850	MULTIPLE WHOLE ORG	0.85	mg/kg			RCBRA
4851	MULTIPLE WHOLE ORG	1.7	mg/kg			RCBRA
4852	MULTIPLE WHOLE ORG	2.9	mg/kg			RCBRA
4853	MULTIPLE WHOLE ORG	2.9	mg/kg			RCBRA
4854	MULTIPLE WHOLE ORG	0.85	mg/kg			RCBRA
4855	MULTIPLE WHOLE ORG	1.5	mg/kg			RCBRA
4856	MULTIPLE WHOLE ORG	1.5	mg/kg			RCBRA
4857	MULTIPLE WHOLE ORG	1.1	mg/kg			RCBRA
4858	MULTIPLE WHOLE ORG	1.7	mg/kg			RCBRA
4859	MULTIPLE WHOLE ORG	0.75	mg/kg			RCBRA
4860	MULTIPLE WHOLE ORG	1.2	mg/kg			RCBRA
4861	MULTIPLE WHOLE ORG	0.51	mg/kg			RCBRA
4862	MULTIPLE WHOLE ORG	1.1	mg/kg			RCBRA
4863	MULTIPLE WHOLE ORG	0.58	mg/kg			RCBRA
4864	MULTIPLE WHOLE ORG	0.95	mg/kg			RCBRA
4865	MULTIPLE WHOLE ORG	0.77	mg/kg			RCBRA
4866	MULTIPLE WHOLE ORG	0.93	mg/kg			RCBRA
4867	MULTIPLE WHOLE ORG	0.93	mg/kg			RCBRA
4868	MULTIPLE WHOLE ORG	1.3	mg/kg			RCBRA
4869	MULTIPLE WHOLE ORG	1.3	mg/kg			RCBRA
4870	MULTIPLE WHOLE ORG	1.5	mg/kg			RCBRA
4871	MULTIPLE WHOLE ORG	1.5	mg/kg			RCBRA
4872	MULTIPLE WHOLE ORG	1.1	mg/kg			RCBRA
4873	MULTIPLE WHOLE ORG	1.2	mg/kg			RCBRA
4874	MULTIPLE WHOLE ORG	2.1	mg/kg			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
4875	Arsenic	7440-38-2	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
4876	Arsenic	7440-38-2	RCBRA 628-1	IU2/IU6	UPLAND	577797.524	148745.681
4877	Arsenic	7440-38-2	RCBRA Bev Ref 1 Rip	Outside decision areas	RIPARIAN	542428.846	167701.261
4878	Arsenic	7440-38-2	RCBRA Bev Ref 2 Rip	Outside decision areas	RIPARIAN	541493.988	167808.357
4879	Arsenic	7440-38-2	RCBRA JA JONES	300	UPLAND	593874.58	120013.908
4880	Arsenic	7440-38-2	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
4881	Arsenic	7440-38-2	RCBRA Pit 18	IU2/IU6	UPLAND	580697.058	145311.464
4882	Arsenic	7440-38-2	RCBRA Pit 24	BC	UPLAND	563395.814	145119.007
4883	Arsenic	7440-38-2	RCBRA Pit 9	300	UPLAND	592807.103	120587.7
4884	Arsenic	7440-38-2	RCBRA R Ref 12	IU2/IU6	RIPARIAN	559201.908	145747.542
4885	Arsenic	7440-38-2	RCBRA R Ref 13	Outside decision areas	RIPARIAN	558572.809	145345.115
4886	Arsenic	7440-38-2	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
4887	Arsenic	7440-38-2	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
4888	Arsenic	7440-38-2	RCBRA R Ref 16	Outside decision areas	RIPARIAN	557650.029	144826.748
4889	Arsenic	7440-38-2	RCBRA Rip 10	D/H	RIPARIAN	573987.873	153082.19
4890	Arsenic	7440-38-2	RCBRA Rip 2	D/H	RIPARIAN	573603.219	152471.6
4891	Arsenic	7440-38-2	RCBRA Rip 3	D/H	RIPARIAN	572639.65	151677.812
4892	Arsenic	7440-38-2	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
4893	Arsenic	7440-38-2	RCBRA Rip 8	D/H	RIPARIAN	578698.584	152233.645
4894	Arsenic	7440-38-2	RCBRA Rip 9	D/H	RIPARIAN	578153.643	152801.452
4895	Arsenic	7440-38-2	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
4896	Arsenic	7440-38-2	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
4897	Arsenic	7440-38-2	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
4898	Arsenic	7440-38-2	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
4899	Arsenic	7440-38-2	RCBRA Yak Rdg 2	Outside decision areas	UPLAND	559031.557	135576.407
4900	Boron	7440-42-8	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764
4901	Boron	7440-42-8	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764
4902	Boron	7440-42-8	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764
4903	Boron	7440-42-8	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
4904	Boron	7440-42-8	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
4905	Boron	7440-42-8	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
4906	Boron	7440-42-8	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
4907	Boron	7440-42-8	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
4908	Boron	7440-42-8	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
4909	Boron	7440-42-8	B POND	Outside decision areas	UPLAND	576356.769	136881.272
4910	Boron	7440-42-8	B POND	Outside decision areas	UPLAND	576356.769	136881.272
4911	Boron	7440-42-8	B POND	Outside decision areas	UPLAND	576356.769	136881.272
4912	Boron	7440-42-8	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
4913	Boron	7440-42-8	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
4875	4/25/2006	J11KR5	SOIL and BIOTA	MIS-phyt	7.7	mg/kg	TERRESTRIAL INVERTEBRATE
4876	4/25/2006	J11XX8	SOIL and BIOTA	MIS	3.6	mg/kg	TERRESTRIAL INVERTEBRATE
4877	6/13/2007	J14Y53	SOIL and BIOTA	MIS	5.1	mg/kg	TERRESTRIAL INVERTEBRATE
4878	6/13/2007	J14Y54	SOIL and BIOTA	MIS	4.7	mg/kg	TERRESTRIAL INVERTEBRATE
4879	4/25/2006	J11L34	SOIL and BIOTA	MIS	2	mg/kg	TERRESTRIAL INVERTEBRATE
4880	4/17/2006	J11KP9	SOIL and BIOTA	MIS	2.6	mg/kg	TERRESTRIAL INVERTEBRATE
4881	4/17/2006	J11KR0	SOIL and BIOTA	MIS	1.8	mg/kg	TERRESTRIAL INVERTEBRATE
4882	4/3/2006	J11KT6	SOIL and BIOTA	MIS	2.4	mg/kg	TERRESTRIAL INVERTEBRATE
4883	4/25/2006	J11KT5	SOIL and BIOTA	MIS	2.3	mg/kg	TERRESTRIAL INVERTEBRATE
4884	3/20/2006	J11961	SOIL and BIOTA	MIS	4.5	mg/kg	TERRESTRIAL INVERTEBRATE
4885	3/20/2006	J11962	SOIL and BIOTA	MIS	9.7	mg/kg	TERRESTRIAL INVERTEBRATE
4886	3/20/2006	J11963	SOIL and BIOTA	MIS	6.9	mg/kg	TERRESTRIAL INVERTEBRATE
4887	6/13/2007	J14Y55	SOIL and BIOTA	MIS	6.9	mg/kg	TERRESTRIAL INVERTEBRATE
4888	3/20/2006	J11964	SOIL and BIOTA	MIS	6.6	mg/kg	TERRESTRIAL INVERTEBRATE
4889	3/16/2006	J11959	SOIL and BIOTA	MIS	6.4	mg/kg	TERRESTRIAL INVERTEBRATE
4890	3/16/2006	J11951	SOIL and BIOTA	MIS	4.5	mg/kg	TERRESTRIAL INVERTEBRATE
4891	3/16/2006	J11952	SOIL and BIOTA	MIS	3.1	mg/kg	TERRESTRIAL INVERTEBRATE
4892	4/25/2006	J11955	SOIL and BIOTA	MIS	9.8	mg/kg	TERRESTRIAL INVERTEBRATE
4893	3/16/2006	J11957	SOIL and BIOTA	MIS	5.7	mg/kg	TERRESTRIAL INVERTEBRATE
4894	3/16/2006	J11958	SOIL and BIOTA	MIS	5.1	mg/kg	TERRESTRIAL INVERTEBRATE
4895	4/3/2006	J11KV0	SOIL and BIOTA	MIS	3.5	mg/kg	TERRESTRIAL INVERTEBRATE
4896	4/3/2006	J11KV0	SOIL and BIOTA	MIS-phyt	3.5	mg/kg	TERRESTRIAL INVERTEBRATE
4897	4/3/2006	J11KT8	SOIL and BIOTA	MIS	2.8	mg/kg	TERRESTRIAL INVERTEBRATE
4898	4/3/2006	J11KT8	SOIL and BIOTA	MIS-phyt	3.2	mg/kg	TERRESTRIAL INVERTEBRATE
4899	4/3/2006	J11KT7	SOIL and BIOTA	MIS	4	mg/kg	TERRESTRIAL INVERTEBRATE
4900	9/13/2005	B1CV56	SOIL and BIOTA	Discrete	1.25	mg/kg	TERRESTRIAL INVERTEBRATE
4901	9/13/2005	B1CV57	SOIL and BIOTA	Discrete	1.25	mg/kg	TERRESTRIAL INVERTEBRATE
4902	9/13/2005	B1CV55	SOIL and BIOTA	Discrete	1.25	mg/kg	TERRESTRIAL INVERTEBRATE
4903	6/15/2005	B1CTY2	SOIL and BIOTA	Discrete	0.725	mg/kg	TERRESTRIAL INVERTEBRATE
4904	6/15/2005	B1CTY3	SOIL and BIOTA	Discrete	0.725	mg/kg	TERRESTRIAL INVERTEBRATE
4905	6/15/2005	B1CTY4	SOIL and BIOTA	Discrete	0.725	mg/kg	TERRESTRIAL INVERTEBRATE
4906	9/13/2005	B1CV54	SOIL and BIOTA	Discrete	3.8	mg/kg	TERRESTRIAL INVERTEBRATE
4907	9/13/2005	B1CV53	SOIL and BIOTA	Discrete	3.8	mg/kg	TERRESTRIAL INVERTEBRATE
4908	9/13/2005	B1CV52	SOIL and BIOTA	Discrete	3.8	mg/kg	TERRESTRIAL INVERTEBRATE
4909	6/15/2005	B1CV47	SOIL and BIOTA	Discrete	0.919	mg/kg	TERRESTRIAL INVERTEBRATE
4910	6/15/2005	B1CV46	SOIL and BIOTA	Discrete	0.919	mg/kg	TERRESTRIAL INVERTEBRATE
4911	6/15/2005	B1CV48	SOIL and BIOTA	Discrete	0.919	mg/kg	TERRESTRIAL INVERTEBRATE
4912	6/15/2005	B1CTY6	SOIL and BIOTA	Discrete	1.1	mg/kg	TERRESTRIAL INVERTEBRATE
4913	6/15/2005	B1CTY7	SOIL and BIOTA	Discrete	1.1	mg/kg	TERRESTRIAL INVERTEBRATE

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
4875	MULTIPLE WHOLE ORG	2.1	mg/kg			RCBRA
4876	MULTIPLE WHOLE ORG	1.1	mg/kg			RCBRA
4877	MULTIPLE WHOLE ORG	0.72	mg/kg			RCBRA
4878	MULTIPLE WHOLE ORG	0.57	mg/kg			RCBRA
4879	MULTIPLE WHOLE ORG	0.72	mg/kg			RCBRA
4880	MULTIPLE WHOLE ORG	1.1	mg/kg			RCBRA
4881	MULTIPLE WHOLE ORG	1.2	mg/kg			RCBRA
4882	MULTIPLE WHOLE ORG	0.81	mg/kg			RCBRA
4883	MULTIPLE WHOLE ORG	0.88	mg/kg			RCBRA
4884	MULTIPLE WHOLE ORG	1.3	mg/kg			RCBRA
4885	MULTIPLE WHOLE ORG	0.96	mg/kg			RCBRA
4886	MULTIPLE WHOLE ORG	0.91	mg/kg			RCBRA
4887	MULTIPLE WHOLE ORG	0.59	mg/kg			RCBRA
4888	MULTIPLE WHOLE ORG	0.89	mg/kg			RCBRA
4889	MULTIPLE WHOLE ORG	0.79	mg/kg			RCBRA
4890	MULTIPLE WHOLE ORG	0.92	mg/kg			RCBRA
4891	MULTIPLE WHOLE ORG	0.59	mg/kg			RCBRA
4892	MULTIPLE WHOLE ORG	1.4	mg/kg			RCBRA
4893	MULTIPLE WHOLE ORG	1.6	mg/kg			RCBRA
4894	MULTIPLE WHOLE ORG	0.74	mg/kg			RCBRA
4895	MULTIPLE WHOLE ORG	0.86	mg/kg			RCBRA
4896	MULTIPLE WHOLE ORG	0.86	mg/kg			RCBRA
4897	MULTIPLE WHOLE ORG	0.59	mg/kg			RCBRA
4898	MULTIPLE WHOLE ORG	0.59	mg/kg			RCBRA
4899	MULTIPLE WHOLE ORG	0.86	mg/kg			RCBRA
4900	CARCASS	3.63	mg/kg			CP
4901	CARCASS	3.9	mg/kg			CP
4902	CARCASS	3.45	mg/kg			CP
4903	CARCASS	5.16	mg/kg			CP
4904	CARCASS	6.69	mg/kg			CP
4905	CARCASS	5.31	mg/kg			CP
4906	CARCASS	2.81	mg/kg			CP
4907	CARCASS	3.12	mg/kg			CP
4908	CARCASS	3.21	mg/kg			CP
4909	CARCASS	4.93	mg/kg			CP
4910	CARCASS	7.21	mg/kg			CP
4911	CARCASS	4.78	mg/kg			CP
4912	CARCASS	4.1	mg/kg			CP
4913	CARCASS	3.52	mg/kg			CP

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
4914	Boron	7440-42-8	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
4915	Boron	7440-42-8	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
4916	Boron	7440-42-8	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
4917	Boron	7440-42-8	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
4918	Boron	7440-42-8	U POND	Outside decision areas	UPLAND	566379.63	134457.045
4919	Boron	7440-42-8	U POND	Outside decision areas	UPLAND	566379.63	134457.045
4920	Boron	7440-42-8	U POND	Outside decision areas	UPLAND	566379.63	134457.045
4921	Boron	7440-42-8	RCBRA 100-D-48	D/H	UPLAND	573841.527	151914.538
4922	Boron	7440-42-8	RCBRA 100-D-49	D/H	UPLAND	573938.06	151944.123
4923	Boron	7440-42-8	RCBRA 100-F-2	IU2/IU6	UPLAND	579728.068	147001.117
4924	Boron	7440-42-8	RCBRA 116-DR-1&2	D/H	UPLAND	574007.817	152246.748
4925	Boron	7440-42-8	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
4926	Boron	7440-42-8	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
4927	Boron	7440-42-8	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
4928	Boron	7440-42-8	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
4929	Boron	7440-42-8	RCBRA 2a Rip	BC	RIPARIAN	564618.501	145284.526
4930	Boron	7440-42-8	RCBRA 2c Rip	K	RIPARIAN	567598.2	146210.159
4931	Boron	7440-42-8	RCBRA 2f Rip	D/H	RIPARIAN	576222.844	154297.511
4932	Boron	7440-42-8	RCBRA 2j Rip	IU2/IU6	RIPARIAN	579360.971	150092.048
4933	Boron	7440-42-8	RCBRA 2l Rip	IU2/IU6	RIPARIAN	582341.212	146120.069
4934	Boron	7440-42-8	RCBRA 300-49	300	UPLAND	594318.994	116830.934
4935	Boron	7440-42-8	RCBRA 3b Rip	IU2/IU6	RIPARIAN	584961.205	141035.835
4936	Boron	7440-42-8	RCBRA 4a Rip	IU2/IU6	RIPARIAN	589347.5	137480.985
4937	Boron	7440-42-8	RCBRA 5c Rip	300	RIPARIAN	594509.985	124869.182
4938	Boron	7440-42-8	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
4939	Boron	7440-42-8	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
4940	Boron	7440-42-8	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
4941	Boron	7440-42-8	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
4942	Boron	7440-42-8	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
4943	Boron	7440-42-8	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
4944	Boron	7440-42-8	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
4945	Boron	7440-42-8	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
4946	Boron	7440-42-8	RCBRA 600-181	IU2/IU6	UPLAND	578303.83	147316.698
4947	Boron	7440-42-8	RCBRA 600-204	IU2/IU6	UPLAND	580128.485	144762.219
4948	Boron	7440-42-8	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
4949	Boron	7440-42-8	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
4950	Boron	7440-42-8	RCBRA 618-4	300	UPLAND	593954.946	117064.473
4951	Boron	7440-42-8	RCBRA 628-1	IU2/IU6	UPLAND	577797.524	148745.681
4952	Boron	7440-42-8	RCBRA Bev Ref 1 Rip	Outside decision areas	RIPARIAN	542428.846	167701.261

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
4914	6/15/2005	B1CTY5	SOIL and BIOTA	Discrete	1.1	mg/kg	TERRESTRIAL INVERTEBRATE
4915	6/15/2005	B1CV44	SOIL and BIOTA	Discrete	0.723	mg/kg	TERRESTRIAL INVERTEBRATE
4916	6/15/2005	B1CTY8	SOIL and BIOTA	Discrete	0.723	mg/kg	TERRESTRIAL INVERTEBRATE
4917	6/15/2005	B1CV45	SOIL and BIOTA	Discrete	0.723	mg/kg	TERRESTRIAL INVERTEBRATE
4918	9/13/2005	B1CV50	SOIL and BIOTA	Discrete	0.664	mg/kg	TERRESTRIAL INVERTEBRATE
4919	9/13/2005	B1CV51	SOIL and BIOTA	Discrete	0.664	mg/kg	TERRESTRIAL INVERTEBRATE
4920	9/13/2005	B1CV49	SOIL and BIOTA	Discrete	0.664	mg/kg	TERRESTRIAL INVERTEBRATE
4921	4/3/2006	J11KV5	SOIL and BIOTA	MIS	1.9	mg/kg	TERRESTRIAL INVERTEBRATE
4922	4/3/2006	J11KV6	SOIL and BIOTA	MIS	3	mg/kg	TERRESTRIAL INVERTEBRATE
4923	4/25/2006	J11L32	SOIL and BIOTA	MIS	3.5	mg/kg	TERRESTRIAL INVERTEBRATE
4924	4/3/2006	J11L31	SOIL and BIOTA	MIS	1.7	mg/kg	TERRESTRIAL INVERTEBRATE
4925	4/17/2006	J11KT1	SOIL and BIOTA	MIS	2.3	mg/kg	TERRESTRIAL INVERTEBRATE
4926	4/17/2006	J11KT1	SOIL and BIOTA	MIS-phyt	2.7	mg/kg	TERRESTRIAL INVERTEBRATE
4927	4/3/2006	J11KR9	SOIL and BIOTA	MIS	25.6	mg/kg	TERRESTRIAL INVERTEBRATE
4928	4/3/2006	J11KR9	SOIL and BIOTA	MIS-phyt	29.6	mg/kg	TERRESTRIAL INVERTEBRATE
4929	6/11/2007	J14Y56	SOIL and BIOTA	MIS	0.91	mg/kg	TERRESTRIAL INVERTEBRATE
4930	6/13/2007	J14Y63	SOIL and BIOTA	MIS	0.94	mg/kg	TERRESTRIAL INVERTEBRATE
4931	6/13/2007	J14Y57	SOIL and BIOTA	MIS	1.2	mg/kg	TERRESTRIAL INVERTEBRATE
4932	6/13/2007	J14Y58	SOIL and BIOTA	MIS	1.5	mg/kg	TERRESTRIAL INVERTEBRATE
4933	6/13/2007	J14Y59	SOIL and BIOTA	MIS	0.88	mg/kg	TERRESTRIAL INVERTEBRATE
4934	4/25/2006	J11KT3	SOIL and BIOTA	MIS	1.4	mg/kg	TERRESTRIAL INVERTEBRATE
4935	6/11/2007	J14Y60	SOIL and BIOTA	MIS	0.98	mg/kg	TERRESTRIAL INVERTEBRATE
4936	6/13/2007	J14Y62	SOIL and BIOTA	MIS	0.82	mg/kg	TERRESTRIAL INVERTEBRATE
4937	6/7/2007	J14Y61	SOIL and BIOTA	MIS	0.53	mg/kg	TERRESTRIAL INVERTEBRATE
4938	4/3/2006	J11L35	SOIL and BIOTA	MIS	1.3	mg/kg	TERRESTRIAL INVERTEBRATE
4939	4/3/2006	J11L35	SOIL and BIOTA	MIS-phyt	2	mg/kg	TERRESTRIAL INVERTEBRATE
4940	4/3/2006	J11KR2	SOIL and BIOTA	MIS	1.4	mg/kg	TERRESTRIAL INVERTEBRATE
4941	4/3/2006	J11KR2	SOIL and BIOTA	MIS-phyt	1.6	mg/kg	TERRESTRIAL INVERTEBRATE
4942	4/25/2006	J11KR3	SOIL and BIOTA	MIS	3.4	mg/kg	TERRESTRIAL INVERTEBRATE
4943	4/25/2006	J11KR3	SOIL and BIOTA	MIS-phyt	5.7	mg/kg	TERRESTRIAL INVERTEBRATE
4944	4/25/2006	J11XX9	SOIL and BIOTA	MIS	2.1	mg/kg	TERRESTRIAL INVERTEBRATE
4945	4/25/2006	J11XX9	SOIL and BIOTA	MIS-phyt	2.9	mg/kg	TERRESTRIAL INVERTEBRATE
4946	4/17/2006	J11KR6	SOIL and BIOTA	MIS	1.3	mg/kg	TERRESTRIAL INVERTEBRATE
4947	4/25/2006	J11KR4	SOIL and BIOTA	MIS	1.5	mg/kg	TERRESTRIAL INVERTEBRATE
4948	4/25/2006	J11KR5	SOIL and BIOTA	MIS	6.8	mg/kg	TERRESTRIAL INVERTEBRATE
4949	4/25/2006	J11KR5	SOIL and BIOTA	MIS-phyt	5.2	mg/kg	TERRESTRIAL INVERTEBRATE
4950	4/26/2006	J11KT2	SOIL and BIOTA	MIS	0.97	mg/kg	TERRESTRIAL INVERTEBRATE
4951	4/25/2006	J11XX8	SOIL and BIOTA	MIS	3.1	mg/kg	TERRESTRIAL INVERTEBRATE
4952	6/13/2007	J14Y53	SOIL and BIOTA	MIS	0.99	mg/kg	TERRESTRIAL INVERTEBRATE

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
4914	CARCASS	4.26	mg/kg			CP
4915	CARCASS	6.86	mg/kg			CP
4916	CARCASS	6.48	mg/kg			CP
4917	CARCASS	9.73	mg/kg			CP
4918	CARCASS	2.71	mg/kg			CP
4919	CARCASS	2.75	mg/kg			CP
4920	CARCASS	2.33	mg/kg			CP
4921	MULTIPLE WHOLE ORG	6.9	mg/kg			RCBRA
4922	MULTIPLE WHOLE ORG	5.9	mg/kg			RCBRA
4923	MULTIPLE WHOLE ORG	3.1	mg/kg	C		RCBRA
4924	MULTIPLE WHOLE ORG	3.5	mg/kg			RCBRA
4925	MULTIPLE WHOLE ORG	6.5	mg/kg	C		RCBRA
4926	MULTIPLE WHOLE ORG	6.5	mg/kg	C		RCBRA
4927	MULTIPLE WHOLE ORG	5.4	mg/kg			RCBRA
4928	MULTIPLE WHOLE ORG	5.4	mg/kg			RCBRA
4929	MULTIPLE WHOLE ORG	2	mg/kg			RCBRA
4930	MULTIPLE WHOLE ORG	3.4	mg/kg			RCBRA
4931	MULTIPLE WHOLE ORG	1	mg/kg			RCBRA
4932	MULTIPLE WHOLE ORG	3.9	mg/kg			RCBRA
4933	MULTIPLE WHOLE ORG	1.6	mg/kg			RCBRA
4934	MULTIPLE WHOLE ORG	4.7	mg/kg	C		RCBRA
4935	MULTIPLE WHOLE ORG	2.4	mg/kg			RCBRA
4936	MULTIPLE WHOLE ORG	1.4	mg/kg			RCBRA
4937	MULTIPLE WHOLE ORG	1.3	mg/kg			RCBRA
4938	MULTIPLE WHOLE ORG	2.5	mg/kg			RCBRA
4939	MULTIPLE WHOLE ORG	2.5	mg/kg			RCBRA
4940	MULTIPLE WHOLE ORG	2.6	mg/kg			RCBRA
4941	MULTIPLE WHOLE ORG	2.6	mg/kg			RCBRA
4942	MULTIPLE WHOLE ORG	2.5	mg/kg	C		RCBRA
4943	MULTIPLE WHOLE ORG	2.5	mg/kg	C		RCBRA
4944	MULTIPLE WHOLE ORG	4.6	mg/kg	C		RCBRA
4945	MULTIPLE WHOLE ORG	4.6	mg/kg	C		RCBRA
4946	MULTIPLE WHOLE ORG	3	mg/kg	C		RCBRA
4947	MULTIPLE WHOLE ORG	3.6	mg/kg	C		RCBRA
4948	MULTIPLE WHOLE ORG	2.8	mg/kg	C		RCBRA
4949	MULTIPLE WHOLE ORG	2.8	mg/kg	C		RCBRA
4950	MULTIPLE WHOLE ORG	7	mg/kg	C		RCBRA
4951	MULTIPLE WHOLE ORG	3.8	mg/kg	C		RCBRA
4952	MULTIPLE WHOLE ORG	1.1	mg/kg			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
4953	Boron	7440-42-8	RCBRA Bev Ref 2 Rip	Outside decision areas	RIPARIAN	541493.988	167808.357
4954	Boron	7440-42-8	RCBRA JA JONES	300	UPLAND	593874.58	120013.908
4955	Boron	7440-42-8	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
4956	Boron	7440-42-8	RCBRA Pit 18	IU2/IU6	UPLAND	580697.058	145311.464
4957	Boron	7440-42-8	RCBRA Pit 23	IU2/IU6	UPLAND	572381.012	144874.157
4958	Boron	7440-42-8	RCBRA Pit 24	BC	UPLAND	563395.814	145119.007
4959	Boron	7440-42-8	RCBRA Pit 9	300	UPLAND	592807.103	120587.7
4960	Boron	7440-42-8	RCBRA R Ref 11	Outside decision areas	RIPARIAN	559400.735	146458.486
4961	Boron	7440-42-8	RCBRA R Ref 12	IU2/IU6	RIPARIAN	559201.908	145747.542
4962	Boron	7440-42-8	RCBRA R Ref 13	Outside decision areas	RIPARIAN	558572.809	145345.115
4963	Boron	7440-42-8	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
4964	Boron	7440-42-8	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
4965	Boron	7440-42-8	RCBRA R Ref 16	Outside decision areas	RIPARIAN	557650.029	144826.748
4966	Boron	7440-42-8	RCBRA Rip 1	D/H	RIPARIAN	577251.869	153659.195
4967	Boron	7440-42-8	RCBRA Rip 10	D/H	RIPARIAN	573987.873	153082.19
4968	Boron	7440-42-8	RCBRA Rip 2	D/H	RIPARIAN	573603.219	152471.6
4969	Boron	7440-42-8	RCBRA Rip 3	D/H	RIPARIAN	572639.65	151677.812
4970	Boron	7440-42-8	RCBRA Rip 4	N	RIPARIAN	570558.596	148981.547
4971	Boron	7440-42-8	RCBRA Rip 5	K	RIPARIAN	569141.025	147521.561
4972	Boron	7440-42-8	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
4973	Boron	7440-42-8	RCBRA Rip 7	IU2/IU6	RIPARIAN	581326.914	147825.17
4974	Boron	7440-42-8	RCBRA Rip 8	D/H	RIPARIAN	578698.584	152233.645
4975	Boron	7440-42-8	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
4976	Boron	7440-42-8	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
4977	Boron	7440-42-8	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
4978	Boron	7440-42-8	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
4979	Boron	7440-42-8	RCBRA Yak Rdg 2	Outside decision areas	UPLAND	559031.557	135576.407
4980	Barium	7440-39-3	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764
4981	Barium	7440-39-3	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764
4982	Barium	7440-39-3	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764
4983	Barium	7440-39-3	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
4984	Barium	7440-39-3	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
4985	Barium	7440-39-3	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
4986	Barium	7440-39-3	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
4987	Barium	7440-39-3	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
4988	Barium	7440-39-3	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
4989	Barium	7440-39-3	B POND	Outside decision areas	UPLAND	576356.769	136881.272
4990	Barium	7440-39-3	B POND	Outside decision areas	UPLAND	576356.769	136881.272
4991	Barium	7440-39-3	B POND	Outside decision areas	UPLAND	576356.769	136881.272

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
4953	6/13/2007	J14Y54	SOIL and BIOTA	MIS	1	mg/kg	TERRESTRIAL INVERTEBRATE
4954	4/25/2006	J11L34	SOIL and BIOTA	MIS	1.5	mg/kg	TERRESTRIAL INVERTEBRATE
4955	4/17/2006	J11KP9	SOIL and BIOTA	MIS	1.2	mg/kg	TERRESTRIAL INVERTEBRATE
4956	4/17/2006	J11KR0	SOIL and BIOTA	MIS	0.85	mg/kg	TERRESTRIAL INVERTEBRATE
4957	4/3/2006	J11L33	SOIL and BIOTA	MIS	1.2	mg/kg	TERRESTRIAL INVERTEBRATE
4958	4/3/2006	J11KT6	SOIL and BIOTA	MIS	2.2	mg/kg	TERRESTRIAL INVERTEBRATE
4959	4/25/2006	J11KT5	SOIL and BIOTA	MIS	1.2	mg/kg	TERRESTRIAL INVERTEBRATE
4960	3/20/2006	J11960	SOIL and BIOTA	MIS	1.2	mg/kg	TERRESTRIAL INVERTEBRATE
4961	3/20/2006	J11961	SOIL and BIOTA	MIS	0.53	mg/kg	TERRESTRIAL INVERTEBRATE
4962	3/20/2006	J11962	SOIL and BIOTA	MIS	2.2	mg/kg	TERRESTRIAL INVERTEBRATE
4963	3/20/2006	J11963	SOIL and BIOTA	MIS	1.6	mg/kg	TERRESTRIAL INVERTEBRATE
4964	6/13/2007	J14Y55	SOIL and BIOTA	MIS	1.6	mg/kg	TERRESTRIAL INVERTEBRATE
4965	3/20/2006	J11964	SOIL and BIOTA	MIS	0.91	mg/kg	TERRESTRIAL INVERTEBRATE
4966	3/16/2006	J11950	SOIL and BIOTA	MIS	1.1	mg/kg	TERRESTRIAL INVERTEBRATE
4967	3/16/2006	J11959	SOIL and BIOTA	MIS	1.2	mg/kg	TERRESTRIAL INVERTEBRATE
4968	3/16/2006	J11951	SOIL and BIOTA	MIS	0.6	mg/kg	TERRESTRIAL INVERTEBRATE
4969	3/16/2006	J11952	SOIL and BIOTA	MIS	0.592	mg/kg	TERRESTRIAL INVERTEBRATE
4970	3/16/2006	J11953	SOIL and BIOTA	MIS	1.2	mg/kg	TERRESTRIAL INVERTEBRATE
4971	3/16/2006	J11954	SOIL and BIOTA	MIS	1.3	mg/kg	TERRESTRIAL INVERTEBRATE
4972	4/25/2006	J11955	SOIL and BIOTA	MIS	2.5	mg/kg	TERRESTRIAL INVERTEBRATE
4973	3/16/2006	J11956	SOIL and BIOTA	MIS	0.75	mg/kg	TERRESTRIAL INVERTEBRATE
4974	3/16/2006	J11957	SOIL and BIOTA	MIS	0.74	mg/kg	TERRESTRIAL INVERTEBRATE
4975	4/3/2006	J11KV0	SOIL and BIOTA	MIS	2	mg/kg	TERRESTRIAL INVERTEBRATE
4976	4/3/2006	J11KV0	SOIL and BIOTA	MIS-phyt	2.3	mg/kg	TERRESTRIAL INVERTEBRATE
4977	4/3/2006	J11KT8	SOIL and BIOTA	MIS	1.5	mg/kg	TERRESTRIAL INVERTEBRATE
4978	4/3/2006	J11KT8	SOIL and BIOTA	MIS-phyt	2	mg/kg	TERRESTRIAL INVERTEBRATE
4979	4/3/2006	J11KT7	SOIL and BIOTA	MIS	2	mg/kg	TERRESTRIAL INVERTEBRATE
4980	9/13/2005	B1CV56	SOIL and BIOTA	Discrete	88.5	mg/kg	TERRESTRIAL INVERTEBRATE
4981	9/13/2005	B1CV57	SOIL and BIOTA	Discrete	88.5	mg/kg	TERRESTRIAL INVERTEBRATE
4982	9/13/2005	B1CV55	SOIL and BIOTA	Discrete	88.5	mg/kg	TERRESTRIAL INVERTEBRATE
4983	6/15/2005	B1CTY2	SOIL and BIOTA	Discrete	88.5	mg/kg	TERRESTRIAL INVERTEBRATE
4984	6/15/2005	B1CTY3	SOIL and BIOTA	Discrete	88.5	mg/kg	TERRESTRIAL INVERTEBRATE
4985	6/15/2005	B1CTY4	SOIL and BIOTA	Discrete	88.5	mg/kg	TERRESTRIAL INVERTEBRATE
4986	9/13/2005	B1CV54	SOIL and BIOTA	Discrete	88.4	mg/kg	TERRESTRIAL INVERTEBRATE
4987	9/13/2005	B1CV53	SOIL and BIOTA	Discrete	88.4	mg/kg	TERRESTRIAL INVERTEBRATE
4988	9/13/2005	B1CV52	SOIL and BIOTA	Discrete	88.4	mg/kg	TERRESTRIAL INVERTEBRATE
4989	6/15/2005	B1CV47	SOIL and BIOTA	Discrete	91.3	mg/kg	TERRESTRIAL INVERTEBRATE
4990	6/15/2005	B1CV48	SOIL and BIOTA	Discrete	91.3	mg/kg	TERRESTRIAL INVERTEBRATE
4991	6/15/2005	B1CV46	SOIL and BIOTA	Discrete	91.3	mg/kg	TERRESTRIAL INVERTEBRATE

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
4953	MULTIPLE WHOLE ORG	1.1	mg/kg			RCBRA
4954	MULTIPLE WHOLE ORG	4.7	mg/kg	C		RCBRA
4955	MULTIPLE WHOLE ORG	4.6	mg/kg	C		RCBRA
4956	MULTIPLE WHOLE ORG	5	mg/kg	C		RCBRA
4957	MULTIPLE WHOLE ORG	3.1	mg/kg			RCBRA
4958	MULTIPLE WHOLE ORG	4	mg/kg			RCBRA
4959	MULTIPLE WHOLE ORG	3.6	mg/kg	C		RCBRA
4960	MULTIPLE WHOLE ORG	1.8	mg/kg			RCBRA
4961	MULTIPLE WHOLE ORG	1.9	mg/kg			RCBRA
4962	MULTIPLE WHOLE ORG	2.1	mg/kg			RCBRA
4963	MULTIPLE WHOLE ORG	3.9	mg/kg			RCBRA
4964	MULTIPLE WHOLE ORG	1.7	mg/kg			RCBRA
4965	MULTIPLE WHOLE ORG	2.5	mg/kg			RCBRA
4966	MULTIPLE WHOLE ORG	1.8	mg/kg			RCBRA
4967	MULTIPLE WHOLE ORG	0.27	mg/kg			RCBRA
4968	MULTIPLE WHOLE ORG	2.3	mg/kg			RCBRA
4969	MULTIPLE WHOLE ORG	0.24	mg/kg			RCBRA
4970	MULTIPLE WHOLE ORG	0.34	mg/kg			RCBRA
4971	MULTIPLE WHOLE ORG	0.39	mg/kg			RCBRA
4972	MULTIPLE WHOLE ORG	3.5	mg/kg	C		RCBRA
4973	MULTIPLE WHOLE ORG	0.44	mg/kg			RCBRA
4974	MULTIPLE WHOLE ORG	2.6	mg/kg			RCBRA
4975	MULTIPLE WHOLE ORG	1.3	mg/kg			RCBRA
4976	MULTIPLE WHOLE ORG	1.3	mg/kg			RCBRA
4977	MULTIPLE WHOLE ORG	2.1	mg/kg			RCBRA
4978	MULTIPLE WHOLE ORG	2.1	mg/kg			RCBRA
4979	MULTIPLE WHOLE ORG	3.2	mg/kg			RCBRA
4980	CARCASS	3.74	mg/kg			CP
4981	CARCASS	4.38	mg/kg			CP
4982	CARCASS	3.88	mg/kg			CP
4983	CARCASS	4.59	mg/kg			CP
4984	CARCASS	4.57	mg/kg			CP
4985	CARCASS	4.2	mg/kg			CP
4986	CARCASS	2.41	mg/kg			CP
4987	CARCASS	2.29	mg/kg			CP
4988	CARCASS	2.51	mg/kg			CP
4989	CARCASS	4.33	mg/kg			CP
4990	CARCASS	4.46	mg/kg			CP
4991	CARCASS	3.29	mg/kg			CP

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
4992	Barium	7440-39-3	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
4993	Barium	7440-39-3	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
4994	Barium	7440-39-3	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
4995	Barium	7440-39-3	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
4996	Barium	7440-39-3	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
4997	Barium	7440-39-3	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
4998	Barium	7440-39-3	U POND	Outside decision areas	UPLAND	566379.63	134457.045
4999	Barium	7440-39-3	U POND	Outside decision areas	UPLAND	566379.63	134457.045
5000	Barium	7440-39-3	U POND	Outside decision areas	UPLAND	566379.63	134457.045
5001	Barium	7440-39-3	RCBRA 100-D-48	D/H	UPLAND	573841.527	151914.538
5002	Barium	7440-39-3	RCBRA 100-D-49	D/H	UPLAND	573938.06	151944.123
5003	Barium	7440-39-3	RCBRA 100-F-2	IU2/IU6	UPLAND	579728.068	147001.117
5004	Barium	7440-39-3	RCBRA 116-DR-1&2	D/H	UPLAND	574007.817	152246.748
5005	Barium	7440-39-3	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
5006	Barium	7440-39-3	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
5007	Barium	7440-39-3	RCBRA 1607-D2:1	D/H	UPLAND	573823.924	152260.319
5008	Barium	7440-39-3	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
5009	Barium	7440-39-3	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
5010	Barium	7440-39-3	RCBRA 2a Rip	BC	RIPARIAN	564618.501	145284.526
5011	Barium	7440-39-3	RCBRA 2c Rip	K	RIPARIAN	567598.2	146210.159
5012	Barium	7440-39-3	RCBRA 2f Rip	D/H	RIPARIAN	576222.844	154297.511
5013	Barium	7440-39-3	RCBRA 2j Rip	IU2/IU6	RIPARIAN	579360.971	150092.048
5014	Barium	7440-39-3	RCBRA 2l Rip	IU2/IU6	RIPARIAN	582341.212	146120.069
5015	Barium	7440-39-3	RCBRA 300-49	300	UPLAND	594318.994	116830.934
5016	Barium	7440-39-3	RCBRA 3b Rip	IU2/IU6	RIPARIAN	584961.205	141035.835
5017	Barium	7440-39-3	RCBRA 4a Rip	IU2/IU6	RIPARIAN	589347.5	137480.985
5018	Barium	7440-39-3	RCBRA 5c Rip	300	RIPARIAN	594509.985	124869.182
5019	Barium	7440-39-3	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
5020	Barium	7440-39-3	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
5021	Barium	7440-39-3	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
5022	Barium	7440-39-3	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
5023	Barium	7440-39-3	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
5024	Barium	7440-39-3	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
5025	Barium	7440-39-3	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
5026	Barium	7440-39-3	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
5027	Barium	7440-39-3	RCBRA 600-181	IU2/IU6	UPLAND	578303.83	147316.698
5028	Barium	7440-39-3	RCBRA 600-204	IU2/IU6	UPLAND	580128.485	144762.219
5029	Barium	7440-39-3	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
5030	Barium	7440-39-3	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
4992	6/15/2005	B1CTY6	SOIL and BIOTA	Discrete	100	mg/kg	TERRESTRIAL INVERTEBRATE
4993	6/15/2005	B1CTY7	SOIL and BIOTA	Discrete	100	mg/kg	TERRESTRIAL INVERTEBRATE
4994	6/15/2005	B1CTY5	SOIL and BIOTA	Discrete	100	mg/kg	TERRESTRIAL INVERTEBRATE
4995	6/15/2005	B1CV44	SOIL and BIOTA	Discrete	83.7	mg/kg	TERRESTRIAL INVERTEBRATE
4996	6/15/2005	B1CTY8	SOIL and BIOTA	Discrete	83.7	mg/kg	TERRESTRIAL INVERTEBRATE
4997	6/15/2005	B1CV45	SOIL and BIOTA	Discrete	83.7	mg/kg	TERRESTRIAL INVERTEBRATE
4998	9/13/2005	B1CV50	SOIL and BIOTA	Discrete	85.8	mg/kg	TERRESTRIAL INVERTEBRATE
4999	9/13/2005	B1CV51	SOIL and BIOTA	Discrete	85.8	mg/kg	TERRESTRIAL INVERTEBRATE
5000	9/13/2005	B1CV49	SOIL and BIOTA	Discrete	85.8	mg/kg	TERRESTRIAL INVERTEBRATE
5001	4/3/2006	J11KV5	SOIL and BIOTA	MIS	69.5	mg/kg	TERRESTRIAL INVERTEBRATE
5002	4/3/2006	J11KV6	SOIL and BIOTA	MIS	81.6	mg/kg	TERRESTRIAL INVERTEBRATE
5003	4/25/2006	J11L32	SOIL and BIOTA	MIS	86.3	mg/kg	TERRESTRIAL INVERTEBRATE
5004	4/3/2006	J11L31	SOIL and BIOTA	MIS	69.2	mg/kg	TERRESTRIAL INVERTEBRATE
5005	4/17/2006	J11KT1	SOIL and BIOTA	MIS	75.6	mg/kg	TERRESTRIAL INVERTEBRATE
5006	4/17/2006	J11KT1	SOIL and BIOTA	MIS-phyt	70.4	mg/kg	TERRESTRIAL INVERTEBRATE
5007	4/3/2006	J11KT4	SOIL and BIOTA	MIS	59.9	mg/kg	TERRESTRIAL INVERTEBRATE
5008	4/3/2006	J11KR9	SOIL and BIOTA	MIS	377	mg/kg	TERRESTRIAL INVERTEBRATE
5009	4/3/2006	J11KR9	SOIL and BIOTA	MIS-phyt	314	mg/kg	TERRESTRIAL INVERTEBRATE
5010	6/11/2007	J14Y56	SOIL and BIOTA	MIS	70.4	mg/kg	TERRESTRIAL INVERTEBRATE
5011	6/13/2007	J14Y63	SOIL and BIOTA	MIS	87.8	mg/kg	TERRESTRIAL INVERTEBRATE
5012	6/13/2007	J14Y57	SOIL and BIOTA	MIS	82.4	mg/kg	TERRESTRIAL INVERTEBRATE
5013	6/13/2007	J14Y58	SOIL and BIOTA	MIS	87.3	mg/kg	TERRESTRIAL INVERTEBRATE
5014	6/13/2007	J14Y59	SOIL and BIOTA	MIS	65.1	mg/kg	TERRESTRIAL INVERTEBRATE
5015	4/25/2006	J11KT3	SOIL and BIOTA	MIS	90	mg/kg	TERRESTRIAL INVERTEBRATE
5016	6/11/2007	J14Y60	SOIL and BIOTA	MIS	73.7	mg/kg	TERRESTRIAL INVERTEBRATE
5017	6/13/2007	J14Y62	SOIL and BIOTA	MIS	92.5	mg/kg	TERRESTRIAL INVERTEBRATE
5018	6/7/2007	J14Y61	SOIL and BIOTA	MIS	70.5	mg/kg	TERRESTRIAL INVERTEBRATE
5019	4/3/2006	J11L35	SOIL and BIOTA	MIS	54.8	mg/kg	TERRESTRIAL INVERTEBRATE
5020	4/3/2006	J11L35	SOIL and BIOTA	MIS-phyt	69.2	mg/kg	TERRESTRIAL INVERTEBRATE
5021	4/3/2006	J11KR2	SOIL and BIOTA	MIS	66.2	mg/kg	TERRESTRIAL INVERTEBRATE
5022	4/3/2006	J11KR2	SOIL and BIOTA	MIS-phyt	67.5	mg/kg	TERRESTRIAL INVERTEBRATE
5023	4/25/2006	J11KR3	SOIL and BIOTA	MIS	78.2	mg/kg	TERRESTRIAL INVERTEBRATE
5024	4/25/2006	J11KR3	SOIL and BIOTA	MIS-phyt	102	mg/kg	TERRESTRIAL INVERTEBRATE
5025	4/25/2006	J11XX9	SOIL and BIOTA	MIS	70.4	mg/kg	TERRESTRIAL INVERTEBRATE
5026	4/25/2006	J11XX9	SOIL and BIOTA	MIS-phyt	80	mg/kg	TERRESTRIAL INVERTEBRATE
5027	4/17/2006	J11KR6	SOIL and BIOTA	MIS	67.7	mg/kg	TERRESTRIAL INVERTEBRATE
5028	4/25/2006	J11KR4	SOIL and BIOTA	MIS	82	mg/kg	TERRESTRIAL INVERTEBRATE
5029	4/25/2006	J11KR5	SOIL and BIOTA	MIS	138	mg/kg	TERRESTRIAL INVERTEBRATE
5030	4/25/2006	J11KR5	SOIL and BIOTA	MIS-phyt	104	mg/kg	TERRESTRIAL INVERTEBRATE

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
4992	CARCASS	3.04	mg/kg			CP
4993	CARCASS	3.75	mg/kg			CP
4994	CARCASS	3.57	mg/kg			CP
4995	CARCASS	4.82	mg/kg			CP
4996	CARCASS	5.45	mg/kg			CP
4997	CARCASS	5.09	mg/kg			CP
4998	CARCASS	4.85	mg/kg			CP
4999	CARCASS	5.44	mg/kg			CP
5000	CARCASS	4.12	mg/kg			CP
5001	MULTIPLE WHOLE ORG	2.1	mg/kg			RCBRA
5002	MULTIPLE WHOLE ORG	2.1	mg/kg			RCBRA
5003	MULTIPLE WHOLE ORG	1.1	mg/kg	C		RCBRA
5004	MULTIPLE WHOLE ORG	2.4	mg/kg			RCBRA
5005	MULTIPLE WHOLE ORG	2.1	mg/kg	C		RCBRA
5006	MULTIPLE WHOLE ORG	2.1	mg/kg	C		RCBRA
5007	MULTIPLE WHOLE ORG	1.3	mg/kg			RCBRA
5008	MULTIPLE WHOLE ORG	1.4	mg/kg			RCBRA
5009	MULTIPLE WHOLE ORG	1.4	mg/kg			RCBRA
5010	MULTIPLE WHOLE ORG	1	mg/kg	C		RCBRA
5011	MULTIPLE WHOLE ORG	2.1	mg/kg	C		RCBRA
5012	MULTIPLE WHOLE ORG	8.8	mg/kg	C		RCBRA
5013	MULTIPLE WHOLE ORG	2.2	mg/kg	C		RCBRA
5014	MULTIPLE WHOLE ORG	2.9	mg/kg	C		RCBRA
5015	MULTIPLE WHOLE ORG	2.2	mg/kg	C		RCBRA
5016	MULTIPLE WHOLE ORG	6.7	mg/kg	C		RCBRA
5017	MULTIPLE WHOLE ORG	7.4	mg/kg	C		RCBRA
5018	MULTIPLE WHOLE ORG	1	mg/kg	C		RCBRA
5019	MULTIPLE WHOLE ORG	0.97	mg/kg			RCBRA
5020	MULTIPLE WHOLE ORG	0.97	mg/kg			RCBRA
5021	MULTIPLE WHOLE ORG	1.3	mg/kg			RCBRA
5022	MULTIPLE WHOLE ORG	1.3	mg/kg			RCBRA
5023	MULTIPLE WHOLE ORG	1.3	mg/kg	C		RCBRA
5024	MULTIPLE WHOLE ORG	1.3	mg/kg	C		RCBRA
5025	MULTIPLE WHOLE ORG	2.1	mg/kg	C		RCBRA
5026	MULTIPLE WHOLE ORG	2.1	mg/kg	C		RCBRA
5027	MULTIPLE WHOLE ORG	1.7	mg/kg	C		RCBRA
5028	MULTIPLE WHOLE ORG	2.7	mg/kg	C		RCBRA
5029	MULTIPLE WHOLE ORG	1.2	mg/kg	C		RCBRA
5030	MULTIPLE WHOLE ORG	1.2	mg/kg	C		RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
5031	Barium	7440-39-3	RCBRA 618-4	300	UPLAND	593954.946	117064.473
5032	Barium	7440-39-3	RCBRA 628-1	IU2/IU6	UPLAND	577797.524	148745.681
5033	Barium	7440-39-3	RCBRA Bev Ref 1 Rip	Outside decision areas	RIPARIAN	542428.846	167701.261
5034	Barium	7440-39-3	RCBRA Bev Ref 2 Rip	Outside decision areas	RIPARIAN	541493.988	167808.357
5035	Barium	7440-39-3	RCBRA JA JONES	300	UPLAND	593874.58	120013.908
5036	Barium	7440-39-3	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
5037	Barium	7440-39-3	RCBRA Pit 18	IU2/IU6	UPLAND	580697.058	145311.464
5038	Barium	7440-39-3	RCBRA Pit 23	IU2/IU6	UPLAND	572381.012	144874.157
5039	Barium	7440-39-3	RCBRA Pit 24	BC	UPLAND	563395.814	145119.007
5040	Barium	7440-39-3	RCBRA Pit 9	300	UPLAND	592807.103	120587.7
5041	Barium	7440-39-3	RCBRA R Ref 11	Outside decision areas	RIPARIAN	559400.735	146458.486
5042	Barium	7440-39-3	RCBRA R Ref 12	IU2/IU6	RIPARIAN	559201.908	145747.542
5043	Barium	7440-39-3	RCBRA R Ref 13	Outside decision areas	RIPARIAN	558572.809	145345.115
5044	Barium	7440-39-3	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
5045	Barium	7440-39-3	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
5046	Barium	7440-39-3	RCBRA R Ref 16	Outside decision areas	RIPARIAN	557650.029	144826.748
5047	Barium	7440-39-3	RCBRA Rip 1	D/H	RIPARIAN	577251.869	153659.195
5048	Barium	7440-39-3	RCBRA Rip 10	D/H	RIPARIAN	573987.873	153082.19
5049	Barium	7440-39-3	RCBRA Rip 2	D/H	RIPARIAN	573603.219	152471.6
5050	Barium	7440-39-3	RCBRA Rip 3	D/H	RIPARIAN	572639.65	151677.812
5051	Barium	7440-39-3	RCBRA Rip 4	N	RIPARIAN	570558.596	148981.547
5052	Barium	7440-39-3	RCBRA Rip 5	K	RIPARIAN	569141.025	147521.561
5053	Barium	7440-39-3	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
5054	Barium	7440-39-3	RCBRA Rip 7	IU2/IU6	RIPARIAN	581326.914	147825.17
5055	Barium	7440-39-3	RCBRA Rip 8	D/H	RIPARIAN	578698.584	152233.645
5056	Barium	7440-39-3	RCBRA Rip 9	D/H	RIPARIAN	578153.643	152801.452
5057	Barium	7440-39-3	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
5058	Barium	7440-39-3	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
5059	Barium	7440-39-3	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
5060	Barium	7440-39-3	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
5061	Barium	7440-39-3	RCBRA Yak Rdg 2	Outside decision areas	UPLAND	559031.557	135576.407
5062	Calcium	7440-70-2	RCBRA 100-D-48	D/H	UPLAND	573841.527	151914.538
5063	Calcium	7440-70-2	RCBRA 100-D-49	D/H	UPLAND	573938.06	151944.123
5064	Calcium	7440-70-2	RCBRA 100-F-2	IU2/IU6	UPLAND	579728.068	147001.117
5065	Calcium	7440-70-2	RCBRA 116-DR-1&2	D/H	UPLAND	574007.817	152246.748
5066	Calcium	7440-70-2	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
5067	Calcium	7440-70-2	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
5068	Calcium	7440-70-2	RCBRA 1607-D2:1	D/H	UPLAND	573823.924	152260.319
5069	Calcium	7440-70-2	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
5031	4/26/2006	J11KT2	SOIL and BIOTA	MIS	59.2	mg/kg	TERRESTRIAL INVERTEBRATE
5032	4/25/2006	J11XX8	SOIL and BIOTA	MIS	74.5	mg/kg	TERRESTRIAL INVERTEBRATE
5033	6/13/2007	J14Y53	SOIL and BIOTA	MIS	76	mg/kg	TERRESTRIAL INVERTEBRATE
5034	6/13/2007	J14Y54	SOIL and BIOTA	MIS	79.9	mg/kg	TERRESTRIAL INVERTEBRATE
5035	4/25/2006	J11L34	SOIL and BIOTA	MIS	70	mg/kg	TERRESTRIAL INVERTEBRATE
5036	4/17/2006	J11KP9	SOIL and BIOTA	MIS	83.5	mg/kg	TERRESTRIAL INVERTEBRATE
5037	4/17/2006	J11KR0	SOIL and BIOTA	MIS	55.5	mg/kg	TERRESTRIAL INVERTEBRATE
5038	4/3/2006	J11L33	SOIL and BIOTA	MIS	51.5	mg/kg	TERRESTRIAL INVERTEBRATE
5039	4/3/2006	J11KT6	SOIL and BIOTA	MIS	80.4	mg/kg	TERRESTRIAL INVERTEBRATE
5040	4/25/2006	J11KT5	SOIL and BIOTA	MIS	80.2	mg/kg	TERRESTRIAL INVERTEBRATE
5041	3/20/2006	J11960	SOIL and BIOTA	MIS	78.6	mg/kg	TERRESTRIAL INVERTEBRATE
5042	3/20/2006	J11961	SOIL and BIOTA	MIS	80.7	mg/kg	TERRESTRIAL INVERTEBRATE
5043	3/20/2006	J11962	SOIL and BIOTA	MIS	122	mg/kg	TERRESTRIAL INVERTEBRATE
5044	3/20/2006	J11963	SOIL and BIOTA	MIS	120.5	mg/kg	TERRESTRIAL INVERTEBRATE
5045	6/13/2007	J14Y55	SOIL and BIOTA	MIS	120.5	mg/kg	TERRESTRIAL INVERTEBRATE
5046	3/20/2006	J11964	SOIL and BIOTA	MIS	79.4	mg/kg	TERRESTRIAL INVERTEBRATE
5047	3/16/2006	J11950	SOIL and BIOTA	MIS	92.1	mg/kg	TERRESTRIAL INVERTEBRATE
5048	3/16/2006	J11959	SOIL and BIOTA	MIS	73.8	mg/kg	TERRESTRIAL INVERTEBRATE
5049	3/16/2006	J11951	SOIL and BIOTA	MIS	103	mg/kg	TERRESTRIAL INVERTEBRATE
5050	3/16/2006	J11952	SOIL and BIOTA	MIS	78.2	mg/kg	TERRESTRIAL INVERTEBRATE
5051	3/16/2006	J11953	SOIL and BIOTA	MIS	97.6	mg/kg	TERRESTRIAL INVERTEBRATE
5052	3/16/2006	J11954	SOIL and BIOTA	MIS	100	mg/kg	TERRESTRIAL INVERTEBRATE
5053	4/25/2006	J11955	SOIL and BIOTA	MIS	153	mg/kg	TERRESTRIAL INVERTEBRATE
5054	3/16/2006	J11956	SOIL and BIOTA	MIS	79.2	mg/kg	TERRESTRIAL INVERTEBRATE
5055	3/16/2006	J11957	SOIL and BIOTA	MIS	71.1	mg/kg	TERRESTRIAL INVERTEBRATE
5056	3/16/2006	J11958	SOIL and BIOTA	MIS	65.7	mg/kg	TERRESTRIAL INVERTEBRATE
5057	4/3/2006	J11KV0	SOIL and BIOTA	MIS	110	mg/kg	TERRESTRIAL INVERTEBRATE
5058	4/3/2006	J11KV0	SOIL and BIOTA	MIS-phyt	113	mg/kg	TERRESTRIAL INVERTEBRATE
5059	4/3/2006	J11KT8	SOIL and BIOTA	MIS	93.5	mg/kg	TERRESTRIAL INVERTEBRATE
5060	4/3/2006	J11KT8	SOIL and BIOTA	MIS-phyt	92.6	mg/kg	TERRESTRIAL INVERTEBRATE
5061	4/3/2006	J11KT7	SOIL and BIOTA	MIS	131	mg/kg	TERRESTRIAL INVERTEBRATE
5062	4/3/2006	J11KV5	SOIL and BIOTA	MIS	6850	mg/kg	TERRESTRIAL INVERTEBRATE
5063	4/3/2006	J11KV6	SOIL and BIOTA	MIS	6110	mg/kg	TERRESTRIAL INVERTEBRATE
5064	4/25/2006	J11L32	SOIL and BIOTA	MIS	7070	mg/kg	TERRESTRIAL INVERTEBRATE
5065	4/3/2006	J11L31	SOIL and BIOTA	MIS	5650	mg/kg	TERRESTRIAL INVERTEBRATE
5066	4/17/2006	J11KT1	SOIL and BIOTA	MIS	3970	mg/kg	TERRESTRIAL INVERTEBRATE
5067	4/17/2006	J11KT1	SOIL and BIOTA	MIS-phyt	3990	mg/kg	TERRESTRIAL INVERTEBRATE
5068	4/3/2006	J11KT4	SOIL and BIOTA	MIS	7420	mg/kg	TERRESTRIAL INVERTEBRATE
5069	4/3/2006	J11KR9	SOIL and BIOTA	MIS	10400	mg/kg	TERRESTRIAL INVERTEBRATE

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
5031	MULTIPLE WHOLE ORG	4.1	mg/kg	C		RCBRA
5032	MULTIPLE WHOLE ORG	2.1	mg/kg	C		RCBRA
5033	MULTIPLE WHOLE ORG	0.59	mg/kg	C		RCBRA
5034	MULTIPLE WHOLE ORG	0.59	mg/kg	C		RCBRA
5035	MULTIPLE WHOLE ORG	2.6	mg/kg	C		RCBRA
5036	MULTIPLE WHOLE ORG	3	mg/kg	C		RCBRA
5037	MULTIPLE WHOLE ORG	2.5	mg/kg	C		RCBRA
5038	MULTIPLE WHOLE ORG	1.6	mg/kg			RCBRA
5039	MULTIPLE WHOLE ORG	1.3	mg/kg			RCBRA
5040	MULTIPLE WHOLE ORG	3	mg/kg	C		RCBRA
5041	MULTIPLE WHOLE ORG	1.2	mg/kg	C		RCBRA
5042	MULTIPLE WHOLE ORG	1.1	mg/kg	C		RCBRA
5043	MULTIPLE WHOLE ORG	1.3	mg/kg	C		RCBRA
5044	MULTIPLE WHOLE ORG	0.78	mg/kg	C		RCBRA
5045	MULTIPLE WHOLE ORG	1.3	mg/kg	C		RCBRA
5046	MULTIPLE WHOLE ORG	1.6	mg/kg	C		RCBRA
5047	MULTIPLE WHOLE ORG	0.65	mg/kg	C		RCBRA
5048	MULTIPLE WHOLE ORG	0.75	mg/kg	C		RCBRA
5049	MULTIPLE WHOLE ORG	1.2	mg/kg	C		RCBRA
5050	MULTIPLE WHOLE ORG	0.4	mg/kg	C		RCBRA
5051	MULTIPLE WHOLE ORG	0.7	mg/kg	C		RCBRA
5052	MULTIPLE WHOLE ORG	0.59	mg/kg	C		RCBRA
5053	MULTIPLE WHOLE ORG	1.4	mg/kg	C		RCBRA
5054	MULTIPLE WHOLE ORG	22.8	mg/kg	C		RCBRA
5055	MULTIPLE WHOLE ORG	1.7	mg/kg	C		RCBRA
5056	MULTIPLE WHOLE ORG	0.83	mg/kg	C		RCBRA
5057	MULTIPLE WHOLE ORG	2.3	mg/kg			RCBRA
5058	MULTIPLE WHOLE ORG	2.3	mg/kg			RCBRA
5059	MULTIPLE WHOLE ORG	1.2	mg/kg			RCBRA
5060	MULTIPLE WHOLE ORG	1.2	mg/kg			RCBRA
5061	MULTIPLE WHOLE ORG	1.8	mg/kg			RCBRA
5062	MULTIPLE WHOLE ORG	511	mg/kg	C		RCBRA
5063	MULTIPLE WHOLE ORG	346	mg/kg	C		RCBRA
5064	MULTIPLE WHOLE ORG	537	mg/kg	C		RCBRA
5065	MULTIPLE WHOLE ORG	580	mg/kg	C		RCBRA
5066	MULTIPLE WHOLE ORG	533	mg/kg	C		RCBRA
5067	MULTIPLE WHOLE ORG	533	mg/kg	C		RCBRA
5068	MULTIPLE WHOLE ORG	414	mg/kg	C		RCBRA
5069	MULTIPLE WHOLE ORG	264	mg/kg	C		RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
5070	Calcium	7440-70-2	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
5071	Calcium	7440-70-2	RCBRA 2a Rip	BC	RIPARIAN	564618.501	145284.526
5072	Calcium	7440-70-2	RCBRA 2c Rip	K	RIPARIAN	567598.2	146210.159
5073	Calcium	7440-70-2	RCBRA 2f Rip	D/H	RIPARIAN	576222.844	154297.511
5074	Calcium	7440-70-2	RCBRA 2j Rip	IU2/IU6	RIPARIAN	579360.971	150092.048
5075	Calcium	7440-70-2	RCBRA 2l Rip	IU2/IU6	RIPARIAN	582341.212	146120.069
5076	Calcium	7440-70-2	RCBRA 300-49	300	UPLAND	594318.994	116830.934
5077	Calcium	7440-70-2	RCBRA 3b Rip	IU2/IU6	RIPARIAN	584961.205	141035.835
5078	Calcium	7440-70-2	RCBRA 4a Rip	IU2/IU6	RIPARIAN	589347.5	137480.985
5079	Calcium	7440-70-2	RCBRA 5c Rip	300	RIPARIAN	594509.985	124869.182
5080	Calcium	7440-70-2	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
5081	Calcium	7440-70-2	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
5082	Calcium	7440-70-2	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
5083	Calcium	7440-70-2	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
5084	Calcium	7440-70-2	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
5085	Calcium	7440-70-2	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
5086	Calcium	7440-70-2	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
5087	Calcium	7440-70-2	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
5088	Calcium	7440-70-2	RCBRA 600-181	IU2/IU6	UPLAND	578303.83	147316.698
5089	Calcium	7440-70-2	RCBRA 600-204	IU2/IU6	UPLAND	580128.485	144762.219
5090	Calcium	7440-70-2	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
5091	Calcium	7440-70-2	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
5092	Calcium	7440-70-2	RCBRA 618-4	300	UPLAND	593954.946	117064.473
5093	Calcium	7440-70-2	RCBRA 628-1	IU2/IU6	UPLAND	577797.524	148745.681
5094	Calcium	7440-70-2	RCBRA Bev Ref 1 Rip	Outside decision areas	RIPARIAN	542428.846	167701.261
5095	Calcium	7440-70-2	RCBRA Bev Ref 2 Rip	Outside decision areas	RIPARIAN	541493.988	167808.357
5096	Calcium	7440-70-2	RCBRA JA JONES	300	UPLAND	593874.58	120013.908
5097	Calcium	7440-70-2	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
5098	Calcium	7440-70-2	RCBRA Pit 18	IU2/IU6	UPLAND	580697.058	145311.464
5099	Calcium	7440-70-2	RCBRA Pit 23	IU2/IU6	UPLAND	572381.012	144874.157
5100	Calcium	7440-70-2	RCBRA Pit 24	BC	UPLAND	563395.814	145119.007
5101	Calcium	7440-70-2	RCBRA Pit 9	300	UPLAND	592807.103	120587.7
5102	Calcium	7440-70-2	RCBRA R Ref 11	Outside decision areas	RIPARIAN	559400.735	146458.486
5103	Calcium	7440-70-2	RCBRA R Ref 12	IU2/IU6	RIPARIAN	559201.908	145747.542
5104	Calcium	7440-70-2	RCBRA R Ref 13	Outside decision areas	RIPARIAN	558572.809	145345.115
5105	Calcium	7440-70-2	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
5106	Calcium	7440-70-2	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
5107	Calcium	7440-70-2	RCBRA R Ref 16	Outside decision areas	RIPARIAN	557650.029	144826.748
5108	Calcium	7440-70-2	RCBRA Rip 1	D/H	RIPARIAN	577251.869	153659.195

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
5070	4/3/2006	J11KR9	SOIL and BIOTA	MIS-phyt	10000	mg/kg	TERRESTRIAL INVERTEBRATE
5071	6/11/2007	J14Y56	SOIL and BIOTA	MIS	3240	mg/kg	TERRESTRIAL INVERTEBRATE
5072	6/13/2007	J14Y63	SOIL and BIOTA	MIS	4460	mg/kg	TERRESTRIAL INVERTEBRATE
5073	6/13/2007	J14Y57	SOIL and BIOTA	MIS	4250	mg/kg	TERRESTRIAL INVERTEBRATE
5074	6/13/2007	J14Y58	SOIL and BIOTA	MIS	4960	mg/kg	TERRESTRIAL INVERTEBRATE
5075	6/13/2007	J14Y59	SOIL and BIOTA	MIS	3930	mg/kg	TERRESTRIAL INVERTEBRATE
5076	4/25/2006	J11KT3	SOIL and BIOTA	MIS	4480	mg/kg	TERRESTRIAL INVERTEBRATE
5077	6/11/2007	J14Y60	SOIL and BIOTA	MIS	4260	mg/kg	TERRESTRIAL INVERTEBRATE
5078	6/13/2007	J14Y62	SOIL and BIOTA	MIS	4890	mg/kg	TERRESTRIAL INVERTEBRATE
5079	6/7/2007	J14Y61	SOIL and BIOTA	MIS	3580	mg/kg	TERRESTRIAL INVERTEBRATE
5080	4/3/2006	J11L35	SOIL and BIOTA	MIS	3310	mg/kg	TERRESTRIAL INVERTEBRATE
5081	4/3/2006	J11L35	SOIL and BIOTA	MIS-phyt	4730	mg/kg	TERRESTRIAL INVERTEBRATE
5082	4/3/2006	J11KR2	SOIL and BIOTA	MIS	3520	mg/kg	TERRESTRIAL INVERTEBRATE
5083	4/3/2006	J11KR2	SOIL and BIOTA	MIS-phyt	4010	mg/kg	TERRESTRIAL INVERTEBRATE
5084	4/25/2006	J11KR3	SOIL and BIOTA	MIS	5190	mg/kg	TERRESTRIAL INVERTEBRATE
5085	4/25/2006	J11KR3	SOIL and BIOTA	MIS-phyt	5960	mg/kg	TERRESTRIAL INVERTEBRATE
5086	4/25/2006	J11XX9	SOIL and BIOTA	MIS	3700	mg/kg	TERRESTRIAL INVERTEBRATE
5087	4/25/2006	J11XX9	SOIL and BIOTA	MIS-phyt	4210	mg/kg	TERRESTRIAL INVERTEBRATE
5088	4/17/2006	J11KR6	SOIL and BIOTA	MIS	3320	mg/kg	TERRESTRIAL INVERTEBRATE
5089	4/25/2006	J11KR4	SOIL and BIOTA	MIS	3510	mg/kg	TERRESTRIAL INVERTEBRATE
5090	4/25/2006	J11KR5	SOIL and BIOTA	MIS	5270	mg/kg	TERRESTRIAL INVERTEBRATE
5091	4/25/2006	J11KR5	SOIL and BIOTA	MIS-phyt	4470	mg/kg	TERRESTRIAL INVERTEBRATE
5092	4/26/2006	J11KT2	SOIL and BIOTA	MIS	4950	mg/kg	TERRESTRIAL INVERTEBRATE
5093	4/25/2006	J11XX8	SOIL and BIOTA	MIS	7540	mg/kg	TERRESTRIAL INVERTEBRATE
5094	6/13/2007	J14Y53	SOIL and BIOTA	MIS	3790	mg/kg	TERRESTRIAL INVERTEBRATE
5095	6/13/2007	J14Y54	SOIL and BIOTA	MIS	4430	mg/kg	TERRESTRIAL INVERTEBRATE
5096	4/25/2006	J11L34	SOIL and BIOTA	MIS	4480	mg/kg	TERRESTRIAL INVERTEBRATE
5097	4/17/2006	J11KP9	SOIL and BIOTA	MIS	8620	mg/kg	TERRESTRIAL INVERTEBRATE
5098	4/17/2006	J11KR0	SOIL and BIOTA	MIS	5180	mg/kg	TERRESTRIAL INVERTEBRATE
5099	4/3/2006	J11L33	SOIL and BIOTA	MIS	5020	mg/kg	TERRESTRIAL INVERTEBRATE
5100	4/3/2006	J11KT6	SOIL and BIOTA	MIS	4230	mg/kg	TERRESTRIAL INVERTEBRATE
5101	4/25/2006	J11KT5	SOIL and BIOTA	MIS	6380	mg/kg	TERRESTRIAL INVERTEBRATE
5102	3/20/2006	J11960	SOIL and BIOTA	MIS	4150	mg/kg	TERRESTRIAL INVERTEBRATE
5103	3/20/2006	J11961	SOIL and BIOTA	MIS	3980	mg/kg	TERRESTRIAL INVERTEBRATE
5104	3/20/2006	J11962	SOIL and BIOTA	MIS	5640	mg/kg	TERRESTRIAL INVERTEBRATE
5105	3/20/2006	J11963	SOIL and BIOTA	MIS	5225	mg/kg	TERRESTRIAL INVERTEBRATE
5106	6/13/2007	J14Y55	SOIL and BIOTA	MIS	5225	mg/kg	TERRESTRIAL INVERTEBRATE
5107	3/20/2006	J11964	SOIL and BIOTA	MIS	4600	mg/kg	TERRESTRIAL INVERTEBRATE
5108	3/16/2006	J11950	SOIL and BIOTA	MIS	4980	mg/kg	TERRESTRIAL INVERTEBRATE

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
5070	MULTIPLE WHOLE ORG	264	mg/kg	C		RCBRA
5071	MULTIPLE WHOLE ORG	229	mg/kg	C		RCBRA
5072	MULTIPLE WHOLE ORG	641	mg/kg	C		RCBRA
5073	MULTIPLE WHOLE ORG	3850	mg/kg	C		RCBRA
5074	MULTIPLE WHOLE ORG	542	mg/kg	C		RCBRA
5075	MULTIPLE WHOLE ORG	806	mg/kg	C		RCBRA
5076	MULTIPLE WHOLE ORG	356	mg/kg	C		RCBRA
5077	MULTIPLE WHOLE ORG	3540	mg/kg	C		RCBRA
5078	MULTIPLE WHOLE ORG	3460	mg/kg	C		RCBRA
5079	MULTIPLE WHOLE ORG	324	mg/kg	C		RCBRA
5080	MULTIPLE WHOLE ORG	392	mg/kg	C		RCBRA
5081	MULTIPLE WHOLE ORG	392	mg/kg	C		RCBRA
5082	MULTIPLE WHOLE ORG	511	mg/kg	C		RCBRA
5083	MULTIPLE WHOLE ORG	511	mg/kg	C		RCBRA
5084	MULTIPLE WHOLE ORG	335	mg/kg	C		RCBRA
5085	MULTIPLE WHOLE ORG	335	mg/kg	C		RCBRA
5086	MULTIPLE WHOLE ORG	318	mg/kg	C		RCBRA
5087	MULTIPLE WHOLE ORG	318	mg/kg	C		RCBRA
5088	MULTIPLE WHOLE ORG	306	mg/kg	C		RCBRA
5089	MULTIPLE WHOLE ORG	308	mg/kg	C		RCBRA
5090	MULTIPLE WHOLE ORG	485	mg/kg	C		RCBRA
5091	MULTIPLE WHOLE ORG	485	mg/kg	C		RCBRA
5092	MULTIPLE WHOLE ORG	1100	mg/kg	C		RCBRA
5093	MULTIPLE WHOLE ORG	424	mg/kg	C		RCBRA
5094	MULTIPLE WHOLE ORG	327	mg/kg	C		RCBRA
5095	MULTIPLE WHOLE ORG	278	mg/kg	C		RCBRA
5096	MULTIPLE WHOLE ORG	439	mg/kg	C		RCBRA
5097	MULTIPLE WHOLE ORG	376	mg/kg	C		RCBRA
5098	MULTIPLE WHOLE ORG	343	mg/kg	C		RCBRA
5099	MULTIPLE WHOLE ORG	354	mg/kg	C		RCBRA
5100	MULTIPLE WHOLE ORG	327	mg/kg	C		RCBRA
5101	MULTIPLE WHOLE ORG	539	mg/kg	C		RCBRA
5102	MULTIPLE WHOLE ORG	279	mg/kg	C		RCBRA
5103	MULTIPLE WHOLE ORG	332	mg/kg	C		RCBRA
5104	MULTIPLE WHOLE ORG	232	mg/kg	C		RCBRA
5105	MULTIPLE WHOLE ORG	280	mg/kg	C		RCBRA
5106	MULTIPLE WHOLE ORG	300	mg/kg	C		RCBRA
5107	MULTIPLE WHOLE ORG	284	mg/kg	C		RCBRA
5108	MULTIPLE WHOLE ORG	346	mg/kg	C		RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
5109	Calcium	7440-70-2	RCBRA Rip 10	D/H	RIPARIAN	573987.873	153082.19
5110	Calcium	7440-70-2	RCBRA Rip 2	D/H	RIPARIAN	573603.219	152471.6
5111	Calcium	7440-70-2	RCBRA Rip 3	D/H	RIPARIAN	572639.65	151677.812
5112	Calcium	7440-70-2	RCBRA Rip 4	N	RIPARIAN	570558.596	148981.547
5113	Calcium	7440-70-2	RCBRA Rip 5	K	RIPARIAN	569141.025	147521.561
5114	Calcium	7440-70-2	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
5115	Calcium	7440-70-2	RCBRA Rip 7	IU2/IU6	RIPARIAN	581326.914	147825.17
5116	Calcium	7440-70-2	RCBRA Rip 8	D/H	RIPARIAN	578698.584	152233.645
5117	Calcium	7440-70-2	RCBRA Rip 9	D/H	RIPARIAN	578153.643	152801.452
5118	Calcium	7440-70-2	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
5119	Calcium	7440-70-2	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
5120	Calcium	7440-70-2	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
5121	Calcium	7440-70-2	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
5122	Calcium	7440-70-2	RCBRA Yak Rdg 2	Outside decision areas	UPLAND	559031.557	135576.407
5123	Calculated Total Uranium	calc_tot_U	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764
5124	Calculated Total Uranium	calc_tot_U	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764
5125	Calculated Total Uranium	calc_tot_U	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764
5126	Calculated Total Uranium	calc_tot_U	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
5127	Calculated Total Uranium	calc_tot_U	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
5128	Calculated Total Uranium	calc_tot_U	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
5129	Calculated Total Uranium	calc_tot_U	B POND	Outside decision areas	UPLAND	576356.769	136881.272
5130	Calculated Total Uranium	calc_tot_U	B POND	Outside decision areas	UPLAND	576356.769	136881.272
5131	Calculated Total Uranium	calc_tot_U	B POND	Outside decision areas	UPLAND	576356.769	136881.272
5132	Calculated Total Uranium	calc_tot_U	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
5133	Calculated Total Uranium	calc_tot_U	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
5134	Calculated Total Uranium	calc_tot_U	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
5135	Calculated Total Uranium	calc_tot_U	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
5136	Calculated Total Uranium	calc_tot_U	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
5137	Calculated Total Uranium	calc_tot_U	U POND	Outside decision areas	UPLAND	566379.63	134457.045
5138	Calculated Total Uranium	calc_tot_U	U POND	Outside decision areas	UPLAND	566379.63	134457.045
5139	Calculated Total Uranium	calc_tot_U	U POND	Outside decision areas	UPLAND	566379.63	134457.045
5140	Calculated Total Uranium	calc_tot_U	RCBRA 4a Rip	IU2/IU6	RIPARIAN	589347.5	137480.985
5141	Cadmium	7440-43-9	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
5142	Cadmium	7440-43-9	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
5143	Cadmium	7440-43-9	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
5144	Cadmium	7440-43-9	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
5145	Cadmium	7440-43-9	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
5146	Cadmium	7440-43-9	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
5147	Cadmium	7440-43-9	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
5109	3/16/2006	J11959	SOIL and BIOTA	MIS	3590	mg/kg	TERRESTRIAL INVERTEBRATE
5110	3/16/2006	J11951	SOIL and BIOTA	MIS	4000	mg/kg	TERRESTRIAL INVERTEBRATE
5111	3/16/2006	J11952	SOIL and BIOTA	MIS	4180	mg/kg	TERRESTRIAL INVERTEBRATE
5112	3/16/2006	J11953	SOIL and BIOTA	MIS	4500	mg/kg	TERRESTRIAL INVERTEBRATE
5113	3/16/2006	J11954	SOIL and BIOTA	MIS	5100	mg/kg	TERRESTRIAL INVERTEBRATE
5114	4/25/2006	J11955	SOIL and BIOTA	MIS	4660	mg/kg	TERRESTRIAL INVERTEBRATE
5115	3/16/2006	J11956	SOIL and BIOTA	MIS	4290	mg/kg	TERRESTRIAL INVERTEBRATE
5116	3/16/2006	J11957	SOIL and BIOTA	MIS	4040	mg/kg	TERRESTRIAL INVERTEBRATE
5117	3/16/2006	J11958	SOIL and BIOTA	MIS	4190	mg/kg	TERRESTRIAL INVERTEBRATE
5118	4/3/2006	J11KV0	SOIL and BIOTA	MIS	4720	mg/kg	TERRESTRIAL INVERTEBRATE
5119	4/3/2006	J11KV0	SOIL and BIOTA	MIS-phyt	5110	mg/kg	TERRESTRIAL INVERTEBRATE
5120	4/3/2006	J11KT8	SOIL and BIOTA	MIS	3020	mg/kg	TERRESTRIAL INVERTEBRATE
5121	4/3/2006	J11KT8	SOIL and BIOTA	MIS-phyt	3460	mg/kg	TERRESTRIAL INVERTEBRATE
5122	4/3/2006	J11KT7	SOIL and BIOTA	MIS	6110	mg/kg	TERRESTRIAL INVERTEBRATE
5123	9/13/2005	B1CV56	SOIL and BIOTA	Discrete	0.451080745	mg/kg	TERRESTRIAL INVERTEBRATE
5124	9/13/2005	B1CV57	SOIL and BIOTA	Discrete	0.451080745	mg/kg	TERRESTRIAL INVERTEBRATE
5125	9/13/2005	B1CV55	SOIL and BIOTA	Discrete	0.451080745	mg/kg	TERRESTRIAL INVERTEBRATE
5126	6/15/2005	B1CTY3	SOIL and BIOTA	Discrete	0.483159075	mg/kg	TERRESTRIAL INVERTEBRATE
5127	6/15/2005	B1CTY4	SOIL and BIOTA	Discrete	0.483159075	mg/kg	TERRESTRIAL INVERTEBRATE
5128	9/13/2005	B1CV54	SOIL and BIOTA	Discrete	0.539442144	mg/kg	TERRESTRIAL INVERTEBRATE
5129	6/15/2005	B1CV47	SOIL and BIOTA	Discrete	0.540827812	mg/kg	TERRESTRIAL INVERTEBRATE
5130	6/15/2005	B1CV46	SOIL and BIOTA	Discrete	0.540827812	mg/kg	TERRESTRIAL INVERTEBRATE
5131	6/15/2005	B1CV48	SOIL and BIOTA	Discrete	0.540827812	mg/kg	TERRESTRIAL INVERTEBRATE
5132	6/15/2005	B1CTY6	SOIL and BIOTA	Discrete	0.567823211	mg/kg	TERRESTRIAL INVERTEBRATE
5133	6/15/2005	B1CTY5	SOIL and BIOTA	Discrete	0.567823211	mg/kg	TERRESTRIAL INVERTEBRATE
5134	6/15/2005	B1CTY7	SOIL and BIOTA	Discrete	0.567823211	mg/kg	TERRESTRIAL INVERTEBRATE
5135	6/15/2005	B1CV44	SOIL and BIOTA	Discrete	0.452932597	mg/kg	TERRESTRIAL INVERTEBRATE
5136	6/15/2005	B1CV45	SOIL and BIOTA	Discrete	0.452932597	mg/kg	TERRESTRIAL INVERTEBRATE
5137	9/13/2005	B1CV50	SOIL and BIOTA	Discrete	0.424095008	mg/kg	TERRESTRIAL INVERTEBRATE
5138	9/13/2005	B1CV51	SOIL and BIOTA	Discrete	0.424095008	mg/kg	TERRESTRIAL INVERTEBRATE
5139	9/13/2005	B1CV49	SOIL and BIOTA	Discrete	0.424095008	mg/kg	TERRESTRIAL INVERTEBRATE
5140	6/13/2007	J14Y62	SOIL and BIOTA	MIS	4.070913504	mg/kg	TERRESTRIAL INVERTEBRATE
5141	6/15/2005	B1CTY3	SOIL and BIOTA	Discrete	0.18	mg/kg	TERRESTRIAL INVERTEBRATE
5142	6/15/2005	B1CTY2	SOIL and BIOTA	Discrete	0.18	mg/kg	TERRESTRIAL INVERTEBRATE
5143	6/15/2005	B1CTY4	SOIL and BIOTA	Discrete	0.18	mg/kg	TERRESTRIAL INVERTEBRATE
5144	9/13/2005	B1CV54	SOIL and BIOTA	Discrete	0.199	mg/kg	TERRESTRIAL INVERTEBRATE
5145	9/13/2005	B1CV53	SOIL and BIOTA	Discrete	0.199	mg/kg	TERRESTRIAL INVERTEBRATE
5146	9/13/2005	B1CV52	SOIL and BIOTA	Discrete	0.199	mg/kg	TERRESTRIAL INVERTEBRATE
5147	6/15/2005	B1CTY6	SOIL and BIOTA	Discrete	0.206	mg/kg	TERRESTRIAL INVERTEBRATE

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
5109	MULTIPLE WHOLE ORG	346	mg/kg	C		RCBRA
5110	MULTIPLE WHOLE ORG	426	mg/kg	C		RCBRA
5111	MULTIPLE WHOLE ORG	154	mg/kg	C		RCBRA
5112	MULTIPLE WHOLE ORG	248	mg/kg	C		RCBRA
5113	MULTIPLE WHOLE ORG	211	mg/kg	C		RCBRA
5114	MULTIPLE WHOLE ORG	385	mg/kg	C		RCBRA
5115	MULTIPLE WHOLE ORG	8410	mg/kg	C		RCBRA
5116	MULTIPLE WHOLE ORG	253	mg/kg	C		RCBRA
5117	MULTIPLE WHOLE ORG	360	mg/kg	C		RCBRA
5118	MULTIPLE WHOLE ORG	223	mg/kg	C		RCBRA
5119	MULTIPLE WHOLE ORG	223	mg/kg	C		RCBRA
5120	MULTIPLE WHOLE ORG	222	mg/kg	C		RCBRA
5121	MULTIPLE WHOLE ORG	222	mg/kg	C		RCBRA
5122	MULTIPLE WHOLE ORG	714	mg/kg	C		RCBRA
5123	CARCASS	0.048151208	mg/kg			CP
5124	CARCASS	0.051591327	mg/kg			CP
5125	CARCASS	0.071698275	mg/kg			CP
5126	CARCASS	0.044452979	mg/kg			CP
5127	CARCASS	0.0591294	mg/kg			CP
5128	CARCASS	0.054104233	mg/kg			CP
5129	CARCASS	0.063032321	mg/kg			CP
5130	CARCASS	0.066208213	mg/kg			CP
5131	CARCASS	0.128977594	mg/kg			CP
5132	CARCASS	0.069447343	mg/kg			CP
5133	CARCASS	0.055425857	mg/kg			CP
5134	CARCASS	0.054565746	mg/kg			CP
5135	CARCASS	0.056617782	mg/kg			CP
5136	CARCASS	0.116804739	mg/kg			CP
5137	CARCASS	0.098483023	mg/kg			CP
5138	CARCASS	0.038958086	mg/kg			CP
5139	CARCASS	0.072028479	mg/kg			CP
5140	MULTIPLE WHOLE ORG	0.696436945	mg/kg			RCBRA
5141	CARCASS	0.067	mg/kg			CP
5142	CARCASS	0.047	mg/kg			CP
5143	CARCASS	0.036	mg/kg			CP
5144	CARCASS	0.056	mg/kg			CP
5145	CARCASS	0.053	mg/kg			CP
5146	CARCASS	0.044	mg/kg			CP
5147	CARCASS	0.044	mg/kg			CP

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
5148	Cadmium	7440-43-9	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
5149	Cadmium	7440-43-9	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
5150	Cadmium	7440-43-9	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
5151	Cadmium	7440-43-9	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
5152	Cadmium	7440-43-9	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
5153	Cadmium	7440-43-9	RCBRA 100-D-48	D/H	UPLAND	573841.527	151914.538
5154	Cadmium	7440-43-9	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
5155	Cadmium	7440-43-9	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
5156	Cadmium	7440-43-9	RCBRA 2a Rip	BC	RIPARIAN	564618.501	145284.526
5157	Cadmium	7440-43-9	RCBRA 2c Rip	K	RIPARIAN	567598.2	146210.159
5158	Cadmium	7440-43-9	RCBRA 2f Rip	D/H	RIPARIAN	576222.844	154297.511
5159	Cadmium	7440-43-9	RCBRA 2j Rip	IU2/IU6	RIPARIAN	579360.971	150092.048
5160	Cadmium	7440-43-9	RCBRA 2l Rip	IU2/IU6	RIPARIAN	582341.212	146120.069
5161	Cadmium	7440-43-9	RCBRA 3b Rip	IU2/IU6	RIPARIAN	584961.205	141035.835
5162	Cadmium	7440-43-9	RCBRA 4a Rip	IU2/IU6	RIPARIAN	589347.5	137480.985
5163	Cadmium	7440-43-9	RCBRA 5c Rip	300	RIPARIAN	594509.985	124869.182
5164	Cadmium	7440-43-9	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
5165	Cadmium	7440-43-9	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
5166	Cadmium	7440-43-9	RCBRA Bev Ref 1 Rip	Outside decision areas	RIPARIAN	542428.846	167701.261
5167	Cadmium	7440-43-9	RCBRA Pit 23	IU2/IU6	UPLAND	572381.012	144874.157
5168	Cadmium	7440-43-9	RCBRA R Ref 12	IU2/IU6	RIPARIAN	559201.908	145747.542
5169	Cadmium	7440-43-9	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
5170	Cadmium	7440-43-9	RCBRA Rip 1	D/H	RIPARIAN	577251.869	153659.195
5171	Cadmium	7440-43-9	RCBRA Rip 10	D/H	RIPARIAN	573987.873	153082.19
5172	Cadmium	7440-43-9	RCBRA Rip 2	D/H	RIPARIAN	573603.219	152471.6
5173	Cadmium	7440-43-9	RCBRA Rip 3	D/H	RIPARIAN	572639.65	151677.812
5174	Cadmium	7440-43-9	RCBRA Rip 4	N	RIPARIAN	570558.596	148981.547
5175	Cadmium	7440-43-9	RCBRA Rip 5	K	RIPARIAN	569141.025	147521.561
5176	Cadmium	7440-43-9	RCBRA Rip 7	IU2/IU6	RIPARIAN	581326.914	147825.17
5177	Cadmium	7440-43-9	RCBRA Rip 8	D/H	RIPARIAN	578698.584	152233.645
5178	Cadmium	7440-43-9	RCBRA Rip 9	D/H	RIPARIAN	578153.643	152801.452
5179	Cobalt	7440-48-4	RCBRA 116-DR-1&2	D/H	UPLAND	574007.817	152246.748
5180	Cobalt	7440-48-4	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
5181	Cobalt	7440-48-4	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
5182	Cobalt	7440-48-4	RCBRA 2j Rip	IU2/IU6	RIPARIAN	579360.971	150092.048
5183	Cobalt	7440-48-4	RCBRA 300-49	300	UPLAND	594318.994	116830.934
5184	Cobalt	7440-48-4	RCBRA 4a Rip	IU2/IU6	RIPARIAN	589347.5	137480.985
5185	Cobalt	7440-48-4	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
5186	Cobalt	7440-48-4	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
5148	6/15/2005	B1CTY7	SOIL and BIOTA	Discrete	0.206	mg/kg	TERRESTRIAL INVERTEBRATE
5149	6/15/2005	B1CTY5	SOIL and BIOTA	Discrete	0.206	mg/kg	TERRESTRIAL INVERTEBRATE
5150	6/15/2005	B1CV44	SOIL and BIOTA	Discrete	0.197	mg/kg	TERRESTRIAL INVERTEBRATE
5151	6/15/2005	B1CTY8	SOIL and BIOTA	Discrete	0.197	mg/kg	TERRESTRIAL INVERTEBRATE
5152	6/15/2005	B1CV45	SOIL and BIOTA	Discrete	0.197	mg/kg	TERRESTRIAL INVERTEBRATE
5153	4/3/2006	J11KV5	SOIL and BIOTA	MIS	0.11	mg/kg	TERRESTRIAL INVERTEBRATE
5154	4/17/2006	J11KT1	SOIL and BIOTA	MIS	0.18	mg/kg	TERRESTRIAL INVERTEBRATE
5155	4/17/2006	J11KT1	SOIL and BIOTA	MIS-phyt	0.12	mg/kg	TERRESTRIAL INVERTEBRATE
5156	6/11/2007	J14Y56	SOIL and BIOTA	MIS	0.54	mg/kg	TERRESTRIAL INVERTEBRATE
5157	6/13/2007	J14Y63	SOIL and BIOTA	MIS	2.3	mg/kg	TERRESTRIAL INVERTEBRATE
5158	6/13/2007	J14Y57	SOIL and BIOTA	MIS	0.83	mg/kg	TERRESTRIAL INVERTEBRATE
5159	6/13/2007	J14Y58	SOIL and BIOTA	MIS	2.4	mg/kg	TERRESTRIAL INVERTEBRATE
5160	6/13/2007	J14Y59	SOIL and BIOTA	MIS	0.66	mg/kg	TERRESTRIAL INVERTEBRATE
5161	6/11/2007	J14Y60	SOIL and BIOTA	MIS	1.7	mg/kg	TERRESTRIAL INVERTEBRATE
5162	6/13/2007	J14Y62	SOIL and BIOTA	MIS	2	mg/kg	TERRESTRIAL INVERTEBRATE
5163	6/7/2007	J14Y61	SOIL and BIOTA	MIS	0.72	mg/kg	TERRESTRIAL INVERTEBRATE
5164	4/25/2006	J11KR3	SOIL and BIOTA	MIS	0.7	mg/kg	TERRESTRIAL INVERTEBRATE
5165	4/25/2006	J11KR3	SOIL and BIOTA	MIS-phyt	0.53	mg/kg	TERRESTRIAL INVERTEBRATE
5166	6/13/2007	J14Y53	SOIL and BIOTA	MIS	0.5	mg/kg	TERRESTRIAL INVERTEBRATE
5167	4/3/2006	J11L33	SOIL and BIOTA	MIS	0.055	mg/kg	TERRESTRIAL INVERTEBRATE
5168	3/20/2006	J11961	SOIL and BIOTA	MIS	0.88	mg/kg	TERRESTRIAL INVERTEBRATE
5169	6/13/2007	J14Y55	SOIL and BIOTA	MIS	1.7	mg/kg	TERRESTRIAL INVERTEBRATE
5170	3/16/2006	J11950	SOIL and BIOTA	MIS	2.2	mg/kg	TERRESTRIAL INVERTEBRATE
5171	3/16/2006	J11959	SOIL and BIOTA	MIS	0.777	mg/kg	TERRESTRIAL INVERTEBRATE
5172	3/16/2006	J11951	SOIL and BIOTA	MIS	0.39	mg/kg	TERRESTRIAL INVERTEBRATE
5173	3/16/2006	J11952	SOIL and BIOTA	MIS	0.655	mg/kg	TERRESTRIAL INVERTEBRATE
5174	3/16/2006	J11953	SOIL and BIOTA	MIS	1.2	mg/kg	TERRESTRIAL INVERTEBRATE
5175	3/16/2006	J11954	SOIL and BIOTA	MIS	1.9	mg/kg	TERRESTRIAL INVERTEBRATE
5176	3/16/2006	J11956	SOIL and BIOTA	MIS	0.67	mg/kg	TERRESTRIAL INVERTEBRATE
5177	3/16/2006	J11957	SOIL and BIOTA	MIS	1.1	mg/kg	TERRESTRIAL INVERTEBRATE
5178	3/16/2006	J11958	SOIL and BIOTA	MIS	0.79	mg/kg	TERRESTRIAL INVERTEBRATE
5179	4/3/2006	J11L31	SOIL and BIOTA	MIS	7.2	mg/kg	TERRESTRIAL INVERTEBRATE
5180	4/17/2006	J11KT1	SOIL and BIOTA	MIS	5.8	mg/kg	TERRESTRIAL INVERTEBRATE
5181	4/17/2006	J11KT1	SOIL and BIOTA	MIS-phyt	5.8	mg/kg	TERRESTRIAL INVERTEBRATE
5182	6/13/2007	J14Y58	SOIL and BIOTA	MIS	7.3	mg/kg	TERRESTRIAL INVERTEBRATE
5183	4/25/2006	J11KT3	SOIL and BIOTA	MIS	6.3	mg/kg	TERRESTRIAL INVERTEBRATE
5184	6/13/2007	J14Y62	SOIL and BIOTA	MIS	7.5	mg/kg	TERRESTRIAL INVERTEBRATE
5185	4/25/2006	J11KR3	SOIL and BIOTA	MIS	6.5	mg/kg	TERRESTRIAL INVERTEBRATE
5186	4/25/2006	J11KR3	SOIL and BIOTA	MIS-phyt	6.9	mg/kg	TERRESTRIAL INVERTEBRATE

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
5148	CARCASS	0.049	mg/kg			CP
5149	CARCASS	0.049	mg/kg			CP
5150	CARCASS	0.048	mg/kg			CP
5151	CARCASS	0.06	mg/kg			CP
5152	CARCASS	0.055	mg/kg			CP
5153	MULTIPLE WHOLE ORG	0.07	mg/kg			RCBRA
5154	MULTIPLE WHOLE ORG	0.07	mg/kg			RCBRA
5155	MULTIPLE WHOLE ORG	0.07	mg/kg			RCBRA
5156	MULTIPLE WHOLE ORG	0.11	mg/kg			RCBRA
5157	MULTIPLE WHOLE ORG	0.12	mg/kg			RCBRA
5158	MULTIPLE WHOLE ORG	0.35	mg/kg			RCBRA
5159	MULTIPLE WHOLE ORG	0.13	mg/kg			RCBRA
5160	MULTIPLE WHOLE ORG	0.23	mg/kg			RCBRA
5161	MULTIPLE WHOLE ORG	0.16	mg/kg			RCBRA
5162	MULTIPLE WHOLE ORG	0.37	mg/kg			RCBRA
5163	MULTIPLE WHOLE ORG	0.24	mg/kg			RCBRA
5164	MULTIPLE WHOLE ORG	0.57	mg/kg			RCBRA
5165	MULTIPLE WHOLE ORG	0.57	mg/kg			RCBRA
5166	MULTIPLE WHOLE ORG	0.07	mg/kg			RCBRA
5167	MULTIPLE WHOLE ORG	0.07	mg/kg			RCBRA
5168	MULTIPLE WHOLE ORG	0.1	mg/kg			RCBRA
5169	MULTIPLE WHOLE ORG	0.12	mg/kg			RCBRA
5170	MULTIPLE WHOLE ORG	0.95	mg/kg			RCBRA
5171	MULTIPLE WHOLE ORG	0.96	mg/kg			RCBRA
5172	MULTIPLE WHOLE ORG	0.5	mg/kg			RCBRA
5173	MULTIPLE WHOLE ORG	0.09	mg/kg			RCBRA
5174	MULTIPLE WHOLE ORG	0.15	mg/kg			RCBRA
5175	MULTIPLE WHOLE ORG	0.46	mg/kg			RCBRA
5176	MULTIPLE WHOLE ORG	0.3	mg/kg			RCBRA
5177	MULTIPLE WHOLE ORG	0.13	mg/kg			RCBRA
5178	MULTIPLE WHOLE ORG	1.1	mg/kg			RCBRA
5179	MULTIPLE WHOLE ORG	0.18	mg/kg			RCBRA
5180	MULTIPLE WHOLE ORG	0.16	mg/kg			RCBRA
5181	MULTIPLE WHOLE ORG	0.16	mg/kg			RCBRA
5182	MULTIPLE WHOLE ORG	0.09	mg/kg			RCBRA
5183	MULTIPLE WHOLE ORG	0.14	mg/kg			RCBRA
5184	MULTIPLE WHOLE ORG	0.08	mg/kg			RCBRA
5185	MULTIPLE WHOLE ORG	0.16	mg/kg			RCBRA
5186	MULTIPLE WHOLE ORG	0.16	mg/kg			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
5187	Cobalt	7440-48-4	RCBRA 600-181	IU2/IU6	UPLAND	578303.83	147316.698
5188	Cobalt	7440-48-4	RCBRA 600-204	IU2/IU6	UPLAND	580128.485	144762.219
5189	Cobalt	7440-48-4	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
5190	Cobalt	7440-48-4	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
5191	Cobalt	7440-48-4	RCBRA 628-1	IU2/IU6	UPLAND	577797.524	148745.681
5192	Cobalt	7440-48-4	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
5193	Cobalt	7440-48-4	RCBRA Pit 18	IU2/IU6	UPLAND	580697.058	145311.464
5194	Cobalt	7440-48-4	RCBRA Yak Rdg 2	Outside decision areas	UPLAND	559031.557	135576.407
5195	Chromium	7440-47-3	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
5196	Chromium	7440-47-3	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
5197	Chromium	7440-47-3	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
5198	Chromium	7440-47-3	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
5199	Chromium	7440-47-3	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
5200	Chromium	7440-47-3	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
5201	Chromium	7440-47-3	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
5202	Chromium	7440-47-3	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
5203	Chromium	7440-47-3	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
5204	Chromium	7440-47-3	RCBRA 100-D-48	D/H	UPLAND	573841.527	151914.538
5205	Chromium	7440-47-3	RCBRA 100-D-49	D/H	UPLAND	573938.06	151944.123
5206	Chromium	7440-47-3	RCBRA 116-DR-1&2	D/H	UPLAND	574007.817	152246.748
5207	Chromium	7440-47-3	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
5208	Chromium	7440-47-3	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
5209	Chromium	7440-47-3	RCBRA 1607-D2:1	D/H	UPLAND	573823.924	152260.319
5210	Chromium	7440-47-3	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
5211	Chromium	7440-47-3	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
5212	Chromium	7440-47-3	RCBRA 2a Rip	BC	RIPARIAN	564618.501	145284.526
5213	Chromium	7440-47-3	RCBRA 2c Rip	K	RIPARIAN	567598.2	146210.159
5214	Chromium	7440-47-3	RCBRA 2f Rip	D/H	RIPARIAN	576222.844	154297.511
5215	Chromium	7440-47-3	RCBRA 2j Rip	IU2/IU6	RIPARIAN	579360.971	150092.048
5216	Chromium	7440-47-3	RCBRA 2l Rip	IU2/IU6	RIPARIAN	582341.212	146120.069
5217	Chromium	7440-47-3	RCBRA 300-49	300	UPLAND	594318.994	116830.934
5218	Chromium	7440-47-3	RCBRA 4a Rip	IU2/IU6	RIPARIAN	589347.5	137480.985
5219	Chromium	7440-47-3	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
5220	Chromium	7440-47-3	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
5221	Chromium	7440-47-3	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
5222	Chromium	7440-47-3	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
5223	Chromium	7440-47-3	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
5224	Chromium	7440-47-3	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
5225	Chromium	7440-47-3	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
5187	4/17/2006	J11KR6	SOIL and BIOTA	MIS	7.2	mg/kg	TERRESTRIAL INVERTEBRATE
5188	4/25/2006	J11KR4	SOIL and BIOTA	MIS	8.9	mg/kg	TERRESTRIAL INVERTEBRATE
5189	4/25/2006	J11KR5	SOIL and BIOTA	MIS	7.1	mg/kg	TERRESTRIAL INVERTEBRATE
5190	4/25/2006	J11KR5	SOIL and BIOTA	MIS-phyt	7	mg/kg	TERRESTRIAL INVERTEBRATE
5191	4/25/2006	J11XX8	SOIL and BIOTA	MIS	7.3	mg/kg	TERRESTRIAL INVERTEBRATE
5192	4/17/2006	J11KP9	SOIL and BIOTA	MIS	9.3	mg/kg	TERRESTRIAL INVERTEBRATE
5193	4/17/2006	J11KR0	SOIL and BIOTA	MIS	6.1	mg/kg	TERRESTRIAL INVERTEBRATE
5194	4/3/2006	J11KT7	SOIL and BIOTA	MIS	12.1	mg/kg	TERRESTRIAL INVERTEBRATE
5195	6/15/2005	B1CTY3	SOIL and BIOTA	Discrete	9.87	mg/kg	TERRESTRIAL INVERTEBRATE
5196	6/15/2005	B1CTY2	SOIL and BIOTA	Discrete	9.87	mg/kg	TERRESTRIAL INVERTEBRATE
5197	6/15/2005	B1CTY4	SOIL and BIOTA	Discrete	9.87	mg/kg	TERRESTRIAL INVERTEBRATE
5198	6/15/2005	B1CTY6	SOIL and BIOTA	Discrete	16.9	mg/kg	TERRESTRIAL INVERTEBRATE
5199	6/15/2005	B1CTY7	SOIL and BIOTA	Discrete	16.9	mg/kg	TERRESTRIAL INVERTEBRATE
5200	6/15/2005	B1CTY5	SOIL and BIOTA	Discrete	16.9	mg/kg	TERRESTRIAL INVERTEBRATE
5201	6/15/2005	B1CV44	SOIL and BIOTA	Discrete	8.63	mg/kg	TERRESTRIAL INVERTEBRATE
5202	6/15/2005	B1CTY8	SOIL and BIOTA	Discrete	8.63	mg/kg	TERRESTRIAL INVERTEBRATE
5203	6/15/2005	B1CV45	SOIL and BIOTA	Discrete	8.63	mg/kg	TERRESTRIAL INVERTEBRATE
5204	4/3/2006	J11KV5	SOIL and BIOTA	MIS	8.9	mg/kg	TERRESTRIAL INVERTEBRATE
5205	4/3/2006	J11KV6	SOIL and BIOTA	MIS	8.6	mg/kg	TERRESTRIAL INVERTEBRATE
5206	4/3/2006	J11L31	SOIL and BIOTA	MIS	8	mg/kg	TERRESTRIAL INVERTEBRATE
5207	4/17/2006	J11KT1	SOIL and BIOTA	MIS	14.9	mg/kg	TERRESTRIAL INVERTEBRATE
5208	4/17/2006	J11KT1	SOIL and BIOTA	MIS-phyt	13.2	mg/kg	TERRESTRIAL INVERTEBRATE
5209	4/3/2006	J11KT4	SOIL and BIOTA	MIS	10.1	mg/kg	TERRESTRIAL INVERTEBRATE
5210	4/3/2006	J11KR9	SOIL and BIOTA	MIS	11.2	mg/kg	TERRESTRIAL INVERTEBRATE
5211	4/3/2006	J11KR9	SOIL and BIOTA	MIS-phyt	14.8	mg/kg	TERRESTRIAL INVERTEBRATE
5212	6/11/2007	J14Y56	SOIL and BIOTA	MIS	38.8	mg/kg	TERRESTRIAL INVERTEBRATE
5213	6/13/2007	J14Y63	SOIL and BIOTA	MIS	23.1	mg/kg	TERRESTRIAL INVERTEBRATE
5214	6/13/2007	J14Y57	SOIL and BIOTA	MIS	26.8	mg/kg	TERRESTRIAL INVERTEBRATE
5215	6/13/2007	J14Y58	SOIL and BIOTA	MIS	33.1	mg/kg	TERRESTRIAL INVERTEBRATE
5216	6/13/2007	J14Y59	SOIL and BIOTA	MIS	16.9	mg/kg	TERRESTRIAL INVERTEBRATE
5217	4/25/2006	J11KT3	SOIL and BIOTA	MIS	8.8	mg/kg	TERRESTRIAL INVERTEBRATE
5218	6/13/2007	J14Y62	SOIL and BIOTA	MIS	31.4	mg/kg	TERRESTRIAL INVERTEBRATE
5219	4/3/2006	J11L35	SOIL and BIOTA	MIS	9.4	mg/kg	TERRESTRIAL INVERTEBRATE
5220	4/3/2006	J11L35	SOIL and BIOTA	MIS-phyt	14.4	mg/kg	TERRESTRIAL INVERTEBRATE
5221	4/3/2006	J11KR2	SOIL and BIOTA	MIS	13	mg/kg	TERRESTRIAL INVERTEBRATE
5222	4/3/2006	J11KR2	SOIL and BIOTA	MIS-phyt	15	mg/kg	TERRESTRIAL INVERTEBRATE
5223	4/25/2006	J11KR3	SOIL and BIOTA	MIS	17.4	mg/kg	TERRESTRIAL INVERTEBRATE
5224	4/25/2006	J11KR3	SOIL and BIOTA	MIS-phyt	18.2	mg/kg	TERRESTRIAL INVERTEBRATE
5225	4/25/2006	J11XX9	SOIL and BIOTA	MIS	10.6	mg/kg	TERRESTRIAL INVERTEBRATE

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
5187	MULTIPLE WHOLE ORG	0.18	mg/kg			RCBRA
5188	MULTIPLE WHOLE ORG	0.17	mg/kg			RCBRA
5189	MULTIPLE WHOLE ORG	0.14	mg/kg			RCBRA
5190	MULTIPLE WHOLE ORG	0.14	mg/kg			RCBRA
5191	MULTIPLE WHOLE ORG	0.17	mg/kg			RCBRA
5192	MULTIPLE WHOLE ORG	0.24	mg/kg			RCBRA
5193	MULTIPLE WHOLE ORG	0.14	mg/kg			RCBRA
5194	MULTIPLE WHOLE ORG	0.16	mg/kg			RCBRA
5195	CARCASS	1.51	mg/kg			CP
5196	CARCASS	1.41	mg/kg			CP
5197	CARCASS	1.24	mg/kg			CP
5198	CARCASS	1.13	mg/kg			CP
5199	CARCASS	1.6	mg/kg			CP
5200	CARCASS	1.31	mg/kg			CP
5201	CARCASS	1.5	mg/kg			CP
5202	CARCASS	1.78	mg/kg			CP
5203	CARCASS	2.05	mg/kg			CP
5204	MULTIPLE WHOLE ORG	0.42	mg/kg			RCBRA
5205	MULTIPLE WHOLE ORG	0.31	mg/kg			RCBRA
5206	MULTIPLE WHOLE ORG	0.22	mg/kg			RCBRA
5207	MULTIPLE WHOLE ORG	0.17	mg/kg			RCBRA
5208	MULTIPLE WHOLE ORG	0.17	mg/kg			RCBRA
5209	MULTIPLE WHOLE ORG	0.22	mg/kg			RCBRA
5210	MULTIPLE WHOLE ORG	0.18	mg/kg			RCBRA
5211	MULTIPLE WHOLE ORG	0.18	mg/kg			RCBRA
5212	MULTIPLE WHOLE ORG	0.54	mg/kg	C		RCBRA
5213	MULTIPLE WHOLE ORG	0.55	mg/kg	C		RCBRA
5214	MULTIPLE WHOLE ORG	0.67	mg/kg	C		RCBRA
5215	MULTIPLE WHOLE ORG	0.78	mg/kg	C		RCBRA
5216	MULTIPLE WHOLE ORG	0.66	mg/kg	C		RCBRA
5217	MULTIPLE WHOLE ORG	0.32	mg/kg			RCBRA
5218	MULTIPLE WHOLE ORG	0.86	mg/kg	C		RCBRA
5219	MULTIPLE WHOLE ORG	0.17	mg/kg			RCBRA
5220	MULTIPLE WHOLE ORG	0.17	mg/kg			RCBRA
5221	MULTIPLE WHOLE ORG	0.57	mg/kg			RCBRA
5222	MULTIPLE WHOLE ORG	0.57	mg/kg			RCBRA
5223	MULTIPLE WHOLE ORG	0.28	mg/kg			RCBRA
5224	MULTIPLE WHOLE ORG	0.28	mg/kg			RCBRA
5225	MULTIPLE WHOLE ORG	0.64	mg/kg			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
5226	Chromium	7440-47-3	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
5227	Chromium	7440-47-3	RCBRA 600-181	IU2/IU6	UPLAND	578303.83	147316.698
5228	Chromium	7440-47-3	RCBRA 600-204	IU2/IU6	UPLAND	580128.485	144762.219
5229	Chromium	7440-47-3	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
5230	Chromium	7440-47-3	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
5231	Chromium	7440-47-3	RCBRA 628-1	IU2/IU6	UPLAND	577797.524	148745.681
5232	Chromium	7440-47-3	RCBRA JA JONES	300	UPLAND	593874.58	120013.908
5233	Chromium	7440-47-3	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
5234	Chromium	7440-47-3	RCBRA Pit 18	IU2/IU6	UPLAND	580697.058	145311.464
5235	Chromium	7440-47-3	RCBRA Pit 23	IU2/IU6	UPLAND	572381.012	144874.157
5236	Chromium	7440-47-3	RCBRA Pit 24	BC	UPLAND	563395.814	145119.007
5237	Chromium	7440-47-3	RCBRA R Ref 11	Outside decision areas	RIPARIAN	559400.735	146458.486
5238	Chromium	7440-47-3	RCBRA R Ref 12	IU2/IU6	RIPARIAN	559201.908	145747.542
5239	Chromium	7440-47-3	RCBRA R Ref 13	Outside decision areas	RIPARIAN	558572.809	145345.115
5240	Chromium	7440-47-3	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
5241	Chromium	7440-47-3	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
5242	Chromium	7440-47-3	RCBRA R Ref 16	Outside decision areas	RIPARIAN	557650.029	144826.748
5243	Chromium	7440-47-3	RCBRA Rip 1	D/H	RIPARIAN	577251.869	153659.195
5244	Chromium	7440-47-3	RCBRA Rip 10	D/H	RIPARIAN	573987.873	153082.19
5245	Chromium	7440-47-3	RCBRA Rip 2	D/H	RIPARIAN	573603.219	152471.6
5246	Chromium	7440-47-3	RCBRA Rip 3	D/H	RIPARIAN	572639.65	151677.812
5247	Chromium	7440-47-3	RCBRA Rip 4	N	RIPARIAN	570558.596	148981.547
5248	Chromium	7440-47-3	RCBRA Rip 5	K	RIPARIAN	569141.025	147521.561
5249	Chromium	7440-47-3	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
5250	Chromium	7440-47-3	RCBRA Rip 7	IU2/IU6	RIPARIAN	581326.914	147825.17
5251	Chromium	7440-47-3	RCBRA Rip 8	D/H	RIPARIAN	578698.584	152233.645
5252	Chromium	7440-47-3	RCBRA Rip 9	D/H	RIPARIAN	578153.643	152801.452
5253	Chromium	7440-47-3	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
5254	Chromium	7440-47-3	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
5255	Chromium	7440-47-3	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
5256	Chromium	7440-47-3	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
5257	Copper	7440-50-8	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764
5258	Copper	7440-50-8	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764
5259	Copper	7440-50-8	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764
5260	Copper	7440-50-8	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
5261	Copper	7440-50-8	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
5262	Copper	7440-50-8	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
5263	Copper	7440-50-8	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
5264	Copper	7440-50-8	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
5226	4/25/2006	J11XX9	SOIL and BIOTA	MIS-phyt	14.2	mg/kg	TERRESTRIAL INVERTEBRATE
5227	4/17/2006	J11KR6	SOIL and BIOTA	MIS	8.2	mg/kg	TERRESTRIAL INVERTEBRATE
5228	4/25/2006	J11KR4	SOIL and BIOTA	MIS	9	mg/kg	TERRESTRIAL INVERTEBRATE
5229	4/25/2006	J11KR5	SOIL and BIOTA	MIS	9.8	mg/kg	TERRESTRIAL INVERTEBRATE
5230	4/25/2006	J11KR5	SOIL and BIOTA	MIS-phyt	11.2	mg/kg	TERRESTRIAL INVERTEBRATE
5231	4/25/2006	J11XX8	SOIL and BIOTA	MIS	14.6	mg/kg	TERRESTRIAL INVERTEBRATE
5232	4/25/2006	J11L34	SOIL and BIOTA	MIS	7.8	mg/kg	TERRESTRIAL INVERTEBRATE
5233	4/17/2006	J11KP9	SOIL and BIOTA	MIS	7.3	mg/kg	TERRESTRIAL INVERTEBRATE
5234	4/17/2006	J11KR0	SOIL and BIOTA	MIS	9.1	mg/kg	TERRESTRIAL INVERTEBRATE
5235	4/3/2006	J11L33	SOIL and BIOTA	MIS	5.3	mg/kg	TERRESTRIAL INVERTEBRATE
5236	4/3/2006	J11KT6	SOIL and BIOTA	MIS	10.1	mg/kg	TERRESTRIAL INVERTEBRATE
5237	3/20/2006	J11960	SOIL and BIOTA	MIS	21	mg/kg	TERRESTRIAL INVERTEBRATE
5238	3/20/2006	J11961	SOIL and BIOTA	MIS	15.4	mg/kg	TERRESTRIAL INVERTEBRATE
5239	3/20/2006	J11962	SOIL and BIOTA	MIS	23.1	mg/kg	TERRESTRIAL INVERTEBRATE
5240	3/20/2006	J11963	SOIL and BIOTA	MIS	23.55	mg/kg	TERRESTRIAL INVERTEBRATE
5241	6/13/2007	J14Y55	SOIL and BIOTA	MIS	23.55	mg/kg	TERRESTRIAL INVERTEBRATE
5242	3/20/2006	J11964	SOIL and BIOTA	MIS	20.1	mg/kg	TERRESTRIAL INVERTEBRATE
5243	3/16/2006	J11950	SOIL and BIOTA	MIS	23.8	mg/kg	TERRESTRIAL INVERTEBRATE
5244	3/16/2006	J11959	SOIL and BIOTA	MIS	29.1	mg/kg	TERRESTRIAL INVERTEBRATE
5245	3/16/2006	J11951	SOIL and BIOTA	MIS	48.7	mg/kg	TERRESTRIAL INVERTEBRATE
5246	3/16/2006	J11952	SOIL and BIOTA	MIS	13.7	mg/kg	TERRESTRIAL INVERTEBRATE
5247	3/16/2006	J11953	SOIL and BIOTA	MIS	66.3	mg/kg	TERRESTRIAL INVERTEBRATE
5248	3/16/2006	J11954	SOIL and BIOTA	MIS	40.1	mg/kg	TERRESTRIAL INVERTEBRATE
5249	4/25/2006	J11955	SOIL and BIOTA	MIS	21.5	mg/kg	TERRESTRIAL INVERTEBRATE
5250	3/16/2006	J11956	SOIL and BIOTA	MIS	141	mg/kg	TERRESTRIAL INVERTEBRATE
5251	3/16/2006	J11957	SOIL and BIOTA	MIS	22.2	mg/kg	TERRESTRIAL INVERTEBRATE
5252	3/16/2006	J11958	SOIL and BIOTA	MIS	28.9	mg/kg	TERRESTRIAL INVERTEBRATE
5253	4/3/2006	J11KV0	SOIL and BIOTA	MIS	12.2	mg/kg	TERRESTRIAL INVERTEBRATE
5254	4/3/2006	J11KV0	SOIL and BIOTA	MIS-phyt	14	mg/kg	TERRESTRIAL INVERTEBRATE
5255	4/3/2006	J11KT8	SOIL and BIOTA	MIS	12.5	mg/kg	TERRESTRIAL INVERTEBRATE
5256	4/3/2006	J11KT8	SOIL and BIOTA	MIS-phyt	15.6	mg/kg	TERRESTRIAL INVERTEBRATE
5257	9/13/2005	B1CV56	SOIL and BIOTA	Discrete	12.6	mg/kg	TERRESTRIAL INVERTEBRATE
5258	9/13/2005	B1CV57	SOIL and BIOTA	Discrete	12.6	mg/kg	TERRESTRIAL INVERTEBRATE
5259	9/13/2005	B1CV55	SOIL and BIOTA	Discrete	12.6	mg/kg	TERRESTRIAL INVERTEBRATE
5260	6/15/2005	B1CTY3	SOIL and BIOTA	Discrete	12	mg/kg	TERRESTRIAL INVERTEBRATE
5261	6/15/2005	B1CTY2	SOIL and BIOTA	Discrete	12	mg/kg	TERRESTRIAL INVERTEBRATE
5262	6/15/2005	B1CTY4	SOIL and BIOTA	Discrete	12	mg/kg	TERRESTRIAL INVERTEBRATE
5263	9/13/2005	B1CV54	SOIL and BIOTA	Discrete	12.5	mg/kg	TERRESTRIAL INVERTEBRATE
5264	9/13/2005	B1CV53	SOIL and BIOTA	Discrete	12.5	mg/kg	TERRESTRIAL INVERTEBRATE

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
5226	MULTIPLE WHOLE ORG	0.64	mg/kg			RCBRA
5227	MULTIPLE WHOLE ORG	1.9	mg/kg			RCBRA
5228	MULTIPLE WHOLE ORG	0.22	mg/kg			RCBRA
5229	MULTIPLE WHOLE ORG	0.48	mg/kg			RCBRA
5230	MULTIPLE WHOLE ORG	0.48	mg/kg			RCBRA
5231	MULTIPLE WHOLE ORG	0.26	mg/kg			RCBRA
5232	MULTIPLE WHOLE ORG	0.15	mg/kg			RCBRA
5233	MULTIPLE WHOLE ORG	0.41	mg/kg			RCBRA
5234	MULTIPLE WHOLE ORG	0.44	mg/kg			RCBRA
5235	MULTIPLE WHOLE ORG	0.21	mg/kg			RCBRA
5236	MULTIPLE WHOLE ORG	0.2	mg/kg			RCBRA
5237	MULTIPLE WHOLE ORG	0.33	mg/kg			RCBRA
5238	MULTIPLE WHOLE ORG	0.23	mg/kg			RCBRA
5239	MULTIPLE WHOLE ORG	0.36	mg/kg			RCBRA
5240	MULTIPLE WHOLE ORG	0.26	mg/kg			RCBRA
5241	MULTIPLE WHOLE ORG	0.7	mg/kg	C		RCBRA
5242	MULTIPLE WHOLE ORG	0.18	mg/kg			RCBRA
5243	MULTIPLE WHOLE ORG	0.24	mg/kg			RCBRA
5244	MULTIPLE WHOLE ORG	0.2	mg/kg			RCBRA
5245	MULTIPLE WHOLE ORG	0.41	mg/kg			RCBRA
5246	MULTIPLE WHOLE ORG	0.15	mg/kg			RCBRA
5247	MULTIPLE WHOLE ORG	0.31	mg/kg			RCBRA
5248	MULTIPLE WHOLE ORG	0.22	mg/kg			RCBRA
5249	MULTIPLE WHOLE ORG	0.3	mg/kg			RCBRA
5250	MULTIPLE WHOLE ORG	0.28	mg/kg			RCBRA
5251	MULTIPLE WHOLE ORG	0.39	mg/kg			RCBRA
5252	MULTIPLE WHOLE ORG	0.25	mg/kg			RCBRA
5253	MULTIPLE WHOLE ORG	0.16	mg/kg			RCBRA
5254	MULTIPLE WHOLE ORG	0.16	mg/kg			RCBRA
5255	MULTIPLE WHOLE ORG	0.16	mg/kg			RCBRA
5256	MULTIPLE WHOLE ORG	0.16	mg/kg			RCBRA
5257	CARCASS	5.85	mg/kg			CP
5258	CARCASS	7.23	mg/kg			CP
5259	CARCASS	7.22	mg/kg			CP
5260	CARCASS	7.98	mg/kg			CP
5261	CARCASS	7.33	mg/kg			CP
5262	CARCASS	7.98	mg/kg			CP
5263	CARCASS	5.07	mg/kg			CP
5264	CARCASS	4.79	mg/kg			CP

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
5265	Copper	7440-50-8	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
5266	Copper	7440-50-8	B POND	Outside decision areas	UPLAND	576356.769	136881.272
5267	Copper	7440-50-8	B POND	Outside decision areas	UPLAND	576356.769	136881.272
5268	Copper	7440-50-8	B POND	Outside decision areas	UPLAND	576356.769	136881.272
5269	Copper	7440-50-8	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
5270	Copper	7440-50-8	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
5271	Copper	7440-50-8	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
5272	Copper	7440-50-8	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
5273	Copper	7440-50-8	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
5274	Copper	7440-50-8	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
5275	Copper	7440-50-8	U POND	Outside decision areas	UPLAND	566379.63	134457.045
5276	Copper	7440-50-8	U POND	Outside decision areas	UPLAND	566379.63	134457.045
5277	Copper	7440-50-8	U POND	Outside decision areas	UPLAND	566379.63	134457.045
5278	Copper	7440-50-8	RCBRA 100-D-48	D/H	UPLAND	573841.527	151914.538
5279	Copper	7440-50-8	RCBRA 100-D-49	D/H	UPLAND	573938.06	151944.123
5280	Copper	7440-50-8	RCBRA 100-F-2	IU2/IU6	UPLAND	579728.068	147001.117
5281	Copper	7440-50-8	RCBRA 116-DR-1&2	D/H	UPLAND	574007.817	152246.748
5282	Copper	7440-50-8	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
5283	Copper	7440-50-8	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
5284	Copper	7440-50-8	RCBRA 1607-D2:1	D/H	UPLAND	573823.924	152260.319
5285	Copper	7440-50-8	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
5286	Copper	7440-50-8	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
5287	Copper	7440-50-8	RCBRA 2a Rip	BC	RIPARIAN	564618.501	145284.526
5288	Copper	7440-50-8	RCBRA 2c Rip	K	RIPARIAN	567598.2	146210.159
5289	Copper	7440-50-8	RCBRA 2f Rip	D/H	RIPARIAN	576222.844	154297.511
5290	Copper	7440-50-8	RCBRA 2j Rip	IU2/IU6	RIPARIAN	579360.971	150092.048
5291	Copper	7440-50-8	RCBRA 2l Rip	IU2/IU6	RIPARIAN	582341.212	146120.069
5292	Copper	7440-50-8	RCBRA 300-49	300	UPLAND	594318.994	116830.934
5293	Copper	7440-50-8	RCBRA 3b Rip	IU2/IU6	RIPARIAN	584961.205	141035.835
5294	Copper	7440-50-8	RCBRA 4a Rip	IU2/IU6	RIPARIAN	589347.5	137480.985
5295	Copper	7440-50-8	RCBRA 5c Rip	300	RIPARIAN	594509.985	124869.182
5296	Copper	7440-50-8	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
5297	Copper	7440-50-8	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
5298	Copper	7440-50-8	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
5299	Copper	7440-50-8	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
5300	Copper	7440-50-8	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
5301	Copper	7440-50-8	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
5302	Copper	7440-50-8	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
5303	Copper	7440-50-8	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
5265	9/13/2005	B1CV52	SOIL and BIOTA	Discrete	12.5	mg/kg	TERRESTRIAL INVERTEBRATE
5266	6/15/2005	B1CV47	SOIL and BIOTA	Discrete	13.9	mg/kg	TERRESTRIAL INVERTEBRATE
5267	6/15/2005	B1CV46	SOIL and BIOTA	Discrete	13.9	mg/kg	TERRESTRIAL INVERTEBRATE
5268	6/15/2005	B1CV48	SOIL and BIOTA	Discrete	13.9	mg/kg	TERRESTRIAL INVERTEBRATE
5269	6/15/2005	B1CTY6	SOIL and BIOTA	Discrete	18.9	mg/kg	TERRESTRIAL INVERTEBRATE
5270	6/15/2005	B1CTY7	SOIL and BIOTA	Discrete	18.9	mg/kg	TERRESTRIAL INVERTEBRATE
5271	6/15/2005	B1CTY5	SOIL and BIOTA	Discrete	18.9	mg/kg	TERRESTRIAL INVERTEBRATE
5272	6/15/2005	B1CV44	SOIL and BIOTA	Discrete	10.5	mg/kg	TERRESTRIAL INVERTEBRATE
5273	6/15/2005	B1CTY8	SOIL and BIOTA	Discrete	10.5	mg/kg	TERRESTRIAL INVERTEBRATE
5274	6/15/2005	B1CV45	SOIL and BIOTA	Discrete	10.5	mg/kg	TERRESTRIAL INVERTEBRATE
5275	9/13/2005	B1CV50	SOIL and BIOTA	Discrete	13	mg/kg	TERRESTRIAL INVERTEBRATE
5276	9/13/2005	B1CV51	SOIL and BIOTA	Discrete	13	mg/kg	TERRESTRIAL INVERTEBRATE
5277	9/13/2005	B1CV49	SOIL and BIOTA	Discrete	13	mg/kg	TERRESTRIAL INVERTEBRATE
5278	4/3/2006	J11KV5	SOIL and BIOTA	MIS	14.5	mg/kg	TERRESTRIAL INVERTEBRATE
5279	4/3/2006	J11KV6	SOIL and BIOTA	MIS	14.3	mg/kg	TERRESTRIAL INVERTEBRATE
5280	4/25/2006	J11L32	SOIL and BIOTA	MIS	15.4	mg/kg	TERRESTRIAL INVERTEBRATE
5281	4/3/2006	J11L31	SOIL and BIOTA	MIS	14.9	mg/kg	TERRESTRIAL INVERTEBRATE
5282	4/17/2006	J11KT1	SOIL and BIOTA	MIS	11.9	mg/kg	TERRESTRIAL INVERTEBRATE
5283	4/17/2006	J11KT1	SOIL and BIOTA	MIS-phyt	11.4	mg/kg	TERRESTRIAL INVERTEBRATE
5284	4/3/2006	J11KT4	SOIL and BIOTA	MIS	13.6	mg/kg	TERRESTRIAL INVERTEBRATE
5285	4/3/2006	J11KR9	SOIL and BIOTA	MIS	26.1	mg/kg	TERRESTRIAL INVERTEBRATE
5286	4/3/2006	J11KR9	SOIL and BIOTA	MIS-phyt	24	mg/kg	TERRESTRIAL INVERTEBRATE
5287	6/11/2007	J14Y56	SOIL and BIOTA	MIS	23.8	mg/kg	TERRESTRIAL INVERTEBRATE
5288	6/13/2007	J14Y63	SOIL and BIOTA	MIS	33.1	mg/kg	TERRESTRIAL INVERTEBRATE
5289	6/13/2007	J14Y57	SOIL and BIOTA	MIS	29.9	mg/kg	TERRESTRIAL INVERTEBRATE
5290	6/13/2007	J14Y58	SOIL and BIOTA	MIS	38.8	mg/kg	TERRESTRIAL INVERTEBRATE
5291	6/13/2007	J14Y59	SOIL and BIOTA	MIS	17.7	mg/kg	TERRESTRIAL INVERTEBRATE
5292	4/25/2006	J11KT3	SOIL and BIOTA	MIS	18.7	mg/kg	TERRESTRIAL INVERTEBRATE
5293	6/11/2007	J14Y60	SOIL and BIOTA	MIS	44.9	mg/kg	TERRESTRIAL INVERTEBRATE
5294	6/13/2007	J14Y62	SOIL and BIOTA	MIS	43.4	mg/kg	TERRESTRIAL INVERTEBRATE
5295	6/7/2007	J14Y61	SOIL and BIOTA	MIS	22.9	mg/kg	TERRESTRIAL INVERTEBRATE
5296	4/3/2006	J11L35	SOIL and BIOTA	MIS	12.7	mg/kg	TERRESTRIAL INVERTEBRATE
5297	4/3/2006	J11L35	SOIL and BIOTA	MIS-phyt	14.5	mg/kg	TERRESTRIAL INVERTEBRATE
5298	4/3/2006	J11KR2	SOIL and BIOTA	MIS	13.1	mg/kg	TERRESTRIAL INVERTEBRATE
5299	4/3/2006	J11KR2	SOIL and BIOTA	MIS-phyt	12	mg/kg	TERRESTRIAL INVERTEBRATE
5300	4/25/2006	J11KR3	SOIL and BIOTA	MIS	44.5	mg/kg	TERRESTRIAL INVERTEBRATE
5301	4/25/2006	J11KR3	SOIL and BIOTA	MIS-phyt	38.5	mg/kg	TERRESTRIAL INVERTEBRATE
5302	4/25/2006	J11XX9	SOIL and BIOTA	MIS	13.4	mg/kg	TERRESTRIAL INVERTEBRATE
5303	4/25/2006	J11XX9	SOIL and BIOTA	MIS-phyt	14.1	mg/kg	TERRESTRIAL INVERTEBRATE

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
5265	CARCASS	5.56	mg/kg			CP
5266	CARCASS	7.84	mg/kg			CP
5267	CARCASS	6.82	mg/kg			CP
5268	CARCASS	8.36	mg/kg			CP
5269	CARCASS	7.81	mg/kg			CP
5270	CARCASS	9.35	mg/kg			CP
5271	CARCASS	9.11	mg/kg			CP
5272	CARCASS	7.51	mg/kg			CP
5273	CARCASS	8.49	mg/kg			CP
5274	CARCASS	7.73	mg/kg			CP
5275	CARCASS	6.3	mg/kg			CP
5276	CARCASS	6.84	mg/kg			CP
5277	CARCASS	5.77	mg/kg			CP
5278	MULTIPLE WHOLE ORG	6.5	mg/kg			RCBRA
5279	MULTIPLE WHOLE ORG	6.5	mg/kg			RCBRA
5280	MULTIPLE WHOLE ORG	6	mg/kg			RCBRA
5281	MULTIPLE WHOLE ORG	6.1	mg/kg			RCBRA
5282	MULTIPLE WHOLE ORG	6.8	mg/kg			RCBRA
5283	MULTIPLE WHOLE ORG	6.8	mg/kg			RCBRA
5284	MULTIPLE WHOLE ORG	6.8	mg/kg			RCBRA
5285	MULTIPLE WHOLE ORG	6	mg/kg			RCBRA
5286	MULTIPLE WHOLE ORG	6	mg/kg			RCBRA
5287	MULTIPLE WHOLE ORG	8.1	mg/kg			RCBRA
5288	MULTIPLE WHOLE ORG	7.9	mg/kg			RCBRA
5289	MULTIPLE WHOLE ORG	14.9	mg/kg			RCBRA
5290	MULTIPLE WHOLE ORG	8.5	mg/kg			RCBRA
5291	MULTIPLE WHOLE ORG	9.6	mg/kg			RCBRA
5292	MULTIPLE WHOLE ORG	8	mg/kg			RCBRA
5293	MULTIPLE WHOLE ORG	13.3	mg/kg			RCBRA
5294	MULTIPLE WHOLE ORG	16	mg/kg			RCBRA
5295	MULTIPLE WHOLE ORG	9.5	mg/kg			RCBRA
5296	MULTIPLE WHOLE ORG	7.3	mg/kg			RCBRA
5297	MULTIPLE WHOLE ORG	7.3	mg/kg			RCBRA
5298	MULTIPLE WHOLE ORG	7.8	mg/kg			RCBRA
5299	MULTIPLE WHOLE ORG	7.8	mg/kg			RCBRA
5300	MULTIPLE WHOLE ORG	18.3	mg/kg			RCBRA
5301	MULTIPLE WHOLE ORG	18.3	mg/kg			RCBRA
5302	MULTIPLE WHOLE ORG	18.6	mg/kg			RCBRA
5303	MULTIPLE WHOLE ORG	18.6	mg/kg			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
5304	Copper	7440-50-8	RCBRA 600-181	IU2/IU6	UPLAND	578303.83	147316.698
5305	Copper	7440-50-8	RCBRA 600-204	IU2/IU6	UPLAND	580128.485	144762.219
5306	Copper	7440-50-8	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
5307	Copper	7440-50-8	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
5308	Copper	7440-50-8	RCBRA 618-4	300	UPLAND	593954.946	117064.473
5309	Copper	7440-50-8	RCBRA 628-1	IU2/IU6	UPLAND	577797.524	148745.681
5310	Copper	7440-50-8	RCBRA Bev Ref 1 Rip	Outside decision areas	RIPARIAN	542428.846	167701.261
5311	Copper	7440-50-8	RCBRA Bev Ref 2 Rip	Outside decision areas	RIPARIAN	541493.988	167808.357
5312	Copper	7440-50-8	RCBRA JA JONES	300	UPLAND	593874.58	120013.908
5313	Copper	7440-50-8	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
5314	Copper	7440-50-8	RCBRA Pit 18	IU2/IU6	UPLAND	580697.058	145311.464
5315	Copper	7440-50-8	RCBRA Pit 23	IU2/IU6	UPLAND	572381.012	144874.157
5316	Copper	7440-50-8	RCBRA Pit 24	BC	UPLAND	563395.814	145119.007
5317	Copper	7440-50-8	RCBRA Pit 9	300	UPLAND	592807.103	120587.7
5318	Copper	7440-50-8	RCBRA R Ref 11	Outside decision areas	RIPARIAN	559400.735	146458.486
5319	Copper	7440-50-8	RCBRA R Ref 12	IU2/IU6	RIPARIAN	559201.908	145747.542
5320	Copper	7440-50-8	RCBRA R Ref 13	Outside decision areas	RIPARIAN	558572.809	145345.115
5321	Copper	7440-50-8	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
5322	Copper	7440-50-8	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
5323	Copper	7440-50-8	RCBRA R Ref 16	Outside decision areas	RIPARIAN	557650.029	144826.748
5324	Copper	7440-50-8	RCBRA Rip 1	D/H	RIPARIAN	577251.869	153659.195
5325	Copper	7440-50-8	RCBRA Rip 10	D/H	RIPARIAN	573987.873	153082.19
5326	Copper	7440-50-8	RCBRA Rip 2	D/H	RIPARIAN	573603.219	152471.6
5327	Copper	7440-50-8	RCBRA Rip 3	D/H	RIPARIAN	572639.65	151677.812
5328	Copper	7440-50-8	RCBRA Rip 4	N	RIPARIAN	570558.596	148981.547
5329	Copper	7440-50-8	RCBRA Rip 5	K	RIPARIAN	569141.025	147521.561
5330	Copper	7440-50-8	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
5331	Copper	7440-50-8	RCBRA Rip 7	IU2/IU6	RIPARIAN	581326.914	147825.17
5332	Copper	7440-50-8	RCBRA Rip 8	D/H	RIPARIAN	578698.584	152233.645
5333	Copper	7440-50-8	RCBRA Rip 9	D/H	RIPARIAN	578153.643	152801.452
5334	Copper	7440-50-8	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
5335	Copper	7440-50-8	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
5336	Copper	7440-50-8	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
5337	Copper	7440-50-8	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
5338	Copper	7440-50-8	RCBRA Yak Rdg 2	Outside decision areas	UPLAND	559031.557	135576.407
5339	Iron	7439-89-6	RCBRA 100-D-48	D/H	UPLAND	573841.527	151914.538
5340	Iron	7439-89-6	RCBRA 100-D-49	D/H	UPLAND	573938.06	151944.123
5341	Iron	7439-89-6	RCBRA 100-F-2	IU2/IU6	UPLAND	579728.068	147001.117
5342	Iron	7439-89-6	RCBRA 116-DR-1&2	D/H	UPLAND	574007.817	152246.748

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
5304	4/17/2006	J11KR6	SOIL and BIOTA	MIS	11.1	mg/kg	TERRESTRIAL INVERTEBRATE
5305	4/25/2006	J11KR4	SOIL and BIOTA	MIS	13.1	mg/kg	TERRESTRIAL INVERTEBRATE
5306	4/25/2006	J11KR5	SOIL and BIOTA	MIS	12.8	mg/kg	TERRESTRIAL INVERTEBRATE
5307	4/25/2006	J11KR5	SOIL and BIOTA	MIS-phyt	11.2	mg/kg	TERRESTRIAL INVERTEBRATE
5308	4/26/2006	J11KT2	SOIL and BIOTA	MIS	9.7	mg/kg	TERRESTRIAL INVERTEBRATE
5309	4/25/2006	J11XX8	SOIL and BIOTA	MIS	21.3	mg/kg	TERRESTRIAL INVERTEBRATE
5310	6/13/2007	J14Y53	SOIL and BIOTA	MIS	32	mg/kg	TERRESTRIAL INVERTEBRATE
5311	6/13/2007	J14Y54	SOIL and BIOTA	MIS	25.6	mg/kg	TERRESTRIAL INVERTEBRATE
5312	4/25/2006	J11L34	SOIL and BIOTA	MIS	12.5	mg/kg	TERRESTRIAL INVERTEBRATE
5313	4/17/2006	J11KP9	SOIL and BIOTA	MIS	13.8	mg/kg	TERRESTRIAL INVERTEBRATE
5314	4/17/2006	J11KR0	SOIL and BIOTA	MIS	13.3	mg/kg	TERRESTRIAL INVERTEBRATE
5315	4/3/2006	J11L33	SOIL and BIOTA	MIS	16	mg/kg	TERRESTRIAL INVERTEBRATE
5316	4/3/2006	J11KT6	SOIL and BIOTA	MIS	15.7	mg/kg	TERRESTRIAL INVERTEBRATE
5317	4/25/2006	J11KT5	SOIL and BIOTA	MIS	13.9	mg/kg	TERRESTRIAL INVERTEBRATE
5318	3/20/2006	J11960	SOIL and BIOTA	MIS	17.1	mg/kg	TERRESTRIAL INVERTEBRATE
5319	3/20/2006	J11961	SOIL and BIOTA	MIS	19.5	mg/kg	TERRESTRIAL INVERTEBRATE
5320	3/20/2006	J11962	SOIL and BIOTA	MIS	34.2	mg/kg	TERRESTRIAL INVERTEBRATE
5321	3/20/2006	J11963	SOIL and BIOTA	MIS	37.3	mg/kg	TERRESTRIAL INVERTEBRATE
5322	6/13/2007	J14Y55	SOIL and BIOTA	MIS	37.3	mg/kg	TERRESTRIAL INVERTEBRATE
5323	3/20/2006	J11964	SOIL and BIOTA	MIS	25.1	mg/kg	TERRESTRIAL INVERTEBRATE
5324	3/16/2006	J11950	SOIL and BIOTA	MIS	34.8	mg/kg	TERRESTRIAL INVERTEBRATE
5325	3/16/2006	J11959	SOIL and BIOTA	MIS	24.1	mg/kg	TERRESTRIAL INVERTEBRATE
5326	3/16/2006	J11951	SOIL and BIOTA	MIS	19.8	mg/kg	TERRESTRIAL INVERTEBRATE
5327	3/16/2006	J11952	SOIL and BIOTA	MIS	19.4	mg/kg	TERRESTRIAL INVERTEBRATE
5328	3/16/2006	J11953	SOIL and BIOTA	MIS	29.6	mg/kg	TERRESTRIAL INVERTEBRATE
5329	3/16/2006	J11954	SOIL and BIOTA	MIS	30.2	mg/kg	TERRESTRIAL INVERTEBRATE
5330	4/25/2006	J11955	SOIL and BIOTA	MIS	30.4	mg/kg	TERRESTRIAL INVERTEBRATE
5331	3/16/2006	J11956	SOIL and BIOTA	MIS	31.6	mg/kg	TERRESTRIAL INVERTEBRATE
5332	3/16/2006	J11957	SOIL and BIOTA	MIS	27.1	mg/kg	TERRESTRIAL INVERTEBRATE
5333	3/16/2006	J11958	SOIL and BIOTA	MIS	22.5	mg/kg	TERRESTRIAL INVERTEBRATE
5334	4/3/2006	J11KV0	SOIL and BIOTA	MIS	16.3	mg/kg	TERRESTRIAL INVERTEBRATE
5335	4/3/2006	J11KV0	SOIL and BIOTA	MIS-phyt	17.5	mg/kg	TERRESTRIAL INVERTEBRATE
5336	4/3/2006	J11KT8	SOIL and BIOTA	MIS	13.4	mg/kg	TERRESTRIAL INVERTEBRATE
5337	4/3/2006	J11KT8	SOIL and BIOTA	MIS-phyt	14.3	mg/kg	TERRESTRIAL INVERTEBRATE
5338	4/3/2006	J11KT7	SOIL and BIOTA	MIS	21.2	mg/kg	TERRESTRIAL INVERTEBRATE
5339	4/3/2006	J11KV5	SOIL and BIOTA	MIS	23200	mg/kg	TERRESTRIAL INVERTEBRATE
5340	4/3/2006	J11KV6	SOIL and BIOTA	MIS	21700	mg/kg	TERRESTRIAL INVERTEBRATE
5341	4/25/2006	J11L32	SOIL and BIOTA	MIS	19300	mg/kg	TERRESTRIAL INVERTEBRATE
5342	4/3/2006	J11L31	SOIL and BIOTA	MIS	20700	mg/kg	TERRESTRIAL INVERTEBRATE

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
5304	MULTIPLE WHOLE ORG	5.6	mg/kg			RCBRA
5305	MULTIPLE WHOLE ORG	8	mg/kg			RCBRA
5306	MULTIPLE WHOLE ORG	7	mg/kg			RCBRA
5307	MULTIPLE WHOLE ORG	7	mg/kg			RCBRA
5308	MULTIPLE WHOLE ORG	15.6	mg/kg			RCBRA
5309	MULTIPLE WHOLE ORG	6.8	mg/kg			RCBRA
5310	MULTIPLE WHOLE ORG	8	mg/kg			RCBRA
5311	MULTIPLE WHOLE ORG	7.7	mg/kg			RCBRA
5312	MULTIPLE WHOLE ORG	5.3	mg/kg			RCBRA
5313	MULTIPLE WHOLE ORG	13.4	mg/kg			RCBRA
5314	MULTIPLE WHOLE ORG	6.4	mg/kg			RCBRA
5315	MULTIPLE WHOLE ORG	5.1	mg/kg			RCBRA
5316	MULTIPLE WHOLE ORG	6.4	mg/kg			RCBRA
5317	MULTIPLE WHOLE ORG	3.9	mg/kg			RCBRA
5318	MULTIPLE WHOLE ORG	7.7	mg/kg			RCBRA
5319	MULTIPLE WHOLE ORG	3.8	mg/kg			RCBRA
5320	MULTIPLE WHOLE ORG	5.6	mg/kg			RCBRA
5321	MULTIPLE WHOLE ORG	4.5	mg/kg			RCBRA
5322	MULTIPLE WHOLE ORG	8.5	mg/kg			RCBRA
5323	MULTIPLE WHOLE ORG	5.7	mg/kg			RCBRA
5324	MULTIPLE WHOLE ORG	20.1	mg/kg			RCBRA
5325	MULTIPLE WHOLE ORG	21.2	mg/kg			RCBRA
5326	MULTIPLE WHOLE ORG	13	mg/kg			RCBRA
5327	MULTIPLE WHOLE ORG	4.1	mg/kg			RCBRA
5328	MULTIPLE WHOLE ORG	6.4	mg/kg			RCBRA
5329	MULTIPLE WHOLE ORG	10.9	mg/kg			RCBRA
5330	MULTIPLE WHOLE ORG	7.7	mg/kg			RCBRA
5331	MULTIPLE WHOLE ORG	29.5	mg/kg			RCBRA
5332	MULTIPLE WHOLE ORG	6.1	mg/kg			RCBRA
5333	MULTIPLE WHOLE ORG	20.2	mg/kg			RCBRA
5334	MULTIPLE WHOLE ORG	5.8	mg/kg			RCBRA
5335	MULTIPLE WHOLE ORG	5.8	mg/kg			RCBRA
5336	MULTIPLE WHOLE ORG	4.8	mg/kg			RCBRA
5337	MULTIPLE WHOLE ORG	4.8	mg/kg			RCBRA
5338	MULTIPLE WHOLE ORG	6.1	mg/kg			RCBRA
5339	MULTIPLE WHOLE ORG	94.8	mg/kg			RCBRA
5340	MULTIPLE WHOLE ORG	211	mg/kg			RCBRA
5341	MULTIPLE WHOLE ORG	40.4	mg/kg	C	J	RCBRA
5342	MULTIPLE WHOLE ORG	188	mg/kg			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
5343	Iron	7439-89-6	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
5344	Iron	7439-89-6	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
5345	Iron	7439-89-6	RCBRA 1607-D2:1	D/H	UPLAND	573823.924	152260.319
5346	Iron	7439-89-6	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
5347	Iron	7439-89-6	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
5348	Iron	7439-89-6	RCBRA 2a Rip	BC	RIPARIAN	564618.501	145284.526
5349	Iron	7439-89-6	RCBRA 2c Rip	K	RIPARIAN	567598.2	146210.159
5350	Iron	7439-89-6	RCBRA 2f Rip	D/H	RIPARIAN	576222.844	154297.511
5351	Iron	7439-89-6	RCBRA 2j Rip	IU2/IU6	RIPARIAN	579360.971	150092.048
5352	Iron	7439-89-6	RCBRA 2l Rip	IU2/IU6	RIPARIAN	582341.212	146120.069
5353	Iron	7439-89-6	RCBRA 300-49	300	UPLAND	594318.994	116830.934
5354	Iron	7439-89-6	RCBRA 3b Rip	IU2/IU6	RIPARIAN	584961.205	141035.835
5355	Iron	7439-89-6	RCBRA 4a Rip	IU2/IU6	RIPARIAN	589347.5	137480.985
5356	Iron	7439-89-6	RCBRA 5c Rip	300	RIPARIAN	594509.985	124869.182
5357	Iron	7439-89-6	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
5358	Iron	7439-89-6	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
5359	Iron	7439-89-6	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
5360	Iron	7439-89-6	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
5361	Iron	7439-89-6	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
5362	Iron	7439-89-6	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
5363	Iron	7439-89-6	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
5364	Iron	7439-89-6	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
5365	Iron	7439-89-6	RCBRA 600-181	IU2/IU6	UPLAND	578303.83	147316.698
5366	Iron	7439-89-6	RCBRA 600-204	IU2/IU6	UPLAND	580128.485	144762.219
5367	Iron	7439-89-6	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
5368	Iron	7439-89-6	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
5369	Iron	7439-89-6	RCBRA 618-4	300	UPLAND	593954.946	117064.473
5370	Iron	7439-89-6	RCBRA 628-1	IU2/IU6	UPLAND	577797.524	148745.681
5371	Iron	7439-89-6	RCBRA Bev Ref 1 Rip	Outside decision areas	RIPARIAN	542428.846	167701.261
5372	Iron	7439-89-6	RCBRA Bev Ref 2 Rip	Outside decision areas	RIPARIAN	541493.988	167808.357
5373	Iron	7439-89-6	RCBRA JA JONES	300	UPLAND	593874.58	120013.908
5374	Iron	7439-89-6	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
5375	Iron	7439-89-6	RCBRA Pit 18	IU2/IU6	UPLAND	580697.058	145311.464
5376	Iron	7439-89-6	RCBRA Pit 23	IU2/IU6	UPLAND	572381.012	144874.157
5377	Iron	7439-89-6	RCBRA Pit 24	BC	UPLAND	563395.814	145119.007
5378	Iron	7439-89-6	RCBRA Pit 9	300	UPLAND	592807.103	120587.7
5379	Iron	7439-89-6	RCBRA R Ref 11	Outside decision areas	RIPARIAN	559400.735	146458.486
5380	Iron	7439-89-6	RCBRA R Ref 12	IU2/IU6	RIPARIAN	559201.908	145747.542
5381	Iron	7439-89-6	RCBRA R Ref 13	Outside decision areas	RIPARIAN	558572.809	145345.115

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
5343	4/17/2006	J11KT1	SOIL and BIOTA	MIS	17400	mg/kg	TERRESTRIAL INVERTEBRATE
5344	4/17/2006	J11KT1	SOIL and BIOTA	MIS-phyt	17600	mg/kg	TERRESTRIAL INVERTEBRATE
5345	4/3/2006	J11KT4	SOIL and BIOTA	MIS	19100	mg/kg	TERRESTRIAL INVERTEBRATE
5346	4/3/2006	J11KR9	SOIL and BIOTA	MIS	15500	mg/kg	TERRESTRIAL INVERTEBRATE
5347	4/3/2006	J11KR9	SOIL and BIOTA	MIS-phyt	20200	mg/kg	TERRESTRIAL INVERTEBRATE
5348	6/11/2007	J14Y56	SOIL and BIOTA	MIS	14500	mg/kg	TERRESTRIAL INVERTEBRATE
5349	6/13/2007	J14Y63	SOIL and BIOTA	MIS	19500	mg/kg	TERRESTRIAL INVERTEBRATE
5350	6/13/2007	J14Y57	SOIL and BIOTA	MIS	19800	mg/kg	TERRESTRIAL INVERTEBRATE
5351	6/13/2007	J14Y58	SOIL and BIOTA	MIS	19800	mg/kg	TERRESTRIAL INVERTEBRATE
5352	6/13/2007	J14Y59	SOIL and BIOTA	MIS	28600	mg/kg	TERRESTRIAL INVERTEBRATE
5353	4/25/2006	J11KT3	SOIL and BIOTA	MIS	19500	mg/kg	TERRESTRIAL INVERTEBRATE
5354	6/11/2007	J14Y60	SOIL and BIOTA	MIS	21000	mg/kg	TERRESTRIAL INVERTEBRATE
5355	6/13/2007	J14Y62	SOIL and BIOTA	MIS	22300	mg/kg	TERRESTRIAL INVERTEBRATE
5356	6/7/2007	J14Y61	SOIL and BIOTA	MIS	24700	mg/kg	TERRESTRIAL INVERTEBRATE
5357	4/3/2006	J11L35	SOIL and BIOTA	MIS	14000	mg/kg	TERRESTRIAL INVERTEBRATE
5358	4/3/2006	J11L35	SOIL and BIOTA	MIS-phyt	22100	mg/kg	TERRESTRIAL INVERTEBRATE
5359	4/3/2006	J11KR2	SOIL and BIOTA	MIS	17100	mg/kg	TERRESTRIAL INVERTEBRATE
5360	4/3/2006	J11KR2	SOIL and BIOTA	MIS-phyt	20700	mg/kg	TERRESTRIAL INVERTEBRATE
5361	4/25/2006	J11KR3	SOIL and BIOTA	MIS	18500	mg/kg	TERRESTRIAL INVERTEBRATE
5362	4/25/2006	J11KR3	SOIL and BIOTA	MIS-phyt	21400	mg/kg	TERRESTRIAL INVERTEBRATE
5363	4/25/2006	J11XX9	SOIL and BIOTA	MIS	14800	mg/kg	TERRESTRIAL INVERTEBRATE
5364	4/25/2006	J11XX9	SOIL and BIOTA	MIS-phyt	20100	mg/kg	TERRESTRIAL INVERTEBRATE
5365	4/17/2006	J11KR6	SOIL and BIOTA	MIS	21200	mg/kg	TERRESTRIAL INVERTEBRATE
5366	4/25/2006	J11KR4	SOIL and BIOTA	MIS	24700	mg/kg	TERRESTRIAL INVERTEBRATE
5367	4/25/2006	J11KR5	SOIL and BIOTA	MIS	19700	mg/kg	TERRESTRIAL INVERTEBRATE
5368	4/25/2006	J11KR5	SOIL and BIOTA	MIS-phyt	21900	mg/kg	TERRESTRIAL INVERTEBRATE
5369	4/26/2006	J11KT2	SOIL and BIOTA	MIS	18300	mg/kg	TERRESTRIAL INVERTEBRATE
5370	4/25/2006	J11XX8	SOIL and BIOTA	MIS	31500	mg/kg	TERRESTRIAL INVERTEBRATE
5371	6/13/2007	J14Y53	SOIL and BIOTA	MIS	25600	mg/kg	TERRESTRIAL INVERTEBRATE
5372	6/13/2007	J14Y54	SOIL and BIOTA	MIS	17800	mg/kg	TERRESTRIAL INVERTEBRATE
5373	4/25/2006	J11L34	SOIL and BIOTA	MIS	18800	mg/kg	TERRESTRIAL INVERTEBRATE
5374	4/17/2006	J11KP9	SOIL and BIOTA	MIS	25900	mg/kg	TERRESTRIAL INVERTEBRATE
5375	4/17/2006	J11KR0	SOIL and BIOTA	MIS	17800	mg/kg	TERRESTRIAL INVERTEBRATE
5376	4/3/2006	J11L33	SOIL and BIOTA	MIS	20900	mg/kg	TERRESTRIAL INVERTEBRATE
5377	4/3/2006	J11KT6	SOIL and BIOTA	MIS	22700	mg/kg	TERRESTRIAL INVERTEBRATE
5378	4/25/2006	J11KT5	SOIL and BIOTA	MIS	23400	mg/kg	TERRESTRIAL INVERTEBRATE
5379	3/20/2006	J11960	SOIL and BIOTA	MIS	18200	mg/kg	TERRESTRIAL INVERTEBRATE
5380	3/20/2006	J11961	SOIL and BIOTA	MIS	17900	mg/kg	TERRESTRIAL INVERTEBRATE
5381	3/20/2006	J11962	SOIL and BIOTA	MIS	23800	mg/kg	TERRESTRIAL INVERTEBRATE

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
5343	MULTIPLE WHOLE ORG	77.7	mg/kg	C	J	RCBRA
5344	MULTIPLE WHOLE ORG	77.7	mg/kg	C	J	RCBRA
5345	MULTIPLE WHOLE ORG	120	mg/kg			RCBRA
5346	MULTIPLE WHOLE ORG	110	mg/kg			RCBRA
5347	MULTIPLE WHOLE ORG	110	mg/kg			RCBRA
5348	MULTIPLE WHOLE ORG	99.1	mg/kg	C		RCBRA
5349	MULTIPLE WHOLE ORG	130	mg/kg	C		RCBRA
5350	MULTIPLE WHOLE ORG	165	mg/kg	C		RCBRA
5351	MULTIPLE WHOLE ORG	139	mg/kg	C		RCBRA
5352	MULTIPLE WHOLE ORG	203	mg/kg	C		RCBRA
5353	MULTIPLE WHOLE ORG	51.9	mg/kg	C	J	RCBRA
5354	MULTIPLE WHOLE ORG	80.5	mg/kg	C		RCBRA
5355	MULTIPLE WHOLE ORG	188	mg/kg	C		RCBRA
5356	MULTIPLE WHOLE ORG	83	mg/kg	C		RCBRA
5357	MULTIPLE WHOLE ORG	66.9	mg/kg			RCBRA
5358	MULTIPLE WHOLE ORG	66.9	mg/kg			RCBRA
5359	MULTIPLE WHOLE ORG	121	mg/kg			RCBRA
5360	MULTIPLE WHOLE ORG	121	mg/kg			RCBRA
5361	MULTIPLE WHOLE ORG	57.5	mg/kg	C	J	RCBRA
5362	MULTIPLE WHOLE ORG	57.5	mg/kg	C	J	RCBRA
5363	MULTIPLE WHOLE ORG	59.8	mg/kg	C	J	RCBRA
5364	MULTIPLE WHOLE ORG	59.8	mg/kg	C	J	RCBRA
5365	MULTIPLE WHOLE ORG	83.7	mg/kg	C	J	RCBRA
5366	MULTIPLE WHOLE ORG	58.5	mg/kg	C	J	RCBRA
5367	MULTIPLE WHOLE ORG	104	mg/kg	C	J	RCBRA
5368	MULTIPLE WHOLE ORG	104	mg/kg	C	J	RCBRA
5369	MULTIPLE WHOLE ORG	156	mg/kg	C	J	RCBRA
5370	MULTIPLE WHOLE ORG	158	mg/kg	C	J	RCBRA
5371	MULTIPLE WHOLE ORG	43.7	mg/kg	C		RCBRA
5372	MULTIPLE WHOLE ORG	54.1	mg/kg	C		RCBRA
5373	MULTIPLE WHOLE ORG	67.8	mg/kg	C	J	RCBRA
5374	MULTIPLE WHOLE ORG	170	mg/kg	C	J	RCBRA
5375	MULTIPLE WHOLE ORG	112	mg/kg	C	J	RCBRA
5376	MULTIPLE WHOLE ORG	76.2	mg/kg			RCBRA
5377	MULTIPLE WHOLE ORG	76.3	mg/kg			RCBRA
5378	MULTIPLE WHOLE ORG	43.3	mg/kg	C	J	RCBRA
5379	MULTIPLE WHOLE ORG	50.4	mg/kg			RCBRA
5380	MULTIPLE WHOLE ORG	43.4	mg/kg			RCBRA
5381	MULTIPLE WHOLE ORG	49.9	mg/kg			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
5382	Iron	7439-89-6	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
5383	Iron	7439-89-6	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
5384	Iron	7439-89-6	RCBRA R Ref 16	Outside decision areas	RIPARIAN	557650.029	144826.748
5385	Iron	7439-89-6	RCBRA Rip 1	D/H	RIPARIAN	577251.869	153659.195
5386	Iron	7439-89-6	RCBRA Rip 10	D/H	RIPARIAN	573987.873	153082.19
5387	Iron	7439-89-6	RCBRA Rip 2	D/H	RIPARIAN	573603.219	152471.6
5388	Iron	7439-89-6	RCBRA Rip 3	D/H	RIPARIAN	572639.65	151677.812
5389	Iron	7439-89-6	RCBRA Rip 4	N	RIPARIAN	570558.596	148981.547
5390	Iron	7439-89-6	RCBRA Rip 5	K	RIPARIAN	569141.025	147521.561
5391	Iron	7439-89-6	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
5392	Iron	7439-89-6	RCBRA Rip 7	IU2/IU6	RIPARIAN	581326.914	147825.17
5393	Iron	7439-89-6	RCBRA Rip 8	D/H	RIPARIAN	578698.584	152233.645
5394	Iron	7439-89-6	RCBRA Rip 9	D/H	RIPARIAN	578153.643	152801.452
5395	Iron	7439-89-6	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
5396	Iron	7439-89-6	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
5397	Iron	7439-89-6	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
5398	Iron	7439-89-6	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
5399	Iron	7439-89-6	RCBRA Yak Rdg 2	Outside decision areas	UPLAND	559031.557	135576.407
5400	Mecury	7439-97-6	RCBRA 2f Rip	D/H	RIPARIAN	576222.844	154297.511
5401	Mecury	7439-97-6	RCBRA 2l Rip	IU2/IU6	RIPARIAN	582341.212	146120.069
5402	Mecury	7439-97-6	RCBRA 3b Rip	IU2/IU6	RIPARIAN	584961.205	141035.835
5403	Mecury	7439-97-6	RCBRA 4a Rip	IU2/IU6	RIPARIAN	589347.5	137480.985
5404	Mecury	7439-97-6	RCBRA 5c Rip	300	RIPARIAN	594509.985	124869.182
5405	Mecury	7439-97-6	RCBRA R Ref 13	Outside decision areas	RIPARIAN	558572.809	145345.115
5406	Mecury	7439-97-6	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
5407	Mecury	7439-97-6	RCBRA Rip 7	IU2/IU6	RIPARIAN	581326.914	147825.17
5408	Mecury	7439-97-6	RCBRA Rip 9	D/H	RIPARIAN	578153.643	152801.452
5409	Potasium	7440_09_7	RCBRA 100-D-48	D/H	UPLAND	573841.527	151914.538
5410	Potasium	7440_09_7	RCBRA 100-D-49	D/H	UPLAND	573938.06	151944.123
5411	Potasium	7440_09_7	RCBRA 100-F-2	IU2/IU6	UPLAND	579728.068	147001.117
5412	Potasium	7440_09_7	RCBRA 116-DR-1&2	D/H	UPLAND	574007.817	152246.748
5413	Potasium	7440_09_7	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
5414	Potasium	7440_09_7	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
5415	Potasium	7440_09_7	RCBRA 1607-D2:1	D/H	UPLAND	573823.924	152260.319
5416	Potasium	7440_09_7	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
5417	Potasium	7440_09_7	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
5418	Potasium	7440_09_7	RCBRA 2a Rip	BC	RIPARIAN	564618.501	145284.526
5419	Potasium	7440_09_7	RCBRA 2c Rip	K	RIPARIAN	567598.2	146210.159
5420	Potasium	7440_09_7	RCBRA 2f Rip	D/H	RIPARIAN	576222.844	154297.511

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
5382	3/20/2006	J11963	SOIL and BIOTA	MIS	23600	mg/kg	TERRESTRIAL INVERTEBRATE
5383	6/13/2007	J14Y55	SOIL and BIOTA	MIS	23600	mg/kg	TERRESTRIAL INVERTEBRATE
5384	3/20/2006	J11964	SOIL and BIOTA	MIS	18100	mg/kg	TERRESTRIAL INVERTEBRATE
5385	3/16/2006	J11950	SOIL and BIOTA	MIS	21100	mg/kg	TERRESTRIAL INVERTEBRATE
5386	3/16/2006	J11959	SOIL and BIOTA	MIS	21000	mg/kg	TERRESTRIAL INVERTEBRATE
5387	3/16/2006	J11951	SOIL and BIOTA	MIS	20000	mg/kg	TERRESTRIAL INVERTEBRATE
5388	3/16/2006	J11952	SOIL and BIOTA	MIS	22700	mg/kg	TERRESTRIAL INVERTEBRATE
5389	3/16/2006	J11953	SOIL and BIOTA	MIS	21200	mg/kg	TERRESTRIAL INVERTEBRATE
5390	3/16/2006	J11954	SOIL and BIOTA	MIS	20300	mg/kg	TERRESTRIAL INVERTEBRATE
5391	4/25/2006	J11955	SOIL and BIOTA	MIS	24100	mg/kg	TERRESTRIAL INVERTEBRATE
5392	3/16/2006	J11956	SOIL and BIOTA	MIS	21300	mg/kg	TERRESTRIAL INVERTEBRATE
5393	3/16/2006	J11957	SOIL and BIOTA	MIS	19300	mg/kg	TERRESTRIAL INVERTEBRATE
5394	3/16/2006	J11958	SOIL and BIOTA	MIS	18400	mg/kg	TERRESTRIAL INVERTEBRATE
5395	4/3/2006	J11KV0	SOIL and BIOTA	MIS	27100	mg/kg	TERRESTRIAL INVERTEBRATE
5396	4/3/2006	J11KV0	SOIL and BIOTA	MIS-phyt	29700	mg/kg	TERRESTRIAL INVERTEBRATE
5397	4/3/2006	J11KT8	SOIL and BIOTA	MIS	19800	mg/kg	TERRESTRIAL INVERTEBRATE
5398	4/3/2006	J11KT8	SOIL and BIOTA	MIS-phyt	24400	mg/kg	TERRESTRIAL INVERTEBRATE
5399	4/3/2006	J11KT7	SOIL and BIOTA	MIS	28000	mg/kg	TERRESTRIAL INVERTEBRATE
5400	6/13/2007	J14Y57	SOIL and BIOTA	MIS	0.039502307	mg/kg	TERRESTRIAL INVERTEBRATE
5401	6/13/2007	J14Y59	SOIL and BIOTA	MIS	0.027652225	mg/kg	TERRESTRIAL INVERTEBRATE
5402	6/11/2007	J14Y60	SOIL and BIOTA	MIS	0.097167969	mg/kg	TERRESTRIAL INVERTEBRATE
5403	6/13/2007	J14Y62	SOIL and BIOTA	MIS	0.107356858	mg/kg	TERRESTRIAL INVERTEBRATE
5404	6/7/2007	J14Y61	SOIL and BIOTA	MIS	0.031689478	mg/kg	TERRESTRIAL INVERTEBRATE
5405	3/20/2006	J11962	SOIL and BIOTA	MIS	0.053662692	mg/kg	TERRESTRIAL INVERTEBRATE
5406	6/13/2007	J14Y55	SOIL and BIOTA	MIS	0.067344132	mg/kg	TERRESTRIAL INVERTEBRATE
5407	3/16/2006	J11956	SOIL and BIOTA	MIS	0.065923254	mg/kg	TERRESTRIAL INVERTEBRATE
5408	3/16/2006	J11958	SOIL and BIOTA	MIS	0.053393214	mg/kg	TERRESTRIAL INVERTEBRATE
5409	4/3/2006	J11KV5	SOIL and BIOTA	MIS	1010	mg/kg	TERRESTRIAL INVERTEBRATE
5410	4/3/2006	J11KV6	SOIL and BIOTA	MIS	1200	mg/kg	TERRESTRIAL INVERTEBRATE
5411	4/25/2006	J11L32	SOIL and BIOTA	MIS	2420	mg/kg	TERRESTRIAL INVERTEBRATE
5412	4/3/2006	J11L31	SOIL and BIOTA	MIS	1120	mg/kg	TERRESTRIAL INVERTEBRATE
5413	4/17/2006	J11KT1	SOIL and BIOTA	MIS	1600	mg/kg	TERRESTRIAL INVERTEBRATE
5414	4/17/2006	J11KT1	SOIL and BIOTA	MIS-phyt	1590	mg/kg	TERRESTRIAL INVERTEBRATE
5415	4/3/2006	J11KT4	SOIL and BIOTA	MIS	1020	mg/kg	TERRESTRIAL INVERTEBRATE
5416	4/3/2006	J11KR9	SOIL and BIOTA	MIS	1180	mg/kg	TERRESTRIAL INVERTEBRATE
5417	4/3/2006	J11KR9	SOIL and BIOTA	MIS-phyt	1310	mg/kg	TERRESTRIAL INVERTEBRATE
5418	6/11/2007	J14Y56	SOIL and BIOTA	MIS	883	mg/kg	TERRESTRIAL INVERTEBRATE
5419	6/13/2007	J14Y63	SOIL and BIOTA	MIS	1110	mg/kg	TERRESTRIAL INVERTEBRATE
5420	6/13/2007	J14Y57	SOIL and BIOTA	MIS	907	mg/kg	TERRESTRIAL INVERTEBRATE

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
5382	MULTIPLE WHOLE ORG	51	mg/kg			RCBRA
5383	MULTIPLE WHOLE ORG	106	mg/kg	C		RCBRA
5384	MULTIPLE WHOLE ORG	52.9	mg/kg			RCBRA
5385	MULTIPLE WHOLE ORG	43.1	mg/kg			RCBRA
5386	MULTIPLE WHOLE ORG	54.9	mg/kg			RCBRA
5387	MULTIPLE WHOLE ORG	60.4	mg/kg			RCBRA
5388	MULTIPLE WHOLE ORG	24.3	mg/kg			RCBRA
5389	MULTIPLE WHOLE ORG	46.7	mg/kg			RCBRA
5390	MULTIPLE WHOLE ORG	40.8	mg/kg			RCBRA
5391	MULTIPLE WHOLE ORG	51	mg/kg	C	J	RCBRA
5392	MULTIPLE WHOLE ORG	26.8	mg/kg			RCBRA
5393	MULTIPLE WHOLE ORG	34.7	mg/kg			RCBRA
5394	MULTIPLE WHOLE ORG	56.9	mg/kg			RCBRA
5395	MULTIPLE WHOLE ORG	63.9	mg/kg			RCBRA
5396	MULTIPLE WHOLE ORG	63.9	mg/kg			RCBRA
5397	MULTIPLE WHOLE ORG	61	mg/kg			RCBRA
5398	MULTIPLE WHOLE ORG	61	mg/kg			RCBRA
5399	MULTIPLE WHOLE ORG	81.9	mg/kg			RCBRA
5400	MULTIPLE WHOLE ORG	0.03	mg/kg			RCBRA
5401	MULTIPLE WHOLE ORG	0.02	mg/kg			RCBRA
5402	MULTIPLE WHOLE ORG	0.02	mg/kg			RCBRA
5403	MULTIPLE WHOLE ORG	0.03	mg/kg			RCBRA
5404	MULTIPLE WHOLE ORG	0.02	mg/kg			RCBRA
5405	MULTIPLE WHOLE ORG	0.02	mg/kg			RCBRA
5406	MULTIPLE WHOLE ORG	0.03	mg/kg			RCBRA
5407	MULTIPLE WHOLE ORG	0.1	mg/kg			RCBRA
5408	MULTIPLE WHOLE ORG	0.02	mg/kg			RCBRA
5409	MULTIPLE WHOLE ORG	2600	mg/kg			RCBRA
5410	MULTIPLE WHOLE ORG	2540	mg/kg			RCBRA
5411	MULTIPLE WHOLE ORG	2430	mg/kg			RCBRA
5412	MULTIPLE WHOLE ORG	2360	mg/kg			RCBRA
5413	MULTIPLE WHOLE ORG	2450	mg/kg			RCBRA
5414	MULTIPLE WHOLE ORG	2450	mg/kg			RCBRA
5415	MULTIPLE WHOLE ORG	2570	mg/kg			RCBRA
5416	MULTIPLE WHOLE ORG	2370	mg/kg			RCBRA
5417	MULTIPLE WHOLE ORG	2370	mg/kg			RCBRA
5418	MULTIPLE WHOLE ORG	2500	mg/kg	C		RCBRA
5419	MULTIPLE WHOLE ORG	2590	mg/kg	C		RCBRA
5420	MULTIPLE WHOLE ORG	2680	mg/kg	C		RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
5421	Potasium	7440_09_7	RCBRA 2j Rip	IU2/IU6	RIPARIAN	579360.971	150092.048
5422	Potasium	7440_09_7	RCBRA 2l Rip	IU2/IU6	RIPARIAN	582341.212	146120.069
5423	Potasium	7440_09_7	RCBRA 300-49	300	UPLAND	594318.994	116830.934
5424	Potasium	7440_09_7	RCBRA 3b Rip	IU2/IU6	RIPARIAN	584961.205	141035.835
5425	Potasium	7440_09_7	RCBRA 4a Rip	IU2/IU6	RIPARIAN	589347.5	137480.985
5426	Potasium	7440_09_7	RCBRA 5c Rip	300	RIPARIAN	594509.985	124869.182
5427	Potasium	7440_09_7	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
5428	Potasium	7440_09_7	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
5429	Potasium	7440_09_7	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
5430	Potasium	7440_09_7	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
5431	Potasium	7440_09_7	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
5432	Potasium	7440_09_7	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
5433	Potasium	7440_09_7	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
5434	Potasium	7440_09_7	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
5435	Potasium	7440_09_7	RCBRA 600-181	IU2/IU6	UPLAND	578303.83	147316.698
5436	Potasium	7440_09_7	RCBRA 600-204	IU2/IU6	UPLAND	580128.485	144762.219
5437	Potasium	7440_09_7	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
5438	Potasium	7440_09_7	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
5439	Potasium	7440_09_7	RCBRA 618-4	300	UPLAND	593954.946	117064.473
5440	Potasium	7440_09_7	RCBRA 628-1	IU2/IU6	UPLAND	577797.524	148745.681
5441	Potasium	7440_09_7	RCBRA Bev Ref 1 Rip	Outside decision areas	RIPARIAN	542428.846	167701.261
5442	Potasium	7440_09_7	RCBRA Bev Ref 2 Rip	Outside decision areas	RIPARIAN	541493.988	167808.357
5443	Potasium	7440_09_7	RCBRA JA JONES	300	UPLAND	593874.58	120013.908
5444	Potasium	7440_09_7	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
5445	Potasium	7440_09_7	RCBRA Pit 18	IU2/IU6	UPLAND	580697.058	145311.464
5446	Potasium	7440_09_7	RCBRA Pit 23	IU2/IU6	UPLAND	572381.012	144874.157
5447	Potasium	7440_09_7	RCBRA Pit 24	BC	UPLAND	563395.814	145119.007
5448	Potasium	7440_09_7	RCBRA Pit 9	300	UPLAND	592807.103	120587.7
5449	Potasium	7440_09_7	RCBRA R Ref 11	Outside decision areas	RIPARIAN	559400.735	146458.486
5450	Potasium	7440_09_7	RCBRA R Ref 12	IU2/IU6	RIPARIAN	559201.908	145747.542
5451	Potasium	7440_09_7	RCBRA R Ref 13	Outside decision areas	RIPARIAN	558572.809	145345.115
5452	Potasium	7440_09_7	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
5453	Potasium	7440_09_7	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
5454	Potasium	7440_09_7	RCBRA R Ref 16	Outside decision areas	RIPARIAN	557650.029	144826.748
5455	Potasium	7440_09_7	RCBRA Rip 1	D/H	RIPARIAN	577251.869	153659.195
5456	Potasium	7440_09_7	RCBRA Rip 10	D/H	RIPARIAN	573987.873	153082.19
5457	Potasium	7440_09_7	RCBRA Rip 2	D/H	RIPARIAN	573603.219	152471.6
5458	Potasium	7440_09_7	RCBRA Rip 3	D/H	RIPARIAN	572639.65	151677.812
5459	Potasium	7440_09_7	RCBRA Rip 4	N	RIPARIAN	570558.596	148981.547

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
5421	6/13/2007	J14Y58	SOIL and BIOTA	MIS	1120	mg/kg	TERRESTRIAL INVERTEBRATE
5422	6/13/2007	J14Y59	SOIL and BIOTA	MIS	790	mg/kg	TERRESTRIAL INVERTEBRATE
5423	4/25/2006	J11KT3	SOIL and BIOTA	MIS	1300	mg/kg	TERRESTRIAL INVERTEBRATE
5424	6/11/2007	J14Y60	SOIL and BIOTA	MIS	889	mg/kg	TERRESTRIAL INVERTEBRATE
5425	6/13/2007	J14Y62	SOIL and BIOTA	MIS	1110	mg/kg	TERRESTRIAL INVERTEBRATE
5426	6/7/2007	J14Y61	SOIL and BIOTA	MIS	627	mg/kg	TERRESTRIAL INVERTEBRATE
5427	4/3/2006	J11L35	SOIL and BIOTA	MIS	1000	mg/kg	TERRESTRIAL INVERTEBRATE
5428	4/3/2006	J11L35	SOIL and BIOTA	MIS-phyt	1380	mg/kg	TERRESTRIAL INVERTEBRATE
5429	4/3/2006	J11KR2	SOIL and BIOTA	MIS	1160	mg/kg	TERRESTRIAL INVERTEBRATE
5430	4/3/2006	J11KR2	SOIL and BIOTA	MIS-phyt	1290	mg/kg	TERRESTRIAL INVERTEBRATE
5431	4/25/2006	J11KR3	SOIL and BIOTA	MIS	1100	mg/kg	TERRESTRIAL INVERTEBRATE
5432	4/25/2006	J11KR3	SOIL and BIOTA	MIS-phyt	1190	mg/kg	TERRESTRIAL INVERTEBRATE
5433	4/25/2006	J11XX9	SOIL and BIOTA	MIS	1290	mg/kg	TERRESTRIAL INVERTEBRATE
5434	4/25/2006	J11XX9	SOIL and BIOTA	MIS-phyt	1420	mg/kg	TERRESTRIAL INVERTEBRATE
5435	4/17/2006	J11KR6	SOIL and BIOTA	MIS	1400	mg/kg	TERRESTRIAL INVERTEBRATE
5436	4/25/2006	J11KR4	SOIL and BIOTA	MIS	1500	mg/kg	TERRESTRIAL INVERTEBRATE
5437	4/25/2006	J11KR5	SOIL and BIOTA	MIS	1830	mg/kg	TERRESTRIAL INVERTEBRATE
5438	4/25/2006	J11KR5	SOIL and BIOTA	MIS-phyt	1830	mg/kg	TERRESTRIAL INVERTEBRATE
5439	4/26/2006	J11KT2	SOIL and BIOTA	MIS	898	mg/kg	TERRESTRIAL INVERTEBRATE
5440	4/25/2006	J11XX8	SOIL and BIOTA	MIS	1370	mg/kg	TERRESTRIAL INVERTEBRATE
5441	6/13/2007	J14Y53	SOIL and BIOTA	MIS	733	mg/kg	TERRESTRIAL INVERTEBRATE
5442	6/13/2007	J14Y54	SOIL and BIOTA	MIS	829	mg/kg	TERRESTRIAL INVERTEBRATE
5443	4/25/2006	J11L34	SOIL and BIOTA	MIS	1070	mg/kg	TERRESTRIAL INVERTEBRATE
5444	4/17/2006	J11KP9	SOIL and BIOTA	MIS	1060	mg/kg	TERRESTRIAL INVERTEBRATE
5445	4/17/2006	J11KR0	SOIL and BIOTA	MIS	969	mg/kg	TERRESTRIAL INVERTEBRATE
5446	4/3/2006	J11L33	SOIL and BIOTA	MIS	852	mg/kg	TERRESTRIAL INVERTEBRATE
5447	4/3/2006	J11KT6	SOIL and BIOTA	MIS	1920	mg/kg	TERRESTRIAL INVERTEBRATE
5448	4/25/2006	J11KT5	SOIL and BIOTA	MIS	996	mg/kg	TERRESTRIAL INVERTEBRATE
5449	3/20/2006	J11960	SOIL and BIOTA	MIS	830	mg/kg	TERRESTRIAL INVERTEBRATE
5450	3/20/2006	J11961	SOIL and BIOTA	MIS	833	mg/kg	TERRESTRIAL INVERTEBRATE
5451	3/20/2006	J11962	SOIL and BIOTA	MIS	1120	mg/kg	TERRESTRIAL INVERTEBRATE
5452	3/20/2006	J11963	SOIL and BIOTA	MIS	1120	mg/kg	TERRESTRIAL INVERTEBRATE
5453	6/13/2007	J14Y55	SOIL and BIOTA	MIS	1120	mg/kg	TERRESTRIAL INVERTEBRATE
5454	3/20/2006	J11964	SOIL and BIOTA	MIS	945	mg/kg	TERRESTRIAL INVERTEBRATE
5455	3/16/2006	J11950	SOIL and BIOTA	MIS	1320	mg/kg	TERRESTRIAL INVERTEBRATE
5456	3/16/2006	J11959	SOIL and BIOTA	MIS	611	mg/kg	TERRESTRIAL INVERTEBRATE
5457	3/16/2006	J11951	SOIL and BIOTA	MIS	848	mg/kg	TERRESTRIAL INVERTEBRATE
5458	3/16/2006	J11952	SOIL and BIOTA	MIS	546	mg/kg	TERRESTRIAL INVERTEBRATE
5459	3/16/2006	J11953	SOIL and BIOTA	MIS	950	mg/kg	TERRESTRIAL INVERTEBRATE

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
5421	MULTIPLE WHOLE ORG	2810	mg/kg	C		RCBRA
5422	MULTIPLE WHOLE ORG	2770	mg/kg	C		RCBRA
5423	MULTIPLE WHOLE ORG	2510	mg/kg			RCBRA
5424	MULTIPLE WHOLE ORG	2120	mg/kg	C		RCBRA
5425	MULTIPLE WHOLE ORG	2700	mg/kg	C		RCBRA
5426	MULTIPLE WHOLE ORG	2430	mg/kg	C		RCBRA
5427	MULTIPLE WHOLE ORG	2240	mg/kg			RCBRA
5428	MULTIPLE WHOLE ORG	2240	mg/kg			RCBRA
5429	MULTIPLE WHOLE ORG	2640	mg/kg			RCBRA
5430	MULTIPLE WHOLE ORG	2640	mg/kg			RCBRA
5431	MULTIPLE WHOLE ORG	2540	mg/kg			RCBRA
5432	MULTIPLE WHOLE ORG	2540	mg/kg			RCBRA
5433	MULTIPLE WHOLE ORG	2490	mg/kg			RCBRA
5434	MULTIPLE WHOLE ORG	2490	mg/kg			RCBRA
5435	MULTIPLE WHOLE ORG	2550	mg/kg			RCBRA
5436	MULTIPLE WHOLE ORG	2620	mg/kg			RCBRA
5437	MULTIPLE WHOLE ORG	2270	mg/kg			RCBRA
5438	MULTIPLE WHOLE ORG	2270	mg/kg			RCBRA
5439	MULTIPLE WHOLE ORG	3440	mg/kg			RCBRA
5440	MULTIPLE WHOLE ORG	2490	mg/kg			RCBRA
5441	MULTIPLE WHOLE ORG	3060	mg/kg	C		RCBRA
5442	MULTIPLE WHOLE ORG	2900	mg/kg	C		RCBRA
5443	MULTIPLE WHOLE ORG	2620	mg/kg			RCBRA
5444	MULTIPLE WHOLE ORG	2620	mg/kg			RCBRA
5445	MULTIPLE WHOLE ORG	2410	mg/kg			RCBRA
5446	MULTIPLE WHOLE ORG	2600	mg/kg			RCBRA
5447	MULTIPLE WHOLE ORG	2530	mg/kg			RCBRA
5448	MULTIPLE WHOLE ORG	2220	mg/kg			RCBRA
5449	MULTIPLE WHOLE ORG	2870	mg/kg			RCBRA
5450	MULTIPLE WHOLE ORG	2850	mg/kg			RCBRA
5451	MULTIPLE WHOLE ORG	2540	mg/kg			RCBRA
5452	MULTIPLE WHOLE ORG	2600	mg/kg			RCBRA
5453	MULTIPLE WHOLE ORG	2360	mg/kg	C		RCBRA
5454	MULTIPLE WHOLE ORG	2850	mg/kg			RCBRA
5455	MULTIPLE WHOLE ORG	2750	mg/kg			RCBRA
5456	MULTIPLE WHOLE ORG	2830	mg/kg			RCBRA
5457	MULTIPLE WHOLE ORG	2630	mg/kg			RCBRA
5458	MULTIPLE WHOLE ORG	2170	mg/kg			RCBRA
5459	MULTIPLE WHOLE ORG	3040	mg/kg			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
5460	Potasium	7440_09_7	RCBRA Rip 5	K	RIPARIAN	569141.025	147521.561
5461	Potasium	7440_09_7	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
5462	Potasium	7440_09_7	RCBRA Rip 7	IU2/IU6	RIPARIAN	581326.914	147825.17
5463	Potasium	7440_09_7	RCBRA Rip 8	D/H	RIPARIAN	578698.584	152233.645
5464	Potasium	7440_09_7	RCBRA Rip 9	D/H	RIPARIAN	578153.643	152801.452
5465	Potasium	7440_09_7	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
5466	Potasium	7440_09_7	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
5467	Potasium	7440_09_7	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
5468	Potasium	7440_09_7	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
5469	Potasium	7440_09_7	RCBRA Yak Rdg 2	Outside decision areas	UPLAND	559031.557	135576.407
5470	Lithium	7439-93-2	RCBRA 100-D-48	D/H	UPLAND	573841.527	151914.538
5471	Lithium	7439-93-2	RCBRA 100-D-49	D/H	UPLAND	573938.06	151944.123
5472	Lithium	7439-93-2	RCBRA 116-DR-1&2	D/H	UPLAND	574007.817	152246.748
5473	Lithium	7439-93-2	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
5474	Lithium	7439-93-2	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
5475	Lithium	7439-93-2	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
5476	Lithium	7439-93-2	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
5477	Lithium	7439-93-2	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
5478	Lithium	7439-93-2	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
5479	Lithium	7439-93-2	RCBRA Pit 23	IU2/IU6	UPLAND	572381.012	144874.157
5480	Lithium	7439-93-2	RCBRA Pit 24	BC	UPLAND	563395.814	145119.007
5481	Lithium	7439-93-2	RCBRA R Ref 11	Outside decision areas	RIPARIAN	559400.735	146458.486
5482	Lithium	7439-93-2	RCBRA R Ref 12	IU2/IU6	RIPARIAN	559201.908	145747.542
5483	Lithium	7439-93-2	RCBRA R Ref 13	Outside decision areas	RIPARIAN	558572.809	145345.115
5484	Lithium	7439-93-2	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
5485	Lithium	7439-93-2	RCBRA R Ref 16	Outside decision areas	RIPARIAN	557650.029	144826.748
5486	Lithium	7439-93-2	RCBRA Rip 1	D/H	RIPARIAN	577251.869	153659.195
5487	Lithium	7439-93-2	RCBRA Rip 10	D/H	RIPARIAN	573987.873	153082.19
5488	Lithium	7439-93-2	RCBRA Rip 2	D/H	RIPARIAN	573603.219	152471.6
5489	Lithium	7439-93-2	RCBRA Rip 3	D/H	RIPARIAN	572639.65	151677.812
5490	Lithium	7439-93-2	RCBRA Rip 4	N	RIPARIAN	570558.596	148981.547
5491	Lithium	7439-93-2	RCBRA Rip 5	K	RIPARIAN	569141.025	147521.561
5492	Lithium	7439-93-2	RCBRA Rip 7	IU2/IU6	RIPARIAN	581326.914	147825.17
5493	Lithium	7439-93-2	RCBRA Rip 8	D/H	RIPARIAN	578698.584	152233.645
5494	Lithium	7439-93-2	RCBRA Rip 9	D/H	RIPARIAN	578153.643	152801.452
5495	Lithium	7439-93-2	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
5496	Lithium	7439-93-2	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
5497	Lithium	7439-93-2	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
5498	Lithium	7439-93-2	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
5460	3/16/2006	J11954	SOIL and BIOTA	MIS	985	mg/kg	TERRESTRIAL INVERTEBRATE
5461	4/25/2006	J11955	SOIL and BIOTA	MIS	1470	mg/kg	TERRESTRIAL INVERTEBRATE
5462	3/16/2006	J11956	SOIL and BIOTA	MIS	826	mg/kg	TERRESTRIAL INVERTEBRATE
5463	3/16/2006	J11957	SOIL and BIOTA	MIS	824	mg/kg	TERRESTRIAL INVERTEBRATE
5464	3/16/2006	J11958	SOIL and BIOTA	MIS	802	mg/kg	TERRESTRIAL INVERTEBRATE
5465	4/3/2006	J11KV0	SOIL and BIOTA	MIS	2280	mg/kg	TERRESTRIAL INVERTEBRATE
5466	4/3/2006	J11KV0	SOIL and BIOTA	MIS-phyt	2210	mg/kg	TERRESTRIAL INVERTEBRATE
5467	4/3/2006	J11KT8	SOIL and BIOTA	MIS	2070	mg/kg	TERRESTRIAL INVERTEBRATE
5468	4/3/2006	J11KT8	SOIL and BIOTA	MIS-phyt	2180	mg/kg	TERRESTRIAL INVERTEBRATE
5469	4/3/2006	J11KT7	SOIL and BIOTA	MIS	2490	mg/kg	TERRESTRIAL INVERTEBRATE
5470	4/3/2006	J11KV5	SOIL and BIOTA	MIS	6.2	mg/kg	TERRESTRIAL INVERTEBRATE
5471	4/3/2006	J11KV6	SOIL and BIOTA	MIS	6.2	mg/kg	TERRESTRIAL INVERTEBRATE
5472	4/3/2006	J11L31	SOIL and BIOTA	MIS	6	mg/kg	TERRESTRIAL INVERTEBRATE
5473	4/3/2006	J11KR9	SOIL and BIOTA	MIS	8.3	mg/kg	TERRESTRIAL INVERTEBRATE
5474	4/3/2006	J11KR9	SOIL and BIOTA	MIS-phyt	9.5	mg/kg	TERRESTRIAL INVERTEBRATE
5475	4/3/2006	J11L35	SOIL and BIOTA	MIS	5.5	mg/kg	TERRESTRIAL INVERTEBRATE
5476	4/3/2006	J11L35	SOIL and BIOTA	MIS-phyt	7.4	mg/kg	TERRESTRIAL INVERTEBRATE
5477	4/3/2006	J11KR2	SOIL and BIOTA	MIS	6.7	mg/kg	TERRESTRIAL INVERTEBRATE
5478	4/3/2006	J11KR2	SOIL and BIOTA	MIS-phyt	7	mg/kg	TERRESTRIAL INVERTEBRATE
5479	4/3/2006	J11L33	SOIL and BIOTA	MIS	4.5	mg/kg	TERRESTRIAL INVERTEBRATE
5480	4/3/2006	J11KT6	SOIL and BIOTA	MIS	7.4	mg/kg	TERRESTRIAL INVERTEBRATE
5481	3/20/2006	J11960	SOIL and BIOTA	MIS	10.5	mg/kg	TERRESTRIAL INVERTEBRATE
5482	3/20/2006	J11961	SOIL and BIOTA	MIS	9	mg/kg	TERRESTRIAL INVERTEBRATE
5483	3/20/2006	J11962	SOIL and BIOTA	MIS	13.5	mg/kg	TERRESTRIAL INVERTEBRATE
5484	3/20/2006	J11963	SOIL and BIOTA	MIS	12.1	mg/kg	TERRESTRIAL INVERTEBRATE
5485	3/20/2006	J11964	SOIL and BIOTA	MIS	11.3	mg/kg	TERRESTRIAL INVERTEBRATE
5486	3/16/2006	J11950	SOIL and BIOTA	MIS	12.7	mg/kg	TERRESTRIAL INVERTEBRATE
5487	3/16/2006	J11959	SOIL and BIOTA	MIS	7.9	mg/kg	TERRESTRIAL INVERTEBRATE
5488	3/16/2006	J11951	SOIL and BIOTA	MIS	10.7	mg/kg	TERRESTRIAL INVERTEBRATE
5489	3/16/2006	J11952	SOIL and BIOTA	MIS	5.1	mg/kg	TERRESTRIAL INVERTEBRATE
5490	3/16/2006	J11953	SOIL and BIOTA	MIS	11.7	mg/kg	TERRESTRIAL INVERTEBRATE
5491	3/16/2006	J11954	SOIL and BIOTA	MIS	12	mg/kg	TERRESTRIAL INVERTEBRATE
5492	3/16/2006	J11956	SOIL and BIOTA	MIS	8.8	mg/kg	TERRESTRIAL INVERTEBRATE
5493	3/16/2006	J11957	SOIL and BIOTA	MIS	9.8	mg/kg	TERRESTRIAL INVERTEBRATE
5494	3/16/2006	J11958	SOIL and BIOTA	MIS	8.7	mg/kg	TERRESTRIAL INVERTEBRATE
5495	4/3/2006	J11KV0	SOIL and BIOTA	MIS	8.9	mg/kg	TERRESTRIAL INVERTEBRATE
5496	4/3/2006	J11KV0	SOIL and BIOTA	MIS-phyt	9.6	mg/kg	TERRESTRIAL INVERTEBRATE
5497	4/3/2006	J11KT8	SOIL and BIOTA	MIS	8.3	mg/kg	TERRESTRIAL INVERTEBRATE
5498	4/3/2006	J11KT8	SOIL and BIOTA	MIS-phyt	9.3	mg/kg	TERRESTRIAL INVERTEBRATE

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
5460	MULTIPLE WHOLE ORG	2010	mg/kg			RCBRA
5461	MULTIPLE WHOLE ORG	2470	mg/kg			RCBRA
5462	MULTIPLE WHOLE ORG	1650	mg/kg			RCBRA
5463	MULTIPLE WHOLE ORG	2740	mg/kg			RCBRA
5464	MULTIPLE WHOLE ORG	2620	mg/kg			RCBRA
5465	MULTIPLE WHOLE ORG	2360	mg/kg			RCBRA
5466	MULTIPLE WHOLE ORG	2360	mg/kg			RCBRA
5467	MULTIPLE WHOLE ORG	2310	mg/kg			RCBRA
5468	MULTIPLE WHOLE ORG	2310	mg/kg			RCBRA
5469	MULTIPLE WHOLE ORG	2370	mg/kg			RCBRA
5470	MULTIPLE WHOLE ORG	0.08	mg/kg			RCBRA
5471	MULTIPLE WHOLE ORG	0.11	mg/kg			RCBRA
5472	MULTIPLE WHOLE ORG	0.1	mg/kg			RCBRA
5473	MULTIPLE WHOLE ORG	0.05	mg/kg			RCBRA
5474	MULTIPLE WHOLE ORG	0.05	mg/kg			RCBRA
5475	MULTIPLE WHOLE ORG	0.03	mg/kg			RCBRA
5476	MULTIPLE WHOLE ORG	0.03	mg/kg			RCBRA
5477	MULTIPLE WHOLE ORG	0.06	mg/kg			RCBRA
5478	MULTIPLE WHOLE ORG	0.06	mg/kg			RCBRA
5479	MULTIPLE WHOLE ORG	0.03	mg/kg			RCBRA
5480	MULTIPLE WHOLE ORG	0.05	mg/kg			RCBRA
5481	MULTIPLE WHOLE ORG	0.05	mg/kg	C		RCBRA
5482	MULTIPLE WHOLE ORG	0.04	mg/kg	C		RCBRA
5483	MULTIPLE WHOLE ORG	0.06	mg/kg	C		RCBRA
5484	MULTIPLE WHOLE ORG	0.05	mg/kg	C		RCBRA
5485	MULTIPLE WHOLE ORG	0.05	mg/kg	C		RCBRA
5486	MULTIPLE WHOLE ORG	0.11	mg/kg	C		RCBRA
5487	MULTIPLE WHOLE ORG	0.04	mg/kg	C		RCBRA
5488	MULTIPLE WHOLE ORG	0.11	mg/kg	C		RCBRA
5489	MULTIPLE WHOLE ORG	0.04	mg/kg	C		RCBRA
5490	MULTIPLE WHOLE ORG	0.08	mg/kg	C		RCBRA
5491	MULTIPLE WHOLE ORG	0.06	mg/kg	C		RCBRA
5492	MULTIPLE WHOLE ORG	0.06	mg/kg	C		RCBRA
5493	MULTIPLE WHOLE ORG	0.05	mg/kg	C		RCBRA
5494	MULTIPLE WHOLE ORG	0.05	mg/kg	C		RCBRA
5495	MULTIPLE WHOLE ORG	0.04	mg/kg			RCBRA
5496	MULTIPLE WHOLE ORG	0.04	mg/kg			RCBRA
5497	MULTIPLE WHOLE ORG	0.03	mg/kg			RCBRA
5498	MULTIPLE WHOLE ORG	0.03	mg/kg			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
5499	Lithium	7439-93-2	RCBRA Yak Rdg 2	Outside decision areas	UPLAND	559031.557	135576.407
5500	Magnesium	7439-95-4	RCBRA 100-D-48	D/H	UPLAND	573841.527	151914.538
5501	Magnesium	7439-95-4	RCBRA 100-D-49	D/H	UPLAND	573938.06	151944.123
5502	Magnesium	7439-95-4	RCBRA 100-F-2	IU2/IU6	UPLAND	579728.068	147001.117
5503	Magnesium	7439-95-4	RCBRA 116-DR-1&2	D/H	UPLAND	574007.817	152246.748
5504	Magnesium	7439-95-4	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
5505	Magnesium	7439-95-4	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
5506	Magnesium	7439-95-4	RCBRA 1607-D2:1	D/H	UPLAND	573823.924	152260.319
5507	Magnesium	7439-95-4	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
5508	Magnesium	7439-95-4	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
5509	Magnesium	7439-95-4	RCBRA 2a Rip	BC	RIPARIAN	564618.501	145284.526
5510	Magnesium	7439-95-4	RCBRA 2c Rip	K	RIPARIAN	567598.2	146210.159
5511	Magnesium	7439-95-4	RCBRA 2f Rip	D/H	RIPARIAN	576222.844	154297.511
5512	Magnesium	7439-95-4	RCBRA 2j Rip	IU2/IU6	RIPARIAN	579360.971	150092.048
5513	Magnesium	7439-95-4	RCBRA 2l Rip	IU2/IU6	RIPARIAN	582341.212	146120.069
5514	Magnesium	7439-95-4	RCBRA 300-49	300	UPLAND	594318.994	116830.934
5515	Magnesium	7439-95-4	RCBRA 3b Rip	IU2/IU6	RIPARIAN	584961.205	141035.835
5516	Magnesium	7439-95-4	RCBRA 4a Rip	IU2/IU6	RIPARIAN	589347.5	137480.985
5517	Magnesium	7439-95-4	RCBRA 5c Rip	300	RIPARIAN	594509.985	124869.182
5518	Magnesium	7439-95-4	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
5519	Magnesium	7439-95-4	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
5520	Magnesium	7439-95-4	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
5521	Magnesium	7439-95-4	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
5522	Magnesium	7439-95-4	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
5523	Magnesium	7439-95-4	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
5524	Magnesium	7439-95-4	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
5525	Magnesium	7439-95-4	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
5526	Magnesium	7439-95-4	RCBRA 600-181	IU2/IU6	UPLAND	578303.83	147316.698
5527	Magnesium	7439-95-4	RCBRA 600-204	IU2/IU6	UPLAND	580128.485	144762.219
5528	Magnesium	7439-95-4	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
5529	Magnesium	7439-95-4	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
5530	Magnesium	7439-95-4	RCBRA 618-4	300	UPLAND	593954.946	117064.473
5531	Magnesium	7439-95-4	RCBRA 628-1	IU2/IU6	UPLAND	577797.524	148745.681
5532	Magnesium	7439-95-4	RCBRA Bev Ref 1 Rip	Outside decision areas	RIPARIAN	542428.846	167701.261
5533	Magnesium	7439-95-4	RCBRA Bev Ref 2 Rip	Outside decision areas	RIPARIAN	541493.988	167808.357
5534	Magnesium	7439-95-4	RCBRA JA JONES	300	UPLAND	593874.58	120013.908
5535	Magnesium	7439-95-4	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
5536	Magnesium	7439-95-4	RCBRA Pit 18	IU2/IU6	UPLAND	580697.058	145311.464
5537	Magnesium	7439-95-4	RCBRA Pit 23	IU2/IU6	UPLAND	572381.012	144874.157

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
5499	4/3/2006	J11KT7	SOIL and BIOTA	MIS	10.9	mg/kg	TERRESTRIAL INVERTEBRATE
5500	4/3/2006	J11KV5	SOIL and BIOTA	MIS	4730	mg/kg	TERRESTRIAL INVERTEBRATE
5501	4/3/2006	J11KV6	SOIL and BIOTA	MIS	4490	mg/kg	TERRESTRIAL INVERTEBRATE
5502	4/25/2006	J11L32	SOIL and BIOTA	MIS	4480	mg/kg	TERRESTRIAL INVERTEBRATE
5503	4/3/2006	J11L31	SOIL and BIOTA	MIS	4200	mg/kg	TERRESTRIAL INVERTEBRATE
5504	4/17/2006	J11KT1	SOIL and BIOTA	MIS	4340	mg/kg	TERRESTRIAL INVERTEBRATE
5505	4/17/2006	J11KT1	SOIL and BIOTA	MIS-phyt	4080	mg/kg	TERRESTRIAL INVERTEBRATE
5506	4/3/2006	J11KT4	SOIL and BIOTA	MIS	4580	mg/kg	TERRESTRIAL INVERTEBRATE
5507	4/3/2006	J11KR9	SOIL and BIOTA	MIS	4340	mg/kg	TERRESTRIAL INVERTEBRATE
5508	4/3/2006	J11KR9	SOIL and BIOTA	MIS-phyt	5040	mg/kg	TERRESTRIAL INVERTEBRATE
5509	6/11/2007	J14Y56	SOIL and BIOTA	MIS	3800	mg/kg	TERRESTRIAL INVERTEBRATE
5510	6/13/2007	J14Y63	SOIL and BIOTA	MIS	4950	mg/kg	TERRESTRIAL INVERTEBRATE
5511	6/13/2007	J14Y57	SOIL and BIOTA	MIS	4570	mg/kg	TERRESTRIAL INVERTEBRATE
5512	6/13/2007	J14Y58	SOIL and BIOTA	MIS	5370	mg/kg	TERRESTRIAL INVERTEBRATE
5513	6/13/2007	J14Y59	SOIL and BIOTA	MIS	4540	mg/kg	TERRESTRIAL INVERTEBRATE
5514	4/25/2006	J11KT3	SOIL and BIOTA	MIS	3920	mg/kg	TERRESTRIAL INVERTEBRATE
5515	6/11/2007	J14Y60	SOIL and BIOTA	MIS	4430	mg/kg	TERRESTRIAL INVERTEBRATE
5516	6/13/2007	J14Y62	SOIL and BIOTA	MIS	5280	mg/kg	TERRESTRIAL INVERTEBRATE
5517	6/7/2007	J14Y61	SOIL and BIOTA	MIS	3780	mg/kg	TERRESTRIAL INVERTEBRATE
5518	4/3/2006	J11L35	SOIL and BIOTA	MIS	3220	mg/kg	TERRESTRIAL INVERTEBRATE
5519	4/3/2006	J11L35	SOIL and BIOTA	MIS-phyt	4470	mg/kg	TERRESTRIAL INVERTEBRATE
5520	4/3/2006	J11KR2	SOIL and BIOTA	MIS	3820	mg/kg	TERRESTRIAL INVERTEBRATE
5521	4/3/2006	J11KR2	SOIL and BIOTA	MIS-phyt	4150	mg/kg	TERRESTRIAL INVERTEBRATE
5522	4/25/2006	J11KR3	SOIL and BIOTA	MIS	4140	mg/kg	TERRESTRIAL INVERTEBRATE
5523	4/25/2006	J11KR3	SOIL and BIOTA	MIS-phyt	4330	mg/kg	TERRESTRIAL INVERTEBRATE
5524	4/25/2006	J11XX9	SOIL and BIOTA	MIS	3520	mg/kg	TERRESTRIAL INVERTEBRATE
5525	4/25/2006	J11XX9	SOIL and BIOTA	MIS-phyt	3870	mg/kg	TERRESTRIAL INVERTEBRATE
5526	4/17/2006	J11KR6	SOIL and BIOTA	MIS	3860	mg/kg	TERRESTRIAL INVERTEBRATE
5527	4/25/2006	J11KR4	SOIL and BIOTA	MIS	4500	mg/kg	TERRESTRIAL INVERTEBRATE
5528	4/25/2006	J11KR5	SOIL and BIOTA	MIS	4310	mg/kg	TERRESTRIAL INVERTEBRATE
5529	4/25/2006	J11KR5	SOIL and BIOTA	MIS-phyt	4450	mg/kg	TERRESTRIAL INVERTEBRATE
5530	4/26/2006	J11KT2	SOIL and BIOTA	MIS	3720	mg/kg	TERRESTRIAL INVERTEBRATE
5531	4/25/2006	J11XX8	SOIL and BIOTA	MIS	4020	mg/kg	TERRESTRIAL INVERTEBRATE
5532	6/13/2007	J14Y53	SOIL and BIOTA	MIS	4150	mg/kg	TERRESTRIAL INVERTEBRATE
5533	6/13/2007	J14Y54	SOIL and BIOTA	MIS	4880	mg/kg	TERRESTRIAL INVERTEBRATE
5534	4/25/2006	J11L34	SOIL and BIOTA	MIS	3580	mg/kg	TERRESTRIAL INVERTEBRATE
5535	4/17/2006	J11KP9	SOIL and BIOTA	MIS	4800	mg/kg	TERRESTRIAL INVERTEBRATE
5536	4/17/2006	J11KR0	SOIL and BIOTA	MIS	4050	mg/kg	TERRESTRIAL INVERTEBRATE
5537	4/3/2006	J11L33	SOIL and BIOTA	MIS	3850	mg/kg	TERRESTRIAL INVERTEBRATE

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
5499	MULTIPLE WHOLE ORG	0.06	mg/kg			RCBRA
5500	MULTIPLE WHOLE ORG	826	mg/kg			RCBRA
5501	MULTIPLE WHOLE ORG	828	mg/kg			RCBRA
5502	MULTIPLE WHOLE ORG	568	mg/kg			RCBRA
5503	MULTIPLE WHOLE ORG	740	mg/kg			RCBRA
5504	MULTIPLE WHOLE ORG	845	mg/kg			RCBRA
5505	MULTIPLE WHOLE ORG	845	mg/kg			RCBRA
5506	MULTIPLE WHOLE ORG	678	mg/kg			RCBRA
5507	MULTIPLE WHOLE ORG	710	mg/kg			RCBRA
5508	MULTIPLE WHOLE ORG	710	mg/kg			RCBRA
5509	MULTIPLE WHOLE ORG	385	mg/kg	C		RCBRA
5510	MULTIPLE WHOLE ORG	588	mg/kg	C		RCBRA
5511	MULTIPLE WHOLE ORG	422	mg/kg	C		RCBRA
5512	MULTIPLE WHOLE ORG	643	mg/kg	C		RCBRA
5513	MULTIPLE WHOLE ORG	439	mg/kg	C		RCBRA
5514	MULTIPLE WHOLE ORG	662	mg/kg			RCBRA
5515	MULTIPLE WHOLE ORG	564	mg/kg	C		RCBRA
5516	MULTIPLE WHOLE ORG	458	mg/kg	C		RCBRA
5517	MULTIPLE WHOLE ORG	294	mg/kg	C		RCBRA
5518	MULTIPLE WHOLE ORG	579	mg/kg			RCBRA
5519	MULTIPLE WHOLE ORG	579	mg/kg			RCBRA
5520	MULTIPLE WHOLE ORG	739	mg/kg			RCBRA
5521	MULTIPLE WHOLE ORG	739	mg/kg			RCBRA
5522	MULTIPLE WHOLE ORG	540	mg/kg			RCBRA
5523	MULTIPLE WHOLE ORG	540	mg/kg			RCBRA
5524	MULTIPLE WHOLE ORG	764	mg/kg			RCBRA
5525	MULTIPLE WHOLE ORG	764	mg/kg			RCBRA
5526	MULTIPLE WHOLE ORG	798	mg/kg			RCBRA
5527	MULTIPLE WHOLE ORG	722	mg/kg			RCBRA
5528	MULTIPLE WHOLE ORG	608	mg/kg			RCBRA
5529	MULTIPLE WHOLE ORG	608	mg/kg			RCBRA
5530	MULTIPLE WHOLE ORG	952	mg/kg			RCBRA
5531	MULTIPLE WHOLE ORG	686	mg/kg			RCBRA
5532	MULTIPLE WHOLE ORG	390	mg/kg	C		RCBRA
5533	MULTIPLE WHOLE ORG	352	mg/kg	C		RCBRA
5534	MULTIPLE WHOLE ORG	826	mg/kg			RCBRA
5535	MULTIPLE WHOLE ORG	888	mg/kg			RCBRA
5536	MULTIPLE WHOLE ORG	714	mg/kg			RCBRA
5537	MULTIPLE WHOLE ORG	690	mg/kg			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
5538	Magnesium	7439-95-4	RCBRA Pit 24	BC	UPLAND	563395.814	145119.007
5539	Magnesium	7439-95-4	RCBRA Pit 9	300	UPLAND	592807.103	120587.7
5540	Magnesium	7439-95-4	RCBRA R Ref 11	Outside decision areas	RIPARIAN	559400.735	146458.486
5541	Magnesium	7439-95-4	RCBRA R Ref 12	IU2/IU6	RIPARIAN	559201.908	145747.542
5542	Magnesium	7439-95-4	RCBRA R Ref 13	Outside decision areas	RIPARIAN	558572.809	145345.115
5543	Magnesium	7439-95-4	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
5544	Magnesium	7439-95-4	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
5545	Magnesium	7439-95-4	RCBRA R Ref 16	Outside decision areas	RIPARIAN	557650.029	144826.748
5546	Magnesium	7439-95-4	RCBRA Rip 1	D/H	RIPARIAN	577251.869	153659.195
5547	Magnesium	7439-95-4	RCBRA Rip 10	D/H	RIPARIAN	573987.873	153082.19
5548	Magnesium	7439-95-4	RCBRA Rip 2	D/H	RIPARIAN	573603.219	152471.6
5549	Magnesium	7439-95-4	RCBRA Rip 3	D/H	RIPARIAN	572639.65	151677.812
5550	Magnesium	7439-95-4	RCBRA Rip 4	N	RIPARIAN	570558.596	148981.547
5551	Magnesium	7439-95-4	RCBRA Rip 5	K	RIPARIAN	569141.025	147521.561
5552	Magnesium	7439-95-4	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
5553	Magnesium	7439-95-4	RCBRA Rip 7	IU2/IU6	RIPARIAN	581326.914	147825.17
5554	Magnesium	7439-95-4	RCBRA Rip 8	D/H	RIPARIAN	578698.584	152233.645
5555	Magnesium	7439-95-4	RCBRA Rip 9	D/H	RIPARIAN	578153.643	152801.452
5556	Magnesium	7439-95-4	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
5557	Magnesium	7439-95-4	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
5558	Magnesium	7439-95-4	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
5559	Magnesium	7439-95-4	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
5560	Magnesium	7439-95-4	RCBRA Yak Rdg 2	Outside decision areas	UPLAND	559031.557	135576.407
5561	Manganese	7439-96-5	RCBRA 100-D-48	D/H	UPLAND	573841.527	151914.538
5562	Manganese	7439-96-5	RCBRA 100-D-49	D/H	UPLAND	573938.06	151944.123
5563	Manganese	7439-96-5	RCBRA 100-F-2	IU2/IU6	UPLAND	579728.068	147001.117
5564	Manganese	7439-96-5	RCBRA 116-DR-1&2	D/H	UPLAND	574007.817	152246.748
5565	Manganese	7439-96-5	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
5566	Manganese	7439-96-5	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
5567	Manganese	7439-96-5	RCBRA 1607-D2:1	D/H	UPLAND	573823.924	152260.319
5568	Manganese	7439-96-5	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
5569	Manganese	7439-96-5	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
5570	Manganese	7439-96-5	RCBRA 2a Rip	BC	RIPARIAN	564618.501	145284.526
5571	Manganese	7439-96-5	RCBRA 2c Rip	K	RIPARIAN	567598.2	146210.159
5572	Manganese	7439-96-5	RCBRA 2f Rip	D/H	RIPARIAN	576222.844	154297.511
5573	Manganese	7439-96-5	RCBRA 2j Rip	IU2/IU6	RIPARIAN	579360.971	150092.048
5574	Manganese	7439-96-5	RCBRA 2l Rip	IU2/IU6	RIPARIAN	582341.212	146120.069
5575	Manganese	7439-96-5	RCBRA 300-49	300	UPLAND	594318.994	116830.934
5576	Manganese	7439-96-5	RCBRA 3b Rip	IU2/IU6	RIPARIAN	584961.205	141035.835

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
5538	4/3/2006	J11KT6	SOIL and BIOTA	MIS	4270	mg/kg	TERRESTRIAL INVERTEBRATE
5539	4/25/2006	J11KT5	SOIL and BIOTA	MIS	4100	mg/kg	TERRESTRIAL INVERTEBRATE
5540	3/20/2006	J11960	SOIL and BIOTA	MIS	4510	mg/kg	TERRESTRIAL INVERTEBRATE
5541	3/20/2006	J11961	SOIL and BIOTA	MIS	4200	mg/kg	TERRESTRIAL INVERTEBRATE
5542	3/20/2006	J11962	SOIL and BIOTA	MIS	5500	mg/kg	TERRESTRIAL INVERTEBRATE
5543	3/20/2006	J11963	SOIL and BIOTA	MIS	5700	mg/kg	TERRESTRIAL INVERTEBRATE
5544	6/13/2007	J14Y55	SOIL and BIOTA	MIS	5700	mg/kg	TERRESTRIAL INVERTEBRATE
5545	3/20/2006	J11964	SOIL and BIOTA	MIS	4870	mg/kg	TERRESTRIAL INVERTEBRATE
5546	3/16/2006	J11950	SOIL and BIOTA	MIS	5360	mg/kg	TERRESTRIAL INVERTEBRATE
5547	3/16/2006	J11959	SOIL and BIOTA	MIS	3590	mg/kg	TERRESTRIAL INVERTEBRATE
5548	3/16/2006	J11951	SOIL and BIOTA	MIS	4750	mg/kg	TERRESTRIAL INVERTEBRATE
5549	3/16/2006	J11952	SOIL and BIOTA	MIS	4090	mg/kg	TERRESTRIAL INVERTEBRATE
5550	3/16/2006	J11953	SOIL and BIOTA	MIS	4650	mg/kg	TERRESTRIAL INVERTEBRATE
5551	3/16/2006	J11954	SOIL and BIOTA	MIS	5260	mg/kg	TERRESTRIAL INVERTEBRATE
5552	4/25/2006	J11955	SOIL and BIOTA	MIS	4930	mg/kg	TERRESTRIAL INVERTEBRATE
5553	3/16/2006	J11956	SOIL and BIOTA	MIS	4150	mg/kg	TERRESTRIAL INVERTEBRATE
5554	3/16/2006	J11957	SOIL and BIOTA	MIS	4270	mg/kg	TERRESTRIAL INVERTEBRATE
5555	3/16/2006	J11958	SOIL and BIOTA	MIS	4440	mg/kg	TERRESTRIAL INVERTEBRATE
5556	4/3/2006	J11KV0	SOIL and BIOTA	MIS	4920	mg/kg	TERRESTRIAL INVERTEBRATE
5557	4/3/2006	J11KV0	SOIL and BIOTA	MIS-phyt	5140	mg/kg	TERRESTRIAL INVERTEBRATE
5558	4/3/2006	J11KT8	SOIL and BIOTA	MIS	3930	mg/kg	TERRESTRIAL INVERTEBRATE
5559	4/3/2006	J11KT8	SOIL and BIOTA	MIS-phyt	4290	mg/kg	TERRESTRIAL INVERTEBRATE
5560	4/3/2006	J11KT7	SOIL and BIOTA	MIS	6110	mg/kg	TERRESTRIAL INVERTEBRATE
5561	4/3/2006	J11KV5	SOIL and BIOTA	MIS	321	mg/kg	TERRESTRIAL INVERTEBRATE
5562	4/3/2006	J11KV6	SOIL and BIOTA	MIS	328	mg/kg	TERRESTRIAL INVERTEBRATE
5563	4/25/2006	J11L32	SOIL and BIOTA	MIS	368	mg/kg	TERRESTRIAL INVERTEBRATE
5564	4/3/2006	J11L31	SOIL and BIOTA	MIS	315	mg/kg	TERRESTRIAL INVERTEBRATE
5565	4/17/2006	J11KT1	SOIL and BIOTA	MIS	281	mg/kg	TERRESTRIAL INVERTEBRATE
5566	4/17/2006	J11KT1	SOIL and BIOTA	MIS-phyt	273	mg/kg	TERRESTRIAL INVERTEBRATE
5567	4/3/2006	J11KT4	SOIL and BIOTA	MIS	286	mg/kg	TERRESTRIAL INVERTEBRATE
5568	4/3/2006	J11KR9	SOIL and BIOTA	MIS	265	mg/kg	TERRESTRIAL INVERTEBRATE
5569	4/3/2006	J11KR9	SOIL and BIOTA	MIS-phyt	314	mg/kg	TERRESTRIAL INVERTEBRATE
5570	6/11/2007	J14Y56	SOIL and BIOTA	MIS	166	mg/kg	TERRESTRIAL INVERTEBRATE
5571	6/13/2007	J14Y63	SOIL and BIOTA	MIS	269	mg/kg	TERRESTRIAL INVERTEBRATE
5572	6/13/2007	J14Y57	SOIL and BIOTA	MIS	227	mg/kg	TERRESTRIAL INVERTEBRATE
5573	6/13/2007	J14Y58	SOIL and BIOTA	MIS	219	mg/kg	TERRESTRIAL INVERTEBRATE
5574	6/13/2007	J14Y59	SOIL and BIOTA	MIS	284	mg/kg	TERRESTRIAL INVERTEBRATE
5575	4/25/2006	J11KT3	SOIL and BIOTA	MIS	310	mg/kg	TERRESTRIAL INVERTEBRATE
5576	6/11/2007	J14Y60	SOIL and BIOTA	MIS	218	mg/kg	TERRESTRIAL INVERTEBRATE

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
5538	MULTIPLE WHOLE ORG	697	mg/kg			RCBRA
5539	MULTIPLE WHOLE ORG	858	mg/kg			RCBRA
5540	MULTIPLE WHOLE ORG	402	mg/kg			RCBRA
5541	MULTIPLE WHOLE ORG	442	mg/kg			RCBRA
5542	MULTIPLE WHOLE ORG	1030	mg/kg			RCBRA
5543	MULTIPLE WHOLE ORG	631	mg/kg			RCBRA
5544	MULTIPLE WHOLE ORG	386	mg/kg	C		RCBRA
5545	MULTIPLE WHOLE ORG	509	mg/kg			RCBRA
5546	MULTIPLE WHOLE ORG	287	mg/kg			RCBRA
5547	MULTIPLE WHOLE ORG	461	mg/kg			RCBRA
5548	MULTIPLE WHOLE ORG	744	mg/kg			RCBRA
5549	MULTIPLE WHOLE ORG	274	mg/kg			RCBRA
5550	MULTIPLE WHOLE ORG	287	mg/kg			RCBRA
5551	MULTIPLE WHOLE ORG	244	mg/kg			RCBRA
5552	MULTIPLE WHOLE ORG	804	mg/kg			RCBRA
5553	MULTIPLE WHOLE ORG	342	mg/kg			RCBRA
5554	MULTIPLE WHOLE ORG	545	mg/kg			RCBRA
5555	MULTIPLE WHOLE ORG	398	mg/kg			RCBRA
5556	MULTIPLE WHOLE ORG	760	mg/kg			RCBRA
5557	MULTIPLE WHOLE ORG	760	mg/kg			RCBRA
5558	MULTIPLE WHOLE ORG	700	mg/kg			RCBRA
5559	MULTIPLE WHOLE ORG	700	mg/kg			RCBRA
5560	MULTIPLE WHOLE ORG	496	mg/kg			RCBRA
5561	MULTIPLE WHOLE ORG	7.5	mg/kg			RCBRA
5562	MULTIPLE WHOLE ORG	9.2	mg/kg			RCBRA
5563	MULTIPLE WHOLE ORG	5.4	mg/kg			RCBRA
5564	MULTIPLE WHOLE ORG	7.7	mg/kg			RCBRA
5565	MULTIPLE WHOLE ORG	6.4	mg/kg			RCBRA
5566	MULTIPLE WHOLE ORG	6.4	mg/kg			RCBRA
5567	MULTIPLE WHOLE ORG	7.2	mg/kg			RCBRA
5568	MULTIPLE WHOLE ORG	4.8	mg/kg			RCBRA
5569	MULTIPLE WHOLE ORG	4.8	mg/kg			RCBRA
5570	MULTIPLE WHOLE ORG	7.5	mg/kg			RCBRA
5571	MULTIPLE WHOLE ORG	8.4	mg/kg			RCBRA
5572	MULTIPLE WHOLE ORG	12.2	mg/kg			RCBRA
5573	MULTIPLE WHOLE ORG	8.5	mg/kg			RCBRA
5574	MULTIPLE WHOLE ORG	10.4	mg/kg			RCBRA
5575	MULTIPLE WHOLE ORG	4.5	mg/kg			RCBRA
5576	MULTIPLE WHOLE ORG	7.7	mg/kg			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
5577	Manganese	7439-96-5	RCBRA 4a Rip	IU2/IU6	RIPARIAN	589347.5	137480.985
5578	Manganese	7439-96-5	RCBRA 5c Rip	300	RIPARIAN	594509.985	124869.182
5579	Manganese	7439-96-5	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
5580	Manganese	7439-96-5	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
5581	Manganese	7439-96-5	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
5582	Manganese	7439-96-5	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
5583	Manganese	7439-96-5	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
5584	Manganese	7439-96-5	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
5585	Manganese	7439-96-5	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
5586	Manganese	7439-96-5	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
5587	Manganese	7439-96-5	RCBRA 600-181	IU2/IU6	UPLAND	578303.83	147316.698
5588	Manganese	7439-96-5	RCBRA 600-204	IU2/IU6	UPLAND	580128.485	144762.219
5589	Manganese	7439-96-5	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
5590	Manganese	7439-96-5	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
5591	Manganese	7439-96-5	RCBRA 618-4	300	UPLAND	593954.946	117064.473
5592	Manganese	7439-96-5	RCBRA 628-1	IU2/IU6	UPLAND	577797.524	148745.681
5593	Manganese	7439-96-5	RCBRA Bev Ref 1 Rip	Outside decision areas	RIPARIAN	542428.846	167701.261
5594	Manganese	7439-96-5	RCBRA Bev Ref 2 Rip	Outside decision areas	RIPARIAN	541493.988	167808.357
5595	Manganese	7439-96-5	RCBRA JA JONES	300	UPLAND	593874.58	120013.908
5596	Manganese	7439-96-5	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
5597	Manganese	7439-96-5	RCBRA Pit 18	IU2/IU6	UPLAND	580697.058	145311.464
5598	Manganese	7439-96-5	RCBRA Pit 23	IU2/IU6	UPLAND	572381.012	144874.157
5599	Manganese	7439-96-5	RCBRA Pit 24	BC	UPLAND	563395.814	145119.007
5600	Manganese	7439-96-5	RCBRA Pit 9	300	UPLAND	592807.103	120587.7
5601	Manganese	7439-96-5	RCBRA R Ref 11	Outside decision areas	RIPARIAN	559400.735	146458.486
5602	Manganese	7439-96-5	RCBRA R Ref 12	IU2/IU6	RIPARIAN	559201.908	145747.542
5603	Manganese	7439-96-5	RCBRA R Ref 13	Outside decision areas	RIPARIAN	558572.809	145345.115
5604	Manganese	7439-96-5	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
5605	Manganese	7439-96-5	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
5606	Manganese	7439-96-5	RCBRA R Ref 16	Outside decision areas	RIPARIAN	557650.029	144826.748
5607	Manganese	7439-96-5	RCBRA Rip 1	D/H	RIPARIAN	577251.869	153659.195
5608	Manganese	7439-96-5	RCBRA Rip 10	D/H	RIPARIAN	573987.873	153082.19
5609	Manganese	7439-96-5	RCBRA Rip 2	D/H	RIPARIAN	573603.219	152471.6
5610	Manganese	7439-96-5	RCBRA Rip 3	D/H	RIPARIAN	572639.65	151677.812
5611	Manganese	7439-96-5	RCBRA Rip 4	N	RIPARIAN	570558.596	148981.547
5612	Manganese	7439-96-5	RCBRA Rip 5	K	RIPARIAN	569141.025	147521.561
5613	Manganese	7439-96-5	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
5614	Manganese	7439-96-5	RCBRA Rip 7	IU2/IU6	RIPARIAN	581326.914	147825.17
5615	Manganese	7439-96-5	RCBRA Rip 8	D/H	RIPARIAN	578698.584	152233.645

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
5577	6/13/2007	J14Y62	SOIL and BIOTA	MIS	257	mg/kg	TERRESTRIAL INVERTEBRATE
5578	6/7/2007	J14Y61	SOIL and BIOTA	MIS	194	mg/kg	TERRESTRIAL INVERTEBRATE
5579	4/3/2006	J11L35	SOIL and BIOTA	MIS	249	mg/kg	TERRESTRIAL INVERTEBRATE
5580	4/3/2006	J11L35	SOIL and BIOTA	MIS-phyt	328	mg/kg	TERRESTRIAL INVERTEBRATE
5581	4/3/2006	J11KR2	SOIL and BIOTA	MIS	274	mg/kg	TERRESTRIAL INVERTEBRATE
5582	4/3/2006	J11KR2	SOIL and BIOTA	MIS-phyt	302	mg/kg	TERRESTRIAL INVERTEBRATE
5583	4/25/2006	J11KR3	SOIL and BIOTA	MIS	280	mg/kg	TERRESTRIAL INVERTEBRATE
5584	4/25/2006	J11KR3	SOIL and BIOTA	MIS-phyt	303	mg/kg	TERRESTRIAL INVERTEBRATE
5585	4/25/2006	J11XX9	SOIL and BIOTA	MIS	258	mg/kg	TERRESTRIAL INVERTEBRATE
5586	4/25/2006	J11XX9	SOIL and BIOTA	MIS-phyt	290	mg/kg	TERRESTRIAL INVERTEBRATE
5587	4/17/2006	J11KR6	SOIL and BIOTA	MIS	326	mg/kg	TERRESTRIAL INVERTEBRATE
5588	4/25/2006	J11KR4	SOIL and BIOTA	MIS	413	mg/kg	TERRESTRIAL INVERTEBRATE
5589	4/25/2006	J11KR5	SOIL and BIOTA	MIS	330	mg/kg	TERRESTRIAL INVERTEBRATE
5590	4/25/2006	J11KR5	SOIL and BIOTA	MIS-phyt	355	mg/kg	TERRESTRIAL INVERTEBRATE
5591	4/26/2006	J11KT2	SOIL and BIOTA	MIS	283	mg/kg	TERRESTRIAL INVERTEBRATE
5592	4/25/2006	J11XX8	SOIL and BIOTA	MIS	396	mg/kg	TERRESTRIAL INVERTEBRATE
5593	6/13/2007	J14Y53	SOIL and BIOTA	MIS	188	mg/kg	TERRESTRIAL INVERTEBRATE
5594	6/13/2007	J14Y54	SOIL and BIOTA	MIS	240	mg/kg	TERRESTRIAL INVERTEBRATE
5595	4/25/2006	J11L34	SOIL and BIOTA	MIS	311	mg/kg	TERRESTRIAL INVERTEBRATE
5596	4/17/2006	J11KP9	SOIL and BIOTA	MIS	377	mg/kg	TERRESTRIAL INVERTEBRATE
5597	4/17/2006	J11KR0	SOIL and BIOTA	MIS	283	mg/kg	TERRESTRIAL INVERTEBRATE
5598	4/3/2006	J11L33	SOIL and BIOTA	MIS	305	mg/kg	TERRESTRIAL INVERTEBRATE
5599	4/3/2006	J11KT6	SOIL and BIOTA	MIS	386	mg/kg	TERRESTRIAL INVERTEBRATE
5600	4/25/2006	J11KT5	SOIL and BIOTA	MIS	350	mg/kg	TERRESTRIAL INVERTEBRATE
5601	3/20/2006	J11960	SOIL and BIOTA	MIS	224	mg/kg	TERRESTRIAL INVERTEBRATE
5602	3/20/2006	J11961	SOIL and BIOTA	MIS	341	mg/kg	TERRESTRIAL INVERTEBRATE
5603	3/20/2006	J11962	SOIL and BIOTA	MIS	562	mg/kg	TERRESTRIAL INVERTEBRATE
5604	3/20/2006	J11963	SOIL and BIOTA	MIS	556	mg/kg	TERRESTRIAL INVERTEBRATE
5605	6/13/2007	J14Y55	SOIL and BIOTA	MIS	556	mg/kg	TERRESTRIAL INVERTEBRATE
5606	3/20/2006	J11964	SOIL and BIOTA	MIS	286	mg/kg	TERRESTRIAL INVERTEBRATE
5607	3/16/2006	J11950	SOIL and BIOTA	MIS	304	mg/kg	TERRESTRIAL INVERTEBRATE
5608	3/16/2006	J11959	SOIL and BIOTA	MIS	266	mg/kg	TERRESTRIAL INVERTEBRATE
5609	3/16/2006	J11951	SOIL and BIOTA	MIS	369	mg/kg	TERRESTRIAL INVERTEBRATE
5610	3/16/2006	J11952	SOIL and BIOTA	MIS	357	mg/kg	TERRESTRIAL INVERTEBRATE
5611	3/16/2006	J11953	SOIL and BIOTA	MIS	252	mg/kg	TERRESTRIAL INVERTEBRATE
5612	3/16/2006	J11954	SOIL and BIOTA	MIS	402	mg/kg	TERRESTRIAL INVERTEBRATE
5613	4/25/2006	J11955	SOIL and BIOTA	MIS	408	mg/kg	TERRESTRIAL INVERTEBRATE
5614	3/16/2006	J11956	SOIL and BIOTA	MIS	255	mg/kg	TERRESTRIAL INVERTEBRATE
5615	3/16/2006	J11957	SOIL and BIOTA	MIS	305	mg/kg	TERRESTRIAL INVERTEBRATE

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
5577	MULTIPLE WHOLE ORG	9.6	mg/kg			RCBRA
5578	MULTIPLE WHOLE ORG	8.8	mg/kg			RCBRA
5579	MULTIPLE WHOLE ORG	5.1	mg/kg			RCBRA
5580	MULTIPLE WHOLE ORG	5.1	mg/kg			RCBRA
5581	MULTIPLE WHOLE ORG	6.6	mg/kg			RCBRA
5582	MULTIPLE WHOLE ORG	6.6	mg/kg			RCBRA
5583	MULTIPLE WHOLE ORG	6	mg/kg			RCBRA
5584	MULTIPLE WHOLE ORG	6	mg/kg			RCBRA
5585	MULTIPLE WHOLE ORG	5.5	mg/kg			RCBRA
5586	MULTIPLE WHOLE ORG	5.5	mg/kg			RCBRA
5587	MULTIPLE WHOLE ORG	5.3	mg/kg			RCBRA
5588	MULTIPLE WHOLE ORG	5.9	mg/kg			RCBRA
5589	MULTIPLE WHOLE ORG	6.6	mg/kg			RCBRA
5590	MULTIPLE WHOLE ORG	6.6	mg/kg			RCBRA
5591	MULTIPLE WHOLE ORG	12.5	mg/kg			RCBRA
5592	MULTIPLE WHOLE ORG	7.2	mg/kg			RCBRA
5593	MULTIPLE WHOLE ORG	6.8	mg/kg			RCBRA
5594	MULTIPLE WHOLE ORG	6.6	mg/kg			RCBRA
5595	MULTIPLE WHOLE ORG	7.1	mg/kg			RCBRA
5596	MULTIPLE WHOLE ORG	7.5	mg/kg			RCBRA
5597	MULTIPLE WHOLE ORG	6.8	mg/kg			RCBRA
5598	MULTIPLE WHOLE ORG	5.9	mg/kg			RCBRA
5599	MULTIPLE WHOLE ORG	5	mg/kg			RCBRA
5600	MULTIPLE WHOLE ORG	7	mg/kg			RCBRA
5601	MULTIPLE WHOLE ORG	6	mg/kg			RCBRA
5602	MULTIPLE WHOLE ORG	4.4	mg/kg			RCBRA
5603	MULTIPLE WHOLE ORG	5.9	mg/kg			RCBRA
5604	MULTIPLE WHOLE ORG	4.7	mg/kg			RCBRA
5605	MULTIPLE WHOLE ORG	7.9	mg/kg			RCBRA
5606	MULTIPLE WHOLE ORG	6.4	mg/kg			RCBRA
5607	MULTIPLE WHOLE ORG	4.5	mg/kg			RCBRA
5608	MULTIPLE WHOLE ORG	7.4	mg/kg			RCBRA
5609	MULTIPLE WHOLE ORG	8.8	mg/kg			RCBRA
5610	MULTIPLE WHOLE ORG	55.9	mg/kg			RCBRA
5611	MULTIPLE WHOLE ORG	4.6	mg/kg			RCBRA
5612	MULTIPLE WHOLE ORG	6.8	mg/kg			RCBRA
5613	MULTIPLE WHOLE ORG	5.3	mg/kg			RCBRA
5614	MULTIPLE WHOLE ORG	2.9	mg/kg			RCBRA
5615	MULTIPLE WHOLE ORG	5.3	mg/kg			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
5616	Manganese	7439-96-5	RCBRA Rip 9	D/H	RIPARIAN	578153.643	152801.452
5617	Manganese	7439-96-5	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
5618	Manganese	7439-96-5	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
5619	Manganese	7439-96-5	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
5620	Manganese	7439-96-5	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
5621	Manganese	7439-96-5	RCBRA Yak Rdg 2	Outside decision areas	UPLAND	559031.557	135576.407
5622	Molybdenum	7439-98-7	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
5623	Molybdenum	7439-98-7	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
5624	Molybdenum	7439-98-7	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
5625	Molybdenum	7439-98-7	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
5626	Molybdenum	7439-98-7	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
5627	Molybdenum	7439-98-7	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
5628	Molybdenum	7439-98-7	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
5629	Molybdenum	7439-98-7	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
5630	Molybdenum	7439-98-7	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
5631	Molybdenum	7439-98-7	RCBRA 100-F-2	IU2/IU6	UPLAND	579728.068	147001.117
5632	Molybdenum	7439-98-7	RCBRA 116-DR-1&2	D/H	UPLAND	574007.817	152246.748
5633	Molybdenum	7439-98-7	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
5634	Molybdenum	7439-98-7	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
5635	Molybdenum	7439-98-7	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
5636	Molybdenum	7439-98-7	RCBRA 2a Rip	BC	RIPARIAN	564618.501	145284.526
5637	Molybdenum	7439-98-7	RCBRA 2c Rip	K	RIPARIAN	567598.2	146210.159
5638	Molybdenum	7439-98-7	RCBRA 2f Rip	D/H	RIPARIAN	576222.844	154297.511
5639	Molybdenum	7439-98-7	RCBRA 2j Rip	IU2/IU6	RIPARIAN	579360.971	150092.048
5640	Molybdenum	7439-98-7	RCBRA 2l Rip	IU2/IU6	RIPARIAN	582341.212	146120.069
5641	Molybdenum	7439-98-7	RCBRA 3b Rip	IU2/IU6	RIPARIAN	584961.205	141035.835
5642	Molybdenum	7439-98-7	RCBRA 4a Rip	IU2/IU6	RIPARIAN	589347.5	137480.985
5643	Molybdenum	7439-98-7	RCBRA 5c Rip	300	RIPARIAN	594509.985	124869.182
5644	Molybdenum	7439-98-7	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
5645	Molybdenum	7439-98-7	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
5646	Molybdenum	7439-98-7	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
5647	Molybdenum	7439-98-7	RCBRA 628-1	IU2/IU6	UPLAND	577797.524	148745.681
5648	Molybdenum	7439-98-7	RCBRA Bev Ref 1 Rip	Outside decision areas	RIPARIAN	542428.846	167701.261
5649	Molybdenum	7439-98-7	RCBRA Bev Ref 2 Rip	Outside decision areas	RIPARIAN	541493.988	167808.357
5650	Molybdenum	7439-98-7	RCBRA JA JONES	300	UPLAND	593874.58	120013.908
5651	Molybdenum	7439-98-7	RCBRA Pit 23	IU2/IU6	UPLAND	572381.012	144874.157
5652	Molybdenum	7439-98-7	RCBRA Pit 24	BC	UPLAND	563395.814	145119.007
5653	Molybdenum	7439-98-7	RCBRA Pit 9	300	UPLAND	592807.103	120587.7
5654	Molybdenum	7439-98-7	RCBRA R Ref 12	IU2/IU6	RIPARIAN	559201.908	145747.542

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
5616	3/16/2006	J11958	SOIL and BIOTA	MIS	267	mg/kg	TERRESTRIAL INVERTEBRATE
5617	4/3/2006	J11KV0	SOIL and BIOTA	MIS	509	mg/kg	TERRESTRIAL INVERTEBRATE
5618	4/3/2006	J11KV0	SOIL and BIOTA	MIS-phyt	528	mg/kg	TERRESTRIAL INVERTEBRATE
5619	4/3/2006	J11KT8	SOIL and BIOTA	MIS	398	mg/kg	TERRESTRIAL INVERTEBRATE
5620	4/3/2006	J11KT8	SOIL and BIOTA	MIS-phyt	440	mg/kg	TERRESTRIAL INVERTEBRATE
5621	4/3/2006	J11KT7	SOIL and BIOTA	MIS	546	mg/kg	TERRESTRIAL INVERTEBRATE
5622	9/13/2005	B1CV54	SOIL and BIOTA	Discrete	0.568	mg/kg	TERRESTRIAL INVERTEBRATE
5623	9/13/2005	B1CV53	SOIL and BIOTA	Discrete	0.568	mg/kg	TERRESTRIAL INVERTEBRATE
5624	9/13/2005	B1CV52	SOIL and BIOTA	Discrete	0.568	mg/kg	TERRESTRIAL INVERTEBRATE
5625	6/15/2005	B1CTY6	SOIL and BIOTA	Discrete	0.41	mg/kg	TERRESTRIAL INVERTEBRATE
5626	6/15/2005	B1CTY5	SOIL and BIOTA	Discrete	0.41	mg/kg	TERRESTRIAL INVERTEBRATE
5627	6/15/2005	B1CTY7	SOIL and BIOTA	Discrete	0.41	mg/kg	TERRESTRIAL INVERTEBRATE
5628	6/15/2005	B1CV44	SOIL and BIOTA	Discrete	0.381	mg/kg	TERRESTRIAL INVERTEBRATE
5629	6/15/2005	B1CTY8	SOIL and BIOTA	Discrete	0.381	mg/kg	TERRESTRIAL INVERTEBRATE
5630	6/15/2005	B1CV45	SOIL and BIOTA	Discrete	0.381	mg/kg	TERRESTRIAL INVERTEBRATE
5631	4/25/2006	J11L32	SOIL and BIOTA	MIS	0.191	mg/kg	TERRESTRIAL INVERTEBRATE
5632	4/3/2006	J11L31	SOIL and BIOTA	MIS	0.3245	mg/kg	TERRESTRIAL INVERTEBRATE
5633	4/17/2006	J11KT1	SOIL and BIOTA	MIS-phyt	0.45	mg/kg	TERRESTRIAL INVERTEBRATE
5634	4/3/2006	J11KR9	SOIL and BIOTA	MIS	0.79	mg/kg	TERRESTRIAL INVERTEBRATE
5635	4/3/2006	J11KR9	SOIL and BIOTA	MIS-phyt	0.88	mg/kg	TERRESTRIAL INVERTEBRATE
5636	6/11/2007	J14Y56	SOIL and BIOTA	MIS	0.7	mg/kg	TERRESTRIAL INVERTEBRATE
5637	6/13/2007	J14Y63	SOIL and BIOTA	MIS	0.48	mg/kg	TERRESTRIAL INVERTEBRATE
5638	6/13/2007	J14Y57	SOIL and BIOTA	MIS	0.7	mg/kg	TERRESTRIAL INVERTEBRATE
5639	6/13/2007	J14Y58	SOIL and BIOTA	MIS	0.96	mg/kg	TERRESTRIAL INVERTEBRATE
5640	6/13/2007	J14Y59	SOIL and BIOTA	MIS	0.52	mg/kg	TERRESTRIAL INVERTEBRATE
5641	6/11/2007	J14Y60	SOIL and BIOTA	MIS	0.78	mg/kg	TERRESTRIAL INVERTEBRATE
5642	6/13/2007	J14Y62	SOIL and BIOTA	MIS	1.1	mg/kg	TERRESTRIAL INVERTEBRATE
5643	6/7/2007	J14Y61	SOIL and BIOTA	MIS	0.57	mg/kg	TERRESTRIAL INVERTEBRATE
5644	4/3/2006	J11L35	SOIL and BIOTA	MIS	0.2	mg/kg	TERRESTRIAL INVERTEBRATE
5645	4/3/2006	J11KR2	SOIL and BIOTA	MIS	0.48	mg/kg	TERRESTRIAL INVERTEBRATE
5646	4/25/2006	J11KR3	SOIL and BIOTA	MIS	0.78	mg/kg	TERRESTRIAL INVERTEBRATE
5647	4/25/2006	J11XX8	SOIL and BIOTA	MIS	1	mg/kg	TERRESTRIAL INVERTEBRATE
5648	6/13/2007	J14Y53	SOIL and BIOTA	MIS	0.89	mg/kg	TERRESTRIAL INVERTEBRATE
5649	6/13/2007	J14Y54	SOIL and BIOTA	MIS	0.48	mg/kg	TERRESTRIAL INVERTEBRATE
5650	4/25/2006	J11L34	SOIL and BIOTA	MIS	0.401	mg/kg	TERRESTRIAL INVERTEBRATE
5651	4/3/2006	J11L33	SOIL and BIOTA	MIS	0.25	mg/kg	TERRESTRIAL INVERTEBRATE
5652	4/3/2006	J11KT6	SOIL and BIOTA	MIS	0.45	mg/kg	TERRESTRIAL INVERTEBRATE
5653	4/25/2006	J11KT5	SOIL and BIOTA	MIS	0.54	mg/kg	TERRESTRIAL INVERTEBRATE
5654	3/20/2006	J11961	SOIL and BIOTA	MIS	0.62	mg/kg	TERRESTRIAL INVERTEBRATE

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
5616	MULTIPLE WHOLE ORG	8.7	mg/kg			RCBRA
5617	MULTIPLE WHOLE ORG	7.1	mg/kg			RCBRA
5618	MULTIPLE WHOLE ORG	7.1	mg/kg			RCBRA
5619	MULTIPLE WHOLE ORG	3.7	mg/kg			RCBRA
5620	MULTIPLE WHOLE ORG	3.7	mg/kg			RCBRA
5621	MULTIPLE WHOLE ORG	8.4	mg/kg			RCBRA
5622	CARCASS	0.491	mg/kg			CP
5623	CARCASS	0.439	mg/kg			CP
5624	CARCASS	0.617	mg/kg			CP
5625	CARCASS	0.389	mg/kg			CP
5626	CARCASS	0.44	mg/kg			CP
5627	CARCASS	0.42	mg/kg			CP
5628	CARCASS	0.222	mg/kg			CP
5629	CARCASS	0.277	mg/kg			CP
5630	CARCASS	0.236	mg/kg			CP
5631	MULTIPLE WHOLE ORG	0.46	mg/kg			RCBRA
5632	MULTIPLE WHOLE ORG	0.61	mg/kg			RCBRA
5633	MULTIPLE WHOLE ORG	0.49	mg/kg			RCBRA
5634	MULTIPLE WHOLE ORG	0.74	mg/kg			RCBRA
5635	MULTIPLE WHOLE ORG	0.74	mg/kg			RCBRA
5636	MULTIPLE WHOLE ORG	0.24	mg/kg			RCBRA
5637	MULTIPLE WHOLE ORG	0.43	mg/kg			RCBRA
5638	MULTIPLE WHOLE ORG	0.25	mg/kg			RCBRA
5639	MULTIPLE WHOLE ORG	0.31	mg/kg			RCBRA
5640	MULTIPLE WHOLE ORG	0.33	mg/kg			RCBRA
5641	MULTIPLE WHOLE ORG	0.2	mg/kg			RCBRA
5642	MULTIPLE WHOLE ORG	0.33	mg/kg			RCBRA
5643	MULTIPLE WHOLE ORG	0.3	mg/kg			RCBRA
5644	MULTIPLE WHOLE ORG	0.45	mg/kg			RCBRA
5645	MULTIPLE WHOLE ORG	0.52	mg/kg			RCBRA
5646	MULTIPLE WHOLE ORG	0.36	mg/kg			RCBRA
5647	MULTIPLE WHOLE ORG	0.35	mg/kg			RCBRA
5648	MULTIPLE WHOLE ORG	0.31	mg/kg			RCBRA
5649	MULTIPLE WHOLE ORG	0.34	mg/kg			RCBRA
5650	MULTIPLE WHOLE ORG	0.4	mg/kg			RCBRA
5651	MULTIPLE WHOLE ORG	0.49	mg/kg			RCBRA
5652	MULTIPLE WHOLE ORG	0.57	mg/kg			RCBRA
5653	MULTIPLE WHOLE ORG	0.48	mg/kg			RCBRA
5654	MULTIPLE WHOLE ORG	0.31	mg/kg			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
5655	Molybdenum	7439-98-7	RCBRA R Ref 13	Outside decision areas	RIPARIAN	558572.809	145345.115
5656	Molybdenum	7439-98-7	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
5657	Molybdenum	7439-98-7	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
5658	Molybdenum	7439-98-7	RCBRA R Ref 16	Outside decision areas	RIPARIAN	557650.029	144826.748
5659	Molybdenum	7439-98-7	RCBRA Rip 1	D/H	RIPARIAN	577251.869	153659.195
5660	Molybdenum	7439-98-7	RCBRA Rip 10	D/H	RIPARIAN	573987.873	153082.19
5661	Molybdenum	7439-98-7	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
5662	Molybdenum	7439-98-7	RCBRA Rip 9	D/H	RIPARIAN	578153.643	152801.452
5663	Sodium	7440-23-5	RCBRA 100-D-48	D/H	UPLAND	573841.527	151914.538
5664	Sodium	7440-23-5	RCBRA 100-D-49	D/H	UPLAND	573938.06	151944.123
5665	Sodium	7440-23-5	RCBRA 100-F-2	IU2/IU6	UPLAND	579728.068	147001.117
5666	Sodium	7440-23-5	RCBRA 116-DR-1&2	D/H	UPLAND	574007.817	152246.748
5667	Sodium	7440-23-5	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
5668	Sodium	7440-23-5	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
5669	Sodium	7440-23-5	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
5670	Sodium	7440-23-5	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
5671	Sodium	7440-23-5	RCBRA 2a Rip	BC	RIPARIAN	564618.501	145284.526
5672	Sodium	7440-23-5	RCBRA 2c Rip	K	RIPARIAN	567598.2	146210.159
5673	Sodium	7440-23-5	RCBRA 2f Rip	D/H	RIPARIAN	576222.844	154297.511
5674	Sodium	7440-23-5	RCBRA 2j Rip	IU2/IU6	RIPARIAN	579360.971	150092.048
5675	Sodium	7440-23-5	RCBRA 2l Rip	IU2/IU6	RIPARIAN	582341.212	146120.069
5676	Sodium	7440-23-5	RCBRA 300-49	300	UPLAND	594318.994	116830.934
5677	Sodium	7440-23-5	RCBRA 3b Rip	IU2/IU6	RIPARIAN	584961.205	141035.835
5678	Sodium	7440-23-5	RCBRA 4a Rip	IU2/IU6	RIPARIAN	589347.5	137480.985
5679	Sodium	7440-23-5	RCBRA 5c Rip	300	RIPARIAN	594509.985	124869.182
5680	Sodium	7440-23-5	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
5681	Sodium	7440-23-5	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
5682	Sodium	7440-23-5	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
5683	Sodium	7440-23-5	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
5684	Sodium	7440-23-5	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
5685	Sodium	7440-23-5	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
5686	Sodium	7440-23-5	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
5687	Sodium	7440-23-5	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
5688	Sodium	7440-23-5	RCBRA 600-181	IU2/IU6	UPLAND	578303.83	147316.698
5689	Sodium	7440-23-5	RCBRA 600-204	IU2/IU6	UPLAND	580128.485	144762.219
5690	Sodium	7440-23-5	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
5691	Sodium	7440-23-5	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
5692	Sodium	7440-23-5	RCBRA 618-4	300	UPLAND	593954.946	117064.473
5693	Sodium	7440-23-5	RCBRA 628-1	IU2/IU6	UPLAND	577797.524	148745.681

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
5655	3/20/2006	J11962	SOIL and BIOTA	MIS	0.75	mg/kg	TERRESTRIAL INVERTEBRATE
5656	3/20/2006	J11963	SOIL and BIOTA	MIS	0.725	mg/kg	TERRESTRIAL INVERTEBRATE
5657	6/13/2007	J14Y55	SOIL and BIOTA	MIS	0.725	mg/kg	TERRESTRIAL INVERTEBRATE
5658	3/20/2006	J11964	SOIL and BIOTA	MIS	0.54	mg/kg	TERRESTRIAL INVERTEBRATE
5659	3/16/2006	J11950	SOIL and BIOTA	MIS	0.56	mg/kg	TERRESTRIAL INVERTEBRATE
5660	3/16/2006	J11959	SOIL and BIOTA	MIS	0.617	mg/kg	TERRESTRIAL INVERTEBRATE
5661	4/25/2006	J11955	SOIL and BIOTA	MIS	0.52	mg/kg	TERRESTRIAL INVERTEBRATE
5662	3/16/2006	J11958	SOIL and BIOTA	MIS	0.43	mg/kg	TERRESTRIAL INVERTEBRATE
5663	4/3/2006	J11KV5	SOIL and BIOTA	MIS	178	mg/kg	TERRESTRIAL INVERTEBRATE
5664	4/3/2006	J11KV6	SOIL and BIOTA	MIS	158	mg/kg	TERRESTRIAL INVERTEBRATE
5665	4/25/2006	J11L32	SOIL and BIOTA	MIS	139	mg/kg	TERRESTRIAL INVERTEBRATE
5666	4/3/2006	J11L31	SOIL and BIOTA	MIS	158	mg/kg	TERRESTRIAL INVERTEBRATE
5667	4/17/2006	J11KT1	SOIL and BIOTA	MIS	153	mg/kg	TERRESTRIAL INVERTEBRATE
5668	4/17/2006	J11KT1	SOIL and BIOTA	MIS-phyt	176	mg/kg	TERRESTRIAL INVERTEBRATE
5669	4/3/2006	J11KR9	SOIL and BIOTA	MIS	385	mg/kg	TERRESTRIAL INVERTEBRATE
5670	4/3/2006	J11KR9	SOIL and BIOTA	MIS-phyt	466	mg/kg	TERRESTRIAL INVERTEBRATE
5671	6/11/2007	J14Y56	SOIL and BIOTA	MIS	132	mg/kg	TERRESTRIAL INVERTEBRATE
5672	6/13/2007	J14Y63	SOIL and BIOTA	MIS	206	mg/kg	TERRESTRIAL INVERTEBRATE
5673	6/13/2007	J14Y57	SOIL and BIOTA	MIS	180	mg/kg	TERRESTRIAL INVERTEBRATE
5674	6/13/2007	J14Y58	SOIL and BIOTA	MIS	229	mg/kg	TERRESTRIAL INVERTEBRATE
5675	6/13/2007	J14Y59	SOIL and BIOTA	MIS	173	mg/kg	TERRESTRIAL INVERTEBRATE
5676	4/25/2006	J11KT3	SOIL and BIOTA	MIS	120	mg/kg	TERRESTRIAL INVERTEBRATE
5677	6/11/2007	J14Y60	SOIL and BIOTA	MIS	227	mg/kg	TERRESTRIAL INVERTEBRATE
5678	6/13/2007	J14Y62	SOIL and BIOTA	MIS	208	mg/kg	TERRESTRIAL INVERTEBRATE
5679	6/7/2007	J14Y61	SOIL and BIOTA	MIS	127	mg/kg	TERRESTRIAL INVERTEBRATE
5680	4/3/2006	J11L35	SOIL and BIOTA	MIS	99.6	mg/kg	TERRESTRIAL INVERTEBRATE
5681	4/3/2006	J11L35	SOIL and BIOTA	MIS-phyt	174	mg/kg	TERRESTRIAL INVERTEBRATE
5682	4/3/2006	J11KR2	SOIL and BIOTA	MIS	123	mg/kg	TERRESTRIAL INVERTEBRATE
5683	4/3/2006	J11KR2	SOIL and BIOTA	MIS-phyt	163	mg/kg	TERRESTRIAL INVERTEBRATE
5684	4/25/2006	J11KR3	SOIL and BIOTA	MIS	176	mg/kg	TERRESTRIAL INVERTEBRATE
5685	4/25/2006	J11KR3	SOIL and BIOTA	MIS-phyt	231	mg/kg	TERRESTRIAL INVERTEBRATE
5686	4/25/2006	J11XX9	SOIL and BIOTA	MIS	132	mg/kg	TERRESTRIAL INVERTEBRATE
5687	4/25/2006	J11XX9	SOIL and BIOTA	MIS-phyt	205	mg/kg	TERRESTRIAL INVERTEBRATE
5688	4/17/2006	J11KR6	SOIL and BIOTA	MIS	127	mg/kg	TERRESTRIAL INVERTEBRATE
5689	4/25/2006	J11KR4	SOIL and BIOTA	MIS	137	mg/kg	TERRESTRIAL INVERTEBRATE
5690	4/25/2006	J11KR5	SOIL and BIOTA	MIS	141	mg/kg	TERRESTRIAL INVERTEBRATE
5691	4/25/2006	J11KR5	SOIL and BIOTA	MIS-phyt	173	mg/kg	TERRESTRIAL INVERTEBRATE
5692	4/26/2006	J11KT2	SOIL and BIOTA	MIS	97.3	mg/kg	TERRESTRIAL INVERTEBRATE
5693	4/25/2006	J11XX8	SOIL and BIOTA	MIS	148	mg/kg	TERRESTRIAL INVERTEBRATE

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
5655	MULTIPLE WHOLE ORG	0.42	mg/kg			RCBRA
5656	MULTIPLE WHOLE ORG	0.36	mg/kg			RCBRA
5657	MULTIPLE WHOLE ORG	0.26	mg/kg			RCBRA
5658	MULTIPLE WHOLE ORG	0.32	mg/kg			RCBRA
5659	MULTIPLE WHOLE ORG	0.42	mg/kg			RCBRA
5660	MULTIPLE WHOLE ORG	0.38	mg/kg			RCBRA
5661	MULTIPLE WHOLE ORG	0.45	mg/kg			RCBRA
5662	MULTIPLE WHOLE ORG	0.31	mg/kg			RCBRA
5663	MULTIPLE WHOLE ORG	446	mg/kg			RCBRA
5664	MULTIPLE WHOLE ORG	491	mg/kg			RCBRA
5665	MULTIPLE WHOLE ORG	440	mg/kg			RCBRA
5666	MULTIPLE WHOLE ORG	388	mg/kg			RCBRA
5667	MULTIPLE WHOLE ORG	495	mg/kg			RCBRA
5668	MULTIPLE WHOLE ORG	495	mg/kg			RCBRA
5669	MULTIPLE WHOLE ORG	446	mg/kg			RCBRA
5670	MULTIPLE WHOLE ORG	446	mg/kg			RCBRA
5671	MULTIPLE WHOLE ORG	821	mg/kg	C		RCBRA
5672	MULTIPLE WHOLE ORG	656	mg/kg	C		RCBRA
5673	MULTIPLE WHOLE ORG	1050	mg/kg	C		RCBRA
5674	MULTIPLE WHOLE ORG	628	mg/kg	C		RCBRA
5675	MULTIPLE WHOLE ORG	836	mg/kg	C		RCBRA
5676	MULTIPLE WHOLE ORG	466	mg/kg			RCBRA
5677	MULTIPLE WHOLE ORG	731	mg/kg	C		RCBRA
5678	MULTIPLE WHOLE ORG	1130	mg/kg	C		RCBRA
5679	MULTIPLE WHOLE ORG	816	mg/kg	C		RCBRA
5680	MULTIPLE WHOLE ORG	499	mg/kg			RCBRA
5681	MULTIPLE WHOLE ORG	499	mg/kg			RCBRA
5682	MULTIPLE WHOLE ORG	524	mg/kg			RCBRA
5683	MULTIPLE WHOLE ORG	524	mg/kg			RCBRA
5684	MULTIPLE WHOLE ORG	820	mg/kg			RCBRA
5685	MULTIPLE WHOLE ORG	820	mg/kg			RCBRA
5686	MULTIPLE WHOLE ORG	477	mg/kg			RCBRA
5687	MULTIPLE WHOLE ORG	477	mg/kg			RCBRA
5688	MULTIPLE WHOLE ORG	438	mg/kg			RCBRA
5689	MULTIPLE WHOLE ORG	469	mg/kg			RCBRA
5690	MULTIPLE WHOLE ORG	460	mg/kg			RCBRA
5691	MULTIPLE WHOLE ORG	460	mg/kg			RCBRA
5692	MULTIPLE WHOLE ORG	570	mg/kg			RCBRA
5693	MULTIPLE WHOLE ORG	453	mg/kg			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
5694	Sodium	7440-23-5	RCBRA Bev Ref 1 Rip	Outside decision areas	RIPARIAN	542428.846	167701.261
5695	Sodium	7440-23-5	RCBRA Bev Ref 2 Rip	Outside decision areas	RIPARIAN	541493.988	167808.357
5696	Sodium	7440-23-5	RCBRA JA JONES	300	UPLAND	593874.58	120013.908
5697	Sodium	7440-23-5	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
5698	Sodium	7440-23-5	RCBRA Pit 18	IU2/IU6	UPLAND	580697.058	145311.464
5699	Sodium	7440-23-5	RCBRA Pit 23	IU2/IU6	UPLAND	572381.012	144874.157
5700	Sodium	7440-23-5	RCBRA Pit 24	BC	UPLAND	563395.814	145119.007
5701	Sodium	7440-23-5	RCBRA Pit 9	300	UPLAND	592807.103	120587.7
5702	Sodium	7440-23-5	RCBRA R Ref 11	Outside decision areas	RIPARIAN	559400.735	146458.486
5703	Sodium	7440-23-5	RCBRA R Ref 12	IU2/IU6	RIPARIAN	559201.908	145747.542
5704	Sodium	7440-23-5	RCBRA R Ref 13	Outside decision areas	RIPARIAN	558572.809	145345.115
5705	Sodium	7440-23-5	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
5706	Sodium	7440-23-5	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
5707	Sodium	7440-23-5	RCBRA R Ref 16	Outside decision areas	RIPARIAN	557650.029	144826.748
5708	Sodium	7440-23-5	RCBRA Rip 1	D/H	RIPARIAN	577251.869	153659.195
5709	Sodium	7440-23-5	RCBRA Rip 10	D/H	RIPARIAN	573987.873	153082.19
5710	Sodium	7440-23-5	RCBRA Rip 2	D/H	RIPARIAN	573603.219	152471.6
5711	Sodium	7440-23-5	RCBRA Rip 3	D/H	RIPARIAN	572639.65	151677.812
5712	Sodium	7440-23-5	RCBRA Rip 4	N	RIPARIAN	570558.596	148981.547
5713	Sodium	7440-23-5	RCBRA Rip 5	K	RIPARIAN	569141.025	147521.561
5714	Sodium	7440-23-5	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
5715	Sodium	7440-23-5	RCBRA Rip 7	IU2/IU6	RIPARIAN	581326.914	147825.17
5716	Sodium	7440-23-5	RCBRA Rip 8	D/H	RIPARIAN	578698.584	152233.645
5717	Sodium	7440-23-5	RCBRA Rip 9	D/H	RIPARIAN	578153.643	152801.452
5718	Sodium	7440-23-5	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
5719	Sodium	7440-23-5	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
5720	Sodium	7440-23-5	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
5721	Sodium	7440-23-5	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
5722	Sodium	7440-23-5	RCBRA Yak Rdg 2	Outside decision areas	UPLAND	559031.557	135576.407
5723	Nickel	7440-02-0	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764
5724	Nickel	7440-02-0	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764
5725	Nickel	7440-02-0	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764
5726	Nickel	7440-02-0	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
5727	Nickel	7440-02-0	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
5728	Nickel	7440-02-0	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
5729	Nickel	7440-02-0	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
5730	Nickel	7440-02-0	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
5731	Nickel	7440-02-0	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
5732	Nickel	7440-02-0	B POND	Outside decision areas	UPLAND	576356.769	136881.272

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
5694	6/13/2007	J14Y53	SOIL and BIOTA	MIS	178	mg/kg	TERRESTRIAL INVERTEBRATE
5695	6/13/2007	J14Y54	SOIL and BIOTA	MIS	163	mg/kg	TERRESTRIAL INVERTEBRATE
5696	4/25/2006	J11L34	SOIL and BIOTA	MIS	102	mg/kg	TERRESTRIAL INVERTEBRATE
5697	4/17/2006	J11KP9	SOIL and BIOTA	MIS	207	mg/kg	TERRESTRIAL INVERTEBRATE
5698	4/17/2006	J11KR0	SOIL and BIOTA	MIS	165	mg/kg	TERRESTRIAL INVERTEBRATE
5699	4/3/2006	J11L33	SOIL and BIOTA	MIS	153	mg/kg	TERRESTRIAL INVERTEBRATE
5700	4/3/2006	J11KT6	SOIL and BIOTA	MIS	162	mg/kg	TERRESTRIAL INVERTEBRATE
5701	4/25/2006	J11KT5	SOIL and BIOTA	MIS	232	mg/kg	TERRESTRIAL INVERTEBRATE
5702	3/20/2006	J11960	SOIL and BIOTA	MIS	164	mg/kg	TERRESTRIAL INVERTEBRATE
5703	3/20/2006	J11961	SOIL and BIOTA	MIS	188	mg/kg	TERRESTRIAL INVERTEBRATE
5704	3/20/2006	J11962	SOIL and BIOTA	MIS	215	mg/kg	TERRESTRIAL INVERTEBRATE
5705	3/20/2006	J11963	SOIL and BIOTA	MIS	243	mg/kg	TERRESTRIAL INVERTEBRATE
5706	6/13/2007	J14Y55	SOIL and BIOTA	MIS	243	mg/kg	TERRESTRIAL INVERTEBRATE
5707	3/20/2006	J11964	SOIL and BIOTA	MIS	149	mg/kg	TERRESTRIAL INVERTEBRATE
5708	3/16/2006	J11950	SOIL and BIOTA	MIS	233	mg/kg	TERRESTRIAL INVERTEBRATE
5709	3/16/2006	J11959	SOIL and BIOTA	MIS	144	mg/kg	TERRESTRIAL INVERTEBRATE
5710	3/16/2006	J11951	SOIL and BIOTA	MIS	150	mg/kg	TERRESTRIAL INVERTEBRATE
5711	3/16/2006	J11952	SOIL and BIOTA	MIS	133	mg/kg	TERRESTRIAL INVERTEBRATE
5712	3/16/2006	J11953	SOIL and BIOTA	MIS	197	mg/kg	TERRESTRIAL INVERTEBRATE
5713	3/16/2006	J11954	SOIL and BIOTA	MIS	231	mg/kg	TERRESTRIAL INVERTEBRATE
5714	4/25/2006	J11955	SOIL and BIOTA	MIS	161	mg/kg	TERRESTRIAL INVERTEBRATE
5715	3/16/2006	J11956	SOIL and BIOTA	MIS	189	mg/kg	TERRESTRIAL INVERTEBRATE
5716	3/16/2006	J11957	SOIL and BIOTA	MIS	224	mg/kg	TERRESTRIAL INVERTEBRATE
5717	3/16/2006	J11958	SOIL and BIOTA	MIS	218	mg/kg	TERRESTRIAL INVERTEBRATE
5718	4/3/2006	J11KV0	SOIL and BIOTA	MIS	215	mg/kg	TERRESTRIAL INVERTEBRATE
5719	4/3/2006	J11KV0	SOIL and BIOTA	MIS-phyt	259	mg/kg	TERRESTRIAL INVERTEBRATE
5720	4/3/2006	J11KT8	SOIL and BIOTA	MIS	127	mg/kg	TERRESTRIAL INVERTEBRATE
5721	4/3/2006	J11KT8	SOIL and BIOTA	MIS-phyt	176	mg/kg	TERRESTRIAL INVERTEBRATE
5722	4/3/2006	J11KT7	SOIL and BIOTA	MIS	172	mg/kg	TERRESTRIAL INVERTEBRATE
5723	9/13/2005	B1CV56	SOIL and BIOTA	Discrete	11.1	mg/kg	TERRESTRIAL INVERTEBRATE
5724	9/13/2005	B1CV57	SOIL and BIOTA	Discrete	11.1	mg/kg	TERRESTRIAL INVERTEBRATE
5725	9/13/2005	B1CV55	SOIL and BIOTA	Discrete	11.1	mg/kg	TERRESTRIAL INVERTEBRATE
5726	6/15/2005	B1CTY3	SOIL and BIOTA	Discrete	9.78	mg/kg	TERRESTRIAL INVERTEBRATE
5727	6/15/2005	B1CTY2	SOIL and BIOTA	Discrete	9.78	mg/kg	TERRESTRIAL INVERTEBRATE
5728	6/15/2005	B1CTY4	SOIL and BIOTA	Discrete	9.78	mg/kg	TERRESTRIAL INVERTEBRATE
5729	9/13/2005	B1CV54	SOIL and BIOTA	Discrete	11	mg/kg	TERRESTRIAL INVERTEBRATE
5730	9/13/2005	B1CV53	SOIL and BIOTA	Discrete	11	mg/kg	TERRESTRIAL INVERTEBRATE
5731	9/13/2005	B1CV52	SOIL and BIOTA	Discrete	11	mg/kg	TERRESTRIAL INVERTEBRATE
5732	6/15/2005	B1CV47	SOIL and BIOTA	Discrete	11.9	mg/kg	TERRESTRIAL INVERTEBRATE

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
5694	MULTIPLE WHOLE ORG	1040	mg/kg	C		RCBRA
5695	MULTIPLE WHOLE ORG	978	mg/kg	C		RCBRA
5696	MULTIPLE WHOLE ORG	427	mg/kg			RCBRA
5697	MULTIPLE WHOLE ORG	479	mg/kg			RCBRA
5698	MULTIPLE WHOLE ORG	417	mg/kg			RCBRA
5699	MULTIPLE WHOLE ORG	432	mg/kg			RCBRA
5700	MULTIPLE WHOLE ORG	542	mg/kg			RCBRA
5701	MULTIPLE WHOLE ORG	508	mg/kg			RCBRA
5702	MULTIPLE WHOLE ORG	473	mg/kg			RCBRA
5703	MULTIPLE WHOLE ORG	322	mg/kg			RCBRA
5704	MULTIPLE WHOLE ORG	259	mg/kg			RCBRA
5705	MULTIPLE WHOLE ORG	392	mg/kg			RCBRA
5706	MULTIPLE WHOLE ORG	806	mg/kg	C		RCBRA
5707	MULTIPLE WHOLE ORG	428	mg/kg			RCBRA
5708	MULTIPLE WHOLE ORG	931	mg/kg			RCBRA
5709	MULTIPLE WHOLE ORG	1110	mg/kg			RCBRA
5710	MULTIPLE WHOLE ORG	642	mg/kg			RCBRA
5711	MULTIPLE WHOLE ORG	137	mg/kg			RCBRA
5712	MULTIPLE WHOLE ORG	494	mg/kg			RCBRA
5713	MULTIPLE WHOLE ORG	670	mg/kg			RCBRA
5714	MULTIPLE WHOLE ORG	494	mg/kg			RCBRA
5715	MULTIPLE WHOLE ORG	1050	mg/kg			RCBRA
5716	MULTIPLE WHOLE ORG	477	mg/kg			RCBRA
5717	MULTIPLE WHOLE ORG	1140	mg/kg			RCBRA
5718	MULTIPLE WHOLE ORG	377	mg/kg			RCBRA
5719	MULTIPLE WHOLE ORG	377	mg/kg			RCBRA
5720	MULTIPLE WHOLE ORG	389	mg/kg			RCBRA
5721	MULTIPLE WHOLE ORG	389	mg/kg			RCBRA
5722	MULTIPLE WHOLE ORG	432	mg/kg			RCBRA
5723	CARCASS	0.184	mg/kg			CP
5724	CARCASS	0.22	mg/kg			CP
5725	CARCASS	0.239	mg/kg			CP
5726	CARCASS	0.56	mg/kg			CP
5727	CARCASS	0.495	mg/kg			CP
5728	CARCASS	0.33	mg/kg			CP
5729	CARCASS	0.153	mg/kg			CP
5730	CARCASS	0.15	mg/kg			CP
5731	CARCASS	0.176	mg/kg			CP
5732	CARCASS	0.768	mg/kg			CP

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
5733	Nickel	7440-02-0	B POND	Outside decision areas	UPLAND	576356.769	136881.272
5734	Nickel	7440-02-0	B POND	Outside decision areas	UPLAND	576356.769	136881.272
5735	Nickel	7440-02-0	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
5736	Nickel	7440-02-0	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
5737	Nickel	7440-02-0	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
5738	Nickel	7440-02-0	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
5739	Nickel	7440-02-0	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
5740	Nickel	7440-02-0	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
5741	Nickel	7440-02-0	U POND	Outside decision areas	UPLAND	566379.63	134457.045
5742	Nickel	7440-02-0	U POND	Outside decision areas	UPLAND	566379.63	134457.045
5743	Nickel	7440-02-0	U POND	Outside decision areas	UPLAND	566379.63	134457.045
5744	Nickel	7440-02-0	RCBRA 100-D-49	D/H	UPLAND	573938.06	151944.123
5745	Nickel	7440-02-0	RCBRA 2a Rip	BC	RIPARIAN	564618.501	145284.526
5746	Nickel	7440-02-0	RCBRA 2c Rip	K	RIPARIAN	567598.2	146210.159
5747	Nickel	7440-02-0	RCBRA 2f Rip	D/H	RIPARIAN	576222.844	154297.511
5748	Nickel	7440-02-0	RCBRA 2j Rip	IU2/IU6	RIPARIAN	579360.971	150092.048
5749	Nickel	7440-02-0	RCBRA 2l Rip	IU2/IU6	RIPARIAN	582341.212	146120.069
5750	Nickel	7440-02-0	RCBRA 300-49	300	UPLAND	594318.994	116830.934
5751	Nickel	7440-02-0	RCBRA 4a Rip	IU2/IU6	RIPARIAN	589347.5	137480.985
5752	Nickel	7440-02-0	RCBRA 5c Rip	300	RIPARIAN	594509.985	124869.182
5753	Nickel	7440-02-0	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
5754	Nickel	7440-02-0	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
5755	Nickel	7440-02-0	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
5756	Nickel	7440-02-0	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
5757	Nickel	7440-02-0	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
5758	Nickel	7440-02-0	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
5759	Nickel	7440-02-0	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
5760	Nickel	7440-02-0	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
5761	Nickel	7440-02-0	RCBRA 600-181	IU2/IU6	UPLAND	578303.83	147316.698
5762	Nickel	7440-02-0	RCBRA 600-204	IU2/IU6	UPLAND	580128.485	144762.219
5763	Nickel	7440-02-0	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
5764	Nickel	7440-02-0	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
5765	Nickel	7440-02-0	RCBRA Bev Ref 2 Rip	Outside decision areas	RIPARIAN	541493.988	167808.357
5766	Nickel	7440-02-0	RCBRA JA JONES	300	UPLAND	593874.58	120013.908
5767	Nickel	7440-02-0	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
5768	Nickel	7440-02-0	RCBRA Pit 18	IU2/IU6	UPLAND	580697.058	145311.464
5769	Nickel	7440-02-0	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
5770	Nickel	7440-02-0	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
5771	Phosphorus	7723-14-0	RCBRA 100-D-48	D/H	UPLAND	573841.527	151914.538

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
5733	6/15/2005	B1CV48	SOIL and BIOTA	Discrete	11.9	mg/kg	TERRESTRIAL INVERTEBRATE
5734	6/15/2005	B1CV46	SOIL and BIOTA	Discrete	11.9	mg/kg	TERRESTRIAL INVERTEBRATE
5735	6/15/2005	B1CTY6	SOIL and BIOTA	Discrete	18.1	mg/kg	TERRESTRIAL INVERTEBRATE
5736	6/15/2005	B1CTY7	SOIL and BIOTA	Discrete	18.1	mg/kg	TERRESTRIAL INVERTEBRATE
5737	6/15/2005	B1CTY5	SOIL and BIOTA	Discrete	18.1	mg/kg	TERRESTRIAL INVERTEBRATE
5738	6/15/2005	B1CV44	SOIL and BIOTA	Discrete	8.6	mg/kg	TERRESTRIAL INVERTEBRATE
5739	6/15/2005	B1CTY8	SOIL and BIOTA	Discrete	8.6	mg/kg	TERRESTRIAL INVERTEBRATE
5740	6/15/2005	B1CV45	SOIL and BIOTA	Discrete	8.6	mg/kg	TERRESTRIAL INVERTEBRATE
5741	9/13/2005	B1CV50	SOIL and BIOTA	Discrete	11.4	mg/kg	TERRESTRIAL INVERTEBRATE
5742	9/13/2005	B1CV51	SOIL and BIOTA	Discrete	11.4	mg/kg	TERRESTRIAL INVERTEBRATE
5743	9/13/2005	B1CV49	SOIL and BIOTA	Discrete	11.4	mg/kg	TERRESTRIAL INVERTEBRATE
5744	4/3/2006	J11KV6	SOIL and BIOTA	MIS	10.5	mg/kg	TERRESTRIAL INVERTEBRATE
5745	6/11/2007	J14Y56	SOIL and BIOTA	MIS	16	mg/kg	TERRESTRIAL INVERTEBRATE
5746	6/13/2007	J14Y63	SOIL and BIOTA	MIS	19	mg/kg	TERRESTRIAL INVERTEBRATE
5747	6/13/2007	J14Y57	SOIL and BIOTA	MIS	16.9	mg/kg	TERRESTRIAL INVERTEBRATE
5748	6/13/2007	J14Y58	SOIL and BIOTA	MIS	21.2	mg/kg	TERRESTRIAL INVERTEBRATE
5749	6/13/2007	J14Y59	SOIL and BIOTA	MIS	12	mg/kg	TERRESTRIAL INVERTEBRATE
5750	4/25/2006	J11KT3	SOIL and BIOTA	MIS	9.8	mg/kg	TERRESTRIAL INVERTEBRATE
5751	6/13/2007	J14Y62	SOIL and BIOTA	MIS	22.9	mg/kg	TERRESTRIAL INVERTEBRATE
5752	6/7/2007	J14Y61	SOIL and BIOTA	MIS	13.5	mg/kg	TERRESTRIAL INVERTEBRATE
5753	4/3/2006	J11L35	SOIL and BIOTA	MIS	10.7	mg/kg	TERRESTRIAL INVERTEBRATE
5754	4/3/2006	J11L35	SOIL and BIOTA	MIS-phyt	13.5	mg/kg	TERRESTRIAL INVERTEBRATE
5755	4/3/2006	J11KR2	SOIL and BIOTA	MIS	12.1	mg/kg	TERRESTRIAL INVERTEBRATE
5756	4/3/2006	J11KR2	SOIL and BIOTA	MIS-phyt	13.1	mg/kg	TERRESTRIAL INVERTEBRATE
5757	4/25/2006	J11KR3	SOIL and BIOTA	MIS	14.1	mg/kg	TERRESTRIAL INVERTEBRATE
5758	4/25/2006	J11KR3	SOIL and BIOTA	MIS-phyt	14.5	mg/kg	TERRESTRIAL INVERTEBRATE
5759	4/25/2006	J11XX9	SOIL and BIOTA	MIS	10.7	mg/kg	TERRESTRIAL INVERTEBRATE
5760	4/25/2006	J11XX9	SOIL and BIOTA	MIS-phyt	12.2	mg/kg	TERRESTRIAL INVERTEBRATE
5761	4/17/2006	J11KR6	SOIL and BIOTA	MIS	10	mg/kg	TERRESTRIAL INVERTEBRATE
5762	4/25/2006	J11KR4	SOIL and BIOTA	MIS	9.9	mg/kg	TERRESTRIAL INVERTEBRATE
5763	4/25/2006	J11KR5	SOIL and BIOTA	MIS	11	mg/kg	TERRESTRIAL INVERTEBRATE
5764	4/25/2006	J11KR5	SOIL and BIOTA	MIS-phyt	10.9	mg/kg	TERRESTRIAL INVERTEBRATE
5765	6/13/2007	J14Y54	SOIL and BIOTA	MIS	19.1	mg/kg	TERRESTRIAL INVERTEBRATE
5766	4/25/2006	J11L34	SOIL and BIOTA	MIS	10	mg/kg	TERRESTRIAL INVERTEBRATE
5767	4/17/2006	J11KP9	SOIL and BIOTA	MIS	9.3	mg/kg	TERRESTRIAL INVERTEBRATE
5768	4/17/2006	J11KR0	SOIL and BIOTA	MIS	9.9	mg/kg	TERRESTRIAL INVERTEBRATE
5769	6/13/2007	J14Y55	SOIL and BIOTA	MIS	23.35	mg/kg	TERRESTRIAL INVERTEBRATE
5770	4/25/2006	J11955	SOIL and BIOTA	MIS	19.5	mg/kg	TERRESTRIAL INVERTEBRATE
5771	4/3/2006	J11KV5	SOIL and BIOTA	MIS	1090	mg/kg	TERRESTRIAL INVERTEBRATE

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
5733	CARCASS	0.725	mg/kg			CP
5734	CARCASS	0.416	mg/kg			CP
5735	CARCASS	0.413	mg/kg			CP
5736	CARCASS	0.569	mg/kg			CP
5737	CARCASS	0.497	mg/kg			CP
5738	CARCASS	0.482	mg/kg			CP
5739	CARCASS	0.544	mg/kg			CP
5740	CARCASS	1.81	mg/kg			CP
5741	CARCASS	0.429	mg/kg			CP
5742	CARCASS	0.405	mg/kg			CP
5743	CARCASS	0.303	mg/kg			CP
5744	MULTIPLE WHOLE ORG	0.35	mg/kg			RCBRA
5745	MULTIPLE WHOLE ORG	0.27	mg/kg			RCBRA
5746	MULTIPLE WHOLE ORG	0.44	mg/kg			RCBRA
5747	MULTIPLE WHOLE ORG	0.44	mg/kg			RCBRA
5748	MULTIPLE WHOLE ORG	0.78	mg/kg			RCBRA
5749	MULTIPLE WHOLE ORG	0.49	mg/kg			RCBRA
5750	MULTIPLE WHOLE ORG	0.52	mg/kg			RCBRA
5751	MULTIPLE WHOLE ORG	0.5	mg/kg			RCBRA
5752	MULTIPLE WHOLE ORG	0.26	mg/kg			RCBRA
5753	MULTIPLE WHOLE ORG	0.27	mg/kg			RCBRA
5754	MULTIPLE WHOLE ORG	0.27	mg/kg			RCBRA
5755	MULTIPLE WHOLE ORG	0.3	mg/kg			RCBRA
5756	MULTIPLE WHOLE ORG	0.3	mg/kg			RCBRA
5757	MULTIPLE WHOLE ORG	0.46	mg/kg			RCBRA
5758	MULTIPLE WHOLE ORG	0.46	mg/kg			RCBRA
5759	MULTIPLE WHOLE ORG	0.4	mg/kg			RCBRA
5760	MULTIPLE WHOLE ORG	0.4	mg/kg			RCBRA
5761	MULTIPLE WHOLE ORG	0.99	mg/kg			RCBRA
5762	MULTIPLE WHOLE ORG	0.52	mg/kg			RCBRA
5763	MULTIPLE WHOLE ORG	0.64	mg/kg			RCBRA
5764	MULTIPLE WHOLE ORG	0.64	mg/kg			RCBRA
5765	MULTIPLE WHOLE ORG	0.26	mg/kg			RCBRA
5766	MULTIPLE WHOLE ORG	0.29	mg/kg			RCBRA
5767	MULTIPLE WHOLE ORG	0.29	mg/kg			RCBRA
5768	MULTIPLE WHOLE ORG	0.37	mg/kg			RCBRA
5769	MULTIPLE WHOLE ORG	0.27	mg/kg			RCBRA
5770	MULTIPLE WHOLE ORG	0.6	mg/kg			RCBRA
5771	MULTIPLE WHOLE ORG	2840	mg/kg			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
5772	Phosphorus	7723-14-0	RCBRA 100-D-49	D/H	UPLAND	573938.06	151944.123
5773	Phosphorus	7723-14-0	RCBRA 100-F-2	IU2/IU6	UPLAND	579728.068	147001.117
5774	Phosphorus	7723-14-0	RCBRA 116-DR-1&2	D/H	UPLAND	574007.817	152246.748
5775	Phosphorus	7723-14-0	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
5776	Phosphorus	7723-14-0	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
5777	Phosphorus	7723-14-0	RCBRA 1607-D2:1	D/H	UPLAND	573823.924	152260.319
5778	Phosphorus	7723-14-0	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
5779	Phosphorus	7723-14-0	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
5780	Phosphorus	7723-14-0	RCBRA 2a Rip	BC	RIPARIAN	564618.501	145284.526
5781	Phosphorus	7723-14-0	RCBRA 2c Rip	K	RIPARIAN	567598.2	146210.159
5782	Phosphorus	7723-14-0	RCBRA 2f Rip	D/H	RIPARIAN	576222.844	154297.511
5783	Phosphorus	7723-14-0	RCBRA 2j Rip	IU2/IU6	RIPARIAN	579360.971	150092.048
5784	Phosphorus	7723-14-0	RCBRA 2l Rip	IU2/IU6	RIPARIAN	582341.212	146120.069
5785	Phosphorus	7723-14-0	RCBRA 300-49	300	UPLAND	594318.994	116830.934
5786	Phosphorus	7723-14-0	RCBRA 3b Rip	IU2/IU6	RIPARIAN	584961.205	141035.835
5787	Phosphorus	7723-14-0	RCBRA 4a Rip	IU2/IU6	RIPARIAN	589347.5	137480.985
5788	Phosphorus	7723-14-0	RCBRA 5c Rip	300	RIPARIAN	594509.985	124869.182
5789	Phosphorus	7723-14-0	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
5790	Phosphorus	7723-14-0	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
5791	Phosphorus	7723-14-0	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
5792	Phosphorus	7723-14-0	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
5793	Phosphorus	7723-14-0	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
5794	Phosphorus	7723-14-0	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
5795	Phosphorus	7723-14-0	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
5796	Phosphorus	7723-14-0	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
5797	Phosphorus	7723-14-0	RCBRA 600-181	IU2/IU6	UPLAND	578303.83	147316.698
5798	Phosphorus	7723-14-0	RCBRA 600-204	IU2/IU6	UPLAND	580128.485	144762.219
5799	Phosphorus	7723-14-0	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
5800	Phosphorus	7723-14-0	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
5801	Phosphorus	7723-14-0	RCBRA 618-4	300	UPLAND	593954.946	117064.473
5802	Phosphorus	7723-14-0	RCBRA 628-1	IU2/IU6	UPLAND	577797.524	148745.681
5803	Phosphorus	7723-14-0	RCBRA Bev Ref 1 Rip	Outside decision areas	RIPARIAN	542428.846	167701.261
5804	Phosphorus	7723-14-0	RCBRA Bev Ref 2 Rip	Outside decision areas	RIPARIAN	541493.988	167808.357
5805	Phosphorus	7723-14-0	RCBRA JA JONES	300	UPLAND	593874.58	120013.908
5806	Phosphorus	7723-14-0	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
5807	Phosphorus	7723-14-0	RCBRA Pit 18	IU2/IU6	UPLAND	580697.058	145311.464
5808	Phosphorus	7723-14-0	RCBRA Pit 23	IU2/IU6	UPLAND	572381.012	144874.157
5809	Phosphorus	7723-14-0	RCBRA Pit 24	BC	UPLAND	563395.814	145119.007
5810	Phosphorus	7723-14-0	RCBRA Pit 9	300	UPLAND	592807.103	120587.7

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
5772	4/3/2006	J11KV6	SOIL and BIOTA	MIS	1030	mg/kg	TERRESTRIAL INVERTEBRATE
5773	4/25/2006	J11L32	SOIL and BIOTA	MIS	906	mg/kg	TERRESTRIAL INVERTEBRATE
5774	4/3/2006	J11L31	SOIL and BIOTA	MIS	991	mg/kg	TERRESTRIAL INVERTEBRATE
5775	4/17/2006	J11KT1	SOIL and BIOTA	MIS	679	mg/kg	TERRESTRIAL INVERTEBRATE
5776	4/17/2006	J11KT1	SOIL and BIOTA	MIS-phyt	745	mg/kg	TERRESTRIAL INVERTEBRATE
5777	4/3/2006	J11KT4	SOIL and BIOTA	MIS	897	mg/kg	TERRESTRIAL INVERTEBRATE
5778	4/3/2006	J11KR9	SOIL and BIOTA	MIS	1090	mg/kg	TERRESTRIAL INVERTEBRATE
5779	4/3/2006	J11KR9	SOIL and BIOTA	MIS-phyt	971	mg/kg	TERRESTRIAL INVERTEBRATE
5780	6/11/2007	J14Y56	SOIL and BIOTA	MIS	588	mg/kg	TERRESTRIAL INVERTEBRATE
5781	6/13/2007	J14Y63	SOIL and BIOTA	MIS	759	mg/kg	TERRESTRIAL INVERTEBRATE
5782	6/13/2007	J14Y57	SOIL and BIOTA	MIS	748	mg/kg	TERRESTRIAL INVERTEBRATE
5783	6/13/2007	J14Y58	SOIL and BIOTA	MIS	727	mg/kg	TERRESTRIAL INVERTEBRATE
5784	6/13/2007	J14Y59	SOIL and BIOTA	MIS	1000	mg/kg	TERRESTRIAL INVERTEBRATE
5785	4/25/2006	J11KT3	SOIL and BIOTA	MIS	769	mg/kg	TERRESTRIAL INVERTEBRATE
5786	6/11/2007	J14Y60	SOIL and BIOTA	MIS	749	mg/kg	TERRESTRIAL INVERTEBRATE
5787	6/13/2007	J14Y62	SOIL and BIOTA	MIS	895	mg/kg	TERRESTRIAL INVERTEBRATE
5788	6/7/2007	J14Y61	SOIL and BIOTA	MIS	744	mg/kg	TERRESTRIAL INVERTEBRATE
5789	4/3/2006	J11L35	SOIL and BIOTA	MIS	655	mg/kg	TERRESTRIAL INVERTEBRATE
5790	4/3/2006	J11L35	SOIL and BIOTA	MIS-phyt	771	mg/kg	TERRESTRIAL INVERTEBRATE
5791	4/3/2006	J11KR2	SOIL and BIOTA	MIS	711	mg/kg	TERRESTRIAL INVERTEBRATE
5792	4/3/2006	J11KR2	SOIL and BIOTA	MIS-phyt	734	mg/kg	TERRESTRIAL INVERTEBRATE
5793	4/25/2006	J11KR3	SOIL and BIOTA	MIS	722	mg/kg	TERRESTRIAL INVERTEBRATE
5794	4/25/2006	J11KR3	SOIL and BIOTA	MIS-phyt	740	mg/kg	TERRESTRIAL INVERTEBRATE
5795	4/25/2006	J11XX9	SOIL and BIOTA	MIS	621	mg/kg	TERRESTRIAL INVERTEBRATE
5796	4/25/2006	J11XX9	SOIL and BIOTA	MIS-phyt	663	mg/kg	TERRESTRIAL INVERTEBRATE
5797	4/17/2006	J11KR6	SOIL and BIOTA	MIS	916	mg/kg	TERRESTRIAL INVERTEBRATE
5798	4/25/2006	J11KR4	SOIL and BIOTA	MIS	992	mg/kg	TERRESTRIAL INVERTEBRATE
5799	4/25/2006	J11KR5	SOIL and BIOTA	MIS	868	mg/kg	TERRESTRIAL INVERTEBRATE
5800	4/25/2006	J11KR5	SOIL and BIOTA	MIS-phyt	780	mg/kg	TERRESTRIAL INVERTEBRATE
5801	4/26/2006	J11KT2	SOIL and BIOTA	MIS	712	mg/kg	TERRESTRIAL INVERTEBRATE
5802	4/25/2006	J11XX8	SOIL and BIOTA	MIS	723	mg/kg	TERRESTRIAL INVERTEBRATE
5803	6/13/2007	J14Y53	SOIL and BIOTA	MIS	568	mg/kg	TERRESTRIAL INVERTEBRATE
5804	6/13/2007	J14Y54	SOIL and BIOTA	MIS	846	mg/kg	TERRESTRIAL INVERTEBRATE
5805	4/25/2006	J11L34	SOIL and BIOTA	MIS	782	mg/kg	TERRESTRIAL INVERTEBRATE
5806	4/17/2006	J11KP9	SOIL and BIOTA	MIS	1050	mg/kg	TERRESTRIAL INVERTEBRATE
5807	4/17/2006	J11KR0	SOIL and BIOTA	MIS	669	mg/kg	TERRESTRIAL INVERTEBRATE
5808	4/3/2006	J11L33	SOIL and BIOTA	MIS	1170	mg/kg	TERRESTRIAL INVERTEBRATE
5809	4/3/2006	J11KT6	SOIL and BIOTA	MIS	921	mg/kg	TERRESTRIAL INVERTEBRATE
5810	4/25/2006	J11KT5	SOIL and BIOTA	MIS	1040	mg/kg	TERRESTRIAL INVERTEBRATE

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
5772	MULTIPLE WHOLE ORG	2590	mg/kg			RCBRA
5773	MULTIPLE WHOLE ORG	2270	mg/kg			RCBRA
5774	MULTIPLE WHOLE ORG	2470	mg/kg			RCBRA
5775	MULTIPLE WHOLE ORG	2530	mg/kg			RCBRA
5776	MULTIPLE WHOLE ORG	2530	mg/kg			RCBRA
5777	MULTIPLE WHOLE ORG	2520	mg/kg			RCBRA
5778	MULTIPLE WHOLE ORG	2640	mg/kg			RCBRA
5779	MULTIPLE WHOLE ORG	2640	mg/kg			RCBRA
5780	MULTIPLE WHOLE ORG	2100	mg/kg			RCBRA
5781	MULTIPLE WHOLE ORG	2170	mg/kg			RCBRA
5782	MULTIPLE WHOLE ORG	2440	mg/kg			RCBRA
5783	MULTIPLE WHOLE ORG	2160	mg/kg			RCBRA
5784	MULTIPLE WHOLE ORG	2230	mg/kg			RCBRA
5785	MULTIPLE WHOLE ORG	2370	mg/kg			RCBRA
5786	MULTIPLE WHOLE ORG	2110	mg/kg			RCBRA
5787	MULTIPLE WHOLE ORG	2610	mg/kg			RCBRA
5788	MULTIPLE WHOLE ORG	1900	mg/kg			RCBRA
5789	MULTIPLE WHOLE ORG	2110	mg/kg			RCBRA
5790	MULTIPLE WHOLE ORG	2110	mg/kg			RCBRA
5791	MULTIPLE WHOLE ORG	2710	mg/kg			RCBRA
5792	MULTIPLE WHOLE ORG	2710	mg/kg			RCBRA
5793	MULTIPLE WHOLE ORG	2490	mg/kg			RCBRA
5794	MULTIPLE WHOLE ORG	2490	mg/kg			RCBRA
5795	MULTIPLE WHOLE ORG	2470	mg/kg			RCBRA
5796	MULTIPLE WHOLE ORG	2470	mg/kg			RCBRA
5797	MULTIPLE WHOLE ORG	2600	mg/kg			RCBRA
5798	MULTIPLE WHOLE ORG	2480	mg/kg			RCBRA
5799	MULTIPLE WHOLE ORG	2090	mg/kg			RCBRA
5800	MULTIPLE WHOLE ORG	2090	mg/kg			RCBRA
5801	MULTIPLE WHOLE ORG	2970	mg/kg			RCBRA
5802	MULTIPLE WHOLE ORG	2230	mg/kg			RCBRA
5803	MULTIPLE WHOLE ORG	2180	mg/kg			RCBRA
5804	MULTIPLE WHOLE ORG	2160	mg/kg			RCBRA
5805	MULTIPLE WHOLE ORG	2540	mg/kg			RCBRA
5806	MULTIPLE WHOLE ORG	2610	mg/kg			RCBRA
5807	MULTIPLE WHOLE ORG	2370	mg/kg			RCBRA
5808	MULTIPLE WHOLE ORG	2560	mg/kg			RCBRA
5809	MULTIPLE WHOLE ORG	2500	mg/kg			RCBRA
5810	MULTIPLE WHOLE ORG	2290	mg/kg			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
5811	Phosphorus	7723-14-0	RCBRA R Ref 11	Outside decision areas	RIPARIAN	559400.735	146458.486
5812	Phosphorus	7723-14-0	RCBRA R Ref 12	IU2/IU6	RIPARIAN	559201.908	145747.542
5813	Phosphorus	7723-14-0	RCBRA R Ref 13	Outside decision areas	RIPARIAN	558572.809	145345.115
5814	Phosphorus	7723-14-0	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
5815	Phosphorus	7723-14-0	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
5816	Phosphorus	7723-14-0	RCBRA R Ref 16	Outside decision areas	RIPARIAN	557650.029	144826.748
5817	Phosphorus	7723-14-0	RCBRA Rip 1	D/H	RIPARIAN	577251.869	153659.195
5818	Phosphorus	7723-14-0	RCBRA Rip 10	D/H	RIPARIAN	573987.873	153082.19
5819	Phosphorus	7723-14-0	RCBRA Rip 2	D/H	RIPARIAN	573603.219	152471.6
5820	Phosphorus	7723-14-0	RCBRA Rip 3	D/H	RIPARIAN	572639.65	151677.812
5821	Phosphorus	7723-14-0	RCBRA Rip 4	N	RIPARIAN	570558.596	148981.547
5822	Phosphorus	7723-14-0	RCBRA Rip 5	K	RIPARIAN	569141.025	147521.561
5823	Phosphorus	7723-14-0	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
5824	Phosphorus	7723-14-0	RCBRA Rip 7	IU2/IU6	RIPARIAN	581326.914	147825.17
5825	Phosphorus	7723-14-0	RCBRA Rip 8	D/H	RIPARIAN	578698.584	152233.645
5826	Phosphorus	7723-14-0	RCBRA Rip 9	D/H	RIPARIAN	578153.643	152801.452
5827	Phosphorus	7723-14-0	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
5828	Phosphorus	7723-14-0	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
5829	Phosphorus	7723-14-0	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
5830	Phosphorus	7723-14-0	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
5831	Phosphorus	7723-14-0	RCBRA Yak Rdg 2	Outside decision areas	UPLAND	559031.557	135576.407
5832	Lead	7439-92-1	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764
5833	Lead	7439-92-1	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764
5834	Lead	7439-92-1	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
5835	Lead	7439-92-1	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
5836	Lead	7439-92-1	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
5837	Lead	7439-92-1	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
5838	Lead	7439-92-1	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
5839	Lead	7439-92-1	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
5840	Lead	7439-92-1	B POND	Outside decision areas	UPLAND	576356.769	136881.272
5841	Lead	7439-92-1	B POND	Outside decision areas	UPLAND	576356.769	136881.272
5842	Lead	7439-92-1	B POND	Outside decision areas	UPLAND	576356.769	136881.272
5843	Lead	7439-92-1	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
5844	Lead	7439-92-1	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
5845	Lead	7439-92-1	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
5846	Lead	7439-92-1	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
5847	Lead	7439-92-1	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
5848	Lead	7439-92-1	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
5849	Lead	7439-92-1	U POND	Outside decision areas	UPLAND	566379.63	134457.045

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
5811	3/20/2006	J11960	SOIL and BIOTA	MIS	725	mg/kg	TERRESTRIAL INVERTEBRATE
5812	3/20/2006	J11961	SOIL and BIOTA	MIS	724	mg/kg	TERRESTRIAL INVERTEBRATE
5813	3/20/2006	J11962	SOIL and BIOTA	MIS	992	mg/kg	TERRESTRIAL INVERTEBRATE
5814	3/20/2006	J11963	SOIL and BIOTA	MIS	798.5	mg/kg	TERRESTRIAL INVERTEBRATE
5815	6/13/2007	J14Y55	SOIL and BIOTA	MIS	798.5	mg/kg	TERRESTRIAL INVERTEBRATE
5816	3/20/2006	J11964	SOIL and BIOTA	MIS	856	mg/kg	TERRESTRIAL INVERTEBRATE
5817	3/16/2006	J11950	SOIL and BIOTA	MIS	826	mg/kg	TERRESTRIAL INVERTEBRATE
5818	3/16/2006	J11959	SOIL and BIOTA	MIS	776	mg/kg	TERRESTRIAL INVERTEBRATE
5819	3/16/2006	J11951	SOIL and BIOTA	MIS	882	mg/kg	TERRESTRIAL INVERTEBRATE
5820	3/16/2006	J11952	SOIL and BIOTA	MIS	1140	mg/kg	TERRESTRIAL INVERTEBRATE
5821	3/16/2006	J11953	SOIL and BIOTA	MIS	797	mg/kg	TERRESTRIAL INVERTEBRATE
5822	3/16/2006	J11954	SOIL and BIOTA	MIS	859	mg/kg	TERRESTRIAL INVERTEBRATE
5823	4/25/2006	J11955	SOIL and BIOTA	MIS	920	mg/kg	TERRESTRIAL INVERTEBRATE
5824	3/16/2006	J11956	SOIL and BIOTA	MIS	809	mg/kg	TERRESTRIAL INVERTEBRATE
5825	3/16/2006	J11957	SOIL and BIOTA	MIS	663	mg/kg	TERRESTRIAL INVERTEBRATE
5826	3/16/2006	J11958	SOIL and BIOTA	MIS	677	mg/kg	TERRESTRIAL INVERTEBRATE
5827	4/3/2006	J11KV0	SOIL and BIOTA	MIS	1060	mg/kg	TERRESTRIAL INVERTEBRATE
5828	4/3/2006	J11KV0	SOIL and BIOTA	MIS-phyt	1000	mg/kg	TERRESTRIAL INVERTEBRATE
5829	4/3/2006	J11KT8	SOIL and BIOTA	MIS	720	mg/kg	TERRESTRIAL INVERTEBRATE
5830	4/3/2006	J11KT8	SOIL and BIOTA	MIS-phyt	724	mg/kg	TERRESTRIAL INVERTEBRATE
5831	4/3/2006	J11KT7	SOIL and BIOTA	MIS	783	mg/kg	TERRESTRIAL INVERTEBRATE
5832	9/13/2005	B1CV56	SOIL and BIOTA	Discrete	5.64	mg/kg	TERRESTRIAL INVERTEBRATE
5833	9/13/2005	B1CV57	SOIL and BIOTA	Discrete	5.64	mg/kg	TERRESTRIAL INVERTEBRATE
5834	6/15/2005	B1CTY3	SOIL and BIOTA	Discrete	5.23	mg/kg	TERRESTRIAL INVERTEBRATE
5835	6/15/2005	B1CTY2	SOIL and BIOTA	Discrete	5.23	mg/kg	TERRESTRIAL INVERTEBRATE
5836	6/15/2005	B1CTY4	SOIL and BIOTA	Discrete	5.23	mg/kg	TERRESTRIAL INVERTEBRATE
5837	9/13/2005	B1CV54	SOIL and BIOTA	Discrete	8.11	mg/kg	TERRESTRIAL INVERTEBRATE
5838	9/13/2005	B1CV53	SOIL and BIOTA	Discrete	8.11	mg/kg	TERRESTRIAL INVERTEBRATE
5839	9/13/2005	B1CV52	SOIL and BIOTA	Discrete	8.11	mg/kg	TERRESTRIAL INVERTEBRATE
5840	6/15/2005	B1CV47	SOIL and BIOTA	Discrete	7.08	mg/kg	TERRESTRIAL INVERTEBRATE
5841	6/15/2005	B1CV48	SOIL and BIOTA	Discrete	7.08	mg/kg	TERRESTRIAL INVERTEBRATE
5842	6/15/2005	B1CV46	SOIL and BIOTA	Discrete	7.08	mg/kg	TERRESTRIAL INVERTEBRATE
5843	6/15/2005	B1CTY6	SOIL and BIOTA	Discrete	8.69	mg/kg	TERRESTRIAL INVERTEBRATE
5844	6/15/2005	B1CTY7	SOIL and BIOTA	Discrete	8.69	mg/kg	TERRESTRIAL INVERTEBRATE
5845	6/15/2005	B1CTY5	SOIL and BIOTA	Discrete	8.69	mg/kg	TERRESTRIAL INVERTEBRATE
5846	6/15/2005	B1CV44	SOIL and BIOTA	Discrete	5.95	mg/kg	TERRESTRIAL INVERTEBRATE
5847	6/15/2005	B1CTY8	SOIL and BIOTA	Discrete	5.95	mg/kg	TERRESTRIAL INVERTEBRATE
5848	6/15/2005	B1CV45	SOIL and BIOTA	Discrete	5.95	mg/kg	TERRESTRIAL INVERTEBRATE
5849	9/13/2005	B1CV51	SOIL and BIOTA	Discrete	5.17	mg/kg	TERRESTRIAL INVERTEBRATE

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
5811	MULTIPLE WHOLE ORG	2200	mg/kg			RCBRA
5812	MULTIPLE WHOLE ORG	2010	mg/kg			RCBRA
5813	MULTIPLE WHOLE ORG	2840	mg/kg			RCBRA
5814	MULTIPLE WHOLE ORG	2190	mg/kg			RCBRA
5815	MULTIPLE WHOLE ORG	2030	mg/kg			RCBRA
5816	MULTIPLE WHOLE ORG	2180	mg/kg			RCBRA
5817	MULTIPLE WHOLE ORG	1910	mg/kg			RCBRA
5818	MULTIPLE WHOLE ORG	2600	mg/kg			RCBRA
5819	MULTIPLE WHOLE ORG	2820	mg/kg			RCBRA
5820	MULTIPLE WHOLE ORG	1380	mg/kg			RCBRA
5821	MULTIPLE WHOLE ORG	1800	mg/kg			RCBRA
5822	MULTIPLE WHOLE ORG	1740	mg/kg			RCBRA
5823	MULTIPLE WHOLE ORG	2550	mg/kg			RCBRA
5824	MULTIPLE WHOLE ORG	2230	mg/kg			RCBRA
5825	MULTIPLE WHOLE ORG	2350	mg/kg			RCBRA
5826	MULTIPLE WHOLE ORG	2640	mg/kg			RCBRA
5827	MULTIPLE WHOLE ORG	2460	mg/kg			RCBRA
5828	MULTIPLE WHOLE ORG	2460	mg/kg			RCBRA
5829	MULTIPLE WHOLE ORG	2340	mg/kg			RCBRA
5830	MULTIPLE WHOLE ORG	2340	mg/kg			RCBRA
5831	MULTIPLE WHOLE ORG	2040	mg/kg			RCBRA
5832	CARCASS	0.087	mg/kg			CP
5833	CARCASS	0.102	mg/kg			CP
5834	CARCASS	0.218	mg/kg			CP
5835	CARCASS	0.19	mg/kg			CP
5836	CARCASS	0.193	mg/kg			CP
5837	CARCASS	0.154	mg/kg			CP
5838	CARCASS	0.123	mg/kg			CP
5839	CARCASS	0.131	mg/kg			CP
5840	CARCASS	0.186	mg/kg			CP
5841	CARCASS	0.173	mg/kg			CP
5842	CARCASS	0.145	mg/kg			CP
5843	CARCASS	0.108	mg/kg			CP
5844	CARCASS	0.176	mg/kg			CP
5845	CARCASS	0.142	mg/kg			CP
5846	CARCASS	0.135	mg/kg			CP
5847	CARCASS	0.181	mg/kg			CP
5848	CARCASS	0.167	mg/kg			CP
5849	CARCASS	0.194	mg/kg			CP

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
5850	Lead	7439-92-1	U POND	Outside decision areas	UPLAND	566379.63	134457.045
5851	Lead	7439-92-1	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
5852	Lead	7439-92-1	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
5853	Lead	7439-92-1	RCBRA 2a Rip	BC	RIPARIAN	564618.501	145284.526
5854	Lead	7439-92-1	RCBRA 2c Rip	K	RIPARIAN	567598.2	146210.159
5855	Lead	7439-92-1	RCBRA 2j Rip	IU2/IU6	RIPARIAN	579360.971	150092.048
5856	Lead	7439-92-1	RCBRA 2l Rip	IU2/IU6	RIPARIAN	582341.212	146120.069
5857	Lead	7439-92-1	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
5858	Lead	7439-92-1	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
5859	Lead	7439-92-1	RCBRA 600-181	IU2/IU6	UPLAND	578303.83	147316.698
5860	Lead	7439-92-1	RCBRA 600-204	IU2/IU6	UPLAND	580128.485	144762.219
5861	Lead	7439-92-1	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
5862	Lead	7439-92-1	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
5863	Lead	7439-92-1	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
5864	Lead	7439-92-1	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
5865	Lead	7439-92-1	RCBRA Rip 5	K	RIPARIAN	569141.025	147521.561
5866	Antimony	7440-36-0	RCBRA 100-F-2	IU2/IU6	UPLAND	579728.068	147001.117
5867	Antimony	7440-36-0	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
5868	Antimony	7440-36-0	RCBRA 628-1	IU2/IU6	UPLAND	577797.524	148745.681
5869	Selenium	7782-49-2	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
5870	Selenium	7782-49-2	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
5871	Selenium	7782-49-2	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
5872	Selenium	7782-49-2	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
5873	Selenium	7782-49-2	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
5874	Selenium	7782-49-2	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
5875	Selenium	7782-49-2	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
5876	Selenium	7782-49-2	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
5877	Selenium	7782-49-2	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
5878	Selenium	7782-49-2	RCBRA R Ref 11	Outside decision areas	RIPARIAN	559400.735	146458.486
5879	Selenium	7782-49-2	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
5880	Selenium	7782-49-2	RCBRA Rip 1	D/H	RIPARIAN	577251.869	153659.195
5881	Selenium	7782-49-2	RCBRA Rip 3	D/H	RIPARIAN	572639.65	151677.812
5882	Silicon	7440-21-3	RCBRA 100-D-48	D/H	UPLAND	573841.527	151914.538
5883	Silicon	7440-21-3	RCBRA 100-D-49	D/H	UPLAND	573938.06	151944.123
5884	Silicon	7440-21-3	RCBRA 100-F-2	IU2/IU6	UPLAND	579728.068	147001.117
5885	Silicon	7440-21-3	RCBRA 116-DR-1&2	D/H	UPLAND	574007.817	152246.748
5886	Silicon	7440-21-3	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
5887	Silicon	7440-21-3	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
5888	Silicon	7440-21-3	RCBRA 1607-D2:1	D/H	UPLAND	573823.924	152260.319

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
5850	9/13/2005	B1CV50	SOIL and BIOTA	Discrete	5.17	mg/kg	TERRESTRIAL INVERTEBRATE
5851	4/17/2006	J11KT1	SOIL and BIOTA	MIS	51.7	mg/kg	TERRESTRIAL INVERTEBRATE
5852	4/17/2006	J11KT1	SOIL and BIOTA	MIS-phyt	95.8	mg/kg	TERRESTRIAL INVERTEBRATE
5853	6/11/2007	J14Y56	SOIL and BIOTA	MIS	17	mg/kg	TERRESTRIAL INVERTEBRATE
5854	6/13/2007	J14Y63	SOIL and BIOTA	MIS	56.5	mg/kg	TERRESTRIAL INVERTEBRATE
5855	6/13/2007	J14Y58	SOIL and BIOTA	MIS	68.6	mg/kg	TERRESTRIAL INVERTEBRATE
5856	6/13/2007	J14Y59	SOIL and BIOTA	MIS	14.7	mg/kg	TERRESTRIAL INVERTEBRATE
5857	4/25/2006	J11KR3	SOIL and BIOTA	MIS	98.1	mg/kg	TERRESTRIAL INVERTEBRATE
5858	4/25/2006	J11KR3	SOIL and BIOTA	MIS-phyt	102	mg/kg	TERRESTRIAL INVERTEBRATE
5859	4/17/2006	J11KR6	SOIL and BIOTA	MIS	5	mg/kg	TERRESTRIAL INVERTEBRATE
5860	4/25/2006	J11KR4	SOIL and BIOTA	MIS	5.5	mg/kg	TERRESTRIAL INVERTEBRATE
5861	4/25/2006	J11KR5	SOIL and BIOTA	MIS	23.4	mg/kg	TERRESTRIAL INVERTEBRATE
5862	4/25/2006	J11KR5	SOIL and BIOTA	MIS-phyt	30.3	mg/kg	TERRESTRIAL INVERTEBRATE
5863	4/17/2006	J11KP9	SOIL and BIOTA	MIS	4.8	mg/kg	TERRESTRIAL INVERTEBRATE
5864	6/13/2007	J14Y55	SOIL and BIOTA	MIS	40.65	mg/kg	TERRESTRIAL INVERTEBRATE
5865	3/16/2006	J11954	SOIL and BIOTA	MIS	46.7	mg/kg	TERRESTRIAL INVERTEBRATE
5866	4/25/2006	J11L32	SOIL and BIOTA	MIS	0.2625	mg/kg	TERRESTRIAL INVERTEBRATE
5867	4/25/2006	J11XX9	SOIL and BIOTA	MIS	1.1	mg/kg	TERRESTRIAL INVERTEBRATE
5868	4/25/2006	J11XX8	SOIL and BIOTA	MIS	0.75	mg/kg	TERRESTRIAL INVERTEBRATE
5869	6/15/2005	B1CTY3	SOIL and BIOTA	Discrete	0.637	mg/kg	TERRESTRIAL INVERTEBRATE
5870	6/15/2005	B1CTY2	SOIL and BIOTA	Discrete	0.637	mg/kg	TERRESTRIAL INVERTEBRATE
5871	6/15/2005	B1CTY4	SOIL and BIOTA	Discrete	0.637	mg/kg	TERRESTRIAL INVERTEBRATE
5872	9/13/2005	B1CV52	SOIL and BIOTA	Discrete	0.569	mg/kg	TERRESTRIAL INVERTEBRATE
5873	6/15/2005	B1CTY6	SOIL and BIOTA	Discrete	0.625	mg/kg	TERRESTRIAL INVERTEBRATE
5874	6/15/2005	B1CTY5	SOIL and BIOTA	Discrete	0.625	mg/kg	TERRESTRIAL INVERTEBRATE
5875	6/15/2005	B1CTY7	SOIL and BIOTA	Discrete	0.625	mg/kg	TERRESTRIAL INVERTEBRATE
5876	6/15/2005	B1CTY8	SOIL and BIOTA	Discrete	0.63	mg/kg	TERRESTRIAL INVERTEBRATE
5877	6/15/2005	B1CV45	SOIL and BIOTA	Discrete	0.63	mg/kg	TERRESTRIAL INVERTEBRATE
5878	3/20/2006	J11960	SOIL and BIOTA	MIS	1	mg/kg	TERRESTRIAL INVERTEBRATE
5879	3/20/2006	J11963	SOIL and BIOTA	MIS	0.84	mg/kg	TERRESTRIAL INVERTEBRATE
5880	3/16/2006	J11950	SOIL and BIOTA	MIS	0.86	mg/kg	TERRESTRIAL INVERTEBRATE
5881	3/16/2006	J11952	SOIL and BIOTA	MIS	0.67	mg/kg	TERRESTRIAL INVERTEBRATE
5882	4/3/2006	J11KV5	SOIL and BIOTA	MIS	283	mg/kg	TERRESTRIAL INVERTEBRATE
5883	4/3/2006	J11KV6	SOIL and BIOTA	MIS	272	mg/kg	TERRESTRIAL INVERTEBRATE
5884	4/25/2006	J11L32	SOIL and BIOTA	MIS	291	mg/kg	TERRESTRIAL INVERTEBRATE
5885	4/3/2006	J11L31	SOIL and BIOTA	MIS	279	mg/kg	TERRESTRIAL INVERTEBRATE
5886	4/17/2006	J11KT1	SOIL and BIOTA	MIS	266	mg/kg	TERRESTRIAL INVERTEBRATE
5887	4/17/2006	J11KT1	SOIL and BIOTA	MIS-phyt	197	mg/kg	TERRESTRIAL INVERTEBRATE
5888	4/3/2006	J11KT4	SOIL and BIOTA	MIS	256	mg/kg	TERRESTRIAL INVERTEBRATE

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
5850	CARCASS	0.236	mg/kg			CP
5851	MULTIPLE WHOLE ORG	1.1	mg/kg			RCBRA
5852	MULTIPLE WHOLE ORG	1.1	mg/kg			RCBRA
5853	MULTIPLE WHOLE ORG	0.37	mg/kg			RCBRA
5854	MULTIPLE WHOLE ORG	0.48	mg/kg			RCBRA
5855	MULTIPLE WHOLE ORG	0.32	mg/kg			RCBRA
5856	MULTIPLE WHOLE ORG	0.49	mg/kg			RCBRA
5857	MULTIPLE WHOLE ORG	0.44	mg/kg			RCBRA
5858	MULTIPLE WHOLE ORG	0.44	mg/kg			RCBRA
5859	MULTIPLE WHOLE ORG	0.37	mg/kg			RCBRA
5860	MULTIPLE WHOLE ORG	2.2	mg/kg			RCBRA
5861	MULTIPLE WHOLE ORG	0.89	mg/kg			RCBRA
5862	MULTIPLE WHOLE ORG	0.89	mg/kg			RCBRA
5863	MULTIPLE WHOLE ORG	0.38	mg/kg			RCBRA
5864	MULTIPLE WHOLE ORG	0.36	mg/kg			RCBRA
5865	MULTIPLE WHOLE ORG	0.32	mg/kg			RCBRA
5866	MULTIPLE WHOLE ORG	0.45	mg/kg			RCBRA
5867	MULTIPLE WHOLE ORG	0.5	mg/kg			RCBRA
5868	MULTIPLE WHOLE ORG	0.55	mg/kg			RCBRA
5869	CARCASS	0.184	mg/kg			CP
5870	CARCASS	0.109	mg/kg			CP
5871	CARCASS	0.141	mg/kg			CP
5872	CARCASS	0.162	mg/kg			CP
5873	CARCASS	0.136	mg/kg			CP
5874	CARCASS	0.143	mg/kg			CP
5875	CARCASS	0.132	mg/kg			CP
5876	CARCASS	0.11	mg/kg			CP
5877	CARCASS	0.133	mg/kg			CP
5878	MULTIPLE WHOLE ORG	0.88	mg/kg			RCBRA
5879	MULTIPLE WHOLE ORG	0.6	mg/kg			RCBRA
5880	MULTIPLE WHOLE ORG	1	mg/kg			RCBRA
5881	MULTIPLE WHOLE ORG	0.66	mg/kg			RCBRA
5882	MULTIPLE WHOLE ORG	47.2	mg/kg			RCBRA
5883	MULTIPLE WHOLE ORG	57.1	mg/kg			RCBRA
5884	MULTIPLE WHOLE ORG	42.4	mg/kg		J	RCBRA
5885	MULTIPLE WHOLE ORG	63.5	mg/kg			RCBRA
5886	MULTIPLE WHOLE ORG	54.5	mg/kg		J	RCBRA
5887	MULTIPLE WHOLE ORG	54.5	mg/kg		J	RCBRA
5888	MULTIPLE WHOLE ORG	48.3	mg/kg			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
5889	Silicon	7440-21-3	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
5890	Silicon	7440-21-3	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
5891	Silicon	7440-21-3	RCBRA 2a Rip	BC	RIPARIAN	564618.501	145284.526
5892	Silicon	7440-21-3	RCBRA 2c Rip	K	RIPARIAN	567598.2	146210.159
5893	Silicon	7440-21-3	RCBRA 2f Rip	D/H	RIPARIAN	576222.844	154297.511
5894	Silicon	7440-21-3	RCBRA 2j Rip	IU2/IU6	RIPARIAN	579360.971	150092.048
5895	Silicon	7440-21-3	RCBRA 2l Rip	IU2/IU6	RIPARIAN	582341.212	146120.069
5896	Silicon	7440-21-3	RCBRA 300-49	300	UPLAND	594318.994	116830.934
5897	Silicon	7440-21-3	RCBRA 3b Rip	IU2/IU6	RIPARIAN	584961.205	141035.835
5898	Silicon	7440-21-3	RCBRA 4a Rip	IU2/IU6	RIPARIAN	589347.5	137480.985
5899	Silicon	7440-21-3	RCBRA 5c Rip	300	RIPARIAN	594509.985	124869.182
5900	Silicon	7440-21-3	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
5901	Silicon	7440-21-3	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
5902	Silicon	7440-21-3	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
5903	Silicon	7440-21-3	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
5904	Silicon	7440-21-3	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
5905	Silicon	7440-21-3	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
5906	Silicon	7440-21-3	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
5907	Silicon	7440-21-3	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
5908	Silicon	7440-21-3	RCBRA 600-181	IU2/IU6	UPLAND	578303.83	147316.698
5909	Silicon	7440-21-3	RCBRA 600-204	IU2/IU6	UPLAND	580128.485	144762.219
5910	Silicon	7440-21-3	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
5911	Silicon	7440-21-3	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
5912	Silicon	7440-21-3	RCBRA 618-4	300	UPLAND	593954.946	117064.473
5913	Silicon	7440-21-3	RCBRA 628-1	IU2/IU6	UPLAND	577797.524	148745.681
5914	Silicon	7440-21-3	RCBRA Bev Ref 1 Rip	Outside decision areas	RIPARIAN	542428.846	167701.261
5915	Silicon	7440-21-3	RCBRA Bev Ref 2 Rip	Outside decision areas	RIPARIAN	541493.988	167808.357
5916	Silicon	7440-21-3	RCBRA JA JONES	300	UPLAND	593874.58	120013.908
5917	Silicon	7440-21-3	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
5918	Silicon	7440-21-3	RCBRA Pit 18	IU2/IU6	UPLAND	580697.058	145311.464
5919	Silicon	7440-21-3	RCBRA Pit 23	IU2/IU6	UPLAND	572381.012	144874.157
5920	Silicon	7440-21-3	RCBRA Pit 24	BC	UPLAND	563395.814	145119.007
5921	Silicon	7440-21-3	RCBRA Pit 9	300	UPLAND	592807.103	120587.7
5922	Silicon	7440-21-3	RCBRA R Ref 11	Outside decision areas	RIPARIAN	559400.735	146458.486
5923	Silicon	7440-21-3	RCBRA R Ref 12	IU2/IU6	RIPARIAN	559201.908	145747.542
5924	Silicon	7440-21-3	RCBRA R Ref 13	Outside decision areas	RIPARIAN	558572.809	145345.115
5925	Silicon	7440-21-3	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
5926	Silicon	7440-21-3	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
5927	Silicon	7440-21-3	RCBRA R Ref 16	Outside decision areas	RIPARIAN	557650.029	144826.748

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
5889	4/3/2006	J11KR9	SOIL and BIOTA	MIS	393	mg/kg	TERRESTRIAL INVERTEBRATE
5890	4/3/2006	J11KR9	SOIL and BIOTA	MIS-phyt	123	mg/kg	TERRESTRIAL INVERTEBRATE
5891	6/11/2007	J14Y56	SOIL and BIOTA	MIS	230.13	mg/kg	TERRESTRIAL INVERTEBRATE
5892	6/13/2007	J14Y63	SOIL and BIOTA	MIS	329	mg/kg	TERRESTRIAL INVERTEBRATE
5893	6/13/2007	J14Y57	SOIL and BIOTA	MIS	342	mg/kg	TERRESTRIAL INVERTEBRATE
5894	6/13/2007	J14Y58	SOIL and BIOTA	MIS	388	mg/kg	TERRESTRIAL INVERTEBRATE
5895	6/13/2007	J14Y59	SOIL and BIOTA	MIS	225	mg/kg	TERRESTRIAL INVERTEBRATE
5896	4/25/2006	J11KT3	SOIL and BIOTA	MIS	258	mg/kg	TERRESTRIAL INVERTEBRATE
5897	6/11/2007	J14Y60	SOIL and BIOTA	MIS	315	mg/kg	TERRESTRIAL INVERTEBRATE
5898	6/13/2007	J14Y62	SOIL and BIOTA	MIS	280	mg/kg	TERRESTRIAL INVERTEBRATE
5899	6/7/2007	J14Y61	SOIL and BIOTA	MIS	203	mg/kg	TERRESTRIAL INVERTEBRATE
5900	4/3/2006	J11L35	SOIL and BIOTA	MIS	286	mg/kg	TERRESTRIAL INVERTEBRATE
5901	4/3/2006	J11L35	SOIL and BIOTA	MIS-phyt	173	mg/kg	TERRESTRIAL INVERTEBRATE
5902	4/3/2006	J11KR2	SOIL and BIOTA	MIS	246	mg/kg	TERRESTRIAL INVERTEBRATE
5903	4/3/2006	J11KR2	SOIL and BIOTA	MIS-phyt	172	mg/kg	TERRESTRIAL INVERTEBRATE
5904	4/25/2006	J11KR3	SOIL and BIOTA	MIS	255	mg/kg	TERRESTRIAL INVERTEBRATE
5905	4/25/2006	J11KR3	SOIL and BIOTA	MIS-phyt	164	mg/kg	TERRESTRIAL INVERTEBRATE
5906	4/25/2006	J11XX9	SOIL and BIOTA	MIS	266	mg/kg	TERRESTRIAL INVERTEBRATE
5907	4/25/2006	J11XX9	SOIL and BIOTA	MIS-phyt	144	mg/kg	TERRESTRIAL INVERTEBRATE
5908	4/17/2006	J11KR6	SOIL and BIOTA	MIS	238	mg/kg	TERRESTRIAL INVERTEBRATE
5909	4/25/2006	J11KR4	SOIL and BIOTA	MIS	288	mg/kg	TERRESTRIAL INVERTEBRATE
5910	4/25/2006	J11KR5	SOIL and BIOTA	MIS	361	mg/kg	TERRESTRIAL INVERTEBRATE
5911	4/25/2006	J11KR5	SOIL and BIOTA	MIS-phyt	239	mg/kg	TERRESTRIAL INVERTEBRATE
5912	4/26/2006	J11KT2	SOIL and BIOTA	MIS	235	mg/kg	TERRESTRIAL INVERTEBRATE
5913	4/25/2006	J11XX8	SOIL and BIOTA	MIS	320	mg/kg	TERRESTRIAL INVERTEBRATE
5914	6/13/2007	J14Y53	SOIL and BIOTA	MIS	330	mg/kg	TERRESTRIAL INVERTEBRATE
5915	6/13/2007	J14Y54	SOIL and BIOTA	MIS	278	mg/kg	TERRESTRIAL INVERTEBRATE
5916	4/25/2006	J11L34	SOIL and BIOTA	MIS	380	mg/kg	TERRESTRIAL INVERTEBRATE
5917	4/17/2006	J11KP9	SOIL and BIOTA	MIS	199	mg/kg	TERRESTRIAL INVERTEBRATE
5918	4/17/2006	J11KR0	SOIL and BIOTA	MIS	266	mg/kg	TERRESTRIAL INVERTEBRATE
5919	4/3/2006	J11L33	SOIL and BIOTA	MIS	272	mg/kg	TERRESTRIAL INVERTEBRATE
5920	4/3/2006	J11KT6	SOIL and BIOTA	MIS	292	mg/kg	TERRESTRIAL INVERTEBRATE
5921	4/25/2006	J11KT5	SOIL and BIOTA	MIS	268	mg/kg	TERRESTRIAL INVERTEBRATE
5922	3/20/2006	J11960	SOIL and BIOTA	MIS	305	mg/kg	TERRESTRIAL INVERTEBRATE
5923	3/20/2006	J11961	SOIL and BIOTA	MIS	323	mg/kg	TERRESTRIAL INVERTEBRATE
5924	3/20/2006	J11962	SOIL and BIOTA	MIS	290	mg/kg	TERRESTRIAL INVERTEBRATE
5925	3/20/2006	J11963	SOIL and BIOTA	MIS	292	mg/kg	TERRESTRIAL INVERTEBRATE
5926	6/13/2007	J14Y55	SOIL and BIOTA	MIS	292	mg/kg	TERRESTRIAL INVERTEBRATE
5927	3/20/2006	J11964	SOIL and BIOTA	MIS	296	mg/kg	TERRESTRIAL INVERTEBRATE

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
5889	MULTIPLE WHOLE ORG	54.5	mg/kg			RCBRA
5890	MULTIPLE WHOLE ORG	54.5	mg/kg			RCBRA
5891	MULTIPLE WHOLE ORG	76.4	mg/kg			RCBRA
5892	MULTIPLE WHOLE ORG	108	mg/kg			RCBRA
5893	MULTIPLE WHOLE ORG	122	mg/kg			RCBRA
5894	MULTIPLE WHOLE ORG	108	mg/kg			RCBRA
5895	MULTIPLE WHOLE ORG	148	mg/kg			RCBRA
5896	MULTIPLE WHOLE ORG	31.8	mg/kg		J	RCBRA
5897	MULTIPLE WHOLE ORG	71.2	mg/kg			RCBRA
5898	MULTIPLE WHOLE ORG	133	mg/kg			RCBRA
5899	MULTIPLE WHOLE ORG	72.7	mg/kg			RCBRA
5900	MULTIPLE WHOLE ORG	44.8	mg/kg			RCBRA
5901	MULTIPLE WHOLE ORG	44.8	mg/kg			RCBRA
5902	MULTIPLE WHOLE ORG	53.5	mg/kg			RCBRA
5903	MULTIPLE WHOLE ORG	53.5	mg/kg			RCBRA
5904	MULTIPLE WHOLE ORG	38	mg/kg		J	RCBRA
5905	MULTIPLE WHOLE ORG	38	mg/kg		J	RCBRA
5906	MULTIPLE WHOLE ORG	44.5	mg/kg		J	RCBRA
5907	MULTIPLE WHOLE ORG	44.5	mg/kg		J	RCBRA
5908	MULTIPLE WHOLE ORG	51.6	mg/kg		J	RCBRA
5909	MULTIPLE WHOLE ORG	41	mg/kg		J	RCBRA
5910	MULTIPLE WHOLE ORG	55.2	mg/kg		J	RCBRA
5911	MULTIPLE WHOLE ORG	55.2	mg/kg		J	RCBRA
5912	MULTIPLE WHOLE ORG	67.4	mg/kg		J	RCBRA
5913	MULTIPLE WHOLE ORG	66.8	mg/kg		J	RCBRA
5914	MULTIPLE WHOLE ORG	34.3	mg/kg			RCBRA
5915	MULTIPLE WHOLE ORG	40.2	mg/kg			RCBRA
5916	MULTIPLE WHOLE ORG	36.8	mg/kg		J	RCBRA
5917	MULTIPLE WHOLE ORG	71.8	mg/kg		J	RCBRA
5918	MULTIPLE WHOLE ORG	61	mg/kg		J	RCBRA
5919	MULTIPLE WHOLE ORG	50.1	mg/kg			RCBRA
5920	MULTIPLE WHOLE ORG	45.8	mg/kg			RCBRA
5921	MULTIPLE WHOLE ORG	57.3	mg/kg		J	RCBRA
5922	MULTIPLE WHOLE ORG	28.5	mg/kg			RCBRA
5923	MULTIPLE WHOLE ORG	36.5	mg/kg			RCBRA
5924	MULTIPLE WHOLE ORG	38.3	mg/kg			RCBRA
5925	MULTIPLE WHOLE ORG	27.2	mg/kg			RCBRA
5926	MULTIPLE WHOLE ORG	84.3	mg/kg			RCBRA
5927	MULTIPLE WHOLE ORG	35.9	mg/kg			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
5928	Silicon	7440-21-3	RCBRA Rip 1	D/H	RIPARIAN	577251.869	153659.195
5929	Silicon	7440-21-3	RCBRA Rip 10	D/H	RIPARIAN	573987.873	153082.19
5930	Silicon	7440-21-3	RCBRA Rip 2	D/H	RIPARIAN	573603.219	152471.6
5931	Silicon	7440-21-3	RCBRA Rip 3	D/H	RIPARIAN	572639.65	151677.812
5932	Silicon	7440-21-3	RCBRA Rip 4	N	RIPARIAN	570558.596	148981.547
5933	Silicon	7440-21-3	RCBRA Rip 5	K	RIPARIAN	569141.025	147521.561
5934	Silicon	7440-21-3	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
5935	Silicon	7440-21-3	RCBRA Rip 7	IU2/IU6	RIPARIAN	581326.914	147825.17
5936	Silicon	7440-21-3	RCBRA Rip 8	D/H	RIPARIAN	578698.584	152233.645
5937	Silicon	7440-21-3	RCBRA Rip 9	D/H	RIPARIAN	578153.643	152801.452
5938	Silicon	7440-21-3	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
5939	Silicon	7440-21-3	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
5940	Silicon	7440-21-3	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
5941	Silicon	7440-21-3	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
5942	Silicon	7440-21-3	RCBRA Yak Rdg 2	Outside decision areas	UPLAND	559031.557	135576.407
5943	Strontium [elemental]	7440-24-6	RCBRA 100-D-48	D/H	UPLAND	573841.527	151914.538
5944	Strontium [elemental]	7440-24-6	RCBRA 100-D-49	D/H	UPLAND	573938.06	151944.123
5945	Strontium [elemental]	7440-24-6	RCBRA 100-F-2	IU2/IU6	UPLAND	579728.068	147001.117
5946	Strontium [elemental]	7440-24-6	RCBRA 116-DR-1&2	D/H	UPLAND	574007.817	152246.748
5947	Strontium [elemental]	7440-24-6	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
5948	Strontium [elemental]	7440-24-6	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
5949	Strontium [elemental]	7440-24-6	RCBRA 1607-D2:1	D/H	UPLAND	573823.924	152260.319
5950	Strontium [elemental]	7440-24-6	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
5951	Strontium [elemental]	7440-24-6	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
5952	Strontium [elemental]	7440-24-6	RCBRA 2a Rip	BC	RIPARIAN	564618.501	145284.526
5953	Strontium [elemental]	7440-24-6	RCBRA 2c Rip	K	RIPARIAN	567598.2	146210.159
5954	Strontium [elemental]	7440-24-6	RCBRA 2f Rip	D/H	RIPARIAN	576222.844	154297.511
5955	Strontium [elemental]	7440-24-6	RCBRA 2j Rip	IU2/IU6	RIPARIAN	579360.971	150092.048
5956	Strontium [elemental]	7440-24-6	RCBRA 2l Rip	IU2/IU6	RIPARIAN	582341.212	146120.069
5957	Strontium [elemental]	7440-24-6	RCBRA 300-49	300	UPLAND	594318.994	116830.934
5958	Strontium [elemental]	7440-24-6	RCBRA 3b Rip	IU2/IU6	RIPARIAN	584961.205	141035.835
5959	Strontium [elemental]	7440-24-6	RCBRA 4a Rip	IU2/IU6	RIPARIAN	589347.5	137480.985
5960	Strontium [elemental]	7440-24-6	RCBRA 5c Rip	300	RIPARIAN	594509.985	124869.182
5961	Strontium [elemental]	7440-24-6	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
5962	Strontium [elemental]	7440-24-6	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
5963	Strontium [elemental]	7440-24-6	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
5964	Strontium [elemental]	7440-24-6	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
5965	Strontium [elemental]	7440-24-6	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
5966	Strontium [elemental]	7440-24-6	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
5928	3/16/2006	J11950	SOIL and BIOTA	MIS	408	mg/kg	TERRESTRIAL INVERTEBRATE
5929	3/16/2006	J11959	SOIL and BIOTA	MIS	372	mg/kg	TERRESTRIAL INVERTEBRATE
5930	3/16/2006	J11951	SOIL and BIOTA	MIS	312	mg/kg	TERRESTRIAL INVERTEBRATE
5931	3/16/2006	J11952	SOIL and BIOTA	MIS	170	mg/kg	TERRESTRIAL INVERTEBRATE
5932	3/16/2006	J11953	SOIL and BIOTA	MIS	328	mg/kg	TERRESTRIAL INVERTEBRATE
5933	3/16/2006	J11954	SOIL and BIOTA	MIS	275	mg/kg	TERRESTRIAL INVERTEBRATE
5934	4/25/2006	J11955	SOIL and BIOTA	MIS	289	mg/kg	TERRESTRIAL INVERTEBRATE
5935	3/16/2006	J11956	SOIL and BIOTA	MIS	298	mg/kg	TERRESTRIAL INVERTEBRATE
5936	3/16/2006	J11957	SOIL and BIOTA	MIS	376	mg/kg	TERRESTRIAL INVERTEBRATE
5937	3/16/2006	J11958	SOIL and BIOTA	MIS	336	mg/kg	TERRESTRIAL INVERTEBRATE
5938	4/3/2006	J11KV0	SOIL and BIOTA	MIS	270	mg/kg	TERRESTRIAL INVERTEBRATE
5939	4/3/2006	J11KV0	SOIL and BIOTA	MIS-phyt	145	mg/kg	TERRESTRIAL INVERTEBRATE
5940	4/3/2006	J11KT8	SOIL and BIOTA	MIS	357	mg/kg	TERRESTRIAL INVERTEBRATE
5941	4/3/2006	J11KT8	SOIL and BIOTA	MIS-phyt	126	mg/kg	TERRESTRIAL INVERTEBRATE
5942	4/3/2006	J11KT7	SOIL and BIOTA	MIS	386	mg/kg	TERRESTRIAL INVERTEBRATE
5943	4/3/2006	J11KV5	SOIL and BIOTA	MIS	29.7	mg/kg	TERRESTRIAL INVERTEBRATE
5944	4/3/2006	J11KV6	SOIL and BIOTA	MIS	31.4	mg/kg	TERRESTRIAL INVERTEBRATE
5945	4/25/2006	J11L32	SOIL and BIOTA	MIS	38.9	mg/kg	TERRESTRIAL INVERTEBRATE
5946	4/3/2006	J11L31	SOIL and BIOTA	MIS	24.7	mg/kg	TERRESTRIAL INVERTEBRATE
5947	4/17/2006	J11KT1	SOIL and BIOTA	MIS	27.7	mg/kg	TERRESTRIAL INVERTEBRATE
5948	4/17/2006	J11KT1	SOIL and BIOTA	MIS-phyt	26.9	mg/kg	TERRESTRIAL INVERTEBRATE
5949	4/3/2006	J11KT4	SOIL and BIOTA	MIS	33.3	mg/kg	TERRESTRIAL INVERTEBRATE
5950	4/3/2006	J11KR9	SOIL and BIOTA	MIS	245	mg/kg	TERRESTRIAL INVERTEBRATE
5951	4/3/2006	J11KR9	SOIL and BIOTA	MIS-phyt	180	mg/kg	TERRESTRIAL INVERTEBRATE
5952	6/11/2007	J14Y56	SOIL and BIOTA	MIS	22.6	mg/kg	TERRESTRIAL INVERTEBRATE
5953	6/13/2007	J14Y63	SOIL and BIOTA	MIS	30.3	mg/kg	TERRESTRIAL INVERTEBRATE
5954	6/13/2007	J14Y57	SOIL and BIOTA	MIS	26.6	mg/kg	TERRESTRIAL INVERTEBRATE
5955	6/13/2007	J14Y58	SOIL and BIOTA	MIS	33.3	mg/kg	TERRESTRIAL INVERTEBRATE
5956	6/13/2007	J14Y59	SOIL and BIOTA	MIS	18.3	mg/kg	TERRESTRIAL INVERTEBRATE
5957	4/25/2006	J11KT3	SOIL and BIOTA	MIS	22.2	mg/kg	TERRESTRIAL INVERTEBRATE
5958	6/11/2007	J14Y60	SOIL and BIOTA	MIS	25.3	mg/kg	TERRESTRIAL INVERTEBRATE
5959	6/13/2007	J14Y62	SOIL and BIOTA	MIS	32.3	mg/kg	TERRESTRIAL INVERTEBRATE
5960	6/7/2007	J14Y61	SOIL and BIOTA	MIS	21.2	mg/kg	TERRESTRIAL INVERTEBRATE
5961	4/3/2006	J11L35	SOIL and BIOTA	MIS	17.9	mg/kg	TERRESTRIAL INVERTEBRATE
5962	4/3/2006	J11L35	SOIL and BIOTA	MIS-phyt	25.5	mg/kg	TERRESTRIAL INVERTEBRATE
5963	4/3/2006	J11KR2	SOIL and BIOTA	MIS	20.3	mg/kg	TERRESTRIAL INVERTEBRATE
5964	4/3/2006	J11KR2	SOIL and BIOTA	MIS-phyt	23.1	mg/kg	TERRESTRIAL INVERTEBRATE
5965	4/25/2006	J11KR3	SOIL and BIOTA	MIS	29.6	mg/kg	TERRESTRIAL INVERTEBRATE
5966	4/25/2006	J11KR3	SOIL and BIOTA	MIS-phyt	37.8	mg/kg	TERRESTRIAL INVERTEBRATE

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
5928	MULTIPLE WHOLE ORG	19.1	mg/kg			RCBRA
5929	MULTIPLE WHOLE ORG	15.6	mg/kg			RCBRA
5930	MULTIPLE WHOLE ORG	36.4	mg/kg			RCBRA
5931	MULTIPLE WHOLE ORG	14.1	mg/kg			RCBRA
5932	MULTIPLE WHOLE ORG	30.4	mg/kg			RCBRA
5933	MULTIPLE WHOLE ORG	18.5	mg/kg			RCBRA
5934	MULTIPLE WHOLE ORG	37.4	mg/kg		J	RCBRA
5935	MULTIPLE WHOLE ORG	7.5	mg/kg			RCBRA
5936	MULTIPLE WHOLE ORG	26.2	mg/kg			RCBRA
5937	MULTIPLE WHOLE ORG	17.9	mg/kg			RCBRA
5938	MULTIPLE WHOLE ORG	44.1	mg/kg			RCBRA
5939	MULTIPLE WHOLE ORG	44.1	mg/kg			RCBRA
5940	MULTIPLE WHOLE ORG	31.3	mg/kg			RCBRA
5941	MULTIPLE WHOLE ORG	31.3	mg/kg			RCBRA
5942	MULTIPLE WHOLE ORG	39.6	mg/kg			RCBRA
5943	MULTIPLE WHOLE ORG	6.3	mg/kg	C		RCBRA
5944	MULTIPLE WHOLE ORG	5.5	mg/kg	C		RCBRA
5945	MULTIPLE WHOLE ORG	4.6	mg/kg	C		RCBRA
5946	MULTIPLE WHOLE ORG	4.2	mg/kg	C		RCBRA
5947	MULTIPLE WHOLE ORG	8.3	mg/kg	C		RCBRA
5948	MULTIPLE WHOLE ORG	8.3	mg/kg	C		RCBRA
5949	MULTIPLE WHOLE ORG	4.2	mg/kg	C		RCBRA
5950	MULTIPLE WHOLE ORG	3.6	mg/kg	C		RCBRA
5951	MULTIPLE WHOLE ORG	3.6	mg/kg	C		RCBRA
5952	MULTIPLE WHOLE ORG	1.7	mg/kg	C		RCBRA
5953	MULTIPLE WHOLE ORG	5.7	mg/kg	C		RCBRA
5954	MULTIPLE WHOLE ORG	14.2	mg/kg	C		RCBRA
5955	MULTIPLE WHOLE ORG	4.8	mg/kg	C		RCBRA
5956	MULTIPLE WHOLE ORG	3.9	mg/kg	C		RCBRA
5957	MULTIPLE WHOLE ORG	5.2	mg/kg	C		RCBRA
5958	MULTIPLE WHOLE ORG	14.4	mg/kg	C		RCBRA
5959	MULTIPLE WHOLE ORG	12.6	mg/kg	C		RCBRA
5960	MULTIPLE WHOLE ORG	1.9	mg/kg	C		RCBRA
5961	MULTIPLE WHOLE ORG	3.1	mg/kg	C		RCBRA
5962	MULTIPLE WHOLE ORG	3.1	mg/kg	C		RCBRA
5963	MULTIPLE WHOLE ORG	3.4	mg/kg	C		RCBRA
5964	MULTIPLE WHOLE ORG	3.4	mg/kg	C		RCBRA
5965	MULTIPLE WHOLE ORG	2.7	mg/kg	C		RCBRA
5966	MULTIPLE WHOLE ORG	2.7	mg/kg	C		RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
5967	Strontium [elemental]	7440-24-6	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
5968	Strontium [elemental]	7440-24-6	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
5969	Strontium [elemental]	7440-24-6	RCBRA 600-181	IU2/IU6	UPLAND	578303.83	147316.698
5970	Strontium [elemental]	7440-24-6	RCBRA 600-204	IU2/IU6	UPLAND	580128.485	144762.219
5971	Strontium [elemental]	7440-24-6	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
5972	Strontium [elemental]	7440-24-6	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
5973	Strontium [elemental]	7440-24-6	RCBRA 618-4	300	UPLAND	593954.946	117064.473
5974	Strontium [elemental]	7440-24-6	RCBRA 628-1	IU2/IU6	UPLAND	577797.524	148745.681
5975	Strontium [elemental]	7440-24-6	RCBRA Bev Ref 1 Rip	Outside decision areas	RIPARIAN	542428.846	167701.261
5976	Strontium [elemental]	7440-24-6	RCBRA Bev Ref 2 Rip	Outside decision areas	RIPARIAN	541493.988	167808.357
5977	Strontium [elemental]	7440-24-6	RCBRA JA JONES	300	UPLAND	593874.58	120013.908
5978	Strontium [elemental]	7440-24-6	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
5979	Strontium [elemental]	7440-24-6	RCBRA Pit 18	IU2/IU6	UPLAND	580697.058	145311.464
5980	Strontium [elemental]	7440-24-6	RCBRA Pit 23	IU2/IU6	UPLAND	572381.012	144874.157
5981	Strontium [elemental]	7440-24-6	RCBRA Pit 24	BC	UPLAND	563395.814	145119.007
5982	Strontium [elemental]	7440-24-6	RCBRA Pit 9	300	UPLAND	592807.103	120587.7
5983	Strontium [elemental]	7440-24-6	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
5984	Strontium [elemental]	7440-24-6	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
5985	Strontium [elemental]	7440-24-6	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
5986	Strontium [elemental]	7440-24-6	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
5987	Strontium [elemental]	7440-24-6	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
5988	Strontium [elemental]	7440-24-6	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
5989	Strontium [elemental]	7440-24-6	RCBRA Yak Rdg 2	Outside decision areas	UPLAND	559031.557	135576.407
5990	Tin	7440-31-5	RCBRA R Ref 13	Outside decision areas	RIPARIAN	558572.809	145345.115
5991	Tin	7440-31-5	RCBRA R Ref 16	Outside decision areas	RIPARIAN	557650.029	144826.748
5992	Thallium	7440-28-0	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
5993	Thallium	7440-28-0	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
5994	Thallium	7440-28-0	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
5995	Thallium	7440-28-0	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
5996	Thallium	7440-28-0	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
5997	Thallium	7440-28-0	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
5998	Thallium	7440-28-0	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
5999	Uranium [inorganic]	7440-61-1	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
6000	Uranium [inorganic]	7440-61-1	B POND	Outside decision areas	UPLAND	576356.769	136881.272
6001	Uranium [inorganic]	7440-61-1	B POND	Outside decision areas	UPLAND	576356.769	136881.272
6002	Uranium [inorganic]	7440-61-1	B POND	Outside decision areas	UPLAND	576356.769	136881.272
6003	Uranium [inorganic]	7440-61-1	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
6004	Uranium [inorganic]	7440-61-1	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
6005	Uranium [inorganic]	7440-61-1	RCBRA 628-1	IU2/IU6	UPLAND	577797.524	148745.681

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
5967	4/25/2006	J11XX9	SOIL and BIOTA	MIS	24.1	mg/kg	TERRESTRIAL INVERTEBRATE
5968	4/25/2006	J11XX9	SOIL and BIOTA	MIS-phyt	29.3	mg/kg	TERRESTRIAL INVERTEBRATE
5969	4/17/2006	J11KR6	SOIL and BIOTA	MIS	18.3	mg/kg	TERRESTRIAL INVERTEBRATE
5970	4/25/2006	J11KR4	SOIL and BIOTA	MIS	18.2	mg/kg	TERRESTRIAL INVERTEBRATE
5971	4/25/2006	J11KR5	SOIL and BIOTA	MIS	52.1	mg/kg	TERRESTRIAL INVERTEBRATE
5972	4/25/2006	J11KR5	SOIL and BIOTA	MIS-phyt	37.4	mg/kg	TERRESTRIAL INVERTEBRATE
5973	4/26/2006	J11KT2	SOIL and BIOTA	MIS	18.9	mg/kg	TERRESTRIAL INVERTEBRATE
5974	4/25/2006	J11XX8	SOIL and BIOTA	MIS	30.7	mg/kg	TERRESTRIAL INVERTEBRATE
5975	6/13/2007	J14Y53	SOIL and BIOTA	MIS	24.7	mg/kg	TERRESTRIAL INVERTEBRATE
5976	6/13/2007	J14Y54	SOIL and BIOTA	MIS	29.8	mg/kg	TERRESTRIAL INVERTEBRATE
5977	4/25/2006	J11L34	SOIL and BIOTA	MIS	19.4	mg/kg	TERRESTRIAL INVERTEBRATE
5978	4/17/2006	J11KP9	SOIL and BIOTA	MIS	26	mg/kg	TERRESTRIAL INVERTEBRATE
5979	4/17/2006	J11KR0	SOIL and BIOTA	MIS	23.5	mg/kg	TERRESTRIAL INVERTEBRATE
5980	4/3/2006	J11L33	SOIL and BIOTA	MIS	19.6	mg/kg	TERRESTRIAL INVERTEBRATE
5981	4/3/2006	J11KT6	SOIL and BIOTA	MIS	22.9	mg/kg	TERRESTRIAL INVERTEBRATE
5982	4/25/2006	J11KT5	SOIL and BIOTA	MIS	21.5	mg/kg	TERRESTRIAL INVERTEBRATE
5983	6/13/2007	J14Y55	SOIL and BIOTA	MIS	35.25	mg/kg	TERRESTRIAL INVERTEBRATE
5984	4/25/2006	J11955	SOIL and BIOTA	MIS	32.2	mg/kg	TERRESTRIAL INVERTEBRATE
5985	4/3/2006	J11KV0	SOIL and BIOTA	MIS	24.9	mg/kg	TERRESTRIAL INVERTEBRATE
5986	4/3/2006	J11KV0	SOIL and BIOTA	MIS-phyt	27.9	mg/kg	TERRESTRIAL INVERTEBRATE
5987	4/3/2006	J11KT8	SOIL and BIOTA	MIS	22.8	mg/kg	TERRESTRIAL INVERTEBRATE
5988	4/3/2006	J11KT8	SOIL and BIOTA	MIS-phyt	25.4	mg/kg	TERRESTRIAL INVERTEBRATE
5989	4/3/2006	J11KT7	SOIL and BIOTA	MIS	29.5	mg/kg	TERRESTRIAL INVERTEBRATE
5990	3/20/2006	J11962	SOIL and BIOTA	MIS	3.3	mg/kg	TERRESTRIAL INVERTEBRATE
5991	3/20/2006	J11964	SOIL and BIOTA	MIS	3.6	mg/kg	TERRESTRIAL INVERTEBRATE
5992	9/13/2005	B1CV54	SOIL and BIOTA	Discrete	0.196	mg/kg	TERRESTRIAL INVERTEBRATE
5993	9/13/2005	B1CV53	SOIL and BIOTA	Discrete	0.196	mg/kg	TERRESTRIAL INVERTEBRATE
5994	9/13/2005	B1CV52	SOIL and BIOTA	Discrete	0.196	mg/kg	TERRESTRIAL INVERTEBRATE
5995	6/15/2005	B1CTY6	SOIL and BIOTA	Discrete	0.14	mg/kg	TERRESTRIAL INVERTEBRATE
5996	6/15/2005	B1CTY5	SOIL and BIOTA	Discrete	0.14	mg/kg	TERRESTRIAL INVERTEBRATE
5997	6/15/2005	B1CTY7	SOIL and BIOTA	Discrete	0.14	mg/kg	TERRESTRIAL INVERTEBRATE
5998	6/15/2005	B1CTY8	SOIL and BIOTA	Discrete	0.13	mg/kg	TERRESTRIAL INVERTEBRATE
5999	6/15/2005	B1CTY3	SOIL and BIOTA	Discrete	0.502	mg/kg	TERRESTRIAL INVERTEBRATE
6000	6/15/2005	B1CV47	SOIL and BIOTA	Discrete	0.478	mg/kg	TERRESTRIAL INVERTEBRATE
6001	6/15/2005	B1CV48	SOIL and BIOTA	Discrete	0.478	mg/kg	TERRESTRIAL INVERTEBRATE
6002	6/15/2005	B1CV46	SOIL and BIOTA	Discrete	0.478	mg/kg	TERRESTRIAL INVERTEBRATE
6003	4/17/2006	J11KT1	SOIL and BIOTA	MIS	1.4	mg/kg	TERRESTRIAL INVERTEBRATE
6004	4/25/2006	J11KR3	SOIL and BIOTA	MIS	2.4	mg/kg	TERRESTRIAL INVERTEBRATE
6005	4/25/2006	J11XX8	SOIL and BIOTA	MIS	2.3	mg/kg	TERRESTRIAL INVERTEBRATE

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
5967	MULTIPLE WHOLE ORG	4.6	mg/kg	C		RCBRA
5968	MULTIPLE WHOLE ORG	4.6	mg/kg	C		RCBRA
5969	MULTIPLE WHOLE ORG	3.3	mg/kg	C		RCBRA
5970	MULTIPLE WHOLE ORG	4	mg/kg	C		RCBRA
5971	MULTIPLE WHOLE ORG	3.3	mg/kg	C		RCBRA
5972	MULTIPLE WHOLE ORG	3.3	mg/kg	C		RCBRA
5973	MULTIPLE WHOLE ORG	7.2	mg/kg	C		RCBRA
5974	MULTIPLE WHOLE ORG	4.2	mg/kg	C		RCBRA
5975	MULTIPLE WHOLE ORG	1.4	mg/kg	C		RCBRA
5976	MULTIPLE WHOLE ORG	1.1	mg/kg	C		RCBRA
5977	MULTIPLE WHOLE ORG	4.8	mg/kg	C		RCBRA
5978	MULTIPLE WHOLE ORG	4.5	mg/kg	C		RCBRA
5979	MULTIPLE WHOLE ORG	6	mg/kg	C		RCBRA
5980	MULTIPLE WHOLE ORG	3.9	mg/kg	C		RCBRA
5981	MULTIPLE WHOLE ORG	3.3	mg/kg	C		RCBRA
5982	MULTIPLE WHOLE ORG	4.5	mg/kg	C		RCBRA
5983	MULTIPLE WHOLE ORG	2	mg/kg	C		RCBRA
5984	MULTIPLE WHOLE ORG	3.8	mg/kg	C		RCBRA
5985	MULTIPLE WHOLE ORG	2	mg/kg	C		RCBRA
5986	MULTIPLE WHOLE ORG	2	mg/kg	C		RCBRA
5987	MULTIPLE WHOLE ORG	2.5	mg/kg	C		RCBRA
5988	MULTIPLE WHOLE ORG	2.5	mg/kg	C		RCBRA
5989	MULTIPLE WHOLE ORG	5.2	mg/kg	C		RCBRA
5990	MULTIPLE WHOLE ORG	1.4	mg/kg	C		RCBRA
5991	MULTIPLE WHOLE ORG	1.2	mg/kg	C		RCBRA
5992	CARCASS	0.043	mg/kg			CP
5993	CARCASS	0.044	mg/kg			CP
5994	CARCASS	0.052	mg/kg			CP
5995	CARCASS	0.046	mg/kg			CP
5996	CARCASS	0.066	mg/kg			CP
5997	CARCASS	0.04	mg/kg			CP
5998	CARCASS	0.026	mg/kg			CP
5999	CARCASS	0.045	mg/kg			CP
6000	CARCASS	0.033	mg/kg			CP
6001	CARCASS	0.032	mg/kg			CP
6002	CARCASS	0.03	mg/kg			CP
6003	MULTIPLE WHOLE ORG	1.8	mg/kg			RCBRA
6004	MULTIPLE WHOLE ORG	2.5	mg/kg			RCBRA
6005	MULTIPLE WHOLE ORG	1.9	mg/kg			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
6006	Uranium [inorganic]	7440-61-1	RCBRA Pit 18	IU2/IU6	UPLAND	580697.058	145311.464
6007	Uranium [inorganic]	7440-61-1	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
6008	Vanadium	7440-62-2	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764
6009	Vanadium	7440-62-2	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764
6010	Vanadium	7440-62-2	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764
6011	Vanadium	7440-62-2	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
6012	Vanadium	7440-62-2	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
6013	Vanadium	7440-62-2	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
6014	Vanadium	7440-62-2	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
6015	Vanadium	7440-62-2	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
6016	Vanadium	7440-62-2	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
6017	Vanadium	7440-62-2	B POND	Outside decision areas	UPLAND	576356.769	136881.272
6018	Vanadium	7440-62-2	B POND	Outside decision areas	UPLAND	576356.769	136881.272
6019	Vanadium	7440-62-2	B POND	Outside decision areas	UPLAND	576356.769	136881.272
6020	Vanadium	7440-62-2	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
6021	Vanadium	7440-62-2	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
6022	Vanadium	7440-62-2	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
6023	Vanadium	7440-62-2	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
6024	Vanadium	7440-62-2	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
6025	Vanadium	7440-62-2	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
6026	Vanadium	7440-62-2	U POND	Outside decision areas	UPLAND	566379.63	134457.045
6027	Vanadium	7440-62-2	U POND	Outside decision areas	UPLAND	566379.63	134457.045
6028	Vanadium	7440-62-2	U POND	Outside decision areas	UPLAND	566379.63	134457.045
6029	Vanadium	7440-62-2	RCBRA 100-D-48	D/H	UPLAND	573841.527	151914.538
6030	Vanadium	7440-62-2	RCBRA 100-D-49	D/H	UPLAND	573938.06	151944.123
6031	Vanadium	7440-62-2	RCBRA 100-F-2	IU2/IU6	UPLAND	579728.068	147001.117
6032	Vanadium	7440-62-2	RCBRA 116-DR-1&2	D/H	UPLAND	574007.817	152246.748
6033	Vanadium	7440-62-2	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
6034	Vanadium	7440-62-2	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
6035	Vanadium	7440-62-2	RCBRA 1607-D2:1	D/H	UPLAND	573823.924	152260.319
6036	Vanadium	7440-62-2	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
6037	Vanadium	7440-62-2	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
6038	Vanadium	7440-62-2	RCBRA 2c Rip	K	RIPARIAN	567598.2	146210.159
6039	Vanadium	7440-62-2	RCBRA 2f Rip	D/H	RIPARIAN	576222.844	154297.511
6040	Vanadium	7440-62-2	RCBRA 2j Rip	IU2/IU6	RIPARIAN	579360.971	150092.048
6041	Vanadium	7440-62-2	RCBRA 2l Rip	IU2/IU6	RIPARIAN	582341.212	146120.069
6042	Vanadium	7440-62-2	RCBRA 300-49	300	UPLAND	594318.994	116830.934
6043	Vanadium	7440-62-2	RCBRA 4a Rip	IU2/IU6	RIPARIAN	589347.5	137480.985
6044	Vanadium	7440-62-2	RCBRA 5c Rip	300	RIPARIAN	594509.985	124869.182

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
6006	4/17/2006	J11KR0	SOIL and BIOTA	MIS	3.1	mg/kg	TERRESTRIAL INVERTEBRATE
6007	4/25/2006	J11955	SOIL and BIOTA	MIS	5.1	mg/kg	TERRESTRIAL INVERTEBRATE
6008	9/13/2005	B1CV56	SOIL and BIOTA	Discrete	41.3	mg/kg	TERRESTRIAL INVERTEBRATE
6009	9/13/2005	B1CV57	SOIL and BIOTA	Discrete	41.3	mg/kg	TERRESTRIAL INVERTEBRATE
6010	9/13/2005	B1CV55	SOIL and BIOTA	Discrete	41.3	mg/kg	TERRESTRIAL INVERTEBRATE
6011	6/15/2005	B1CTY3	SOIL and BIOTA	Discrete	57.3	mg/kg	TERRESTRIAL INVERTEBRATE
6012	6/15/2005	B1CTY2	SOIL and BIOTA	Discrete	57.3	mg/kg	TERRESTRIAL INVERTEBRATE
6013	6/15/2005	B1CTY4	SOIL and BIOTA	Discrete	57.3	mg/kg	TERRESTRIAL INVERTEBRATE
6014	9/13/2005	B1CV54	SOIL and BIOTA	Discrete	45.8	mg/kg	TERRESTRIAL INVERTEBRATE
6015	9/13/2005	B1CV53	SOIL and BIOTA	Discrete	45.8	mg/kg	TERRESTRIAL INVERTEBRATE
6016	9/13/2005	B1CV52	SOIL and BIOTA	Discrete	45.8	mg/kg	TERRESTRIAL INVERTEBRATE
6017	6/15/2005	B1CV47	SOIL and BIOTA	Discrete	43.9	mg/kg	TERRESTRIAL INVERTEBRATE
6018	6/15/2005	B1CV48	SOIL and BIOTA	Discrete	43.9	mg/kg	TERRESTRIAL INVERTEBRATE
6019	6/15/2005	B1CV46	SOIL and BIOTA	Discrete	43.9	mg/kg	TERRESTRIAL INVERTEBRATE
6020	6/15/2005	B1CTY6	SOIL and BIOTA	Discrete	37.2	mg/kg	TERRESTRIAL INVERTEBRATE
6021	6/15/2005	B1CTY7	SOIL and BIOTA	Discrete	37.2	mg/kg	TERRESTRIAL INVERTEBRATE
6022	6/15/2005	B1CTY5	SOIL and BIOTA	Discrete	37.2	mg/kg	TERRESTRIAL INVERTEBRATE
6023	6/15/2005	B1CV44	SOIL and BIOTA	Discrete	45.6	mg/kg	TERRESTRIAL INVERTEBRATE
6024	6/15/2005	B1CTY8	SOIL and BIOTA	Discrete	45.6	mg/kg	TERRESTRIAL INVERTEBRATE
6025	6/15/2005	B1CV45	SOIL and BIOTA	Discrete	45.6	mg/kg	TERRESTRIAL INVERTEBRATE
6026	9/13/2005	B1CV50	SOIL and BIOTA	Discrete	48.2	mg/kg	TERRESTRIAL INVERTEBRATE
6027	9/13/2005	B1CV51	SOIL and BIOTA	Discrete	48.2	mg/kg	TERRESTRIAL INVERTEBRATE
6028	9/13/2005	B1CV49	SOIL and BIOTA	Discrete	48.2	mg/kg	TERRESTRIAL INVERTEBRATE
6029	4/3/2006	J11KV5	SOIL and BIOTA	MIS	58.8	mg/kg	TERRESTRIAL INVERTEBRATE
6030	4/3/2006	J11KV6	SOIL and BIOTA	MIS	53.5	mg/kg	TERRESTRIAL INVERTEBRATE
6031	4/25/2006	J11L32	SOIL and BIOTA	MIS	42.6	mg/kg	TERRESTRIAL INVERTEBRATE
6032	4/3/2006	J11L31	SOIL and BIOTA	MIS	48.7	mg/kg	TERRESTRIAL INVERTEBRATE
6033	4/17/2006	J11KT1	SOIL and BIOTA	MIS	39.6	mg/kg	TERRESTRIAL INVERTEBRATE
6034	4/17/2006	J11KT1	SOIL and BIOTA	MIS-phyt	39.5	mg/kg	TERRESTRIAL INVERTEBRATE
6035	4/3/2006	J11KT4	SOIL and BIOTA	MIS	43.9	mg/kg	TERRESTRIAL INVERTEBRATE
6036	4/3/2006	J11KR9	SOIL and BIOTA	MIS	44.5	mg/kg	TERRESTRIAL INVERTEBRATE
6037	4/3/2006	J11KR9	SOIL and BIOTA	MIS-phyt	55.2	mg/kg	TERRESTRIAL INVERTEBRATE
6038	6/13/2007	J14Y63	SOIL and BIOTA	MIS	39.7	mg/kg	TERRESTRIAL INVERTEBRATE
6039	6/13/2007	J14Y57	SOIL and BIOTA	MIS	52.4	mg/kg	TERRESTRIAL INVERTEBRATE
6040	6/13/2007	J14Y58	SOIL and BIOTA	MIS	41.6	mg/kg	TERRESTRIAL INVERTEBRATE
6041	6/13/2007	J14Y59	SOIL and BIOTA	MIS	84.4	mg/kg	TERRESTRIAL INVERTEBRATE
6042	4/25/2006	J11KT3	SOIL and BIOTA	MIS	47.2	mg/kg	TERRESTRIAL INVERTEBRATE
6043	6/13/2007	J14Y62	SOIL and BIOTA	MIS	51.1	mg/kg	TERRESTRIAL INVERTEBRATE
6044	6/7/2007	J14Y61	SOIL and BIOTA	MIS	66.9	mg/kg	TERRESTRIAL INVERTEBRATE

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
6006	MULTIPLE WHOLE ORG	2.2	mg/kg			RCBRA
6007	MULTIPLE WHOLE ORG	1.9	mg/kg			RCBRA
6008	CARCASS	0.519	mg/kg			CP
6009	CARCASS	0.532	mg/kg			CP
6010	CARCASS	0.565	mg/kg			CP
6011	CARCASS	1.93	mg/kg			CP
6012	CARCASS	1.84	mg/kg			CP
6013	CARCASS	1.17	mg/kg			CP
6014	CARCASS	0.445	mg/kg			CP
6015	CARCASS	0.366	mg/kg			CP
6016	CARCASS	0.336	mg/kg			CP
6017	CARCASS	1.2	mg/kg			CP
6018	CARCASS	1.1	mg/kg			CP
6019	CARCASS	1.34	mg/kg			CP
6020	CARCASS	0.633	mg/kg			CP
6021	CARCASS	1.17	mg/kg			CP
6022	CARCASS	0.881	mg/kg			CP
6023	CARCASS	1.11	mg/kg			CP
6024	CARCASS	1.57	mg/kg			CP
6025	CARCASS	1.48	mg/kg			CP
6026	CARCASS	1.52	mg/kg			CP
6027	CARCASS	1.3	mg/kg			CP
6028	CARCASS	1.6	mg/kg			CP
6029	MULTIPLE WHOLE ORG	0.15	mg/kg			RCBRA
6030	MULTIPLE WHOLE ORG	0.46	mg/kg			RCBRA
6031	MULTIPLE WHOLE ORG	0.1	mg/kg			RCBRA
6032	MULTIPLE WHOLE ORG	0.29	mg/kg			RCBRA
6033	MULTIPLE WHOLE ORG	0.21	mg/kg			RCBRA
6034	MULTIPLE WHOLE ORG	0.21	mg/kg			RCBRA
6035	MULTIPLE WHOLE ORG	0.15	mg/kg			RCBRA
6036	MULTIPLE WHOLE ORG	0.14	mg/kg			RCBRA
6037	MULTIPLE WHOLE ORG	0.14	mg/kg			RCBRA
6038	MULTIPLE WHOLE ORG	0.12	mg/kg			RCBRA
6039	MULTIPLE WHOLE ORG	0.21	mg/kg			RCBRA
6040	MULTIPLE WHOLE ORG	0.16	mg/kg			RCBRA
6041	MULTIPLE WHOLE ORG	0.28	mg/kg			RCBRA
6042	MULTIPLE WHOLE ORG	0.16	mg/kg			RCBRA
6043	MULTIPLE WHOLE ORG	0.28	mg/kg			RCBRA
6044	MULTIPLE WHOLE ORG	0.1	mg/kg			RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
6045	Vanadium	7440-62-2	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
6046	Vanadium	7440-62-2	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
6047	Vanadium	7440-62-2	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
6048	Vanadium	7440-62-2	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
6049	Vanadium	7440-62-2	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
6050	Vanadium	7440-62-2	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
6051	Vanadium	7440-62-2	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
6052	Vanadium	7440-62-2	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
6053	Vanadium	7440-62-2	RCBRA 600-181	IU2/IU6	UPLAND	578303.83	147316.698
6054	Vanadium	7440-62-2	RCBRA 600-204	IU2/IU6	UPLAND	580128.485	144762.219
6055	Vanadium	7440-62-2	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
6056	Vanadium	7440-62-2	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
6057	Vanadium	7440-62-2	RCBRA 618-4	300	UPLAND	593954.946	117064.473
6058	Vanadium	7440-62-2	RCBRA 628-1	IU2/IU6	UPLAND	577797.524	148745.681
6059	Vanadium	7440-62-2	RCBRA JA JONES	300	UPLAND	593874.58	120013.908
6060	Vanadium	7440-62-2	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
6061	Vanadium	7440-62-2	RCBRA Pit 18	IU2/IU6	UPLAND	580697.058	145311.464
6062	Vanadium	7440-62-2	RCBRA Pit 23	IU2/IU6	UPLAND	572381.012	144874.157
6063	Vanadium	7440-62-2	RCBRA Pit 9	300	UPLAND	592807.103	120587.7
6064	Vanadium	7440-62-2	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
6065	Vanadium	7440-62-2	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
6066	Vanadium	7440-62-2	RCBRA R Ref 16	Outside decision areas	RIPARIAN	557650.029	144826.748
6067	Vanadium	7440-62-2	RCBRA Rip 5	K	RIPARIAN	569141.025	147521.561
6068	Vanadium	7440-62-2	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
6069	Vanadium	7440-62-2	RCBRA Yak Rdg 2	Outside decision areas	UPLAND	559031.557	135576.407
6070	Zinc	7440-66-6	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764
6071	Zinc	7440-66-6	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764
6072	Zinc	7440-66-6	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764
6073	Zinc	7440-66-6	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
6074	Zinc	7440-66-6	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
6075	Zinc	7440-66-6	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
6076	Zinc	7440-66-6	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
6077	Zinc	7440-66-6	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
6078	Zinc	7440-66-6	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
6079	Zinc	7440-66-6	B POND	Outside decision areas	UPLAND	576356.769	136881.272
6080	Zinc	7440-66-6	B POND	Outside decision areas	UPLAND	576356.769	136881.272
6081	Zinc	7440-66-6	B POND	Outside decision areas	UPLAND	576356.769	136881.272
6082	Zinc	7440-66-6	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
6083	Zinc	7440-66-6	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
6045	4/3/2006	J11L35	SOIL and BIOTA	MIS	31.5	mg/kg	TERRESTRIAL INVERTEBRATE
6046	4/3/2006	J11L35	SOIL and BIOTA	MIS-phyt	53	mg/kg	TERRESTRIAL INVERTEBRATE
6047	4/3/2006	J11KR2	SOIL and BIOTA	MIS	39.6	mg/kg	TERRESTRIAL INVERTEBRATE
6048	4/3/2006	J11KR2	SOIL and BIOTA	MIS-phyt	49.2	mg/kg	TERRESTRIAL INVERTEBRATE
6049	4/25/2006	J11KR3	SOIL and BIOTA	MIS	43.2	mg/kg	TERRESTRIAL INVERTEBRATE
6050	4/25/2006	J11KR3	SOIL and BIOTA	MIS-phyt	50.6	mg/kg	TERRESTRIAL INVERTEBRATE
6051	4/25/2006	J11XX9	SOIL and BIOTA	MIS	33.5	mg/kg	TERRESTRIAL INVERTEBRATE
6052	4/25/2006	J11XX9	SOIL and BIOTA	MIS-phyt	47.2	mg/kg	TERRESTRIAL INVERTEBRATE
6053	4/17/2006	J11KR6	SOIL and BIOTA	MIS	51.7	mg/kg	TERRESTRIAL INVERTEBRATE
6054	4/25/2006	J11KR4	SOIL and BIOTA	MIS	62.2	mg/kg	TERRESTRIAL INVERTEBRATE
6055	4/25/2006	J11KR5	SOIL and BIOTA	MIS	43.6	mg/kg	TERRESTRIAL INVERTEBRATE
6056	4/25/2006	J11KR5	SOIL and BIOTA	MIS-phyt	52.8	mg/kg	TERRESTRIAL INVERTEBRATE
6057	4/26/2006	J11KT2	SOIL and BIOTA	MIS	45.4	mg/kg	TERRESTRIAL INVERTEBRATE
6058	4/25/2006	J11XX8	SOIL and BIOTA	MIS	39.9	mg/kg	TERRESTRIAL INVERTEBRATE
6059	4/25/2006	J11L34	SOIL and BIOTA	MIS	45.1	mg/kg	TERRESTRIAL INVERTEBRATE
6060	4/17/2006	J11KP9	SOIL and BIOTA	MIS	69.1	mg/kg	TERRESTRIAL INVERTEBRATE
6061	4/17/2006	J11KR0	SOIL and BIOTA	MIS	45.7	mg/kg	TERRESTRIAL INVERTEBRATE
6062	4/3/2006	J11L33	SOIL and BIOTA	MIS	46.5	mg/kg	TERRESTRIAL INVERTEBRATE
6063	4/25/2006	J11KT5	SOIL and BIOTA	MIS	66.7	mg/kg	TERRESTRIAL INVERTEBRATE
6064	3/20/2006	J11963	SOIL and BIOTA	MIS	51.6	mg/kg	TERRESTRIAL INVERTEBRATE
6065	6/13/2007	J14Y55	SOIL and BIOTA	MIS	51.6	mg/kg	TERRESTRIAL INVERTEBRATE
6066	3/20/2006	J11964	SOIL and BIOTA	MIS	36.6	mg/kg	TERRESTRIAL INVERTEBRATE
6067	3/16/2006	J11954	SOIL and BIOTA	MIS	44.1	mg/kg	TERRESTRIAL INVERTEBRATE
6068	4/25/2006	J11955	SOIL and BIOTA	MIS	53	mg/kg	TERRESTRIAL INVERTEBRATE
6069	4/3/2006	J11KT7	SOIL and BIOTA	MIS	58.1	mg/kg	TERRESTRIAL INVERTEBRATE
6070	9/13/2005	B1CV56	SOIL and BIOTA	Discrete	40.6	mg/kg	TERRESTRIAL INVERTEBRATE
6071	9/13/2005	B1CV57	SOIL and BIOTA	Discrete	40.6	mg/kg	TERRESTRIAL INVERTEBRATE
6072	9/13/2005	B1CV55	SOIL and BIOTA	Discrete	40.6	mg/kg	TERRESTRIAL INVERTEBRATE
6073	6/15/2005	B1CTY3	SOIL and BIOTA	Discrete	48.6	mg/kg	TERRESTRIAL INVERTEBRATE
6074	6/15/2005	B1CTY2	SOIL and BIOTA	Discrete	48.6	mg/kg	TERRESTRIAL INVERTEBRATE
6075	6/15/2005	B1CTY4	SOIL and BIOTA	Discrete	48.6	mg/kg	TERRESTRIAL INVERTEBRATE
6076	9/13/2005	B1CV54	SOIL and BIOTA	Discrete	73.6	mg/kg	TERRESTRIAL INVERTEBRATE
6077	9/13/2005	B1CV53	SOIL and BIOTA	Discrete	73.6	mg/kg	TERRESTRIAL INVERTEBRATE
6078	9/13/2005	B1CV52	SOIL and BIOTA	Discrete	73.6	mg/kg	TERRESTRIAL INVERTEBRATE
6079	6/15/2005	B1CV47	SOIL and BIOTA	Discrete	46	mg/kg	TERRESTRIAL INVERTEBRATE
6080	6/15/2005	B1CV48	SOIL and BIOTA	Discrete	46	mg/kg	TERRESTRIAL INVERTEBRATE
6081	6/15/2005	B1CV46	SOIL and BIOTA	Discrete	46	mg/kg	TERRESTRIAL INVERTEBRATE
6082	6/15/2005	B1CTY6	SOIL and BIOTA	Discrete	74.5	mg/kg	TERRESTRIAL INVERTEBRATE
6083	6/15/2005	B1CTY5	SOIL and BIOTA	Discrete	74.5	mg/kg	TERRESTRIAL INVERTEBRATE

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
6045	MULTIPLE WHOLE ORG	0.1	mg/kg			RCBRA
6046	MULTIPLE WHOLE ORG	0.1	mg/kg			RCBRA
6047	MULTIPLE WHOLE ORG	0.15	mg/kg			RCBRA
6048	MULTIPLE WHOLE ORG	0.15	mg/kg			RCBRA
6049	MULTIPLE WHOLE ORG	0.16	mg/kg			RCBRA
6050	MULTIPLE WHOLE ORG	0.16	mg/kg			RCBRA
6051	MULTIPLE WHOLE ORG	0.19	mg/kg			RCBRA
6052	MULTIPLE WHOLE ORG	0.19	mg/kg			RCBRA
6053	MULTIPLE WHOLE ORG	0.24	mg/kg			RCBRA
6054	MULTIPLE WHOLE ORG	0.17	mg/kg			RCBRA
6055	MULTIPLE WHOLE ORG	0.22	mg/kg			RCBRA
6056	MULTIPLE WHOLE ORG	0.22	mg/kg			RCBRA
6057	MULTIPLE WHOLE ORG	0.74	mg/kg			RCBRA
6058	MULTIPLE WHOLE ORG	0.48	mg/kg			RCBRA
6059	MULTIPLE WHOLE ORG	0.16	mg/kg			RCBRA
6060	MULTIPLE WHOLE ORG	0.4	mg/kg			RCBRA
6061	MULTIPLE WHOLE ORG	0.31	mg/kg			RCBRA
6062	MULTIPLE WHOLE ORG	0.14	mg/kg			RCBRA
6063	MULTIPLE WHOLE ORG	0.14	mg/kg			RCBRA
6064	MULTIPLE WHOLE ORG	0.11	mg/kg			RCBRA
6065	MULTIPLE WHOLE ORG	0.09	mg/kg			RCBRA
6066	MULTIPLE WHOLE ORG	0.09	mg/kg			RCBRA
6067	MULTIPLE WHOLE ORG	0.09	mg/kg			RCBRA
6068	MULTIPLE WHOLE ORG	0.12	mg/kg			RCBRA
6069	MULTIPLE WHOLE ORG	0.19	mg/kg			RCBRA
6070	CARCASS	31.8	mg/kg			CP
6071	CARCASS	36.6	mg/kg			CP
6072	CARCASS	36.4	mg/kg			CP
6073	CARCASS	39.9	mg/kg			CP
6074	CARCASS	37	mg/kg			CP
6075	CARCASS	42.2	mg/kg			CP
6076	CARCASS	30.7	mg/kg			CP
6077	CARCASS	30.8	mg/kg			CP
6078	CARCASS	33.7	mg/kg			CP
6079	CARCASS	41.4	mg/kg			CP
6080	CARCASS	42.9	mg/kg			CP
6081	CARCASS	37.3	mg/kg			CP
6082	CARCASS	38.1	mg/kg			CP
6083	CARCASS	41.7	mg/kg			CP

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
6084	Zinc	7440-66-6	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
6085	Zinc	7440-66-6	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
6086	Zinc	7440-66-6	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
6087	Zinc	7440-66-6	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
6088	Zinc	7440-66-6	U POND	Outside decision areas	UPLAND	566379.63	134457.045
6089	Zinc	7440-66-6	U POND	Outside decision areas	UPLAND	566379.63	134457.045
6090	Zinc	7440-66-6	U POND	Outside decision areas	UPLAND	566379.63	134457.045
6091	Zinc	7440-66-6	RCBRA 100-D-48	D/H	UPLAND	573841.527	151914.538
6092	Zinc	7440-66-6	RCBRA 100-D-49	D/H	UPLAND	573938.06	151944.123
6093	Zinc	7440-66-6	RCBRA 100-F-2	IU2/IU6	UPLAND	579728.068	147001.117
6094	Zinc	7440-66-6	RCBRA 116-DR-1&2	D/H	UPLAND	574007.817	152246.748
6095	Zinc	7440-66-6	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
6096	Zinc	7440-66-6	RCBRA 116-F-1	IU2/IU6	UPLAND	580028.502	147860.793
6097	Zinc	7440-66-6	RCBRA 1607-D2:1	D/H	UPLAND	573823.924	152260.319
6098	Zinc	7440-66-6	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
6099	Zinc	7440-66-6	RCBRA 1607-H2	D/H	UPLAND	577719.171	153037.184
6100	Zinc	7440-66-6	RCBRA 2a Rip	BC	RIPARIAN	564618.501	145284.526
6101	Zinc	7440-66-6	RCBRA 2c Rip	K	RIPARIAN	567598.2	146210.159
6102	Zinc	7440-66-6	RCBRA 2f Rip	D/H	RIPARIAN	576222.844	154297.511
6103	Zinc	7440-66-6	RCBRA 2j Rip	IU2/IU6	RIPARIAN	579360.971	150092.048
6104	Zinc	7440-66-6	RCBRA 2l Rip	IU2/IU6	RIPARIAN	582341.212	146120.069
6105	Zinc	7440-66-6	RCBRA 300-49	300	UPLAND	594318.994	116830.934
6106	Zinc	7440-66-6	RCBRA 3b Rip	IU2/IU6	RIPARIAN	584961.205	141035.835
6107	Zinc	7440-66-6	RCBRA 4a Rip	IU2/IU6	RIPARIAN	589347.5	137480.985
6108	Zinc	7440-66-6	RCBRA 5c Rip	300	RIPARIAN	594509.985	124869.182
6109	Zinc	7440-66-6	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
6110	Zinc	7440-66-6	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
6111	Zinc	7440-66-6	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
6112	Zinc	7440-66-6	RCBRA 600-132	IU2/IU6	UPLAND	577621.293	148894.409
6113	Zinc	7440-66-6	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
6114	Zinc	7440-66-6	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
6115	Zinc	7440-66-6	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
6116	Zinc	7440-66-6	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
6117	Zinc	7440-66-6	RCBRA 600-181	IU2/IU6	UPLAND	578303.83	147316.698
6118	Zinc	7440-66-6	RCBRA 600-204	IU2/IU6	UPLAND	580128.485	144762.219
6119	Zinc	7440-66-6	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
6120	Zinc	7440-66-6	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
6121	Zinc	7440-66-6	RCBRA 618-4	300	UPLAND	593954.946	117064.473
6122	Zinc	7440-66-6	RCBRA 628-1	IU2/IU6	UPLAND	577797.524	148745.681

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
6084	6/15/2005	B1CTY7	SOIL and BIOTA	Discrete	74.5	mg/kg	TERRESTRIAL INVERTEBRATE
6085	6/15/2005	B1CV44	SOIL and BIOTA	Discrete	70.7	mg/kg	TERRESTRIAL INVERTEBRATE
6086	6/15/2005	B1CTY8	SOIL and BIOTA	Discrete	70.7	mg/kg	TERRESTRIAL INVERTEBRATE
6087	6/15/2005	B1CV45	SOIL and BIOTA	Discrete	70.7	mg/kg	TERRESTRIAL INVERTEBRATE
6088	9/13/2005	B1CV51	SOIL and BIOTA	Discrete	42.8	mg/kg	TERRESTRIAL INVERTEBRATE
6089	9/13/2005	B1CV50	SOIL and BIOTA	Discrete	42.8	mg/kg	TERRESTRIAL INVERTEBRATE
6090	9/13/2005	B1CV49	SOIL and BIOTA	Discrete	42.8	mg/kg	TERRESTRIAL INVERTEBRATE
6091	4/3/2006	J11KV5	SOIL and BIOTA	MIS	45.5	mg/kg	TERRESTRIAL INVERTEBRATE
6092	4/3/2006	J11KV6	SOIL and BIOTA	MIS	43.4	mg/kg	TERRESTRIAL INVERTEBRATE
6093	4/25/2006	J11L32	SOIL and BIOTA	MIS	53.7	mg/kg	TERRESTRIAL INVERTEBRATE
6094	4/3/2006	J11L31	SOIL and BIOTA	MIS	41.4	mg/kg	TERRESTRIAL INVERTEBRATE
6095	4/17/2006	J11KT1	SOIL and BIOTA	MIS	39.9	mg/kg	TERRESTRIAL INVERTEBRATE
6096	4/17/2006	J11KT1	SOIL and BIOTA	MIS-phyt	39.9	mg/kg	TERRESTRIAL INVERTEBRATE
6097	4/3/2006	J11KT4	SOIL and BIOTA	MIS	38.3	mg/kg	TERRESTRIAL INVERTEBRATE
6098	4/3/2006	J11KR9	SOIL and BIOTA	MIS	56.8	mg/kg	TERRESTRIAL INVERTEBRATE
6099	4/3/2006	J11KR9	SOIL and BIOTA	MIS-phyt	72.8	mg/kg	TERRESTRIAL INVERTEBRATE
6100	6/11/2007	J14Y56	SOIL and BIOTA	MIS	108	mg/kg	TERRESTRIAL INVERTEBRATE
6101	6/13/2007	J14Y63	SOIL and BIOTA	MIS	338	mg/kg	TERRESTRIAL INVERTEBRATE
6102	6/13/2007	J14Y57	SOIL and BIOTA	MIS	218	mg/kg	TERRESTRIAL INVERTEBRATE
6103	6/13/2007	J14Y58	SOIL and BIOTA	MIS	377	mg/kg	TERRESTRIAL INVERTEBRATE
6104	6/13/2007	J14Y59	SOIL and BIOTA	MIS	139	mg/kg	TERRESTRIAL INVERTEBRATE
6105	4/25/2006	J11KT3	SOIL and BIOTA	MIS	47.7	mg/kg	TERRESTRIAL INVERTEBRATE
6106	6/11/2007	J14Y60	SOIL and BIOTA	MIS	348	mg/kg	TERRESTRIAL INVERTEBRATE
6107	6/13/2007	J14Y62	SOIL and BIOTA	MIS	342	mg/kg	TERRESTRIAL INVERTEBRATE
6108	6/7/2007	J14Y61	SOIL and BIOTA	MIS	120	mg/kg	TERRESTRIAL INVERTEBRATE
6109	4/3/2006	J11L35	SOIL and BIOTA	MIS	35.1	mg/kg	TERRESTRIAL INVERTEBRATE
6110	4/3/2006	J11L35	SOIL and BIOTA	MIS-phyt	45.2	mg/kg	TERRESTRIAL INVERTEBRATE
6111	4/3/2006	J11KR2	SOIL and BIOTA	MIS	45.4	mg/kg	TERRESTRIAL INVERTEBRATE
6112	4/3/2006	J11KR2	SOIL and BIOTA	MIS-phyt	145	mg/kg	TERRESTRIAL INVERTEBRATE
6113	4/25/2006	J11KR3	SOIL and BIOTA	MIS	75.5	mg/kg	TERRESTRIAL INVERTEBRATE
6114	4/25/2006	J11KR3	SOIL and BIOTA	MIS-phyt	79.9	mg/kg	TERRESTRIAL INVERTEBRATE
6115	4/25/2006	J11XX9	SOIL and BIOTA	MIS	62.9	mg/kg	TERRESTRIAL INVERTEBRATE
6116	4/25/2006	J11XX9	SOIL and BIOTA	MIS-phyt	62.9	mg/kg	TERRESTRIAL INVERTEBRATE
6117	4/17/2006	J11KR6	SOIL and BIOTA	MIS	43.3	mg/kg	TERRESTRIAL INVERTEBRATE
6118	4/25/2006	J11KR4	SOIL and BIOTA	MIS	50.2	mg/kg	TERRESTRIAL INVERTEBRATE
6119	4/25/2006	J11KR5	SOIL and BIOTA	MIS	45.2	mg/kg	TERRESTRIAL INVERTEBRATE
6120	4/25/2006	J11KR5	SOIL and BIOTA	MIS-phyt	48	mg/kg	TERRESTRIAL INVERTEBRATE
6121	4/26/2006	J11KT2	SOIL and BIOTA	MIS	34.2	mg/kg	TERRESTRIAL INVERTEBRATE
6122	4/25/2006	J11XX8	SOIL and BIOTA	MIS	53.8	mg/kg	TERRESTRIAL INVERTEBRATE

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
6084	CARCASS	44.2	mg/kg			CP
6085	CARCASS	41.8	mg/kg			CP
6086	CARCASS	45.9	mg/kg			CP
6087	CARCASS	45.6	mg/kg			CP
6088	CARCASS	37.4	mg/kg			CP
6089	CARCASS	31.9	mg/kg			CP
6090	CARCASS	33.3	mg/kg			CP
6091	MULTIPLE WHOLE ORG	60.5	mg/kg			RCBRA
6092	MULTIPLE WHOLE ORG	51.9	mg/kg			RCBRA
6093	MULTIPLE WHOLE ORG	35.6	mg/kg	C		RCBRA
6094	MULTIPLE WHOLE ORG	32.6	mg/kg			RCBRA
6095	MULTIPLE WHOLE ORG	34.9	mg/kg	C		RCBRA
6096	MULTIPLE WHOLE ORG	34.9	mg/kg	C		RCBRA
6097	MULTIPLE WHOLE ORG	45.1	mg/kg			RCBRA
6098	MULTIPLE WHOLE ORG	38.1	mg/kg			RCBRA
6099	MULTIPLE WHOLE ORG	38.1	mg/kg			RCBRA
6100	MULTIPLE WHOLE ORG	53	mg/kg	C		RCBRA
6101	MULTIPLE WHOLE ORG	43.1	mg/kg	C		RCBRA
6102	MULTIPLE WHOLE ORG	59.5	mg/kg	C		RCBRA
6103	MULTIPLE WHOLE ORG	45.6	mg/kg	C		RCBRA
6104	MULTIPLE WHOLE ORG	57.4	mg/kg	C		RCBRA
6105	MULTIPLE WHOLE ORG	39.5	mg/kg	C		RCBRA
6106	MULTIPLE WHOLE ORG	42.9	mg/kg	C		RCBRA
6107	MULTIPLE WHOLE ORG	54.4	mg/kg	C		RCBRA
6108	MULTIPLE WHOLE ORG	51.3	mg/kg	C		RCBRA
6109	MULTIPLE WHOLE ORG	30.1	mg/kg			RCBRA
6110	MULTIPLE WHOLE ORG	30.1	mg/kg			RCBRA
6111	MULTIPLE WHOLE ORG	38.7	mg/kg			RCBRA
6112	MULTIPLE WHOLE ORG	38.7	mg/kg			RCBRA
6113	MULTIPLE WHOLE ORG	60.3	mg/kg	C		RCBRA
6114	MULTIPLE WHOLE ORG	60.3	mg/kg	C		RCBRA
6115	MULTIPLE WHOLE ORG	39.3	mg/kg	C		RCBRA
6116	MULTIPLE WHOLE ORG	39.3	mg/kg	C		RCBRA
6117	MULTIPLE WHOLE ORG	34.9	mg/kg	C		RCBRA
6118	MULTIPLE WHOLE ORG	35.5	mg/kg	C		RCBRA
6119	MULTIPLE WHOLE ORG	34.4	mg/kg	C		RCBRA
6120	MULTIPLE WHOLE ORG	34.4	mg/kg	C		RCBRA
6121	MULTIPLE WHOLE ORG	61.1	mg/kg	C		RCBRA
6122	MULTIPLE WHOLE ORG	33.7	mg/kg	C		RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
6123	Zinc	7440-66-6	RCBRA Bev Ref 1 Rip	Outside decision areas	RIPARIAN	542428.846	167701.261
6124	Zinc	7440-66-6	RCBRA Bev Ref 2 Rip	Outside decision areas	RIPARIAN	541493.988	167808.357
6125	Zinc	7440-66-6	RCBRA JA JONES	300	UPLAND	593874.58	120013.908
6126	Zinc	7440-66-6	RCBRA Pit 14	IU2/IU6	UPLAND	580928.233	138893.242
6127	Zinc	7440-66-6	RCBRA Pit 18	IU2/IU6	UPLAND	580697.058	145311.464
6128	Zinc	7440-66-6	RCBRA Pit 23	IU2/IU6	UPLAND	572381.012	144874.157
6129	Zinc	7440-66-6	RCBRA Pit 24	BC	UPLAND	563395.814	145119.007
6130	Zinc	7440-66-6	RCBRA Pit 9	300	UPLAND	592807.103	120587.7
6131	Zinc	7440-66-6	RCBRA R Ref 11	Outside decision areas	RIPARIAN	559400.735	146458.486
6132	Zinc	7440-66-6	RCBRA R Ref 12	IU2/IU6	RIPARIAN	559201.908	145747.542
6133	Zinc	7440-66-6	RCBRA R Ref 13	Outside decision areas	RIPARIAN	558572.809	145345.115
6134	Zinc	7440-66-6	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
6135	Zinc	7440-66-6	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
6136	Zinc	7440-66-6	RCBRA R Ref 16	Outside decision areas	RIPARIAN	557650.029	144826.748
6137	Zinc	7440-66-6	RCBRA Rip 1	D/H	RIPARIAN	577251.869	153659.195
6138	Zinc	7440-66-6	RCBRA Rip 10	D/H	RIPARIAN	573987.873	153082.19
6139	Zinc	7440-66-6	RCBRA Rip 2	D/H	RIPARIAN	573603.219	152471.6
6140	Zinc	7440-66-6	RCBRA Rip 3	D/H	RIPARIAN	572639.65	151677.812
6141	Zinc	7440-66-6	RCBRA Rip 4	N	RIPARIAN	570558.596	148981.547
6142	Zinc	7440-66-6	RCBRA Rip 5	K	RIPARIAN	569141.025	147521.561
6143	Zinc	7440-66-6	RCBRA Rip 6	300	RIPARIAN	594479.972	116194.209
6144	Zinc	7440-66-6	RCBRA Rip 7	IU2/IU6	RIPARIAN	581326.914	147825.17
6145	Zinc	7440-66-6	RCBRA Rip 8	D/H	RIPARIAN	578698.584	152233.645
6146	Zinc	7440-66-6	RCBRA Rip 9	D/H	RIPARIAN	578153.643	152801.452
6147	Zinc	7440-66-6	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
6148	Zinc	7440-66-6	RCBRA Saddle Mt	Outside decision areas	UPLAND	578514.983	160614.852
6149	Zinc	7440-66-6	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
6150	Zinc	7440-66-6	RCBRA Ver. South	Outside decision areas	UPLAND	555777.783	143343.749
6151	Zinc	7440-66-6	RCBRA Yak Rdg 2	Outside decision areas	UPLAND	559031.557	135576.407
6152	Dichlorodiphenyldichloroethylene	72-55-9	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
6153	Dichlorodiphenyltrichloroethane	50-29-3	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
6154	Dichlorodiphenyltrichloroethane	50-29-3	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
6155	Dichlorodiphenyltrichloroethane	50-29-3	RCBRA 628-1	IU2/IU6	UPLAND	577797.524	148745.681
6156	Endosulfan I	959-98-8	RCBRA 600-139	IU2/IU6	UPLAND	577434.633	147799.591
6157	Endosulfan I	959-98-8	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
6158	Endosulfan sulfate	1031-07-8	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
6159	Fluoranthene	206-44-0	RCBRA 1607-D2:1	D/H	UPLAND	573823.924	152260.319
6160	Fluoranthene	206-44-0	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
6161	Fluoranthene	206-44-0	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
6123	6/13/2007	J14Y53	SOIL and BIOTA	MIS	150	mg/kg	TERRESTRIAL INVERTEBRATE
6124	6/13/2007	J14Y54	SOIL and BIOTA	MIS	103	mg/kg	TERRESTRIAL INVERTEBRATE
6125	4/25/2006	J11L34	SOIL and BIOTA	MIS	43.2	mg/kg	TERRESTRIAL INVERTEBRATE
6126	4/17/2006	J11KP9	SOIL and BIOTA	MIS	49.2	mg/kg	TERRESTRIAL INVERTEBRATE
6127	4/17/2006	J11KR0	SOIL and BIOTA	MIS	37.7	mg/kg	TERRESTRIAL INVERTEBRATE
6128	4/3/2006	J11L33	SOIL and BIOTA	MIS	39.9	mg/kg	TERRESTRIAL INVERTEBRATE
6129	4/3/2006	J11KT6	SOIL and BIOTA	MIS	48.6	mg/kg	TERRESTRIAL INVERTEBRATE
6130	4/25/2006	J11KT5	SOIL and BIOTA	MIS	46.6	mg/kg	TERRESTRIAL INVERTEBRATE
6131	3/20/2006	J11960	SOIL and BIOTA	MIS	122	mg/kg	TERRESTRIAL INVERTEBRATE
6132	3/20/2006	J11961	SOIL and BIOTA	MIS	171	mg/kg	TERRESTRIAL INVERTEBRATE
6133	3/20/2006	J11962	SOIL and BIOTA	MIS	285	mg/kg	TERRESTRIAL INVERTEBRATE
6134	3/20/2006	J11963	SOIL and BIOTA	MIS	305	mg/kg	TERRESTRIAL INVERTEBRATE
6135	6/13/2007	J14Y55	SOIL and BIOTA	MIS	305	mg/kg	TERRESTRIAL INVERTEBRATE
6136	3/20/2006	J11964	SOIL and BIOTA	MIS	168	mg/kg	TERRESTRIAL INVERTEBRATE
6137	3/16/2006	J11950	SOIL and BIOTA	MIS	393	mg/kg	TERRESTRIAL INVERTEBRATE
6138	3/16/2006	J11959	SOIL and BIOTA	MIS	214	mg/kg	TERRESTRIAL INVERTEBRATE
6139	3/16/2006	J11951	SOIL and BIOTA	MIS	124	mg/kg	TERRESTRIAL INVERTEBRATE
6140	3/16/2006	J11952	SOIL and BIOTA	MIS	131	mg/kg	TERRESTRIAL INVERTEBRATE
6141	3/16/2006	J11953	SOIL and BIOTA	MIS	219	mg/kg	TERRESTRIAL INVERTEBRATE
6142	3/16/2006	J11954	SOIL and BIOTA	MIS	311	mg/kg	TERRESTRIAL INVERTEBRATE
6143	4/25/2006	J11955	SOIL and BIOTA	MIS	201	mg/kg	TERRESTRIAL INVERTEBRATE
6144	3/16/2006	J11956	SOIL and BIOTA	MIS	207	mg/kg	TERRESTRIAL INVERTEBRATE
6145	3/16/2006	J11957	SOIL and BIOTA	MIS	218	mg/kg	TERRESTRIAL INVERTEBRATE
6146	3/16/2006	J11958	SOIL and BIOTA	MIS	197	mg/kg	TERRESTRIAL INVERTEBRATE
6147	4/3/2006	J11KV0	SOIL and BIOTA	MIS	53.5	mg/kg	TERRESTRIAL INVERTEBRATE
6148	4/3/2006	J11KV0	SOIL and BIOTA	MIS-phyt	53.7	mg/kg	TERRESTRIAL INVERTEBRATE
6149	4/3/2006	J11KT8	SOIL and BIOTA	MIS	43.2	mg/kg	TERRESTRIAL INVERTEBRATE
6150	4/3/2006	J11KT8	SOIL and BIOTA	MIS-phyt	48.3	mg/kg	TERRESTRIAL INVERTEBRATE
6151	4/3/2006	J11KT7	SOIL and BIOTA	MIS	56.9	mg/kg	TERRESTRIAL INVERTEBRATE
6152	4/25/2006	J11KR5	SOIL and BIOTA	MIS	0.0027	mg/kg	TERRESTRIAL INVERTEBRATE
6153	4/25/2006	J11KR3	SOIL and BIOTA	MIS	0.0049	mg/kg	TERRESTRIAL INVERTEBRATE
6154	4/25/2006	J11XX9	SOIL and BIOTA	MIS	0.00205	mg/kg	TERRESTRIAL INVERTEBRATE
6155	4/25/2006	J11XX8	SOIL and BIOTA	MIS	0.009	mg/kg	TERRESTRIAL INVERTEBRATE
6156	4/25/2006	J11KR3	SOIL and BIOTA	MIS	0.00115	mg/kg	TERRESTRIAL INVERTEBRATE
6157	4/25/2006	J11KR5	SOIL and BIOTA	MIS	0.00125	mg/kg	TERRESTRIAL INVERTEBRATE
6158	4/25/2006	J11KR5	SOIL and BIOTA	MIS	0.0012	mg/kg	TERRESTRIAL INVERTEBRATE
6159	8/10/2006	J12Y66	SOIL and BIOTA	MIS	0.17	mg/kg	TERRESTRIAL INVERTEBRATE
6160	8/10/2006	J12Y67	SOIL and BIOTA	MIS	0.092	mg/kg	TERRESTRIAL INVERTEBRATE
6161	8/10/2006	J12Y67	SOIL and BIOTA	MIS-phyt	0.14	mg/kg	TERRESTRIAL INVERTEBRATE

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
6123	MULTIPLE WHOLE ORG	43.8	mg/kg	C		RCBRA
6124	MULTIPLE WHOLE ORG	48.6	mg/kg	C		RCBRA
6125	MULTIPLE WHOLE ORG	42	mg/kg	C		RCBRA
6126	MULTIPLE WHOLE ORG	35.7	mg/kg	C		RCBRA
6127	MULTIPLE WHOLE ORG	32.3	mg/kg	C		RCBRA
6128	MULTIPLE WHOLE ORG	30.9	mg/kg			RCBRA
6129	MULTIPLE WHOLE ORG	36.8	mg/kg			RCBRA
6130	MULTIPLE WHOLE ORG	33.1	mg/kg	C		RCBRA
6131	MULTIPLE WHOLE ORG	41.9	mg/kg			RCBRA
6132	MULTIPLE WHOLE ORG	33.5	mg/kg			RCBRA
6133	MULTIPLE WHOLE ORG	34.9	mg/kg			RCBRA
6134	MULTIPLE WHOLE ORG	34.7	mg/kg			RCBRA
6135	MULTIPLE WHOLE ORG	42.6	mg/kg	C		RCBRA
6136	MULTIPLE WHOLE ORG	40	mg/kg			RCBRA
6137	MULTIPLE WHOLE ORG	79.1	mg/kg			RCBRA
6138	MULTIPLE WHOLE ORG	92.6	mg/kg			RCBRA
6139	MULTIPLE WHOLE ORG	57.9	mg/kg			RCBRA
6140	MULTIPLE WHOLE ORG	28	mg/kg			RCBRA
6141	MULTIPLE WHOLE ORG	34.3	mg/kg			RCBRA
6142	MULTIPLE WHOLE ORG	60.2	mg/kg			RCBRA
6143	MULTIPLE WHOLE ORG	38.5	mg/kg	C		RCBRA
6144	MULTIPLE WHOLE ORG	82.8	mg/kg			RCBRA
6145	MULTIPLE WHOLE ORG	38.7	mg/kg			RCBRA
6146	MULTIPLE WHOLE ORG	99.4	mg/kg			RCBRA
6147	MULTIPLE WHOLE ORG	27.4	mg/kg			RCBRA
6148	MULTIPLE WHOLE ORG	27.4	mg/kg			RCBRA
6149	MULTIPLE WHOLE ORG	29.1	mg/kg			RCBRA
6150	MULTIPLE WHOLE ORG	29.1	mg/kg			RCBRA
6151	MULTIPLE WHOLE ORG	30.5	mg/kg			RCBRA
6152	MULTIPLE WHOLE ORG	0.018	mg/kg	JD	J	RCBRA
6153	MULTIPLE WHOLE ORG	0.019	mg/kg	JD	J	RCBRA
6154	MULTIPLE WHOLE ORG	0.098	mg/kg	D	J	RCBRA
6155	MULTIPLE WHOLE ORG	0.14	mg/kg	D	J	RCBRA
6156	MULTIPLE WHOLE ORG	0.059	mg/kg	D	J	RCBRA
6157	MULTIPLE WHOLE ORG	0.026	mg/kg	JD	J	RCBRA
6158	MULTIPLE WHOLE ORG	1.4	mg/kg	D	J	RCBRA
6159	MULTIPLE WHOLE ORG	0.36	mg/kg			RCBRA
6160	MULTIPLE WHOLE ORG	0.091	mg/kg	J		RCBRA
6161	MULTIPLE WHOLE ORG	0.091	mg/kg	J		RCBRA

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
6162	Fluorene	86-73-7	RCBRA 600-131	IU2/IU6	UPLAND	577475.261	149037.291
6163	Methoxychlor	72-43-5	RCBRA 600-171	IU2/IU6	UPLAND	578143.253	147797.96
6164	Methoxychlor	72-43-5	RCBRA 600-208	IU2/IU6	UPLAND	586234.966	138403.691
6165	Phenanthrene	85-01-8	RCBRA JA JONES	300	UPLAND	593874.58	120013.908
6166	Actinium-228	14331-83-0	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
6167	Bismuth-214	14733-03-0	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
6168	Cesium-137	10045-97-3	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764
6169	Cesium-137	10045-97-3	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764
6170	Cesium-137	10045-97-3	BCCA HIGH A	Outside decision areas	UPLAND	573574.343	133774.04
6171	Cesium-137	10045-97-3	BCCA HIGH A	Outside decision areas	UPLAND	573574.343	133774.04
6172	Cesium-137	10045-97-3	BCCA HIGH A	Outside decision areas	UPLAND	573574.343	133774.04
6173	Cesium-137	10045-97-3	BCCA HIGH B	Outside decision areas	UPLAND	573574.343	133774.04
6174	Cesium-137	10045-97-3	BCCA HIGH B	Outside decision areas	UPLAND	573574.343	133774.04
6175	Cesium-137	10045-97-3	BCCA HIGH B	Outside decision areas	UPLAND	573574.343	133774.04
6176	Lead-214	15067-28-4	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
6177	Potassium-40	13966-00-2	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
6178	Radium-226	13982-63-3	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764
6179	Radium-226	13982-63-3	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
6180	Radium-226	13982-63-3	B POND	Outside decision areas	UPLAND	576356.769	136881.272
6181	Radium-226	13982-63-3	B POND	Outside decision areas	UPLAND	576356.769	136881.272
6182	Radium-226	13982-63-3	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
6183	Radium-226	13982-63-3	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
6184	Radium-226	13982-63-3	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
6185	Radium-228	15262-20-1	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
6186	Radium-228	15262-20-1	B POND	Outside decision areas	UPLAND	576356.769	136881.272
6187	Radium-228	15262-20-1	U POND	Outside decision areas	UPLAND	566379.63	134457.045
6188	Strontium-90	10098-97-2	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764
6189	Strontium-90	10098-97-2	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
6190	Strontium-90	10098-97-2	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
6191	Strontium-90	10098-97-2	BCCA HIGH A	Outside decision areas	UPLAND	573574.343	133774.04
6192	Strontium-90	10098-97-2	BCCA HIGH A	Outside decision areas	UPLAND	573574.343	133774.04
6193	Strontium-90	10098-97-2	BCCA HIGH A	Outside decision areas	UPLAND	573574.343	133774.04
6194	Strontium-90	10098-97-2	BCCA HIGH B	Outside decision areas	UPLAND	573574.343	133774.04
6195	Strontium-90	10098-97-2	BCCA HIGH B	Outside decision areas	UPLAND	573574.343	133774.04
6196	Strontium-90	10098-97-2	BCCA HIGH B	Outside decision areas	UPLAND	573574.343	133774.04
6197	Strontium-90	10098-97-2	BCCA LOW	Outside decision areas	UPLAND	575540.167	134072.931
6198	Strontium-90	10098-97-2	BCCA LOW	Outside decision areas	UPLAND	575540.167	134072.931
6199	Strontium-90	10098-97-2	BCCA MED	Outside decision areas	UPLAND	573927.1	132389.2
6200	Strontium-90	10098-97-2	BCCA MED	Outside decision areas	UPLAND	573927.1	132389.2

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
6162	8/29/2006	J135Y7	SOIL and BIOTA	MIS-phyt	0.0017	mg/kg	TERRESTRIAL INVERTEBRATE
6163	4/25/2006	J11XX9	SOIL and BIOTA	MIS	0.0023	mg/kg	TERRESTRIAL INVERTEBRATE
6164	4/25/2006	J11KR5	SOIL and BIOTA	MIS	0.0032	mg/kg	TERRESTRIAL INVERTEBRATE
6165	8/29/2006	J135Y9	SOIL and BIOTA	MIS	0.007094	mg/kg	TERRESTRIAL INVERTEBRATE
6166	9/13/2005	B1CV52	SOIL and BIOTA	Discrete	0.719	pCi/g	TERRESTRIAL INVERTEBRATE
6167	9/13/2005	B1CV54	SOIL and BIOTA	Discrete	0.544	pCi/g	TERRESTRIAL INVERTEBRATE
6168	9/13/2005	B1CV57	SOIL and BIOTA	Discrete	3.19	pCi/g	TERRESTRIAL INVERTEBRATE
6169	9/13/2005	B1CV55	SOIL and BIOTA	Discrete	3.19	pCi/g	TERRESTRIAL INVERTEBRATE
6170	9/13/2005	B1D9J6	SOIL and BIOTA	Discrete	5.6	pCi/g	TERRESTRIAL INVERTEBRATE
6171	9/13/2005	B1D9J7	SOIL and BIOTA	Discrete	5.6	pCi/g	TERRESTRIAL INVERTEBRATE
6172	9/13/2005	B1D9J5	SOIL and BIOTA	Discrete	5.6	pCi/g	TERRESTRIAL INVERTEBRATE
6173	8/31/2006	B1KKC5	SOIL and BIOTA	Discrete	11.5	pCi/g	TERRESTRIAL INVERTEBRATE
6174	8/31/2006	B1KKC6	SOIL and BIOTA	Discrete	11.5	pCi/g	TERRESTRIAL INVERTEBRATE
6175	8/31/2006	B1KKC4	SOIL and BIOTA	Discrete	11.5	pCi/g	TERRESTRIAL INVERTEBRATE
6176	9/13/2005	B1CV54	SOIL and BIOTA	Discrete	0.578	pCi/g	TERRESTRIAL INVERTEBRATE
6177	9/13/2005	B1CV53	SOIL and BIOTA	Discrete	17.3	pCi/g	TERRESTRIAL INVERTEBRATE
6178	9/13/2005	B1CV56	SOIL and BIOTA	Discrete	0.688	pCi/g	TERRESTRIAL INVERTEBRATE
6179	9/13/2005	B1CV54	SOIL and BIOTA	Discrete	0.544	pCi/g	TERRESTRIAL INVERTEBRATE
6180	6/15/2005	B1CV47	SOIL and BIOTA	Discrete	0.531	pCi/g	TERRESTRIAL INVERTEBRATE
6181	6/15/2005	B1CV46	SOIL and BIOTA	Discrete	0.531	pCi/g	TERRESTRIAL INVERTEBRATE
6182	6/15/2005	B1CTY5	SOIL and BIOTA	Discrete	0.641	pCi/g	TERRESTRIAL INVERTEBRATE
6183	6/15/2005	B1CTY8	SOIL and BIOTA	Discrete	0.612	pCi/g	TERRESTRIAL INVERTEBRATE
6184	6/15/2005	B1CV45	SOIL and BIOTA	Discrete	0.612	pCi/g	TERRESTRIAL INVERTEBRATE
6185	9/13/2005	B1CV52	SOIL and BIOTA	Discrete	0.719	pCi/g	TERRESTRIAL INVERTEBRATE
6186	6/15/2005	B1CV48	SOIL and BIOTA	Discrete	0.775	pCi/g	TERRESTRIAL INVERTEBRATE
6187	9/13/2005	B1CV49	SOIL and BIOTA	Discrete	0.725	pCi/g	TERRESTRIAL INVERTEBRATE
6188	9/13/2005	B1CV57	SOIL and BIOTA	Discrete	0.0977	pCi/g	TERRESTRIAL INVERTEBRATE
6189	6/15/2005	B1CTY3	SOIL and BIOTA	Discrete	0.042	pCi/g	TERRESTRIAL INVERTEBRATE
6190	9/13/2005	B1CV52	SOIL and BIOTA	Discrete	0.144	pCi/g	TERRESTRIAL INVERTEBRATE
6191	9/13/2005	B1D9J7	SOIL and BIOTA	Discrete	12.4	pCi/g	TERRESTRIAL INVERTEBRATE
6192	9/13/2005	B1D9J6	SOIL and BIOTA	Discrete	12.4	pCi/g	TERRESTRIAL INVERTEBRATE
6193	9/13/2005	B1D9J5	SOIL and BIOTA	Discrete	12.4	pCi/g	TERRESTRIAL INVERTEBRATE
6194	8/31/2006	B1KKC5	SOIL and BIOTA	Discrete	30.7	pCi/g	TERRESTRIAL INVERTEBRATE
6195	8/31/2006	B1KKC4	SOIL and BIOTA	Discrete	30.7	pCi/g	TERRESTRIAL INVERTEBRATE
6196	8/31/2006	B1KKC6	SOIL and BIOTA	Discrete	30.7	pCi/g	TERRESTRIAL INVERTEBRATE
6197	9/13/2005	B1DYH7	SOIL and BIOTA	Discrete	0.049	pCi/g	TERRESTRIAL INVERTEBRATE
6198	9/13/2005	B1D9J9	SOIL and BIOTA	Discrete	0.049	pCi/g	TERRESTRIAL INVERTEBRATE
6199	9/13/2005	B1D9H9	SOIL and BIOTA	Discrete	0.256	pCi/g	TERRESTRIAL INVERTEBRATE
6200	9/13/2005	B1D9J4	SOIL and BIOTA	Discrete	0.256	pCi/g	TERRESTRIAL INVERTEBRATE

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
6162	MULTIPLE WHOLE ORG	0.14	mg/kg			RCBRA
6163	MULTIPLE WHOLE ORG	0.034	mg/kg	D	J	RCBRA
6164	MULTIPLE WHOLE ORG	0.18	mg/kg	D	J	RCBRA
6165	MULTIPLE WHOLE ORG	0.097	mg/kg			RCBRA
6166	CARCASS	1.55	pCi/g			CP
6167	CARCASS	1.06	pCi/g			CP
6168	CARCASS	0.102	pCi/g			CP
6169	CARCASS	0.107	pCi/g			CP
6170	CARCASS	0.564	pCi/g			CP
6171	CARCASS	0.495	pCi/g			CP
6172	CARCASS	0.388	pCi/g			CP
6173	CARCASS	0.142	pCi/g			CP
6174	CARCASS	0.214	pCi/g			CP
6175	CARCASS	0.128	pCi/g			CP
6176	CARCASS	1.01	pCi/g			CP
6177	CARCASS	5.59	pCi/g			CP
6178	CARCASS	0.298	pCi/g			CP
6179	CARCASS	1.06	pCi/g			CP
6180	CARCASS	0.722	pCi/g			CP
6181	CARCASS	0.742	pCi/g			CP
6182	CARCASS	0.428	pCi/g		J	CP
6183	CARCASS	0.469	pCi/g			CP
6184	CARCASS	1.07	pCi/g			CP
6185	CARCASS	1.55	pCi/g			CP
6186	CARCASS	0.583	pCi/g			CP
6187	CARCASS	0.472	pCi/g			CP
6188	CARCASS	0.44	pCi/g			CP
6189	CARCASS	0.75	pCi/g			CP
6190	CARCASS	0.47	pCi/g			CP
6191	CARCASS	9.8	pCi/g			CP
6192	CARCASS	12	pCi/g			CP
6193	CARCASS	7.9	pCi/g			CP
6194	CARCASS	3.83	pCi/g			CP
6195	CARCASS	4.71	pCi/g			CP
6196	CARCASS	4.06	pCi/g			CP
6197	CARCASS	0.15	pCi/g			CP
6198	CARCASS	0.11	pCi/g			CP
6199	CARCASS	0.48	pCi/g			CP
6200	CARCASS	0.9	pCi/g			CP

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
6201	Strontium-90	10098-97-2	BCCA MED	Outside decision areas	UPLAND	573927.1	132389.2
6202	Strontium-90	10098-97-2	BCCA MED	Outside decision areas	UPLAND	573927.1	132389.2
6203	Strontium-90	10098-97-2	BCCA MED	Outside decision areas	UPLAND	573927.1	132389.2
6204	Strontium-90	10098-97-2	BCCA MED	Outside decision areas	UPLAND	573927.1	132389.2
6205	Strontium-90	10098-97-2	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
6206	Thorium-230	14269-63-7	RCBRA Bev Ref 2 Rip	Outside decision areas	RIPARIAN	541493.988	167808.357
6207	Thorium-230	14269-63-7	RCBRA R Ref 14	Outside decision areas	RIPARIAN	556717.18	145144.848
6208	Uranium-233/234	13966-29-5	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764
6209	Uranium-233/234	13966-29-5	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764
6210	Uranium-233/234	13966-29-5	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764
6211	Uranium-233/234	13966-29-5	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
6212	Uranium-233/234	13966-29-5	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
6213	Uranium-233/234	13966-29-5	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
6214	Uranium-233/234	13966-29-5	B POND	Outside decision areas	UPLAND	576356.769	136881.272
6215	Uranium-233/234	13966-29-5	B POND	Outside decision areas	UPLAND	576356.769	136881.272
6216	Uranium-233/234	13966-29-5	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
6217	Uranium-233/234	13966-29-5	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
6218	Uranium-233/234	13966-29-5	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
6219	Uranium-233/234	13966-29-5	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
6220	Uranium-233/234	13966-29-5	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
6221	Uranium-233/234	13966-29-5	U POND	Outside decision areas	UPLAND	566379.63	134457.045
6222	Uranium-233/234	13966-29-5	U POND	Outside decision areas	UPLAND	566379.63	134457.045
6223	Uranium-233/234	13966-29-5	U POND	Outside decision areas	UPLAND	566379.63	134457.045
6224	Uranium-235	15117-96-1	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764
6225	Uranium-235	15117-96-1	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764
6226	Uranium-235	15117-96-1	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764
6227	Uranium-235	15117-96-1	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
6228	Uranium-235	15117-96-1	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
6229	Uranium-235	15117-96-1	B POND	Outside decision areas	UPLAND	576356.769	136881.272
6230	Uranium-235	15117-96-1	B POND	Outside decision areas	UPLAND	576356.769	136881.272
6231	Uranium-235	15117-96-1	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
6232	Uranium-235	15117-96-1	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
6233	Uranium-235	15117-96-1	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
6234	Uranium-235	15117-96-1	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
6235	Uranium-235	15117-96-1	U POND	Outside decision areas	UPLAND	566379.63	134457.045
6236	Uranium-235	15117-96-1	U POND	Outside decision areas	UPLAND	566379.63	134457.045
6237	Uranium-235	15117-96-1	U POND	Outside decision areas	UPLAND	566379.63	134457.045
6238	Uranium-238	U-238	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764
6239	Uranium-238	U-238	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
6201	9/13/2005	B1D9J2	SOIL and BIOTA	Discrete	0.256	pCi/g	TERRESTRIAL INVERTEBRATE
6202	9/13/2005	B1D9J0	SOIL and BIOTA	Discrete	0.256	pCi/g	TERRESTRIAL INVERTEBRATE
6203	9/13/2005	B1D9J1	SOIL and BIOTA	Discrete	0.256	pCi/g	TERRESTRIAL INVERTEBRATE
6204	9/13/2005	B1D9J3	SOIL and BIOTA	Discrete	0.256	pCi/g	TERRESTRIAL INVERTEBRATE
6205	6/15/2005	B1CTY5	SOIL and BIOTA	Discrete	0.00385	pCi/g	TERRESTRIAL INVERTEBRATE
6206	6/13/2007	J14Y54	SOIL and BIOTA	MIS	0.252	pCi/g	TERRESTRIAL INVERTEBRATE
6207	6/13/2007	J14Y55	SOIL and BIOTA	MIS	0.351	pCi/g	TERRESTRIAL INVERTEBRATE
6208	9/13/2005	B1CV56	SOIL and BIOTA	Discrete	0.14	pCi/g	TERRESTRIAL INVERTEBRATE
6209	9/13/2005	B1CV57	SOIL and BIOTA	Discrete	0.14	pCi/g	TERRESTRIAL INVERTEBRATE
6210	9/13/2005	B1CV55	SOIL and BIOTA	Discrete	0.14	pCi/g	TERRESTRIAL INVERTEBRATE
6211	6/15/2005	B1CTY3	SOIL and BIOTA	Discrete	0.15	pCi/g	TERRESTRIAL INVERTEBRATE
6212	6/15/2005	B1CTY4	SOIL and BIOTA	Discrete	0.15	pCi/g	TERRESTRIAL INVERTEBRATE
6213	9/13/2005	B1CV54	SOIL and BIOTA	Discrete	0.15	pCi/g	TERRESTRIAL INVERTEBRATE
6214	6/15/2005	B1CV46	SOIL and BIOTA	Discrete	0.13	pCi/g	TERRESTRIAL INVERTEBRATE
6215	6/15/2005	B1CV48	SOIL and BIOTA	Discrete	0.13	pCi/g	TERRESTRIAL INVERTEBRATE
6216	6/15/2005	B1CTY6	SOIL and BIOTA	Discrete	0.2	pCi/g	TERRESTRIAL INVERTEBRATE
6217	6/15/2005	B1CTY5	SOIL and BIOTA	Discrete	0.2	pCi/g	TERRESTRIAL INVERTEBRATE
6218	6/15/2005	B1CV44	SOIL and BIOTA	Discrete	0.14	pCi/g	TERRESTRIAL INVERTEBRATE
6219	6/15/2005	B1CTY8	SOIL and BIOTA	Discrete	0.14	pCi/g	TERRESTRIAL INVERTEBRATE
6220	6/15/2005	B1CV45	SOIL and BIOTA	Discrete	0.14	pCi/g	TERRESTRIAL INVERTEBRATE
6221	9/13/2005	B1CV50	SOIL and BIOTA	Discrete	0.13	pCi/g	TERRESTRIAL INVERTEBRATE
6222	9/13/2005	B1CV51	SOIL and BIOTA	Discrete	0.13	pCi/g	TERRESTRIAL INVERTEBRATE
6223	9/13/2005	B1CV49	SOIL and BIOTA	Discrete	0.13	pCi/g	TERRESTRIAL INVERTEBRATE
6224	9/13/2005	B1CV56	SOIL and BIOTA	Discrete	0.01	pCi/g	TERRESTRIAL INVERTEBRATE
6225	9/13/2005	B1CV57	SOIL and BIOTA	Discrete	0.01	pCi/g	TERRESTRIAL INVERTEBRATE
6226	9/13/2005	B1CV55	SOIL and BIOTA	Discrete	0.01	pCi/g	TERRESTRIAL INVERTEBRATE
6227	9/13/2005	B1CV54	SOIL and BIOTA	Discrete	0.008	pCi/g	TERRESTRIAL INVERTEBRATE
6228	9/13/2005	B1CV52	SOIL and BIOTA	Discrete	0.008	pCi/g	TERRESTRIAL INVERTEBRATE
6229	6/15/2005	B1CV46	SOIL and BIOTA	Discrete	0.011	pCi/g	TERRESTRIAL INVERTEBRATE
6230	6/15/2005	B1CV48	SOIL and BIOTA	Discrete	0.011	pCi/g	TERRESTRIAL INVERTEBRATE
6231	6/15/2005	B1CTY7	SOIL and BIOTA	Discrete	0.011	pCi/g	TERRESTRIAL INVERTEBRATE
6232	6/15/2005	B1CV44	SOIL and BIOTA	Discrete	0.014	pCi/g	TERRESTRIAL INVERTEBRATE
6233	6/15/2005	B1CTY8	SOIL and BIOTA	Discrete	0.014	pCi/g	TERRESTRIAL INVERTEBRATE
6234	6/15/2005	B1CV45	SOIL and BIOTA	Discrete	0.014	pCi/g	TERRESTRIAL INVERTEBRATE
6235	9/13/2005	B1CV50	SOIL and BIOTA	Discrete	0.016	pCi/g	TERRESTRIAL INVERTEBRATE
6236	9/13/2005	B1CV51	SOIL and BIOTA	Discrete	0.016	pCi/g	TERRESTRIAL INVERTEBRATE
6237	9/13/2005	B1CV49	SOIL and BIOTA	Discrete	0.016	pCi/g	TERRESTRIAL INVERTEBRATE
6238	9/13/2005	B1CV56	SOIL and BIOTA	Discrete	0.15	pCi/g	TERRESTRIAL INVERTEBRATE
6239	9/13/2005	B1CV57	SOIL and BIOTA	Discrete	0.15	pCi/g	TERRESTRIAL INVERTEBRATE

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
6201	CARCASS	0.5	pCi/g			CP
6202	CARCASS	0.48	pCi/g			CP
6203	CARCASS	0.43	pCi/g			CP
6204	CARCASS	0.43	pCi/g			CP
6205	CARCASS	0.27	pCi/g			CP
6206	MULTIPLE WHOLE ORG	0.291	pCi/g			RCBRA
6207	MULTIPLE WHOLE ORG	0.344	pCi/g			RCBRA
6208	CARCASS	0.019	pCi/g			CP
6209	CARCASS	0.025	pCi/g			CP
6210	CARCASS	0.032	pCi/g			CP
6211	CARCASS	0.053	pCi/g			CP
6212	CARCASS	0.015	pCi/g			CP
6213	CARCASS	0.023	pCi/g			CP
6214	CARCASS	0.028	pCi/g			CP
6215	CARCASS	0.058	pCi/g			CP
6216	CARCASS	0.018	pCi/g			CP
6217	CARCASS	0.016	pCi/g			CP
6218	CARCASS	0.025	pCi/g			CP
6219	CARCASS	0.03	pCi/g			CP
6220	CARCASS	0.036	pCi/g			CP
6221	CARCASS	0.026	pCi/g			CP
6222	CARCASS	0.019	pCi/g			CP
6223	CARCASS	0.029	pCi/g			CP
6224	CARCASS	0.014	pCi/g			CP
6225	CARCASS	0.015	pCi/g			CP
6226	CARCASS	0.007	pCi/g			CP
6227	CARCASS	0.014	pCi/g			CP
6228	CARCASS	0.017	pCi/g			CP
6229	CARCASS	0.008	pCi/g			CP
6230	CARCASS	0.015	pCi/g			CP
6231	CARCASS	0.015	pCi/g			CP
6232	CARCASS	0.013	pCi/g			CP
6233	CARCASS	0.011	pCi/g			CP
6234	CARCASS	0.008	pCi/g			CP
6235	CARCASS	0.007	pCi/g			CP
6236	CARCASS	0.007	pCi/g			CP
6237	CARCASS	0.027	pCi/g			CP
6238	CARCASS	0.014	pCi/g			CP
6239	CARCASS	0.015	pCi/g			CP

Obs	Analyte	CAS ID	Sample Site Name	Rod Decisional Area	Sampling Environment	Easting	Northing
6240	Uranium-238	U-238	216-B-63 DITCH	Outside decision areas	UPLAND	573691.8305	137506.9764
6241	Uranium-238	U-238	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
6242	Uranium-238	U-238	216-S-10 DITCH	Outside decision areas	UPLAND	566742.9376	136801.9932
6243	Uranium-238	U-238	2607-E6 SEPTIC	Outside decision areas	UPLAND	574901.775	135996.102
6244	Uranium-238	U-238	B POND	Outside decision areas	UPLAND	576356.769	136881.272
6245	Uranium-238	U-238	B POND	Outside decision areas	UPLAND	576356.769	136881.272
6246	Uranium-238	U-238	B POND	Outside decision areas	UPLAND	576356.769	136881.272
6247	Uranium-238	U-238	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
6248	Uranium-238	U-238	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
6249	Uranium-238	U-238	GABLE MOUNTAIN POND	Outside decision areas	UPLAND	574365.815	140213.41
6250	Uranium-238	U-238	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
6251	Uranium-238	U-238	REFERENCE SITE 1	Outside decision areas	UPLAND	565365.958	137535.247
6252	Uranium-238	U-238	U POND	Outside decision areas	UPLAND	566379.63	134457.045
6253	Uranium-238	U-238	U POND	Outside decision areas	UPLAND	566379.63	134457.045
6254	Uranium-238	U-238	U POND	Outside decision areas	UPLAND	566379.63	134457.045
6255	Uranium-238	U-238	RCBRA 4a Rip	IU2/IU6	RIPARIAN	589347.5	137480.985

****NOTES:**

B-(Inorganics and Wetchem)-The analyte was detected at a value less than the contract required detection limit (CRDL), but greater than or equal to the minimum de
C-(Inorganics and Wetchem)-The analyte was detected in both the sample and the associated QC blank, and the sample concentration was less than or equal to five t
D-(Organics and Wetchem)-The analyte was identified in an analysis at a secondary dilution factor (that is, dilution factor different from 1.0).
E-(Inorganics)-Reported value is estimated because of interference.
E-(Organics)--Concentration exceeds the calibration range of the gas chromatograph/mass spectrometer.
N-(All)-The spike sample recovery is outside control limits.
J-(Organics)-Indicates the constituent was analyzed for and detected. The associated value is estimated because of a QC deficiency identified during data validation.
J-(All) The associated value is estimated because of a QC deficiency identified during data validation.
U-(All) The constituent was analyzed for and was not detected.
UJ-The constituent was analyzed for and was not detected. Because of a QC deficiency identified during data validation, the value reported may not accurately reflec
UR-Indicates the constituent was analyzed for and not detected; however, because of an identified QC deficiency, the data should be considered unusable for decisio
R-Indicates the constituent was analyzed for and detected; however, because of an identified QC deficiency, the data should be considered unusable for decision-mal
X-(All)-The result-specific translation of this qualifier code is provided in the data report and/or case narrative.

Obs	Sample Date	Sample ID	Sample Matrix	Soil Sample Type	Soil Concentration	Units	Biota Media
6240	9/13/2005	B1CV55	SOIL and BIOTA	Discrete	0.15	pCi/g	TERRESTRIAL INVERTEBRATE
6241	6/15/2005	B1CTY3	SOIL and BIOTA	Discrete	0.16	pCi/g	TERRESTRIAL INVERTEBRATE
6242	6/15/2005	B1CTY4	SOIL and BIOTA	Discrete	0.16	pCi/g	TERRESTRIAL INVERTEBRATE
6243	9/13/2005	B1CV54	SOIL and BIOTA	Discrete	0.18	pCi/g	TERRESTRIAL INVERTEBRATE
6244	6/15/2005	B1CV47	SOIL and BIOTA	Discrete	0.18	pCi/g	TERRESTRIAL INVERTEBRATE
6245	6/15/2005	B1CV48	SOIL and BIOTA	Discrete	0.18	pCi/g	TERRESTRIAL INVERTEBRATE
6246	6/15/2005	B1CV46	SOIL and BIOTA	Discrete	0.18	pCi/g	TERRESTRIAL INVERTEBRATE
6247	6/15/2005	B1CTY6	SOIL and BIOTA	Discrete	0.19	pCi/g	TERRESTRIAL INVERTEBRATE
6248	6/15/2005	B1CTY5	SOIL and BIOTA	Discrete	0.19	pCi/g	TERRESTRIAL INVERTEBRATE
6249	6/15/2005	B1CTY7	SOIL and BIOTA	Discrete	0.19	pCi/g	TERRESTRIAL INVERTEBRATE
6250	6/15/2005	B1CV44	SOIL and BIOTA	Discrete	0.15	pCi/g	TERRESTRIAL INVERTEBRATE
6251	6/15/2005	B1CV45	SOIL and BIOTA	Discrete	0.15	pCi/g	TERRESTRIAL INVERTEBRATE
6252	9/13/2005	B1CV51	SOIL and BIOTA	Discrete	0.14	pCi/g	TERRESTRIAL INVERTEBRATE
6253	9/13/2005	B1CV50	SOIL and BIOTA	Discrete	0.14	pCi/g	TERRESTRIAL INVERTEBRATE
6254	9/13/2005	B1CV49	SOIL and BIOTA	Discrete	0.14	pCi/g	TERRESTRIAL INVERTEBRATE
6255	6/13/2007	J14Y62	SOIL and BIOTA	MIS	1.35	pCi/g	TERRESTRIAL INVERTEBRATE

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king purposes.

Obs	Biota Tissue Composition	Tissue Concentration	Units	**Lab Qualifier	**Validation Qualifier	Sample Data Source
6240	CARCASS	0.023	pCi/g			CP
6241	CARCASS	0.014	pCi/g			CP
6242	CARCASS	0.018	pCi/g			CP
6243	CARCASS	0.016	pCi/g			CP
6244	CARCASS	0.019	pCi/g			CP
6245	CARCASS	0.041	pCi/g			CP
6246	CARCASS	0.021	pCi/g			CP
6247	CARCASS	0.021	pCi/g			CP
6248	CARCASS	0.018	pCi/g			CP
6249	CARCASS	0.016	pCi/g			CP
6250	CARCASS	0.017	pCi/g			CP
6251	CARCASS	0.038	pCi/g			CP
6252	CARCASS	0.012	pCi/g			CP
6253	CARCASS	0.032	pCi/g			CP
6254	CARCASS	0.02	pCi/g			CP
6255	MULTIPLE WHOLE ORG	0.234	pCi/g			RCBRA

Appendix B

Summaries of Studies Included in the Arthropod Literature Bioaccumulation Database

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B1 Summary

Reference: Andrews et al., 1989a

Analytes Considered: Pb

Species: plants, small mammals, invertebrates

Geographic Location of Study: Great Britain

Exposure Duration: field

Type of Tissue Analyzed: whole body

Type of Source Media Analyzed: soil and vegetation

Analytical Method: atomic absorption spectrophotometry

Extraction Method: Nitric acid wet oxidation

Soil Characteristics (pH, CEC, % OM, % Clay, etc.) Presented: not reported

Purpose of Study: To examine distribution and accumulation of lead in a grassland ecosystem established on a revegetated tailings dam

Reference: Andrews et al., 1989b

Analytes Considered: Zn

Species: plants, small mammals, invertebrates

Geographic Location of Study: Great Britain

Exposure Duration: field

Type of Tissue Analyzed: whole body

Type of Source Media Analyzed: soil and vegetation

Analytical Method: atomic absorption spectrophotometry

Extraction Method: Nitric acid wet oxidation

Soil Characteristics (pH, CEC, % OM, % Clay, etc.) Presented: not reported

Purpose of Study: To examine distribution and accumulation of lead in a grassland ecosystem established on a revegetated tailings dam

Reference: Andrews et al., 1989c

Analytes Considered: Fl

Species: plants, small mammals, invertebrates

Geographic Location of Study: Great Britain

Exposure Duration: field

Type of Tissue Analyzed: whole body

Type of Source Media Analyzed: soil

Analytical Method: fluoride ion-selective electrode

Extraction Method: Nitric acid

Soil Characteristics (pH, CEC, % OM, % Clay, etc.) Presented: not reported

Purpose of Study: To determine the distribution of contaminants in a contaminated ecosystem

Reference: Beyer et al., 1985

Analytes Considered: Pb, Zn, Cu, Cd,

Species: Invertebrates, amphibians, small mammals and birds

Geographic Location of Study: Pennsylvania, USA

Exposure Duration: field

Type of Tissue Analyzed: whole body

Type of Source Media Analyzed: Soil, plants and fungi

Analytical Method: AAS

Extraction Method: Acid leached

Soil Characteristics (pH, CEC, % OM, % Clay, etc.) Presented: pH, OM, P, CA, Mg, K and CEC

Purpose of Study: To examine the level of metal concentrations in wildlife and determine the effects on contamination on the health of the animals.

Reference: Beyer et al., 1990

Analytes Considered: Pb, Zn, Cu, Se, Ni, Cd, Cr, As

Species: Common reed, ladybug, slugs, invertebrates, meadow vole, sparrow, mouse, shrew

Geographic Location of Study: Maryland

Exposure Duration: field

Type of Tissue Analyzed: whole body

Type of Source Media Analyzed: Soil

Analytical Method: AAS

Extraction Method: nitric acid and hydrogen peroxide or nitric acid and hydrochloric acid (samples) hydrochloric:nitric acid (soil)

Soil Characteristics (pH, CEC, % OM, % Clay, etc.) Presented: NA

Purpose of Study: To investigate trace elements in soil and biota in confined disposal facilities for dredged material

Reference: Carter, A., 1983

Analytes Considered: Cd, Cu, Zn

Species: Soil invertebrates

Geographic Location of Study: Vancouver, British Columbia

Exposure Duration: field

Type of Tissue Analyzed: whole body, food items and fecies

Type of Source Media Analyzed: soil and plants

Analytical Method: AAS and flame spectroscopy

Extraction Method: Nitric Acid

Soil Characteristics (pH, CEC, % OM, % Clay, etc.) Presented: NA

Purpose of Study: Evaluate the importance of soil macrofauna in the distribution and turnover of heavy metals

Reference: Dmowski, K. and M. A. Karolewski, 1979

Analytes Considered: Zn, Cd, Pb

Species: Invertebrates, amphibians and birds

Geographic Location of Study: Poland

Exposure Duration: field

Type of Tissue Analyzed: whole body

Type of Source Media Analyzed: Soils and plants

Analytical Method: Atomic absorption spectrophotometer

Extraction Method: HCL and HNO_3

Soil Characteristics (pH, CEC, % OM, % Clay, etc.) Presented: NA

Purpose of Study: Examine contaminant concentrations in organisms representing different trophic levels to determine the role of chosen organisms in bioaccumulation of the contimanints.

Notes: Invertebrates analyzed in groups due to small mass. For birds, feathers and the liver were analyzed separate from the whole body, but results from each of the three samples were utilized in the calculation of total metals.

Reference: Hemminga et al., 1989

Analytes Considered: Cd, Cu

Species: Aster tropolium (marsh plant), Agapanthia villosoviridescens (larvae)

Geographic Location of Study: Netherlands

Exposure Duration: field

Type of Tissue Analyzed: whole body

Type of Source Media Analyzed: soil, plant (diet)

Analytical Method: Described in Nieuwenhuize et al., 1991

Soil Extraction Method: Described in Nieuwenhuize et al., 1991

Soil Characteristics (pH, CEC, % OM, % Clay, etc.) Presented: NR

Purpose of Study: To determine seasonal changes of cadmium and copper levels in stem boring larvae.

Reference: Hope et al., 1996

Analytes Considered: Ba

Species: Ground dwelling insects, vegetation

Geographic Location of Study: Virginia

Exposure Duration: field

Type of Tissue Analyzed: whole body

Type of Source Media Analyzed: soil

Analytical Method: Done by Savannah River and Babcock and Wilcox Laboratories

Extraction Method: Done by Savannah River and Babcock and Wilcox Laboratories

Soil Characteristics (pH, CEC, % OM, % Clay, etc.) Presented: NR

Purpose of Study: To investigate the uptake and trophic transfer of barium in terrestrial ecosystems.

Reference: Hunter and Johnson, 1982

Analytes Considered: Cd, Cu

Species: small mammals and invertebrates

Geographic Location of Study: England

Exposure Duration: field

Type of Tissue Analyzed: whole body

Type of Source Media Analyzed: soils, litter, vegetation, fruits and seeds

Analytical Method: atomic absorption spectrophotometry

Extraction Method: nitric and perchloric wet extraction

Soil Characteristics (pH, CEC, % OM, % Clay, etc.) Presented: NA

Purpose of Study: Examination of food chain transfer of contaminants in a grassland ecosystem, and assess the relative transport and bioaccumulation potential.

Reference: Knutti et al., 1988

Analytes Considered: Cd

Species: invertebrates, mouse, roe-deer

Geographic Location of Study: Switzerland

Exposure Duration: field

Type of Tissue Analyzed: whole body, liver, kidney

Type of Source Media Analyzed: litter

Analytical Method: AAS

Extraction Method: nitric acid

Soil Characteristics (pH, CEC, % OM, % Clay, etc.) Presented: NR

Purpose of Study: To determine cadmium content in invertebrate fauna of an unpolluted forest in Switzerland

Reference: Paine et al., 1993

Analytes Considered: PCBs

Species: house cricket (*Acheta domesticus*)

Geographic Location of Study: Illinois

Exposure Duration: 14 days

Type of Tissue Analyzed: whole body

Type of Source Media Analyzed: soil

Analytical Method: Hewelett Packard 5890 series II GC fitted with an electron-capture detector, auto injector, and 30-m DB-5 column

Extraction Method: methylene chloride: cyclohexane

Soil Characteristics (pH, CEC, % OM, % Clay, etc.) Presented: pH=5.5, 4% OM

Purpose of Study: To determine the toxicity and bioaccumulation potential of PCBs to crickets

Notes: Concentrations in crickets are reported as wet weights.

Reference: Pascoe et al., 1996
Analytes Considered: As, Cd, Cu, Zn
Species: vegetation, grasshoppers
Geographic Location of Study: Montana
Exposure Duration: field
Type of Tissue Analyzed: whole body
Type of Source Media Analyzed: soil
Analytical Method: ICP and AAS
Extraction Method: reported in Linder et al., 1994
Soil Characteristics (pH, CEC, % OM, % Clay, etc.) Presented: NR
Purpose of Study: To perform a food chain analysis of exposures and risk to wildlife at a metals contaminated wetland.

Reference: Posthuma, 1990
Analytes Considered: Cd, Zn
Species: Collembola (Orchesella cincta)
Geographic Location of Study: Netherlands, Germany, Belgium
Exposure Duration: field
Type of Tissue Analyzed: whole body
Type of Source Media Analyzed: soil, plant
Analytical Method: graphite furnace AAS
Extraction Method: HNO3 and H2O2
Soil Characteristics (pH, CEC, % OM, % Clay, etc.) Presented: NA
Purpose of Study: To determine genetic differentiation b/c populations of Orshesella cincta from heavy metal contaminated sites.

Reference: Price et al., 1974
Analytes Considered: Pb
Species: Arthropods
Geographic Location of Study: Urbana, Illinois, USA
Exposure Duration: field
Type of Tissue Analyzed: whole body
Type of Source Media Analyzed: soil and plants
Analytical Method: Atomic absorption spectrophotometry
Extraction Method: HCL
Soil Characteristics (pH, CEC, % OM, % Clay, etc.) Presented: NA
Purpose of Study: Examination of the potential for storage and movement of contaminates in the insect component of the ecosystem

Reference: PTI Environmental Services, 1994

Analytes Considered: aluminum, antimony, arsenic, barium, beryllium, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, nickel, potassium, selenium, silver sodium, thallium, total mercury, vanadium, zinc

Species: spider, grasshopper, caterpillar, beetle

Geographic Location of Study: Upper Clark Fork River Basin

Exposure Duration: resident

Type of Tissue Analyzed: whole body

Type of Source Media Analyzed: soil

Analytical Method: EPA SOW No. 788 (EPA, 1988)

Extraction Method: HNO3/modified SW-846, Method 3050, using an additional quantity of acid

Soil Characteristics (pH, CEC, % OM, % Clay, etc.) Presented: pH, CEC, % sand, silt, clay, gravel, EC, sulfate, % TOC.

Purpose of Study: To assess ecorisks for the Upper Clark Fork River Basin.

Notes: The invertebrate sample included 10 individuals or 4 grams of tissue.

Reference: PTI Environmental Services, 1995

Analytes Considered: aluminum, antimony, barium, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, nickel, potassium, silver, sodium, vanadium, zinc.

Species: *Smilex bona-nox, Bidens polylepis, Ambrosia trifida, Ambrosia artemisiifolia, Sorghastrum nutans, Panicum virgatum, Ambrosia psilostachya, Amaranthus palmeri*

Geographic Location of Study: Bartlesville, Oklahoma

Exposure Duration: resident

Type of Tissue Analyzed: aboveground parts

Type of Source Media Analyzed: soil

Analytical Method: Done by CAS Analytical Laboratories

Extraction Method: Done by CAS Analytical Laboratories

Soil Characteristics (pH, CEC, % OM, % Clay, etc.) Presented: pH, MEC, and P

Purpose of Study: To assess the ecological risks in Bartlesville, Oklahoma

Notes: CEC is given as MEC. SONV was assumed to be *Sourghastrum nutans.*

Reference: Rabitsch, 1995a

Analytes Considered: Cd, Pb, Cu, Zn

Species: Invertebrates

Geographic Location of Study: Austria

Exposure Duration: field

Type of Tissue Analyzed: whole body

Type of Source Media Analyzed: soil and plants

Analytical Method: AAS

Extraction Method: nitric acid
Soil Characteristics (pH, CEC, % OM, % Clay, etc.) Presented: pH
Purpose of Study: To provide information on the standard level of contaminants in invertebrates living in close proximity to an emissions source with a long history of pollution.

Reference: Rabitsch, 1995b
Analytes Considered: Cd, Pb, Cu, Zn
Species: Dolichorderinae spp., Myrmicinae spp., Formicinae spp.
Geographic Location of Study: Austria
Exposure Duration: field
Type of Tissue Analyzed: whole body
Type of Source Media Analyzed: soil
Analytical Method: Varian Spectr AA 30 with a GTA 96 autosampler
Extraction Method: nitric acid
Soil Characteristics (pH, CEC, % OM, % Clay, etc.) Presented: NR
Purpose of Study: To determine metal accumulation in arthropods

Reference: Rabitsch, 1995c
Analytes Considered: Pb, Zn, Cu, Cd
Species: Arachnidae
Geographic Location of Study: Austria
Exposure Duration: field
Type of Tissue Analyzed: whole body
Type of Source Media Analyzed: soil
Analytical Method: Varian Spector AA30 with GTA 96 autosampler
Extraction Method: nitric acid
Soil Characteristics (pH, CEC, % OM, % Clay, etc.) Presented: NA
Purpose of Study: To determine metal accumulation in arthropods exposed to heavy metals
Notes: soil concentrations were extracted from Rabitsch, 1995b.

Reference: USFWS, 2000
Analytes Considered: Al, As, B, Ba, Be, Cd, Cr, Cu, Fe, Hg, Mg, Mn, Mo, Ni, Pb, Se, Sr, V, Zn
Species: Grasshoppers, vegetation, birds
Geographic Location of Study: Wyoming
Exposure Duration: field
Type of Tissue Analyzed: liver, eggs, whole body
Type of Source Media Analyzed: soil, water
Analytical Method: AAS for As, Hg, Se, ICPES for others
Extraction Method: nitric and perchloric acids (all except Hg) nitric acid for Hg
Soil Characteristics (pH, CEC, % OM, % Clay, etc.) Presented: NR

Purpose of Study: To investigate selenium in a Wyoming Grassland community receiving an In Situ Uranium Mine

Reference: Van Hook and Yates, 1975
Analytes Considered: Cd
Species: crickets (*P. Fasciatus*) and wolf spiders (Lycosa spp.)
Geographic Location of Study: Tennessee
Exposure Duration: field
Type of Tissue Analyzed: whole body
Type of Source Media Analyzed: soil
Analytical Method: Nuclear data gamma spectometer system
Extraction Method: NA
Soil Characteristics (pH, CEC, % OM, % Clay, etc.) Presented: NR
Purpose of Study: To investigate the behavior of cadmium in a grassland arthropod food chain.
Notes: Study used cadmium 109.

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Appendix C

Literature Arthropod Bioaccumulation Data for Hanford

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Literature Arthropod Bioacumulation Data for Hanford															
Analyte	Site Location	Sample Location	Trophic Level	Class	Order	Family	Species	Diettype	Diet	Plant	Water	Soil Concentration (mg/kg)	Arthropod Cencentration (mg/kg)	*Laboratory Qualification	**Literature Reference
Pb	Britain	control		Insecta	Diptera		diptera					120	28		Andrews_et_al_1989a
Pb	Britain	tailings_dam		Insecta	Diptera		diptera					3,960	549		Andrews_et_al_1989a
Pb	Britain	control	predator	Arachnida	Araneae		spiders					120	22		Andrews_et_al_1989a
Pb	Britain	tailings_dam	predator	Arachnida	Araneae		spiders					3,960	462		Andrews_et_al_1989a
Pb	Britain	control	predator	Insecta	Coleoptera	Carabidae	carabidae					120	5.7		Andrews_et_al_1989a
Pb	Britain	tailings_dam	predator	Insecta	Coleoptera	Carabidae	carabidae					3,960	106		Andrews_et_al_1989a
Zn	Britain	control		Insecta	Diptera		diptera					62	198		Andrews_et_al_1989b
Zn	Britain	tailings_dam		Insecta	Diptera		diptera					1,925	852		Andrews_et_al_1989b
Zn	Britain	control	predator	Arachnida	Araneae		spiders					62	529		Andrews_et_al_1989b
Zn	Britain	tailings_dam	predator	Arachnida	Araneae		spiders					1,925	657		Andrews_et_al_1989b
Zn	Britain	control	predator	Insecta	Coleoptera	Carabidae	carabidae					62	120		Andrews_et_al_1989b
Zn	Britain	tailings_dam	predator	Insecta	Coleoptera	Carabidae	carabidae					1,925	340		Andrews_et_al_1989b
F	Britain	control		Insecta	Diptera		diptera					131	31		Andrews_et_al_1989c
F	Britain	tailings_dam		Insecta	Diptera		diptera					99	1.1		Andrews_et_al_1989c
Cd	Pennsylvania	Bake_Oven_Knob	herbivore	Insecta	Lepidoptera	Arctiidae	Halisidota_and_spilosoma			2.3		2.7	4.6		Beyer_et_al_1985
Cd	Pennsylvania	Palmerton	herbivore	Insecta	Lepidoptera	Arctiidae	lep._H._tessellaris			8.1		35	11		Beyer_et_al_1985
Cu	Pennsylvania	Bake_Oven_Knob	herbivore	Insecta	Lepidoptera	Arctiidae	Halisidota_and_spilosoma			7.1		18	6.2		Beyer_et_al_1985
Cu	Pennsylvania	Palmerton	herbivore	Insecta	Lepidoptera	Arctiidae	lep._H._tessellaris			8.8		9.9	9.3		Beyer_et_al_1985
Pb	Pennsylvania	Bake_Oven_Knob	herbivore	Insecta	Lepidoptera	Arctiidae	Halisidota_and_spilosoma			9.9		150	2.0		Beyer_et_al_1985
Pb	Pennsylvania	Palmerton	herbivore	Insecta	Lepidoptera	Arctiidae	lep._H._tessellaris			31		41	6.8		Beyer_et_al_1985
Zn	Pennsylvania	Bake_Oven_Knob	herbivore	Insecta	Lepidoptera	Arctiidae	Halisidota_and_spilosoma			148		230	340		Beyer_et_al_1985
Zn	Pennsylvania	Palmerton	herbivore	Insecta	Lepidoptera	Arctiidae	lep._H._tessellaris			660		2,900	500		Beyer_et_al_1985
Cd	Pennsylvania	Bake_Oven_Knob	herbivore	Insecta	Lepidoptera	asiocampida	lep._M._americanum			2.3		2.7	0.70		Beyer_et_al_1985
Cu	Pennsylvania	Bake_Oven_Knob	herbivore	Insecta	Lepidoptera	asiocampida	lep._M._americanum			7.1		18	12		Beyer_et_al_1985
Pb	Pennsylvania	Bake_Oven_Knob	herbivore	Insecta	Lepidoptera	asiocampida	lep._M._americanum			9.9		150	1.3		Beyer_et_al_1985
Zn	Pennsylvania	Bake_Oven_Knob	herbivore	Insecta	Lepidoptera	asiocampida	lep._M._americanum			148		230	150		Beyer_et_al_1985
Cd	Pennsylvania	Bake_Oven_Knob	herbivore	Insecta	Lepidoptera	Lymantriidae	lep.P._dispar			2.3		2.7	0.77		Beyer_et_al_1985
Cd	Pennsylvania	Palmerton	herbivore	Insecta	Lepidoptera	Lymantriidae	lep._P._dispar			8.1		35	3.3		Beyer_et_al_1985
Cu	Pennsylvania	Bake_Oven_Knob	herbivore	Insecta	Lepidoptera	Lymantriidae	lep._P._dispar			7.1		18	13		Beyer_et_al_1985
Cu	Pennsylvania	Palmerton	herbivore	Insecta	Lepidoptera	Lymantriidae	lep._P._dispar			8.8		9.9	13		Beyer_et_al_1985
Pb	Pennsylvania	Bake_Oven_Knob	herbivore	Insecta	Lepidoptera	Lymantriidae	lep._P._dispar			9.9		150	3.4		Beyer_et_al_1985
Pb	Pennsylvania	Palmerton	herbivore	Insecta	Lepidoptera	Lymantriidae	lep._P._dispar			31		41	8.7		Beyer_et_al_1985
Zn	Pennsylvania	Bake_Oven_Knob	herbivore	Insecta	Lepidoptera	Lymantriidae	lep._P._dispar			148		230	170		Beyer_et_al_1985
Zn	Pennsylvania	Palmerton	herbivore	Insecta	Lepidoptera	Lymantriidae	lep._P._dispar			660		2,900	280		Beyer_et_al_1985
Cd	Pennsylvania	Bake_Oven_Knob	herbivore	Insecta	Lepidoptera	Noctuidae	lep._C._paleogama			2.3		2.7	0.38		Beyer_et_al_1985
Cd	Pennsylvania	Bake_Oven_Knob	herbivore	Insecta	Lepidoptera	Noctuidae	lep._L._unipuncta			2.3		2.7	0.38		Beyer_et_al_1985
Cd	Pennsylvania	Bake_Oven_Knob	herbivore	Insecta	Lepidoptera	Noctuidae	lep._A._pyramidoides			2.3		2.7	0.64		Beyer_et_al_1985
Cd	Pennsylvania	Bake_Oven_Knob	herbivore	Insecta	Lepidoptera	Noctuidae	lep._N._c-nigrum			2.3		2.7	1.7		Beyer_et_al_1985
Cd	Pennsylvania	Palmerton	herbivore	Insecta	Lepidoptera	Noctuidae	lep._C._paleogama			8.1		35	0.72		Beyer_et_al_1985
Cd	Pennsylvania	Palmerton	herbivore	Insecta	Lepidoptera	Noctuidae	lep._L._unipuncta			8.1		35	1.2		Beyer_et_al_1985
Cd	Pennsylvania	Palmerton	herbivore	Insecta	Lepidoptera	Noctuidae	lep._N._c-nigrum			8.1		35	4.7		Beyer_et_al_1985
Cd	Pennsylvania	Palmerton	herbivore	Insecta	Lepidoptera	Noctuidae	lep._A._pyramidoides			8.1		35	5.2		Beyer_et_al_1985
Cd	Pennsylvania	Palmerton	herbivore	Insecta	Lepidoptera	Noctuidae	lep._P._excaecatus			8.1		35	8.3		Beyer_et_al_1985
Cu	Pennsylvania	Bake_Oven_Knob	herbivore	Insecta	Lepidoptera	Noctuidae	lep._L._unipuncta			7.1		18	3.8		Beyer_et_al_1985
Cu	Pennsylvania	Bake_Oven_Knob	herbivore	Insecta	Lepidoptera	Noctuidae	lep._A._pyramidoides			7.1		18	5.5		Beyer_et_al_1985
Cu	Pennsylvania	Bake_Oven_Knob	herbivore	Insecta	Lepidoptera	Noctuidae	lep._N._c-nigrum			7.1		18	6.1		Beyer_et_al_1985
Cu	Pennsylvania	Bake_Oven_Knob	herbivore	Insecta	Lepidoptera	Noctuidae	lep._C._paleogama			7.1		18	13		Beyer_et_al_1985
Cu	Pennsylvania	Palmerton	herbivore	Insecta	Lepidoptera	Noctuidae	lep._L._unipuncta			8.8		9.9	7.2		Beyer_et_al_1985
Cu	Pennsylvania	Palmerton	herbivore	Insecta	Lepidoptera	Noctuidae	lep._A._pyramidoides			8.8		9.9	9.5		Beyer_et_al_1985
Cu	Pennsylvania	Palmerton	herbivore	Insecta	Lepidoptera	Noctuidae	lep._P._excaecatus			8.8		9.9	9.9		Beyer_et_al_1985
Cu	Pennsylvania	Palmerton	herbivore	Insecta	Lepidoptera	Noctuidae	lep._C._paleogama			8.8		9.9	15		Beyer_et_al_1985
Cu	Pennsylvania	Palmerton	herbivore	Insecta	Lepidoptera	Noctuidae	lep._N._c-nigrum			8.8		9.9	15		Beyer_et_al_1985
Pb	Pennsylvania	Bake_Oven_Knob	herbivore	Insecta	Lepidoptera	Noctuidae	lep._L._unipuncta			9.9		150	1.0		Beyer_et_al_1985
Pb	Pennsylvania	Bake_Oven_Knob	herbivore	Insecta	Lepidoptera	Noctuidae	lep._C._paleogama			9.9		150	1.5		Beyer_et_al_1985
Pb	Pennsylvania	Bake_Oven_Knob	herbivore	Insecta	Lepidoptera	Noctuidae	lep._A._pyramidoides			9.9		150	1.7		Beyer_et_al_1985
Pb	Pennsylvania	Bake_Oven_Knob	herbivore	Insecta	Lepidoptera	Noctuidae	lep._N._c-nigrum			9.9		150	1.9		Beyer_et_al_1985
Pb	Pennsylvania	Palmerton	herbivore	Insecta	Lepidoptera	Noctuidae	lep._L._unipuncta			31		41	1.9		Beyer_et_al_1985
Pb	Pennsylvania	Palmerton	herbivore	Insecta	Lepidoptera	Noctuidae	lep._C._paleogama			31		41	2.1		Beyer_et_al_1985
Pb	Pennsylvania	Palmerton	herbivore	Insecta	Lepidoptera	Noctuidae	lep._N._c-nigrum			31		41	2.7		Beyer_et_al_1985
Pb	Pennsylvania	Palmerton	herbivore	Insecta	Lepidoptera	Noctuidae	lep._P._excaecatus			31		41	3.3		Beyer_et_al_1985
Pb	Pennsylvania	Palmerton	herbivore	Insecta	Lepidoptera	Noctuidae	lep._A._pyramidoides			21		41	4.8		Beyer_et_al_1985
Zn	Pennsylvania	Bake_Oven_Knob	herbivore	Insecta	Lepidoptera	Noctuidae	lep._A._pyramidoides			148		230	140		Beyer_et_al_1985

Literature Arthropod Bioacumulation Data for Hanford															
Analyte	Site Location	Sample Location	Trophic Level	Class	Order	Family	Species	Diettype	Diet	Plant	Water	Soil Concentration (mg/kg)	Arthropod Cencentration (mg/kg)	*Laboratory Qualification	**Literature Reference
Zn	Pennsylvania	Bake_Oven_Knob	herbivore	Insecta	Lepidoptera	Noctuidae	lep._C._paleogama			148		230	160		Beyer_et_al_1985
Zn	Pennsylvania	Bake_Oven_Knob	herbivore	Insecta	Lepidoptera	Noctuidae	lep._L._unipuncta			148		230	190		Beyer_et_al_1985
Zn	Pennsylvania	Bake_Oven_Knob	herbivore	Insecta	Lepidoptera	Noctuidae	lep._N._c-nigrum			148		230	300		Beyer_et_al_1985
Zn	Pennsylvania	Palmerton	herbivore	Insecta	Lepidoptera	Noctuidae	lep._C._paleogama			660		2,900	250		Beyer_et_al_1985
Zn	Pennsylvania	Palmerton	herbivore	Insecta	Lepidoptera	Noctuidae	lep._L._unipuncta			660		2,900	320		Beyer_et_al_1985
Zn	Pennsylvania	Palmerton	herbivore	Insecta	Lepidoptera	Noctuidae	lep._P._excaecatus			660		2,900	380		Beyer_et_al_1985
Zn	Pennsylvania	Palmerton	herbivore	Insecta	Lepidoptera	Noctuidae	lep._N._c-nigrum			660		2,900	480		Beyer_et_al_1985
Zn	Pennsylvania	Palmerton	herbivore	Insecta	Lepidoptera	Noctuidae	lep._A._pyramidoides			660		2,900	540		Beyer_et_al_1985
Cd	Pennsylvania	Bake_Oven_Knob	herbivore	Insecta	Coleoptera	Scolytidae	bark_beetle_larvae					2.7	1.5		Beyer_et_al_1985
Cd	Pennsylvania	Palmerton	herbivore	Insecta	Coleoptera	Scolytidae	bark_beetle_larvae					35	6.2		Beyer_et_al_1985
Cu	Pennsylvania	Bake_Oven_Knob	herbivore	Insecta	Coleoptera	Scolytidae	bark_beetle_larvae					18	28		Beyer_et_al_1985
Cu	Pennsylvania	Palmerton	herbivore	Insecta	Coleoptera	Scolytidae	bark_beetle_larvae					9.9	22		Beyer_et_al_1985
Pb	Pennsylvania	Bake_Oven_Knob	herbivore	Insecta	Coleoptera	Scolytidae	bark_beetle_larvae					150	0.10		Beyer_et_al_1985
Pb	Pennsylvania	Palmerton	herbivore	Insecta	Coleoptera	Scolytidae	bark_beetle_larvae					41	0.10		Beyer_et_al_1985
Zn	Pennsylvania	Bake_Oven_Knob	herbivore	Insecta	Coleoptera	Scolytidae	bark_beetle_larvae					230	470		Beyer_et_al_1985
Zn	Pennsylvania	Palmerton	herbivore	Insecta	Coleoptera	Scolytidae	bark_beetle_larvae					2,900	1,450		Beyer_et_al_1985
Cd	Pennsylvania	Palmerton	predator	Insecta	Diptera	Calliphoridae	dip._Calliphoridae					35	29		Beyer_et_al_1985
Cu	Pennsylvania	Palmerton	predator	Insecta	Diptera	Calliphoridae	dip._Calliphoridae					9.9	18		Beyer_et_al_1985
Pb	Pennsylvania	Palmerton	predator	Insecta	Diptera	Calliphoridae	dip._Calliphoridae					41	15		Beyer_et_al_1985
Zn	Pennsylvania	Palmerton	predator	Insecta	Diptera	Calliphoridae	dip._Calliphoridae					2,900	740		Beyer_et_al_1985
Cd	Pennsylvania	Palmerton	predator	Insecta	Diptera	arcophagida	dip._Sarcophagidae					35	44		Beyer_et_al_1985
Cu	Pennsylvania	Palmerton	predator	Insecta	Diptera	arcophagida	dip._Sarcophagidae					9.9	18		Beyer_et_al_1985
Pb	Pennsylvania	Palmerton	predator	Insecta	Diptera	arcophagida	dip._Sarcophagidae					41	24		Beyer_et_al_1985
Zn	Pennsylvania	Palmerton	predator	Insecta	Diptera	arcophagida	dip._Sarcophagidae					2,900	460		Beyer_et_al_1985
Cd	Pennsylvania	Bake_Oven_Knob	predator	Insecta	Coleoptera	Sylphidae	carrion_beetles					2.7	0.85		Beyer_et_al_1985
Cd	Pennsylvania	Palmerton	predator	Insecta	Coleoptera	Sylphidae	carrion_beetles					35	1.3		Beyer_et_al_1985
Cu	Pennsylvania	Bake_Oven_Knob	predator	Insecta	Coleoptera	Sylphidae	carrion_beetles					18	12		Beyer_et_al_1985
Cu	Pennsylvania	Palmerton	predator	Insecta	Coleoptera	Sylphidae	carrion_beetles					9.9	13		Beyer_et_al_1985
Pb	Pennsylvania	Bake_Oven_Knob	predator	Insecta	Coleoptera	Sylphidae	carrion_beetles					150	1.6		Beyer_et_al_1985
Pb	Pennsylvania	Palmerton	predator	Insecta	Coleoptera	Sylphidae	carrion_beetles					41	2.5		Beyer_et_al_1985
Zn	Pennsylvania	Bake_Oven_Knob	predator	Insecta	Coleoptera	Sylphidae	carrion_beetles					230	120		Beyer_et_al_1985
Zn	Pennsylvania	Palmerton	predator	Insecta	Coleoptera	Sylphidae	carrion_beetles					2,900	150		Beyer_et_al_1985
Cd	Pennsylvania	Bake_Oven_Knob	predator	Insecta	Hymenoptera	Vespidae	hornets					2.7	2.3		Beyer_et_al_1985
Cu	Pennsylvania	Bake_Oven_Knob	predator	Insecta	Hymenoptera	Vespidae	hornets					18	38		Beyer_et_al_1985
Pb	Pennsylvania	Bake_Oven_Knob	predator	Insecta	Hymenoptera	Vespidae	hornets					150	2.1		Beyer_et_al_1985
Zn	Pennsylvania	Bake_Oven_Knob	predator	Insecta	Hymenoptera	Vespidae	hornets					230	180		Beyer_et_al_1985
Cr	Delaware	2	predator	Insecta	Coleoptera	Coccinelidae	C_septempunctata					20	12		Beyer_et_al_1990
Cr	Maryland	1	predator	Insecta	Coleoptera	Coccinelidae	C_septempunctata					33	3.7		Beyer_et_al_1990
Cr	Maryland	3	predator	Insecta	Coleoptera	Coccinelidae	C_septempunctata					26	2.2		Beyer_et_al_1990
Cr	Maryland	5	predator	Insecta	Coleoptera	Coccinelidae	C_septempunctata					300	3.0		Beyer_et_al_1990
Cu	Delaware	2	predator	Insecta	Coleoptera	Coccinelidae	C_septempunctata					15	14		Beyer_et_al_1990
Cu	Maryland	1	predator	Insecta	Coleoptera	Coccinelidae	C_septempunctata					24	14		Beyer_et_al_1990
Cu	Maryland	3	predator	Insecta	Coleoptera	Coccinelidae	C_septempunctata					71	17		Beyer_et_al_1990
Cu	Maryland	5	predator	Insecta	Coleoptera	Coccinelidae	C_septempunctata					150	17		Beyer_et_al_1990
Pb	Delaware	2	predator	Insecta	Coleoptera	Coccinelidae	C_septempunctata					22	0.86		Beyer_et_al_1990
Ni	Delaware	2	predator	Insecta	Coleoptera	Coccinelidae	C_septempunctata					17	8.7		Beyer_et_al_1990
Ni	Maryland	1	predator	Insecta	Coleoptera	Coccinelidae	C_septempunctata					13	2.7		Beyer_et_al_1990
Ni	Maryland	3	predator	Insecta	Coleoptera	Coccinelidae	C_septempunctata					12	1.4		Beyer_et_al_1990
Ni	Maryland	5	predator	Insecta	Coleoptera	Coccinelidae	C_septempunctata					28	2.8		Beyer_et_al_1990
Se	Maryland	5	predator	Insecta	Coleoptera	Coccinelidae	C_septempunctata					4.8	0.088		Beyer_et_al_1990
Zn	Delaware	2	predator	Insecta	Coleoptera	Coccinelidae	C_septempunctata					120	160		Beyer_et_al_1990
Zn	Maryland	1	predator	Insecta	Coleoptera	Coccinelidae	C_septempunctata					74	112		Beyer_et_al_1990
Zn	Maryland	3	predator	Insecta	Coleoptera	Coccinelidae	C_septempunctata					83	104		Beyer_et_al_1990
Zn	Maryland	5	predator	Insecta	Coleoptera	Coccinelidae	C_septempunctata					200	140		Beyer_et_al_1990
Cd	BritColumbia	red_clover_drained_field	predator	Insecta	Coleoptera	Carabidae	carabidae_ad					0.40	0.30		Carter_1983
Cu	BritColumbia	red_clover_drained_field	predator	Insecta	Coleoptera	Carabidae	carabidae_ad					26	13		Carter_1983
Zn	BritColumbia	red_clover_drained_field	predator	Insecta	Coleoptera	Carabidae	carabidae_ad					83	116		Carter_1983
Cd	BritColumbia	red_clover_drained_field	predator	Insecta	Coleoptera	Staphylinidae	staphylinid_ad					0.40	0.60		Carter_1983
Cu	BritColumbia	red_clover_drained_field	predator	Insecta	Coleoptera	Staphylinidae	staphylinid_ad					26	32		Carter_1983
Zn	BritColumbia	red_clover_drained_field	predator	Insecta	Coleoptera	Staphylinidae	staphylinid_ad					83	278		Carter_1983
Cd	Poland	Kuzie	herbivore	Insecta			herbivore_arthropods					0.10	0.80		Dmowski_and_Karolewski_19
Cd	Poland	pine_forest_	herbivore	Insecta			herbivore_arthropods					7.8	11		Dmowski_and_Karolewski_19

Literature Arthropod Bioacumulation Data for Hanford															
Analyte	Site Location	Sample Location	Trophic Level	Class	Order	Family	Species	Diettype	Diet	Plant	Water	Soil Concentration (mg/kg)	Arthropod Cencentration (mg/kg)	*Laboratory Qualification	**Literature Reference
Cd	Poland	protection_zone	herbivore	Insecta			herbivore_arthropods					4.1	10		Dmowski_and_Karolewski_19
Pb	Poland	Kuzie	herbivore	Insecta			herbivore_arthropods					3.0	1.4		Dmowski_and_Karolewski_19
Pb	Poland	pine_forest_	herbivore	Insecta			herbivore_arthropods					1,378	498		Dmowski_and_Karolewski_19
Pb	Poland	protection_zone	herbivore	Insecta			herbivore_arthropods					870	109		Dmowski_and_Karolewski_19
Zn	Poland	pine_forest_	herbivore	Insecta			herbivore_arthropods					636	728		Dmowski_and_Karolewski_19
Zn	Poland	protection_zone	herbivore	Insecta			herbivore_arthropods					81	662		Dmowski_and_Karolewski_19
Cd	Poland	Kuzie	omnivore	Insecta			omnivore_arthropods					0.10	1.1		Dmowski_and_Karolewski_19
Cd	Poland	pine_forest_	omnivore	Insecta			omnivore_arthropods					7.8	24		Dmowski_and_Karolewski_19
Cd	Poland	protection_zone	omnivore	Insecta			omnivore_arthropods					4.1	15		Dmowski_and_Karolewski_19
Pb	Poland	Kuzie	omnivore	Insecta			omnivore_arthropods					3.0	2.3		Dmowski_and_Karolewski_19
Pb	Poland	pine_forest_	omnivore	Insecta			omnivore_arthropods					1,378	487		Dmowski_and_Karolewski_19
Pb	Poland	protection_zone	omnivore	Insecta			omnivore_arthropods					870	363		Dmowski_and_Karolewski_19
Zn	Poland	pine_forest_	omnivore	Insecta			omnivore_arthropods					636	526		Dmowski_and_Karolewski_19
Zn	Poland	protection_zone	omnivore	Insecta			omnivore_arthropods					81	497		Dmowski_and_Karolewski_19
Cd	Poland	Kuzie	predator	Insecta			predatory_arthropds					0.10	2.4		Dmowski_and_Karolewski_19
Cd	Poland	pine_forest_	predator	Insecta			predatory_arthropds					7.8	34		Dmowski_and_Karolewski_19
Cd	Poland	protection_zone	predator	Insecta			predatory_arthropds					4.1	12		Dmowski_and_Karolewski_19
Pb	Poland	Kuzie	predator	Insecta			predatory_arthropds					3.0	0		Dmowski_and_Karolewski_19
Pb	Poland	pine_forest_	predator	Insecta			predatory_arthropds					1,378	435		Dmowski_and_Karolewski_19
Pb	Poland	protection_zone	predator	Insecta			predatory_arthropds					870	346		Dmowski_and_Karolewski_19
Zn	Poland	pine_forest_	predator	Insecta			predatory_arthropds					636	1,538		Dmowski_and_Karolewski_19
Zn	Poland	protection_zone	predator	Insecta			predatory_arthropds					81	790		Dmowski_and_Karolewski_19
Cd	Netherlands	Bath	herbivore	Insecta	Coleoptera	Cerambycidae	A_villosoviridescens	ster_tripoiun	4.24			3.1	12		Hemminga_et_al_1989
Cd	Netherlands	Ellewoutsdijk	herbivore	Insecta	Coleoptera	Cerambycidae	A_villosoviridescens	ster_tripoiun	1.2			0.69	26		Hemminga_et_al_1989
Cd	Netherlands	Waarde	herbivore	Insecta	Coleoptera	Cerambycidae	A_villosoviridescens	ster_tripoiun	5.4			1.6	32		Hemminga_et_al_1989
Cu	Netherlands	Bath	herbivore	Insecta	Coleoptera	Cerambycidae	A_villosoviridescens	ster_tripoiun	11.7			35	55		Hemminga_et_al_1989
Cu	Netherlands	Ellewoutsdijk	herbivore	Insecta	Coleoptera	Cerambycidae	A_villosoviridescens	ster_tripoiun	8.1			21	48		Hemminga_et_al_1989
Cu	Netherlands	Waarde	herbivore	Insecta	Coleoptera	Cerambycidae	A_villosoviridescens	ster_tripoiun	3.7			28	51		Hemminga_et_al_1989
Ba	Virginia			Insecta			beetles_and_termite_larva					104	16		Hope_et_al_1996
Cd	Britain	control	herbivore	Insecta	Coleoptera		herbivore_arthropods					0.75	1.2		Hunter_and_Johnson_1982
Cd	Britain	intermediate	herbivore	Insecta	Coleoptera		herbivore_arthropods					3.1	4.5		Hunter_and_Johnson_1982
Cd	Britain	refinery	herbivore	Insecta	Coleoptera		herbivore_arthropods					8.5	11		Hunter_and_Johnson_1982
Cu	Britain	control	herbivore	Insecta	Coleoptera		herbivore_arthropods					9.3	17		Hunter_and_Johnson_1982
Cu	Britain	intermediate	herbivore	Insecta	Coleoptera		herbivore_arthropods					246	78		Hunter_and_Johnson_1982
Cu	Britain	refinery	herbivore	Insecta	Coleoptera		herbivore_arthropods					2,480	310		Hunter_and_Johnson_1982
Cd	Britain	control	predator	Insecta	Coleoptera		carnivore_arthropods					0.75	2.0		Hunter_and_Johnson_1982
Cd	Britain	intermediate	predator	Insecta	Coleoptera		carnivore_arthropods					3.1	6.9		Hunter_and_Johnson_1982
Cd	Britain	refinery	predator	Insecta	Coleoptera		carnivore_arthropods					8.5	11		Hunter_and_Johnson_1982
Cu	Britain	control	predator	Insecta	Coleoptera		carnivore_arthropods					9.3	23		Hunter_and_Johnson_1982
Cu	Britain	intermediate	predator	Insecta	Coleoptera		carnivore_arthropods					246	86		Hunter_and_Johnson_1982
Cu	Britain	refinery	predator	Insecta	Coleoptera		carnivore_arthropods					2,480	568		Hunter_and_Johnson_1982
Cd	Switzerland	low	detritivore	Insecta	Coleoptera		Geotrupes_stercorarious			0.66		0.10	0.079		Knutti_et_al_1988
Cd	Switzerland	low	herbivore	Insecta	Coleoptera		Rhagium_sycophanta_(larvae)			0.66		0.10	1.5		Knutti_et_al_1988
Cd	Switzerland	low	herbivore	Insecta	Coleoptera		Phyllobius_arborator			0.66		0.10	0.096		Knutti_et_al_1988
Cd	Switzerland	low	herbivore	Insecta	Coleoptera		Rhagium_sycophanta_(pupae)			0.66		0.10	0.073		Knutti_et_al_1988
Cd	Switzerland	low	herbivore	Insecta	Coleoptera		Strangalia_maculata			0.66		0.10	0.32		Knutti_et_al_1988
Cd	Switzerland	low	herbivore	Insecta	Coleoptera		Psylliodes_chrysocephala			0.66		0.10	0.37		Knutti_et_al_1988
Cd	Switzerland	low	herbivore	Insecta	Coleoptera		Phyllobius_sinuatus			0.66		0.10	0.091		Knutti_et_al_1988
Cd	Switzerland	low	herbivore	Insecta	Coleoptera		Pterostichus_oblongopuntatus			0.66		0.10	0.092		Knutti_et_al_1988
Cd	Switzerland	low	herbivore	Insecta	Hemiptera		Acanthosoma_haemorrhoidale			0.66		0.10	0.18		Knutti_et_al_1988
Cd	Switzerland	low	herbivore	Insecta	Lepidoptera		Scotia_exlamationis			0.66		0.10	0.11		Knutti_et_al_1988
Cd	Switzerland	low	herbivore	Insecta	Lepidoptera		Eilema_lurideiola_			0.66		0.10	0.27		Knutti_et_al_1988
Cd	Switzerland	low	herbivore	Insecta	Lepidoptera		Eilema_deplana			0.66		0.10	0.18		Knutti_et_al_1988
Cd	Switzerland	low	herbivore	Insecta	Homoptera	Aphididae	Aphididae			0.66		0.10	0.012		Knutti_et_al_1988
Cd	Switzerland	low	herbivore	Insecta	Lepidoptera	Limacodidae	Apoda_limacodes			0.66		0.10	0.10		Knutti_et_al_1988
Cd	Switzerland	low	herbivore	Insecta	Hemiptera	Pentatomidae	Pentatoma_rufipes			0.66		0.10	0.31		Knutti_et_al_1988
Cd	Switzerland	low	herbivore	Insecta	Coleoptera		Lagrea_hirta			0.66		0.10	0.26		Knutti_et_al_1988
Cd	Switzerland	low	predator	Insecta	Coleoptera		Amphimallon_solstitiale			0.66		0.10	0.0050		Knutti_et_al_1988
Cd	Switzerland	low	predator	Insecta	Coleoptera	Carabidae	Abax_parallelepipedus			0.66		0.10	0.29		Knutti_et_al_1988
Cd	Switzerland	low	predator	Insecta	Coleoptera	carabidae	Molops_piceus			0.66		0.10	0.29		Knutti_et_al_1988
Cd	Switzerland	low	predator	Insecta	Coleoptera	Carabidae	Carabus_coriaceus			0.66		0.10	0.42		Knutti_et_al_1988
Cd	Switzerland	low	predator	Insecta	Neuroptera	Chrysopidae	Chrysopidae			0.66		0.10	0.17		Knutti_et_al_1988

Literature Arthropod Bioacumulation Data for Hanford															
Analyte	Site Location	Sample Location	Trophic Level	Class	Order	Family	Species	Diettype	Diet	Plant	Water	Soil Concentration (mg/kg)	Arthropod Cencentration (mg/kg)	*Laboratory Qualification	**Literature Reference
Cd	Switzerland	low	predator	Insecta	Coleoptera	Coccinellidae	Calvia_decemguttata			0.66		0.10	0.021		Knutti_et_al_1988
Cd	Switzerland	low	predator	Insecta	Hymenoptera	Formicidae	Formica_fusca			0.66		0.10	1.9		Knutti_et_al_1988
Cd	Switzerland	low	predator	Insecta	Hymenoptera	formicidae	Myrmicinae			0.66		0.10	0.19		Knutti_et_al_1988
Cd	Switzerland	low	predator	Insecta	Hymenoptera	formicidae	Araschnia_levana_(larvae)			0.66		0.10	0.018		Knutti_et_al_1988
Cd	Switzerland	low	predator	Insecta	Hymenoptera	Formicidae	Formica_sanguinea			0.66		0.10	1.9		Knutti_et_al_1988
Cd	Switzerland	low	predator	Insecta	Hymenoptera	Formicidae	Formica_rufa			0.66		0.10	1.1		Knutti_et_al_1988
Cd	Switzerland	low	predator	Insecta	Coleoptera	silphidae	Necrophorus_vespilloides			0.66		0.10	0.079		Knutti_et_al_1988
Cd	Switzerland	low	predator	Insecta	Diptera	Syrphidae	Syrphidae			0.66		0.10	0.24		Knutti_et_al_1988
PCB	Illinois	100	herbivore	Insecta	Orthoptera	Gryllidae	Acheta_domesticus					100	11		Paine_et_al_1993
PCB	Illinois	250	herbivore	Insecta	Orthoptera	Gryllidae	Acheta_domesticus					250	48		Paine_et_al_1993
PCB	Illinois	500	herbivore	Insecta	Orthoptera	Gryllidae	Acheta_domesticus					500	92		Paine_et_al_1993
PCB	Illinois	1000	herbivore	Insecta	Orthoptera	Gryllidae	Acheta_domesticus					1,000	149		Paine_et_al_1993
PCB	Illinois	2000	herbivore	Insecta	Orthoptera	Gryllidae	Acheta_domesticus					2,000	144		Paine_et_al_1993
As	Montana	milltown	herbivore	Insecta	Orthoptera	Acrididae	grasshoppers					67	3.9		Pascoe_et_al_1996
Cd	Montana	milltown	herbivore	Insecta	Orthoptera	Acrididae	grasshoppers					7.3	1.5		Pascoe_et_al_1996
Cd	Montana	milltown_(reference)	herbivore	Insecta	Orthoptera	Acrididae	grasshoppers					1.9	0.15		Pascoe_et_al_1996
Cu	Montana	milltown	herbivore	Insecta	Orthoptera	Acrididae	grasshoppers					585	61		Pascoe_et_al_1996
Zn	Montana	milltown	herbivore	Insecta	Orthoptera	Acrididae	grasshoppers					1,950	271		Pascoe_et_al_1996
Zn	Montana	milltown_(reference)	herbivore	Insecta	Orthoptera	Acrididae	grasshoppers					49	80		Pascoe_et_al_1996
Cd	Belgium	Pl	detritivore	Insecta	Collembola		Orchesella_cincta			2.9		28	0.58		Posthuma_1990
Cd	Germany	Br_	detritivore	Insecta	Collembola		Orchesella_cincta			1.2		3.4	0.66		Posthuma_1990
Cd	Germany	St	detritivore	Insecta	Collembola		Orchesella_cincta			5.3		63	2.0		Posthuma_1990
Cd	Netherlands	Bu	detritivore	Insecta	Collembola		Orchesella_cincta			3.8		5.0	1.3		Posthuma_1990
Cd	Netherlands	Mo	detritivore	Insecta	Collembola		Orchesella_cincta			1.0		1.1	0.40		Posthuma_1990
Cd	Netherlands	Ro	detritivore	Insecta	Collembola		Orchesella_cincta			0.61		0.43	0.24		Posthuma_1990
Zn	Belgium	Pl	detritivore	Insecta	Collembola		Orchesella_cincta			406		4,915	113		Posthuma_1990
Zn	Germany	Br_	detritivore	Insecta	Collembola		Orchesella_cincta			157		173	50		Posthuma_1990
Zn	Germany	St	detritivore	Insecta	Collembola		Orchesella_cincta			332		1,560	104		Posthuma_1990
Zn	Netherlands	Bu	detritivore	Insecta	Collembola		Orchesella_cincta			906		950	122		Posthuma_1990
Zn	Netherlands	Mo	detritivore	Insecta	Collembola		Orchesella_cincta			294		382	33		Posthuma_1990
Zn	Netherlands	Ro	detritivore	Insecta	Collembola		Orchesella_cincta			35		33	34		Posthuma_1990
Pb	Illinois	ynfield_meadow_0-7_from_shou	herbivore	Insecta			sucking_insects			9.0		45	4.6		Price_et_al_1974
Pb	Illinois	ynfield_meadow_0-7_from_shou	herbivore	Insecta			chewing_insects			9.0		45	7.2		Price_et_al_1974
Pb	Illinois	I-74_0.7m_from_shoulder	herbivore	Insecta			sucking_insects			25		60	16		Price_et_al_1974
Pb	Illinois	I-74_0.7m_from_shoulder	herbivore	Insecta			chewing_insects			25		60	27		Price_et_al_1974
Pb	Illinois	I-74_13_-_20_m_from_shoulder	herbivore	Insecta			sucking_insects			15		20	9.8		Price_et_al_1974
Pb	Illinois	I-74_13_-_20_m_from_shoulder	herbivore	Insecta			chewing_insects			15		20	11		Price_et_al_1974
Pb	Illinois	lower_conc_areas	herbivore	Insecta			chewing_insects			2.0		12	3.4		Price_et_al_1974
Pb	Illinois	lower_conc_areas	herbivore	Insecta			sucking_insects			2.0		12	4.7		Price_et_al_1974
Pb	Illinois	ynfield_meadow_0-7_from_shou	predator	Insecta			predatory_inscets			9.0		45	23		Price_et_al_1974
Pb	Illinois	I-74_0.7m_from_shoulder	predator	Insecta			predatory_inscets			25		60	31		Price_et_al_1974
Pb	Illinois	I-74_13_-_20_m_from_shoulder	predator	Insecta			predatory_inscets			15		20	20		Price_et_al_1974
Pb	Illinois	lower_conc_areas	predator	Insecta			predatory_inscets			2.0		12	3.3		Price_et_al_1974
Al	Oklahoma	GRID1		Insecta	Coleoptera		beetle					16,400	106		PTI_1995
Al	Oklahoma	GRID4		Insecta	Coleoptera		beetle					14,550	40		PTI_1995
Al	Oklahoma	TERB		Insecta	Coleoptera		beetle					16,700	43		PTI_1995
Al	Oklahoma	TERB		Insecta	Coleoptera		beetle					16,700	426		PTI_1995
Al	Oklahoma	TRAP1		Insecta	Coleoptera		beetle					16,100	48		PTI_1995
As	Oklahoma	GRID1		Insecta	Coleoptera		beetle					5.7	0.50		PTI_1995
As	Oklahoma	GRID4		Insecta	Coleoptera		beetle					17	0.50		PTI_1995
As	Oklahoma	TERB		Insecta	Coleoptera		beetle					4.4	0.50		PTI_1995
As	Oklahoma	TERB		Insecta	Coleoptera		beetle					4.4	0.50		PTI_1995
As	Oklahoma	TRAP1		Insecta	Coleoptera		beetle					39	0.50		PTI_1995
Ba	Oklahoma	GRID1		Insecta	Coleoptera		beetle					151	1.9		PTI_1995
Ba	Oklahoma	GRID4		Insecta	Coleoptera		beetle					164	16		PTI_1995
Ba	Oklahoma	TERB		Insecta	Coleoptera		beetle					131	4.6		PTI_1995
Ba	Oklahoma	TERB		Insecta	Coleoptera		beetle					131	20		PTI_1995
Ba	Oklahoma	TRAP1		Insecta	Coleoptera		beetle					176	19		PTI_1995
Be	Oklahoma	GRID1		Insecta	Coleoptera		beetle					1.2	0.020		PTI_1995
Be	Oklahoma	GRID4		Insecta	Coleoptera		beetle					0.95	0.020		PTI_1995
Be	Oklahoma	TERB		Insecta	Coleoptera		beetle					1.4	0.020		PTI_1995
Be	Oklahoma	TERB		Insecta	Coleoptera		beetle					1.4	0.020		PTI_1995

Literature Arthropod Bioacumulation Data for Hanford															
Analyte	Site Location	Sample Location	Trophic Level	Class	Order	Family	Species	Diettype	Diet	Plant	Water	Soil Concentration (mg/kg)	Arthropod Cencentration (mg/kg)	*Laboratory Qualification	**Literature Reference
Be	Oklahoma	TRAP1		Insecta	Coleoptera		beetle					1.3	0.020		PTI_1995
Cd	Oklahoma	GRID1		Insecta	Coleoptera		beetle					27	4.3	J	PTI_1995
Cd	Oklahoma	GRID4		Insecta	Coleoptera		beetle					33	1.7	J	PTI_1995
Cd	Oklahoma	TERB		Insecta	Coleoptera		beetle					3.4	1.3	J	PTI_1995
Cd	Oklahoma	TERB		Insecta	Coleoptera		beetle					3.4	3.2	J	PTI_1995
Cd	Oklahoma	TRAP1		Insecta	Coleoptera		beetle					144	3.2	J	PTI_1995
Ca	Oklahoma	GRID1		Insecta	Coleoptera		beetle					13,000	1,160		PTI_1995
Ca	Oklahoma	GRID4		Insecta	Coleoptera		beetle					3,715	1,480		PTI_1995
Ca	Oklahoma	TERB		Insecta	Coleoptera		beetle					2,330	1,410		PTI_1995
Ca	Oklahoma	TERB		Insecta	Coleoptera		beetle					2,330	1,510		PTI_1995
Ca	Oklahoma	TRAP1		Insecta	Coleoptera		beetle					8,380	1,470		PTI_1995
Cr	Oklahoma	GRID1		Insecta	Coleoptera		beetle					27	2.2		PTI_1995
Cr	Oklahoma	GRID4		Insecta	Coleoptera		beetle					26	2.8		PTI_1995
Cr	Oklahoma	TERB		Insecta	Coleoptera		beetle					40	1.6		PTI_1995
Cr	Oklahoma	TERB		Insecta	Coleoptera		beetle					40	6.0		PTI_1995
Cr	Oklahoma	TRAP1		Insecta	Coleoptera		beetle					43	1.9		PTI_1995
Co	Oklahoma	GRID1		Insecta	Coleoptera		beetle					16	0.15		PTI_1995
Co	Oklahoma	GRID4		Insecta	Coleoptera		beetle					10	0.040		PTI_1995
Co	Oklahoma	TERB		Insecta	Coleoptera		beetle					8.8	0.050		PTI_1995
Co	Oklahoma	TERB		Insecta	Coleoptera		beetle					8.8	0.30		PTI_1995
Co	Oklahoma	TRAP1		Insecta	Coleoptera		beetle					15	0.040		PTI_1995
Cu	Oklahoma	GRID1		Insecta	Coleoptera		beetle					48	19		PTI_1995
Cu	Oklahoma	GRID4		Insecta	Coleoptera		beetle					77	14		PTI_1995
Cu	Oklahoma	TERB		Insecta	Coleoptera		beetle					22	15		PTI_1995
Cu	Oklahoma	TERB		Insecta	Coleoptera		beetle					22	19		PTI_1995
Cu	Oklahoma	TRAP1		Insecta	Coleoptera		beetle					186	15		PTI_1995
Fe	Oklahoma	GRID1		Insecta	Coleoptera		beetle					26,100	166		PTI_1995
Fe	Oklahoma	GRID4		Insecta	Coleoptera		beetle					20,450	141		PTI_1995
Fe	Oklahoma	TERB		Insecta	Coleoptera		beetle					32,800	118		PTI_1995
Fe	Oklahoma	TERB		Insecta	Coleoptera		beetle					32,800	436		PTI_1995
Fe	Oklahoma	TRAP1		Insecta	Coleoptera		beetle					27,000	114		PTI_1995
Pb	Oklahoma	GRID1		Insecta	Coleoptera		beetle					84	2.9		PTI_1995
Pb	Oklahoma	GRID4		Insecta	Coleoptera		beetle					282	0.63		PTI_1995
Pb	Oklahoma	TERB		Insecta	Coleoptera		beetle					56	0.40		PTI_1995
Pb	Oklahoma	TERB		Insecta	Coleoptera		beetle					56	1.1		PTI_1995
Pb	Oklahoma	TRAP1		Insecta	Coleoptera		beetle					485	1.6		PTI_1995
Mg	Oklahoma	GRID1		Insecta	Coleoptera		beetle					2,850	1,170		PTI_1995
Mg	Oklahoma	GRID4		Insecta	Coleoptera		beetle					2,120	1,740		PTI_1995
Mg	Oklahoma	TERB		Insecta	Coleoptera		beetle					2,170	1,490		PTI_1995
Mg	Oklahoma	TERB		Insecta	Coleoptera		beetle					2,170	1,770		PTI_1995
Mg	Oklahoma	TRAP1		Insecta	Coleoptera		beetle					2,530	1,760		PTI_1995
Mn	Oklahoma	GRID1		Insecta	Coleoptera		beetle					486	23		PTI_1995
Mn	Oklahoma	GRID4		Insecta	Coleoptera		beetle					583	37		PTI_1995
Mn	Oklahoma	TERB		Insecta	Coleoptera		beetle					285	38		PTI_1995
Mn	Oklahoma	TERB		Insecta	Coleoptera		beetle					285	43		PTI_1995
Mn	Oklahoma	TRAP1		Insecta	Coleoptera		beetle					615	36		PTI_1995
Hg	Oklahoma	GRID1		Insecta	Coleoptera		beetle					0.090	0.050		PTI_1995
Hg	Oklahoma	GRID4		Insecta	Coleoptera		beetle					0.090	0.050		PTI_1995
Hg	Oklahoma	TERB		Insecta	Coleoptera		beetle					0.050	0.050		PTI_1995
Hg	Oklahoma	TERB		Insecta	Coleoptera		beetle					0.050	0.10		PTI_1995
Hg	Oklahoma	TRAP1		Insecta	Coleoptera		beetle					0.86	0.050		PTI_1995
Ni	Oklahoma	GRID1		Insecta	Coleoptera		beetle					26	2.0		PTI_1995
Ni	Oklahoma	GRID4		Insecta	Coleoptera		beetle					19	2.0		PTI_1995
Ni	Oklahoma	TERB		Insecta	Coleoptera		beetle					15	2.0		PTI_1995
Ni	Oklahoma	TERB		Insecta	Coleoptera		beetle					15	3.0		PTI_1995
Ni	Oklahoma	TRAP1		Insecta	Coleoptera		beetle					28	2.0		PTI_1995
K	Oklahoma	GRID1		Insecta	Coleoptera		beetle					1,400	6,070		PTI_1995
K	Oklahoma	GRID4		Insecta	Coleoptera		beetle					2,325	10,100		PTI_1995
K	Oklahoma	TERB		Insecta	Coleoptera		beetle					2,000	6,900		PTI_1995
K	Oklahoma	TERB		Insecta	Coleoptera		beetle					2,000	10,200		PTI_1995
K	Oklahoma	TRAP1		Insecta	Coleoptera		beetle					1,980	10,200		PTI_1995
Se	Oklahoma	GRID4		Insecta	Coleoptera		beetle					0.62	1.0		PTI_1995

Literature Arthropod Bioacumulation Data for Hanford															
Analyte	Site Location	Sample Location	Trophic Level	Class	Order	Family	Species	Diettype	Diet	Plant	Water	Soil Concentration (mg/kg)	Arthropod Cencentration (mg/kg)	*Laboratory Qualification	**Literature Reference
Se	Oklahoma	TRAP1		Insecta	Coleoptera		beetle					19	1.0		PTI_1995
Ag	Oklahoma	GRID1		Insecta	Coleoptera		beetle					1.0	0.060	J	PTI_1995
Ag	Oklahoma	GRID4		Insecta	Coleoptera		beetle					2.9	0.020	J	PTI_1995
Ag	Oklahoma	TERB		Insecta	Coleoptera		beetle					1.2	0.030	J	PTI_1995
Ag	Oklahoma	TERB		Insecta	Coleoptera		beetle					1.2	0.030	J	PTI_1995
Ag	Oklahoma	TRAP1		Insecta	Coleoptera		beetle					5.4	0.040	J	PTI_1995
Na	Oklahoma	GRID1		Insecta	Coleoptera		beetle					148	1,230		PTI_1995
Na	Oklahoma	GRID4		Insecta	Coleoptera		beetle					61	1,530		PTI_1995
Na	Oklahoma	TERB		Insecta	Coleoptera		beetle					68	1,180		PTI_1995
Na	Oklahoma	TERB		Insecta	Coleoptera		beetle					68	1,790		PTI_1995
Na	Oklahoma	TRAP1		Insecta	Coleoptera		beetle					395	1,600		PTI_1995
Tl	Oklahoma	GRID1		Insecta	Coleoptera		beetle					0.36	0.020	J	PTI_1995
Tl	Oklahoma	GRID4		Insecta	Coleoptera		beetle					0.33	0.020	J	PTI_1995
Tl	Oklahoma	TERB		Insecta	Coleoptera		beetle					0.38	0.020	J	PTI_1995
Tl	Oklahoma	TERB		Insecta	Coleoptera		beetle					0.38	0.020	J	PTI_1995
V	Oklahoma	GRID1		Insecta	Coleoptera		beetle					31	0.30		PTI_1995
V	Oklahoma	GRID4		Insecta	Coleoptera		beetle					31	0.20		PTI_1995
V	Oklahoma	TERB		Insecta	Coleoptera		beetle					45	0.20		PTI_1995
V	Oklahoma	TERB		Insecta	Coleoptera		beetle					45	0.80		PTI_1995
V	Oklahoma	TRAP1		Insecta	Coleoptera		beetle					58	0.20		PTI_1995
Zn	Oklahoma	GRID1		Insecta	Coleoptera		beetle					3,210	266		PTI_1995
Zn	Oklahoma	GRID4		Insecta	Coleoptera		beetle					2,135	150		PTI_1995
Zn	Oklahoma	TERB		Insecta	Coleoptera		beetle					413	136		PTI_1995
Zn	Oklahoma	TERB		Insecta	Coleoptera		beetle					413	281		PTI_1995
Zn	Oklahoma	TRAP1		Insecta	Coleoptera		beetle					7,170	180		PTI_1995
Al	Oklahoma	GRID1	herbivore	Insecta	Lepidoptera		catapillar					16,400	444		PTI_1995
Al	Oklahoma	GRID2	herbivore	Insecta	Lepidoptera		catapillar					14,700	52		PTI_1995
Al	Oklahoma	GRID4	herbivore	Insecta	Lepidoptera		catapillar					14,550	44		PTI_1995
Al	Oklahoma	TERA	herbivore	Insecta	Lepidoptera		catapillar					12,700	46		PTI_1995
Al	Oklahoma	TERC	herbivore	Insecta	Lepidoptera		catapillar					17,800	125		PTI_1995
Al	Oklahoma	TRAP1	herbivore	Insecta	Lepidoptera		catapillar					16,100	46		PTI_1995
Al	Oklahoma	TRAP2	herbivore	Insecta	Lepidoptera		catapillar					13,600	31		PTI_1995
Sb	Oklahoma	TERA	herbivore	Insecta	Lepidoptera		catapillar					4.0	0.10	J	PTI_1995
Sb	Oklahoma	TERC	herbivore	Insecta	Lepidoptera		catapillar					4.1	0.030	J	PTI_1995
As	Oklahoma	GRID1	herbivore	Insecta	Lepidoptera		catapillar					5.7	0.50		PTI_1995
As	Oklahoma	GRID2	herbivore	Insecta	Lepidoptera		catapillar					21	1.0		PTI_1995
As	Oklahoma	GRID4	herbivore	Insecta	Lepidoptera		catapillar					17	0.50		PTI_1995
As	Oklahoma	TERA	herbivore	Insecta	Lepidoptera		catapillar					2.9	1.0		PTI_1995
As	Oklahoma	TERC	herbivore	Insecta	Lepidoptera		catapillar					6.3	0.50		PTI_1995
As	Oklahoma	TRAP1	herbivore	Insecta	Lepidoptera		catapillar					39	0.50		PTI_1995
As	Oklahoma	TRAP2	herbivore	Insecta	Lepidoptera		catapillar					7.9	0.50		PTI_1995
Ba	Oklahoma	GRID1	herbivore	Insecta	Lepidoptera		catapillar					151	13		PTI_1995
Ba	Oklahoma	GRID2	herbivore	Insecta	Lepidoptera		catapillar					160	22		PTI_1995
Ba	Oklahoma	GRID4	herbivore	Insecta	Lepidoptera		catapillar					164	9.9		PTI_1995
Ba	Oklahoma	TERA	herbivore	Insecta	Lepidoptera		catapillar					98	30		PTI_1995
Ba	Oklahoma	TERC	herbivore	Insecta	Lepidoptera		catapillar					222	6.8		PTI_1995
Ba	Oklahoma	TRAP1	herbivore	Insecta	Lepidoptera		catapillar					176	10		PTI_1995
Ba	Oklahoma	TRAP2	herbivore	Insecta	Lepidoptera		catapillar					157	8.8		PTI_1995
Be	Oklahoma	GRID1	herbivore	Insecta	Lepidoptera		catapillar					1.2	0.020		PTI_1995
Be	Oklahoma	GRID2	herbivore	Insecta	Lepidoptera		catapillar					0.95	0.10		PTI_1995
Be	Oklahoma	GRID4	herbivore	Insecta	Lepidoptera		catapillar					0.95	0.020		PTI_1995
Be	Oklahoma	TERA	herbivore	Insecta	Lepidoptera		catapillar					0.70	0.10		PTI_1995
Be	Oklahoma	TERC	herbivore	Insecta	Lepidoptera		catapillar					1.2	0.020		PTI_1995
Be	Oklahoma	TRAP1	herbivore	Insecta	Lepidoptera		catapillar					1.3	0.020		PTI_1995
Be	Oklahoma	TRAP2	herbivore	Insecta	Lepidoptera		catapillar					0.87	0.020		PTI_1995
Cd	Oklahoma	GRID1	herbivore	Insecta	Lepidoptera		catapillar					27	6.5	J	PTI_1995
Cd	Oklahoma	GRID2	herbivore	Insecta	Lepidoptera		catapillar					70	8.0	J	PTI_1995
Cd	Oklahoma	GRID4	herbivore	Insecta	Lepidoptera		catapillar					33	13	J	PTI_1995
Cd	Oklahoma	TERA	herbivore	Insecta	Lepidoptera		catapillar					0.89	1.0	J	PTI_1995
Cd	Oklahoma	TRAP1	herbivore	Insecta	Lepidoptera		catapillar					144	17	J	PTI_1995
Cd	Oklahoma	TRAP2	herbivore	Insecta	Lepidoptera		catapillar					36	11	J	PTI_1995
Ca	Oklahoma	GRID1	herbivore	Insecta	Lepidoptera		catapillar					13,000	4,840		PTI_1995

Literature Arthropod Bioacumulation Data for Hanford															
Analyte	Site Location	Sample Location	Trophic Level	Class	Order	Family	Species	Diettype	Diet	Plant	Water	Soil Concentration (mg/kg)	Arthropod Cencentration (mg/kg)	*Laboratory Qualification	**Literature Reference
Ca	Oklahoma	GRID2	herbivore	Insecta	Lepidoptera		catapillar					2,500	3,560		PTI_1995
Ca	Oklahoma	GRID4	herbivore	Insecta	Lepidoptera		catapillar					3,715	2,540		PTI_1995
Ca	Oklahoma	TERA	herbivore	Insecta	Lepidoptera		catapillar					1,670	1,860		PTI_1995
Ca	Oklahoma	TERC	herbivore	Insecta	Lepidoptera		catapillar					66,200	3,280		PTI_1995
Ca	Oklahoma	TRAP1	herbivore	Insecta	Lepidoptera		catapillar					8,380	4,420		PTI_1995
Ca	Oklahoma	TRAP2	herbivore	Insecta	Lepidoptera		catapillar					4,110	2,600		PTI_1995
Cr	Oklahoma	GRID1	herbivore	Insecta	Lepidoptera		catapillar					27	15		PTI_1995
Cr	Oklahoma	GRID2	herbivore	Insecta	Lepidoptera		catapillar					25	13		PTI_1995
Cr	Oklahoma	GRID4	herbivore	Insecta	Lepidoptera		catapillar					26	1.7		PTI_1995
Cr	Oklahoma	TERA	herbivore	Insecta	Lepidoptera		catapillar					24	18		PTI_1995
Cr	Oklahoma	TERC	herbivore	Insecta	Lepidoptera		catapillar					33	2.0		PTI_1995
Cr	Oklahoma	TRAP1	herbivore	Insecta	Lepidoptera		catapillar					43	1.7		PTI_1995
Cr	Oklahoma	TRAP2	herbivore	Insecta	Lepidoptera		catapillar					25	3.9		PTI_1995
Co	Oklahoma	GRID1	herbivore	Insecta	Lepidoptera		catapillar					16	0.30		PTI_1995
Co	Oklahoma	GRID2	herbivore	Insecta	Lepidoptera		catapillar					9.2	0.10		PTI_1995
Co	Oklahoma	GRID4	herbivore	Insecta	Lepidoptera		catapillar					10	0.040		PTI_1995
Co	Oklahoma	TERA	herbivore	Insecta	Lepidoptera		catapillar					6.4	0.20		PTI_1995
Co	Oklahoma	TERC	herbivore	Insecta	Lepidoptera		catapillar					13	0.070		PTI_1995
Co	Oklahoma	TRAP1	herbivore	Insecta	Lepidoptera		catapillar					15	0.060		PTI_1995
Co	Oklahoma	TRAP2	herbivore	Insecta	Lepidoptera		catapillar					9.6	0.070		PTI_1995
Cu	Oklahoma	GRID1	herbivore	Insecta	Lepidoptera		catapillar					48	18		PTI_1995
Cu	Oklahoma	GRID2	herbivore	Insecta	Lepidoptera		catapillar					180	22		PTI_1995
Cu	Oklahoma	GRID4	herbivore	Insecta	Lepidoptera		catapillar					77	15		PTI_1995
Cu	Oklahoma	TERA	herbivore	Insecta	Lepidoptera		catapillar					11	17		PTI_1995
Cu	Oklahoma	TERC	herbivore	Insecta	Lepidoptera		catapillar					20	11		PTI_1995
Cu	Oklahoma	TRAP1	herbivore	Insecta	Lepidoptera		catapillar					186	16		PTI_1995
Cu	Oklahoma	TRAP2	herbivore	Insecta	Lepidoptera		catapillar					64	17		PTI_1995
Fe	Oklahoma	GRID1	herbivore	Insecta	Lepidoptera		catapillar					26,100	907		PTI_1995
Fe	Oklahoma	GRID2	herbivore	Insecta	Lepidoptera		catapillar					19,800	457		PTI_1995
Fe	Oklahoma	GRID4	herbivore	Insecta	Lepidoptera		catapillar					20,450	103		PTI_1995
Fe	Oklahoma	TERA	herbivore	Insecta	Lepidoptera		catapillar					16,800	770		PTI_1995
Fe	Oklahoma	TERC	herbivore	Insecta	Lepidoptera		catapillar					28,200	136		PTI_1995
Fe	Oklahoma	TRAP1	herbivore	Insecta	Lepidoptera		catapillar					27,000	112		PTI_1995
Fe	Oklahoma	TRAP2	herbivore	Insecta	Lepidoptera		catapillar					19,300	139		PTI_1995
Pb	Oklahoma	GRID1	herbivore	Insecta	Lepidoptera		catapillar					84	12		PTI_1995
Pb	Oklahoma	GRID2	herbivore	Insecta	Lepidoptera		catapillar					435	1.6		PTI_1995
Pb	Oklahoma	GRID4	herbivore	Insecta	Lepidoptera		catapillar					282	0.42		PTI_1995
Pb	Oklahoma	TERA	herbivore	Insecta	Lepidoptera		catapillar					27	0.40		PTI_1995
Pb	Oklahoma	TERC	herbivore	Insecta	Lepidoptera		catapillar					27	0.22		PTI_1995
Pb	Oklahoma	TRAP1	herbivore	Insecta	Lepidoptera		catapillar					485	0.94		PTI_1995
Pb	Oklahoma	TRAP2	herbivore	Insecta	Lepidoptera		catapillar					179	0.69		PTI_1995
Mg	Oklahoma	GRID1	herbivore	Insecta	Lepidoptera		catapillar					2,850	2,870		PTI_1995
Mg	Oklahoma	GRID2	herbivore	Insecta	Lepidoptera		catapillar					1,750	2,700		PTI_1995
Mg	Oklahoma	GRID4	herbivore	Insecta	Lepidoptera		catapillar					2,120	3,170		PTI_1995
Mg	Oklahoma	TERA	herbivore	Insecta	Lepidoptera		catapillar					1,450	2,540		PTI_1995
Mg	Oklahoma	TERC	herbivore	Insecta	Lepidoptera		catapillar					3,400	1,900		PTI_1995
Mg	Oklahoma	TRAP1	herbivore	Insecta	Lepidoptera		catapillar					2,530	2,760		PTI_1995
Mg	Oklahoma	TRAP2	herbivore	Insecta	Lepidoptera		catapillar					2,140	3,220		PTI_1995
Mn	Oklahoma	GRID1	herbivore	Insecta	Lepidoptera		catapillar					486	28		PTI_1995
Mn	Oklahoma	GRID2	herbivore	Insecta	Lepidoptera		catapillar					578	18		PTI_1995
Mn	Oklahoma	GRID4	herbivore	Insecta	Lepidoptera		catapillar					583	35		PTI_1995
Mn	Oklahoma	TERA	herbivore	Insecta	Lepidoptera		catapillar					150	34		PTI_1995
Mn	Oklahoma	TERC	herbivore	Insecta	Lepidoptera		catapillar					1,260	51		PTI_1995
Mn	Oklahoma	TRAP1	herbivore	Insecta	Lepidoptera		catapillar					615	32		PTI_1995
Mn	Oklahoma	TRAP2	herbivore	Insecta	Lepidoptera		catapillar					524	37		PTI_1995
Hg	Oklahoma	GRID1	herbivore	Insecta	Lepidoptera		catapillar					0.090	0.080		PTI_1995
Hg	Oklahoma	GRID2	herbivore	Insecta	Lepidoptera		catapillar					0.19	0.20		PTI_1995
Hg	Oklahoma	GRID4	herbivore	Insecta	Lepidoptera		catapillar					0.090	0.050		PTI_1995
Hg	Oklahoma	TERA	herbivore	Insecta	Lepidoptera		catapillar					0.030	0.20		PTI_1995
Hg	Oklahoma	TERC	herbivore	Insecta	Lepidoptera		catapillar					0.060	0.050		PTI_1995
Hg	Oklahoma	TRAP1	herbivore	Insecta	Lepidoptera		catapillar					0.86	0.050		PTI_1995
Hg	Oklahoma	TRAP2	herbivore	Insecta	Lepidoptera		catapillar					0.080	0.050		PTI_1995

Literature Arthropod Bioacumulation Data for Hanford															
Analyte	Site Location	Sample Location	Trophic Level	Class	Order	Family	Species	Diettype	Diet	Plant	Water	Soil Concentration (mg/kg)	Arthropod Cencentration (mg/kg)	*Laboratory Qualification	**Literature Reference
Ni	Oklahoma	GRID1	herbivore	Insecta	Lepidoptera		catapillar					26	2.0		PTI_1995
Ni	Oklahoma	GRID2	herbivore	Insecta	Lepidoptera		catapillar					18	10		PTI_1995
Ni	Oklahoma	GRID4	herbivore	Insecta	Lepidoptera		catapillar					19	2.0		PTI_1995
Ni	Oklahoma	TERA	herbivore	Insecta	Lepidoptera		catapillar					9.9	10		PTI_1995
Ni	Oklahoma	TERC	herbivore	Insecta	Lepidoptera		catapillar					36	2.0		PTI_1995
Ni	Oklahoma	TRAP1	herbivore	Insecta	Lepidoptera		catapillar					28	2.0		PTI_1995
Ni	Oklahoma	TRAP2	herbivore	Insecta	Lepidoptera		catapillar					20	2.0		PTI_1995
K	Oklahoma	GRID1	herbivore	Insecta	Lepidoptera		catapillar					1,400	21,300		PTI_1995
K	Oklahoma	GRID2	herbivore	Insecta	Lepidoptera		catapillar					1,850	27,400		PTI_1995
K	Oklahoma	GRID4	herbivore	Insecta	Lepidoptera		catapillar					2,325	25,300		PTI_1995
K	Oklahoma	TERA	herbivore	Insecta	Lepidoptera		catapillar					1,440	18,700		PTI_1995
K	Oklahoma	TERC	herbivore	Insecta	Lepidoptera		catapillar					3,040	23,200		PTI_1995
K	Oklahoma	TRAP1	herbivore	Insecta	Lepidoptera		catapillar					1,980	22,000		PTI_1995
K	Oklahoma	TRAP2	herbivore	Insecta	Lepidoptera		catapillar					2,320	27,300		PTI_1995
Se	Oklahoma	GRID2	herbivore	Insecta	Lepidoptera		catapillar					0.94	4.0		PTI_1995
Se	Oklahoma	GRID4	herbivore	Insecta	Lepidoptera		catapillar					0.62	1.0		PTI_1995
Se	Oklahoma	TERC	herbivore	Insecta	Lepidoptera		catapillar					0.33	1.0	J	PTI_1995
Se	Oklahoma	TRAP1	herbivore	Insecta	Lepidoptera		catapillar					19	6.0		PTI_1995
Se	Oklahoma	TRAP2	herbivore	Insecta	Lepidoptera		catapillar					0.57	1.0		PTI_1995
Ag	Oklahoma	GRID1	herbivore	Insecta	Lepidoptera		catapillar					1.0	0.12	J	PTI_1995
Ag	Oklahoma	GRID2	herbivore	Insecta	Lepidoptera		catapillar					6.9	0.10	J	PTI_1995
Ag	Oklahoma	GRID4	herbivore	Insecta	Lepidoptera		catapillar					2.9	0.030	J	PTI_1995
Ag	Oklahoma	TERA	herbivore	Insecta	Lepidoptera		catapillar					0.59	0.10	J	PTI_1995
Ag	Oklahoma	TRAP1	herbivore	Insecta	Lepidoptera		catapillar					5.4	0.020	J	PTI_1995
Ag	Oklahoma	TRAP2	herbivore	Insecta	Lepidoptera		catapillar					2.1	0.020	J	PTI_1995
Na	Oklahoma	GRID1	herbivore	Insecta	Lepidoptera		catapillar					148	191		PTI_1995
Na	Oklahoma	GRID2	herbivore	Insecta	Lepidoptera		catapillar					49	533		PTI_1995
Na	Oklahoma	GRID4	herbivore	Insecta	Lepidoptera		catapillar					61	91		PTI_1995
Na	Oklahoma	TERA	herbivore	Insecta	Lepidoptera		catapillar					41	116		PTI_1995
Na	Oklahoma	TERC	herbivore	Insecta	Lepidoptera		catapillar					78	106		PTI_1995
Na	Oklahoma	TRAP1	herbivore	Insecta	Lepidoptera		catapillar					395	304		PTI_1995
Na	Oklahoma	TRAP2	herbivore	Insecta	Lepidoptera		catapillar					57	176		PTI_1995
Tl	Oklahoma	GRID1	herbivore	Insecta	Lepidoptera		catapillar					0.36	0.020	J	PTI_1995
Tl	Oklahoma	GRID2	herbivore	Insecta	Lepidoptera		catapillar					0.38	0.10	J	PTI_1995
Tl	Oklahoma	GRID4	herbivore	Insecta	Lepidoptera		catapillar					0.33	0.020	J	PTI_1995
Tl	Oklahoma	TERA	herbivore	Insecta	Lepidoptera		catapillar					0.39	0.10	J	PTI_1995
Tl	Oklahoma	TRAP2	herbivore	Insecta	Lepidoptera		catapillar					0.37	0.020	J	PTI_1995
V	Oklahoma	GRID1	herbivore	Insecta	Lepidoptera		catapillar					31	1.1		PTI_1995
V	Oklahoma	GRID2	herbivore	Insecta	Lepidoptera		catapillar					30	0.50		PTI_1995
V	Oklahoma	GRID4	herbivore	Insecta	Lepidoptera		catapillar					31	0.20		PTI_1995
V	Oklahoma	TERA	herbivore	Insecta	Lepidoptera		catapillar					25	0.50		PTI_1995
V	Oklahoma	TERC	herbivore	Insecta	Lepidoptera		catapillar					34	0.40		PTI_1995
V	Oklahoma	TRAP1	herbivore	Insecta	Lepidoptera		catapillar					58	0.20		PTI_1995
V	Oklahoma	TRAP2	herbivore	Insecta	Lepidoptera		catapillar					28	0.20		PTI_1995
Zn	Oklahoma	GRID1	herbivore	Insecta	Lepidoptera		catapillar					3,210	478		PTI_1995
Zn	Oklahoma	GRID2	herbivore	Insecta	Lepidoptera		catapillar					3,750	744		PTI_1995
Zn	Oklahoma	GRID4	herbivore	Insecta	Lepidoptera		catapillar					2,135	407		PTI_1995
Zn	Oklahoma	TERA	herbivore	Insecta	Lepidoptera		catapillar					154	229		PTI_1995
Zn	Oklahoma	TERC	herbivore	Insecta	Lepidoptera		catapillar					169	102		PTI_1995
Zn	Oklahoma	TRAP1	herbivore	Insecta	Lepidoptera		catapillar					7,170	593		PTI_1995
Zn	Oklahoma	TRAP2	herbivore	Insecta	Lepidoptera		catapillar					2,270	366		PTI_1995
Al	Oklahoma	GRID1	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					16,400	182		PTI_1995
Al	Oklahoma	GRID2	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					14,700	18		PTI_1995
Al	Oklahoma	GRID2	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					14,700	24		PTI_1995
Al	Oklahoma	GRID3	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					12,200	23		PTI_1995
Al	Oklahoma	GRID3	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					12,200	30		PTI_1995
Al	Oklahoma	GRID4	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					14,550	12		PTI_1995
Al	Oklahoma	TERA	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					12,700	25		PTI_1995
Al	Oklahoma	TERB	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					16,700	13		PTI_1995
Al	Oklahoma	TERC	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					17,800	73		PTI_1995
Al	Oklahoma	TRAP1	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					16,100	14		PTI_1995
Al	Oklahoma	TRAP1	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					16,100	29		PTI_1995

Literature Arthropod Bioacumulation Data for Hanford															
Analyte	Site Location	Sample Location	Trophic Level	Class	Order	Family	Species	Diettype	Diet	Plant	Water	Soil Concentration (mg/kg)	Arthropod Cencentration (mg/kg)	*Laboratory Qualification	**Literature Reference
Al	Oklahoma	TRAP2	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					13,600	19		PTI_1995
Sb	Oklahoma	GRID3	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					4.4	0.020	J	PTI_1995
Sb	Oklahoma	GRID3	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					4.4	0.020	J	PTI_1995
Sb	Oklahoma	TERA	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					4.0	0.030	J	PTI_1995
Sb	Oklahoma	TERC	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					4.1	0.030	J	PTI_1995
As	Oklahoma	GRID1	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					5.7	0.50		PTI_1995
As	Oklahoma	GRID2	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					21	0.50		PTI_1995
As	Oklahoma	GRID2	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					21	0.50		PTI_1995
As	Oklahoma	GRID3	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					15	0.50		PTI_1995
As	Oklahoma	GRID3	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					15	0.50		PTI_1995
As	Oklahoma	GRID4	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					17	0.50		PTI_1995
As	Oklahoma	TERA	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					2.9	0.50		PTI_1995
As	Oklahoma	TERB	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					4.4	0.50		PTI_1995
As	Oklahoma	TERC	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					6.3	0.50		PTI_1995
As	Oklahoma	TRAP1	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					39	0.50		PTI_1995
As	Oklahoma	TRAP1	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					39	0.50		PTI_1995
As	Oklahoma	TRAP2	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					7.9	0.50		PTI_1995
Ba	Oklahoma	GRID1	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					151	3.6		PTI_1995
Ba	Oklahoma	GRID2	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					160	2.8		PTI_1995
Ba	Oklahoma	GRID2	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					160	2.9		PTI_1995
Ba	Oklahoma	GRID3	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					92	2.5		PTI_1995
Ba	Oklahoma	GRID3	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					92	2.9		PTI_1995
Ba	Oklahoma	GRID4	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					164	2.9		PTI_1995
Ba	Oklahoma	TERA	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					98	5.1		PTI_1995
Ba	Oklahoma	TERB	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					131	4.7		PTI_1995
Ba	Oklahoma	TERC	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					222	2.9		PTI_1995
Ba	Oklahoma	TRAP1	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					176	2.8		PTI_1995
Ba	Oklahoma	TRAP1	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					176	3.8		PTI_1995
Ba	Oklahoma	TRAP2	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					157	3.4		PTI_1995
Be	Oklahoma	GRID1	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					1.2	0.020		PTI_1995
Be	Oklahoma	GRID2	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					0.95	0.020		PTI_1995
Be	Oklahoma	GRID2	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					0.95	0.020		PTI_1995
Be	Oklahoma	GRID3	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					0.84	0.020		PTI_1995
Be	Oklahoma	GRID3	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					0.84	0.020		PTI_1995
Be	Oklahoma	GRID4	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					0.95	0.020		PTI_1995
Be	Oklahoma	TERA	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					0.70	0.020		PTI_1995
Be	Oklahoma	TERB	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					1.4	0.020		PTI_1995
Be	Oklahoma	TERC	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					1.2	0.020		PTI_1995
Be	Oklahoma	TRAP1	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					1.3	0.020		PTI_1995
Be	Oklahoma	TRAP1	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					1.3	0.020		PTI_1995
Be	Oklahoma	TRAP2	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					0.87	0.020		PTI_1995
Cd	Oklahoma	GRID1	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					27	4.8	J	PTI_1995
Cd	Oklahoma	GRID2	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					70	4.9	J	PTI_1995
Cd	Oklahoma	GRID2	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					70	5.7	J	PTI_1995
Cd	Oklahoma	GRID3	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					25	4.2	J	PTI_1995
Cd	Oklahoma	GRID3	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					25	4.5	J	PTI_1995
Cd	Oklahoma	GRID4	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					33	5.0	J	PTI_1995
Cd	Oklahoma	TERA	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					0.89	0.70	J	PTI_1995
Cd	Oklahoma	TERB	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					3.4	5.2	J	PTI_1995
Cd	Oklahoma	TRAP1	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					144	5.8	J	PTI_1995
Cd	Oklahoma	TRAP1	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					144	6.4	J	PTI_1995
Cd	Oklahoma	TRAP2	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					36	3.1	J	PTI_1995
Ca	Oklahoma	GRID1	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					13,000	1,930		PTI_1995
Ca	Oklahoma	GRID2	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					2,500	908		PTI_1995
Ca	Oklahoma	GRID2	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					2,500	1,090		PTI_1995
Ca	Oklahoma	GRID3	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					1,790	973		PTI_1995
Ca	Oklahoma	GRID3	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					1,790	1,050		PTI_1995
Ca	Oklahoma	GRID4	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					3,715	1,400		PTI_1995
Ca	Oklahoma	TERA	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					1,670	1,130		PTI_1995
Ca	Oklahoma	TERB	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					2,330	2,000		PTI_1995
Ca	Oklahoma	TERC	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					66,200	1,750		PTI_1995
Ca	Oklahoma	TRAP1	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					8,380	1,460		PTI_1995

Literature Arthropod Bioacumulation Data for Hanford															
Analyte	Site Location	Sample Location	Trophic Level	Class	Order	Family	Species	Diettype	Diet	Plant	Water	Soil Concentration (mg/kg)	Arthropod Cencentration (mg/kg)	*Laboratory Qualification	**Literature Reference
Ca	Oklahoma	TRAP1	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					8,380	1,480		PTI_1995
Ca	Oklahoma	TRAP2	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					4,110	1,190		PTI_1995
Cr	Oklahoma	GRID1	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					27	2.4		PTI_1995
Cr	Oklahoma	GRID2	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					25	1.2		PTI_1995
Cr	Oklahoma	GRID2	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					25	1.3		PTI_1995
Cr	Oklahoma	GRID3	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					21	1.2		PTI_1995
Cr	Oklahoma	GRID3	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					21	1.7		PTI_1995
Cr	Oklahoma	GRID4	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					26	1.0		PTI_1995
Cr	Oklahoma	TERA	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					24	3.5		PTI_1995
Cr	Oklahoma	TERB	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					40	1.3		PTI_1995
Cr	Oklahoma	TERC	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					33	2.2		PTI_1995
Cr	Oklahoma	TRAP1	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					43	1.1		PTI_1995
Cr	Oklahoma	TRAP1	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					43	1.5		PTI_1995
Cr	Oklahoma	TRAP2	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					25	0.50		PTI_1995
Co	Oklahoma	GRID1	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					16	0.17		PTI_1995
Co	Oklahoma	GRID2	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					9.2	0.030		PTI_1995
Co	Oklahoma	GRID2	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					9.2	0.030		PTI_1995
Co	Oklahoma	GRID3	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					8.3	0.030		PTI_1995
Co	Oklahoma	GRID3	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					8.3	0.050		PTI_1995
Co	Oklahoma	GRID4	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					10	0.040		PTI_1995
Co	Oklahoma	TERA	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					6.4	0.13		PTI_1995
Co	Oklahoma	TERB	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					8.8	0.20		PTI_1995
Co	Oklahoma	TERC	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					13	0.060		PTI_1995
Co	Oklahoma	TRAP1	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					15	0.050		PTI_1995
Co	Oklahoma	TRAP1	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					15	0.11		PTI_1995
Co	Oklahoma	TRAP2	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					9.6	0.060		PTI_1995
Cu	Oklahoma	GRID1	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					48	72		PTI_1995
Cu	Oklahoma	GRID2	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					180	45		PTI_1995
Cu	Oklahoma	GRID2	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					180	52		PTI_1995
Cu	Oklahoma	GRID3	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					68	37		PTI_1995
Cu	Oklahoma	GRID3	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					68	41		PTI_1995
Cu	Oklahoma	GRID4	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					77	42		PTI_1995
Cu	Oklahoma	TERA	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					11	56		PTI_1995
Cu	Oklahoma	TERB	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					22	111		PTI_1995
Cu	Oklahoma	TERC	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					20	50		PTI_1995
Cu	Oklahoma	TRAP1	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					186	37		PTI_1995
Cu	Oklahoma	TRAP1	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					186	54		PTI_1995
Cu	Oklahoma	TRAP2	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					64	31		PTI_1995
Fe	Oklahoma	GRID1	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					26,100	203		PTI_1995
Fe	Oklahoma	GRID2	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					19,800	84		PTI_1995
Fe	Oklahoma	GRID2	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					19,800	88		PTI_1995
Fe	Oklahoma	GRID3	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					15,500	75		PTI_1995
Fe	Oklahoma	GRID3	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					15,500	91		PTI_1995
Fe	Oklahoma	GRID4	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					20,450	59		PTI_1995
Fe	Oklahoma	TERA	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					16,800	454		PTI_1995
Fe	Oklahoma	TERB	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					32,800	54		PTI_1995
Fe	Oklahoma	TERC	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					28,200	135		PTI_1995
Fe	Oklahoma	TRAP1	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					27,000	52		PTI_1995
Fe	Oklahoma	TRAP1	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					27,000	80		PTI_1995
Fe	Oklahoma	TRAP2	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					19,300	56		PTI_1995
Pb	Oklahoma	GRID1	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					84	4.1		PTI_1995
Pb	Oklahoma	GRID2	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					435	0.38		PTI_1995
Pb	Oklahoma	GRID2	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					435	0.68		PTI_1995
Pb	Oklahoma	GRID3	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					261	0.46		PTI_1995
Pb	Oklahoma	GRID3	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					261	0.62		PTI_1995
Pb	Oklahoma	GRID4	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					282	0.19		PTI_1995
Pb	Oklahoma	TERA	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					27	0.16		PTI_1995
Pb	Oklahoma	TERB	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					56	0.080		PTI_1995
Pb	Oklahoma	TERC	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					27	0.11		PTI_1995
Pb	Oklahoma	TRAP1	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					485	0.45		PTI_1995
Pb	Oklahoma	TRAP1	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					485	0.82		PTI_1995
Pb	Oklahoma	TRAP2	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					179	0.22		PTI_1995

Literature Arthropod Bioacumulation Data for Hanford															
Analyte	Site Location	Sample Location	Trophic Level	Class	Order	Family	Species	Diettype	Diet	Plant	Water	Soil Concentration (mg/kg)	Arthropod Cencentration (mg/kg)	*Laboratory Qualification	**Literature Reference
Mg	Oklahoma	GRID1	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					2,850	1,270		PTI_1995
Mg	Oklahoma	GRID2	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					1,750	1,090		PTI_1995
Mg	Oklahoma	GRID2	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					1,750	1,230		PTI_1995
Mg	Oklahoma	GRID3	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					1,340	1,070		PTI_1995
Mg	Oklahoma	GRID3	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					1,340	1,120		PTI_1995
Mg	Oklahoma	GRID4	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					2,120	1,220		PTI_1995
Mg	Oklahoma	TERA	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					1,450	1,040		PTI_1995
Mg	Oklahoma	TERB	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					2,170	1,040		PTI_1995
Mg	Oklahoma	TERC	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					3,400	1,100		PTI_1995
Mg	Oklahoma	TRAP1	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					2,530	1,100		PTI_1995
Mg	Oklahoma	TRAP1	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					2,530	1,180		PTI_1995
Mg	Oklahoma	TRAP2	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					2,140	1,160		PTI_1995
Mn	Oklahoma	GRID1	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					486	11		PTI_1995
Mn	Oklahoma	GRID2	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					578	11		PTI_1995
Mn	Oklahoma	GRID2	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					578	36		PTI_1995
Mn	Oklahoma	GRID3	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					455	40		PTI_1995
Mn	Oklahoma	GRID3	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					455	45		PTI_1995
Mn	Oklahoma	GRID4	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					583	22		PTI_1995
Mn	Oklahoma	TERA	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					150	96		PTI_1995
Mn	Oklahoma	TERB	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					285	25		PTI_1995
Mn	Oklahoma	TERC	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					1,260	29		PTI_1995
Mn	Oklahoma	TRAP1	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					615	5.7		PTI_1995
Mn	Oklahoma	TRAP1	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					615	32		PTI_1995
Mn	Oklahoma	TRAP2	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					524	24		PTI_1995
Hg	Oklahoma	GRID1	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					0.090	0.050		PTI_1995
Hg	Oklahoma	GRID2	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					0.19	0.050		PTI_1995
Hg	Oklahoma	GRID2	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					0.19	0.050		PTI_1995
Hg	Oklahoma	GRID3	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					0.050	0.050		PTI_1995
Hg	Oklahoma	GRID3	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					0.050	0.050		PTI_1995
Hg	Oklahoma	GRID4	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					0.090	0.050		PTI_1995
Hg	Oklahoma	TERA	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					0.030	0.060		PTI_1995
Hg	Oklahoma	TERB	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					0.050	0.080		PTI_1995
Hg	Oklahoma	TERC	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					0.060	0.050		PTI_1995
Hg	Oklahoma	TRAP1	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					0.86	0.050		PTI_1995
Hg	Oklahoma	TRAP1	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					0.86	0.050		PTI_1995
Hg	Oklahoma	TRAP2	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					0.080	0.050		PTI_1995
Ni	Oklahoma	GRID1	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					26	2.0		PTI_1995
Ni	Oklahoma	GRID2	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					18	2.0		PTI_1995
Ni	Oklahoma	GRID2	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					18	2.0		PTI_1995
Ni	Oklahoma	GRID3	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					10	2.0		PTI_1995
Ni	Oklahoma	GRID3	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					10	2.0		PTI_1995
Ni	Oklahoma	GRID4	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					19	2.0		PTI_1995
Ni	Oklahoma	TERA	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					9.9	2.0		PTI_1995
Ni	Oklahoma	TERB	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					15	2.0		PTI_1995
Ni	Oklahoma	TERC	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					36	2.0		PTI_1995
Ni	Oklahoma	TRAP1	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					28	2.0		PTI_1995
Ni	Oklahoma	TRAP1	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					28	2.0		PTI_1995
Ni	Oklahoma	TRAP2	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					20	2.0		PTI_1995
K	Oklahoma	GRID1	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					1,400	9,180		PTI_1995
K	Oklahoma	GRID2	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					1,850	10,900		PTI_1995
K	Oklahoma	GRID2	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					1,850	12,100		PTI_1995
K	Oklahoma	GRID3	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					1,410	9,770		PTI_1995
K	Oklahoma	GRID3	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					1,410	10,800		PTI_1995
K	Oklahoma	GRID4	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					2,325	9,680		PTI_1995
K	Oklahoma	TERA	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					1,440	9,680		PTI_1995
K	Oklahoma	TERB	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					2,000	8,140		PTI_1995
K	Oklahoma	TERC	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					3,040	10,500		PTI_1995
K	Oklahoma	TRAP1	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					1,980	9,220		PTI_1995
K	Oklahoma	TRAP1	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					1,980	9,900		PTI_1995
K	Oklahoma	TRAP2	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					2,320	9,930		PTI_1995
Se	Oklahoma	GRID2	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					0.94	1.0		PTI_1995
Se	Oklahoma	GRID2	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					0.94	1.0		PTI_1995

Literature Arthropod Bioacumulation Data for Hanford															
Analyte	Site Location	Sample Location	Trophic Level	Class	Order	Family	Species	Diettype	Diet	Plant	Water	Soil Concentration (mg/kg)	Arthropod Cencentration (mg/kg)	*Laboratory Qualification	**Literature Reference
Se	Oklahoma	GRID3	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					0.53	1.0		PTI_1995
Se	Oklahoma	GRID3	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					0.53	2.0		PTI_1995
Se	Oklahoma	GRID4	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					0.62	1.0		PTI_1995
Se	Oklahoma	TERC	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					0.33	1.0	J	PTI_1995
Se	Oklahoma	TRAP1	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					19	2.0		PTI_1995
Se	Oklahoma	TRAP1	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					19	3.0		PTI_1995
Se	Oklahoma	TRAP2	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					0.57	1.0		PTI_1995
Ag	Oklahoma	GRID1	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					1.0	0.12	J	PTI_1995
Ag	Oklahoma	GRID2	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					6.9	0.27	J	PTI_1995
Ag	Oklahoma	GRID2	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					6.9	0.30	J	PTI_1995
Ag	Oklahoma	GRID3	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					3.0	0.15	J	PTI_1995
Ag	Oklahoma	GRID3	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					3.0	0.15	J	PTI_1995
Ag	Oklahoma	GRID4	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					2.9	0.050	J	PTI_1995
Ag	Oklahoma	TERA	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					0.59	0.020	J	PTI_1995
Ag	Oklahoma	TERB	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					1.2	0.020	J	PTI_1995
Ag	Oklahoma	TRAP1	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					5.4	0.12	J	PTI_1995
Ag	Oklahoma	TRAP1	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					5.4	0.16	J	PTI_1995
Ag	Oklahoma	TRAP2	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					2.1	0.030	J	PTI_1995
Na	Oklahoma	GRID1	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					148	770		PTI_1995
Na	Oklahoma	GRID2	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					49	1,070		PTI_1995
Na	Oklahoma	GRID2	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					49	1,150		PTI_1995
Na	Oklahoma	GRID3	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					86	1,080		PTI_1995
Na	Oklahoma	GRID3	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					86	1,080		PTI_1995
Na	Oklahoma	GRID4	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					61	872		PTI_1995
Na	Oklahoma	TERA	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					41	734		PTI_1995
Na	Oklahoma	TERB	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					68	644		PTI_1995
Na	Oklahoma	TERC	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					78	485		PTI_1995
Na	Oklahoma	TRAP1	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					395	1,040		PTI_1995
Na	Oklahoma	TRAP1	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					395	1,110		PTI_1995
Na	Oklahoma	TRAP2	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					57	968		PTI_1995
Tl	Oklahoma	GRID1	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					0.36	0.020	J	PTI_1995
Tl	Oklahoma	GRID2	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					0.38	0.020	J	PTI_1995
Tl	Oklahoma	GRID2	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					0.38	0.020	J	PTI_1995
Tl	Oklahoma	GRID3	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					0.38	0.020	J	PTI_1995
Tl	Oklahoma	GRID3	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					0.38	0.020	J	PTI_1995
Tl	Oklahoma	GRID4	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					0.33	0.020	J	PTI_1995
Tl	Oklahoma	TERA	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					0.39	0.020	J	PTI_1995
Tl	Oklahoma	TERB	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					0.38	0.020	J	PTI_1995
Tl	Oklahoma	TRAP2	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					0.37	0.020	J	PTI_1995
V	Oklahoma	GRID1	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					31	0.50		PTI_1995
V	Oklahoma	GRID2	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					30	0.20		PTI_1995
V	Oklahoma	GRID2	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					30	0.20		PTI_1995
V	Oklahoma	GRID3	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					29	0.20		PTI_1995
V	Oklahoma	GRID3	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					29	0.20		PTI_1995
V	Oklahoma	GRID4	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					31	0.20		PTI_1995
V	Oklahoma	TERA	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					25	0.10		PTI_1995
V	Oklahoma	TERB	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					45	0.20		PTI_1995
V	Oklahoma	TERC	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					34	0.20		PTI_1995
V	Oklahoma	TRAP1	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					58	0.20		PTI_1995
V	Oklahoma	TRAP1	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					58	0.20		PTI_1995
V	Oklahoma	TRAP2	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					28	0.20		PTI_1995
Zn	Oklahoma	GRID1	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					3,210	334		PTI_1995
Zn	Oklahoma	GRID2	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					3,750	375		PTI_1995
Zn	Oklahoma	GRID2	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					3,750	376		PTI_1995
Zn	Oklahoma	GRID3	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					1,530	263		PTI_1995
Zn	Oklahoma	GRID3	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					1,530	292		PTI_1995
Zn	Oklahoma	GRID4	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					2,135	266		PTI_1995
Zn	Oklahoma	TERA	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					154	197		PTI_1995
Zn	Oklahoma	TERB	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					413	235		PTI_1995
Zn	Oklahoma	TERC	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					169	171		PTI_1995
Zn	Oklahoma	TRAP1	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					7,170	253		PTI_1995
Zn	Oklahoma	TRAP1	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					7,170	261		PTI_1995

Literature Arthropod Bioacumulation Data for Hanford															
Analyte	Site Location	Sample Location	Trophic Level	Class	Order	Family	Species	Diettype	Diet	Plant	Water	Soil Concentration (mg/kg)	Arthropod Cencentration (mg/kg)	*Laboratory Qualification	**Literature Reference
Zn	Oklahoma	TRAP2	herbivore	Insecta	Orthoptera	Acrididae	grasshopper					2,270	223		PTI_1995
Al	Oklahoma	GRID1	predator	Arachnida	Araneae		spider					16,400	136		PTI_1995
Al	Oklahoma	GRID2	predator	Arachnida	Araneae		spider					14,700	20		PTI_1995
Al	Oklahoma	GRID4	predator	Arachnida	Araneae		spider					14,550	19		PTI_1995
Al	Oklahoma	TERA	predator	Arachnida	Araneae		spider					12,700	30		PTI_1995
Al	Oklahoma	TERB	predator	Arachnida	Araneae		spider					16,700	19		PTI_1995
Al	Oklahoma	TERC	predator	Arachnida	Araneae		spider					17,800	149		PTI_1995
Sb	Oklahoma	TERA	predator	Arachnida	Araneae		spider					4.0	0.030	J	PTI_1995
Sb	Oklahoma	TERC	predator	Arachnida	Araneae		spider					4.1	0.030	J	PTI_1995
As	Oklahoma	GRID1	predator	Arachnida	Araneae		spider					5.7	1.0		PTI_1995
As	Oklahoma	GRID2	predator	Arachnida	Araneae		spider					21	0.50		PTI_1995
As	Oklahoma	GRID4	predator	Arachnida	Araneae		spider					17	0.50		PTI_1995
As	Oklahoma	TERA	predator	Arachnida	Araneae		spider					2.9	0.50		PTI_1995
As	Oklahoma	TERB	predator	Arachnida	Araneae		spider					4.4	0.50		PTI_1995
As	Oklahoma	TERC	predator	Arachnida	Araneae		spider					6.3	0.50		PTI_1995
Ba	Oklahoma	GRID1	predator	Arachnida	Araneae		spider					151	2.8		PTI_1995
Ba	Oklahoma	GRID2	predator	Arachnida	Araneae		spider					160	2.5		PTI_1995
Ba	Oklahoma	GRID4	predator	Arachnida	Araneae		spider					164	4.5		PTI_1995
Ba	Oklahoma	TERA	predator	Arachnida	Araneae		spider					98	6.6		PTI_1995
Ba	Oklahoma	TERB	predator	Arachnida	Araneae		spider					131	5.0		PTI_1995
Ba	Oklahoma	TERC	predator	Arachnida	Araneae		spider					222	5.8		PTI_1995
Be	Oklahoma	GRID1	predator	Arachnida	Araneae		spider					1.2	0.040		PTI_1995
Be	Oklahoma	GRID2	predator	Arachnida	Araneae		spider					0.95	0.020		PTI_1995
Be	Oklahoma	GRID4	predator	Arachnida	Araneae		spider					0.95	0.020		PTI_1995
Be	Oklahoma	TERA	predator	Arachnida	Araneae		spider					0.70	0.020		PTI_1995
Be	Oklahoma	TERB	predator	Arachnida	Araneae		spider					1.4	0.020		PTI_1995
Be	Oklahoma	TERC	predator	Arachnida	Araneae		spider					1.2	0.020		PTI_1995
Cd	Oklahoma	GRID1	predator	Arachnida	Araneae		spider					27	30	J	PTI_1995
Cd	Oklahoma	GRID2	predator	Arachnida	Araneae		spider					70	8.6	J	PTI_1995
Cd	Oklahoma	GRID4	predator	Arachnida	Araneae		spider					33	18	J	PTI_1995
Cd	Oklahoma	TERA	predator	Arachnida	Araneae		spider					0.89	10	J	PTI_1995
Cd	Oklahoma	TERB	predator	Arachnida	Araneae		spider					3.4	9.7	J	PTI_1995
Ca	Oklahoma	GRID1	predator	Arachnida	Araneae		spider					13,000	1,960		PTI_1995
Ca	Oklahoma	GRID2	predator	Arachnida	Araneae		spider					2,500	1,250		PTI_1995
Ca	Oklahoma	GRID4	predator	Arachnida	Araneae		spider					3,715	2,100		PTI_1995
Ca	Oklahoma	TERA	predator	Arachnida	Araneae		spider					1,670	2,500		PTI_1995
Ca	Oklahoma	TERB	predator	Arachnida	Araneae		spider					2,330	2,000		PTI_1995
Ca	Oklahoma	TERC	predator	Arachnida	Araneae		spider					66,200	3,120		PTI_1995
Cr	Oklahoma	GRID1	predator	Arachnida	Araneae		spider					27	11		PTI_1995
Cr	Oklahoma	GRID2	predator	Arachnida	Araneae		spider					25	4.6		PTI_1995
Cr	Oklahoma	GRID4	predator	Arachnida	Araneae		spider					26	1.3		PTI_1995
Cr	Oklahoma	TERA	predator	Arachnida	Araneae		spider					24	11		PTI_1995
Cr	Oklahoma	TERB	predator	Arachnida	Araneae		spider					40	1.8		PTI_1995
Cr	Oklahoma	TERC	predator	Arachnida	Araneae		spider					33	1.6		PTI_1995
Co	Oklahoma	GRID1	predator	Arachnida	Araneae		spider					16	0.11		PTI_1995
Co	Oklahoma	GRID2	predator	Arachnida	Araneae		spider					9.2	0.040		PTI_1995
Co	Oklahoma	GRID4	predator	Arachnida	Araneae		spider					10	0.070		PTI_1995
Co	Oklahoma	TERA	predator	Arachnida	Araneae		spider					6.4	0.24		PTI_1995
Co	Oklahoma	TERB	predator	Arachnida	Araneae		spider					8.8	0.090		PTI_1995
Co	Oklahoma	TERC	predator	Arachnida	Araneae		spider					13	0.090		PTI_1995
Cu	Oklahoma	GRID1	predator	Arachnida	Araneae		spider					48	95		PTI_1995
Cu	Oklahoma	GRID2	predator	Arachnida	Araneae		spider					180	56		PTI_1995
Cu	Oklahoma	GRID4	predator	Arachnida	Araneae		spider					77	56		PTI_1995
Cu	Oklahoma	TERA	predator	Arachnida	Araneae		spider					11	105		PTI_1995
Cu	Oklahoma	TERB	predator	Arachnida	Araneae		spider					22	79		PTI_1995
Cu	Oklahoma	TERC	predator	Arachnida	Araneae		spider					20	72		PTI_1995
Fe	Oklahoma	GRID1	predator	Arachnida	Araneae		spider					26,100	533		PTI_1995
Fe	Oklahoma	GRID2	predator	Arachnida	Araneae		spider					19,800	267		PTI_1995
Fe	Oklahoma	GRID4	predator	Arachnida	Araneae		spider					20,450	230		PTI_1995
Fe	Oklahoma	TERA	predator	Arachnida	Araneae		spider					16,800	1,720		PTI_1995
Fe	Oklahoma	TERB	predator	Arachnida	Araneae		spider					32,800	210		PTI_1995
Fe	Oklahoma	TERC	predator	Arachnida	Araneae		spider					28,200	473		PTI_1995

Literature Arthropod Bioacumulation Data for Hanford															
Analyte	Site Location	Sample Location	Trophic Level	Class	Order	Family	Species	Diettype	Diet	Plant	Water	Soil Concentration (mg/kg)	Arthropod Cencentration (mg/kg)	*Laboratory Qualification	**Literature Reference
Pb	Oklahoma	GRID1	predator	Arachnida	Araneae		spider					84	3.1		PTI_1995
Pb	Oklahoma	GRID2	predator	Arachnida	Araneae		spider					435	1.0		PTI_1995
Pb	Oklahoma	GRID4	predator	Arachnida	Araneae		spider					282	0.52		PTI_1995
Pb	Oklahoma	TERA	predator	Arachnida	Araneae		spider					27	0.47		PTI_1995
Pb	Oklahoma	TERB	predator	Arachnida	Araneae		spider					56	0.32		PTI_1995
Pb	Oklahoma	TERC	predator	Arachnida	Araneae		spider					27	0.28		PTI_1995
Mg	Oklahoma	GRID1	predator	Arachnida	Araneae		spider					2,850	1,770		PTI_1995
Mg	Oklahoma	GRID2	predator	Arachnida	Araneae		spider					1,750	1,780		PTI_1995
Mg	Oklahoma	GRID4	predator	Arachnida	Araneae		spider					2,120	1,920		PTI_1995
Mg	Oklahoma	TERA	predator	Arachnida	Araneae		spider					1,450	2,120		PTI_1995
Mg	Oklahoma	TERB	predator	Arachnida	Araneae		spider					2,170	2,020		PTI_1995
Mg	Oklahoma	TERC	predator	Arachnida	Araneae		spider					3,400	2,120		PTI_1995
Mn	Oklahoma	GRID1	predator	Arachnida	Araneae		spider					486	24		PTI_1995
Mn	Oklahoma	GRID2	predator	Arachnida	Araneae		spider					578	22		PTI_1995
Mn	Oklahoma	GRID4	predator	Arachnida	Araneae		spider					583	21		PTI_1995
Mn	Oklahoma	TERA	predator	Arachnida	Araneae		spider					150	42		PTI_1995
Mn	Oklahoma	TERB	predator	Arachnida	Araneae		spider					285	37		PTI_1995
Mn	Oklahoma	TERC	predator	Arachnida	Araneae		spider					1,260	35		PTI_1995
Hg	Oklahoma	GRID1	predator	Arachnida	Araneae		spider					0.090	0.080		PTI_1995
Hg	Oklahoma	GRID2	predator	Arachnida	Araneae		spider					0.19	0.060		PTI_1995
Hg	Oklahoma	GRID4	predator	Arachnida	Araneae		spider					0.090	0.050		PTI_1995
Hg	Oklahoma	TERA	predator	Arachnida	Araneae		spider					0.030	0.20		PTI_1995
Hg	Oklahoma	TERB	predator	Arachnida	Araneae		spider					0.050	0.060		PTI_1995
Hg	Oklahoma	TERC	predator	Arachnida	Araneae		spider					0.060	0.13		PTI_1995
Ni	Oklahoma	GRID1	predator	Arachnida	Araneae		spider					26	4.0		PTI_1995
Ni	Oklahoma	GRID2	predator	Arachnida	Araneae		spider					18	2.0		PTI_1995
Ni	Oklahoma	GRID4	predator	Arachnida	Araneae		spider					19	2.0		PTI_1995
Ni	Oklahoma	TERA	predator	Arachnida	Araneae		spider					9.9	4.0		PTI_1995
Ni	Oklahoma	TERB	predator	Arachnida	Araneae		spider					15	2.0		PTI_1995
Ni	Oklahoma	TERC	predator	Arachnida	Araneae		spider					36	2.0		PTI_1995
K	Oklahoma	GRID1	predator	Arachnida	Araneae		spider					1,400	10,300		PTI_1995
K	Oklahoma	GRID2	predator	Arachnida	Araneae		spider					1,850	9,050		PTI_1995
K	Oklahoma	GRID4	predator	Arachnida	Araneae		spider					2,325	9,880		PTI_1995
K	Oklahoma	TERA	predator	Arachnida	Araneae		spider					1,440	11,100		PTI_1995
K	Oklahoma	TERB	predator	Arachnida	Araneae		spider					2,000	9,670		PTI_1995
K	Oklahoma	TERC	predator	Arachnida	Araneae		spider					3,040	11,000		PTI_1995
Se	Oklahoma	GRID2	predator	Arachnida	Araneae		spider					0.94	1.0		PTI_1995
Se	Oklahoma	GRID4	predator	Arachnida	Araneae		spider					0.62	2.0		PTI_1995
Se	Oklahoma	TERC	predator	Arachnida	Araneae		spider					0.33	2.0	J	PTI_1995
Ag	Oklahoma	GRID1	predator	Arachnida	Araneae		spider					1.0	0.59	J	PTI_1995
Ag	Oklahoma	GRID2	predator	Arachnida	Araneae		spider					6.9	0.37	J	PTI_1995
Ag	Oklahoma	GRID4	predator	Arachnida	Araneae		spider					2.9	0.32	J	PTI_1995
Ag	Oklahoma	TERA	predator	Arachnida	Araneae		spider					0.59	0.59	J	PTI_1995
Ag	Oklahoma	TERB	predator	Arachnida	Araneae		spider					1.2	0.43	J	PTI_1995
Na	Oklahoma	GRID1	predator	Arachnida	Araneae		spider					148	3,810		PTI_1995
Na	Oklahoma	GRID2	predator	Arachnida	Araneae		spider					49	2,680		PTI_1995
Na	Oklahoma	GRID4	predator	Arachnida	Araneae		spider					61	2,000		PTI_1995
Na	Oklahoma	TERA	predator	Arachnida	Araneae		spider					41	3,240		PTI_1995
Na	Oklahoma	TERB	predator	Arachnida	Araneae		spider					68	2,400		PTI_1995
Na	Oklahoma	TERC	predator	Arachnida	Araneae		spider					78	2,330		PTI_1995
Tl	Oklahoma	GRID1	predator	Arachnida	Araneae		spider					0.36	0.040	J	PTI_1995
Tl	Oklahoma	GRID2	predator	Arachnida	Araneae		spider					0.38	0.020	J	PTI_1995
Tl	Oklahoma	GRID4	predator	Arachnida	Araneae		spider					0.33	0.020	J	PTI_1995
Tl	Oklahoma	TERA	predator	Arachnida	Araneae		spider					0.39	0.020	J	PTI_1995
Tl	Oklahoma	TERB	predator	Arachnida	Araneae		spider					0.38	0.020	J	PTI_1995
V	Oklahoma	GRID1	predator	Arachnida	Araneae		spider					31	0.30		PTI_1995
V	Oklahoma	GRID2	predator	Arachnida	Araneae		spider					30	0.30		PTI_1995
V	Oklahoma	GRID4	predator	Arachnida	Araneae		spider					31	0.20		PTI_1995
V	Oklahoma	TERA	predator	Arachnida	Araneae		spider					25	0.10		PTI_1995
V	Oklahoma	TERB	predator	Arachnida	Araneae		spider					45	0.20		PTI_1995
V	Oklahoma	TERC	predator	Arachnida	Araneae		spider					34	0.50		PTI_1995
Zn	Oklahoma	GRID1	predator	Arachnida	Araneae		spider					3,210	631		PTI_1995

Literature Arthropod Bioacumulation Data for Hanford															
Analyte	Site Location	Sample Location	Trophic Level	Class	Order	Family	Species	Diettype	Diet	Plant	Water	Soil Concentration (mg/kg)	Arthropod Cencentration (mg/kg)	*Laboratory Qualification	**Literature Reference
Zn	Oklahoma	GRID2	predator	Arachnida	Araneae		spider					3,750	365		PTI_1995
Zn	Oklahoma	GRID4	predator	Arachnida	Araneae		spider					2,135	336		PTI_1995
Zn	Oklahoma	TERA	predator	Arachnida	Araneae		spider					154	415		PTI_1995
Zn	Oklahoma	TERB	predator	Arachnida	Araneae		spider					413	319		PTI_1995
Zn	Oklahoma	TERC	predator	Arachnida	Araneae		spider					169	328		PTI_1995
Cd	Austria	2	herbivore	Insecta	Orthoptera	Acrididae	Orthoptera-C._montanus					82	12		Rabitsch_1995a
Cu	Austria	2	herbivore	Insecta	Orthoptera	Acrididae	Orthoptera-C._montanus					1,900	137		Rabitsch_1995a
Pb	Austria	2	herbivore	Insecta	Orthoptera	Acrididae	Orthoptera-C._montanus					93,768	306		Rabitsch_1995a
Zn	Austria	2	herbivore	Insecta	Orthoptera	Acrididae	Orthoptera-C._montanus					8,050	701		Rabitsch_1995a
Cd	Austria	2	herbivore	Insecta	Coleoptera	Curculionidae	curculionidae-O._crategi					82	5.5		Rabitsch_1995a
Cd	Austria	2	herbivore	Insecta	Coleoptera	Curculionidae	curculionidae-O._ovatus					82	9.9		Rabitsch_1995a
Cd	Austria	3	herbivore	Insecta	Coleoptera	Curculionidae	curculionidae-O._raucus					43	2.7		Rabitsch_1995a
Cd	Austria	3	herbivore	Insecta	Coleoptera	Curculionidae	curculionidae-O._ovatus					43	8.4		Rabitsch_1995a
Cd	Austria	4	herbivore	Insecta	Coleoptera	Curculionidae	curculionidae-H._abietus					35	1.4		Rabitsch_1995a
Cu	Austria	2	herbivore	Insecta	Coleoptera	Curculionidae	curculionidae-O._crategi					1,900	9.4		Rabitsch_1995a
Cu	Austria	2	herbivore	Insecta	Coleoptera	Curculionidae	curculionidae-O._ovatus					1,900	21		Rabitsch_1995a
Cu	Austria	3	herbivore	Insecta	Coleoptera	Curculionidae	curculionidae-O._ovatus					295	18		Rabitsch_1995a
Cu	Austria	3	herbivore	Insecta	Coleoptera	Curculionidae	curculionidae-O._raucus					295	33		Rabitsch_1995a
Cu	Austria	4	herbivore	Insecta	Coleoptera	Curculionidae	curculionidae-H._abietus					130	40		Rabitsch_1995a
Pb	Austria	2	herbivore	Insecta	Coleoptera	Curculionidae	curculionidae-O._crategi					93,768	292		Rabitsch_1995a
Pb	Austria	2	herbivore	Insecta	Coleoptera	Curculionidae	curculionidae-O._ovatus					93,768	726		Rabitsch_1995a
Pb	Austria	3	herbivore	Insecta	Coleoptera	Curculionidae	curculionidae-O._raucus					8,928	95		Rabitsch_1995a
Pb	Austria	3	herbivore	Insecta	Coleoptera	Curculionidae	curculionidae-O._ovatus					8,928	353		Rabitsch_1995a
Pb	Austria	4	herbivore	Insecta	Coleoptera	Curculionidae	curculionidae-H._abietus					4,665	28		Rabitsch_1995a
Zn	Austria	2	herbivore	Insecta	Coleoptera	Curculionidae	curculionidae-O._ovatus					8,050	138		Rabitsch_1995a
Zn	Austria	2	herbivore	Insecta	Coleoptera	Curculionidae	curculionidae-O._crategi					8,050	206		Rabitsch_1995a
Zn	Austria	3	herbivore	Insecta	Coleoptera	Curculionidae	curculionidae-O._raucus					7,795	80		Rabitsch_1995a
Zn	Austria	3	herbivore	Insecta	Coleoptera	Curculionidae	curculionidae-O._ovatus					7,795	99		Rabitsch_1995a
Zn	Austria	4	herbivore	Insecta	Coleoptera	Curculionidae	curculionidae-H._abietus					5,813	79		Rabitsch_1995a
Cd	Austria	5	omnivore	Insecta	Orthoptera	Blattodidae	Blattodea-E._sylvestris					2.5	3.5		Rabitsch_1995a
Cu	Austria	5	omnivore	Insecta	Orthoptera	Blattodidae	Blattodea-E._sylvestris					37	16		Rabitsch_1995a
Pb	Austria	5	omnivore	Insecta	Orthoptera	Blattodidae	Blattodea-E._sylvestris					574	34		Rabitsch_1995a
Zn	Austria	5	omnivore	Insecta	Orthoptera	Blattodidae	Blattodea-E._sylvestris					329	267		Rabitsch_1995a
Cd	Austria	1	predator	Insecta	Coleoptera	Carabidae	carabidae-P._versicolor					23	4.1		Rabitsch_1995a
Cd	Austria	1	predator	Insecta	Coleoptera	Carabidae	carabidae-P._oblongopunctatus					23	12		Rabitsch_1995a
Cd	Austria	2	predator	Insecta	Coleoptera	Carabidae	carabidae-H._rufipes					82	4.4		Rabitsch_1995a
Cd	Austria	2	predator	Insecta	Coleoptera	Carabidae	carabidae-C._erratus					82	7.6		Rabitsch_1995a
Cd	Austria	2	predator	Insecta	Coleoptera	Carabidae	carabidae-A._lunicollis					82	15		Rabitsch_1995a
Cd	Austria	2	predator	Insecta	Coleoptera	Carabidae	carabidae-P._versicolor					82	18		Rabitsch_1995a
Cd	Austria	4	predator	Insecta	Coleoptera	Carabidae	carabidae-C._hortensis					35	7.6		Rabitsch_1995a
Cd	Austria	5	predator	Insecta	Coleoptera	Carabidae	carabidae-P._metallicus					2.5	2.5		Rabitsch_1995a
Cd	Austria	5	predator	Insecta	Coleoptera	Carabidae	carabidae-P._oblongopunctatus					2.5	2.8		Rabitsch_1995a
Cd	Austria	5	predator	Insecta	Coleoptera	Carabidae	carabidae-C._hortensis					2.5	11		Rabitsch_1995a
Cu	Austria	1	predator	Insecta	Coleoptera	Carabidae	carabidae-P._versicolor					114	15		Rabitsch_1995a
Cu	Austria	1	predator	Insecta	Coleoptera	Carabidae	carabidae-P._oblongopunctatus					114	25		Rabitsch_1995a
Cu	Austria	2	predator	Insecta	Coleoptera	Carabidae	carabidae-H._rufipes					1,900	15		Rabitsch_1995a
Cu	Austria	2	predator	Insecta	Coleoptera	Carabidae	carabidae-P._versicolor					1,900	18		Rabitsch_1995a
Cu	Austria	2	predator	Insecta	Coleoptera	Carabidae	carabidae-C._erratus					1,900	28		Rabitsch_1995a
Cu	Austria	2	predator	Insecta	Coleoptera	Carabidae	carabidae-A._lunicollis					1,900	40		Rabitsch_1995a
Cu	Austria	4	predator	Insecta	Coleoptera	Carabidae	carabidae-C._hortensis					130	12		Rabitsch_1995a
Cu	Austria	5	predator	Insecta	Coleoptera	Carabidae	carabidae-P._metallicus					37	14		Rabitsch_1995a
Cu	Austria	5	predator	Insecta	Coleoptera	Carabidae	carabidae-C._hortensis					37	14		Rabitsch_1995a
Cu	Austria	5	predator	Insecta	Coleoptera	Carabidae	carabidae-P._oblongopunctatus					37	21		Rabitsch_1995a
Pb	Austria	1	predator	Insecta	Coleoptera	Carabidae	carabidae-P._versicolor					1,695	31		Rabitsch_1995a
Pb	Austria	1	predator	Insecta	Coleoptera	Carabidae	carabidae-P._oblongopunctatus					1,695	43		Rabitsch_1995a
Pb	Austria	2	predator	Insecta	Coleoptera	Carabidae	carabidae-H._rufipes					93,768	215		Rabitsch_1995a
Pb	Austria	2	predator	Insecta	Coleoptera	Carabidae	carabidae-P._versicolor					93,768	472		Rabitsch_1995a
Pb	Austria	2	predator	Insecta	Coleoptera	Carabidae	carabidae-C._erratus					93,768	617		Rabitsch_1995a
Pb	Austria	2	predator	Insecta	Coleoptera	Carabidae	carabidae-A._lunicollis					93,768	623		Rabitsch_1995a
Pb	Austria	4	predator	Insecta	Coleoptera	Carabidae	carabidae-C._hortensis					4,665	9.5		Rabitsch_1995a
Pb	Austria	5	predator	Insecta	Coleoptera	Carabidae	carabidae-C._hortensis					574	3.8		Rabitsch_1995a
Pb	Austria	5	predator	Insecta	Coleoptera	Carabidae	carabidae-P._metallicus					574	6.1		Rabitsch_1995a

Literature Arthropod Bioacumulation Data for Hanford															
Analyte	Site Location	Sample Location	Trophic Level	Class	Order	Family	Species	Diettype	Diet	Plant	Water	Soil Concentration (mg/kg)	Arthropod Cencentration (mg/kg)	*Laboratory Qualification	**Literature Reference
Pb	Austria	5	predator	Insecta	Coleoptera	Carabidae	carabidae-P._oblongopunctatus					574	12		Rabitsch_1995a
Zn	Austria	1	predator	Insecta	Coleoptera	Carabidae	carabidae-P._versicolor					1,697	247		Rabitsch_1995a
Zn	Austria	1	predator	Insecta	Coleoptera	Carabidae	carabidae-P._oblongopunctatus					1,697	298		Rabitsch_1995a
Zn	Austria	2	predator	Insecta	Coleoptera	Carabidae	carabidae-H._rufipes					8,050	287		Rabitsch_1995a
Zn	Austria	2	predator	Insecta	Coleoptera	Carabidae	carabidae-P._versicolor					8,050	394		Rabitsch_1995a
Zn	Austria	2	predator	Insecta	Coleoptera	Carabidae	carabidae-A._lunicollis					8,050	402		Rabitsch_1995a
Zn	Austria	2	predator	Insecta	Coleoptera	Carabidae	carabidae-C._erratus					8,050	475		Rabitsch_1995a
Zn	Austria	4	predator	Insecta	Coleoptera	Carabidae	carabidae-C._hortensis					5,813	113		Rabitsch_1995a
Zn	Austria	5	predator	Insecta	Coleoptera	Carabidae	carabidae-C._hortensis					329	104		Rabitsch_1995a
Zn	Austria	5	predator	Insecta	Coleoptera	Carabidae	carabidae-P._oblongopunctatus					329	125		Rabitsch_1995a
Zn	Austria	5	predator	Insecta	Coleoptera	Carabidae	carabidae-P._metallicus					329	157		Rabitsch_1995a
Cd	Austria	1	predator	Insecta	Coleoptera	Staphylinidae	staphylinidae-P._fossor					23	5.7		Rabitsch_1995a
Cd	Austria	1	predator	Insecta	Coleoptera	Staphylinidae	staphylinidae-Q._fuliginosus					23	20		Rabitsch_1995a
Cd	Austria	3	predator	Insecta	Coleoptera	Staphylinidae	staphylinidae-Z._humeralis					43	7.3		Rabitsch_1995a
Cd	Austria	3	predator	Insecta	Coleoptera	Staphylinidae	staphylinidae-X._linearis					43	8.2		Rabitsch_1995a
Cd	Austria	3	predator	Insecta	Coleoptera	Staphylinidae	staphylinidae-P._fossor					43	9.5		Rabitsch_1995a
Cd	Austria	3	predator	Insecta	Coleoptera	Staphylinidae	staphylinidae-G._circellaris					43	17		Rabitsch_1995a
Cd	Austria	4	predator	Insecta	Coleoptera	Staphylinidae	staphylinidae-P._fossor					35	17		Rabitsch_1995a
Cd	Austria	5	predator	Insecta	Coleoptera	Staphylinidae	staphylinidae-Q._fuliginosus					2.5	6.6		Rabitsch_1995a
Cu	Austria	1	predator	Insecta	Coleoptera	Staphylinidae	staphylinidae-Q._fuliginosus					114	14		Rabitsch_1995a
Cu	Austria	1	predator	Insecta	Coleoptera	Staphylinidae	staphylinidae-P._fossor					114	37		Rabitsch_1995a
Cu	Austria	3	predator	Insecta	Coleoptera	Staphylinidae	staphylinidae-X._linearis					295	15		Rabitsch_1995a
Cu	Austria	3	predator	Insecta	Coleoptera	Staphylinidae	staphylinidae-P._fossor					295	28		Rabitsch_1995a
Cu	Austria	3	predator	Insecta	Coleoptera	Staphylinidae	staphylinidae-Z._humeralis					295	42		Rabitsch_1995a
Cu	Austria	3	predator	Insecta	Coleoptera	Staphylinidae	staphylinidae-G._circellaris					295	76		Rabitsch_1995a
Cu	Austria	4	predator	Insecta	Coleoptera	Staphylinidae	staphylinidae-P._fossor					130	38		Rabitsch_1995a
Cu	Austria	5	predator	Insecta	Coleoptera	Staphylinidae	staphylinidae-Q._fuliginosus					37	12		Rabitsch_1995a
Pb	Austria	1	predator	Insecta	Coleoptera	Staphylinidae	staphylinidae-P._fossor					1,695	21		Rabitsch_1995a
Pb	Austria	1	predator	Insecta	Coleoptera	Staphylinidae	staphylinidae-Q._fuliginosus					1,695	46		Rabitsch_1995a
Pb	Austria	3	predator	Insecta	Coleoptera	Staphylinidae	staphylinidae-P._fossor					8,928	52		Rabitsch_1995a
Pb	Austria	3	predator	Insecta	Coleoptera	Staphylinidae	staphylinidae-X._linearis					8,928	77		Rabitsch_1995a
Pb	Austria	3	predator	Insecta	Coleoptera	Staphylinidae	staphylinidae-Z._humeralis					8,928	107		Rabitsch_1995a
Pb	Austria	3	predator	Insecta	Coleoptera	Staphylinidae	staphylinidae-G._circellaris					8,928	1,037		Rabitsch_1995a
Pb	Austria	4	predator	Insecta	Coleoptera	Staphylinidae	staphylinidae-P._fossor					4,665	58		Rabitsch_1995a
Pb	Austria	5	predator	Insecta	Coleoptera	Staphylinidae	staphylinidae-Q._fuliginosus					574	11		Rabitsch_1995a
Zn	Austria	1	predator	Insecta	Coleoptera	Staphylinidae	staphylinidae-Q._fuliginosus					1,697	380		Rabitsch_1995a
Zn	Austria	1	predator	Insecta	Coleoptera	Staphylinidae	staphylinidae-P._fossor					1,697	635		Rabitsch_1995a
Zn	Austria	3	predator	Insecta	Coleoptera	Staphylinidae	staphylinidae-Z._humeralis					7,795	96		Rabitsch_1995a
Zn	Austria	3	predator	Insecta	Coleoptera	Staphylinidae	staphylinidae-P._fossor					7,795	472		Rabitsch_1995a
Zn	Austria	3	predator	Insecta	Coleoptera	Staphylinidae	staphylinidae-X._linearis					7,795	550		Rabitsch_1995a
Zn	Austria	3	predator	Insecta	Coleoptera	Staphylinidae	staphylinidae-G._circellaris					7,795	891		Rabitsch_1995a
Zn	Austria	4	predator	Insecta	Coleoptera	Staphylinidae	staphylinidae-P._fossor					5,813	589		Rabitsch_1995a
Zn	Austria	5	predator	Insecta	Coleoptera	Staphylinidae	staphylinidae-Q._fuliginosus					329	314		Rabitsch_1995a
Cd	Austria	1	predator	Insecta	Hymenoptera	Formicidae	Myrmica_sabuleti					15	5.5		Rabitsch_1995b
Cd	Austria	1	predator	Insecta	Hymenoptera	Formicidae	Formica_fusca					15	15		Rabitsch_1995b
Cd	Austria	1	predator	Insecta	Hymenoptera	Formicidae	Lasius_platythorax					15	29		Rabitsch_1995b
Cd	Austria	1	predator	Insecta	Hymenoptera	Formicidae	Myrmica_sabuleti					15	4.3		Rabitsch_1995b
Cd	Austria	1	predator	Insecta	Hymenoptera	Formicidae	Myrmica_sabuleti					15	13		Rabitsch_1995b
Cd	Austria	2	predator	Insecta	Hymenoptera	Formicidae	Tetramorium_caespitum					97	3.7		Rabitsch_1995b
Cd	Austria	2	predator	Insecta	Hymenoptera	Formicidae	Myrmica_sabuleti					97	7.2		Rabitsch_1995b
Cd	Austria	3	predator	Insecta	Hymenoptera	Formicidae	Lasius_platythorax					30	6.6		Rabitsch_1995b
Cd	Austria	3	predator	Insecta	Hymenoptera	Formicidae	Camponitus_ligniperda					30	28		Rabitsch_1995b
Cd	Austria	3	predator	Insecta	Hymenoptera	Formicidae	Leptohorax_acervorum					30	5.7		Rabitsch_1995b
Cd	Austria	3	predator	Insecta	Hymenoptera	Formicidae	Camponitus_ligniperda					30	48		Rabitsch_1995b
Cd	Austria	4	predator	Insecta	Hymenoptera	Formicidae	Myrmica_sabuleti					24	3.6		Rabitsch_1995b
Cd	Austria	4	predator	Insecta	Hymenoptera	Formicidae	Myrmica_sabuleti					24	9.5		Rabitsch_1995b
Cd	Austria	4	predator	Insecta	Hymenoptera	Formicidae	Tapinoma_ambigumm					24	17		Rabitsch_1995b
Cd	Austria	5	predator	Insecta	Hymenoptera	Formicidae	Camponitus_vagus					2.0	25		Rabitsch_1995b
Cd	Austria	5	predator	Insecta	Hymenoptera	Formicidae	Lasius_platythorax					2.0	23		Rabitsch_1995b
Cd	Austria	5	predator	Insecta	Hymenoptera	Formicidae	Camponitus_ligniperda					2.0	46		Rabitsch_1995b
Cu	Austria	1	predator	Insecta	Hymenoptera	Formicidae	Formica_fusca					95	19		Rabitsch_1995b
Cu	Austria	1	predator	Insecta	Hymenoptera	Formicidae	Myrmica_sabuleti					95	21		Rabitsch_1995b

Literature Arthropod Bioacumulation Data for Hanford															
Analyte	Site Location	Sample Location	Trophic Level	Class	Order	Family	Species	Diettype	Diet	Plant	Water	Soil Concentration (mg/kg)	Arthropod Cencentration (mg/kg)	*Laboratory Qualification	**Literature Reference
Cu	Austria	1	predator	Insecta	Hymenoptera	Formicidae	Lasius_platythorax					95	45		Rabitsch_1995b
Cu	Austria	1	predator	Insecta	Hymenoptera	Formicidae	Myrmica_sabuleti					95	13		Rabitsch_1995b
Cu	Austria	1	predator	Insecta	Hymenoptera	Formicidae	Myrmica_sabuleti					95	16		Rabitsch_1995b
Cu	Austria	2	predator	Insecta	Hymenoptera	Formicidae	Tetramorium_caespitum					1,320	47		Rabitsch_1995b
Cu	Austria	2	predator	Insecta	Hymenoptera	Formicidae	Myrmica_sabuleti					1,320	15		Rabitsch_1995b
Cu	Austria	3	predator	Insecta	Hymenoptera	Formicidae	Lasius_platythorax					184	8.8		Rabitsch_1995b
Cu	Austria	3	predator	Insecta	Hymenoptera	Formicidae	Camponitus_ligniperda					184	15		Rabitsch_1995b
Cu	Austria	3	predator	Insecta	Hymenoptera	Formicidae	Leptohorax_acervorum					184	5.2		Rabitsch_1995b
Cu	Austria	3	predator	Insecta	Hymenoptera	Formicidae	Camponitus_ligniperda					184	37		Rabitsch_1995b
Cu	Austria	4	predator	Insecta	Hymenoptera	Formicidae	Myrmica_sabuleti					86	13		Rabitsch_1995b
Cu	Austria	4	predator	Insecta	Hymenoptera	Formicidae	Myrmica_sabuleti					86	16		Rabitsch_1995b
Cu	Austria	4	predator	Insecta	Hymenoptera	Formicidae	Tapinoma_ambigumm					86	40		Rabitsch_1995b
Cu	Austria	5	predator	Insecta	Hymenoptera	Formicidae	Camponitus_vagus					35	39		Rabitsch_1995b
Cu	Austria	5	predator	Insecta	Hymenoptera	Formicidae	Lasius_platythorax					35	8.6		Rabitsch_1995b
Cu	Austria	5	predator	Insecta	Hymenoptera	Formicidae	Camponitus_ligniperda					35	22		Rabitsch_1995b
Pb	Austria	1	predator	Insecta	Hymenoptera	Formicidae	Myrmica_sabuleti					1,190	15		Rabitsch_1995b
Pb	Austria	1	predator	Insecta	Hymenoptera	Formicidae	Lasius_platythorax					1,190	58		Rabitsch_1995b
Pb	Austria	1	predator	Insecta	Hymenoptera	Formicidae	Formica_fusca					1,190	68		Rabitsch_1995b
Pb	Austria	1	predator	Insecta	Hymenoptera	Formicidae	Myrmica_sabuleti					1,190	18		Rabitsch_1995b
Pb	Austria	1	predator	Insecta	Hymenoptera	Formicidae	Myrmica_sabuleti					1,190	20		Rabitsch_1995b
Pb	Austria	2	predator	Insecta	Hymenoptera	Formicidae	Tetramorium_caespitum					61,946	2,273		Rabitsch_1995b
Pb	Austria	2	predator	Insecta	Hymenoptera	Formicidae	Myrmica_sabuleti					61,946	148		Rabitsch_1995b
Pb	Austria	3	predator	Insecta	Hymenoptera	Formicidae	Lasius_platythorax					6,788	39		Rabitsch_1995b
Pb	Austria	3	predator	Insecta	Hymenoptera	Formicidae	Camponitus_ligniperda					6,788	171		Rabitsch_1995b
Pb	Austria	3	predator	Insecta	Hymenoptera	Formicidae	Leptohorax_acervorum					6,788	102		Rabitsch_1995b
Pb	Austria	3	predator	Insecta	Hymenoptera	Formicidae	Camponitus_ligniperda					6,788	376		Rabitsch_1995b
Pb	Austria	4	predator	Insecta	Hymenoptera	Formicidae	Myrmica_sabuleti					4,667	33		Rabitsch_1995b
Pb	Austria	4	predator	Insecta	Hymenoptera	Formicidae	Myrmica_sabuleti					4,667	44		Rabitsch_1995b
Pb	Austria	4	predator	Insecta	Hymenoptera	Formicidae	Tapinoma_ambigumm					4,667	240		Rabitsch_1995b
Pb	Austria	5	predator	Insecta	Hymenoptera	Formicidae	Camponitus_vagus					516	59		Rabitsch_1995b
Pb	Austria	5	predator	Insecta	Hymenoptera	Formicidae	Lasius_platythorax					516	9.9		Rabitsch_1995b
Pb	Austria	5	predator	Insecta	Hymenoptera	Formicidae	Camponitus_ligniperda					516	91		Rabitsch_1995b
Zn	Austria	1	predator	Insecta	Hymenoptera	Formicidae	Myrmica_sabuleti					1,237	200		Rabitsch_1995b
Zn	Austria	1	predator	Insecta	Hymenoptera	Formicidae	Lasius_platythorax					1,237	276		Rabitsch_1995b
Zn	Austria	1	predator	Insecta	Hymenoptera	Formicidae	Formica_fusca					1,237	545		Rabitsch_1995b
Zn	Austria	1	predator	Insecta	Hymenoptera	Formicidae	Myrmica_sabuleti					1,237	140		Rabitsch_1995b
Zn	Austria	1	predator	Insecta	Hymenoptera	Formicidae	Myrmica_sabuleti					1,237	158		Rabitsch_1995b
Zn	Austria	2	predator	Insecta	Hymenoptera	Formicidae	Tetramorium_caespitum					6,672	211		Rabitsch_1995b
Zn	Austria	2	predator	Insecta	Hymenoptera	Formicidae	Myrmica_sabuleti					6,672	435		Rabitsch_1995b
Zn	Austria	3	predator	Insecta	Hymenoptera	Formicidae	Lasius_platythorax					3,964	439		Rabitsch_1995b
Zn	Austria	3	predator	Insecta	Hymenoptera	Formicidae	Camponitus_ligniperda					3,964	739		Rabitsch_1995b
Zn	Austria	3	predator	Insecta	Hymenoptera	Formicidae	Leptohorax_acervorum					3,964	232		Rabitsch_1995b
Zn	Austria	3	predator	Insecta	Hymenoptera	Formicidae	Camponitus_ligniperda					3,964	3,011		Rabitsch_1995b
Zn	Austria	4	predator	Insecta	Hymenoptera	Formicidae	Myrmica_sabuleti					3,058	224		Rabitsch_1995b
Zn	Austria	4	predator	Insecta	Hymenoptera	Formicidae	Myrmica_sabuleti					3,058	334		Rabitsch_1995b
Zn	Austria	4	predator	Insecta	Hymenoptera	Formicidae	Tapinoma_ambigumm					3,058	950		Rabitsch_1995b
Zn	Austria	5	predator	Insecta	Hymenoptera	Formicidae	Camponitus_vagus					291	1,286		Rabitsch_1995b
Zn	Austria	5	predator	Insecta	Hymenoptera	Formicidae	Lasius_platythorax					291	239		Rabitsch_1995b
Zn	Austria	5	predator	Insecta	Hymenoptera	Formicidae	Camponitus_ligniperda					291	964		Rabitsch_1995b
Cd	Austria	1	predator	Arachnida	Araneae		Harpactea_lepida					15	43		Rabitsch_1995c
Cd	Austria	2	predator	Arachnida	Araneae		Gonatium_rubidium					97	15		Rabitsch_1995c
Cd	Austria	2	predator	Arachnida	Araneae		Micaria_fulgens					97	73		Rabitsch_1995c
Cd	Austria	2	predator	Arachnida	Araneae		Zodarion_rubidum					97	31		Rabitsch_1995c
Cd	Austria	2	predator	Arachnida	Araneae		Zelotes_electus					97	42		Rabitsch_1995c
Cd	Austria	2	predator	Arachnida	Araneae		Micaria_fulgens					97	100		Rabitsch_1995c
Cd	Austria	2	predator	Arachnida	Araneae		Alopecosa_trabalis					97	42		Rabitsch_1995c
Cd	Austria	2	predator	Arachnida	Araneae		Alopecosa_trabalis					97	56		Rabitsch_1995c
Cd	Austria	2	predator	Arachnida	Araneae		Phrurolithus_festivis					97	82		Rabitsch_1995c
Cd	Austria	2	predator	Arachnida	Araneae		Xerolycosa_nemoralis					97	50		Rabitsch_1995c
Cd	Austria	3	predator	Arachnida	Araneae		Zelotes_apricorum					30	60		Rabitsch_1995c
Cd	Austria	3	predator	Arachnida	Araneae		Hahnia_ononidum					30	57		Rabitsch_1995c
Cd	Austria	3	predator	Arachnida	Araneae		Hahnia_ononidum					30	30		Rabitsch_1995c

Literature Arthropod Bioacumulation Data for Hanford															
Analyte	Site Location	Sample Location	Trophic Level	Class	Order	Family	Species	Diettype	Diet	Plant	Water	Soil Concentration (mg/kg)	Arthropod Cencentration (mg/kg)	*Laboratory Qualification	**Literature Reference
Cd	Austria	3	predator	Arachnida	Araneae		Pardosa_luubris_s._Str.					30	75		Rabitsch_1995c
Cd	Austria	3	predator	Arachnida	Araneae		Pardosa_alacris					30	91		Rabitsch_1995c
Cd	Austria	4	predator	Arachnida	Araneae		Alopecosa_cuneata					24	91		Rabitsch_1995c
Cd	Austria	4	predator	Arachnida	Araneae		Alopecosa_trabalis					24	43		Rabitsch_1995c
Cd	Austria	4	predator	Arachnida	Araneae		Alopecosa_trabalis					24	48		Rabitsch_1995c
Cd	Austria	5	predator	Arachnida	Araneae		Macrargus_rufus					2.0	30		Rabitsch_1995c
Cd	Austria	5	predator	Arachnida	Araneae		Macrargus_rufus					2.0	29		Rabitsch_1995c
Cd	Austria	5	predator	Arachnida	Araneae		Histopona_torpida					2.0	30		Rabitsch_1995c
Cd	Austria	5	predator	Arachnida	Araneae		Amaurobius_obustus					2.0	54		Rabitsch_1995c
Cu	Austria	1	predator	Arachnida	Araneae		Harpactea_lepida					95	82		Rabitsch_1995c
Cu	Austria	2	predator	Arachnida	Araneae		Gonatium_rubidium					1,320	37		Rabitsch_1995c
Cu	Austria	2	predator	Arachnida	Araneae		Micaria_fulgens					1,320	95		Rabitsch_1995c
Cu	Austria	2	predator	Arachnida	Araneae		Zodarion_rubidum					1,320	52		Rabitsch_1995c
Cu	Austria	2	predator	Arachnida	Araneae		Zelotes_electus					1,320	107		Rabitsch_1995c
Cu	Austria	2	predator	Arachnida	Araneae		Micaria_fulgens					1,320	110		Rabitsch_1995c
Cu	Austria	2	predator	Arachnida	Araneae		Alopecosa_trabalis					1,320	147		Rabitsch_1995c
Cu	Austria	2	predator	Arachnida	Araneae		Alopecosa_trabalis					1,320	193		Rabitsch_1995c
Cu	Austria	2	predator	Arachnida	Araneae		Phrurolithus_festivis					1,320	113		Rabitsch_1995c
Cu	Austria	2	predator	Arachnida	Araneae		Xerolycosa_nemoralis					1,320	95		Rabitsch_1995c
Cu	Austria	3	predator	Arachnida	Araneae		Zelotes_apricorum					184	292		Rabitsch_1995c
Cu	Austria	3	predator	Arachnida	Araneae		Hahnia_ononidum					184	67		Rabitsch_1995c
Cu	Austria	3	predator	Arachnida	Araneae		Hahnia_ononidum					184	61		Rabitsch_1995c
Cu	Austria	3	predator	Arachnida	Araneae		Pardosa_luubris_s._Str.					184	174		Rabitsch_1995c
Cu	Austria	3	predator	Arachnida	Araneae		Pardosa_alacris					184	255		Rabitsch_1995c
Cu	Austria	4	predator	Arachnida	Araneae		Alopecosa_cuneata					86	150		Rabitsch_1995c
Cu	Austria	4	predator	Arachnida	Araneae		Alopecosa_trabalis					86	127		Rabitsch_1995c
Cu	Austria	4	predator	Arachnida	Araneae		Alopecosa_trabalis					86	155		Rabitsch_1995c
Cu	Austria	5	predator	Arachnida	Araneae		Macrargus_rufus					35	49		Rabitsch_1995c
Cu	Austria	5	predator	Arachnida	Araneae		Macrargus_rufus					35	67		Rabitsch_1995c
Cu	Austria	5	predator	Arachnida	Araneae		Histopona_torpida					35	153		Rabitsch_1995c
Cu	Austria	5	predator	Arachnida	Araneae		Amaurobius_obustus					35	159		Rabitsch_1995c
Pb	Austria	1	predator	Arachnida	Araneae		Harpactea_lepida					1,190	34		Rabitsch_1995c
Pb	Austria	2	predator	Arachnida	Araneae		Micaria_fulgens					61,946	337		Rabitsch_1995c
Pb	Austria	2	predator	Arachnida	Araneae		Gonatium_rubidium					61,946	530		Rabitsch_1995c
Pb	Austria	2	predator	Arachnida	Araneae		Zodarion_rubidum					61,946	438		Rabitsch_1995c
Pb	Austria	2	predator	Arachnida	Araneae		Zelotes_electus					61,946	457		Rabitsch_1995c
Pb	Austria	2	predator	Arachnida	Araneae		Micaria_fulgens					61,946	642		Rabitsch_1995c
Pb	Austria	2	predator	Arachnida	Araneae		Alopecosa_trabalis					61,946	160		Rabitsch_1995c
Pb	Austria	2	predator	Arachnida	Araneae		Alopecosa_trabalis					61,946	216		Rabitsch_1995c
Pb	Austria	2	predator	Arachnida	Araneae		Phrurolithus_festivis					61,946	1,221		Rabitsch_1995c
Pb	Austria	2	predator	Arachnida	Araneae		Xerolycosa_nemoralis					61,946	359		Rabitsch_1995c
Pb	Austria	3	predator	Arachnida	Araneae		Zelotes_apricorum					6,788	41		Rabitsch_1995c
Pb	Austria	3	predator	Arachnida	Araneae		Hahnia_ononidum					6,788	188		Rabitsch_1995c
Pb	Austria	3	predator	Arachnida	Araneae		Pardosa_luubris_s._Str.					6,788	83		Rabitsch_1995c
Pb	Austria	3	predator	Arachnida	Araneae		Pardosa_alacris					6,788	84		Rabitsch_1995c
Pb	Austria	3	predator	Arachnida	Araneae		Hahnia_ononidum					6,788	207		Rabitsch_1995c
Pb	Austria	4	predator	Arachnida	Araneae		Alopecosa_cuneata					4,667	66		Rabitsch_1995c
Pb	Austria	4	predator	Arachnida	Araneae		Alopecosa_trabalis					4,667	26		Rabitsch_1995c
Pb	Austria	4	predator	Arachnida	Araneae		Alopecosa_trabalis					4,667	27		Rabitsch_1995c
Pb	Austria	5	predator	Arachnida	Araneae		Macrargus_rufus					516	68		Rabitsch_1995c
Pb	Austria	5	predator	Arachnida	Araneae		Macrargus_rufus					516	104		Rabitsch_1995c
Pb	Austria	5	predator	Arachnida	Araneae		Histopona_torpida					516	6.9		Rabitsch_1995c
Pb	Austria	5	predator	Arachnida	Araneae		Amaurobius_obustus					516	23		Rabitsch_1995c
Zn	Austria	1	predator	Arachnida	Araneae		Harpactea_lepida					1,237	1,273		Rabitsch_1995c
Zn	Austria	2	predator	Arachnida	Araneae		Micaria_fulgens					6,672	792		Rabitsch_1995c
Zn	Austria	2	predator	Arachnida	Araneae		Gonatium_rubidium					6,672	980		Rabitsch_1995c
Zn	Austria	2	predator	Arachnida	Araneae		Zodarion_rubidum					6,672	740		Rabitsch_1995c
Zn	Austria	2	predator	Arachnida	Araneae		Zelotes_electus					6,672	841		Rabitsch_1995c
Zn	Austria	2	predator	Arachnida	Araneae		Micaria_fulgens					6,672	931		Rabitsch_1995c
Zn	Austria	2	predator	Arachnida	Araneae		Alopecosa_trabalis					6,672	1,721		Rabitsch_1995c
Zn	Austria	2	predator	Arachnida	Araneae		Alopecosa_trabalis					6,672	2,024		Rabitsch_1995c
Zn	Austria	2	predator	Arachnida	Araneae		Phrurolithus_festivis					6,672	1,054		Rabitsch_1995c

Literature Arthropod Bioacumulation Data for Hanford															
Analyte	Site Location	Sample Location	Trophic Level	Class	Order	Family	Species	Diettype	Diet	Plant	Water	Soil Concentration (mg/kg)	Arthropod Cencentration (mg/kg)	*Laboratory Qualification	**Literature Reference
Zn	Austria	2	predator	Arachnida	Araneae		Xerolycosa_nemoralis					6,672	1,732		Rabitsch_1995c
Zn	Austria	3	predator	Arachnida	Araneae		Zelotes_apricorum					3,964	1,411		Rabitsch_1995c
Zn	Austria	3	predator	Arachnida	Araneae		Hahnia_ononidum					3,964	786		Rabitsch_1995c
Zn	Austria	3	predator	Arachnida	Araneae		Hahnia_ononidum					3,964	751		Rabitsch_1995c
Zn	Austria	3	predator	Arachnida	Araneae		Pardosa_luubris_s._Str.					3,964	1,148		Rabitsch_1995c
Zn	Austria	3	predator	Arachnida	Araneae		Pardosa_alacris					3,964	1,413		Rabitsch_1995c
Zn	Austria	4	predator	Arachnida	Araneae		Alopecosa_cuneata					3,058	1,308		Rabitsch_1995c
Zn	Austria	4	predator	Arachnida	Araneae		Alopecosa_trabalis					3,058	1,120		Rabitsch_1995c
Zn	Austria	4	predator	Arachnida	Araneae		Alopecosa_trabalis					3,058	1,160		Rabitsch_1995c
Zn	Austria	5	predator	Arachnida	Araneae		Macrargus_rufus					291	458		Rabitsch_1995c
Zn	Austria	5	predator	Arachnida	Araneae		Macrargus_rufus					291	386		Rabitsch_1995c
Zn	Austria	5	predator	Arachnida	Araneae		Histopona_torpida					291	621		Rabitsch_1995c
Zn	Austria	5	predator	Arachnida	Araneae		Amaurobius_obustus					291	960		Rabitsch_1995c
Cd	Austria	1	predator	Arachnida	Opiliones	Opilionidae	Phalangium_opilio					15	60		Rabitsch_1995c
Cd	Austria	1	predator	Arachnida	Opiliones	Opilionidae	Paranemastoma_4-punctatum					15	31		Rabitsch_1995c
Cd	Austria	1	predator	Arachnida	Opiliones	Opilionidae	Oliolophus_tridens					15	64		Rabitsch_1995c
Cd	Austria	1	predator	Arachnida	Opiliones	Opilionidae	Oliolophus_tridens					15	43		Rabitsch_1995c
Cd	Austria	5	predator	Arachnida	Opiliones	Opilionidae	Lacinius_ephippiatus					2.0	17		Rabitsch_1995c
Cd	Austria	5	predator	Arachnida	Opiliones	Opilionidae	Nelima_semproni					2.0	22		Rabitsch_1995c
Cd	Austria	5	predator	Arachnida	Opiliones	Opilionidae	Paranemastoma_4-punctatum					2.0	17		Rabitsch_1995c
Cd	Austria	5	predator	Arachnida	Opiliones	Opilionidae	Lophopilio_palpinalis					2.0	55		Rabitsch_1995c
Cd	Austria	5	predator	Arachnida	Opiliones	Opilionidae	Lophopilio_palpinalis					2.0	37		Rabitsch_1995c
Cu	Austria	1	predator	Arachnida	Opiliones	Opilionidae	Phalangium_opilio					95	39		Rabitsch_1995c
Cu	Austria	1	predator	Arachnida	Opiliones	Opilionidae	Paranemastoma_4-punctatum					95	41		Rabitsch_1995c
Cu	Austria	1	predator	Arachnida	Opiliones	Opilionidae	Oliolophus_tridens					95	37		Rabitsch_1995c
Cu	Austria	1	predator	Arachnida	Opiliones	Opilionidae	Oliolophus_tridens					95	20		Rabitsch_1995c
Cu	Austria	5	predator	Arachnida	Opiliones	Opilionidae	Lacinius_ephippiatus					35	49		Rabitsch_1995c
Cu	Austria	5	predator	Arachnida	Opiliones	Opilionidae	Nelima_semproni					35	103		Rabitsch_1995c
Cu	Austria	5	predator	Arachnida	Opiliones	Opilionidae	Paranemastoma_4-punctatum					35	24		Rabitsch_1995c
Cu	Austria	5	predator	Arachnida	Opiliones	Opilionidae	Lophopilio_palpinalis					35	66		Rabitsch_1995c
Cu	Austria	5	predator	Arachnida	Opiliones	Opilionidae	Lophopilio_palpinalis					35	42		Rabitsch_1995c
Pb	Austria	1	predator	Arachnida	Opiliones	Opilionidae	Phalangium_opilio					1,190	95		Rabitsch_1995c
Pb	Austria	1	predator	Arachnida	Opiliones	Opilionidae	Paranemastoma_4-punctatum					1,190	62		Rabitsch_1995c
Pb	Austria	1	predator	Arachnida	Opiliones	Opilionidae	Oliolophus_tridens					1,190	93		Rabitsch_1995c
Pb	Austria	1	predator	Arachnida	Opiliones	Opilionidae	Oliolophus_tridens					1,190	78		Rabitsch_1995c
Pb	Austria	5	predator	Arachnida	Opiliones	Opilionidae	Lacinius_ephippiatus					516	47		Rabitsch_1995c
Pb	Austria	5	predator	Arachnida	Opiliones	Opilionidae	Nelima_semproni					516	102		Rabitsch_1995c
Pb	Austria	5	predator	Arachnida	Opiliones	Opilionidae	Paranemastoma_4-punctatum					516	29		Rabitsch_1995c
Pb	Austria	5	predator	Arachnida	Opiliones	Opilionidae	Lophopilio_palpinalis					516	36		Rabitsch_1995c
Pb	Austria	5	predator	Arachnida	Opiliones	Opilionidae	Lophopilio_palpinalis					516	37		Rabitsch_1995c
Zn	Austria	1	predator	Arachnida	Opiliones	Opilionidae	Phalangium_opilio					1,237	530		Rabitsch_1995c
Zn	Austria	1	predator	Arachnida	Opiliones	Opilionidae	Paranemastoma_4-punctatum					1,237	422		Rabitsch_1995c
Zn	Austria	1	predator	Arachnida	Opiliones	Opilionidae	Oliolophus_tridens					1,237	1,242		Rabitsch_1995c
Zn	Austria	1	predator	Arachnida	Opiliones	Opilionidae	Oliolophus_tridens					1,237	588		Rabitsch_1995c
Zn	Austria	5	predator	Arachnida	Opiliones	Opilionidae	Lacinius_ephippiatus					291	201		Rabitsch_1995c
Zn	Austria	5	predator	Arachnida	Opiliones	Opilionidae	Nelima_semproni					291	184		Rabitsch_1995c
Zn	Austria	5	predator	Arachnida	Opiliones	Opilionidae	Paranemastoma_4-punctatum					291	287		Rabitsch_1995c
Zn	Austria	5	predator	Arachnida	Opiliones	Opilionidae	Lophopilio_palpinalis					291	666		Rabitsch_1995c
Zn	Austria	5	predator	Arachnida	Opiliones	Opilionidae	Lophopilio_palpinalis					291	476		Rabitsch_1995c
As	Wyoming	Reference	herbivore	Insecta	Orthoptera	Acrididae	Grasshoppers					3.6	0.12		Ramirez_and_Rogers_2000
As	Wyoming	Study_Area	herbivore	Insecta	Orthoptera	Acrididae	Grasshoppers					4.0	0.090		Ramirez_and_Rogers_2000
Ba	Wyoming	Reference	herbivore	Insecta	Orthoptera	Acrididae	Grasshoppers					77	3.1		Ramirez_and_Rogers_2000
Ba	Wyoming	Study_Area	herbivore	Insecta	Orthoptera	Acrididae	Grasshoppers					114	2.1		Ramirez_and_Rogers_2000
Cd	Wyoming	Reference	herbivore	Insecta	Orthoptera	Acrididae	Grasshoppers					0.21	0.28		Ramirez_and_Rogers_2000
Cd	Wyoming	Study_Area	herbivore	Insecta	Orthoptera	Acrididae	Grasshoppers					0.090	0.40		Ramirez_and_Rogers_2000
Cu	Wyoming	Study_Area	herbivore	Insecta	Orthoptera	Acrididae	Grasshoppers					16	37		Ramirez_and_Rogers_2000
Mg	Wyoming	Reference	herbivore	Insecta	Orthoptera	Acrididae	Grasshoppers					4,138	1,177		Ramirez_and_Rogers_2000
Mg	Wyoming	Study_Area	herbivore	Insecta	Orthoptera	Acrididae	Grasshoppers					3,965	1,233		Ramirez_and_Rogers_2000
Mn	Wyoming	Reference	herbivore	Insecta	Orthoptera	Acrididae	Grasshoppers					13	11		Ramirez_and_Rogers_2000
Mn	Wyoming	Study_Area	herbivore	Insecta	Orthoptera	Acrididae	Grasshoppers					213	32		Ramirez_and_Rogers_2000
Se	Wyoming	Reference	herbivore	Insecta	Orthoptera	Acrididae	Grasshoppers					0.62	0.72		Ramirez_and_Rogers_2000
Se	Wyoming	Study_Area	herbivore	Insecta	Orthoptera	Acrididae	Grasshoppers					3.1	13		Ramirez_and_Rogers_2000

Literature Arthropod Bioacumulation Data for Hanford															
Analyte	Site Location	Sample Location	Trophic Level	Class	Order	Family	Species	Diettype	Diet	Plant	Water	Soil Concentration (mg/kg)	Arthropod Cencentration (mg/kg)	*Laboratory Qualification	**Literature Reference
V	Wyoming	Reference	herbivore	Insecta	Orthoptera	Acrididae	Grasshoppers					21	0.58		Ramirez_and_Rogers_2000
Zn	Wyoming	Reference	herbivore	Insecta	Orthoptera	Acrididae	Grasshoppers					59	141		Ramirez_and_Rogers_2000
Zn	Wyoming	Study_Area	herbivore	Insecta	Orthoptera	Acrididae	Grasshoppers					51	140		Ramirez_and_Rogers_2000
Cd	Tennessee	east_Tennessee	herbivore	Insecta	Orthoptera	Gryllidae	P.fasciatus			0.0040		0.0040	0.042		Van_Hook_and_Yates_1975
Cd	Tennessee	east_Tennessee	predator	Arachnida	Araneae		Lycosa_sp.			0.0040		0.0040	0.030		Van_Hook_and_Yates_1975
As	Montana	WSCT1		Insecta	Coleoptera		BEETLE					1,400	98	J	PTI_1994
As	Montana	WSCRFT1		Insecta	Coleoptera		BEETLE					65	6.2	J	PTI_1994
As	Montana	WSCR1		Insecta	Coleoptera		BEETLE					478	54	J	PTI_1994
As	Montana	WSCRFR1		Insecta	Coleoptera		BEETLE					35	3.9	J	PTI_1994
As	Montana	SBCT1		Insecta	Coleoptera		BEETLE					178	22		PTI_1994
As	Montana	SBCT1		Insecta	Coleoptera		BEETLE					178	6.6		PTI_1994
As	Montana	SBCR1		Insecta	Coleoptera		BEETLE					193	16		PTI_1994
As	Montana	WSCR1		Insecta	Coleoptera		BEETLE					478	65		PTI_1994
As	Montana	WSCR1		Insecta	Coleoptera		BEETLE					478	76		PTI_1994
Cd	Montana	WSCT1		Insecta	Coleoptera		BEETLE					4.6	2.6		PTI_1994
Cd	Montana	WSCRFT1		Insecta	Coleoptera		BEETLE					1.7	0.76		PTI_1994
Cd	Montana	WSCR1		Insecta	Coleoptera		BEETLE					7.3	1.1		PTI_1994
Cd	Montana	WSCRFR1		Insecta	Coleoptera		BEETLE					0.30	0.76		PTI_1994
Cd	Montana	SBCT1		Insecta	Coleoptera		BEETLE					2.2	0.72		PTI_1994
Cd	Montana	SBCT1		Insecta	Coleoptera		BEETLE					2.2	6.7		PTI_1994
Cd	Montana	SBCR1		Insecta	Coleoptera		BEETLE					2.6	3.1		PTI_1994
Cd	Montana	WSCR1		Insecta	Coleoptera		BEETLE					7.3	0.78		PTI_1994
Cd	Montana	WSCR1		Insecta	Coleoptera		BEETLE					7.3	4.4		PTI_1994
Cu	Montana	WSCT1		Insecta	Coleoptera		BEETLE					1,200	212		PTI_1994
Cu	Montana	WSCRFT1		Insecta	Coleoptera		BEETLE					127	42		PTI_1994
Cu	Montana	WSCR1		Insecta	Coleoptera		BEETLE					1,701	100		PTI_1994
Cu	Montana	WSCRFR1		Insecta	Coleoptera		BEETLE					31	23		PTI_1994
Cu	Montana	SBCT1		Insecta	Coleoptera		BEETLE					193	27		PTI_1994
Cu	Montana	SBCT1		Insecta	Coleoptera		BEETLE					193	72		PTI_1994
Cu	Montana	SBCR1		Insecta	Coleoptera		BEETLE					391	111		PTI_1994
Cu	Montana	WSCR1		Insecta	Coleoptera		BEETLE					1,701	91		PTI_1994
Cu	Montana	WSCR1		Insecta	Coleoptera		BEETLE					1,701	88		PTI_1994
Pb	Montana	WSCT1		Insecta	Coleoptera		BEETLE					491	43		PTI_1994
Pb	Montana	WSCRFT1		Insecta	Coleoptera		BEETLE					40	3.2		PTI_1994
Pb	Montana	WSCR1		Insecta	Coleoptera		BEETLE					192	6.2		PTI_1994
Pb	Montana	WSCRFR1		Insecta	Coleoptera		BEETLE					8.6	1.9		PTI_1994
Pb	Montana	SBCT1		Insecta	Coleoptera		BEETLE					68	3.9	J	PTI_1994
Pb	Montana	SBCT1		Insecta	Coleoptera		BEETLE					68	1.7	J	PTI_1994
Pb	Montana	SBCR1		Insecta	Coleoptera		BEETLE					303	23	J	PTI_1994
Pb	Montana	WSCR1		Insecta	Coleoptera		BEETLE					192	5.0	J	PTI_1994
Pb	Montana	WSCR1		Insecta	Coleoptera		BEETLE					192	5.3	J	PTI_1994
Zn	Montana	WSCT1		Insecta	Coleoptera		BEETLE					817	303		PTI_1994
Zn	Montana	WSCRFT1		Insecta	Coleoptera		BEETLE					149	150		PTI_1994
Zn	Montana	WSCR1		Insecta	Coleoptera		BEETLE					757	184		PTI_1994
Zn	Montana	WSCRFR1		Insecta	Coleoptera		BEETLE					57	127		PTI_1994
Zn	Montana	SBCT1		Insecta	Coleoptera		BEETLE					148	120		PTI_1994
Zn	Montana	SBCT1		Insecta	Coleoptera		BEETLE					148	215		PTI_1994
Zn	Montana	SBCR1		Insecta	Coleoptera		BEETLE					911	322		PTI_1994
Zn	Montana	WSCR1		Insecta	Coleoptera		BEETLE					757	200		PTI_1994
Zn	Montana	WSCR1		Insecta	Coleoptera		BEETLE					757	217		PTI_1994
As	Montana	WSCT1		Insecta	Orthoptera	Acrididae	GRASSHOPPER					1,400	21	J	PTI_1994
As	Montana	WSCRFT1		Insecta	Orthoptera	Acrididae	GRASSHOPPER					65	2.3	J	PTI_1994
As	Montana	WSCR1		Insecta	Orthoptera	Acrididae	GRASSHOPPER					478	29	J	PTI_1994
As	Montana	WSCRFR1		Insecta	Orthoptera	Acrididae	GRASSHOPPER					35	1.4	J	PTI_1994
As	Montana	SBCR1		Insecta	Orthoptera	Acrididae	GRASSHOPPER					193	3.4		PTI_1994
As	Montana	SBCT1		Insecta	Orthoptera	Acrididae	GRASSHOPPER					178	10		PTI_1994
As	Montana	WSCR1		Insecta	Orthoptera	Acrididae	GRASSHOPPER					478	35		PTI_1994
As	Montana	WSCR1		Insecta	Orthoptera	Acrididae	GRASSHOPPER					478	33		PTI_1994
Cd	Montana	WSCT1		Insecta	Orthoptera	Acrididae	GRASSHOPPER					4.6	2.5		PTI_1994
Cd	Montana	WSCRFT1		Insecta	Orthoptera	Acrididae	GRASSHOPPER					1.7	0.37		PTI_1994
Cd	Montana	WSCR1		Insecta	Orthoptera	Acrididae	GRASSHOPPER					7.3	0.88		PTI_1994
Cd	Montana	WSCRFR1		Insecta	Orthoptera	Acrididae	GRASSHOPPER					0.30	0.49		PTI_1994

Literature Arthropod Bioacumulation Data for Hanford															
Analyte	Site Location	Sample Location	Trophic Level	Class	Order	Family	Species	Diettype	Diet	Plant	Water	Soil Concentration (mg/kg)	Arthropod Cencentration (mg/kg)	*Laboratory Qualification	**Literature Reference
Cd	Montana	SBCR1		Insecta	Orthoptera	Acrididae	GRASSHOPPER					2.6	1.9		PTI_1994
Cd	Montana	SBCT1		Insecta	Orthoptera	Acrididae	GRASSHOPPER					2.2	1.1		PTI_1994
Cd	Montana	WSCR1		Insecta	Orthoptera	Acrididae	GRASSHOPPER					7.3	1.4		PTI_1994
Cd	Montana	WSCR1		Insecta	Orthoptera	Acrididae	GRASSHOPPER					7.3	1.4		PTI_1994
Cu	Montana	WSCT1		Insecta	Orthoptera	Acrididae	GRASSHOPPER					1,200	286		PTI_1994
Cu	Montana	WSCRFT1		Insecta	Orthoptera	Acrididae	GRASSHOPPER					127	80		PTI_1994
Cu	Montana	WSCR1		Insecta	Orthoptera	Acrididae	GRASSHOPPER					1,701	178		PTI_1994
Cu	Montana	WSCRFR1		Insecta	Orthoptera	Acrididae	GRASSHOPPER					31	84		PTI_1994
Cu	Montana	SBCR1		Insecta	Orthoptera	Acrididae	GRASSHOPPER					391	189		PTI_1994
Cu	Montana	SBCT1		Insecta	Orthoptera	Acrididae	GRASSHOPPER					193	117		PTI_1994
Cu	Montana	WSCR1		Insecta	Orthoptera	Acrididae	GRASSHOPPER					1,701	202		PTI_1994
Cu	Montana	WSCR1		Insecta	Orthoptera	Acrididae	GRASSHOPPER					1,701	170		PTI_1994
Pb	Montana	WSCT1		Insecta	Orthoptera	Acrididae	GRASSHOPPER					491	8.3		PTI_1994
Pb	Montana	WSCRFT1		Insecta	Orthoptera	Acrididae	GRASSHOPPER					40	1.3		PTI_1994
Pb	Montana	WSCR1		Insecta	Orthoptera	Acrididae	GRASSHOPPER					192	13		PTI_1994
Pb	Montana	WSCRFR1		Insecta	Orthoptera	Acrididae	GRASSHOPPER					8.6	1.3		PTI_1994
Pb	Montana	SBCR1		Insecta	Orthoptera	Acrididae	GRASSHOPPER					303	4.2	J	PTI_1994
Pb	Montana	SBCT1		Insecta	Orthoptera	Acrididae	GRASSHOPPER					68	3.8	J	PTI_1994
Pb	Montana	WSCR1		Insecta	Orthoptera	Acrididae	GRASSHOPPER					192	12	J	PTI_1994
Pb	Montana	WSCR1		Insecta	Orthoptera	Acrididae	GRASSHOPPER					192	12	J	PTI_1994
Zn	Montana	WSCT1		Insecta	Orthoptera	Acrididae	GRASSHOPPER					817	279		PTI_1994
Zn	Montana	WSCRFT1		Insecta	Orthoptera	Acrididae	GRASSHOPPER					149	176		PTI_1994
Zn	Montana	WSCR1		Insecta	Orthoptera	Acrididae	GRASSHOPPER					757	277		PTI_1994
Zn	Montana	WSCRFR1		Insecta	Orthoptera	Acrididae	GRASSHOPPER					57	201		PTI_1994
Zn	Montana	SBCR1		Insecta	Orthoptera	Acrididae	GRASSHOPPER					911	282		PTI_1994
Zn	Montana	SBCT1		Insecta	Orthoptera	Acrididae	GRASSHOPPER					148	166		PTI_1994
Zn	Montana	WSCR1		Insecta	Orthoptera	Acrididae	GRASSHOPPER					757	276		PTI_1994
Zn	Montana	WSCR1		Insecta	Orthoptera	Acrididae	GRASSHOPPER					757	257		PTI_1994
As	Montana	WSCT1		Arachnida	Araneae		SPIDER					1,400	99	J	PTI_1994
As	Montana	WSCRFT1		Arachnida	Araneae		SPIDER					65	11	J	PTI_1994
As	Montana	WSCR1		Arachnida	Araneae		SPIDER					478	32	J	PTI_1994
As	Montana	WSCRFR1		Arachnida	Araneae		SPIDER					35	13	J	PTI_1994
As	Montana	SBCR1		Arachnida	Araneae		SPIDER					193	34		PTI_1994
As	Montana	SBCT1		Arachnida	Araneae		SPIDER					178	50		PTI_1994
As	Montana	WSCR1		Arachnida	Araneae		SPIDER					478	51		PTI_1994
As	Montana	WSCR1		Arachnida	Araneae		SPIDER					478	59		PTI_1994
Cd	Montana	WSCT1		Arachnida	Araneae		SPIDER					4.6	19		PTI_1994
Cd	Montana	WSCRFT1		Arachnida	Araneae		SPIDER					1.7	4.8		PTI_1994
Cd	Montana	WSCR1		Arachnida	Araneae		SPIDER					7.3	2.9		PTI_1994
Cd	Montana	WSCRFR1		Arachnida	Araneae		SPIDER					0.30	5.9		PTI_1994
Cd	Montana	SBCR1		Arachnida	Araneae		SPIDER					2.6	14		PTI_1994
Cd	Montana	SBCT1		Arachnida	Araneae		SPIDER					2.2	8.3		PTI_1994
Cd	Montana	WSCR1		Arachnida	Araneae		SPIDER					7.3	3.5		PTI_1994
Cd	Montana	WSCR1		Arachnida	Araneae		SPIDER					7.3	4.0		PTI_1994
Cu	Montana	WSCT1		Arachnida	Araneae		SPIDER					1,200	386		PTI_1994
Cu	Montana	WSCRFT1		Arachnida	Araneae		SPIDER					127	43		PTI_1994
Cu	Montana	WSCR1		Arachnida	Araneae		SPIDER					1,701	179		PTI_1994
Cu	Montana	WSCRFR1		Arachnida	Araneae		SPIDER					31	64		PTI_1994
Cu	Montana	SBCR1		Arachnida	Araneae		SPIDER					391	318		PTI_1994
Cu	Montana	SBCT1		Arachnida	Araneae		SPIDER					193	94		PTI_1994
Cu	Montana	WSCR1		Arachnida	Araneae		SPIDER					1,701	214		PTI_1994
Cu	Montana	WSCR1		Arachnida	Araneae		SPIDER					1,701	298		PTI_1994
Pb	Montana	WSCT1		Arachnida	Araneae		SPIDER					491	43		PTI_1994
Pb	Montana	WSCRFT1		Arachnida	Araneae		SPIDER					40	5.7		PTI_1994
Pb	Montana	WSCR1		Arachnida	Araneae		SPIDER					192	16		PTI_1994
Pb	Montana	WSCRFR1		Arachnida	Araneae		SPIDER					8.6	8.7		PTI_1994
Pb	Montana	SBCR1		Arachnida	Araneae		SPIDER					303	51	J	PTI_1994
Pb	Montana	SBCT1		Arachnida	Araneae		SPIDER					68	16	J	PTI_1994
Pb	Montana	WSCR1		Arachnida	Araneae		SPIDER					192	22	J	PTI_1994
Pb	Montana	WSCR1		Arachnida	Araneae		SPIDER					192	29	J	PTI_1994
Zn	Montana	WSCT1		Arachnida	Araneae		SPIDER					817	519		PTI_1994
Zn	Montana	WSCRFT1		Arachnida	Araneae		SPIDER					149	350		PTI_1994

Literature Arthropod Bioacumulation Data for Hanford															
Analyte	Site Location	Sample Location	Trophic Level	Class	Order	Family	Species	Diettype	Diet	Plant	Water	Soil Concentration (mg/kg)	Arthropod Cencentration (mg/kg)	*Laboratory Qualification	**Literature Reference
Zn	Montana	WSCR1		Arachnida	Araneae		SPIDER					757	425		PTI_1994
Zn	Montana	WSCRFR1		Arachnida	Araneae		SPIDER					57	416		PTI_1994
Zn	Montana	SBCR1		Arachnida	Araneae		SPIDER					911	855		PTI_1994
Zn	Montana	SBCT1		Arachnida	Araneae		SPIDER					148	350		PTI_1994
Zn	Montana	WSCR1		Arachnida	Araneae		SPIDER					757	504		PTI_1994
Zn	Montana	WSCR1		Arachnida	Araneae		SPIDER					757	802		PTI_1994

CHPRC-01311, REV. 2

Appendix D

Bioaccumulation Scatterplots

CHPRC-01311, REV. 2

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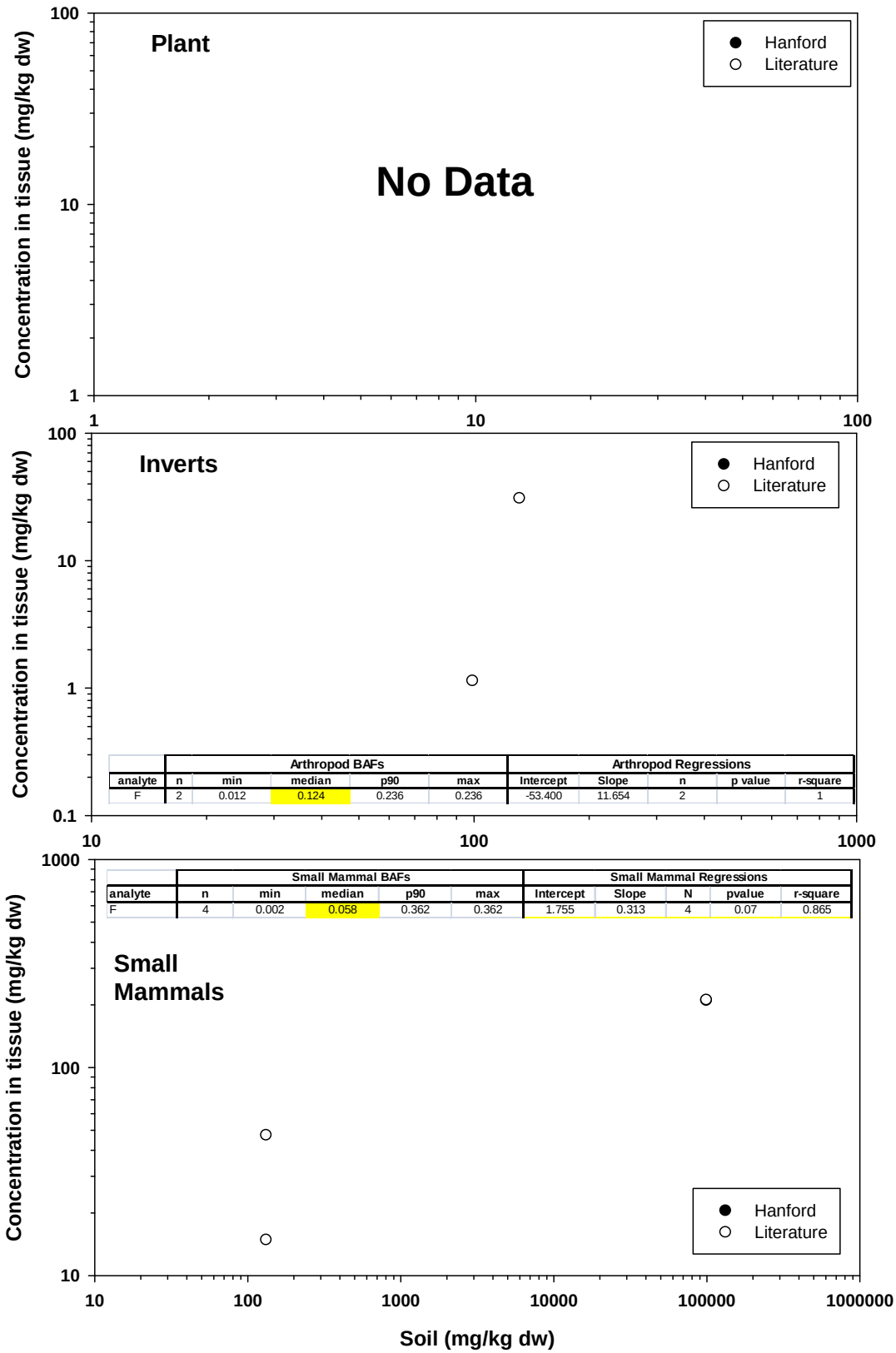
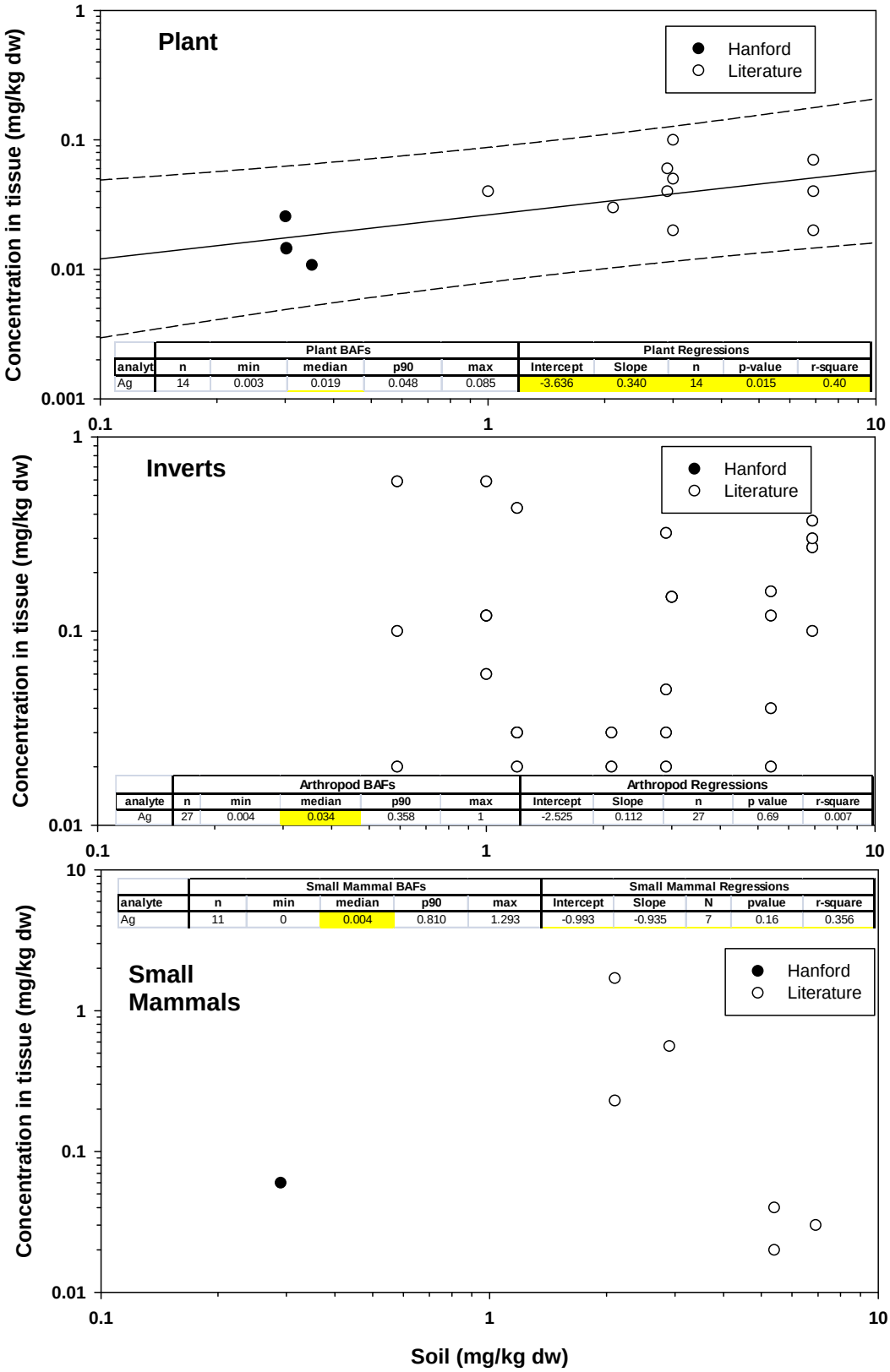


	Arthropod BAFs					Arthropod Regressions				
analyte	n	min	median	p90	max	Intercept	Slope	n	p value	r-square
F	2	0.012	0.124	0.236	0.236	-53.400	11.654	2		1

	Small Mammal BAFs					Small Mammal Regressions				
analyte	n	min	median	p90	max	Intercept	Slope	N	pvalue	r-square
F	4	0.002	0.058	0.362	0.362	1.755	0.313	4	0.07	0.865

Figure D-1. Scatterplots of Collocated Soil and Terrestrial Plant, Terrestrial Arthropod, or Small Mammal *Fluoride* Concentrations from Hanford and Literature-Derived Sources Used for Development of Bioaccumulation Models

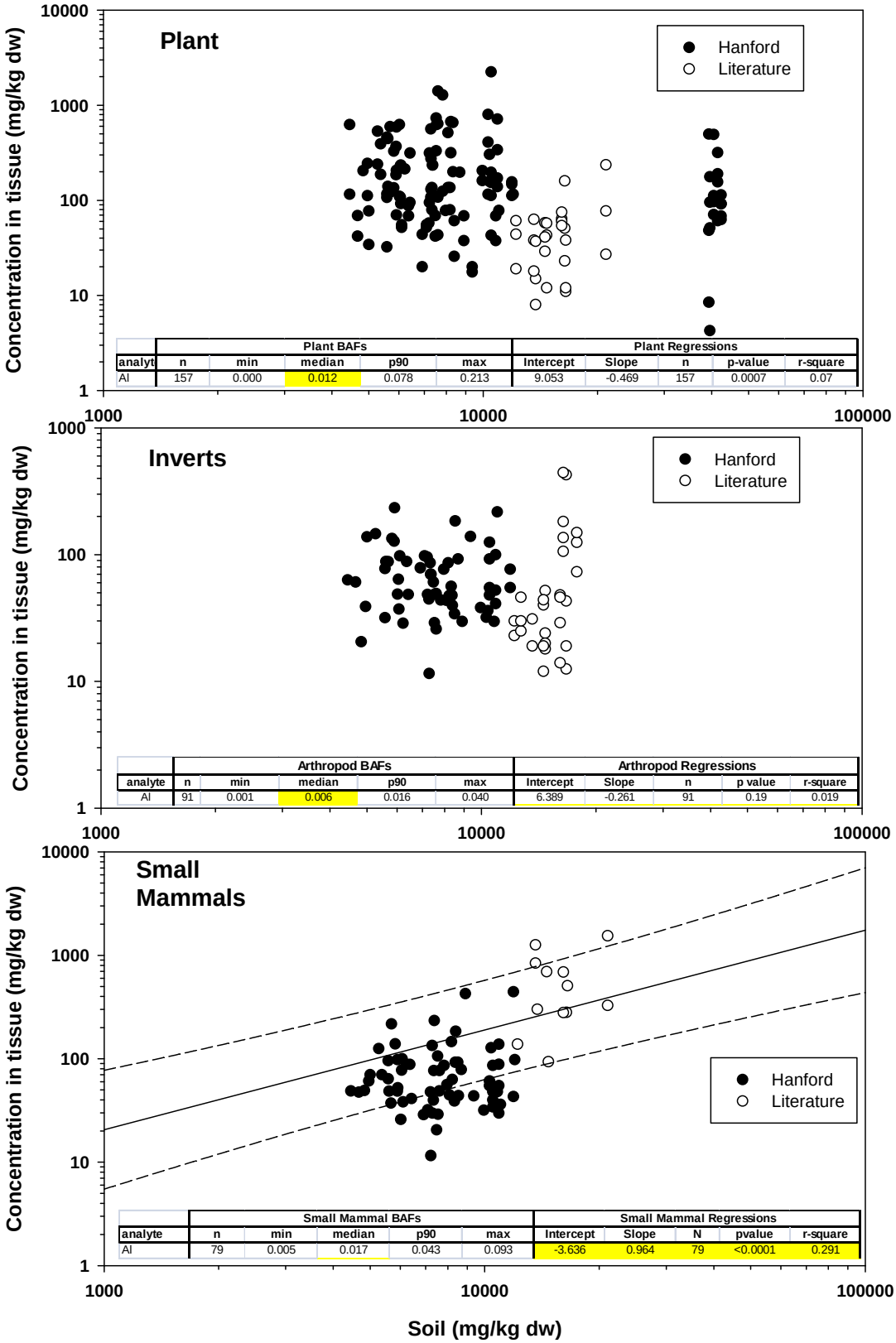


	Plant BAFs					Plant Regressions				
analyt	n	min	median	p90	max	Intercept	Slope	n	p-value	r-square
Ag	14	0.003	0.019	0.048	0.085	-3.636	0.340	14	0.015	0.40

	Arthropod BAFs					Arthropod Regressions				
analyte	n	min	median	p90	max	Intercept	Slope	n	p value	r-square
Ag	27	0.004	0.034	0.358	1	-2.525	0.112	27	0.69	0.007

	Small Mammal BAFs					Small Mammal Regressions				
analyte	n	min	median	p90	max	Intercept	Slope	N	pvalue	r-square
Ag	11	0	0.004	0.810	1.293	-0.993	-0.935	7	0.16	0.356

Figure D-2. Scatterplots of Collocated Soil and Terrestrial Plant, Terrestrial Arthropod, or Small Mammal *Silver* Concentrations from Hanford and Literature-Derived Sources Used for Development of Bioaccumulation Models

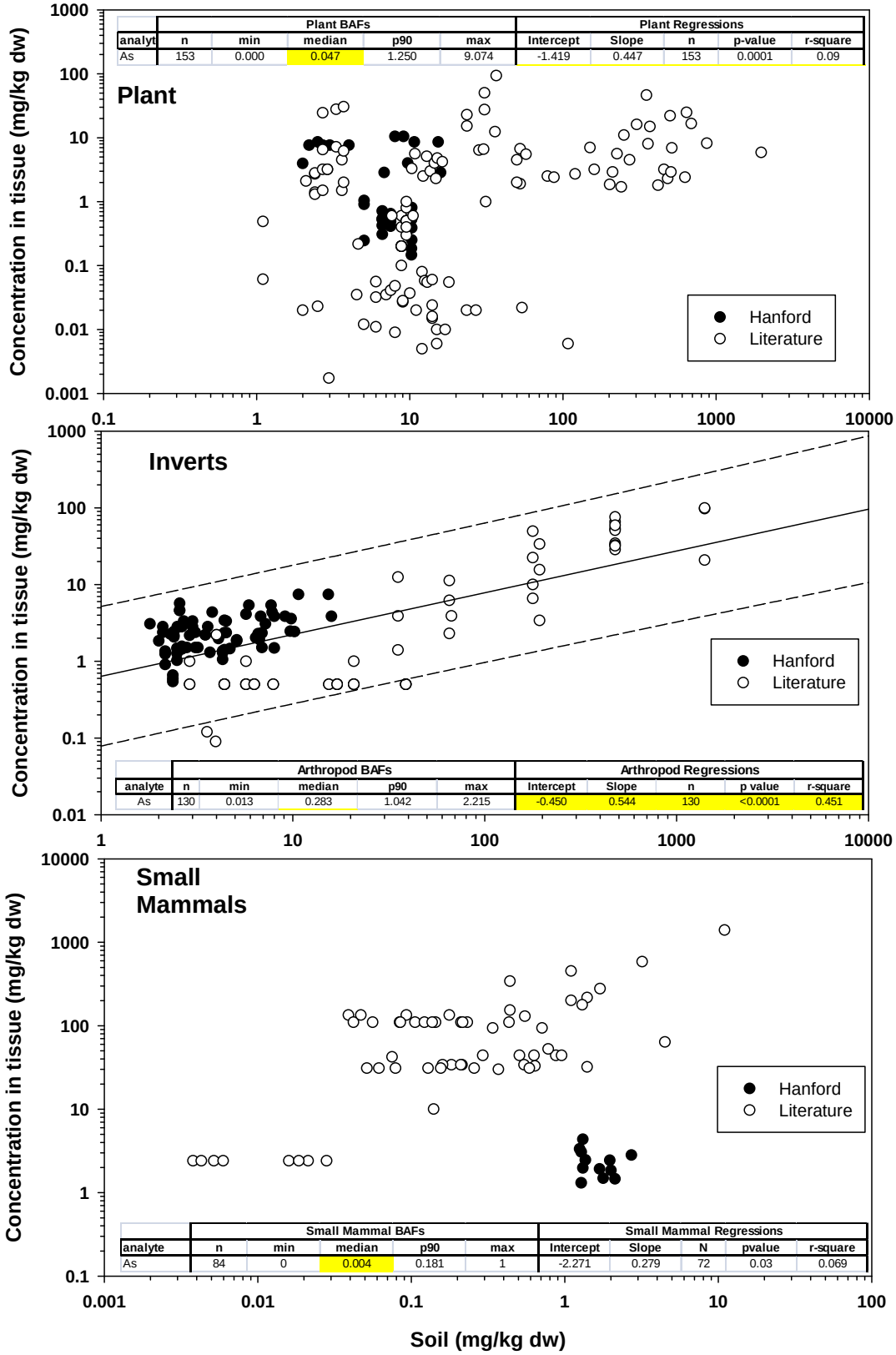


	Plant BAFs					Plant Regressions				
analyt	n	min	median	p90	max	Intercept	Slope	n	p-value	r-square
Al	157	0.000	0.012	0.078	0.213	9.053	-0.469	157	0.0007	0.07

	Arthropod BAFs					Arthropod Regressions				
analyte	n	min	median	p90	max	Intercept	Slope	n	p value	r-square
Al	91	0.001	0.006	0.016	0.040	6.389	-0.261	91	0.19	0.019

	Small Mammal BAFs					Small Mammal Regressions				
analyte	n	min	median	p90	max	Intercept	Slope	N	pvalue	r-square
Al	79	0.005	0.017	0.043	0.093	-3.636	0.964	79	<0.0001	0.291

Figure D-3. Scatterplots of Collocated Soil and Terrestrial Plant, Terrestrial Arthropod, or Small Mammal *Aluminum* Concentrations from Hanford and Literature-Derived Sources Used for Development of Bioaccumulation Models

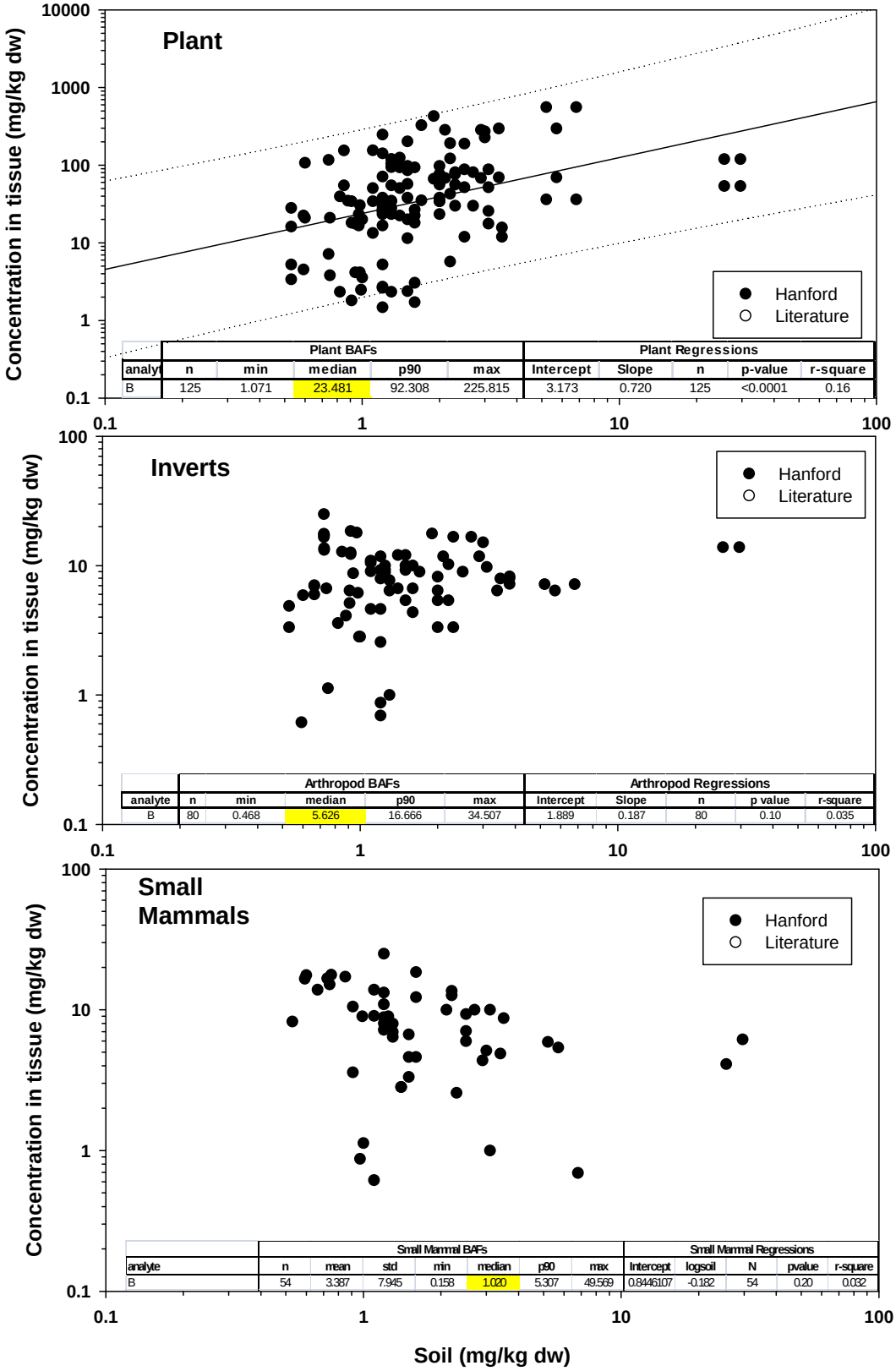


analyte	Plant BAFs n	min	median	p90	max	Plant Regressions Intercept	Slope	n	p-value	r-square
As	153	0.000	0.047	1.250	9.074	-1.419	0.447	153	0.0001	0.09

analyte	Arthropod BAFs n	min	median	p90	max	Arthropod Regressions Intercept	Slope	n	p value	r-square
As	130	0.013	0.283	1.042	2.215	-0.450	0.544	130	<0.0001	0.451

analyte	Small Mammal BAFs n	min	median	p90	max	Small Mammal Regressions Intercept	Slope	N	pvalue	r-square
As	84	0	0.004	0.181	1	-2.271	0.279	72	0.03	0.069

Figure D-4. Scatterplots of Collocated Soil and Terrestrial Plant, Terrestrial Arthropod, or Small Mammal *Arsenic* Concentrations from Hanford and Literature-Derived Sources Used for Development of Bioaccumulation Models

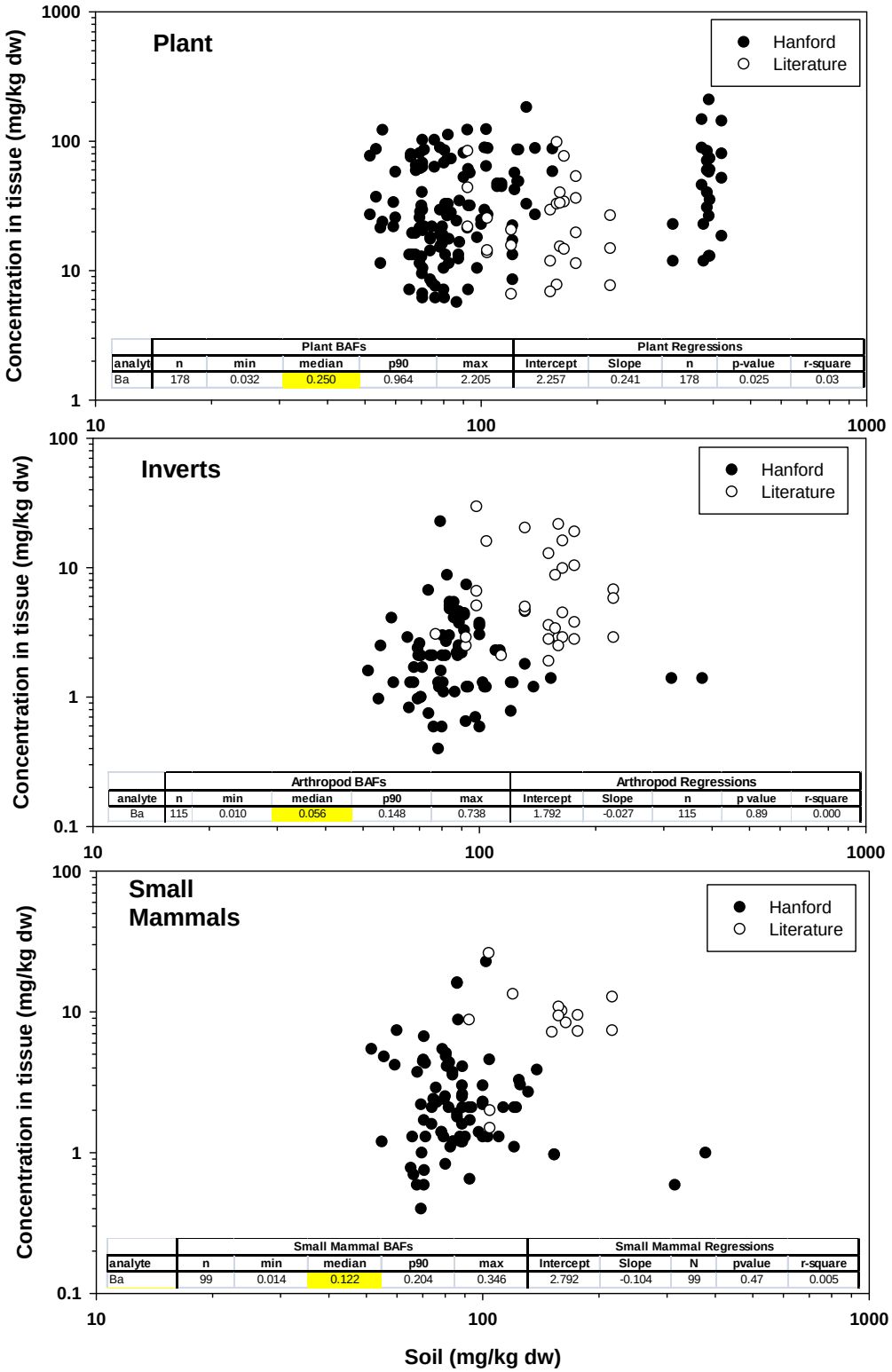


	Plant BAFs					Plant Regressions				
analyt	n	min	median	p90	max	Intercept	Slope	n	p-value	r-square
B	125	1.071	23.481	92.308	225.815	3.173	0.720	125	<0.0001	0.16

	Arthropod BAFs					Arthropod Regressions				
analyte	n	min	median	p90	max	Intercept	Slope	n	p value	r-square
B	80	0.468	5.626	16.666	34.507	1.889	0.187	80	0.10	0.035

	Small Mammal BAFs							Small Mammal Regressions				
analyte	n	mean	std	min	median	p90	max	Intercept	logsoil	N	pvalue	r-square
B	54	3.387	7.945	0.158	1.020	5.307	49.569	0.8446107	-0.182	54	0.20	0.032

Figure D-5. Scatterplots of Collocated Soil and Terrestrial Plant, Terrestrial Arthropod, or Small Mammal *Boron* Concentrations from Hanford and Literature-Derived Sources Used for Development of Bioaccumulation Models

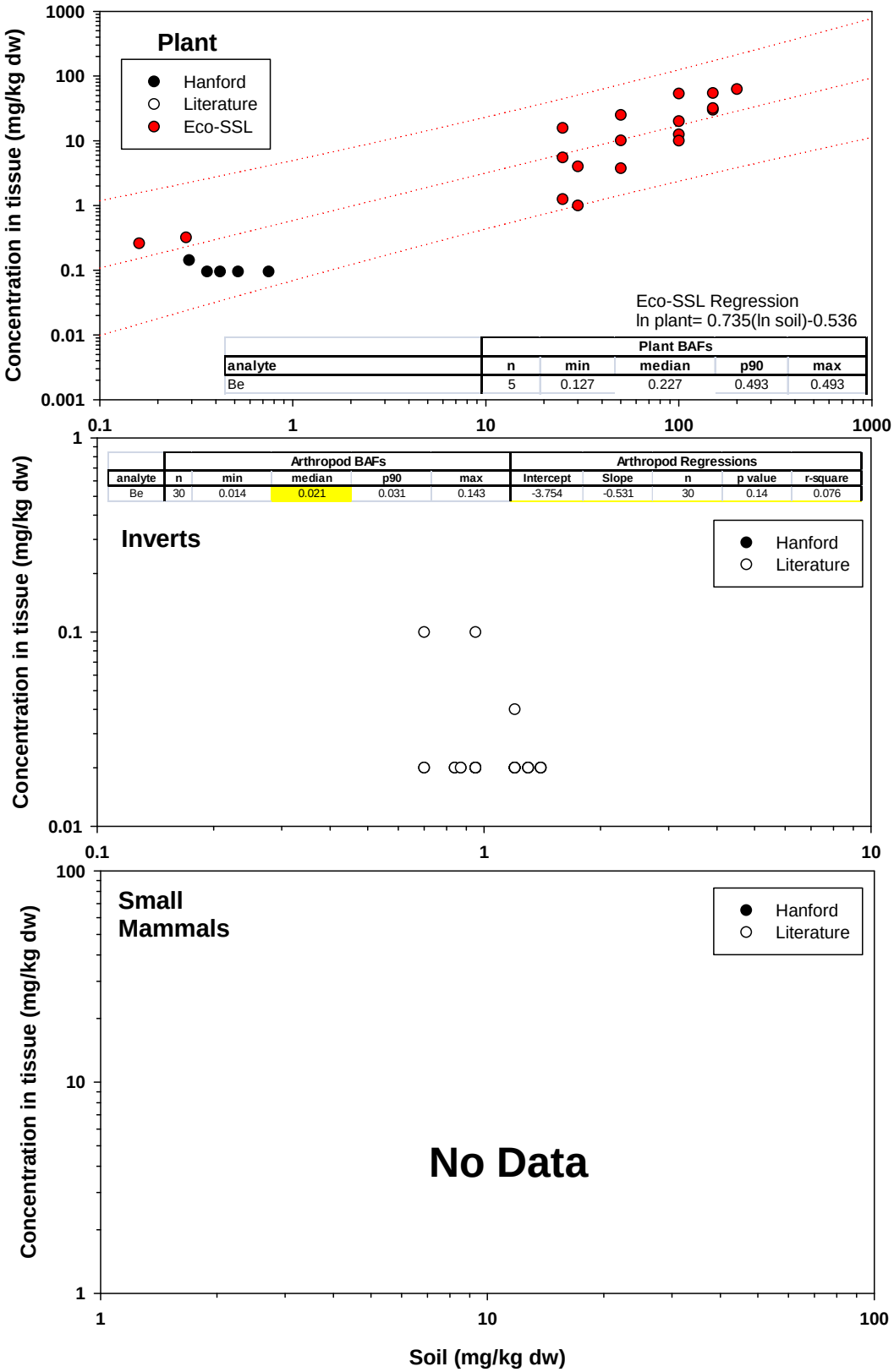


	Plant BAFs					Plant Regressions				
analyt	n	min	median	p90	max	Intercept	Slope	n	p-value	r-square
Ba	178	0.032	0.250	0.964	2.205	2.257	0.241	178	0.025	0.03

	Arthropod BAFs					Arthropod Regressions				
analyte	n	min	median	p90	max	Intercept	Slope	n	p value	r-square
Ba	115	0.010	0.056	0.148	0.738	1.792	-0.027	115	0.89	0.000

	Small Mammal BAFs					Small Mammal Regressions				
analyte	n	min	median	p90	max	Intercept	Slope	N	pvalue	r-square
Ba	99	0.014	0.122	0.204	0.346	2.792	-0.104	99	0.47	0.005

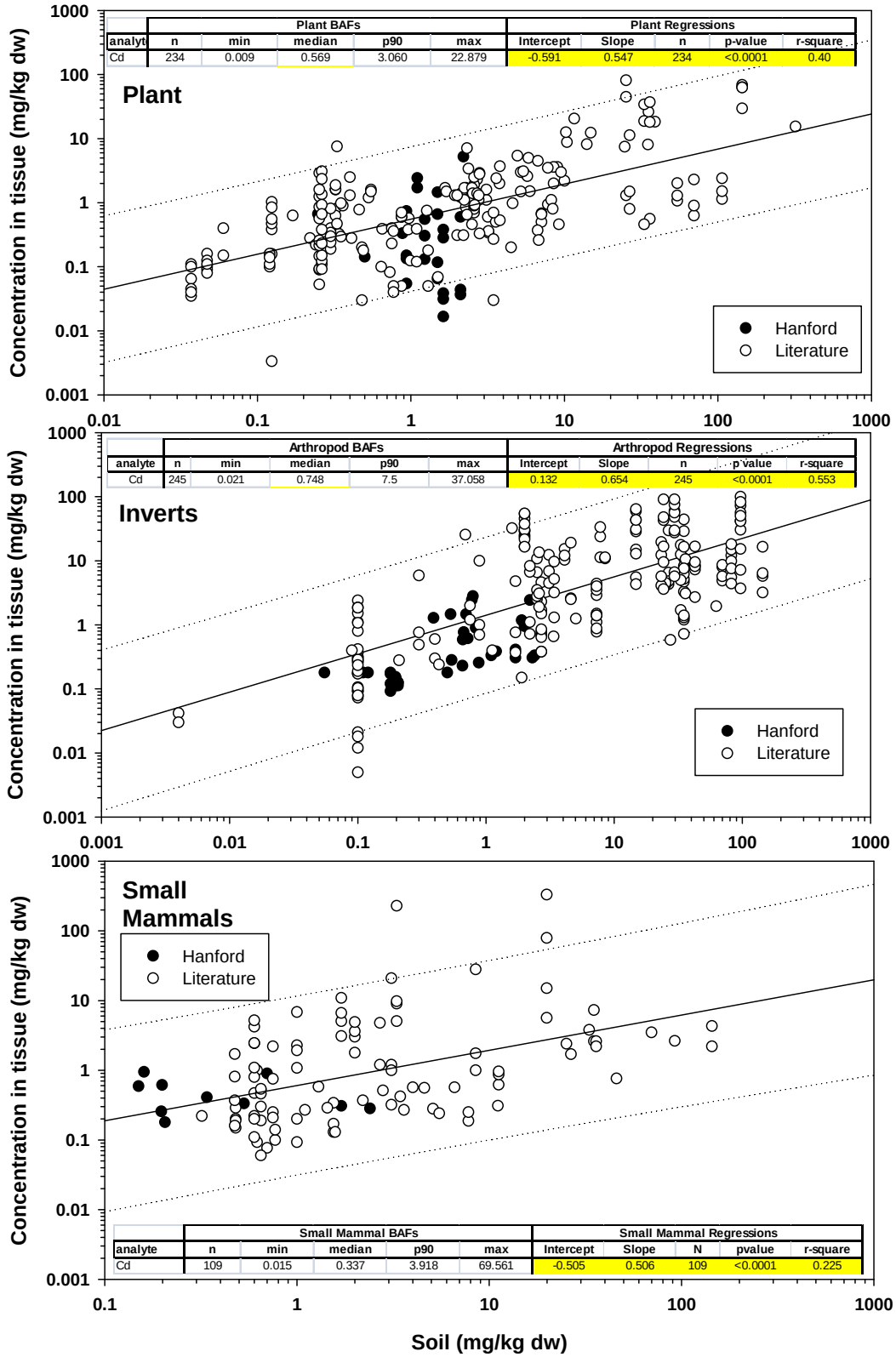
Figure D-6. Scatterplots of Collocated Soil and Terrestrial Plant, Terrestrial Arthropod, or Small Mammal *Barium* Concentrations from Hanford and Literature-Derived Sources Used for Development of Bioaccumulation Models



	Plant BAFs				
analyte	n	min	median	p90	max
Be	5	0.127	0.227	0.493	0.493

	Arthropod BAFs					Arthropod Regressions				
analyte	n	min	median	p90	max	Intercept	Slope	n	p value	r-square
Be	30	0.014	0.021	0.031	0.143	-3.754	-0.531	30	0.14	0.076

Figure D-7. Scatterplots of Collocated Soil and Terrestrial Plant, Terrestrial Arthropod, or Small Mammal *Beryllium* Concentrations from Hanford and Literature-Derived Sources Used for Development of Bioaccumulation Models

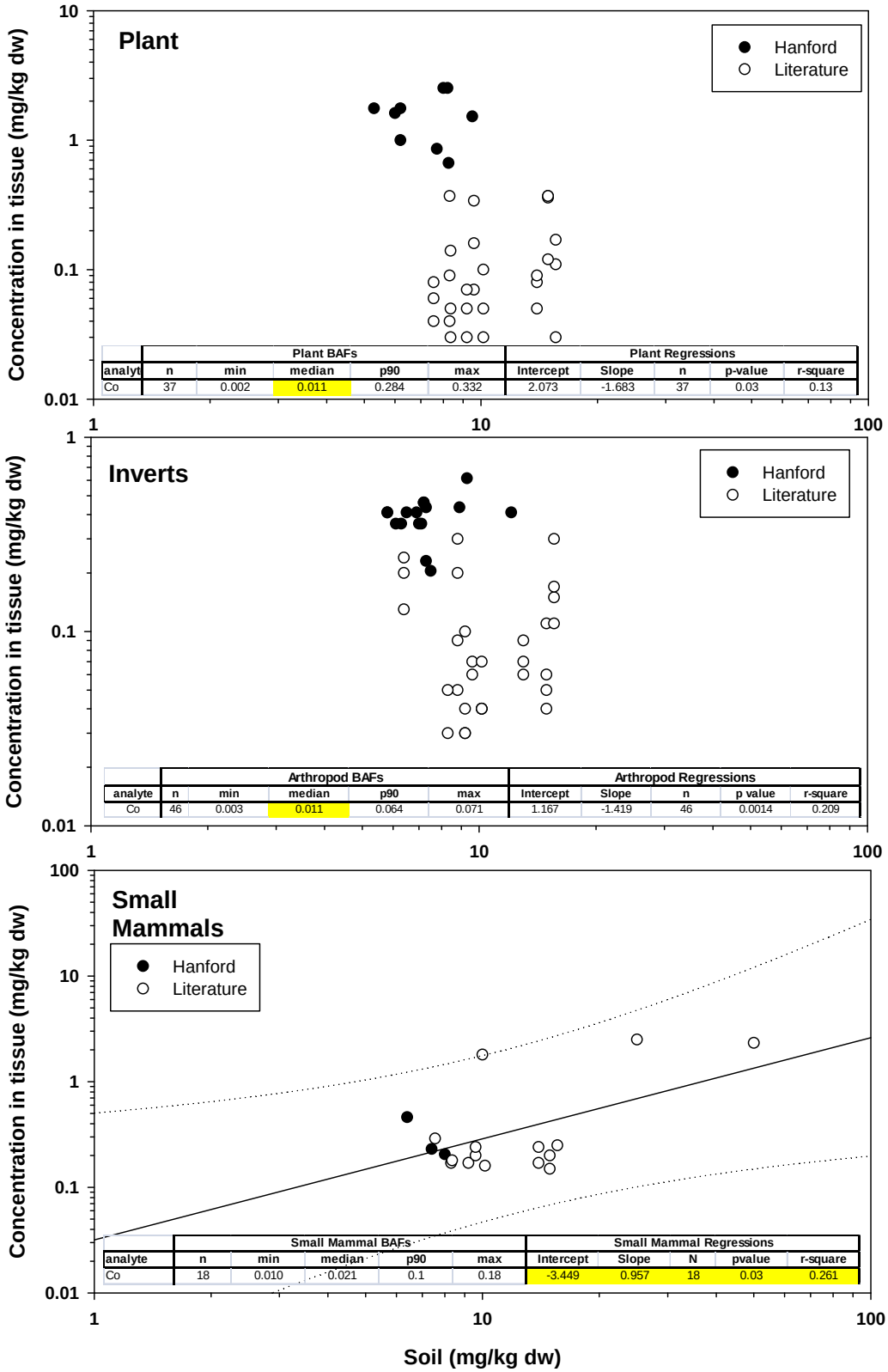


analyte	Plant BAFs n	min	median	p90	max	Plant Regressions Intercept	Slope	n	p-value	r-square
Cd	234	0.009	0.569	3.060	22.879	-0.591	0.547	234	<0.0001	0.40

analyte	Arthropod BAFs n	min	median	p90	max	Arthropod Regressions Intercept	Slope	n	p-value	r-square
Cd	245	0.021	0.748	7.5	37.058	0.132	0.654	245	<0.0001	0.553

analyte	Small Mammal BAFs n	min	median	p90	max	Small Mammal Regressions Intercept	Slope	N	pvalue	r-square
Cd	109	0.015	0.337	3.918	69.561	-0.505	0.506	109	<0.0001	0.225

Figure D-8. Scatterplots of Collocated Soil and Terrestrial Plant, Terrestrial Arthropod, or Small Mammal *Cadmium* Concentrations from Hanford and Literature-Derived Sources Used for Development of Bioaccumulation Models

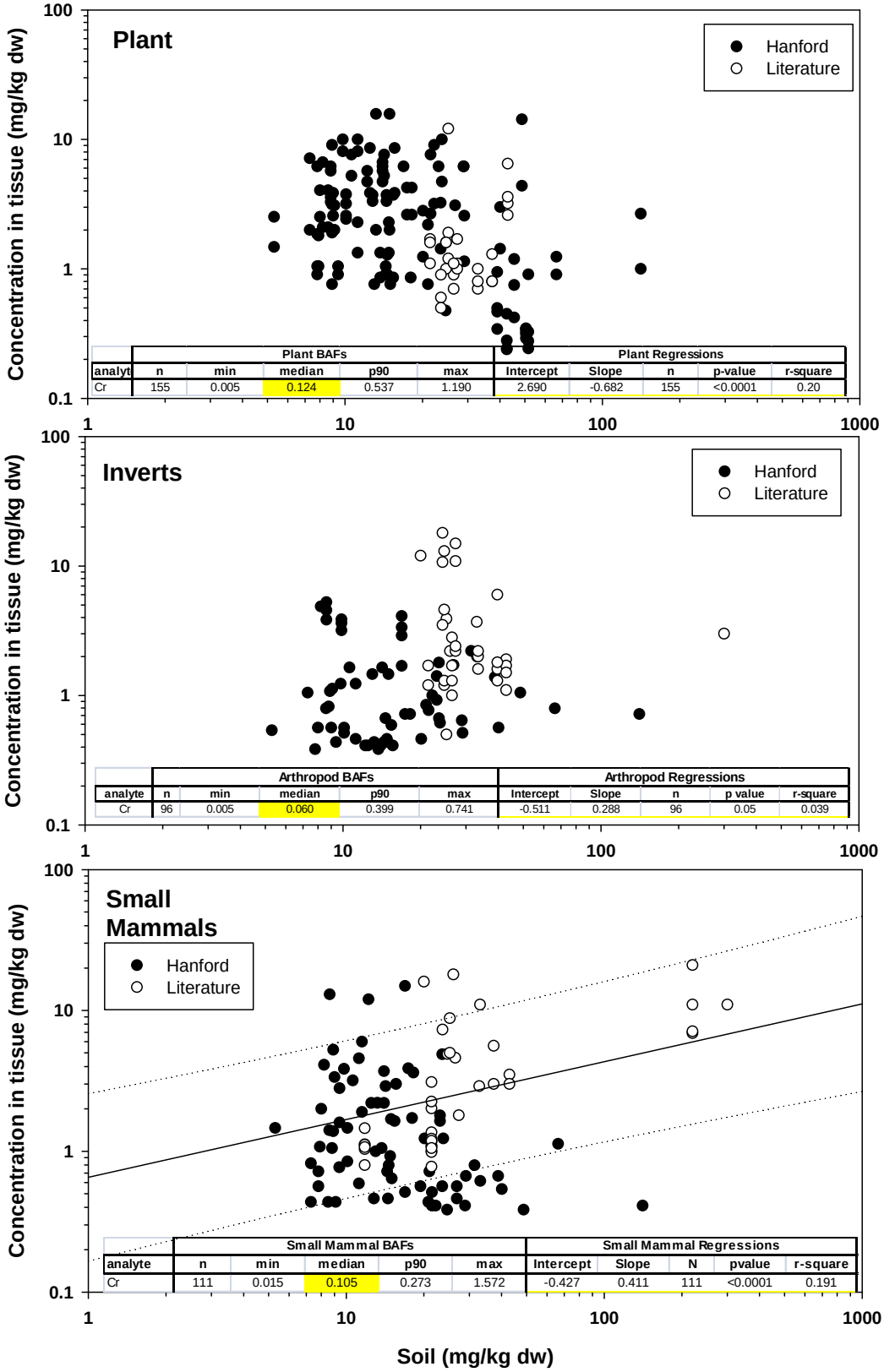


	Plant BAFs					Plant Regressions				
analyt	n	min	median	p90	max	Intercept	Slope	n	p-value	r-square
Co	37	0.002	0.011	0.284	0.332	2.073	-1.683	37	0.03	0.13

	Arthropod BAFs					Arthropod Regressions				
analyte	n	min	median	p90	max	Intercept	Slope	n	p value	r-square
Co	46	0.003	0.011	0.064	0.071	1.167	-1.419	46	0.0014	0.209

	Small Mammal BAFs					Small Mammal Regressions				
analyte	n	min	median	p90	max	Intercept	Slope	N	pvalue	r-square
Co	18	0.010	0.021	0.1	0.18	-3.449	0.957	18	0.03	0.261

Figure D-9. Scatterplots of Collocated Soil and Terrestrial Plant, Terrestrial Arthropod, or Small Mammal *Cobalt* Concentrations from Hanford and Literature-Derived Sources Used for Development of Bioaccumulation Models

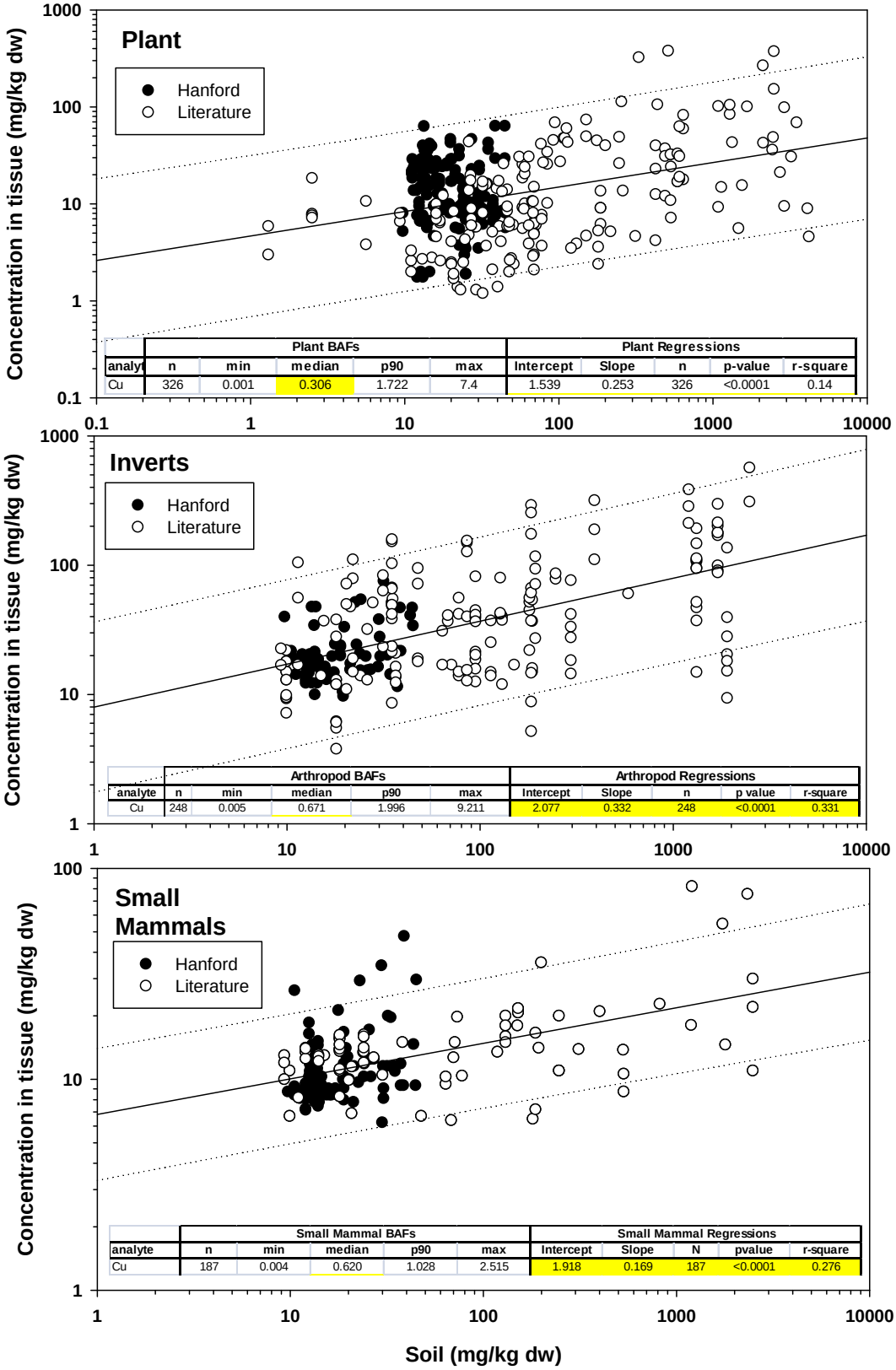


	Plant BAFs					Plant Regressions				
analyt	n	min	median	p90	max	Intercept	Slope	n	p-value	r-square
Cr	155	0.005	0.124	0.537	1.190	2.690	-0.682	155	<0.0001	0.20

	Arthropod BAFs					Arthropod Regressions				
analyte	n	min	median	p90	max	Intercept	Slope	n	p value	r-square
Cr	96	0.005	0.060	0.399	0.741	-0.511	0.288	96	0.05	0.039

	Small Mammal BAFs					Small Mammal Regressions				
analyte	n	min	median	p90	max	Intercept	Slope	N	pvalue	r-square
Cr	111	0.015	0.105	0.273	1.572	-0.427	0.411	111	<0.0001	0.191

Figure D-10. Scatterplots of Collocated Soil and Terrestrial Plant, Terrestrial Arthropod, or Small Mammal *Chromium* Concentrations from Hanford and Literature-Derived Sources Used for Development of Bioaccumulation Models

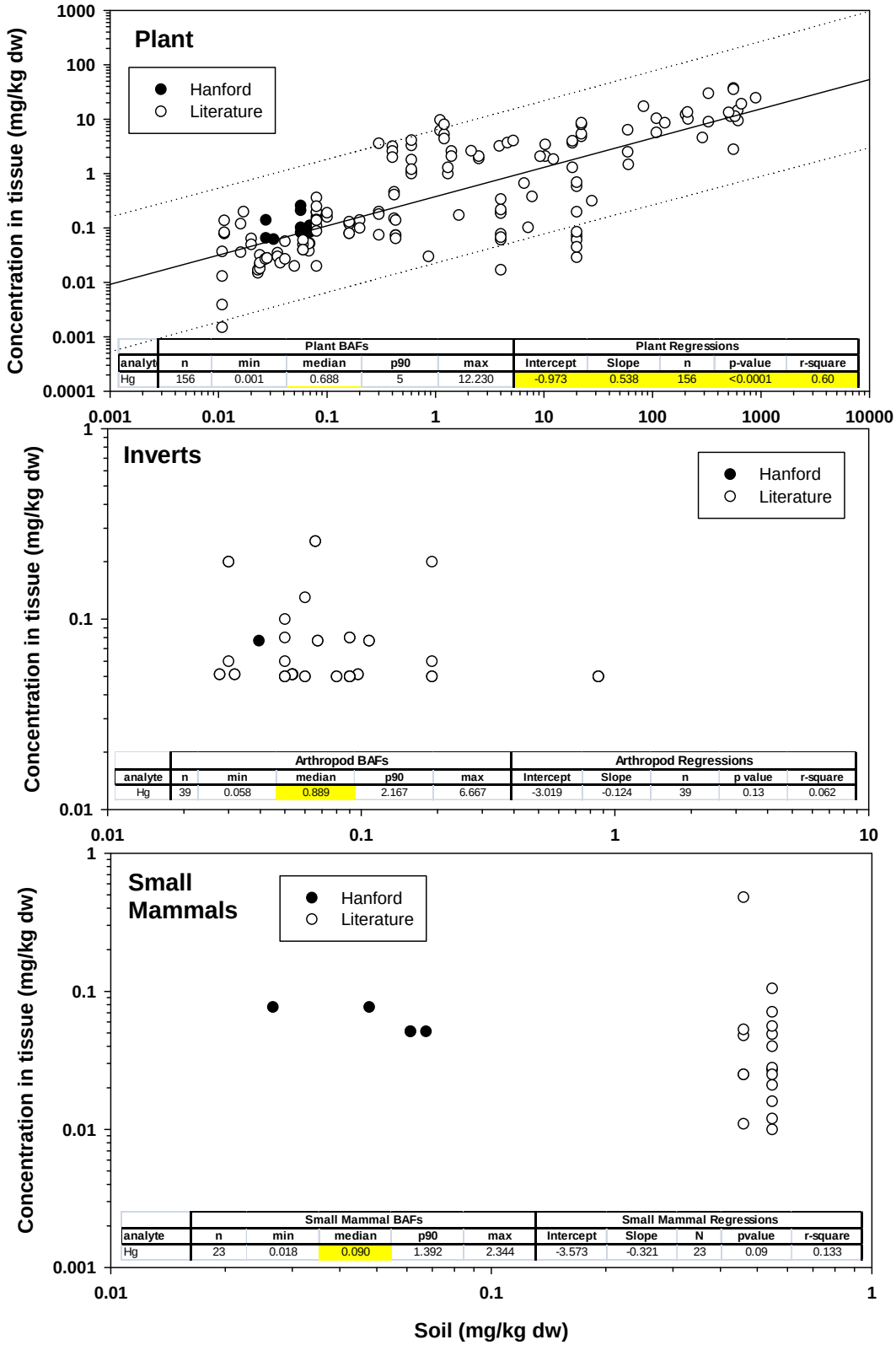


	Plant BAFs					Plant Regressions				
analyt	n	min	median	p90	max	Intercept	Slope	n	p-value	r-square
Cu	326	0.001	0.306	1.722	7.4	1.539	0.253	326	<0.0001	0.14

	Arthropod BAFs					Arthropod Regressions				
analyte	n	min	median	p90	max	Intercept	Slope	n	p value	r-square
Cu	248	0.005	0.671	1.996	9.211	2.077	0.332	248	<0.0001	0.331

	Small Mammal BAFs					Small Mammal Regressions				
analyte	n	min	median	p90	max	Intercept	Slope	N	pvalue	r-square
Cu	187	0.004	0.620	1.028	2.515	1.918	0.169	187	<0.0001	0.276

Figure D-11. Scatterplots of Collocated Soil and Terrestrial Plant, Terrestrial Arthropod, or Small Mammal *Copper* Concentrations from Hanford and Literature-Derived Sources Used for Development of Bioaccumulation Models

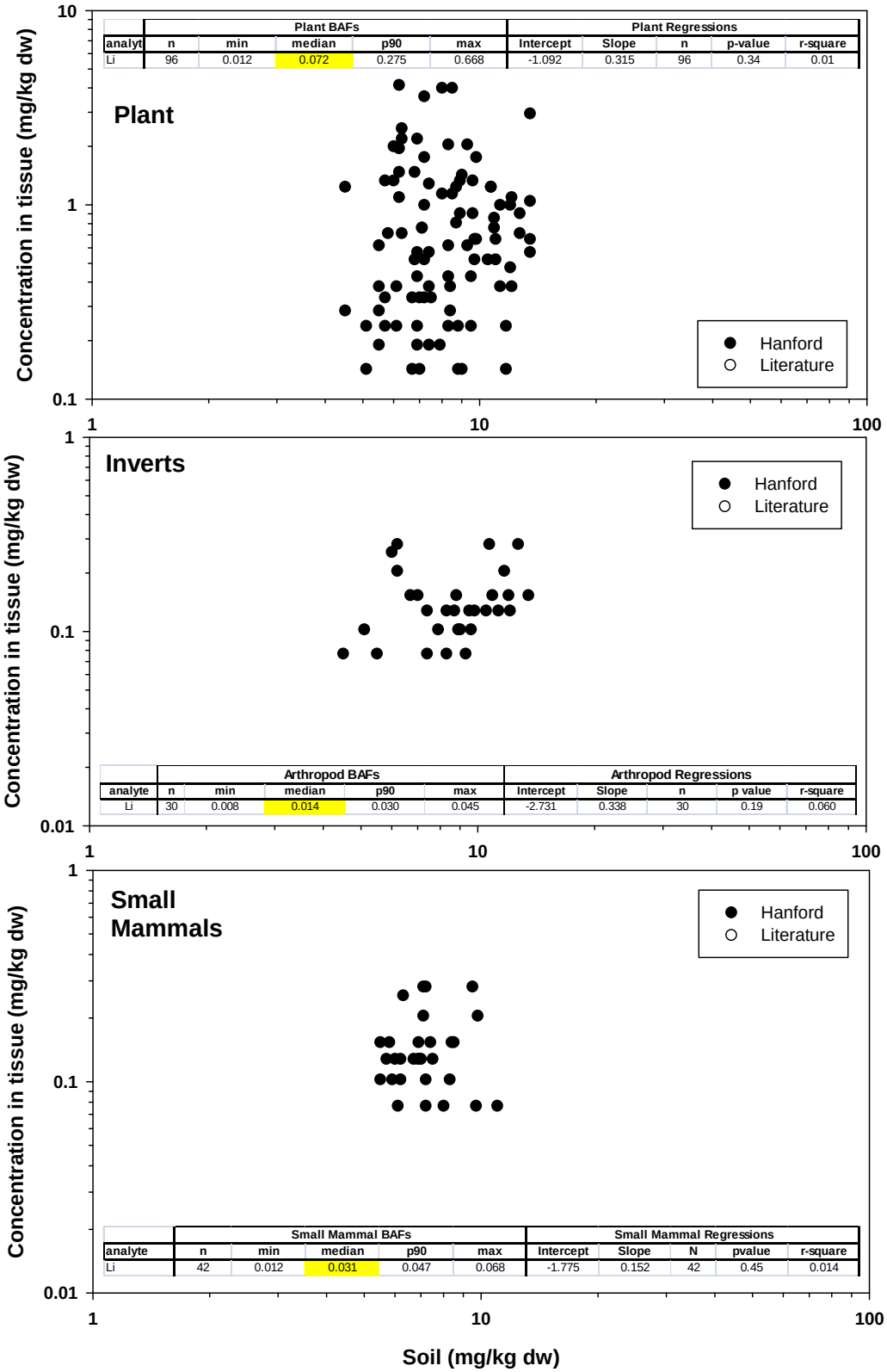


	Plant BAFs					Plant Regressions				
analyte	n	min	median	p90	max	Intercept	Slope	n	p-value	r-square
Hg	156	0.001	0.688	5	12.230	-0.973	0.538	156	<0.0001	0.60

	Arthropod BAFs					Arthropod Regressions				
analyte	n	min	median	p90	max	Intercept	Slope	n	p value	r-square
Hg	39	0.058	0.889	2.167	6.667	-3.019	-0.124	39	0.13	0.062

	Small Mammal BAFs					Small Mammal Regressions				
analyte	n	min	median	p90	max	Intercept	Slope	N	pvalue	r-square
Hg	23	0.018	0.090	1.392	2.344	-3.573	-0.321	23	0.09	0.133

Figure D-12. Scatterplots of Collocated Soil and Terrestrial Plant, Terrestrial Arthropod, or Small Mammal *Mercury* Concentrations from Hanford and Literature-Derived Sources Used for Development of Bioaccumulation Models

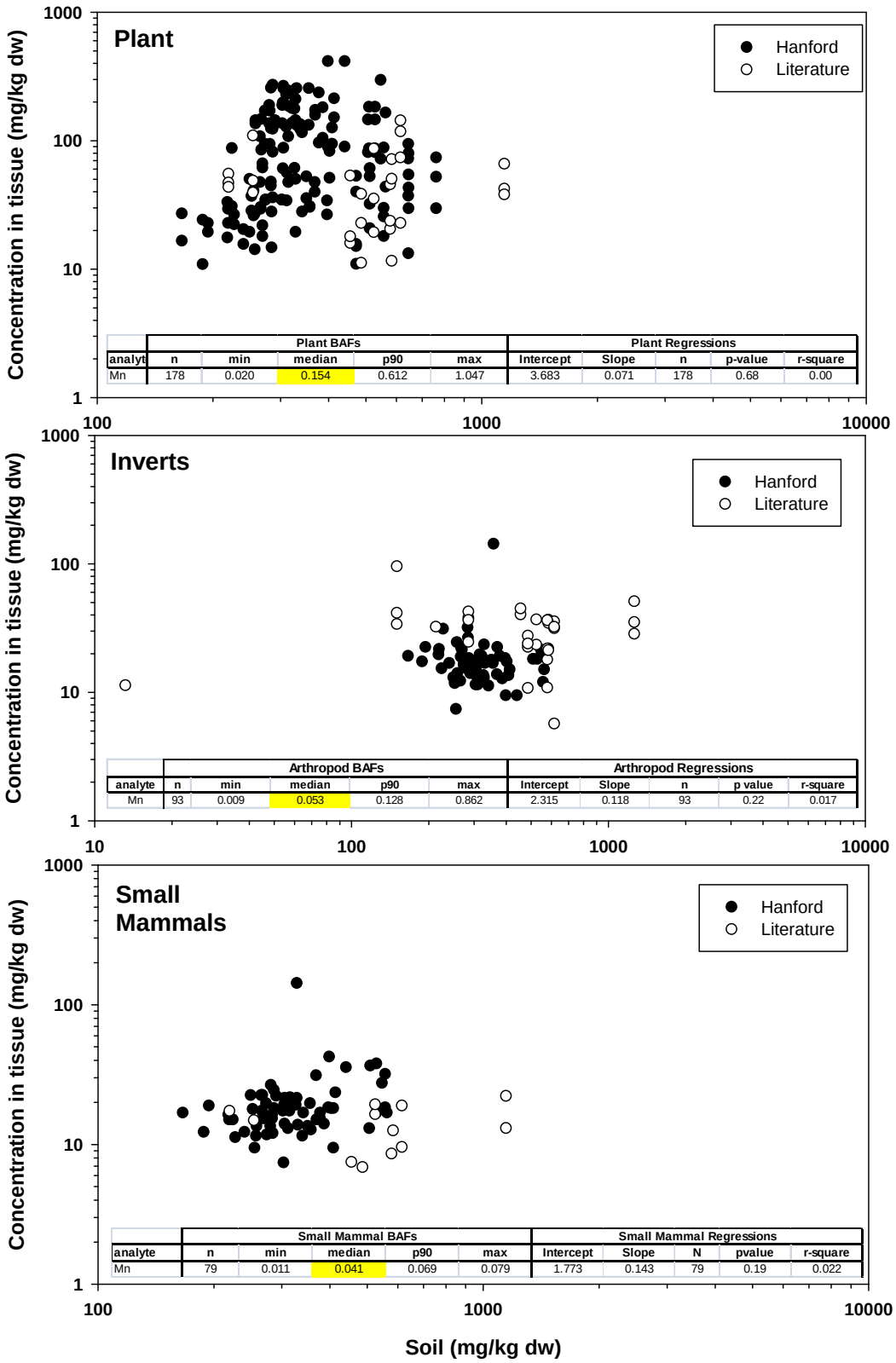


	Plant BAFs					Plant Regressions				
analyte	n	min	median	p90	max	Intercept	Slope	n	p-value	r-square
Li	96	0.012	0.072	0.275	0.668	-1.092	0.315	96	0.34	0.01

	Arthropod BAFs					Arthropod Regressions				
analyte	n	min	median	p90	max	Intercept	Slope	n	p value	r-square
Li	30	0.008	0.014	0.030	0.045	-2.731	0.338	30	0.19	0.060

	Small Mammal BAFs					Small Mammal Regressions				
analyte	n	min	median	p90	max	Intercept	Slope	N	pvalue	r-square
Li	42	0.012	0.031	0.047	0.068	-1.775	0.152	42	0.45	0.014

Figure D-13. Scatterplots of Collocated Soil and Terrestrial Plant, Terrestrial Arthropod, or Small Mammal *Lithium* Concentrations from Hanford and Literature-Derived Sources Used for Development of Bioaccumulation Models

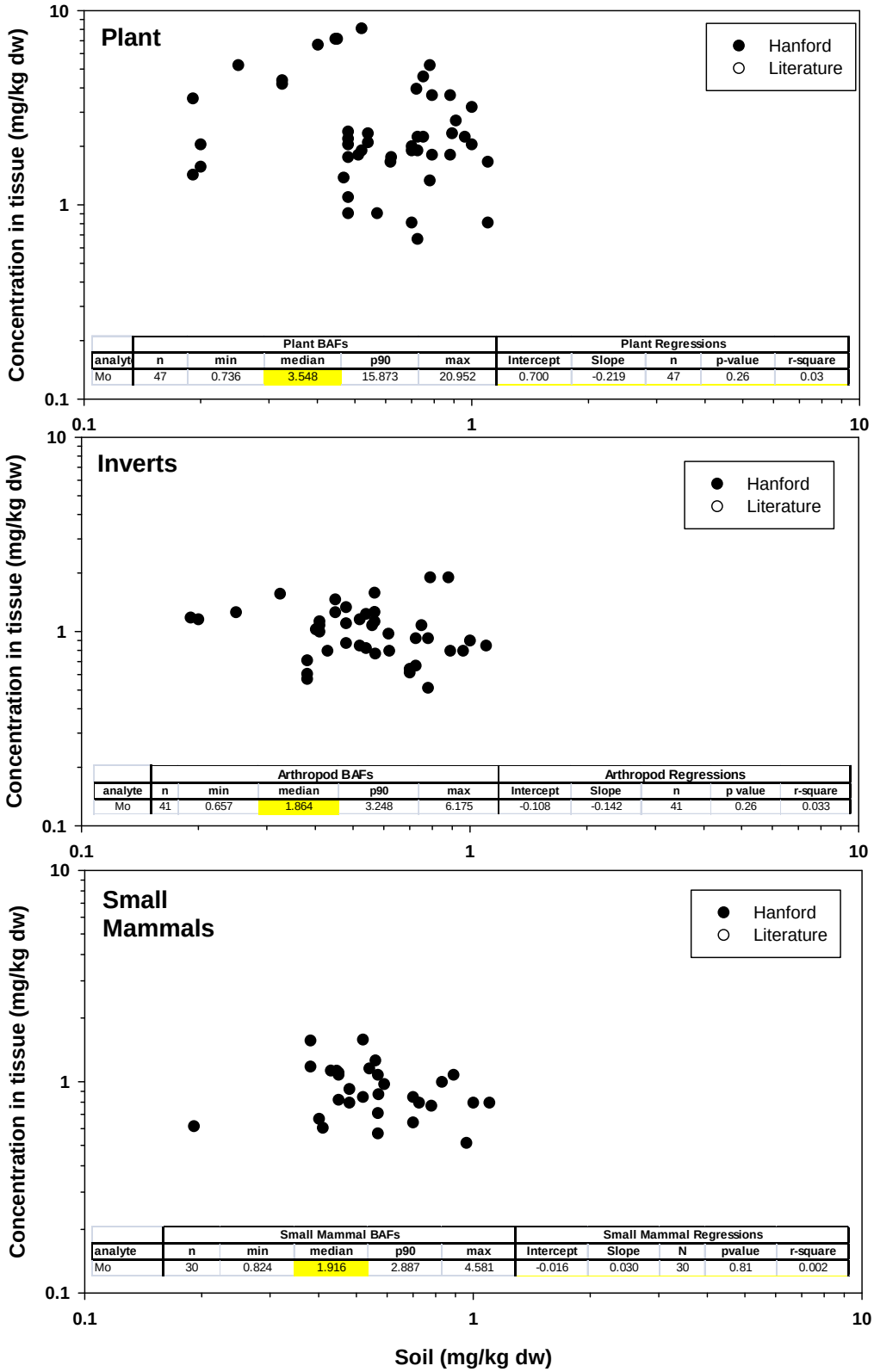


	Plant BAFs					Plant Regressions				
analyt	n	min	median	p90	max	Intercept	Slope	n	p-value	r-square
Mn	178	0.020	0.154	0.612	1.047	3.683	0.071	178	0.68	0.00

	Arthropod BAFs					Arthropod Regressions				
analyte	n	min	median	p90	max	Intercept	Slope	n	p value	r-square
Mn	93	0.009	0.053	0.128	0.862	2.315	0.118	93	0.22	0.017

	Small Mammal BAFs					Small Mammal Regressions				
analyte	n	min	median	p90	max	Intercept	Slope	N	pvalue	r-square
Mn	79	0.011	0.041	0.069	0.079	1.773	0.143	79	0.19	0.022

Figure D-14. Scatterplots of Collocated Soil and Terrestrial Plant, Terrestrial Arthropod, or Small Mammal *Manganese* Concentrations from Hanford and Literature-Derived Sources Used for Development of Bioaccumulation Models

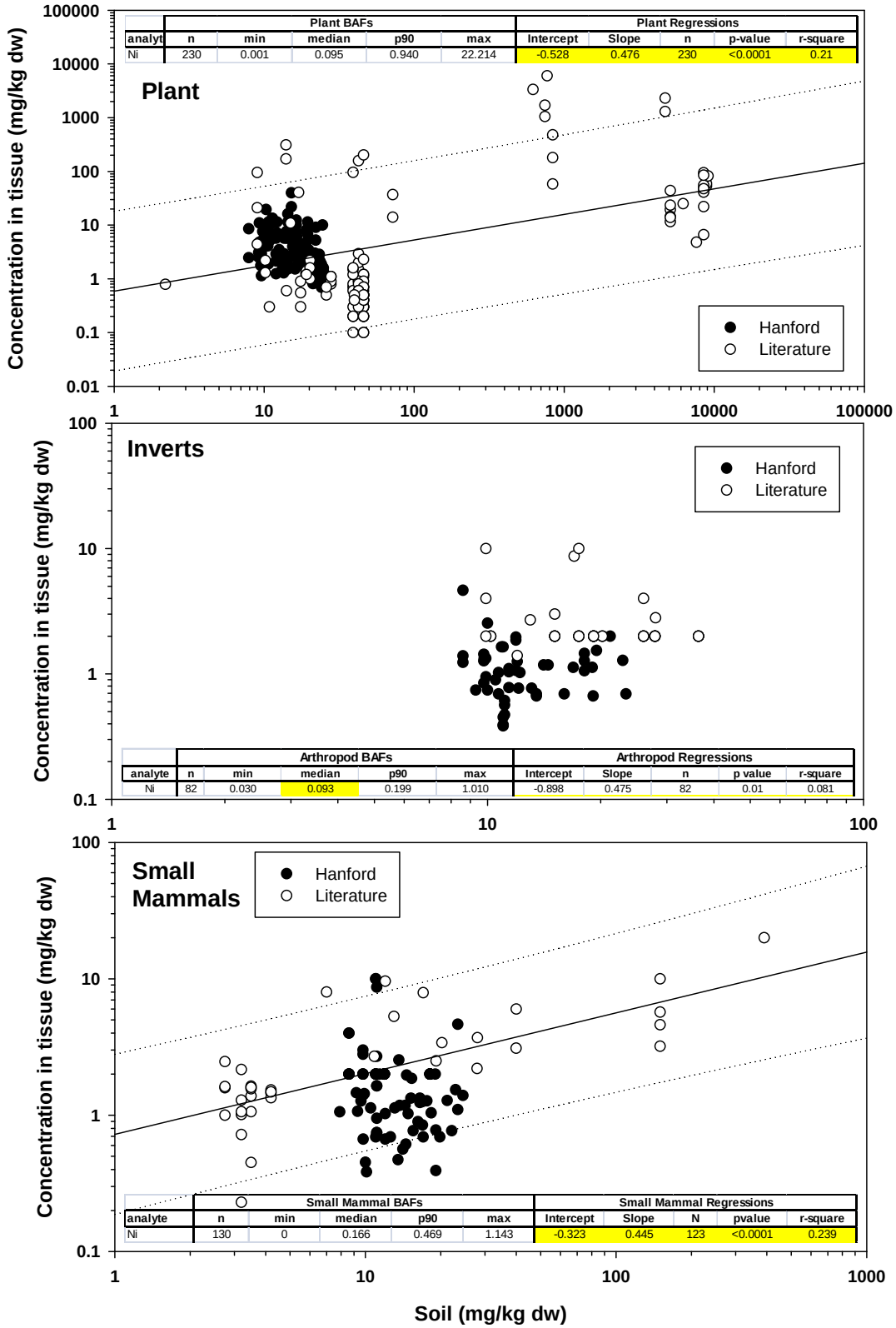


	Plant BAFs					Plant Regressions				
analyte	n	min	median	p90	max	Intercept	Slope	n	p-value	r-square
Mo	47	0.736	3.548	15.873	20.952	0.700	-0.219	47	0.26	0.03

	Arthropod BAFs					Arthropod Regressions				
analyte	n	min	median	p90	max	Intercept	Slope	n	p value	r-square
Mo	41	0.657	1.864	3.248	6.175	-0.108	-0.142	41	0.26	0.033

	Small Mammal BAFs					Small Mammal Regressions				
analyte	n	min	median	p90	max	Intercept	Slope	N	pvalue	r-square
Mo	30	0.824	1.916	2.887	4.581	-0.016	0.030	30	0.81	0.002

Figure D-15. Scatterplots of Collocated Soil and Terrestrial Plant, Terrestrial Arthropod, or Small Mammal *Molybdenum* Concentrations from Hanford and Literature-Derived Sources Used for Development of Bioaccumulation Models

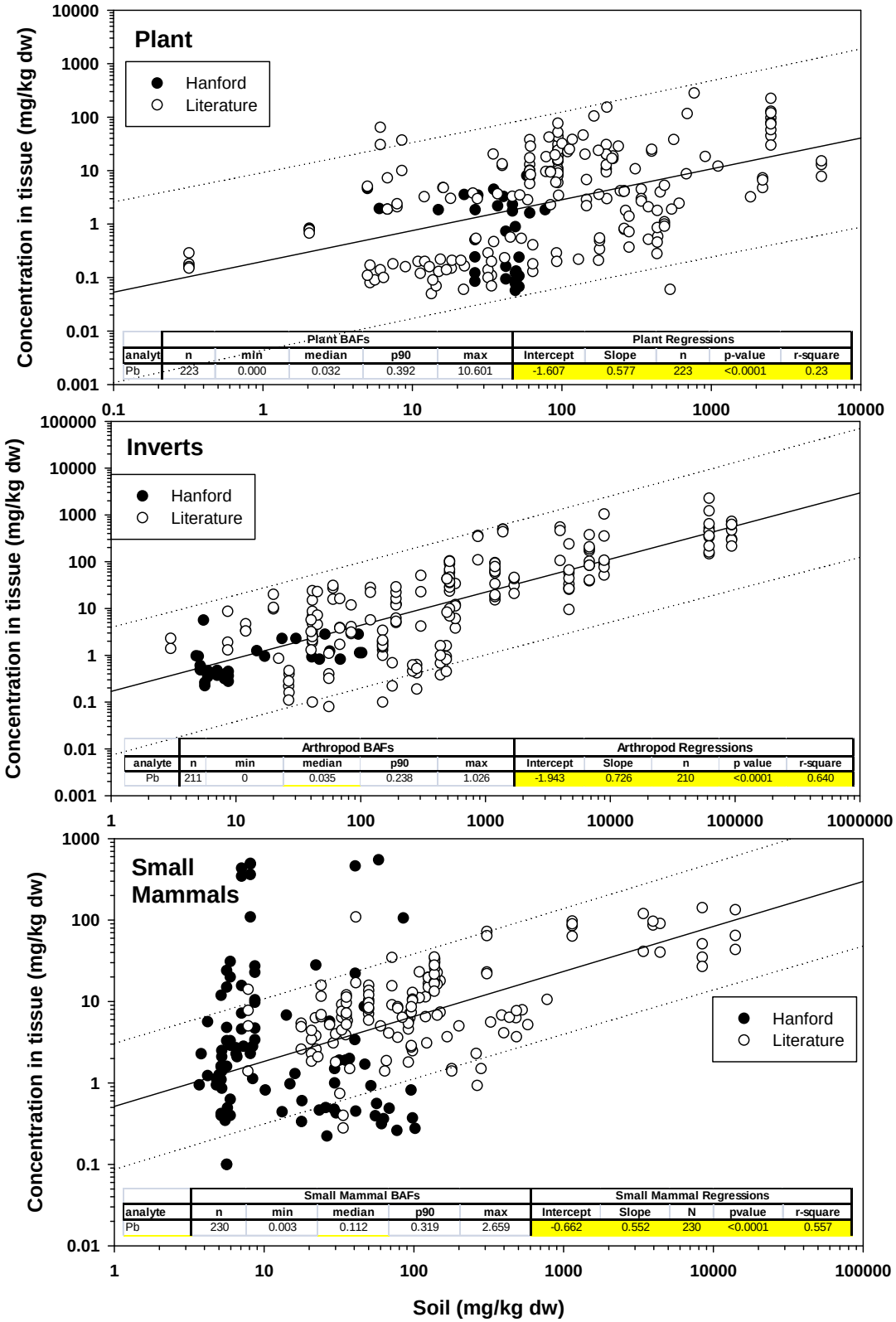


analyt	Plant BAFs n	min	median	p90	max	Plant Regressions Intercept	Slope	n	p-value	r-square
Ni	230	0.001	0.095	0.940	22.214	-0.528	0.476	230	<0.0001	0.21

analyte	Arthropod BAFs n	min	median	p90	max	Arthropod Regressions Intercept	Slope	n	p value	r-square
Ni	82	0.030	0.093	0.199	1.010	-0.898	0.475	82	0.01	0.081

analyte	Small Mammal BAFs n	min	median	p90	max	Small Mammal Regressions Intercept	Slope	N	pvalue	r-square
Ni	130	0	0.166	0.469	1.143	-0.323	0.445	123	<0.0001	0.239

Figure D-16. Scatterplots of Collocated Soil and Terrestrial Plant, Terrestrial Arthropod, or Small Mammal *Nickel* Concentrations from Hanford and Literature-Derived Sources Used for Development of Bioaccumulation Models

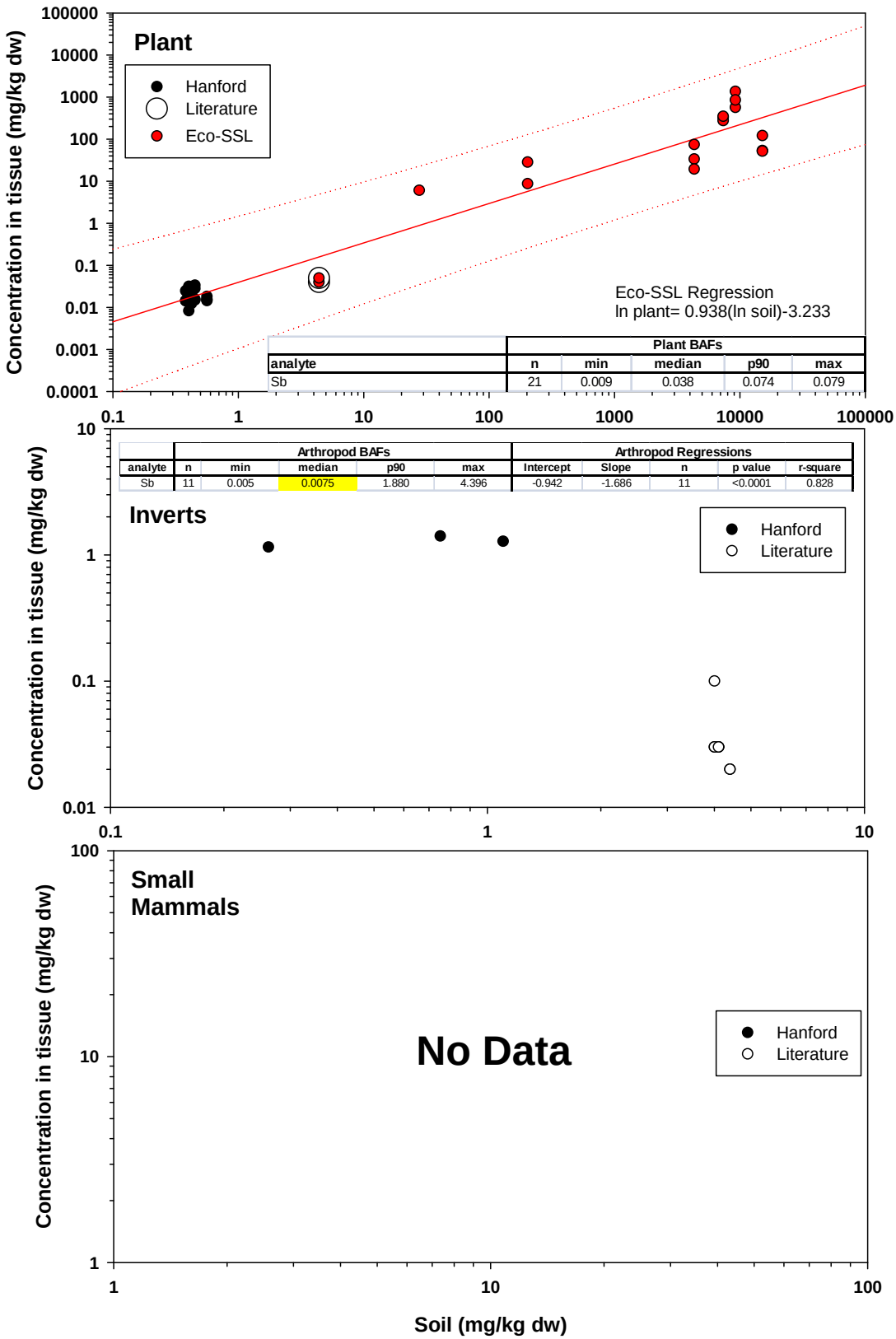


analyte	Plant BAFs n	min	median	p90	max	Plant Regressions Intercept	Slope	n	p-value	r-square
Pb	223	0.000	0.032	0.392	10.601	-1.607	0.577	223	<0.0001	0.23

analyte	Arthropod BAFs n	min	median	p90	max	Arthropod Regressions Intercept	Slope	n	p value	r-square
Pb	211	0	0.035	0.238	1.026	-1.943	0.726	210	<0.0001	0.640

analyte	Small Mammal BAFs n	min	median	p90	max	Small Mammal Regressions Intercept	Slope	N	pvalue	r-square
Pb	230	0.003	0.112	0.319	2.659	-0.662	0.552	230	<0.0001	0.557

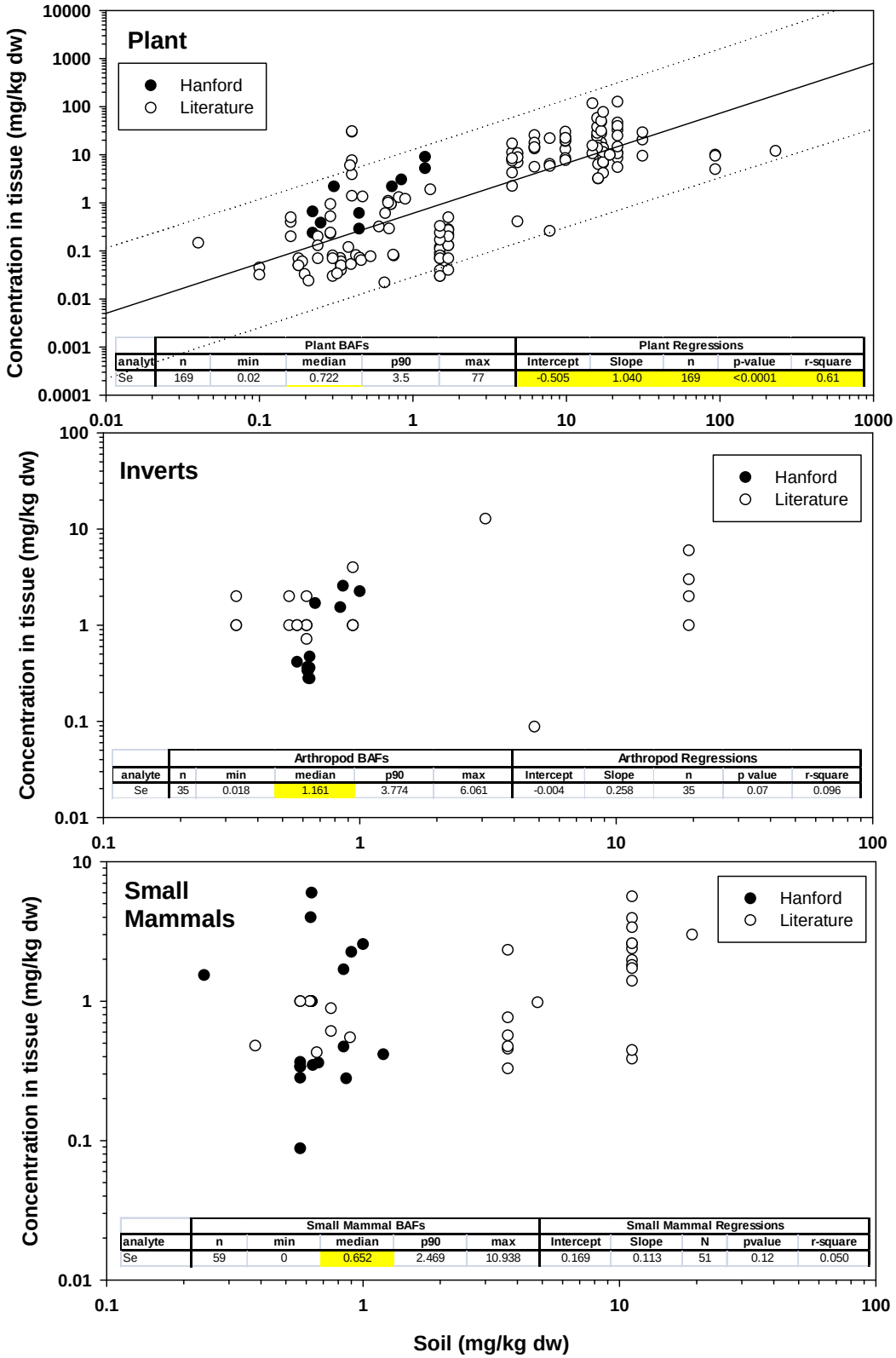
Figure D-17. Scatterplots of Collocated Soil and Terrestrial Plant, Terrestrial Arthropod, or Small Mammal *Lead* Concentrations from Hanford and Literature-Derived Sources Used for Development of Bioaccumulation Models



	Plant BAFs				
analyte	n	min	median	p90	max
Sb	21	0.009	0.038	0.074	0.079

	Arthropod BAFs					Arthropod Regressions				
analyte	n	min	median	p90	max	Intercept	Slope	n	p value	r-square
Sb	11	0.005	0.0075	1.880	4.396	-0.942	-1.686	11	<0.0001	0.828

Figure D-18. Scatterplots of Collocated Soil and Terrestrial Plant, Terrestrial Arthropod, or Small Mammal *Antimony* Concentrations from Hanford and Literature-Derived Sources Used for Development of Bioaccumulation Models

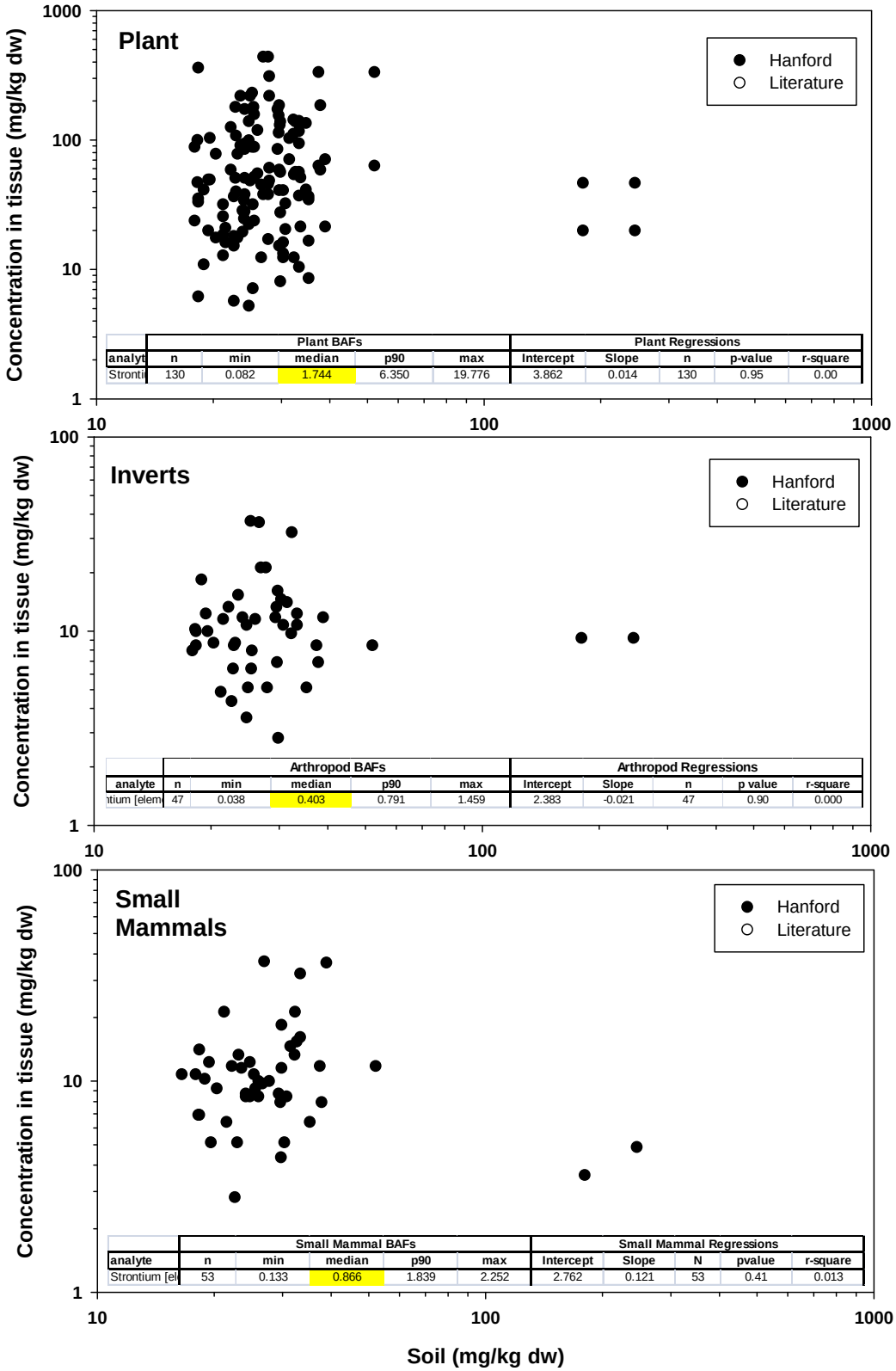


	Plant BAFs					Plant Regressions				
analyte	n	min	median	p90	max	Intercept	Slope	n	p-value	r-square
Se	169	0.02	0.722	3.5	77	-0.505	1.040	169	<0.0001	0.61

	Arthropod BAFs					Arthropod Regressions				
analyte	n	min	median	p90	max	Intercept	Slope	n	p value	r-square
Se	35	0.018	1.161	3.774	6.061	-0.004	0.258	35	0.07	0.096

	Small Mammal BAFs					Small Mammal Regressions				
analyte	n	min	median	p90	max	Intercept	Slope	N	pvalue	r-square
Se	59	0	0.652	2.469	10.938	0.169	0.113	51	0.12	0.050

Figure D-19. Scatterplots of Collocated Soil and Terrestrial Plant, Terrestrial Arthropod, or Small Mammal *Selenium* Concentrations from Hanford and Literature-Derived Sources Used for Development of Bioaccumulation Models

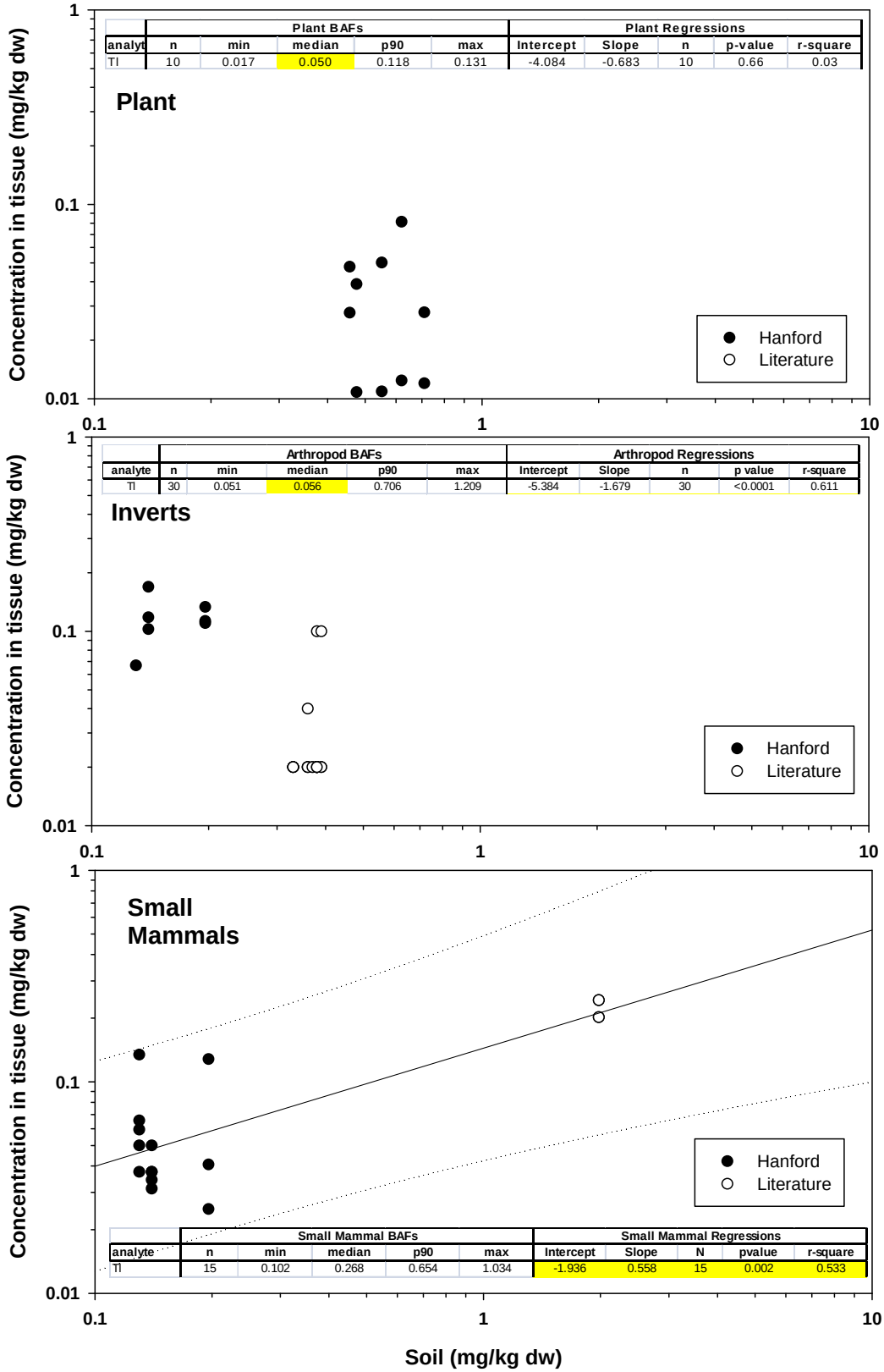


	Plant BAFs					Plant Regressions				
analyt	n	min	median	p90	max	Intercept	Slope	n	p-value	r-square
Stronti	130	0.082	1.744	6.350	19.776	3.862	0.014	130	0.95	0.00

	Arthropod BAFs					Arthropod Regressions				
analyte	n	min	median	p90	max	Intercept	Slope	n	p value	r-square
ntium [elem	47	0.038	0.403	0.791	1.459	2.383	-0.021	47	0.90	0.000

	Small Mammal BAFs					Small Mammal Regressions				
analyte	n	min	median	p90	max	Intercept	Slope	N	pvalue	r-square
Strontium [el	53	0.133	0.866	1.839	2.252	2.762	0.121	53	0.41	0.013

Figure D-20. Scatterplots of Collocated Soil and Terrestrial Plant, Terrestrial Arthropod, or Small Mammal *Strontium* Concentrations from Hanford and Literature-Derived Sources Used for Development of Bioaccumulation Models

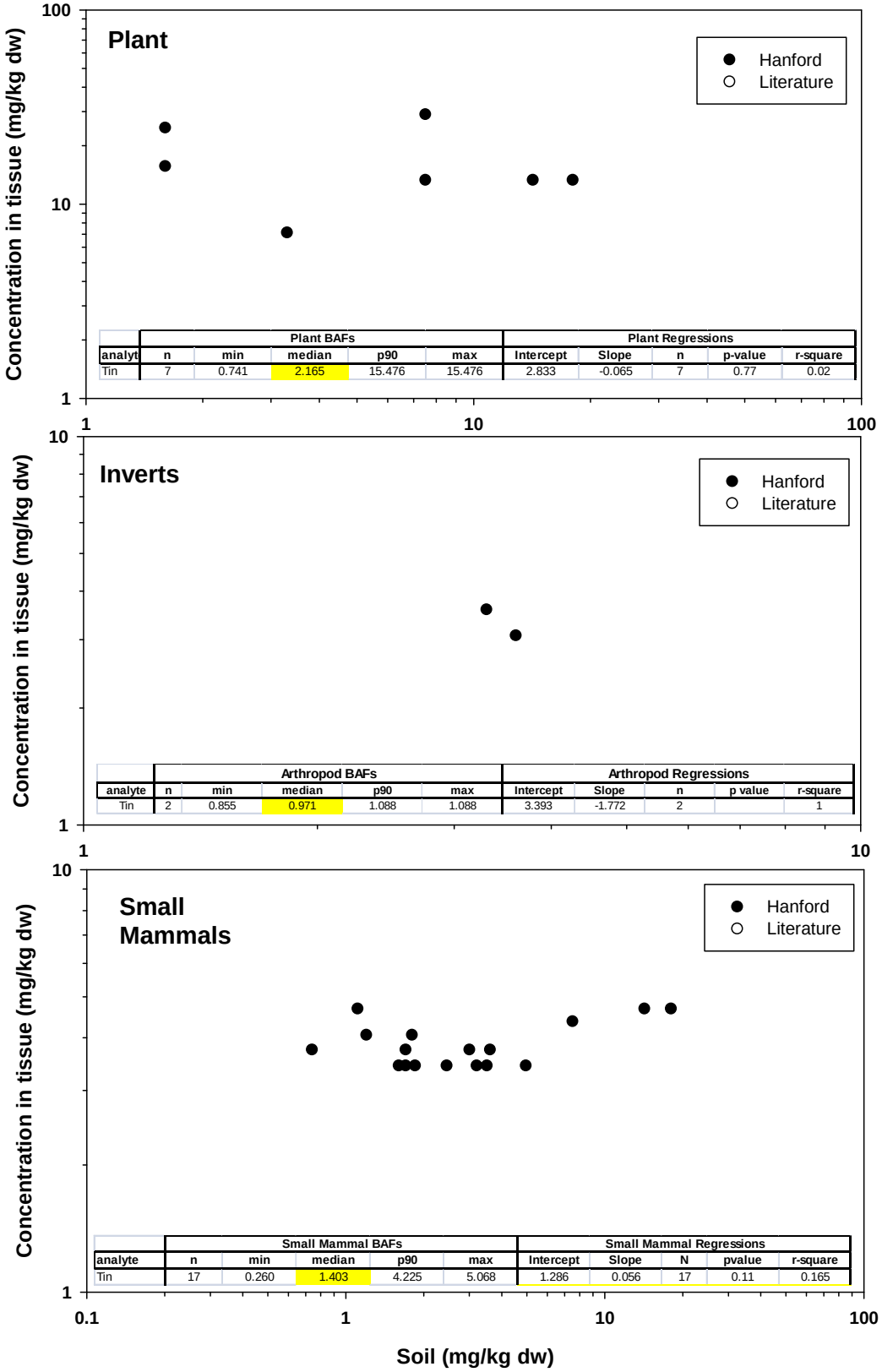


	Plant BAFs					Plant Regressions				
analyte	n	min	median	p90	max	Intercept	Slope	n	p-value	r-square
Tl	10	0.017	0.050	0.118	0.131	-4.084	-0.683	10	0.66	0.03

	Arthropod BAFs					Arthropod Regressions				
analyte	n	min	median	p90	max	Intercept	Slope	n	p value	r-square
Tl	30	0.051	0.056	0.706	1.209	-5.384	-1.679	30	<0.0001	0.611

	Small Mammal BAFs					Small Mammal Regressions				
analyte	n	min	median	p90	max	Intercept	Slope	N	pvalue	r-square
Tl	15	0.102	0.268	0.654	1.034	-1.936	0.558	15	0.002	0.533

Figure D-21. Scatterplots of Collocated Soil and Terrestrial Plant, Terrestrial Arthropod, or Small Mammal *Thallium* Concentrations from Hanford and Literature-Derived Sources Used for Development of Bioaccumulation Models

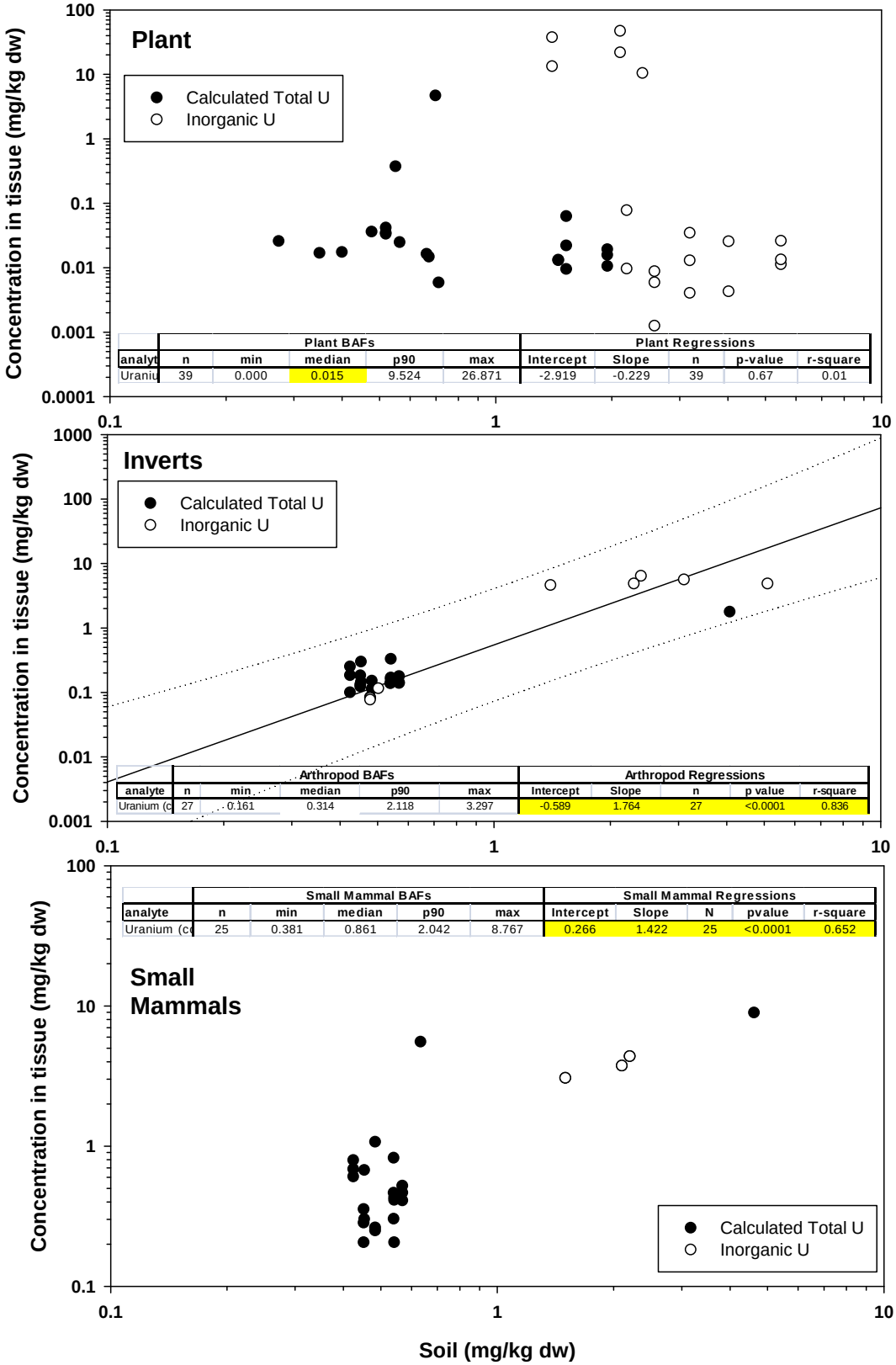


	Plant BAFs					Plant Regressions				
analyt	n	min	median	p90	max	Intercept	Slope	n	p-value	r-square
Tin	7	0.741	2.165	15.476	15.476	2.833	-0.065	7	0.77	0.02

	Arthropod BAFs					Arthropod Regressions				
analyte	n	min	median	p90	max	Intercept	Slope	n	p value	r-square
Tin	2	0.855	0.971	1.088	1.088	3.393	-1.772	2		1

	Small Mammal BAFs					Small Mammal Regressions				
analyte	n	min	median	p90	max	Intercept	Slope	N	pvalue	r-square
Tin	17	0.260	1.403	4.225	5.068	1.286	0.056	17	0.11	0.165

Figure D-22. Scatterplots of Collocated Soil and Terrestrial Plant, Terrestrial Arthropod, or Small Mammal *Tin* Concentrations from Hanford and Literature-Derived Sources Used for Development of Bioaccumulation Models

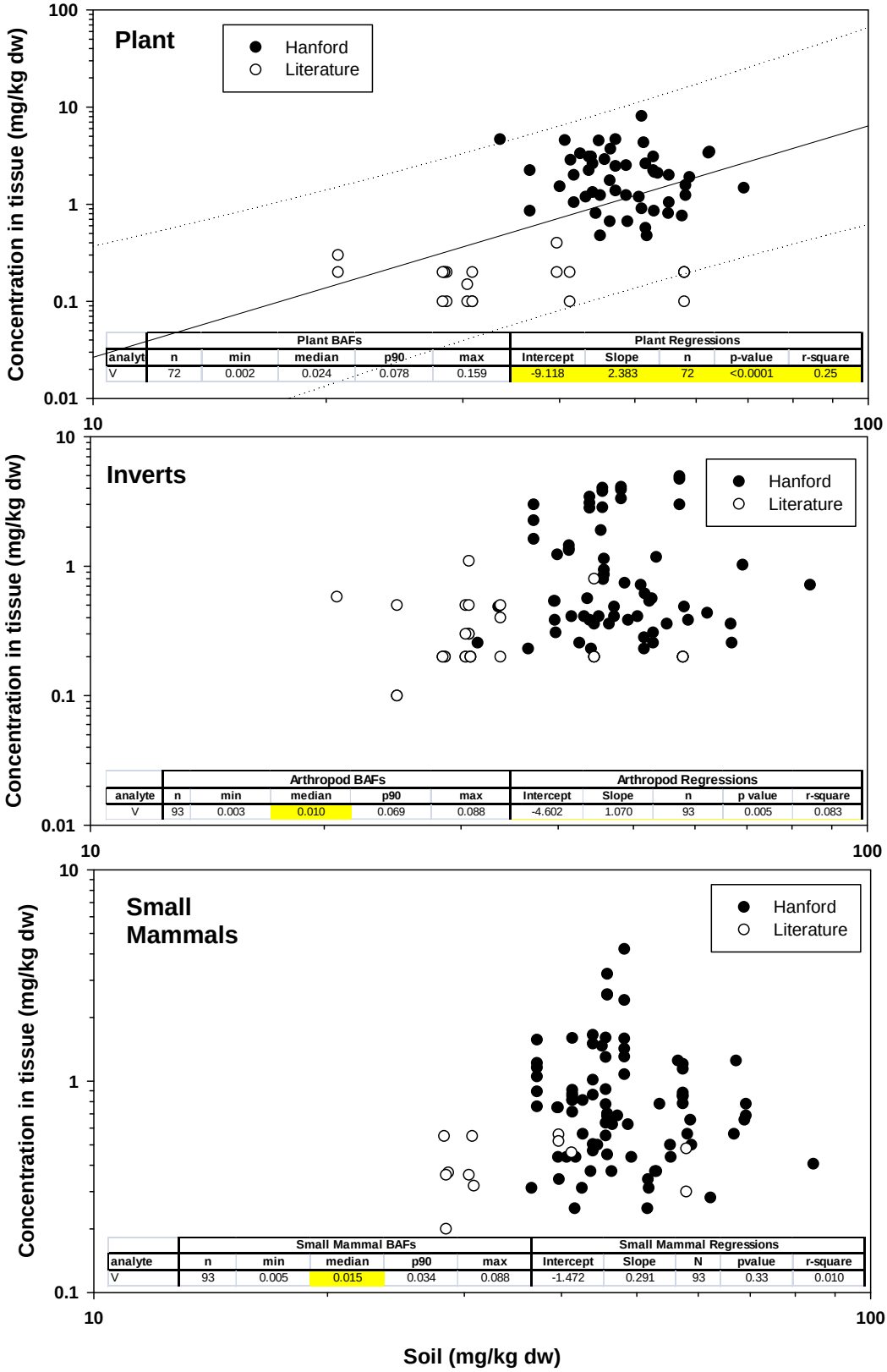


	Plant BAFs					Plant Regressions				
analyt	n	min	median	p90	max	Intercept	Slope	n	p-value	r-square
Uraniu	39	0.000	0.015	9.524	26.871	-2.919	-0.229	39	0.67	0.01

	Arthropod BAFs					Arthropod Regressions				
analyte	n	min	median	p90	max	Intercept	Slope	n	p value	r-square
Uranium (c	27	0.161	0.314	2.118	3.297	-0.589	1.764	27	<0.0001	0.836

	Small Mammal BAFs					Small Mammal Regressions				
analyte	n	min	median	p90	max	Intercept	Slope	N	pvalue	r-square
Uranium (c	25	0.381	0.861	2.042	8.767	0.266	1.422	25	<0.0001	0.652

Figure D-23. Scatterplots of Collocated Soil and Terrestrial Plant, Terrestrial Arthropod, or Small Mammal *Uranium* Concentrations from Hanford (by Two Analyses) Used for Development of Bioaccumulation Models

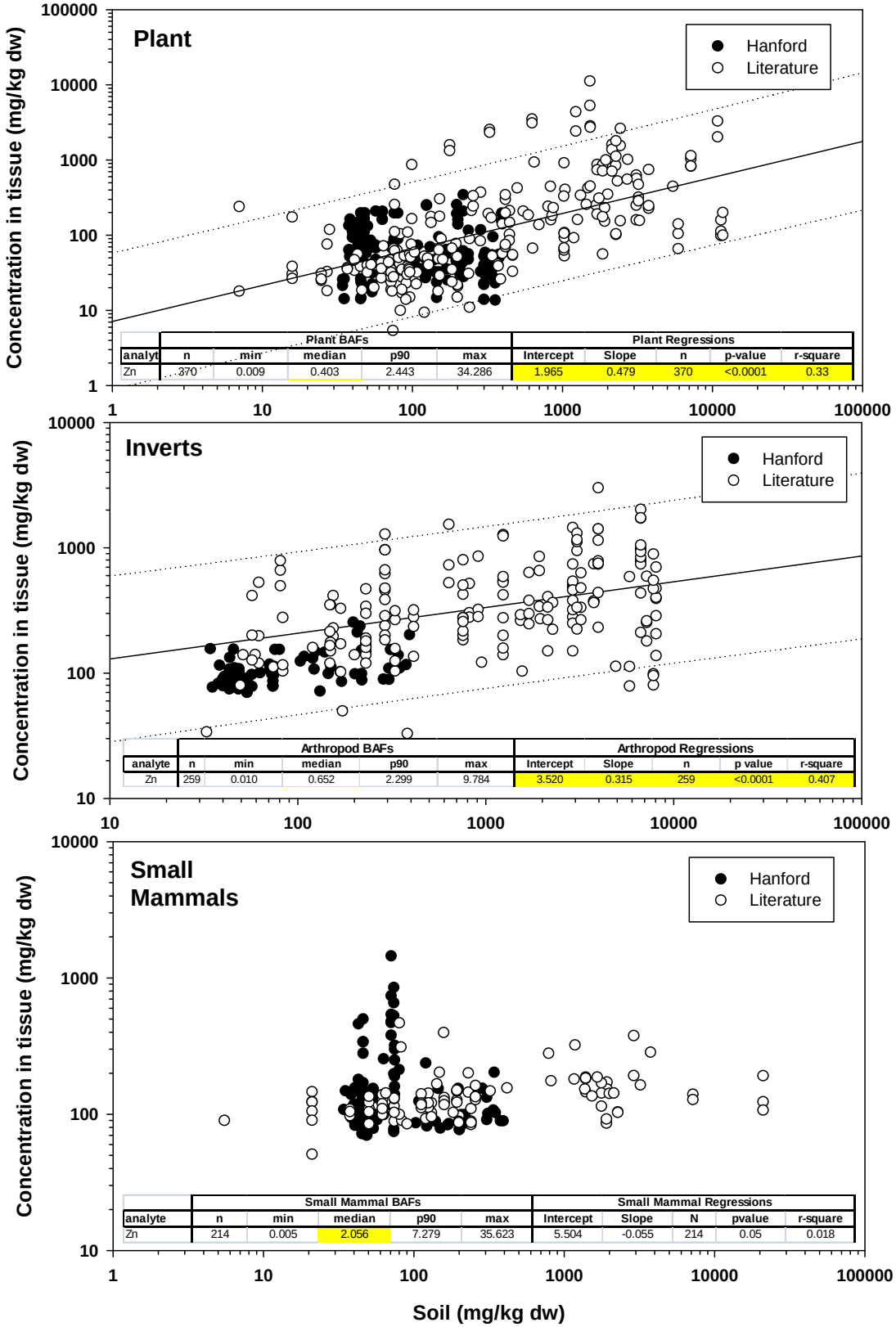


	Plant BAFs					Plant Regressions				
analyte	n	min	median	p90	max	Intercept	Slope	n	p-value	r-square
V	72	0.002	0.024	0.078	0.159	-9.118	2.383	72	<0.0001	0.25

	Arthropod BAFs					Arthropod Regressions				
analyte	n	min	median	p90	max	Intercept	Slope	n	p value	r-square
V	93	0.003	0.010	0.069	0.088	-4.602	1.070	93	0.005	0.083

	Small Mammal BAFs					Small Mammal Regressions				
analyte	n	min	median	p90	max	Intercept	Slope	N	pvalue	r-square
V	93	0.005	0.015	0.034	0.088	-1.472	0.291	93	0.33	0.010

Figure D-24. Scatterplots of Collocated Soil and Terrestrial Plant, Terrestrial Arthropod, or Small Mammal *Vanadium* Concentrations from Hanford and Literature-Derived Sources Used for Development of Bioaccumulation Models

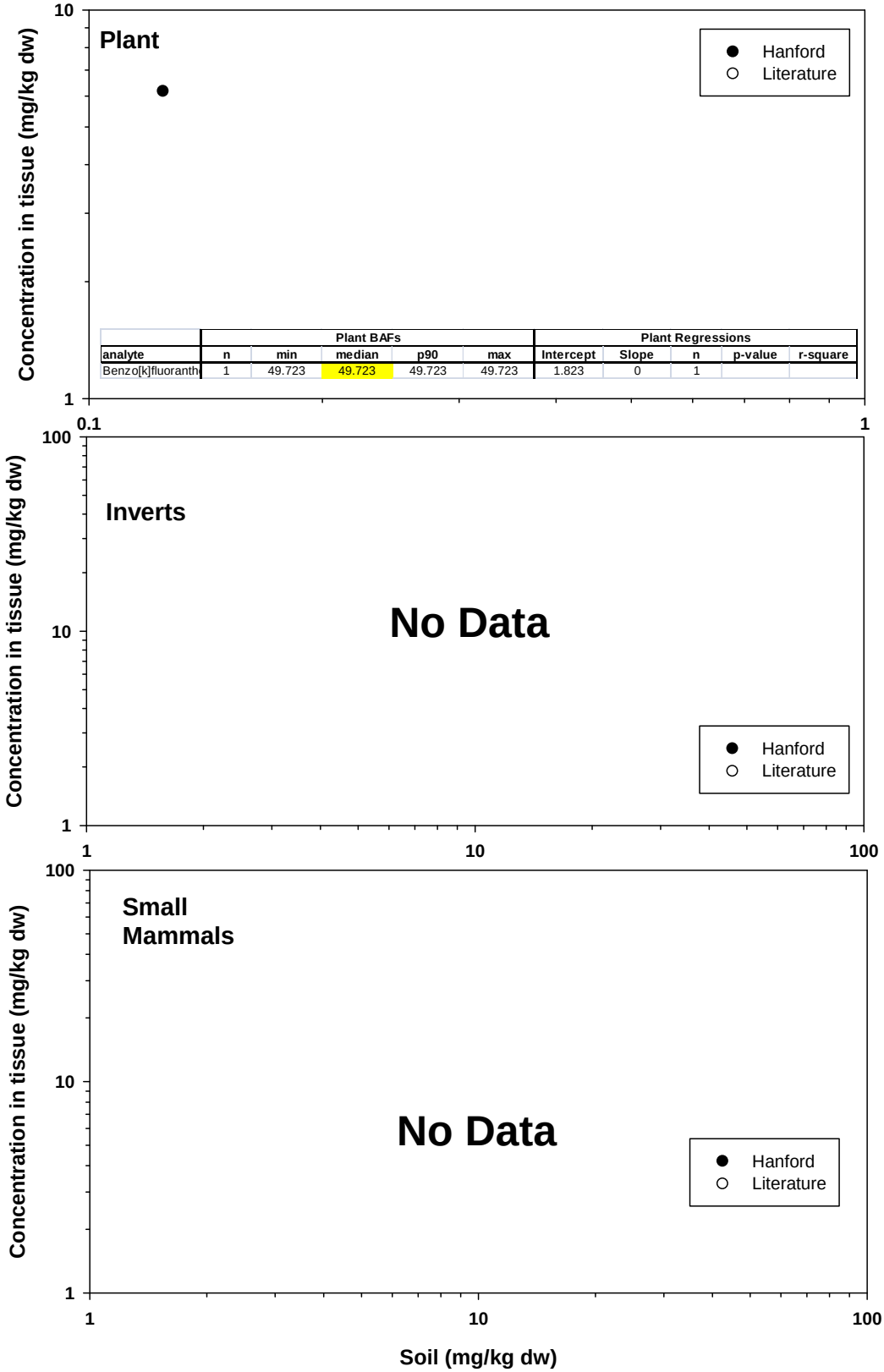


	Plant BAFs					Plant Regressions				
analyt	n	min	median	p90	max	Intercept	Slope	n	p-value	r-square
Zn	370	0.009	0.403	2.443	34.286	1.965	0.479	370	<0.0001	0.33

	Arthropod BAFs					Arthropod Regressions				
analyte	n	min	median	p90	max	Intercept	Slope	n	p value	r-square
Zn	259	0.010	0.652	2.299	9.784	3.520	0.315	259	<0.0001	0.407

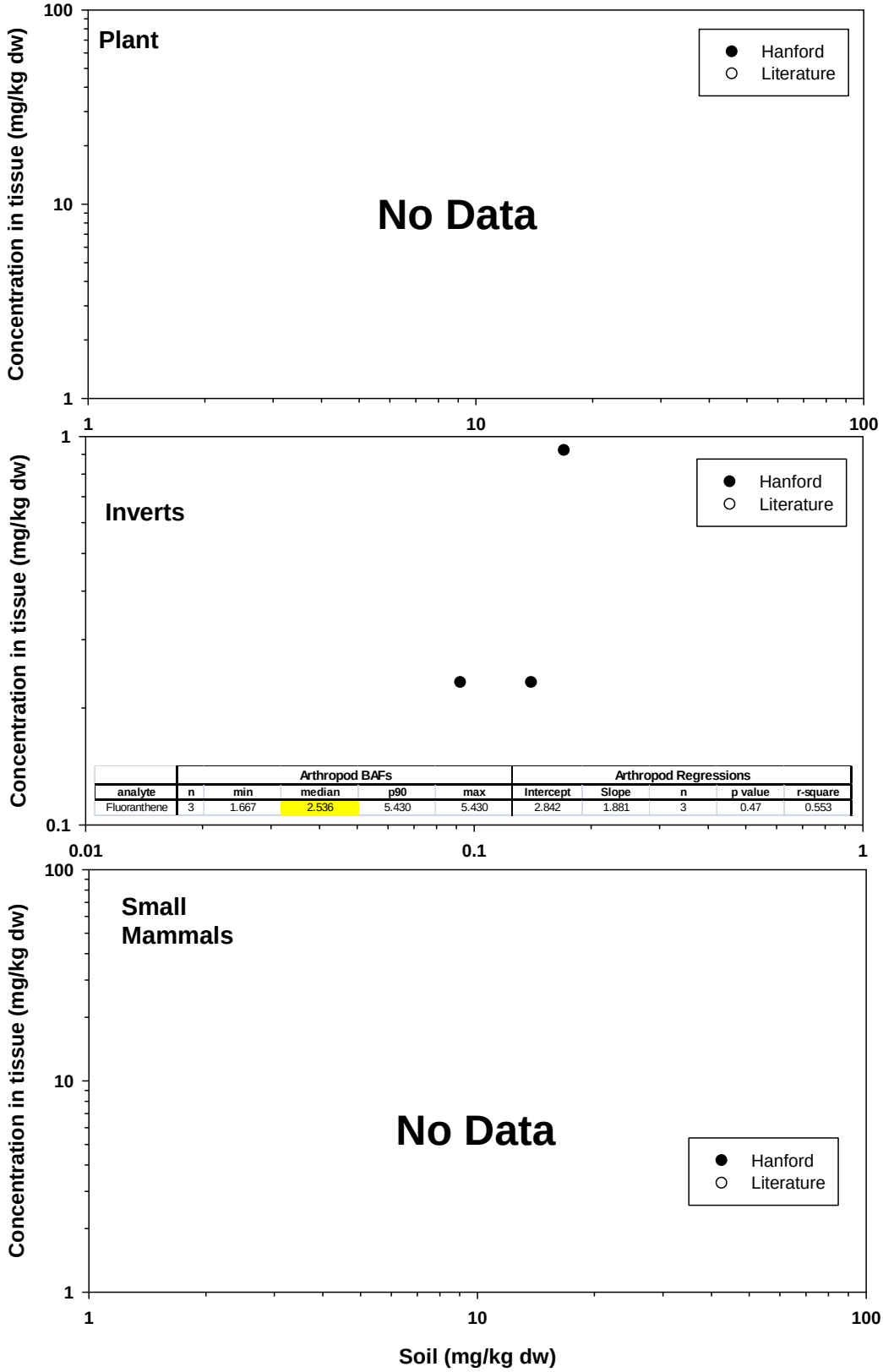
	Small Mammal BAFs					Small Mammal Regressions				
analyte	n	min	median	p90	max	Intercept	Slope	N	pvalue	r-square
Zn	214	0.005	2.056	7.279	35.623	5.504	-0.055	214	0.05	0.018

Figure D-25. Scatterplots of Collocated Soil and Terrestrial Plant, Terrestrial Arthropod, or Small Mammal *Zinc* Concentrations from Hanford and Literature-Derived Sources Used for Development of Bioaccumulation Models



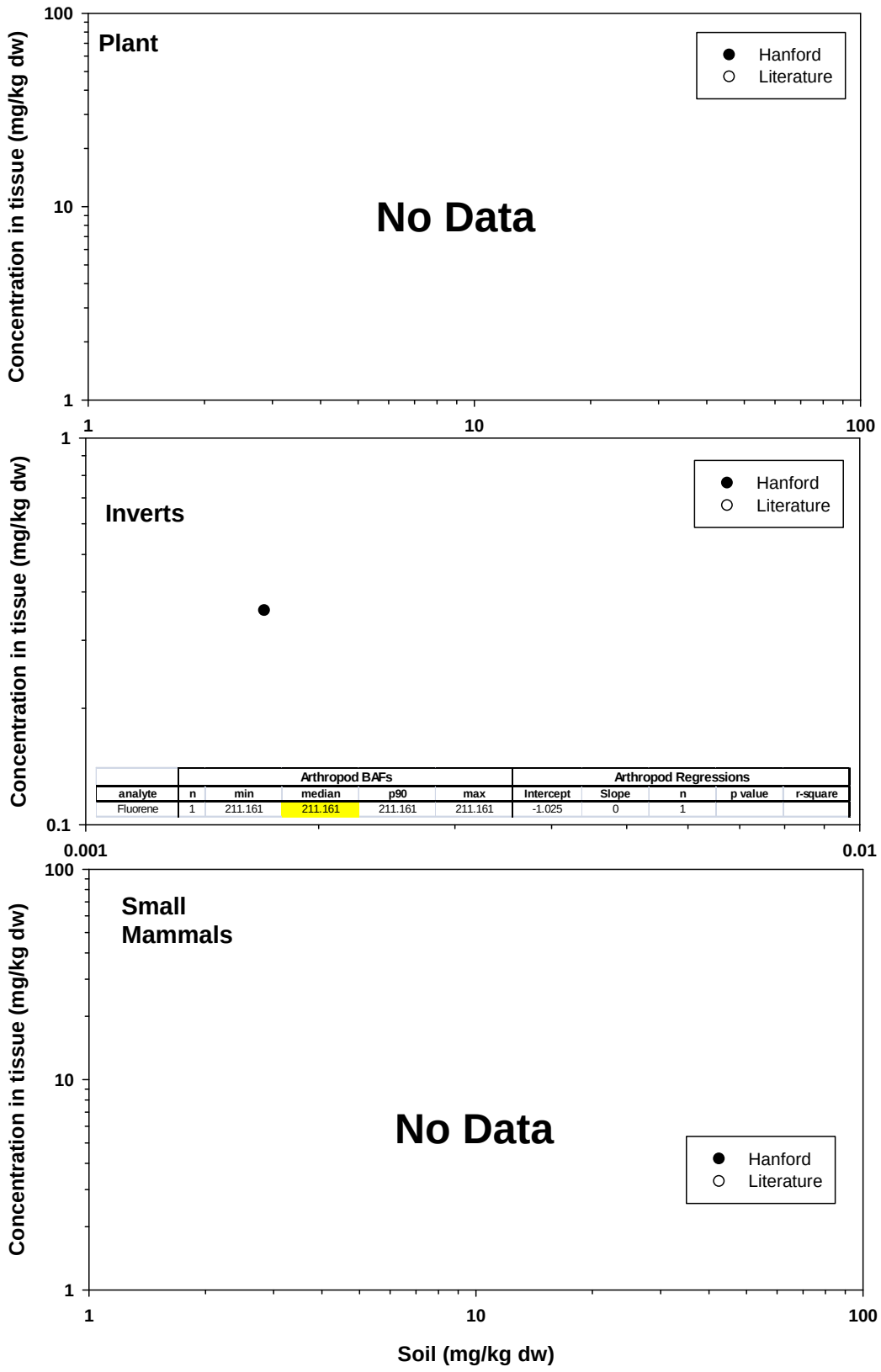
	Plant BAFs					Plant Regressions				
analyte	n	min	median	p90	max	Intercept	Slope	n	p-value	r-square
Benzo[k]fluoranth	1	49.723	49.723	49.723	49.723	1.823	0	1		

Figure D-26. Scatterplots of Collocated Soil and Terrestrial Plant, Terrestrial Arthropod, or Small Mammal *Benzo(k)fluoranthene* Concentrations from Hanford and Literature-Derived Sources Used for Development of Bioaccumulation Models



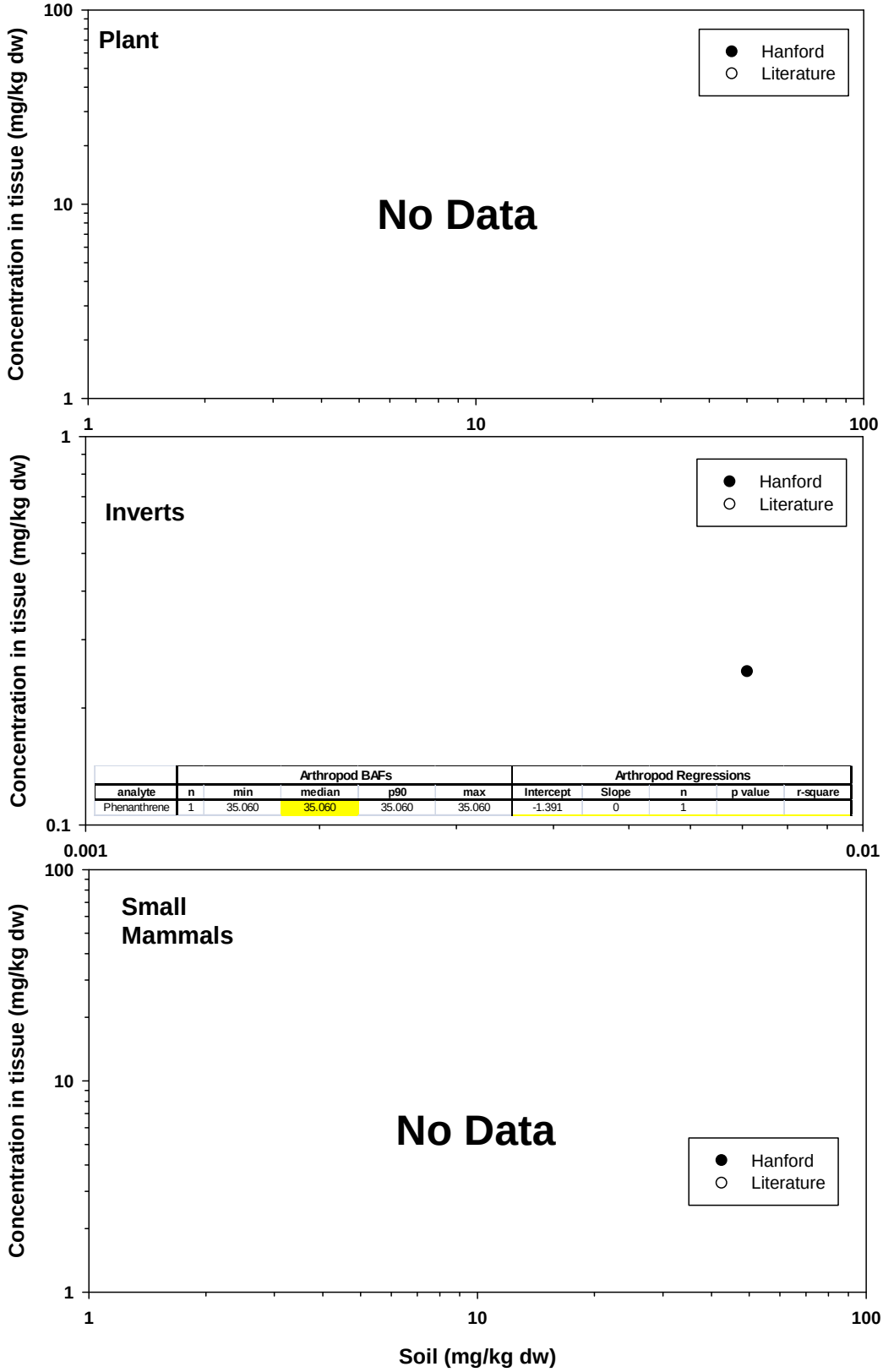
	Arthropod BAFs					Arthropod Regressions				
analyte	n	min	median	p90	max	Intercept	Slope	n	p value	r-square
Fluoranthene	3	1.667	2.536	5.430	5.430	2.842	1.881	3	0.47	0.553

Figure D-27. Scatterplots of Collocated Soil and Terrestrial Plant, Terrestrial Arthropod, or Small Mammal *Fluoranthene* Concentrations from Hanford and Literature-Derived Sources Used for Development of Bioaccumulation Models



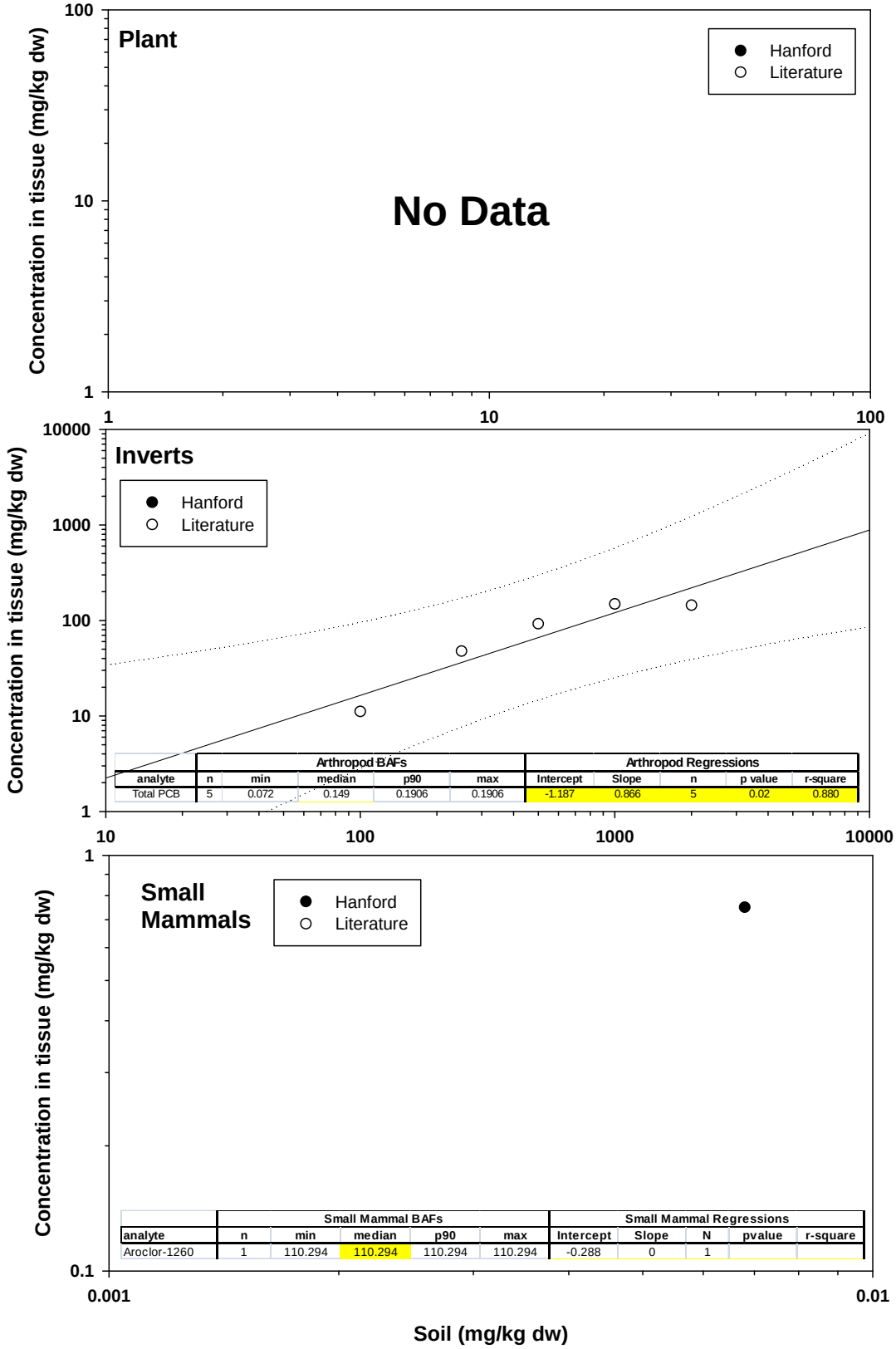
	Arthropod BAFs					Arthropod Regressions				
analyte	n	min	median	p90	max	Intercept	Slope	n	p value	r-square
Fluorene	1	211.161	211.161	211.161	211.161	-1.025	0	1		

Figure D-28. Scatterplots of Collocated Soil and Terrestrial Plant, Terrestrial Arthropod, or Small Mammal *Fluorene* Concentrations from Hanford and Literature-Derived Sources Used for Development of Bioaccumulation Models



	Arthropod BAFs					Arthropod Regressions				
analyte	n	min	median	p90	max	Intercept	Slope	n	p value	r-square
Phenanthrene	1	35.060	35.060	35.060	35.060	-1.391	0	1		

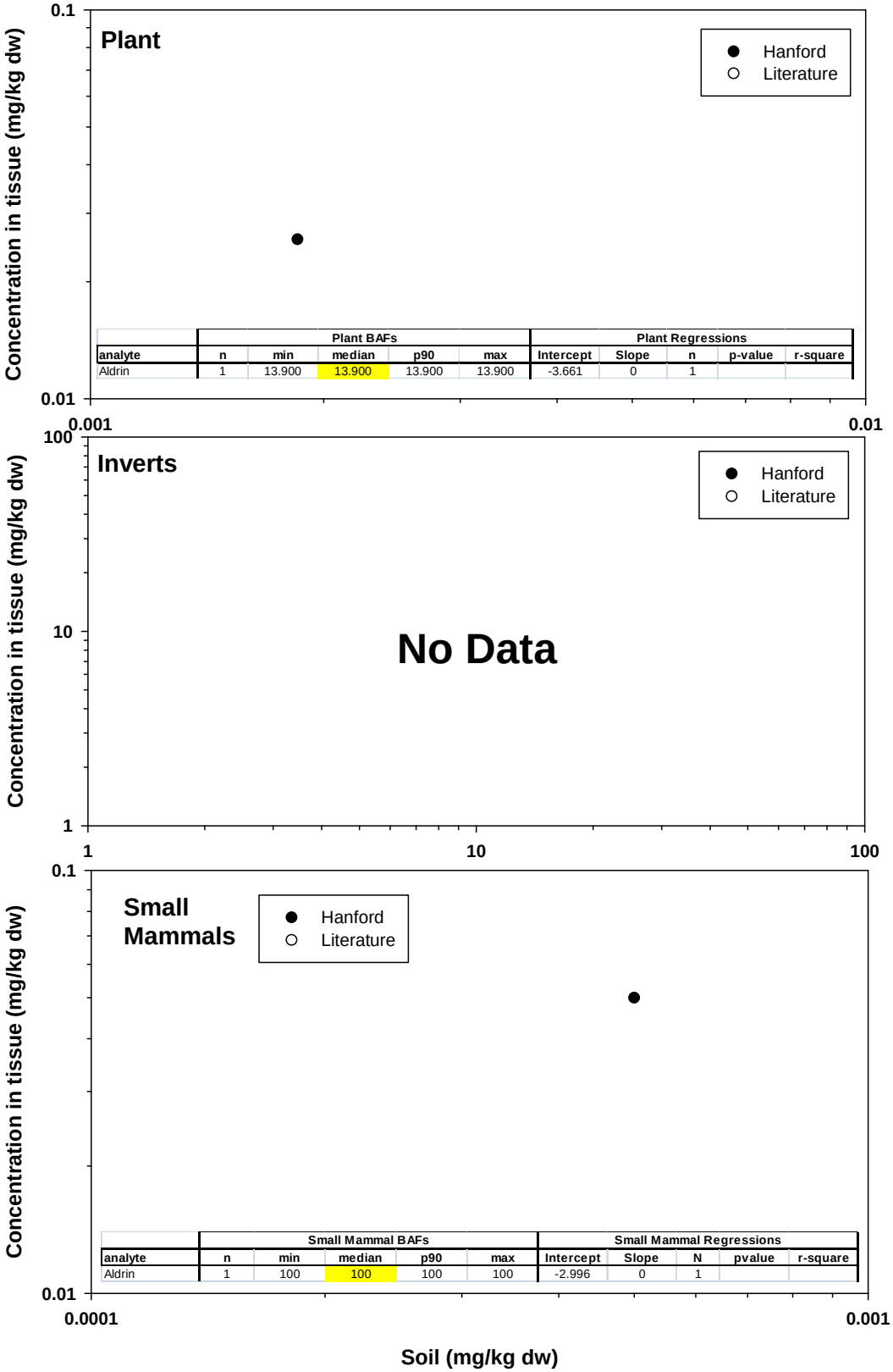
Figure D-29. Scatterplots of Collocated Soil and Terrestrial Plant, Terrestrial Arthropod, or Small Mammal *Phenanthrene* Concentrations from Hanford and Literature-Derived Sources Used for Development of Bioaccumulation Models



	Arthropod BAFs					Arthropod Regressions				
analyte	n	min	median	p90	max	Intercept	Slope	n	p value	r-square
Total PCB	5	0.072	0.149	0.1906	0.1906	-1.187	0.866	5	0.02	0.880

	Small Mammal BAFs					Small Mammal Regressions				
analyte	n	min	median	p90	max	Intercept	Slope	N	pvalue	r-square
Aroclor-1260	1	110.294	110.294	110.294	110.294	-0.288	0	1		

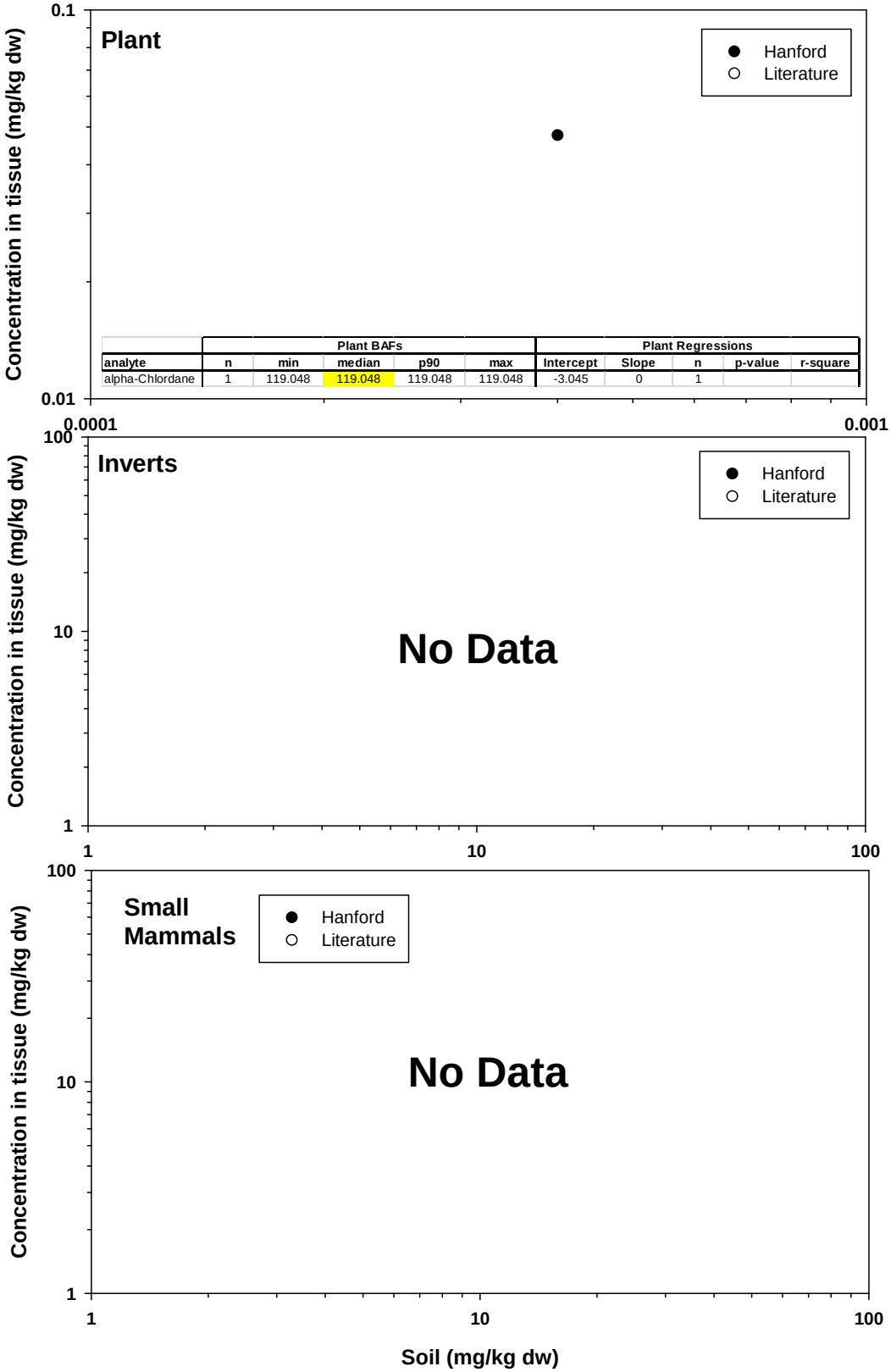
Figure D-30. Scatterplots of Collocated Soil and Terrestrial Plant, Terrestrial Arthropod, or Small Mammal *PCB* Concentrations from Hanford and Literature-Derived Sources Used for Development of Bioaccumulation Models



	Plant BAFs					Plant Regressions				
analyte	n	min	median	p90	max	Intercept	Slope	n	p-value	r-square
Aldrin	1	13.900	13.900	13.900	13.900	-3.661	0	1		

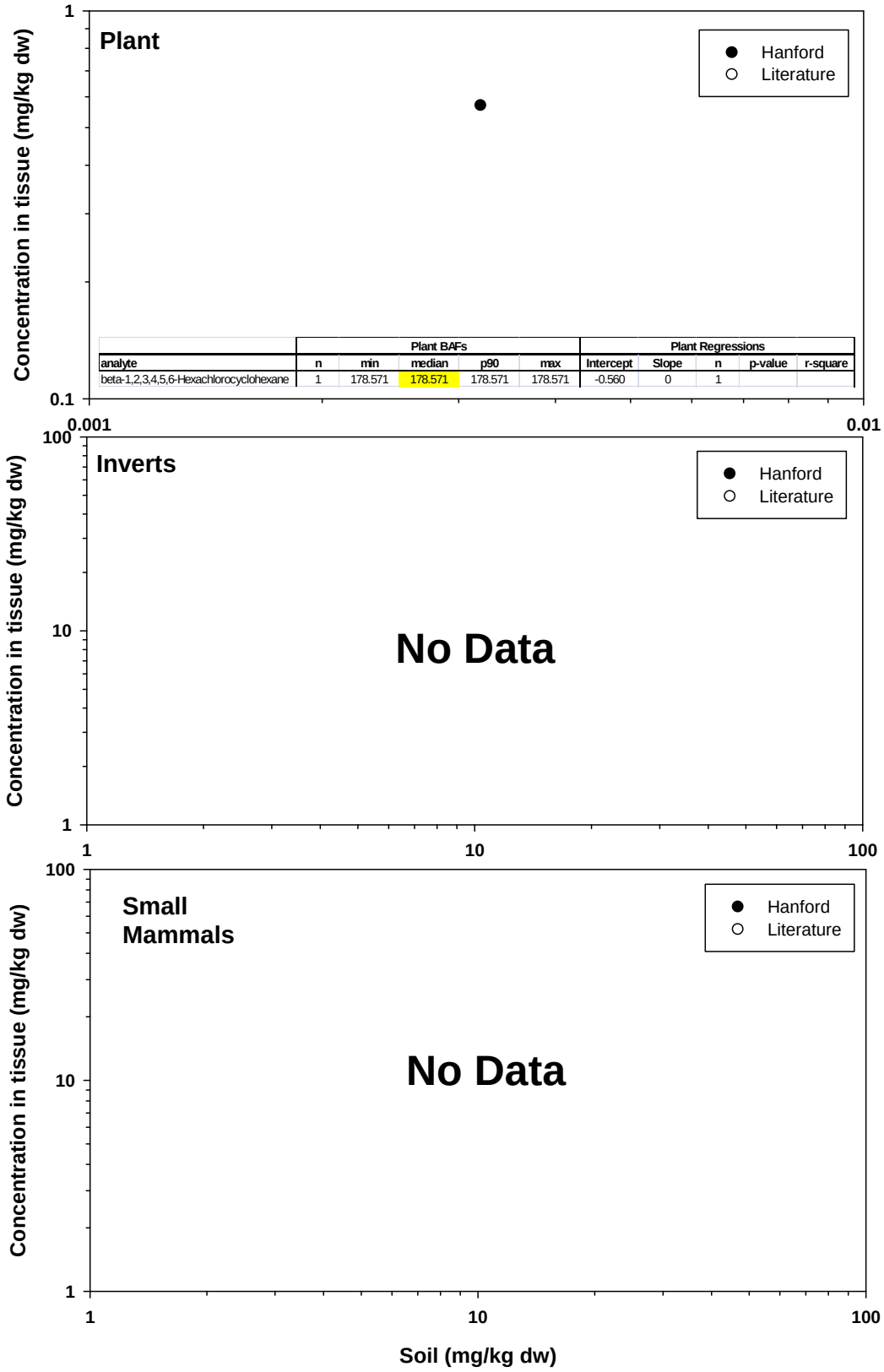
	Small Mammal BAFs					Small Mammal Regressions				
analyte	n	min	median	p90	max	Intercept	Slope	N	pvalue	r-square
Aldrin	1	100	100	100	100	-2.996	0	1		

Figure D-31. Scatterplots of Collocated Soil and Terrestrial Plant, Terrestrial Arthropod, or Small Mammal *Aldrin* Concentrations from Hanford and Literature-Derived Sources Used for Development of Bioaccumulation Models



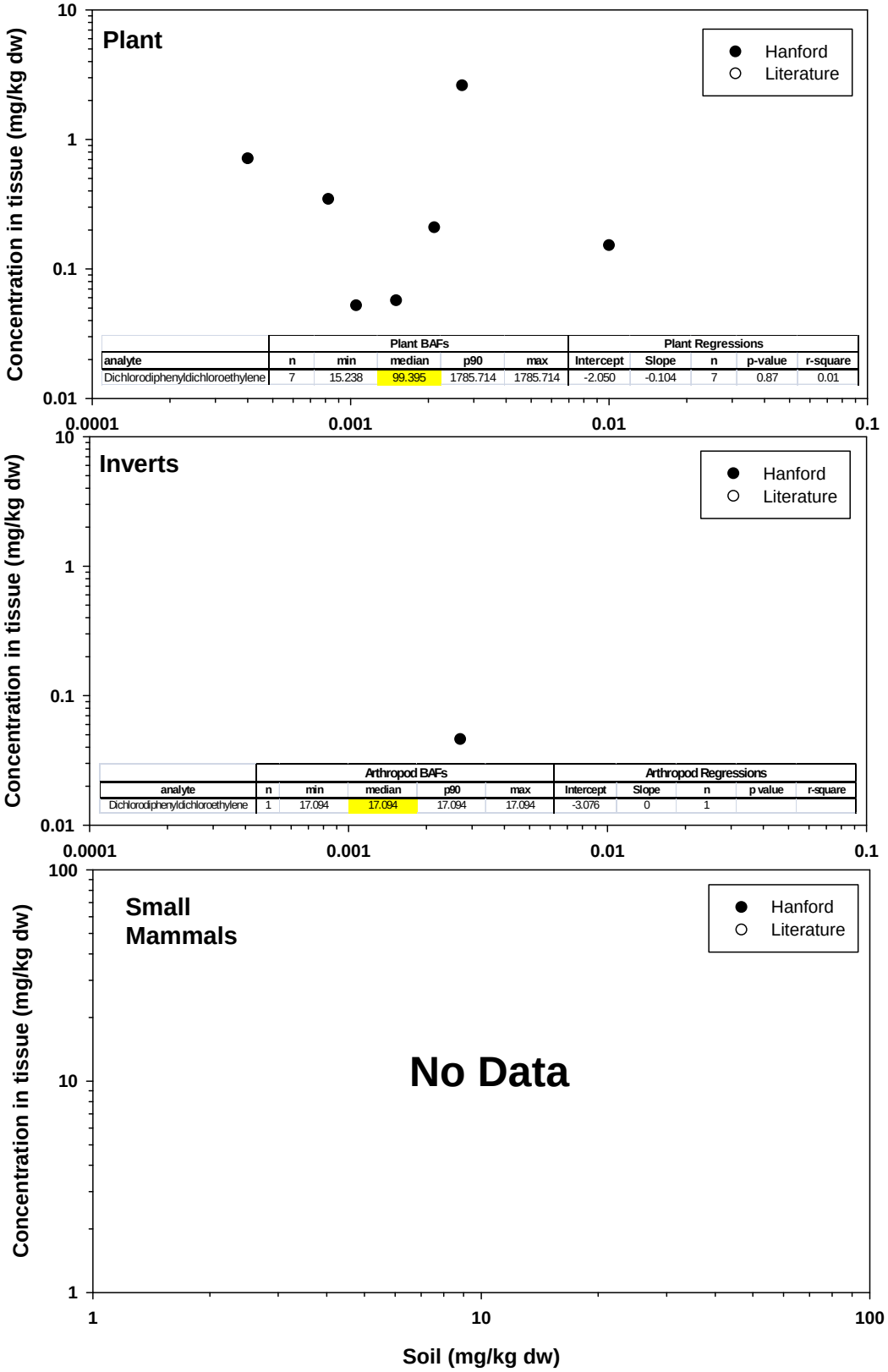
	Plant BAFs					Plant Regressions				
analyte	n	min	median	p90	max	Intercept	Slope	n	p-value	r-square
alpha-Chlordane	1	119.048	119.048	119.048	119.048	-3.045	0	1		

Figure D-32. Scatterplots of Collocated Soil and Terrestrial Plant, Terrestrial Arthropod, or Small Mammal *Alpha-chlordane* Concentrations from Hanford and Literature-Derived Sources Used for Development of Bioaccumulation Models



	Plant BAFs					Plant Regressions				
analyte	n	min	median	p90	max	Intercept	Slope	n	p-value	r-square
beta-1,2,3,4,5,6-Hexachlorocyclohexane	1	178.571	178.571	178.571	178.571	-0.560	0	1		

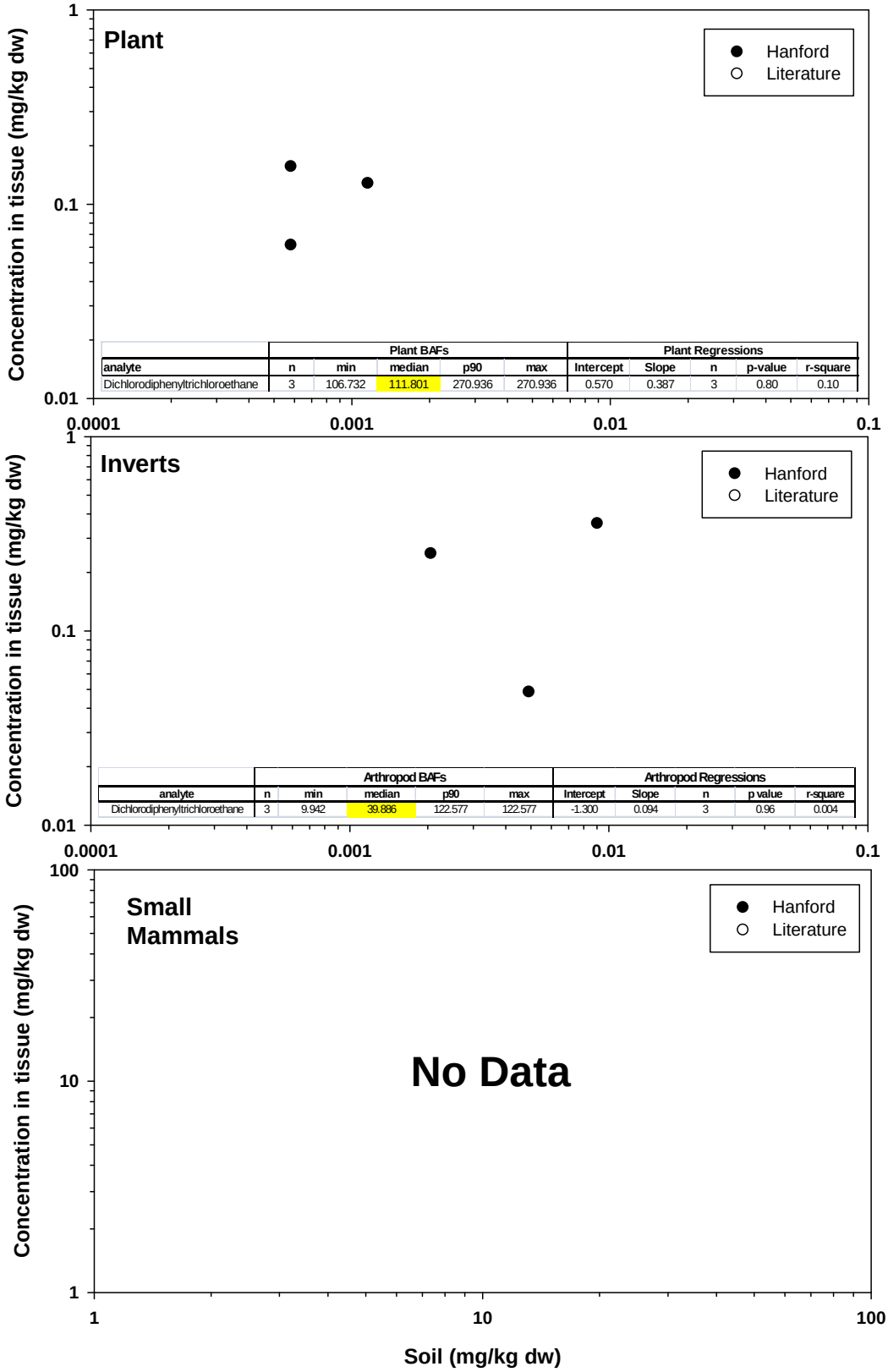
Figure D-33. Scatterplots of Collocated Soil and Terrestrial Plant, Terrestrial Arthropod, or Small Mammal *Beta-HCH* Concentrations from Hanford and Literature-Derived Sources Used for Development of Bioaccumulation Models



	Plant BAFs					Plant Regressions				
analyte	n	min	median	p90	max	Intercept	Slope	n	p-value	r-square
Dichlorodiphenyldichloroethylene	7	15.238	99.395	1785.714	1785.714	-2.050	-0.104	7	0.87	0.01

	Arthropod BAFs					Arthropod Regressions				
analyte	n	min	median	p90	max	Intercept	Slope	n	p value	r-square
Dichlorodiphenyldichloroethylene	1	17.094	17.094	17.094	17.094	-3.076	0	1		

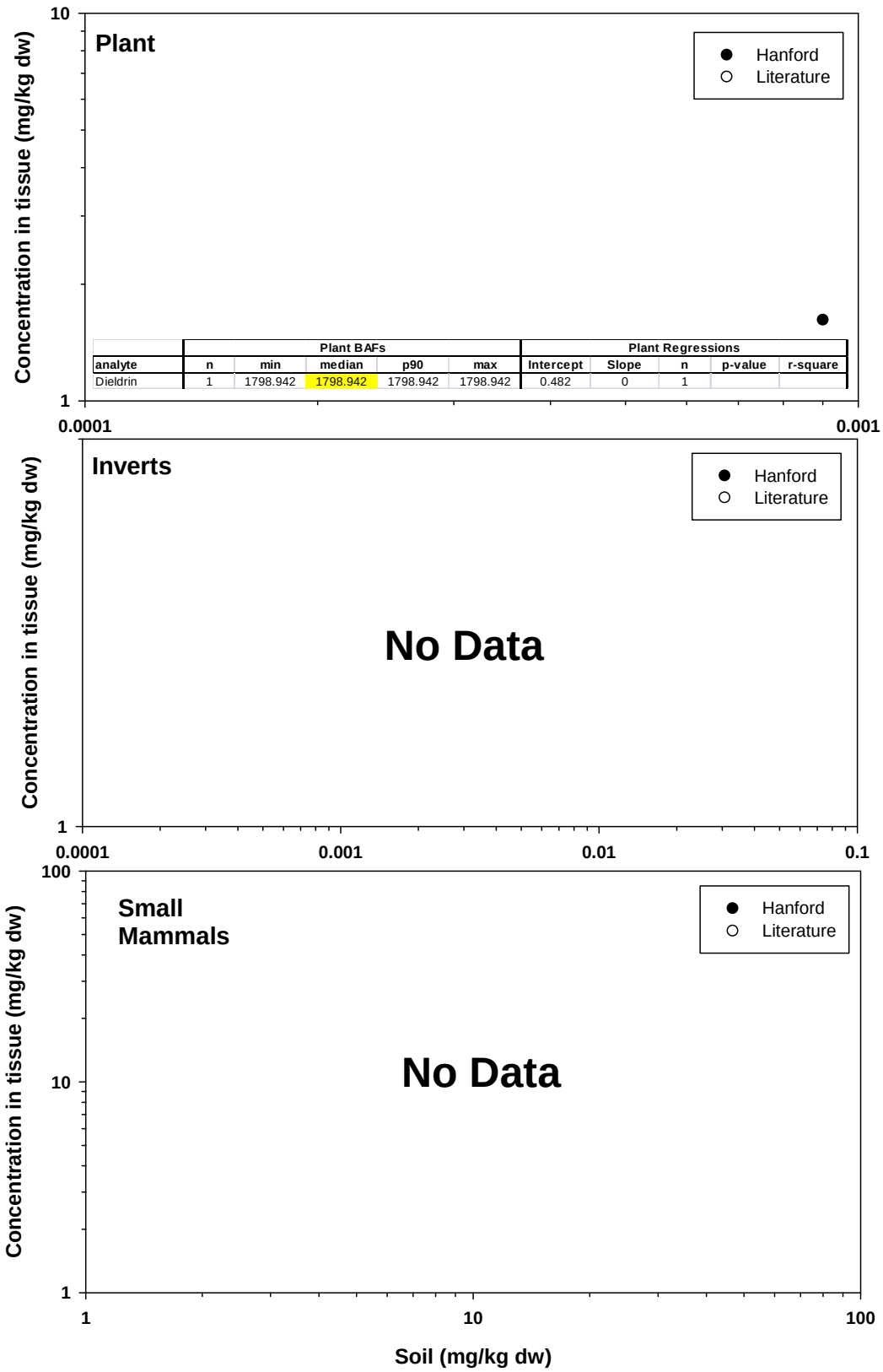
Figure D-34. Scatterplots of Collocated Soil and Terrestrial Plant, Terrestrial Arthropod, or Small Mammal *DDE* Concentrations from Hanford and Literature-Derived Sources Used for Development of Bioaccumulation Models



	Plant BAFs					Plant Regressions				
analyte	n	min	median	p90	max	Intercept	Slope	n	p-value	r-square
Dichlorodiphenyltrichloroethane	3	106.732	111.801	270.936	270.936	0.570	0.387	3	0.80	0.10

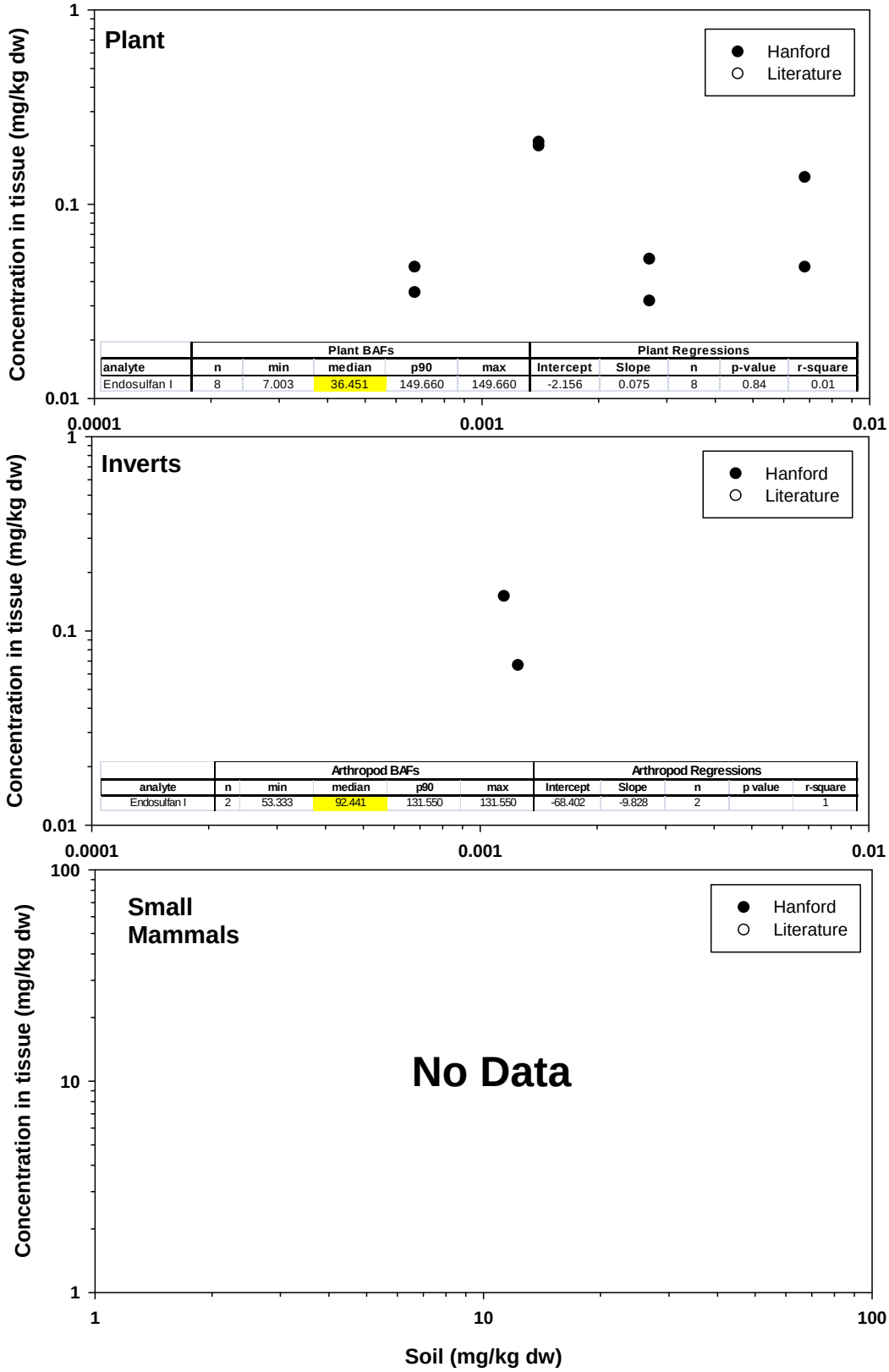
	Arthropod BAFs					Arthropod Regressions				
analyte	n	min	median	p90	max	Intercept	Slope	n	p value	r-square
Dichlorodiphenyltrichloroethane	3	9.942	39.886	122.577	122.577	-1.300	0.094	3	0.96	0.004

Figure D-35. Scatterplots of Collocated Soil and Terrestrial Plant, Terrestrial Arthropod, or Small Mammal *DDT* Concentrations from Hanford and Literature-Derived Sources Used for Development of Bioaccumulation Models



	Plant BAFs					Plant Regressions				
analyte	n	min	median	p90	max	Intercept	Slope	n	p-value	r-square
Dieldrin	1	1798.942	1798.942	1798.942	1798.942	0.482	0	1		

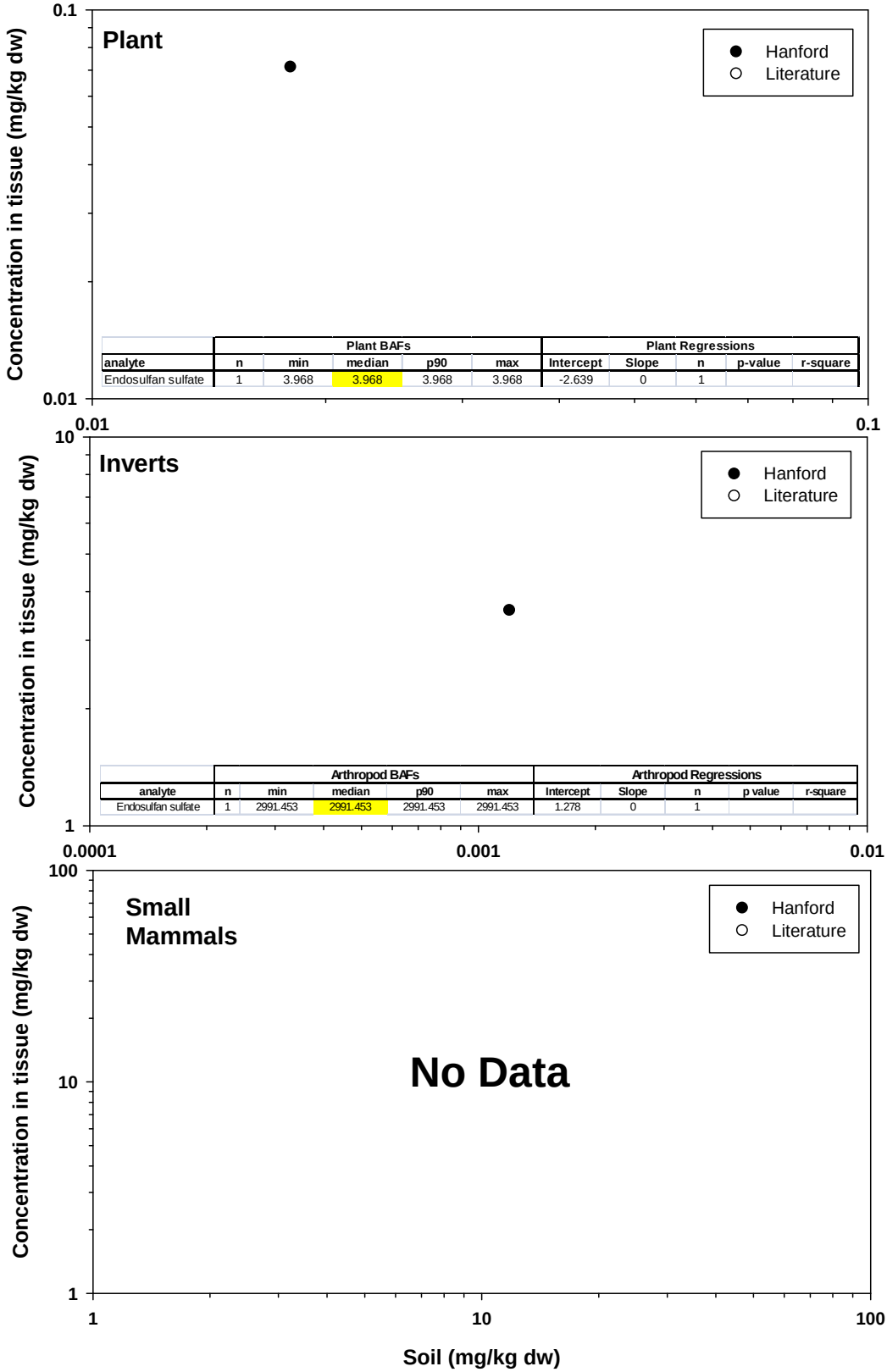
Figure D-36. Scatterplots of Collocated Soil and Terrestrial Plant, Terrestrial Arthropod, or Small Mammal *Dieldrin* Concentrations from Hanford and Literature-Derived Sources Used for Development of Bioaccumulation Models



	Plant BAFs					Plant Regressions				
analyte	n	min	median	p90	max	Intercept	Slope	n	p-value	r-square
Endosulfan I	8	7.003	36.451	149.660	149.660	-2.156	0.075	8	0.84	0.01

	Arthropod BAFs					Arthropod Regressions				
analyte	n	min	median	p90	max	Intercept	Slope	n	p value	r-square
Endosulfan I	2	53.333	92.441	131.550	131.550	-68.402	-9.828	2		1

Figure D-37. Scatterplots of Collocated Soil and Terrestrial Plant, Terrestrial Arthropod, or Small Mammal *Endosulfan I (Alpha)* Concentrations from Hanford and Literature-Derived Sources Used for Development of Bioaccumulation Models



	Plant BAFs					Plant Regressions				
analyte	n	min	median	p90	max	Intercept	Slope	n	p-value	r-square
Endosulfan sulfate	1	3.968	3.968	3.968	3.968	-2.639	0	1		

	Arthropod BAFs					Arthropod Regressions				
analyte	n	min	median	p90	max	Intercept	Slope	n	p value	r-square
Endosulfan sulfate	1	2991.453	2991.453	2991.453	2991.453	1.278	0	1		

Figure D-38. Scatterplots of Collocated Soil and Terrestrial Plant, Terrestrial Arthropod, or Small Mammal *Endosulfan Sulfate* Concentrations from Hanford and Literature-Derived Sources Used for Development of Bioaccumulation Models

	Plant BAFs					Plant Regressions				
analyte	n	min	median	p90	max	Intercept	Slope	n	p-value	r-square
Endrin aldehyde	1	68.783	68.783	68.783	68.783	-2.089	0	1		

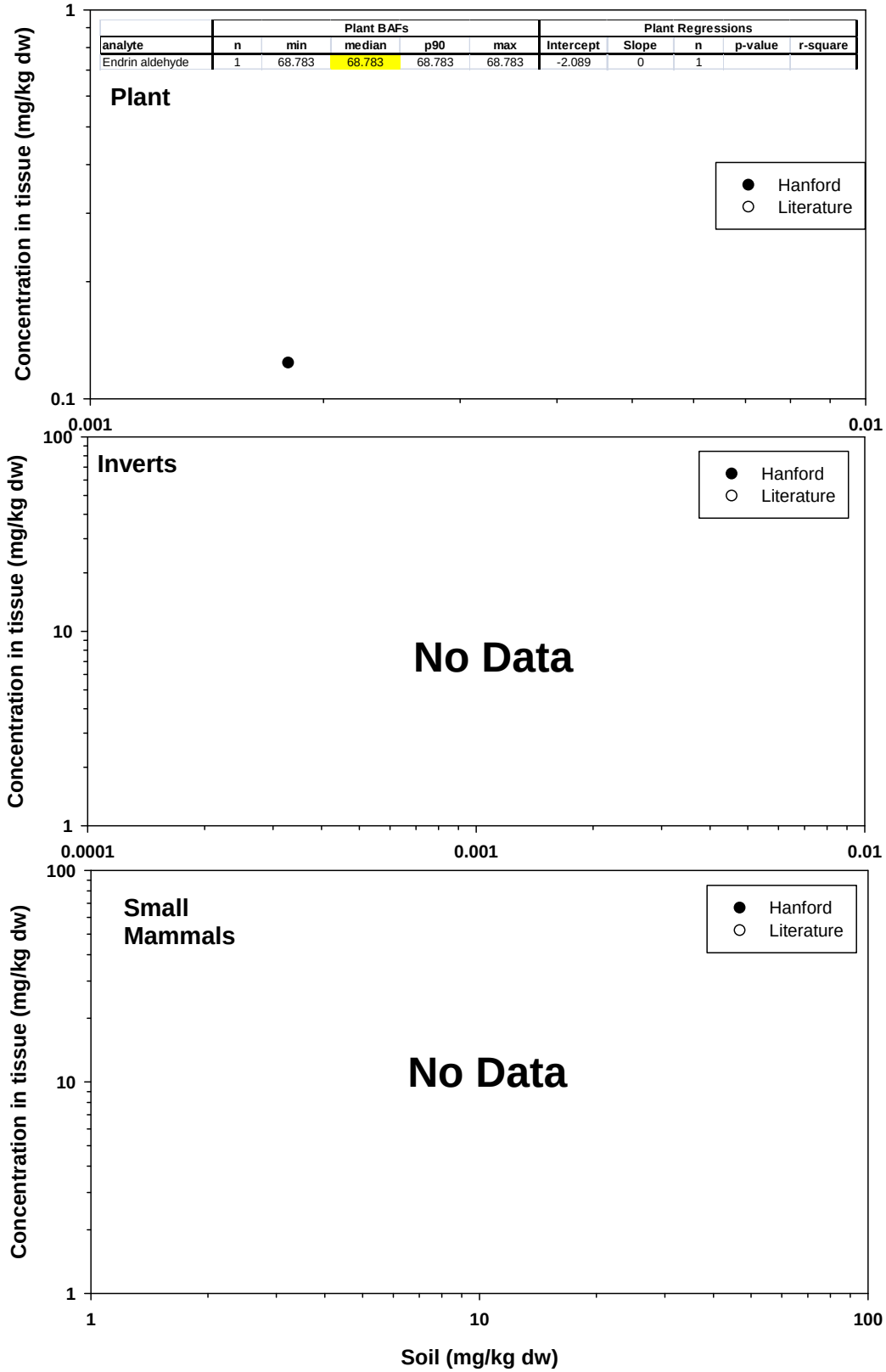
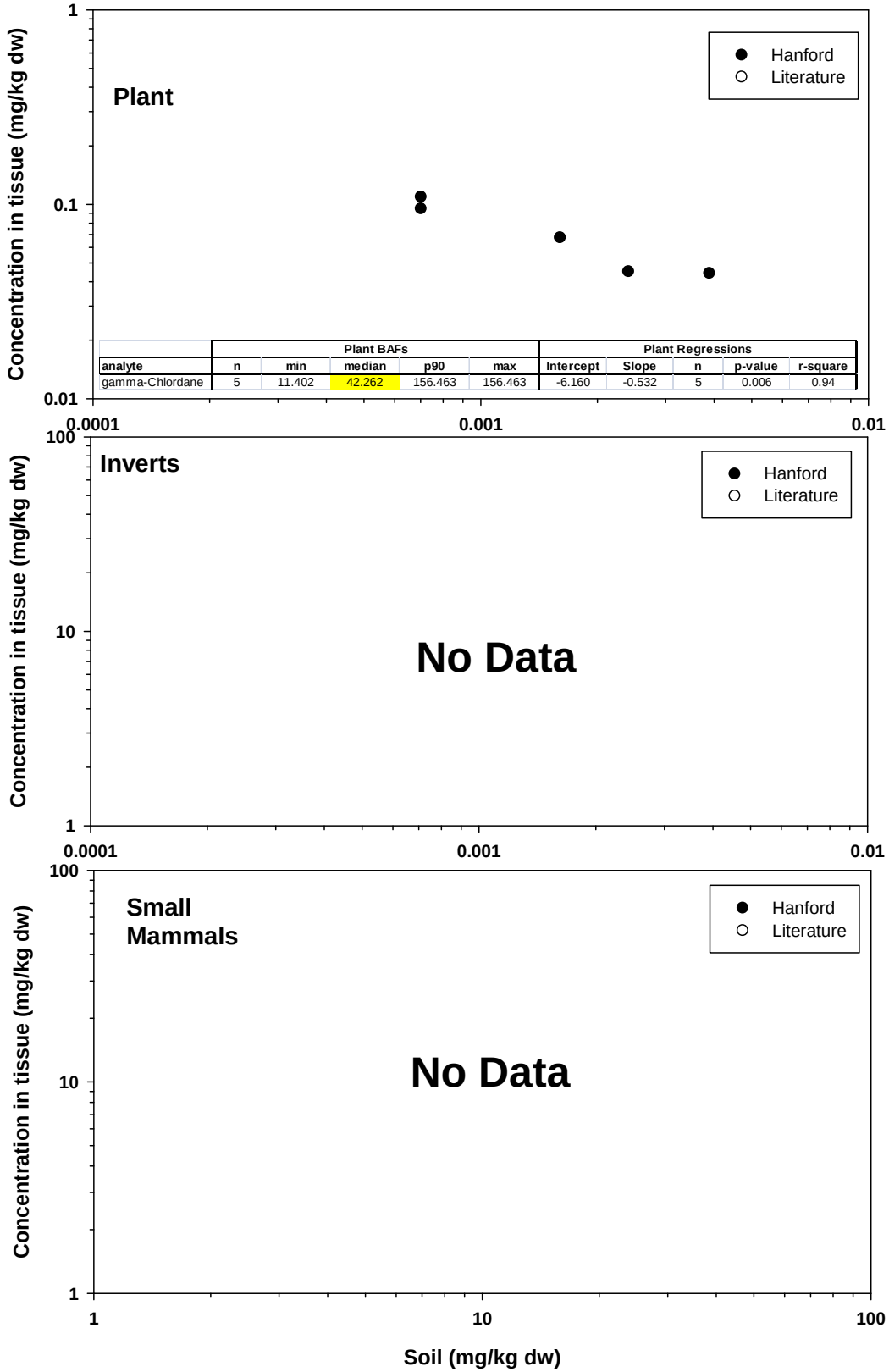
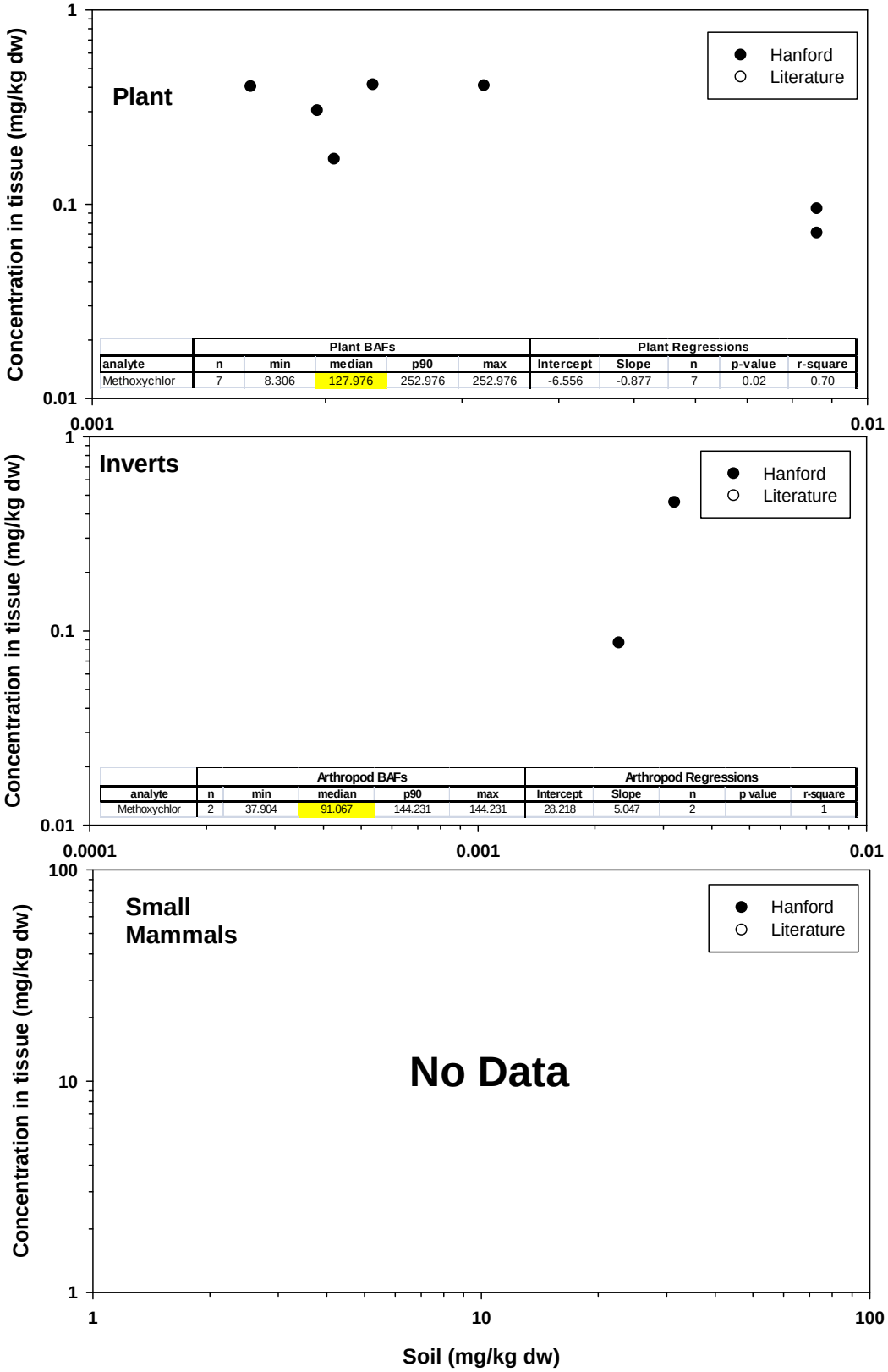


Figure D-39. Scatterplots of Collocated Soil and Terrestrial Plant, Terrestrial Arthropod, or Small Mammal *Endrin Aldehyde* Concentrations from Hanford and Literature-Derived Sources Used for Development of Bioaccumulation Models



	Plant BAFs					Plant Regressions				
analyte	n	min	median	p90	max	Intercept	Slope	n	p-value	r-square
gamma-Chlordane	5	11.402	42.262	156.463	156.463	-6.160	-0.532	5	0.006	0.94

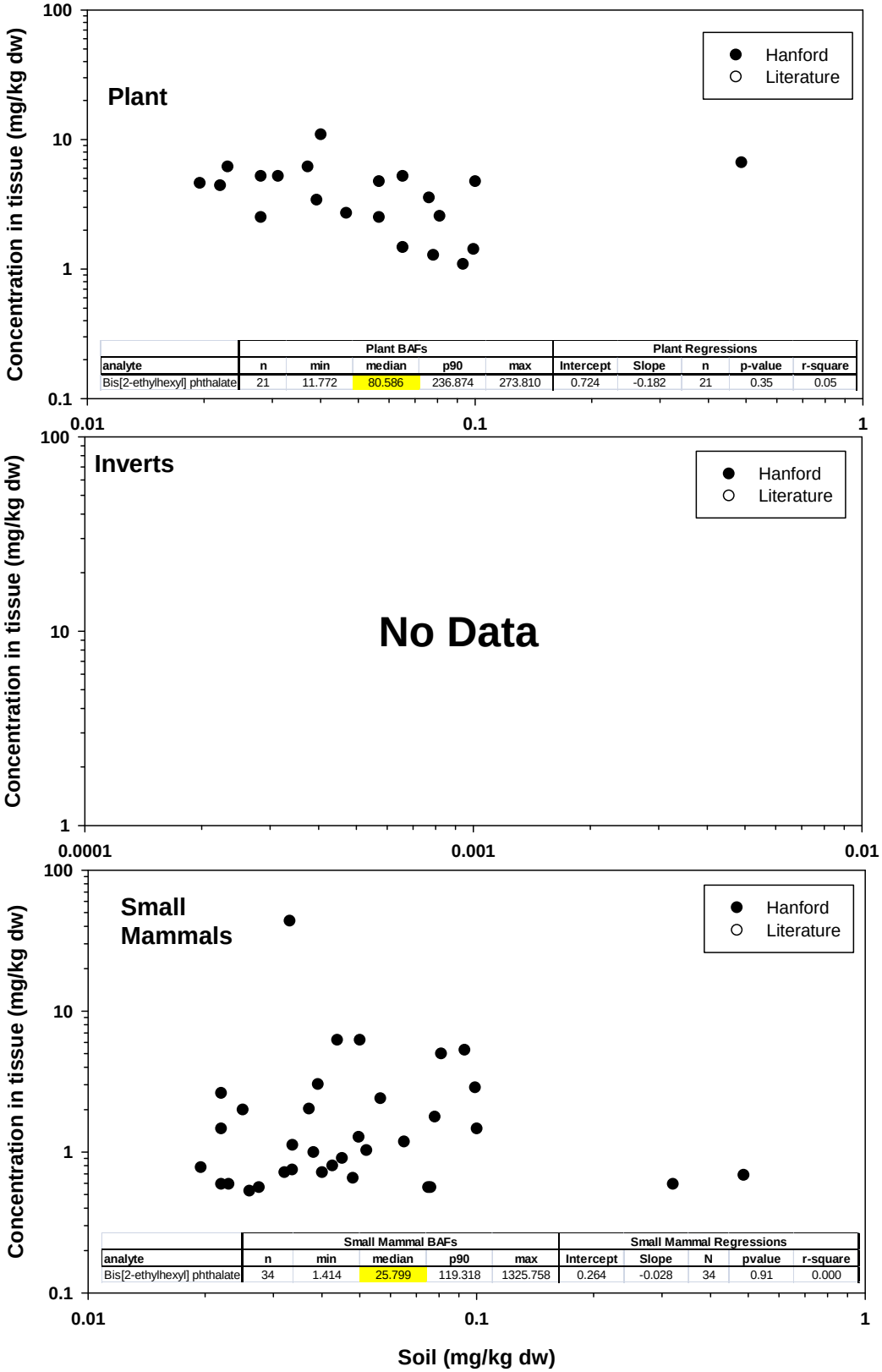
Figure D-40. Scatterplots of Collocated Soil and Terrestrial Plant, Terrestrial Arthropod, or Small Mammal *Gamma-Chlordane* Concentrations from Hanford and Literature-Derived Sources Used for Development of Bioaccumulation Models



	Plant BAFs					Plant Regressions				
analyte	n	min	median	p90	max	Intercept	Slope	n	p-value	r-square
Methoxychlor	7	8.306	127.976	252.976	252.976	-6.556	-0.877	7	0.02	0.70

	Arthropod BAFs					Arthropod Regressions				
analyte	n	min	median	p90	max	Intercept	Slope	n	p value	r-square
Methoxychlor	2	37.904	91.067	144.231	144.231	28.218	5.047	2		1

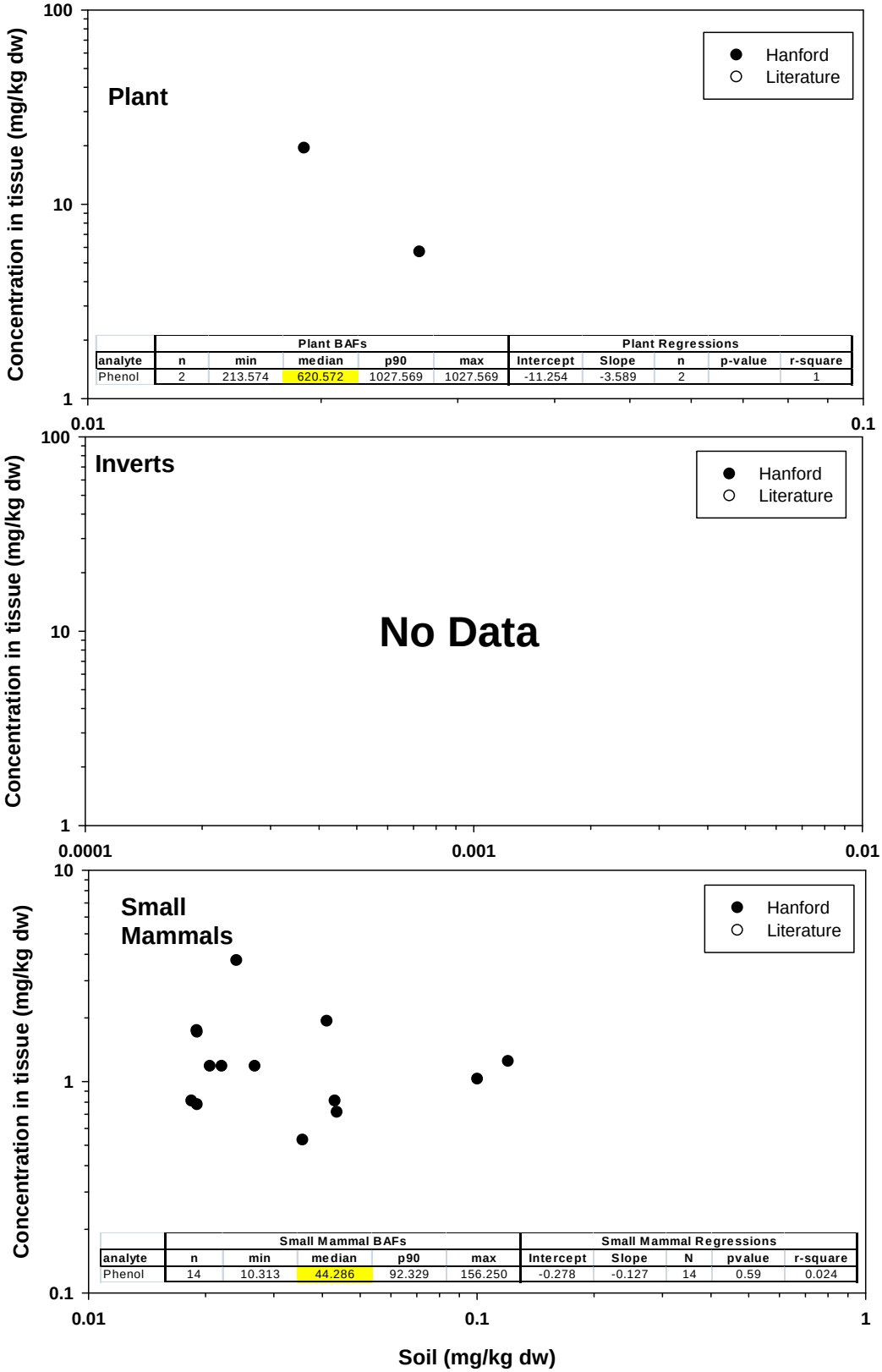
Figure D-41. Scatterplots of Collocated Soil and Terrestrial Plant, Terrestrial Arthropod, or Small Mammal *Methoxychlor* Concentrations from Hanford and Literature-Derived Sources Used for Development of Bioaccumulation Models



	Plant BAFs					Plant Regressions				
analyte	n	min	median	p90	max	Intercept	Slope	n	p-value	r-square
Bis[2-ethylhexyl] phthalate	21	11.772	80.586	236.874	273.810	0.724	-0.182	21	0.35	0.05

	Small Mammal BAFs					Small Mammal Regressions				
analyte	n	min	median	p90	max	Intercept	Slope	N	pvalue	r-square
Bis[2-ethylhexyl] phthalate	34	1.414	25.799	119.318	1325.758	0.264	-0.028	34	0.91	0.000

Figure D-42. Scatterplots of Collocated Soil and Terrestrial Plant, Terrestrial Arthropod, or Small Mammal *Bis(2-ethylhexyl)phthalate* Concentrations from Hanford and Literature-Derived Sources Used for Development of Bioaccumulation Models



	Plant BAFs					Plant Regressions				
analyte	n	min	median	p90	max	Intercept	Slope	n	p-value	r-square
Phenol	2	213.574	620.572	1027.569	1027.569	-11.254	-3.589	2		1

	Small Mammal BAFs					Small Mammal Regressions				
analyte	n	min	median	p90	max	Intercept	Slope	N	pvalue	r-square
Phenol	14	10.313	44.286	92.329	156.250	-0.278	-0.127	14	0.59	0.024

Figure D-43. Scatterplots of Collocated Soil and Terrestrial Plant, Terrestrial Arthropod, or Small Mammal *Phenol* Concentrations from Hanford and Literature-Derived Sources Used for Development of Bioaccumulation Models

Appendix E

Descriptions of Studies Used to Calculate Benchmarks

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This appendix describes the studies used to calculate benchmarks. The lowest observed adverse effects level (LOAEL) PRGs are shown in Tables F-1 through F-8. Complete reference citations are provided in the main text of this document.

Compound: Acenaphthene
Form: not applicable
Reference: EPA, 1989a
Test Species: Mouse
Body weight: 0.03 kg (EPA/600/6-87/008)
Study Duration: 90 days
Endpoint: hepatotoxicity
Expo. Route: oral gavage
Dosage: four dose levels: 0, 175, 350, or 700 mg/kg/day
Final NOAEL: 175 mg/kg/d
Final LOAEL: 350 mg/kg/d

Compound: Aldrin
Form: not applicable
Reference: Treon and Cleveland, 1955
Test Species: Rat
Body weight: 0.35 kg (EPA/600/6-87/008)
Food Consumption: 0.028 kg/d (calculated using allometric equation from EPA/600/6-87/008)
Study Duration: 3 generations (>1 yr and during a critical life stage = chronic)
Endpoint: reproduction
Expo. Route: oral in diet
Dosage: three dose levels:
2.5, 12.5, and 25.0 ppm; NOAEL = 2.5 ppm
Calculations:

$$NOAEL: \left(\frac{2.5\ mg\ Aldrin}{kg\ food} x \frac{28\ g\ food}{day} x \frac{1\ kg}{1000\ g} \right) / 0.35\ kg\ BW = 0.2\ mg/kg/d$$

$$LOAEL: \left(\frac{12.5\ mg\ Aldrin}{kg\ food} x \frac{28\ g\ food}{day} x \frac{1\ kg}{1000\ g} \right) / 0.35\ kg\ BW = 1\ mg/kg/d$$

Comments: While the numbers of litters and offspring mortality were not significantly reduced among rats receiving the 2.5 ppm dose level, these parameters were reduced at the 12.5 ppm dose level. Because the study considered exposure throughout 3 generations including critical life stages (reproduction), the 2.5 ppm dose was considered to be a chronic NOAEL and the 12.5 ppm dose was considered a subchronic LOAEL.
Final NOAEL: 0.2 mg/kg/d
Final LOAEL: 1 mg/kg/d

Compound: Aldrin
Form: not applicable
Reference: Hall et al., 1971
Test Species: Ring-Necked Pheasant

Study Duration: 6 weeks
Endpoint: growth
Expo. Route: oral via gelatin capsule
Dosage: three dose levels
Comments: Study and value selected based on an extensive review of available literature - documented in 39-EJ1138-01J.
Final NOAEL: 0.007 mg/kg/d
Final LOAEL: 0.035 mg/kg/d

Compound: Aluminum
Form: $AlCl_3$
Reference: Ondreicka et al., 1966
Test Species: Mouse
Body weight: 0.03 kg (EPA/600/6-87/008)
Study Duration: 3 generations (>1 yr and during a critical life stage = chronic)
Endpoint: reproduction
Expo. Route: oral in water
Dosage: one dose level:
19.3 mg Al /kg/d = LOAEL
Calculations: not applicable
Comments: While there were no effects on the number of litters or number of offspring per litter, growth of generations 2 and 3 was significantly reduced. Therefore, this dose was considered to be a chronic LOAEL. A chronic NOAEL was estimated by multiplying the chronic LOAEL by a LOAEL-NOAEL uncertainty factor of 0.1.
Final NOAEL: 1.93 mg/kg/d
Final LOAEL: 19.3 mg/kg/d

Compound: Aluminum
Form: $Al_2(SO_4)_3$
Reference: Carriere et al., 1986
Test Species: Ringed Dove
Body weight: 0.155 kg (Terres, 1980)
Food Consumption: 0.017 kg/d (calculated using allometric equation from Nagy, 1987)
Study Duration: 4 months (>10 wk and during a critical life stage = chronic)
Endpoint: reproduction
Expo. Route: oral in diet
Dosage: one dose level:
1,000 ppm Al (as $Al_2(SO_4)_3$)= NOAEL
Calculations:

$$NOAEL: \left(\frac{1000\ mg\ Al}{kg\ food} x \frac{17\ g\ food}{day} x \frac{1\ kg}{1000\ g} \right) / 0.155\ kg\ BW = 109.7\ mg/kg/d$$

Comments: Because no significant differences were observed at the 1,000 ppm dose level and the study considered exposure over 4 months including critical life stages (reproduction), this dose was considered to be a chronic NOAEL.
Final NOAEL: 109.7 mg/kg/d

Compound: Anthracene
Form: not applicable
Reference: EPA, 1989b
Test Species: Mouse
Body weight: 0.03 kg (EPA/600/6-87/008)
Study Duration: at least 90 days
Endpoint: survival and pathology
Expo. Route: oral gavage
Dosage: four dose levels: 0, 250, 500, and 1,000 mg/kg/day
Final NOAEL: 1,000 mg/kg/d

Compound: Antimony
Form: Antimony Trichloride
Reference: Rossi et al., 1987
Test Species: Rat
Body weight: 0.33 kg
Food consumption: 0.03650 L/day
Study Duration: 31 days
Endpoint: reproduction
Expo. Route: oral in water
Dosage: three dose levels: 0, 1, 10 mg/L
Final NOAEL: 0.059 mg/kg/d
Final LOAEL: 0.59 mg/kg/d

Compound: Aromatic Hydrocarbon (AH) Mixture
Form: Aromatics – ethylbenzene, 1,2,3,4-tetrahydronaphthalene, dimethylnaphthalene, 2,3,3-trimethylindolenine, acenaphthylene, acenaphthene, phenanthrene, 2-methylbenzothiazole, dibenzothiophene, and 2,6-dimethylquinoline
Reference: Patton and Dieter, 1980
Test Species: Mallard
Body weight: 1.23 kg (mean from control group graph in study)
Food consumption: 100 g/d (Heinz et al., 1989)
Expo.Duration: 7 month (>10 wk = chronic)
Endpoint: growth
Expo. Route: oral diet
Dosage: three dose groups (1% mixture in diet)
10,000 ppm paraffin mixture only,
9,600 ppm paraffin and 400 ppm AH, and
6,000 ppm paraffin and 4,000 ppm AH
Calculations:

$$LOAEL\ :\left(\frac{4000\,mg\ AH\ Mix}{kg\ food}\times\frac{100\,g\ food}{day}\times\frac{1\,kg}{1000\,g}\right)/1.23\,kg\ BW = 325\ mg/kg/d$$

Comments: Liver weights in birds on the 4,000 ppm diet were significantly elevated. Because no adverse effects were reported for 10,000 ppm paraffin only dose, the AH dose of 4,000 ppm was considered to be a chronic LOAEL for the aromatic hydrocarbon mixture. A chronic NOAEL was estimated using an uncertainty factor of 0.1.
Final LOAEL: 325 mg/kg/d

Final NOAEL: 32.5 mg/kg/d

Compound: Aliphatic Hydrocarbon Mixture
Form: Mixture of n-paraffins (tridecane, pentadecane, hexadecane, heptadecane, octadecane, and nonadecane), iso-paraffins (2,2,4,6,6-pentamethylheptane, 2,2,4,4,6,8,8-heptamethylnonane, and 2,6,10,14-tetramethylpentadecane), and 2-ring cyclo-paraffins (decahydronaphthalene)
Reference: Patton and Dieter, 1980
Test Species: Mallard
Body weight: 1.23 kg
Food consumption: 100 g/d (Heinz et al., 1989)
Expo. Duration: 7 month (>10 wk = chronic)
Endpoint: growth
Expo. Route: oral diet
Dosage: three dose groups (1% mixture in diet)
10,000 ppm paraffin mixture only,
9,600 ppm paraffin and 400 ppm AH, and
6,000 ppm paraffin and 4,000 ppm AH
Calculations:

$$LOAEL\ :\left(\frac{10000\,mg\ Paraffin\,Mix}{kg\ food}\times\frac{100\,g\ food}{day}\times\frac{1\,kg}{1000\,g}\right)/1.23\,kg\ BW=813\,mg/kg/d$$

Comments: No adverse effects were reported for 10,000 ppm paraffin only dose.
Final NOAEL: 813 mg/kg/d

Compound: Aroclor 1016
Form: not applicable
Reference: Aulerich and Ringer, 1980
Test Species: Mink
Body weight: 1.0 kg (EPA/600/R-93/187)
food consumption: 0.137 kg/d (Bleavins and Aulerich, 1981)
Study Duration: 18 months (>1 yr and during a critical life stage = chronic)
Endpoint: reproduction
Expo. Route: oral in diet
Dosage: three dose levels: 2, 10, and 25 ppm; 10 ppm = NOAEL
Calculations:

$$NOAEL:\left(\frac{10\ mg\ Aroclor\,1016}{kg\ food}\ x\ \frac{137\ g\ food}{day}\ x\ \frac{1\,kg}{1000\ g}\right)/\ 1\,kg\ BW = 1.37\ mg/kg/d$$

$$LOAEL:\left(\frac{25\ mg\ Aroclor\,1016}{kg\ food}\ x\ \frac{137\ g\ food}{day}\ x\ \frac{1\,kg}{1000\ g}\right)/\ 1\,kg\ BW = 3.425\ mg/kg/d$$

Comments: While kit mortality was greater for all dose levels, these differences were not significant. Because Aroclor 1016 at 25 ppm in the diet reduced kit growth, and the study considered exposure over 18 months including critical life stages (reproduction), this dose was considered a chronic LOAEL; the 10 ppm dose was considered to be a chronic NOAEL.

Final NOAEL: 1.37 mg/kg/d
Final LOAEL: 3.43 mg/kg/d

Compound: Aroclor 1242
Form: not applicable
Reference: Bleavins et al., 1980
Test Species: Mink
Body weight: 1.0 kg (EPA/600/R-93/187)
food consumption: 0.137 kg/d (Bleavins and Aulerich, 1981)
Study Duration: 7 months (during a critical life stage = chronic)
Endpoint: reproduction
Expo. Route: oral in diet
Dosage: four dose levels:
5, 10, 20, and 40 ppm; 5 ppm = LOAEL
Calculations:

$$LOAEL: \left(\frac{5\ mg\ Aroclor\ 1254}{kg\ food} x \frac{137\ g\ food}{day} x \frac{1\ kg}{1000\ g} \right) / 1\ kg\ BW = 0.685\ mg/kg/d$$

Comments: Because all Aroclor 1242 dose levels produced total reproductive failure, and the study considered exposure over 7 months including critical life stages (reproduction), the lowest dose was considered to be a chronic LOAEL. A chronic NOAEL was estimated by multiplying the chronic LOAEL by a LOAEL-NOAEL uncertainty factor of 0.1.
Final NOAEL: 0.069 mg/kg/d
Final LOAEL: 0.69 mg/kg/d

Compound: Aroclor 1248
Form: not applicable
Reference: Barsotti et al., 1976
Test Species: Rhesus Monkey
Body weight: 5.0 kg (from study)
food consumption: 0.2 kg/d (EPA/600/6-87/008)
Study Duration: 14 months (>1 yr and during a critical life stage = chronic)
Endpoint: reproduction
Expo. Route: oral in diet
Dosage: two dose levels:
Calculations:

$$LOAEL: \left(\frac{2.5\ mg\ Aroclor\ 1248}{kg\ food} x \frac{200\ g\ food}{day} x \frac{1\ kg}{1000\ g} \right) / 5\ kg\ BW = 0.1\ mg/kg/d$$

2.5 and 5 ppm; 2.5 ppm = LOAEL
Comments: Pregnancy and live birth rates were reduced by both dose levels. Because the study considered exposure over 14 months including critical life stages (reproduction), the 2.5 ppm dose was considered to be a chronic LOAEL. A chronic NOAEL was estimated by multiplying the chronic LOAEL by a LOAEL-NOAEL uncertainty factor of 0.1.

Final NOAEL: 0.01 mg/kg/d
Final LOAEL: 0.1 mg/kg/d

Compound: Aroclor 1254
Form: not applicable
Reference: McCoy et al., 1995
Test Species: Oldfield mouse (*Permyscus poliontus*)
Body weight: 0.014 kg (Silva and Downing, 1995)
food consumption: assumed comparable to that reported by Linzey (1987) for white-footed mice (*Peromyscus leucopus*):
0.135 g food/g BW/d or 1.9 g/animal/d
Study Duration: 12 months (>1 yr and during a critical life stage = chronic)
Endpoint: reproduction
Expo. Route: oral in diet
Dosage: one dose level:
5 ppm = LOAEL
Calculations:

$$LOAEL: \left(\frac{5\ mg\ Aroclor\ 1254}{kg\ food} x \frac{1.9\ g\ food}{day} x \frac{1\ kg}{1000\ g} \right) / 0.014\ kg\ BW = 0.68\ mg/kg/d$$

Comments: Aroclor 1254 at 5 ppm in the diet reduced the number of litters, offspring weights, and offspring survival. Because and the study considered exposure over 12 months including critical life stages (reproduction), this dose was considered to be a chronic LOAEL. A chronic NOAEL was estimated by multiplying the chronic LOAEL by a LOAEL-NOAEL uncertainty factor of 0.1.
Final NOAEL: 0.068 mg/kg/d
Final LOAEL: 0.68 mg/kg/d

Compound: Aroclor 1254
Form: not applicable
Reference: Dahlgren et al., 1972
Test Species: Ring-necked Pheasant
Body weight: 1 kg (EPA/600/R-93/187)
Study Duration: 17 weeks (>10 wks and during a critical life stage = chronic)
Endpoint: reproduction
Expo. Route: weekly oral dose via gelatin capsule
Dosage: two dose levels:
12.5 and 50 mg/bird/week; LOAEL = 12.5 mg/bird/week
Calculations: 12.5 mg/bird/week = 1.8 mg/kg/d
Comments: Significantly reduced egg hatchability was observed in both treatment groups. Therefore, because the study considered exposure throughout a critical life stage (reproduction), the 12.5 mg/bird/week dose was considered to be a chronic LOAEL. A chronic NOAEL was estimated by multiplying the chronic LOAEL by a LOAEL-NOAEL uncertainty factor of 0.1.
Final NOAEL: 0.18 mg/kg/d
Final LOAEL: 1.8 mg/kg/d

Compound: Arsenic
Form: Sodium Arsenite
Reference: Neiger and Osweiler, 1989
Test Species: Dog
Body weight: 10.1 kg
Food Consumption: 0.4597 kg/d
Study Duration: 8 weeks
Endpoint: growth
Expo. Route: oral in diet
Dosage: four dose levels: 0.0/0.88/1.80/2.88 mg/kg bw/d
Comments: Value is highest bounded NOAEL lower than the lowest bounded LOAEL value for reproduction, growth or survival; LOAEL is from same study.
Final NOAEL: 1.04 mg/kg/d
Final LOAEL: 1.66 mg/kg/d

Compound: Arsenic
Form: arsenic oxide
Reference: Holcman and Stibilj, 1997
Test Species: Chicken
Body weight: 1.6 kg
Food consumption: 0.1194 kg/day
Study Duration: 19 days during reproduction
Endpoint: reproduction
Expo. Route: oral in diet
Dosage: four dose levels: 0/7.5/15.0/30.0 mg/kg diet
Comments: Value is highest bounded NOAEL lower than the lowest bounded LOAEL value for reproduction, growth or survival; LOAEL is from same study.
Final NOAEL: 2.24 mg/kg/d

Compound: Arsenic
Form: Sodium arsenate (99.2% pure)
Reference: Stanley et al., 1994
Test Species: Mallard
Body weight: 1 kg (Heinz et al., 1989)
Food Consumption: 0.1 kg/d (Heinz et al., 1989)
Study Duration: >10 weeks
Endpoint: Reproduction
Expo. Route: Oral in diet
Dosage: Four dose levels: 0.26, 22, 93, or 403 mg/kg
Calculations:

$$NOAEL: \left(\frac{93\, mg\ As}{kg\ \ food} x \frac{100 g\ \ food}{day} x \frac{1\, kg}{1000\, g} \right) / 1\, kg\ BW = 9.3\, mg/kg/d$$

$$LOAEL: \left(\frac{403\, mg\ As}{kg\ \ food} x \frac{100\, g\ \ food}{day} x \frac{1\, kg}{1000\, g} \right) / 1\, kg\ BW = 40.3\, mg/kg/d$$

Final NOAEL: 9.3 mg/kg/d

Final LOAEL: 40.3 mg/kg/d

Compound: Barium
Form: multiple forms
Reference: OSWER Directive 9285.7-63
Test Species: Rat and mouse (multiple studies)
Body weight: multiple studies
Food Consumption: multiple studies
Study Duration: 10 days to 520 days
Endpoint: reproduction and growth
Expo. Route: multiple studies
Comments: Geometric mean of NOAELs for reproduction and growth from OSWER Directive 9285.7-63.
Final NOAEL: 51.8 mg/kg/d

Compound: Barium
Form: Barium Chloride
Reference: NTP, 1994
Test Species: Rat
Body weight: 0.35 kg (EPA/600/6-87/008)
Water Consump.: 0.022 L/d (from study)
Study Duration: 105 weeks (>1 year = chronic)
Endpoint: nephrotoxicity
Expo. Route: Oral in water
Dosage: Three dose levels: 500, 1,250, and 2,500 ppm Ba (as barium chloride); Authors calculated exposures:
Males – 15, 30, and 60 mg/kg/d
Females – 15, 45, and 75 mg/kg/d
Calculations: Not applicable
Comments: Although no kidney-related lesions were observed in any treatment, kidney weights were significantly increased in females at the 2,500 ppm level. The 2,500 ppm dose level was thus judged to represent a chronic LOAEL.
Final NOAEL: 45 mg/kg/d
Final LOAEL: 75 mg/kg/d

Compound: Barium
Form: Barium Hydroxide
Reference: Johnson et al., 1960
Test Species: 1-day old chicks
Body weight: 0.121 kg (mean + at 14 d; EPA/600/6-87/008)
Food Consumption: 0.0126 kg/d (calculated using allometric equation from EPA/600/6-87/008)
Study Duration: 4 wk (<10 wk = subchronic)
Endpoint: mortality
Expo. Route: oral in diet
Dosage: eight dose level:
250; 500; 1,000; 2,000; 4,000; 8,000; 16,000; and 32,000 ppm Ba (as Barium Hydroxide)
NOAEL = 2,000 ppm
Calculations:

$$NOAEL: \left(\frac{2000\ mg\ Ba}{kg\ \ food} x \frac{12.6\ g\ \ food}{day} x \frac{1\ kg}{1000\ g} \right) / 0.121\ kg\ BW = 208.26\ mg/kg/d$$

$$LOAEL: \left(\frac{4000\ mg\ Ba}{kg\ \ food} x \frac{12.6\ g\ \ food}{day} x \frac{1\ kg}{1000\ g} \right) / 0.121\ kg\ BW = 416.53\ mg/kg/d$$

Comments: To estimate daily barium intake throughout the 4 week study period, food consumption of 2-week-old chicks was calculated. While this value will overestimate and underestimate food consumption by younger and older chicks, it was assumed to approximate food consumption throughout the entire 4 week study. While barium exposures up to 2,000 ppm produced no mortality, chicks in the 4,000 to 32,000 ppm groups experienced 5% to 100% mortality. Because 2,000 ppm was the highest nonlethal dose, this dose was considered to be a subchronic NOAEL. The 4,000 ppm dose was considered to be a subchronic LOAEL. Chronic NOAELs and LOAELs were estimated by multiplying the subchronic NOAELs and LOAELs by a subchronic to chronic uncertainty factor of 0.1.

Final NOAEL: 20.8 mg/kg/d

Final LOAEL: 41.7 mg/kg/d

Compound: beta-1,2,3,4,5,6-Hexachlorocyclohexane

Form: β-Benzene Hexachloride (β-BHC)

Reference: Van Velsen et al., 1986

Test Species: Rat
Body weight: 0.35 kg (EPA/600/6-87/008)
Food Consumption: 0.028 kg/d (calculated using allometric equation from EPA/600/6-87/008)

Study Duration: 13 weeks
(<1 yr and not during a critical life stage = subchronic)

Endpoint: growth, blood chemistry, organ histology

Expo. Route: oral in diet

Dosage: four dose levels:
2, 10, 50, and 250 ppm; NOAEL = 50 ppm

$$NOAEL: \left(\frac{50\ mg\ \beta\text{-}BHC}{kg\ \ food} x \frac{28\ g\ \ food}{day} x \frac{1\ kg}{1000\ g} \right) / 0.35\ kg\ BW = 4\ mg/kg/d$$

Calculations:

$$LOAEL: \left(\frac{250\ mg\ \beta\text{-}BHC}{kg\ \ food} x \frac{28\ g\ \ food}{day} x \frac{1\ kg}{1000\ g} \right) / 0.35\ kg\ BW = 20\ mg/kg/d$$

Comments: Consumption of 250 ppm β-BHC in the diet caused gonadal atrophy in both male and female rats. Because no significant effects were observed in groups consuming 50 ppm β-BHC or less, this dose was considered to be a subchronic NOAEL; the 250 ppm dose was considered to be a subchronic LOAEL. Chronic

NOAELs and LOAELs were estimated by multiplying the subchronic values by a subchronic-chronic uncertainty factor of 0.1.

Final NOAEL: 0.4 mg/kg/d
Final LOAEL: 2 mg/kg/d

Compound: Benzene
Form: not applicable
Reference: Wolf et al., 1956
Test Species: Rat
Body weight: 0.175 to 0.250 kg (from study)
Expo. Duration: 182 to 194 days (<1 yr = subchronic)
Endpoint: survival, pathology
Expo. Route: oral gavage
Dosage: four dose levels:
1, 10, 50, and 100 mg/kg/d
Calculations: not applicable
Comments: Mortality was not reported at any dose level. Hemopoetic effects were observed at the 50 mg/kg/d dose but only to a slight degree at the 10 mg/kg dose. Because this study was less than one year in duration, all doses were considered subchronic. Therefore, 50 mg/kg/d was considered the subchronic LOAEL and 10 mg/kg/d the subchronic NOAEL.
Final Subchronic NOAEL: 10 mg/kg/d
Final Subchronic LOAEL: 50 mg/kg/d

Compound: Benzo(a)anthracene
Form: not applicable
Reference: Beall, 2007
Test Species: bobwhite quail
Study Duration: 60 d
Endpoint: growth
Expo. Route: oral in diet
Dosage: four dose levels: 0, 0.1, 1, 10 mg/kg in diet: NOAEL calculated based on reported daily food consumption
Calculations: not applicable
Comments: NOAEL based on mean exposure over 60-day duration of the study.
Final NOAEL: 0.65 mg/kg/d

Compound: Benzo(a)pyrene (BaP)
Form: not applicable
Reference: Mackenzie and Angevine, 1981
Test Species: Mouse
Body weight: 0.03 kg (EPA/600/6-87/008)
Study Duration: days 7-16 of gestation (during a critical life stage = chronic)
Endpoint: reproduction
Expo. Route: oral intubation
Dosage: three dose levels:
10, 40, and 160 mg/kg/d; LOAEL = 10 mg/kg/d
Calculations: not applicable
Comments: BaP exposure 160 mg/kg/d significantly reduced pregnancy rates and percentage of viable litters. Pup weights were significantly reduced by all three dose levels. Total sterility was observed in 97% of offspring in the 40 and 160 mg/kg/d

groups and fertility was impaired among offspring in the 10 mg/kg/d group. While the BaP exposures evaluated in this study were of a short duration, they occurred during a critical life stage. Therefore, the 10 mg/kg/d dose was considered to be a chronic LOAEL. A chronic NOAEL was estimated by multiplying the chronic LOAEL by a LOAEL-NOAEL uncertainty factor of 0.1.

Final NOAEL: 1 mg/kg/d
Final LOAEL: 10 mg/kg/d

Compound: Beryllium
Form: Beryllium Sulfate
Reference: Schroeder and Mitchner, 1975
Test Species: Rat
Body weight: 0.35 kg (EPA/600/6-87/008)
Water Consumption: 0.046 L/d (calculated using allometric equation from EPA/600/6-87/008)
Study Duration: lifetime (>1yr = chronic)
Endpoint: longevity, weight loss
Expo. Route: oral in water
Dosage: one dose level:
5 ppm Be = NOAEL
Calculations:

$$NOAEL: \left(\frac{5\ mg\ Be}{L\ water} x \frac{46\ mL\ water}{day} x \frac{1\ L}{1000\ mL} \right) / 0.35\ kg\ BW = 0.66\ mg/kg/d$$

Comments: While exposure to 5 ppm Be in water did not reduce longevity, weight loss by males was observed in months 2 - 6. Because the weight loss was not considered to be an adverse effect, the 5 ppm dose level was considered to be a chronic NOAEL.
Final NOAEL: 0.66 mg/kg/d

Compound: Bis(2-ethylhexyl)Phthalate (BEHP)
Form: not applicable
Reference: Lamb et al., 1987
Test Species: Mouse
Body weight: 0.03 kg (EPA/600/6-87/008)
Food Consumption: 0.0055 kg/d
(calculated using allometric equation from EPA/600/6-87/008)
Study Duration: 105 d (during critical life stage = chronic)
Endpoint: reproduction
Expo. Route: oral in diet
Dosage: three dose levels:
0.01%, 0.1% and 0.3% of diet;
NOAEL = 0.01% = 100 mg/kg
LOAEL = 0.1% = 1,000 mg/kg
Calculations:

$$NOAEL: \left(\frac{100\ mg\ BEHP}{kg\ \ food} x \frac{5.5\ g\ \ food}{day} x \frac{1\ kg}{1000\ g} \right) / 0.03\ kg\ BW = 18.33\ mg/kg/d$$

$$LOAEL: \left(\frac{1000\ mg\ BEHP}{kg\ \ food} x \frac{5.5\ g\ \ food}{day} x \frac{1\ kg}{1000\ g} \right) / 0.03\ kg\ BW = 183.3\ mg/kg/d$$

Comments: While significant reproductive effects were observed among mice on diets containing 0.1% and 0.3% Bis(2-ethylhexyl)Phthalate, no adverse effects were observed among the 0.01% dose group. Because the study considered exposure during critical life stage, the 0.01% dose was considered to be a chronic NOAEL. The 0.1% dose was considered to be a chronic LOAEL.
Final NOAEL: 18.3 mg/kg/d
Final LOAEL: 183 mg/kg/d

Compound: Bis(2-ethylhexyl)Phthalate (BEHP)
Form: not applicable
Reference: Peakall, 1974
Test Species: Ringed Dove
Body weight: 0.155 kg (Dunning, 1993)
Food Consumption: 0.01727 kg/d (calculated using allometric equation from Nagy, 1987)
Study Duration: 4 weeks (during critical life stage = chronic)
Endpoint: reproduction
Expo. Route: oral in diet
Dosage: one dose level:
10 ppm = NOAEL

$$NOAEL: \left(\frac{10\ mg\ BEHP}{kg\ \ food} x \frac{17.27\ g\ \ food}{day} x \frac{1\ kg}{1000\ g} \right) / 0.155\ kg\ BW = 1.11\ mg/kg/d$$

Calculations:
Comments: No significant reproductive effects were observed among doves on diets containing 10 ppm Bis(2-ethylhexyl)Phthalate, and the study considered exposure over 4 weeks and during a critical life stage, the 10 ppm dose was considered to be a chronic NOAEL.
Final NOAEL: 1.1 mg/kg/d

Compound: Boron
Form: Boric acid or Borax
Reference: Weir and Fisher, 1972
Test Species: Rat
Body weight: 0.35 kg (EPA/600/6-87/008)
Food Consumption: 0.028 kg/d (calculated using allometric equation from EPA/600/6-87/008)
Study Duration: 3 generations (>1 yr and during a critical life stage = chronic)
Endpoint: reproduction
Expo. Route: oral in diet

Dosage: three dose levels:
117, 350, and 1,170 ppm B; NOAEL = 350 ppm

Calculations:

$$NOAEL: \left(\frac{350\ mg\ B}{kg\ \ food} x \frac{28\ g\ \ food}{day} x \frac{1\ kg}{1000\ g} \right) / 0.35\ kg\ BW = 28\ mg/kg/d$$

$$LOAEL: \left(\frac{1170\ mg\ B}{kg\ \ food} x \frac{28\ g\ \ food}{day} x \frac{1\ kg}{1000\ g} \right) / 0.35\ kg\ BW = 93.6\ mg/kg/d$$

Comments: While consumption of 1,170 ppm B as either boric acid or borax resulted in sterility, no adverse reproductive effects were observed among rats consuming 117 or 350 ppm B. Because the study considered exposure throughout 3 generations including critical life stages (reproduction), the 350 ppm dose was considered to be a chronic NOAEL and the 1,170 ppm dose was considered a chronic LOAEL.

Final NOAEL: 28 mg/kg/d

Final LOAEL: 93.6 mg/kg/d

Compound: Boron

Form: Boric acid

Reference: Smith and Anders, 1989

Test Species: Mallard Ducks
Body weight: 1 kg (Heinz et al., 1989)
Food Consumption: 0.1 kg/d (Heinz et al., 1989)

Study Duration: 3 wks prior to, during, and 3 wks post reproduction
(during a critical life stage = chronic)

Endpoint: reproduction

Expo. Route: oral in diet

Dosage: four dose levels:
8; 35; 288; and 1,000 ppm B; NOAEL = 288 ppm

Calculations:

$$NOAEL: \left(\frac{288\ mg\ B}{kg\ \ food} x \frac{100\ g\ \ food}{day} x \frac{1\ kg}{1000\ g} \right) / 1\ kg\ BW = 28.8\ mg/kg/d$$

$$LOAEL: \left(\frac{1000\ mg\ B}{kg\ \ food} x \frac{100g\ \ food}{day} x \frac{1\ kg}{1000\ g} \right) / 1\ kg\ BW = 100\ mg/kg/d$$

Comments: While consumption of 1,000 ppm B resulted in reduced egg fertility and duckling growth and increased embryo and duckling mortality, no adverse reproductive effects were observed among the other dose levels. Because the study considered exposure throughout reproduction, the 288 ppm dose was considered to be a chronic NOAEL and the 1,000 ppm dose was considered a chronic LOAEL.

Final NOAEL: 28.8 mg/kg/d

Final LOAEL: 100 mg/kg/d

Compound: Butanol
Form: not applicable
Reference: EPA, 1986
Test Species: Rat
Study Duration: 13 weeks
Endpoint: hypoactivity/ataxia
Expo. Route: oral gavage
Dosage: four dose levels: 0, 30, 125 and 500 mg/kg/day
Final NOAEL: 125 mg/kg/d
Final LOAEL: 500 mg/kg/d

Compound: 2-butanone (Methyl Ethyl Ketone/MEK)
Form: not applicable
Reference: Cox et al., 1975
Test Species: Rat
Body weight: 0.35 kg (EPA/600/6-87/008)
Study Duration: 2 generations (>1 yr and during a critical life stage=chronic)
Endpoint: reproduction
Expo. Route: oral in water
Dosage: three dose levels:
538; 1,644; and 5,089 mg/kg/d (males)
594; 1,771; and 4,571 mg/kg/d (females)
NOAEL = 1,771 mg/kg/d
Calculations: not applicable
Comments: While MEK at the highest dose levels (4,571 and 5,089 mg/kg/d) reduced the number of pups/litter, pup survivorship, and pup body weight, no adverse effects were observed at the next higher levels (1,644 mg/kg/d and 1,771 mg/kg/d for males and females respectively). Because the study was 2 generations in duration, the 1,771and 4571 mg/kg/d doses were considered to be chronic.
Final NOAEL: 1771 mg/kg/d
Final LOAEL: 4571 mg/kg/d

Compound: n-butylbenzene
Form: Isopropyl Benzene
Reference: Wolf et al., 1956
Test Species: Rat
Body weight: 0.175-0.250 kg
Study Duration: 194 days
Endpoint: survival and pathology
Expo. Route: oral gavage
Dosage: Three dose levels: 154, 462, and 769 mg/kg/d
Calculations: not applicable
Comments: Mortality was not reported at any dose level. Isopropylbenzene at 154 mg/kg/d had no effect, while kidney weight was affected at 462 and 769 mg/kg/d. Therefore, 154 mg/kg/d and 462 mg/kg/d were considered the NOAEL and LOAEL, respectively. Dose was adjusted for gavage schedule (5 days/week) for a NOAEL of 110 mg/kg/d and a LOAEL of 330 mg/kg/d.
Final NOAEL: 110 mg/kg/d
Final LOAEL: 330 mg/kg/d

Compound: Cadmium
Form: cadmium acetate
Reference: Yuhas et al., 1979
Test Species: Rat
Body weight: 0.43 kg
Food consumption: 0.0331 L/day
Study Duration: 2 weeks
Endpoint: growth
Expo. Route: oral in water
Dosage: four dose levels: 0/1/10/100 mg/L
Calculations: NA
Comments: Value is highest bounded NOAEL lower than the lowest bounded LOAEL value for reproduction, growth or survival; LOAEL is from same study.
Final NOAEL: 0.77 mg/kg/d
Final LOAEL: 7.7 mg/kg/d

Compound: Cadmium
Form: $CdCl_2$
Reference: Sutou et al., 1980a and 1980b
Test Species: Rat
Body weight: 0.303 kg (mean from all dose levels; from Sutou et al., 1980a)
Study Duration: 6 weeks through mating and gestation (during a critical life stage = chronic).
Endpoint: reproduction
Expo. Route: oral gavage
Dosage: four dose levels: 0, 0.1, 1.0, and 10.0 Cd/kg/d
1 mg/kg/d = NOAEL
10 mg/kg/d = LOAEL
Calculations: NA
Comments: While no adverse effects were observed at the 1 mg/kg/d dose level, fetal implantations were reduced by 28%, fetal survivorship was reduced by 50% and fetal resorptions increased by 400% amongst the 10 mg/kg/d group. Because the study considered oral exposure during reproduction, the 1 and 10 mg/kg/d doses were considered to be chronic NOAELs and LOAELs, respectively.
Final NOAEL: 1 mg/kg/d
Final LOAEL: 10 mg/kg/d

Compound: Cadmium
Form: cadmium sulfate
Reference: Leach et al., 1979
Test Species: Chicken
Body weight: 1.6 kg
Food consumption: 0.07903 kg/day
Study Duration: 12 weeks during egg laying
Endpoint: reproduction
Expo. Route: oral in diet
Dosage: four dose levels: 0/3/12/48 ug/g diet
Calculations: NA
Comments: Lowest bounded reproductive LOAEL above the geometric mean NOAEL from OSWER Directive 9285.7-65.
Final NOAEL: 0.597 mg/kg/d

Final LOAEL: 2.37 mg/kg/d

Compound: Cadmium
Form: Multiple Forms
Reference: OSWER Directive 9285.7-65
Test Species: chicken, mallard, and Japanese quail
Body weight: multiple studies
Study Duration: 7 days to 1 year
Endpoint: growth and reproduction
Expo. Route: oral in diet
Dosage: multiple studies
Calculations: NA
Comments: Geometric mean of NOAELs for reproduction and growth from OSWER Directive 9285.7-65.
Final NOAEL: 1.47 mg/kg/d

Compound: Carbon Tetrachloride
Form: not applicable
Reference: Alumot et al., 1976a
Test Species: Rat
Body weight: 0.35 kg (EPA/600/6-87/008)
Food Consumption: 0.028 kg/d (calculated using allometric equation from EPA/600/6-87/008)
Study Duration: 2 yr (>1 yr and during a critical life stage = chronic).
Endpoint: reproduction
Expo. Route: oral in diet
Dosage: two dose levels:
80 and 200 ppm;
No effects observed at either dose level.
Calculations:

$$NOAEL: \left(\frac{200\ mg\ CCl_4}{kg\ \ food} \ x \ \frac{28\ g\ \ food}{day} \ x \ \frac{1\ kg}{1000\ g} \right) / \ 0.35\ kg\ BW = 16\ mg/kg/d$$

Comments: Because no significant differences were observed at either dose level and the study considered exposure throughout 2 years including critical life stages (reproduction), the maximum dose was considered to be a chronic NOAEL.
Final NOAEL: 16 mg/kg/d

Compound: Chlordane
Form: not applicable
Reference: Stickel et al., 1983
Test Species: Red-winged Blackbird
Body weight: 0.064 kg (from study)
Food Consumption: 0.0137 kg/d
(calculated using allometric equation from Nagy, 1987)
Study Duration: 84 days (>10 weeks = chronic).
Endpoint: mortality
Expo. Route: oral in diet

Dosage: three dose levels:
10, 50, and 100 ppm; NOAEL = 10 ppm

Calculations:

$$NOAEL: \left(\frac{10\ mg\ Chlordane}{kg\ \ food} x \frac{13.7\ g\ \ food}{day} x \frac{1\ kg}{1000\ g} \right) / 0.064\ kg\ BW = 2.14\ mg/kg/d$$

$$LOAEL: \left(\frac{50\ mg\ Chlordane}{kg\ \ food} x \frac{13.7\ g\ \ food}{day} x \frac{1\ kg}{1000\ g} \right) / 0.064\ kg\ BW = 10.7\ mg/kg/d$$

Comments: While 26% and 24% mortality was observed among birds on diets containing 50 and 100 mg/kg Chlordane, no adverse effects were observed among the 10 mg/kg dose group. Because the study considered exposure over 84 days, the 10 mg/kg dose was considered to be a chronic NOAEL. The 50 mg/kg dose was considered to be a chronic LOAEL.
Final NOAEL: 2.14 mg/kg/d
Final LOAEL: 10.7 mg/kg/d

Compound: Chlordane
Form: not applicable
Reference: Narotsky and Kavlock, 1995
Test Species: Rat
Study Duration: gestation day 6-19
Endpoint: reproduction
Dosage: three dose levels: 0, 21 or 28 mg/kg-day
Expo. Route: oral gavage
Final NOAEL: 2.1 mg/kg/d
Final LOAEL: 21 mg/kg/d

Compound: Chlorobenzene
Form: not applicable
Reference: Monsanto Co., 1967
Test Species: Dog
Study Duration: 13 weeks
Endpoint: liver pathology
Expo. Route: oral in capsules
Dosage: three dose levels: 27.25, 54.5, or 272.5 mg/kg/day, 5 days/week
Comments: Because dogs were exposed for 5 days/week, 7 day/week exposure was estimated by multiplying doses by 0.7 (5 days/7 days). NOAEL 27.25 mg/kg/day adjusted to 19 mg/kg/day.
Final NOAEL: 19.5 mg/kg/d
Final LOAEL: 38.7 mg/kg/d

Compound: Chloroform
Form: not applicable
Reference: Palmer et al., 1979
Test Species: Rat
Body weight: 0.35 kg (EPA/600/6-87/008)
Study Duration: 13 wk (<1 yr and not during a critical life stage = subchronic).
Endpoint: liver, kidney, gonad condition
Expo. Route: oral intubation
Dosage: four dose levels:
15, 30, 150, and 410 mg/kg/d; NOAEL = 150 mg/kg/d
Calculations: not applicable
Comments: Gonadal atrophy was observed among male and female rats receiving 410 mg/kg/d; therefore, 150 mg/kg/d was considered to be a subchronic NOAEL. The 410 mg/kg/d dose was considered to be a subchronic LOAEL. To estimate the chronic NOAEL and LOAEL, the subchronic values was multiplied by a subchronic-chronic uncertainty factor of 0.1.
Final NOAEL: 15 mg/kg/d
Final LOAEL: 41 mg/kg/d

Compound: Chromium (+6)
Form: Sodium Dichromate
Reference: Chowdhury and Mitra, 1995
Test Species: Rat
Body weight: 0.3084 kg
Study Duration: 190 days
Endpoint: reproduction
Expo. Route: oral gavage
Dosage: four dose levels: 0/19.4/38.6/85.7 mg/kg bw/d
Comments: Lowest bounded reproductive LOAEL above the geometric mean NOAEL from OSWER Directive 9285.7-66.
Final NOAEL: 20 mg/kg/d
Final LOAEL: 40 mg/kg/d

Compound: Chromium (+6)
Form: Multiple Forms
Reference: OSWER Directive 9285.7-66
Test Species: Rat
Study Duration: 8 days – 1 year
Endpoint: reproduction and growth
Expo. Route: multiple studies
Dosage: multiple studies
Comments: Geometric mean of NOAELs for reproduction and growth from OSWER Directive 9285.7-66.
Final NOAEL: 9.24 mg/kg/d

Compound: Chromium
Form: Cr^{+3}
Reference: OSWER Directive 9285.7-66
Test Species: Mouse, Rat, Pig, Cattle
Study Duration: 35 – 332 days
Endpoint: reproduction and growth

Expo. Route: oral in diet (food or water)
Dosage: multiple studies
Comments: Geometric mean of NOAELs for reproduction and growth.
Final NOAEL: 2.4 mg/kg/d

Compound: Chromium
Form: Cr^{+3}
Reference: Zahid et al., 1990
Test Species: Mouse
Body weight: 0.0249 kg
Food consumption: 0.0063 kg/day
Study Duration: 35 days
Endpoint: reproduction
Expo. Route: oral in diet (food)
Dosage: four dose levels: 0/100/200/400 mg/kg diet
Comments: Lowest reproductive LOAEL above the geometric mean NOAEL from OSWER Directive 9285.7-66.
Final LOAEL: 9.62 mg/kg/d

Compound: Chromium
Form: Cr^{+3} as $CrK(SO_4)_2$
Reference: Haseltine et al., 1985
Test Species: Black Duck
Body weight: 1.25 kg (mean + ; Dunning, 1993)
Food Consumption: Congeneric Mallard ducks, weighing 1 kg consume 100 g food/d (Heinz et al.1989). Therefore, it was assumed that a 1.25 kg black duck would consume 125 g food/d.
Study Duration: 10 mo. (>10 weeks and during a critical life stage = chronic)
Endpoint: reproduction
Expo. Route: oral in diet
Dosage: two dose levels:
10 and 50 ppm Cr^{+3} in diet; NOAEL = 10 ppm

$$NOAEL: \left(\frac{10\ mg\ Cr^{+3}}{kg\ \ food} x \frac{125\ g\ \ food}{day} x \frac{1\ kg}{1000\ g} \right) / 1.25\ kg\ BW = 1\ mg/kg/d$$

$$LOAEL: \left(\frac{50\ mg\ Cr^{+3}}{kg\ \ food} x \frac{125\ g\ \ food}{day} x \frac{1\ kg}{1000\ g} \right) / 1.25\ kg\ BW = 5\ mg/kg/d$$

Calculations:
Comments: While duckling survival was reduced at the 50 ppm dose level, no significant differences were observed at the 10 ppm Cr^{+3} dose level. Because the study considered exposure throughout a critical life stage (reproduction), the dose 50 ppm dose was considered to be a chronic LOAEL and the dose 10 ppm dose was considered to be a chronic NOAEL.
Final NOAEL: 1 mg/kg/d
Final LOAEL: 5 mg/kg/d

Compound: Chromium
Form: Multiple Forms
Reference: OSWER Directive 9285.7-66
Test Species: Chicken, Black Duck, Turkey
Study Duration: 14 - 190 days
Endpoint: reproduction and growth
Expo. Route: oral in diet (food)
Dosage: multiple studies
Comments: Geometric mean of NOAELs for reproduction and growth from OSWER Directive 9285.7-66.
Final NOAEL: 2.66 mg/kg/d

Compound: Cobalt
Form: Multiple Forms
Reference: OSWER Directive 9285.7-67
Test Species: Rat, Mouse, Cow, Pig, Guinea Pig
Study Duration: 5 days - 16 weeks
Endpoint: reproduction and growth
Expo. Route: multiple studies
Dosage: multiple studies
Comments: Geometric mean of NOAELs for reproduction and growth from OSWER Directive 9285.7-67.
Final NOAEL: 7.33 mg/kg/d

Compound: Cobalt
Form: Cobalt Chloride
Reference: Domingo et al., 1985
Test Species: Rat
Body weight: 0.3 kg
Food consumption: 0.026 kg/d
Study Duration: 28 days
Endpoint: reproduction
Expo. Route: oral gavage
Dosage: four does levels: 0/12/24/48 mg/kg/d
Comments: Lowest bounded reproductive LOAEL above the geometric mean NOAEL from OSWER Directive 9285.7-67.
Final NOAEL: 5.45 mg/kg/d
Final LOAEL: 10.9 mg/kg/d

Compound: Cobalt
Form: Multiple Forms
Reference: OSWER Directive 9285.7-67
Test Species: Chicken, Duck
Study Duration: 8 days – 5 weeks
Endpoint: growth
Expo. Route: oral in diet
Dosage: multiple studies
Comments: Geometric mean of NOAELs for growth from OSWER Directive 9285.7-67.
Final NOAEL: 7.61 mg/kg/d

Compound: Cobalt

Form: Cobalt Chloride
Reference: Hill, 1979
Test Species: Chicken
Body weight: 0.328 kg
Food consumption: 0.028 kg/d
Study Duration: 5 weeks
Endpoint: growth
Expo. Route: oral in diet
Dosage: four does levels: 0/100/200/300 mg/kg/d
Comments: Lowest bounded reproductive LOAEL above the geometric mean NOAEL from OSWER Directive 9285.7-67.
Final NOAEL: 3.89 mg/kg/d
Final LOAEL: 7.8 mg/kg/d

Compound: Copper
Form: Copper Sulfate Pentahydrate
Reference: Allcroft et al., 1961
Test Species: Pig
Body weight: 100 kg
Food consumption: 2.36 kg/d
Study Duration: 4 weeks
Endpoint: growth
Expo. Route: oral in diet
Dosage: four does levels: 0/380/560/934 mg/kg/d
Comments: Value is highest bounded NOAEL lower than the lowest bounded LOAEL value for reproduction, growth or survival; LOAEL is from same study.
Final NOAEL: 5.6 mg/kg/d
Final LOAEL: 9.34 mg/kg/d

Compound: Copper
Form: Copper
Reference: al Ankari et al., 1998
Test Species: Chicken
Body weight: 1.5161 kg
Food consumption: 0.12278 kg/d
Study Duration: 84 days during egg laying
Endpoint: reproduction
Expo. Route: oral in diet
Dosage: four does levels: 0/50/150/250 mg/kg/d
Comments: Value is highest bounded NOAEL lower than the lowest bounded LOAEL value for reproduction, growth or survival; LOAEL is from same study.
Final NOAEL: 4.05 mg/kg/d
Final LOAEL: 12.1 mg/kg/d

Compound: *o*-Cresol
Form: not applicable
Reference: Hornshaw et al., 1986
Test Species: Mink
Body weight: 1.0 kg (EPA/600/R-93/187)
Food Consumption: 0.137 kg/d (Bleavins and Aulerich, 1981)
Study Duration: 6 months (during a critical life stage = chronic)

Endpoint: reproduction
Expo. Route: oral in diet
Dosage: three dose levels:
100, 400, and 1,600 ppm ; NOAEL = 1600 ppm
Calculations:

$$NOAEL: \left(\frac{1600\ mg\ o\text{-}Cresol}{kg\ \ food} \ x \ \frac{137\ g\ \ food}{day} \ x \ \frac{1\ kg}{1000\ g} \right) / \ 1\ kg\ BW = 219.2\ mg/kg/d$$

Comments: No adverse effects were observed at any dose level. Because this study considered exposure during reproduction, the maximum dose was considered to be a chronic NOAEL.
Final NOAEL: 219.2 mg/kg/d

Compound: Cyanide
Form: Potassium Cyanide
Reference: Tewe and Maner, 1981
Test Species: Rat
Body weight: 0.273 kg (from study)
Food Consumption: 0.0375 kg/d (from study)
Study Duration: gestation and lactation (during a critical life stage = chronic)
Endpoint: reproduction
Expo. Route: oral in diet
Dosage: one dose level:
500 ppm CN = NOAEL

$$NOAEL: \left(\frac{500\ mg\ CN}{kg\ \ food} \ x \ \frac{37.5\ g\ \ food}{day} \ x \ \frac{1\ kg}{1000\ g} \right) / \ 0.273\ kg\ BW = 68.7\ mg/kg/d$$

Calculations:
Comments: Consumption of 500 ppm Cn significantly reduced offspring growth and food consumption; however, values for treated individuals were only marginally less than controls (reductions were 7% or less). While the effects of 500 ppm Cn in the diet were statistically significant, they were not considered to be biologically significant. Because the study considered exposure throughout a critical life stage (reproduction), this dose was considered to be a chronic NOAEL.
Final NOAEL: 68.7 mg/kg/d

Compound: Dichlorodiphenyltrichloroethane (DDT)
Form: not applicable
Reference: Wrenn et al., 1970
Test Species: Rat
Body weight: 0.06830 kg (from study)
Food Consumption: 0.075384 kg/d (from study)
Study Duration: 15 days (during gestation)
Endpoint: reproduction
Expo. Route: oral gavage
Dosage: three dose levels: 0/10/50 mg/kg

Comments: Value is highest bounded NOAEL lower than the lowest bounded LOAEL value for reproduction, growth or survival; LOAEL is from same study.
Final NOAEL: 0.147 mg/kg/d
Final LOAEL: 0.735 mg/kg/d

Compound: Dichlorodiphenyltrichloroethane (DDT)
Form: not applicable
Reference: Cecil et al., 1971
Test Species: Chicken
Body weight: 2.0369999 kg (from study)
Food Consumption: 0.0924860 kg/d (from study)
Study Duration: 30 days
Endpoint: growth
Expo. Route: oral in diet
Dosage: four dose levels: 0/5/50/500 mg/kg diet
Comments: Value is highest bounded NOAEL lower than the lowest bounded LOAEL value for reproduction, growth or survival; LOAEL is from same study.
Final NOAEL: 0.227 mg/kg/d
Final LOAEL: 2.27 mg/kg/d

Compound: Dichlorodiphenyltrichloroethane (DDT)
Form: not applicable
Reference: Heath et al., 1969
Test Species: Mallard
Body weight: 1.1 kg (from study)
Food Consumption: 0.06192552 kg/d (from study)
Study Duration: 1 year
Endpoint: reproduction
Expo. Route: oral in diet
Dosage: four dose levels: 0/2.5/10/40 mg/kg diet
Comments: value is lowest reproductive LOAEL above the NOAEL used for the EcoSSL; NOAEL is from same study.
Final NOAEL: 0.563 mg/kg/d
Final LOAEL: 1.892 mg/kg/d

Compound: 1,2,-Dichlorobenzene
Form: not applicable
Reference: NTP, 1985
Test Species: Rat
Study Duration: 2 years
Endpoint: survival and pathology
Expo. Route: oral gavage
Dosage: three dose levels:
0, 60, or 120 mg/kg/day, 5 days/week for 103 weeks
Comments:. Because rats were exposed for 5 days/week, 7 day/week exposure was estimated by multiplying doses by 0.7 (5 days/7 days). NOAEL of 120 mg/kg/day was adjusted.
Final NOAEL: 85.7 mg/kg/d.

Compound: 1,2,-Dichloroethane
Form: not applicable
Reference: Lane et al., 1982
Test Species: Mouse
Body weight: 0.035 kg (from study)
Water Consumption: 6 mL/d (from study)
Study Duration: 2 generations (>1 yr and during a critical life stage = chronic).
Endpoint: reproduction
Expo. Route: oral in water
Dosage: three dose levels:
5, 15, and 50 mg/kg/d
No effects observed at any dose level.
Calculations: not applicable
Comments: Because no significant differences were observed at any dose level and the study considered exposure throughout 2 generations including critical life stages (reproduction), the maximum dose was considered to be a chronic NOAEL.
Final NOAEL: 50 mg/kg/d.

Compound: 1,2,-Dichloroethane
Form: not applicable
Reference: Alumot at al., 1976b
Test Species: Chicken
Body weight: 1.6 kg (mean + from study)
Food Consumption: 0.11 kg/d (calculated using allometric equation from EPA/600/6-87/008)
Study Duration: 2 yr (>10 wk and during a critical life stage = chronic).
Endpoint: reproduction
Expo. Route: oral in diet
Dosage: two dose levels:
250 and 500 ppm; NOAEL = 250 ppm
Calculations:

$$NOAEL: \left(\frac{250\ mg\ 1{,}2\ Dichloroethane}{kg\ \ food} \ x \ \frac{0.11\ kg\ \ food}{day} \right) / \ 1.6\ kg\ BW = 17.2\ mg/kg/d$$

$$LOAEL: \left(\frac{500\ mg\ 1{,}2\ Dichloroethane}{kg\ \ food} \ x \ \frac{0.11\ kg\ \ food}{day} \right) / \ 1.6\ kg\ BW = 34.4\ mg/kg/d$$

Comments: While egg production was reduced at the 500 ppm dose level, no significant differences were observed at the 250 ppm dose level. Because the study considered exposure throughout 2 years including critical life stages (reproduction), these doses were considered to be chronic NOAELs and LOAELs.
Final NOAEL: 17.2 mg/kg/d
Final LOAEL: 34.4 mg/kg/d

Compound: 1,1-Dichloroethylene (1,1-dichloroethene)

Form: not applicable
Reference: Quast et al., 1983
Test Species: Rat
Body weight: 0.35 kg (EPA/600/6-87/008)
Study Duration: 2 years (>1 yr = chronic).
Endpoint: mortality, body weight, blood chemistry, liver histology
Expo. Route: oral in water
Dosage: three dose levels:
7, 10, and 20 mg/kg/d (males) and
9, 14, and 30 mg/kg/d (females); NOAEL = 30 mg/kg/d
Calculations: not applicable
Comments: The only treatment-related effects observed were microscopic hepatic lesions. These were evident among females at all dose levels and among males only at the highest dose level. No other treatment effects were observed. Because the relationship of hepatic lesions to potential population effects is unknown and no other effects were observed, the maximum dose, 30 mg/kg/d was considered a chronic NOAEL.
Final NOAEL: 30 mg/kg/d

Compound: 1,2-Dichloroethylene (used for Cis-1,2-dichloroethylene Trans-1,2 dichloroethylene)
Form: not applicable
Reference: Palmer et al., 1979
Test Species: Mouse
Body weight: 0.03 kg (EPA/600/6-87/008)
Study Duration: 90 d (<1 yr and not during a critical life stage = subchronic)
Endpoint: body and organ weights, blood chemistry, hepatic function
Expo. Route: oral in water
Dosage: three dose levels:
16.8, 175, and 387 mg/kg/d (Males)
22.6, 224, and 452 mg/kg/d (Females)
NOAEL = 452 mg/kg/d
Calculations: not applicable
Comments: Exposure to 387 mg/kg/d 1,2-Dichloroethylene reduced glutathione levels in males and all dose levels reduced aniline hydroxylase activity in females. No other treatment effects were observed. Because the relationship of enzyme levels to potential population effects is unknown and no other effects were observed, the maximum dose, 452 mg/kg/d was considered a subchronic NOAEL. To estimate the chronic NOAEL, the subchronic NOAEL was multiplied by a subchronic-chronic uncertainty factor of 0.1.
Final NOAEL: 45.2 mg/kg/d

Compound: Dichloromethane (Methylene Chloride)
Form: not applicable
Reference: NCA, 1982
Test Species: Rat
Body weight: 0.35 kg (EPA/600/6-87/008)
Study Duration: 2 yrs (>1 yr=chronic)
Endpoint: liver histology
Expo. Route: oral in water
Dosage: four dose levels:

5.85, 50, 125, and 250 mg/kg/d; NOAEL = 5.85 mg/kg/d
Calculations: not applicable
Comments: While methylene chloride at 50 mg/kg/d or greater produced histological changes in the liver, no effects were observed at the 5.85 mg/kg/d dose level. Because the study was 2 yrs in duration, the 5.85 mg/kg/d dose was considered to be a chronic NOAEL. The 50 mg/kg/d dose was considered to be a chronic LOAEL.
Final NOAEL: 5.85 mg/kg/d
Final LOAEL: 50 mg/kg/d

Compound: Dieldrin
Form: NA
Reference: Harr et al., 1970
Test Species: Rat
Body weight: 0.156 kg
Food Consumption: 0.0149 kg/d
Study Duration: 750 days
Endpoint: reproduction
Expo. Route: oral in diet
Dosage: eleven dose levels:
0/0.08/0.16/0.31/0.63/1.25/2.5/5.0/10/20/40 mg/kg diet
Comments: Value is highest bounded NOAEL lower than the lowest bounded LOAEL value for reproduction, growth or survival; LOAEL is from same study.
Final NOAEL: 0.015 mg/kg/d
Final LOAEL: 0.03 mg/kg/d

Compound: Dieldrin
Form: NA
Reference: Nebeker et al., 1992
Test Species: Mallard
Body weight: 0.334 kg
Food Consumption: 0.0750 kg/d
Study Duration: 24 days
Endpoint: growth
Expo. Route: oral in diet
Dosage: seven dose levels:
0/0.3/16.4/48/155/272/606 ug/g diet
Comments: Value is highest bounded NOAEL lower than the lowest bounded LOAEL value for reproduction, growth or survival; LOAEL is from same study.
Final NOAEL: 0.0709 mg/kg/d
Final LOAEL: 3.78 mg/kg/d

Compound: Dieldrin
Form: NA
Reference: Wiese et al., 1968
Test Species: Crowned Guinea Fowl
Body weight: 0.1792 kg
Food Consumption: 0.0097 kg/d
Study Duration: 21 months
Endpoint: reproduction
Expo. Route: oral in diet
Dosage: seven dose levels:

	0/0.05/0.15/0.5/1.5/5/15 mg/kg diet
Comments:	Value is lowest reproductive LOAEL above the NOAEL used for the EcoSSL; NOAEL is from same study.
Final NOAEL:	0.0671 mg/kg/d
Final LOAEL:	0.223 mg/kg/d

Compound:	2,4-Dinitrotoluene
Form:	NA
Reference:	Ellis et al., 1979
Test Species:	dog
Study Duration:	24 months
Endpoint:	hemotoxicity and mortality
Expo. Route:	oral in capsule
Dosage:	four dose levels: 0, 0.2, 1.5 or 10.0 mg/kg/day
Calculations:	not applicable
Comments:	NOAEL and LOAEL are LED10 and ED10 values, respectively calculated using EPA benchmark dose software. Study for benchmark calculation selected based on an extensive review of available literature (39-EJ-1138-01D).
Final NOAEL:	0.67 mg/kg/d
Final LOAEL:	1.4 mg/kg/d

Compound:	2,4-Dinitrotoluene
Form:	NA
Reference:	Johnson et al., 2005
Test Species:	Bobwhite Quail
Study Duration:	60 days
Endpoint:	hematoxicity and mortality
Expo. Route:	oral gavage
Dosage:	five dose levels: 0, 1, 5, 15 or 25 mg/kg-d
Calculations:	not applicable
Comments:	Study and value selected based on an extensive review of available literature - documented in 39-EJ-1138-01D.
Final NOAEL:	0.01 mg/kg/d
Final LOAEL:	1.3 mg/kg/d

Compound:	Endosulfan
Form:	not applicable
Reference:	Dikshith et al., 1984
Test Species:	Rat Body weight: 0.35 kg (EPA/600/6-87/008) Food Consumption: 0.028 kg/d (calculated using allometric equation from EPA/600/6-87/008)
Study Duration:	30 days (<1 yr and not during a critical life stage = subchronic)
Endpoint:	reproduction, blood chemistry
Expo. Route:	oral intubation
Dosage:	three dose levels per sex: male: 0.75, 2.5, and 5.0 mg/kg/d female 0.25, 0.75, and 1.5 mg/kg/d
Calculations:	not applicable

Comments: Male and female rats were dosed for 30 days at the three respective dose levels, then one male and two females from the following groups were paired and allowed to mate: 5 mg/kg/d ( ) x 0 mg/kg/d (control) and 0 mg/kg/d (control) x 1.5 mg/kg/d ( ). No adverse effects were observed for any dose level. Because it was assumed that adverse reproductive effects were more likely to be observed in exposed females than males, and because the study was <1 yr in duration and did not include a critical life stage (exposure was discontinued prior to gestation), the 1.5 mg/kg/d dose was considered a subchronic NOAEL. A chronic NOAEL was estimated by multiplying the subchronic NOAEL by a subchronic-chronic uncertainty factor of 0.1.

Final NOAEL: 0.15 mg/kg/d

Compound: Endosulfan
Form: not applicable
Reference: Abiola, 1992
Test Species: Gray Partridge
Body weight: 0.400 kg (from study)
Food Consumption: 0.032 kg/d (calculated using allometric equation from Nagy, 1987)
Study Duration: 4 weeks (during a critical life stage = chronic).
Endpoint: reproduction
Expo. Route: oral in diet
Dosage: three dose levels:
5, 25, 125 ppm; NOAEL = 125 ppm
Calculations:

$$NOAEL: \left(\frac{125\ mg\ Endosulfan}{kg\ food} x \frac{32\ g\ food}{day} x \frac{1\ kg}{1000\ g} \right) / 0.400\ kg\ BW = 10\ mg/kg/d$$

Comments: No adverse effects were observed at any dose level. Because exposure occurred during reproduction, the maximum dose was considered a chronic NOAEL.

Final NOAEL: 10 mg/kg/d

Compound: Endrin
Form: not applicable
Reference: Good and Ware, 1969
Test Species: Mouse
Body weight: 0.03 kg (EPA/600/6-87/008)
Food Consumption: 0.0055 kg/d
(calculated using allometric equation from EPA/600/6-87/008)
Study Duration: 120 d (during a critical life stage = chronic).
Endpoint: reproduction
Expo. Route: oral in diet
Dosage: one dose level:
5 ppm = LOAEL
Calculations:

$$LOAEL: \left(\frac{5\ mg\ Endrin}{kg\ \ food} x \frac{5.5\ g\ \ food}{day} x \frac{1\ kg}{1000\ g} \right) / 0.03\ kg\ BW = 0.92\ mg/kg/d$$

Comments: Significant reproductive effects (reduced parental survival, litter size, and number of young/d) were observed among mice fed diets containing 5 ppm Endrin. Because they considered exposure during a critical life stage, this dose was considered to be a chronic LOAEL. A chronic NOAEL was estimated by multiplying the chronic LOAEL by a LOAEL-NOAEL uncertainty factor of 0.1.
Final NOAEL: 0.092 mg/kg/d
Final LOAEL: 0.92 mg/kg/d

Compound: Endrin
Form: not applicable
Reference: Spann et al., 1986
Test Species: Mallard duck
Body weight: 1.15 kg (from study)
Food Consumption: Mallard ducks, weighing 1 kg consume 100 g food/d (Heinz et al.1989). Therefore, it was assumed that a 1.15 kg Mallard duck would consume 115 g food/d.
Study Duration: >200 d. (>10 weeks and during a critical life stage = chronic)
Endpoint: reproduction
Expo. Route: oral in diet
Dosage: two dose levels:
1 and 3 ppm Endrin in diet; NOAEL = 3 ppm
Calculations:

$$NOAEL: \left(\frac{3\ mg\ Endrin}{kg\ \ food} x \frac{115\ g\ \ food}{day} x \frac{1\ kg}{1000\ g} \right) / 1.15\ kg\ BW = 0.3\ mg/kg/d$$

Comments: While the authors state that birds receiving the 3 ppm dose appeared to reproduce more poorly than controls, this difference was not significant. Because no significant differences were observed at the 3 ppm dose level and the study considered exposure throughout a critical life stage (reproduction), this dose was considered to be a chronic NOAEL.
Final NOAEL: 0.3 mg/kg/d

Compound: Ethyl Benzene
Form: not applicable
Reference: Wolf et al., 1956
Test Species: Rat
Body weight: 0.175 to 0.250 kg (from study)
Expo. Duration: 182 to 194 days (<1 yr = subchronic)
Endpoint: survival, pathology
Expo. Route: oral gavage
Dosage: four dose levels: 13.6, 136, 408, and 680 mg/kg/d
Calculations: not applicable
Comments: Mortality was not reported at any dose level. Although ethyl benzene had no effect at doses up to 136 mg/kg/d, liver and kidney pathology was evident at the 408 mg/kg/d dose. Because

the duration of the study was less than one year, all doses were considered subchronic. Therefore the subchronic NOAEL and LOAEL were considered to be 136 and 408 mg/kg/d respectively.

Final Subchronic NOAEL: 136 mg/kg/d
Final Subchronic LOAEL: 408 mg/kg/d

Compound: Fluoranthene
Form: not applicable
Reference: EPA, 1988
Test Species: Mouse
Body weight: 0.03 kg (from study)
Expo. Duration: 13weeks
Endpoint: nephropathy
Expo. Route: oral gavage
Dosage: four dose levels: 0, 125, 250, or 500 mg/kg/d
Final NOAEL: 125 mg/kg/d
Final LOAEL: 250 mg/kg/d

Compound: Fluorene
Form: not applicable
Reference: EPA, 1989c
Test Species: Mouse
Body weight: 0.03 kg (from study)
Expo. Duration: 13weeks
Endpoint: hemotoxicity
Expo. Route: oral gavage
Dosage: four dose levels: 0, 125, 250, or 500 mg/kg/d
Final NOAEL: 125 mg/kg/d
Final LOAEL: 250 mg/kg/d

Compound: Fluoride
Form: NaF
Reference: Aulerich et al., 1987
Test Species: Mink
Body weight: 1.0 kg (EPA/600/R-93/187)
Food Consumption: 0.137 kg/d (Bleavins and Aulerich, 1981)
Study Duration: 382 d (during a critical life stage = chronic)
Endpoint: reproduction
Expo. Route: oral in diet
Dosage: five dose levels:
33, 60, 108, 194, and 350 ppm supplemental F + 35 ppm F in base diet; NOAEL = 194 ppm + 35 ppm = 229 ppm F
Calculations:

$$NOAEL: \left(\frac{229\ mg\ F}{kg\ \ food} \ x \ \frac{137\ g\ \ food}{day} \ x \ \frac{1\ kg}{1000\ g} \right) / \ 1\ kg\ BW = 31.37\ mg/kg/d$$

$$LOAEL: \left(\frac{385\ mg\ F}{kg\ \ food} x \frac{137\ g\ \ food}{day} x \frac{1\ kg}{1000\ g} \right) / 1\ kg\ BW = 52.75\ mg/kg/d$$

Comments: Fluoride up to 229 ppm in mink diets had no adverse effects on reproduction; Survivorship of kits in the 385 ppm (350+35 ppm) group was significantly reduced. These doses were considered to be NOAELs and LOAELs, respectively. Because and the study considered exposure over 382 days including critical life stages (reproduction), these doses were considered to be a chronic.

Final NOAEL: 31.37 mg/kg/d

Final LOAEL: 52.75 mg/kg/d

Compound: Fluoride

Form: NaF

Reference: Pattee et al., 1988

Test Species: Screech Owl
Body weight: 0.181 kg (Dunning, 1993)
Food Consumption: 1300/1700 g/month/pair (from study)
Daily food consumption was estimated as follows:
median food consumption/month/pair = 1500 g;
1 month = 30 d;
Males and females consume equal amounts of food = 750 g/month
750 g/month 30 d = 25 g/ d

Study Duration: 5/6 months (during a critical life stage = chronic)

Endpoint: reproduction

Expo. Route: oral in diet

Dosage: two dose levels:
56.5 and 232 ppm F; NOAEL = 56.5 ppm F

Calculations:

$$NOAEL: \left(\frac{56.5\ mg\ F}{kg\ \ food} x \frac{25\ g\ \ food}{day} x \frac{1\ kg}{1000\ g} \right) / 0.181\ kg\ BW = 7.8\ mg/kg/d$$

$$LOAEL: \left(\frac{232\ mg\ F}{kg\ \ food} x \frac{25\ g\ \ food}{day} x \frac{1\ kg}{1000\ g} \right) / 0.181\ kg\ BW = 32\ mg/kg/d$$

Comments: While fertility and hatching success was significantly reduced by 232 ppm F in the diet, 56.5 ppm F in the diet had no adverse effect. Because the study considered exposure during reproduction, these doses were considered to be chronic.

Final NOAEL: 7.8 mg/kg/d

Final LOAEL: 32 mg/kg/d

Compound: Gamma Hexachlorobenzene (Lindane)

Form: not applicable

Reference: Chakravarty and Lahiri, 1986; Chakravarty et al., 1986

Test Species: Mallard
Body weight: 1 kg

Study Duration: 8 weeks

Endpoint: reproduction

Expo. Route: oral intubation
Dosage: three dose levels:
20 mg/kg-day, 8.57 mg/kg-day, and 5.71 mg/kg-day
Calculations: not applicable
Comments: Whereas effects were observed at the 8.57 mg/kg/d dose, no effects were observed at the 5.71 mg/kg/d dose. Because the LOAEL was less than the NOAEL in another study an interspecies uncertainty factor of 0.1 was applied by 87-MA02T6-05C.
Final NOAEL: 0.571 mg/kg/d
Final LOAEL: 0.857 mg/kg/d

Compound: Gasoline range organics
Form: No. 2 Fuel
Reference: Szaro et al., 1981
Test Species: Mallard
Body weight: 1 kg
Study Duration: 18 weeks
Endpoint: mortality and growth
Expo. Route: oral in diet
Dosage: Two dose levels: 0.5 and 5.0% (5,000 and 50,000 mg/kg) No. 2 fuel oil in food
Final NOAEL: 500 mg/kg/d
Final LOAEL: 5,000 mg/kg/d

Compound: 2- Hexanone
Form: not applicable
Reference: O'Donoghue et al., 1978
Test Species: Rat
Expo. Duration: 13 months
Endpoint: neurotoxicity
Expo. Route: oral in water
Dosage: 0, 0.25, 0.5, or 1.0% 2-hexanone (96% pure, containing 3.2% methyl isobutyl ketone (MiBK) and 0.7% unknown contaminants).
Final NOAEL: 5 mg/kg/d
Final LOAEL: 36.1 mg/kg/d

Compound: 2- Hexanone
Form: not applicable
Reference: Abou-Donia et al., 1982
Test Species: White Leghorn Chicken
Body weight: 1.7 kg (mean from study)
Expo. Duration: 90 days (>10 wks = chronic)
Endpoint: survival, pathology, neurotoxicity index
Expo. Route: oral gavage
Dosage: 100 mg/kg/d
Calculations: not applicable
Comments: Positive weight gains among control hens occurred over the course of the study, but hens exposed to 100 mg/kg/d MnBK experienced a 17% decrease in body weight compared to initial weight. These hens also experienced various levels of ataxia. Because the duration of this study was >10 weeks, the chronic LOAEL was considered to be 100 mg/kg/d. A chronic LOAEL was estimated by

multiplying the chronic LOAEL by a LOAEL to NOAEL uncertainty factor of 0.1.

Final NOAEL: 10 mg/kg/d
Final LOAEL: 100 mg/kg/d

Compound: High MW PAHs
Form: benzo(a)byrene
Reference: Culp et al., 1998
Test Species: Mouse
Body weight: 0.038 kg
Food Consumption: 0.00467 kg/d
Study Duration: 55 weeks
Endpoint: growth
Expo. Route: oral in diet
Dosage: four dose levels: 0/5/25/100 mg/kg
Comments: Value is highest bounded NOAEL lower than the lowest bounded LOAEL value for reproduction, growth, or survival; LOAEL is from the same study.
Final NOAEL: 0.65 mg/kg/d
Final LOAEL: 3.07 mg/kg/d

Compound: Iodine
Form: potassium iodide
Reference: Aulerich et al., 1978
Test Species: Mink
Body weight: 1 kg
Food Consumption: 0.137 kg/d (Bleavins and Aulerich, 1981)
Study Duration: breeding through lactation
Endpoint: reproduction
Expo. Route: oral in diet
Dosage: 3 dose levels: 10, 100, 1,000 mg/kg in food
Calculations:

$$NOAEL: \left(\frac{10\ mg\ I}{kg\ \ food} x \frac{137\ g\ \ food}{day} x \frac{1\ kg}{1000\ g} \right) / 1\ kg\ BW = 1.37\ mg/kg/d$$

$$LOAEL: \left(\frac{100\ mg\ I}{kg\ \ food} x \frac{137\ g\ \ food}{day} x \frac{1\ kg}{1000\ g} \right) / 1\ kg\ BW = 13.7\ mg/kg/d$$

Final NOAEL: 1.37 mg/kg/d
Final LOAEL: 13.7 mg/kg/d

Compound: JP-8 Jet Fuel (used for gasoline range organics)
Reference: Cooper and Mattie, 1996
Test Species: Rat
Body weight: 0.35 kg (EPA/600/6-87/008)
Study Duration: gestational days 6-15 (during a critical life stage = chronic)
Endpoint: reproduction
Expo. Route: oral gavage
Dosage: four dose levels:
500; 1,000; 1,500; 2,000 mg JP-8 jet fuel/kg/d
Calculations: not applicable

Comments: Maternal and fetal weight gain was significantly reduced in rats dosed by oral gavage at the rate of 1,500 mg/kg/day. Additionally, a dose-response increase in mortality was also reported. Because no significant differences were observed at the two lower dose levels and the study considered exposure throughout a critical life stage (reproduction), the 1,000 mg/kg/day dose was considered to be a chronic NOAEL and the 1,500 mg/kg/day dose was considered to be a chronic LOAEL.
Final NOAEL: 1,000 mg/kg/d
Final LOAEL: 1,500 mg/kg/d

Compound: Lead
Reference: Kimmel et al., 1980
Test Species: Rat
Body weight: 0.3 kg
Food consumption: 0.036 L/d
Study Duration: 7 weeks during gestation
Endpoint: growth
Expo. Route: oral in water
Dosage: five dose levels: 0/0.13/1.27/13/69 mg/kg bw/d
Calculations: not applicable
Comments: Value is highest bounded NOAEL lower than the lowest bounded LOAEL value for reproduction, growth or survival; LOAEL is from same study.
Final NOAEL: 1.05 mg/kg/d
Final LOAEL: 12.1 mg/kg/d

Compound: Lead
Form: Lead Acetate
Reference: Edens and Garlich, 1983
Test Species: chicken
Body weight: 1.81 kg (EPA/600/6-87/008)
Food consumption: 0.118 kg/d
Study Duration: 4 weeks during egg laying
Endpoint: reproduction
Expo. Route: oral in diet
Dosage: four dose levels: 0/25/50 mg/kg diet
Calculations: not applicable
Comments: Value is highest bounded NOAEL lower than the lowest bounded LOAEL value for reproduction, growth or survival; LOAEL is from same study.
Final NOAEL: 1.63 mg/kg/d
Final LOAEL: 3.26 mg/kg/d

Compound: Lithium
Form: Lithium Carbonate (18.78% Li)
Reference: Marathe and Thomas, 1986
Test Species: Rat
Body weight: 0.35 kg (EPA/600/6-87/008)
Food Consumption: 0.028 kg/d (calculated using allometric equation from EPA/600/6-87/008)
Study Duration: days 6-15 of gestation (during a critical life stage = chronic)
Endpoint: reproduction
Expo. Route: oral in diet

Dosage: two dose levels:
50 and 100 mg/kg/d Lithium Carbonate**:** NOAEL = 50 mg/kg/d
Calculations: mg Li /kg/d = 0.1878 x 50 mg/kg/d = 9.39
Comments: Lithium carbonate exposure of 100 mg/kg/d reduced the number of offspring and offspring weights. No adverse effects were observed at the 50 mg/kg level. While the Lithium exposures evaluated in this study were of a short duration, they occurred during a critical life stage. Therefore, the 50 mg/kg/d dose was considered to be a chronic NOAEL and the 100 mg/kg/d dose was considered to be a chronic LOAEL.
Final NOAEL: 9.4 mg/kg/d
Final LOAEL: 18.8 mg/kg/d

Compound: Low MW PAHs
Form: 1-naphthaleneacetic acid
Reference: Verschuuren et al., 1976b
Test Species: Rat
Body weight: 0.247 kg (EPA/600/6-87/008)
Food Consumption: 0.0162 kg/d
Study Duration: 6 weeks
Endpoint: growth
Expo. Route: oral in diet
Dosage: four dose levels: 0/200/1,000/5,000 mg/kg
Comments: Value is highest bounded NOAEL lower than the lowest bounded LOAEL value for reproduction, growth or survival; LOAEL is from same study.
Final NOAEL: 65.8 mg/kg/d
Final LOAEL: 328 mg/kg/d

Compound: Manganese
Form: Multiple Forms
Reference: OSWER Directive 9285.7-71
Test Species: multiple studies
Study Duration: 4 – 730 days
Endpoint: reproduction and growth
Expo. Route: multiple studies
Dosage: multiple studies
Comments: Geometric mean of NOAELs for reproduction and growth from OSWER Directive 9285.7-71.
Final NOAEL: 51.5 mg/kg/d

Compound: Manganese
Form: Manganese oxide
Reference: Rehnberg et al., 1980
Test Species: Rat
Body weight: 0.0566 kg
Food Consumption: 0.006483 L/d
Study Duration: 20 days
Endpoint: reproduction
Expo. Route: Gavage
Dosage: four dose levels:
0, 21, 71, and 214 mg/kg/bw/day

Comments: Lowest bounded growth or reproductive LOAEL above the geometric mean NOAEL from OSWER Directive 9285.7-71.

Final NOAEL: 21 mg/kg/d
Final LOAEL: 71 mg/kg/d

Compound: Manganese
Form: Multiple forms
Reference: OSWER Directive 9285.7-71
Test Species: Chicken, Turkey, Japanese Quail
Study Duration: 1 – 12 weeks
Endpoint: reproduction and growth
Expo. Route: multiple studies
Dosage: multiple studies
Comments: NOAEL is based on the geometric mean of NOAELs for reproduction and growth. Values extrapolated from Appendix 5.1 Table (OSWER Directive 9285.7-71).
Final NOAEL: 179 mg/kg/d

Compound: Manganese
Form: Manganese chloride tetrahydrate
Reference: Southern and Baker, 1983
Test Species: Chicken (*Gallus domesticus*)
Body weight: 0.0566 kg
Food Consumption: 0.006483 kg/d
Study Duration: 20 days
Endpoint: reproduction
Expo. Route: Gavage
Dosage: four dose levels:
0, 21, 71, and 214 mg/kg/bw/day
Comments: Lowest bounded growth or reproductive LOAEL above the geometric mean NOAEL from OSWER Directive 9285.7-71.
Final NOAEL: 21 mg/kg/d
Final LOAEL: 71 mg/kg/d

Compound: Mercury
Form: Methyl Mercury Chloride (CH_3HgCl; 79.89% Hg)
Reference: Verschuuren et al., 1976a
Test Species: Rat
Body weight: 0.35 kg (EPA/600/6-87/008)
Food Consumption: 0.028 kg/d (calculated using allometric equation from EPA/600/6-87/008)
Study Duration: 3 generations (>1 yr and during a critical life stage = chronic)
Endpoint: reproduction
Expo. Route: oral in diet
Dosage: three dose levels:
0.1, 0.5, and 2.5 ppm Methyl Mercury Chloride;
NOAEL = 0.5 ppm Methyl Mercury Chloride
0.7989 0.5 mg/kg = 0.399 mg Hg /kg
Calculations:

$$NOAEL: \left(\frac{0.399\ mg\ Hg}{kg\ \ food} x \frac{28\ g\ \ food}{day} x \frac{1\ kg}{1000\ g} \right) / 0.35\ kg\ BW = 0.032\ mg/kg/d$$

$$LOAEL: \left(\frac{1.99725\ mg\ Hg}{kg\ \ food} x \frac{28\ g\ \ food}{day} x \frac{1\ kg}{1000\ g} \right) / 0.35\ kg\ BW = 0.16\ mg/kg/d$$

Comments: While exposure to 2.5 ppm methyl mercury chloride reduced pup viability, adverse effects were not observed at lower doses. Because significant effects were not observed at the 0.5 ppm Methyl Mercury Chloride dose level, this dose was considered to be a chronic NOAEL. The 2.5 ppm Methyl Mercury Chloride dose level was considered to be a chronic LOAEL.
Final NOAEL: 0.032 mg/kg/d
Final LOAEL: 0.16 mg/kg/d

Compound: Mercury
Form: Methyl Mercury Dicyandiamide
Reference: Heinz, 1979; Heinz and Hoffman, 1998
Test Species: Mallard Duck
Body weight: 1 kg (Heinz et al., 1989)
Food Consumption: 0.128 kg/d (from study)
Study Duration: 3 generations (>1 yr and during a critical life stage = chronic)
Endpoint: reproduction
Expo. Route: oral in diet
Dosage: one dose level:
0.5 ppm Hg as Methyl Mercury Dicyandiamide
LOAEL = 0.5 ppm
Calculations:

$$LOAEL: \left(\frac{0.5\ mg\ Hg}{kg\ \ food} x \frac{128\ g\ \ food}{day} x \frac{1\ kg}{1000\ g} \right) / 1\ kg\ BW = 0.064\ mg/kg/d$$

Comments: Because significant effects (fewer eggs and ducklings were produced) were observed at the 0.5 ppm Hg dose level and the study consider exposure over three generations, this dose was considered to be a chronic LOAEL. A chronic NOAEL was estimated by multiplying the chronic LOAEL by a LOAEL-NOAEL uncertainty factor of 0.1.
Final NOAEL: 0.0064 mg/kg/d
Final LOAEL: 0.064 mg/kg/d

Compound: Methoxychlor
Form: not applicable
Reference: Gray et al., 1988
Test Species: Rat
Body weight: 0.35 kg (EPA/600/6-87/008)
Food Consumption: 0.028 kg/d (calculated using allometric equation from EPA/600/6-87/008)
Study Duration: 11 month (during a critical life stage = chronic)
Endpoint: reproduction

Expo. Route: oral in diet
Dosage: four dose levels:
25, 50, 100 and 200 ppm; NOAEL = 50 ppm
Calculations:

$$NOAEL: \left(\frac{50\ mg\ Methoxychlor}{kg\ \ food} x \frac{28\ g\ \ food}{day} x \frac{1\ kg}{1000\ g} \right) / 0.35\ kg\ BW = 4\ mg/kg/d$$

$$LOAEL: \left(\frac{100\ mg\ Methoxychlor}{kg\ \ food} x \frac{28\ g\ \ food}{day} x \frac{1\ kg}{1000\ g} \right) / 0.35\ kg\ BW = 8\ mg/kg/d$$

Comments: Fertility and litter size was significantly reduced among rats fed diets containing 100 or 200 ppm methoxychlor. Because significant effects were not observed at the 50 ppm dose level and the study considered exposure during reproduction, the 50 ppm was considered to be a chronic NOAEL. The 100 ppm was considered to be a chronic LOAEL.
Final NOAEL: 4 mg/kg/d
Final LOAEL: 8 mg/kg/d

Compound: Methyl Ethyl Ketone
Form: not applicable
Reference: Cox et al., 1975
Test Species: Rat
Body weight: 0.35 kg (EPA/600/6-87/008)
Study Duration: 2 generations (>1 yr and during a critical life stage=chronic)
Endpoint: reproduction
Expo. Route: oral in water
Dosage: three dose levels:
538; 1,644; and 5,089 mg/kg/d (males),
594; 1,771; and 4,571 mg/kg/d (females);
NOAEL = 1,771 mg/kg/d
Calculations: not applicable
Comments: While Methyl Ethyl Ketone at the highest dose levels (4,571 and 5,089 mg/kg/d) reduced the number of pups/litter, pup survivorship, and pup body weight, no adverse effects were observed at the next higher levels (1,644 mg/kg/d and 1,771 mg/kg/d for males and females, respectively). Because the study was 2 generations in duration, the 1,771and 4,571 mg/kg/d doses were considered to be chronic.
Final NOAEL: 1,771 mg/kg/d
Final LOAEL: 4,571 mg/kg/d

Compound: 2-Methylnaphthalene
Form: not applicable
Reference: Murata et al., 1997
Test Species: Mouse
Body weight: 0.0425 kg (mean male and female from study)
Food Consumption: 0.0055 kg/d
(calculated using allometric equation from EPA, 1988)

Expo.Duration: 81 weeks (>1 yr = chronic)
Endpoint: survival, pathology
Expo. Route: oral in diet
Dosage: two dose levels: 0.075 and 0.15% diet
750, 1500 mg/kg diet
Calculations: (based on values in study)
Low dose: 50.3 mg/kg/d
Low dose: 54.3 mg/kg/d
High dose: 107.6 mg/kg/d
High dose: 113.8 mg/kg/d
Comments: Although survival did not differ among either dose, incidence of pulmonary pathology (pulmonary alveolar protienosis) was statistically increased among males and females at both doses. In addition, growth among males consuming the 0.15% diet was significantly reduced. Therefore, the 50.3 mg/kg/d dose was assumed to be a chronic LOAEL. A chronic NOAEL was estimated by applying a LOAEL-NOAEL uncertainty factor of 0.1.
Final NOAEL: 50.3 mg/kg/d
Final LOAEL: 5.03 mg/kg/d

Compound: Molybdenum
Form: Molybdate (MoO_4)
Reference: Schroeder and Mitchener, 1971
Test Species: Mouse
Body weight: 0.03 kg (EPA/600/6-87/008)
Food Consumption: 0.0055 kg/d
Water Consumption: 0.0075 L/d
(calculated using allometric equation from EPA/600/6-87/008)
Study Duration: 3 generations (>1 yr and during critical life stage=chronic)
Endpoint: reproduction
Expo. Route: oral in water
Dosage: one dose level:
10 mg Mo/L + 0.45 mg/kg in diet = LOAEL
Calculations:

$$NOAEL: \left(\frac{10\ mg\ Mo}{L\ water} x \frac{7.5mL\ water}{day} x \frac{1\ L}{1000\ mL} \right) / 0.03\ kg\ BW = 2.5mg/kg/d$$

$$LOAEL: \left(\frac{0.45\ mg\ Mo}{kg\ \ food} x \frac{5.5g\ \ food}{day} x \frac{1\ kg}{1000\ g} \right) / 0.03\ kg\ BW = 0.0825mg/kg/d$$

Total Exposure = 2.5 mg/kg/d + 0.0825 mg/kg/d =2.5825 mg/kg/d

Comments: Because mice exposed to Mo displayed reduced reproductive success with a high incidence of runts, this dose was considered to be a chronic LOAEL. A chronic NOAEL was estimated by multiplying the chronic LOAEL by a LOAEL-NOAEL uncertainty factor of 0.1.
Final NOAEL: 0.26 mg/kg/d

Final LOAEL: 2.6 mg/kg/d

Compound: Molybdenum
Form: Sodium Molybdate
Reference: Lepore and Miller, 1965
Test Species: Chicken
Body weight: 1.5 kg (EPA/600/6-87/008)
Food Consumption: 0.106 kg/d
(calculated using allometric equation from EPA/600/6-87/008)
Study Duration: 21 d through reproduction (during a critical life stage=chronic)
Endpoint: reproduction
Expo. Route: oral in diet
Dosage: three dose levels:
500; 1,000; and 2,000 ppm mo; 500 ppm = LOAEL
Calculations:

$$LOAEL: \left(\frac{500\ mg\ Mo}{L\ water} x \frac{106mg\ \ food}{day} x \frac{1\ kg}{1000\ mg} \right) / 1.5\ kg\ BW = 35.33\ mg/kg/d$$

Comments: Embryonic viability was reduced to zero in the 500 ppm Mo treatment, therefore this dose was considered to be a chronic LOAEL. A chronic NOAEL was estimated by multiplying the chronic LOAEL by a LOAEL NOAEL uncertainty factor of 0.1.
Final NOAEL: 3.5/kg/d
Final LOAEL: 35.3 mg/kg/d

Compound: Nickel
Form: Nickelous Chloride
Reference: Pandey and Srivastava, 2000
Test Species: Mouse
Body weight: 0.025 kg
Food consumption: 0.00331 kg/d
Study Duration: 35 days
Endpoint: reproduction
Expo. Route: oral (other)
Dosage: four dose levels: 0/3.57/7.14/14.29 mg/kg bw/d
Calculations: not applicable
Comments: Value is highest bounded NOAEL lower than the lowest bounded LOAEL value for reproduction, growth or survival; LOAEL is from same study.
Final NOAEL: 1.7 mg/kg/d
Final LOAEL: 3.4 mg/kg/d

Compound: Nickel
Form: Nickel Chloride Hexahydrate
Reference: Martinez and Diaz, 1996
Test Species: Chicken
Body weight: 1.8901 kg
Food consumption: 0.08809 kg/day
Study Duration: 42 days

Endpoint: growth
Expo. Route: oral in diet
Dosage: four dose levels: 0/123.5/247/494 mg/kg diet
Calculations: not applicable
Comments: Lowest bounded growth or reproductive LOAEL above the geometric mean NOAEL from OSWER Directive 9285.7-76.
Final NOAEL: 5.76 mg/kg/d
Final LOAEL: 11.5 mg/kg/d

Compound: Nickel
Form: Multiple Forms
Reference: OSWER Directive 9285.7-76
Test Species: Chicken, Duck
Study Duration: 19 – 60 days
Endpoint: reproduction and growth
Expo. Route: Multiple studies
Dosage: Multiple studies
Calculations: not applicable
Comments: Geometric mean of reproduction and growth studies from OSWER Directive 9285.7-76.
Final NOAEL: 6.71 mg/kg/d

Compound: Nitrate
Form: Potassium Nitrate
Reference: Sleight and Atallah, 1968
Test Species: Guinea pig
Body weight: 0.86 kg (EPA/600/6-87/008)
Study Duration: 143-204 days (during a critical life stage=chronic)
Endpoint: reproduction
Expo. Route: oral in water
Dosage: four dose levels:
12, 102, 507, and 1,130 mg nitrate-Nitrogen kg/d;
NOAEL = 507 mg/kg/d
Calculations: not applicable
Comments: While Nitrate at the 1130 mg/kg/d dose level reduced the number of live births, no adverse effects were observed at the other dose levels. Because the study considered exposure during reproduction, the 507 mg/kg/d dose was considered to be a chronic NOAEL and the 1,130 mg/kg/d dose was considered to be a chronic LOAEL.
Final NOAEL: 507 mg/kg/d
Final LOAEL: 1130 mg/kg/d

Compound: *o*-Cresol
Reference: Hornshaw et al., 1986
Form: not applicable
Test Species: Mink
Body weight: 0.958 (mean of control females from study)
Food consumption: 204 g/d (mean of all test groups in study because no difference among groups)
Expo. Duration: 6 months (during a critical life stage = chronic)
Endpoint: reproduction

Expo. Route: oral diet
Dosage: 3 dose levels:
100, 400, and 1,600 ppm
Calculations:

$$NOAEL\ :\left(\frac{1600\,mg\,o-cresol}{kg\ food}\times\frac{204\,g\ food}{day}\times\frac{1kg}{1000\,g}\right)/0.958\,kg\,BW=312.69\ mg/kg/d$$

Comments: No adverse effects were observed at any dose level. Because this study considered exposure during reproduction, the maximum dose was considered to be a chronic NOAEL.
Final NOAEL: 312.69 mg/kg/d

Compound: Naphthalene
Form: not applicable
Reference: Navarro et al., 1991
Test Species: Rat
Body weight: 0.24 kg (range, 0.21-0.27 kg) (mean of females in study)
Expo. Duration: days 6-15 of gestation (during critical life stage = chronic)
Endpoint: reproduction
Expo. Route: oral gavage
Dosage: 3 dose levels:
50, 150, and 450 mg/kg/d
Calculations: not applicable
Comments: Dams treated with 150 and 450 mg/kg/d experienced a respective 31 and 53% reduction in weight gain compared to control dams. Maternal body weight gain continued to be reduced post-treatment (day 15 through sacrifice on day 20). No effects in weight gain were observed in rats dosed with 50 mg/kg/d. No fetal effects were observed. Because maternal body weight gain was reduced and these effects were observed during a critical life-stage, 150 mg/kg/d was considered to be the chronic LOAEL. No adverse effects were observed at 50 mg/kg/d, therefore this was considered to be a chronic NOAEL.
Final NOAEL: 50 mg/kg/d
Final LOAEL: 150 mg/kg/d

Compound: Phenol
Form: not applicable
Reference: EPAOTS057368
Test Species: rat
Study Duration: gestation days 6-15
Endpoint: reproduction
Expo. Route: oral gavage
Dosage: four dose levels: 0, 60, 120, or 180 mg/kg-day
Comments: Study and value selected based on an extensive review of available literature - documented in 87-MA02T6-05E.
Final NOAEL: 12 mg/kg/d
Final LOAEL: 36 mg/kg/d

Compound: Pyrene
Form: not applicable
Reference: EPA, 1989d

Test Species: Mouse
Body weight: 0.03 kg
Study Duration: 13 weeks
Endpoint: nephropathy
Expo. Route: oral gavage
Dosage: four dose levels: 0, 75, 125, or 250 mg/kg/bw/day
Comments: Verified on IRIS (http://www.epa.gov/ncea/iris/subst/0445.htm) Dec. 9, 2009.
Final NOAEL: 75 mg/kg/d
Final LOAEL: 125 mg/kg/d

Compound: Selenium
Form: Sodium selenite
Reference: Mahan and Moxon, 1984
Test Species: Pig
Body weight: 17.8 kg
Food Consumption: 0.510 kg/d
Study Duration: 37 days
Endpoint: growth
Expo. Route: oral in food
Dosage: seven dose levels:
0, 2.5, 5, 7.5, 10, 20, 40 mg/kg/bw/day
Comments: Value is highest bounded NOAEL lower than the lowest bounded LOAEL value for reproduction, growth or survival; LOAEL is from same study.
Final NOAEL: 0.032 mg/kg/d
Final LOAEL: 0.16 mg/kg/d

Compound: Selenium
Form: Sodium selenite
Reference: El-Begearmi and Combs, 1982
Test Species: Chicken
Body weight: 0.328 kg
Food Consumption: 0.00380 kg/d
Study Duration: 2 weeks
Endpoint: mortality
Expo. Route: food
Dosage: four dose levels:
0, 25, 50, 750 mg/kg/bw/day
Comments: Value is highest bounded NOAEL lower than the lowest bounded LOAEL value for reproduction, growth or survival; LOAEL is from same study.
Final NOAEL: 0.290 mg/kg/d
Final LOAEL: 0.579 mg/kg/d

Compound: Silver
Form: Silver Acetate
Reference: Van Vleet, 1976
Test Species: Pig
Body weight: 8.86 kg
Food Consumption: 0.41281 kg/d
Study Duration: 40 days
Endpoint: growth
Expo. Route: oral in food

Dosage: two dose levels:
0, 0.2 mg/kg/bw/day
Comments: Lowest growth, reproduction, or survival LOAEL, with NOAEL estimated by application of uncertainty factor.
Final NOAEL: 6.02 mg/kg/d
Final LOAEL: 60.2 mg/kg/d

Compound: Silver
Form: Silver Acetate
Reference: Jensen et al., 1974
Test Species: Turkey
Body weight: 0.662 kg
Food Consumption: 0.04449 kg/d
Study Duration: 5 weeks
Endpoint: growth
Expo. Route: oral in diet
Dosage: three dose levels:
0, 300, 900 mg/kg/bw/day
Comments: Lowest growth, reproduction, or survival LOAEL, with NOAEL estimated by application of uncertainty factor.
Final NOAEL: 2.02 mg/kg/d
Final LOAEL: 20.2 mg/kg/d

Compound: Strontium (stable)
Form: Strontium Chloride (55% Sr)
Reference: Skoryna, 1981
Test Species: Rat
Body weight: 0.35 kg (EPA/600/6-87/008)
Study Duration: 3 yrs (>1 yr = chronic)
Endpoint: Body weight and bone changes
Expo. Route: oral in water
Dosage: three dose levels:
70, 147, and 263 mg Sr kg/d;
NOAEL = 263 mg/kg/d
Calculations: not applicable
Comments: No adverse effects were observed for any Sr dosage level. Therefore, because the study considered exposure over three years, the maximum dose was considered to be a chronic NOAEL.
Final NOAEL: 263 mg/kg/d

Compound: 1,1,2,2-Tetrachloroethane
Form: 1,1,1,2-Tetrachloroethane
Reference: NTP, 1983
Test Species: Rat
Body weight: 0.35 kg (EPA/600/6-87/008)
Study Duration: 5 days/week for 103 wks
Endpoint: Hepatotoxicity
Expo. Route: oral gavage
Dosage: 2 dose levels (administered daily 5 days/week):
125 and 250 mg/kg/d;
No NOAEL; LOAEL=125 mg/kg/d

Calculations: not applicable
Comments: Because rats were exposed for 5 days/week, 7 day/week exposure were estimated by multiplying doses by 0.714 (5 days/7 days). Hepatotoxicity was observed at both doses. Therefore, the 89.5 (125*0.714) mg/kg/d dose was considered to be a chronic LOAEL. A chronic NOAEL was estimated by multiplying the chronic LOAEL by a LOAEL-NOAEL uncertainty factor of 0.1
Final NOAEL: 8.93 mg/kg/d
Final LOAEL: 89.3 mg/kg/d

Compound: 1,1,2,2-Tetrachloroethylene
Form: not applicable
Reference: Buben and O'Flaherty, 1985
Test Species: Mouse
Body weight: 0.03 kg (EPA/600/6-87/008)
Study Duration: 6 weeks
(<1 yr and not during a critical life stage = subchronic)
Endpoint: Hepatotoxicity
Expo. Route: oral gavage
Dosage: seven dose levels (administered daily 5 days/week for 6 weeks):
20; 100; 200; 500; 1,000; 1,500; and 2,000 mg/kg/d;
NOAEL = 20 mg/kg/d
Calculations: not applicable
Comments: Because mice were exposed for 5 days/week, 7 day/week exposure were estimated by multiplying doses by 0.7 (5 days/7 days). Hepatotoxicity was observed at doses of 100 mg/kg/d or greater. Therefore, the 20 mg/kg/d dose was considered to be a subchronic NOAEL and the 100 mg/kg/d dose was considered to be a subchronic LOAEL. A chronic NOAEL was estimated by multiplying the subchronic NOAEL by a subchronic-chronic uncertainty factor of 0.1
Final NOAEL: 1.4 mg/kg/d
Final LOAEL: 7 mg/kg/d

Compound: Thallium
Form: Thallium Sulfate
Reference: Formigli et al., 1986
Test Species: Rat
Body weight: 0.365 kg (from study)
Study Duration: 60 days
(<1 yr and not during a critical life stage = subchronic)
Endpoint: reproduction (male testicular function)
Expo. Route: oral in water
Dosage: one dose level: 10 ppm Tl = LOAEL
Calculations: mean daily intake (from study) = 270 µp Tl/rat
= 0.74 mg/kg/d
Comments: Because rats exposed to 10 ppm Tl in the diet displayed reduced sperm motility and the study considered exposures only for 60 d , this dose was considered to be a subchronic LOAEL. A chronic NOAEL was estimated by multiplying the subchronic LOAEL by a subchronic-chronic uncertainty factor of 0.1 and a LOAEL-NOAEL uncertainty factor of 0.1.
Final NOAEL: 0.0074 mg/kg/d

Final LOAEL: 0.074 mg/kg/d

Compound: Tin
Form: Bis (Tributyltin) Oxide (TBTO)
Reference: Davis et al., 1987
Test Species: Mouse
Body weight: 0.03 kg (EPA/600/6-87/008)
Study Duration: days 6-15 of gestation (during a critical life stage = chronic)
Endpoint: reproduction
Expo. Route: oral intubation
Dosage: six dose levels:
1.2, 3.5, 5.8, 11.7, 23.4, and 35 mg/kg/d;
NOAEL= 23.4 mg/kg/d
Calculations: not applicable
Comments: Mice dosed with 35 mg/kg/d TBTO displayed reduced fetal weight and fetal survival and increased frequency of litter resorption. Adverse effects were not observed at lower dose levels. Because the study considered exposure during gestation, the 23.4 and 35 mg/kg/d dose levels were considered to be chronic NOAELs and LOAELs, respectively.
Final NOAEL: 23.4 mg/kg/d
Final LOAEL: 35 mg/kg/d

Compound: Tin
Form: Bis (Tributyltin) Oxide (TBTO)
Reference: Schlatterer et al., 1993
Test Species: Japanese quail
Body weight: 0.15 kg (Vos et al., 1971)
Food consumption: 0.0169 kg/d (calculated using allometric equation of Nagy, 1987)
Study Duration: 6 weeks (during a reproduction = chronic)
Endpoint: reproduction
Expo. Route: oral in diet
Dosage: four dose levels:
24, 60, 150, and 375 mg/kg in diet;
NOAEL= 60 mg/kg
Calculations:

$$NOAEL: \left(\frac{60\ mg\ TBTO}{kg\ \ food} \ x \ \frac{16.9\ g\ \ food}{day} \ x \ \frac{1\ kg}{1000\ g} \right) / \ 0.15\ kg\ BW = 6.76\ mg/kg/d$$

$$LOAEL: \left(\frac{150\ mg\ TBTO}{kg\ \ food} \ x \ \frac{16.9\ g\ \ food}{day} \ x \ \frac{1\ kg}{1000\ g} \right) / \ 0.15\ kg\ BW = 16.9\ mg/kg/d$$

Comments: While egg weight and hatchability were reduced among quail consuming diets containing 150 mg TBTO/kg, no consistent adverse effects were observed among the 60 mg/kg groups. Because the study considered exposure during reproduction, the 60 and 150 mg/kg dose levels were considered to be chronic NOAELs and LOAELs, respectively.

Final NOAEL: 6.8 mg/kg/d
Final LOAEL: 16.9 mg/kg/d

Compound: Toluene
Form: not applicable
Reference: Gospe et al., 1994
Test Species: Rat
Body weight: 0.2 kg (mean from study)
Expo. Duration: days 6-19 of gestation (during a critical life stage = chronic)
Endpoint: reproduction, growth
Expo. Route: oral gavage
Dosage: 520 mg/kg/d
Calculations: not applicable
Comments: Female rats dosed at 520 mg/kg/d during gestation experienced a 24% reduction in body weight gain, as well as reductions in placental weight. Fetal weights were reduced 9.4%. Fetal organ weights were less in the exposed group, with significant reductions on the weights of fetal liver and kidney. Toluene exposure did not produce any major fetal malformations and there were no significant neuropathologic findings. Because the study was conducted during a critical life-stage, 520 mg/kg/d was considered to be a chronic LOAEL. A chronic NOAEL was estimated by multiplying the chronic LOAEL by an uncertainty factor of 0.1.
Final NOAEL: 52 mg/kg/d
Final LOAEL: 520 mg/kg/d

Compound: 1,1,1-Trichloroethane
Form: not applicable
Reference: Lane et al., 1982
Test Species: Mouse
Body weight: 0.035 kg (from study)
Water Consumption: 6 mL/d (from study)
Study Duration: 2 generations (>1 yr and during a critical life stage = chronic)
Endpoint: reproduction
Expo. Route: oral in water
Dosage: three dose levels:
100, 300, and 1,000 mg/kg/d
No effects observed at any dose level.
Calculations: not applicable
Comments: Because no significant differences were observed at any dose level and the study considered exposure throughout 2 generations including critical life stages (reproduction), the maximum dose was considered to be a chronic NOAEL.
Final NOAEL: 1,000 mg/kg/d.

Compound: 1,1,2,2-Tetrachloroethane
Form: not applicable
Reference: NTP, 1983
Test Species: Rat
Study Duration: 103 weeks
Endpoint: nephrotoxicity
Expo. Route: oral gavage
Dosage: three dose levels: 0, 125, or 250 mg/kg/day

Comments: Verified on IRIS (http://www.epa.gov/ncea/iris/subst/0265.htm) Dec 11, 2009
Final NOAEL: 8.93 mg/kg/d
Final LOAEL: 89.3 mg/kg/d

Compound: Trichloroethylene
Form: not applicable
Reference: Buben and O'Flaherty, 1985
Test Species: Mouse
Body weight: 0.03 kg (EPA/600/6-87/008)
Study Duration: 6 weeks
(<1 yr and not during a critical life stage = subchronic)
Endpoint: Hepatotoxicity
Expo. Route: oral gavage
Dosage: seven dose levels (administered daily 5 days/week for 6 weeks):
100; 200; 400; 800; 1,600; 2,400; and 3,200 mg/kg/d;
LOAEL = 100 mg/kg/d
Calculations: not applicable
Comments: Because mice were exposed for 5 days/week, 7 day/week exposures were estimated by multiplying doses by 0.7 (5 days/7 days). Hepatotoxicity was observed at doses of 100 mg/kg/d or greater. Therefore, the 100 mg/kg/d dose was considered to be a subchronic LOAEL. A chronic NOAEL was estimated by multiplying the subchronic NOAEL by a subchronic-chronic uncertainty factor of 0.1 and a LOAEL-NOAEL uncertainty factor of 0.1.
Final NOAEL: 0.7 mg/kg/d
Final LOAEL: 7 mg/kg/d

Compound: Uranium
Form: Uranyl acetate (~~61.32~~56.13% U)
Reference: Paternain et al., 1989
Test Species: Mouse
Body weight (from study): 0.028 kg
Study Duration: 60 d prior to gestation, plus through gestation, delivery and lactation (during a critical life stage = chronic)
Endpoint: reproduction
Expo. Route: oral intubation
Dosage: three dose levels:
5, 10, and 25 mg uranyl acetate /kg/d;NOAEL=5 mg/kg/d or
Calculations: NOAEL dosage of elemental U is:
~~0.6132~~ 0.5613 x 5 mg uranyl acetate /kg/d or ~~3.07~~2.8 mg U/kg/d
LOAEL dosage of elemental U is:
~~0.6132~~ 0.5613 x 10 mg uranyl acetate /kg/d or ~~6.13~~5.6 mg U/kg/d
Comments: Significant differences in reproductive parameters (e.g., no. dead young/litter, size and weight of offspring, etc.) were observed at the 10 and 25 mg/kg/d dose levels. Because no significant differences were observed at the 5 mg/kg/d level and the study considered exposure throughout a critical life stage (reproduction), this dose was considered to be a chronic NOAEL. The 10 mg/kg/d dose was considered to be a chronic LOAEL.
Final NOAEL: ~~3.07~~2.8 mg U/kg/d
Final LOAEL: ~~6.13~~5.6 mg U/kg/d

Compound: Uranium
Form: depleted metallic
Reference: Haseltine and Sileo, 1983
Test Species: Black Duck
Body weight: 1.25 kg (mean + ; Dunning, 1993)
Food Consumption: Congeneric Mallard ducks, weighing 1 kg consume 100 gfood/d (Heinz et al.1989). Therefore, it was assumed that a 1.25 kg black duck would consume 125 g food/d.
Study Duration: 6 weeks
(<10 wks and not during a critical life stage = subchronic)
Endpoint: mortality, body weight, blood chemistry, liver or kidney effects
Expo. Route: oral in diet
Dosage: four dose levels:
25, 100, 400, and 1,600 ppm U in food;
NOAEL = 1600 ppm
Calculations:

$$NOAEL: \left(\frac{1600\ mg\ U}{kg\ \ food} \ x \ \frac{125\ g\ \ food}{day} \ x \ \frac{1\ kg}{1000\ g} \right) / \ 1.25\ kg\ BW = 160\ mg/kg/d$$

Comments: No effects observed at any dose level. Because this study was less than 10 weeks in duration and did not consider a critical lifestage (i.e., reproduction), it is considered to be subchronic. To estimate the chronic NOAEL, the subchronic NOAEL was multiplied by a subchronic-chronic uncertainty factor of 0.1.
Final NOAEL: 16 mg U/kg/d.

Compound: Vanadium
Form: Sodium Orthovanadate
Reference: Sanchez et al., 1991
Test Species: Mouse
Body weight: 0.047 kg
Study Duration: 12 days during gestation
Endpoint: reproduction
Expo. Route: oral gavage
Dosage: five dose levels: 0/7.5/15/30/60 mg/kg bw/d
Comments: Value is highest bounded NOAEL lower than the lowest bounded LOAEL value for reproduction, growth or survival; LOAEL is from same study.
Final NOAEL: 4.16 mg/kg/d
Final LOAEL: 8.31 mg/kg/d

Compound: Vanadium
Form: Sodium Metavanadate
Reference: Hill, 1979
Test Species: Chicken
Body weight: 1.042 kg
Food Consumption: 0.05978 kg/d
Study Duration: 5 weeks
Endpoint: growth

Expo. Route: oral in diet
Dosage: four dose levels: 0/3/6/12 mg/kg diet
Comments: Value is highest bounded NOAEL lower than the lowest bounded LOAEL value for reproduction, growth or survival; LOAEL is from same study.
Final NOAEL: 0.344 mg/kg/d
Final LOAEL: 0.688 mg/kg/d

Compound: Xylene
Form: Xylene Mixture
Reference: NTP, 1986
Test Species: Rat
Study Duration: 103 weeks
Endpoint: behavior growth mortality
Expo. Route: oral gavage
Dosage: three dose levels: 0, 250, or 500 mg/kg
Final NOAEL: 179 mg/kg/d
Final LOAEL: 350 mg/kg/d

Compound: Xylene
Form: Xylene Mixture
Reference: Hill and Camardese, 1986
Test Species: Japanese Quail
Study Duration: 5 days
Endpoint: growth and mortality
Expo. Route: oral in diet
Dosage: 3 dose levels up to 20,000 mg/kg diet
Comments: 5 day dietary exposure to 4,066 mg/kg/d had no effect. A chronic NOAEL was estimated using an uncertainty factor of 0.01.
Final NOAEL: 40.7 mg/kg/d

Compound: Zinc
Form: Zinc sulfate
Reference: Miller et al., 1989
Test Species: Cattle
Body weight: 580 kg
Food consumption: 22 kg/d
Study Duration: 14 weeks
Endpoint: Reproduction
Expo. Route: Oral in diet
Dosage: Three dose levels: 0/1,000/2,000 mg/kg diet
Final NOAEL: 37.9 mg/kg/d
Final LOAEL: 75.9 mg/kg/d

Compound: Zinc
Form: Various forms
Reference: OSWER Directive 9285.7-67
Test Species: Various species
Study Duration: 4 days – 1 year
Endpoint: Reproduction and growth
Expo. Route: Multiple studies
Dosage: Multiple studies

Comments: Geometric mean of NOAELs for reproduction and growth from Table 6.1 (OSWER Directive 9285.7-67).
Final NOAEL: 75.4 mg/kg/d

Compound: Zinc
Form: Zinc acetate
Reference: Gibson et al., 1986
Test Species: Chicken
Body weight: 2 kg
Food consumption: 0.1167 kg/d
Study Duration: 10 weeks
Endpoint: Reproduction
Expo. Route: Oral in diet
Dosage: Six dose levels: 0/114.7/133/162.1/107.4/135.9 mg/d
Comments: lowest bounded growth or reproductive LOAEL above the geometric mean NOAEL from OSWER Directive 9285.7-67.
Final NOAEL: 57.3 mg/kg/d
Final LOAEL: 66.5 mg/kg/d

Compound: Zinc
Form: Various forms
Reference: OSWER Directive 9285.7-67
Test Species: Chicken, Duck, Japanese Quail
Study Duration: 4 days – 20 weeks
Endpoint: growth and reproduction
Expo. Route: Multiple studies
Dosage: Multiple studies
Comments: Geometric mean of NOAELs for reproduction and growth from Table 6.1 (OSWER Directive 9285.7-67).
Final NOAEL: 66.1 mg/kg/d

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Appendix F

Derivation of Tier 2 PRGs at the Hanford Site

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Table F-1. Derivation of Tier 2 LOAEL-Based PRGs for CA Quail at the Hanford Site

			Estimated Concentrations in Biota (mg/kg DW)				Food Intake	Diet Composition (proportion)				Estimated Exposure (mg/kg/d)					Percent Estimated Exposure by Pathway				Selected Avian TRV (mg/kg/d)	
	Analyte	Soil LOAEL-based PRG (mg/kg)	Terrestrial Plants	Terrestrial Arthropod	Small Mammals	Species	(kg/kg-bw/d, dw)	Small Mammals	Soil Inverts	Plants	Soil	Small Mammals	Soil Inverts	Plants	Soil	Total	Small Mam.	Soil Inverts	Plants	Soil	NOAEL	LOAEL
General Inorganic	Flouride	NBD	NBD	NBD	NBD	California Quail	0.078	0	0	1.0	0.061	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	7.8	32
General Inorganic	Nitrogen in Nitrite and Nitrate	NTD	NTD	NTD	NTD	California Quail	0.078	0	0	1.0	0.061	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	---	---
Metal	Silver	4,238	0.45	144	18	California Quail	0.078	0	0	1.0	0.061	0	0	0.035	20	20	0	0	0.0017	1.00	2.0	20
Metal	Aluminum	19,217	234	118	356	California Quail	0.078	0	0	1.0	0.061	0	0	18	91	110	0	0	0.17	0.83	110	---
Metal	Arsenic	4,776	225	64	21	California Quail	0.078	0	0	1.0	0.061	0	0	18	23	40	0	0	0.44	0.56	9.3	40
Metal	Boron	54	1,279	306	56	California Quail	0.078	0	0	1.0	0.061	0	0	100	0.26	100	0	0	1.00	0.0026	29	100
Metal	Barium	1,721	430	96	210	California Quail	0.078	0	0	1.0	0.061	0	0	34	8.2	42	0	0	0.80	0.20	21	42
Metal	Beryllium	NTD	NTD	NTD	NTD	California Quail	0.078	0	0	1.0	0.061	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	---	---
Metal	Cadium	294	12	47	11	California Quail	0.078	0	0	1.0	0.061	0	0	0.97	1.4	2.4	0	0	0.41	0.59	1.5	2.4
Metal	Cobalt	1,397	15	15	32	California Quail	0.078	0	0	1.0	0.061	0	0	1.2	6.6	7.8	0	0	0.15	0.85	7.6	7.8
Metal	Chromium	193	24	12	20	California Quail	0.078	0	0	1.0	0.061	0	0	1.9	0.92	2.8	0	0	0.67	0.33	2.7	2.8
Metal	Copper	423	129	60	19	California Quail	0.078	0	0	1.0	0.061	0	0	10	2.0	12	0	0	0.83	0.17	4.1	12
Metal	Mercury	36	2.6	32	3.2	California Quail	0.078	0	0	1.0	0.061	0	0	0.20	0.17	0.37	0	0	0.54	0.46	0.068	0.37
Metal	Lithium	NTD	NTD	NTD	NTD	California Quail	0.078	0	0	1.0	0.061	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	---	---
Metal	Manganese	20,746	3,196	1,093	857	California Quail	0.078	0	0	1.0	0.061	0	0	249	99	348	0	0	0.72	0.28	179	348
Metal	Molybdenum	125	445	234	240	California Quail	0.078	0	0	1.0	0.061	0	0	35	0.60	35	0	0	0.98	0.017	3.5	35
Metal	Nickel	2,051	22	190	22	California Quail	0.078	0	0	1.0	0.061	0	0	1.7	9.8	11	0	0	0.15	0.85	6.7	12
Metal	Lead	559	7.7	14	17	California Quail	0.078	0	0	1.0	0.061	0	0	0.60	2.7	3.3	0	0	0.18	0.82	1.6	3.3
Metal	Antimony	NTD	NTD	NTD	NTD	California Quail	0.078	0	0	1.0	0.061	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	---	---
Metal	Selenium	10	6.8	12	6.7	California Quail	0.078	0	0	1.0	0.061	0	0	0.53	0.049	0.58	0	0	0.92	0.084	0.29	0.58
Metal	Tin	97	211	95	137	California Quail	0.078	0	0	1.0	0.061	0	0	16	0.46	17	0	0	0.97	0.027	6.8	17
Metal	Thallium	NTD	NTD	NTD	NTD	California Quail	0.078	0	0	1.0	0.061	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	---	---
Metal	Uranium - Calculated Total	2,002	83	1,299	32,879	California Quail	0.078	0	0	1.0	0.061	0	0	6.5	9.5	16	0	0	0.40	0.60	16	---
Metal	Vanadium	81	3.9	0.79	1.2	California Quail	0.078	0	0	1.0	0.061	0	0	0.30	0.39	0.69	0	0	0.44	0.56	0.34	0.69
Metal	Zinc	6,289	469	531	12,930	California Quail	0.078	0	0	1.0	0.061	0	0	37	30	66	0	0	0.55	0.45	66	67
PAH	Benzo[k]fluoranthene	0.17	8.3	0	0	California Quail	0.078	0	0	1.0	0.061	0	0	0.65	7.96E-04	0.65	0	0	1.00	0.0012	0.65	---
PAH	Fluoranthene	NBD	NBD	NBD	NBD	California Quail	0.078	0	0	1.0	0.061	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	0.65	---
PAH	Fluorene	NBD	NBD	NBD	NBD	California Quail	0.078	0	0	1.0	0.061	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	33	325
PAH	Phenanthrene	NBD	NBD	NBD	NBD	California Quail	0.078	0	0	1.0	0.061	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	33	325
PCB	PCB	NBD	NBD	NBD	NBD	California Quail	0.078	0	0	1.0	0.061	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	0.18	1.8
Pesticide	Aldrin	0.032	0.45	0	3.2	California Quail	0.078	0	0	1.0	0.061	0	0	0.035	1.53E-04	0.035	0	0	1.00	0.0044	0.0070	0.035
Pesticide	alpha-Chlordane	1.2	137	0	0	California Quail	0.078	0	0	1.0	0.061	0	0	11	0.0055	11	0	0	1.00	5.12E-04	2.1	11
Pesticide	beta-1,2,3,4,5,6-Hexachlorocyclohexane	0.062	11	0	0	California Quail	0.078	0	0	1.0	0.061	0	0	0.86	2.93E-04	0.86	0	0	1.00	3.41E-04	0.57	0.86
Pesticide	Dichlorodiphenyldichloroethylene	0.24	24	4.2	0	California Quail	0.078	0	0	1.0	0.061	0	0	1.9	0.0012	1.9	0	0	1.00	6.13E-04	0.23	1.9
Pesticide	Dichlorodiphenyltrichloroethane	0.22	24	8.6	0	California Quail	0.078	0	0	1.0	0.061	0	0	1.9	0.0010	1.9	0	0	1.00	5.45E-04	0.23	1.9
Pesticide	Dieldrin	0.0016	2.9	0	0	California Quail	0.078	0	0	1.0	0.061	0	0	0.22	7.56E-06	0.22	0	0	1.00	3.39E-05	0.071	0.22
Pesticide	Endosulfan I	3.5	128	325	0	California Quail	0.078	0	0	1.0	0.061	0	0	10.0	0.017	10	0	0	1.00	0.0017	10	---
Pesticide	Endosulfan sulfate	32	126	95,184	0	California Quail	0.078	0	0	1.0	0.061	0	0	9.8	0.15	10	0	0	0.98	0.015	10	---
Pesticide	Endrin aldehyde	0.056	3.8	0	0	California Quail	0.078	0	0	1.0	0.061	0	0	0.30	2.66E-04	0.30	0	0	1.00	8.86E-04	0.30	---
Pesticide	gamma-Chlordane	3.2	137	0	0	California Quail	0.078	0	0	1.0	0.061	0	0	11	0.015	11	0	0	1.00	0.0014	2.1	11
Pesticide	Methoxychlor	NTD	NTD	NTD	NTD	California Quail	0.078	0	0	1.0	0.061	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	---	---
SVOC	Bis[2-ethylhexyl] phthalate	0.17	14	0	4.5	California Quail	0.078	0	0	1.0	0.061	0	0	1.1	8.32E-04	1.1	0	0	1.00	7.56E-04	1.1	---
SVOC	Phenol	NTD	NTD	NTD	NTD	California Quail	0.078	0	0	1.0	0.061	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	---	---

Notes:
It has been conservatively assumed that all chemical intake is absorbed by the receptor.
Blue Shaded values are Calculated using NOAELs TRV due to the lack of LOAELs TRV
Acronyms:
BAF = Bioaccumulation factor
DW = Dry weight
FIR = Food ingestion rate
LOAEL = lowest observed adverse effect level
mg/kg = Miligrams per kilogram
mg/kg BW/day, DW = Miligrams per kilogram of body weight per day, dry weight
mg/kg/d = Miligrams per kilogram per day
NTD - PRG was not calculated because there was no toxicity data available.
NBD - PRG was not calculated due to incomplete or a lack of bioacculation data.
PRGs = Preliminary remediation goals
TRV = Toxicity reference value

Equations:
Total Estimated Exposure = Food Intake + Incidental Soil Intake
Food Intake = estimated concentration in biota X proportion of biota type X food ingestion rate (FIR)
Incidental Soil intake = concentration in soil X proportion of soil as component of diet X food ingestion rate (FIR)
ln[Estimated Concentrations in Biota] (method 1) = B1*(ln[Site Specific Soil Concentration]) + B0
where: B1 = slope and B0 = intercept
Estimated Concentrations in Biota (method 2) = soil concentration X BAF
Hazard Quotient = Total Estimated Exposure (Dose) / TRV
Therefore, when the HQ = 1, soil concentration = PRG
where: Soil concentration (mg/kg) = TRV / (Food Intake + Incidental Soil Intake) = Soil PRG

Table F-2. Derivation of Tier 2 LOAEL-Based PRGs for Western Meadowlark at the Hanford Site

			Estimated Concentrations in Biota (mg/kg DW)				Food Intake	Diet Composition (proportion)				Estimated Exposure (mg/kg/d)					Percent Estimated Exposure by Pathway				Selected Avian TRV (mg/kg/d)	
	Analyte	Soil LOAEL-based PRG (mg/kg)	Terrestrial Plants	Terrestrial Arthropod	Small Mammals	Species	(kg/kg-bw/d, dw)	Small Mammals	Soil Inverts	Plants	Soil	Small Mammals	Soil Inverts	Plants	Soil	Total	Small Mam.	Soil Inverts	Plants	Soil	NOAEL	LOAEL
General Inorganic	Flouride	6,296	0.52	213	27	Meadowlark	0.12	0	0.63	0.37	0.021	0	16	0.023	16	32	0	0.51	7.21E-04	0.49	7.8	32
General Inorganic	Nitrogen in Nitrite and Nitrate	NTD	NTD	NTD	NTD	Meadowlark	0.12	0	0.63	0.37	0.021	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	---	---
Metal	Silver	3,973	0.44	135	17	Meadowlark	0.12	0	0.63	0.37	0.021	0	10	0.020	10.0	20	0	0.51	9.77E-04	0.49	2.0	20
Metal	Aluminum	31,220	380	191	569	Meadowlark	0.12	0	0.63	0.37	0.021	0	15	17	78	110	0	0.13	0.15	0.71	110	---
Metal	Arsenic	7,403	349	81	33	Meadowlark	0.12	0	0.63	0.37	0.021	0	6.2	16	19	40	0	0.15	0.39	0.46	9.3	40
Metal	Boron	68	1,591	381	69	Meadowlark	0.12	0	0.63	0.37	0.021	0	29	71	0.17	100	0	0.29	0.71	0.0017	29	100
Metal	Barium	2,335	583	130	285	Meadowlark	0.12	0	0.63	0.37	0.021	0	9.9	26	5.9	42	0	0.24	0.62	0.14	21	42
Metal	Beryllium	NTD	NTD	NTD	NTD	Meadowlark	0.12	0	0.63	0.37	0.021	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	---	---
Metal	Cadium	103	7.0	24	6.3	Meadowlark	0.12	0	0.63	0.37	0.021	0	1.8	0.31	0.26	2.4	0	0.76	0.13	0.11	1.5	2.4
Metal	Cobalt	2,050	22	22	47	Meadowlark	0.12	0	0.63	0.37	0.021	0	1.7	0.97	5.1	7.8	0	0.22	0.12	0.66	7.6	7.8
Metal	Chromium	221	27	13	23	Meadowlark	0.12	0	0.63	0.37	0.021	0	1.0	1.2	0.55	2.8	0	0.36	0.44	0.20	2.7	2.8
Metal	Copper	461	141	61	19	Meadowlark	0.12	0	0.63	0.37	0.021	0	4.7	6.3	1.2	12	0	0.38	0.52	0.096	4.1	12
Metal	Mercury	4.7	0.87	4.2	0.42	Meadowlark	0.12	0	0.63	0.37	0.021	0	0.32	0.039	0.012	0.37	0	0.86	0.10	0.032	0.068	0.37
Metal	Lithium	NTD	NTD	NTD	NTD	Meadowlark	0.12	0	0.63	0.37	0.021	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	---	---
Metal	Manganese	26,026	4,009	1,371	1,076	Meadowlark	0.12	0	0.63	0.37	0.021	0	104	179	65	348	0	0.30	0.51	0.19	179	348
Metal	Molybdenum	117	415	218	224	Meadowlark	0.12	0	0.63	0.37	0.021	0	17	18	0.29	35	0	0.47	0.52	0.0083	3.5	35
Metal	Nickel	1,127	17	104	17	Meadowlark	0.12	0	0.63	0.37	0.021	0	7.9	0.75	2.8	11	0	0.69	0.065	0.25	6.7	12
Metal	Lead	664	8.5	16	19	Meadowlark	0.12	0	0.63	0.37	0.021	0	1.2	0.38	1.7	3.3	0	0.37	0.12	0.51	1.6	3.3
Metal	Antimony	NTD	NTD	NTD	NTD	Meadowlark	0.12	0	0.63	0.37	0.021	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	---	---
Metal	Selenium	4.9	3.1	5.6	3.2	Meadowlark	0.12	0	0.63	0.37	0.021	0	0.43	0.14	0.012	0.58	0	0.74	0.24	0.021	0.29	0.58
Metal	Tin	98	212	95	137	Meadowlark	0.12	0	0.63	0.37	0.021	0	7.2	9.4	0.25	17	0	0.43	0.56	0.015	6.8	17
Metal	Thallium	NTD	NTD	NTD	NTD	Meadowlark	0.12	0	0.63	0.37	0.021	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	---	---
Metal	Uranium - Calculated Total	339	14	191	3,033	Meadowlark	0.12	0	0.63	0.37	0.021	0	15	0.63	0.85	16	0	0.91	0.039	0.053	16	---
Metal	Vanadium	107	7.6	1.1	1.6	Meadowlark	0.12	0	0.63	0.37	0.021	0	0.080	0.34	0.27	0.69	0	0.12	0.49	0.39	0.34	0.69
Metal	Zinc	4,662	406	484	9,585	Meadowlark	0.12	0	0.63	0.37	0.021	0	37	18	12	66	0	0.55	0.27	0.18	66	67
PAH	Benzo[k]fluoranthene	NBD	NBD	NBD	NBD	Meadowlark	0.12	0	0.63	0.37	0.021	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	0.65	---
PAH	Fluoranthene	NBD	NBD	NBD	NBD	Meadowlark	0.12	0	0.63	0.37	0.021	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	0.65	---
PAH	Fluorene	NBD	NBD	NBD	NBD	Meadowlark	0.12	0	0.63	0.37	0.021	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	33	325
PAH	Phenanthrene	NBD	NBD	NBD	NBD	Meadowlark	0.12	0	0.63	0.37	0.021	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	33	325
PCB	PCB	NBD	NBD	NBD	NBD	Meadowlark	0.12	0	0.63	0.37	0.021	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	0.18	1.8
Pesticide	Aldrin	NBD	NBD	NBD	NBD	Meadowlark	0.12	0	0.63	0.37	0.021	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	0.0070	0.035
Pesticide	alpha-Chlordane	NBD	NBD	NBD	NBD	Meadowlark	0.12	0	0.63	0.37	0.021	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	2.1	11
Pesticide	beta-1,2,3,4,5,6-Hexachlorocyclohexane	NBD	NBD	NBD	NBD	Meadowlark	0.12	0	0.63	0.37	0.021	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	0.57	0.86
Pesticide	Dichlorodiphenyldichloroethylene	0.33	33	5.6	0	Meadowlark	0.12	0	0.63	0.37	0.021	0	0.43	1.5	8.27E-04	1.9	0	0.23	0.77	4.37E-04	0.23	1.9
Pesticide	Dichlorodiphenyltrichloroethane	0.24	26	9.4	0	Meadowlark	0.12	0	0.63	0.37	0.021	0	0.71	1.2	5.92E-04	1.9	0	0.38	0.62	3.13E-04	0.23	1.9
Pesticide	Dieldrin	NBD	NBD	NBD	NBD	Meadowlark	0.12	0	0.63	0.37	0.021	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	0.071	0.22
Pesticide	Endosulfan I	1.2	42	107	0	Meadowlark	0.12	0	0.63	0.37	0.021	0	8.1	1.9	0.0029	10	0	0.81	0.19	2.90E-04	10	---
Pesticide	Endosulfan sulfate	0.044	0.17	132	0	Meadowlark	0.12	0	0.63	0.37	0.021	0	10.0	0.0078	1.10E-04	10	0	1.00	7.78E-04	1.10E-05	10	---
Pesticide	Endrin aldehyde	NBD	NBD	NBD	NBD	Meadowlark	0.12	0	0.63	0.37	0.021	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	0.30	---
Pesticide	gamma-Chlordane	NBD	NBD	NBD	NBD	Meadowlark	0.12	0	0.63	0.37	0.021	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	2.1	11
Pesticide	Methoxychlor	NTD	NTD	NTD	NTD	Meadowlark	0.12	0	0.63	0.37	0.021	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	---	---
SVOC	Bis[2-ethylhexyl] phthalate	NBD	NBD	NBD	NBD	Meadowlark	0.12	0	0.63	0.37	0.021	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	1.1	---
SVOC	Phenol	NTD	NTD	NTD	NTD	Meadowlark	0.12	0	0.63	0.37	0.021	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	---	---

Notes:
It has been conservatively assumed that all chemical intake is absorbed by the receptor.
Blue Shaded values are Calculated using NOAELs TRV due to the lack of LOAELs TRV
Acronyms:
BAF = Bioaccumulation factor
DW = Dry weight
FIR = Food ingestion rate
LOAEL = lowest observed adverse effect level
mg/kg = Miligrams per kilogram
mg/kg BW/day, DW = Miligrams per kilogram of body weight per day, dry weight
mg/kg/d = Miligrams per kilogram per day
NTD - PRG was not calculated because there was no toxicity data available.
NBD - PRG was not calculated due to incomplete or a lack of bioacculation data.
PRGs = Preliminary remediation goals
TRV = Toxicity reference value

Equations:
Total Estimated Exposure = Food Intake + Incidental Soil Intake
Food Intake = estimated concentration in biota X proportion of biota type X food ingestion rate (FIR)
Incidental Soil intake = concentration in soil X proportion of soil as component of diet X food ingestion rate (FIR)
ln[Estimated Concentrations in Biota] (method 1) = B1*(ln[Site Specific Soil Concentration]) + B0
where: B1 = slope and B0 = intercept
Estimated Concentrations in Biota (method 2) = soil concentration X BAF
Hazard Quotient = Total Estimated Exposure (Dose) / TRV
Therefore, when the HQ = 1, soil concentration = PRG
where: Soil concentration (mg/kg) = TRV / (Food Intake + Incidental Soil Intake) = Soil PRG

Table F-3. Derivation of Tier 2 LOAEL-Based PRGs for Killdeer at the Hanford Site

			Estimated Concentrations in Biota (mg/kg DW)				Food Intake	Diet Composition (proportion)				Estimated Exposure (mg/kg/d)					Percent Estimated Exposure by Pathway				Selected Avian TRV (mg/kg/d)	
	Analyte	Soil LOAEL-based PRG (mg/kg)	Terrestrial Plants	Terrestrial Arthropod	Small Mammals	Species	(kg/kg-bw/d, dw)	Small Mammals	Soil Inverts	Plants	Soil	Small Mammals	Soil Inverts	Plants	Soil	Total	Small Mam.	Soil Inverts	Plants	Soil	NOAEL	LOAEL
General Inorganic	Flouride	1,558	0.32	53	6.8	Killdeer	0.19	0	1.0	0	0.073	0	10	0	22	32	0	0.32	0	0.68	7.8	32
General Inorganic	Nitrogen in Nitrite and Nitrate	NTD	NTD	NTD	NTD	Killdeer	0.19	0	1.0	0	0.073	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	---	---
Metal	Silver	983	0.28	33	4.3	Killdeer	0.19	0	1.0	0	0.073	0	6.4	0	14	20	0	0.32	0	0.68	2.0	20
Metal	Aluminum	7,214	88	44	138	Killdeer	0.19	0	1.0	0	0.073	0	8.5	0	101	110	0	0.077	0	0.92	110	---
Metal	Arsenic	2,284	108	43	10	Killdeer	0.19	0	1.0	0	0.073	0	8.3	0	32	40	0	0.20	0	0.80	9.3	40
Metal	Boron	91	2,144	514	93	Killdeer	0.19	0	1.0	0	0.073	0	99	0	1.3	100	0	0.99	0	0.013	29	100
Metal	Barium	1,687	421	94	205	Killdeer	0.19	0	1.0	0	0.073	0	18	0	24	42	0	0.43	0	0.57	21	42
Metal	Beryllium	NTD	NTD	NTD	NTD	Killdeer	0.19	0	1.0	0	0.073	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	---	---
Metal	Cadium	29	3.5	10	3.3	Killdeer	0.19	0	1.0	0	0.073	0	2.0	0	0.40	2.4	0	0.83	0	0.17	1.5	2.4
Metal	Cobalt	484	5.1	5.3	12	Killdeer	0.19	0	1.0	0	0.073	0	1.0	0	6.8	7.8	0	0.13	0	0.87	7.6	7.8
Metal	Chromium	109	13	6.5	11	Killdeer	0.19	0	1.0	0	0.073	0	1.3	0	1.5	2.8	0	0.45	0	0.55	2.7	2.8
Metal	Copper	213	65	47	17	Killdeer	0.19	0	1.0	0	0.073	0	9.1	0	3.0	12	0	0.75	0	0.25	4.1	12
Metal	Mercury	2.0	0.55	1.8	0.18	Killdeer	0.19	0	1.0	0	0.073	0	0.34	0	0.028	0.37	0	0.92	0	0.076	0.068	0.37
Metal	Lithium	NTD	NTD	NTD	NTD	Killdeer	0.19	0	1.0	0	0.073	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	---	---
Metal	Manganese	14,407	2,219	759	595	Killdeer	0.19	0	1.0	0	0.073	0	146	0	202	348	0	0.42	0	0.58	179	348
Metal	Molybdenum	95	336	177	182	Killdeer	0.19	0	1.0	0	0.073	0	34	0	1.3	35	0	0.96	0	0.038	3.5	35
Metal	Nickel	361	9.8	33	10.0	Killdeer	0.19	0	1.0	0	0.073	0	6.4	0	5.1	12	0	0.56	0	0.44	6.7	12
Metal	Lead	156	3.7	5.6	8.4	Killdeer	0.19	0	1.0	0	0.073	0	1.1	0	2.2	3.3	0	0.33	0	0.67	1.6	3.3
Metal	Antimony	NTD	NTD	NTD	NTD	Killdeer	0.19	0	1.0	0	0.073	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	---	---
Metal	Selenium	2.4	1.5	2.8	1.6	Killdeer	0.19	0	1.0	0	0.073	0	0.54	0	0.034	0.58	0	0.94	0	0.059	0.29	0.58
Metal	Tin	84	182	82	118	Killdeer	0.19	0	1.0	0	0.073	0	16	0	1.2	17	0	0.93	0	0.070	6.8	17
Metal	Thallium	NTD	NTD	NTD	NTD	Killdeer	0.19	0	1.0	0	0.073	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	---	---
Metal	Uranium - Calculated Total	139	5.8	73	917	Killdeer	0.19	0	1.0	0	0.073	0	14	0	1.9	16	0	0.88	0	0.12	16	---
Metal	Vanadium	43	0.87	0.42	0.63	Killdeer	0.19	0	1.0	0	0.073	0	0.081	0	0.61	0.69	0	0.12	0	0.88	0.34	0.69
Metal	Zinc	856	181	283	1,759	Killdeer	0.19	0	1.0	0	0.073	0	54	0	12	66	0	0.82	0	0.18	66	67
PAH	Benzo[k]fluoranthene	NBD	NBD	NBD	NBD	Killdeer	0.19	0	1.0	0	0.073	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	0.65	---
PAH	Fluoranthene	1.3	0	3.3	0	Killdeer	0.19	0	1.0	0	0.073	0	0.63	0	0.018	0.65	0	0.97	0	0.028	0.65	---
PAH	Fluorene	8.0	0	1,690	0	Killdeer	0.19	0	1.0	0	0.073	0	325	0	0.11	325	0	1.00	0	3.46E-04	33	325
PAH	Phenanthrene	48	0	1,688	0	Killdeer	0.19	0	1.0	0	0.073	0	324	0	0.68	325	0	1.00	0	0.0021	33	325
PCB	PCB	36	0	6.8	3,949	Killdeer	0.19	0	1.0	0	0.073	0	1.3	0	0.50	1.8	0	0.72	0	0.28	0.18	1.8
Pesticide	Aldrin	NBD	NBD	NBD	NBD	Killdeer	0.19	0	1.0	0	0.073	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	0.0070	0.035
Pesticide	alpha-Chlordane	NBD	NBD	NBD	NBD	Killdeer	0.19	0	1.0	0	0.073	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	2.1	11
Pesticide	beta-1,2,3,4,5,6-Hexachlorocyclohexane	NBD	NBD	NBD	NBD	Killdeer	0.19	0	1.0	0	0.073	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	0.57	0.86
Pesticide	Dichlorodiphenyldichloroethylene	0.57	57	9.8	0	Killdeer	0.19	0	1.0	0	0.073	0	1.9	0	0.0080	1.9	0	1.00	0	0.0043	0.23	1.9
Pesticide	Dichlorodiphenyltrichloroethane	0.25	28	9.8	0	Killdeer	0.19	0	1.0	0	0.073	0	1.9	0	0.0035	1.9	0	1.00	0	0.0018	0.23	1.9
Pesticide	Dieldrin	NBD	NBD	NBD	NBD	Killdeer	0.19	0	1.0	0	0.073	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	0.071	0.22
Pesticide	Endosulfan I	0.56	21	52	0	Killdeer	0.19	0	1.0	0	0.073	0	10.0	0	0.0079	10	0	1.00	0	7.89E-04	10	---
Pesticide	Endosulfan sulfate	0.017	0.069	52	0	Killdeer	0.19	0	1.0	0	0.073	0	10.0	0	2.44E-04	10.0	0	1.00	0	2.44E-05	10	---
Pesticide	Endrin aldehyde	NBD	NBD	NBD	NBD	Killdeer	0.19	0	1.0	0	0.073	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	0.30	---
Pesticide	gamma-Chlordane	NBD	NBD	NBD	NBD	Killdeer	0.19	0	1.0	0	0.073	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	2.1	11
Pesticide	Methoxychlor	NTD	NTD	NTD	NTD	Killdeer	0.19	0	1.0	0	0.073	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	---	---
SVOC	Bis[2-ethylhexyl] phthalate	NBD	NBD	NBD	NBD	Killdeer	0.19	0	1.0	0	0.073	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	1.1	---
SVOC	Phenol	NTD	NTD	NTD	NTD	Killdeer	0.19	0	1.0	0	0.073	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	---	---

Notes:
It has been conservatively assumed that all chemical intake is absorbed by the receptor.
Blue Shaded values are Calculated using NOAELs TRV due to the lack of LOAELs TRV
Acronyms:
BAF = Bioaccumulation factor
DW = Dry weight
FIR = Food ingestion rate
LOAEL = lowest observed adverse effect level
mg/kg = Miligrams per kilogram
mg/kg BW/day, DW = Miligrams per kilogram of body weight per day, dry weight
mg/kg/d = Miligrams per kilogram per day
NTD - PRG was not calculated because there was no toxicity data available.
NBD - PRG was not calculated due to incomplete or a lack of bioacculation data.
PRGs = Preliminary remediation goals
TRV = Toxicity reference value

Equations:
Total Estimated Exposure = Food Intake + Incidental Soil Intake
Food Intake = estimated concentration in biota X proportion of biota type X food ingestion rate (FIR)
Incidental Soil intake = concentration in soil X proportion of soil as component of diet X food ingestion rate (FIR)
ln[Estimated Concentrations in Biota] (method 1) = B1*(ln[Site Specific Soil Concentration]) + B0
where: B1 = slope and B0 = intercept
Estimated Concentrations in Biota (method 2) = soil concentration X BAF
Hazard Quotient = Total Estimated Exposure (Dose) / TRV
Therefore, when the HQ = 1, soil concentration = PRG
where: Soil concentration (mg/kg) = TRV / (Food Intake + Incidental Soil Intake) = Soil PRG

Table F-4. Derivation of Tier 2 LOAEL-Based PRGs for Red-tailed Hawk at the Hanford Site

			Estimated Concentrations in Biota (mg/kg DW)				Food Intake	Diet Composition (proportion)				Estimated Exposure (mg/kg/d)					Percent Estimated Exposure by Pathway					
	Analyte	Soil LOAEL-based PRG (mg/kg)	Terrestrial Plants	Terrestrial Arthropod	Small Mammals	Species	(kg/kg-bw/d, dw)	Small Mammals	Soil Inverts	Plants	Soil	Small Mammals	Soil Inverts	Plants	Soil	Total	Small Mam.	Soil Inverts	Plants	Soil	Selected Avian TRV (mg/kg/d) NOAEL	Selected Avian TRV (mg/kg/d) LOAEL
General Inorganic	Flouride	31,978	0.90	1,084	139	Red-tailed Hawk	0.035	1.0	0	0	0.024	4.9	0	0	27	32	0.15	0	0	0.85	7.8	32
General Inorganic	Nitrogen in Nitrite and Nitrate	NTD	NTD	NTD	NTD	Red-tailed Hawk	0.035	1.0	0	0	0.024	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	---	---
Metal	Silver	20,186	0.77	684	88	Red-tailed Hawk	0.035	1.0	0	0	0.024	3.1	0	0	17	20	0.15	0	0	0.85	2.0	20
Metal	Aluminum	74,599	909	457	1,317	Red-tailed Hawk	0.035	1.0	0	0	0.024	46	0	0	63	110	0.42	0	0	0.58	110	---
Metal	Arsenic	40,102	1,892	204	179	Red-tailed Hawk	0.035	1.0	0	0	0.024	6.3	0	0	34	40	0.16	0	0	0.84	9.3	40
Metal	Boron	2,714	63,727	15,269	2,768	Red-tailed Hawk	0.035	1.0	0	0	0.024	98	0	0	2.3	100	0.98	0	0	0.023	29	100
Metal	Barium	8,101	2,022	451	987	Red-tailed Hawk	0.035	1.0	0	0	0.024	35	0	0	6.9	42	0.84	0	0	0.16	21	42
Metal	Beryllium	NTD	NTD	NTD	NTD	Red-tailed Hawk	0.035	1.0	0	0	0.024	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	---	---
Metal	Cadium	1,711	33	149	26	Red-tailed Hawk	0.035	1.0	0	0	0.024	0.92	0	0	1.4	2.4	0.39	0	0	0.61	1.5	2.4
Metal	Cobalt	4,798	51	52	106	Red-tailed Hawk	0.035	1.0	0	0	0.024	3.7	0	0	4.1	7.8	0.48	0	0	0.52	7.6	7.8
Metal	Chromium	610	76	37	64	Red-tailed Hawk	0.035	1.0	0	0	0.024	2.3	0	0	0.52	2.8	0.81	0	0	0.19	2.7	2.8
Metal	Copper	12,881	3,942	185	34	Red-tailed Hawk	0.035	1.0	0	0	0.024	1.2	0	0	11	12	0.098	0	0	0.90	4.1	12
Metal	Mercury	92	4.3	82	8.3	Red-tailed Hawk	0.035	1.0	0	0	0.024	0.29	0	0	0.078	0.37	0.79	0	0	0.21	0.068	0.37
Metal	Lithium	NTD	NTD	NTD	NTD	Red-tailed Hawk	0.035	1.0	0	0	0.024	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	---	---
Metal	Manganese	150,899	23,247	7,950	6,237	Red-tailed Hawk	0.035	1.0	0	0	0.024	220	0	0	128	348	0.63	0	0	0.37	179	348
Metal	Molybdenum	515	1,829	961	988	Red-tailed Hawk	0.035	1.0	0	0	0.024	35	0	0	0.44	35	0.99	0	0	0.012	3.5	35
Metal	Nickel	11,625	51	1,078	47	Red-tailed Hawk	0.035	1.0	0	0	0.024	1.7	0	0	9.8	11	0.14	0	0	0.86	6.7	12
Metal	Lead	2,300	17	39	37	Red-tailed Hawk	0.035	1.0	0	0	0.024	1.3	0	0	1.9	3.3	0.40	0	0	0.60	1.6	3.3
Metal	Antimony	NTD	NTD	NTD	NTD	Red-tailed Hawk	0.035	1.0	0	0	0.024	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	---	---
Metal	Selenium	24	17	28	16	Red-tailed Hawk	0.035	1.0	0	0	0.024	0.56	0	0	0.021	0.58	0.96	0	0	0.036	0.29	0.58
Metal	Tin	335	726	326	471	Red-tailed Hawk	0.035	1.0	0	0	0.024	17	0	0	0.28	17	0.98	0	0	0.017	6.8	17
Metal	Thallium	NTD	NTD	NTD	NTD	Red-tailed Hawk	0.035	1.0	0	0	0.024	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	---	---
Metal	Uranium - Calculated Total	82	3.4	41	451	Red-tailed Hawk	0.035	1.0	0	0	0.024	16	0	0	0.069	16	1.00	0	0	0.0043	16	---
Metal	Vanadium	505	304	4.9	7.4	Red-tailed Hawk	0.035	1.0	0	0	0.024	0.26	0	0	0.43	0.69	0.38	0	0	0.62	0.34	0.69
Metal	Zinc	906	186	289	1,862	Red-tailed Hawk	0.035	1.0	0	0	0.024	66	0	0	0.77	67	0.99	0	0	0.012	66	67
PAH	Benzo[k]fluoranthene	NBD	NBD	NBD	NBD	Red-tailed Hawk	0.035	1.0	0	0	0.024	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	0.65	---
PAH	Fluoranthene	NBD	NBD	NBD	NBD	Red-tailed Hawk	0.035	1.0	0	0	0.024	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	0.65	---
PAH	Fluorene	NBD	NBD	NBD	NBD	Red-tailed Hawk	0.035	1.0	0	0	0.024	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	33	325
PAH	Phenanthrene	NBD	NBD	NBD	NBD	Red-tailed Hawk	0.035	1.0	0	0	0.024	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	33	325
PCB	PCB	0.46	0	0.16	51	Red-tailed Hawk	0.035	1.0	0	0	0.024	1.8	0	0	3.92E-04	1.8	1.00	0	0	2.18E-04	0.18	1.8
Pesticide	Aldrin	0.0099	0.14	0	0.99	Red-tailed Hawk	0.035	1.0	0	0	0.024	0.035	0	0	8.40E-06	0.035	1.00	0	0	2.40E-04	0.0070	0.035
Pesticide	alpha-Chlordane	NBD	NBD	NBD	NBD	Red-tailed Hawk	0.035	1.0	0	0	0.024	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	2.1	11
Pesticide	beta-1,2,3,4,5,6-Hexachlorocyclohexane	NBD	NBD	NBD	NBD	Red-tailed Hawk	0.035	1.0	0	0	0.024	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	0.57	0.86
Pesticide	Dichlorodiphenyldichloroethylene	NBD	NBD	NBD	NBD	Red-tailed Hawk	0.035	1.0	0	0	0.024	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	0.23	1.9
Pesticide	Dichlorodiphenyltrichloroethane	NBD	NBD	NBD	NBD	Red-tailed Hawk	0.035	1.0	0	0	0.024	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	0.23	1.9
Pesticide	Dieldrin	NBD	NBD	NBD	NBD	Red-tailed Hawk	0.035	1.0	0	0	0.024	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	0.071	0.22
Pesticide	Endosulfan I	NBD	NBD	NBD	NBD	Red-tailed Hawk	0.035	1.0	0	0	0.024	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	10	---
Pesticide	Endosulfan sulfate	NBD	NBD	NBD	NBD	Red-tailed Hawk	0.035	1.0	0	0	0.024	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	10	---
Pesticide	Endrin aldehyde	NBD	NBD	NBD	NBD	Red-tailed Hawk	0.035	1.0	0	0	0.024	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	0.30	---
Pesticide	gamma-Chlordane	NBD	NBD	NBD	NBD	Red-tailed Hawk	0.035	1.0	0	0	0.024	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	2.1	11
Pesticide	Methoxychlor	NTD	NTD	NTD	NTD	Red-tailed Hawk	0.035	1.0	0	0	0.024	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	---	---
SVOC	Bis[2-ethylhexyl] phthalate	1.2	97	0	31	Red-tailed Hawk	0.035	1.0	0	0	0.024	1.1	0	0	0.0010	1.1	1.00	0	0	9.29E-04	1.1	---
SVOC	Phenol	NTD	NTD	NTD	NTD	Red-tailed Hawk	0.035	1.0	0	0	0.024	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	---	---

Notes:
It has been conservatively assumed that all chemical intake is absorbed by the receptor.
Blue Shaded values are Calculated using NOAELs TRV due to the lack of LOAELs TRV
Acronyms:
BAF = Bioaccumulation factor
DW = Dry weight
FIR = Food ingestion rate
LOAEL = lowest observed adverse effect level
mg/kg = Miligrams per kilogram
mg/kg BW/day, DW = Miligrams per kilogram of body weight per day, dry weight
mg/kg/d = Miligrams per kilogram per day
NTD - PRG was not calculated because there was no toxicity data available.
NBD - PRG was not calculated due to incomplete or a lack of bioacculation data.
PRGs = Preliminary remediation goals
TRV = Toxicity reference value

Equations:
Total Estimated Exposure = Food Intake + Incidental Soil Intake
Food Intake = estimated concentration in biota X proportion of biota type X food ingestion rate (FIR)
Incidental Soil intake = concentration in soil X proportion of soil as component of diet X food ingestion rate (FIR)
ln[Estimated Concentrations in Biota] (method 1) = B1*(ln[Site Specific Soil Concentration]) + B0
where: B1 = slope and B0 = intercept
Estimated Concentrations in Biota (method 2) = soil concentration X BAF
Hazard Quotient = Total Estimated Exposure (Dose) / TRV
Therefore, when the HQ = 1, soil concentration = PRG
where: Soil concentration (mg/kg) = TRV / (Food Intake + Incidental Soil Intake) = Soil PRG

Table F-5. Derivation of Tier 2 LOAEL-Based PRGs for Great-Basin Pocketmouse at the Hanford Site

			Estimated Concentrations in Biota (mg/kg DW)				Food Intake	Diet Composition (proportion)				Estimated Exposure (mg/kg/d)					Percent Estimated Exposure by Pathway				Selected Mammalian TRV (mg/kg/d)	
	Analyte	Soil LOAEL-based PRG (mg/kg)	Terrestrial Plants	Terrestrial Arthropod	Small Mammals	Species	(kg/kg-bw/d, dw)	Small Mammals	Soil Inverts	Plants	Soil	Small Mammals	Soil Inverts	Plants	Soil	Total	Small Mam.	Soil Inverts	Plants	Soil	NOAEL	LOAEL
General Inorganic	Flouride	NBD	NBD	NBD	NBD	GB Pocket Mouse	0.12	0	0	1.0	0.020	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	31	53
General Inorganic	Nitrogen in Nitrite and Nitrate	27	9,201	0	0	GB Pocket Mouse	0.12	0	0	1.0	0.020	0	0	1,130	0.066	1,130	0	0	1.00	5.87E-05	507	1,130
Metal	Silver	24,465	0.82	829	106	GB Pocket Mouse	0.12	0	0	1.0	0.020	0	0	0.10	60	60	0	0	0.0017	1.00	6.0	60
Metal	Aluminum	4,883	59	30	95	GB Pocket Mouse	0.12	0	0	1.0	0.020	0	0	7.3	12	19	0	0	0.38	0.62	1.9	19
Metal	Arsenic	201	9.5	11	0.90	GB Pocket Mouse	0.12	0	0	1.0	0.020	0	0	1.2	0.49	1.7	0	0	0.70	0.30	1.0	1.7
Metal	Boron	32	762	182	33	GB Pocket Mouse	0.12	0	0	1.0	0.020	0	0	94	0.080	94	0	0	1.00	8.51E-04	28	94
Metal	Barium	2,265	565	126	276	GB Pocket Mouse	0.12	0	0	1.0	0.020	0	0	69	5.6	75	0	0	0.93	0.074	45	75
Metal	Beryllium	14	4.1	0.29	0.015	GB Pocket Mouse	0.12	0	0	1.0	0.020	0	0	0.50	0.034	0.53	0	0	0.94	0.064	0.53	---
Metal	Cadium	2,203	37	175	30	GB Pocket Mouse	0.12	0	0	1.0	0.020	0	0	4.6	5.4	10.0	0	0	0.46	0.54	1.0	10
Metal	Cobalt	2,901	31	32	65	GB Pocket Mouse	0.12	0	0	1.0	0.020	0	0	3.8	7.1	11	0	0	0.35	0.65	7.3	11
Metal	Chromium	544	67	33	57	GB Pocket Mouse	0.12	0	0	1.0	0.020	0	0	8.3	1.3	9.6	0	0	0.86	0.14	2.4	9.6
Metal	Copper	233	71	49	17	GB Pocket Mouse	0.12	0	0	1.0	0.020	0	0	8.8	0.57	9.3	0	0	0.94	0.061	5.6	9.3
Metal	Mercury	7.9	1.1	7.0	0.70	GB Pocket Mouse	0.12	0	0	1.0	0.020	0	0	0.14	0.019	0.16	0	0	0.88	0.12	0.032	0.16
Metal	Lithium	1,664	120	23	52	GB Pocket Mouse	0.12	0	0	1.0	0.020	0	0	15	4.1	19	0	0	0.78	0.22	9.4	19
Metal	Manganese	3,322	512	175	137	GB Pocket Mouse	0.12	0	0	1.0	0.020	0	0	63	8.2	71	0	0	0.89	0.11	52	71
Metal	Molybdenum	5.9	21	11	11	GB Pocket Mouse	0.12	0	0	1.0	0.020	0	0	2.6	0.015	2.6	0	0	0.99	0.0056	0.26	2.6
Metal	Nickel	711	13	66	13	GB Pocket Mouse	0.12	0	0	1.0	0.020	0	0	1.7	1.7	3.4	0	0	0.49	0.51	1.7	3.4
Metal	Lead	2,672	19	44	40	GB Pocket Mouse	0.12	0	0	1.0	0.020	0	0	2.3	6.6	8.9	0	0	0.26	0.74	4.7	8.9
Metal	Antimony	97	2.9	0.72	0.036	GB Pocket Mouse	0.12	0	0	1.0	0.020	0	0	0.35	0.24	0.59	0	0	0.60	0.40	0.059	0.59
Metal	Selenium	2.7	1.7	3.1	1.8	GB Pocket Mouse	0.12	0	0	1.0	0.020	0	0	0.21	0.0066	0.22	0	0	0.97	0.031	0.14	0.22
Metal	Tin	130	282	127	183	GB Pocket Mouse	0.12	0	0	1.0	0.020	0	0	35	0.32	35	0	0	0.99	0.0092	23	35
Metal	Thallium	8.7	0.44	0.49	0.48	GB Pocket Mouse	0.12	0	0	1.0	0.020	0	0	0.054	0.021	0.075	0	0	0.71	0.29	0.015	0.075
Metal	Uranium - Calculated Total	371	15	211	3,426	GB Pocket Mouse	0.12	0	0	1.0	0.020	0	0	1.9	0.91	2.8	0	0	0.67	0.33	0.28	2.8
Metal	Vanadium	260	62	2.5	3.8	GB Pocket Mouse	0.12	0	0	1.0	0.020	0	0	7.7	0.64	8.3	0	0	0.92	0.077	4.2	8.3
Metal	Zinc	6,711	484	542	13,798	GB Pocket Mouse	0.12	0	0	1.0	0.020	0	0	59	16	76	0	0	0.78	0.22	75	76
PAH	Benzo[k]fluoranthene	1.6	81	0	0	GB Pocket Mouse	0.12	0	0	1.0	0.020	0	0	10.0	0.0040	10	0	0	1.00	4.02E-04	1.0	10
PAH	Fluoranthene	NBD	NBD	NBD	NBD	GB Pocket Mouse	0.12	0	0	1.0	0.020	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	125	250
PAH	Fluorene	NBD	NBD	NBD	NBD	GB Pocket Mouse	0.12	0	0	1.0	0.020	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	125	250
PAH	Phenanthrene	NBD	NBD	NBD	NBD	GB Pocket Mouse	0.12	0	0	1.0	0.020	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	1,000	---
PCB	PCB	NBD	NBD	NBD	NBD	GB Pocket Mouse	0.12	0	0	1.0	0.020	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	0.068	0.68
Pesticide	Aldrin	0.58	8.1	0	58	GB Pocket Mouse	0.12	0	0	1.0	0.020	0	0	1.00	0.0014	1.0	0	0	1.00	0.0014	0.20	1.0
Pesticide	alpha-Chlordane	1.4	171	0	0	GB Pocket Mouse	0.12	0	0	1.0	0.020	0	0	21	0.0035	21	0	0	1.00	1.68E-04	2.1	21
Pesticide	beta-1,2,3,4,5,6-Hexachlorocyclohexane	0.091	16	0	0	GB Pocket Mouse	0.12	0	0	1.0	0.020	0	0	2.0	2.24E-04	2.0	0	0	1.00	1.12E-04	0.40	2.0
Pesticide	Dichlorodiphenyldichloroethylene	0.060	6.0	1.0	0	GB Pocket Mouse	0.12	0	0	1.0	0.020	0	0	0.73	1.48E-04	0.73	0	0	1.00	2.01E-04	0.15	0.74
Pesticide	Dichlorodiphenyltrichloroethane	0.054	6.0	2.1	0	GB Pocket Mouse	0.12	0	0	1.0	0.020	0	0	0.73	1.31E-04	0.74	0	0	1.00	1.79E-04	0.15	0.74
Pesticide	Dieldrin	1.36E-04	0.24	0	0	GB Pocket Mouse	0.12	0	0	1.0	0.020	0	0	0.030	3.34E-07	0.030	0	0	1.00	1.11E-05	0.015	0.030
Pesticide	Endosulfan I	0.033	1.2	3.1	0	GB Pocket Mouse	0.12	0	0	1.0	0.020	0	0	0.15	8.23E-05	0.15	0	0	1.00	5.48E-04	0.15	---
Pesticide	Endosulfan sulfate	0.31	1.2	916	0	GB Pocket Mouse	0.12	0	0	1.0	0.020	0	0	0.15	7.52E-04	0.15	0	0	0.99	0.0050	0.15	---
Pesticide	Endrin aldehyde	0.11	7.5	0	0	GB Pocket Mouse	0.12	0	0	1.0	0.020	0	0	0.92	2.67E-04	0.92	0	0	1.00	2.91E-04	0.092	0.92
Pesticide	gamma-Chlordane	4.0	171	0	0	GB Pocket Mouse	0.12	0	0	1.0	0.020	0	0	21	0.0099	21	0	0	1.00	4.73E-04	2.1	21
Pesticide	Methoxychlor	0.51	65	46	0	GB Pocket Mouse	0.12	0	0	1.0	0.020	0	0	8.0	0.0013	8.0	0	0	1.00	1.56E-04	4.0	8.0
SVOC	Bis[2-ethylhexyl] phthalate	18	1,490	0	477	GB Pocket Mouse	0.12	0	0	1.0	0.020	0	0	183	0.045	183	0	0	1.00	2.48E-04	18	183
SVOC	Phenol	0.47	293	0	21	GB Pocket Mouse	0.12	0	0	1.0	0.020	0	0	36	0.0012	36	0	0	1.00	3.22E-05	12	36

Notes:
It has been conservatively assumed that all chemical intake is absorbed by the receptor.
Blue Shaded values are Calculated using NOAELs TRV due to the lack of LOAELs TRV
Acronyms:
BAF = Bioaccumulation factor
DW = Dry weight
FIR = Food ingestion rate
LOAEL = lowest observed adverse effect level
mg/kg = Miligrams per kilogram
mg/kg BW/day, DW = Miligrams per kilogram of body weight per day, dry weight
mg/kg/d = Miligrams per kilogram per day
NTD - PRG was not calculated because there was no toxicity data available.
NBD - PRG was not calculated due to incomplete or a lack of bioacculation data.
PRGs = Preliminary remediation goals
TRV = Toxicity reference value

Equations:
Total Estimated Exposure = Food Intake + Incidental Soil Intake
Food Intake = estimated concentration in biota X proportion of biota type X food ingestion rate (FIR)
Incidental Soil intake = concentration in soil X proportion of soil as component of diet X food ingestion rate (FIR)
ln[Estimated Concentrations in Biota] (method 1) = B1*(ln[Site Specific Soil Concentration]) + B0
where: B1 = slope and B0 = intercept
Estimated Concentrations in Biota (method 2) = soil concentration X BAF
Hazard Quotient = Total Estimated Exposure (Dose) / TRV
Therefore, when the HQ = 1, soil concentration = PRG
where: Soil concentration (mg/kg) = TRV / (Food Intake + Incidental Soil Intake) = Soil PRG

Table F-6. Derivation of Tier 2 LOAEL-Based PRGs for Deer Mouse at the Hanford Site

			Estimated Concentrations in Biota (mg/kg DW)				Food Intake	Diet Composition (proportion)				Estimated Exposure (mg/kg/d)					Percent Estimated Exposure by Pathway				Selected Mammalian TRV (mg/kg/d)	
	Analyte	Soil LOAEL-based PRG (mg/kg)	Terrestrial Plants	Terrestrial Arthropod	Small Mammals	Species	(kg/kg-bw/d, dw)	Small Mammals	Soil Inverts	Plants	Soil	Small Mammals	Soil Inverts	Plants	Soil	Total	Small Mam.	Soil Inverts	Plants	Soil	NOAEL	LOAEL
General Inorganic	Flouride	3,877	0	480	224	Deer Mouse	0.17	0	0.50	0.50	0.020	0	40	0	13	53	0	0.76	0	0.24	31	53
General Inorganic	Nitrogen in Nitrite and Nitrate	40	13,613	0	0	Deer Mouse	0.17	0	0.50	0.50	0.020	0	0	1,130	0.13	1,130	0	0	1.00	1.17E-04	507	1,130
Metal	Silver	9,806	0.60	332	43	Deer Mouse	0.17	0	0.50	0.50	0.020	0	28	0.050	33	60	0	0.46	8.30E-04	0.54	6.0	60
Metal	Aluminum	3,988	49	24	78	Deer Mouse	0.17	0	0.50	0.50	0.020	0	2.0	4.0	13	19	0	0.11	0.21	0.69	1.9	19
Metal	Arsenic	127	6.0	8.9	0.57	Deer Mouse	0.17	0	0.50	0.50	0.020	0	0.74	0.50	0.42	1.7	0	0.45	0.30	0.25	1.0	1.7
Metal	Boron	39	908	218	39	Deer Mouse	0.17	0	0.50	0.50	0.020	0	18	75	0.13	94	0	0.19	0.81	0.0014	28	94
Metal	Barium	2,617	653	146	319	Deer Mouse	0.17	0	0.50	0.50	0.020	0	12	54	8.7	75	0	0.16	0.72	0.12	45	75
Metal	Beryllium	20	5.2	0.41	0.021	Deer Mouse	0.17	0	0.50	0.50	0.020	0	0.034	0.43	0.065	0.53	0	0.064	0.81	0.12	0.53	---
Metal	Cadium	624	19	77	16	Deer Mouse	0.17	0	0.50	0.50	0.020	0	6.4	1.6	2.1	10.0	0	0.64	0.16	0.21	1.0	10
Metal	Cobalt	2,136	23	23	49	Deer Mouse	0.17	0	0.50	0.50	0.020	0	1.9	1.9	7.1	11	0	0.18	0.17	0.65	7.3	11
Metal	Chromium	517	64	31	54	Deer Mouse	0.17	0	0.50	0.50	0.020	0	2.6	5.3	1.7	9.6	0	0.27	0.55	0.18	2.4	9.6
Metal	Copper	193	59	46	17	Deer Mouse	0.17	0	0.50	0.50	0.020	0	3.8	4.9	0.64	9.3	0	0.41	0.52	0.068	5.6	9.3
Metal	Mercury	1.6	0.48	1.4	0.14	Deer Mouse	0.17	0	0.50	0.50	0.020	0	0.12	0.040	0.0052	0.16	0	0.72	0.25	0.032	0.032	0.16
Metal	Lithium	1,797	129	25	56	Deer Mouse	0.17	0	0.50	0.50	0.020	0	2.1	11	6.0	19	0	0.11	0.57	0.32	9.4	19
Metal	Manganese	3,467	534	183	143	Deer Mouse	0.17	0	0.50	0.50	0.020	0	15	44	12	71	0	0.21	0.62	0.16	52	71
Metal	Molybdenum	5.7	20	11	11	Deer Mouse	0.17	0	0.50	0.50	0.020	0	0.89	1.7	0.019	2.6	0	0.34	0.65	0.0073	0.26	2.6
Metal	Nickel	247	8.1	23	8.4	Deer Mouse	0.17	0	0.50	0.50	0.020	0	1.9	0.68	0.82	3.4	0	0.56	0.20	0.24	1.7	3.4
Metal	Lead	1,578	14	30	30	Deer Mouse	0.17	0	0.50	0.50	0.020	0	2.5	1.2	5.2	8.9	0	0.28	0.13	0.59	4.7	8.9
Metal	Antimony	92	2.7	0.69	0.034	Deer Mouse	0.17	0	0.50	0.50	0.020	0	0.057	0.23	0.31	0.59	0	0.097	0.39	0.52	0.059	0.59
Metal	Selenium	1.4	0.87	1.7	0.93	Deer Mouse	0.17	0	0.50	0.50	0.020	0	0.14	0.073	0.0047	0.22	0	0.64	0.34	0.022	0.14	0.22
Metal	Tin	133	287	129	186	Deer Mouse	0.17	0	0.50	0.50	0.020	0	11	24	0.44	35	0	0.31	0.68	0.013	23	35
Metal	Thallium	6.2	0.31	0.35	0.40	Deer Mouse	0.17	0	0.50	0.50	0.020	0	0.029	0.026	0.021	0.075	0	0.38	0.34	0.27	0.015	0.075
Metal	Uranium - Calculated Total	59	2.4	29	289	Deer Mouse	0.17	0	0.50	0.50	0.020	0	2.4	0.20	0.20	2.8	0	0.86	0.072	0.070	0.28	2.8
Metal	Vanadium	297	85	2.9	4.3	Deer Mouse	0.17	0	0.50	0.50	0.020	0	0.24	7.1	0.99	8.3	0	0.029	0.85	0.12	4.2	8.3
Metal	Zinc	3,331	346	435	6,849	Deer Mouse	0.17	0	0.50	0.50	0.020	0	36	29	11	76	0	0.48	0.38	0.15	75	76
PAH	Benzo[k]fluoranthene	NBD	NBD	NBD	NBD	Deer Mouse	0.17	0	0.50	0.50	0.020	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	1.0	10
PAH	Fluoranthene	NBD	NBD	NBD	NBD	Deer Mouse	0.17	0	0.50	0.50	0.020	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	125	250
PAH	Fluorene	NBD	NBD	NBD	NBD	Deer Mouse	0.17	0	0.50	0.50	0.020	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	125	250
PAH	Phenanthrene	NBD	NBD	NBD	NBD	Deer Mouse	0.17	0	0.50	0.50	0.020	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	1,000	---
PCB	PCB	NBD	NBD	NBD	NBD	Deer Mouse	0.17	0	0.50	0.50	0.020	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	0.068	0.68
Pesticide	Aldrin	NBD	NBD	NBD	NBD	Deer Mouse	0.17	0	0.50	0.50	0.020	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	0.20	1.0
Pesticide	alpha-Chlordane	NBD	NBD	NBD	NBD	Deer Mouse	0.17	0	0.50	0.50	0.020	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	2.1	21
Pesticide	beta-1,2,3,4,5,6-Hexachlorocyclohexane	NBD	NBD	NBD	NBD	Deer Mouse	0.17	0	0.50	0.50	0.020	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	0.40	2.0
Pesticide	Dichlorodiphenyldichloroethylene	0.076	7.6	1.3	0	Deer Mouse	0.17	0	0.50	0.50	0.020	0	0.11	0.63	2.52E-04	0.74	0	0.15	0.85	3.43E-04	0.15	0.74
Pesticide	Dichlorodiphenyltrichloroethane	0.058	6.5	2.3	0	Deer Mouse	0.17	0	0.50	0.50	0.020	0	0.19	0.54	1.94E-04	0.74	0	0.26	0.74	2.64E-04	0.15	0.74
Pesticide	Dieldrin	NBD	NBD	NBD	NBD	Deer Mouse	0.17	0	0.50	0.50	0.020	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	0.015	0.030
Pesticide	Endosulfan I	0.014	0.51	1.3	0	Deer Mouse	0.17	0	0.50	0.50	0.020	0	0.11	0.042	4.65E-05	0.15	0	0.72	0.28	3.10E-04	0.15	---
Pesticide	Endosulfan sulfate	6.03E-04	0.0024	1.8	0	Deer Mouse	0.17	0	0.50	0.50	0.020	0	0.15	1.99E-04	2.00E-06	0.15	0	1.00	0.0013	1.34E-05	0.15	---
Pesticide	Endrin aldehyde	NBD	NBD	NBD	NBD	Deer Mouse	0.17	0	0.50	0.50	0.020	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	0.092	0.92
Pesticide	gamma-Chlordane	NBD	NBD	NBD	NBD	Deer Mouse	0.17	0	0.50	0.50	0.020	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	2.1	21
Pesticide	Methoxychlor	0.44	56	40	0	Deer Mouse	0.17	0	0.50	0.50	0.020	0	3.3	4.7	0.0015	8.0	0	0.42	0.58	1.83E-04	4.0	8.0
SVOC	Bis[2-ethylhexyl] phthalate	NBD	NBD	NBD	NBD	Deer Mouse	0.17	0	0.50	0.50	0.020	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	18	183
SVOC	Phenol	NBD	NBD	NBD	NBD	Deer Mouse	0.17	0	0.50	0.50	0.020	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	12	36

Notes:
It has been conservatively assumed that all chemical intake is absorbed by the receptor.
Blue Shaded values are Calculated using NOAELs TRV due to the lack of LOAELs TRV
Acronyms:
BAF = Bioaccumulation factor
DW = Dry weight
FIR = Food ingestion rate
LOAEL = lowest observed adverse effect level
mg/kg = Miligrams per kilogram
mg/kg BW/day, DW = Miligrams per kilogram of body weight per day, dry weight
mg/kg/d = Miligrams per kilogram per day
NTD - PRG was not calculated because there was no toxicity data available.
NBD - PRG was not calculated due to incomplete or a lack of bioacculation data.
PRGs = Preliminary remediation goals
TRV = Toxicity reference value

Equations:
Total Estimated Exposure = Food Intake + Incidental Soil Intake
Food Intake = estimated concentration in biota X proportion of biota type X food ingestion rate (FIR)
Incidental Soil intake = concentration in soil X proportion of soil as component of diet X food ingestion rate (FIR)
ln[Estimated Concentrations in Biota] (method 1) = B1*(ln[Site Specific Soil Concentration]) + B0
where: B1 = slope and B0 = intercept
Estimated Concentrations in Biota (method 2) = soil concentration X BAF
Hazard Quotient = Total Estimated Exposure (Dose) / TRV
Therefore, when the HQ = 1, soil concentration = PRG
where: Soil concentration (mg/kg) = TRV / (Food Intake + Incidental Soil Intake) = Soil PRG

Table F-7. Derivation of Tier 2 LOAEL-Based PRGs for Grasshopper Mouse at the Hanford Site

			Estimated Concentrations in Biota (mg/kg DW)				Food Intake	Diet Composition (proportion)				Estimated Exposure (mg/kg/d)					Percent Estimated Exposure by Pathway				Selected Mammalian TRV (mg/kg/d)	
	Analyte	Soil LOAEL-based PRG (mg/kg)	Terrestrial Plants	Terrestrial Arthropod	Small Mammals	Species	(kg/kg-bw/d, dw)	Small Mammals	Soil Inverts	Plants	Soil	Small Mammals	Soil Inverts	Plants	Soil	Total	Small Mam.	Soil Inverts	Plants	Soil	NOAEL	LOAEL
General Inorganic	Flouride	4,061	0	503	235	Grasshopper Mouse	0.098	0	1.0	0	0.0090	0	49	0	3.6	53	0	0.93	0	0.068	31	53
General Inorganic	Nitrogen in Nitrite and Nitrate	1.28E+06	4.38E+08	0	0	Grasshopper Mouse	0.098	0	1.0	0	0.0090	0	0	0	1,130	1,130	0	0	0	1.0	507	1,130
Metal	Silver	14,362	0.69	487	62	Grasshopper Mouse	0.098	0	1.0	0	0.0090	0	48	0	13	60	0	0.79	0	0.21	6.0	60
Metal	Aluminum	13,059	159	80	245	Grasshopper Mouse	0.098	0	1.0	0	0.0090	0	7.8	0	11	19	0	0.40	0	0.60	1.9	19
Metal	Arsenic	302	14	14	1.3	Grasshopper Mouse	0.098	0	1.0	0	0.0090	0	1.4	0	0.27	1.7	0	0.84	0	0.16	1.0	1.7
Metal	Boron	170	3,992	956	173	Grasshopper Mouse	0.098	0	1.0	0	0.0090	0	93	0	0.15	94	0	1.00	0	0.0016	28	94
Metal	Barium	11,873	2,964	661	1,446	Grasshopper Mouse	0.098	0	1.0	0	0.0090	0	65	0	10	75	0	0.86	0	0.14	45	75
Metal	Beryllium	181	27	3.8	0.19	Grasshopper Mouse	0.098	0	1.0	0	0.0090	0	0.37	0	0.16	0.53	0	0.70	0	0.30	0.53	---
Metal	Cadium	858	22	95	18	Grasshopper Mouse	0.098	0	1.0	0	0.0090	0	9.2	0	0.75	10.0	0	0.92	0	0.075	1.0	10
Metal	Cobalt	5,610	59	61	123	Grasshopper Mouse	0.098	0	1.0	0	0.0090	0	6.0	0	4.9	11	0	0.55	0	0.45	7.3	11
Metal	Chromium	1,424	177	86	149	Grasshopper Mouse	0.098	0	1.0	0	0.0090	0	8.4	0	1.3	9.6	0	0.87	0	0.13	2.4	9.6
Metal	Copper	1,217	372	85	23	Grasshopper Mouse	0.098	0	1.0	0	0.0090	0	8.3	0	1.1	9.3	0	0.89	0	0.11	5.6	9.3
Metal	Mercury	1.8	0.52	1.6	0.16	Grasshopper Mouse	0.098	0	1.0	0	0.0090	0	0.16	0	0.0016	0.16	0	0.99	0	0.010	0.032	0.16
Metal	Lithium	8,347	601	117	259	Grasshopper Mouse	0.098	0	1.0	0	0.0090	0	11	0	7.3	19	0	0.61	0	0.39	9.4	19
Metal	Manganese	11,780	1,815	621	487	Grasshopper Mouse	0.098	0	1.0	0	0.0090	0	61	0	10	71	0	0.85	0	0.15	52	71
Metal	Molybdenum	14	50	26	27	Grasshopper Mouse	0.098	0	1.0	0	0.0090	0	2.6	0	0.012	2.6	0	1.00	0	0.0048	0.26	2.6
Metal	Nickel	342	9.5	32	9.7	Grasshopper Mouse	0.098	0	1.0	0	0.0090	0	3.1	0	0.30	3.4	0	0.91	0	0.088	1.7	3.4
Metal	Lead	3,807	23	57	49	Grasshopper Mouse	0.098	0	1.0	0	0.0090	0	5.6	0	3.3	8.9	0	0.62	0	0.38	4.7	8.9
Metal	Antimony	366	10	2.7	0.14	Grasshopper Mouse	0.098	0	1.0	0	0.0090	0	0.27	0	0.32	0.59	0	0.45	0	0.55	0.059	0.59
Metal	Selenium	1.9	1.2	2.2	1.2	Grasshopper Mouse	0.098	0	1.0	0	0.0090	0	0.21	0	0.0017	0.22	0	0.99	0	0.0077	0.14	0.22
Metal	Tin	365	791	355	513	Grasshopper Mouse	0.098	0	1.0	0	0.0090	0	35	0	0.32	35	0	0.99	0	0.0092	23	35
Metal	Thallium	12	0.59	0.66	0.57	Grasshopper Mouse	0.098	0	1.0	0	0.0090	0	0.065	0	0.010	0.075	0	0.86	0	0.14	0.015	0.075
Metal	Uranium - Calculated Total	57	2.4	28	280	Grasshopper Mouse	0.098	0	1.0	0	0.0090	0	2.7	0	0.050	2.8	0	0.98	0	0.018	0.28	2.8
Metal	Vanadium	4,531	56,525	44	66	Grasshopper Mouse	0.098	0	1.0	0	0.0090	0	4.3	0	4.0	8.3	0	0.52	0	0.48	4.2	8.3
Metal	Zinc	12,666	656	663	26,042	Grasshopper Mouse	0.098	0	1.0	0	0.0090	0	65	0	11	76	0	0.85	0	0.15	75	76
PAH	Benzo[k]fluoranthene	NBD	NBD	NBD	NBD	Grasshopper Mouse	0.098	0	1.0	0	0.0090	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	1.0	10
PAH	Fluoranthene	1,005	0	2,550	0	Grasshopper Mouse	0.098	0	1.0	0	0.0090	0	249	0	0.88	250	0	1.00	0	0.0035	125	250
PAH	Fluorene	12	0	2,558	0	Grasshopper Mouse	0.098	0	1.0	0	0.0090	0	250	0	0.011	250	0	1.00	0	4.26E-05	125	250
PAH	Phenanthrene	292	0	10,232	0	Grasshopper Mouse	0.098	0	1.0	0	0.0090	0	1,000	0	0.26	1,000	0	1.00	0	2.57E-04	1,000	---
PCB	PCB	35	0	6.6	3,875	Grasshopper Mouse	0.098	0	1.0	0	0.0090	0	0.65	0	0.031	0.68	0	0.95	0	0.045	0.068	0.68
Pesticide	Aldrin	NBD	NBD	NBD	NBD	Grasshopper Mouse	0.098	0	1.0	0	0.0090	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	0.20	1.0
Pesticide	alpha-Chlordane	NBD	NBD	NBD	NBD	Grasshopper Mouse	0.098	0	1.0	0	0.0090	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	2.1	21
Pesticide	beta-1,2,3,4,5,6-Hexachlorocyclohexane	NBD	NBD	NBD	NBD	Grasshopper Mouse	0.098	0	1.0	0	0.0090	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	0.40	2.0
Pesticide	Dichlorodiphenyldichloroethylene	0.44	44	7.5	0	Grasshopper Mouse	0.098	0	1.0	0	0.0090	0	0.73	0	3.87E-04	0.74	0	1.00	0	5.26E-04	0.15	0.74
Pesticide	Dichlorodiphenyltrichloroethane	0.19	21	7.5	0	Grasshopper Mouse	0.098	0	1.0	0	0.0090	0	0.73	0	1.66E-04	0.74	0	1.00	0	2.26E-04	0.15	0.74
Pesticide	Dieldrin	NBD	NBD	NBD	NBD	Grasshopper Mouse	0.098	0	1.0	0	0.0090	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	0.015	0.030
Pesticide	Endosulfan I	0.017	0.61	1.5	0	Grasshopper Mouse	0.098	0	1.0	0	0.0090	0	0.15	0	1.46E-05	0.15	0	1.00	0	9.73E-05	0.15	---
Pesticide	Endosulfan sulfate	5.13E-04	0.0020	1.5	0	Grasshopper Mouse	0.098	0	1.0	0	0.0090	0	0.15	0	4.51E-07	0.15	0	1.00	0	3.01E-06	0.15	---
Pesticide	Endrin aldehyde	NBD	NBD	NBD	NBD	Grasshopper Mouse	0.098	0	1.0	0	0.0090	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	0.092	0.92
Pesticide	gamma-Chlordane	NBD	NBD	NBD	NBD	Grasshopper Mouse	0.098	0	1.0	0	0.0090	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	2.1	21
Pesticide	Methoxychlor	0.90	115	82	0	Grasshopper Mouse	0.098	0	1.0	0	0.0090	0	8.0	0	7.91E-04	8.0	0	1.00	0	9.88E-05	4.0	8.0
SVOC	Bis[2-ethylhexyl] phthalate	NBD	NBD	NBD	NBD	Grasshopper Mouse	0.098	0	1.0	0	0.0090	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	18	183
SVOC	Phenol	NBD	NBD	NBD	NBD	Grasshopper Mouse	0.098	0	1.0	0	0.0090	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	12	36

Notes:
It has been conservatively assumed that all chemical intake is absorbed by the receptor.
Blue Shaded values are Calculated using NOAELs TRV due to the lack of LOAELs TRV
Acronyms:
BAF = Bioaccumulation factor
DW = Dry weight
FIR = Food ingestion rate
LOAEL = lowest observed adverse effect level
mg/kg = Miligrams per kilogram
mg/kg BW/day, DW = Miligrams per kilogram of body weight per day, dry weight
mg/kg/d = Miligrams per kilogram per day
NTD - PRG was not calculated because there was no toxicity data available.
NBD - PRG was not calculated due to incomplete or a lack of bioacculation data.
PRGs = Preliminary remediation goals
TRV = Toxicity reference value

Equations:
Total Estimated Exposure = Food Intake + Incidental Soil Intake
Food Intake = estimated concentration in biota X proportion of biota type X food ingestion rate (FIR)
Incidental Soil intake = concentration in soil X proportion of soil as component of diet X food ingestion rate (FIR)
ln[Estimated Concentrations in Biota] (method 1) = B1*(ln[Site Specific Soil Concentration]) + B0
where: B1 = slope and B0 = intercept
Estimated Concentrations in Biota (method 2) = soil concentration X BAF
Hazard Quotient = Total Estimated Exposure (Dose) / TRV
Therefore, when the HQ = 1, soil concentration = PRG
where: Soil concentration (mg/kg) = TRV / (Food Intake + Incidental Soil Intake) = Soil PRG

Table F-8. Derivation of Tier 2 PRGs for Badger at the Hanford Site

			Estimated Concentrations in Biota (mg/kg DW)				Food Intake	Diet Composition (proportion)				Estimated Exposure (mg/kg/d)					Percent Estimated Exposure by Pathway				Selected Mammalian TRV (mg/kg/d)	
	Analyte	Soil LOAEL-based PRG (mg/kg)	Terrestrial Plants	Terrestrial Arthropod	Small Mammals	Species	(kg/kg-bw/d, dw)	Small Mammals	Soil Inverts	Plants	Soil	Small Mammals	Soil Inverts	Plants	Soil	Total	Small Mam.	Soil Inverts	Plants	Soil	NOAEL	LOAEL
General Inorganic	Flouride	13,833	0	1,715	800	Badger	0.035	1.0	0	0	0.052	28	0	0	25	53	0.53	0	0	0.47	31	53
General Inorganic	Nitrogen in Nitrite and Nitrate	626,035	2.13E+08	0	0	Badger	0.035	1.0	0	0	0.052	0	0	0	1,130	1,130	0	0	0	1.0	507	1,130
Metal	Silver	30,778	0.89	1,043	134	Badger	0.035	1.0	0	0	0.052	4.6	0	0	56	60	0.077	0	0	0.92	6.0	60
Metal	Aluminum	7,811	95	48	150	Badger	0.035	1.0	0	0	0.052	5.2	0	0	14	19	0.27	0	0	0.73	1.9	19
Metal	Arsenic	847	40	25	3.8	Badger	0.035	1.0	0	0	0.052	0.13	0	0	1.5	1.7	0.079	0	0	0.92	1.0	1.7
Metal	Boron	2,516	59,074	14,154	2,566	Badger	0.035	1.0	0	0	0.052	89	0	0	4.5	94	0.95	0	0	0.049	28	94
Metal	Barium	12,430	3,103	692	1,514	Badger	0.035	1.0	0	0	0.052	53	0	0	22	75	0.70	0	0	0.30	45	75
Metal	Beryllium	289	38	6.1	0.30	Badger	0.035	1.0	0	0	0.052	0.011	0	0	0.52	0.53	0.020	0	0	0.98	0.53	---
Metal	Cadium	4,704	57	288	43	Badger	0.035	1.0	0	0	0.052	1.5	0	0	8.5	10.0	0.15	0	0	0.85	1.0	10
Metal	Cobalt	4,234	45	46	94	Badger	0.035	1.0	0	0	0.052	3.3	0	0	7.6	11	0.30	0	0	0.70	7.3	11
Metal	Chromium	1,765	219	106	185	Badger	0.035	1.0	0	0	0.052	6.4	0	0	3.2	9.6	0.67	0	0	0.33	2.4	9.6
Metal	Copper	4,631	1,417	132	28	Badger	0.035	1.0	0	0	0.052	0.98	0	0	8.4	9.3	0.11	0	0	0.89	5.6	9.3
Metal	Mercury	33	2.5	29	2.9	Badger	0.035	1.0	0	0	0.052	0.10	0	0	0.059	0.16	0.63	0	0	0.37	0.032	0.16
Metal	Lithium	6,522	470	92	202	Badger	0.035	1.0	0	0	0.052	7.0	0	0	12	19	0.37	0	0	0.63	9.4	19
Metal	Manganese	21,916	3,376	1,155	906	Badger	0.035	1.0	0	0	0.052	31	0	0	40	71	0.44	0	0	0.56	52	71
Metal	Molybdenum	38	135	71	73	Badger	0.035	1.0	0	0	0.052	2.5	0	0	0.069	2.6	0.97	0	0	0.026	0.26	2.6
Metal	Nickel	1,520	19	141	19	Badger	0.035	1.0	0	0	0.052	0.66	0	0	2.7	3.4	0.19	0	0	0.81	1.7	3.4
Metal	Lead	3,966	24	59	50	Badger	0.035	1.0	0	0	0.052	1.7	0	0	7.2	8.9	0.20	0	0	0.80	4.7	8.9
Metal	Antimony	325	8.9	2.4	0.12	Badger	0.035	1.0	0	0	0.052	0.0042	0	0	0.59	0.59	0.0072	0	0	0.99	0.059	0.59
Metal	Selenium	8.8	5.8	10	5.7	Badger	0.035	1.0	0	0	0.052	0.20	0	0	0.016	0.22	0.93	0	0	0.074	0.14	0.22
Metal	Tin	693	1,500	673	972	Badger	0.035	1.0	0	0	0.052	34	0	0	1.3	35	0.96	0	0	0.036	23	35
Metal	Thallium	25	1.2	1.4	0.87	Badger	0.035	1.0	0	0	0.052	0.030	0	0	0.045	0.075	0.40	0	0	0.60	0.015	0.075
Metal	Uranium - Calculated Total	22	0.93	10	79	Badger	0.035	1.0	0	0	0.052	2.8	0	0	0.041	2.8	0.99	0	0	0.014	0.28	2.8
Metal	Vanadium	3,596	32,605	35	52	Badger	0.035	1.0	0	0	0.052	1.8	0	0	6.5	8.3	0.22	0	0	0.78	4.2	8.3
Metal	Zinc	1,037	198	301	2,133	Badger	0.035	1.0	0	0	0.052	74	0	0	1.9	76	0.98	0	0	0.025	75	76
PAH	Benzo[k]fluoranthene	NBD	NBD	NBD	NBD	Badger	0.035	1.0	0	0	0.052	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	1.0	10
PAH	Fluoranthene	NBD	NBD	NBD	NBD	Badger	0.035	1.0	0	0	0.052	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	125	250
PAH	Fluorene	NBD	NBD	NBD	NBD	Badger	0.035	1.0	0	0	0.052	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	125	250
PAH	Phenanthrene	NBD	NBD	NBD	NBD	Badger	0.035	1.0	0	0	0.052	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	1,000	---
PCB	PCB	0.18	0	0.068	20	Badger	0.035	1.0	0	0	0.052	0.68	0	0	3.20E-04	0.68	1.00	0	0	4.71E-04	0.068	0.68
Pesticide	Aldrin	0.29	4.0	0	29	Badger	0.035	1.0	0	0	0.052	1.00	0	0	5.20E-04	1.0	1.00	0	0	5.20E-04	0.20	1.0
Pesticide	alpha-Chlordane	NBD	NBD	NBD	NBD	Badger	0.035	1.0	0	0	0.052	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	2.1	21
Pesticide	beta-1,2,3,4,5,6-Hexachlorocyclohexane	NBD	NBD	NBD	NBD	Badger	0.035	1.0	0	0	0.052	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	0.40	2.0
Pesticide	Dichlorodiphenyldichloroethylene	NBD	NBD	NBD	NBD	Badger	0.035	1.0	0	0	0.052	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	0.15	0.74
Pesticide	Dichlorodiphenyltrichloroethane	NBD	NBD	NBD	NBD	Badger	0.035	1.0	0	0	0.052	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	0.15	0.74
Pesticide	Dieldrin	NBD	NBD	NBD	NBD	Badger	0.035	1.0	0	0	0.052	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	0.015	0.030
Pesticide	Endosulfan I	NBD	NBD	NBD	NBD	Badger	0.035	1.0	0	0	0.052	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	0.15	---
Pesticide	Endosulfan sulfate	NBD	NBD	NBD	NBD	Badger	0.035	1.0	0	0	0.052	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	0.15	---
Pesticide	Endrin aldehyde	NBD	NBD	NBD	NBD	Badger	0.035	1.0	0	0	0.052	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	0.092	0.92
Pesticide	gamma-Chlordane	NBD	NBD	NBD	NBD	Badger	0.035	1.0	0	0	0.052	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	2.1	21
Pesticide	Methoxychlor	NBD	NBD	NBD	NBD	Badger	0.035	1.0	0	0	0.052	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	4.0	8.0
SVOC	Bis[2-ethylhexyl] phthalate	204	16,435	0	5,261	Badger	0.035	1.0	0	0	0.052	183	0	0	0.37	183	1.00	0	0	0.0020	18	183
SVOC	Phenol	23	14,516	0	1,036	Badger	0.035	1.0	0	0	0.052	36	0	0	0.042	36	1.00	0	0	0.0012	12	36

Notes:
It has been conservatively assumed that all chemical intake is absorbed by the receptor.
Blue Shaded values are Calculated using NOAELs TRV due to the lack of LOAELs TRV
Acronyms:
BAF = Bioaccumulation factor
DW = Dry weight
FIR = Food ingestion rate
LOAEL = lowest observed adverse effect level
mg/kg = Miligrams per kilogram
mg/kg BW/day, DW = Miligrams per kilogram of body weight per day, dry weight
mg/kg/d = Miligrams per kilogram per day
NTD - PRG was not calculated because there was no toxicity data available.
NBD - PRG was not calculated due to incomplete or a lack of bioacculation data.
PRGs = Preliminary remediation goals
TRV = Toxicity reference value

Equations:
Total Estimated Exposure = Food Intake + Incidental Soil Intake
Food Intake = estimated concentration in biota X proportion of biota type X food ingestion rate (FIR)
Incidental Soil intake = concentration in soil X proportion of soil as component of diet X food ingestion rate (FIR)
ln[Estimated Concentrations in Biota] (method 1) = B1*(ln[Site Specific Soil Concentration]) + B0
where: B1 = slope and B0 = intercept
Estimated Concentrations in Biota (method 2) = soil concentration X BAF
Hazard Quotient = Total Estimated Exposure (Dose) / TRV
Therefore, when the HQ = 1, soil concentration = PRG
where: Soil concentration (mg/kg) = TRV / (Food Intake + Incidental Soil Intake) = Soil PRG

Appendix G

Derivation of NOAEL-Based Tier 2 PRGs at the Hanford Site

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Table G-1. Derivation of Tier 2 NOAEL-Based PRGs for CA Quail at the Hanford Site

			Estimated Concentrations in Biota (mg/kg DW)				Food Intake	Diet Composition (proportion)				Estimated Exposure (mg/kg/d)					Percent Estimated Exposure by Pathway				
	Analyte	Soil PRG (mg/kg)	Terrestrial Plants	Terrestrial Arthropod	Small Mammals	Species	(kg/kg-bw/d, dw)	Small Mammals	Soil Inverts	Plants	Soil	Small Mammals	Soil Inverts	Plants	Soil	Total	Small Mam.	Soil Inverts	Plants	Soil	Selected Avian TRV (mg/kg/d) NOAEL
General Inorganic	Flouride	NBD	NBD	NBD	NBD	California Quail	0.078	0	0	1.0	0.061	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	7.8
General Inorganic	Nitrogen in Nitrite and Nitrate	NTD	NTD	NTD	NTD	California Quail	0.078	0	0	1.0	0.061	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	---
Metal	Silver	421	0.21	14	1.8	California Quail	0.078	0	0	1.0	0.061	0	0	0.016	2.0	2.0	0	0	0.0080	0.99	2.0
Metal	Aluminum	19,217	234	118	356	California Quail	0.078	0	0	1.0	0.061	0	0	18	91	110	0	0	0.17	0.83	110
Metal	Arsenic	1,102	52	29	4.9	California Quail	0.078	0	0	1.0	0.061	0	0	4.1	5.2	9.3	0	0	0.44	0.56	9.3
Metal	Boron	16	368	88	16	California Quail	0.078	0	0	1.0	0.061	0	0	29	0.075	29	0	0	1.00	0.0026	29
Metal	Barium	859	214	48	105	California Quail	0.078	0	0	1.0	0.061	0	0	17	4.1	21	0	0	0.80	0.20	21
Metal	Beryllium	NTD	NTD	NTD	NTD	California Quail	0.078	0	0	1.0	0.061	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	---
Metal	Cadium	162	9.0	32	7.9	California Quail	0.078	0	0	1.0	0.061	0	0	0.70	0.77	1.5	0	0	0.48	0.52	1.5
Metal	Cobalt	1,363	14	15	32	California Quail	0.078	0	0	1.0	0.061	0	0	1.1	6.5	7.6	0	0	0.15	0.85	7.6
Metal	Chromium	184	23	11	19	California Quail	0.078	0	0	1.0	0.061	0	0	1.8	0.88	2.7	0	0	0.67	0.33	2.7
Metal	Copper	141	43	41	16	California Quail	0.078	0	0	1.0	0.061	0	0	3.4	0.67	4.1	0	0	0.83	0.17	4.1
Metal	Mercury	3.0	0.69	2.7	0.27	California Quail	0.078	0	0	1.0	0.061	0	0	0.054	0.014	0.068	0	0	0.79	0.21	0.068
Metal	Lithium	NTD	NTD	NTD	NTD	California Quail	0.078	0	0	1.0	0.061	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	---
Metal	Manganese	10,671	1,644	562	441	California Quail	0.078	0	0	1.0	0.061	0	0	128	51	179	0	0	0.72	0.28	179
Metal	Molybdenum	13	44	23	24	California Quail	0.078	0	0	1.0	0.061	0	0	3.5	0.060	3.5	0	0	0.98	0.017	3.5
Metal	Nickel	1,134	17	105	17	California Quail	0.078	0	0	1.0	0.061	0	0	1.3	5.4	6.7	0	0	0.20	0.80	6.7
Metal	Lead	261	5.0	8.1	11	California Quail	0.078	0	0	1.0	0.061	0	0	0.39	1.2	1.6	0	0	0.24	0.76	1.6
Metal	Antimony	NTD	NTD	NTD	NTD	California Quail	0.078	0	0	1.0	0.061	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	---
Metal	Selenium	5.3	3.4	6.1	3.4	California Quail	0.078	0	0	1.0	0.061	0	0	0.26	0.025	0.29	0	0	0.91	0.086	0.29
Metal	Tin	39	85	38	55	California Quail	0.078	0	0	1.0	0.061	0	0	6.6	0.19	6.8	0	0	0.97	0.027	6.8
Metal	Thallium	NTD	NTD	NTD	NTD	California Quail	0.078	0	0	1.0	0.061	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	---
Metal	Uranium - Calculated Total	2,002	83	1,299	32,879	California Quail	0.078	0	0	1.0	0.061	0	0	6.5	9.5	16	0	0	0.40	0.60	16
Metal	Vanadium	51	1.3	0.50	0.74	California Quail	0.078	0	0	1.0	0.061	0	0	0.10	0.24	0.34	0	0	0.29	0.71	0.34
Metal	Zinc	6,236	467	530	12,821	California Quail	0.078	0	0	1.0	0.061	0	0	36	30	66	0	0	0.55	0.45	66
PAH	Benzo[k]fluoranthene	0.17	8.3	0	0	California Quail	0.078	0	0	1.0	0.061	0	0	0.65	7.96E-04	0.65	0	0	1.00	0.0012	0.65
PAH	Fluoranthene	NBD	NBD	NBD	NBD	California Quail	0.078	0	0	1.0	0.061	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	0.65
PAH	Fluorene	NBD	NBD	NBD	NBD	California Quail	0.078	0	0	1.0	0.061	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	33
PAH	Phenanthrene	NBD	NBD	NBD	NBD	California Quail	0.078	0	0	1.0	0.061	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	33
PCB	PCB	NBD	NBD	NBD	NBD	California Quail	0.078	0	0	1.0	0.061	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	0.18
Pesticide	Aldrin	0.0064	0.089	0	0.64	California Quail	0.078	0	0	1.0	0.061	0	0	0.0070	3.06E-05	0.0070	0	0	1.00	0.0044	0.0070
Pesticide	alpha-Chlordane	0.23	27	0	0	California Quail	0.078	0	0	1.0	0.061	0	0	2.1	0.0011	2.1	0	0	1.00	5.12E-04	2.1
Pesticide	beta-1,2,3,4,5,6-Hexachlorocyclohexane	0.041	7.3	0	0	California Quail	0.078	0	0	1.0	0.061	0	0	0.57	1.95E-04	0.57	0	0	1.00	3.41E-04	0.57
Pesticide	Dichlorodiphenyldichloroethylene	0.029	2.9	0.50	0	California Quail	0.078	0	0	1.0	0.061	0	0	0.23	1.39E-04	0.23	0	0	1.00	6.13E-04	0.23
Pesticide	Dichlorodiphenyltrichloroethane	0.026	2.9	1.0	0	California Quail	0.078	0	0	1.0	0.061	0	0	0.23	1.24E-04	0.23	0	0	1.00	5.45E-04	0.23
Pesticide	Dieldrin	5.05E-04	0.91	0	0	California Quail	0.078	0	0	1.0	0.061	0	0	0.071	2.40E-06	0.071	0	0	1.00	3.39E-05	0.071
Pesticide	Endosulfan I	3.5	128	325	0	California Quail	0.078	0	0	1.0	0.061	0	0	10.0	0.017	10	0	0	1.00	0.0017	10
Pesticide	Endosulfan sulfate	32	126	95,184	0	California Quail	0.078	0	0	1.0	0.061	0	0	9.8	0.15	10	0	0	0.98	0.015	10
Pesticide	Endrin aldehyde	0.056	3.8	0	0	California Quail	0.078	0	0	1.0	0.061	0	0	0.30	2.66E-04	0.30	0	0	1.00	8.86E-04	0.30
Pesticide	gamma-Chlordane	0.65	27	0	0	California Quail	0.078	0	0	1.0	0.061	0	0	2.1	0.0031	2.1	0	0	1.00	0.0014	2.1
Pesticide	Methoxychlor	NTD	NTD	NTD	NTD	California Quail	0.078	0	0	1.0	0.061	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	---
SVOC	Bis[2-ethylhexyl] phthalate	0.17	14	0	4.5	California Quail	0.078	0	0	1.0	0.061	0	0	1.1	8.32E-04	1.1	0	0	1.00	7.56E-04	1.1
SVOC	Phenol	NTD	NTD	NTD	NTD	California Quail	0.078	0	0	1.0	0.061	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	---

Notes:
It has been conservatively assumed that all chemical intake is absorbed by the receptor.
Acronyms:
BAF = Bioaccumulation factor
DW = Dry weight
FIR = Food ingestion rate
NOAEL = lowest observed adverse effect level
mg/kg = Miligrams per kilogram
mg/kg BW/day, DW = Miligrams per kilogram of body weight per day, dry weight
mg/kg/d = Miligrams per kilogram per day
NTD - PRG was not calculated because there was no toxicity data available.
NBD - PRG was not calculated due to incomplete or a lack of bioacculation data.
PRGs = Preliminary remediation goals
TRV = Toxicity reference value

Equations:
Total Estimated Exposure = Food Intake + Incidental Soil Intake
Food Intake = estimated concentration in biota X proportion of biota type X food ingestion rate (FIR)
Incidental Soil intake = concentration in soil X proportion of soil as component of diet X food ingestion rate (FIR)
ln[Estimated Concentrations in Biota] (method 1) = B1*(ln[Site Specific Soil Concentration]) + B0
where: B1 = slope and B0 = intercept
Estimated Concentrations in Biota (method 2) = soil concentration X BAF
Hazard Quotient = Total Estimated Exposure (Dose) / TRV
Therefore, when the HQ = 1, soil concentration = PRG
where: Soil concentration (mg/kg) = TRV / (Food Intake + Incidental Soil Intake) = Soil PRG

Table G-2. Derivation of Tier 2 NOAEL-Based PRGs for Western Meadowlark at the Hanford Site

			Estimated Concentrations in Biota (mg/kg DW)				Food Intake	Diet Composition (proportion)				Estimated Exposure (mg/kg/d)					Percent Estimated Exposure by Pathway				
	Analyte	Soil PRG (mg/kg)	Terrestrial Plants	Terrestrial Arthropod	Small Mammals	Species	(kg/kg-bw/d, dw)	Small Mammals	Soil Inverts	Plants	Soil	Small Mammals	Soil Inverts	Plants	Soil	Total	Small Mam.	Soil Inverts	Plants	Soil	Selected Avian TRV (mg/kg/d) NOAEL
General Inorganic	Flouride	1,533	0.32	52	6.7	Meadowlark	0.12	0	0.63	0.37	0.021	0	3.9	0.014	3.8	7.8	0	0.51	0.0018	0.49	7.8
General Inorganic	Nitrogen in Nitrite and Nitrate	NTD	NTD	NTD	NTD	Meadowlark	0.12	0	0.63	0.37	0.021	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	---
Metal	Silver	396	0.20	13	1.7	Meadowlark	0.12	0	0.63	0.37	0.021	0	1.0	0.0090	0.99	2.0	0	0.50	0.0045	0.49	2.0
Metal	Aluminum	31,220	380	191	569	Meadowlark	0.12	0	0.63	0.37	0.021	0	15	17	78	110	0	0.13	0.15	0.71	110
Metal	Arsenic	1,463	69	34	6.5	Meadowlark	0.12	0	0.63	0.37	0.021	0	2.6	3.1	3.7	9.3	0	0.28	0.33	0.39	9.3
Metal	Boron	20	458	110	20	Meadowlark	0.12	0	0.63	0.37	0.021	0	8.3	20	0.049	29	0	0.29	0.71	0.0017	29
Metal	Barium	1,165	291	65	142	Meadowlark	0.12	0	0.63	0.37	0.021	0	4.9	13	2.9	21	0	0.24	0.62	0.14	21
Metal	Beryllium	NTD	NTD	NTD	NTD	Meadowlark	0.12	0	0.63	0.37	0.021	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	---
Metal	Cadium	51	4.8	15	4.4	Meadowlark	0.12	0	0.63	0.37	0.021	0	1.1	0.21	0.13	1.5	0	0.77	0.14	0.087	1.5
Metal	Cobalt	2,000	21	22	46	Meadowlark	0.12	0	0.63	0.37	0.021	0	1.7	0.94	5.0	7.6	0	0.22	0.12	0.66	7.6
Metal	Chromium	211	26	13	22	Meadowlark	0.12	0	0.63	0.37	0.021	0	0.96	1.2	0.53	2.7	0	0.36	0.44	0.20	2.7
Metal	Copper	86	26	35	14	Meadowlark	0.12	0	0.63	0.37	0.021	0	2.7	1.2	0.22	4.1	0	0.66	0.29	0.053	4.1
Metal	Mercury	0.76	0.33	0.68	0.068	Meadowlark	0.12	0	0.63	0.37	0.021	0	0.052	0.015	0.0019	0.068	0	0.76	0.21	0.028	0.068
Metal	Lithium	NTD	NTD	NTD	NTD	Meadowlark	0.12	0	0.63	0.37	0.021	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	---
Metal	Manganese	13,387	2,062	705	553	Meadowlark	0.12	0	0.63	0.37	0.021	0	54	92	34	179	0	0.30	0.51	0.19	179
Metal	Molybdenum	12	41	22	22	Meadowlark	0.12	0	0.63	0.37	0.021	0	1.7	1.8	0.029	3.5	0	0.47	0.52	0.0083	3.5
Metal	Nickel	643	13	60	13	Meadowlark	0.12	0	0.63	0.37	0.021	0	4.5	0.57	1.6	6.7	0	0.67	0.085	0.24	6.7
Metal	Lead	291	5.3	8.8	12	Meadowlark	0.12	0	0.63	0.37	0.021	0	0.67	0.24	0.73	1.6	0	0.41	0.14	0.45	1.6
Metal	Antimony	NTD	NTD	NTD	NTD	Meadowlark	0.12	0	0.63	0.37	0.021	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	---
Metal	Selenium	2.4	1.5	2.8	1.6	Meadowlark	0.12	0	0.63	0.37	0.021	0	0.22	0.068	0.0061	0.29	0	0.74	0.24	0.021	0.29
Metal	Tin	39	85	38	55	Meadowlark	0.12	0	0.63	0.37	0.021	0	2.9	3.8	0.099	6.8	0	0.43	0.56	0.015	6.8
Metal	Thallium	NTD	NTD	NTD	NTD	Meadowlark	0.12	0	0.63	0.37	0.021	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	---
Metal	Uranium - Calculated Total	339	14	191	3,033	Meadowlark	0.12	0	0.63	0.37	0.021	0	15	0.63	0.85	16	0	0.91	0.039	0.053	16
Metal	Vanadium	69	2.7	0.68	1.0	Meadowlark	0.12	0	0.63	0.37	0.021	0	0.051	0.12	0.17	0.34	0	0.15	0.35	0.50	0.34
Metal	Zinc	4,604	404	482	9,466	Meadowlark	0.12	0	0.63	0.37	0.021	0	37	18	12	66	0	0.55	0.27	0.17	66
PAH	Benzo[k]fluoranthene	NBD	NBD	NBD	NBD	Meadowlark	0.12	0	0.63	0.37	0.021	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	0.65
PAH	Fluoranthene	NBD	NBD	NBD	NBD	Meadowlark	0.12	0	0.63	0.37	0.021	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	0.65
PAH	Fluorene	NBD	NBD	NBD	NBD	Meadowlark	0.12	0	0.63	0.37	0.021	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	33
PAH	Phenanthrene	NBD	NBD	NBD	NBD	Meadowlark	0.12	0	0.63	0.37	0.021	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	33
PCB	PCB	NBD	NBD	NBD	NBD	Meadowlark	0.12	0	0.63	0.37	0.021	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	0.18
Pesticide	Aldrin	NBD	NBD	NBD	NBD	Meadowlark	0.12	0	0.63	0.37	0.021	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	0.0070
Pesticide	alpha-Chlordane	NBD	NBD	NBD	NBD	Meadowlark	0.12	0	0.63	0.37	0.021	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	2.1
Pesticide	beta-1,2,3,4,5,6-Hexachlorocyclohexane	NBD	NBD	NBD	NBD	Meadowlark	0.12	0	0.63	0.37	0.021	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	0.57
Pesticide	Dichlorodiphenyldichloroethylene	0.040	3.9	0.68	0	Meadowlark	0.12	0	0.63	0.37	0.021	0	0.051	0.18	9.93E-05	0.23	0	0.23	0.77	4.37E-04	0.23
Pesticide	Dichlorodiphenyltrichloroethane	0.028	3.2	1.1	0	Meadowlark	0.12	0	0.63	0.37	0.021	0	0.086	0.14	7.10E-05	0.23	0	0.38	0.62	3.13E-04	0.23
Pesticide	Dieldrin	NBD	NBD	NBD	NBD	Meadowlark	0.12	0	0.63	0.37	0.021	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	0.071
Pesticide	Endosulfan I	1.2	42	107	0	Meadowlark	0.12	0	0.63	0.37	0.021	0	8.1	1.9	0.0029	10	0	0.81	0.19	2.90E-04	10
Pesticide	Endosulfan sulfate	0.044	0.17	132	0	Meadowlark	0.12	0	0.63	0.37	0.021	0	10.0	0.0078	1.10E-04	10	0	1.00	7.78E-04	1.10E-05	10
Pesticide	Endrin aldehyde	NBD	NBD	NBD	NBD	Meadowlark	0.12	0	0.63	0.37	0.021	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	0.30
Pesticide	gamma-Chlordane	NBD	NBD	NBD	NBD	Meadowlark	0.12	0	0.63	0.37	0.021	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	2.1
Pesticide	Methoxychlor	NTD	NTD	NTD	NTD	Meadowlark	0.12	0	0.63	0.37	0.021	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	---
SVOC	Bis[2-ethylhexyl] phthalate	NBD	NBD	NBD	NBD	Meadowlark	0.12	0	0.63	0.37	0.021	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	1.1
SVOC	Phenol	NTD	NTD	NTD	NTD	Meadowlark	0.12	0	0.63	0.37	0.021	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	---

Notes:
It has been conservatively assumed that all chemical intake is absorbed by the receptor.
Acronyms:
BAF = Bioaccumulation factor
DW = Dry weight
FIR = Food ingestion rate
NOAEL = lowest observed adverse effect level
mg/kg = Miligrams per kilogram
mg/kg BW/day, DW = Miligrams per kilogram of body weight per day, dry weight
mg/kg/d = Miligrams per kilogram per day
NTD - PRG was not calculated because there was no toxicity data available.
NBD - PRG was not calculated due to incomplete or a lack of bioacculation data.
PRGs = Preliminary remediation goals
TRV = Toxicity reference value

Equations:
Total Estimated Exposure = Food Intake + Incidental Soil Intake
Food Intake = estimated concentration in biota X proportion of biota type X food ingestion rate (FIR)
Incidental Soil intake = concentration in soil X proportion of soil as component of diet X food ingestion rate (FIR)
ln[Estimated Concentrations in Biota] (method 1) = B1*(ln[Site Specific Soil Concentration]) + B0
where: B1 = slope and B0 = intercept
Estimated Concentrations in Biota (method 2) = soil concentration X BAF
Hazard Quotient = Total Estimated Exposure (Dose) / TRV
Therefore, when the HQ = 1, soil concentration = PRG
where: Soil concentration (mg/kg) = TRV / (Food Intake + Incidental Soil Intake) = Soil PRG

Table G-3. Derivation of Tier 2 NOAEL-Based PRGs for Killdeer at the Hanford Site

			Estimated Concentrations in Biota (mg/kg DW)				Food Intake	Diet Composition (proportion)				Estimated Exposure (mg/kg/d)					Percent Estimated Exposure by Pathway				
	Analyte	Soil PRG (mg/kg)	Terrestrial Plants	Terrestrial Arthropod	Small Mammals	Species	(kg/kg-bw/d, dw)	Small Mammals	Soil Inverts	Plants	Soil	Small Mammals	Soil Inverts	Plants	Soil	Total	Small Mam.	Soil Inverts	Plants	Soil	Selected Avian TRV (mg/kg/d) NOAEL
General Inorganic	Flouride	380	0.20	13	1.7	Killdeer	0.19	0	1.0	0	0.073	0	2.5	0	5.3	7.8	0	0.32	0	0.68	7.8
General Inorganic	Nitrogen in Nitrite and Nitrate	NTD	NTD	NTD	NTD	Killdeer	0.19	0	1.0	0	0.073	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	---
Metal	Silver	98	0.13	3.3	0.43	Killdeer	0.19	0	1.0	0	0.073	0	0.64	0	1.4	2.0	0	0.32	0	0.68	2.0
Metal	Aluminum	7,214	88	44	138	Killdeer	0.19	0	1.0	0	0.073	0	8.5	0	101	110	0	0.077	0	0.92	110
Metal	Arsenic	427	20	17	1.9	Killdeer	0.19	0	1.0	0	0.073	0	3.3	0	6.0	9.3	0	0.36	0	0.64	9.3
Metal	Boron	26	617	148	27	Killdeer	0.19	0	1.0	0	0.073	0	28	0	0.37	29	0	0.99	0	0.013	29
Metal	Barium	841	210	47	102	Killdeer	0.19	0	1.0	0	0.073	0	9.0	0	12	21	0	0.43	0	0.57	21
Metal	Beryllium	NTD	NTD	NTD	NTD	Killdeer	0.19	0	1.0	0	0.073	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	---
Metal	Cadium	15	2.4	6.6	2.3	Killdeer	0.19	0	1.0	0	0.073	0	1.3	0	0.20	1.5	0	0.86	0	0.14	1.5
Metal	Cobalt	472	5.0	5.1	12	Killdeer	0.19	0	1.0	0	0.073	0	0.99	0	6.6	7.6	0	0.13	0	0.87	7.6
Metal	Chromium	104	13	6.3	11	Killdeer	0.19	0	1.0	0	0.073	0	1.2	0	1.5	2.7	0	0.45	0	0.55	2.7
Metal	Copper	16	4.8	20	11	Killdeer	0.19	0	1.0	0	0.073	0	3.8	0	0.22	4.1	0	0.95	0	0.054	4.1
Metal	Mercury	0.37	0.22	0.33	0.033	Killdeer	0.19	0	1.0	0	0.073	0	0.063	0	0.0052	0.068	0	0.92	0	0.076	0.068
Metal	Lithium	NTD	NTD	NTD	NTD	Killdeer	0.19	0	1.0	0	0.073	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	---
Metal	Manganese	7,410	1,142	390	306	Killdeer	0.19	0	1.0	0	0.073	0	75	0	104	179	0	0.42	0	0.58	179
Metal	Molybdenum	9.5	34	18	18	Killdeer	0.19	0	1.0	0	0.073	0	3.4	0	0.13	3.5	0	0.96	0	0.038	3.5
Metal	Nickel	211	7.5	20	7.8	Killdeer	0.19	0	1.0	0	0.073	0	3.8	0	3.0	6.7	0	0.56	0	0.44	6.7
Metal	Lead	72	2.4	3.2	5.5	Killdeer	0.19	0	1.0	0	0.073	0	0.62	0	1.0	1.6	0	0.38	0	0.62	1.6
Metal	Antimony	NTD	NTD	NTD	NTD	Killdeer	0.19	0	1.0	0	0.073	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	---
Metal	Selenium	1.2	0.74	1.4	0.80	Killdeer	0.19	0	1.0	0	0.073	0	0.27	0	0.017	0.29	0	0.94	0	0.059	0.29
Metal	Tin	34	73	33	48	Killdeer	0.19	0	1.0	0	0.073	0	6.3	0	0.48	6.8	0	0.93	0	0.070	6.8
Metal	Thallium	NTD	NTD	NTD	NTD	Killdeer	0.19	0	1.0	0	0.073	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	---
Metal	Uranium - Calculated Total	139	5.8	73	917	Killdeer	0.19	0	1.0	0	0.073	0	14	0	1.9	16	0	0.88	0	0.12	16
Metal	Vanadium	22	0.17	0.21	0.31	Killdeer	0.19	0	1.0	0	0.073	0	0.041	0	0.30	0.34	0	0.12	0	0.88	0.34
Metal	Zinc	844	179	282	1,736	Killdeer	0.19	0	1.0	0	0.073	0	54	0	12	66	0	0.82	0	0.18	66
PAH	Benzo[k]fluoranthene	NBD	NBD	NBD	NBD	Killdeer	0.19	0	1.0	0	0.073	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	0.65
PAH	Fluoranthene	1.3	0	3.3	0	Killdeer	0.19	0	1.0	0	0.073	0	0.63	0	0.018	0.65	0	0.97	0	0.028	0.65
PAH	Fluorene	0.80	0	169	0	Killdeer	0.19	0	1.0	0	0.073	0	32	0	0.011	33	0	1.00	0	3.46E-04	33
PAH	Phenanthrene	4.8	0	169	0	Killdeer	0.19	0	1.0	0	0.073	0	32	0	0.068	33	0	1.00	0	0.0021	33
PCB	PCB	2.8	0	0.74	305	Killdeer	0.19	0	1.0	0	0.073	0	0.14	0	0.039	0.18	0	0.78	0	0.22	0.18
Pesticide	Aldrin	NBD	NBD	NBD	NBD	Killdeer	0.19	0	1.0	0	0.073	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	0.0070
Pesticide	alpha-Chlordane	NBD	NBD	NBD	NBD	Killdeer	0.19	0	1.0	0	0.073	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	2.1
Pesticide	beta-1,2,3,4,5,6-Hexachlorocyclohexane	NBD	NBD	NBD	NBD	Killdeer	0.19	0	1.0	0	0.073	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	0.57
Pesticide	Dichlorodiphenyldichloroethylene	0.069	6.8	1.2	0	Killdeer	0.19	0	1.0	0	0.073	0	0.23	0	9.65E-04	0.23	0	1.00	0	0.0043	0.23
Pesticide	Dichlorodiphenyltrichloroethane	0.030	3.3	1.2	0	Killdeer	0.19	0	1.0	0	0.073	0	0.23	0	4.15E-04	0.23	0	1.00	0	0.0018	0.23
Pesticide	Dieldrin	NBD	NBD	NBD	NBD	Killdeer	0.19	0	1.0	0	0.073	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	0.071
Pesticide	Endosulfan I	0.56	21	52	0	Killdeer	0.19	0	1.0	0	0.073	0	10.0	0	0.0079	10	0	1.00	0	7.89E-04	10
Pesticide	Endosulfan sulfate	0.017	0.069	52	0	Killdeer	0.19	0	1.0	0	0.073	0	10.0	0	2.44E-04	10.0	0	1.00	0	2.44E-05	10
Pesticide	Endrin aldehyde	NBD	NBD	NBD	NBD	Killdeer	0.19	0	1.0	0	0.073	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	0.30
Pesticide	gamma-Chlordane	NBD	NBD	NBD	NBD	Killdeer	0.19	0	1.0	0	0.073	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	2.1
Pesticide	Methoxychlor	NTD	NTD	NTD	NTD	Killdeer	0.19	0	1.0	0	0.073	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	---
SVOC	Bis[2-ethylhexyl] phthalate	NBD	NBD	NBD	NBD	Killdeer	0.19	0	1.0	0	0.073	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	1.1
SVOC	Phenol	NTD	NTD	NTD	NTD	Killdeer	0.19	0	1.0	0	0.073	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	---

Notes:
It has been conservatively assumed that all chemical intake is absorbed by the receptor.
Acronyms:
BAF = Bioaccumulation factor
DW = Dry weight
FIR = Food ingestion rate
NOAEL = lowest observed adverse effect level
mg/kg = Miligrams per kilogram
mg/kg BW/day, DW = Miligrams per kilogram of body weight per day, dry weight
mg/kg/d = Miligrams per kilogram per day
NTD - PRG was not calculated because there was no toxicity data available.
NBD - PRG was not calculated due to incomplete or a lack of bioacculation data.
PRGs = Preliminary remediation goals
TRV = Toxicity reference value

Equations:
Total Estimated Exposure = Food Intake + Incidental Soil Intake
Food Intake = estimated concentration in biota X proportion of biota type X food ingestion rate (FIR)
Incidental Soil intake = concentration in soil X proportion of soil as component of diet X food ingestion rate (FIR)
ln[Estimated Concentrations in Biota] (method 1) = B1*(ln[Site Specific Soil Concentration]) + B0
where: B1 = slope and B0 = intercept
Estimated Concentrations in Biota (method 2) = soil concentration X BAF
Hazard Quotient = Total Estimated Exposure (Dose) / TRV
Therefore, when the HQ = 1, soil concentration = PRG
where: Soil concentration (mg/kg) = TRV / (Food Intake + Incidental Soil Intake) = Soil PRG

Table G-4. Derivation of Tier 2 NOAEL-Based PRGs for Red-tailed Hawk at the Hanford Site

			Estimated Concentrations in Biota (mg/kg DW)				Food Intake	Diet Composition (proportion)				Estimated Exposure (mg/kg/d)					Percent Estimated Exposure by Pathway				
	Analyte	Soil PRG (mg/kg)	Terrestrial Plants	Terrestrial Arthropod	Small Mammals	Species	(kg/kg-bw/d, dw)	Small Mammals	Soil Inverts	Plants	Soil	Small Mammals	Soil Inverts	Plants	Soil	Total	Small Mam.	Soil Inverts	Plants	Soil	Selected Avian TRV (mg/kg/d) NOAEL
General Inorganic	Flouride	7,795	0.56	264	34	Red-tailed Hawk	0.035	1.0	0	0	0.024	1.2	0	0	6.6	7.8	0.15	0	0	0.85	7.8
General Inorganic	Nitrogen in Nitrite and Nitrate	NTD	NTD	NTD	NTD	Red-tailed Hawk	0.035	1.0	0	0	0.024	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	---
Metal	Silver	2,019	0.35	68	8.8	Red-tailed Hawk	0.035	1.0	0	0	0.024	0.31	0	0	1.7	2.0	0.15	0	0	0.85	2.0
Metal	Aluminum	74,599	909	457	1,317	Red-tailed Hawk	0.035	1.0	0	0	0.024	46	0	0	63	110	0.42	0	0	0.58	110
Metal	Arsenic	9,254	437	92	41	Red-tailed Hawk	0.035	1.0	0	0	0.024	1.5	0	0	7.8	9.3	0.16	0	0	0.84	9.3
Metal	Boron	782	18,353	4,397	797	Red-tailed Hawk	0.035	1.0	0	0	0.024	28	0	0	0.66	29	0.98	0	0	0.023	29
Metal	Barium	4,041	1,009	225	492	Red-tailed Hawk	0.035	1.0	0	0	0.024	17	0	0	3.4	21	0.84	0	0	0.16	21
Metal	Beryllium	NTD	NTD	NTD	NTD	Red-tailed Hawk	0.035	1.0	0	0	0.024	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	---
Metal	Cadium	935	23	100	19	Red-tailed Hawk	0.035	1.0	0	0	0.024	0.68	0	0	0.79	1.5	0.46	0	0	0.54	1.5
Metal	Cobalt	4,679	50	51	103	Red-tailed Hawk	0.035	1.0	0	0	0.024	3.6	0	0	4.0	7.6	0.48	0	0	0.52	7.6
Metal	Chromium	584	72	35	61	Red-tailed Hawk	0.035	1.0	0	0	0.024	2.2	0	0	0.49	2.7	0.81	0	0	0.19	2.7
Metal	Copper	3,647	1,116	122	27	Red-tailed Hawk	0.035	1.0	0	0	0.024	0.96	0	0	3.1	4.0	0.24	0	0	0.76	4.1
Metal	Mercury	17	1.7	15	1.5	Red-tailed Hawk	0.035	1.0	0	0	0.024	0.054	0	0	0.014	0.068	0.79	0	0	0.21	0.068
Metal	Lithium	NTD	NTD	NTD	NTD	Red-tailed Hawk	0.035	1.0	0	0	0.024	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	---
Metal	Manganese	77,618	11,957	4,089	3,208	Red-tailed Hawk	0.035	1.0	0	0	0.024	113	0	0	66	179	0.63	0	0	0.37	179
Metal	Molybdenum	52	183	96	99	Red-tailed Hawk	0.035	1.0	0	0	0.024	3.5	0	0	0.044	3.5	0.99	0	0	0.012	3.5
Metal	Nickel	6,425	38	596	36	Red-tailed Hawk	0.035	1.0	0	0	0.024	1.3	0	0	5.4	6.7	0.19	0	0	0.81	6.7
Metal	Lead	966	11	21	23	Red-tailed Hawk	0.035	1.0	0	0	0.024	0.81	0	0	0.82	1.6	0.50	0	0	0.50	1.6
Metal	Antimony	NTD	NTD	NTD	NTD	Red-tailed Hawk	0.035	1.0	0	0	0.024	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	---
Metal	Selenium	12	8.1	14	7.9	Red-tailed Hawk	0.035	1.0	0	0	0.024	0.28	0	0	0.010	0.29	0.96	0	0	0.036	0.29
Metal	Tin	135	292	131	189	Red-tailed Hawk	0.035	1.0	0	0	0.024	6.7	0	0	0.11	6.8	0.98	0	0	0.017	6.8
Metal	Thallium	NTD	NTD	NTD	NTD	Red-tailed Hawk	0.035	1.0	0	0	0.024	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	---
Metal	Uranium - Calculated Total	82	3.4	41	451	Red-tailed Hawk	0.035	1.0	0	0	0.024	16	0	0	0.069	16	1.00	0	0	0.0043	16
Metal	Vanadium	253	58	2.5	3.7	Red-tailed Hawk	0.035	1.0	0	0	0.024	0.13	0	0	0.21	0.34	0.38	0	0	0.62	0.34
Metal	Zinc	900	185	288	1,851	Red-tailed Hawk	0.035	1.0	0	0	0.024	65	0	0	0.76	66	0.99	0	0	0.012	66
PAH	Benzo[k]fluoranthene	NBD	NBD	NBD	NBD	Red-tailed Hawk	0.035	1.0	0	0	0.024	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	0.65
PAH	Fluoranthene	NBD	NBD	NBD	NBD	Red-tailed Hawk	0.035	1.0	0	0	0.024	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	0.65
PAH	Fluorene	NBD	NBD	NBD	NBD	Red-tailed Hawk	0.035	1.0	0	0	0.024	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	33
PAH	Phenanthrene	NBD	NBD	NBD	NBD	Red-tailed Hawk	0.035	1.0	0	0	0.024	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	33
PCB	PCB	0.046	0	0.021	5.1	Red-tailed Hawk	0.035	1.0	0	0	0.024	0.18	0	0	3.92E-05	0.18	1.00	0	0	2.18E-04	0.18
Pesticide	Aldrin	0.0020	0.028	0	0.20	Red-tailed Hawk	0.035	1.0	0	0	0.024	0.0070	0	0	1.68E-06	0.0070	1.00	0	0	2.40E-04	0.0070
Pesticide	alpha-Chlordane	NBD	NBD	NBD	NBD	Red-tailed Hawk	0.035	1.0	0	0	0.024	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	2.1
Pesticide	beta-1,2,3,4,5,6-Hexachlorocyclohexane	NBD	NBD	NBD	NBD	Red-tailed Hawk	0.035	1.0	0	0	0.024	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	0.57
Pesticide	Dichlorodiphenyldichloroethylene	NBD	NBD	NBD	NBD	Red-tailed Hawk	0.035	1.0	0	0	0.024	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	0.23
Pesticide	Dichlorodiphenyltrichloroethane	NBD	NBD	NBD	NBD	Red-tailed Hawk	0.035	1.0	0	0	0.024	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	0.23
Pesticide	Dieldrin	NBD	NBD	NBD	NBD	Red-tailed Hawk	0.035	1.0	0	0	0.024	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	0.071
Pesticide	Endosulfan I	NBD	NBD	NBD	NBD	Red-tailed Hawk	0.035	1.0	0	0	0.024	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	10
Pesticide	Endosulfan sulfate	NBD	NBD	NBD	NBD	Red-tailed Hawk	0.035	1.0	0	0	0.024	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	10
Pesticide	Endrin aldehyde	NBD	NBD	NBD	NBD	Red-tailed Hawk	0.035	1.0	0	0	0.024	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	0.30
Pesticide	gamma-Chlordane	NBD	NBD	NBD	NBD	Red-tailed Hawk	0.035	1.0	0	0	0.024	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	2.1
Pesticide	Methoxychlor	NTD	NTD	NTD	NTD	Red-tailed Hawk	0.035	1.0	0	0	0.024	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	---
SVOC	Bis[2-ethylhexyl] phthalate	0.31	4.3	0	31	Red-tailed Hawk	0.035	1.0	0	0	0.024	1.1	0	0	2.64E-04	1.1	1.00	0	0	2.40E-04	1.1
SVOC	Phenol	NTD	NTD	NTD	NTD	Red-tailed Hawk	0.035	1.0	0	0	0.024	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	---

Notes:
It has been conservatively assumed that all chemical intake is absorbed by the receptor.
Acronyms:
BAF = Bioaccumulation factor
DW = Dry weight
FIR = Food ingestion rate
NOAEL = lowest observed adverse effect level
mg/kg = Miligrams per kilogram
mg/kg BW/day, DW = Miligrams per kilogram of body weight per day, dry weight
mg/kg/d = Miligrams per kilogram per day
NTD - PRG was not calculated because there was no toxicity data available.
NBD - PRG was not calculated due to incomplete or a lack of bioacculation data.
PRGs = Preliminary remediation goals
TRV = Toxicity reference value

Equations:
Total Estimated Exposure = Food Intake + Incidental Soil Intake
Food Intake = estimated concentration in biota X proportion of biota type X food ingestion rate (FIR)
Incidental Soil intake = concentration in soil X proportion of soil as component of diet X food ingestion rate (FIR)
ln[Estimated Concentrations in Biota] (method 1) = B1*(ln[Site Specific Soil Concentration]) + B0
where: B1 = slope and B0 = intercept
Estimated Concentrations in Biota (method 2) = soil concentration X BAF
Hazard Quotient = Total Estimated Exposure (Dose) / TRV
Therefore, when the HQ = 1, soil concentration = PRG
where: Soil concentration (mg/kg) = TRV / (Food Intake + Incidental Soil Intake) = Soil PRG

Table G-5. Derivation of Tier 2 NOAEL-Based PRGs for Great Basin Pocket Mouse at the Hanford Site

			Estimated Concentrations in Biota (mg/kg DW)				Food Intake	Diet Composition (proportion)				Estimated Exposure (mg/kg/d)					Percent Estimated Exposure by Pathway				
	Analyte	Soil PRG (mg/kg)	Terrestrial Plants	Terrestrial Arthropod	Small Mammals	Species	(kg/kg-bw/d, dw)	Small Mammals	Soil Inverts	Plants	Soil	Small Mammals	Soil Inverts	Plants	Soil	Total	Small Mam.	Soil Inverts	Plants	Soil	Selected Mammalian TRV (mg/kg/d) NOAEL
General Inorganic	Flouride	NBD	NBD	NBD	NBD	GB Pocket Mouse	0.12	0	0	1.0	0.020	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	31
General Inorganic	Nitrogen in Nitrite and Nitrate	12	4,128	0	0	GB Pocket Mouse	0.12	0	0	1.0	0.020	0	0	507	0.030	507	0	0	1.00	5.87E-05	507
Metal	Silver	2,432	0.37	82	11	GB Pocket Mouse	0.12	0	0	1.0	0.020	0	0	0.046	6.0	6.0	0	0	0.0076	0.99	6.0
Metal	Aluminum	488	5.9	3.0	10	GB Pocket Mouse	0.12	0	0	1.0	0.020	0	0	0.73	1.2	1.9	0	0	0.38	0.62	1.9
Metal	Arsenic	126	5.9	8.9	0.56	GB Pocket Mouse	0.12	0	0	1.0	0.020	0	0	0.73	0.31	1.0	0	0	0.70	0.30	1.0
Metal	Boron	9.7	228	55	9.9	GB Pocket Mouse	0.12	0	0	1.0	0.020	0	0	28	0.024	28	0	0	1.00	8.51E-04	28
Metal	Barium	1,359	339	76	166	GB Pocket Mouse	0.12	0	0	1.0	0.020	0	0	42	3.3	45	0	0	0.93	0.074	45
Metal	Beryllium	14	4.1	0.29	0.015	GB Pocket Mouse	0.12	0	0	1.0	0.020	0	0	0.50	0.034	0.53	0	0	0.94	0.064	0.53
Metal	Cadium	87	6.4	21	5.8	GB Pocket Mouse	0.12	0	0	1.0	0.020	0	0	0.79	0.21	1.00	0	0	0.79	0.21	1.0
Metal	Cobalt	1,951	21	21	45	GB Pocket Mouse	0.12	0	0	1.0	0.020	0	0	2.5	4.8	7.3	0	0	0.35	0.65	7.3
Metal	Chromium	136	17	8.2	14	GB Pocket Mouse	0.12	0	0	1.0	0.020	0	0	2.1	0.33	2.4	0	0	0.86	0.14	2.4
Metal	Copper	140	43	41	16	GB Pocket Mouse	0.12	0	0	1.0	0.020	0	0	5.3	0.34	5.6	0	0	0.94	0.061	5.6
Metal	Mercury	0.47	0.25	0.42	0.042	GB Pocket Mouse	0.12	0	0	1.0	0.020	0	0	0.031	0.0011	0.032	0	0	0.96	0.036	0.032
Metal	Lithium	832	60	12	26	GB Pocket Mouse	0.12	0	0	1.0	0.020	0	0	7.4	2.0	9.4	0	0	0.78	0.22	9.4
Metal	Manganese	2,409	371	127	100	GB Pocket Mouse	0.12	0	0	1.0	0.020	0	0	46	5.9	52	0	0	0.89	0.11	52
Metal	Molybdenum	0.59	2.1	1.1	1.1	GB Pocket Mouse	0.12	0	0	1.0	0.020	0	0	0.26	0.0015	0.26	0	0	0.99	0.0056	0.26
Metal	Nickel	269	8.5	25	8.7	GB Pocket Mouse	0.12	0	0	1.0	0.020	0	0	1.0	0.66	1.7	0	0	0.61	0.39	1.7
Metal	Lead	1,290	12	26	27	GB Pocket Mouse	0.12	0	0	1.0	0.020	0	0	1.5	3.2	4.7	0	0	0.33	0.67	4.7
Metal	Antimony	8.8	0.30	0.066	0.0033	GB Pocket Mouse	0.12	0	0	1.0	0.020	0	0	0.037	0.022	0.059	0	0	0.63	0.37	0.059
Metal	Selenium	1.8	1.1	2.1	1.2	GB Pocket Mouse	0.12	0	0	1.0	0.020	0	0	0.14	0.0045	0.14	0	0	0.97	0.031	0.14
Metal	Tin	87	189	85	122	GB Pocket Mouse	0.12	0	0	1.0	0.020	0	0	23	0.21	23	0	0	0.99	0.0092	23
Metal	Thallium	1.7	0.087	0.097	0.20	GB Pocket Mouse	0.12	0	0	1.0	0.020	0	0	0.011	0.0043	0.015	0	0	0.71	0.29	0.015
Metal	Uranium - Calculated Total	37	1.5	18	156	GB Pocket Mouse	0.12	0	0	1.0	0.020	0	0	0.19	0.091	0.28	0	0	0.67	0.33	0.28
Metal	Vanadium	191	30	1.9	2.8	GB Pocket Mouse	0.12	0	0	1.0	0.020	0	0	3.7	0.47	4.2	0	0	0.89	0.11	4.2
Metal	Zinc	6,644	481	541	13,660	GB Pocket Mouse	0.12	0	0	1.0	0.020	0	0	59	16	75	0	0	0.78	0.22	75
PAH	Benzo[k]fluoranthene	0.16	8.1	0	0	GB Pocket Mouse	0.12	0	0	1.0	0.020	0	0	1.00	4.02E-04	1.00	0	0	1.00	4.02E-04	1.0
PAH	Fluoranthene	NBD	NBD	NBD	NBD	GB Pocket Mouse	0.12	0	0	1.0	0.020	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	125
PAH	Fluorene	NBD	NBD	NBD	NBD	GB Pocket Mouse	0.12	0	0	1.0	0.020	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	125
PAH	Phenanthrene	NBD	NBD	NBD	NBD	GB Pocket Mouse	0.12	0	0	1.0	0.020	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	1,000
PCB	PCB	NBD	NBD	NBD	NBD	GB Pocket Mouse	0.12	0	0	1.0	0.020	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	0.068
Pesticide	Aldrin	0.12	1.6	0	12	GB Pocket Mouse	0.12	0	0	1.0	0.020	0	0	0.20	2.87E-04	0.20	0	0	1.00	0.0014	0.20
Pesticide	alpha-Chlordane	0.14	17	0	0	GB Pocket Mouse	0.12	0	0	1.0	0.020	0	0	2.1	3.53E-04	2.1	0	0	1.00	1.68E-04	2.1
Pesticide	beta-1,2,3,4,5,6-Hexachlorocyclohexane	0.018	3.3	0	0	GB Pocket Mouse	0.12	0	0	1.0	0.020	0	0	0.40	4.48E-05	0.40	0	0	1.00	1.12E-04	0.40
Pesticide	Dichlorodiphenyldichloroethylene	0.012	1.2	0.21	0	GB Pocket Mouse	0.12	0	0	1.0	0.020	0	0	0.15	2.96E-05	0.15	0	0	1.00	2.01E-04	0.15
Pesticide	Dichlorodiphenyltrichloroethane	0.011	1.2	0.43	0	GB Pocket Mouse	0.12	0	0	1.0	0.020	0	0	0.15	2.63E-05	0.15	0	0	1.00	1.79E-04	0.15
Pesticide	Dieldrin	6.79E-05	0.12	0	0	GB Pocket Mouse	0.12	0	0	1.0	0.020	0	0	0.015	1.67E-07	0.015	0	0	1.00	1.11E-05	0.015
Pesticide	Endosulfan I	0.033	1.2	3.1	0	GB Pocket Mouse	0.12	0	0	1.0	0.020	0	0	0.15	8.23E-05	0.15	0	0	1.00	5.48E-04	0.15
Pesticide	Endosulfan sulfate	0.31	1.2	916	0	GB Pocket Mouse	0.12	0	0	1.0	0.020	0	0	0.15	7.52E-04	0.15	0	0	0.99	0.0050	0.15
Pesticide	Endrin aldehyde	0.011	0.75	0	0	GB Pocket Mouse	0.12	0	0	1.0	0.020	0	0	0.092	2.67E-05	0.092	0	0	1.00	2.91E-04	0.092
Pesticide	gamma-Chlordane	0.40	17	0	0	GB Pocket Mouse	0.12	0	0	1.0	0.020	0	0	2.1	9.93E-04	2.1	0	0	1.00	4.73E-04	2.1
Pesticide	Methoxychlor	0.25	33	23	0	GB Pocket Mouse	0.12	0	0	1.0	0.020	0	0	4.0	6.25E-04	4.0	0	0	1.00	1.56E-04	4.0
SVOC	Bis[2-ethylhexyl] phthalate	1.8	149	0	48	GB Pocket Mouse	0.12	0	0	1.0	0.020	0	0	18	0.0045	18	0	0	1.00	2.48E-04	18
SVOC	Phenol	0.16	98	0	7.0	GB Pocket Mouse	0.12	0	0	1.0	0.020	0	0	12	3.87E-04	12	0	0	1.00	3.22E-05	12

Notes:
It has been conservatively assumed that all chemical intake is absorbed by the receptor.
Acronyms:
BAF = Bioaccumulation factor
DW = Dry weight
FIR = Food ingestion rate
NOAEL = lowest observed adverse effect level
mg/kg = Miligrams per kilogram
mg/kg BW/day, DW = Miligrams per kilogram of body weight per day, dry weight
mg/kg/d = Miligrams per kilogram per day
NTD - PRG was not calculated because there was no toxicity data available.
NBD - PRG was not calculated due to incomplete or a lack of bioacculation data.
PRGs = Preliminary remediation goals
TRV = Toxicity reference value

Equations:
Total Estimated Exposure = Food Intake + Incidental Soil Intake
Food Intake = estimated concentration in biota X proportion of biota type X food ingestion rate (FIR)
Incidental Soil intake = concentration in soil X proportion of soil as component of diet X food ingestion rate (FIR)
ln[Estimated Concentrations in Biota] (method 1) = B1*(ln[Site Specific Soil Concentration]) + B0
where: B1 = slope and B0 = intercept
Estimated Concentrations in Biota (method 2) = soil concentration X BAF
Hazard Quotient = Total Estimated Exposure (Dose) / TRV
Therefore, when the HQ = 1, soil concentration = PRG
where: Soil concentration (mg/kg) = TRV / (Food Intake + Incidental Soil Intake) = Soil PRG

Table G-6. Derivation of Tier 2 NOAEL-Based PRGs for Deer Mouse at the Hanford Site

			Estimated Concentrations in Biota (mg/kg DW)				Food Intake	Diet Composition (proportion)				Estimated Exposure (mg/kg/d)					Percent Estimated Exposure by Pathway				
Analyte		Soil PRG (mg/kg)	Terrestrial Plants	Terrestrial Arthropod	Small Mammals	Species	(kg/kg-bw/d, dw)	Small Mammals	Soil Inverts	Plants	Soil	Small Mammals	Soil Inverts	Plants	Soil	Total	Small Mam.	Soil Inverts	Plants	Soil	Selected Mammalian TRV (mg/kg/d) NOAEL
General Inorganic	Flouride	2,305	0	286	133	Deer Mouse	0.17	0	0.50	0.50	0.020	0	24	0	7.7	31	0	0.76	0	0.24	31
General Inorganic	Nitrogen in Nitrite and Nitrate	18	6,108	0	0	Deer Mouse	0.17	0	0.50	0.50	0.020	0	0	507	0.060	507	0	0	1.00	1.17E-04	507
Metal	Silver	977	0.27	33	4.2	Deer Mouse	0.17	0	0.50	0.50	0.020	0	2.7	0.023	3.2	6.0	0	0.46	0.0038	0.54	6.0
Metal	Aluminum	399	4.9	2.4	8.5	Deer Mouse	0.17	0	0.50	0.50	0.020	0	0.20	0.40	1.3	1.9	0	0.11	0.21	0.69	1.9
Metal	Arsenic	70	3.3	6.4	0.31	Deer Mouse	0.17	0	0.50	0.50	0.020	0	0.53	0.27	0.23	1.0	0	0.51	0.26	0.22	1.0
Metal	Boron	12	272	65	12	Deer Mouse	0.17	0	0.50	0.50	0.020	0	5.4	23	0.038	28	0	0.19	0.81	0.0014	28
Metal	Barium	1,570	392	87	191	Deer Mouse	0.17	0	0.50	0.50	0.020	0	7.3	33	5.2	45	0	0.16	0.72	0.12	45
Metal	Beryllium	20	5.2	0.41	0.021	Deer Mouse	0.17	0	0.50	0.50	0.020	0	0.034	0.43	0.065	0.53	0	0.064	0.81	0.12	0.53
Metal	Cadium	21	2.9	8.3	2.8	Deer Mouse	0.17	0	0.50	0.50	0.020	0	0.69	0.24	0.069	1.0	0	0.69	0.24	0.069	1.0
Metal	Cobalt	1,436	15	16	33	Deer Mouse	0.17	0	0.50	0.50	0.020	0	1.3	1.3	4.8	7.3	0	0.18	0.17	0.65	7.3
Metal	Chromium	129	16	7.8	14	Deer Mouse	0.17	0	0.50	0.50	0.020	0	0.64	1.3	0.43	2.4	0	0.27	0.55	0.18	2.4
Metal	Copper	92	28	36	15	Deer Mouse	0.17	0	0.50	0.50	0.020	0	3.0	2.3	0.30	5.6	0	0.53	0.42	0.054	5.6
Metal	Mercury	0.23	0.17	0.20	0.021	Deer Mouse	0.17	0	0.50	0.50	0.020	0	0.017	0.014	7.65E-04	0.032	0	0.53	0.45	0.024	0.032
Metal	Lithium	899	65	13	28	Deer Mouse	0.17	0	0.50	0.50	0.020	0	1.0	5.4	3.0	9.4	0	0.11	0.57	0.32	9.4
Metal	Manganese	2,515	387	132	104	Deer Mouse	0.17	0	0.50	0.50	0.020	0	11	32	8.3	52	0	0.21	0.62	0.16	52
Metal	Molybdenum	0.57	2.0	1.1	1.1	Deer Mouse	0.17	0	0.50	0.50	0.020	0	0.089	0.17	0.0019	0.26	0	0.34	0.65	0.0073	0.26
Metal	Nickel	112	5.6	10	5.9	Deer Mouse	0.17	0	0.50	0.50	0.020	0	0.86	0.46	0.37	1.7	0	0.51	0.27	0.22	1.7
Metal	Lead	751	9.1	17	20	Deer Mouse	0.17	0	0.50	0.50	0.020	0	1.5	0.76	2.5	4.7	0	0.31	0.16	0.53	4.7
Metal	Antimony	8.7	0.30	0.065	0.0033	Deer Mouse	0.17	0	0.50	0.50	0.020	0	0.0054	0.025	0.029	0.059	0	0.091	0.42	0.49	0.059
Metal	Selenium	0.96	0.58	1.1	0.62	Deer Mouse	0.17	0	0.50	0.50	0.020	0	0.092	0.048	0.0032	0.14	0	0.64	0.33	0.022	0.14
Metal	Tin	89	192	86	125	Deer Mouse	0.17	0	0.50	0.50	0.020	0	7.2	16	0.29	23	0	0.31	0.68	0.013	23
Metal	Thallium	1.2	0.062	0.069	0.16	Deer Mouse	0.17	0	0.50	0.50	0.020	0	0.0057	0.0051	0.0041	0.015	0	0.38	0.34	0.27	0.015
Metal	Uranium - Calculated Total	6.8	0.28	2.8	16	Deer Mouse	0.17	0	0.50	0.50	0.020	0	0.23	0.023	0.023	0.28	0	0.84	0.083	0.080	0.28
Metal	Vanadium	215	39	2.1	3.1	Deer Mouse	0.17	0	0.50	0.50	0.020	0	0.17	3.3	0.71	4.2	0	0.042	0.79	0.17	4.2
Metal	Zinc	3,287	344	433	6,758	Deer Mouse	0.17	0	0.50	0.50	0.020	0	36	29	11	75	0	0.48	0.38	0.14	75
PAH	Benzo[k]fluoranthene	NBD	NBD	NBD	NBD	Deer Mouse	0.17	0	0.50	0.50	0.020	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	1.0
PAH	Fluoranthene	NBD	NBD	NBD	NBD	Deer Mouse	0.17	0	0.50	0.50	0.020	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	125
PAH	Fluorene	NBD	NBD	NBD	NBD	Deer Mouse	0.17	0	0.50	0.50	0.020	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	125
PAH	Phenanthrene	NBD	NBD	NBD	NBD	Deer Mouse	0.17	0	0.50	0.50	0.020	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	1,000
PCB	PCB	NBD	NBD	NBD	NBD	Deer Mouse	0.17	0	0.50	0.50	0.020	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	0.068
Pesticide	Aldrin	NBD	NBD	NBD	NBD	Deer Mouse	0.17	0	0.50	0.50	0.020	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	0.20
Pesticide	alpha-Chlordane	NBD	NBD	NBD	NBD	Deer Mouse	0.17	0	0.50	0.50	0.020	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	2.1
Pesticide	beta-1,2,3,4,5,6-Hexachlorocyclohexane	NBD	NBD	NBD	NBD	Deer Mouse	0.17	0	0.50	0.50	0.020	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	0.40
Pesticide	Dichlorodiphenyldichloroethylene	0.015	1.5	0.26	0	Deer Mouse	0.17	0	0.50	0.50	0.020	0	0.022	0.13	5.05E-05	0.15	0	0.15	0.85	3.43E-04	0.15
Pesticide	Dichlorodiphenyltrichloroethane	0.012	1.3	0.47	0	Deer Mouse	0.17	0	0.50	0.50	0.020	0	0.039	0.11	3.88E-05	0.15	0	0.26	0.74	2.64E-04	0.15
Pesticide	Dieldrin	NBD	NBD	NBD	NBD	Deer Mouse	0.17	0	0.50	0.50	0.020	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	0.015
Pesticide	Endosulfan I	0.014	0.51	1.3	0	Deer Mouse	0.17	0	0.50	0.50	0.020	0	0.11	0.042	4.65E-05	0.15	0	0.72	0.28	3.10E-04	0.15
Pesticide	Endosulfan sulfate	6.03E-04	0.0024	1.8	0	Deer Mouse	0.17	0	0.50	0.50	0.020	0	0.15	1.99E-04	2.00E-06	0.15	0	1.00	0.0013	1.34E-05	0.15
Pesticide	Endrin aldehyde	NBD	NBD	NBD	NBD	Deer Mouse	0.17	0	0.50	0.50	0.020	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	0.092
Pesticide	gamma-Chlordane	NBD	NBD	NBD	NBD	Deer Mouse	0.17	0	0.50	0.50	0.020	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	2.1
Pesticide	Methoxychlor	0.22	28	20	0	Deer Mouse	0.17	0	0.50	0.50	0.020	0	1.7	2.3	7.30E-04	4.0	0	0.42	0.58	1.83E-04	4.0
SVOC	Bis[2-ethylhexyl] phthalate	NBD	NBD	NBD	NBD	Deer Mouse	0.17	0	0.50	0.50	0.020	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	18
SVOC	Phenol	NBD	NBD	NBD	NBD	Deer Mouse	0.17	0	0.50	0.50	0.020	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	12

Notes:
It has been conservatively assumed that all chemical intake is absorbed by the receptor.
Acronyms:
BAF = Bioaccumulation factor
DW = Dry weight
FIR = Food ingestion rate
NOAEL = lowest observed adverse effect level
mg/kg = Miligrams per kilogram
mg/kg BW/day, DW = Miligrams per kilogram of body weight per day, dry weight
mg/kg/d = Miligrams per kilogram per day
NTD - PRG was not calculated because there was no toxicity data available.
NBD - PRG was not calculated due to incomplete or a lack of bioacculation data.
PRGs = Preliminary remediation goals
TRV = Toxicity reference value

Equations:
Total Estimated Exposure = Food Intake + Incidental Soil Intake
Food Intake = estimated concentration in biota X proportion of biota type X food ingestion rate (FIR)
Incidental Soil intake = concentration in soil X proportion of soil as component of diet X food ingestion rate (FIR)
ln[Estimated Concentrations in Biota] (method 1) = B1*(ln[Site Specific Soil Concentration]) + B0
where: B1 = slope and B0 = intercept
Estimated Concentrations in Biota (method 2) = soil concentration X BAF
Hazard Quotient = Total Estimated Exposure (Dose) / TRV
Therefore, when the HQ = 1, soil concentration = PRG
where: Soil concentration (mg/kg) = TRV / (Food Intake + Incidental Soil Intake) = Soil PRG

Table G-7. Derivation of Tier 2 NOAEL-Based PRGs for Grasshopper Mouse at the Hanford Site

			Estimated Concentrations in Biota (mg/kg DW)				Food Intake	Diet Composition (proportion)				Estimated Exposure (mg/kg/d)					Percent Estimated Exposure by Pathway				
Analyte		Soil PRG (mg/kg)	Terrestrial Plants	Terrestrial Arthropod	Small Mammals	Species	(kg/kg-bw/d, dw)	Small Mammals	Soil Inverts	Plants	Soil	Small Mammals	Soil Inverts	Plants	Soil	Total	Small Mam.	Soil Inverts	Plants	Soil	Selected Mammalian TRV (mg/kg/d) NOAEL
General Inorganic	Flouride	2,415	0	299	140	Grasshopper Mouse	0.098	0	1.0	0	0.0090	0	29	0	2.1	31	0	0.93	0	0.068	31
General Inorganic	Nitrogen in Nitrite and Nitrate	576,537	1.96E+08	0	0	Grasshopper Mouse	0.098	0	1.0	0	0.0090	0	0	0	507	507	0	0	0	1.0	507
Metal	Silver	1,436	0.31	49	6.2	Grasshopper Mouse	0.098	0	1.0	0	0.0090	0	4.8	0	1.3	6.0	0	0.79	0	0.21	6.0
Metal	Aluminum	1,306	16	8.0	27	Grasshopper Mouse	0.098	0	1.0	0	0.0090	0	0.78	0	1.1	1.9	0	0.40	0	0.60	1.9
Metal	Arsenic	140	6.6	9.4	0.62	Grasshopper Mouse	0.098	0	1.0	0	0.0090	0	0.92	0	0.12	1.0	0	0.88	0	0.12	1.0
Metal	Boron	51	1,194	286	52	Grasshopper Mouse	0.098	0	1.0	0	0.0090	0	28	0	0.045	28	0	1.00	0	0.0016	28
Metal	Barium	7,124	1,778	396	868	Grasshopper Mouse	0.098	0	1.0	0	0.0090	0	39	0	6.3	45	0	0.86	0	0.14	45
Metal	Beryllium	181	27	3.8	0.19	Grasshopper Mouse	0.098	0	1.0	0	0.0090	0	0.37	0	0.16	0.53	0	0.70	0	0.30	0.53
Metal	Cadium	28	3.4	10.0	3.2	Grasshopper Mouse	0.098	0	1.0	0	0.0090	0	0.98	0	0.024	1.0	0	0.98	0	0.024	1.0
Metal	Cobalt	3,773	40	41	84	Grasshopper Mouse	0.098	0	1.0	0	0.0090	0	4.0	0	3.3	7.3	0	0.55	0	0.45	7.3
Metal	Chromium	355	44	21	37	Grasshopper Mouse	0.098	0	1.0	0	0.0090	0	2.1	0	0.31	2.4	0	0.87	0	0.13	2.4
Metal	Copper	322	99	54	18	Grasshopper Mouse	0.098	0	1.0	0	0.0090	0	5.3	0	0.28	5.6	0	0.95	0	0.051	5.6
Metal	Mercury	0.36	0.22	0.32	0.033	Grasshopper Mouse	0.098	0	1.0	0	0.0090	0	0.032	0	3.21E-04	0.032	0	0.99	0	0.010	0.032
Metal	Lithium	4,174	300	59	130	Grasshopper Mouse	0.098	0	1.0	0	0.0090	0	5.7	0	3.7	9.4	0	0.61	0	0.39	9.4
Metal	Manganese	8,545	1,316	450	353	Grasshopper Mouse	0.098	0	1.0	0	0.0090	0	44	0	7.5	52	0	0.85	0	0.15	52
Metal	Molybdenum	1.4	5.0	2.6	2.7	Grasshopper Mouse	0.098	0	1.0	0	0.0090	0	0.26	0	0.0012	0.26	0	1.00	0	0.0048	0.26
Metal	Nickel	171	6.8	16	7.1	Grasshopper Mouse	0.098	0	1.0	0	0.0090	0	1.5	0	0.15	1.7	0	0.91	0	0.088	1.7
Metal	Lead	1,753	15	32	32	Grasshopper Mouse	0.098	0	1.0	0	0.0090	0	3.2	0	1.5	4.7	0	0.67	0	0.33	4.7
Metal	Antimony	37	1.2	0.27	0.014	Grasshopper Mouse	0.098	0	1.0	0	0.0090	0	0.027	0	0.032	0.059	0	0.45	0	0.55	0.059
Metal	Selenium	1.3	0.76	1.5	0.81	Grasshopper Mouse	0.098	0	1.0	0	0.0090	0	0.14	0	0.0011	0.14	0	0.99	0	0.0077	0.14
Metal	Tin	244	529	237	343	Grasshopper Mouse	0.098	0	1.0	0	0.0090	0	23	0	0.21	23	0	0.99	0	0.0092	23
Metal	Thallium	2.4	0.12	0.13	0.23	Grasshopper Mouse	0.098	0	1.0	0	0.0090	0	0.013	0	0.0021	0.015	0	0.86	0	0.14	0.015
Metal	Uranium - Calculated Total	6.8	0.28	2.8	16	Grasshopper Mouse	0.098	0	1.0	0	0.0090	0	0.27	0	0.0059	0.28	0	0.98	0	0.021	0.28
Metal	Vanadium	2,268	10,869	22	33	Grasshopper Mouse	0.098	0	1.0	0	0.0090	0	2.2	0	2.0	4.2	0	0.52	0	0.48	4.2
Metal	Zinc	12,474	651	659	25,647	Grasshopper Mouse	0.098	0	1.0	0	0.0090	0	64	0	11	75	0	0.85	0	0.15	75
PAH	Benzo[k]fluoranthene	NBD	NBD	NBD	NBD	Grasshopper Mouse	0.098	0	1.0	0	0.0090	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	1.0
PAH	Fluoranthene	503	0	1,275	0	Grasshopper Mouse	0.098	0	1.0	0	0.0090	0	125	0	0.44	125	0	1.00	0	0.0035	125
PAH	Fluorene	6.1	0	1,279	0	Grasshopper Mouse	0.098	0	1.0	0	0.0090	0	125	0	0.0053	125	0	1.00	0	4.26E-05	125
PAH	Phenanthrene	292	0	10,232	0	Grasshopper Mouse	0.098	0	1.0	0	0.0090	0	1,000	0	0.26	1,000	0	1.00	0	2.57E-04	1,000
PCB	PCB	2.5	0	0.67	275	Grasshopper Mouse	0.098	0	1.0	0	0.0090	0	0.066	0	0.0022	0.068	0	0.97	0	0.032	0.068
Pesticide	Aldrin	NBD	NBD	NBD	NBD	Grasshopper Mouse	0.098	0	1.0	0	0.0090	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	0.20
Pesticide	alpha-Chlordane	NBD	NBD	NBD	NBD	Grasshopper Mouse	0.098	0	1.0	0	0.0090	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	2.1
Pesticide	beta-1,2,3,4,5,6-Hexachlorocyclohexane	NBD	NBD	NBD	NBD	Grasshopper Mouse	0.098	0	1.0	0	0.0090	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	0.40
Pesticide	Dichlorodiphenyldichloroethylene	0.088	8.7	1.5	0	Grasshopper Mouse	0.098	0	1.0	0	0.0090	0	0.15	0	7.74E-05	0.15	0	1.00	0	5.26E-04	0.15
Pesticide	Dichlorodiphenyltrichloroethane	0.038	4.2	1.5	0	Grasshopper Mouse	0.098	0	1.0	0	0.0090	0	0.15	0	3.32E-05	0.15	0	1.00	0	2.26E-04	0.15
Pesticide	Dieldrin	NBD	NBD	NBD	NBD	Grasshopper Mouse	0.098	0	1.0	0	0.0090	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	0.015
Pesticide	Endosulfan I	0.017	0.61	1.5	0	Grasshopper Mouse	0.098	0	1.0	0	0.0090	0	0.15	0	1.46E-05	0.15	0	1.00	0	9.73E-05	0.15
Pesticide	Endosulfan sulfate	5.13E-04	0.0020	1.5	0	Grasshopper Mouse	0.098	0	1.0	0	0.0090	0	0.15	0	4.51E-07	0.15	0	1.00	0	3.01E-06	0.15
Pesticide	Endrin aldehyde	NBD	NBD	NBD	NBD	Grasshopper Mouse	0.098	0	1.0	0	0.0090	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	0.092
Pesticide	gamma-Chlordane	NBD	NBD	NBD	NBD	Grasshopper Mouse	0.098	0	1.0	0	0.0090	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	2.1
Pesticide	Methoxychlor	0.45	58	41	0	Grasshopper Mouse	0.098	0	1.0	0	0.0090	0	4.0	0	3.95E-04	4.0	0	1.00	0	9.88E-05	4.0
SVOC	Bis[2-ethylhexyl] phthalate	NBD	NBD	NBD	NBD	Grasshopper Mouse	0.098	0	1.0	0	0.0090	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	18
SVOC	Phenol	NBD	NBD	NBD	NBD	Grasshopper Mouse	0.098	0	1.0	0	0.0090	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	12

Notes:
It has been conservatively assumed that all chemical intake is absorbed by the receptor.
Acronyms:
BAF = Bioaccumulation factor
DW = Dry weight
FIR = Food ingestion rate
NOAEL = lowest observed adverse effect level
mg/kg = Miligrams per kilogram
mg/kg BW/day, DW = Miligrams per kilogram of body weight per day, dry weight
mg/kg/d = Miligrams per kilogram per day
NTD - PRG was not calculated because there was no toxicity data available.
NBD - PRG was not calculated due to incomplete or a lack of bioacculation data.
PRGs = Preliminary remediation goals
TRV = Toxicity reference value

Equations:
Total Estimated Exposure = Food Intake + Incidental Soil Intake
Food Intake = estimated concentration in biota X proportion of biota type X food ingestion rate (FIR)
Incidental Soil intake = concentration in soil X proportion of soil as component of diet X food ingestion rate (FIR)
ln[Estimated Concentrations in Biota] (method 1) = B1*(ln[Site Specific Soil Concentration]) + B0
where: B1 = slope and B0 = intercept
Estimated Concentrations in Biota (method 2) = soil concentration X BAF
Hazard Quotient = Total Estimated Exposure (Dose) / TRV
Therefore, when the HQ = 1, soil concentration = PRG
where: Soil concentration (mg/kg) = TRV / (Food Intake + Incidental Soil Intake) = Soil PRG

Table G-8. Derivation of Tier 2 NOAEL-Based PRGs for Badger at the Hanford Site

			Estimated Concentrations in Biota (mg/kg DW)				Food Intake	Diet Composition (proportion)				Estimated Exposure (mg/kg/d)					Percent Estimated Exposure by Pathway				
	Analyte	Soil PRG (mg/kg)	Terrestrial Plants	Terrestrial Arthropod	Small Mammals	Species	(kg/kg-bw/d, dw)	Small Mammals	Soil Inverts	Plants	Soil	Small Mammals	Soil Inverts	Plants	Soil	Total	Small Mam.	Soil Inverts	Plants	Soil	Selected Mammalian TRV (mg/kg/d) NOAEL
General Inorganic	Flouride	8,227	0	1,020	476	Badger	0.035	1.0	0	0	0.052	17	0	0	15	31	0.53	0	0	0.47	31
General Inorganic	Nitrogen in Nitrite and Nitrate	280,885	9.57E+07	0	0	Badger	0.035	1.0	0	0	0.052	0	0	0	507	507	0	0	0	1.0	507
Metal	Silver	3,078	0.41	104	13	Badger	0.035	1.0	0	0	0.052	0.46	0	0	5.6	6.0	0.077	0	0	0.92	6.0
Metal	Aluminum	764	9.3	4.7	16	Badger	0.035	1.0	0	0	0.052	0.55	0	0	1.4	1.9	0.29	0	0	0.71	1.9
Metal	Arsenic	531	25	19	2.4	Badger	0.035	1.0	0	0	0.052	0.082	0	0	0.96	1.0	0.079	0	0	0.92	1.0
Metal	Boron	753	17,672	4,234	768	Badger	0.035	1.0	0	0	0.052	27	0	0	1.4	28	0.95	0	0	0.049	28
Metal	Barium	7,458	1,862	415	909	Badger	0.035	1.0	0	0	0.052	32	0	0	13	45	0.70	0	0	0.30	45
Metal	Beryllium	289	38	6.1	0.30	Badger	0.035	1.0	0	0	0.052	0.011	0	0	0.52	0.53	0.020	0	0	0.98	0.53
Metal	Cadium	335	13	51	11	Badger	0.035	1.0	0	0	0.052	0.40	0	0	0.60	1.0	0.40	0	0	0.60	1.0
Metal	Cobalt	2,832	30	31	64	Badger	0.035	1.0	0	0	0.052	2.2	0	0	5.1	7.3	0.30	0	0	0.70	7.3
Metal	Chromium	440	55	26	46	Badger	0.035	1.0	0	0	0.052	1.6	0	0	0.79	2.4	0.67	0	0	0.33	2.4
Metal	Copper	2,606	797	109	26	Badger	0.035	1.0	0	0	0.052	0.89	0	0	4.7	5.6	0.16	0	0	0.84	5.6
Metal	Mercury	6.5	1.0	5.8	0.58	Badger	0.035	1.0	0	0	0.052	0.020	0	0	0.012	0.032	0.63	0	0	0.37	0.032
Metal	Lithium	3,261	235	46	101	Badger	0.035	1.0	0	0	0.052	3.5	0	0	5.9	9.4	0.37	0	0	0.63	9.4
Metal	Manganese	15,897	2,449	837	657	Badger	0.035	1.0	0	0	0.052	23	0	0	29	52	0.44	0	0	0.56	52
Metal	Molybdenum	3.8	14	7.1	7.3	Badger	0.035	1.0	0	0	0.052	0.25	0	0	0.0069	0.26	0.97	0	0	0.026	0.26
Metal	Nickel	687	13	64	13	Badger	0.035	1.0	0	0	0.052	0.46	0	0	1.2	1.7	0.27	0	0	0.73	1.7
Metal	Lead	1,952	16	35	34	Badger	0.035	1.0	0	0	0.052	1.2	0	0	3.5	4.7	0.25	0	0	0.75	4.7
Metal	Antimony	32	1.0	0.24	0.012	Badger	0.035	1.0	0	0	0.052	4.22E-04	0	0	0.059	0.059	0.0072	0	0	0.99	0.059
Metal	Selenium	5.9	3.8	6.8	3.8	Badger	0.035	1.0	0	0	0.052	0.13	0	0	0.011	0.14	0.93	0	0	0.074	0.14
Metal	Tin	463	1,003	450	650	Badger	0.035	1.0	0	0	0.052	23	0	0	0.84	23	0.96	0	0	0.036	23
Metal	Thallium	3.1	0.15	0.17	0.27	Badger	0.035	1.0	0	0	0.052	0.0094	0	0	0.0056	0.015	0.63	0	0	0.37	0.015
Metal	Uranium - Calculated Total	4.0	0.17	1.6	7.9	Badger	0.035	1.0	0	0	0.052	0.27	0	0	0.0072	0.28	0.97	0	0	0.026	0.28
Metal	Vanadium	1,800	6,269	18	26	Badger	0.035	1.0	0	0	0.052	0.91	0	0	3.2	4.2	0.22	0	0	0.78	4.2
Metal	Zinc	1,030	197	301	2,119	Badger	0.035	1.0	0	0	0.052	74	0	0	1.9	75	0.98	0	0	0.025	75
PAH	Benzo[k]fluoranthene	NBD	NBD	NBD	NBD	Badger	0.035	1.0	0	0	0.052	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	1.0
PAH	Fluoranthene	NBD	NBD	NBD	NBD	Badger	0.035	1.0	0	0	0.052	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	125
PAH	Fluorene	NBD	NBD	NBD	NBD	Badger	0.035	1.0	0	0	0.052	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	125
PAH	Phenanthrene	NBD	NBD	NBD	NBD	Badger	0.035	1.0	0	0	0.052	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	1,000
PCB	PCB	0.018	0	0.0093	2.0	Badger	0.035	1.0	0	0	0.052	0.068	0	0	3.20E-05	0.068	1.00	0	0	4.71E-04	0.068
Pesticide	Aldrin	0.058	0.80	0	5.8	Badger	0.035	1.0	0	0	0.052	0.20	0	0	1.04E-04	0.20	1.00	0	0	5.20E-04	0.20
Pesticide	alpha-Chlordane	NBD	NBD	NBD	NBD	Badger	0.035	1.0	0	0	0.052	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	2.1
Pesticide	beta-1,2,3,4,5,6-Hexachlorocyclohexane	NBD	NBD	NBD	NBD	Badger	0.035	1.0	0	0	0.052	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	0.40
Pesticide	Dichlorodiphenyldichloroethylene	NBD	NBD	NBD	NBD	Badger	0.035	1.0	0	0	0.052	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	0.15
Pesticide	Dichlorodiphenyltrichloroethane	NBD	NBD	NBD	NBD	Badger	0.035	1.0	0	0	0.052	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	0.15
Pesticide	Dieldrin	NBD	NBD	NBD	NBD	Badger	0.035	1.0	0	0	0.052	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	0.015
Pesticide	Endosulfan I	NBD	NBD	NBD	NBD	Badger	0.035	1.0	0	0	0.052	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	0.15
Pesticide	Endosulfan sulfate	NBD	NBD	NBD	NBD	Badger	0.035	1.0	0	0	0.052	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	0.15
Pesticide	Endrin aldehyde	NBD	NBD	NBD	NBD	Badger	0.035	1.0	0	0	0.052	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	0.092
Pesticide	gamma-Chlordane	NBD	NBD	NBD	NBD	Badger	0.035	1.0	0	0	0.052	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	2.1
Pesticide	Methoxychlor	NBD	NBD	NBD	NBD	Badger	0.035	1.0	0	0	0.052	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	NBD	4.0
SVOC	Bis[2-ethylhexyl] phthalate	20	1,643	0	526	Badger	0.035	1.0	0	0	0.052	18	0	0	0.037	18	1.00	0	0	0.0020	18
SVOC	Phenol	7.8	4,839	0	345	Badger	0.035	1.0	0	0	0.052	12	0	0	0.014	12	1.00	0	0	0.0012	12

Notes:
It has been conservatively assumed that all chemical intake is absorbed by the receptor.
Acronyms:
BAF = Bioaccumulation factor
DW = Dry weight
FIR = Food ingestion rate
NOAEL = lowest observed adverse effect level
mg/kg = Miligrams per kilogram
mg/kg BW/day, DW = Miligrams per kilogram of body weight per day, dry weight
mg/kg/d = Miligrams per kilogram per day
NTD - PRG was not calculated because there was no toxicity data available.
NBD - PRG was not calculated due to incomplete or a lack of bioacculation data.
PRGs = Preliminary remediation goals
TRV = Toxicity reference value

Equations:
Total Estimated Exposure = Food Intake + Incidental Soil Intake
Food Intake = estimated concentration in biota X proportion of biota type X food ingestion rate (FIR)
Incidental Soil intake = concentration in soil X proportion of soil as component of diet X food ingestion rate (FIR)
ln[Estimated Concentrations in Biota] (method 1) = B1*(ln[Site Specific Soil Concentration]) + B0
where: B1 = slope and B0 = intercept
Estimated Concentrations in Biota (method 2) = soil concentration X BAF
Hazard Quotient = Total Estimated Exposure (Dose) / TRV
Therefore, when the HQ = 1, soil concentration = PRG
where: Soil concentration (mg/kg) = TRV / (Food Intake + Incidental Soil Intake) = Soil PRG

Appendix H

Evaluation and Selection of the Uranium TRV for Mammals at the Hanford Site

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H1 Ecology Memorandum

Ecology Position
January 2014

Subject: Toxicity reference value (TRV) for uranium (U) for mammals (underlying a wildlife preliminary remediation goal [PRG] for Hanford soils)

Problem

USDOE (2013) has proposed a LOAEL based soil PRG (40 mg/kg) for U for mammals, calculated for a badger receptor with a soil to small mammal bioaccumulation regression equation, using the wildlife exposure model used to derive EPA EcoSSLs (USEPA, 2007). In addition, this PRG incorporates a mammalian LOAEL TRV (6.13 mg U/kg-d) from Sample et al (1996). However, this proposed TRV from Sample et al (1996) is based on a single study (Paternain et al, 1989) and does not utilize data from the most sensitive study endpoint (i.e., decreased body weight in pups) to identify a LOAEL.

Analysis

Data have been tabulated for key studies, relating to TRV development for U (Table 1). Sample et al (1996) derived a final LOAEL of 6.13 mg U/kg-d. This is based on the 10 mg/kg-d dose of uranyl acetate (and a U fraction of 0.6132 of the test compound) in a study by Paternain et al (1989), employing oral exposure to mice. However, Sample et al (1996) did not include the significant decrease in pup body weight at the 5 mg/kg-d dose. Pup body weight decreased ($P<0.05$) by 8% after 21 days. Also, the chemical form of U is reported as uranyl acetate by Sample et al (1996) vs. uranyl acetate dihydrate by Paternain et al (1989). Thus, the fraction of U should be 0.561 (rather than 0.6132). Using the decrease in pup body weight at 5 mg/kg-d of uranyl acetate dihydrate, as well as the lower U fraction (Paternain et al, 1989), a LOAEL of 2.8 mg U/kg-d is derived.

LOAEL results of Domingo et al (1989) and Ortega et al (1989), using rats and mice orally exposed to uranyl acetate dihydrate, are consistent with those of Paternain et al (1989) (Table 1). A 33% decrease in maternal body weight ($P<0.05$) and a 26% decrease in fetal body weight ($P<0.001$) were reported in mice after a 9 day gestational exposure period at 5 mg/kg-d (2.8 mg U/kg-d) (Domingo et al, 1989). Similarly, a 38% decrease in body weight ($P<0.05$) was observed in male rats after 3 weeks at 4 mg/kg-d (2.2 mg U/kg-d) (Ortega et al, 1989).

LOAEL results for histopathological changes in the kidney (e.g., renal tubular lesions) and liver (e.g., nuclear and cytoplasmic changes) of rats and kidney of rabbits (e.g., renal tubular lesions) after oral exposure to uranyl nitrate hexahydrate for 91 days have been reported by Gilman et al (1998a,b,c) (Table1). In particular, a LOAEL of 0.06 mg U/kg-d was derived in male rats for renal damage (Gilman et al, 1998b). Although these histopathological endpoints are not directly useful for deriving soil PRGs (which preferentially employ ecologically relevant endpoints, e.g., growth, reproduction, survival), intake rates relating to histopathological endpoints (Gilman et al, 1998a,b) were compared allometrically with intake rates relating to growth effect endpoints (Ortega et al, 1989; Paternain et al, 1989; Domingo et al, 1989) to estimate their relative difference in sensitivity (Sheppard et al, 2005). In this manner, growth effects were shown to be approximately 21.6 (ratio of allometric coefficients=1.3/0.06) times less sensitive than renal damage, resulting in a LOAEL of 1.3 mg U/kg-d (21.6*0.06 mg U/kg-d) for growth and development in small mammals (Sheppard et al, 2005) (Table 1).

Recommendation

Using a weight of evidence approach (which considers a wider range of studies) and an allometric ratio between renal damage and growth effects, a more defensible LOAEL TRV (1.3 mg U/kg-d) for small mammals has been derived by Sheppard et al (2007). It is recommended that this LOAEL be used as the TRV for deriving a soil PRG for U for mammals at the Hanford Site. This would reduce the current Tier 2 soil PRG for U from 40 to approximately 13 mg/kg.

References

Domingo, JL et al. 1989. The developmental toxicity of uranium in mice. Toxicol 55:143-152.

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Gilman, AP et al. 1998b. Uranyl nitrate: 28 day and 91 day toxicity studies in the Sprague-Dawley rat. Toxicol Sci 41:117-128.

Gilman, AP et al. 1998c. Uranyl nitrate: 91 day exposure and recovery studies in the male New Zealand White rabbit. Toxicol Sci 41:138-151.

Ortega, A et al. 1989. Evaluation of the oral toxicity of uranium in a 4 week drinking water study in rats.

Paternain, JL et al. 1989. The effects of uranium on reproduction, gestation, and postnatal survival in mice. Ecotoxicol Environ Safety 17:291-296.

Sample, BE et al. 1996. Toxicological benchmarks for wildlife: 1996 revision. ES/ER/TM-86/R3, ORNL, Oak Ridge, TN.

Sheppard, SC et al. 2005. Derivation of ecotoxicity thresholds for uranium. J Environ Radioact 79:55-83.

USDOE. 2013. Tier 2 risk based soil concentrations protective of ecological receptors at the Hanford Site. CHPRC-01311, Rev 1, Richland, WA.

USEPA. 2007. Guidance for developing EcoSSLs. Exposure models and bioaccumulation factors for derivation of wildlife EcoSSLs. OSWER Directive 9285.7-55, Attachment 4-1

Table 1. Key studies, relating to TRV development for U.

Test Chemical	MW (g/mol)	U fraction (238.0/MW)	Test Species	Exposure Duration	Exposure Route	Dose (test chemical)	Endpoint selected	NOAEL (mg U/kg-d)	LOAEL (mg U/kg-d)	Reference
uranyl acetate[1]	390.1	0.6132	mice	60 d prior to mating, plus through gestation, delivery, lactation	oral (intubation)	5, 10, 25 mg/kg-d	reproduction	3.07	6.13	Sample et al (1996) citing Paternain et al (1989
uranyl acetate dihydrate	424.1	0.561	mice (male, female)	60 d prior to mating, plus through gestation, delivery, lactation	oral (intragastric)	0, 5, 10, 25 mg/kg-d	growth/body weight (pups)	NS	2.8	Paternain et al (1989)
uranyl acetate dihydrate	424.1	0.561	mice (female)	gestational days 6-15	oral (gavage)	0, 5, 10, 25, 50 mg/kg-d	growth/body weight (maternal, fetal)	NS	2.8	Domingo et al (1989)
uranyl acetate dihydrate	424.1	0.561	rats (male)	4 wks	oral (drinking water)	0, 2, 4, 8, 16 mg/kg-d	growth/body weight	1.1	2.2	Ortega et al (1989)
uranyl nitrate hexahydrate	502.1	0.474	rabbits (male)	91 d	oral (drinking water)	0.96, 4.8, 24, 120, 600 mg/L	renal damage	NS	0.05	Gilman et al (1998a)
uranyl nitrate	502.1	0.474	rabbits	91 d	oral (drinking	4.8, 24,	renal damage	NS	0.49	Gilman et al

hexahydrate			(female)		water)	600 mg/L				(1998a)
uranyl nitrate hexahydrate	502.1	0.474	rats (male)	91 d	oral (drinking water)	0.96, 4.8, 24, 120, 600 mg/L	renal and hepatic damage	NS	0.06	Gilman et al (1998b)
uranyl nitrate hexahydrate	502.1	0.474	rats (female)	91 d	oral (drinking water)	0.96, 4.8, 24, 120, 600 mg/L	renal and hepatic damage	NS	0.09	Gilman et al (1998b)
uranyl nitrate hexahydrate	502.1	0.474	rabbits (male)	91 d	oral (drinking water)	24, 600 mg/L	renal damage	NS	≤1.36	Gilman et al (1998c)
various	NA	NA	mammal (1 kg)	various	oral	various	growth and development	0.1	1.3	Sheppard et al (2005)

Abbreviations: TRV=toxicity reference value, U=uranium, MW=molecular weight, NOAEL=no observed adverse effect level, LOAEL=lowest observed adverse effect level, NS=not specified, NA=not applicable.
[1]uranyl acetate dihydrate (according to Paternain et al, 1989).

H2 RL Response

Ecological Risk, Inc.

To: James Hansen, Alaa Aly

From: Bradley E. Sample, PhD

Date: 1/16/2013

Re: Mammalian TRV for Uranium

On January 8, 2014, the Washington Department of Ecology (Ecology) provided to the US Department of Energy (DOE) a document representing the January 2014 Ecology Position on the Toxicity Reference Value (TRV) for uranium (U) for mammals. Ecological Risk, Inc., reviewed this document on behalf of CHPRC and DOE. This technical memorandum summarizes our comments on the Ecology Uranium TRV document. In addition we present the results of our evaluation of uranium mammalian toxicity data.

Comments on Ecology Uranium TRV document

In our review of the Ecology uranium TRV document, we identified a number of issues. These are listed below.

1) **2nd paragraph, 4th sentence:** Sample et al. (1996) did not consider this response biologically significant as the growth reduction was less than 20%. Use of a 20% threshold to identify biologically significant effects is consistent with existing regulatory policy and practice (Suter et al. 2000; see Attachment 1) and has previously been applied at the Hanford Site (DOE 2011). It should be noted that in their review of Paternain et al. (1989), WHO (2004) only identified effects at the 5.6 and 14 mg U/kg/d doses. In their review of Paternain et al. (1989), ATSDR (1999) identified the 5.6 mg U/kg/d dose (rounded to 6) as the NOAEL.

2) **2nd paragraph, 5th sentence:** We agree that the dose calculation in Sample et al. (1996) is incorrect - the corrected dose calculation will be used in future calculations, as necessary.

3) **3rd paragraph, last sentence:** We do not agree that the data presented in Ortega et al. (1989) is suitable to define a LOAEL. Ecology is correct in stating that male rats displayed a statistically significant 38% weight loss after 3 weeks exposure to 4 mg/kg/d uranyl acetate. However the weight loss at 3 weeks was not uniform across doses: it was 38% at 4 mg/kg/d; 24% at 8 mg/kg/d; and 29% at 16 mg/kg/d. Higher concentrations of uranium produced less weight loss than lower concentrations. Further, at 4 weeks there was no statistically significant weight differences between control and any treatment doses. In fact, mean weight of control rats was 11% to 35% less than rats in any of the U dose groups.

4) **4th paragraph, 3rd sentence:** We agree that text corresponds with the analyses presented in Sheppard et al. (2005). However, there are a number of serious issues with the analysis presented in Sheppard et al. (2005) that we believe undermine its validity to define a mammalian TRV for uranium. Specifically:

A) Sheppard et al. (2005) assume that 'intake' scales uniformly to the 0.75 power. Published allometric models for both food and water ingestion do not support this statement. The allometric model for water consumption in mammals developed by Calder and Braun (1983) is:

$$0.099(\text{BW in kg})^{0.90}$$

Nagy (2001) developed allometric scaling based on field observations of food ingestion rates for mammals, birds and reptiles. Allometric scaling factors for dry matter food ingestion for mammals ranged from 0.41 to 0.86. Further, Nagy (2005) states '*The scaling slopes for FMR (*field metabolic rate*) often differ from BMR (*basal metabolic rate*) slopes for the same Class of animals, and most differ from the theoretical slope of 0.75*."

B) Sheppard et al. (2005) employ an allometric scaling approach to extrapolate uranium doses among test species. Allometric scaling for extrapolating wildlife toxicity data is no longer recommended by USEPA (USEPA 2005). This position is supported by Allard et al. (2011).

C) Sheppard et al. (2005) identifies 1.3 mg U /kg/d to be a LOAEL for 'growth', however the basis for this value is not evident. It appears that Sheppard et al. (2005) conflate the renal effects from Gilman et al. (1989c) with growth and reproductive effects in other studies. In section 10.1 of their paper, Sheppard et al. (2005) compare the renal LOAEL from Gilman et al. (1989c; 1.36 mg/kg/d) to the growth and development LOAELs from Ortega et al. (1989; 2.2 mg/kg/d), Paternain et al. (1989; 5.6 mg/kg/d), and Domingo et al. (1989a; 2.8 mg/kg/d) and state that "*Despite the rather different animals, dosage methods and endpoints, the effect concentrations were quite similar*." We do not agree that the effect concentrations are similar; a LOAEL of 1.36 mg/kg/d is not equal to LOAELs of 2.2 mg/kg/d, 2.8 mg/kg/d, or 5.6 mg/kg/d. Further, the 1.36 mg/kg/d dose reported in Gilman et al. (1998c) is not actually a LOAEL, but rather a NOAEL (see below). Because of these multiple issues with the Sheppard et al. (2005) study, we believe that their analysis is flawed and do not agree that the 1.3 mg U/kg/d value is defensible or appropriate.

CHPRC Evaluation of Mammalian Toxicity Data

CHPRC conducted a review of available uranium toxicity data for mammals, using the Sheppard et al. (2005) paper as a starting point, as it is the basis for the TRV recommended by Ecology.

We obtained and reviewed the key papers which form the basis for Sheppard et al. (2005). These are summarized in Table 1. We also evaluated two additional reviews of uranium toxicity to mammals: WHO (2004) and ATSDR (1999). These were considered to provide independent interpretations of the studies.

The study that appears to be the basis for the 1.3 mg/kg/d TRV in Sheppard et al. (2005) is Gilman et al. (1998c). In this study, rabbits were exposed to uranyl nitrate in drinking water for 91 days followed by a 91 day recovery period. Two doses were provided: 1.36 and 40.98 mg U /kg/d. Gilman et al. (1998c) observed no statistically significant increase in the incidence of kidney lesions at 1.36 mg/kg/d but did observe multiple highly significant differences at 40.98 mg/kg/d. None the less, Gilman et al. (1998c) estimate that the LOAEL is at or below 1.36 mg/kg/d. This is based on U concentrations in kidneys and not on the actual dose. Further, although Gilman et al. (1998c) state in the text of the paper that kidney U concentrations were significantly elevated relative to controls for both the 1.36 and 40.98 mg U /kg/d doses, this is not supported by the results they present in tables. In their discussion, Gilman et al. (1998c) also state: '*The rabbits exposed to 24 mg UN/L* [1.36 mg U/kg/d]*in this study showed few dose-related changes (tubular atrophy or dilation and cytoplasmic vacuolation or pigmentation), contrasting markedly with the findings of the previous study in male rabbits (Gilman et al, 1998b)*.

In their review of toxicity of U in drinking water, WHO (2004) interpreted the results from Gilman et al. (1998c) to indicate a LOAEL between 1.36 and 40.98 mg/kg/d. This is consistent with the results actually reported in Gilman et al. (1998c) and our interpretation. In their review of Gilman et al. (1998c), ATSDR (1999) identifies 1.36 as a less serious LOAEL for renal effects and 40.98 as a serious LOAEL.

In relation to the kidney toxicity studies of Gilman et al. (1998a, 1998b, and 1998c), Sheppard et al. (2005) state: "*However, it is not clear these effects would have ecological significance, because both the testes and the kidney probably have inherent excess capacity, so that some degree of damage is sustainable. In addition, it is possible that kidney function can recover on cessation of U intake*." We concur with this statement from Sheppard et al. (2005). This is also consistent with the Eco-SSLs and how we generally select toxicity data for TRVs, by focusing on growth, reproduction and survival[1].

Additional studies were referenced by Sheppard et al. (2005). These were performed on mice, focused on developmental and reproduction effects, and summarized in Table 1. Sheppard et al.

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[1] USEPA (2007)defines a TRV as: '*Doses above which ecologically relevant effects (growth, reproduction or survival) might occur to wildlife species following chronic dietary exposure and below which it is reasonably expected that such effects will not occur*.'

(2005) states that "*Despite the rather different animals, dosage methods and endpoints, the effect concentrations were quite similar. These effects are more clearly related to ecological function, because they deal with growth and development rate*." We agree that the results from these studies are more ecologically relevant. We do not agree however that the effect concentrations are similar (see comment 4D, above).

Based on the results from the reproductive studies on mice (Domingo et al. 1989a, Domingo et al. 1989b, and Paternain et al. 1989), LOAELs range from 2.8 to 28 mg U /kg/d. Sample et al. (1996) recommends use of the LOAEL from Paternain et al. (1989). We concur, as this represents effects associated with the longest term (>60 days) reproductive exposure. The lowest LOAEL (Domingo et al. 1989a) is based on only 9 days exposure. In addition, Domingo et al. (1989a) only observed statistically significant fetal weight reduction at the 2.8 mg/kg/d dose; no other reproductive effects were evident. At the next highest (5.6 mg/kg/d) and all subsequent doses, fetal weight, length, and number of stunted fetuses/litter are all statistically significantly increased. This 5.6 mg/kg/d dose corresponds with the dose at which Paternain et al. (1989) observed statistically significant embryolethality and reduced fetal growth.

Conclusion

We agree with statements made in Sheppard et al. (2005) concerning the ecological relevancy of developmental toxicity data relative to kidney data. However, due to the significant uncertainties/inconsistencies associated with the derivation of the 1.3 mg/kg/d TRV, we do not agree with Ecology that this value represents the most defensible TRV. Rather, based on our evaluation of the available data, we believe that the 5.6 mg/kg/d TRV is most suitable. However, because WAC 173-340-7493(4)(a) states "*Toxicity reference values or soil concentrations established from the literature shall represent the lowest relevant LOAEL found in the literature*", the LOAEL of 2.8 mg/kg/d from Domingo et al. (1989b) may be the most defendable.

In conclusion, we find that the TRV of 1.3 mg U/kg/d proposed in Sheppard et al. (2005), and recommended by Ecology for use at Hanford, is not suitable based on our evaluation of the original published literature (see Comment 4C, above), coupled with reviews performed by ATSDR (1999) and WHO (2004). Similarly, we find the 2.2 mg U/kg/d TRV from Ortega et al. (1989) not to be an acceptable LOAEL based on our review Ortega et al. (1989) outlined in Comment 3 (above). Based on our review of results presented in Domingo et al. (1989a and 1989b) and Paternain et al. (1989), it appears that serious reproductive effects are first evident at a dose of 5.6 mg U/kg/d. However, Domingo et al. (1989a) also observed a statistically significant 25.5% fetal growth reduction at a dose of 2.8 mg U/kg/d. Therefore, to be consistent with WAC 173-340-7493(4)(a), we believe this dose of 2.8 mg U/kg/d to be the most appropriate LOAEL for application at the Hanford Site.

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Attachment 1

From Suter at el. (2000):

For the Oak Ridge Reservation, a level of effect that is considered potentially significant has been inferred on the basis of analysis of EPA and Tennessee regulatory practice (Suter et al. 1994a). The clearest ecological criteria for regulation in the U.S. are those developed for the regulation of aqueous effluent under the National Pollution Discharge Elimination System (NPDES). NPDES permitting may be based on any of three types of evidence: water quality criteria, effluent toxicity tests, and biological surveys, and the use of each of these implies that a 20% reduction in ecological parameters is acceptable.

1. The Chronic National Ambient Water Quality Criteria (NAWQC) for Protection of Aquatic Life are based on thresholds for statistically significant effects on individual responses of fish and aquatic invertebrates. Those thresholds correspond to approximately 25% reductions in the parameters of fish chronic tests (Suter et al. 1987). Because of the compounding of individual responses across life stages, the chronic NAWQC concentrations are estimated to correspond to much more than 20% effects on a continuously-exposed fish population (Barnthouse et al. 1990). Hence, while the EPA did not intend to design the NAWQC to correspond to a 20% effect or any other particular level of effect, the consequence of the procedure used to derive the NAWQC is to specify a concentration that, in chronic exposures, results in effects of that are greater than 20%, on average.

2. The subchronic tests used to regulate effluents based on their toxicity cannot reliably detect reductions of less than 20% in the test endpoints (Anderson and Norberg-King 1991). Once again, this is a consequence of the manner in which the EPA regulates effluents rather than a conscious policy decision.

3. Twenty percent is the approximate detection limit of field measurement techniques used in regulating aqueous contaminants based on bioassessment. For example, the community metrics for an exposed benthic macroinvertebrate community must be reduced by more than 20% relative to the best communities within the ecoregion to be considered even slightly impaired in the EPA's rapid bioassessment procedure (Plafkin et al. 1989). Measures for other taxa that are more difficult to sample may be even less sensitive. For example, the number of fish species and individuals must be reduced by 33% to receive less than the top score in the EPA's rapid bioassessment procedure for fish (Plafkin et al. 1989). Once again, this effects level is a

consequence of the manner in which the EPA regulates effluents rather than a conscious policy decision.

The 20% level is also consistent with practice in assessments of terrestrial effects. The Lowest-Observed-Effects-Concentration (LOEC) for dietary tests of avian reproduction (the most important chronic test endpoint for ecological assessment of terrestrial effects of pesticides and arguably the most applicable test for waste sites) corresponds to approximately a 20% effect on individual response parameters (Office of Pesticide Programs 1982).

Therefore, a decrement in an ecological assessment endpoint that is less than 20% is generally acceptable based on current EPA regulatory practice and could not be reliably confirmed by field studies. Therefore, it is de minimis in practice.

Table 1. Summary of dietary toxicity data for uranium in mammals

Study	Test Species	Form	Exposure	Duration	effects	NOAEL (mg U/kg/d)	LOAEL (mg U/kg/d)	Notes
Gilman et al. 1998a	rats	uranyl nitrate	drinking water	91 days	renal lesions	NA	0.06 (male) 0.09 (female)	
Gilman et al. 1998b	rabbits - male	uranyl nitrate	drinking water	91 days	renal lesions	NA	0.05	Note that this LOAEL is associated with *Pasteurella* infection; Authors note that influence of infection on LOAEL cannot be excluded
Gilman et al. 1998b	rabbits - female	uranyl nitrate	drinking water	91 days	renal lesions	NA	0.49	rabbits were *Pasteurella*-free
Gilman et al. 1998c	rabbits - male	uranyl nitrate	drinking water	91 days exposure/ 91 days recovery	renal lesions	1.36	40.98	rabbits were *Pasteurella*-free; The authors of this study observed no statistically significant increase in the incidence of kidney lesions at 1.36 mg/kg/d but did observe multiple highly significant differences at 40.98 mg/kg/d. None the less, in the authors *estimate* that the LOAEL is at or below 1.36 mg/kg/d. This is based on U concentrations in kidneys and not on the actual dose. Note that in their review of toxicity of U in drinking water, WHO (2004) interpreted the results from Gilman et al. (1998c) to indicate a LOAEL between 1.36 and 40.98 mg/kg/d. This is consistent with the results actually reported in Gilman et al. (1998c). ATSDR (1999) identifies 1.36 as a less serious LOAEL for renal effects and 40.98 as a serious LOAEL.

Domingo et al. 1989a	mice	uranyl acetate	drinking water	gestational days 6-15	reproduction development		2.8	Only one measure, fetal weight, was significantly reduced at 2.8 mg/kg/d. Fetal growth and number of stunted fetuses/litter increased in a dose-dependent manner, starting at 5.6 mg/kg/d.
Domingo et al. 1989b	mice	uranyl acetate	oral gavage	d 13 of pregnancy to d 21 of lactation	reproduction development	2.8	28	Whereas litter size and other reproductive and developmental indices were not reduced at 2.8 mg/kg/d, they were significantly reduced among mice recieving the 28 mg/kg/d dose. In their review of toxicity of U in drinking water, WHO (2004) identified the NOAEL to be 2.8 mg/kg based on developmental effects to pups. Also, ATSDR (1999) identifies the serious LOAEL from this study to be 28 mg/kg/d based on decreased litter size.
Paternain et al. 1989	mice	uranyl acetate	oral gavage	60 d prior to gestation plus through lactation	reproduction development	2.8	5.6	Fetal growth and embryolethality occur in a dose-dependent manner starting at 5.6 mg/kg/d. Both Sample et al. (1996) and WHO (2004) identify this dose as a LOAEL. ATSDR (1999) identifies the NOAEL from this study to be 6 (rounded from 5.6) mg/kg/d and the LOAEL to be 14 mg/kg/d. **(note that Sample et al. [1996] includes a calculation error for proportion of U in uranyl acetate - NOAEL and LOAEL are correctly reported as 2.8 and 5.6 mg/kg/d, not 3.07 and 6.13 mg/kg/d)**

Attachment H3

DOE-STD-1153-2002 – A Graded Approach for Evaluating Radiation Doses to Aquatic and Terrestrial Biota

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A Graded Approach for Evaluating Radiation Doses to Aquatic and Terrestrial Biota

MODULE 1

PRINCIPLES AND APPLICATION

MODULE 1: PRINCIPLES AND APPLICATION

DOE-STD-1153-2002

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1 Introduction

The U.S. Department of Energy (DOE) is accountable to Congress and the public for the safe conduct of its activities, including facility operation, waste management and disposal activities, and remediation of environmental contamination. These routine activities may result in releases of radionuclides to the air and water, accumulation of radionuclides in soil and sediment, and the potential for plants, animals, and members of the public to be exposed to radiation. DOE Order 5400.5, “Radiation Protection of the Public and the Environment” (1990a), lists the environmental radiation protection requirements that DOE and DOE-contractor employees must meet to protect aquatic animals. In addition, dose limits below which deleterious effects on populations of aquatic and terrestrial organisms have not been observed, as discussed by the National Council on Radiation Protection and Measurements (NCRP 1991), and the International Atomic Energy Agency (IAEA 1992), are considered by DOE to be relevant to the protection of all aquatic and terrestrial biota on DOE sites.

1.1 Purpose

This DOE technical standard provides a graded approach (including screening methods and methods for detailed analyses) and related guidance that DOE and DOE contractors may use to evaluate compliance with specified limits on radiation dose to populations of aquatic animals, terrestrial plants, and terrestrial animals due to anthropogenic sources at DOE sites. Specifically, the technical standard provides dose evaluation methods that can be used to meet the requirements for protection of biota in DOE Orders 5400.1, "General Environmental Protection Program" (DOE 1990b), 5400.5 (DOE 1990a), and the dose limits for protection of biota developed or discussed by the NCRP (1991) and IAEA (1992). Accordingly, this technical standard uses the biota dose limits specified below within a graded approach to demonstrate that populations of plants and animals are adequately protected from the effects of ionizing radiation:

- **Aquatic Animals**. The absorbed dose to aquatic animals should not exceed 1 rad/d (10 mGy/d) from exposure to radiation or radioactive material releases into the aquatic environment. This dose limit is specified in DOE Order 5400.5.

- **Terrestrial Plants**. The absorbed dose to terrestrial plants should not exceed 1 rad/d (10 mGy/d) from exposure to radiation or radioactive material releases into the terrestrial environment.

- **Terrestrial Animals**. The absorbed dose to terrestrial animals should not exceed 0.1 rad/d (1 mGy/d) from exposure to radiation or radioactive material releases into the terrestrial environment.

Avoiding measurable impairment of reproductive capability is deemed to be the critical biological endpoint of concern in establishing the dose limits for aquatic and terrestrial biota. Module 1, Section 1.2.2 discusses this issue further. Guidance for interpreting and applying

these dose limits with respect to the length of time and geographic area over which actual doses should be compared with the limits is provided in Module 2, Section 3.

DOE has proposed these dose limits for aquatic and terrestrial biota under proposed rule Title 10, Code of Federal Regulations, Part 834 (10 CFR 834), “Radiation Protection of the Public and the Environment” *(*DOE 1993). DOE has decided not to promulgate these dose limits until guidance for demonstrating compliance has been developed. Consequently, this technical standard was developed, in part, in response to comments and recommendations received by DOE through the proposed rule comment period. Principal themes in the comments included: (1) requests for development of cost-effective methods to support the use of DOE's existing and proposed biota dose limits, (2) support for a multi-tiered approach to include screening, (3) requests for guidance on biota monitoring, and (4) requests for development of a generic method to promote consistency, while retaining some flexibility for site-specific methods and information. These themes served as the guiding principles for development of the methods contained in this technical standard.

The specific methods and guidance in this technical standard are acceptable for use by DOE and DOE-contractors when evaluating doses to biota in relation to the above dose limits. The methods and guidance in this technical standard should also be useful to ecological risk assessors who must evaluate risks to biota from radionuclides that occur on DOE sites. Using the graded approach provided in this technical standard, risk assessors can use soil, sediment, and water radionuclide concentration data to determine whether radionuclide concentrations at a site are likely to result in doses in excess of those listed above and would, therefore, have the potential to impact resident populations of plants and animals. The methods can also give risk assessors an immediate qualitative assessment of the importance of doses of ionizing radiation to the resident receptors. The dose equations in this technical standard also provide methods of estimating upper-bound (e.g., conservatively derived) doses to specific plants and animals. Refer to Module 1, Section 3, for a description of intended and potential applications of the DOE graded approach.

1.2 Background

1.2.1 Increasing Interest and Need for Biota Dose Evaluation Methods

There is growing national and international interest in establishing a regulatory framework (e.g., to include standards or criteria) and supporting evaluation methodologies for demonstrating protection of the environment from the effects of ionizing radiation. Regarding environmental protection, the ICRP statement that "...if man is adequately protected then other living things are also likely to be sufficiently protected" (ICRP 1977; 1991) uses human protection to infer environmental protection from the effects of ionizing radiation. This assumption is most appropriate in cases where humans and other biota inhabit the same environment and have common routes of exposure, and less appropriate in cases where human access is restricted or pathways exist that are much more important for biota than for humans. The inclusion of

radiation as a stressor within ecological risk assessments is also a consideration. Ecological risk assessments at contaminated sites being considered for remediation under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) generally require an assessment of all stressors, including radiation. Assessments of radiation impacts on contaminated ecosystems are currently underway in the U.S. under CERCLA regulations (EPA 1988).

Nationally and internationally, no standardized methods have been adopted for evaluating doses and demonstrating protection of plants and animals from the effects of ionizing radiation. In 1999, the IAEA convened a technical committee examining protection of the environment from the effects of ionizing radiation and provided recommendations and discussion points for moving forward with the development of protection frameworks and dose assessment methods. The resulting IAEA Technical Document, "Protection of the Environment from the Effects of Ionizing Radiation" (1999) references multi-tiered screening as a potentially cost-effective and easy way of demonstrating compliance with radiation criteria for protection of biota. The IAEA has subsequently hosted a series of Specialists' Meetings on radiological protection of the environment, and the Nuclear Energy Agency (NEA) and the ICRP have sponsored a series of fora on this issue. It is hoped that the methods and guidance provided in this DOE technical standard will serve as a platform for national and international discussion of radiation protection frameworks, standards, and dose assessment methods for biota.

Benefits of a Screening Process

"A multi-tiered screening approach is normally used in ecological risk assessments. Screening may also be a potentially cost-effective and easy way of demonstrating compliance with radiation criteria or standards for protection of the environment. Screening values should be used to identify radionuclides in situations of concern, and to determine whether these radionuclides warrant further assessment, or if they are at levels that require no further attention. In practice, this initial screening is expected to be sufficient in the majority of cases. When initial screening fails, additional analysis or assessment may be needed. A two- or three-tiered scheme would help ensure that the magnitude of the assessment effort would be scaled to the likelihood and severity of environmental impacts."

From: IAEA-TECDOC-1091, Protection of the Environment from the Effects of Ionizing Radiation: A Report for Discussion (July 1999)

1.2.2 Basis for Biota Dose Limits Applied in this Technical Standard

A dose limit for controlling radiological impacts from DOE activities to native aquatic animals is specified in DOE Order 5400.5. At present, DOE Orders do not specify dose limits for terrestrial organisms. However, an intended objective of DOE Orders 5400.1 and 5400.5 is to protect the aquatic and terrestrial environment, including populations of plants and animals, within and beyond the boundaries of DOE sites from impacts of routine DOE activities. The dose limits in this technical standard are consistent with (a) the intent of DOE Orders 5400.1

and 5400.5, (b) the dose limit for aquatic animals specified in DOE Order 5400.5, and (c) findings of the IAEA and NCRP regarding doses below which deleterious effects on populations of aquatic and terrestrial organisms have not been observed. They are also consistent with the intent of the IAEA document, “The Principles of Radioactive Waste Management” (IAEA 1995), in which Principle 2 states that “radioactive waste shall be managed in such a way as to provide an acceptable level of environmental protection.” The background for the dose limits for aquatic and terrestrial biota is briefly discussed below. These dose limits represent expected safe levels of exposure, and are consensus No Adverse Effects Levels (NOAELs) for effects on population-relevant attributes in natural populations of biota.

1.2.2.1 Aquatic Organisms

At the request of DOE, the NCRP (1991) reviewed the literature on the effects of radiation on aquatic organisms and prepared a report on the then-current understanding of such effects. The report also provided guidance for protecting populations of aquatic organisms, concluding that a chronic dose of no greater than 1 rad/d (0.4 mGy/h) to the maximally exposed individual in a population of aquatic organisms would ensure protection of the population.

The IAEA examined and summarized the conclusions regarding aquatic organisms of several previous reviews (IAEA 1992):

- Aquatic organisms are no more sensitive than other organisms; however, because they are poikilothermic animals, temperature can control the time of expression of radiation effects.
- The radiosensitivity of aquatic organisms increases with increasing complexity, that is, as organisms occupy successively higher positions on the phylogenetic scale.
- The radiosensitivity of many aquatic organisms changes with age, or, in the case of unhatched eggs, with the stage of development.
- Embryo development in fish and the process of gametogenesis appear to be the most radiosensitive stages of all aquatic organisms tested.
- The radiation-induced mutation rate for aquatic organisms appears to be between that for *Drosophila* (fruit flies) and mice.

Furthermore, the 1992 review found that the conclusions of an earlier IAEA review (1976) were still supported; namely, that appreciable effects in aquatic populations would not be expected at doses lower than 1 rad/d (10 mGy/d) and that limiting the dose to the maximally exposed individuals to less than 1 rad/d would provide adequate protection of the population.

1.2.2.2 Terrestrial Organisms

The IAEA (1992) summarized information about the effects of acute ionizing radiation on terrestrial organisms as follows:

- Reproduction (encompassing the processes from gametic formation through embryonic development) is likely to be the most limiting endpoint in terms of survival of the population.

- Lethal doses vary widely among different species, with birds, mammals, and a few tree species being the most sensitive among those considered.

- Acute doses of 10 rad (100 mGy) or less are very unlikely to produce persistent and measurable deleterious changes in populations or communities of terrestrial plants or animals.

The IAEA (1992) also summarized information about the effects of chronic radiation on terrestrial organisms:

- Reproduction (encompassing the processes from gametogenesis through embryonic development) is likely to be the most limiting endpoint in terms of population maintenance.

- Sensitivity to chronic radiation varies markedly among different taxa; certain mammals, birds, reptiles, and a few tree species appear to be the most sensitive.

- In the case of invertebrates, indirect responses to radiation-induced changes in vegetation appear more critical than direct effects.

- Irradiation at chronic dose rates of 1 rad/d (10 mGy/d) or less does not appear likely to cause observable changes in terrestrial plant populations.

- Irradiation at chronic dose rates of 0.1 rad/d (1 mGy/d) or less does not appear likely to cause observable changes in terrestrial animal populations. The assumed threshold for effects in terrestrial animals is less than that for terrestrial plants, primarily because some species of mammals and reptiles are considered to be more radiosensitive.

- Reproductive effects on long-lived species with low reproductive capacity may require further consideration.

The NCRP and IAEA concluded for aquatic organisms and the IAEA concluded for terrestrial organisms that the statement by the ICRP (1977; 1991), "...if man is adequately protected, then other living things are also likely to be sufficiently protected" was reasonable within the

limitations of the generic exposure scenarios examined. A similar assessment was made at a DOE-sponsored workshop (Barnthouse 1995) held to evaluate the adequacy of existing effects data and approaches to radiation protection of aquatic and terrestrial organisms to support moving forward with setting regulatory limits. DOE workshop participants agreed that protecting humans generally protects biota, except under the following conditions: (1) human access to a contaminated area is restricted but access by biota is not restricted, (2) unique exposure pathways exist for plants and animals that do not affect exposure of humans, (3) rare or endangered species are present, or (4) other stresses on the plant or animal population are significant.

1.2.2.3 Additional Summaries and Reviews of Radiation Effects Data on Biota Confirming NCRP and IAEA Findings

UNSCEAR. In 1996, the United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR) summarized and reviewed information on the responses to acute and chronic radiation of plants and animals, both as individuals and as populations (UNSCEAR 1996). The conclusions from the UNSCEAR review were consistent with findings and recommendations made earlier by the NCRP and IAEA concerning biota effects data and appropriate dose limits for protection of biota. In 2002, UNSCEAR reported that these dose rate criteria (1 rad/d for aquatic animals and terrestrial plants; 0.1 rad/d for terrestrial animals) remain defensible for protection of populations of plants and animals. The UNSCEAR plans to develop a new scientific annex to further address radioecology and effects of radiation on the environment (Gentner 2002).

UK Environment Agency. In 2001, the Environment Agency of the United Kingdom (UK) conducted a review of the available body of radiation effects data on biota (Copplestone et al. 2001). They concluded that it is unlikely that there will be any significant effects in:

- populations of freshwater and coastal organisms at chronic dose rates below 400 uGy/h (or 1 rad/d; 10 mGy/d);
- terrestrial plant populations at chronic dose rates below 400 uGy/h (or 1 rad/d; 10 mGy/d); and
- terrestrial animal populations at chronic dose rates below 40 uGy/h (or 0.1 rad/d; 1 mGy/d).

It is noteworthy that the UK Environment Agency's review findings are largely consistent with the findings and biota dose recommendations of the NCRP, the IAEA, and UNSCEAR cited above. Additionally, they concluded that it is unlikely that there will be any significant effects in populations of organisms in the deep ocean at chronic dose rates below 1,000 uGy/h (or 2.5 rad/d; 25 mGy/d).

ACRP. In 2002, the Advisory Committee on Radiation Protection (ACRP), charged with providing advice to the Canadian Nuclear Safety Commission (CNSC) regarding approaches needed for the radiological protection of the environment, provided recommendations concerning appropriate dose rate criteria for protection of biota. The ACRP recommended that the generic dose rate criterion for protecting biota should be in the range of 1-10 mGy/d (0.1-1 rad/d). The ACRP indicated that this dose rate criterion is based on population-level effects and, given the current state of knowledge and consensus views of radiation effects on biota, represents the level at which ecosystems will suffer no appreciable deleterious effects. The criterion is specified in terms of daily dose rather than annual dose. The intent is to avoid, for example, what would be the annual dose at this dose rate criterion being received in a few days. The ACRP further recommended that there should be some flexibility in the averaging time used in interpreting this dose rate criterion (CNSC-ACRP 2002).

1.2.2.4 Application of Biota Dose Limits as "Dose Rate Guidelines" for Evaluating Doses to Biota

The biota dose limits specified in this technical standard are based on the current state of science and knowledge regarding effects of ionizing radiation on plants and animals. They should not be interpreted as a "bright line" that, if exceeded, would trigger a mandatory regulatory or remedial action. Rather, they should be interpreted and applied more as "Dose Rate Guidelines" that provide an indication that populations of plants and animals could be impacted from exposure to ionizing radiation and that further investigation and action is likely necessary.

1.2.3 Protection of Populations

The intent of the graded approach (i.e., the screening and analysis methods) in this technical standard is to protect populations of aquatic animals, terrestrial animals, and terrestrial plants from the effects of exposure to anthropogenic ionizing radiation. As noted above, certain taxa are more sensitive to ionizing radiation than others. Based on this observation, it is generally assumed that protecting the more sensitive taxa will adequately protect other, less sensitive taxa. Hence, in cases where site-specific evaluations may be required, receptors should be selected that (1) are important to the structure and function of the community, (2) are expected to receive a comparatively high degree of exposure (e.g., expected to receive a radiation dose to reproductive tissues which is relatively high per unit of radionuclide present in the ecosystem, in comparison with other receptors in the same community), and (3) have a comparatively high degree of radiosensitivity (e.g., radiation effects of concern occur at relatively low doses, in comparison with other receptors in the same community). Figure 1.1 shows the relative radiosensitivity of various taxa for both aquatic and terrestrial systems.

Participants at the DOE-sponsored workshop to evaluate the adequacy of existing effects data and approaches to radiation protection of aquatic and terrestrial organisms (Barnthouse 1995) concluded that existing data support the application of recommended dose limits to

representative rather than maximally exposed individuals within populations of plants and animals. Participants concluded that exposure below the recommended dose limits would not cause adverse effects at the population level, even though some individuals within the population might be adversely affected.

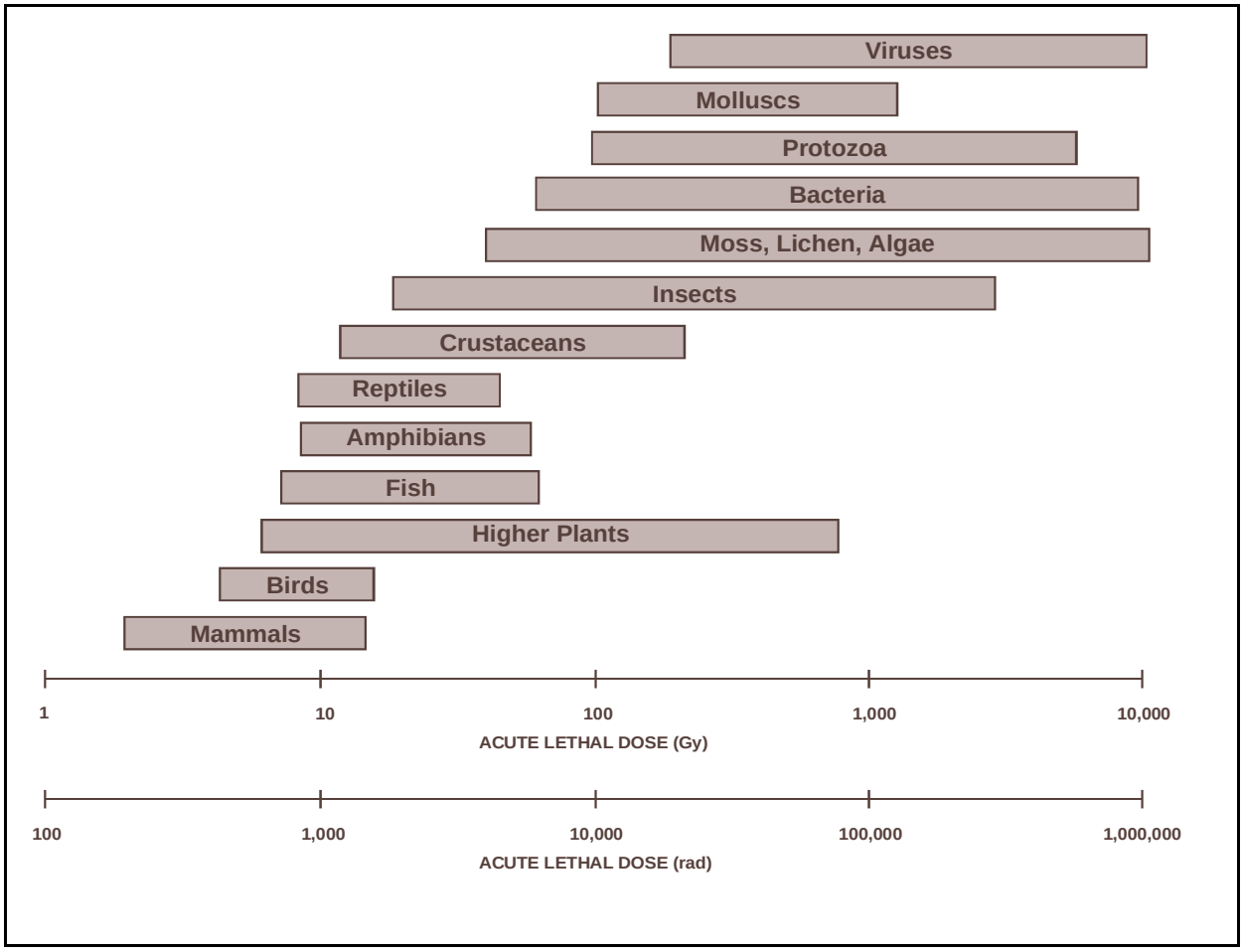


Figure 1.1 Approximate Acute Lethal Dose Ranges for Various Taxonomic Groups
Source: Whicker and Schulz 1982; UNSCEAR 1996.

2 Overview of the DOE Graded Approach

DOE's graded approach for evaluating radiation doses to aquatic and terrestrial biota consists of a three-step process which is designed to guide a user from an initial, conservative general screening to, if needed, a more rigorous analysis using site-specific information (Figure 2.1). The three-step process includes: (1) assembling radionuclide concentration data and knowledge of sources, receptors, and routes of exposure for the area to be evaluated; (2) applying an easy-to-use general screening methodology that provides limiting radionuclide concentration values (i.e., Biota Concentration Guides - BCGs) in soil, sediment, and water; and (3) if needed, conducting an analysis through site-specific screening, site-specific analysis, or an actual site-specific biota dose assessment conducted within an eco-risk. Any of the steps within the graded approach may be used at any time, but the general screening methodology will usually be the simplest, most cost-effective, and least time-consuming. Table 2.1 provides a summary of DOE's graded approach.

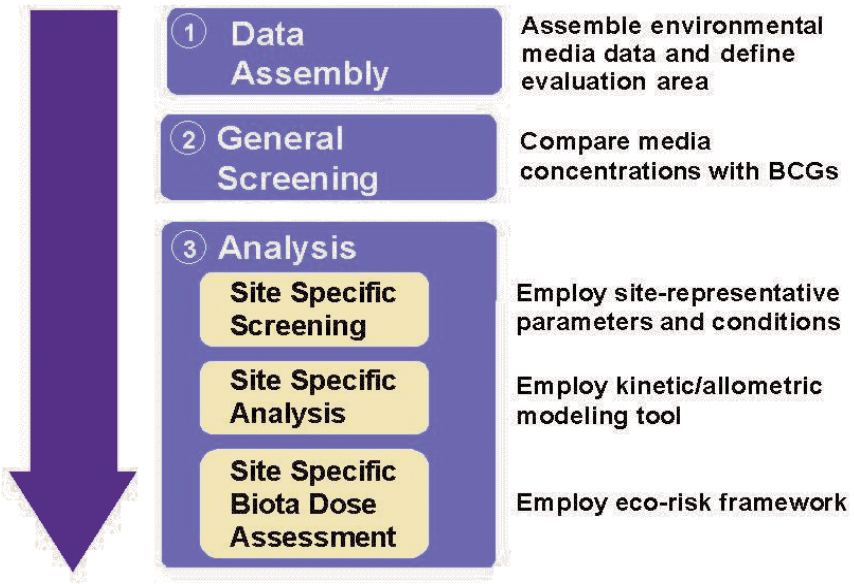


Figure 2.1 Overview of the DOE Graded Approach for Evaluating Radiation Doses to Aquatic and Terrestrial Biota

Table 2.1 Summary of DOE's Three-Step Process for Evaluating Radiation Doses to Aquatic and Terrestrial Biota

1. Data Assembly	Knowledge of sources, receptors, and routes of exposure for the area to be evaluated is summarized. Measured radionuclide concentrations in water, sediment, and soil are assembled for subsequent screening.
2. General Screening	Maximum measured radionuclide concentrations in an environmental medium (i.e., water, sediment, soil) are compared with a set of Biota Concentration Guides (BCGs). Each radionuclide-specific BCG represents the limiting radionuclide concentration in an environmental medium which would not result in recommended dose standards for biota to be exceeded.
3. Analysis	This phase consists of three increasingly more detailed steps of analysis.
(a) Site-Specific Screening	Site-specific screening, using more realistic site-representative lumped parameters (e.g., bioaccumulation factors) in place of conservative default parameters. Use of mean radionuclide concentrations in place of maximum values, taking into account time dependence and spatial extent of contamination, may be considered.
(b) Site-Specific Analysis	Site-specific analysis employing a kinetic modeling tool (applicable to riparian and terrestrial animal organism types) provided as part of the graded approach methodology. Multiple parameters which represent contributions to the organism's internal dose (e.g., body mass, consumption rate of food/soil, inhalation rate, lifespan, biological elimination rates) can be modified to represent site and organism-specific characteristics. The kinetic model employs allometric equations relating body mass to these internal dose parameters.
(c) Site-Specific Biota Dose Assessment	An actual site-specific biota dose assessment involving the collection and analysis of biota samples. The dose assessment would involve a problem formulation, analysis, and risk characterization protocol consistent with the widely-used ecological risk assessment paradigm.

2.1 Key Features of the Graded Approach

The graded approach was designed for flexibility and acceptability:

- It provides users with a tiered approach for demonstrating compliance with biota dose limits that is generally cost-effective and easy-to-implement.
- It allows for the use of measured radionuclide concentrations in environmental media typically collected as part of routine environmental surveillance programs.

- It is designed for multiple applications. The technical standard is applicable to demonstrations of compliance with biota dose limits and for use in ecological risk assessments of radiological impact.

- It provides a framework that supports the use of site-specific information.

- It incorporates ecological risk assessment concepts and provides guidance for site-specific biota dose assessments (where needed) employing the widely-used ecological risk assessment (ERA) paradigm.

- All of the equations and resulting BCGs contained in this technical standard have been encoded into a series of electronic spreadsheets. The spreadsheets were built using Microsoft Excel® and incorporate Visual Basic® commands to help guide and automate the user's progression through the biota dose evaluation process. Use of these spreadsheets, termed the "RAD-BCG Calculator," is described in Module 1, Sections 4-8. Refer to Module 1, Section 4 for an overview of the RAD-BCG Calculator and its contents for use as a companion tool to this technical standard.

- It provides users with "a place to start" and "an analysis path forward." The BCGs are not stand-alone. Exceedance of BCGs leads the user to the more-detailed tiers of analysis as needed in a stepwise manner. These linkages are an integral part of the graded approach framework and are built into the companion software tool, the RAD-BCG Calculator.

2.2 Key Points Regarding Methods Derivation

Internal and external sources of dose (and their contributing exposure pathways) are incorporated in the derivation of the graded approach methodology. Sufficient prudence has been exercised in the development of each of the assumptions and default parameter values to ensure that the resulting BCGs are appropriately conservative. In the event that an individual default parameter value is subsequently found to be an upper-end value but not the "most limiting" value for a unique site-specific exposure scenario, the other prudent assumptions and default parameter values will ensure that the BCGs (and resultant doses to biota) should continue to carry the appropriate degree of conservatism for screening purposes. Refer to Module 3 for a detailed description of the derivation of dose equations and default parameters used in the graded approach. Key assumptions used in deriving the BCGs that highlight the conservatism applied in the general screening phase are presented in Table 2.2. Exposure pathways for each of the reference organism types considered in the graded approach are presented in Figures 2.2 through 2.5. A summary of the general dose equation and approach used to derive the BCGs is provided in Table 2.3.

Table 2.2 Assumptions Regarding Sources, Receptors, and Routes of Exposure Applied in the General Screening Phase of the Graded Approach

Dose Limits	• BCGs were derived for aquatic animal, riparian animal, terrestrial plant, and terrestrial animal reference organisms. The dose rate limits used to derive the BCGs for each organism type are 1 rad/d, 0.1 rad/d, 1 rad/d, and 0.1 rad/d respectively. • While existing effects data support the application of these dose limits to representative individuals within populations of plants and animals, the assumptions and parameters applied in the derivation of the BCGs are based on a maximally exposed individual, representing a conservative approach for screening purposes.
External Sources of Radiation Exposure	• Estimates of the contribution to dose from external radioactive material were made assuming that all of the ionizing radiation was deposited in the organism (i.e., no pass-through and no self-shielding). This is conservative, and is tantamount to assuming that the radiosensitive tissues of concern (the reproductive tissues) lie on the surface of a very small organism. • For external exposure to contaminated soil, the source was presumed to be infinite in extent. In the case of external exposure to contaminated sediment and water, the source was presumed to be semi-infinite in extent. • The source medium to which the organisms are continuously exposed is assumed to contain uniform concentrations of radionuclides. • These assumptions provide for appropriately conservative estimates of energy deposition in the organism from external sources of radiation exposure.
Internal Sources of Radiation Exposure	• Estimates of the contribution to dose from internal radioactive material were conservatively made assuming that all of the decay energy is retained in the tissue of the organism, (i.e., 100% absorption). • Progeny of radionuclides and their decay chains are also included. This provides an over-estimate of internal exposure, as the lifetime of many of the biota of interest is generally short compared to the time for the build-up of progeny for certain radionuclides. • The radionuclides are presumed to be homogeneously distributed in the tissues of the receptor organism. This is unlikely to under-estimate the actual dose to the tissues of concern (i.e., reproductive organs). • A radiation weighing factor of 20 for alpha particles is used in calculating the BCGs for all organism types. This is conservative, especially if non-stochastic effects are most important in determining harm to biota. The true value may be a factor of 3 to 4 lower.

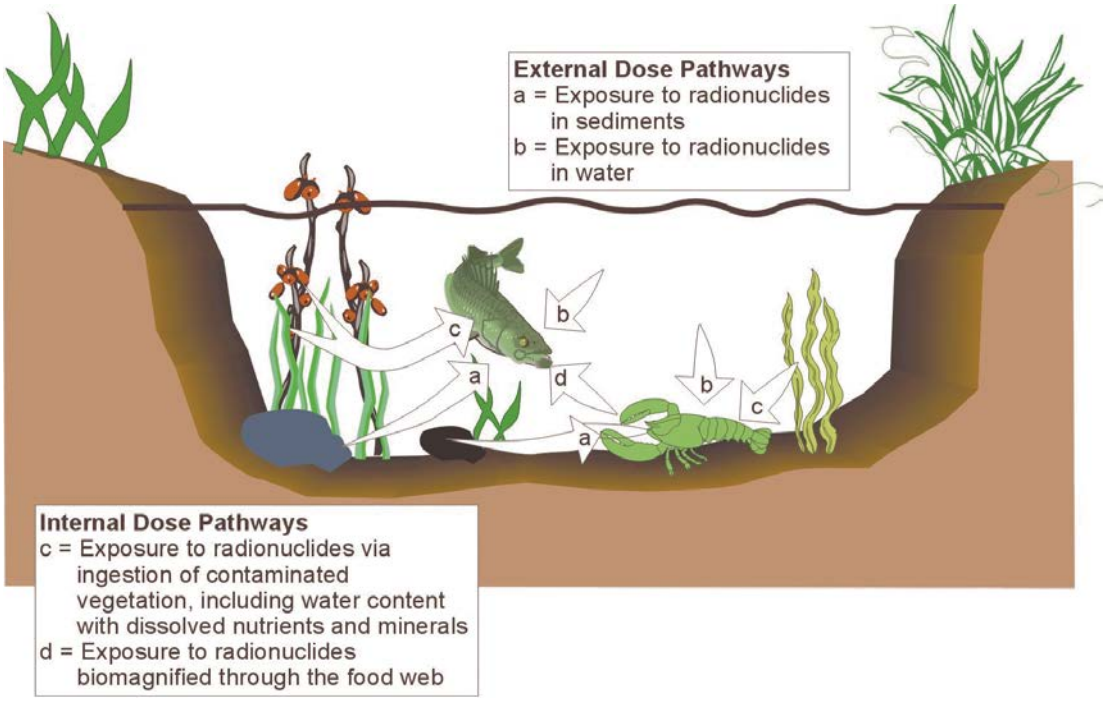


Figure 2.2 Exposure Pathways for Aquatic Animals

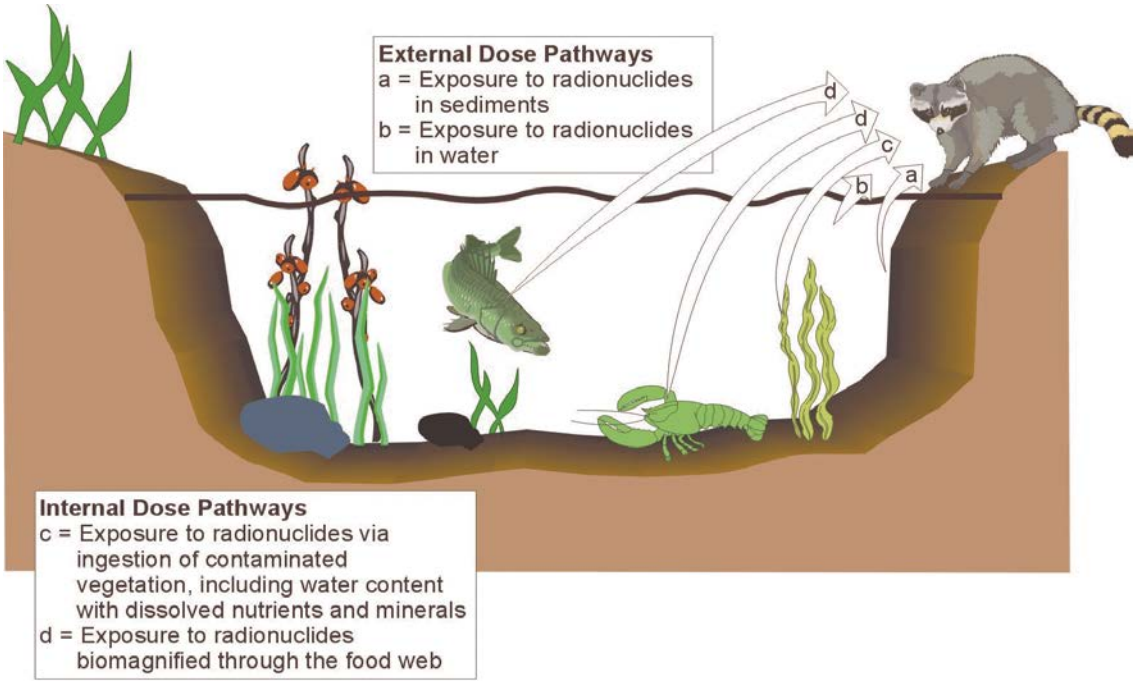


Figure 2.3 Exposure Pathways for Riparian Animals

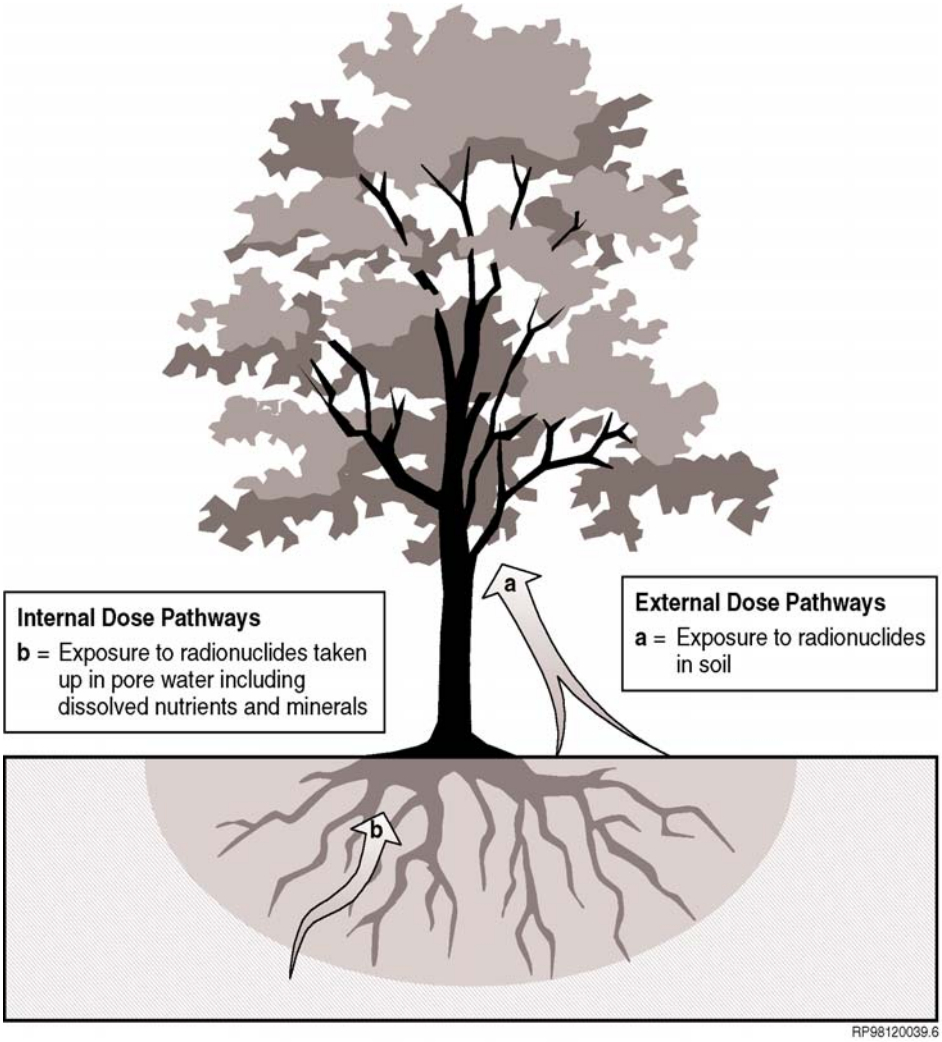


Figure 2.4 Exposure Pathways for Terrestrial Plants

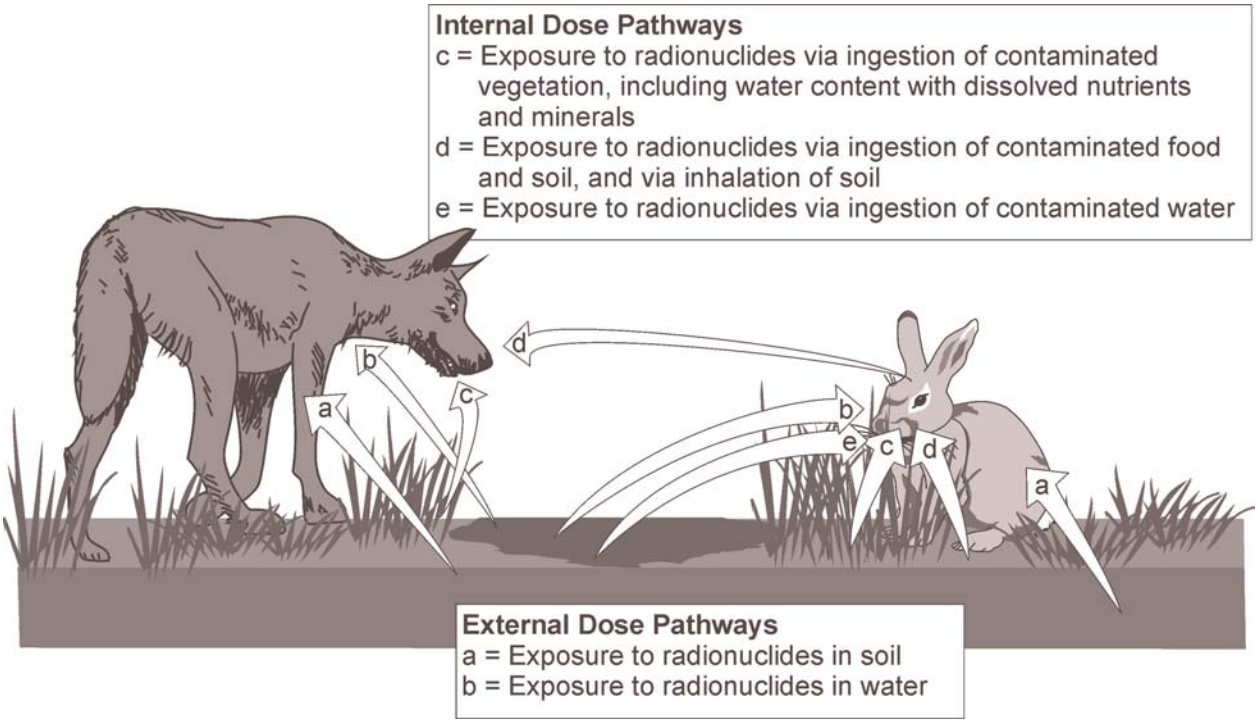


Figure 2.5 Exposure Pathways for Terrestrial Animals

Table 2.3 General Dose Equation and Approach Used to Derive BCGs

$$\text{Limiting Concentration} = \frac{\text{Dose Rate Limit}}{(\text{Internal Dose Rate}) + (\text{External Dose Rate}_{soil/sed.}) + (\text{External Dose Rate}_{water})}$$
• The limiting concentration in an environmental medium was calculated by first setting a target total dose (e.g., 1 rad/d for aquatic organisms and terrestrial plants, or 0.1 rad/d for riparian and terrestrial animals) and then back-calculating to the medium concentration (i.e., the BCG) necessary to produce the applicable dose from radionuclides in the organism (internal dose), plus the external dose components from radionuclides in the environment (external dose). • The denominator of the generic equation represents the dose per unit media concentration and may be broken down into the base components of internal and external dose. • Internal doses originate from radionuclides inside the organism's body. The internal dose is calculated as the product of the internal radionuclide concentration and internal dose conversion factor. External doses originate from radionuclides external to the organism and are calculated as the product of the radionuclide concentration in the environmental medium in which the organism resides and an appropriate dose conversion factor.

2.3 Relationship of the Graded Approach to Ecological Risk Assessment

The Graded Approach Is a Framework for Organizing Successively Rigorous Tiers of Assessment, with a Particular Emphasis on Ionizing Radiation.

The graded approach for evaluating radiation doses to aquatic and terrestrial biota is consistent with the standard ecological risk assessment (ERA) paradigm (EPA 1998). As in the standard ERA paradigm, the graded approach moves from a simple and relatively conservative screening evaluation to a more detailed and realistic assessment. Each step in the graded approach addresses, either explicitly or implicitly, the principal ERA components. That is, the graded approach is a framework for organizing the successively rigorous ERA tiers, but with a particular emphasis on ionizing radiation.

The graded approach for evaluating radiation doses to aquatic and terrestrial biota is consistent with the standard ecological risk assessment (ERA) paradigm (EPA 1998). The ERA structure provides a process for organizing and evaluating information to determine the nature, likelihood, and magnitude of potential impacts on environmental receptors (Suter 1993). The three major phases of an ERA are problem formulation, analysis of exposure and effects, and risk characterization. The ERA is typically done in successively rigorous tiers, each of which includes the three general ERA phases (Suter, Efroymson, Sample & Jones 2000). As in the widely-used ERA paradigm, the graded approach moves from a simple and relatively conservative screening evaluation to a more detailed and realistic assessment. Each step in the graded approach addresses, either explicitly or implicitly, all of the aforementioned ERA components. That is, the graded approach is a framework for organizing the successively rigorous ERA tiers, but with a particular emphasis on ionizing radiation.

The ERA process is general in nature and could be applied to the evaluation of radiation as a stressor, but not without some modifications and provision of additional guidance. There are some noteworthy technical issues concerning the evaluation of radiation that require further consideration and elaboration. Some issues are the same as for chemicals, but some are unique to radionuclides. In response to requests for guidance on this topic, Module 2, Section 1 provides a basic “primer” on technical issues that should be considered when evaluating radiation as a stressor to the environment, and draws on the experiences gained by BDAC members in developing the graded approach and conducting radiological ERAs. To our knowledge, standardized guidance on how to address these issues is not available elsewhere.

3 Application Considerations

The principal application of the graded approach is to demonstrate that routine DOE operations and activities are in compliance with the biota dose limits for protecting populations of plants and animals. In addition, the design of the graded approach (e.g., assumptions used; a multi-tiered screening and analysis approach; flexibility to allow use of site-specific information on sources, receptors, and routes of exposure) permits its application in ecological assessments of radiological impact and in other environmental assessment scenarios. Discussions on other intended or potential applications of the graded approach were first held in 1999 at a Biota Dose Assessment Committee (BDAC) Meeting (DOE 1999). Additional applications of the graded approach were identified by users and reviewers of an interim version of this technical standard that was made available for a trial use period beginning in July 2000 (DOE 2000a). Recommendations made by BDAC members and users on the intended and potential applications of the graded approach are summarized in an applications matrix (Table 3.1).

Data Quality Objectives

Data quality objectives (DQOs) shall be considered when determining the appropriateness of applying the DOE graded approach to other environmental assessment scenarios identified in Table 3.1.

Table 3.1 Applications Matrix Summarizing Intended and Potential Uses of the DOE Graded Approach

APPLICATIONS	INTENDED / POTENTIAL USE	CONSIDERATIONS
Types of Receptors		
Populations of plants and animals	This is the primary intended use.	
Individual plants and animals, including threatened and endangered species, and commercially or culturally valued species	Equations used within the graded approach are technically sound for application to individual organisms. Applying dose limits intended for the protection of populations to evaluations of individuals may require further consideration.	Use of effects endpoints/dose limits appropriate for protection of the individuals being evaluated; and/or application of safety factors, conservative exposure assumptions, and parameter values. Dose evaluations should be performed under the provisions of the applicable Federal and/or state statutes or regulations for rare and endangered species.

Table 3.1 (Continued) Applications Matrix Summarizing Intended and Potential Uses of the DOE Graded Approach

APPLICATIONS	INTENDED / POTENTIAL USE	CONSIDERATIONS
Types of Exposure		
Chronic	The methodology assumes chronic exposure and equilibrium conditions.	
Acute		The methodology is not intended to be used for assessing acute exposures. The models and assumptions used in the graded approach assume equilibrium conditions.
Accidents	Could be used to provide an indication of long-term "recovery" or health of the population over time following an accident. Equations and models used within the graded approach are technically sound for this application.	Accidents typically result in short-term, acute exposures for which the methodology is not intended. However, it can be applied for assessing long-term exposures due to accidents.
Types of Environments		
Fresh water, coastal, and marine environments	The methodology is intended to be applied to fresh water environments, and can be applied to coastal and marine environments.	Care must be taken when selecting parameter values (e.g., receptor lumped parameters; K_d values), as fresh water, coastal, and marine equilibrium chemistry differ considerably.
Terrestrial environments	The methodology is intended to be applied to terrestrial environments.	
Compliance / Impact Assessment		
Demonstration that DOE activities are in compliance with biota dose limits	This is a principal DOE application of the graded approach.	

Table 3.1 (Continued) Applications Matrix Summarizing Intended and Potential Uses of the DOE Graded Approach

APPLICATIONS	INTENDED / POTENTIAL USE	CONSIDERATIONS
Compliance / Impact Assessment (Continued)		
National Environmental Policy Act (NEPA)	The graded approach could be coupled with predictive dispersion codes that model a facility's effluents prior to construction, to estimate doses to biota in the Environmental Impact Statement. C Comparison of alternatives C Screen for issues needing analysis C Defining significance criteria C Mitigation action plan	Effects and assessment endpoints selected for use in the biota dose evaluation should be relevant to the management goals of the study.
Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)	Screening for potential radiological impacts within an ecological risk assessment. C Remedial Investigation/ Feasibility Study (RI/FS) C Engineering Evaluation/ Cost Analysis (EE/CA)	Effects and assessment endpoints selected for use in the biota dose evaluation should be relevant to the management goals of the study.
Natural Resource Damage Assessments (NRDA)	Screening assessments.	Effects and assessment endpoints selected for use in the biota dose evaluation should be relevant to the management goals of the study.
Decommissioning	Could be used to evaluate doses to biota, and to predict future doses to biota, associated with pre- and post- site or facility decommissioning activities.	Effects and assessment endpoints selected for use in the biota dose evaluation should be relevant to the management goals of the study.
Resource Conservation and Recovery Act (RCRA)	C Mixing zone definition C Alternative concentration limits	Effects and assessment endpoints selected for use in the biota dose evaluation should be relevant to the management goals of the study.

Table 3.1 (Continued) Applications Matrix Summarizing Intended and Potential Uses of the DOE Graded Approach

APPLICATIONS	INTENDED / POTENTIAL USE	CONSIDERATIONS
Compliance / Impact Assessment (Continued)		
Clean Water Act	Mixing zone assessments.	Effects and assessment endpoints selected for use in the biota dose evaluation should be relevant to the management goals of the study.

As mentioned earlier, the principal driver and basis of need for developing the graded approach was to provide DOE field and program elements with methods for demonstrating compliance with DOE biota dose limits and recommendations for radiological protection of the environment. Thus, many of the decisions that are traditionally made when conducting a case-specific assessment (e.g., choice of indicator receptors; defining receptor exposure profiles; selection of effects endpoints) were made at a programmatic level and incorporated into the screening phase of the graded approach *a priori.* For example, the thresholds for adverse effects were set at the recommended limits for protection of natural populations of biota. Those are the appropriate effects levels for demonstrating protection with DOE requirements and recommendations for the protection of the environment from ionizing radiation (Module 1, Section 1.2). If the graded approach is used for other purposes (e.g., Table 3.1), then the programmatic objectives and the methods should be reviewed and discussed with the relevant decision makers and stakeholders, preferably via the Data Quality Objectives (DQO) process (Bilyard et al. 1997) to ensure that the results obtained through application of the graded approach will support the management goals and objectives of the environmental assessment.

3.1 Evaluating Doses to Individual Organisms

The equations and models used within the graded approach for estimating the dose per unit concentration of radionuclides in environmental media and for deriving the BCGs are also applicable to individual organisms. However, there are questions concerning the applicability of the biota dose limits to individual organisms. While the biota dose limits presented in Module 1, Section 1.1 were derived based on dose-response information for the most radiosensitive of all species studied, and taking into account the most radiosensitive life stages, the question of whether these dose limits can be applied to protection of individual members of a species, in contrast to protection of populations of species, requires further consideration. That is, for individual plants and animals, especially threatened and endangered species, the health effects of concern could be different from the effects of concern in protection of populations.

The application of safety factors to these dose limits is one approach that has been used in evaluating doses to individual organisms (e.g., for culturally valued species). Use of safety

factors, appropriate default parameter values, maximum radionuclide concentrations in environmental media, and 100 percent organism residence time and exposure are factors to consider in the application of the graded approach for evaluating doses to individuals. Refer to Module 2, Section 8 for a more detailed discussion on this issue. Specific cases where evaluation of individual organisms may be needed are discussed below.

3.1.1 Threatened and Endangered Species

Care must be taken by the user if the graded approach is applied in an evaluation of potential radiological impacts to endangered, threatened, rare, or otherwise sensitive species of plants and animals managed under the Federal Endangered Species Act or similar state laws or regulations pertaining to rare or endangered species (Endangered Species Act, 16 USC 1531 et seq.). It is the users responsibility to select effects and assessment endpoints, and the required input parameter values that reflect actual or expected exposure profiles, for the individuals being evaluated. Protection of endangered species should be performed under the provisions of the applicable Federal and/or state statutes or regulations for rare and endangered species.

3.1.2 Commercially and Culturally Valued Species

Care must be taken by the user if the graded approach is applied in an evaluation of potential radiological imacts to these categories of species. These would include species that are routinely harvested for their economic value (e.g., salmon) or their cultural value (e.g., medicinal plants used by Native Americans). One issue is whether or not these species should be evaluated at the individual or the population level. It is the users responsibility to select effects and assessment endpoints, and the required input parameter values that reflect actual or expected exposure profiles, for the individuals being evaluated.

3.2 Evaluating Doses to Aquatic Plants

Available information about the effects of ionizing radiation on aquatic plants does not appear to be adequate to characterize their sensitivity to ionizing radiation, or to establish defensible recommendations (i.e., in the form of dose standards or criteria) for allowable exposures of populations or individuals. However, regarding this technical standard, indirect means can provide a general qualitative indication of the effects to aquatic plants relative to effects on other organisms. In general, one would expect substantially lower radiosensitivity in higher plants in comparison to the most sensitive birds, fishes and mammals (Whicker and Schultz 1982; Whicker 1997). Therefore, an evaluation using this technical standard that demonstrates protection of aquatic and riparian animals should provide an indication that aquatic plants are also likely protected. Alternatively, appropriate bioaccumulation factors (B_{iv}s) for aquatic plants could be used in the appropriate aquatic system spreadsheets to calculate BCGs for aquatic plants. Refer to Module 2, Section 2.3, and Module 3, Section 3.2.1, for guidance in this area.

3.3 Experimental Facilities

The methods in this technical standard are not directly intended to be applied to properly permitted experimental facilities that expose biota to ionizing radiation without releasing materials to the environment (e.g., particle beam accelerators). Although the operation of such facilities may be considered to be “routine,” any inadvertent exposure of biota as a result of such operations should have been addressed in the operating permit, precluding any need to apply the methods described herein. Additionally, any such exposures would be localized, and would thus be unlikely to affect substantial populations of any species that this technical standard addresses. Refer to Module 2, Section 2.4 for detailed considerations and methods for evaluating potential impacts to biota around accelerators or other sources of direct radiation.

3.4 Hazardous Chemicals and Industrial Hazards

The methods in this technical standard are not appropriate for evaluating potential impacts on biota from hazardous chemicals or industrial-type hazards, including noise and traffic.

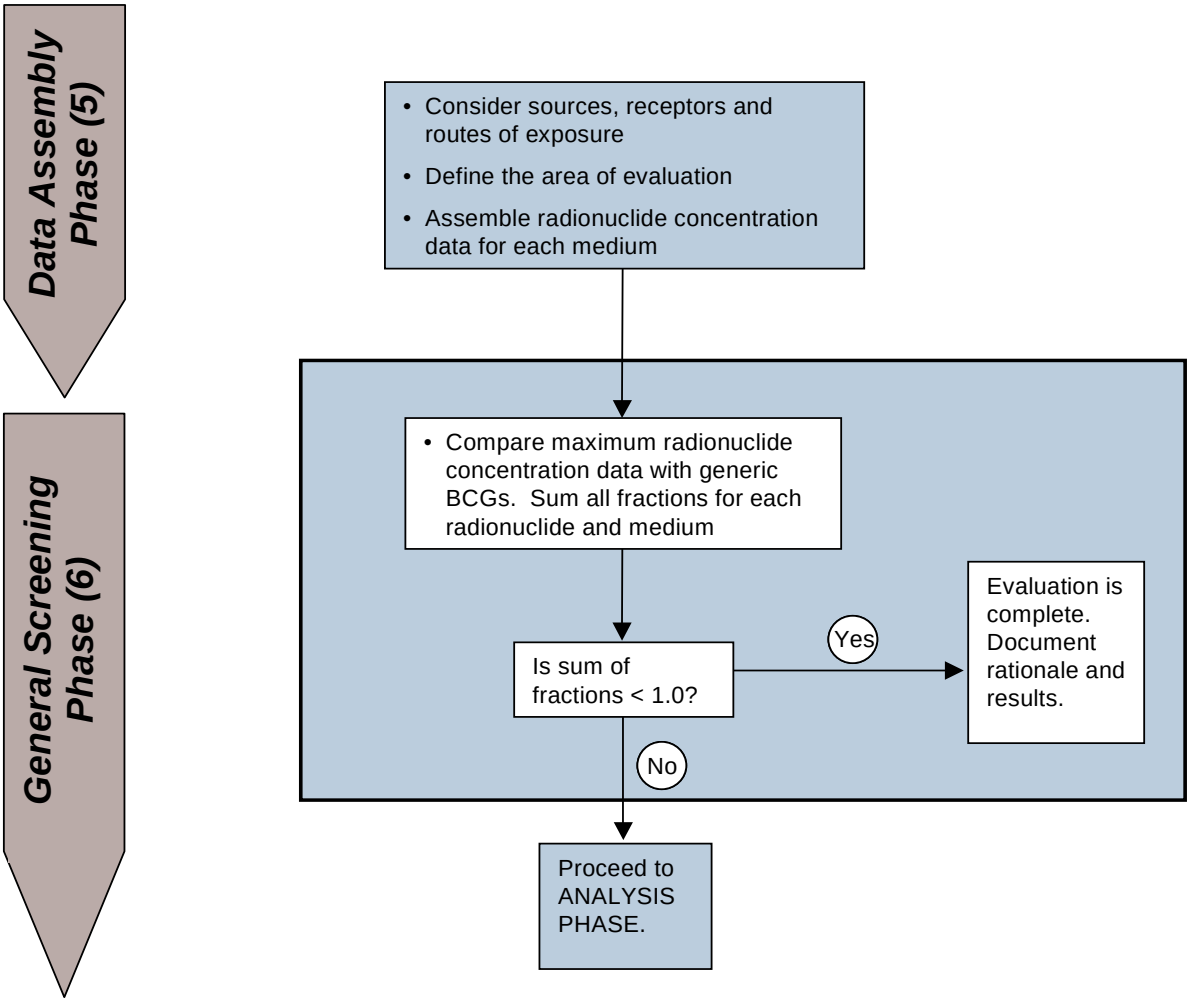
3.5 Frequency of Conducting Evaluations

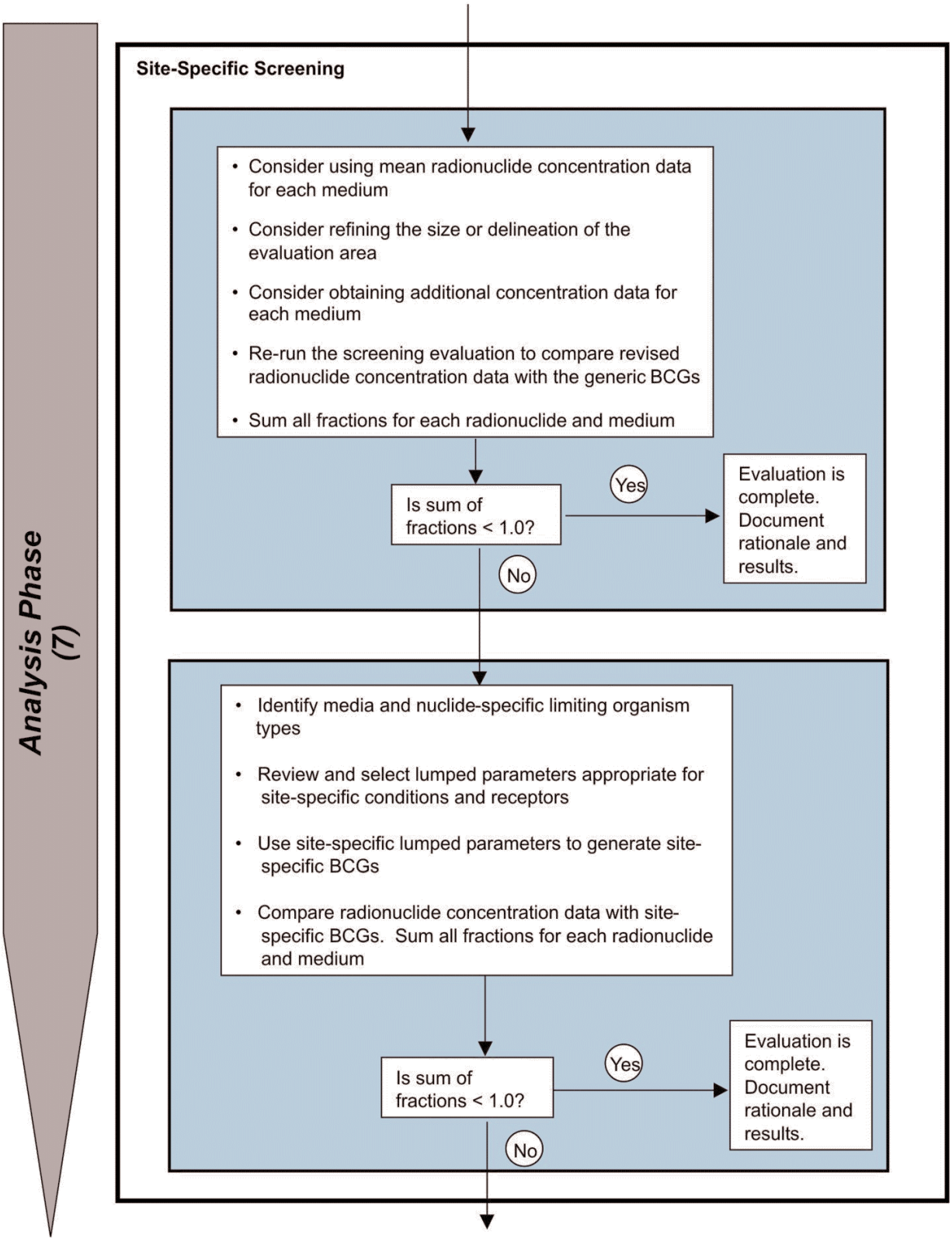
Dose evaluations for aquatic and terrestrial biota shall be conducted annually in conjunction with the preparation of annual site environmental reports that are required under DOE Orders 5400.1 and 5400.5. More frequent evaluations could be required at the direction of DOE’s Office of Environment, Safety and Health (EH).

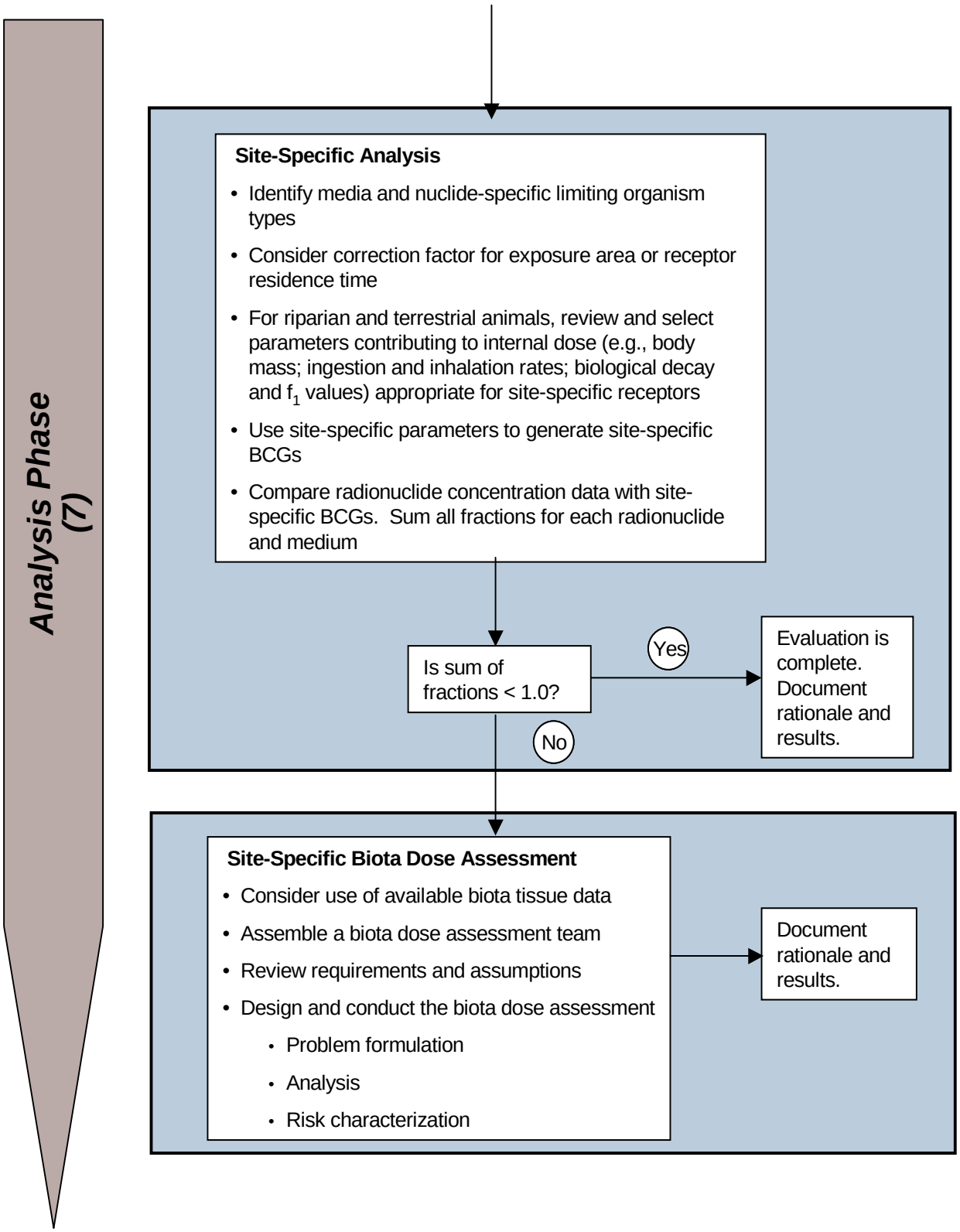
4 Step-by-Step Implementation of the Graded Approach

Here we present an overview of the complete process for implementing the graded approach. This section is provided to help orient you to the step-by-step guidance corresponding to each phase of the graded approach which follows in Sections 5 - 8 of this Module. A flowchart showing how to progress through each phase of the graded approach, and the components of each phase, is provided in Figure 4.1. Refer to this figure as you proceed through the step-by-step guidance presented in subsequent sections. References to more comprehensive guidance (presented in Module 2 of this technical standard) are provided throughout the step-by-step guidance. Example applications of the graded approach, using actual DOE site data, are presented in Section 9 of this Module.

Figure 4.1 Flowchart Illustrating Step-by-Step Guidance for Progressing Through the DOE Graded Approach. Section numbers within this technical standard corresponding to each phase are highlighted for reference.




Analysis Phase
(7)
Site-Specific Screening
• Consider using mean radionuclide concentration data for each medium
• Consider refining the size or delineation of the evaluation area
• Consider obtaining additional concentration data for each medium
• Re-run the screening evaluation to compare revised radionuclide concentration data with the generic BCGs
• Sum all fractions for each radionuclide and medium
Is sum of fractions < 1.0?
Yes
Evaluation is complete. Document rationale and results.
No
• Identify media and nuclide-specific limiting organism types
• Review and select lumped parameters appropriate for site-specific conditions and receptors
• Use site-specific lumped parameters to generate site-specific BCGs
• Compare radionuclide concentration data with site-specific BCGs. Sum all fractions for each radionuclide and medium
Is sum of fractions < 1.0?
Yes
Evaluation is complete. Document rationale and results.
No


Analysis Phase (7)
Site-Specific Analysis
• Identify media and nuclide-specific limiting organism types
• Consider correction factor for exposure area or receptor residence time
• For riparian and terrestrial animals, review and select parameters contributing to internal dose (e.g., body mass; ingestion and inhalation rates; biological decay and f_1 values) appropriate for site-specific receptors
• Use site-specific parameters to generate site-specific BCGs
• Compare radionuclide concentration data with site-specific BCGs. Sum all fractions for each radionuclide and medium
Is sum of fractions < 1.0?
Yes
Evaluation is complete. Document rationale and results.
No
Site-Specific Biota Dose Assessment
• Consider use of available biota tissue data
• Assemble a biota dose assessment team
• Review requirements and assumptions
• Design and conduct the biota dose assessment
• Problem formulation
• Analysis
• Risk characterization
Document rationale and results.

4.1 Parameter Values that Can be Modified in the Graded Approach

DOE's three-phased approach is designed to guide you from an initial conservative evaluation using general screening to, if needed, a more rigorous analysis using site-specific information. The amount of effort required for your biota dose evaluation and the information needed on site-specific conditions and receptors increases as you progress through the three phases of the graded approach, particularly during the analysis phase. The result will be a set of less conservative, more realistic site-representative BCGs. Table 4.1 provides a general summary of parameter values that can be modified or applied corresponding to each phase of the graded approach. Use this table as a reference when progressing through the step-by-step guidance provided in subsequent sections of this Module.

Table 4.1 Summary of Parameter Values that Can, with Technical Justification, be Modified Corresponding to Each Phase of the Graded Approach

Phase	Parameters[1]
Data Assembly	• Size of evaluation area • Radionuclide concentrations in environmental media
General Screening	• Initial general screening using maximum radionuclide concentrations: No parameter modifications are allowed
Analysis: *Site-Specific Screening*	• Use of mean radionuclide concentrations, taking into account time dependence and spatial extent of contamination, may be considered • Site-specific lumped parameter values in place of default values used in the general screening phase • Sediment K_d values may be modified, with technical justification, for aquatic system evaluations where only water or only sediment concentration data are available for the screening process
Site-Specific Analysis	• A correction factor for exposure area or receptor residence time for all organism types may be considered • For riparian and terrestrial animals: - Food source B_{iv} value for riparian and terrestrial animals - Body mass - Uptake fraction of radionuclide ingested/absorbed (f_1) - Biological elimination rate constant of radionuclide exiting the organism (λ_{bio})

Table 4.1 (Continued) Summary of Parameter Values that Can, with Technical Justification, be Modified Corresponding to Each Phase of the Graded Approach

Phase	Parameters[1]
	- Food intake rate and supporting parameters - Soil intake rate and supporting parameters - Inhalation rate and supporting parameters - Soil inhalation rate and supporting parameters - Water consumption rate - Maximum life span - Allometric equations provided can be modified
Site-Specific Biota Dose Assessment	• Design, collection, and direct analysis of environmental media and biota

[1] The RAD-BCG Calculator provides the capabilities to modify the dose limits for aquatic and terrestrial organisms, to modify the RBE weighting factor for alpha emitters, and to de-select inclusion of energies for progeny of chain-decaying nuclides with regard to internal dose conversion factors. These default values shall be used in dose evaluations conducted for DOE sites. See Module 2, Section 7 for a detailed discussion on the selection of the RBE weighting factor for alpha emitters.

4.2 Use of the RAD-BCG Calculator

The RAD-BCG Calculator is a companion tool to the technical standard. It contains a series of electronic spreadsheets for use in:

- entering site data on radionuclide concentrations in soil, sediment, or water,
- comparing radionuclide-specific data with radionuclide-specific BCGs,
- determining if the sum of fractions for all radionuclide data/BCG comparisons is less than 1.0, and
- when technically justified, modifiying default parameters used in the general screening phase, and calculating site-specific BCGs using site-specific information representing the evaluation area and receptors.

A Table of Contents within the RAD-BCG Calculator provides a listing of the spreadsheets and information text screens, with a brief statement about their application. The contents of the RAD-BCG Calculator are also provided in Table 4.2.

Within these electronic spreadsheets, several fields (e.g., columns) of cells contain notes, viewed by placing the cursor over the cell, that provide additional information on the source of the number of parameter value cited in that cell. The equations used to derive the BCG calculations and to link values across different spreadsheets are presented in a separate

protected spreadsheet within the RAD-BCG Calculator. The equations and assumptions used to derive the BCGs are described in detail within Module 3 of this technical standard.

4.3 The Biota Dose Assessment Committee

The Biota Dose Assessment Committee (BDAC), chaired by DOE's Air, Water and Radiation Division (EH-412), is available as a resource to answer questions concerning the graded approach for evaluating radiation doses to biota. The BDAC is an approved technical standards topical committee organized under the DOE Technical Standards Program. As stated in its charter, the purpose of the BDAC is (a) to assist, consistent with DOE needs, in developing and promoting technical standards and associated guidance for DOE-wide applications in assessing radiation dose to biota, (b) to serve as a major forum within DOE for obtaining technical assistance, discussing technical issues, and sharing lessons learned regarding biota dose standards and assessment methods, and (c) to serve as a technical resource and advisory group for DOE program and field elements regarding site-specific biota dose assessments. The BDAC web site (http://homer.ornl.gov/oepa/public/bdac) provides internet access to guidance, methods, and related tools associated with this technical standard; links to related web sites also are provided. Specific questions concerning the guidance and methods contained in this technical standard, and requests for consultation with the BDAC Core Team, should be coordinated through EH-412 (contact Stephen Domotor, 202-586-0871, Stephen.Domotor@eh.doe.gov).

The BDAC is available as a resource to DOE program and field elements

The Department's Biota Dose Assessment Committee is available as a technical resource and advisory group concerning evaluation of radiation doses to biota. Questions concerning the application of the DOE graded approach should be coordinated through DOE's Air, Water and Radiation Division (EH-412).

Table 4.2 Contents of the RAD-BCG Calculator. A listing of the spreadsheets and information text screens, with a brief statement on their application and relationship to tables contained in this technical standard, is provided.

Spreadsheet Type	Spreadsheet Title	Content Description	Parameters That Can Be Modified
Information Text Screens	Front Page	Welcoming comments and a description of the purpose of the RAD-BCG Calculator, and its intended use. Provides a link to begin a semi-automated biota dose evaluation using the RAD-BCG Calculator.	
	Overview	Provides an overview of DOE's graded approach for evaluating radiation doses to aquatic and terrestrial biota. Summarizes the three phases (data assembly, general screening, analysis) of the graded approach. Provides a link to begin a semi-automated biota dose evaluation using the RAD-BCG Calculator.	
	Table of Contents	Lists all spreadsheets and information text screens included in the RAD-BCG Calculator.	
	Getting Started	Provides general considerations on the general site information required for defining the evaluation area and conducting a biota dose evaluation using the screening methods contained in the technical standard, along with general considerations when conducting an aquatic vs. terrestrial system evaluation. Provides a link for continuing on with a semi-automated evaluation.	
Principal Screening and Analysis Spreadsheets	Initial Conditions	Allows the user to select SI (e.g., Bq/kg) or special (e.g., pCi/g) units in the biota dose evaluation. Provides a feature to reset all parameters to their default values.	Restore initial default parameters; select units
	Aquatic and Terrestrial System Data Entry/BCG Worksheets	Provides the environmental system data entry/BCG worksheet for aquatic system evaluations and terrestrial system evaluations, respectively. Allows the user to enter data on radionuclide concentrations in soil, sediment and water. Lists the BCGs for each radionuclide. Calculates the sum of fractions for all radionuclide data/BCG comparisons and indicates if this sum of fractions is less than 1.0. Lists the limiting organism type responsible for the BCG cited, which references the organism type spreadsheet where default parameters can be modified with site-specific values.	Site radionuclide concentration data for soil, sediment, and water

Spreadsheet Type	Spreadsheet Title	Content Description	Parameters That Can Be Modified
Supporting Parameter and Reference Spreadsheets	Aquatic Animal	Contains the basic parameters used in the calculation of water and sediment BCGs for aquatic biota. Contains all of the same information and parameters as is presented in Module 1, Table 7.1.	B_{iv}; correction factor for exposure area and time
	Terrestrial Plant	Contains the basic parameters used in the calculation of water and soil BCGs for terrestrial plants. Contains all of the same information and parameters as is presented in Module 1, Table 7.3.	B_{iv}; correction factor for exposure area and time
	Riparian Animal	Contains the basic parameters used in the calculation of water and sediment BCGs for riparian animals. Contains all of the same information and parameters as is presented in Module 1, Tables 7.2, 7.5, and 7.6.	With "lumped BCGs" selected: lumped parameter; correction factors for exposure area and time; with "allometric BCGs" selected: correction factors for exposure area and time; fraction of intake retained; biological decay constant; all allometric parameters and equations
	Terrestrial Animal	Contains the basic parameters used in the calculation of water and soil BCGs for terrestrial animals. Contains all of the same information and parameters as is presented in Module 1, Tables 7.4, 7.7, and 7.8.	With "lumped BCGs" selected: lumped parameter; correction factors for exposure area and time; with "allometric BCGs" selected: correction factors for exposure area and time; fraction of intake retained; biological decay constant; all allometric parameters and equations
Supporting Spreadsheets	Dose Factors and Common Parameters	Contains internal dose conversion factors, and external dose conversion factors in soil, sediment and water for each radionuclide. Contains sediment and soil most probable K_d values used as default parameters, and provides their ranges. Contains all of the same information and parameters as is presented in Module 1, Tables 6.5 and 7.9.	Most probable K_d values; radiation weighting factor for alpha emitters; inclusion of energies for progeny of chain-decaying nuclides with regard to internal dose conversion factors
	Decay Chains	Contains decay chains (both with and without progeny) for each radionuclide. This spreadsheet is not provided in the technical standard.	

5 Data Assembly Phase

The DOE graded approach for evaluating radiation doses to aquatic and terrestrial biota was designed to minimize the need for additional data collection above and beyond environmental radionuclide concentration data typically available through routine environmental monitoring and surveillance programs. The data assembly phase encompasses three steps: (1) considering the sources of radioactivity, the key receptors, and the routes of exposure to these receptors; (2) defining the geographic area to be evaluated; and (3) assembling and organizing data on radionuclide concentrations in water, sediments, and soil for use in the general screening phase, and for use in the analysis phase, if needed. Each of the three steps are interdependent and should be considered collectively when implementing the data assembly phase.

5.1 Step 1: Consider the Sources, Receptors, and Routes of Exposure

It is expected that general knowledge concerning sources, receptors, and routes of exposure will be sufficient for defining the geographic area of evaluation when implementing the general screening phase of the graded approach. However, more detailed information regarding these elements may need to be considered as you progress through the graded approach. For example, if the BCGs for the general screening evaluation are exceeded, you may wish to refine your input data for site-specific screening (e.g., using mean radionuclide concentration data in place of maximum values; re-defining the geographic area of evaluation). Alternatively, you may wish to move to the site-specific analysis component of the graded approach, which may require consideration of internal dose parameters relating to site-specific receptors and routes of exposure. Detailed guidance on consideration of sources, receptors, and routes of exposure, for application in defining the area of evaluation and for use in the analysis phase, is provided in Module 2, Section 2.

5.2 Step 2: Define Your Area of Evaluation

It is necessary to determine the spatial extent over which the graded approach will be applied. The assumptions regarding sources, receptors, and routes of exposure used in the development of the graded approach provide for conservative BCGs. In the derivation of the screening approach, the source medium to which the organisms are exposed is assumed to be infinite in extent and to contain uniform concentrations of radionuclides. The organisms are also assumed to be resident in the contaminated area (e.g., exposed to contaminated media) 100 percent of the time. Given these

Three conditions should be present for a dose evaluation:

- *Radioactivity should be present or anticipated to be present in the environment as a result of DOE activities*
- *Receptors (i.e., plants and/or animals) should be present in the vicinity of those sources*
- *Routes of exposure should exist from those sources to the receptors*

assumptions, the first approach shall be to use maximum radionuclide concentration data applicable to your geographic area of interest (e.g., the entire site). A review of your effluent monitoring and environmental surveillance program design and resultant data should provide insights on sampling locations yielding the highest radionuclide concentrations.

5.3 Step 3: Assemble and Organize Data on Radionuclide Concentrations in Environmental Media

The next step is to collect and organize relevant data on radionuclide concentrations in environmental media. Radionuclide concentrations in surface water and/or sediment and in soil are needed for implementing the graded approach. Acceptable sources of data include but are not limited to: Annual Site Environmental Reports, effluent monitoring and environmental surveillance data, remediation data, and data from special site-specific studies (e.g., ecological studies conducted for other purposes). The data should be organized by location and medium, and be applicable to the geographic area of evaluation identified in Step 2 above. Locations may be defined by management and administrative characteristics (e.g., remediation sites; operations areas; operable units), physical characteristics (e.g., watershed; pond; stream), or ecological characteristics (e.g., corresponding to habitat types). Maximum radionuclide concentrations in environmental media shall be used in the initial application of the general screening phase to provide the most conservative evaluation.

5.3.1 Aquatic System Considerations

If you are conducting an aquatic system evaluation, note that use of radionuclide concentration data from co-located surface water and sediment samples is preferred and will result in a less conservative, more realistic evaluation. A mix of data from water and/or sediment samples collected from different locations within the vicinity of one another may be used, with justification. Note that where co-located samples are not available, only water or only sediment data may be used, but will result in a significantly more conservative evaluation. This is because the BCGs derived using individual water or sediment values involve the use of a conservative sediment distribution coefficient (K_d) to calculate the environmental media radionuclide concentration and dose contribution of either the missing water or sediment component.

5.3.2 Terrestrial System Considerations

If you are conducting a terrestrial system evaluation, you should consider the types of receptors resident in your area of evaluation and the appropriateness of your soil samples with regard to these receptors. For example, surface soil samples may not be representative of potential radionuclide exposure to deep-rooted plant receptors. Refer to Module 2, Section 5 for detailed guidance in this area. Also note that if you have a water body in your evaluation area, you must also conduct an aquatic system evaluation.

6 General Screening Phase

A major goal of the general screening phase is to provide a method that allows you to easily apply data on radionuclide concentrations in an environmental medium to evaluate compliance with the dose limits for biota. In the general screening phase, data on radionuclide concentrations in environmental media are compared with a set of generic BCGs. Each radionuclide-specific BCG represents the limiting radionuclide concentration in environmental media which would not result in DOE's established or recommended dose limits for biota to be exceeded. These limiting radionuclide concentrations, or BCGs, are presented in Tables 6.1 through 6.4. These "look-up" tables allow for quick, easy comparisons of radionuclide concentrations in environmental media with the BCGs. Guidance on using these look-up tables is provided below.

6.1 Step 1: Compare Data on Radionuclide Concentrations in Environmental Media with Generic BCGs Contained in Look-up Tables

A sum of fractions approach is used in comparing data on measured radionuclide concentrations in environmental media with the BCGs contained in the look-up tables. That is, when multiple radionuclides are present in multiple environmental media, the sum of fractions rule shall be applied to account for all sources of exposure. Hence, the sum of the ratios of the measured concentration of each radionuclide to its corresponding BCG for each medium shall then be summed across media, and the total sum of fractions shall not exceed 1.0.

Sum of Fractions Rule

When multiple radionuclides are present in multiple environmental media, the sum of fractions rule shall be applied to account for all sources of exposure.

For each environmental medium, for radionuclides A, B, ... N, with concentrations C_A, C_B ...C_N, and corresponding screening BCG values BCG_A, BCG_B, ... BCG_N, this relationship for aquatic and terrestrial system evaluations is as follows:

- Aquatic System Evaluation:

$$\left[\frac{C_A}{BCG_A} \% \frac{C_B}{BCG_B} \%...\% \frac{C_N}{BCG_N}\right] \text{water} \% \left[\frac{C_A}{BCG_A} \% \frac{C_B}{BCG_B} \%...\% \frac{C_N}{BCG_N}\right] \text{sediment} < 1.0$$

- Terrestrial System Evaluation:

$$\left[\frac{C_A}{BCG_A} \% \frac{C_B}{BCG_B} \%...\% \frac{C_N}{BCG_N}\right] \text{water} \% \left[\frac{C_A}{BCG_A} \% \frac{C_B}{BCG_B} \%...\% \frac{C_N}{BCG_N}\right] \text{soil} < 1.0$$

If the sum of fractions (the summed ratios between the radionuclide concentrations in environmental media and the radionuclide-specific BCGs) is less than 1.0, the dose to an aquatic or terrestrial receptor is below the biota dose limit, and you have passed the general screening evaluation. Proceed to Section 8, Documenting Your Biota Dose Evaluation Results. If the sum is greater than 1.0, further investigation is required (e.g., initiating site-specific screening or analysis).

Getting Started with the RAD-BCG Calculator

Enable Macros. Click on "Enable Macros" when prompted.

Select your units. You may work in either SI Units (e.g., Bq/kg) or Special Units (e.g., pCi/g). Select your units in the "Initial Conditions" spreadsheet of the RAD-BCG calculator.

Enter your data. The RAD-BCG Calculator contains aquatic and terrestrial system data entry/BCG worksheets. These environmental data/BCG worksheets allow you to enter your data on radionuclide concentrations in environmental media, automatically calculate the sum of fractions, and determine whether the sum of fractions is greater or less than 1.0.

When entering data for an aquatic system evaluation, be sure to select "water," "sediment," or "both," corresponding to the data you are working with.

The terrestrial system data entry/BCG worksheet provides a feature that allows you to import water data used in the aquatic evaluation, as appropriate.

Prepare for General Screening. To prepare for general screening, be sure that the "lumped BCGs" button is selected within the riparian and terrestrial animal spreadsheets.

Using the Sum of Fractions Rule: Terrestrial System Evaluation

Maximum radionuclide concentrations for water and soil collected within the evaluation area and available through the existing site environmental surveillance program were summarized. Maximum radionuclide concentrations for Cs-137 and Sr-90 in soil were 1.21 and 1.30 pCi/g, respectively. Maximum radionuclide concentrations for Cs-137 and Sr-90 in water were 49.6 and 84.5 pCi/L, respectively. Applying the sum of fractions rule, and using the BCG values listed in Table 6.4, one obtains the following:

soil: $\frac{1.21}{20} \% \frac{1.30}{20}$ ' 1.2E&01

water: $\frac{49.6}{6E\%05} \% \frac{84.5}{5E\%04}$ ' 1.63E&03

1.2E-01	+	1.77E-03	=	0.12
(soil sum of fractions)		(water sum of fractions)		(total sum of fractions)

Conclusion: Because 0.12 is less than 1.0, the dose to a terrestrial receptor does not exceed the recommended dose limits for protection of populations of terrestrial plants and animals. Note that the soil medium provides most of the contribution to dose.

Using the Sum of Fractions Rule: **Aquatic System Evaluation**

Maximum radionuclide concentrations for co-located water and sediment samples collected within the evaluation area and available through the existing site environmental surveillance program were summarized. Maximum radionuclide concentrations for water and sediment are:

	Sr-90	Cs-137
water (pCi/L)	1.5E-03	ND
sediment (pCi/g)	3.8	7.9

Applying the sum of fractions rule, and using the BCG values listed in Table 6.2, one obtains the following:

$$\frac{1.5E\&03}{3E\%02} \% \frac{0}{4E\%01} ' 5.0E\&06$$ (sum of fractions for radionuclides in water)

$$\frac{3.8}{6E\%02} \% \frac{7.9}{3E\%03} ' 8.96E\&03$$ (sum of fractions for radionuclides in sediment)

$$5.0E\&06 \% 8.96E\&03 ' 8.96E\&03$$ (total sum of fractions for radionuclides in water and sediment)

Conclusion: Dose to an aquatic receptor does not exceed the recommended dose limits for aquatic or riparian animals.

6.1.1 Aquatic System Considerations

In situations where co-located water and sediment data are not available, in the general screening phase you must estimate the missing radionuclide concentration data through the use of “most probable” radionuclide-specific K_d values. Radionuclide-specific most probable K_d values are provided in Table 6.5 of this Module and in the Dose Factors and Common Parameters spreadsheet of the RAD-BCG Calculator. The radionuclide concentration data estimated for the missing water or sediment medium is then used along

Estimating Radionuclide Concentration Data in Situations where Co-Located Water and Sediment Data are not Available

The RAD-BCG Calculator uses a “most probable” default K_d value to automatically calculate the missing radionuclide concentration, and then automatically enters it into the aquatic system data entry/BCG worksheet.

with the radionuclide concentration data for the available medium in the sum of fractions calculation as described previously.

Judgement should be applied in determining if measured radionuclide concentration data for water and sediment media can be considered as originating from co-located water and sediment samples. If measured radionuclide concentration data for water and sediment media are only available from separate locations, you should calculate the missing radionuclide concentration data for each missing medium, and apply the approach that results in the highest (e.g., most conservative) sum of fractions in your biota dose evaluation. Equations for estimating radionuclide concentration data in situations where co-located water and sediment data are not available are provided in Module 3, Section 3.2.3. If the sum of fractions is less than 1.0, the dose to an aquatic receptor is below the biota dose limit, and you have passed the general screening evaluation. Proceed to Section 8, Documenting Your Biota Dose Evaluation Results. If the sum is greater than 1.0, further investigation is required (e.g., initiating site-specific screening or analysis).

6.1.2 Dealing with High Background Levels of Naturally Occurring Radionuclides

Radiation dose rates at local background reference sites can be used to ensure that the site-related dose rates represent an actual increase in exposure. If the evaluation area is suspected or has been documented to have high background levels of naturally occurring radionuclides, these background levels may be taken into account when determining compliance of DOE activities with the biota dose limits. For example, this may be a consideration for the two isotopes of radium (see BCGs for Ra-226 and Ra-228, Tables 6.1 - 6.4). Background levels for environmental media should be estimated based on data for the same or similar media types in uncontaminated areas. If the sum of fractions for measured radionuclide concentrations in media from the contaminated area exceeds 1.0, this sum should be compared with the sum of fractions calculated using measured radionuclide concentrations in media from the background area. If the sum of fractions from the contaminated area does not exceed that from the background area, the contaminated area has passed the screening evaluation. Proceed to Module 1, Section 8 and document the results of the comparison. If it does exceed the background sum of fractions, proceed to the next phases of the graded approach. Refer to Module 2, Section 3.3.1, and Module 2, Section 6.3.1.5 for related guidance on this topic.

Table 6.1 Biota Concentration Guides (BCGs) for Water and Sediment (in SI Units) for Use in Aquatic System Evaluations. For use with radionuclide concentrations from co-located water and sediment.

Nuclide	BCG (water), Bq/m^3	Organism Responsible for Limiting Dose in Water	BCG (sediment), Bq/kg	Organism Responsible for Limiting Dose in Sediment
^{241}Am	2E+04	Aquatic Animal	2E+05	Riparian Animal
^{144}Ce	6E+04	Aquatic Animal	1E+05	Riparian Animal
^{135}Cs	2E+04	Riparian Animal	2E+06	Riparian Animal
^{137}Cs	2E+03	Riparian Animal	1E+05	Riparian Animal
^{60}Co	1E+05	Aquatic Animal	5E+04	Riparian Animal
^{154}Eu	8E+05	Aquatic Animal	1E+05	Riparian Animal
^{155}Eu	1E+07	Aquatic Animal	1E+06	Riparian Animal
^{3}H	1E+10	Riparian Animal	1E+07	Riparian Animal
^{129}I	1E+06	Riparian Animal	1E+06	Riparian Animal
^{131}I	5E+05	Riparian Animal	2E+05	Riparian Animal
^{239}Pu	7E+03	Aquatic Animal	2E+05	Riparian Animal
^{226}Ra	2E+02	Riparian Animal	4E+03	Riparian Animal
^{228}Ra	1E+02	Riparian Animal	3E+03	Riparian Animal
^{125}Sb	1E+07	Aquatic Animal	3E+05	Riparian Animal
^{90}Sr	1E+04	Riparian Animal	2E+04	Riparian Animal
^{99}Tc	2E+07	Riparian Animal	2E+06	Riparian Animal
^{232}Th	1E+04	Aquatic Animal	5E+04	Riparian Animal
^{233}U	7E+03	Aquatic Animal	2E+05	Riparian Animal
^{234}U	7E+03	Aquatic Animal	2E+05	Riparian Animal
^{235}U	8E+03	Aquatic Animal	1E+05	Riparian Animal
^{238}U	8E+03	Aquatic Animal	9E+04	Riparian Animal
^{65}Zn	5E+02	Riparian Animal	5E+04	Riparian Animal
^{95}Zr	3E+05	Aquatic Animal	9E+04	Riparian Animal

Table 6.2 Biota Concentration Guides (BCGs) for Water and Sediment (in Special Units) for Use in Aquatic System Evaluations. For use with measured radionuclide concentrations from co-located water and sediment.

Nuclide	BCG (water), pCi/L	Organism Responsible for Limiting Dose in Water	BCG (sediment), pCi/g	Organism Responsible for Limiting Dose in Sediment
^{241}Am	4E+02	Aquatic Animal	5E+03	Riparian Animal
^{144}Ce	2E+03	Aquatic Animal	3E+03	Riparian Animal
^{135}Cs	5E+02	Riparian Animal	4E+04	Riparian Animal
^{137}Cs	4E+01	Riparian Animal	3E+03	Riparian Animal
^{60}Co	4E+03	Aquatic Animal	1E+03	Riparian Animal
^{154}Eu	2E+04	Aquatic Animal	3E+03	Riparian Animal
^{155}Eu	3E+05	Aquatic Animal	3E+04	Riparian Animal
^{3}H	3E+08	Riparian Animal	4E+05	Riparian Animal
^{129}I	4E+04	Riparian Animal	3E+04	Riparian Animal
^{131}I	1E+04	Riparian Animal	5E+03	Riparian Animal
^{239}Pu	2E+02	Aquatic Animal	6E+03	Riparian Animal
^{226}Ra	4E+00	Riparian Animal	1E+02	Riparian Animal
^{228}Ra	3E+00	Riparian Animal	9E+01	Riparian Animal
^{125}Sb	4E+05	Aquatic Animal	7E+03	Riparian Animal
^{90}Sr	3E+02	Riparian Animal	6E+02	Riparian Animal
^{99}Tc	7E+05	Riparian Animal	4E+04	Riparian Animal
^{232}Th	3E+02	Aquatic Animal	1E+03	Riparian Animal
^{233}U	2E+02	Aquatic Animal	5E+03	Riparian Animal
^{234}U	2E+02	Aquatic Animal	5E+03	Riparian Animal
^{235}U	2E+02	Aquatic Animal	4E+03	Riparian Animal
^{238}U	2E+02	Aquatic Animal	2E+03	Riparian Animal
^{65}Zn	1E+01	Riparian Animal	1E+03	Riparian Animal
^{95}Zr	7E+03	Aquatic Animal	2E+03	Riparian Animal

Table 6.3 Biota Concentration Guides (BCGs) for Water and Soil (in SI Units) for Use in Terrestrial System Evaluations.

Nuclide	BCG (water), Bq/m^3	Organism Responsible for Limiting Dose in Water	BCG (soil), Bq/kg	Organism Responsible for Limiting Dose in Soil
^{241}Am	7E+06	Terrestrial Animal	1E+05	Terrestrial Animal
^{144}Ce	1E+08	Terrestrial Animal	5E+04	Terrestrial Animal
^{135}Cs	3E+08	Terrestrial Animal	1E+04	Terrestrial Animal
^{137}Cs	2E+07	Terrestrial Animal	8E+02	Terrestrial Animal
^{60}Co	4E+07	Terrestrial Animal	3E+04	Terrestrial Animal
^{154}Eu	8E+07	Terrestrial Animal	5E+04	Terrestrial Animal
^{155}Eu	1E+09	Terrestrial Animal	6E+05	Terrestrial Animal
^{3}H	9E+09	Terrestrial Animal	6E+06	Terrestrial Animal
^{129}I	2E+08	Terrestrial Animal	2E+05	Terrestrial Animal
^{131}I	7E+07	Terrestrial Animal	3E+04	Terrestrial Animal
^{239}Pu	7E+06	Terrestrial Animal	2E+05	Terrestrial Animal
^{226}Ra	3E+05	Terrestrial Animal	2E+03	Terrestrial Animal
^{228}Ra	3E+05	Terrestrial Animal	2E+03	Terrestrial Animal
^{125}Sb	3E+08	Terrestrial Animal	1E+05	Terrestrial Animal
^{90}Sr	2E+06	Terrestrial Animal	8E+02	Terrestrial Animal
^{99}Tc	6E+08	Terrestrial Animal	2E+05	Terrestrial Animal
^{232}Th	2E+06	Terrestrial Animal	6E+04	Terrestrial Animal
^{233}U	1E+07	Terrestrial Animal	2E+05	Terrestrial Animal
^{234}U	1E+07	Terrestrial Animal	2E+05	Terrestrial Animal
^{235}U	2E+07	Terrestrial Animal	1E+05	Terrestrial Animal
^{238}U	2E+07	Terrestrial Animal	6E+04	Terrestrial Animal
^{65}Zn	6E+06	Terrestrial Animal	2E+04	Terrestrial Animal
^{95}Zr	8E+07	Terrestrial Animal	4E+04	Terrestrial Animal

Table 6.4 Biota Concentration Guides (BCGs) for Water and Soil (in Special Units) for Use in Terrestrial System Evaluations.

Nuclide	BCG (water), pCi/L	Organism Responsible for Limiting Dose in Water	BCG (soil), pCi/g	Organism Responsible for Limiting Dose in Soil
^{241}Am	2E+05	Terrestrial Animal	4E+03	Terrestrial Animal
^{144}Ce	3E+06	Terrestrial Animal	1E+03	Terrestrial Animal
^{135}Cs	8E+06	Terrestrial Animal	3E+02	Terrestrial Animal
^{137}Cs	6E+05	Terrestrial Animal	2E+01	Terrestrial Animal
^{60}Co	1E+06	Terrestrial Animal	7E+02	Terrestrial Animal
^{154}Eu	2E+06	Terrestrial Animal	1E+03	Terrestrial Animal
^{155}Eu	3E+07	Terrestrial Animal	2E+04	Terrestrial Animal
^{3}H	2E+08	Terrestrial Animal	2E+05	Terrestrial Animal
^{129}I	6E+06	Terrestrial Animal	6E+03	Terrestrial Animal
^{131}I	2E+06	Terrestrial Animal	9E+02	Terrestrial Animal
^{239}Pu	2E+05	Terrestrial Animal	6E+03	Terrestrial Animal
^{226}Ra	8E+03	Terrestrial Animal	5E+01	Terrestrial Animal
^{228}Ra	7E+03	Terrestrial Animal	4E+01	Terrestrial Animal
^{125}Sb	7E+06	Terrestrial Animal	3E+03	Terrestrial Animal
^{90}Sr	5E+04	Terrestrial Animal	2E+01	Terrestrial Animal
^{99}Tc	2E+07	Terrestrial Animal	4E+03	Terrestrial Animal
^{232}Th	5E+04	Terrestrial Animal	2E+03	Terrestrial Animal
^{233}U	4E+05	Terrestrial Animal	5E+03	Terrestrial Animal
^{234}U	4E+05	Terrestrial Animal	5E+03	Terrestrial Animal
^{235}U	4E+05	Terrestrial Animal	3E+03	Terrestrial Animal
^{238}U	4E+05	Terrestrial Animal	2E+03	Terrestrial Animal
^{65}Zn	2E+05	Terrestrial Animal	4E+02	Terrestrial Animal
^{95}Zr	2E+06	Terrestrial Animal	1E+03	Terrestrial Animal

Table 6.5 Part 1 of Dose Factors and Common Parameters Spreadsheet. Most Probable K_d values for use in calculating generic BCGs for water and sediment in situations where co-located water and sediment samples are unavailable.

	Distribution Coefficients, K_d					
Nuclide	**Maximum Value L/kg (mL/g)**	**Reference $K_{d,max}$**	**Minimum Value L/kg (mL/g)**	**Reference $K_{d,min}$**	**Most Probable Value [(a)] L/kg (mL/g)**	**Reference $K_{d,mp}$**
^{241}Am	6.5E+05	T&M	8.5E+01	T&M	5.0E+03	T&M
^{144}Ce	1.0E+07	T&M	1.0E+02	RESRAD	1.0E+03	RESRAD
^{135}Cs	8.0E+04	T&M	1.7E+01	T&M	5.0E+02	RESRAD
^{137}Cs	8.0E+04	T&M	1.7E+01	T&M	5.0E+02	RESRAD
^{60}Co	3.0E+05	T&M	1.0E+02	RESRAD	1.0E+03	RESRAD
^{154}Eu	1.3E+05	T&M	2.0E+02	T&M	5.0E+02	T&M
^{155}Eu	1.3E+05	T&M	2.0E+02	T&M	5.0E+02	T&M
^{3}H	1.0E-04	KAH	1.0E-05	KAH	1.0E-03	KAH
^{129}I	1.0E+02	T&M	1.0E-05	KAH	1.0E+01	T&M
^{131}I	1.0E+02	T&M	1.0E-05	KAH	1.0E+01	T&M
^{239}Pu	1.0E+07	T&M	1.0E+02	T&M	2.0E+03	RESRAD
^{226}Ra	1.0E+03	T&M	1.0E-01	RESRAD	7.0E+01	RESRAD
^{228}Ra	1.0E+03	T&M	1.0E-01	RESRAD	7.0E+01	RESRAD
^{125}Sb	1.0E+03	KAH	1.0E-03	KAH	1.0E+00	KAH
^{90}Sr	4.0E+03	T&M	1.0E-01	RESRAD	3.0E+01	RESRAD
^{99}Tc	1.0E+02	T&M	1.0E-05	KAH	5.0E+00	T&M
^{232}Th	1.0E+06	T&M	1.2E+00	RESRAD	6.0E+04	RESRAD
^{233}U	5.0E+01	RESRAD	1.0E-01	RESRAD	5.0E+01	RESRAD
^{234}U	5.0E+01	RESRAD	1.0E-01	RESRAD	5.0E+01	RESRAD
^{235}U	5.0E+01	RESRAD	1.0E-01	RESRAD	5.0E+01	RESRAD
^{238}U	5.0E+01	RESRAD	1.0E-01	RESRAD	5.0E+01	RESRAD
^{65}Zn	1.0E+04	T&M	2.0E+00	RESRAD	2.0E+01	RESRAD
^{95}Zr	1.0E+05	T&M	1.0E+02	RESRAD	1.0E+03	RESRAD

T&M = Till and Meyer 1983; RESRAD = Yu et al. 1993; KAH = Estimation by K. A. Higley, Oregon State University.
(a) = "Most Probable" values shall be used to generate the generic BCGs for use in general screening in a case where only water or sediment data are available. This value may be modified using a site-representative K_d value in the analysis phase of the graded approach.

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7 Analysis Phase

The analysis phase of the graded approach contains three increasingly more detailed components of analysis for evaluating doses to biota: site-specific screening, site-specific analysis, and site-specific biota dose assessment. In the analysis phase, you are also increasingly moving away from the default parameters and assumptions used in the general screening phase of the graded approach. The amount of effort required for your biota dose evaluation and the information needed about site-specific conditions and receptors increase as you progress through the three components of the analysis phase. The amount of specialized assistance (e.g., in health physics, radioecology, and eco-risk assessment) that might be needed also increases as you progress through the components of the analysis phase. In return, the result will be a set of less conservative, more realistic and site-representative BCGs. **The rationale for selection of site-specific parameters applied in this phase shall be sufficiently documented when reporting your biota dose evaluation results**. Each of the three analysis components is described below.

7.1 Analysis Phase - Site-Specific Screening

Site-specific screening allows you to apply knowledge of site-specific conditions and receptors in your biota dose evaluation in place of the default parameter values and assumptions used in the general screening phase of the graded approach. For example, use of mean radionuclide concentrations in place of maximum values, taking into account time dependence and spatial extent of contamination, may be considered. Parameters representative of site-specific receptors also may be considered. These considerations and their application in site-specific screening are discussed below.

Questions to Consider in Determining Your Path Forward in Site-Specific Screening:

Can I use mean radionuclide concentrations rather than maximum values?

Does it make sense to adjust or re-define my evaluation area, using knowledge of the spatio-temporal extent of my contamination with respect to receptor habitats?

Are the "limiting organism types" corresponding to my media and radionuclides expected to be present in my evaluation area?

Do I have site-representative parameters (e.g., lumped parameters; B_{iv}s; K_ds) that can be used in place of default values?

7.1.1 Step 1: Assess the Representativeness of Your Input Data on Radionuclide Concentrations in Environmental Media and the Delineation of Your Evaluation Area

Spatial and temporal variability relative to the distribution of contamination in the evaluation area can be taken into account when evaluating doses to biota. Each of the elements presented below should be considered collectively as you proceed through this step.

7.1.1.1 Consider Using Mean Radionuclide Concentrations

Determine if mean radionuclide concentrations can be used in place of maximum concentrations. For example, use of mean values is appropriate and permitted in situations where time-series data are available and of sufficient quality. Spatial variability in the distribution of contamination can also be taken into account. Note that depending on the purpose of your application of the graded approach, you may be requested (e.g., by regulators or stakeholders) to use only maximum radionuclide concentration data rather than mean values. Detailed guidance on applying spatio-temporal considerations in determining mean radionuclide concentrations for use in the graded approach is provided in Module 2, Section 3.

7.1.1.2 Consider Refining the Evaluation Area

It may be useful to re-assess your rationale for delineating the evaluation area (e.g., breaking one large area into several smaller areas) through consideration of the quality and spatio-temporal distribution of radionuclide concentration data, the ecological susceptibility and habitats of the receptors, and the spatial distribution of contaminants with respect to these habitats. Refer to Module 2, Section 4 for detailed guidance in this area.

7.1.1.3 Consider Obtaining Additional Radionuclide Concentration Data

Consider collecting additional radionuclide concentration data. For an aquatic system evaluation, consider using co-located water and sediment data if you have not already done so.

7.1.2 Step 2: Re-Run the Screening Evaluation Using Revised Radionuclide Concentration Data and/or Evaluation Area

Here you are comparing your refined data on measured radionuclide concentrations corresponding to your original or re-defined evaluation area, with the generic BCGs. This is done by re-entering these revised data into the appropriate environmental data/BCG worksheet in the RAD-BCG Calculator. It is important to note that in this step you have not modified the initial, generic BCG values. They are the same generic BCGs that are used in the general screening phase of the graded approach. This step is considered a site-specific screen in that you are now making site-specific judgements relative to your measured radionuclide concentration data and your evaluation area. If the sum of fractions is less than 1.0, then you

have passed the site-specific screening evaluation. Proceed to Section 8, Documenting Your Biota Dose Evaluation Results. If the sum of fractions is greater than 1.0, then continue to progress through the graded approach.

7.1.3 Step 3: Assess the Representativeness of Default Parameters and Assumptions Used in Deriving the Generic BCGs; Select Site-Specific Parameters and Generate Site-Specific BCGs

This step allows you to replace default parameters used in the general screening phase with site-representative parameters for use in site-specific screening. Each of the elements presented below should be considered collectively as you proceed through this step.

7.1.3.1 Identify Radionuclide-Specific Limiting Medium and Organism Type

Review the radionuclide-specific BCGs used in the general screening phase of the graded approach. First, identify the environmental medium and individual radionuclides from your evaluation that provide the greatest contribution to potential dose (e.g., medium concentration: BCG ratios that represent the largest contributors to the sum of fractions). Then, for each of these radionuclides, identify the limiting organism type from which the generic BCGs were derived. Limiting organism types corresponding to generic BCGs are listed for each radionuclide in Tables 6.1 - 6.4 and in the corresponding RAD-BCG Calculator spreadsheets. If you did not conduct a general screen prior to site-specific screening, go to the organism type table or spreadsheet that corresponds to the site-specific receptor you have chosen to use in your analysis. The site-specific receptor you select should be important to the structure and function of the community, in that protection of this organism within your evaluation area assures that all other organisms in your evaluation area are also protected. Some examples of receptors that could serve as good indicators of radiological impact are provided for your reference in Module 2, Section 2.1.3.

Selecting A Site-Specific Receptor

The receptor should be important to the structure and function of the community. It should: (1) be expected to receive a comparatively high degree of exposure (e.g., expected to receive a radiation dose to reproductive tissues which is relatively high per unit of radionuclide present in the ecosystem, in comparison to other receptors in the same community); (2) have a comparably high degree of radiosensitivity (e.g., radiation effects of concern occur at relatively low doses, in comparison with other receptors in the same community); and (3) exhibit a high degree of bioaccumulation.

7.1.3.2 Review and Select Site-Specific Lumped Parameters

The general screening phase uses a conservative default “lumped parameter” in the estimation of internal dose to an organism. The lumped parameter is based largely on empirical

measurements of radionuclides in biological tissues of organisms collected in contaminated habitats. In cases where empirical measurements are unavailable or few in number, the lumped parameter is based on a conservative value derived using uncertainty analysis on the kinetic/allometric method (see Module 3, Section 3.5). The lumped parameter serves as a "natural integrator" of internal contamination in that it inherently reflects all pathways of intake by an organism. Here, in site-specific screening, lumped parameters representative of site-specific conditions and receptors are used to generate site-specific BCGs in place of the default lumped parameters that were used in generating the generic BCGs. This site-specific screening results in a less conservative, more realistic evaluation of potential doses to biota for your area of evaluation.

The initial values of the lumped parameters were specifically chosen to produce conservative (e.g., highly protective) BCGs. It is recognized that actual lumped parameters for a single radionuclide may range over several orders of magnitude, depending upon biotic and abiotic features of the environment. In step 3 you review the default lumped parameters used in deriving the BCGs for the appropriate organism type. The default lumped parameter values (and other input parameters) are contained in a set of organism type tables (Tables 7.1 - 7.4). The RAD-BCG Calculator contains similar tables which can be easily located (see Module 1, Section 4). Review and select lumped parameters representative of site-specific conditions and receptors you have selected for your evaluation area. These site-specific lumped parameters are entered into the appropriate organism type spreadsheet in the RAD-BCG Calculator and used to generate site-specific BCGs. Sources for lumped parameter values representative of your site-specific conditions and receptors include: (1) your own site-derived lumped parameters (e.g., B_{iv}s) for site-specific receptors; (2) values published in the scientific literature or in site-specific technical reports (e.g., from specialized ecological studies) for receptors that are comparable to site-specific receptors in your evaluation area; and (3) databases such as the pilot version of the Biota Dose Assessment Database of Environmental Parameters (BDAD), which is accessible via the Internet through the BDAC web site (http://homer.ornl.gov/oepa/public/bdac).

7.1.3.3 Review and Select Site-Representative K_ds

For aquatic system evaluations where co-located water and sediment samples are not available, recall that in the general screening phase a most probable K_d is used to calculate the environmental media radionuclide concentration and dose contribution of either the missing water or sediment component. Site-specific screening allows you to consider the use of a site-representative K_d value in place of the default most probable value that was used in the general screening phase. Minimum, maximum, and most probable K_d values for each radionuclide are provided in Table 6.5. Sources for K_d values representative of your site specific conditions include: (1) your own site-derived K_d values; (2) values published in the scientific literature or in site-specific technical reports; and (3) databases such as the pilot version of the BDAD, which is accessible via the Internet (see above). Site-representative K_d values are entered into the

Dose Factors and Common Parameters spreadsheet within the RAD-BCG Calculator and used in generating site-specific BCGs.

7.1.4 Step 4: Re-Run the Screening Evaluation and Compare Data on Radionuclide Concentrations in Environmental Media with Newly-Generated Site-Specific BCGs

The use of lumped parameters appropriate for site-specific conditions or receptors should result in more realistic, site-representative BCGs. When using the RAD-BCG Calculator, the generic BCGs listed in the aquatic and terrestrial system data entry/BCG worksheets are automatically updated with the newly generated BCGs, allowing for easy evaluation. If the sum of fractions (the summed ratios between the radionuclide concentrations in environmental media and the radionuclide-specific BCGs) is less than 1.0, the dose to the aquatic or terrestrial receptor is below the biota dose limit. Refer to Section 8, Reporting Your Biota Dose Evaluation Results. If the sum is greater than 1.0, further analysis is required. Proceed to Section 7.2, Site-Specific Analysis.

Entering Site-Specific Information into the RAD-BCG Calculator to Calculate Site-Specific BCGs

Lumped parameters may be modified in each of the organism type spreadsheets contained in the RAD-BCG Calculator. When working in the riparian or terrestrial animal spreadsheets, click on the "Lumped BCGs" button to allow these parameters to be modified. A "user supplied value" message will appear for each lumped parameter modified. Reset buttons for returning all values to their defaults are also featured.

Site-specific K_d values may be used by entering these values in place of the "most probable" values in the Dose Factors and Common Parameters spreadsheet.

The site-specific BCGs derived using these new parameters will show up in the organism-type spreadsheet, and also in the environmental data entry/BCG worksheets, allowing for easy comparison with site radionuclide concentration data previously entered.

7.2 Analysis Phase - Site-Specific Analysis

In site-specific analysis, a kinetic/allometric model is employed to conduct a more rigorous analysis of riparian animal and terrestrial animal organism types. Here you are conducting a very site-specific evaluation (essentially estimating an upper-bound dose) to a site-specific riparian or terrestrial animal of known characteristics (e.g., body mass, behavior, internal exposure pathways, and parameters). Recall that the general and site-specific screening approaches use a lumped parameter in the estimation of internal dose to an organism. The lumped parameter serves as a "natural integrator" of internal contamination in that it inherently

reflects all pathways of intake by an organism. In site-specific analysis, simplistic, first-order kinetic modeling is used to examine the internal pathways of exposure for riparian animal and terrestrial animal receptors in greater detail. Appropriate parameters representing individual mechanisms (e.g., ingestion; inhalation) that contribute to internal dose are applied in place of the lumped parameter (one value which reflects all mechanisms contributing to internal dose). Appropriate values (e.g., organism body mass; ingestion rate; inhalation rate; biological uptake and elimination rates) representative of site-specific conditions and receptors are used in the estimation of internal dose and generation of site-specific BCGs. Allometric equations relating body size to many of these parameters (e.g., ingestion rate; inhalation rate; life span) are used in the estimation of internal dose. Alternatively, you can enter your own values in place of allometrically derived parameters. A correction factor for exposure area or organism residence time may also be applied for all organism types in site-specific analysis.

7.2.1 Step 5: Assess the Representativeness of Default Parameters and Assumptions Employed in Kinetic/Allometric Models; Select Site-Specific Parameters and Generate Site-Specific BCGs

This step allows you to examine and replace default parameters, assumptions, and allometric relationships used in kinetic/allometric models to derive BCGs for riparian animals and terrestrial animals. A correction factor for exposure area or organism residence time may also be applied for all organism types. Each of the elements presented below should be considered collectively when implementing this step.

7.2.1.1 Identify Radionuclide-Specific Limiting Medium and Organism Type

Review the radionuclide-specific BCGs used in the general or site-specific screening portions of the graded approach. First, identify the environmental medium and individual radionuclides from your evaluation that provide the greatest contribution to potential dose (e.g., medium concentration:BCG ratios that represent the largest contributors to the sum of fractions). Then, for each of these radionuclides, identify the limiting organism type from which the general or site-specific BCGs were derived. Limiting organism types corresponding to general BCGs are listed for each radionuclide in Tables 6.1 - 6.4, and in the corresponding RAD-BCG Calculator spreadsheets. If the riparian animal or terrestrial animal organism types are listed, then you may consider the guidance in Sections 7.2.1.2 - 7.2.1.4. If riparian or terrestrial animals are not listed as the limiting organism types, then you need only consider Section 7.2.1.2 below. If you did not conduct a general or site-specific screen prior to site-specific analysis, the proceeding statement applies to the site-specific receptor you have chosen to use in your analysis.

7.2.1.2 Consider Correction Factor for Exposure Area or Receptor Residence Time

A correction factor for exposure area or receptor residence time should be among the first parameters that you consider in site-specific analysis. Temporal and spatial variability can be taken into account when evaluating doses to biota. For example: (1) radionuclides will typically

be distributed non-uniformly in the environment; and (2) organisms are typically distributed non-uniformly within the environment such that exposure may vary among individuals in an affected population (e.g., organisms may migrate into and out of areas of greater and lesser contamination). The general and site-specific screening portions of the graded approach assume for conservative purposes that an organism's residence time in the evaluation area is 100 percent and that the contaminated media are available 100 percent of the time to provide a source of exposure. These assumptions can be modified in site-specific analysis.

Using a Correction Factor for Exposure Area or Receptor Residence Time in the RAD-BCG Calculator

A correction factor for exposure area or receptor residence time, located in each of the organism-type spreadsheets, may be applied. Site-specific BCGs derived using these correction factors will appear in the organism-type spreadsheets, and also in the environmental data entry/BCG worksheet, allowing for easy comparison with site radionuclide concentration data previously entered.

Note that in cases where a riparian or terrestrial animal was indicated as the limiting organism in general or site-specific screening, it is possible that "scaling down" the correction factor to reflect a very small percentage of time an organism spends in the contaminated area may result in triggering the identification of a new limiting organism type (e.g., aquatic animal; terrestrial plant).

Correction Factor for Receptor Residence Time. The term "residence time" as used in the graded approach refers to the fraction of time that an organism resides in a radioactively contaminated area. In site-specific analysis, a correction factor for residence time (e.g., as a percentage of time) may be applied to take into account a specific receptor's home range, movements, and behavior relative to the evaluation area. This

Using the Kinetic/Allometric Method for Riparian and Terrestrial Animals: Entering Site-Representative Parameters into the Riparian Animal and Terrestrial Animal Spreadsheets contained in the RAD-BCG Calculator.

First, click on the "Allometric BCGs" button to allow these parameters to be modified.

Individual parameters (e.g., body mass; ingestion rate; inhalation rate; radionuclide uptake and retention factors) related to mechanisms providing an internal dose may be modified.

Changing the radionuclide-specific food source (B_{iv}) values in the aquatic animal and terrestrial plant spreadsheets will automatically change the BCG values in the riparian animal and terrestrial animal spreadsheets, respectively.

Site-specific BCGs derived using these new parameter values will show up in the riparian and terrestrial animal spreadsheets, and also in the environmental data entry/BCG worksheets, allowing for easy comparison to site radionuclide concentration data previously entered.

correction factor is entered into the appropriate organism type spreadsheet within the RAD-BCG Calculator and used in generating site-specific BCGs.

Correction Factor for Exposure Area. Radionuclides will typically be distributed non-uniformly in the environment. In site-specific analysis, a correction factor for contaminated area (e.g., as a percentage of time) can be applied to take into account an intermittent source of exposure to all receptors in the evaluation area. This correction factor is entered into the appropriate organism type spreadsheet within the RAD-BCG Calculator and used in generating site-specific BCGs.

7.2.1.3 Riparian and Terrestrial Animals: Review and Select Parameters Representative of Site-specific Conditions and Receptors

In site-specific analysis you can also modify the individual parameters that relate to internal exposure pathways for site-specific conditions and receptors. The RAD-BCG Calculator is designed for easy modification of these parameters and subsequent generation of site-specific BCGs that are derived using these new parameter values. Refer back to Table 4.1 for a complete list of parameters that can be modified when conducting a site-specific analysis.

7.2.1.4 Riparian and Terrestrial Animals: Review and Select Food Source Parameter Values Representative of Site-Specific Receptors

The kinetic/allometric method for deriving riparian and terrestrial animal BCGs uses a radionuclide-specific food source parameter in calculating the internal dose contribution for these organism types. The method uses radionuclide-specific default B_{iv}s for aquatic animals (listed in Table 7.1) and terrestrial plants (listed in Table 7.3) as the default food source parameter values for riparian and terrestrial animals respectively. You may review the appropriateness of these default food source parameter values (i.e., the B_{iv}s and their source organisms) and replace these with food source parameter values (B_{iv}s) corresponding to organisms which are more representative of the expected food sources for the riparian or terrestrial animal you have selected to use in your site-specific analysis. When using the RAD-BCG Calculator, changing the radionuclide-specific B_{iv} values in the aquatic animal and terrestrial plant spreadsheets will automatically change the BCG values in the riparian animal and terrestrial animal spreadsheets respectively. These new site-specific BCGs will also show up in the environmental system data entry/BCG worksheets, allowing for easy comparisons with previously entered radionuclide concentration data.

7.2.2 Step 6: Re-Run the RAD-BCG Calculator and Compare Data on Radionuclide Concentrations in Environmental Media with Newly-Generated Site-Specific BCGs

The use of parameter values and a correction factor appropriate for site-specific conditions or receptors should result in more realistic, site-representative BCGs. If the sum of fractions (the

summed ratios between the radionuclide concentrations in environmental media and the radionuclide-specific BCGs) is less than 1.0, the dose to the aquatic or terrestrial receptor organism is below the biota dose limit. Refer to Section 8, Documenting Your Biota Dose Assessment Results. If the sum is greater than 1.0, further analysis is required.

7.3. Analysis Phase - Conducting a Site-Specific Biota Dose Assessment

7.3.1 Determine if Additional Analysis is Warranted

While the majority of the graded approach centers on the use of measured radionuclide concentrations in environmental media for comparison with BCGs, the site-specific biota dose assessment component of the analysis phase centers on the actual collection and analysis of biota from the evaluation area. This is so that measured concentrations of radionuclides in the tissues of biota can then be used to more realistically estimate the internal dose contribution to a site-specific receptor.

Should Additional Analysis or Remedial Action be Considered?

Factors to consider if initial general screening, site-specific screening, and site-specific analysis elements of the graded approach indicate a potential radiological impact to populations of biota within the evaluation area:

- The geographical extent of the contamination
- The magnitude of potential or observed effects of the contamination relative to the level of biological organization affected
- The likelihood that these effects could occur or will continue to occur
- The presence of genetically-isolated populations
- The ecological relationship of the affected area to the surrounding habitat
- The preservation of threatened or endangered species, or commercially or culturally valued species
- The recovery potential of the affected ecological resources and expected persistence of the radionuclides of concern under present site conditions
- The short- and long-term effects of the remedial alternatives on the habitat and the surrounding ecosystem
- Information obtained through a “lines of evidence” approach

Additional analysis may be warranted if biota dose evaluations using the screening and analysis methods described to this point continue to indicate that there is a potential adverse impact from radiation as a stressor to populations of biota (i.e., the BCGs are exceeded). An important point is that exceeding the BCGs should not force a mandatory decision regarding remediation of the evaluation area, but rather is an indication that further investigation is likely necessary. There are many factors that should be considered when deciding how to respond following a determination that the BCGs are exceeded (e.g., ecological relevance and susceptibility of the affected population; size of the contaminated area and persistence of contaminants; impacts of remediation alternatives).

If radionuclide concentrations in environmental media exceed the BCGs, two courses of action may be taken. On the one hand, it may be desirable to perform detailed dose assessments for relevant receptors. But given the potentially large expense that such a site-specific assessment could incur, removing the sources of ionizing radiation by reducing or eliminating discharges, or remediating existing environmental contamination, should also be considered. Site-specific conditions, especially the cost of eliminating discharges and/or remediating contaminated areas, will determine which approach is the more desirable.

The discussion below provides basic guidance on how to conduct a site-specific biota dose assessment.

7.3.2 An Important Note Concerning the Use of Available Biota Tissue Data

It is important to note that the use of measured concentrations of radionuclides in tissues of plants and animals in estimating internal dose is a reasonable and acceptable approach if adequate data are available. That is, if it can be justified that the available tissue data (1) are representative of species within the evaluation area that are capable of receiving the highest dose, and (2) reflect a representative sampling of the population within the evaluation area. These considerations are especially important in cases where biota tissue data becomes available as a result of opportunistic sampling (e.g., road kills; hunting). Detailed guidance regarding the selection of representative receptor species, and representative population and exposure considerations, is provided in Module 2, Section 6. If available biota tissue data is determined to be inadequate, then collection and analysis of biota from the evaluation area will be required. The internal dose conversion factors for biota, and external dose conversion factors for water, sediment and soil used to derive the generic BCGs in the graded approach are provided in Table 7.9. These values, together with your measured radionuclide concentrations in water, sediment and soil, and biota tissue data, can be used to estimate an upper-bound dose to a receptor.

7.3.3 Step 1: Assemble a Biota Dose Assessment Team

The composition of the biota dose assessment team is critical to designing and conducting a technically sound dose assessment. Together, team members must have a complete set of the

relevant skills necessary to do the work. Necessary skills will vary somewhat by site, but should include ecology, health physics, radioecology, and specialists in fate and transport of contaminants for the environmental media of interest. Depending on the regulatory compliance agreements and monitoring program requirements that exist at the site, it may also be desirable to have a regulatory specialist participate in the assessment. Other site-specific conditions will dictate the need for other related skills within the team or the need for direct stakeholder participation at this level.

7.3.4 Step 2: Review Requirements

To perform a detailed dose assessment, it will usually be necessary to design and conduct a relatively comprehensive environmental study of the sources of ionizing radiation and the potential receptors (e.g., to involve collection and analysis of site-specific organisms within the evaluation area). Such a study should be consistent with the requirements of applicable DOE Orders and guidance, Federal regulations, and State regulations. Particularly important are the following DOE Orders:

- Order 5400.1, *General Environmental Protection Program*
- Order 5400.5, *Radiation Protection of the Public and the Environment*
- Order 414.1A, *Quality Assurance*

These Orders, and the Federal legislation and Executive Orders cited therein, applicable State regulations, and applicable DOE site-specific requirements should be consulted during the design and conduct of field and laboratory studies to support dose assessments.

7.3.5 Step 3: Review Assumptions

Two assumptions will most likely be implicit in the dose assessment:

- Because it will be impossible to assess dose to all potential receptor populations in the area of contamination, one (to several) receptor species must serve as surrogates for all potentially exposed populations. Therefore, species selected for dose assessment should be among those that are most sensitive to the effects of ionizing radiation, helping to ensure that all populations are protected.
- The population of the receptor species for which doses are assessed is defined as those individuals living within the contaminated area. This assumption is consistent with the EPA definition of “population.” This assumption is conservative to the extent that individuals move in and out of the contaminated area.

Any deviations from the above assumptions when designing or conducting the dose assessment should be documented.

7.3.6 Recommended Approaches to Designing and Conducting the Dose Assessment

It is strongly recommended that all dose assessments be designed and conducted following the *Guidelines for Ecological Risk Assessment* (EPA 1998). Use of these guidelines will help ensure that the resulting dose assessments are technically sound. In addition, some of the steps in the ecological risk process (e.g., development of a site conceptual model) will be useful for assessing toxicological risks associated with some radionuclides (e.g., uranium isotopes) as well as the ecological risks from other co-occurring substances or stressors within the contaminated area (e.g., hazardous chemicals). The site conceptual model will also be useful for understanding the large-scale distribution of contaminants and the sources of ecological risk to the populations within and beyond the study area. *Guidelines for Ecological Risk Assessment* can be downloaded from the DOE EH-41 Dose and Risk Assessment web site (http://www.eh.doe.gov/oepa/risk). An electronic tool for developing a site conceptual model is also available at this web site. If multiple stressors are present and need to be evaluated, then appropriate guidance concerning cumulative risk assessment should be considered (e.g., see EPA 1997b).

In addition to the references found in EPA's *Guidelines for Ecological Risk Assessment*, the following references and materials should be useful, many of which are also available on the EH-41 Dose and Risk Assessment web site: (http:/www.eh.doe.gov/oepa/risk).

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- U.S. Environmental Protection Agency (EPA). 1997. *Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments.* EPA 540-R-97-006 (Interim Final June 5, 1997), U.S. EPA, Washington, D.C.

7.3.7 Designing and Conducting the Dose Assessment

The *Guidelines for Ecological Risk Assessment* (EPA 1998) provide a flexible framework for assessing ecological risks. The framework consists of three major phases of activity: problem formulation, analysis, and risk characterization. Activities within each of these phases can be summarized as follows:

In *problem formulation,* risk assessors evaluate goals and select assessment endpoints, prepare the conceptual model, and develop an analysis plan. During the *analysis phase*, assessors evaluate exposure to stressors and the relationship between stressor levels and ecological effects. In the third phase, *risk characterization*, assessors estimate risk (or dose) through integration of exposure and stressor-response profiles, describe risk by discussing lines of evidence and determining ecological adversity, and prepare a report. A more detailed "primer" on how to evaluate doses to biota through the ecological risk assessment process is provided in Module 2, Section 1.

Assessment Endpoint

An explicit expression of the environmental value that is to be protected, operationally defined by an ecological entity and its attributes. For example, salmon are valued ecological entities; reproduction and age class structure are some of their important attributes. Together "salmon reproduction and age class structure" form an assessment endpoint.

The dose assessment team has considerable latitude over how activities should be conducted within each phase of the assessment. The dose limits recommended in Module 1, Section 1.1 do not compromise this flexibility, but provide a major advantage for the dose assessment team because they define doses below which risks to populations are assumed not to occur. This definition simplifies those steps in the ecological risk assessment process that involve assessing the relationship between stressor levels and ecological effects, characterizing, estimating, and assessing risks. Caution should be exercised if more restrictive limits are selected, to ensure that the supporting effects data are of high quality, reproducible, and clearly relevant to protection of natural populations. In cases where evaluating dose to individual organisms is needed, you should consider the guidance provided in Module 2, Section 8. The following brief overview of the

ecological risk assessment process emphasizes how the recommended dose limits simplify the risk assessment process for the dose assessment team.

Problem Formulation. In this first phase, the purpose of the dose assessment is clearly defined, the problem is clearly stated, and a plan for analyzing and characterizing risks is developed. As seen in Figure 7.1, available information is integrated to develop a site conceptual model and define assessment endpoints. The analysis plan is derived from the assessment endpoints and conceptual model. As the risk assessment proceeds, assessment endpoints and/or the site conceptual model may be refined, requiring subsequent revisions to the analysis plan.

In the problem formulation phase, the dose assessment team will perform the above steps in much the same way as would an ecological risk-assessment team. For this reason, the dose assessment team should coordinate its activities with other ecological risk assessment efforts

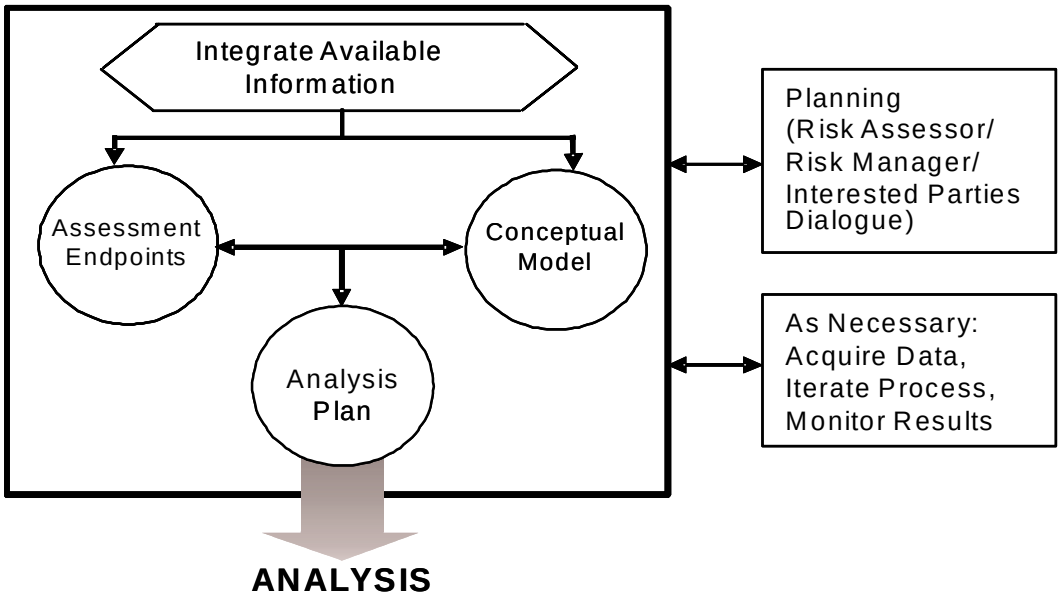

Figure 7.1 Problem Formulation, Phase 1 of Dose Assessment (from EPA 1998)

so that the identification of assessment endpoints and the development of site conceptual models are coordinated. The dose assessment team will, however, need to consider two factors that an ecological risk-assessment team might not. First, the analysis plan should select receptor species resident at the specific site that are known to be radiosensitive. Second, certain considerations are important to collecting biological samples for dosimetric assessments. Collection of biological samples is done to provide more realistic estimates of internal dose to organisms. Considerations for collecting biological samples are reviewed in detail in Module 2, Section 6. Additional considerations for both dose assessments and ecological risk assessments are the movement of receptors into and out of the contaminated area and the distribution of receptors relative to the contaminated area. These considerations

are particularly relevant to motile species, small “hot spots” of contamination, and areas where the concentrations of contaminants vary spatially. In such cases, it may be expedient to better

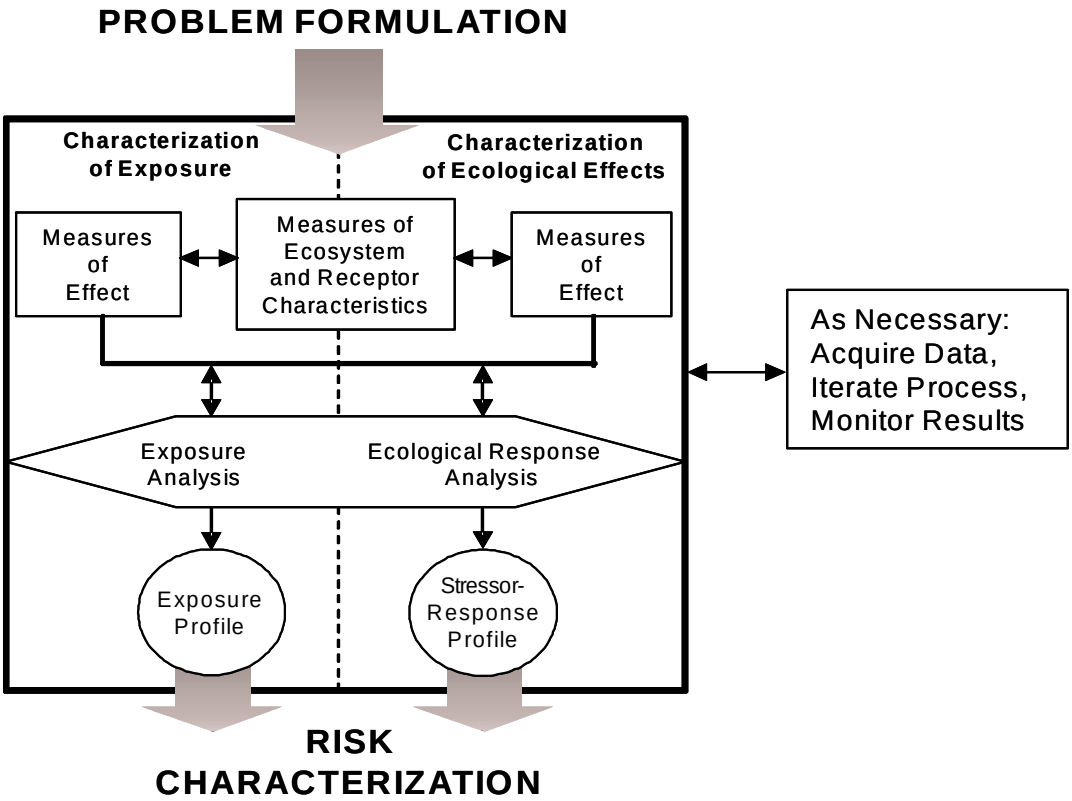

Figure 7.2 Analysis, Phase 2 of Dose Assessment (from EPA 1998)

define the distribution of organisms in time and/or space relative to the contaminated area. For example, individuals of a species may reside year-round within the region but move into and out of the contaminated area, necessitating the collection of data on duration of exposure. Or, ecologically significant species of plants may be located in only one part of the contaminated area and may be exposed to radionuclide concentrations that are above or below mean values for the area. Refer to Module 2, Sections 2 through 5 for detailed guidance in these areas.

Analysis Phase. The exposure profile and stressor-response profile (i.e., ecological effects profile) are estimated during this phase (see Figure 7.2). The dose assessment team should focus on the exposure side of the analysis phase because deleterious effects on receptor populations are assumed not to occur below the recommended limits of 0.1 rad/d or 1.0 rad/d, as appropriate.

In this phase, the dose assessment team should focus on identifying exposure pathways and quantifying exposure. The site conceptual model is the basis for identifying exposure pathways. Quantifying exposure is achieved by assessing the strengths and limitations of the

existing site-specific environmental data on radionuclide contamination, collecting additional supplemental data as needed, and quantitatively analyzing exposure. If supplemental data are needed, the analysis plan may also need to be revised.

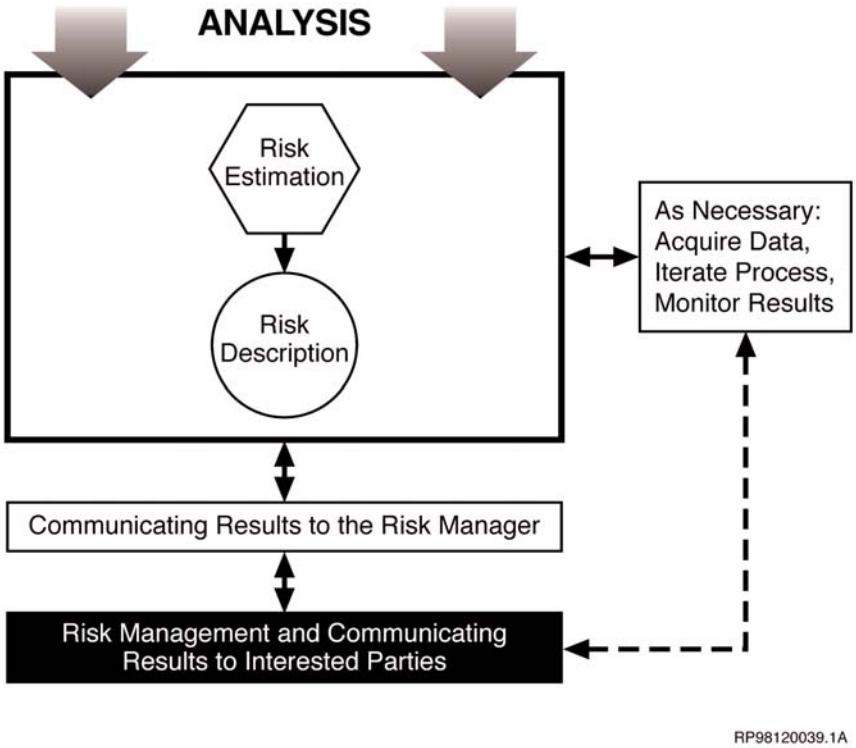

Figure 7.3 Risk Characterization, Phase 3 of Dose Assessment (from EPA 1998)

Risk Characterization. In this phase, doses are estimated and described (see Figure 7.3). The recommended limits again simplify this process since adverse effects on receptor populations are assumed not to occur at exposures below the recommended limits. Plants and animals may also be simultaneously exposed to other stressors, such as noise and hazardous chemicals. At present, no consensus exists within the scientific community about what the cumulative impacts are of simultaneous exposure to ionizing radiation and other anthropogenic stressors, or how to measure them. This factor should be considered when estimating and describing the risks associated with doses of ionizing radiation, if only qualitatively. In cases where exposure of biota to ionizing radiation exceeds the biota dose limits, a consideration of cumulative impacts from radiation and other stressors present may be warranted. Refer to *EPA's Guidance on Cumulative Risk Assessment*, Part 1, Planning and Scoping (EPA 1997b) for an introduction to this topic.

Table 7.1 Aquatic Animal Biota Concentration Guide Spreadsheet. BCGs are for use with radionuclide concentrations from co-located water and sediment. The default lumped parameter values (B_{iv}s) listed here were used to derive the generic BCGs for the general screening phase. These lumped parameter values may be replaced with site-representative values in the site-specific screening component of the analysis phase.

	Derived Concentrations		Bioaccumulation Factor	
Nuclide	**BCG (sediment) Bq/kg**	**BCG (water) Bq/m^3**	**B_{iv}, Organism to Water (L/kg) Fresh Mass**	**Water B_{iv} Reference[(a)]**
^{241}Am	3E+07	2E+04	400	CRITR
^{144}Ce	1E+06	6E+04	9000	T&M, Table 5.41
^{135}Cs	3E+07	5E+05	22000	T&M, Table 5.41
^{137}Cs	2E+06	4E+04	22000	T&M, Table 5.41
^{60}Co	6E+05	1E+05	2000	T&M, Table 5.41
^{154}Eu	1E+06	8E+05	600	GENII
^{155}Eu	1E+07	1E+07	600	GENII
^{3}H	3E+08	2E+11	0.2	CRITR
^{129}I	2E+07	4E+07	220	T&M, Table 5.41
^{131}I	3E+06	6E+06	220	T&M, Table 5.41
^{239}Pu	3E+08	7E+03	1000	T&M, Table 5.41
^{226}Ra	5E+05	4E+02	3200	T&M, Table 5.41
^{228}Ra	1E+06	3E+02	3200	Based on ^{226}Ra
^{125}Sb	3E+06	1E+07	100	T&M, Table 5.41
^{90}Sr	1E+06	2E+06	320	T&M, Table 5.41
^{99}Tc	2E+07	9E+07	78	T&M, Table 5.41
^{232}Th	1E+08	1E+04	80	T&M, Table 5.41
^{233}U	4E+08	7E+03	1000	T&M, Table 5.41
^{234}U	1E+08	7E+03	1000	T&M, Table 5.41
^{235}U	4E+06	8E+03	1000	T&M, Table 5.41
^{238}U	2E+06	8E+03	1000	T&M, Table 5.41
^{65}Zn	2E+06	7E+04	17000	T&M, Table 5.41
^{95}Zr	9E+05	3E+05	1600	T&M, Table 5.41

(a) T&M = Till and Meyer 1983; GENII = Napier et al. 1988; CRITR = Baker and Soldat 1992

Table 7.2 Part 1 of the Riparian Animal Biota Concentration Guide Spreadsheet. BCGs are for use with radionuclide concentrations from co-located water and sediment. The default lumped parameter values were used to derive the generic BCGs for the general screening phase. These lumped parameter values may be replaced with site-representative values in the site-specific screening component of the analysis phase.

Nuclide	BCG (sediment) Bq/kg	BCG (water) Bq/m^3	Lumped Parameter, Bq/kg (animal - wet weight)	
			per Bq/kg sediment	per Bq/L water
^{241}Am	2E+05	5E+04	3.E-03	1.E+01
^{144}Ce	1E+05	2E+06	5.E-04	3.E+01
^{135}Cs	2E+06	2E+04	3.E-01	5.E+04
^{137}Cs	1E+05	2E+03	3.E-01	5.E+04
^{60}Co	5E+04	2E+05	1.E-02	2.E+02
^{154}Eu	1E+05	2E+06	4.E-03	2.E+01
^{155}Eu	1E+06	3E+07	3.E-03	2.E+01
^{3}H	1E+07	1E+10	4.E-01	8.E-01
^{129}I	1E+06	1E+06	3.E-01	6.E+02
^{131}I	2E+05	5E+05	1.E-01	2.E+02
^{239}Pu	2E+05	2E+04	3.E-03	3.E+01
^{226}Ra	4E+03	2E+02	3.E-02	8.E+02
^{228}Ra	3E+03	1E+02	3.E-02	8.E+02
^{125}Sb	3E+05	2E+08	4.E-04	3.E-01
^{90}Sr	2E+04	1E+04	2.E+00	6.E+03
^{99}Tc	2E+06	2E+07	5.E-02	3.E+01
^{232}Th	5E+04	6E+04	2.E-03	1.E+00
^{233}U	2E+05	3E+04	4.E-03	3.E+01
^{234}U	2E+05	3E+04	4.E-03	3.E+01
^{235}U	1E+05	3E+04	4.E-03	3.E+01
^{238}U	9E+04	3E+04	4.E-03	3.E+01
^{65}Zn	5E+04	5E+02	2.E+00	2.E+05
^{95}Zr	9E+04	1E+06	3.E-03	4.E+01

(a) CRITR = Baker and Soldat 1992; T&M = Till and Meyer 1983; GENII = Napier et al. 1988; W&S = Whicker and Schultz 1982; KAH = K. A. Higley, Oregon State University.

Table 7.3 Terrestrial Plant Biota Concentration Guide Spreadsheet. The default lumped parameter values (B_{iv}s) listed here were used to derive the generic BCGs for the general screening phase. These lumped parameter values may be replaced with site-representative values in the site-specific screening component of the analysis phase.

Nuclide	BCG (soil) Bq/kg	BCG (water) Bq/m^3	Bioaccumulation Factor, B_{iv}	
			Bq/kg (plant - wet weight) per Bq/kg (soil)	Reference[(a)]
^{241}Am	8E+05	3E+10	8E-03	T&M, Table 5.16, Table 5.18
^{144}Ce	5E+05	1E+09	4E-02	T&M, Table 5.16, Table 5.17
^{135}Cs	1E+06	3E+10	1E+01	T&M, Table 5.16, Table 5.17
^{137}Cs	8E+04	2E+09	1E+01	T&M, Table 5.16, Table 5.17
^{60}Co	2E+05	6E+08	2E-01	T&M, Table 5.16, Table 5.17
^{154}Eu	5E+05	1E+09	4E-02	Estimated from Ce value by KAH
^{155}Eu	6E+06	1E+10	4E-02	Estimated from Ce value by KAH
^{3}H	6E+07	3E+11	1E+00	Estimated from NUREG 1.109
^{129}I	6E+06	2E+10	4E-01	T&M, Table 5.16, Table 5.17
^{131}I	9E+05	3E+09	4E-01	T&M, Table 5.16, Table 5.17 for ^{129}I
^{239}Pu	5E+05	3E+11	1E-02	T&M, Table 5.16, Table 5.18
^{226}Ra	1E+04	5E+08	1E-01	T&M, Table 5.16, Table 5.18
^{228}Ra	9E+03	1E+09	1E-01	T&M, Table 5.16, Table 5.18 from ^{226}Ra
^{125}Sb	1E+06	3E+09	1E-02	From GENII, Food Transfer Library
^{90}Sr	1E+05	1E+09	4E+00	T&M, Table 5.16, Table 5.17
^{99}Tc	8E+05	2E+10	8E+00	From GENII, Food Transfer Library
^{232}Th	9E+05	1E+11	1E-03	T&M, Table 5.16, Table 5.18
^{233}U	2E+06	4E+11	4E-03	T&M, Table 5.16, Table 5.18 from ^{238}U
^{234}U	2E+06	1E+11	4E-03	T&M, Table 5.16, Table 5.18 from ^{238}U
^{235}U	1E+06	4E+09	4E-03	T&M, Table 5.16, Table 5.18 from ^{238}U
^{238}U	6E+05	2E+09	4E-03	T&M, Table 5.16, Table 5.18
^{65}Zn	9E+05	2E+09	3E-01	T&M, Table 5.16, Table 5.17
^{95}Zr	4E+05	9E+08	3E-02	T&M, Table 5.16, Table 5.17

(a) T&M = Till and Meyer 1983; GENII = Napier et al. 1988; KAH = K. A. Higley, Oregon State University.

Table 7.4 Part 1 of the Terrestrial Animal Biota Concentration Guide Spreadsheet. The default lumped parameter values listed here were used to derive the generic BCGs for the general screening phase. These lumped parameter values may be replaced with site-representative values in the site-specific screening component of the analysis phase.

Nuclide	BCG (soil) Bq/kg	BCG (water) Bq/m^3	Lumped Parameters	
			Terrestrial Animal to Soil Bq/kg (animal - wet wt.) / Bq/kg (soil)	Terrestrial Animal to Water Bq/kg (animal - wet wt.)/Bq/L (water)
^{241}Am	1E+05	7E+06	4E-03	9E-02
^{144}Ce	5E+04	1E+08	6E-03	8E-03
^{135}Cs	1E+04	3E+08	1E+02	3E+00
^{137}Cs	8E+02	2E+07	1E+02	3E+00
^{60}Co	3E+04	4E+07	8E-02	1E-01
^{154}Eu	5E+04	8E+07	5E-03	1E-01
^{155}Eu	6E+05	1E+09	4E-03	9E-02
^{3}H	6E+06	9E+09	1E+00	1E+00
^{129}I	2E+05	2E+08	3E+00	3E+00
^{131}I	3E+04	7E+07	3E+00	1E+00
^{239}Pu	2E+05	7E+06	3E-03	9E-02
^{226}Ra	2E+03	3E+05	6E-02	4E-01
^{228}Ra	2E+03	3E+05	6E-02	4E-01
^{125}Sb	1E+05	3E+08	4E-04	5E-03
^{90}Sr	8E+02	2E+06	8E+01	3E+01
^{99}Tc	2E+05	6E+08	3E+00	8E-01
^{232}Th	6E+04	2E+06	2E-03	5E-02
^{233}U	2E+05	1E+07	4E-03	5E-02
^{234}U	2E+05	1E+07	4E-03	5E-02
^{235}U	1E+05	2E+07	4E-03	5E-02
^{238}U	6E+04	2E+07	4E-03	5E-02
^{65}Zn	2E+04	6E+06	7E+00	2E+01
^{95}Zr	4E+04	8E+07	4E-03	3E-02

Table 7.5 Part 2 of the Riparian Animal Biota Concentration Guide Spreadsheet. The default parameter values listed here relating to the uptake, retention and biological decay rates of radionuclides for a riparian animal receptor may be replaced with site-representative values in the site-specific analysis component of the analysis phase.

Nuclide	Fraction of Intake Retained f_1 (unitless)	Biological Decay Constant λ_{bio} (d^{-1})	$\lambda bio = ln(2)/(aW^b)$		λ_{bio} (d^{-1}) Reference[(a)]
			a (constant)	b (constant)	
^{241}Am	1E-03	5.53E-04	0.8	0.81	ICRP 30, Part 4
^{144}Ce	3E-04	3.46E-04	1.4	0.8	ICRP 30, Part 1
^{135}Cs	1E+00	2.24E-02	3.5	0.24	W&S
^{137}Cs	1E+00	2.24E-02	3.5	0.24	W&S
^{60}Co	5E-02	3.01E-02	2.6	0.24	W&S
^{154}Eu	1E-03	3.46E-04	1.4	0.8	ICRP 30, Part 3
^{155}Eu	1E-03	3.46E-04	1.4	0.8	ICRP 30, Part 3
^{3}H	1E+00	5.72E-03	0.82	0.55	W&S
^{129}I	1E+00	3.13E-02	6.8	0.13	W&S
^{131}I	1E+00	3.13E-02	6.8	0.13	W&S
^{239}Pu	1E-03	5.53E-04	0.8	0.81	ICRP 30, Part 4
^{226}Ra	2E-01	3.58E-02	2	0.25	Estimated by KAH
^{228}Ra	2E-01	3.58E-02	2	0.25	Estimated by KAH
^{125}Sb	1E-02	1.43E-01	0.5	0.25	ICRP 30, Part 3
^{90}Sr	3E-01	6.11E-04	107	0.26	W&S
^{99}Tc	8E-01	6.11E-02	0.3	0.4	ICRP 30, Part 2
^{232}Th	2E-04	1.34E-04	3.3	0.81	ICRP 30, Part 1
^{233}U	5E-02	6.81E-02	0.8	0.28	ICRP 30, Part 1
^{234}U	5E-02	6.81E-02	0.8	0.28	ICRP 30, Part 1
^{235}U	5E-02	6.81E-02	0.8	0.28	ICRP 30, Part 1
^{238}U	5E-02	6.81E-02	0.8	0.28	ICRP 30, Part 1
^{65}Zn	5E-01	7.16E-04	100	0.25	ICRP 30, Part 2
^{95}Zr	2E-03	7.16E-04	100	0.25	ICRP 30, Part 1

(a) CRITR = Baker and Soldat 1992; T&M = Till and Meyer 1983; GENII = Napier et al. 1988; W&S = Whicker and Schultz 1982; KAH = K. A. Higley, Oregon State University.

Table 7.6 Part 3 of the Riparian Animal Biota Concentration Guide Spreadsheet. Riparian animal default kinetic/allometric relationship parameter values listed here may be replaced with site-representative values in the site-specific analysis component of the analysis phase.

Parameter	Equation	Descriptions	Value(s)	Reference
W		Body mass (g)	8800	default for raccoon or river otter
r	$r = \frac{a}{dc}\ 70\ M^{0.75}$	Food intake rate (g/d)	325.1377223	W&S, Vol. II, p. 43, equation 78
		a: ratio of active to basal metabolic rate	2	
		70: constant	70	
		d: fraction of energy ingested that is assimilated or oxidized	0.44	
		c: caloric value of food, kcal/g	5	
		M: body mass in kg (=W*0.001)	8.8	
		0.75: exponent in calculation	0.75	
$r_{sediment}$	$r_{sediment} = 0.1\ r$	Sediment Intake Rate (g/d)	32.5137723	EPA Wildlife Exposure Factor Handbook, Vol. 1, p. 4-22
		r: food intake rate, g/d	325.1377223	
		0.1: fraction of sediment in diet, expressed as % of food diet, dry wt.	0.1	
T_{ls}	$T_{ls,\max,} = 1.02 M^{0.30}$	Maximum Lifespan	1.958596497	Calder, p. 316, Table 11-5
		1.02: constant in equation	1.02	
		M = body mass in kg	8.8	
		0.30: exponent in calculation	0.30	
r_b	$r_b = 0.481 M^{0.76}$	Inhalation rate (m^3/d)	2.511608286	Pedley, p. 15, Table V., adjusted to provide units of m^3/d
		0.481: constant in calculation to give m^3/d	0.481	
		M = body mass in kg	8.8	
		0.76: exponent in equation	0.76	
$r_{inhalation}$	$r_{inhalation} = x\ r_b$	Sediment inhalation rate (g/d)	0.000251161	derived
		x: airborne dust loading, g/m^3	0.0001	
		r_b: inhalation rate (see above)	2.511608286	
I_w	$I_w = 0.099 M^{0.90}$	Water consumption rate (L/d)	0.700921852	EPA Wildlife Exposure Factor Handbook, Vol. 1, p. 3-10, equation 3-17
		0.099: constant in equation	0.099	
		see above equation, M: body mass in kg (=W*0.001)	8.8	
		0.9: exponent in calculation	0.9	

Table 7.7 Part 2 of the Terrestrial Animal Biota Concentration Guide Spreadsheet. The default parameter values listed here relating to the uptake, retention, and biological decay rates of radionuclides for a terrestrial animal receptor may be replaced with site-representative values in the site-specific analysis component of the analysis phase.

Nuclide	Fraction of Intake Retained f_1 (unitless)	Biological Decay Constant λ_{bio}, d^{-1}	$\lambda_{bio} = \ln(2) / (aW^b)$		λ_{bio} (d^{-1}) Reference [a]	PT/IT [b]
			a (constant)	b (exponent)		
^{241}Am	1E-03	7.09E-02	0.8	0.81	ICRP 30 Part 4	250
^{144}Ce	3E-04	4.18E-02	1.4	0.8	ICRP 30 Part 1	16
^{135}Cs	1E+00	9.43E-02	3.5	0.24	Whicker & Schultz	0.8
^{137}Cs	1E+00	9.43E-02	3.5	0.24	Whicker & Schultz	0.8
^{60}Co	5E-02	1.27E-01	2.6	0.24	Whicker & Schultz	7
^{154}Eu	1E-03	4.18E-02	1.4	0.8	ICRP 30 Part3	30
^{155}Eu	1E-03	4.18E-02	1.4	0.8	ICRP 30 Part 3	30
^{3}H	1E+00	1.54E-01	0.82	0.55	Whicker & Schultz	1
^{129}I	1E+00	6.82E-02	6.8	0.13	Whicker & Schultz	0.7
^{131}I	1E+00	6.82E-02	6.8	0.13	Whicker & Schultz	0.7
^{239}Pu	1E-03	7.09E-02	0.8	0.81	ICRP 30 Part 3	4000
^{226}Ra	2E-01	1.6E-01	2	0.25	Estimated by KAH	3
^{228}Ra	2E-01	1.6E-01	2	0.25	Estimated by KAH	3
^{125}Sb	1E-02	6.40E-01	0.5	0.25	ICRP 30 Part 3	3.5
^{90}Sr	3E-01	2.90E-03	107	0.26	Whicker & Schultz	200
^{99}Tc	8E-01	6.71E-01	0.3	0.4	ICRP 30 Part 2	5
^{232}Th	2E-04	1.72E-02	3.3	0.81	ICRP 30 Part 1	750
^{233}U	5E-02	3.65E-01	0.8	0.28	ICRP 30 Part 1	7000
^{234}U	5E-02	3.65E-01	0.8	0.28	ICRP 30 Part 1	7000
^{235}U	5E-02	3.65E-01	0.8	0.28	ICRP 30 Part 1	3500
^{238}U	5E-02	3.65E-01	0.8	0.28	ICRP 30 Part 1	4000
^{65}Zn	5E-01	3.20E-03	100	0.25	ICRP 30 Part 2	1
^{95}Zr	2E-03	3.20E-03	100	0.25	ICRP 30 Part 1	10

(a) KAH = K.A. Higley, Oregon State University; Whicker and Schultz, 1982; (b) PT/IT = Factor used in assessing the relative contribution to internal dose from animal inhalation versus ingestion.

Table 7.8 Part 3 of Terrestrial Animal Biota Concentration Guide Spreadsheet. Terrestrial animal default kinetic/allometric relationship parameter values listed here may be replaced with site-representative values in the site-specific analysis component of the analysis phase.

Parameter	Equation	Descriptions	Value(s)	Reference
W		Body mass (g)	22	default for deer mouse
r	$r = \frac{a}{dc}\ 70\ M^{0.75}$	Food intake rate (g/d)	3.635150245	W&S, Vol. II, p. 43, equation 78
		a: ratio of active to basal metabolic rate	2	
		70: constant	70	
		d: fraction of energy ingested that is assimilated or oxidized	0.44	
		c: caloric value of food, kcal/g	5	
		M: body mass in kg (=W*0.001)	0.022	
		0.75: exponent in calculation	0.75	
r_{soil}	$r_{soil} = 0.1\ r$	Soil Intake Rate (g/d)	0.363515025	EPA Wildlife Exposure Factor Handbook, Vol. 1, p. 4-22
		r: food intake rate, g/d	3.635150245	
		0.1: amount of soil in diet, expressed as fraction of food diet, dry wt.	0.1	
T_{ls}	$T_{ls,\max,} = 1.02 M^{0.30}$	Maximum Lifespan	.324583901	Calder, p. 316, Table 11-5
		1.02: constant in equation	1.02	
		see above equation, M: body mass in kg (=W*0.001)	0.022	
		0.30: exponent in calculation	0.30	
r_b	$r_b = 0.481 M^{0.76}$	Inhalation rate (m^3/d)	0.026447603	Pedley, p. 15, Table V., adjusted to provide units of m^3/d
		0.481: constant in calculation to give m^3/d	0.481	
		M = body mass in kg	0.022	
		0.76: exponent in equation	0.76	
$r_{inhalation}$	$r_{inhalation} = x\ r_b$	Soil inhalation rate (g/d)	2.64476E-06	derived
		x: airborne dust loading, g/m^3	0.0001	
		r_b: inhalation rate (see above)	0.026447603	
I_w	$I_w = 0.099 M^{0.90}$	Water consumption rate (L/d)	0.003190183	EPA Wildlife Exposure Factor Handbook, Vol. 1, p. 3-10, equation 3-17
		0.099: constant in equation	0.099	
		see above equation, M: body mass in kg (=W*0.001)	0.022	
		0.9: exponent in calculation	0.9	

Table 7.9 Part 2 of Dose Factors and Common Parameters Spreadsheet. Provides a reference source for all default internal dose conversion factors, and external dose conversion factors for water, sediment, and soil used in deriving the generic BCGs. These values, together with measured radionuclide concentrations in water, sediment, soil, and biota tissue data, can be used to estimate a dose to a receptor.

Nuclide	Dose Conversion Factors			
	Internal Dose	External Dose		
	Gy/y per Bq/kg (wet)	Water Gy/y per Bq/m^3	Sediment Gy/y per Bq/kg (dry)	Soil Gy/y per Bq/kg (dry)
^{241}Am	5.6E-04	1.4E-10	1.4E-07	2.9E-07
^{144}Ce	6.8E-06	3.4E-09	3.4E-06	6.8E-06
^{135}Cs	3.4E-07	1.4E-10	1.4E-07	2.8E-07
^{137}Cs	4.3E-06	2.0E-09	2.0E-06	4.0E-06
^{60}Co	1.3E-05	6.6E-09	6.6E-06	1.3E-05
^{154}Eu	7.6E-06	3.8E-09	3.8E-06	7.7E-06
^{155}Eu	6.2E-07	3.1E-10	3.1E-07	6.2E-07
^{3}H	2.9E-08	1.4E-11	1.4E-08	2.9E-08
^{129}I	4.5E-07	2.0E-10	2.0E-07	4.0E-07
^{131}I	2.9E-06	1.4E-09	1.4E-06	2.9E-06
^{239}Pu	5.3E-04	1.4E-11	1.4E-08	2.8E-08
^{226}Ra	3.0E-03	6.8E-09	6.8E-06	1.4E-05
^{228}Ra	3.6E-03	3.4E-09	3.4E-06	6.9E-06
^{125}Sb	2.7E-06	1.4E-09	1.4E-06	2.9E-06
^{90}Sr	5.7E-06	2.8E-09	2.8E-06	5.7E-06
^{99}Tc	5.1E-07	2.1E-10	2.1E-07	4.3E-07
^{232}Th	4.1E-03	3.0E-11	3.0E-08	6.1E-08
^{233}U	4.9E-04	9.3E-12	9.3E-09	1.9E-08
^{234}U	4.9E-04	3.2E-11	3.2E-08	6.5E-08
^{235}U	4.5E-04	9.4E-10	9.4E-07	1.8E-06
^{238}U	4.4E-04	2.3E-09	2.3E-06	4.6E-06
^{65}Zn	3.0E-06	1.5E-09	1.5E-06	3.0E-06
^{95}Zr	8.4E-06	4.2E-09	4.2E-06	8.4E-06

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8 Documenting Your Biota Dose Evaluation Results

At a minimum, your results shall be documented in your Annual Site Environmental Report (DOE 2000b). The following information shall be summarized in the Annual Site Environmental Report, and described in more detail within a report retained on file for future reference:

- Specify the biota dose limits being complied with (e.g., 1 rad/d for aquatic animals; DOE Order 5400.5).

- Identify the methods used to demonstrate compliance with these limits. Cite the method used (e.g., this technical standard). Describe the process used (e.g., general screening phase, site-specific analysis, actual biota dose assessment involving the collection and analysis of biota).

Printing the Results of Your Biota Dose Evaluation using the RAD-BCG Calculator

Clicking on the "Set Print Area for Report" button at the bottom of the Aquatic or Terrestrial System Data Entry/BCG Worksheets, then pressing the printer icon in the toolbar, will print out a record of your biota dose evaluation. Sum of fraction totals, limiting organism types, and any changes you made to default parameters will be included.

- Describe the area(s) of evaluation, sources of exposure, organism types, media types, and radionuclide data used in the evaluation.

- Summarize the results (e.g., sum of fractions for media and radionuclides are less than 1; doses calculated are less than biota dose limits) for the site area(s) of evaluation; and conclusions.

- Summarize why the evaluation was conducted, and how the results will be used (e.g., to demonstrate compliance with DOE dose limits, for use in outreach activities, in response to stakeholder or regulator requests, or for use in an eco-risk assessment.)

- All detailed information used in calculations (e.g., site-specific parameters selected and the rationale for their use) shall be described and retained on file for future reference.

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9 Example Applications of the Graded Approach

9.1 Generic Example of an Aquatic System Evaluation

This example was prepared using actual measured radionuclide concentration data from a DOE site. However, the data is used within a hypothetical context for a generic site (e.g., Poplar Springs Site, a hypothetical site). Two cases are provided, drawing from the same data set of measured radionuclide concentrations from surface water samples. The first case considers the entire Poplar Springs Site as the evaluation area, and options for proceeding when the Site fails a general screening evaluation. The second case begins with the goal of assessing several evaluation areas independently within the boundary of the Poplar Springs Site. The cases are intended only to highlight key steps and concepts of the graded approach, and to highlight several alternatives within each that would also result in a determination of protection relative to Dose Rate Guidelines.

Purpose:

The purpose of the evaluation was to demonstrate that the Poplar Springs Site (PSS) is in compliance with DOE's biota dose limit for aquatic animals pursuant to DOE Order 5400.5 II 3.a.(c)(5): "to protect native animal aquatic organisms, the absorbed does to these organisms shall not exceed 1 rad/d from exposure to the radioactive material in liquid wastes discharged to natural waterways."

1. Data Assembly *(Phase 1 of the Graded Approach)*:

A. Verify Data is Appropriate for a Biota Dose Evaluation

Surface water samples are collected and analyzed to assess the impact of past and current DOE operations on the quality of local surface water. Sampling locations include streams within the main plant area and at downstream locations from Poplar Springs Site (PSS) facilities; all are within the PSS boundary. These sampling stations are located within the Blue Falls Creek Watershed (main plant and down stream locations) and within other smaller watersheds, all of which flow into the Darlington River. Surface water data (via the surface water surveillance program) are collected throughout the year. The sampling frequency is dependant on historical data and the processes or legacy activities nearby or upstream from these locations. Therefore, sampling occurs at different locations monthly, bimonthly, quarterly, or semiannually. The sampling locations are presented in Table 1.

Table 1 Surface Water Sampling Locations for the Poplar Springs Site

Watershed	Sampling Locations
Blue Falls Creek	
Main Plant–On-site Stream Locations:	Two Falls Creek TFCK 0.5
	Broad Creek BRCK
	Northwest Tributary NWTK 0.5
Downstream Locations:	Muddy Branch MB 0.6
	Blue Falls Creek BFCK 3.0
	Blue Falls Creek at Blue Falls Dam BFCK 1.4
Other Watersheds Entering the Darlington River	Taylor's Creek TCK 1.0
	Beaver Creek BVCK 2.3

B. Request Sampling Data, to Include Maximum and Mean Water and Sediment Radionuclide Concentrations (co-located if possible) Collected for the Environmental Monitoring and Surveillance Program at Poplar Springs Site

Environmental surveillance surface water monitoring results were available. However, no on-site sediment data (co-located with water sampling stations) were available. The data were organized by collection location and summarized in a table for future use (Table 2). It was determined that the sampling locations indicated in Table 2 were each representative of individual evaluation areas within the larger Poplar Springs Site. Each of the evaluation areas were identified because they provide a good indication of potential impacts to biota in natural waterways within the Poplar Springs Site.

Table 2 Measured Radionuclide Concentrations (pCi/L) in Surface Water Collected from the Poplar Springs Site. Maximum, minimum, and average values are summarized. The maximum measured radionuclide concentrations observed for the Poplar Springs Site (i.e., across all sampling locations) are indicated by an (*).

Sampling Location	Radionuclide	Maximum	Minimum	Average
Main Plant: On-site station locations:				
Two Falls Creek (TFCK 0.5)	H-3	530	430	480
	Sr	15	15	15
Broad Creek (BRCK)	H-3	360	110	240
	Sr	290	59	170
	*U-234	36	7.7	22
	U-235	0.048	0	0.024
	U-238	0.52	0.28	0.40
Northwest Tributary (NWTK 0.5)	H-3	160	110	140
	Sr	71	1.8	36
Downstream Locations:				
Muddy Branch (MB 0.6)	*Co-60	4.6	-2.8	2.0
	Cs-137	3.0	0.0050	1.5
	*H-3	760,000	39,000	460,000
	*Sr	460	84	250
	U-234	0.52	0.15	0.33
	U-238	0.50	0.15	0.37
Blue Falls Creek (BFCK 3.0)	Co-60	1.5	0.034	0.79
	*Cs-137	67	12	37
	H-3	36,000	3,300	17,000
	Sr	330	28	100
	U-234	4.8	1.2	3.5
	*U-235	0.075	0	0.024
	*U-238	2.1	0.24	0.98
Blue Falls Creek at Blue Falls Dam (BFCK 1.4)	Co-60	3.9	0.58	2.5
	Cs-137	40	8.5	12
	H-3	140,000	32,000	71,000
	Sr	140	54	100
	U-234	8.2	1.6	5.0
	U-235	0.065	0	0.029
	U-238	1.6	0.41	0.95
Other watersheds entering the Darlington River:				
Taylor's Creek (TCK 1.0)	Co-60	3.2	0.64	1.9
Beaver Creek (BVCK 2.3)	Co-60	1.8	1.6	1.7
	H-3	330	180	260
	Sr	43	4.8	24

CASE 1. Use of Maximum Measured Radionuclide Concentrations for the Entire Poplar Springs Site

1. General Screening Evaluation *(Phase 2 of the Graded Approach)*

A. Enter Data into the RAD-BCG Calculator

Maximum measured radionuclide concentration data for surface water detected for the entire Poplar Springs Site (i.e., the radionuclide-specific maximum values detected across the entire Site) were entered into the Aquatic System Data Entry/BCG Worksheet within the RAD-BCG Calculator. The RAD-BCG Calculator automatically calculated the missing sediment radionuclide concentration data (e.g., by using the "most probable" radionuclide-specific K_d values) and entered the calculated radionuclide concentrations into the appropriate fields.

B. Compare Measured Radionuclide Concentrations in Environmental Media with BCGs

The RAD-BCG Calculator automatically calculated the radionuclide-specific partial sum of fractions for water and sediment, then calculated the total sum of fractions. A summary of the comparisons for each medium and radionuclide (which is similar in presentation to what you would see in the Aquatic System Data Entry/BCG Worksheet) is provided in Table 3. Note that this comparison could also be done manually by using Tables 6.1 - 6.2 and associated guidance contained in Module 1 of the DOE technical standard. The results indicated that the Poplar Springs Site failed the general screening evaluation using maximum radionuclide concentration data. Results also indicated that the water medium appears to be limiting (see partial sum of fractions for water and sediment, respectively, in Table 3). In addition, Cs-137 and Sr-90 were the radionuclides that provided the greatest contribution to the total sum of fractions (i.e., they were the most limiting radionuclides, providing the greatest contribution to potential dose). A riparian animal was indicated as the limiting organism type for these radionuclides.

Table 3 Aquatic System Evaluation: General Screening Results for Poplar Springs Site using Maximum Measured Radionuclide Concentrations in Surface Water Across the Entire Site

Radionuclide	Maximum Measured Radionuclide Concentrations (pCi/L)	Water Sum of Fractions	Sediment Sum of Fractions
H-3	760,000	2.9E-03	2.03E-06
Sr-90	460	1.70	2.37E-02
U-234	36	1.8E-01	3.42E-04
U-235	0.075	3.4E-04	1.01E-06
U-238	2.1	9.4E-03	4.22E-05
Co-60	4.6	1.2E-03	3.14E-03
Cs-137	67	1.6	1.07E-02
Total of partial sum of fractions for each medium		3.42	3.80E-02
Total sum of fractions for all radionuclides and media			3.45

2. Site-Specific Screening using Mean Radionuclide Concentrations in Place of Maximum Values *(Phase 3 of the Graded Approach: Analysis Phase, Site-Specific Screening)*

It was determined through consultation with site environmental surveillance program personnel that the quality and quantity of data allowed for averaging of measured radionuclide concentration data by individual sampling location for the Poplar Springs Site, but not across the entire Site. Guidance provided in Module 2, Section 3 of the DOE technical standard concerning spatio-temporal averaging, and guidance provided in Module 2, Section 4 concerning the definition of an evaluation area was reviewed. It was determined that - although the habitats and presence of the limiting organism type (in this case a riparian animal) were similar across all sampling locations, radionuclide data could not be averaged across the entire Poplar Springs Site because: (1) the site was too large for such an averaging scheme to be sensible, and (2) the contamination profiles (e.g., the radionuclides detected and their levels) for Main Plant - on-site locations, downstream locations, and other streams that enter the Darlington River were too different from one another (see Table 2). However, it was determined that within the downstream locations, data from Blue Falls Creek (BFCK 3.0) and Blue Falls Creek at Blue Falls Dam (BFCK 1.4) station locations could be averaged over space and time, because of their proximity to each other (e.g., both stations are in the same water system), and because the contamination profiles, habitats, and limiting organism type (riparian animal) were determined to be similar across the areas represented by these sampling locations. Therefore, measured radionuclide concentrations for these two locations were averaged for subsequent use in site-specific screening. Measured radionuclide concentrations for each of the remaining sampling locations were averaged by location, consistent with advice from the Site environmental surveillance program personnel.

A. Enter Data into the RAD-BCG Calculator

The averaging scheme presented above resulted in the need for seven separate evaluations: one for each of the six individual sampling locations, and one for the combined Blue Falls Creek / Blue Falls Creek at Blue Falls Dam locations. For each evaluation, mean measured radionuclide concentration data for surface water were entered into the Aquatic System Data Entry/BCG Worksheet within the RAD-BCG Calculator. The RAD-BCG Calculator automatically calculated the missing sediment radionuclide concentration data (e.g., by using the “most probable” radionuclide-specific K_d values) and entered the calculated radionuclide concentrations into the appropriate fields.

B. Compare Measured Radionuclide Concentrations in Environmental Media with BCGs

The RAD-BCG Calculator automatically calculated the radionuclide-specific partial sum of fractions for water and sediment, then calculated the total sum of fractions. A summary of the comparisons for each location is provided in Table 4. The results indicated that all of the sampling locations, each representing an individual evaluation area, passed the site-specific screening.

Table 4 Aquatic System Evaluation: Site-Specific Screening Results using Mean Radionuclide Concentrations in Surface Water for Each Evaluation Area

Sampling Location	Average Concentrations Sum of Fractions < 1.0 (Pass/Fail)?	Water Sum of Fractions	Sediment Sum of Fractions	Total Sum of Fractions
Main Plant - On-site Locations:				
Two Falls Creek (TFCK 0.5)	passed	5.39E-02	7.73E-04	0.055
Broad Creek (BRCK)	passed	7.21E-01	8.98E-03	0.73
Northwest Tributary (NWTK 0.5)	passed	1.29E-01	1.86E-03	0.13
Downstream Locations:				
Muddy Branch (MB 0.6)	passed	9.38E-01	1.45E-02	0.95
Blue Falls Creek (BFCK 3.0) and Blue Falls Creek at Blue Falls Dam Station (BFCK 1.4) (combined)	passed	0.96	1.03E-02	0.97
Other Streams that enter Darlington River:				
Taylor's Creek (TCK 1.0)	passed	5.05E-04	1.3E-03	0.002
Beaver Creek (BVCK 2.3)	passed	8.66E-02	2.4E-03	0.089

3. Documentation of Results

The results of the biota dose evaluation were summarized. A summary report which contains computer screen printouts of the spreadsheet results from the RAD-BCG Calculator were retained on file for future reference. The rationale for using average radionuclide concentration values in place of maximum values was documented. As required by EH, a summary of the evaluation was included in the Poplar Springs Site's Annual Site Environmental Report.

4. Lessons Learned

- All of the downstream station locations corresponding to individual evaluation areas provided the greatest total sums of fractions. These are clearly good indicator locations for future biota dose evaluations.

- All of the evaluation areas passed. However, because the total sum of fractions for each of the downstream locations was very near 1.0, we could consider conducting additional analysis on these evaluation areas using the analysis phase of the graded approach (refer to the example provided in CASE 2).

- Possible future activities could include: (1) assessing the need for additional sampling locations; (2) collecting co-located sediment and water samples for these and other locations; (3) collecting representative receptors and analyzing tissue data to permit a direct and more realistic dose evaluation.

CASE 2. Evaluation of Several Evaluation Areas Using Maximum Measured Radionuclide Concentration Data

1. General Screening Evaluation *(Phase 2 of the Graded Approach)*

A. Enter Data into the RAD-BCG Calculator

Maximum measured radionuclide concentration data for surface water for each sampling location (each representative of individual evaluation areas) were entered into the Aquatic System Data Entry/BCG Worksheet within the RAD-BCG Calculator (i.e., in this case, eight individual evaluations, one for each sampling location representative of an evaluation area, were conducted). The RAD-BCG Calculator automatically calculated the missing sediment radionuclide concentration data (e.g., by using the "most probable" radionuclide-specific K_d values) and entered the calculated radionuclide concentrations into the appropriate fields.

B. Compare Measured Radionuclide Concentrations in Environmental Media with BCGs

The RAD-BCG Calculator automatically calculated the radionuclide-specific partial sum of fractions for water and sediment, then calculated the total sum of fractions. A summary of the comparisons for each location is provided in Table 5. The results indicated that four of the locations evaluated (Broad Creek, Muddy Branch, Blue Falls Creek, and Blue Falls Creek at Blue Falls Dam) failed the general screening evaluation using maximum radionuclide concentration data. Results also indicated that the water medium is limiting (see partial sum of fractions for water and sediment, respectively, in Table 5). It was also determined that Cs-137 and Sr-90 were the radionuclides that provided the greatest contribution to the total sum of fractions (i.e., they were the most limiting radionuclides, providing the greatest contribution to potential dose). A riparian animal was the limiting organism type for these radionuclides.

Table 5 Aquatic System Evaluation: General Screening Results for Poplar Springs Site Using Maximum Measured Radionuclide Concentrations in Surface Water

Sampling Locations	Sum of Fractions < 1.0 (Pass/Fail?) Using Maximum Concentrations	Water Sum of Fractions	Sediment Sum of Fractions	Total Sum of Fractions
Main Plant--On-site Locations:				
Two Falls Creek (TFCK 0.5)	passed	5.39E-02	7.7E-04	0.05
Broad Creek (BRCK)	failed	1.22	1.53E-02	1.24
Northwest Tributary (NWTK 0.1)	passed	2.55E-01	3.66E-03	0.26
Downstream Locations:				
Muddy Branch (MB 0.6)	failed	1.73	2.73E-02	1.76
Blue Falls Creek (BFCK 3.0)	failed	2.79	2.88E-02	2.82
Blue Falls Creek at Blue Falls Dam (BFCK 1.4)	failed	1.49	1.64E-02	1.51
Other Streams that enter Darlington River:				
Taylor's Creek (TCK 1.0)	passed	8.51E-04	2.19E-03	0.003
Beaver Creek (BVCK 2.3)	passed	1.55E-01	3.45E-03	0.16

2. Site-Specific Screening using Mean Radionuclide Concentrations in Place of Maximum Values ***(Phase 3 of the Graded Approach: Analysis Phase, Site-Specific Screening)***

It was determined through consultation with Site environmental surveillance program personnel that the quality and quantity of data provided for time averaging of measured radionuclide concentration data for each individual evaluation area. Guidance provided in Module 2, Section 2 of the DOE technical standard concerning spatio-temporal averaging was also consulted.

A. Enter Data into the RAD-BCG Calculator

Mean radionuclide concentration data for surface water from each of the four sampling locations which failed the general screening phase were entered into the Aquatic System Data Entry/BCG Worksheet within the RAD-BCG Calculator (i.e., four separate evaluations were conducted). The RAD-BCG Calculator automatically calculated the missing sediment radionuclide concentration data (e.g., by using the "most probable" radionuclide-specific K_d values) and entered the calculated sediment radionuclide concentrations into the appropriate fields.

B. Compare Measured Radionuclide Concentrations in Environmental Media with BCGs

The RAD-BCG Calculator automatically calculated the radionuclide-specific partial sum of fractions for water and sediment, then calculated the total sum of fractions. A summary of the comparisons for each location is provided in Table 6. The results indicated that of the four locations evaluated (Broad Creek, Muddy Branch, Blue Falls Creek, and Blue Falls Creek at Blue Falls Dam), Broad Creek, Muddy Branch, and Blue Falls Creek at Blue Falls Dam passed the site-specific screening evaluation using mean radionuclide concentration data. Results also indicated that for the remaining location (Blue Falls Creek - which did not pass the screen), the water medium is limiting (see partial sum of fractions for water and sediment, respectively, in Table 6). It was also determined that Cs-137 and Sr-90 were the radionuclides that provided the greatest contribution to the total sum of fractions (i.e., they were the most limiting radionuclides, providing the greatest contribution to potential dose).

Table 6 Aquatic System Evaluation: Site-Specific Screening Results for the Poplar Springs Site using Mean Radionuclide Concentrations in Surface Water

Sampling Location	Average Concentrations Sum of Fractions < 1.0 (Pass/Fail?)	Water Sum of Fractions	Sediment Sum of Fractions	Total Sum of Fractions
Main Plant--On-site Locations:				
Two Falls Creek (TFCK 0.5)	(passed in general screen)			--
Broad Creek (BRCK)	passed	7.21E-01	8.98E-03	0.73
Northwest Tributary (NWTK 0.5)	(passed in general screen)			--
Downstream Locations:				
Muddy Branch (MB 0.6)	passed	9.38E-01	1.45E-02	0.975
Blue Falls Creek (BFCK 3.0)	failed	1.25	1.17E-02	1.26
Blue Falls Creek at Blue Falls Dam (BFCK 1.4)	passed	6.70E-01	8.85E-03	0.68
Other Streams that enter Darlington River:				
Taylor's Creek (TCK 1.0)	(passed in general screen)			--
Beaver Creek (BVCK 2.3)	(passed in general screen)			--

3. Site-Specific Screening using Site-Representative Parameter Values in Place of Default Values *(Phase 3 of the Graded Approach, Site-Specific Screening)*

Further efforts were directed at modifying some of the default parameters used in the site-specific screening portion of the graded approach, replacing them with more site-representative values.

A. Review of Data and Parameters for Blue Falls Creek (BFCK 3.0)

Because both maximum and average surface water concentrations collected at Blue Falls Creek exceeded the BCGs in general screening and site-specific screening, respectively, it was necessary to review the data used, limiting organism type responsible for the BCGs, limiting media, and area of evaluation. A summary of this review is provided in Table 7.

Table 7 Review of Radionuclide Concentration Data and Limiting Organism Type to Determine Path Forward in the Biota Dose Evaluation

Review the Following:	Comment
Sampling/Data Frequency -- adequate?	Surface water samples were collected and analyzed bimonthly (Jan, March, May, Jul, Sep, Nov): considered to be adequate. Possible Future Activities: * Consider possible need to increase sampling frequency (contact appropriate personnel) * Consider collection of co-located sediment samples (see below)
Radionuclides of concern?	Cs-137 and Sr-90 are the limiting radionuclides contributing the most to the total sum of fractions at this location. Water is the limiting medium; sediment contributes to dose but is not the limiting medium. Maximum and average concentrations detected in surface water for this location: Cs-137: Maximum: 67; Average: 37 pCi/L Sr-90: Maximum: 330; Average: 100 pCi/L
Are the limiting organism types used to derive BCGs reasonable?	Riparian animal -- yes, this receptor is feasible for the evaluation area. Known to be resident.
Consider re-defining or modifying the evaluation area?	Radionuclide data was already time-averaged to generate mean concentrations which are representative of the evaluation area. The location from which the radionuclide concentrations were detected is considered to be a representative indicator for site impacts on natural waterways. No additional modifications to the delineation of the evaluation area will be conducted.

B. Consider Replacing Default Lumped Parameter Values with Site-Representative Values

The major issues for this evaluation were Cs-137 and Sr-90 surface water concentrations. Therefore, the focus was on the radionuclide-specific default lumped parameters used to derive the BCGs for these two radionuclides.

The Riparian Animal Spreadsheet contained in the RAD-BCG Calculator (and contained in Module 1 Table 7.2 of the DOE technical standard) was reviewed to identify the default lumped parameter values (see Table 8 below for a summary). Available site data was reviewed for site-representative lumped parameter values for riparian animals (the limiting organism type for Cs-137 and Sr-90). After making some preliminary inquiries with site personnel, it was determined that there were no easily-accessible site-specific lumped parameter data for riparian animals. A more extensive search could have been performed (e.g., making contact with other DOE site representatives; conducting a literature search), but it was decided to move on to the site-specific analysis component of the graded approach, focusing on reviewing and potentially modifying additional default parameters and assumptions used in the analysis phase.

Table 8 Default Lumped Parameter Values Used to Derive Generic Water BCGs for Riparian Animals

Radionuclide	Lumped Parameter Bq/kg (animal-wet weight) per Bq/L(water)	Comment
Cs-137	50,000	A preliminary search at the Site indicated no known or easily accessible site-specific data for estimating site-specific lumped parameters for riparian animals.
Sr-90	6,000	A preliminary search at the Site indicated no known or easily accessible site-specific data for estimating site-specific lumped parameters for riparian animals.

4. Site-Specific Analysis Using Site-Representative Parameter Values and Assumptions in Place of Default Values *(Phase 3 of the Graded Approach, Site-Specific Analysis)*

A. Review Default Parameter Values and Consider Replacing with Site-Representative Values

A number of default parameters which are used in estimating a riparian animal's internal dose can be considered for modification in site-specific analysis. The default parameters for a riparian animal were reviewed by accessing the Riparian Animal Spreadsheet in the RAD-BCG Calculator (also contained in Module 1, Tables 7.5 and 7.6 of the DOE technical standard). These parameters are summarized in Table 9 below.

Table 9 Review of Default Parameter Values for Possible Modification Using Site-Representative Values

Parameter	Default Value	Site-Specific Values?
Appropriate Riparian Receptor?	Raccoon	Default organism is known to be resident at the site.
Fraction of intake retained Cs-137 Sr-90	 1 0.3	No known site specific evaluations to conclude otherwise. Default values were used to be conservative.
Biological Decay Constant Cs-137 Sr-90	 2.24E-02 6.11E-04	No known site specific evaluations to conclude otherwise. Default values were used to be conservative.
Correction Factor for Area or Time	1.0	No known site specific evaluations to conclude otherwise. The organism would be expected to be resident in the evaluation area 100% of the time.
Dose Limits for Riparian Animals	0.1 rad/d	Default dose limit used for riparian animals. Can not be changed without DOE-EH-41 approval.
Body Mass	8800 g	Default value. Default value was used to be conservative.
Other Kinetic/Allometric Relationship Parameters	Allometric equations and related input parameters representing mechanisms to internal dose to a riparian animal.	A cursory review of the default values for these parameters was made. It was decided to use the default values and equations rather than to obtain more site-representative values for use in the kinetic/allometric models employed in the analysis phase of the graded approach. However, the aquatic animal food source B_{iv} value used as the default food source to the riparian animal was reviewed (in the Aquatic Animal Spreadsheet) and subsequently modified.

Each of the contributing parameters could have been reviewed in detail, with the objective of identifying values more representative of site-specific receptors. It was determined through contact with aquatic biologists and radioecologists at the Poplar Springs Site that a reasonable amount of data relating to bioaccumulation factors (B_{iv}s) for fish was available at relevant Poplar Springs Site locations for the Blue Falls Creek evaluation area. Data exists for fish at or near Blue Falls Creek (BFCK 3.0) for Cs-137 and there is some data for Sr-90 in whole fish collected on-site in nearby waterways having similar water chemistry. It was determined that these fish were representative of the expected food sources to a riparian animal at the evaluation area, and that their B_{iv}s would provide more representative food source values to a site-specific riparian animal, in place of the default values used. With the assistance of the aquatic specialists, site-specific Cs-137 and Sr-90 concentrations measured in fish and in surface water were used to estimate B_{iv}s applicable to the Blue Falls Creek evaluation area. The data and resulting B_{iv}s are shown in Tables 10 and 11.

Table 10 Site-Specific Bioaccumulation Information for Cesium-137

Species	Water Concentration (Bq/L)	Tissue Concentration (Bq/kg)[1]	Bioaccumulation Factor (L/kg)[2]	Reference
Bluegill	1.52 Bq/L	BFCK 2.9 (N=7): 7900 ± 3400 Bq/kg dw BFCK 2.3 (N=5): 4600 ± 752 Bq/kg dw	1040 605	PSS/TM-11295 - Third Report of the PSS BMAP for Blue Falls Creek Watershed and the Darlington River (Tables 8.2-water and 8.11-fish)
Sunfish (includes bluegill and redbreast sunfish)	5.2 Bq/L	BFCK 3.5 (N=8): 21600 ± 2200 Bq/kg dw BFCK 2.9 (N=8) 29800 ± 9100 Bq/kg dw BFCK 2.3 (N=8): 13600 ± 8400 Bq/kg dw	830 1150 520	PSS/TM-10804 - Second Report of the PSS BMAP for Blue Falls Creek Watershed and the Darlington River (Table 8.23) Water Data Table 5.2.26 Environmental Surveillance of the PSS and Surrounding Environs (ES/ESH-1/V2)
Redbreast Sunfish	1.52 Bq/L	BFCK 2.9 (N=5): 7600 ± 1300 Bq/kg dw	1000	PSS/TM-11295- Third Report of the PSS BMAP for Blue Falls Creek Watershed and the Darlington River (Tables 8.2-water and 8.11-fish)

[1] Tissue concentrations were measured in fish fillets. It is assumed that the tissue concentrations in fillets are representative of whole body concentrations. This is appropriate, given that Cs-137 is known to concentrate in muscle tissues.

[2] It is assumed that fish are about 80% water; therefore, the dry weight of fish is multiplied by 0.2 to convert dry weight to wet weight.

Table 11 Site-Specific Bioaccumulation Information for Strontium-90

Species	Water Concentration (Bq/L)	Tissue Concentration (Bq/kg)	Bioaccumulation Factor (L/kg)	Reference
Bluegill	4.8 Bq/L	520 ± 140 Bq/kg ww (1987) (Whole body) N=5	110	PSS/TM-10804 - Second Report of the PSS BMAP for Blue Falls Creek Watershed and the Darlington River (Table 8.1) Blue Falls Creek Water Data Table 2.2.1 Environmental Surveillance of the PSS and Surrounding Environs (ES/ESH-4/V2).
Gizzard Shad	4.8 Bq//L	370 ± 360 Bq/kg ww (1987) (Whole body) N=5	80	PSS/TM-10804 - Second Report of the PSS BMAP for Blue Falls Creek Watershed and the Darlington River (Table 8.1) Blue Falls Creek Water Data Table 2.2.1 Environmental Surveillance of the PSS and Surrounding Environs (ES/ESH-4/V2)
Largemouth Bass	4.8 Bq/L	230 ± 120 Bq/kg ww (1987) (Whole body) N=5	50	PSS/TM-10804 - Second Report of the PSS BMAP for Blue Falls Creek Watershed and the Darlington River (Table 8.1) Blue Falls Creek Water Data Table 2.2.1 Environmental Surveillance of the PSS and Surrounding Environs (ES/ESH-4/V2)

B. Modification of Default B_{iv} Values for Organisms Consumed by the Limiting Organism

The Aquatic Animal Spreadsheet within the RAD-BCG Calculator was accessed and the default B_{iv} values for Cs-137 and Sr-90 were reviewed. Based on literature reviews, calculated values (Table 10 and Table 11), and consultations with the aquatic specialists**,** the following site-specific B_{iv}s for fish were selected:

Cs-137: 1150 (L/kg). Most conservative estimated bioaccumulation factor for fish collected at or near the sampling location (BFCK 2.9).

Sr-90: 110 (L/kg). Most conservative estimated bioaccumulation factor for fish collected on the Poplar Springs Site.

Enter Site-Representative Parameter Values into the RAD-BCG Calculator

First, the "allometric BCGs" button on the Riparian Animal Spreadsheet of the RAD-BCG Calculator was selected. This selection allowed the calculation of BCGs using the kinetic/allometric method. Then, the Aquatic Animal Spreadsheet of the RAD-BCG Calculator was accessed, and the default B_{iv} values for Cs-137 and Sr-90 were replaced by entering the site-specific B_{iv} values listed above. A "user supplied value" message appeared in the Aquatic Animal Spreadsheet to provide a reminder that default values had been modified. The BCGs for Cs-137 and Sr-90 were automatically updated within the RAD-BCG Calculator to reflect these site-specific input values. The site-specific BCGs for these two radionuclides were shown in the Riparian Animal Spreadsheet, and in the Aquatic System Data Entry/BCG Worksheet - where our mean measured radionuclide concentration data was previously entered. A new partial and total sum of fractions were automatically calculated by the RAD-BCG Calculator.

Compare Measured Radionuclide Concentrations in Environmental Media with BCGs

Due to the adjustment of the Cesium-137 B_{iv} to 1150 and the Sr-90 B_{iv} to 110, the total sum of fractions for Blue Falls Creek was less than 1.0, indicating that we passed the site-specific analysis.

It is also noteworthy that - had we used the site-specific food source B_{iv} values compared with maximum measured radionuclide concentration data rather than mean values, the total sum of fractions for our riparian animal would also have passed. This would be a useful approach if we were required by regulators or stakeholders to use only maximum measured radionuclide concentrations in our evaluation. This point highlights one example regarding the flexibility of the graded approach.

5. Documentation of Results

The results of the biota dose evaluation were summarized. A summary report containing computer screen printouts of the spreadsheets from the RAD-BCG Calculator were retained on file for future reference. The rationale for selecting site-representative B_{iv}s as a food source value to a riparian animal was documented. As required by EH, a summary of the evaluation was included in the Poplar Springs Site's Annual Site Environmental Report.

6. Lessons Learned

- Possible future activities could include: (1) assessing the need for additional sampling locations; (2) collecting co-located sediment and water samples for these and other locations; (3) collecting representative receptors and analyzing tissue data to permit a direct and more realistic dose evaluation.

Attachment H4

Narrative Discussion of Potential for Effects on Endangered Species

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Narrative Discussion of the Potential for Effects on Federal Endangered Species Caused by a Proposed Remedial Action for a Portion of the Hanford Site

Prepared by DOE/RL in July, 2014

DOE has completed an investigation (U.S. Department of Energy, 2012a) and prepared a Proposed Plan (U.S. Department of Energy, 2012b) which identifies a Preferred Alternative for remediation of a portion of the Hanford site near Richland, Washington. Groundwater originating from this area of the Hanford Site (100-D/H) has been found to contain four contaminants (chromium, hexavalent chromium [Cr (VI)], nitrate, strontium-90 [Sr-90]) above either human health or ecological risk thresholds. The contaminants are identified as Contaminants of Concern (COCs).

This narrative discussion presents an evaluation of potential effects on listed species within the Columbia River caused by initiation and completion of a remedial action to cleanup groundwater discharges to the river originating from the 100-D/H areas at the Hanford Site. This discussion is specific to the aquatic environment, and is focused on COCs with the potential for reaching the Columbia River. The evaluation supports a conclusion of no effect on species listed as threatened or endangered under the Endangered Species Act. This conclusion is based on multiple lines of evidence. First, the preferred remedy does not take an action in the Columbia River, so there will not be any direct physical effects on fish or their habitat. Second, there are no effects of COCs on listed species of fish before, during or after the remedial actions, as discussed below.

This conclusion is based, in part, on the current and future operation of a pump and treat system to remove Cr (VI) from groundwater and to prevent or reduce the chromium from getting to the river. The pump and treat system was put in place by the interim action Record of Decision (USEPA, 1996). The proposed plan for completing the remediation at 100-D/H identifies a preferred alternative that will continue the operation of the pump and treat system until groundwater and surface water meet applicable standards to protect human health and the environment.

Introduction

The 100-D/H Areas encompass 20 km^2 (7.8 mi^2) adjacent to the Columbia River in the northwest portion of the Hanford Site (Figure 1). The 100-D/H Areas include three deactivated nuclear reactors and support facilities that produced plutonium from 1945 to 1967. The reactors were built to irradiate uranium fuel rods to produce plutonium and other special nuclear materials. The reactors and processes associated with operations generated large quantities of liquid and solid wastes. Solid wastes included sludge, reactor components, and various other contaminated items associated with reactor operations. Waste generated from reactor operations was contaminated with radionuclides, hazardous chemicals, or both. Liquid wastes were released to the environment by discharging effluent to temporary surface impoundments, cribs, ditches, and the Columbia River. Solid waste was generally placed in burial grounds. The waste sites in 100-D/H included storage tanks, ponds, trenches, cribs, French drains, solid waste burial grounds, retention basins, pipelines, and spills/leaks.

Analytical results from the Remedial Investigation (RI) characterization of 100–HR-3 groundwater Operable Unit (OU) indicated the localized presence of Cr (VI) in the deep vadose zone to the water table (Figure 1). Cr (VI) is the most widespread contaminant in the groundwater beneath 100-D/H. Other groundwater contaminants are total chromium, nitrate, and Sr-90. Total chromium is co-located with the Cr (VI) plume. Nitrate is present over larger areas but within boundaries of the Cr (VI) plume. Sr-90 is

present in the groundwater in localized areas within the 100-H Area and at one well in 100-D Area. Groundwater cleanup was initiated in 1997 under an interim action ROD (EPA/ROD/R10-95/126) with the startup of the first pump-and-treat system at 100-H. The use of pump-and-treat was expanded under a 2004 interim action ROD Explanation of Significant Differences[1] to include a standalone pump-and-treat system to capture a newly discovered portion of the plume. Routine monitoring of the 100-HR-3 OU revealed an expansion of the plume across the horn area towards 100-H Area and an increase in Cr (VI) concentrations in the 100-D Area. The 2009 interim action ROD Explanation of Significant Differences[2] increased the groundwater extraction rate and the capacity of the pump-and-treat systems to capture the Cr (VI) plume. Two pump-and-treat systems are currently operating and are designed to remediate the Cr (VI) plume and provide a measure of protection to the Columbia River. Continued monitoring indicates that Cr (VI) concentrations and the plume footprint areas in groundwater are declining.

Threatened and Endangered Species within the Hanford Reach

The section of the Columbia River next to the Hanford Site is within the Hanford Reach, which extends from Priest Rapids Dam downstream to the slack waters of Lake Wallula, created by McNary Dam. The Hanford Reach of the Columbia River contains three species listed as threatened or endangered under the federal Endangered Species Act (ESA), including Upper Columbia River spring-run Chinook salmon (*Oncorhynchus tshawytscha*), Upper Columbia River steelhead trout (*Oncorhynchus mykiss*), and bull trout (*Salvelinus confluentus*).

Three runs (spring, summer, and fall) of Chinook salmon pass through the Hanford Reach, however, only the Upper Columbia River spring-run Chinook salmon are considered as special status species under the Endangered Species Act (Becker, 1985). The Hanford Reach supports a healthy population of spawning fall-run Chinook salmon, but these are not listed under the Endangered Species Act (Becker, 1985).

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[1] EPA/ROD/R10-95/126, 1995, *Interim Remedial Action Record of Decision for the 100-BC-1, 100-DR-1, and 100-HR-1 Operable Units, Hanford Site, Benton County, Washington*, U.S. Environmental Protection Agency, Region 10, Seattle, Washington. Available at: http://www.epa.gov/superfund/sites/rods/fulltext/r1095126.pdf

[2] USEPA, Ecology, and DOE, 2009, *Explanation of Significant Differences for the 100-HR-3 and 100-KR-4 Operable Units Interim Action Record of Decision: Hanford Site Benton County, Washington*, U.S. Environmental Protection Agency, Washington State Department of Ecology, and U.S. Department of Energy, Olympia, Washington. Available at: http://www5.hanford.gov/arpir/?content=findpage&AKey=0096029.

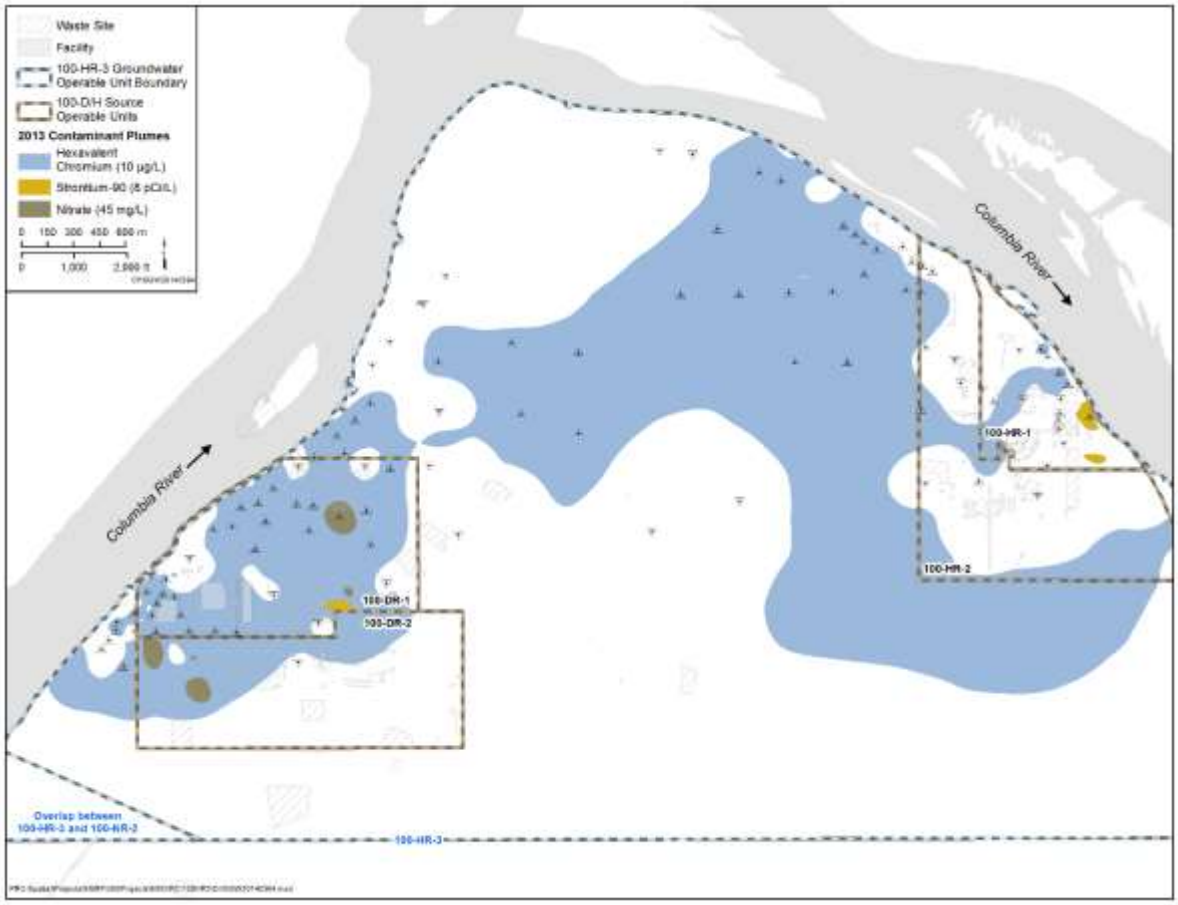


Figure 1. Cr (VI), Nitrate, and Strontium-90 Concentrations in 100–HR-3 Groundwater Operable Unit.

Potential for Exposure

The Columbia River rapidly dilutes groundwater contaminants entering the river to relatively low concentrations, so the primary concern for special status species is from exposure to porewater in sediments. Larval development stages for salmonid species occur within these shallow sediments. The egg stage and intra-gravel development occur in what are known as '"Redds" (Figure 2). Redds are formed by adults clearing the gravel area with their tails. Redd configurations cause a river flow pattern that continually flushes shallow sediments, providing oxygen and removing particulates.

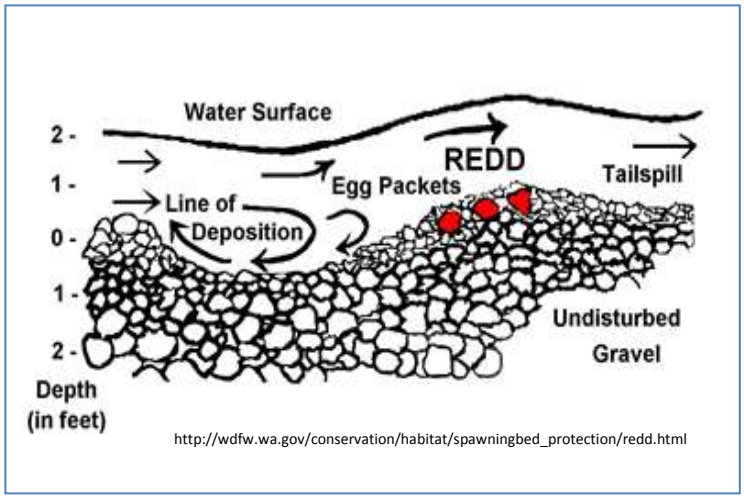


Figure 2. Depiction of Redd Used by Salmonids for Egg Deposition and During Early Developmental Stages.

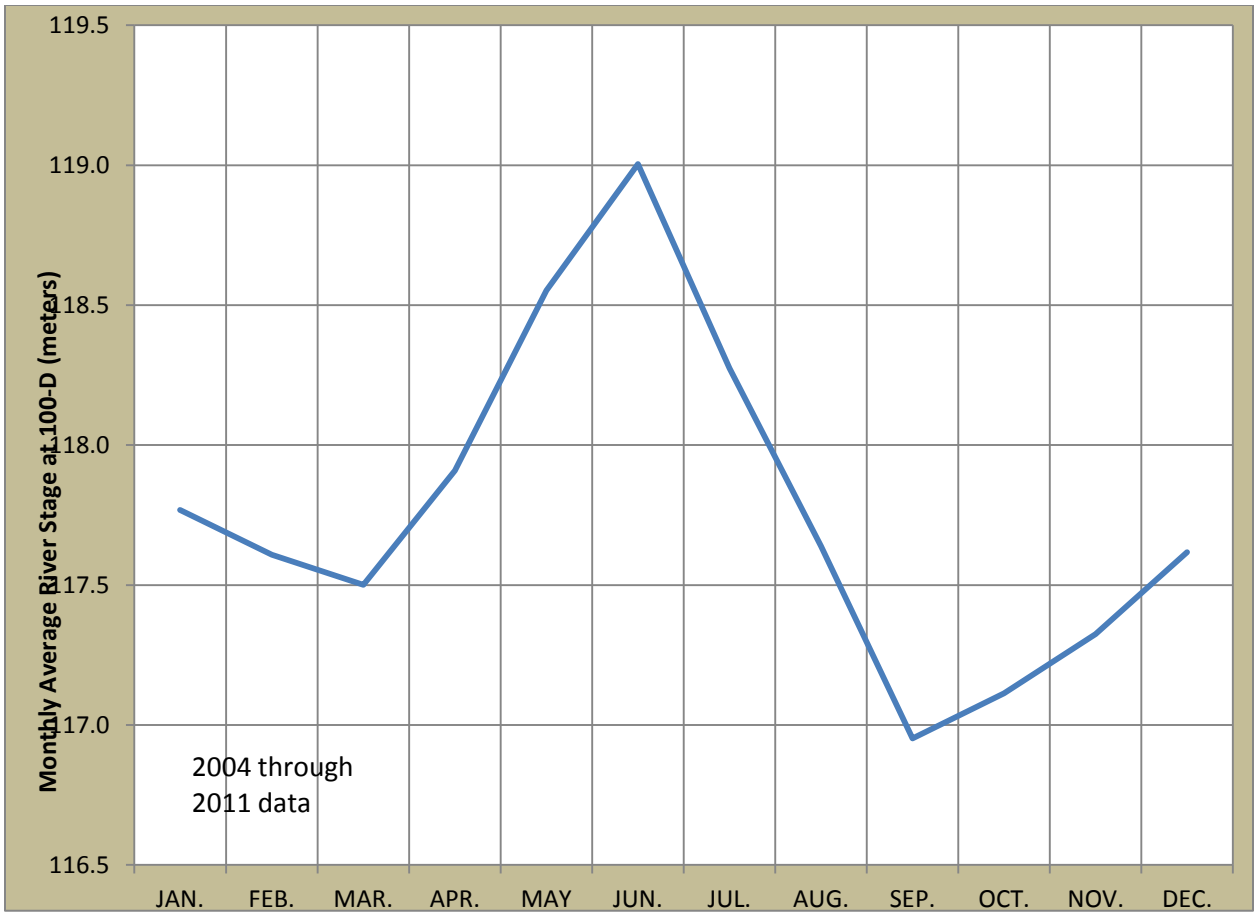


Figure 3. Monthly Average River Stage at 100-D (2004 through 2011).

Only one of the three special status species (i.e., steelhead) spawn within the Hanford Reach of the Columbia River. Spring run Chinook salmon spawn primarily in headwater streams (Poston, 2010). Bull trout use headwater streams in pristine environments for spawning (WDFW, 2013). Bull trout do not reside or spawn in the Hanford Reach, and the Hanford Reach only serves as a migration corridor for adults (Poston, 2010). Steelhead are present in the surface waters of the Hanford Reach year around, though most adults move into the Hanford Reach between August and November with the peak migration into the area occurring in September (Watson, 1973; Becker, 1985). Spawning occurs between February and June, with peak spawning occurring in mid-May (Eldred, 1970; Watson, 1973; Becker, 1985). Egg stage occurs between early February and early July. Intra-gravel development occurs between early May and the middle of July, after which fry move into the water column (USDOE, 2000). The Columbia River stage is highest during the intra-gravel development period, as shown by the 100-D and 100-H river gauge measurement data for 100-D (Figure 3) and 100-H (Figure 4).

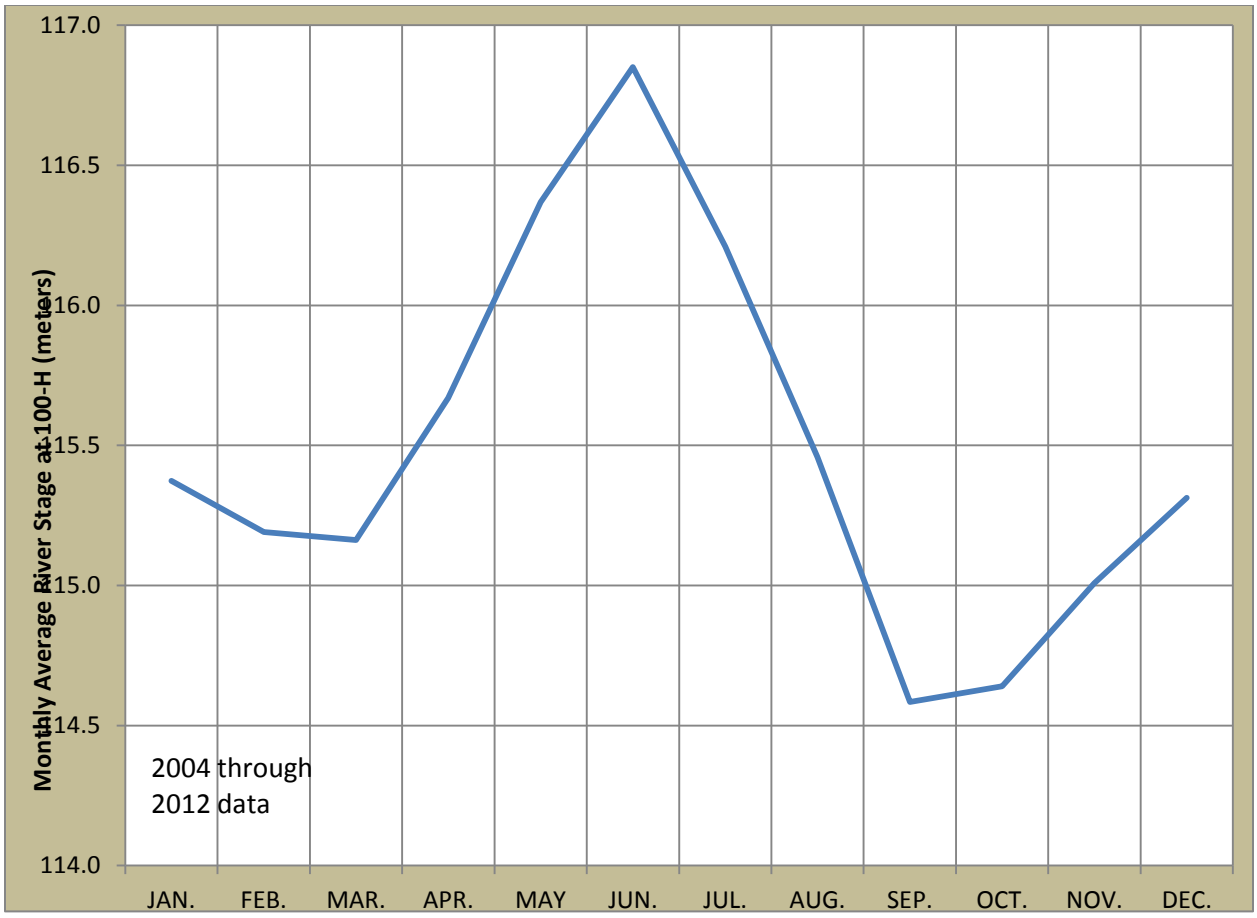


Figure 4. Monthly Average River Stage at 100-H (2004 through 2012).

Ten general salmon spawning areas along the Hanford Reach of the Columbia River have been routinely monitored by aerial surveys (Dauble and Watson 1990 as cited in Dauble et al. 2003). More recent detailed graphical display of the location of salmon redds was provided in the *Columbia River Component Risk Assessment Volume 1: Screening Level Ecological Risk Assessment* (DOE/RL-2010-117) (Figure 5). These sources focus primarily on the location of fall Chinook salmon redds. Aerial mapping of steelhead redds is typically more difficult, if not impossible, due to high, turbid spring runoff that obscures visibility (DOE/RL-2000-27). However, a study of sympatric steelhead trout and Chinook salmon in the Crooked Fork and Johnson Creek of Idaho showed a similarity in spawning habitat (Everest and Chapman, 1972). Dauble et al. (2003) reported the general characteristics of fall Chinook salmon in the Columbia River to include water depths of ~1-3 m, velocities of 60-120 cm/sec, and dominant substrate size of 7.6-15.2 cm. Orcutt et al. (1968) reported similar conditions for steelhead trout redds studied on the Salmon River in Idaho: depth of 0.2-1.5 m, velocity of 70-76 cm/sec, and substrate size of 1.3-10.2 cm. More general mapping of steelhead redds in the Hanford Reach of the Columbia River was conducted in 1968 and 1970 during unusually low flow conditions (Figure 6). The areas appear to be the same as those shown in the more detailed salmon redd maps, suggesting the findings of Everest and Chapman (1972) and Orcutt et al. (1968) may apply to the Columbia River as well.

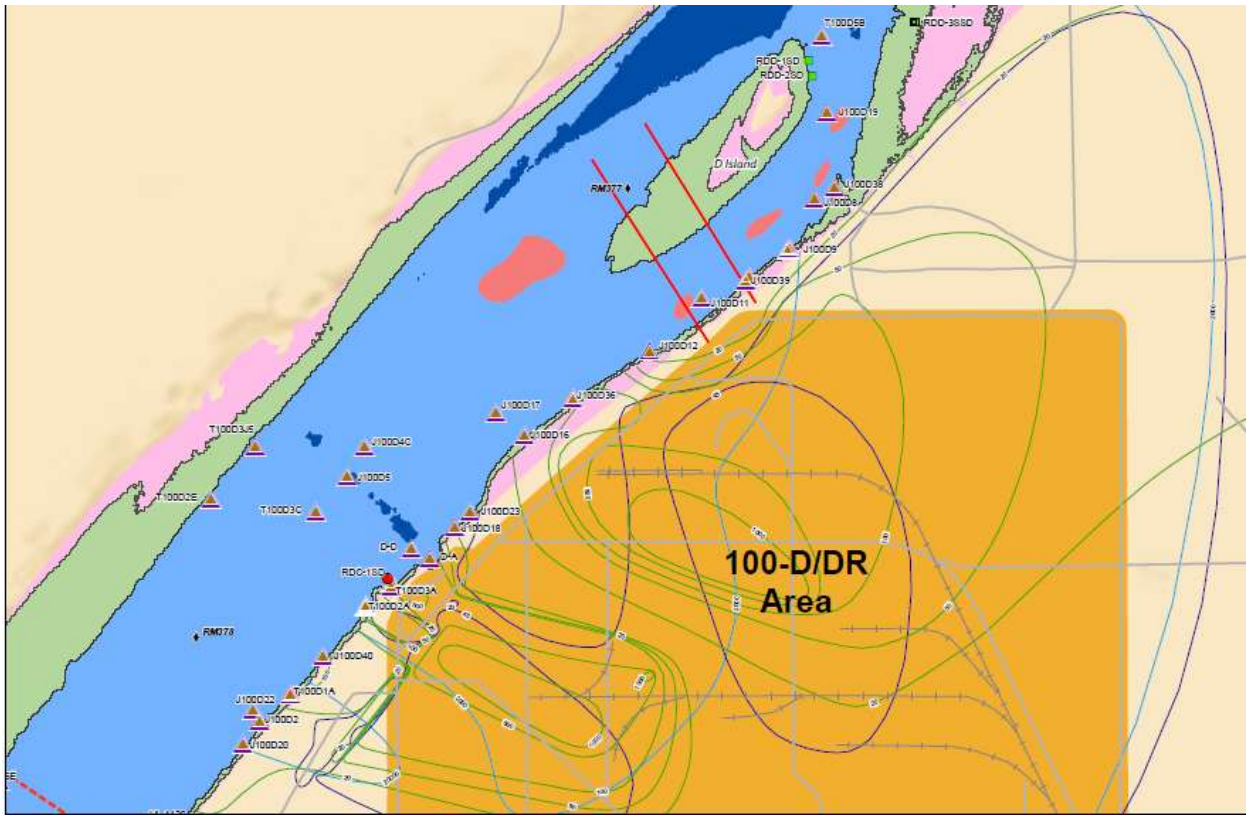


Figure 5. Locations of Chinook Salmon Redds (indicated by light red shading) and sampling locations (indicated by triangles) in the 100-D Area of the Hanford Reach (Source: DOE/RL-2010-117).

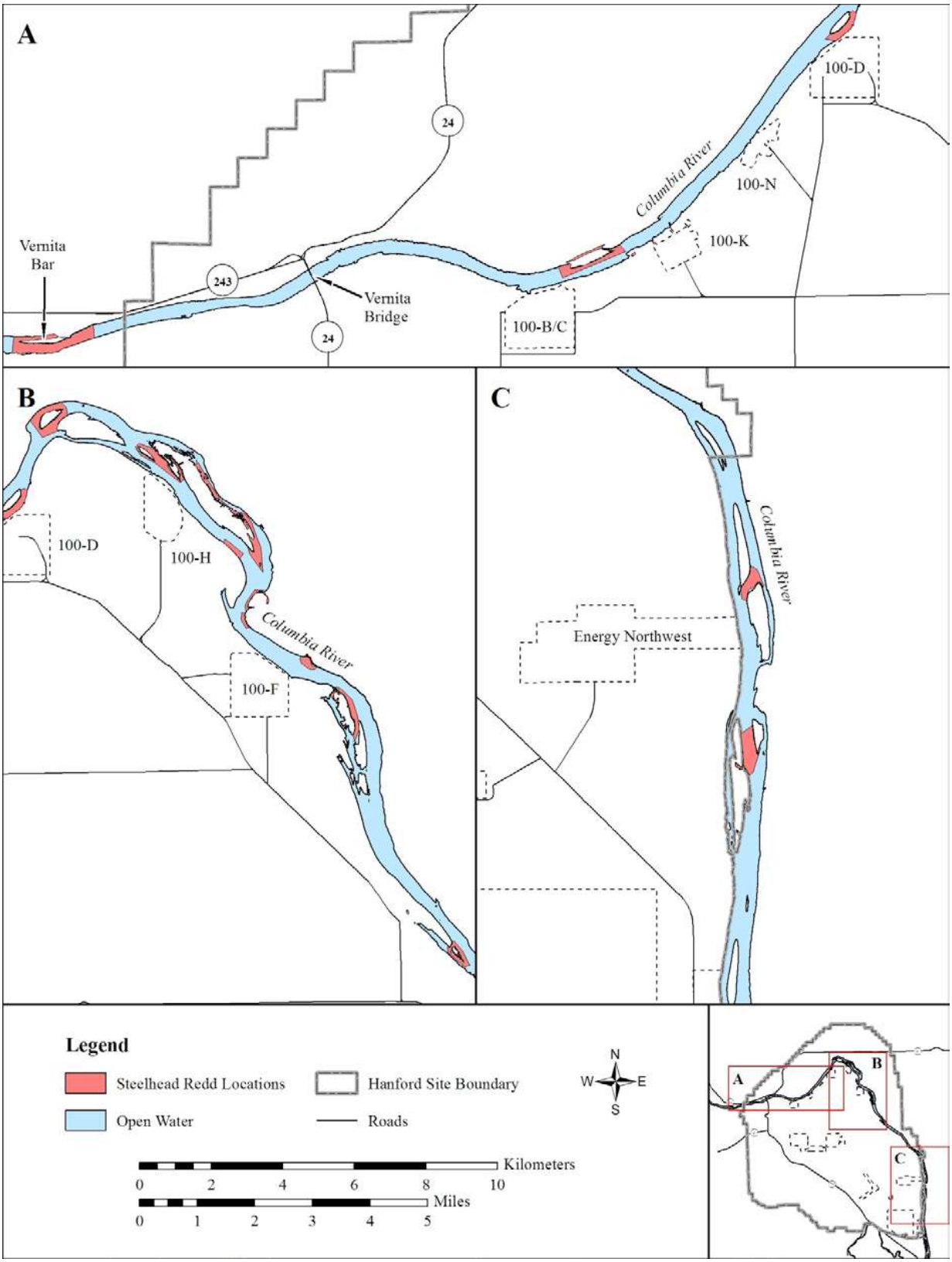


Figure 6. Locations of Steelhead Redds Observed During Aerial Surveys in 1968 and 1970 in the Upper Portion of the Hanford Reach (Source: Dauble et al. 2003).

Contaminants of Concern

The 100-D/H RI/FS contains both human health and ecological risk assessments. The human health risk assessment identified Cr (VI) and total chromium, nitrate, and Sr-90 as COCs for human health in groundwater. The ecological risk assessment identified total chromium, Cr (VI), and nitrate as ecological COCs from a Hanford source (Appendix L; DOE-RL-2010-95).

Strontium-90 Toxicity Evaluation

The maximum detected concentration of Sr-90 in the nearshore groundwater wells evaluated as part of the Appendix L evaluation (DOE-RL-2010-95) was 110 pCi /L and the maximum in the aquifer tube samples was 18 pCi /L.

EPA has not identified a water quality criterion, nor has the State of Washington promulgated a surface water quality standard for Sr-90. Toxicity thresholds for plants and wildlife found in aquatic, terrestrial, and riparian environments are represented by DOE's Biota Concentration Guides (BCGs) for radionuclides presented in *Graded Approach for Radiation Doses to Biota* (DOE STD 1153 2002). The final water BCGs recommended for Sr-90 are 278 pCi/L based on dose to riparian animals and 53,900 pCi/L based on dose to aquatic animals including fish.

Current Sr-90 concentrations do not exceed the lowest of the BCGs throughout the plume and predicted future concentrations continue to be below both these BCGs, strongly suggesting that that there is no current or future threat to aquatic life (including fish) in the Columbia River from the Sr-90 plume in the 100-HR-3 groundwater OU.

Nitrate Toxicity Evaluation

Nitrate concentrations in groundwater in the 100-HR-3 groundwater OU range from 7.8 to 99.2 mg/L (measured as NO_3). These are inland concentrations in the groundwater which are not currently upwelling in the Columbia River. Over time, this nitrate will disperse, but is expected to eventually reach the river. Concentrations that reach the river will be much lower than those currently observed in groundwater.

EPA has not identified a water quality criterion, nor has the State of Washington promulgated a surface water quality standard for nitrate. There are few studies of the effects of nitrate specifically on fish and even fewer on salmonids. Available data suggest that fish are relatively insensitive to acute exposures to nitrate. However, for chronic exposures, one lake trout study identified a no effect level of 7.1 mg/L NO_3 and a low effect threshold of 28 mg/L NO_3. The effects identified in this study were a delay of development to the swim-up stage and reduced growth measured as wet weight (McGurk et al. 2006). More recent work has shown this earlier study may not be fully indicative of the mechanism of nitrate toxicity within an aquatic environment (Elphick, 2011; Nautilus, 2011; Nautilus, 2013) as nitrate has been shown to be less toxic in water with higher water hardness.

In its report to the Mining Association of British Columbia, Nautilus (2011) reported the results of a toxicity study for the effects of nitrate on rainbow trout conducted at different water hardness concentrations. The study by McGurk et al. (2006) was conducted in soft water with a hardness range of 10-16 mg/L. Nautilus (2011) was able to produce soft water results with rainbow trout that was

comparable to McGurk et al. (2006). For the test cases at a hardness of 92 mg/L, the NOEC was 199 mg/L NO_3 and an EC10 (concentration at which effect noted in 10 percent of test cases) was established at 230 mg/L NO_3. The Columbia River water hardness is approximately 84 mg/L, so the results from the 92 mg/L hardness test group are more indicative of a threshold for the Hanford Reach. The initial work on rainbow trout was followed by a second study on multiple aquatic species (Nautilus, 2013). The second study yielded similar results of decreasing sensitivity to nitrate with increasing hardness as noted for toxicity tests with fathead minnow (*Pimephales promelas*), amphipods (*Hyalella azteca*), midge (*Chironomus dilutus*), and water fleas (*Ceriodaphnia dubia*). It should be noted that the Nautilus (2011) report was considered appropriate quality to incorporate into the Canadian water quality guidelines development. In the Canadian report (CCME, 2012), they discuss the Nautilus (2011) results and the evidence for lower nitrate toxicity in higher hardness water.

The evaluation above identifies that the relevant no effect level for steelhead in the Columbia River is 199 mg/L NO_3, which is greater than the nitrate concentrations currently in groundwater. With the toxicity thresholds relevant to steelhead identified above at the water hardness representative of the Columbia River, nitrate concentrations will have no effect on steelhead or other listed species when the nitrate-contaminated groundwater reaches the Columbia River.

Total Chromium and Cr(VI) Toxicity Evaluation

Total chromium is comprised of Cr (III) and Cr (VI) and, as indicated by the detected concentrations, Cr (VI) is the dominant form of chromium present in groundwater. Cr (VI) is significantly more toxic than Cr (III) for fish, primarily because Cr (VI) has markedly greater solubility, bioavailability, mobility, and toxicity than Cr (III) in the aquatic environment (USEPA, 1985 and 2005; Eisler, 1986). Cr (III) has limited solubility based on its tendency to form stable complexes with organic ligands and sediment minerals and insoluble hydroxide and oxide complexes (Jardine et al. 2013). It has been demonstrated to have very low toxicity when present in the aquatic environment (Graham et al. 2009, USEPA 2005, Berry et al. 2004, Becker et al. 2006, Oshida et al. 1976, 1981). Cr (VI) is the dominant form of chromium at this site, and is accordingly the primary focus of this evaluation.

The most recent water quality criteria evaluation by EPA for Cr (VI) was in 1995 (U.S. Environmental Protection Agency, 1996). This evaluation indicated there were not enough data to directly calculate a chronic criterion, so the evaluation relied on acute toxicity data and an acute to chronic ratio. The most sensitive fish species in that evaluation was a guppy with an acute toxicity value of 30,000 µg/L. Rainbow trout were identified as having an acute toxicity value of 69,000 µg/L, with a species and study-specific acute to chronic ratio of 260.8, resulting in a chronic toxicity level at 265 µg/L.

Several investigations have been conducted over the years to evaluate the potential for adverse effects to salmonids as a result of Cr (VI) originating from the Hanford facility. Patton et al. (2001 and 2007) studied the effect of Cr (VI) sampled from Hanford groundwater on early life-stage (eyed eggs to free swimming juveniles) fall Chinook salmon survival, development rate, and growth. Dauble et al. (2003) discusses the results of several lab-based investigations that were completed to evaluate the effects of Cr (VI) on various life stages of fall Chinook salmon, including fertilization, egg, alevin, and parr, and toxicological endpoints of hatching, growth, survival, health, pathology, and avoidance of contamination behavior. Farag et al. (2000) evaluated fertilization success in cutthroat trout and Chinook salmon based on an evaluation of sperm and ovum viability and using exposure conditions (e.g., exposure period, temperature) that are consistent with those present in the Columbia River adjacent to the Hanford Facility. Each of these studies brings valuable insight to understanding the potential

exposure and effects relationships in the Hanford Reach. However, with what is understood about the steelhead trout lifecycle and contaminant behavior in groundwater and surface water in the Hanford reach, only a subset of these studies are applicable to assessing risk to the steelhead trout.

As noted by Everest and Chapman (1972), salmonids are only present in sediments during early developmental stages, which encompasses egg laying and fertilization, egg development and hatching, and early alevin development (prior to swim up). Because Cr (VI) has not been detected in the overlying surface waters of the Columbia River adjacent to the 100 D/H, salmonids could only be exposed to Cr (VI) in porewater during these early life stages. Accordingly, only toxicity data for these early life stages are relevant to evaluating the potential for impacts to salmonids. Table 1 summarizes potentially relevant toxicity data to evaluate Cr (VI) effects from releases from the Hanford site.

Table 1. Summary of Toxicity Data Available for Salmonid Early Life Stage Tests with Cr (VI).

Developmental Stage	Reference	Form Tested	Species	Component/ Stage Tested	Test Parameter	Endpoint	Outcome (µg/L)
Fertilization	Farag et al. 2000	Cr (VI)	Cutthroat trout	Egg/ sperm	Fertilization	NOEC (percent fertilization; multiple concentrations tested)	266
		Cr (VI)	Chinook salmon	Egg/ sperm	Fertilization	NOEC (percent fertilization; multiple concentrations tested)	266
Egg/Embryo	Sauter et al. 1976	Not specified	Rainbow trout	Egg	Hatchability	LOEC (significantly reduced hatch based on comparison to laboratory control)	6,100
	Patton et al. 2001	Cr (VI)	Chinook salmon	Egg (eyed) to swim up stage	Egg survival, development, growth	NOEC (percent survival, development rate and length and weight; multiple concentrations tested)	266
Alevin	Buhl and Hamilton,	Cr (VI)	Coho salmon	Alevin	Survival	96-hr LC50	205,000

	1990	Cr (VI)	Rainbow trout	Alevin	Survival	96-hr LC50	600,000

Effects of Cr (VI) on egg fertilization were best studied by Farag et al. (2000), who investigated a realistic sperm-egg Cr (VI) exposure period of one minute during fertilization studies. In the study, Chinook salmon and cutthroat trout (*Oncorhynchus clarki*) eggs and sperm were exposed to Cr (VI) samples collected from groundwater wells at the Hanford site. Using this realistic exposure scenario, Farag et al. (2000) demonstrated that Cr (VI) concentrations of up to 266 µg/L would not adversely affect Chinook salmon or cutthroat trout egg fertilization. Since higher concentrations were not tested, the actual no effect concentration may be much higher.

Limited data are available about the sensitivity of salmonid eggs/embryos and early developmental stage alevins to chromium. Sauter et al. (1976), for example, reported a significant effect concentration of 6,100 µg/L for rainbow trout hatchability. Patton et al. (2001) reported no effect on the survival, development, and growth of Chinook salmon between eyed egg and swim up stage when exposed to Hanford groundwater with up to 266 µg/L Cr (VI) (maximum concentration tested). Buhl and Hamilton (1990), meanwhile, reported a 96-hour LC50 concentration of 205,000 µg/L for Coho salmon and a 96-hour LC50 concentration of 600,000 µg/L for rainbow trout when exposed to Cr (VI) at the early alevin stage. Using the most conservative outcomes from the fertilization studies, a site-specific NOEC of 266 µg/L Cr (VI) was identified and established as the threshold for evaluation.

Chromium [primarily composed of Cr (VI)] is the most widespread contaminant in the groundwater at 100-D/H and, as shown in Table 2, has been detected in the 100-D/H groundwater plume at concentrations exceeding the 266 µg/L site-specific NOEC threshold. Cr (VI) in the 100-HR-3 groundwater had concentrations ranging from 2.6 to 6,390 µg/L with the highest concentrations away from the river. Cr (VI) concentrations measured in aquifer tubes (closer to the location of potential salmonid exposure) between 2007 and 2011 ranged from 2 to 380 µg/L at 100-D and 2.3 to 42 µg/L at 100-H.

A study of groundwater upwelling into the river was conducted in 2009 and 2010 (WCH, 2010). The study looked at factors influencing groundwater upwelling and contaminant concentrations within the gravels at a depth of 30 cm (12 inches) below the substrate surface. This sediment depth was to evaluate contaminant concentrations within the biologically active zone including the depth of sediment that would contain steelhead redds. Appendix A of this study (WCH, 2010) provides an evaluation and discussion of how river stage influences groundwater upwelling. They found that prolonged higher river stages have the lowest groundwater upwelling (see Figures 3 and 4).

The study collected pore water samples from several locations in the 100 D/H area from a depth of 20 to 30 cm (8-12 inches) in the sediment. Pore water samples were collected during the lowest flows of the year (September – November, 2009) when groundwater upwelling and groundwater contaminant concentrations are highest. Thirty locations were sampled in D-Area and 30 locations were sampled in H-Area. The maximum concentrations of Cr (VI) in pore water measured near 100-D were 331 and 112 µg/L (Figure 7), but these concentrations were collected in locations not known to be salmon or steelhead spawning areas (Figure 5 and 6). Pore water concentrations near potential spawning areas were less than 26 µ/L. Similarly, the Cr (VI) concentrations were less than 29 µg/L (Figure 8) near potential spawning areas near 100-H (Figure 6). Because groundwater upwelling and groundwater contaminant concentrations are lower when river stages are higher, these concentrations can be considered to represent worse-case upwelling concentrations. Potential Cr (VI) exposure to steelhead

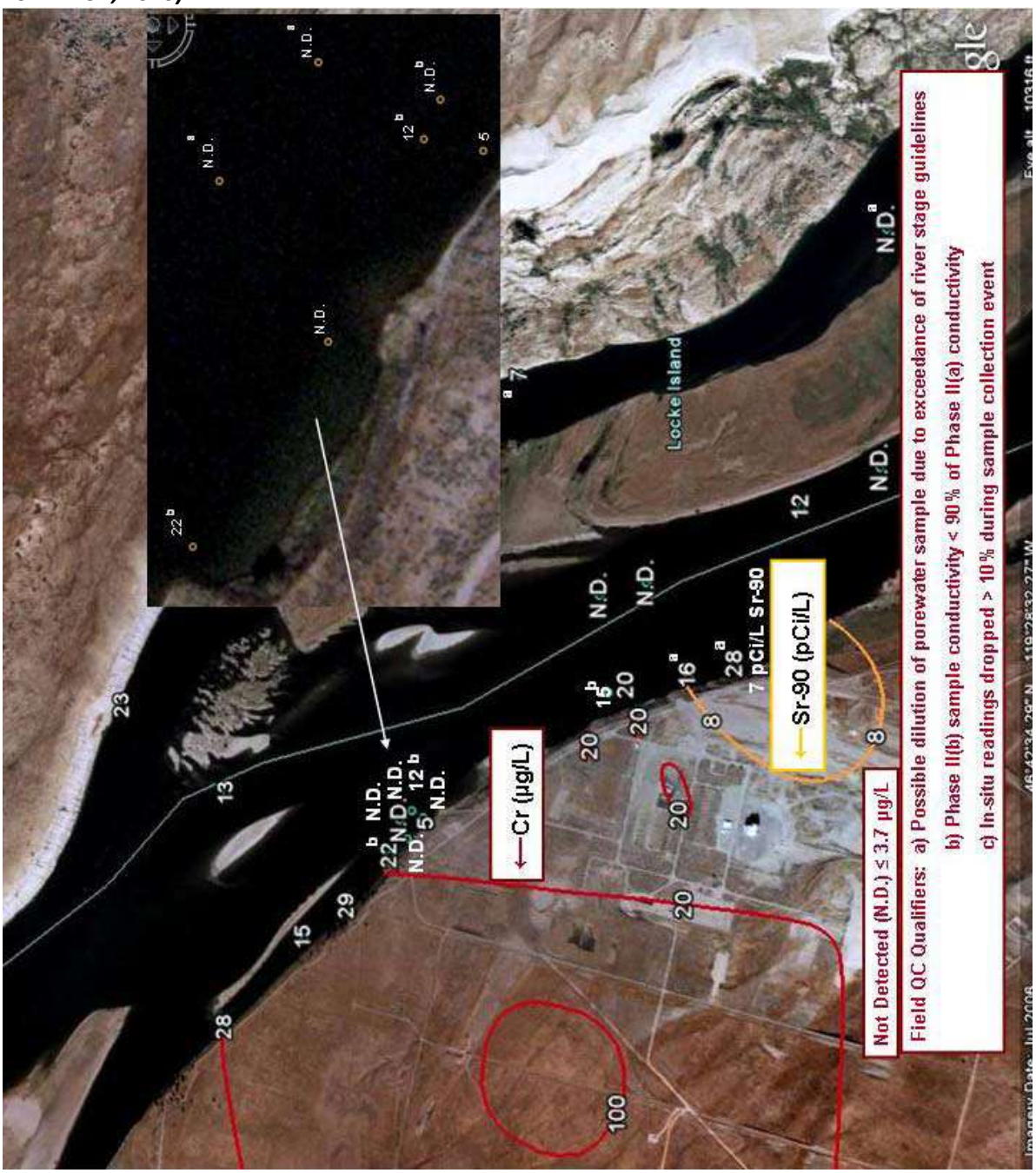
eggs and alevins in spawning areas are below 266 µg/L, which is considered a site-specific NOEC threshold.

Table 2. Summary of Total and Cr (VI) Concentrations Detected in 100-D and 100-H Groundwater.

Item	Form Reported	Concentration (µg/L)	
		100-D	100-H
Groundwater	Total Chromium	5.6 – 4,460	
Groundwater	Cr (VI)	3.0 – 2,960	
Aquifer Tube	Cr (VI)	2.0 – 380	2.3 - 42
Porewater near spawning areas	Cr (VI)	<26	<29
State Water Quality Standard	Cr (VI)	10	10
Site-Specific NOEC	Cr (VI)	266	266

Figure 7. Pore Water Cr (VI) (µg/L) levels measured during Phase II(b) Near the 100-D Area. (Figure 3-34 in WCH, 2010)

Figure 8. Pore Water Cr (VI) (µg/L) Levels Measured During Phase II(b) Near the 100-H Area. (Figure 3-40 in WCH, 2010)



Conclusions

Contaminated groundwater from the 100-D/H areas that upwells into the river currently has no effect on salmonid species listed as threatened or endangered under the Endangered Species Act. There are also no foreseeable effects on listed salmonids in the future as long as the groundwater pump and treat system continue to treat Cr (VI) until concentrations are less than the NOEC threshold of 266 µg/L and those concentrations can be maintained without operation of the pump and treat system. The decision to operate a pump and treat system for Cr (VI) was made in an interim action Record of Decision. The proposed plan for remedial action that is being considered for a Record of Decision identifies a preferred alternative that continues to operate the pump and treat system until surface water standards are met. The conclusion of this evaluation is that there is no effect on listed salmonids now, and the action will not have an effect on listed salmonids.

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