

FINAL MEETING SUMMARY

**HANFORD ADVISORY BOARD
River and Plateau Committee Meeting
December 17, 2009
Richland, WA**

Topics in this Meeting Summary

Welcome and introductions 1
100 Area RI/FS Update..... 1
NRC – Part 61 Waste Classification Rulemaking & DOE – EM 435.1 5
Central Plateau Cleanup Completion Strategy – Issue Distillation 6
Follow-up from the Base Assumptions Committee of the Whole Meeting..... 9
Committee Business..... 9
Action Items / Commitments 12
Handouts 12
Attendees..... 12

This is only a summary of issues and actions in this meeting. It may not represent the fullness of ideas discussed or opinions given, and should not be used as a substitute for actual public involvement or public comment on any particular topic unless specifically identified as such.

Welcome and introductions

Pam Larson welcomed the committee and introductions were made. Pam said she still had some questions and needed some clarification on portions of the November River and Plateau (RAP) committee meeting summary. The committee decided to wait until January to approve the summary.

John Price, Washington State Department of Ecology (Ecology), gave a short update on the M-91 Milestone changes; Ecology and the U.S. Department of Energy – Richland Operations Office (DOE-RL) expect to move forward fairly quickly on the decision. John said more information will be available in January. Pam suggested putting this on the agenda for next month, and thanked John.

100 Area RI/FS Update

Greg Sinton, DOE – Richland Operations Office (RL) presented an update on the 100 Area Remedial Investigation/Feasibility Study (RI/FS) on behalf of Jim Hanson. He discussed the integrated 100 Area work plan and said that it is nearly final and that all issues had been resolved except for a consistency issue related to groundwater “beneficial use”. No other issues or comments were expected. The DH Area Addendum is essentially complete. This addendum includes a Sampling and Analysis Plan (SAP) for

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groundwater. A “mini -SAP” has been completed to allow RI sampling of existing wells to start. The K Area Addendum is complete and ready to be signed; the BC and F Area Addendums are currently being refined based on comments received. The N Area Draft A will be submitted for regulator comment at the end of December.

Greg said DOE received good input at the recent 100 BC Area Workshop. Greg provided an update on the proposed chromium treatability test, groundwater river upwelling, and utilized a handout with a map of the 100 BC Area as a reference. He pointed out the wells that have been installed and the additional wells proposed in this area. Concerns have been expressed to DOE about the treatability test, with input to either revamp the tests or implement a remove-treat-dispose strategy.

A river sampling location is being researched, with additional sampling scheduled in January. DOE collected groundwater samples from aquifer tubes in October and the results for chromium were in the range of 40 parts per billion (ppb); the results have been as high as 80 ppb, so the lower results were encouraging. DOE will determine if there is a need for another round of sampling in May; the RI/FS should be approved by then. Clusters of aquifer tubes are being added along the river to monitor that area. In new wells being installed groundwater samples are planned to be taken every five feet to obtain concentration depth profiles. There was not much contamination found near the first well, and the other near a chromium site (100-B-27) showed more contamination up to about the 35 ppb range. The contamination appeared at a location deeper than expected, but still was below the drinking water standard in these initial samples.

Regulator Perspectives

- Nina Menard, Washington State Department of Ecology (Ecology), said Ecology is almost ready to sign off on the plans discussed by Greg Sinton.
- Laura Buelow, Environmental Protection Agency (EPA), said the EPA is also ready to sign. She said EPA was pleased with the 100 BC Area workshop. The EPA still has concerns with the 100 BC Area; concerns which were supported by the U.S. Geological Survey (USGS). She passed the concerns on to DOE. DOE is looking at the different options, and there is a meeting this afternoon about the treatability tests.
- Laura said the 100 BC Area work plan will be reformatted based on comments received. The work plan was not simple to read, and it has been revamped to read more like an RI/FS work plan.
- Laura said that there is not an interim Record of Decision (ROD) for the 100-BC-5 (100-BC groundwater) operable unit; the DOE will not make a decision until after more characterization.
- Laura responded to Floyd Hodges’ question about sampling in the riverbed and said there were some groundwater upwelling locations with no contaminants detected. She referred to the map and gave an example of a sample that DOE took. Laura said that background samples of hexavalent chromium were not taken because it was agreed that any hexavalent chromium found could be linked back to Hanford. There is not naturally background of hexavalent chromium.

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Committee Discussion

- Dale Engstrom asked Greg Sinton if the well with the deep chromium contamination was the 7507 well on the handout of the 100 BC Area. Greg said he was referencing the 7505 well.
- Dale described how the 100 BC area RI/FS came out of a workshop, and he thought it would be valuable to the River and Plateau (RAP) Committee to bring up concerns about the RI/FS and show the progress that has been made. Dale said one of the main concerns within this topic are the results of the testing at the bottom of the river.
- Steve White asked if Greg could explain the nomenclature of the handout. Greg referred back to the handout and read from it to explain what the numbers and symbols mean; he explained which wells were which and how the wells are signified.
- Greg explained there are two wells that will be installed in the 100 BC Area, one is near the river which will be significant and the other is further from the river in the center of the map, which covers a large contamination site. Maynard Plahuta asked if the plumes shown on the handout overlap. Greg said there are three different plumes and explained that the colors on the map are referencing the type of contaminant and the concentration of that contaminant.
- Shelley Cimon asked Laura if there is a date for this 100 BC Area work. Laura said work is planned to start in the spring.
- Pam said she has been told the reason for strontium in the N Area was because of the trenches for cooling water. If this is case, then, why aren't there strontium plumes? Maynard said there are depressions in the trenches so not all the water went out. Greg explained where the trenches are on the handout, and where there was cooling water. Susan Leckband suggested to Greg that these handouts be made a little more understandable for lay people. Susan asked Greg if the handout represents the cleanup standard or the contamination level. Greg said the plume map is supposed to represent areas of contamination at some relevant level, such as the drinking water or other applicable standard.
- Floyd Hodges asked if the area on the map near the river represents the plume and said that it is uncharacterized. Laura said there will be more wells there, and that the map needs to be updated. There will be more characterization closer to the river. She said there was a meeting a week ago where these decisions were made.
- Floyd asked the source of the chromium. Laura said DOE is doing monthly to annual groundwater monitoring, but cannot be sure. She said one possibility is 100-C-7.
- Wade Riggsbee said it is interesting that the plume shown does not go out into the river, but there is upwelling in the data. There needs to be a way to address this in the RI/FS because the river is being impacted. Floyd said looking at the flow lines, there has to be contamination in the river. Wade said the river is not fully represented in the RI/FS, which was the purpose of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). However, politically the river has still been ignored. Wade said there are tracers and other evidence of contamination.

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- Steve asked about the nomenclature on the boreholes. Laura said the location of the boreholes is not clearly shown by the handout and clarified which borehole was which.
- Pam asked for clarification on the discharge pipes. Greg said the pipes have been taken out; he said the pipes are on the handout to show where the pipes used to be. Pam asked if the discharge pipes have all been removed. John said Ecology did a risk assessment and the removal was included in the exposure scenario. It was determined that people playing around the pipes would have doses up to 20 years. (See Footnote 1.)
- Dale thinks areas of the handout do not adequately reflect the likely extent of the chromium plume, once tidal influx is considered. He asked if it can be better defined. Laura said the new wells are set to define this better. Many of the new wells are place to try to determine where this chromium is coming from. She said the B4-8 groundwater well is below drinking water standard for chromium, but above the aquatic standard, and the DOE and EPA are looking at priorities based on characterization.
- Barbara Harper, Confederated Tribes of the Umatilla Indian Reservation (CTUIR), asked if there are any 3D projections to look at depth of the plumes. Laura said the remedial action report may be able to do that as the new wells have samples taken at different depths, creating depth profiles which might make 3D projections possible.
- Dale asked if depth interval sampling and then screening was done during the drilling. Laura said yes; for example, something like strontium 90 is screened at the top. She referenced the groundwater well B2-12 that can be seen as two dots on the handout. This well is screened down into the Ringold Upper Mud (RUM), whereas others are screened at the top. A new well will be installed and will be screened and the depth of the contaminants can be found.
- Pam asked what screening means. Wade explained to Pam screening is analyzing the type and amount of contaminants at different levels.
- Wade asked about the upwelling again; he pointed out that aquifers have different pathways that create a whole different contamination regime, making it a more complicated issue.
- Laura said that the wells currently being drilled are finding that there are different depths of chromium contamination and that the depth to the RUM was deeper than expected. She said DOE is updating the bathymetric maps in the work plan to clarify this point.
- Dale said when the river intersects the land, it is typical for a helical flow to go into the ground and back out. Secondly, he said the reason the river is so straight is due to old fault zones, this may not be recognized, and this is part of the reason the RUM is not as predictable.
- Floyd asked about sampling the river bed. Laura referred to the map to show how far into the river testing was done.

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NRC – Part 61 Waste Classification Rulemaking & DOE – EM 435.1

Shelley updated the committee on the rulemaking and said there will be a hearing on the process of blending, down-blending and reclassification for how waste is dispositioned. Shelley would like to get a representative from the Nuclear Regulatory Commission (NRC) at the April Site-Specific Advisory Board (SSAB) meeting at Oak Ridge, and that DOE headquarters is trying to get someone at the meeting as well. The waste classification refers to low-level waste, and there is discussion of reclassifying depleted uranium, which is a concern due to the human health hazard. Shelley said the U.S. does not track its waste, that it is not a national priority, and there is also an issue of waste from other countries coming into the US (e.g. from Italy to Utah). Congress is looking at making rules about this. Shelley thinks the rulemaking may change the definition of disposition. Shelley would like DOE to hold a public workshop in Richland on the potential rulemaking changes. As of now, the only public meeting will be held in the Maryland area.

Regulator Perspectives

- John said he is following this topic on Waste Classification Rulemaking, and that representatives from Ecology have gone to workshops. This is due to a raised awareness for depleted uranium, so he was not sure of the tie to the NRC. There will be workshops and public outreach efforts. He suggested Shelley talk with Larry Camper at NRC (Division of Waste Management and Environmental Protection).
- Craig Cameron, EPA, said the EPA has used some of these provisions for disposing of waste, only for very specific circumstances. He has talked to a variety of individuals at EPA headquarters and there is opposition to the process of blending. He said that EPA has sent letters to various states expressing dissatisfaction with some of their approaches to waste management and disposal that have involved blending.

Committee Discussion

- Sandra Lilligren asked if Shelley could help clarify who is involved in this and how. Shelley didn't have an answer at this time.
- Maynard asked Shelley if depleted uranium will be restricted. Shelley was not sure but said there is a large volume. Maynard asked if there is any indication of how much depleted uranium there is. John said the NRC is looking at site specific and individual scenarios to investigate how much is out there.
- Wade asked if this discussion on waste classification rulemaking and disposal is part of the HABs role. Wade said he felt this topic was better addressed at the State level. Susan Leckband referenced the intersection of this issue with Environmental Management (EM) and waste disposal. Wade said the topic also intersects with CERCLA. Wade said he sees a need for an intersection with CERCLA for uranium.
- Tom Carpenter said he has heard concern expressed from national groups about relaxing standards regarding waste classification during rulemaking. He said it may not be a good result for some people, and there has to be compliance with what the
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NRC proposed. Tom said DOE can adopt or ignore this, and if DOE is rewriting 435-1 this might be data DOE will look at.

- Gerry Pollet said he thinks this topic as it relates to the U.S. Ecology site is appropriately addressed by the HAB, as is a part of the Hanford permit. John asked if this was what DOE challenged in court. Gerry said yes and DOE settled.
- Vince Panesko (phone) said during the break he found some info he will email to Pam and Shelley on Part 61, and the ways DOE is looking at that.

Central Plateau Cleanup Completion Strategy (CPCS)– Issue Distillation

Pam Larsen introduced the issue managers who worked on the draft advice: Dale Engstrom, Wade Riggsbee, Maynard Plahuta and herself.

Dale framed the discussion. He said there were numerous DOE presentations on the CPCS at RAP meetings since Spring, followed by a presentation and breakout group discussion at the June HAB meeting, followed by a committee-of-the-whole (COTW) in October on this subject. In November, the HAB held a sounding board on the CPCS. Dale and the other issue managers distilled the key issues from all of the input and used them to develop the draft advice in front of the committee today. Dale emphasized that the committee has until February to prepare to bring this in front of the Board. The issue managers today are looking for questions and comments on the draft advice.

Regulator Perspectives

- John said there is a need for more discussion on presumptive remedies. Ecology found that in the federal arena, it is common to pick capping and potentially waste money on characterization, so this step is being skipped and landfills are being capped.
- Craig commented about the reference to the River Corridor approach and the outer area on the second page in the second paragraph (“using the River Corridor approach may not be adequate for the Outer Area”). He thinks the text implies that the River Corridor approach was inadequate. EPA does not agree and Craig suggested that this should be rewritten. He said that it is a good thing that the outer area will be cleaned up to be able to meet unrestricted use.
- John said Ecology is looking at comments on the CPCS; Ecology is concerned with impacts to the vadose zone, which is consistent with the advice.
- John said he thinks there is confusion on which document is being discussed in the draft advice. Ecology places more emphasis on Tri-Party Agreement (TPA) change packages than they do on the CPCS itself.
- Craig commented on the cumulative impacts and the baseline risk assessment. He thinks it is more important to focus on the impacts of the different remedies and cleanup levels.
- John agreed with Nick Ceto’s suggestion to have people with familiarity surrounding institutional controls (ICs) speak to the HAB. It would be beneficial to hear from other states as far as how this has been dealt with.

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Committee Discussion

- Pam asked about the reference to a “presumptive remedy.” Dale said it applies to landfills, and that the state of Washington does not require landfills to be dug up again for characterization.
- Gerry said he sent comments on this draft advice and asked the issue managers to incorporate it. Dale said he did not have time to incorporate the comments prior to the committee meeting. Gerry has a few issues with the draft advice. Gerry thought the advice should say more directly that landfill regulations are not appropriately applied to burial grounds. Gerry said characterization must occur and Washington State law calls for remove, treat and dispose (RTD), not a cap. He said this discussion should be pointing to the fact that institutional memory may be overlooked by DOE in areas such as the 100 Area landfill.
- He also has issues with the CPCS changing the exposure scenarios, and thinks the HAB’s concern needs to be more clearly stated in the draft advice. Washington State’s standards forbid use of an industrial exposure scenario where there is a reasonable prediction that future use will include anyone other than industrial site workers within buildings or on asphalt surfaces for more than forty hours per week, or where contamination will spread to adjoining unrestricted areas. He said DOE has not met the burden of showing that the entire 200 West and 200 East areas will meet this industrial scenario, as opposed to specific waste management areas. He said DOE proposes to utilize a new exposure scenario that would allow even more contamination to remain by assuming that the future site users for the entire inner Central Plateau area will be maintenance workers or an occasional intruder. This (unlikely) scenario would not meet Washington’s state standards.
- Gerry said that for the Inner area, there should be a corridor between 200 East and 200 West. Gerry sees it as a possible industrial area during cleanup. There will be a lot of activity; he does not want to say it as an open area. Gerry said the center of the U is considered to be part of the Outer area; Use in this area would be unrestricted. The band on the southern portion of the U labeled Inner Area is not proposed to be used by landfills and it is a important corridor for unrestricted use; it is going to be used by wildlife and it should be cleaned up and used as unrestricted.
- Nick said DOE has not made a decision on the 200 East and 200 West areas; that the CPCS is a strategy and DOE will go through CERCLA and solicit public input, before deciding how to treat these areas. Nick said that DOE is conceptually describing cleanup in the CPCS and that it is evolving; some of the actions described in the CPCS will not be implemented as described. Gerry said that he is responding to what DOE put on paper, and that this is what the draft advice must address, as well.
- Gerry said the Tank Closure and Waste Management EIS shows an impact on capping verses RTD. CERCLA does not do this analysis, so the EIS should be used as an example of the potential impacts. Gerry would like to see this recommendation included in the advice. Gerry said the advice says more units are needed, more specifically units on 200 East and 200 West which is different for cribs and trenches and this needs its own processes. His final point is that there needs to be a second
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visit to the impacts of the decisions after CERCLA. A lesson from the EIS is the total sum of the impact. Gerry said the agencies need to be advised to come back and look at that.

- Susan Leckband asked Gerry about cumulative impacts and how advice can be given from a cumulative standpoint when decisions are made so far in the future. Gerry said the site as a whole is supposed to meet this level not just the individual units.
- Dale said part of the CPCS is to create a large waste management area so the agencies can analyze the entire area for its impact, which is different from a cumulative impact. The HAB may want to advise that including all of 200 East or 200 West within this large waste management area is not ok, and that incremental decisions should be addressed through a cumulative effects analysis.
- John said this is important point. DOE originally proposed consolidating proposals for waste treatment into one decision to better show the total impacts. EPA and Ecology thought it would be too complicated to combine all these actions into one decision and that it would be difficult to get this through the public comment process. The other concern from EPA and Ecology is that nothing could move forward until the single decision for the entire area was made. He said it is important that the HAB give clear advice concerning the tradeoffs of describing the impacts collectively in one decision, or making more decisions and needing to track cumulative impacts as decisions are made.
- Gerry said the decisions need to be packaged together because to do otherwise will hide impacts. Maynard said if 80% of the decisions are completed, the impacts from the remaining 20% might affect the decisions that are made.
- Nick reiterated that DOE will be assessing risk on all of these sites, and is creating a communication tool that will identify these risks and how to describe the cumulative effects.
- Dick said it seems that there has to be some estimates made on cumulative risk for this to take form. He said a reasonable assessment of impacts can be made and summed. This may influence remediation. Dick recognizes that DOE cannot make defensible estimates, but could make them more for displaying the order of magnitude.
- Nick said Craig had a good observation about cumulative impacts and the base line risk assessment. He said DOE has taken the baseline as a platform; part of the issue is that the baseline has been used for more than what it was intended, which is part of the problem. Craig agreed. Barb said she has been a risk practitioner for 30 years, and agrees with Craig. She said this is a complex set of concepts. She said cumulative impacts will take more thought, using geospatial tools and there are other methods that can get this information that adding up risk numbers cannot. There is a need for more sophistication on how to do cumulative impacts.
- Floyd said capping is prevalent in the CPCS, and there is an over- reliance on ICs. He said the topic being discussed with these hazards is so big; he wants clarification on what that means for ICs. He talked about the half life of plutonium; he wants to see in the advice what period of time the ICs are.
- Nick suggested having people who have familiarity with ICs come in and talk about it for perspective. DOE is on new ground with most of this. Dale said the report put out

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two years ago says that ICs do not usually work; there are real problems with them. Nick said DOE is trying to minimize the use of ICs. John suggested going to places besides Bunker Hill to find potential people to come to the HAB to speak about ICs. Pam reminded the committee talked that there will be a presentation at the February HAB meeting regarding ICs.

- Gerry asked about reclassifying Resource Conservation & Recovery Act (RCRA) units to CERCLA units. He said RCRA is more prescriptive than CERCLA. He also asked if Ecology would give up their decision authority to EPA if the units were reclassified as CERCLA units. John said Ecology would continue to work on the now RCRA units and would not be giving up any decision authority, though EPA would have the lead in the analysis. Gerry said this needs more discussion and it needs to be commented on in the advice.
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- Wade said he thinks that decisions under CERCLA would lose their transparency, and opportunity for public input.
- Tom said there would be a loss of state jurisdiction, as well.
- Dale said he and the other issue managers will incorporate the comments of this RAP discussion into the next draft of the advice.

Follow-up from the Base Assumptions Committee of the Whole Meeting

Greg deBruler reviewed the outcomes of yesterday's COTW meeting. The issue managers will review the action items and see which might lead to advice and which might lead to other actionable items. The intent is not to combine the action items into one piece of advice, but to see what fits together and what should be treated separately.

Gerry thanked the issue managers for how well the COTW meeting went the previous day. Greg said that the preparation was well worth it and that it was a good meeting. It allowed people to get into the issues. Dale said the summary of the issues in the agenda was helpful and put things in perspective. Pam said having it in advance was great.

Committee Business

The committee briefly reviewed and refined the 6-month work plan, reserving any comprehensive review of this until the January meeting. The following are the topics for the upcoming 3 months (*italicized items are additional Board events*):

January

1. Discussion after this meeting revealed that the pipelines in the river in question are in fact still there.

- LTS/IC
 - Prep up February Board mtg
 - Set up For March workshop
- Multi-project teams – Integration
- CPCS advice
- M-91 update on negotiations
- Base Assumptions COTW advice
- Check priority list – How are we doing?

February

- U.S. Ecology site closure issues (What the relationship with Hanford and Board work?)
- RCRA permit
- K-Basin sludge update
- *ELI/EPA LTS Workshop for Board Meeting*
- *Burial Grounds Workshop (date TBD)*
- *Joint RAP/TWC Technical Meeting on TC&WM EIS (date TBD)*

March

- TPA Change Packages (M-15, M-91)
- Limited Landfill Update (incl. update on results from value engineering)
- River sampling status update, incl. Yakama sturgeon sampling
- *LTS COTW (March 3)*
- *HAB meeting (1 day) on TC&WM EIS advice (March 4)*

The committee identified the following framing questions and leads for the January Committee meeting:

LTS/IC

Framing:

- Prep for February Board meeting – What are the objectives and outcomes for the ELI/EPA presentation?
- Prep for March 3 workshop – What are the objectives and outcomes for this workshop?
- Gap analysis and results

Committee Leads: Bob Suyama, Doug Mercer

Agency Leads: Boyd Hathaway, Paula Call, John Price, Craig Cameron

Multi-project Teams

Framing:

- What do these teams involve?
- Who is involved?
- What topics are these teams addressing?

Committee Leads: Dale Engstrom, Wade Riggsbee

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Agency Leads: John Morse, Briant Charbonneau, John Price, Nina Menard, Dib Goswami, Craig Cameron, Janice Williams (CHPRC)

CPCS

Framing:

- Finalize the draft advice

Committee Leads: Dale Engstrom, Wade Riggsbee, Maynard Plahuta, Pam Larsen

Agency Leads: Matt McCormick, Briant Charbonneau, John Price, Rick Bonds, Craig Cameron

Base Assumptions Advice/Actionable Items

Framing:

- Review any draft advice
- Discuss other actionable items

Committee Leads: Greg deBruler, Dale Engstrom, Wade Riggsbee, Maynard Plahuta, Pam Larsen

Agency Leads: Paula Call, agency presenters from the COTW

Committee Report Card – Agency and Board Priorities

Framing:

- What is the committee's progress on the agency and Board priority lists?
- How does the committee plan to complete the remaining priority work?

Committee Leads: Pam Larsen, Maynard Plahuta

Agency Leads: N/A

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Action Items / Commitments

- Vince will send an email with information on NRC rulemaking to Pam and Shelley. Susan will forward this to the RAP Committee
- Issue managers will review the Base Assumptions COTW notes and prepare draft advice or other actionable items
- Pam will check with Richland on the conference line capability in the library meeting room (for potential for future RAP meetings)
- Susan will send the link to the 300 Area RI/FS to the Committee
- Susan will prepare and distribute conference line etiquette

Handouts

NOTE: Copies of meeting handouts can be obtained through the Hanford Advisory Board Administrator at (509) 942-1906, or tgilley@enviroissues.com

- Map of 100 BC Area, Greg Sinton DOE-RL, December 17, 2009
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Attendees

HAB Members and Alternates

Tom Carpenter (Phone)	Pam Larsen	Gerry Pollet
Shelley Cimon	Susan Leckband	Wade Riggsbee
Greg deBruler (Phone)	Sandra Lilligren	Dick Smith
Dale Engstrom	Vince Panesko (Phone)	Bob Suyama
Floyd Hodges	Maynard Plahuta	Dave Rowland
		Steve White

Others

Paula Call, DOE-RL (Phone)	Rick Bond, Ecology	Sonja Johnson, CHPRC
Nick Ceto, DOE-RL	Nina Menard, Ecology	Janice Williams, CHPRC
Greg Sinton, DOE-RL	John Price, Ecology	Barbara Harper, CTUIR
Margo Voogd, DOE	Ginger Wireman, Ecology	Dru Butler, MSA
	Laura Buelow, EPA	Barb Wise, MSA
	Craig Cameron, EPA	Mike Priddy, Washington State Department of Health
	Emy Laija, EPA	Ron Morrison,

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