Document #: DOE/RL-97-044, VOL 3

Revision #: 003

NOTE-TO-FILE

☐ **CANCELLED** - Document Number Cancelled

☐ **VOID** - Document Never Generated

☐ **SENSITIVE** – _____

☐ **DISTRIBUTION** - _____

☒ **OTHER** – SEE CCN 084314 FOR ADDITIONAL ERRATA SHEET CHANGES TO DOCUMENT

Form Docsopen #56544

mgl/1

DOE/RL-97-44
Rev. 3
Vol. 3

Richland Environmental Restoration Project Fiscal Year 2001-2003 Detailed Work Plan

Groundwater/Vadose Zone Integration Project

United States
Department of Energy

DOE/RL-97-44
Rev. 3
Vol. 3

Richland Environmental Restoration Project
Fiscal Year 2001-2003 Detailed Work Plan
Groundwater/Vadose Zone Integration Project

Richland
Operations
Office

DOE/RL-97-44
Vol. 3
Rev. 3
OU N/A
TSD: N/A
ERA: N/A

CONCURRENCE PAGE 1

Title: RICHLAND ENVIRONMENTAL RESTORATION PROJECT FISCAL YEAR 2001-2003 DETAILED WORK PLAN - GROUNDWATER/VADOSE ZONE INTEGRATION PROJECTS

Kelly Swan, Planning & Controls Manager, Projects, BHI

Kelly Swan — 9/12/00
Signature — Date

Brian Foley, Project Manager, DOE-RL

Brian J. Foley — 9/14/00
Signature — Date

Marvin Furman, Project Manager, DOE-RL

K. Michael Thompson for MF — 9/12/00
Signature — Date

Doug Hildebrand, Project Manager, DOE-RL

RD Hildebrand — 9-13-00
Signature — Date

Arlene Tortoso, Project Manager, DOE-RL

Arlene C. Tortoso — 9/13/00
Signature — Date

DOE/RL-97-44
Vol. 3
Rev. 3
OU N/A
TSD: N/A
ERA: N/A

CONCURRENCE PAGE 2

Title: RICHLAND ENVIRONMENTAL RESTORATION PROJECT FISCAL YEAR 2001-2003 DETAILED WORK PLAN - GROUNDWATER/VADOSE ZONE INTEGRATION PROJECTS

Mike Thompson, Project Manager, DOE-RL

K. Mark Thompson * 9/12/00

Signature Date

Michael Graham, Project Manager, BHI

Michael J. Graham 9/14/00

Signature Date

* Contingent on revision of GW/VZ Prjt. PI to reflect completion of 618-11 ^3H Investigations early in FY 2001.

DOE/RL-97-44
Rev. 3
Vol. 3

Richland Environmental Restoration Project Fiscal Year 2001-2003 Detailed Work Plan

Groundwater/Vadose Zone Integration Project

Date Published
September 2000

United States Department of Energy

P.O. Box 550, Richland, Washington 99352

TRADEMARK DISCLAIMER
Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof or its contractors or subcontractors.

This report has been reproduced from the best available copy.
Available in paper copy and microfiche.

Available for a processing fee to U.S. Department of Energy
and its contractors from:
U.S. Department of Energy
Office of Scientific and Technical Information
P.O. Box 62
Oak Ridge, TN 37831-0062
(865) 576-8401
fax: (865) 576-5728
email: reports@adonis.osti.gov
online ordering: http://www.doe.gov/bridge

Available for sale to the public, in paper, from:
U.S. Department of Commerce
National Technical Information Service
5285 Port Royal Road
Springfield, VA 22161
(800) 553-6847
fax: (703) 605.6900
email: orders@ntis.fedworld.gov
online ordering: http://www.ntis.gov/ordering.htm

Printed in the United States of America

DISCLM-5.CHP (11/99)

Page

AREA PROJECT DESCRIPTION 1-1

AREA TECHNICAL BASELINE 2-1

AREA SCHEDULE BASELINE 3-1

AREA COST/STAFF BASELINE 4-1

Groundwater/Vadose Zone Integration Project 5-1
200 Area Environmental Restoration Remedial Action 6-1
Groundwater Management Project 7-1

INTRODUCTION

This volume of the Detailed Work Plan (DWP) covers the Groundwater/Vadose Zone (GW/VZ) Integration Project. The project is unique in that it includes scope for the following three Program Baseline Summaries (PBSs):

- VZ-01 – Groundwater/Vadose Zone Integration
- ER-02 – 200 Area Remedial Action
- ER-08 – Groundwater Management.

The GW/VZ Integration Project also integrates and tracks several other projects associated with GW/VZ and Columbia River activities. These other projects are as follows:

- Tank Farms Vadose Characterization, which is part of PBS TW-04.

- Immobilized Low Activity Waste (ILAW) vadose zone characterization and performance assessment, which are part of PBS TW-09.

- Environmental Monitoring, which is part of PBS OT-01.

Each of these activities is tracked and included in the GW/VZ Integration Project's monthly report to the U.S. Department of Energy (DOE), Richland Operations Office (RL). For overall Hanford Site reporting, these activities are rolled up under their specific PBS.

While the information for all three PBSs has been pulled together in this volume, activities are presented such that individual PBSs can be distinguished.

DESCRIPTION

OBJECTIVE

The Hanford Site GW/VZ Integration Project (Integration Project) was established in 1997 to develop the technical capability and scientific information needed to perform site-wide assessments of the potential effects of Hanford Site soil and groundwater contaminants on human, economic, and ecological systems, as well as on local cultures. More specifically, the risk assessment methodologies, computer models, and data developed by the project will help inform and influence key decisions by regulators and DOE on the selection of clean-up goals and technologies.

The overall Integration Project mission will be accomplished over a long period of time, which is consistent with the schedule for implementing key remediation decisions. However, the project also provides vital near-term benefits to the Hanford Site by coordinating and focusing site characterization efforts, eliminating redundancies and overlaps, developing methods to evaluate risks and impacts on a broad scale, and putting key assessment information under site configuration control.

The Integration Project has adopted a mission that was framed through a series of meetings with regulators, Tribal Nations, stakeholders, and the State of Oregon. The mission focuses the project on developing a credible, technically-defensible assessment of the cumulative effects of Hanford Site wastes in order to provide risk information (public, environmental, and cultural/ socioeconomic) to inform and influence cleanup decisions. Incorporating the information that is supplied by the Integration Project into the cleanup decision process is a new, important, and fundamental evolution of DOE's management strategy for the Hanford Site.

TECHNICAL CONTENT

The following list provides a summary of the top-level objectives for the Integration Project. These are aligned with the overall Hanford Site vision.

1. System Assessment Capability (SAC) analysis of points of compliance and action levels for groundwater: by 2001.

2. Obtain regulatory agreements for river and plateau points of compliance and action levels for groundwater: by 2001.

3. The SAC will support regulatory risk analysis for the Hanford Site (Office of River Protection [ORP]and RL) Remediation Baseline: by 2004.

4. "Validation" of regulatory risk: by 2005.

5. Determine long-term actions for remediation of 100 Area groundwater: by 2006.

6. Complete the Science and Technology (S&T) Roadmap for remediation: by 2001.

7. Complete the operational groundwater model: by 2002.

8. Complete data and conceptual documentation: by 2003.

9. Complete the S&T Roadmap for monitoring (though ongoing monitoring): by 2003.

10. Complete S&T waste site inventory and vadose zone transport: by 2003.

11. Complete biological/ecological impact assessment for strontium and chromium: by 2004.

12. Complete S&T for the groundwater river interface: by 2004.

13. Support the Composite Analysis update: by 2004.

14. Complete the 200 Area "high risk" waste site assessment: by 2004.

15. Complete the tank farm vadose zone assessment: by 2004.

16. Support the *Comprehensive Environmental Response, Compensation, and Liability Act* (CERCLA) five-year review in 2005.

17. Design surface and subsurface barriers for interim actions (cribs, tank farms, etc.), to be complete by 2005.

18. Monitoring will have evolved to a state of the art system that will be designed to serve the Hanford Site through closure: by 2006.

19. Determine long term actions for remediation of 200 Area groundwater: TBD.

The following sections summarize the scope of the key endeavors, in accordance with the Integration Project's work breakdown structure (WBS).

Management and Integration

The Management and Integration scope includes technical reviews, public involvement, integration planning, and data configuration.

Technical Review

The technical review task includes the expert panel, associated sub-panels, the National Academy of Sciences (NAS), and project-specific reviews.

A technical expert panel has been established to address specific technical or management issues. The panel focuses on problem resolution and technical reviews. The purpose of the external panel is to provide DOE with technical observations and recommendations regarding the planning, execution, and interpretation of results from the Integration Project. The panel reports to RL. The expert panel operates through written procedures that address requirements, protocols, the timeliness of producing panel reports, and a formal recommendation and comment resolution tracking and response process. The expert panel has the ability to establish sub-panels that are comprised of experts who are focused on a specific technical topics, according to project needs.

Another process for independent review that is being pursued by the DOE is through the NAS. The DOE has requested that independent, external peer reviews be conducted by the NAS on a periodic basis. These reviews will be coordinated with the expert panel, and conducted to avoid conflicts of interest (or any bias) potentially associated with conclusions and recommendations. In accordance with NAS standards, this review will be made by highly qualified technical experts.

The Hanford Site projects utilize various forms of internal technical and peer review to ensure quality and technically sound products. The reviews associated with groundwater and vadose zones activities will be coordinated with the Integration Project to ensure efficient use of resources (and results) that address the overall needs of the Hanford Site.

Public Involvement

The Public Involvement (PI) effort supports effective and real-time project participation, as well as involvement by all interested audiences. There are various ways of communicating with and participating in the progress of the Integration Project. Effective dialogue between the Integration Project team and interested audiences will communicate issues, values, and concerns that affect decision-making processes. These methods include the following:

Tribal Governments: Direct discussions and involvement on an informal basis will be offered and conducted upon request, and/or based on project needs. Consultations, including a more formal interface with Tribal Governments, will be conducted in conjunction with the RL Office of External Affairs (OEA).

Hanford Advisory Board (HAB): Information will be provided to the HAB's Environmental Restoration (ER) Committee and PI Committee. The ER Committee will determine when project information should be presented to the full board, and if draft advice should be presented to the full board. The Integration Project Team will provide the ER Committee with current status information at their monthly meetings. Updated status information will be provided to the PI Committee at the Tri-Party Agreement Quarterly PI planning meetings.

One-on-Ones: These are individual discussions held with interested audiences.

Media Relations: Regional communication of specific information will be made to general audiences through the media. The use of press releases, media availability, interviews, and other communication methods and mechanisms will be employed to meet communication and project goals.

Project Team Meetings: Project team meetings will be held routinely to facilitate a detailed dialogue. Meetings will be held at regular intervals, and will be open to all interested audiences. Meeting notes will be distributed to the mailing list.

Integration Planning

The Integration Planning task consists of a series of activities that provide overall documentation, integration planning, and system engineering for the GW/VZ Integration Project.

This task provides for the development and update of project documentation, the Project Description, the Project Baseline, the Long Range Plan (LRP), and the DWP.

Relative to project integration, this task integrates with DOE, Fluor Hanford (FH), and Pacific Northwest National Laboratory (PNNL) strategic planning for the Hanford Site, Hanford Site systems engineering, and strategic issues. This task also supports customer and regulatory interfaces through the Regulatory and Policy Working Groups.

Data Configuration

This task provides for the planning, development, administration, and maintenance of the configuration controls necessary to support the GW/VZ Integration Project. Existing databases, protocols, procedures, and guidelines are reviewed, modified, and (if needed) created to support the project's mission. Project position papers will be authored to maintain the project's position on various topics (e.g., data qualification). Management and integration (configuration control) will also interface with the core projects, Hanford Site contractors/subcontractors, stakeholders, and regulators to ensure that controls that are put in place will lead to acceptable and defensible RL conclusions/recommendations that support the overall cleanup mission.

Four tasks have been defined to build the GW/VZ Integration Project configuration control system. They are as follows:

Quality Assurance (QA): The goal of the this activity is to establish the controls necessary to ensure that traceable, transparent, reviewed, reproducible, and retrievable (T_2R_3) data, documents and/or information are supplied, evaluated, and produced by the GW/VZ Integration Project, and by the core projects and site contractors/subcontractors. To meet this goal, configuration control will adopt, establish, implement, and administer project-specific GW/VZ QA protocols. The QA protocols will not duplicate or recreate what is already in-place, as stated in the Bechtel Hanford Inc. (BHI) general QA plan, in the approved QA Plans for teaming partners, core projects, or site contractors/subcontractors.

Management Protocol: Configuration control will evaluate the protocols/procedures/ guidelines that are presently written and in-place (e.g., BHI, PNNL, FH, core projects or contractors/ subcontractors) to determine their applicability to achieving the stated mission of the GW/VZ Integration Project. Whenever possible, protocols that exist will be adopted and used with minor revision and/or modification and applied to the GW/VZ Integration Project. In some cases, however, it has already been determined that the needed protocols have not been written or developed.

Configuration Control Database(s): Several relational databases are needed to support the GW/VZ Integration Project. These databases will be controlled, maintained, and administered under the configuration control activity. The databases serve three primary purposes:

- Definition and maintenance of the GW/VZ Integration Project's position on technical and non-technical issues and activities.
- Allowing stakeholders, site, and project participant access to official, project positions.
- Ensuring that data/parameters/electronic deliverables are consistent and of high quality.

Various types of information (e.g., stakeholder issues, features, events, and processes [FEPs]) input/output, reduced/interpreted data, qualified core project data and information) will be under configuration control and will be included in these databases.

Internet-Based Virtual Library: The functions and activities conducted and performed by the GW/VZ Integration Project lend themselves to building a Hanford Site web-based public virtual library that is under configuration control. The purpose of the library will be to make all information (e.g., maps, illustrations, data, databases, documents, and protocols) easily and readily available to RL personnel, core projects, site contractors/subcontractors, stakeholders, regulators and the public. The library will provide ties to important data, databases, models, and documents.

Characterization of Systems: The focus of this activity is to coordinate and optimize GW/VZ and Columbia River characterization, data collection, and interpretation. The basis for this activity is that data must be available when needed, and the data must be maintained and used in a consistent and technically defensible manner.

The Integration Project, through the characterization of systems task, must effectively manage interfaces with other site projects that either directly or indirectly utilize or provide information relative to the GW/VZ and Columbia River. The Hanford Site projects that interface with the Integration Project are listed in Table 1-1.

Table 1-1. Key Interfaces with the Integration Project.

Responsible Project	Activity
Office of River Protection	Immobilized Low Activity Waste
Office of River Protection	Tank Farms Vadose Zone Characterization
Waste Management	Solid Waste Management
Environmental Restoration	Groundwater Monitoring and Modeling
Environmental Restoration	Well Installation
Environmental Restoration	Vadose Zone Monitoring
Environmental Restoration	Groundwater Remedial Actions
Environmental Restoration	100/200/300 Area Remedial Actions and Assessments
Environmental Assurance Policy and Permits	Environmental Monitoring (Columbia River)

Characterization of systems consists of a series of activities that accomplish the following:

- Capture and integrate technical knowledge by evaluating FEPs.
- Disposition of technical issues.
- Communicate technical knowledge through revised site conceptual models.
- Integrate field characterization and assessment modeling activities across site projects.

Performance of the first three listed activities will result in the development of consistent and integrated system-level conceptual models of the Hanford Site, which include the key technical elements of inventory, vadose zone, groundwater, the Columbia River, and biological systems. A conceptual model is a description of the natural system that is supported through documented evaluations of pertinent FEPs. Models will be developed that address both regional (far field) and local (near field) scales.

Implementation of the last activity results in the coordination and integration of Hanford Site vadose zone, groundwater, and Columbia River field characterization work to ensure that data collection is being optimized. Performance of this task will result in the development of a consolidated schedule (and actions) for efficient field characterization that accomplish the following:

- Consolidate field characterization needs for core projects, S&T, and the SAC.
- Evaluate the sequencing of the needs.

- Identify planned field work that will (or could) meet data needs.
- Actively facilitate the inclusion of priority work scope into field activities.

The primary method of connecting data needs to field activities involves participation in data quality objective (DQO) planning sessions.

The last activity also ensures that there is a forum to integrate the projects that perform numerical modeling to support impact assessments.

System Assessment Capability: The SAC is comprised of a set of quantitative (e.g., numerical models and data) and qualitative (e.g., rules on cultural values) tools and information that will be used to assess Hanford Site cumulative impacts on water resources, living systems, cultures, and regional economics. A key element of the systems being assessed is the Columbia River. The results of this cumulative impact assessment will allow site-specific cleanup decisions and disposal authorizations to be made in the context of overall Hanford Site impacts on the region. The SAC will also provide useful information for making such site operational decisions as cleanup prioritization, funding allocation, and the need for additional data. In the long term, the SAC will provide important information supporting Hanford Site closure decisions.

The SAC will be improved through iterative cycles until users are satisfied that it provides sufficiently complete and defensible impact assessments of the Hanford Site. Assessments completed through the SAC will address future impacts of waste remedial action and disposal in the near-river region of the 100 and 300 Areas, and in the Central Plateau region of the 200 Areas. The SAC will address a broad range of human health, ecological, cultural, and economic risks and impacts. These impact assessments will seek to quantify and otherwise describe site-wide system impacts, and will provide estimates of water quality in the groundwater system and in the Columbia River adjacent to and downstream of the site.

The SAC will continue to be developed through an open process that provides for regulator, Tribal Nation, and stakeholder input. The SAC staff will meet with regulators, Tribal Nations, and stakeholders to exchange information. The open project meetings will be used to provide progress updates. Based on the expectations for the SAC, S&T needs and core project support expectations will also be identified. Two important aspects of the analysis will include understanding the uncertainty in the initial assessments results, and the approach to the risk and impact assessment.

Science and Technology: The Integration Project recognizes that there are gaps in the Hanford Site's knowledge and data for the following technical elements: inventory vadose zone, groundwater, river, risk, monitoring, and remedial options. Information and data concerning these technical elements are required to adequately predict the movement of contaminants in the subsurface and surface environments, and to subsequently design and monitor remedial options.

The objective of the S&T endeavor is to provide the understanding, knowledge, data, tools, and methodologies that come out of an applied research approach that is not available from individual projects. The information developed by the S&T effort will be provided to projects (and to the SAC) to help inform and influence remediation and closure decisions at the Hanford Site.

The scope of the S&T program encompasses the inventory, vadose zone, groundwater, Columbia River and risk technical elements, which are needed to describe the controlling features and processes in each of these environmental settings. Physical, chemical, and biological features, events, and processes are all considered.

200 Area Remedial Action Project Technical Content (RL-ER02)

The objective of the 200 Area Remedial Action Project effort is to complete the cleanup of soil-contaminated sites (non-tank farm related) consistent with the 200 Area RI/FS Implementation Plan, Tri-Party Agreement milestones, and site-wide planning outcomes for the Central Plateau.

Technical Content

CERCLA and *Resource Conservation and Recovery Act* (RCRA) assessment activities will be performed for the 200-CW-1 Gable/B Pond and Ditches Cooling Water Group, to include preparation of an RI report (summarizing the field characterization results) and a feasibility study (FS) report (with a RCRA treatment, storage, and disposal [TSD] closure plan), and preparation of a proposed plan and proposed RCRA permit modification.

CERCLA and RCRA assessment activities will be performed for the 200-PW-2 Uranium-Rich Process Waste Group, including preparation of an remedial investigation (RI)/FS work plan, and a TSD unit sampling plan that defines the remedial investigation program and field characterization activities.

Continue 200-BP-1 Hanford Prototype Barrier long-term performance monitoring.

CERCLA and RCRA assessment activities will be performed for the 200-CS-1 Chemical Sewer Group, including field characterization.

CERCLA assessment activities will be performed for the 200-TW-1 Scavenged Waste Group, including finalizing an RI/FS work plan that defines the remedial investigation program and performing field characterization.

CERCLA assessment activities will be performed for the 200-TW-2 Tank Waste Group, including finalizing of an RI/FS work plan defining the remedial investigation program and performing field characterization.

CERCLA assessment activities will be performed for the 200-PW-1 Plutonium/Organic-Rich Process Waste Group, including preparation of an RI/FS work plan that defines the remedial investigation program. (Pending approval of a Tri-Party Agreement change package.)

200 Area site-wide activities will also be performed, including project integration, waste site reclassification (WIDS update), and general support. Initiate activities and planning to support a CERCLA-based full-scale treatability test of a modified RCRA C surface barrier on a waste site(s) in the 200 Area. These activities will initially be based on recommendations from the 200-BP-1 Treatability Test Report for the Hanford Barrier. Activities include evaluating borrow sources for fine-grained soil and issuing a report of results.

Current funding is not sufficient to meet all Tri-Party Agreement milestone requirements and to achieve planning goals for the Central Plateau for the 200 Area Remedial Action Project. An additional authorization section is included in the DWP that identifies the 200 Area

supplemental work scope necessary to meet Tri-Party Agreement compliance and to come to remedial decisions for the Central Plateau.

Groundwater Management Project Technical Content (RL-ER08)

The Hanford Site consolidated Groundwater Management Project has the overall goals of 1) focusing on remediation of groundwater; and 2) long-term protection of groundwater resources. The consolidated groundwater management activity provides an integrated and site-wide evaluation of groundwater quality at the Hanford Site, along with assessments of the potential offsite impacts of RL operations. Through implementation of the Hanford Site-Wide Groundwater Remediation Strategy, in accordance with the Hanford Past-Practice Strategy, a pathway for performing accelerated interim remedial measures (IRMs) for selected contaminant plumes is being accomplished. This strategy contains the spread and/or reduces the mass of major groundwater contamination plumes. This project is a core project within the GW/VZ Integrated Project Team, to ensure the necessary coordination of activities to support site-wide remediation issues.

With the exception of one in situ treatment barrier, located in the 100 Areas, remediation of contaminated groundwater generally consists of groundwater extraction, surface treatment, and re-injection to the aquifer. Remediation of soil contamination using soil vapor extraction is also included within this scope. Process activities will be performed in order to evaluate system efficiency and aquifer response. The PNNL Groundwater Monitoring Project activities consist of monitoring network design, sample collection, sample analysis, hydrologic characterization, data evaluation, and reporting for RCRA, CERCLA, site-wide, and operational activities. Seismic monitoring, vadose monitoring, and groundwater modeling also reside in the PNNL Groundwater Monitoring Project. Well installation, well maintenance, and well abandonment are included in the Groundwater Management Project. The Groundwater Remediation Project is separated into three major areas: 100 Area Groundwater, 200 Area Groundwater, and Hanford Site Groundwater Management.

100 Area Groundwater Operable Units

The 100 Area is located in the northern portion of the Hanford Site, and includes nine nuclear reactors previously used for plutonium production. These reactors are grouped into six reactor areas, which are listed in order of upstream to downstream location: 100 B/C, 100 K, 100 N, 100 D, 100 H, and 100 F. Five groundwater operable units (OUs) are designated for these areas: 100-BC-5, 100-KR-4, 100-NR-2, 100-HR-3, and 100-FR-3. Groundwater in the 100 D Area is consolidated with the 100-HR-3 OU. The 100-BC-5 and 100-FR-3 groundwater OUs are managed under Hanford Site Groundwater Management. Primary sources of contamination are cribs, french drains, trenches, ponds, retention basins, pipelines, and waste disposal sites. Principal contaminant plumes include strontium, tritium, chromium, and nitrate from the historical effluent discharges.

Operable Unit 100-BC-5

The work plan for 100-BC-5 was approved in August 1992. The limited field investigation (LFI) included the installation and sampling of ten additional groundwater-monitoring wells. The LFI report and associated qualitative risk assessment (QRA) were completed in August 1993. Although groundwater contaminants are present, the LFI indicated that an interim remedial action was not warranted for this groundwater OU, because the contaminants are limited in distribution, and are of relatively low concentration and/or low mobility. A focused feasibility

study (FFS) and focus sheet were completed and submitted to the regulators in October 1994, and were completed in October 1995. The focus sheet recommended removal of the OU from the IRM pathway, and continued monitoring and evaluation to maintain a technical baseline that supports the final record of decision (ROD).

Operable Unit 100-FR-3

The work plan for 100-FR-3 was approved in 1992. The LFI included the installation and sampling of 13 groundwater-monitoring wells. The LFI report and associated QRA were completed in October 1994. Groundwater contamination is present, but concentrations are such that risks to human health are not unacceptable (based on an occasional use scenario). However, contaminants exceed applicable or relevant and appropriate requirement (ARAR) levels. Therefore, the 100-FR-3 OU should remain on the IRM pathway, but remedial actions should be coordinated with overlying source OUs. A trichloroethylene (TCE) investigation was conducted during the summer 1995, and an FFS and focus sheet were prepared and submitted in 1995. The focus sheet recommended removal of the OU from the IRM pathway, and continued monitoring and evaluation to maintain a technical baseline that supports the final ROD. Monitoring activities are included in Hanford Site Groundwater Management.

Operable Unit 100-HR-3

The work plan for 100-HR-3, which includes the 100-D/DR and 100-H Areas, and the adjacent 600 Area, was approved in September 1992. The LFI included installation of 12 new wells at 100-D/DR; seven new wells at 100-H; and three new wells in the 600 Area (between 100-D/DR and 100-H). An LFI report, including the results of a QRA, was completed in September 1994. The report did not recommend an IRM for any of the three areas for human health risk. Chromium was identified as a contaminant of concern for ecological receptors in the river. A FFS and proposed plan (PP) were completed in August 1995. The PP recommended a pump-and-treat IRM to address chromium movement with groundwater into the Columbia River. An interim ROD for the 100-HR-3 and 100-KR-4 OUs was issued in April 1996. The ROD specifies installation of a pump-and-treat system in 100-HR-3 to intercept the portions of the chromium plumes that impact the Columbia River. The objective of the IRM is protection of ecological receptors in the river substrate from exposure to hexavalent chromium. Construction was completed June 1997, followed by operation of the 100-HR-3 pump and treat system. In fiscal year 1998 (FY98) TC-99 contamination was observed in the treatment system, resulting in handling the resin as a mixed waste. As a waste minimization activity, the treatment train was split from 100 D (non-contaminated) from the 100 H Area. An innovative technology, In Situ Redox Manipulation (ISRM), was demonstrated in FY98, FY99, and FY00. A ROD amendment was issued to deploy the ISRM technology through FY00-FY03.

Operable Unit 100-KR-4

The work plan for 100-KR-4 was approved in September 1992. The LFI included the installation and sampling of seven new groundwater monitoring wells. An LFI report, including the results of a QRA, was completed in July 1994. The report concluded that an IRM was not warranted, based on human health risk, but IRMs could be justified for ecological concerns related to chromium. An FFS and PP were completed in September 1995. The PP recommends a pump-and-treat IRM to address chromium movement with groundwater into the Columbia River. The interim ROD for the 100-HR-3 and 100-KR-4 OUs was issued in April 1996. The ROD specifies installation of a pump-and-treat system in the 100-KR-4 Area to intercept the portions of the chromium plumes that impact the Columbia River. The objective of the IRM is protection

of ecological receptors in the river substrate from exposure to hexavalent chromium. Construction of the 100-KR-4 pump-and-treat system was completed in September 1997. Operations began in October 1998.

Operable Unit 100-NR-2

The 100-NR-2 OU entails the groundwater beneath the 100-NR-1 OU. In 1994 an engineering evaluation/cost analysis for an expedited response action was prepared for consideration by the regulatory agencies. In September 1994 an action memorandum was issued for (1) design and implementation of a pump and treat system; and (2) installation of a sheet pile barrier. The pump and treat system initiated operations in September 1995, and was modified for increased processing capacity in FY97. The system continues to operate at a nominal 60 gpm, with zeolite change out occurring on approximately a 30-day cycle. The sheet pile barrier was abandoned after tests concluded the piles could not be driven into the ground. The LFI reports and QRAs for the NR-1/2 OUs were completed in 1995. The corrective measures study reports were completed during FY97. QRAs for the OUs were completed in 1995. An interim ROD (Interim Remedial Action Record Decision (ROD) for the 100-NR-1 and 100-NR-2 Operable Units of the Hanford 100 N Area) was issued on October 7, 1999. The ROD addresses contaminated soil sites in the 100 N Area, the Shoreline site (N Springs), and the groundwater beneath the 100 N Area. The selected remedy specified in the ROD is to continue pump and treat operations.

Hanford Site Groundwater Management

Operable Unit - Groundwater Monitoring

Contamination of soils and groundwater beneath the Hanford Site has resulted from waste management and disposal practices associated with 50 years of plutonium production, fuel processing, and fuel fabrication. RL has been assigned with environmental restoration responsibilities for the Hanford Site, and has focused activities on remediation of soil and groundwater, long-term monitoring and assessment of the nature, extent, offsite impacts of groundwater contamination, and evaluation of the movement of contaminants in the soil column to groundwater. Soil remediation and soil characterization for remediation activities are performed by the Remedial Action Project. Long-term and remedial action groundwater monitoring, long-term soil monitoring, groundwater modeling, and seismic monitoring are all performed under Hanford Site Groundwater Management Project.

Waste disposal sites that contributed to the majority of Hanford Site soil and groundwater contamination were located in proximity to each other in various operational areas. The 100 Area is located in the northern portion of the Hanford Site, and includes nine nuclear reactors previously used for plutonium production. These reactors are grouped into six reactor areas, which are listed in order of upstream to downstream location: 100 B/C, 100 K, 100 N, 100 D, 100 H, and 100 F. Five groundwater OUs were designated under the CERCLA process for characterization possible remedial actions: 100-BC-5, 100-KR-4, 100-NR-2, 100-HR-3, and 100-FR-3. Three OUs (100-KR-4, 100-NR-2, and 100-HR-3) have IRMs (pump-and-treat systems) that are operating. The two remaining OUs were incorporated into the long-term monitoring of groundwater contamination in FY98. Six RCRA facilities are located in the 100 Area (1301-N, 1325-N, 1324-N/NA, 120-D-1, and 183-H). Of particular concern in the 100 Area is the proximity of the Columbia River. Groundwater in the 100 Area ultimately discharges to the Columbia River. Principal contaminant plumes in the 100 Areas include strontium-90, tritium, chromium, and nitrate. The most significant contaminants are chromium

and strontium-90. Chromium is toxic to aquatic organisms, and strontium-90 is a human health risk at concentrations found in portions of the groundwater plumes.

The 200 Areas, which are located near the center of the Hanford Site, encompass the 200 West and East Areas that contain facilities for reactor fuel processing and waste management. Four groundwater OUs are designated for the 200 Areas: 200-UP-1 and 200-ZP-1 in the 200 West Area; and 200-BP-5 and 200-PO-1 in the 200 East Area. Principal groundwater contaminant plumes in the 200 Areas include uranium and technetium (200-UP-1), carbon tetrachloride (200-ZP-1), plutonium, strontium, cobalt, and technetium (two plumes, 200-BP-5), and tritium and iodine (200-PO-1). Initial work for 200-BP-5 and 200-PO-1 was completed in FY97, and monitoring requirements for these two OUs are incorporated into the long-term monitoring network in FY98. Pump-and-treat operations are being performed at 200-UP-1 and 200-ZP-1. 19 RCRA facilities are located in the 200 Areas (216-S-10, 216-U-12, along with seven single-shell tank farms, four low-level burial grounds, 216-A-10, 216-A-36B, 216-A-37-1, 216-A-29, 216-B-3 pond, and 216-B-63). The purgewater TSD is managed within this scope until the TSD can be closed.

The largest portion in the areal extent of the Hanford Site that requires groundwater monitoring is classified as the 600 Area. Very few waste sources are present in the 600 Area, but there are large-scale contaminant plumes (e.g., 200-PO-1, tritium, iodine-129, and nitrate) that are sourced from waste disposal areas that require monitoring.

The 300 Area is located in the southeast corner of the Hanford Site. The area was initially constructed as a fuels fabrication complex; later, research and development facilities were added. The 300-FF-5 OU underlies the 300 Area. Principal contaminants of concern are cis-1, 2-dichloroethene, trichloroethene, and uranium. An interim ROD has been issued for the 300-FF-5, which requires long-term monitoring and assessment. One RCRA facility is located in the 300 Area (300 Area process trenches).

The 1100 Area is located on the southern border of the Hanford Site. A number of vehicle maintenance, office, and construction wastes (including drums of organic liquids) were disposed in this area. The 1100-EM-1 groundwater OU underlies the waste sites in this area. A final ROD was issued for the OU in September 1993, which requires long-term monitoring and assessment for a TCE plume. No RCRA facilities exist in this area.

Integrating activities, in addition to the groundwater monitoring and evaluation, which are of technical importance include the development and maintenance of a Hanford Site standard groundwater model, seismic monitoring and interpretation, and vadose zone monitoring. The Hanford Site groundwater model is to be developed as a collaborative effort between RL, contractors, regulators, Tribal Nation representatives, and stakeholders. Well drilling, maintenance, remediation, and abandonment are also within the scope of the Groundwater Management, to ensure the integrity of monitoring activities.

100-NPL Common

This activity supports the RCRA, CERCLA, and RL processes associated with management planning and evaluation of human health/environmental risks derived from past and current activities at the Hanford Site, which have impacted (or may impact) groundwater and the Columbia River.

200 Area Groundwater Operable Units

The 200 Area, located near the center of the Hanford Site, encompasses the 200 West and East Areas that contain reactor fuel processing and waste management facilities. Four groundwater OUs are designated for the 200 Areas: 200-UP-1 and 200-ZP-1 in the 200 West Area, and 200-BP-5 and 200-PO-1 in the 200 East Area. Primary sources of contamination were liquid waste disposal structures (e.g., cribs, trenches, and ponds). One source OU (200-ZP-2, in the 200 West Area) has been included in the Groundwater Remediation Project. Remediation strategies for waste sites associated with discharges from the Z Plant will require coordination between 200-ZP-1 and 200-ZP-2. Monitoring activities for 200-BP-5 and 200-PO-1 OUs are included within Hanford Site Groundwater Management. The 200-PO-1 OU contaminant plume(s) cover approximately 80-85 square miles.

200-UP-1 Operable Unit

The 200-UP-1 OU underlies the U Plant and S Plant aggregate areas, which are located in the southern half of the 200 West Area. The OU addresses the contamination identified in the aquifer soils and groundwater within its boundary. Over 25 contaminants are known to have exceeded drinking water standards in the OU. The highest priority contaminants include uranium, technetium, carbon tetrachloride, and nitrate. Pump and treat technology will be utilized to remediate these plumes. A treatability test was completed in FY95 to define the treatment technology. Initial system upgrades were completed in FY95. The system operated through February 1997. Treatment of groundwater was transferred to the ETF in March 1997. Minor electrical modifications were completed in July 1998 to isolated pump controls. The pilot scale system went through D&D in August 1998. Monitoring activities are included within Hanford Site Groundwater Management.

200-ZP-1 Operable Unit

The 200-ZP-1 OU underlies the Z Plant and T Plant aggregate areas, which are located in the northern half of the 200 West Area. The OU addresses the contamination identified in the aquifer soils, and in the groundwater within its boundary. The contaminants of concern are carbon tetrachloride, chloroform, and trichlorethylene. Contaminated groundwater is treated with an air-stripping unit, followed by vapor phase granular activated carbon (GAC) polishing. An interim ROD has been issued requiring remediation of the 2,000-3,000 ppb carbon tetrachloride plume northwest of Z Plant (excluding the T Plant plume). Remediation efforts will be completed in three phases. Phase I was initiated in FY94, and consists of a pilot-scale treatability test. Phase II upgrades, consisting of design, procurement, construction, and operation of a 150 gpm air-stripping system, were completed in FY96. Phase III included adding three new extraction wells and four new injection wells, and was completed in August 1997.

200-ZP-2 Operable Unit

The 200-ZP-2 source OU addresses contaminated soils associated with Z Plant operations. An expedited response action (ERA) is currently being performed to remove carbon tetrachloride from the vadose zone beneath the 200-ZP-2 OU. The remediation strategy for this response action is to obtain an industrial cleanup standard for vadose zone soils, as directed by the *Model Toxics Control Act* (MTCA). Three vapor extraction units were operated in FY97. Treatment systems and well field responses will be monitored and expanded (as appropriate). During FY97 all systems were turned off to conduct a rebound study.

Due to low CCl_4 concentration and rebound, remediation activities utilizing a single system were initiated in FY97. One transportable system will be operated in FY01.

WORK STATEMENT

Groundwater/Vadose Zone Integration Project Work Statement (ER-VZ01)

Management and Integration

FY01

Integration Planning

- Develop programmatic interface agreements between the Integration Project and other site projects. System Engineering will draw support from characterization and SAC development activities (as needed) to arrive at appropriate interface requirements.
- Set up and lead Regulatory Path Forward Work Group Meetings as needed.
- Develop required information to support the working group. Interface with the ongoing Hanford site strategic planning efforts and the HAB.
- Support detail work plan preparation.

Peer Review

- The GW/VZ Expert Panel provides broad oversight, including merit and technical reviews, of GW/VZ Project activities. One expert panel will be conducted.
- Subpanels of the GW/VZ Expert Panel provide technical or management reviews for the GW/VZ Project. Three subpanel meetings to be conducted.
- A National Academy of Sciences panel will focus on the science and technology component of the GW/VZ Project. One on-site panel meeting will be conducted.

Public Involvement

- Ensure that the project considers and reflects the values and input from regulatory agencies, the State of Oregon, Tribal Nations, and members of the public.
- Ensure the project communicates early and often, to allow maximum input in the project decision-making processes.

Data Configuration

- Provide traceable, transparent, reviewed, reproducible, and retrievable (T2R3) data and/or information from the GW/VZ Integration Project to aid in RL decision making.
- Adapt or modify existing configuration control systems, protocols, and databases (when possible) to avoid unnecessary expenditure of funds and duplication of resources.

- Establish the second stage of the Internet Based Virtual Library, which includes databases, documents (etc.) that are completed by or which support the GW/VZ Integration Project.

FY02

Integration Planning

- Provide GW/VZ Project documentation and planning tasks. Additionally, provide the primary interface for Hanford Site strategic planning.
- Implement a regulatory framework.
- Provide System Engineering support to the Integration Project.

Peer Review

- The GW/VZ Expert Panel provides broad oversight, including merit and technical reviews, for the GW/VZ Project. Two expert panels will be conducted.
- Subpanels of the GW/VZ Expert Panel provide technical or management reviews for the GW/VZ Project. Three meetings will be conducted.
- A National Academy of Sciences panel will focus on the science and technology component of the GW/VZ Project.

Public Involvement

- Ensure that the project considers and reflects the values and input from regulatory agencies, the State of Oregon, Tribal Nations, and members of the public.
- The Integration Project will communicate early and often to allow maximum input in project decision-making processes.

Data Configuration

- Provide traceable, transparent, reviewed, reproducible, and retrievable (T2R3) data and/or information from the GW/VZ Integration Project to aid in RL decision making.
- Maintain configuration control systems, protocols, and databases.
- Establish the third stage of the Internet Based Virtual Library, which includes databases, documents (etc.) that are completed by or support the GW/VZ Integration Project.

FY03

Integration Planning

- Provide GW/VZ Project documentation and planning tasks. Additionally, provide the primary interface for Hanford Site strategic planning.
- Implement a regulatory framework.
- Provide System Engineering support to the Integration Project.

Peer Review

- The GW/VZ Expert Panel provides broad oversight, including merit and technical reviews, for the GW/VZ Project. Two expert panels will be conducted.
- Subpanels of the GW/VZ Expert Panel provide technical or management reviews for the GW/VZ Project. Three meetings will be conducted.
- A National Academy of Sciences panel will focus on the science and technology component of the GW/VZ Project.

Public Involvement

- Ensure that the project considers and reflects the values and input from regulatory agencies, the State of Oregon, Tribal Nations, and members of the public.
- The Integration Project will communicate early and often to allow maximum input in the project decision-making processes.

Data Configuration

- Provide traceable, transparent, reviewed, reproducible, and retrievable (T2R3) data and/or information from the GW/VZ Integration Project to aid in DOE-RL decision making.
- Maintain configuration control systems, protocols, and databases.
- Maintain support of the Internet Based Virtual Library, which includes databases, documents (etc.) that are completed by or support the GW/VZ Integration Project.

Characterization of Systems

FY01

- Continue revision of conceptual models by technical elements and key interfaces.
- Resolve technical issues by evaluating relevant FEPs; prepare and document resolution and update technical issues database.
- Document site knowledge and conduct peer review of site knowledge.
- Incorporate new technical gaps and needs into a consolidated list of field characterization needs.
- Focus efforts on opportunities to improve site integration of characterization and numerical modeling.

FY02

- Revise site conceptual models.
- Provide input into the development of SAC Rev. 1 requirements development.

- Implement technical issue protocol (resolve technical issues, draft project positions, review and comment resolution, populate database, update internet with technical issue evaluations).
- Prepare and issue a draft data package for implementation of SAC (Rev. 1), which will include new characterization data.
- Document technical gaps and needs and partner with S&T and core projects to include these needs into work planning.
- Review and re-evaluate the list of field characterization needs.

FY03

- Update current state of knowledge and assessment specific application descriptive information on an as-needed basis.
- Add new HFEPs as they are identified through internal and external peer reviews, and through the technical management task.
- Implement a technical issue protocol (resolve technical issues, draft project positions, review and comment resolution, populate database, update internet with technical issue evaluations).
- Document technical gaps and needs and partner with S&T and core projects to include these needs into work planning.
- Review and re-evaluate the list of field characterization needs.

System Assessment Capability

FY01

- Complete historical matching case analysis and the required analysis for the initial assessment performed with the SAC (Rev. 0) capability.
- Complete analyses for risk and impact for the initial assessment performed with the SAC (Rev. 0) capability.
- Draft the SAC (Rev. 0) testing and evaluation report.

FY02

- Develop requirements for the SAC (Rev. 1) and related assessments. This will include ability to meet 2004 Composite Analysis requirements.
- Complete design document for SAC (Rev. 1).
- Assemble the SAC (Rev. 1).
- Assemble the data required to perform the initial assessment with SAC (Rev. 1).

FY03

- Complete testing of SAC (Rev. 1).
- Complete historical matching case analysis and the required analysis for the initial assessment with SAC (Rev. 1).

Science and Technology

FY01

- Develop mass-balanced estimates of soil waste site inventories.
- Complete laboratory and reactive transport modeling studies that "wrap around" S-SX tank farm characterization efforts and initiate studies at B-BX-BY and the Z-11 ditch.
- Conduct field experiments to investigate vadose zone transport phenomena under controlled conditions (inject concentrated salt tracer), and to evaluate advanced characterization technologies.
- Develop enhanced conceptual models of groundwater/river interactions to better understand migration of contaminants into the Columbia River.
- Conduct laboratory studies to quantify the kinetics of biological uptake and key contaminants for aquatic species and riparian vegetation, and to enhance existing toxicological models.
- Interface with the NAS.

FY02

- Revise the S&T plan and roadmap to include the remediation technical element, and to incorporate the NAS study results and results of SAC (Rev. 0).
- Complete mass-balance estimates of soil waste site inventories.
- Complete laboratory and reactive transport studies for the B-BX-BY tank farm and Z-11 ditch investigations, and initiate studies at T-TX-TY.
- Conduct field experiments to investigate vadose zone transport phenomena under controlled conditions (dilute tracer in deep sediments).
- Complete the conceptual and numerical models of groundwater/river interaction to estimate groundwater discharge to the Columbia River's ecosystem.
- Complete laboratory studies and model development for biological uptake for aquatic species and riparian vegetation.

FY03

- Revise the S&T roadmap to include the monitoring technical element.

- Complete laboratory and reactive transport studies for the T-TX-TY tank farm, and a scavenged waste site.
- Conduct field experiments to investigate vadose zone transport phenomena under controlled conditions (concentrated salt tracer in deep sediments).

200 Area Remedial Action Project Work Statement (RL-ER02)

(See Additional Authorization tab for further detail.)

Operable Unit 200-PX NPL Common

FY01

200-CW-1: Complete the RI report. Initiate the FS report and TSD closure plan.

200-PW-2: Complete the RI/FS work plan with TSD unit sampling plan.

200 Common: General support for 200 Area-wide activities.

FY02

200 Common: General support for 200 Area-wide activities.

FY03

200 Common: General support for 200 Area-wide activities.

Groundwater Management Project Work Statement (RL-ER08)

Operable Unit 100-HR-3

FY01

Chemical Treatment Ion Exchange: Treatment options include all activities and costs associated with procurement, construction, operation, maintenance, performance monitoring, and waste management of an ion exchange pump and treat system for 100-HR-3, which includes all those activities normally associated with the standard operation of an industrial wastewater treatment process. Trained personnel and specific procedures will be provided to operate the 100-HR-3 pump and treat system in a manner that conforms with the guidelines related to the operation of facilities at DOE sites.

Tasks include provision of manual labor for all activities normally associated with the standard maintenance of an industrial wastewater treatment process.

Performance sampling will be conducted in accordance with approved plans/documents for the extraction and injection wells, and the treatment system sample points. Sampling includes chemical and water table measurements (as necessary) for all wells. Performance monitoring includes sample preparation, sample management, data validation, data review, field data management, and final data management. A project-specific database will be maintained to aid in data analysis and reporting. Sampling plans will be updated to include revisions since startup.

Management will be provided for waste associated with the operation of the ion exchange system for the 100-HR-3 pump and treat system. Waste management support for spent resin and miscellaneous equipment includes waste labeling, routine surveillance, waste designation, coordination of waste shipments for regeneration/disposal, regeneration costs, disposal costs, disposal of process samples, waste profiling, and waste packaging/loading.

Operations include general engineering services, evaluating the need for upgrades, preparation of field change notices (FCNs) and document change notices (DCNs), updating the programmable logic controller (PLC) logic, chromium analyzer, process data evaluation, and closeout of the design process.

Chemical Treatment – In Situ Redox Manipulation

Tasks include those activities associated with the construction of 24 injection/withdrawal wells and four groundwater compliance monitoring wells..

Tasks include those activities associated with the implementation of the ISRM. This includes project management, manual/non-manual labor, and subcontract support. Provide trained personnel and specific procedures during ISRM operations implementation. Processes include injection, reaction, and withdrawal of chemicals and waste byproducts used to complete ISRM barrier installations.

Tasks include those activities associated with the maintenance of the ISRM barrier, including compliance wells.

Management will be provided for waste associated with the operation of the ISRM. Waste management includes the disposal of soil and groundwater, as needed, during well installations, chemical injection/withdrawal ISRM well operations, and miscellaneous waste disposal activities. Waste management support includes waste sampling and evaluations, profiling, labeling, disposal costs, and management.

Tasks include those activities associated with the use and maintenance of the site-specific ISRM evaporation pond to contain and evaporate well extraction water from ISRM emplacement activities.

Performance and compliance sampling and monitoring will be conducted in accordance with approved plans and documents. Sampling includes chemical and water table measurements for well installations, injection/withdrawal activities, waste management selection, and performance compliance objects. Performance and compliance monitoring includes sample preparation, sample analysis, sample management, data validation, data evaluation, field screening, and management.

Develop and distribute ISRM reports. The reports shall include data quarterly monitoring summaries, annual ISRM monitoring evaluations, annual installation summaries, and client and regulatory information requests, including off-project reviews.

FY02

Chemical Treatment Ion Exchange

Same as FY01.

Chemical Treatment – In Situ Redox Manipulation

Same as FY01.

FY03

Chemical Treatment Ion Exchange

Same as FY01.

Chemical Treatment – In Situ Redox Manipulation

Tasks include those activities associated with the maintenance of the ISRM barrier and compliance wells.

Tasks include those activities associated with the maintenance and closure of the site-specific ISRM evaporation pond used to contain and evaporate well extraction water from ISRM emplacement activities.

Performance and compliance sampling and monitoring will be conducted in accordance with approved plans and documents. Sampling includes chemical and water table measurements for well installations, injection/withdrawal activities, waste management selection, and performance compliance objects. Performance and compliance monitoring includes sample preparation, sample analysis, sample management, data validation, data evaluation, field screening, and management.

Develop and distribute ISRM reports. These reports shall include quarterly data monitoring summaries, annual ISRM monitoring evaluations, annual installation summaries, and client and regulatory information requests, including off-project reviews.

Operable Unit 100-KR-4

FY01

Chemical Treatment Ion Exchange: Treatment options include all activities and costs associated with the procurement, construction, operation, maintenance, performance monitoring, and waste management of an ion exchange pump and treat system for 100-KR-4, which includes all those activities normally associated with the standard operation of an industrial wastewater treatment process. Trained personnel and specific procedures will be provided to operate the 100-KR-4 pump and treat system in a manner that conforms with the guidelines related to the operation of facilities at DOE sites.

Tasks include provision of manual labor for all activities normally associated with the standard maintenance of an industrial wastewater treatment process.

Performance sampling will be conducted in accordance with approved plans/documents for the extraction and injection wells, and the treatment system sample points. Sampling includes chemical and water table measurements (as necessary) for all wells. Performance monitoring includes sample preparation, sample management, data validation, data review, field data management, and final data management. Sampling plans will be updated to include revisions since startup.

Management will be provided for waste associated with the operation of the ion exchange system for the 100-KR-4 pump and treat. Waste management support for spent resin and miscellaneous equipment shall include waste labeling, routine surveillance, waste designation, coordination of waste shipments for regeneration/disposal, regeneration costs, disposal costs, disposal of process samples, waste profiling, and waste packaging/loading.

Operations include general engineering services, evaluating the need for upgrades, preparation of FCNs and DCNs, updating the PLC logic, and process data evaluation.

FY02

Chemical Treatment Ion Exchange

Same as FY00.

FY03

Chemical Treatment Ion Exchange

Same as FY01.

Operable Unit 100-NR-2

FY01

Chemical Treatment Ion Adsorption: This task includes all activities normally associated with the operation of the treatment process, including project management and manual/non-manual field support. Trained personnel and specific procedures are provided to operate the 100-NR-2 pump and treat system in a manner that conforms with guidelines related to the operation of facilities at the Hanford Site.

Tasks include all labor (craft/non-manual) and supervision for all activities normally associated with the operation of a treatment process. This includes all industrial, hazardous, and radiological safety activities.

Performance sampling will be conducted in accordance with approved plans/documents for the extraction and injection wells and treatment system sampling points. Sampling includes chemical/radiological and water table measurements (as necessary). Performance monitoring includes sample preparation, analysis, sample management, data validation, data reviews, field data, and management. Hydraulic/chemical analysis of aquifer data is budgeted in Long-Term Monitoring. Performance monitoring will be performed in accordance with BHI-01165, N Springs Expedited Response Action Performance Monitoring Plan. The Remedial Design Report (RDR)/Remedial Action Work Plan (RAWP) is required to be completed in FY01.

Management will be provided for waste associated with operation and maintenance of the treatment system. Waste management support for spent clino resin and miscellaneous equipment shall include labeling, routine surveillance, waste designation, coordination of waste shipments for disposal to the ERDF, ETF, disposal costs, disposal of process samples, waste profiles, and packaging/loading.

FY02

Chemical Treatment Ion Adsorption

Same as FY01.

FY03

Chemical Treatment Ion Adsorption

Same as FY01.

100 Area Groundwater River Corridor Common

FY01

Project Support Costs: These costs include overall management and functional support for 100 Area operable unit remediation activities, including overall management of the project activities by task lead; functional group oversight, which includes technical review and oversight by functional groups; project meetings/miscellaneous, which include attendance at monthly project status meetings; Planning and Controls; project administration, clerical support, and project engineering support. Also included are development of the RDR/RAWPs and operation and maintenance (O&M) plans.

FY02

Project Support: Same as FY01, with the exception that the development of groundwater strategy documents and plan revisions will commence.

FY03

Project Support: Same as FY01, with the exception that the development of groundwater strategy documents and plan revisions will be completed.

Groundwater Management

FY01

Project Support Costs: This involves overall management and functional support for various activities, including overall management of project activities by task lead; functional group oversight, which includes technical review and oversight by functional groups; project meetings/miscellaneous, which include attendance at monthly project status meetings; Planning and Controls; project administration, clerical support, and project engineering support. It also includes overall project management for interim groundwater monitoring of OUs at 100-HR-3, 100-KR-4,100-NR-2, 200-ZP-1, 200-UP-1; long-term groundwater monitoring; seismic monitoring, groundwater well maintenance; database activities; decommissioning; groundwater modeling; and groundwater well installation.

Long-Term Monitoring: This consists of modutank operations and closure, groundwater, and seismic monitoring activities, along with the groundwater modeling necessary to support long-term landlord surveillance and maintenance responsibilities at the Hanford Site.

Groundwater conditions will be evaluated to meet regulatory requirements, agreements, and DOE orders. Seismic monitoring includes all activities to operate, maintain, and interpret data derived from a 41-station seismic and 6-station strong motion accelerometer arrays on the Hanford Site and nearby surrounding areas. Groundwater modeling focuses on the development of consensus conceptual and numerical models of Hanford Site geology, hydrology, and contaminant transport.

Well Maintenance, Remediation and Abandonment: Routine and non-routine well maintenance will be performed to support groundwater monitoring activities (e.g., head repair; removal, inspection, repair/replacement and reinstallation of sampling equipment; camera surveys; well cleaning; well development; and equipment retrieval/removal). Updates will be provided to the electronic database containing well construction information. Maintenance will be provided for well as-built diagrams, along with maintenance and updating of electronic well document files. In addition, Internet access to well information will be maintained and updated as necessary. Well decommissioning (abandonment) or remediation activities will be carried over from the FY00 work scope.

Interim Action Monitoring: This includes all activities and costs associated with planning, scheduling, collection, analysis, data management, and evaluation of routine groundwater samples for the 100-HR-3, 100-KR-4, 100-NR-2, 200-UP-1, 200-ZP-1, and 200-ZP-2 OUs. Monitoring planning is to be based on approved sampling plans or regulatory agreements. This activity includes performance of the management, planning, coordination, and implementation of maintenance on groundwater monitoring wells used for groundwater monitoring in the OU.

RCRA Monitoring Installation: This includes all drilling activities necessary to support drilling RCRA monitoring wells as agreed to by DOE and the Washington State Department of Ecology (Ecology).

FY02

Project Support Costs: Same as FY01.

Long-Term Monitoring: Same as FY01 (there may be some differences in deliverables).

Well Maintenance, Remediation, and Abandonment: Same as FY01.

Interim Action Monitoring: Same as FY01.

RCRA Well Installation: Same as FY01.

FY03

Project Support Costs: Same as FY01.

Long-Term Monitoring: Same as FY01 (there may be some differences in deliverables).

Well Maintenance, Remediation, and Abandonment: Same as FY01.

Interim Action Monitoring: Same as FY01.

RCRA Well Installation: Same as FY01.

Operable Unit 200-UP-1

FY01

Chemical Treatment: An extraction well will be maintained to operate at a minimum of 50 gpm and will be pumped to the Effluent Treatment Facility (ETF) for treatment. Waste management activities will be necessary to manage waste that does not meet ERDF WAC. One extraction well will be constructed.

FY02 and FY03

Groundwater monitoring and reporting are included under Interim Action Monitoring. No system operations are included.

Operable Unit 200-ZP-1

FY01

Physical Treatment: In accordance with the 200-ZP-1 Interim Record of Decision (IROD), 200-ZP-1 will concentrate on hydraulically containing the 2,000 to 3,000 ppb contour of a large VOC plume that is located northwest of the 234-5Z (Z Plant) complex. This includes operation of an air stripping pump and treat system. Treatment options include all activities and costs associated with procurement, construction, maintenance, performance monitoring, and waste management of an air stripping pump and treat system. The system will be operated by trained craft in a manner that conforms with the guidelines related to the operation of facilities at DOE sites. One extraction well will be constructed.

Operations include general engineering services, evaluating the need for upgrades, preparation of FCNs and DCNs, updating the PLC logic, and process data evaluation. Weekly reports will be provided for system availability of processed water, and for mass removal of contaminants.

FY02 and FY03

Physical Treatment: Same as FY01.

Operable Unit 200-ZP-2

FY 01

Physical Treatment: The passive system will be operated, including performance monitoring. Activities for dense nonaqueous phase liquid (DNAPL) investigation will be initiated.

FY02 and FY03

Physical Treatment: Same as FY01.

200 Area Groundwater Plateau Common

FY01

Project Support Costs: These costs include overall management and functional support for the 200 Area operable unit remediation activities, including overall management of the project activities by task lead; functional group oversight, which includes technical review and oversight by functional groups; project meetings/miscellaneous, which include attendance at monthly project status meetings; Planning and Controls; project administration, clerical support, and project engineering support.

FY02 and FY03

Project Support: Same as FY01.

PROJECT ASSUMPTIONS

Groundwater/Vadose Zone Integration Project Assumptions (RL-VZ01)

- Funding mechanisms will remain unchanged from FY00.
- A new contracting strategy will not change the reporting requirements for the core projects.
- No budget allowance has been included to support changes associated with Phase II Budget Update Guidance for the ER baseline update. Guidance will not be available until September FY00. Upon receipt, a baseline change proposal (BCP), as appropriate, will be initiated and approved prior to commencing work activities.
- Any additional 200 Area Characterization work scope will require a BCP to revise the FY01-FY03 DWP.
- Implementation of all changes due to the revisions to 10 *Code of Federal Regulations* (CFR) 835 will be completed in FY00, and there will be no significant cost impacts in FY01.
- There will be no changes to the RadCon program.

Management and Integration

Integration Planning

- The Regulatory Path Forward Work Group will be supported in its participation of regulators and stakeholders. Implementation (renegotiations, scope revisions, etc.) of recommendations of the work group will be funded by individual projects.
- The project requirements document and other interface documents will be reviewed by DOE, but will not require public review. Work that is dependent on these documents may proceed prior to DOE approval.

- The GW/VZ Project will be incorporated into the overall Environmental Restoration Contractor (ERC) Baseline and LRP.
- Data management integration issues will be addressed under the Hanford Site contracting strategy.

Peer Review

- The GW/VZ Expert Panel and subpanel activities will be funded by the GW/VZ Integration Project.
- Core project preparation and participation will be funded by the core projects.
- Technical comment resolution, in response to subpanel and NAS comments, will be addressed and performed by the responsible group.
- The National Academy of Sciences panel will be funded by DOE-Headquarters (HQ), per DOE-RL guidance for the GW/VZ project.

Public Involvement

- The GW/VZ Project will provide an information sharing/public involvement forum for all of Hanford's Core Projects (Open Project Team Meetings, Calendar of Events, and Public Review Opportunities).
- "One-on-one" meetings with interested groups is the preferred outreach venue.
- Public involvement for the project has been integrated into the project tasks (i.e., SAC, S&T, Regulatory Path Forward).

Data Configuration

- The GW/VZ QA program will be based on CERCLA and RCRA requirements, and on DOE Order 5700.6.
- The existing structure of databases will be suitable, with minor modification, for use by the project.
- The FEPs (or equivalent database) will track technical issues.
- The virtual library will be released to the project and the public in three stages that are pre-approved by RL and security before release.

Characterization of Systems

- The FEPs evaluation process that is used at other DOE sites will form a technically sound basis for evaluating site technical knowledge and resolving technical issues.
- The conceptual model core team will be comprised of leads from BHI, PNNL, FH, and RPP.
- The initial evaluation of FEPs must be completed prior to conceptual model completion.

- Concerns raised during peer review can be addressed within scope and schedule.
- Technical Issues are cross-cutting; therefore, the technical issue resolution team will consist of leads from COS, site projects, S&T and SAC technical teams.
- Existing DQO processes employed by the core projects are adequate for characterization needs.
- The modeling coordination team will be adequate to provide consistency in modeling approaches across site projects.
- The SAC project team will provide timely input of data requirements for SAC, Rev. 1, to characterization of systems.

System Assessment Capability

- The existing consolidated groundwater model is sufficient for use in the SAC (Rev. 0).
- The S&T efforts associated with the development or adaptation of the SAC will provide timely input to the SAC project team.
- Assessments performed with the SAC (Rev. 1) will rely on the characterization of systems task for the data needed to support the assessment.
- The initial assessment will analyze the Hanford Site Disposition Baseline, and will include a subset of the radioactive and hazardous chemical contaminants expected to dominate risk and impacts.
- No significant issues will be raised by NAS or Expert Panel reviews. If significant issues are identified, BCPs will be developed to address impacts.
- The SAC (Rev. 1) capability will be an enhancement of Rev. 0, not a complete redesign.
- Planned activities are sufficient to gain regulator and DOE acceptance as a viable regulatory tool.

Science and Technology

- S&T funding through the Integration Project (minimum of $5M/year) will be provided to PNNL, and PNNL will subcontract directly with the other national laboratories to conduct the work.
- Assumes EMSP funding provided during FY99 ($1M) can be carried over.
- Other national laboratories will continue to provide resources to the Integration Project as needed.
- Issues raised by the NAS and IPEP can be addressed within current scope and schedule.

- Work planned by core projects (RPP, Tank Farm Vadose Zone, ILAW, 200 Area Characterization, Groundwater Project, Surface Environmental Surveillance Project), where interfaces with S&T have been identified, will be funded and proceed as scheduled.

- Other core projects will pay for work within their baselines (e.g., coring, sample retrieval with ES&H, and basic characterization). S&T will provide funding for such marginal costs as sample distribution and additional scientific study. S&T will receive a sufficient quantity of each contaminated sample for "wrap-around" science.

- SCFA will provide funding to support vadose zone characterization of tank farms and surface barrier performance monitoring.

- EMSP projects will provide select contributions to "wrap around" science and vadose zone transport field studies.

- "Reasonable" samples will be distributed to EMSP investigators, and to the multi-laboratory S&T research team, in compliance with ES&H and waste management requirements.

- An existing field site will be sufficient for FY01 vadose zone field study experiments; responsibilities for ES&H will be with PNNL.

- An existing field site for final years of testing (FY02 and FY03) will be identified that can be either trenched in cooperation with ongoing activities, or is a site (trench) that has been opened and currently not in use.

200 Area Remedial Action Assumptions (RL-ER02)

- Additional funding for compliance with Tri-Party Agreement milestones and to meet site-wide planning outcomes for the Central Plateau will be provided. (See ER02 Additional Authorization section of the DWP.)

- The 200 Area RI/FS Implementation Plan (DOE-RL-98-28, Rev. 0) defines the need and content of 200 Area RI/FS work plans, along with the TSD Unit Sampling Plan. It also defines the framework for implementing characterization and remediation activities in the 200 Areas, and provides the waste site groupings and sites to be characterized.

- Public review of the 200 Area RI/FS work plans is only assumed for the 200-TW-1 and 200-TW-2 Operable Units (which are included under the FY01 Supplemental Funding Plan). No public review is assumed for the 200-PW-2 Operable Unit. All work plans are assumed to contain sufficient detail to initiate field work. The work plans will include a RCRA TSD unit sampling plan for TSD units within the waste group. Work plans will define the scope of the remedial investigation.

- The FS report scope is based on the 200 Areas RI/FS Implementation Plan. It assumes only a limited number of alternatives (4) will be evaluated, including no action/institutional controls, capping, and removal. A closure plan will be prepared for each RCRA TSD unit within the waste group, and will be appended to the FS report. Only minor changes/revisions are assumed to result from the review cycles.

- No budget allowance has been included to support changes associated with Phase II Budget Update Guidance for the ER Baseline update. Guidance will not be available until September FY00. Upon receipt, a BCP, as appropriate, will be initiated and approved prior to commencing work activities.

Groundwater Management Project Assumptions (RL-ER08)

General

- The DNAPL investigation (PITT) estimate is preliminary. A final estimate and schedule will be developed based on a definition of scope and Duke estimate. If PITT technology is not selected, other technologies will be reviewed.

- Grand Junction monitoring/logging will be funded separately by DOE-RL (see Additional Authorization Tab). PNNL technical support is within the scope of ER08.

- ISRM does not include scope or potential funds associated with the award of the EM-50 Return on Investment Proposal.

- Five RL RCRA wells (M-24) will be installed in FY01. RCRA wells for ORP will be identified later, and funded by ORP. **Issue:** Additional RL RCRA wells will likely to be required (see Additional Authorization Tab).

- Composite Analysis (CA) Addendum and ongoing CA maintenance activities will be performed within the modeling cost account, under the Groundwater Monitoring Program, until responsibilities for this scope is transferred to the SAC element of GW/VZ Project in FY03.

- Ongoing groundwater model consolidation activities will continue to be performed under the modeling cost account, within the Groundwater Monitoring Program, with a target of providing an operable site-wide ground water modeling capability by the end of FY03.

- Ongoing model maintenance and configuration control of the interim site-wide groundwater model is being provided by the modeling cost accounts within the Groundwater Monitoring Program.

- No budget allowance has been included to support changes associated with Phase II Budget Update Guidance for the ER baseline update. Guidance will not be available until September FY00. Upon receipt, a BCP, as appropriate, will be initiated and approved prior to commencing work activities.

- No budget has been included to support outcomes of Innovative Treatment Remediation Demonstration (ITRD) efforts at 100-NR-2.

- Implementation of all changes due to the revisions to 10 CFR 835 will be completed in FY00, and there will be no significant cost impacts in FY01.

- There will be no changes to the RadCon program.

Operations

- There will be no major changes in subcontract costs to collect samples.
- Off shift or back shift support will be based on historical experience.
- No major equipment upgrades will be required to maintain the pump and treat systems.
- Any changes that may be required this fiscal year to current groundwater operations and long term monitoring program as a result of the CERCLA five-year review will be planned after receipt of EPA's five-year report, and would be incorporated in to the DWP through the baseline change process.

Waste

- Well services waste from wells, aquifer tubes, or seeps whose primary purpose is monitoring for RCRA TSDs (outside the tank farm fence) or Atomic Energy Act will be handled as RCRA waste at the 100 N 90 day pad.
- Well services waste from wells, aquifer tubes, or seeps that are used for CERCLA monitoring will be managed according to a regulator approved document (such as a Waste Management or Control Plan) and stored at the appropriate OU specific waste site and disposed accordingly.
- Waste from well drilling activities for the M-24 RCRA compliance wells will be handled as RCRA waste.
- Waste from the pump and treat systems will be managed in accordance with the waste management or control plan for the appropriate operable unit.
- The ETF will be available to receive and treat purge water in FY01 from 200-UP-1.
- Resin regeneration is not on a regulatory clock for disposition.
- The update of the purgewater strategy will not result in any significant change to how purgewater is handled in the field.

Prepared By:	K. N. Swan	**Date:**	
ERC Project Manager:	M. J. Graham	**Date:**	
DOE Project Manager:	K. M. Thompson		

FY01 ACTION PLAN

Groundwater/Vadose Zone Integration Project – VZ01

CHARACTERIZATION OF SYSTEMS

- Continue revision of conceptual models by technical elements and key interfaces.
- Resolve technical issues by evaluating relevant FEPs; prepare and document resolution; update technical issues database.
- Document site knowledge and conduct peer review of site knowledge.
- Incorporate new technical gaps and needs into consolidated list of field characterization needs.
- Focus efforts on opportunities to improve site integration of characterization and numerical modeling.

SYSTEM ASSESSMENT CAPABILITY

- Complete historical matching case analysis and the required analysis for the initial assessment performed with the SAC (Rev. 0) capability.
- Complete analyses for risk and impact for the initial assessment performed with the SAC (Rev. 0) capability.
- Complete functional review of SAC (Rev. 0) testing and evaluation report.

MANAGEMENT AND INTEGRATION

Peer Review

- Conduct two (one of which is carryover) Expert Panel meeting to provide broad oversight, including merit and technical review, of the GW/VZ Integration Project.
- Conduct three Expert Panel subpanel meetings to provide technical peer review for the GW/VZ Integration Project.
- A National Academy of Sciences panel will focus on the science and technology component of the GW/VZ Integration Project, holding one onsite meeting and two offsite meetings.

Public Involvement

- Participate in four relationship-building meetings, and prepare two semi-annual Congressional reports.

Data Configuration

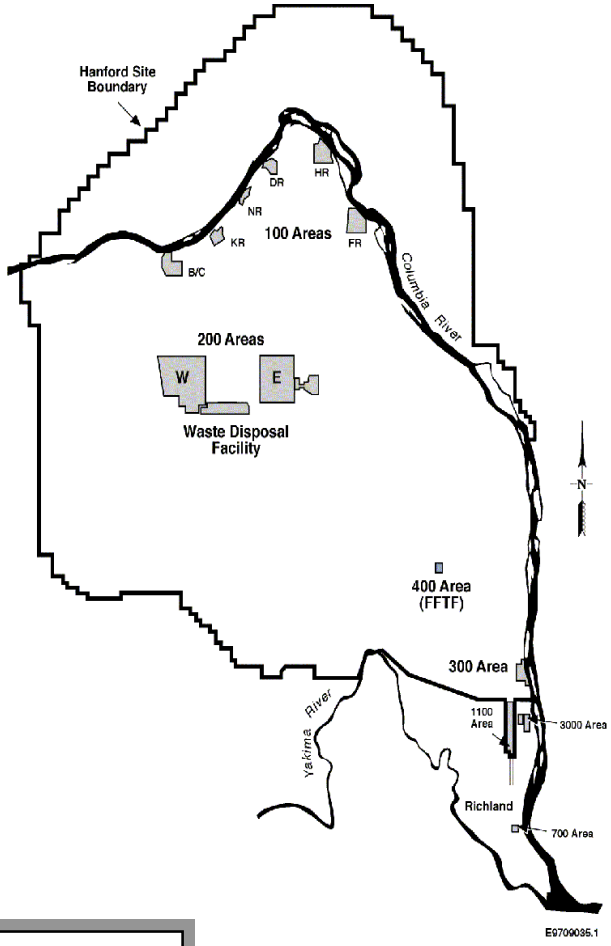
- Maintain, control, and administer the following relational SLATE data bases: issues and FEPs databases.
- Develop and administer the data/parameters/electronic deliverables database.
- Develop the first virtual library modules to make Hanford Site information readily available to both Hanford employees and to the public.
- Update/maintain requirements management database.

Regulatory Integration

- Develop tools to ensure compliance with regulatory requirements and agreements.
- Work with regulators on prompt management of emerging regulatory issues in a consistent manner.
- Provide regulatory support to project strategic planning.

Integration Planning

- Complete the project requirements document.
- Continue to provide support for Hanford Site strategic planning.



SCIENCE AND TECHNOLOGY

- Develop mass-balanced estimates of soil waste site inventories.
- Complete laboratory and reactive transport modeling studies that "wrap around" S-SX tank farm characterization efforts; initiate studies at B-BX-BY (includes carryover).
- Conduct field experiments to investigate vadose zone transport phenomena under controlled conditions (inject concentrated salt tracer); evaluate advanced characterization technologies.
- Develop enhanced conceptual models of groundwater/river interactions to better understand migration of contaminants into the Columbia River.
- Conduct laboratory studies to quantify the kinetics of biological uptake and transport of key contaminants for aquatic species, and enhance existing toxicological models.
- Interface with the NAS.

FY02 ACTION PLAN

Groundwater/Vadose Zone Integration Project – VZ01

CHARACTERIZATION OF SYSTEMS

- Revise site conceptual models.
- Provide input into the development of SAC (Rev. 1) requirements development.
- Implement the technical issue protocol (resolve technical issues, draft project positions, review and comment resolution, populate database, update internet with technical issue evaluations).
- Prepare and issue a draft data package for implementation of the SAC (Rev. 1), new characterization data.
- Document technical gaps and needs and partner with S&T and core projects to include these needs into work planning.
- Review and re-evaluate the list of field characterization needs.

SYSTEM ASSESSMENT CAPABILITY

- Develop requirements for the SAC (Rev. 1) and related assessment. This will include the ability to meet 2004 composite analysis requirements.
- Complete design document for SAC (Rev. 1).
- Assemble the SAC (Rev. 1).
- Assemble the data required to perform the initial assessment with SAC (Rev. 1).

MANAGEMENT AND INTEGRATION

Peer Review

- Conduct two Expert Panel meetings to provide broad oversight, including merit and technical review, of the GW/VZ Integration Project.
- Conduct three Expert Panel subpanel meetings to provide technical peer review for the GW/VZ Integration Project.

Public Involvement

- Participate in relationship building meetings, and prepare two semi-annual Congressional reports.

Data Configuration

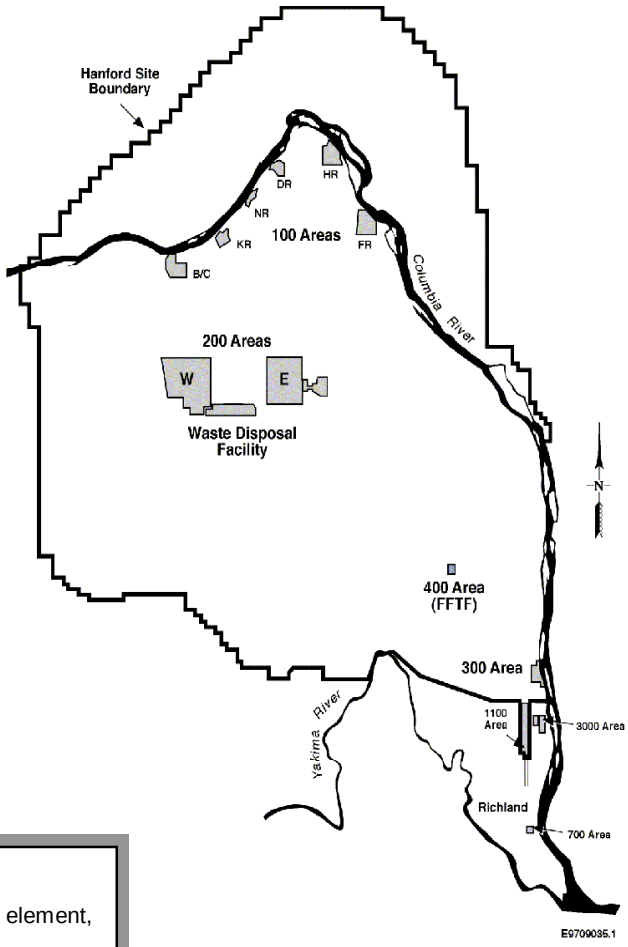
- Maintain, control, and administer the following relational SLATE data bases: issues and FEPs databases.
- Maintain the data/parameters/electronic deliverables database.
- Establish the third stage of the virtual library, to include databases and documents.
- Update/maintain the requirements management database.

Regulatory Integration

- Develop tools to ensure compliance with regulatory requirements and agreements.
- Work with regulators on prompt management of emerging regulatory issues in a consistent manner.
- Provide regulatory support to project strategic planning.

Integration Planning

- Continue to provide support for Hanford Site strategic planning.



SCIENCE AND TECHNOLOGY

- Revise the S&T plan and roadmap to include the remediation technical element, NAS study results, and results of the SAC (Rev. 0).
- Complete mass-balance estimates of soil waste site inventories.
- Complete laboratory and reactive transport studies for the B-BX-BY tank farm; initiate studies at T-TX-TY.
- Conduct field experiments to investigate vadose zone transport phenomena under controlled conditions (dilute tracer in deep sediments).
- Complete the conceptual and numerical models of groundwater/river interaction to estimate groundwater discharge to the river's ecosystem.
- Complete laboratory studies and model development for biological uptake for aquatic species.

FY03 ACTION PLAN

Groundwater/Vadose Zone Integration Project – VZ01

CHARACTERIZATION OF SYSTEMS

- Update current state of knowledge and assessment-specific application descriptive information on an as-needed basis.
- Add new HFEPs (as they are identified) through internal and external peer reviews, and through the technical management task.
- Implement technical issue protocols (resolve technical issues, draft project positions, review and comment resolution, populate database, update internet with technical issue evaluations).
- Document technical gaps and needs, and partner with S&T and core projects to include these needs into work planning.
- Review and re-evaluate the list of field characterization needs.

SYSTEM ASSESSMENT CAPABILITY

- Complete testing of the SAC (Rev. 1).
- Complete historical matching case analysis and the required analysis for the initial assessment with the SAC (Rev. 1). (Results will be documented and reviewed during FY04).

MANAGEMENT AND INTEGRATION

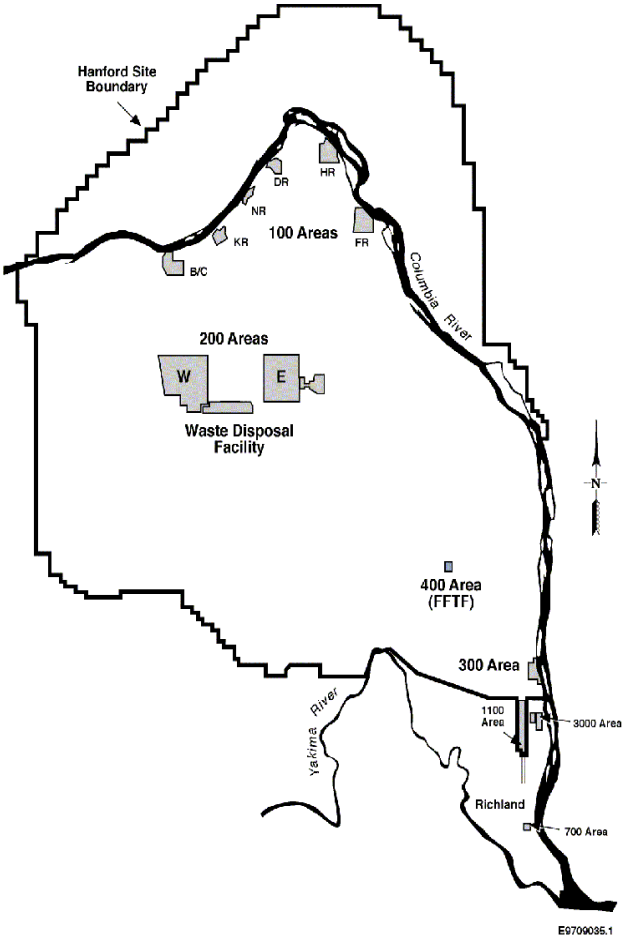
Peer Review
- Conduct two Expert Panel meetings to provide broad oversight, including merit and technical review, of the GW/VZ Integration Project.
- Conduct three Expert Panel subpanel meetings to provide technical peer review for the GW/VZ Integration Project.

Public Involvement
- Participate in relationship building meetings, and prepare two semi-annual Congressional reports.

Data Configuration
- Maintain, control, and administer the following relational SLATE data bases: issues and FEPs databases.
- Maintain the data/parameters/electronic deliverables database.
- Maintain the virtual library, which includes databases and documents.
- Update/maintain requirements management database.

Regulatory Integration
- Develop tools to ensure compliance with regulatory requirements and agreements.
- Work with regulators on prompt management of emerging regulatory issues in a consistent manner.
- Provide regulatory support for project strategic planning.

Integration Planning
- Continue to provide support for Hanford strategic planning.



SCIENCE AND TECHNOLOGY

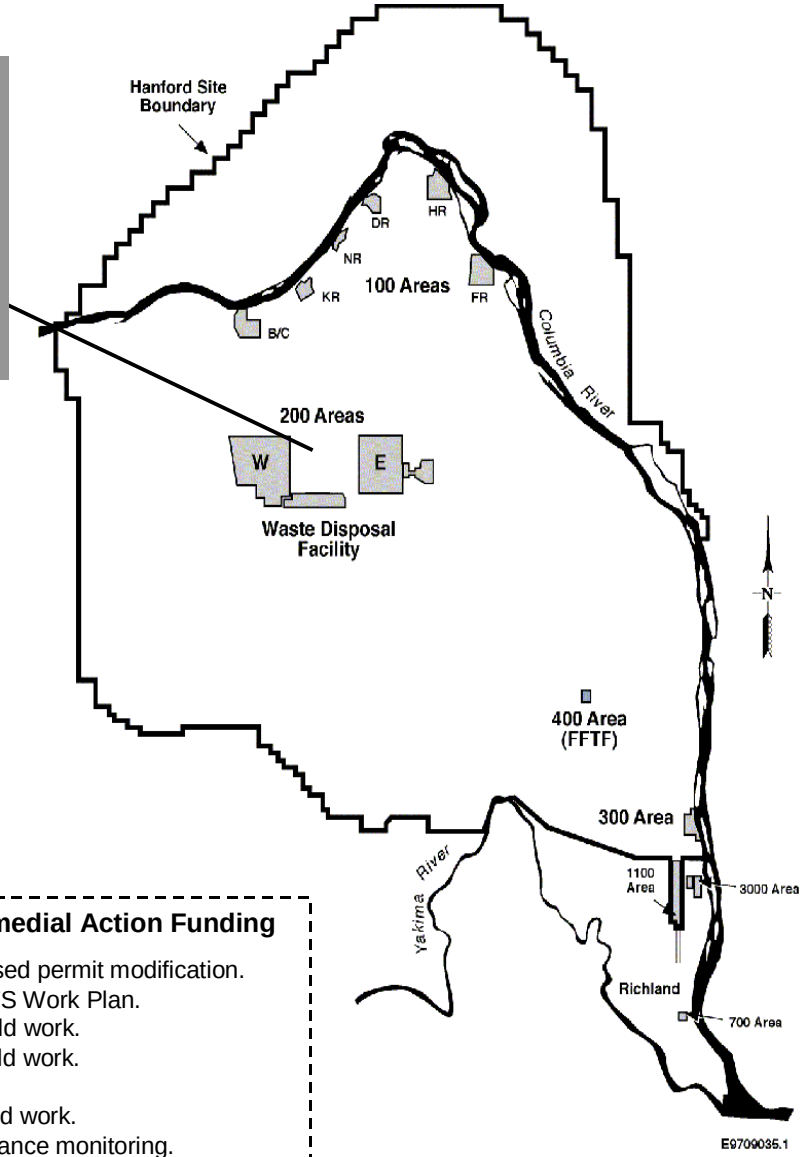
- Revise the S&T roadmap to include the monitoring technical element.
- Complete laboratory and reactive transport studies for the T-TX-TY Tank Farm and a scavenged waste site.
- Conduct field experiments to investigate vadose zone transport phenomena under controlled conditions (concentrated salt tracer in deep sediments).

FY01 ACTION PLAN

200 Area Remedial Action – ER02

200 Area Remedial Action

- Complete the 200-CW-1 Remedial Investigation Report.
- Initiate the 200-CW-1 Feasibility Study and the RCRA treatment, storage and disposal unit closure plan.
- Complete the 200-PW-2 RI/FS Work Plan and the RCRA TSD sampling plan.
- Provide general support for 200 Area-wide activities.



Additional Authorization 200 Area Remedial Action Funding

- Initiate the 200-CW-1 Proposed Plan/proposed permit modification.
- Complete the 200-TW-1 and 200-TW-2 RI/FS Work Plan.
- Initiate 200-TW-1 Remedial Investigation field work.
- Initiate 200-TW-2 Remedial Investigation field work.
- Complete the 200-PW-1 RI/FS Work Plan.
- Initiate 200-CS-1 Remedial Investigation field work.
- Continue Hanford Barrier long-term performance monitoring.
- Initiate the alternative barrier (Modified RCRA C) treatability test.
- Complete WIDS update activities.
- Provide general support for 200 Area project activities.

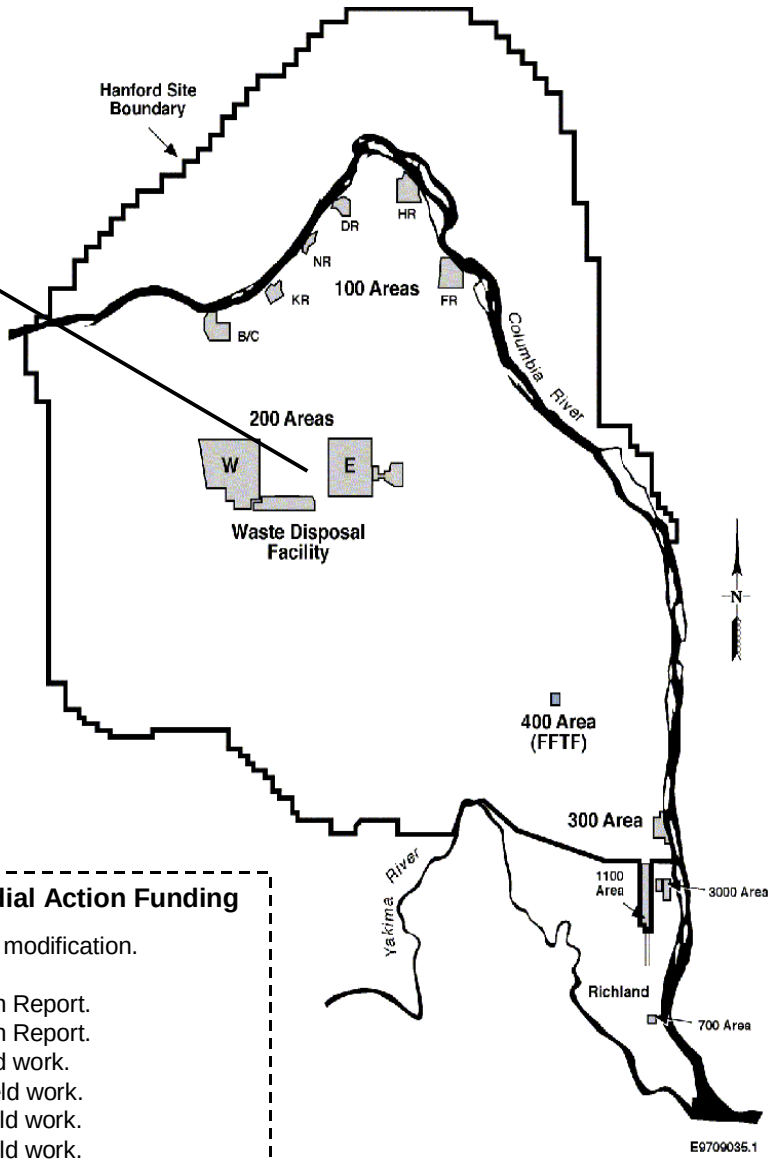
FY02 ACTION PLAN

200 Area Remedial Action – ER02

200 Area Remedial Action

- Guidance funding is insufficient to meet Tri-Party Agreement milestones or to achieve site-wide planning goals for the Central Plateau.

  NOTE: Refer to the Additional Authorization box below for a listing of activities necessary to maintain compliance and progress toward remedial decisions in the Central Plateau.



Additional Authorization 200 Area Remedial Action Funding

- Complete the 200-CW-1 Proposed Plan/permit modification.
- Initiate 200-CW-1 ROD support.
- Complete the 200-TW-1 Remedial Investigation Report.
- Complete the 200-TW-2 Remedial Investigation Report.
- Continue 200-CS-1 Remedial Investigation field work.
- Complete 200-CW-5 Remedial Investigation field work.
- Complete 200-PW-2 Remedial Investigation field work.
- Complete 200-PW-1 Remedial Investigation field work.
- Complete 200-LW-1 RI/FS Work Plan.
- Continue Hanford Barrier long-term performance monitoring.
- Continue alternative barrier (Modified RCRA C) treatability test.
- Provide general support for 200 Area project activities.

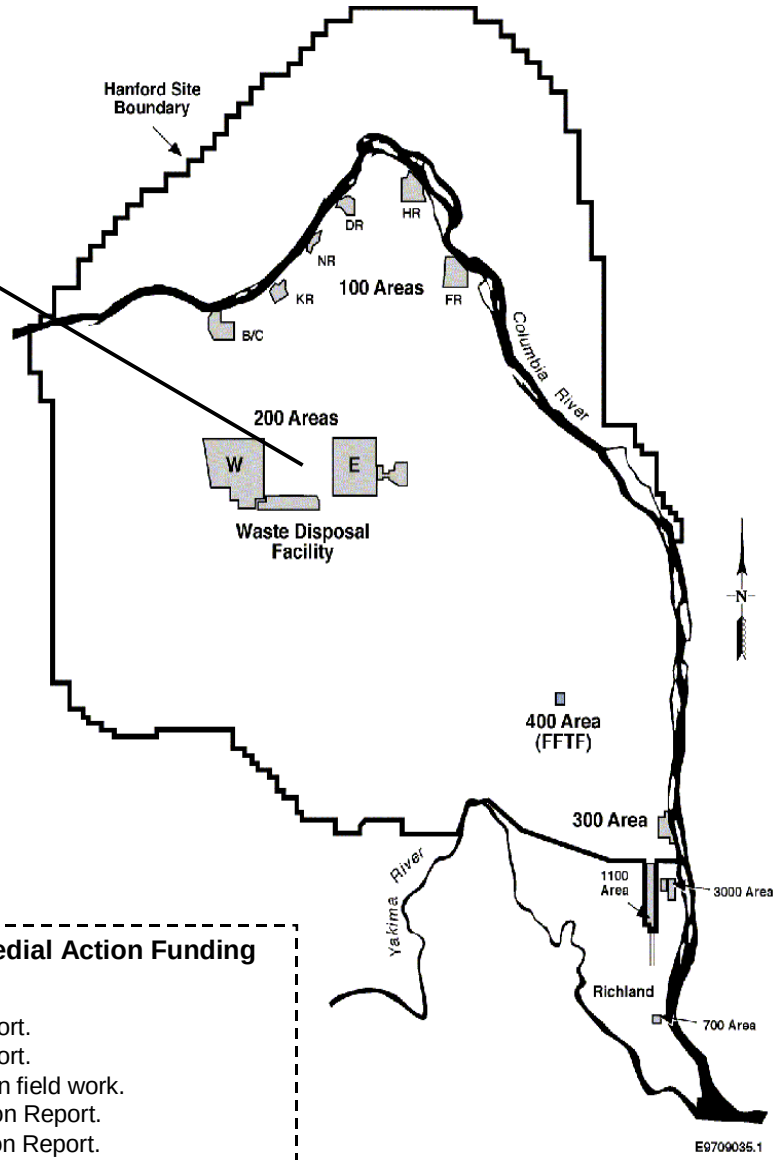
FY03 ACTION PLAN

200 Area Remedial Action – ER02

200 Area Remedial Action

- Guidance funding is insufficient to meet Tri-Party Agreement milestones or to achieve site-wide planning goals for the Central Plateau.

  NOTE: Refer to the Additional Authorization box below for a listing of activities necessary to maintain compliance and progress toward remedial decisions in the Central Plateau.



Additional Authorization 200 Area Remedial Action Funding

- Complete 200-CW-1 ROD support.
- Complete the 200-TW-1 Feasibility Study Report.
- Complete the 200-TW-2 Feasibility Study Report.
- Complete the 200-CS-1 Remedial Investigation field work.
- Complete the 200-CW-5 Remedial Investigation Report.
- Complete the 200-PW-2 Remedial Investigation Report.
- Complete the 200-PW-1 Remedial Investigation Report.
- Complete the 200-LW-1 Remedial Investigation field work.
- Complete the 200-MW-1 RI/FS Work Plan.
- Continue the Hanford Barrier long-term performance monitoring.
- Continue alternative barrier (Modified RCRA C) treatability test.
- Provide general support for 200 Area project activities.

FY01 ACTION PLAN

Groundwater Management Project – ER08

River Corridor

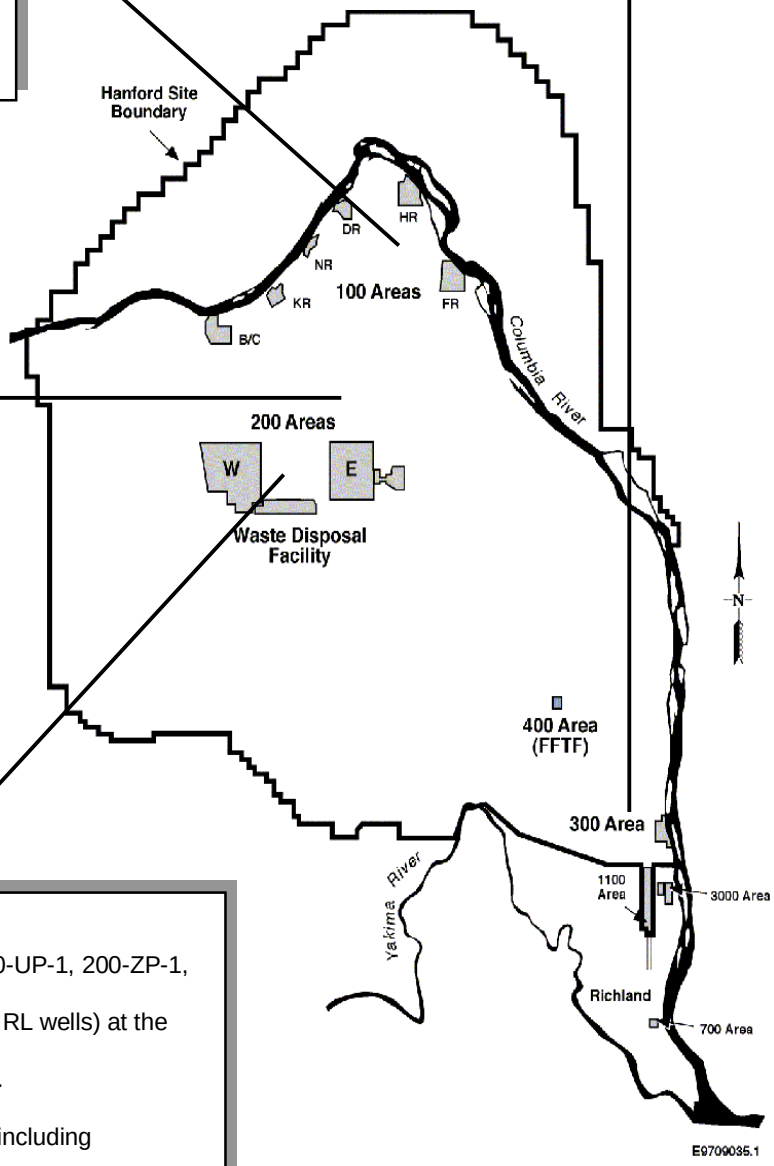
- Operate pump and treat systems at 100-HR-3, 100-KR-4, and 100-NR-2, including performance monitoring and continued deployment of In Situ REDOX Manipulation (ISRM) at 100 D/DR.
- Develop RDR/RA work plans and O&M plans.
- Update sampling plans for 100-HR-3 and 100-KR-4, to include revisions since startup.

300 Area

- Complete the Phase II-A Tritium Investigation Report, and the Phase II-B Tritium DQO/SAP for the 618-11 Burial Ground.

Groundwater Management

- The Groundwater Management work scope includes groundwater, seismic, and vadose monitoring, well maintenance, well database management, modutank closure, and groundwater modeling.
- Prepare and issue quarterly and annual reports.



Plateau

- Operate pump and treat systems for 200-UP-1, 200-ZP-1, including performance monitoring.
- Continue with RCRA well installation (5 RL wells) at the 200 East and West Areas.
- Construct 1 extraction well at 200-UP-1.
- Construct 1 extraction well at 200-ZP-1.
- Operate the 200-ZP-2 passive system, including performance monitoring.
- 200-ZP-2: Initiate activities for DNAPL investigation.

FY02 ACTION PLAN

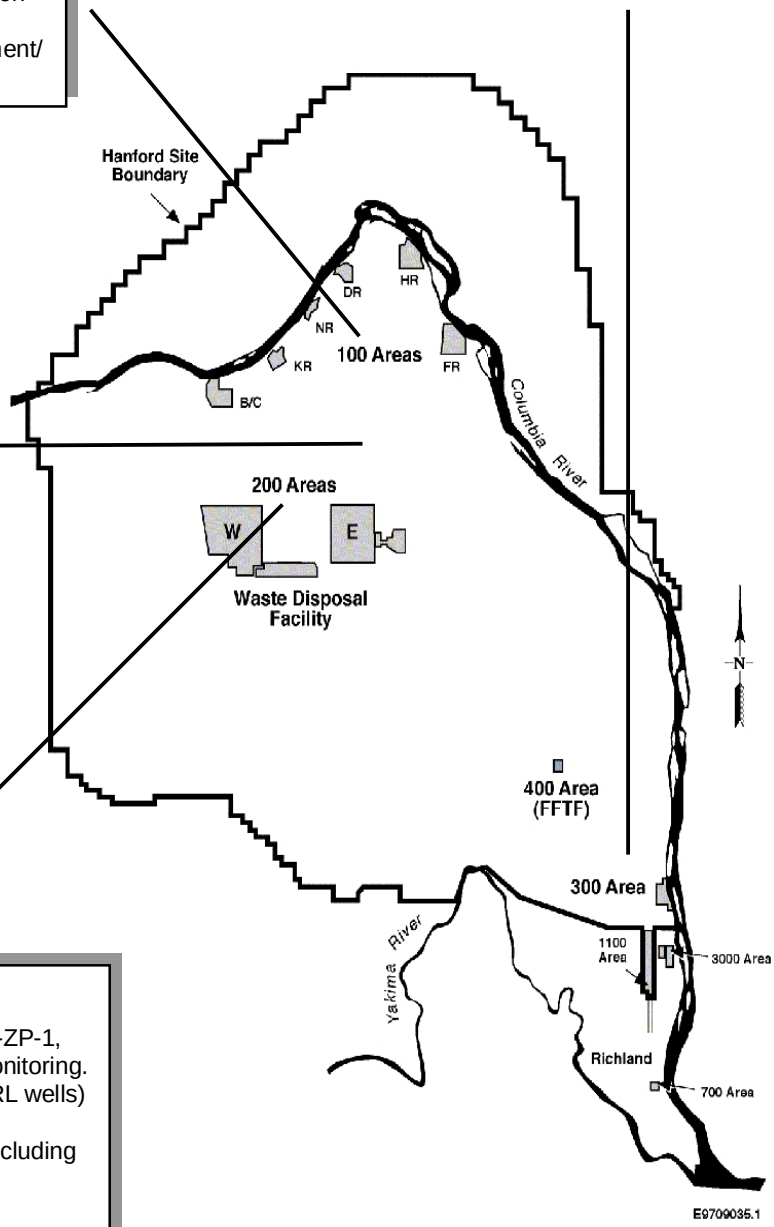
Groundwater Management Project – ER08

River Corridor

- Operate pump and treat systems at 100-HR-3, 100-KR-4, and 100-NR-2, including performance monitoring and deployment of In Situ REDOX Manipulation (ISRM) at 100 D/DR.
- Develop the groundwater strategy document/ plans and revisions.

300 Area

- Perform the tritium investigation.



Groundwater Management

- The Groundwater Management work scope includes groundwater, seismic, and vadose monitoring, well maintenance, well database management, and groundwater modeling.
- Prepare and issue quarterly and annual reports.
- Complete modutanks closure.

Plateau

- Operate pump and treat systems for 200-ZP-1, and 200-UP-1, including performance monitoring.
- Continue with RCRA well installation (5 RL wells) at the 200 East and West Areas.
- Operate the 200-ZP-2 passive system, including performance monitoring.
- 200-ZP-2: Continue activities for DNAPL investigation.

FY03 ACTION PLAN

Groundwater Management Project – ER08

River Corridor

- Operate the pump and treat systems at 100-HR-3, 100-KR-4, and 100-NR-2.
- Decommission the ISRM evaporation pond.

300 Area

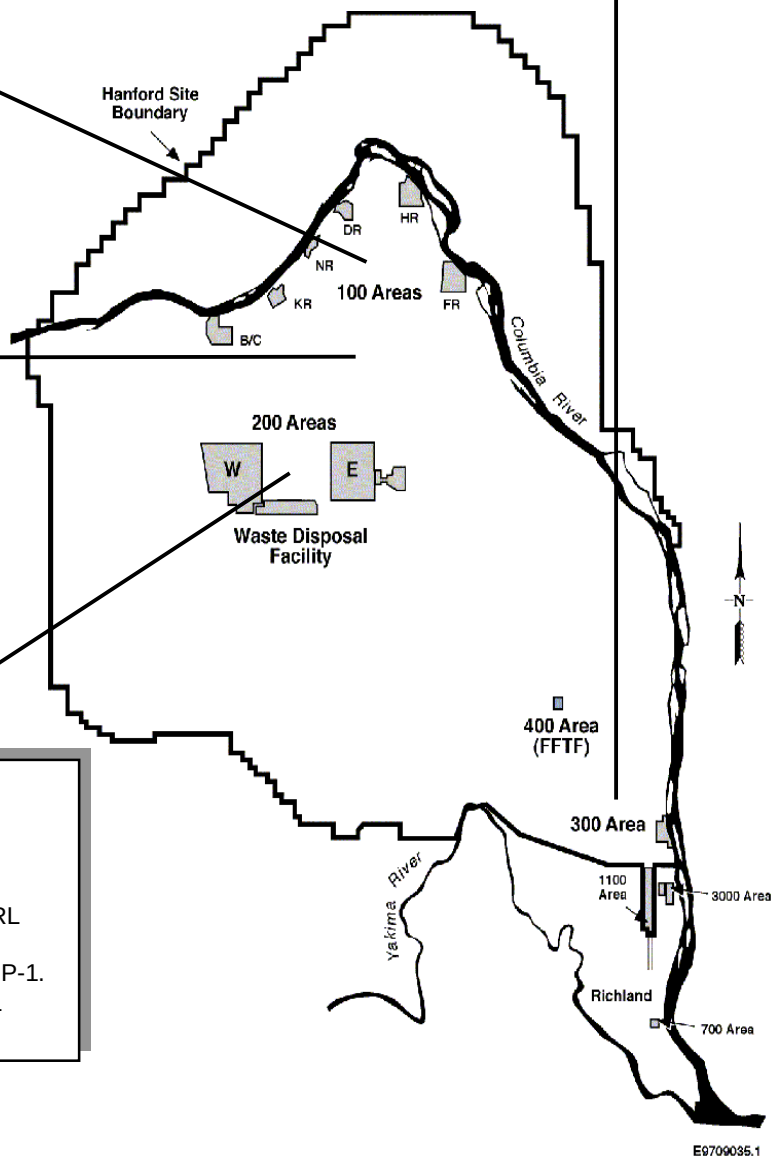
- Perform the tritium investigation.

Groundwater Management

- The Groundwater Management work scope includes groundwater, seismic, and vadose monitoring, well maintenance, well database management, and groundwater modeling.
- Prepare and issue quarterly and annual reports.

Plateau

- Operate the pump and treat systems for 200-ZP-1, and 200-UP-1, including performance monitoring.
- Continue with RCRA well installation (5 RL wells).
- Install six new monitoring wells for 200-UP-1.
- 200-ZP-2: Continue activities for DNAPL investigation.



1.4.10.1 Richland Environmental Restoration Project

1.4.10.1.1 Remedial Action

1.4.10.1.1.02 ER02 200 Area Environmental Restoration Remedial Action

1.4.10.1.1.02.05 200 Area Remedial Action

1.4.10.1.1.02.05.25 PK 200 Area NPL Common Source Assessment
1.4.10.1.1.02.05.25.02 PK2 200-PW-2 Operable Unit
1.4.10.1.1.02.05.25.02.31 PK21 200-PW-2 Operable Unit Assessment
1.4.10.1.1.02.05.25.02.31.01 PK2101 200-PW-2 Uranium-Rich Process Waste Group Assessment
1.4.10.1.1.02.05.25.13 PKD 200-CS-1 Operable Unit
1.4.10.1.1.02.05.25.13.31 PKD1 200-CS-1 Operable Unit Assessment
1.4.10.1.1.02.05.25.13.31.01 PKD101 200-CS-1 Chemical Sewer Group Assessment
1.4.10.1.1.02.05.25.24 PKR 200 Area NPL Common Source
1.4.10.1.1.02.05.25.24.31 PKR1 200 Area NPL Common Source Assessment
1.4.10.1.1.02.05.25.24.31.01 PKR101 200 Area NPL Common Source Assessment Activities

1.4.10.1.1.08 ER08 Groundwater Management Project

1.4.10.1.1.08.02 100 Area Groundwater Remedial Action

1.4.10.1.1.08.02.06 PC 100-KR GW Remedial Actions
1.4.10.1.1.08.02.06.04 PC4 100-KR-4 GW Operable Unit
1.4.10.1.1.08.02.06.04.32 PC42 100-KR-4 GW Remediation
1.4.10.1.1.08.02.06.04.32.12 PC4212 100-KR-4 GW Chemical Treatment Process

1.4.10.1.1.08.02.08 PE 100-HR GW Remedial Actions
1.4.10.1.1.08.02.08.03 PE3 100-HR-3 GW Operable Unit
1.4.10.1.1.08.02.08.03.32 PE32 100-HR-3 GW Remediation
1.4.10.1.1.08.02.08.03.32.01 PE3201 100-HR-3 GW Project Support costs
1.4.10.1.1.08.02.08.03.32.12 PE3212 100-HR-3 GW Chemical Treatment Process
1.4.10.1.1.08.02.08.03.32.14 PE3214 100-HR-3 In-Situ Redox Manipulation

1.4.10.1.1.08.02.09 PG 100-NR GW Remedial Action
1.4.10.1.1.08.02.09.02 PG2 100-NR-2 GW Operable Unit
1.4.10.1.1.08.02.09.02.32 PG22 100-NR-2 GW Operable Unit Remediation
1.4.10.1.1.08.02.09.02.32.02 PG2202 100-NR-2 GW ERA Implementation

1.4.10.1.1.08.02.29 PH 100 Area GW Remedial Action River Corridor Common
1.4.10.1.1.08.02.29.01 PH1 100 Area GW Remedial Action River Corridor Common Operable Unit
1.4.10.1.1.08.02.29.01.32 PH12 100 Area GW Remedial Action River Corridor Common Remediation
1.4.10.1.1.08.02.29.01.32.01 PH1201 100 Area GW Remedial Action River Corridor Common Support

1.4.10.1.1.08.03 Hanford Site Groundwater Management

1.4.10.1.1.08.03.24 P4 Groundwater Monitoring
1.4.10.1.1.08.03.24.01 P41 GW Monitoring
1.4.10.1.1.08.03.24.01.02 P412 GW Monitoring Remediation
1.4.10.1.1.08.03.24.01.02.01 P41201 GW Project Support Costs
1.4.10.1.1.08.03.24.01.02.02 P41202 GW Long Term Monitoring
1.4.10.1.1.08.03.24.01.02.03 P41203 PNNL: GW Seismic Monitoring
1.4.10.1.1.08.03.24.01.02.04 P41204 PNNL: GW Vadose Monitoring
1.4.10.1.1.08.03.24.01.02.05 P41205 PNNL: GW Modeling
1.4.10.1.1.08.03.24.01.02.06 P41206 PNNL: GW Monitoring
1.4.10.1.1.08.03.24.01.02.07 P41207 PNNL: GW Well Installation
1.4.10.1.1.08.03.24.01.02.0P P4120P PNNL: GW Project Support
1.4.10.1.1.08.03.24.09 P49 RCRA and GW Monitoring (7340)
1.4.10.1.1.08.03.24.09.31 P491 RCRA and GW Monitoring Landlord (7340)
1.4.10.1.1.08.03.24.09.31.08 P49108 7340-1 GW Well Installation (Expense)

1.4.10.1.1.08.03.25 P5 Hanford Site GW Well Maint., Refurbishment, Abandonment

1.4.10.1.1.08.03.25.01 P51 GW Well Maintenence, Refurbishment, Abandonment
1.4.10.1.1.08.03.25.01.02 P512 GW Well Maintenence, Refurbishment, Abandonment Landlord
1.4.10.1.1.08.03.25.01.02.02 P51202 GW Maintenence, Refurbishment, Abandonment

1.4.10.1.1.08.03.26 P6 Hanford Site Interim Action GW Monitoring
1.4.10.1.1.08.03.26.01 P61 Interim Action GW Monitoring
1.4.10.1.1.08.03.26.01.02 P612 Interim Action GW Monitoring Landlord
1.4.10.1.1.08.03.26.01.02.02 P61202 GW Interim Action Monitoring

1.4.10.1.1.08.06 200 Area Groundwater Remedial Action

1.4.10.1.1.08.06.16 PT 200-UP GW Remedial Actions
1.4.10.1.1.08.06.16.01 PT1 200-UP-1 GW Operable Unit
1.4.10.1.1.08.06.16.01.32 PT12 200-UP-1 GW Remediation
1.4.10.1.1.08.06.16.01.32.12 PT1212 200-UP-1 GW Chemical Treatment Operation

1.4.10.1.1.08.06.17 PU 200-ZP GW Remedial Actions
1.4.10.1.1.08.06.17.01 PU1 200-ZP-1 GW Operable Unit
1.4.10.1.1.08.06.17.01.32 PU12 200-ZP-1 GW Remediation
1.4.10.1.1.08.06.17.01.32.01 PU1201 200-ZP-1 GW Project Support costs
1.4.10.1.1.08.06.17.01.32.05 PU1205 200-ZP-1 GW Physical Treatment Process
1.4.10.1.1.08.06.17.02 PU2 200-ZP-2 GW (Vapor)
1.4.10.1.1.08.06.17.02.34 PU24 200-ZP-2 GW RCRA/CERCLA Interim Removal Actions
1.4.10.1.1.08.06.17.02.34.05 PU2405 200-ZP-2 GW Physical Treatment Operation
1.4.10.1.1.08.06.17.02.34.14 PU2414 200-ZP-2 GW D&D

1.4.10.1.1.08.06.30 PX 200 Area GW Remedial Action Plateau Common
1.4.10.1.1.08.06.30.01 PX1 200 Area GW Remedial Action Plateau Common Operable Unit
1.4.10.1.1.08.06.30.01.32 PX12 200 Area GW Remedial Action Plateau Common Remediation
1.4.10.1.1.08.06.30.01.32.01 PX1201 200 Area GW Remedial Action Plateau Common Support

1.4.10.1.7 Site-Wide Groundwater/Vadose Zone Integration Project

1.4.10.1.7.11 VZ01 Site-Wide Groundwater/Vadose Zone Integration Project

1.4.10.1.7.11.03 Hanford Site Groundwater Management - Vadose Integration

1.4.10.1.7.11.03.27 P7 GW/Vadose Zone Integration Project
1.4.10.1.7.11.03.27.01 P71 GW/Vadose Zone Integration Project
1.4.10.1.7.11.03.27.01.35 P715 GW/Vadose Zone Integration of Vadose Zone Activities
1.4.10.1.7.11.03.27.01.35.01 P71501 GW/Vadose Zone Management and Integration
1.4.10.1.7.11.03.27.01.35.02 P71502 Characterization of Systems
1.4.10.1.7.11.03.27.01.35.03 P71503 System Assessment Capability
1.4.10.1.7.11.03.27.01.35.04 P71504 Science and Technology (PNNL Fin Plan)

WORK BREAKDOWN STRUCTURE INDEX

PBS	Indenture Level 5	6	7	8	9	10	11	Title	HQ/ERC WBS #	B&R #
RL-ER02		X						200 Area Environmental Restoration Remedial Action	1.4.10.1.1.02	EW02J1020
RL-ER02			X					200 Area Remedial Action	1.4.10.1.1.02.05	EW02J1020
RL-ER02				X				200 Area NPL Common Source Assessment	1.4.10.1.1.02.05.25	EW02J1020
RL-ER02					X			200-PW-2 Operable Unit	1.4.10.1.1.02.05.25.02	EW02J1020
RL-ER02						X		200-PW-2 Operable Unit Assessment	1.4.10.1.1.02.05.25.02.31	EW02J1020
RL-ER02							X	200-PW-2 Uranium-Rich Process Waste Group Assessment	1.4.10.1.1.02.05.25.02.31.01	EW02J1020
RL-ER02					X			200-CW-1 Operable Unit	1.4.10.1.1.02.05.25.07	EW02J1020
RL-ER02						X		200-CW-1 Operable Unit Assessment	1.4.10.1.1.02.05.25.07.31	EW02J1020
RL-ER02							X	200-CW-1 Gable Mtn/B-Pond and Ditches Cooling Water Group Assess	1.4.10.1.1.02.05.25.07.31.01	EW02J1020
RL-ER02					X			200 Area NPL Common Source	1.4.10.1.1.02.05.25.24	EW02J1020
RL-ER02						X		200 Area NPL Common Source Assessment	1.4.10.1.1.02.05.25.24.31	EW02J1020
RL-ER02							X	200 Area NPL Common Source Assessment Activities	1.4.10.1.1.02.05.25.24.31.01	EW02J1020
RL-ER08		X						Groundwater Management Project	1.4.10.1.1.08	EW02J1080
RL-ER08			X					100 Area Groundwater Remedial Action	1.4.10.1.1.08.02	EW02J1080
RL-ER08				X				100-KR GW Remedial Actions	1.4.10.1.1.08.02.06	EW02J1080
RL-ER08					X			100-KR-4 GW Operable Unit	1.4.10.1.1.08.02.06.04	EW02J1080
RL-ER08						X		100-KR-4 GW Remediation	1.4.10.1.1.08.02.06.04.32	EW02J1080
RL-ER08							X	100-KR-4 GW Chemical Treatment Process	1.4.10.1.1.08.02.06.04.32.12	EW02J1080
RL-ER08				X				100-HR GW Remedial Actions	1.4.10.1.1.08.02.08	EW02J1080
RL-ER08					X			100-HR-3 GW Operable Unit	1.4.10.1.1.08.02.08.03	EW02J1080
RL-ER08						X		100-HR-3 GW Remediation	1.4.10.1.1.08.02.08.03.32	EW02J1080
RL-ER08							X	100-HR-3 GW Chemical Treatment Process	1.4.10.1.1.08.02.08.03.32.12	EW02J1080
RL-ER08							X	100-HR-3 In-Situ Redox Manipulation	1.4.10.1.1.08.02.08.03.32.14	EW02J1080
RL-ER08				X				100-NR GW Remedial Action	1.4.10.1.1.08.02.09	EW02J1080
RL-ER08					X			100-NR-2 GW Operable Unit	1.4.10.1.1.08.02.09.02	EW02J1080

WORK BREAKDOWN STRUCTURE INDEX

PBS	Indenture Level 5	6	7	8	9	10	11	Title	HQ/ERC WBS #	B&R #
RL-ER08						X		100-NR-2 GW Operable Unit Remediation	1.4.10.1.1.08.02.09.02.32	EW02J1080
RL-ER08							X	100-NR-2 GW ERA Implementation	1.4.10.1.1.08.02.09.02.32.02	EW02J1080
RL-ER08				X				100 Area GW Remedial Action River Corridor Common	1.4.10.1.1.08.02.29	EW02J1080
RL-ER08					X			100 Area GW Remedial Action River Corridor Common Operable Unit	1.4.10.1.1.08.02.29.01	EW02J1080
RL-ER08						X		100 Area GW Remedial Action River Corridor Common Remediation	1.4.10.1.1.08.02.29.01.32	EW02J1080
RL-ER08							X	100 Area GW Remedial Action River Corridor Common Support	1.4.10.1.1.08.02.29.01.32.01	EW02J1080
RL-ER08			X					Hanford Site Groundwater Management	1.4.10.1.1.08.03	EW02J1080
RL-ER08				X				Groundwater Monitoring	1.4.10.1.1.08.03.24	EW02J1080
RL-ER08					X			GW Monitoring	1.4.10.1.1.08.03.24.01	EW02J1080
RL-ER08						X		GW Monitoring Remediation	1.4.10.1.1.08.03.24.01.02	EW02J1080
RL-ER08							X	GW Project Support Costs	1.4.10.1.1.08.03.24.01.02.01	EW02J1080
RL-ER08							X	GW Long Term Monitoring	1.4.10.1.1.08.03.24.01.02.02	EW02J1080
RL-ER08							X	PNNL: GW Seismic Monitoring	1.4.10.1.1.08.03.24.01.02.03	EW02J1080
RL-ER08							X	PNNL: GW Vadose Monitoring	1.4.10.1.1.08.03.24.01.02.04	EW02J1080
RL-ER08							X	PNNL: GW Modeling	1.4.10.1.1.08.03.24.01.02.05	EW02J1080
RL-ER08							X	PNNL: GW Monitoring	1.4.10.1.1.08.03.24.01.02.06	EW02J1080
RL-ER08							X	PNNL: GW Well Installation	1.4.10.1.1.08.03.24.01.02.07	EW02J1080
RL-ER08							X	PNNL: GW Project Support	1.4.10.1.1.08.03.24.01.02.0P	EW02J1080
RL-ER08					X			RCRA and GW Monitoring (7340)	1.4.10.1.1.08.03.24.09	EW02J1080
RL-ER08						X		RCRA and GW Monitoring Landlord (7340)	1.4.10.1.1.08.03.24.09.31	EW02J1080
RL-ER08							X	7340-1 GW Well Installation (Expense)	1.4.10.1.1.08.03.24.09.31.08	EW02J1080
RL-ER08				X				Hanford Site GW Well Maint., Refurbishment, Abandonment	1.4.10.1.1.08.03.25	EW02J1080
RL-ER08					X			GW Well Maintenence, Refurbishment, Abandonment	1.4.10.1.1.08.03.25.01	EW02J1080
RL-ER08						X		GW Well Maintenence, Refurbishment, Abandonment Landlord	1.4.10.1.1.08.03.25.01.02	EW02J1080
RL-ER08							X	GW Maintenence, Refurbishment, Abandonment	1.4.10.1.1.08.03.25.01.02.02	EW02J1080

WORK BREAKDOWN STRUCTURE INDEX

PBS	Indenture Level 5	6	7	8	9	10	11	Title	HQ/ERC WBS #	B&R #
RL-ER08				X				Hanford Site Interim Action GW Monitoring	1.4.10.1.1.08.03.26	EW02J1080
RL-ER08					X			Interim Action GW Monitoring	1.4.10.1.1.08.03.26.01	EW02J1080
RL-ER08						X		Interim Action GW Monitoring Landlord	1.4.10.1.1.08.03.26.01.02	EW02J1080
RL-ER08							X	GW Interim Action Monitoring	1.4.10.1.1.08.03.26.01.02.02	EW02J1080
RL-ER08			X					200 Area Groundwater Remedial Action	1.4.10.1.1.08.06	EW02J1080
RL-ER08				X				200-UP GW Remedial Actions	1.4.10.1.1.08.06.16	EW02J1080
RL-ER08					X			200-UP-1 GW Operable Unit	1.4.10.1.1.08.06.16.01	EW02J1080
RL-ER08						X		200-UP-1 GW Remediation	1.4.10.1.1.08.06.16.01.32	EW02J1080
RL-ER08							X	200-UP-1 GW Chemical Treatment Operation	1.4.10.1.1.08.06.16.01.32.12	EW02J1080
RL-ER08				X				200-ZP GW Remedial Actions	1.4.10.1.1.08.06.17	EW02J1080
RL-ER08					X			200-ZP-1 GW Operable Unit	1.4.10.1.1.08.06.17.01	EW02J1080
RL-ER08						X		200-ZP-1 GW Remediation	1.4.10.1.1.08.06.17.01.32	EW02J1080
RL-ER08							X	200-ZP-1 GW Physical Treatment Process	1.4.10.1.1.08.06.17.01.32.05	EW02J1080
RL-ER08					X			200-ZP-2 GW (Vapor)	1.4.10.1.1.08.06.17.02	EW02J1080
RL-ER08						X		200-ZP-2 GW RCRA/CERCLA Interim Removal Actions	1.4.10.1.1.08.06.17.02.34	EW02J1080
RL-ER08							X	200-ZP-2 GW Physical Treatment Operation	1.4.10.1.1.08.06.17.02.34.05	EW02J1080
RL-ER08				X				200 Area GW Remedial Action Plateau Common	1.4.10.1.1.08.06.30	EW02J1080
RL-ER08					X			200 Area GW Remedial Action Plateau Common Operable Unit	1.4.10.1.1.08.06.30.01	EW02J1080
RL-ER08						X		200 Area GW Remedial Action Plateau Common Remediation	1.4.10.1.1.08.06.30.01.32	EW02J1080
RL-ER08							X	200 Area GW Remedial Action Plateau Common Support	1.4.10.1.1.08.06.30.01.32.01	EW02J1080
	X							Site-Wide Groundwater/Vadose Zone Integration Project	1.4.10.1.7	
RL-VZ01		X						Site-Wide Groundwater/Vadose Zone Integration Project	1.4.10.1.7.11	EW02J1290
RL-VZ01			X					Hanford Site Groundwater Management - Vadose Integration	1.4.10.1.7.11.03	EW02J1290
RL-VZ01				X				GW/Vadose Zone Integration Project	1.4.10.1.7.11.03.27	EW02J1290
RL-VZ01					X			GW/Vadose Zone Integration Project	1.4.10.1.7.11.03.27.01	EW02J1290

WORK BREAKDOWN STRUCTURE INDEX

PBS	Indenture Level							Title	HQ/ERC WBS #	B&R #
	5	6	7	8	9	10	11			
RL-VZ01						X		GW/Vadose Zone Integration of Vadose Zone Activities	1.4.10.1.7.11.03.27.01.35	EW02J1290
RL-VZ01							X	GW/Vadose Zone Management and Integration	1.4.10.1.7.11.03.27.01.35.01	EW02J1290
RL-VZ01							X	Characterization of Systems	1.4.10.1.7.11.03.27.01.35.02	EW02J1290
RL-VZ01							X	System Assessment Capability	1.4.10.1.7.11.03.27.01.35.03	EW02J1290
RL-VZ01							X	Science and Technology (PNNL Fin Plan)	1.4.10.1.7.11.03.27.01.35.04	EW02J1290

RESPONSIBILITY ASSIGNMENT MATRIX

OU	CA #	WBS #	Description	Responsibility	
				ERC	RL
200 Area RA		1.4.10.1.1.02	200 Area Environmental Restoration Remedial Action	FORD BH	FOLEY BL
200 Area RA		1.4.10.1.1.02.05	200 Area Remedial Action	FORD BH	FOLEY BL
200 NPL Common	PK	1.4.10.1.1.02.05.25	200 Area NPL Common Source Assessment	FORD BH	FOLEY BL
200-PW-2	PK2	1.4.10.1.1.02.05.25.02	200-PW-2 Operable Unit	FORD BH	FOLEY BL
200-PW-2	PK21	1.4.10.1.1.02.05.25.02.31	200-PW-2 Operable Unit Assessment	FORD BH	FOLEY BL
200-PW-2	PK2101	1.4.10.1.1.02.05.25.02.31.01	200-PW-2 Uranium-Rich Process Waste Group Assessment	FORD BH	FOLEY BL
200-CW-1	PK7	1.4.10.1.1.02.05.25.07	200-CW-1 Operable Unit	FORD BH	FOLEY BL
200-CW-1	PK71	1.4.10.1.1.02.05.25.07.31	200-CW-1 Operable Unit Assessment	FORD BH	FOLEY BL
200-CW-1	PK7101	1.4.10.1.1.02.05.25.07.31.01	200-CW-1 Gable Mtn/B-Pond and Ditches Cooling Water Group Assess	FORD BH	FOLEY BL
200 NPL Common	PKR	1.4.10.1.1.02.05.25.24	200 Area NPL Common Source	FORD BH	FOLEY BL
200 NPL Common	PKR1	1.4.10.1.1.02.05.25.24.31	200 Area NPL Common Source Assessment	FORD BH	FOLEY BL
200 NPL Common	PKR101	1.4.10.1.1.02.05.25.24.31.01	200 Area NPL Common Source Assessment Activities	FORD BH	FOLEY BL
GW Management		1.4.10.1.1.08	Groundwater Management Project	ARMATROUT JF	TORTOSO AC
100 Area GW		1.4.10.1.1.08.02	100 Area Groundwater Remedial Action	ARMATROUT JF	TORTOSO AC
100-KR	PC	1.4.10.1.1.08.02.06	100-KR GW Remedial Actions	ARMATROUT JF	TORTOSO AC
100-KR-4	PC4	1.4.10.1.1.08.02.06.04	100-KR-4 GW Operable Unit	ARMATROUT JF	TORTOSO AC
100-KR-4	PC42	1.4.10.1.1.08.02.06.04.32	100-KR-4 GW Remediation	ARMATROUT JF	TORTOSO AC
100-KR-4	PC4212	1.4.10.1.1.08.02.06.04.32.12	100-KR-4 GW Chemical Treatment Process	ARMATROUT JF	TORTOSO AC
100-HR	PE	1.4.10.1.1.08.02.08	100-HR GW Remedial Actions	ARMATROUT JF	TORTOSO AC
100-HR-3	PE3	1.4.10.1.1.08.02.08.03	100-HR-3 GW Operable Unit	ARMATROUT JF	TORTOSO AC
100-HR-3	PE32	1.4.10.1.1.08.02.08.03.32	100-HR-3 GW Remediation	ARMATROUT JF	TORTOSO AC
100-HR-3	PE3212	1.4.10.1.1.08.02.08.03.32.12	100-HR-3 GW Chemical Treatment Process	ARMATROUT JF	TORTOSO AC
100-HR-3	PE3214	1.4.10.1.1.08.02.08.03.32.14	100-HR-3 In-Situ Redox Manipulation	ARMATROUT JF	TORTOSO AC
100-NR	PG	1.4.10.1.1.08.02.09	100-NR GW Remedial Action	ARMATROUT JF	TORTOSO AC
100-NR-2	PG2	1.4.10.1.1.08.02.09.02	100-NR-2 GW Operable Unit	ARMATROUT JF	TORTOSO AC

RESPONSIBILITY ASSIGNMENT MATRIX

OU	CA #	WBS #	Description	Responsibility	
				ERC	RL
100-NR-2	PG22	1.4.10.1.1.08.02.09.02.32	100-NR-2 GW Operable Unit Remediation	ARMATROUT JF	TORTOSO AC
100-NR-2	PG2202	1.4.10.1.1.08.02.09.02.32.02	100-NR-2 GW ERA Implementation	ARMATROUT JF	TORTOSO AC
100 Area River Corridor	PH	1.4.10.1.1.08.02.29	100 Area GW Remedial Action River Corridor Common	ARMATROUT JF	TORTOSO AC
100 Area River Corridor	PH1	1.4.10.1.1.08.02.29.01	100 Area GW Remedial Action River Corridor Common Operable Unit	ARMATROUT JF	TORTOSO AC
100 Area River Corridor	PH12	1.4.10.1.1.08.02.29.01.32	100 Area GW Remedial Action River Corridor Common Remediation	ARMATROUT JF	TORTOSO AC
100 Area River Corridor	PH1201	1.4.10.1.1.08.02.29.01.32.01	100 Area GW Remedial Action River Corridor Common Support	ARMATROUT JF	TORTOSO AC
HSGWM		1.4.10.1.1.08.03	Hanford Site Groundwater Management	ARMATROUT JF	FURMAN MJ
GW Monitoring	P4	1.4.10.1.1.08.03.24	Groundwater Monitoring	ARMATROUT JF	FURMAN MJ
GW Monitoring	P41	1.4.10.1.1.08.03.24.01	GW Monitoring	ARMATROUT JF	FURMAN MJ
GW Monitoring	P412	1.4.10.1.1.08.03.24.01.02	GW Monitoring Remediation	ARMATROUT JF	FURMAN MJ
GW Monitoring	P41201	1.4.10.1.1.08.03.24.01.02.01	GW Project Support Costs	ARMATROUT JF	FURMAN MJ
GW Monitoring	P41202	1.4.10.1.1.08.03.24.01.02.02	GW Long Term Monitoring	ARMATROUT JF	FURMAN MJ
GW Monitoring	P41203	1.4.10.1.1.08.03.24.01.02.03	PNNL: GW Seismic Monitoring	ARMATROUT JF	FURMAN MJ
GW Monitoring	P41204	1.4.10.1.1.08.03.24.01.02.04	PNNL: GW Vadose Monitoring	ARMATROUT JF	FURMAN MJ
GW Monitoring	P41205	1.4.10.1.1.08.03.24.01.02.05	PNNL: GW Modeling	ARMATROUT JF	FURMAN MJ
GW Monitoring	P41206	1.4.10.1.1.08.03.24.01.02.06	PNNL: GW Monitoring	ARMATROUT JF	FURMAN MJ
GW Monitoring	P41207	1.4.10.1.1.08.03.24.01.02.07	PNNL: GW Well Installation	ARMATROUT JF	FURMAN MJ
GW Monitoring	P4120P	1.4.10.1.1.08.03.24.01.02.0P	PNNL: GW Project Support	ARMATROUT JF	FURMAN MJ
RCRA Monitoring	P49	1.4.10.1.1.08.03.24.09	RCRA and GW Monitoring (7340)	ARMATROUT JF	FURMAN MJ
RCRA Monitoring	P491	1.4.10.1.1.08.03.24.09.31	RCRA and GW Monitoring Landlord (7340)	ARMATROUT JF	FURMAN MJ
RCRA Monitoring	P49108	1.4.10.1.1.08.03.24.09.31.08	7340-1 GW Well Installation (Expense)	ARMATROUT JF	FURMAN MJ
GW Well Maintenance	P5	1.4.10.1.1.08.03.25	Hanford Site GW Well Maint., Refurbishment, Abandonment	ARMATROUT JF	FURMAN MJ
GW Well Maintenance	P51	1.4.10.1.1.08.03.25.01	GW Well Maintenence, Refurbishment, Abandonment	ARMATROUT JF	FURMAN MJ
GW Well Maintenance	P512	1.4.10.1.1.08.03.25.01.02	GW Well Maintenence, Refurbishment, Abandonment Landlord	ARMATROUT JF	FURMAN MJ
GW Well Maintenance	P51202	1.4.10.1.1.08.03.25.01.02.02	GW Maintenence, Refurbishment, Abandonment	ARMATROUT JF	FURMAN MJ

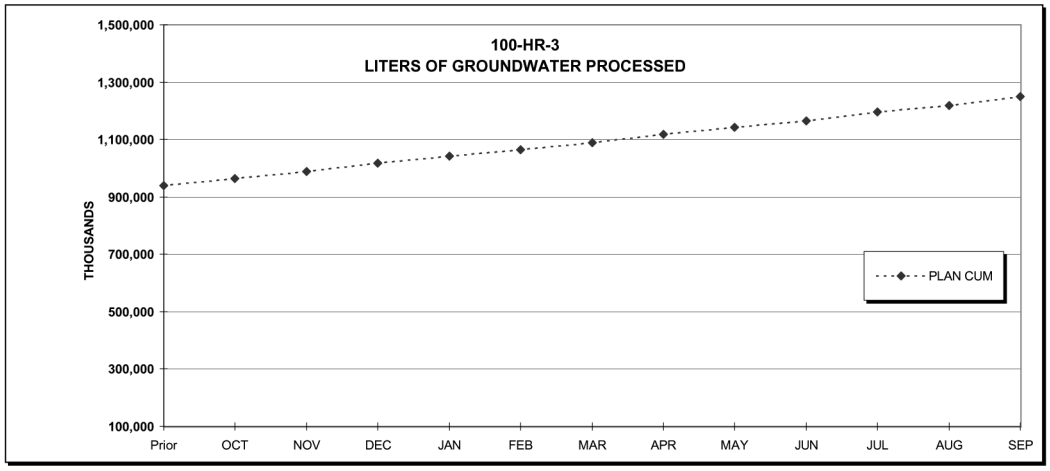
RESPONSIBILITY ASSIGNMENT MATRIX

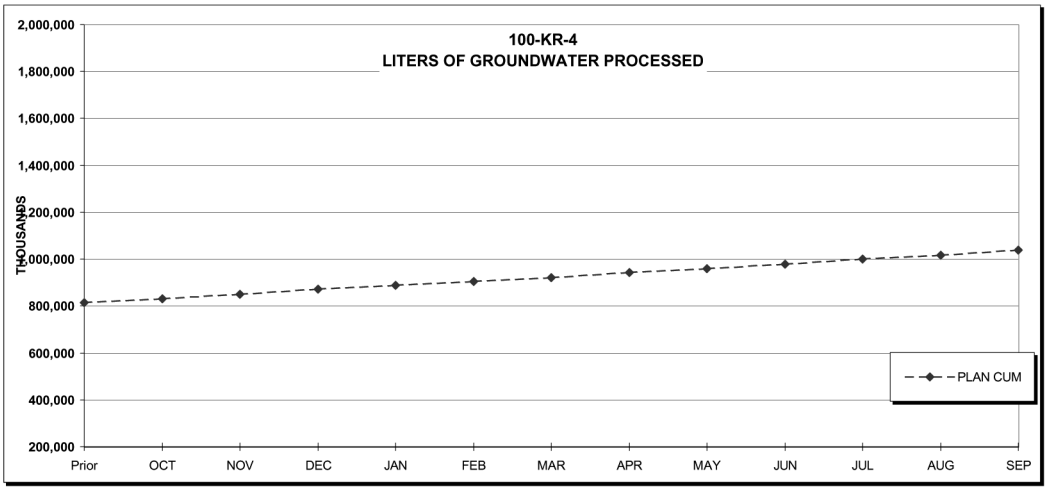
OU	CA #	WBS #	Description	Responsibility	
				ERC	RL
IA GW Maint	P6	1.4.10.1.1.08.03.26	Hanford Site Interim Action GW Monitoring	ARMATROUT JF	FURMAN MJ
IA GW Maint	P61	1.4.10.1.1.08.03.26.01	Interim Action GW Monitoring	ARMATROUT JF	FURMAN MJ
IA GW Maint	P612	1.4.10.1.1.08.03.26.01.02	Interim Action GW Monitoring Landlord	ARMATROUT JF	FURMAN MJ
IA GW Maint	P61202	1.4.10.1.1.08.03.26.01.02.02	GW Interim Action Monitoring	ARMATROUT JF	FURMAN MJ
200 Area GW		1.4.10.1.1.08.06	200 Area Groundwater Remedial Action	ARMATROUT JF	TORTOSO AC
200-UP	PT	1.4.10.1.1.08.06.16	200-UP GW Remedial Actions	ARMATROUT JF	TORTOSO AC
200-UP-1	PT1	1.4.10.1.1.08.06.16.01	200-UP-1 GW Operable Unit	ARMATROUT JF	TORTOSO AC
200-UP-1	PT12	1.4.10.1.1.08.06.16.01.32	200-UP-1 GW Remediation	ARMATROUT JF	TORTOSO AC
200-UP-1	PT1212	1.4.10.1.1.08.06.16.01.32.12	200-UP-1 GW Chemical Treatment Operation	ARMATROUT JF	TORTOSO AC
200-ZP	PU	1.4.10.1.1.08.06.17	200-ZP GW Remedial Actions	ARMATROUT JF	TORTOSO AC
200-ZP-1	PU1	1.4.10.1.1.08.06.17.01	200-ZP-1 GW Operable Unit	ARMATROUT JF	TORTOSO AC
200-ZP-1	PU12	1.4.10.1.1.08.06.17.01.32	200-ZP-1 GW Remediation	ARMATROUT JF	TORTOSO AC
200-ZP-1	PU1205	1.4.10.1.1.08.06.17.01.32.05	200-ZP-1 GW Physical Treatment Process	ARMATROUT JF	TORTOSO AC
200-ZP-2	PU2	1.4.10.1.1.08.06.17.02	200-ZP-2 GW (Vapor)	ARMATROUT JF	TORTOSO AC
200-ZP-2	PU24	1.4.10.1.1.08.06.17.02.34	200-ZP-2 GW RCRA/CERCLA Interim Removal Actions	ARMATROUT JF	TORTOSO AC
200-ZP-2	PU2405	1.4.10.1.1.08.06.17.02.34.05	200-ZP-2 GW Physical Treatment Operation	ARMATROUT JF	TORTOSO AC
100 Area Plateau	PX	1.4.10.1.1.08.06.30	200 Area GW Remedial Action Plateau Common	ARMATROUT JF	TORTOSO AC
100 Area Plateau	PX1	1.4.10.1.1.08.06.30.01	200 Area GW Remedial Action Plateau Common Operable Unit	ARMATROUT JF	TORTOSO AC
100 Area Plateau	PX12	1.4.10.1.1.08.06.30.01.32	200 Area GW Remedial Action Plateau Common Remediation	ARMATROUT JF	TORTOSO AC
100 Area Plateau	PX1201	1.4.10.1.1.08.06.30.01.32.01	200 Area GW Remedial Action Plateau Common Support	ARMATROUT JF	TORTOSO AC
GW/Vadose Zone		1.4.10.1.7	Site-Wide Groundwater/Vadose Zone Integration Project	GRAHAM MJ	THOMPSON KM
GW/Vadose Zone		1.4.10.1.7.11	Site-Wide Groundwater/Vadose Zone Integration Project	GRAHAM MJ	THOMPSON KM
GW/Vadose Zone		1.4.10.1.7.11.03	Hanford Site Groundwater Management - Vadose Integration	GRAHAM MJ	THOMPSON KM
GW/Vadose Zone	P7	1.4.10.1.7.11.03.27	GW/Vadose Zone Integration Project	GRAHAM MJ	THOMPSON KM
GW/Vadose Zone	P71	1.4.10.1.7.11.03.27.01	GW/Vadose Zone Integration Project	GRAHAM MJ	THOMPSON KM

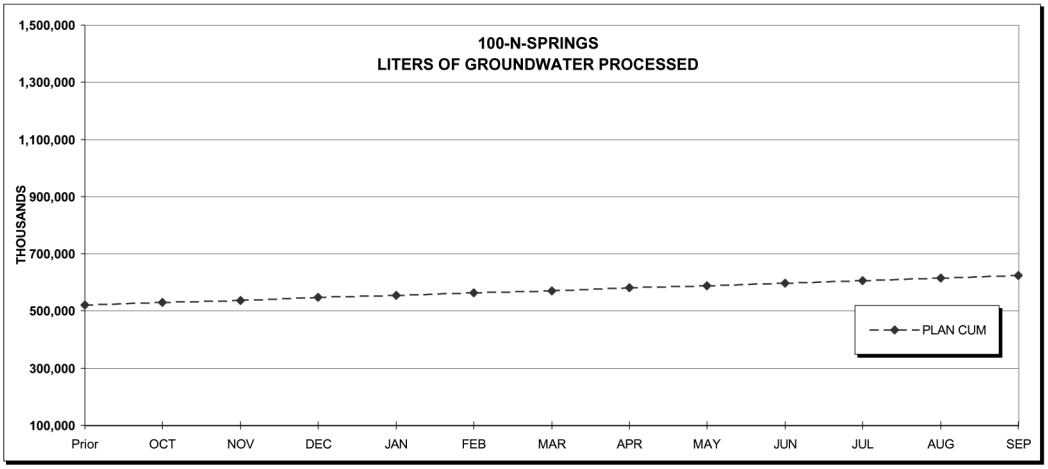
RESPONSIBILITY ASSIGNMENT MATRIX

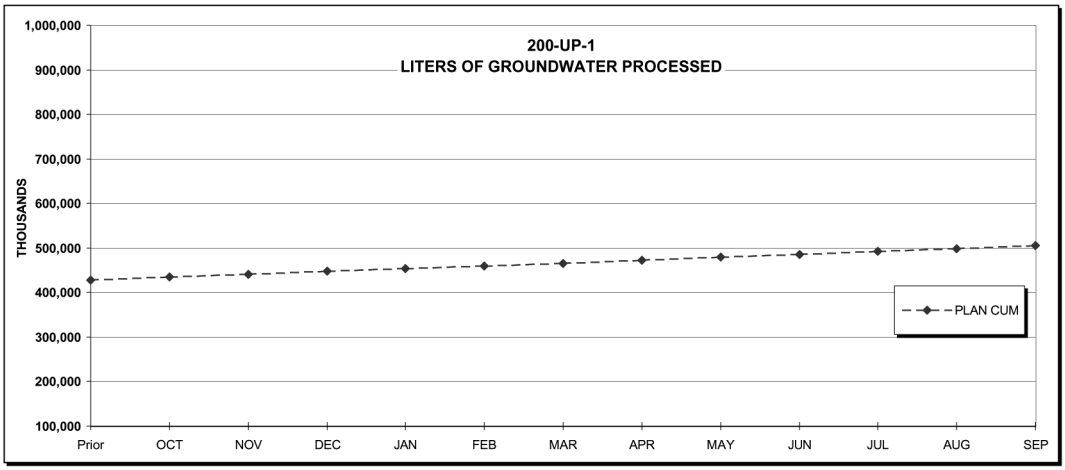
OU	CA #	WBS #	Description	Responsibility	
				ERC	RL
GW/Vadose Zone	P715	1.4.10.1.7.11.03.27.01.35	GW/Vadose Zone Integration of Vadose Zone Activities	GRAHAM MJ	THOMPSON KM
GW/Vadose Zone	P71501	1.4.10.1.7.11.03.27.01.35.01	GW/Vadose Zone Management and Integration	GRAHAM MJ	THOMPSON KM
GW/Vadose Zone	P71502	1.4.10.1.7.11.03.27.01.35.02	Characterization of Systems	GRAHAM MJ	THOMPSON KM
GW/Vadose Zone	P71503	1.4.10.1.7.11.03.27.01.35.03	System Assessment Capability	GRAHAM MJ	THOMPSON KM
GW/Vadose Zone	P71504	1.4.10.1.7.11.03.27.01.35.04	Science and Technology (PNNL Fin Plan)	GRAHAM MJ	THOMPSON KM

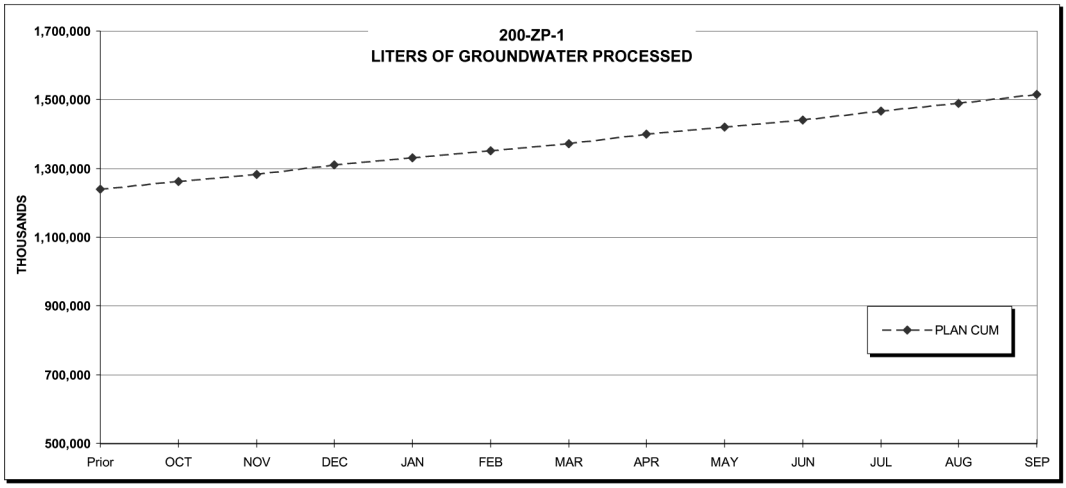
PRODUCTION METRICS

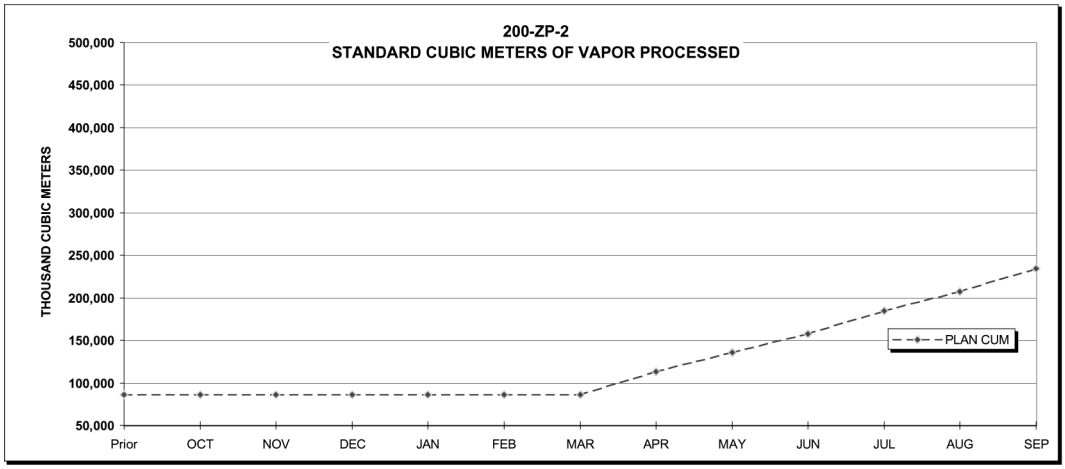






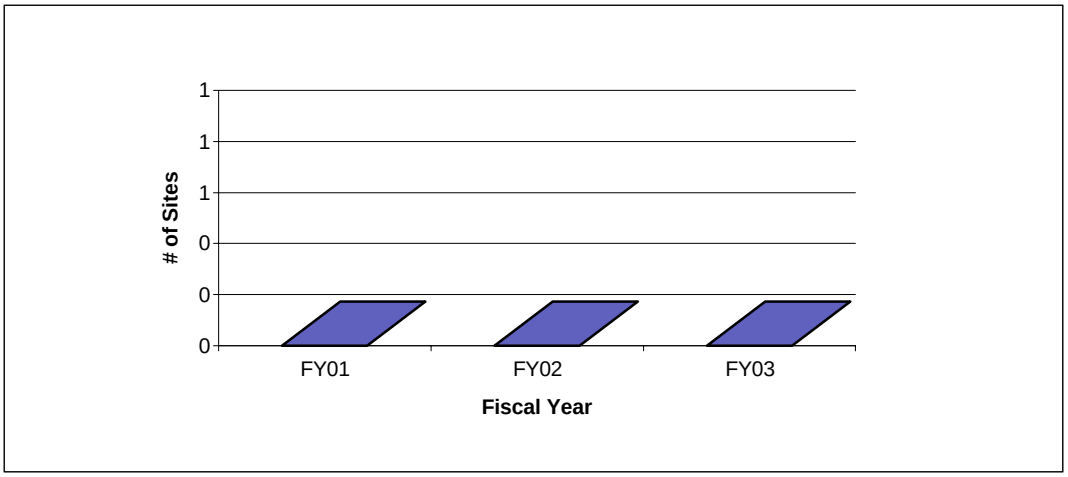

200-UP-1
LITERS OF GROUNDWATER PROCESSED
THOUSANDS
1,000,000
900,000
800,000
700,000
600,000
500,000
400,000
300,000
200,000
100,000
Prior
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
PLAN CUM


200-ZP-1
LITERS OF GROUNDWATER PROCESSED
THOUSANDS
1,700,000
1,500,000
1,300,000
1,100,000
900,000
700,000
500,000
Prior
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
PLAN CUM


200-ZP-2
STANDARD CUBIC METERS OF VAPOR PROCESSED
THOUSAND CUBIC METERS
500,000
450,000
400,000
350,000
300,000
250,000
200,000
150,000
100,000
50,000
Prior
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
PLAN CUM

AREA REMEDIATION QUANTITIES PRODUCTION RATES

Number of Sites Assessed



	FY01	FY02	FY03
Each	0	0	0

200 Area Waste Sites

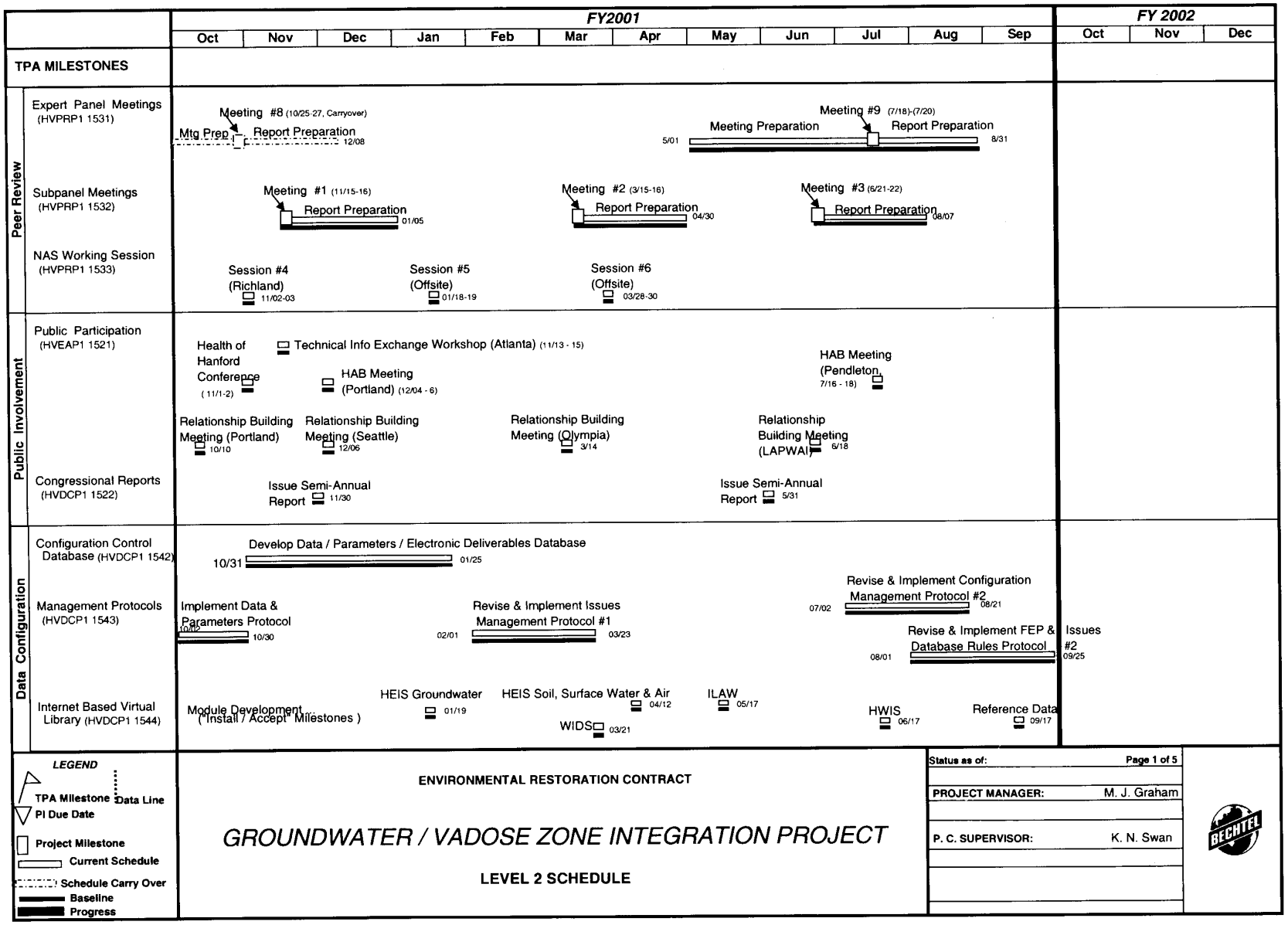
FY01	FY02	FY03
None	***None***	***None***

NOTE: 200-CW-1 Proposed Plan to RL is January 17, 2002

Groundwater/Vadose Zone Integration Project

Area Schedule Baseline

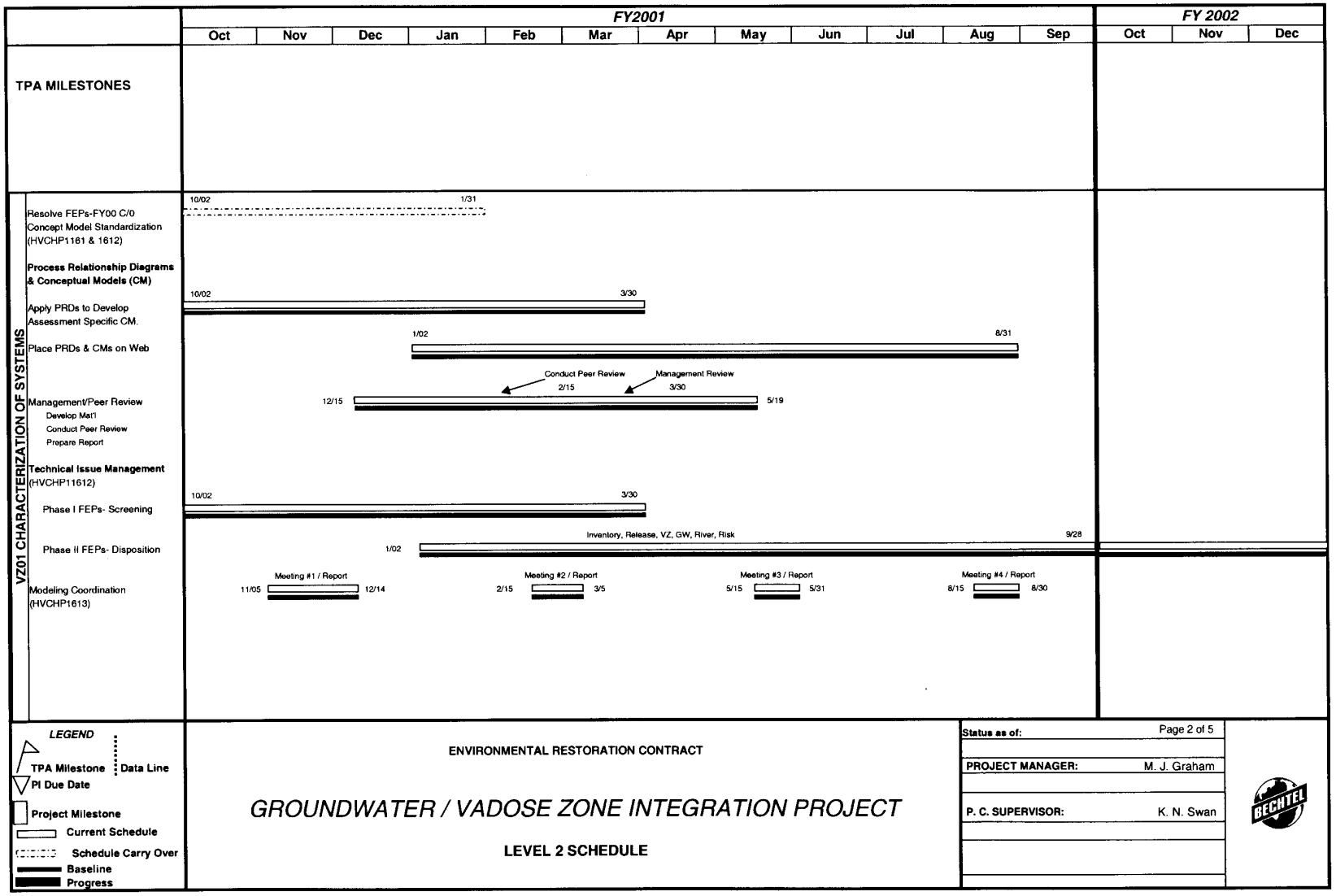
October 1, 2000



Groundwater/Vadose Zone Integration Project

Area Schedule Baseline

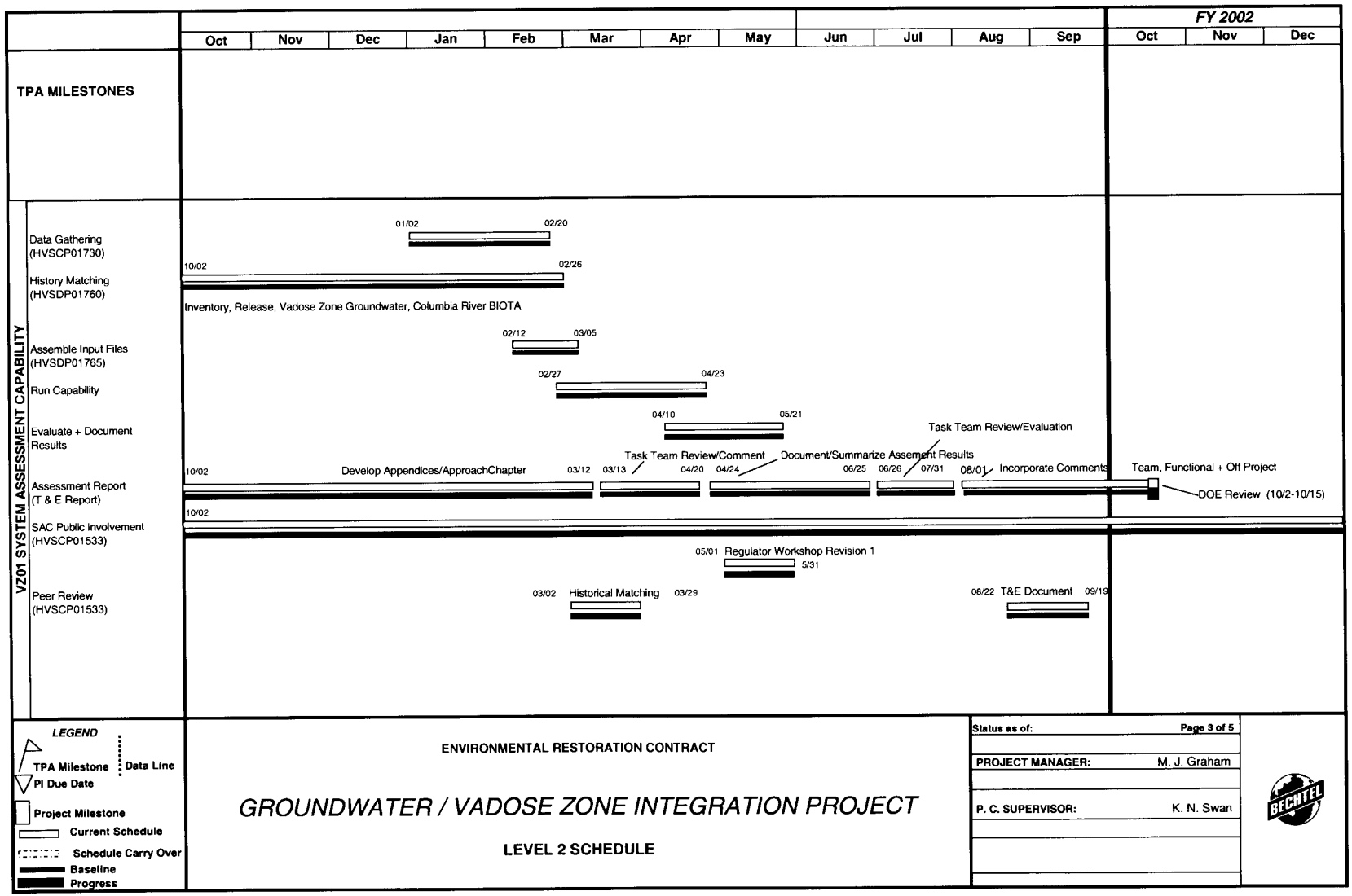
October 1, 2000



Groundwater/Vadose Zone Integration Project

Area Schedule Baseline

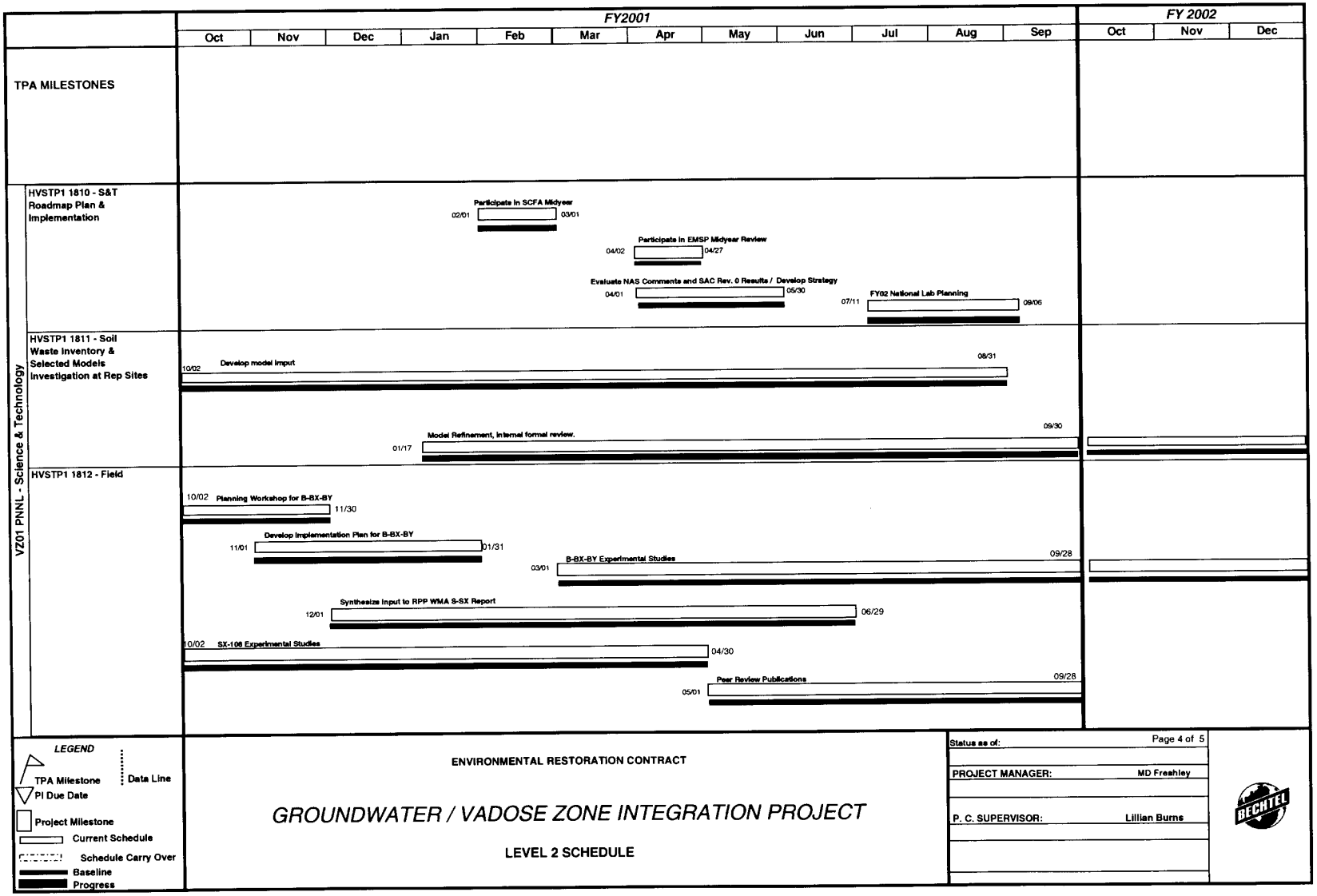
October 1, 2000



Groundwater/Vadose Zone Integration Project

Area Schedule Baseline

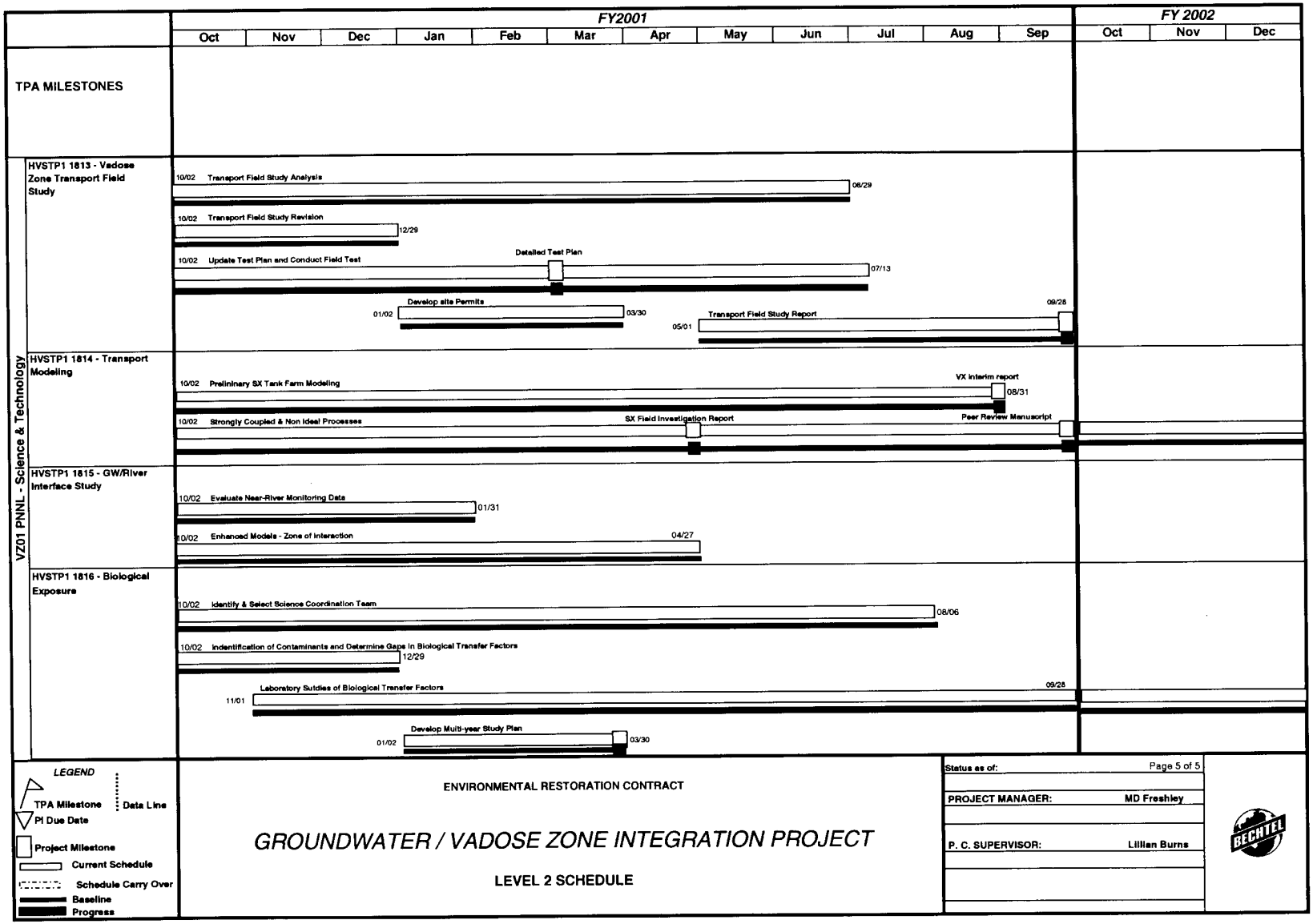
October 1, 2000



Groundwater/Vadose Zone Integration Project

Area Schedule Baseline

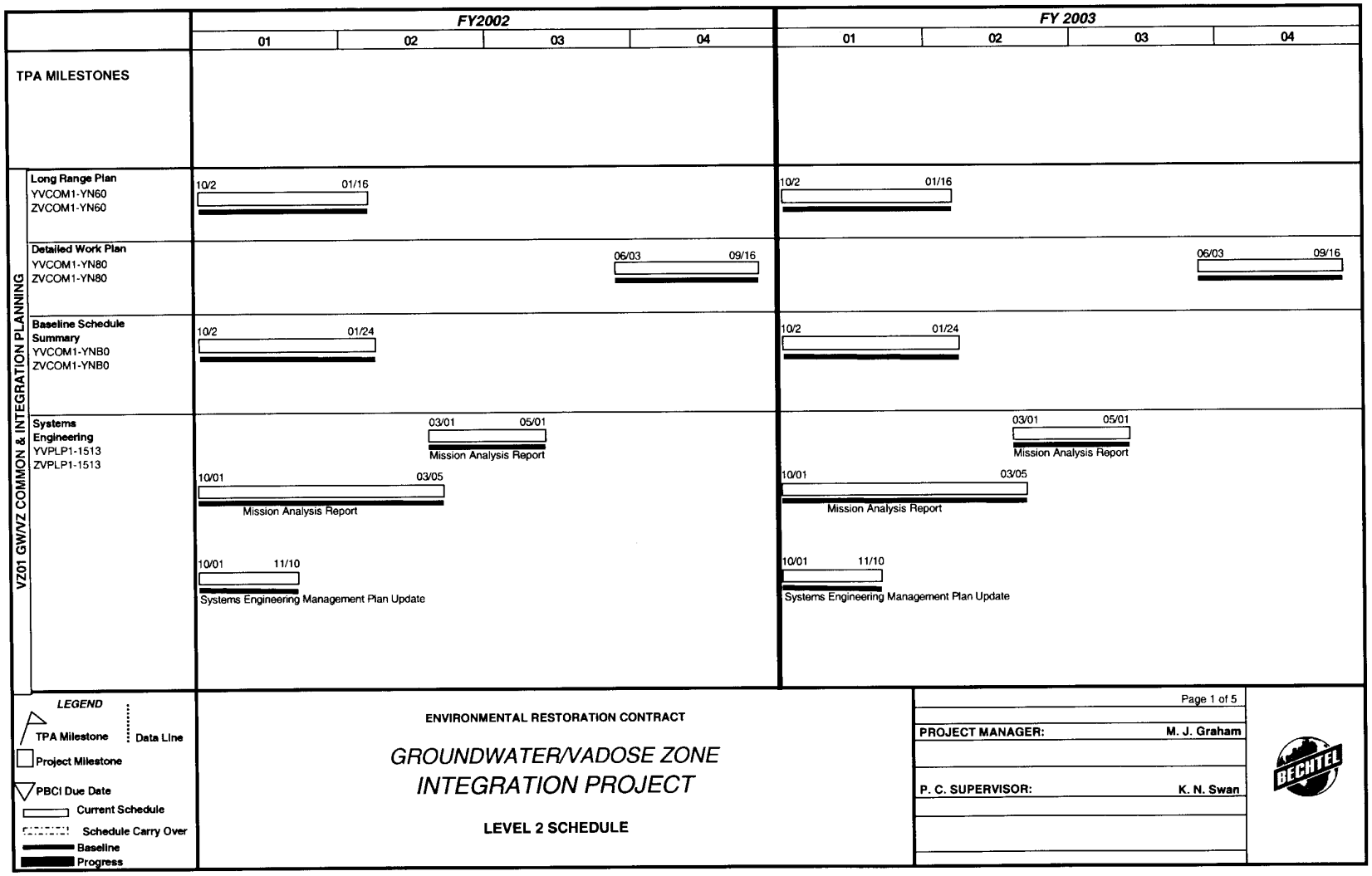
October 1, 2000



Groundwater/Vadose Zone Integration Project

Area Schedule Baseline

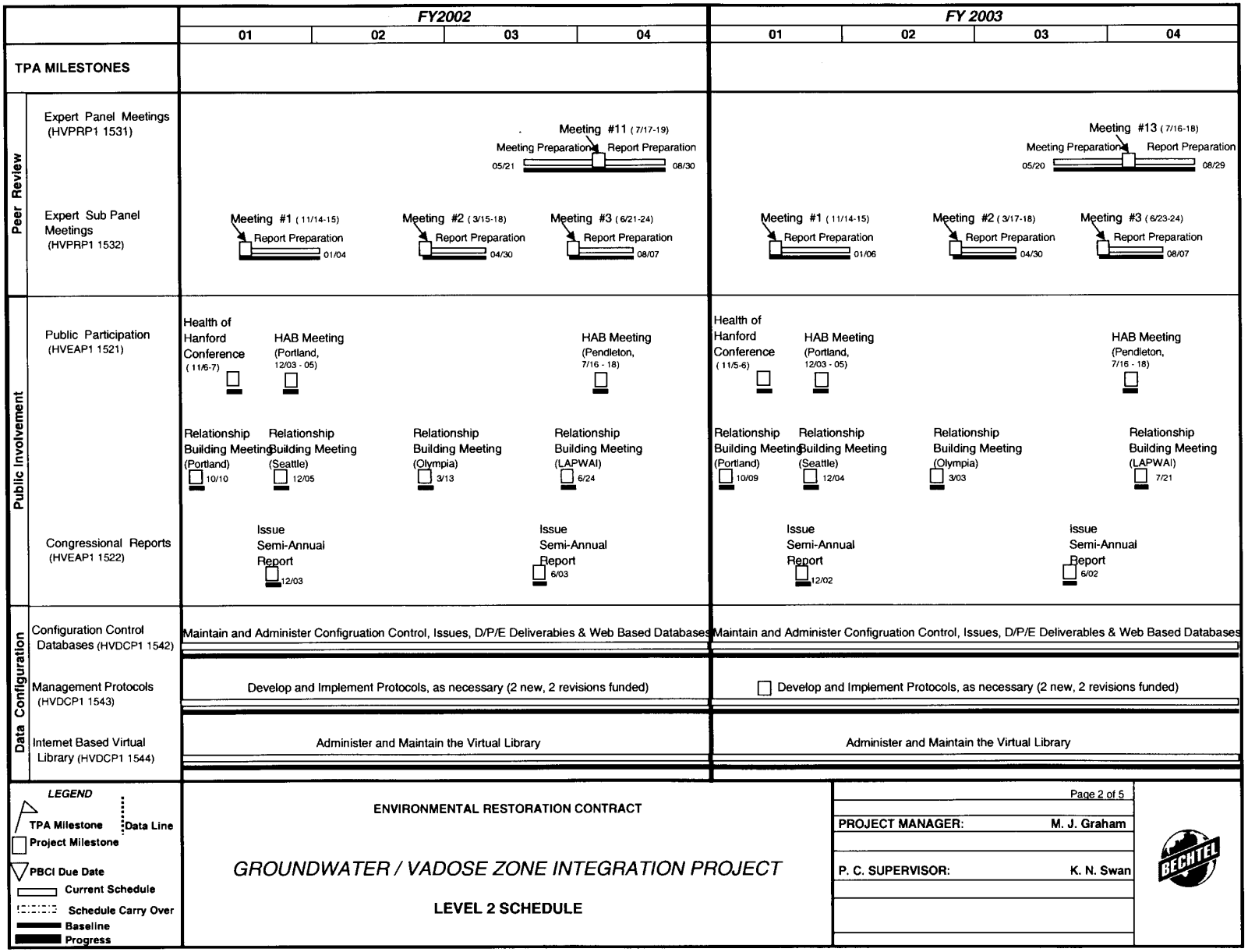
October 1, 2000



Groundwater/Vadose Zone Integration Project

Area Schedule Baseline

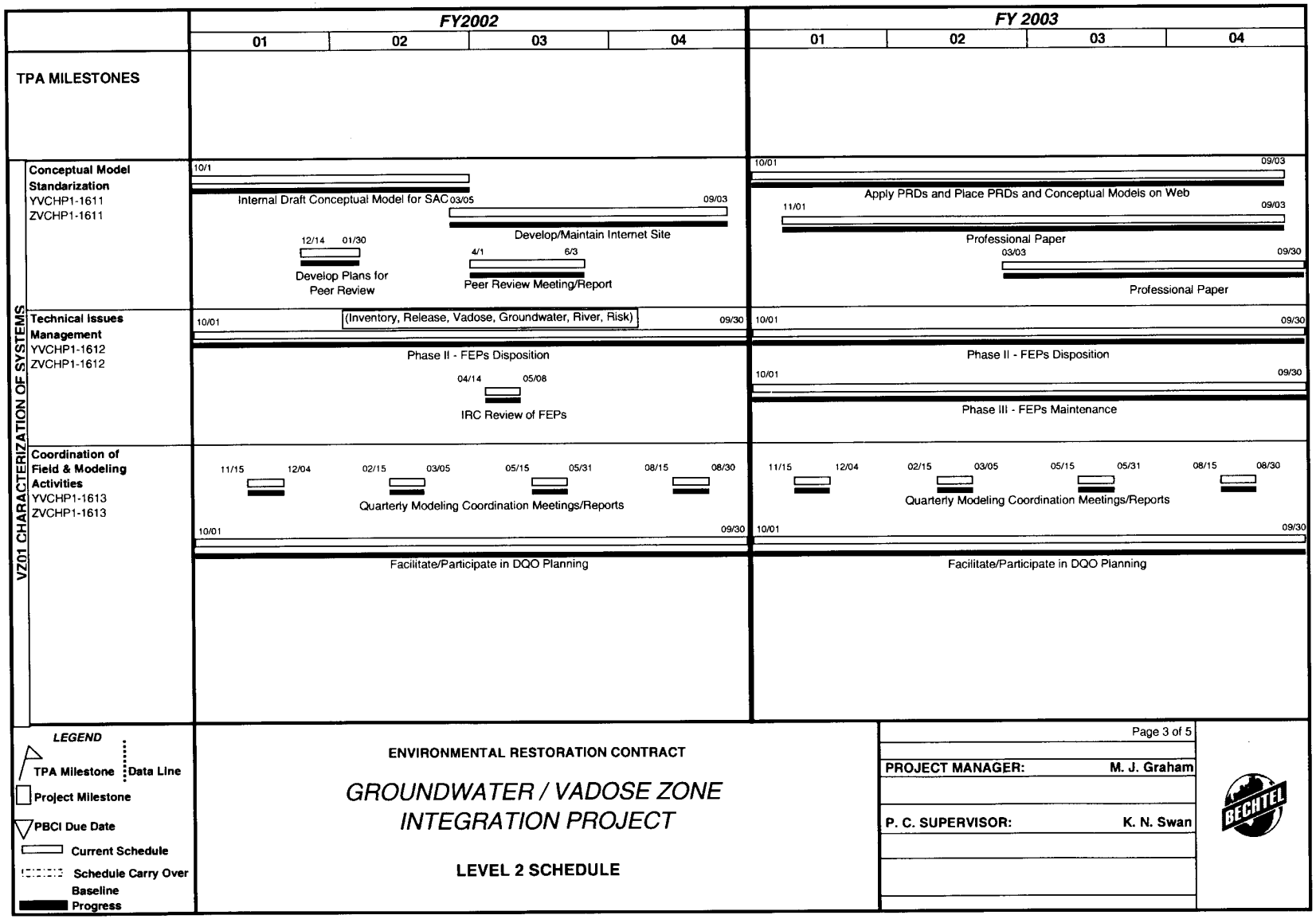
October 1, 2000



Groundwater/Vadose Zone Integration Project

Area Schedule Baseline

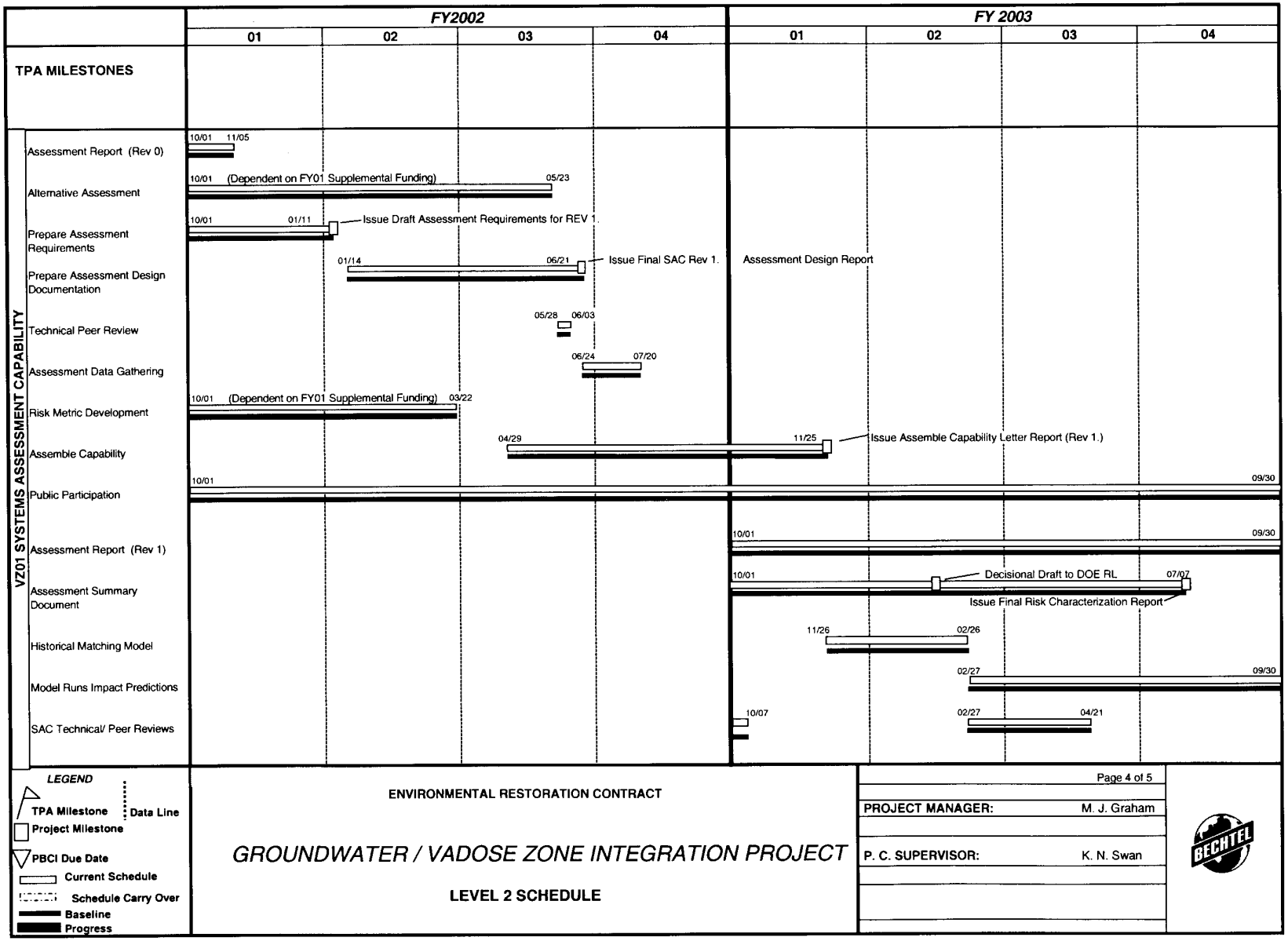
October 1, 2000



Groundwater/Vadose Zone Integration Project

Area Schedule Baseline

October 1, 2000



Groundwater/Vadose Zone Integration Project

Area Schedule Baseline

October 1, 2000

	FY2002				FY 2003			
	01	02	03	04	01	02	03	04
TPA MILESTONES								
VZ01 PNNL SCIENCE & TECHNOLOGY								
HVSTP1 1810 - S&T Roadmap Plan & Implementation	10/01			09/30	10/01			09/30
HVSTP1 1811 - Soil Waste Inventory & Selected Models	10/01			09/30	10/01			09/30
HVSTP1 1812 - Field Investigation at Rep Sites	10/01			09/30	10/01			09/30
HVSTP1 1813 - Vadose Zone Transport Field Study	10/01			09/30	10/01			09/30
HVSTP1 1814 - Transport Modeling	10/01			09/30	10/01			09/30
HVSTP1 1815 - GW/River Interface Study	10/01			09/30	10/01			09/30
HVSTP1 1816 - Biological Exposure	10/01			09/30	10/01			09/30

LEGEND

- TPA Milestone
- Data Line
- Project Milestone
- PBCI Due Date
- Current Schedule
- Schedule Carry Over
- Baseline
- Progress

ENVIRONMENTAL RESTORATION CONTRACT

GROUNDWATER/VADOSE ZONE INTEGRATION PROJECT

LEVEL 2 SCHEDULE

Page 5 of 5

PROJECT MANAGER: MD FRESHLEY

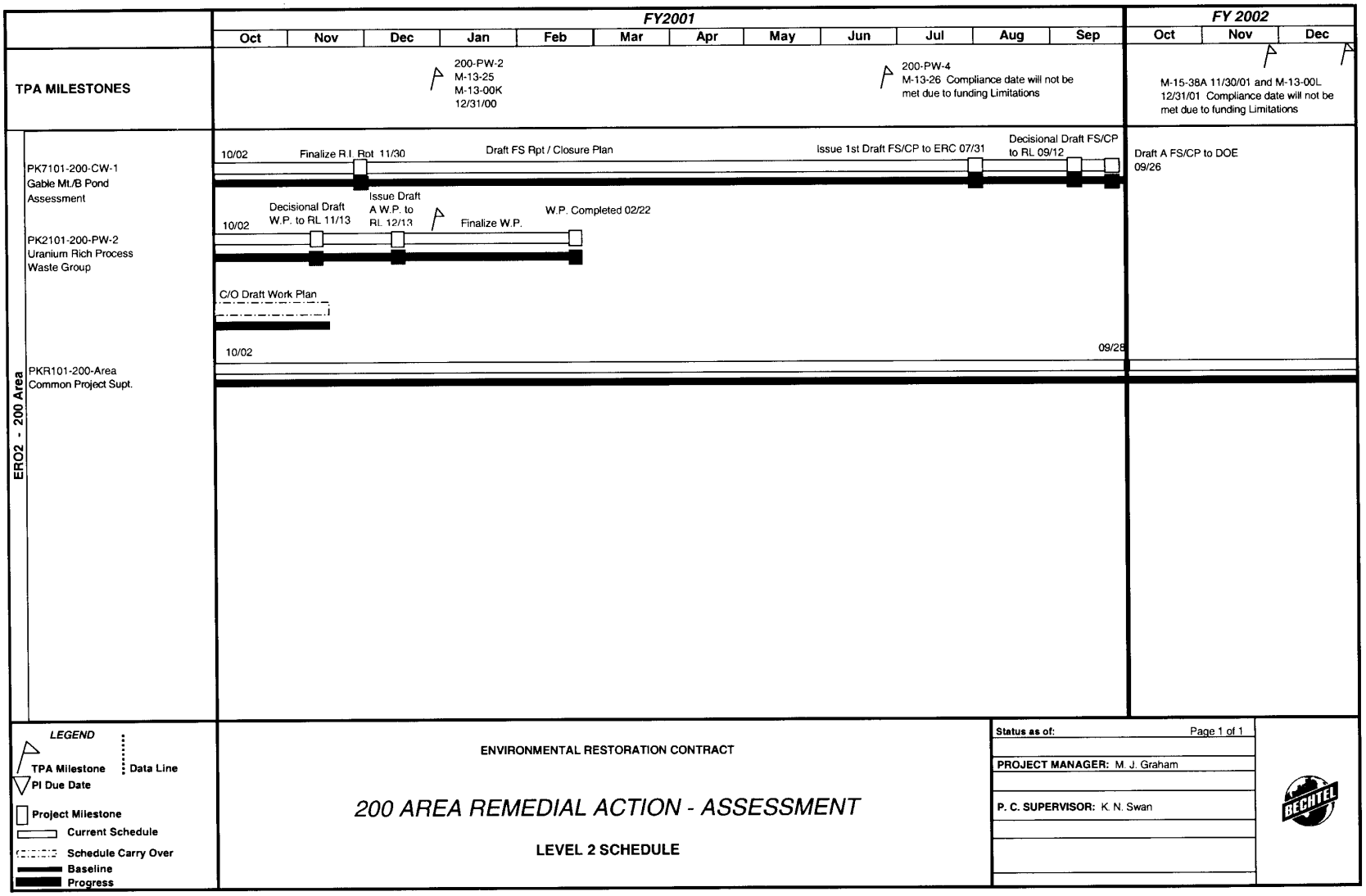
P. C. SUPERVISOR: LR BURNS

BECHTEL

Groundwater/Vadose Zone Integration Project

Area Schedule Baseline

October 1, 2000



Groundwater/Vadose Zone Integration Project

Area Schedule Baseline

October 1, 2000

	FY2002				FY 2003			
	01	02	03	04	01	02	03	04
TPA MILESTONES	M-15-38A 11/30/01; M-13-00L12/31/01 M-15-40A 09/30/02 Compliance date will not be met due to funding Limitations				M-13-00M 12/31/02; M-20-3902/28/03; M-15-40B 05/31/03; M-15-39A 09/30/03 Compliance date will not be met due to funding Limitations			
ERO2 - 200 AREA / PKR101-200-Area Common	CAP SUMMARY				CAP SUMMARY			

Note: Activities to support meeting TPA milestones and to achieve sitewide panning goals are not detailed due to insufficient funding for FY02 and FY03. Activities necessary to maintain TPA compliance and to achieve Central Plateau planning outcomes are detailed in the Additional Authorization section of the DWP.

LEGEND

- TPA Milestone
- Data Line
- Project Milestone
- PI Due Date
- Current Schedule
- Schedule Carry Over
- Baseline
- Progress

ENVIRONMENTAL RESTORATION CONTRACT

200 AREA REMEDIAL ACTION - ASSESSMENT

LEVEL 2 SCHEDULE

Page 1 of 1

PROJECT MANAGER: M. J. Graham

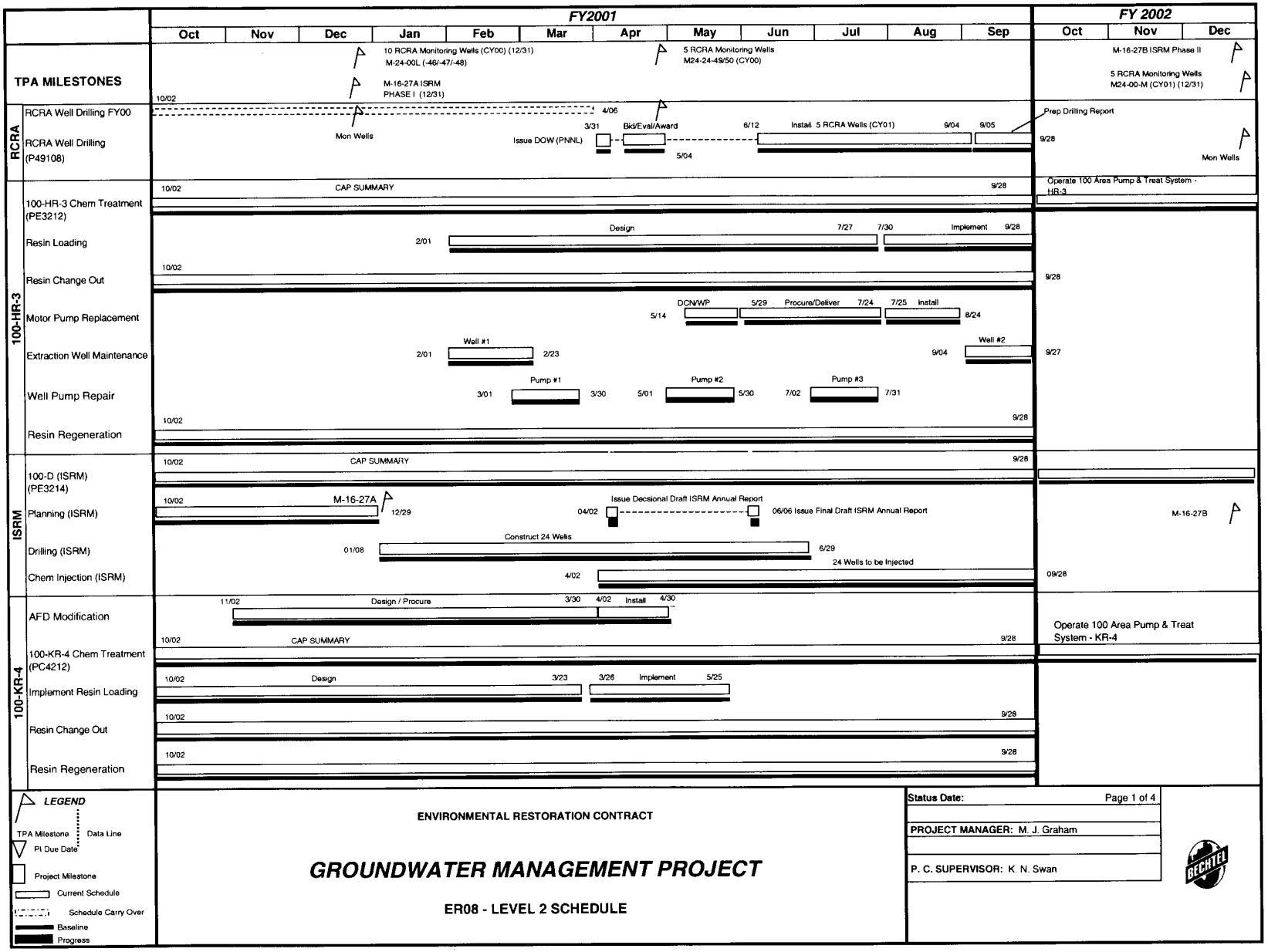
P. C. SUPERVISOR: K. N. Swan

BECHTEL

Groundwater/Vadose Zone Integration Project

Area Schedule Baseline

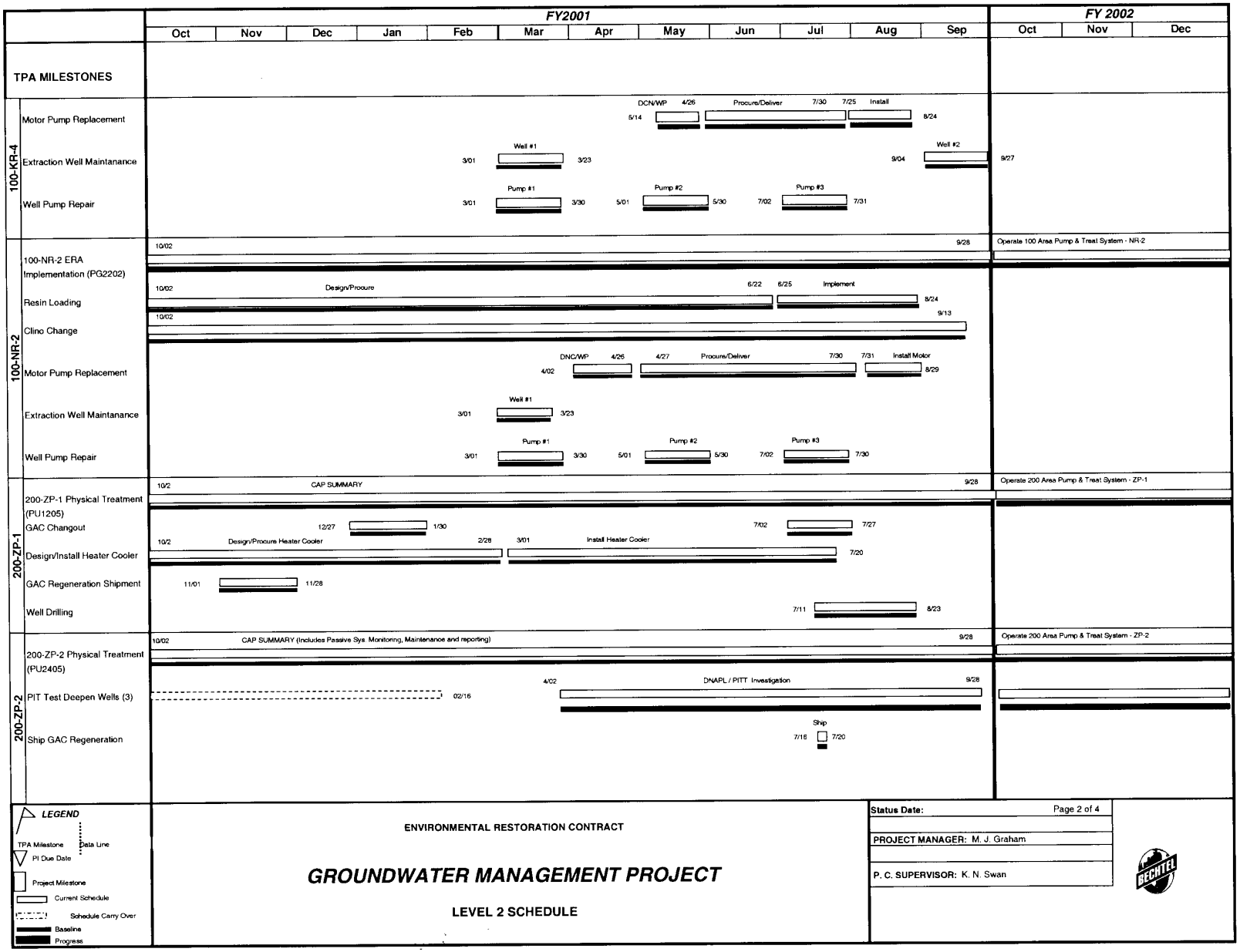
October 1, 2000



Groundwater/Vadose Zone Integration Project

Area Schedule Baseline

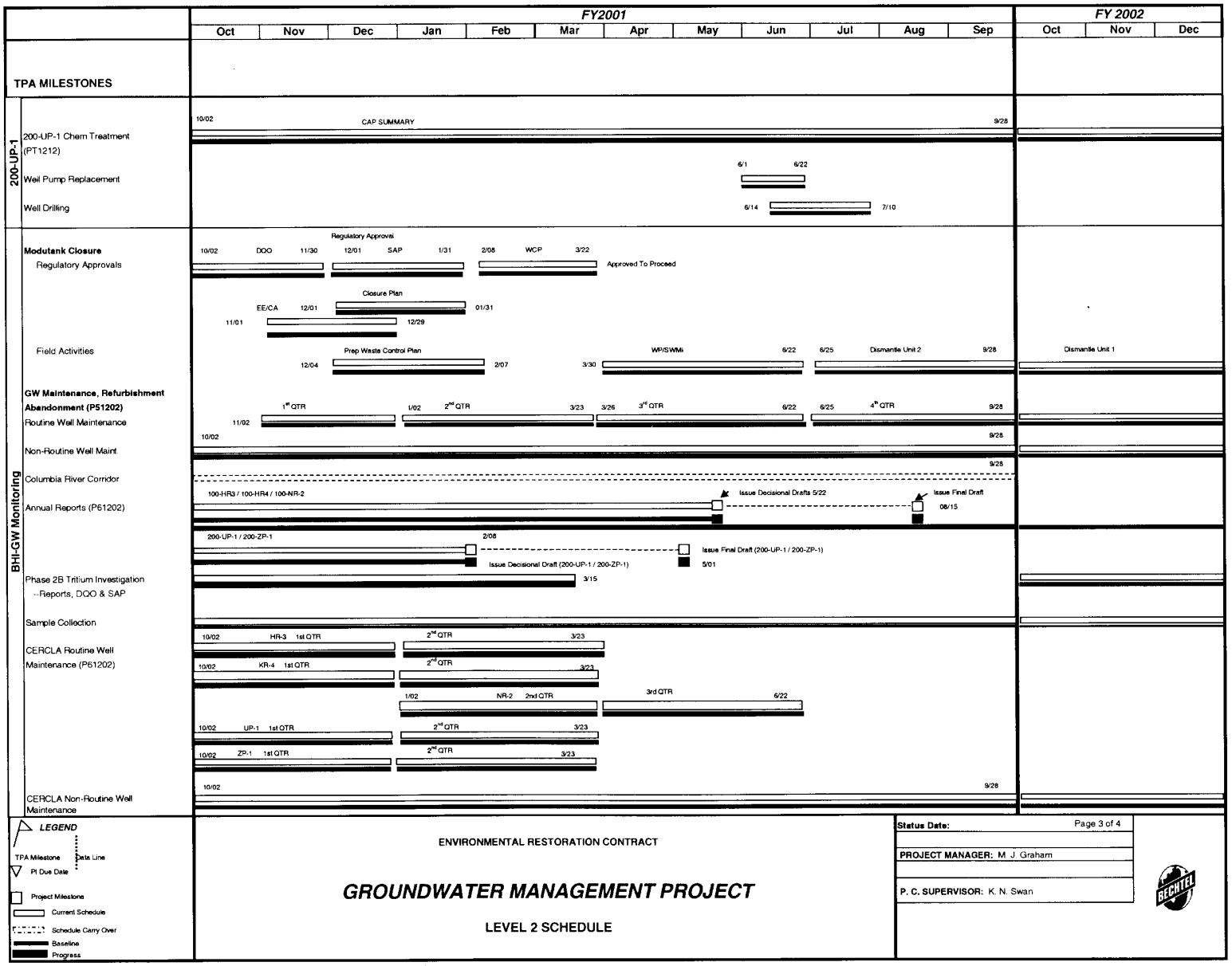
October 1, 2000



Groundwater/Vadose Zone Integration Project

Area Schedule Baseline

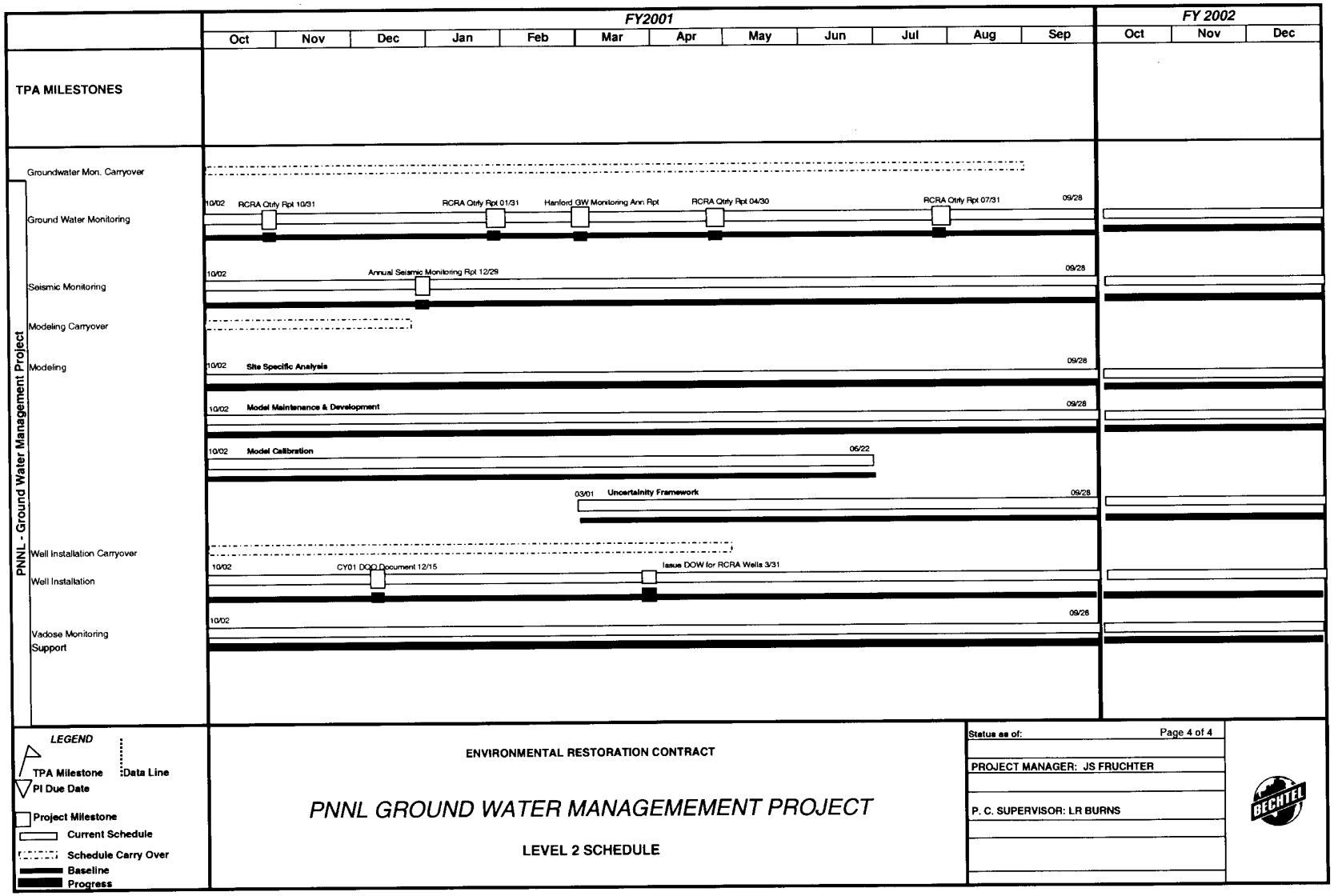
October 1, 2000



Groundwater/Vadose Zone Integration Project

Area Schedule Baseline

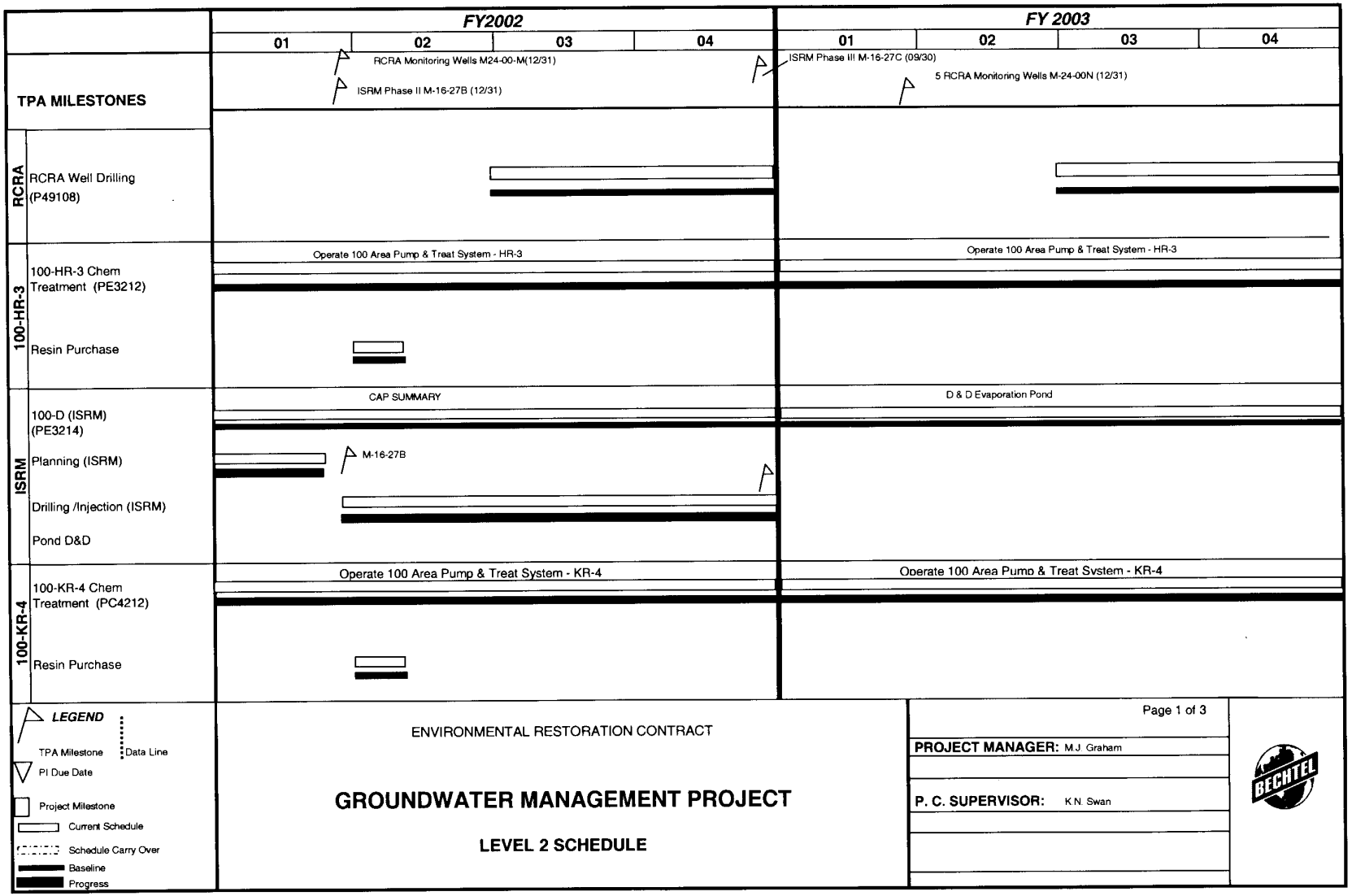
October 1, 2000



Groundwater/Vadose Zone Integration Project

Area Schedule Baseline

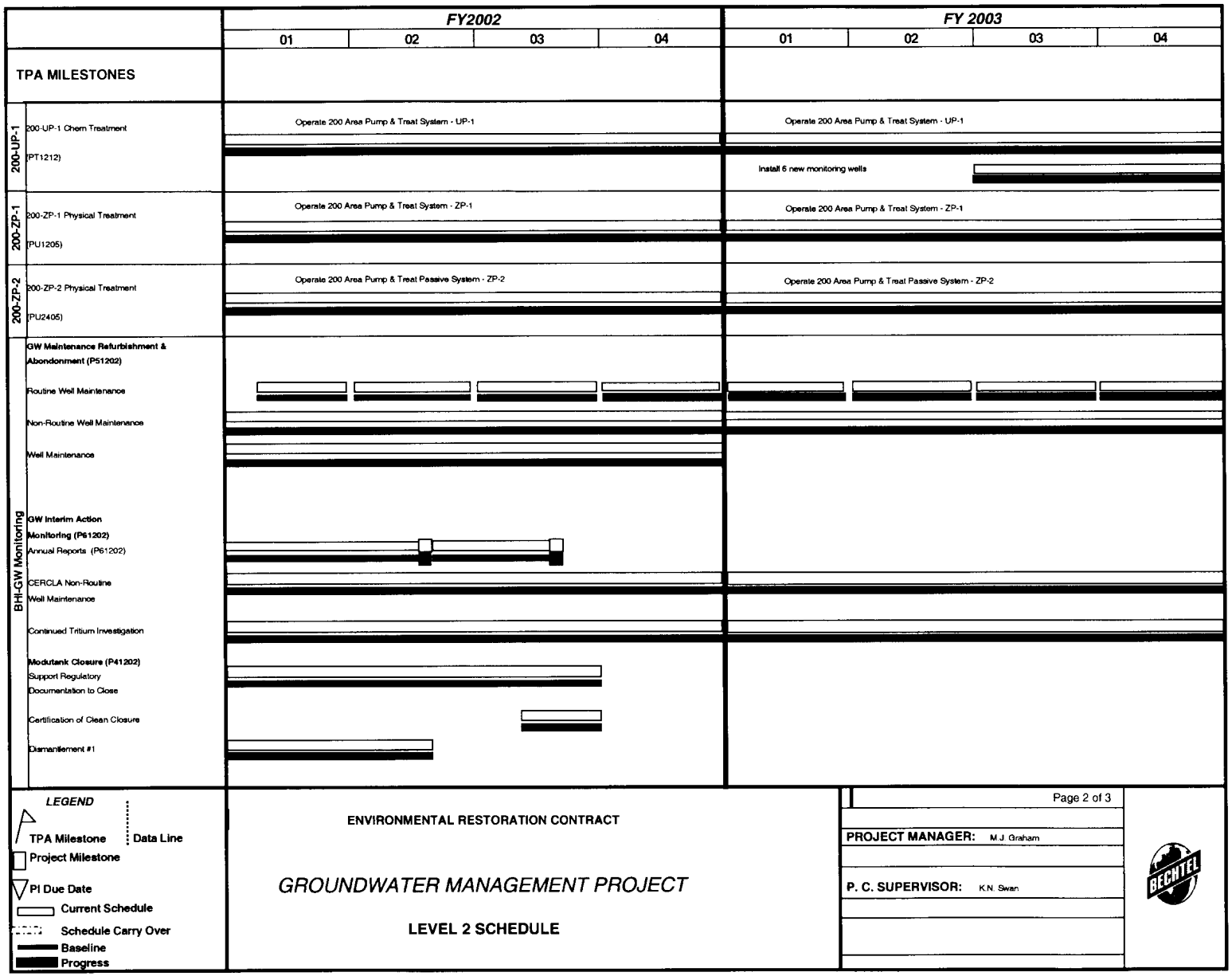
October 1, 2000

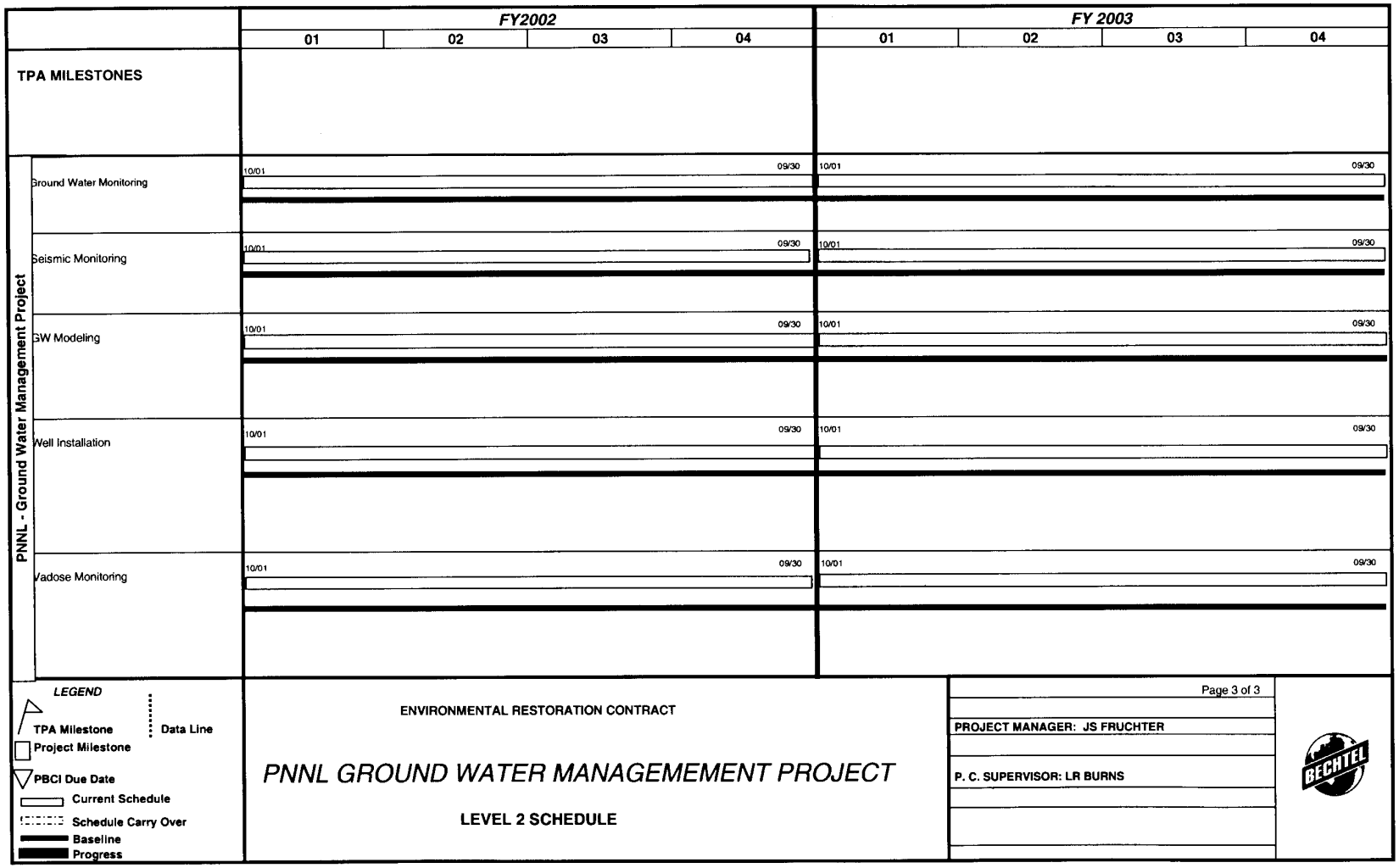


Groundwater/Vadose Zone Integration Project

Area Schedule Baseline

October 1, 2000




FY2002
FY 2003
01
02
03
04
01
02
03
04
TPA MILESTONES
PNNL - Ground Water Management Project
Ground Water Monitoring
Seismic Monitoring
GW Modeling
Well Installation
Vadose Monitoring
10/01
09/30
LEGEND
TPA Milestone
Data Line
Project Milestone
PBCI Due Date
Current Schedule
Schedule Carry Over
Baseline
Progress
ENVIRONMENTAL RESTORATION CONTRACT
PNNL GROUND WATER MANAGEMEMENT PROJECT
LEVEL 2 SCHEDULE
Page 3 of 3
PROJECT MANAGER: JS FRUCHTER
P. C. SUPERVISOR: LR BURNS
BECHTEL

TRI-PARTY AGREEMENT MILESTONES

PBS	Milestone No.	Compliance Date	Milestone Description	OU	Comments
ER02	M-13-00K	12/31/00	Submit 1 200 NPL RI/FS (RFI/CMS) Work Plan	200-NPL Common	This milestone will be met when "M-13-25" is complete.
ER02	M-13-25	12/31/00	Submit Uranium Rich Process Waste Group (200-PW-2) Work Plan (will also satisfy M-13-00K)	200-PW-2	This milestone satisfies " M-13-00K"
ER02	M-13-26	06/30/01	Submit General Process Waste Group (200-PW-4) Work Plan	200-PW-4	Pending; see Additional Authorization funding
ER02	M-15-38A	11/30/01	Submit Draft A Gable Mountain Pond/B Pond and Ditch Cooling Water Group Feasibility Study and 216-B-3 Pond System RCRA TSD Unit Closure Plan and Submit Draft A Gable Mountain Pond/B Pond and Ditch Cooling Water Group Proposed Plan/Proposed RCRA Permit Modification	200-CW-1	Pending; see Additional Authorization funding
ER02	M-13-00L	12/31/01	Submit 3 200 NPL RI/FS (RFI/CMS) Work Plans	200-NPL Common	Pending; see Additional Authorization funding
ER02	M-15-40A	09/30/02	Complete U Pond/Z Ditches Cooling Water Group Field Work Through Sample Collection and Analysis	200-CW-5	Pending; see Additional Authorization funding
ER02	M-13-00M	12/31/02	Submit 3 200 NPL RI/FS (RFI/CMS) Work Plans	200-NPL Common	Pending; see Additional Authorization funding
ER02	M-20-39	02/28/03	Submit 216-S-10 Pond and Ditch Closure/Post Closure Plan to Ecology in Coordination with the Work Plan for the Chemical Sewer Group (to be coordinated with M-13-21)	200-CS-1	Pending; see Additional Authorization funding
ER02	M-15-40B	05/31/03	Submit Draft A U Pond/Z Ditches Cooling Water Group Remedial Investigation Report	200-CW-5	Pending; see Additional Authorization funding
ER02	M-15-39A	09/30/03	Complete Chemical Sewer Group Field Work Through Sample Collection and Analysis	200-CS-1	Pending; see Additional Authorization funding
ER08	M-16-27A	12/31/00	Complete 100-HR-3 Phase I, ISRM Barrier Emplacement (Planning, Well Installation, and Barrier Emplacement)	100-HR-3	
ER08	M-24-00L	12/31/00	Install RCRA Groundwater Monitoring Wells at Rate of Up to 50 in Calendar Year 2000 if Required	Site	15 Well to be drilled, 5 in FY00, 10 to be carried over to FY01
ER08	M-24-46	12/31/00	Install Two (2) Additional Wells at SST WMA S-SX		
ER08	M-24-47	12/31/00	Install Four (4) Additional Wells at SST WMA T		
ER08	M-24-48	12/31/00	Install Four (4) Additional Wells at SST WMA TX-TY		
ER08	M-24-49	04/30/01	Install Four (4) Additional Wells at SST WMA S-SX		
ER08	M-24-50	04/30/01	Install One (1) Additional Well at SST WMA TX-TY		
ER08	M-24-00M	12/31/01	Install RCRA Groundwater Monitoring Wells at Rate of Up to 50 in Calendar Year 2001 if Required	Site	5 RL wells included in FY01 - FY03 DWP, ORP - TBD
ER08	M-16-27B	12/31/01	Complete 100-HR-3 Phase II, ISRM Barrier Emplacement (Planning, Well Installation, and Barrier Emplacement)	100-HR-3	
ER08	M-16-27C	09/30/02	Complete 100-HR-3 Phase III, ISRM Barrier Emplacement (Planning, Well Installation, and Barrier Emplacement)	100-HR-3	
ER08	M-24-00N	12/31/02	Install RCRA Groundwater Monitoring Wells at Rate of Up to 50 in Calendar Year 2002 if Required	Site	5 RL wells included in FY01 - FY03 DWP, ORP - TBD

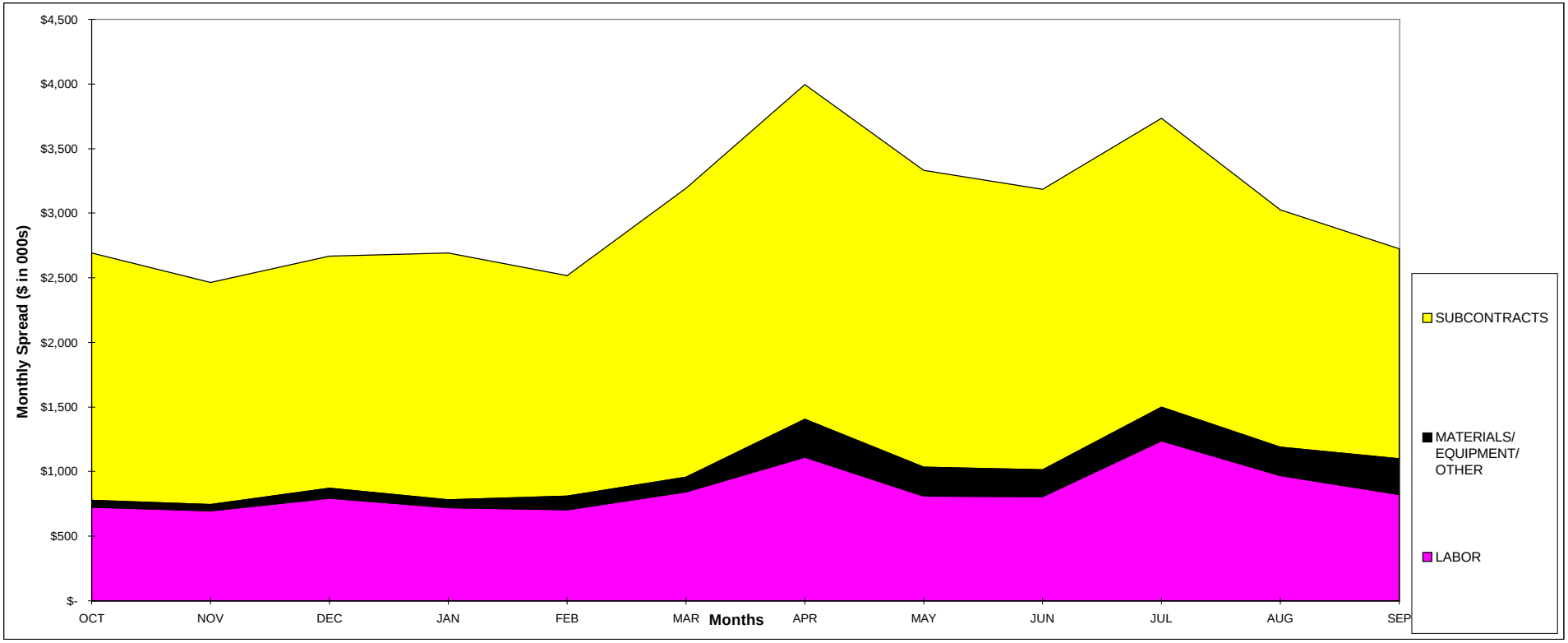
AREA FY 2001 - FY 2003 BUDGET BASELINE TABLE

PBS	Description	HOURS			$1,000			
		Non Manual	Manual	Total	Labor	Material/ Eqpt/Other	SC	Total
		FY 2001						
RL-ER02	200 Area Environmental Restoration Remedial Action	5,395		5,395	437	0	6	443
RL-ER08	Groundwater Management Project	80,240	37,094	117,334	8,467	1,722	14,753	24,942
RL-VZ01	Site-Wide Groundwater/Vadose Zone Integration Project	18,279		18,279	1,341	215	9,278	10,833
	FY2001 TOTAL	**103,913**	**37,094**	**141,007**	**10,244**	**1,937**	**24,036**	**36,218**
		FY 2002						
RL-ER02	200 Area Environmental Restoration Remedial Action				0	1,246	0	1,246
RL-ER08	Groundwater Management Project	69,704	34,874	104,577	7,696	2,703	13,711	24,110
RL-VZ01	Site-Wide Groundwater/Vadose Zone Integration Project	19,771		19,771	1,531	144	9,092	10,767
	FY2002 TOTAL	**89,474**	**34,874**	**124,348**	**9,227**	**4,093**	**22,803**	**36,123**
		FY 2003						
RL-ER02	200 Area Environmental Restoration Remedial Action				0	1,294	0	1,294
RL-ER08	Groundwater Management Project	73,274	33,877	107,151	8,160	1,661	14,542	24,363
RL-VZ01	Site-Wide Groundwater/Vadose Zone Integration Project	17,560		17,560	1,405	538	8,764	10,706
	FY2003 TOTAL	**90,834**	**33,877**	**124,711**	**9,565**	**3,492**	**23,306**	**36,363**

Groundwater/Vadose Zone Integration Project

FY 2001 AREA BASELINE EXPENDITURE FORECAST (EM-40 Only)

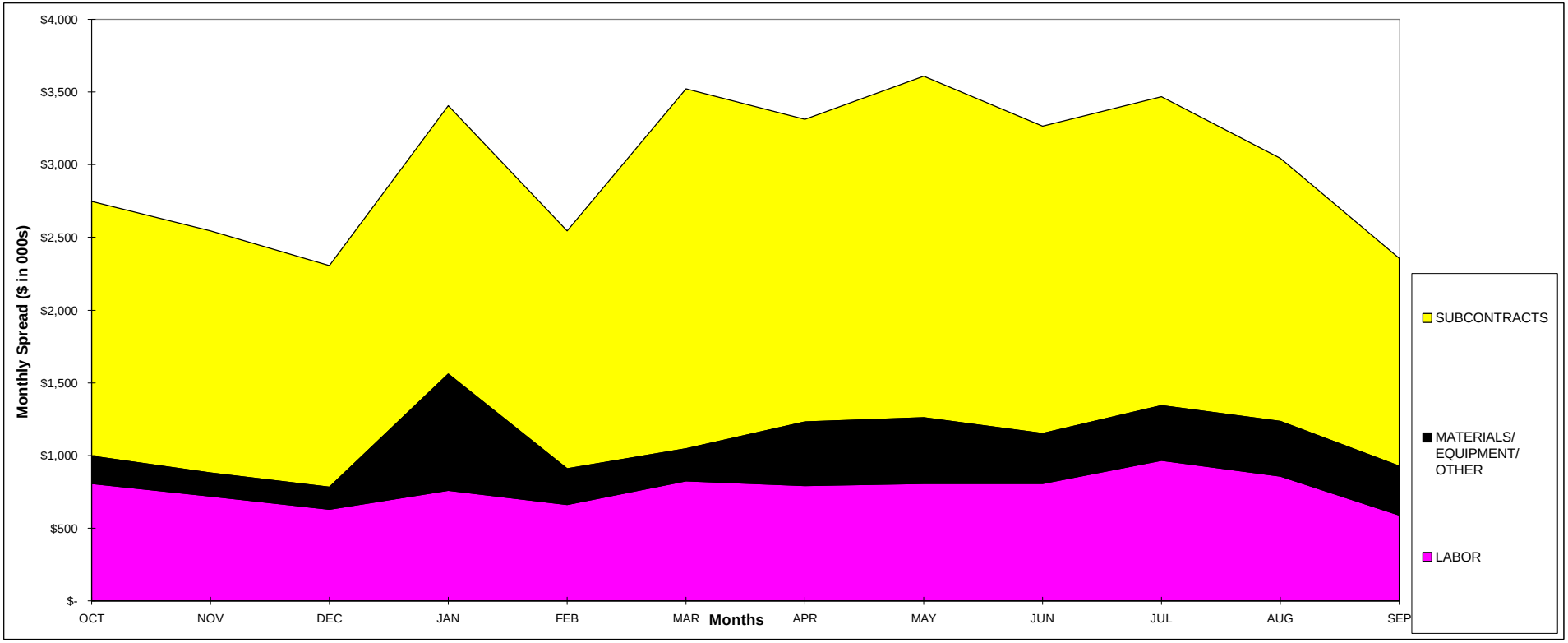
(Dollars in Thousands)



	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
LABOR	$ 727	$ 697	$ 795	$ 723	$ 704	$ 842	$ 1,112	$ 810	$ 805	$ 1,237	$ 968	$ 824	$ 10,244
MATERIALS/ EQUIPMENT/ OTHER	$ 49	$ 49	$ 75	$ 58	$ 106	$ 117	$ 295	$ 223	$ 207	$ 262	$ 220	$ 276	$ 1,937
SUBCONTRACTS	$ 1,916	$ 1,717	$ 1,796	$ 1,912	$ 1,705	$ 2,233	$ 2,588	$ 2,299	$ 2,172	$ 2,235	$ 1,839	$ 1,624	$ 24,036
BUDGET CURRENT	$ 2,692	$ 2,464	$ 2,667	$ 2,692	$ 2,515	$ 3,192	$ 3,995	$ 3,332	$ 3,184	$ 3,734	$ 3,027	$ 2,724	$ 36,218
BUDGET BASELINE (DWP)	$ 2,692	$ 2,464	$ 2,667	$ 2,692	$ 2,515	$ 3,192	$ 3,995	$ 3,332	$ 3,184	$ 3,734	$ 3,027	$ 2,724	$ 36,218
ACTUALS	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
MONTHLYFORECAST	$ 2,692	$ 2,464	$ 2,667	$ 2,692	$ 2,515	$ 3,192	$ 3,995	$ 3,332	$ 3,184	$ 3,734	$ 3,027	$ 2,724	$ 36,218
CUMULATIVE EAC	$ 2,692	$ 5,155	$ 7,822	$ 10,514	$ 13,030	$ 16,222	$ 20,216	$ 23,549	$ 26,733	$ 30,467	$ 33,494	**$ 36,218**	$ 36,218

FY 2002 AREA BASELINE EXPENDITURE FORECAST (EM-40 Only)

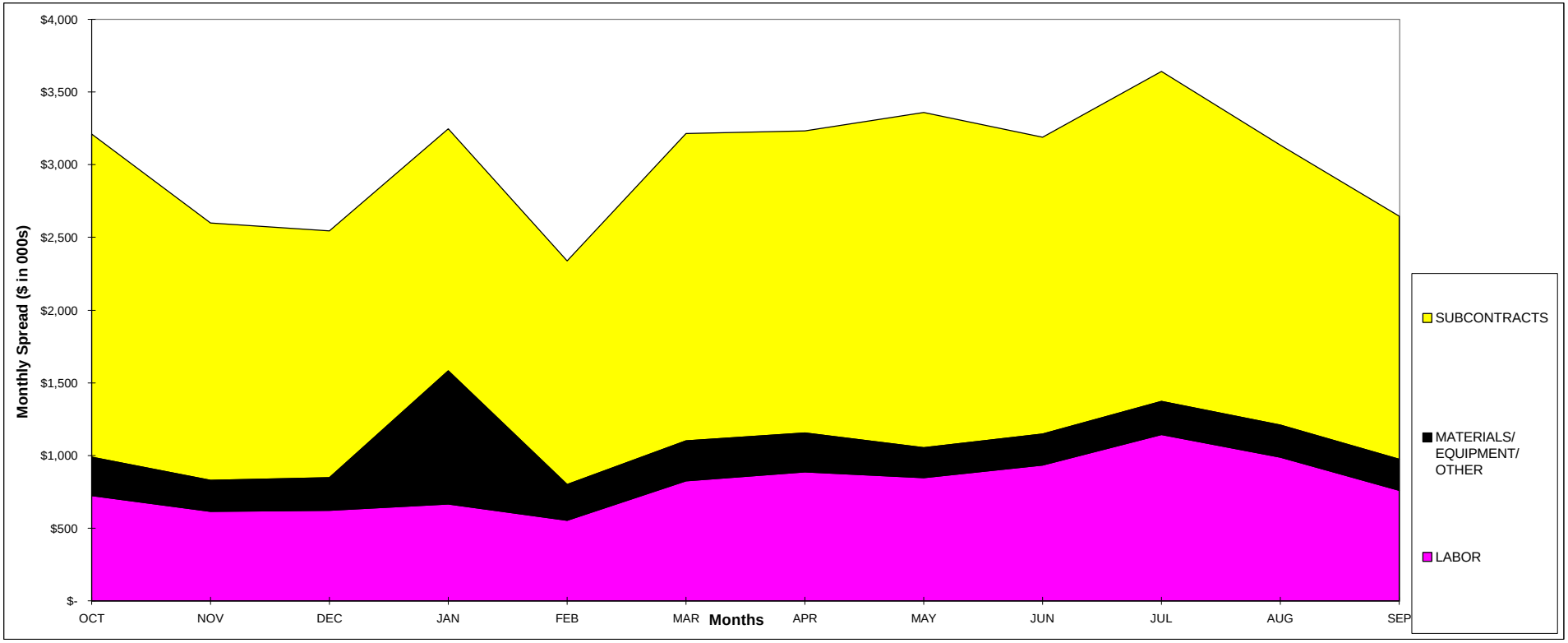
(Dollars in Thousands)



	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
LABOR	$ 809	$ 719	$ 631	$ 762	$ 662	$ 825	$ 792	$ 808	$ 806	$ 966	$ 857	$ 590	$ 9,227
MATERIALS/ EQUIPMENT/ OTHER	$ 187	$ 162	$ 152	$ 798	$ 245	$ 221	$ 437	$ 453	$ 346	$ 377	$ 378	$ 338	$ 4,093
SUBCONTRACTS	$ 1,751	$ 1,663	$ 1,522	$ 1,847	$ 1,639	$ 2,474	$ 2,084	$ 2,347	$ 2,114	$ 2,125	$ 1,808	$ 1,430	$ 22,803
BUDGET CURRENT	$ 2,746	$ 2,544	$ 2,305	$ 3,407	$ 2,546	$ 3,520	$ 3,313	$ 3,608	$ 3,266	$ 3,467	$ 3,043	$ 2,358	$ 36,123
BUDGET BASELINE (DWP)	$ 2,746	$ 2,544	$ 2,305	$ 3,407	$ 2,546	$ 3,520	$ 3,313	$ 3,608	$ 3,266	$ 3,467	$ 3,043	$ 2,358	$ 36,123
ACTUALS	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
MONTHLYFORECAST	$ 2,746	$ 2,544	$ 2,305	$ 3,407	$ 2,546	$ 3,520	$ 3,313	$ 3,608	$ 3,266	$ 3,467	$ 3,043	$ 2,358	$ 36,123
CUMULATIVE EAC	$ 2,746	$ 5,290	$ 7,595	$ 11,002	$ 13,548	$ 17,068	$ 20,381	$ 23,989	$ 27,254	$ 30,722	$ 33,765	**$ 36,123**	$ 36,123

FY 2003 AREA BASELINE EXPENDITURE FORECAST (EM-40 Only)

(Dollars in Thousands)



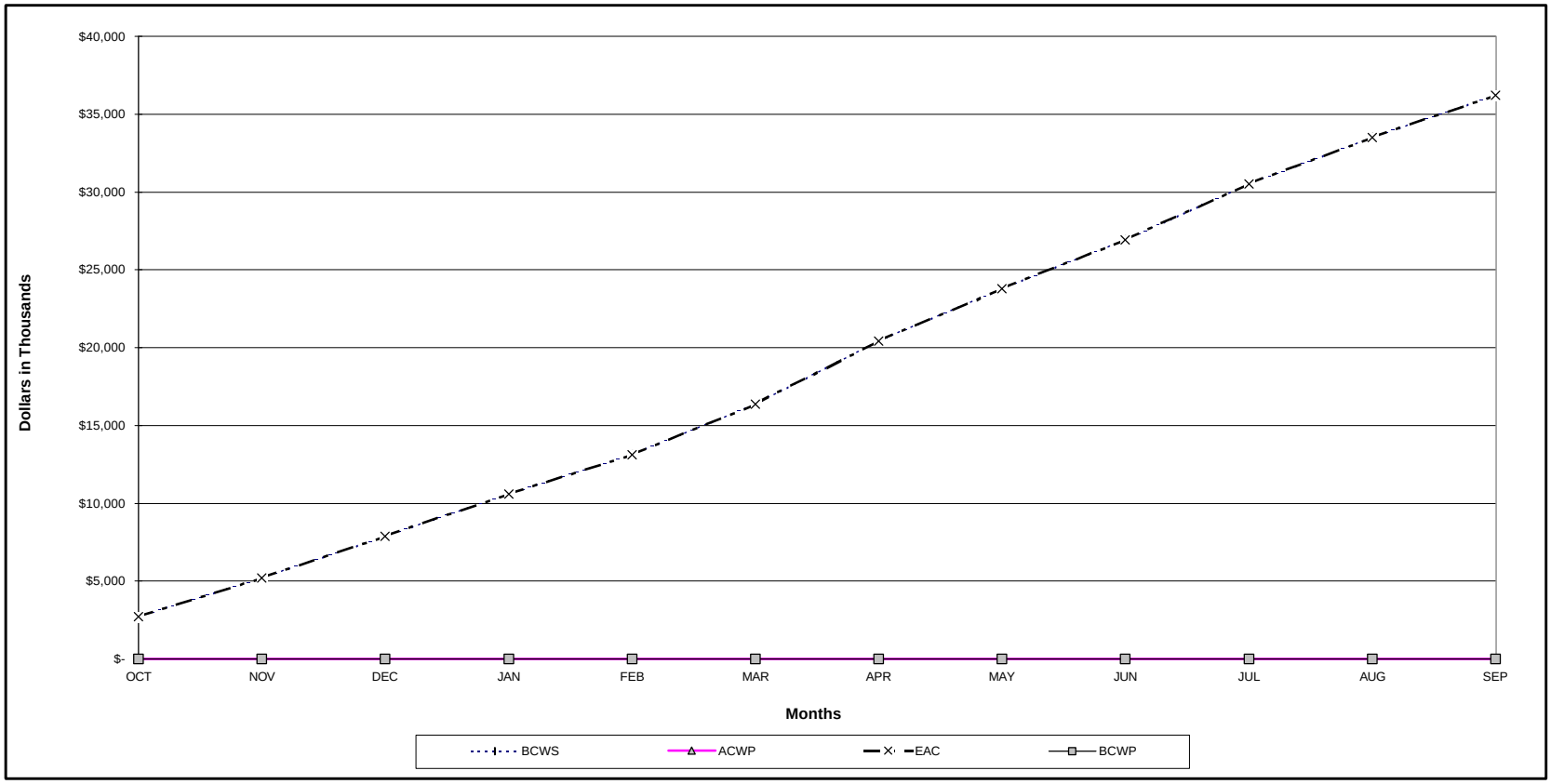
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
LABOR	$ 726	$ 614	$ 621	$ 665	$ 554	$ 826	$ 885	$ 846	$ 934	$ 1,144	$ 990	$ 761	$ 9,565
MATERIALS/ EQUIPMENT/ OTHER	$ 263	$ 216	$ 224	$ 916	$ 246	$ 274	$ 270	$ 207	$ 214	$ 228	$ 220	$ 212	$ 3,492
SUBCONTRACTS	$ 2,222	$ 1,770	$ 1,701	$ 1,665	$ 1,540	$ 2,115	$ 2,078	$ 2,308	$ 2,041	$ 2,269	$ 1,924	$ 1,672	$ 23,306
BUDGET CURRENT	$ 3,211	$ 2,601	$ 2,547	$ 3,246	$ 2,340	$ 3,215	$ 3,233	$ 3,361	$ 3,189	$ 3,642	$ 3,133	$ 2,645	$ 36,363
BUDGET BASELINE (DWP)	$ 3,211	$ 2,601	$ 2,547	$ 3,246	$ 2,340	$ 3,215	$ 3,233	$ 3,361	$ 3,189	$ 3,642	$ 3,133	$ 2,645	$ 36,363
ACTUALS	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
MONTHLYFORECAST	$ 3,211	$ 2,601	$ 2,547	$ 3,246	$ 2,340	$ 3,215	$ 3,233	$ 3,361	$ 3,189	$ 3,642	$ 3,133	$ 2,645	$ 36,363
CUMULATIVE EAC	$ 3,211	$ 5,811	$ 8,358	$ 11,604	$ 13,944	$ 17,159	$ 20,393	$ 23,754	$ 26,943	$ 30,584	$ 33,718	**$ 36,363**	$ 36,363

Groundwater/Vadose Zone Integration Project

October 1, 2000

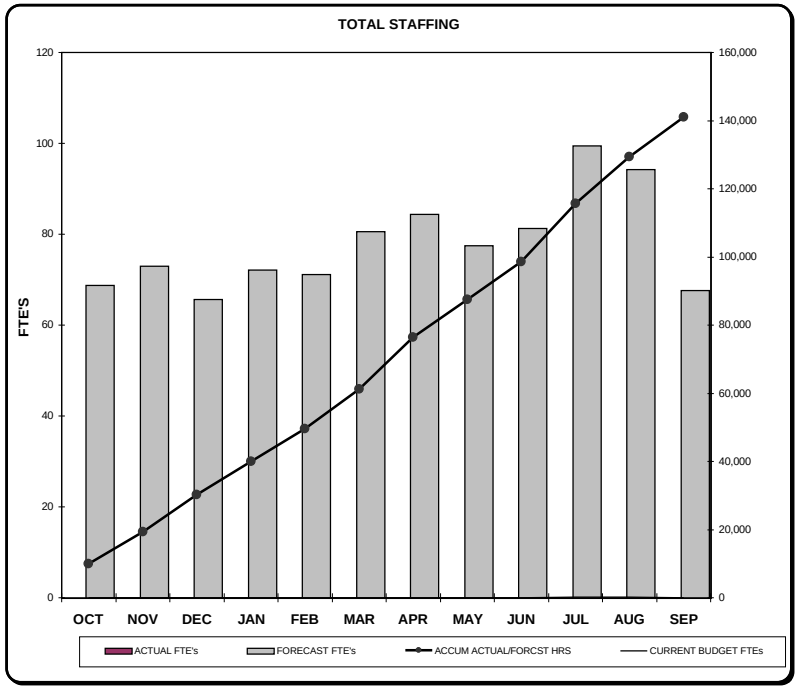
FY 2001 AREA PERFORMANCE GRAPH (EM-40 Only)

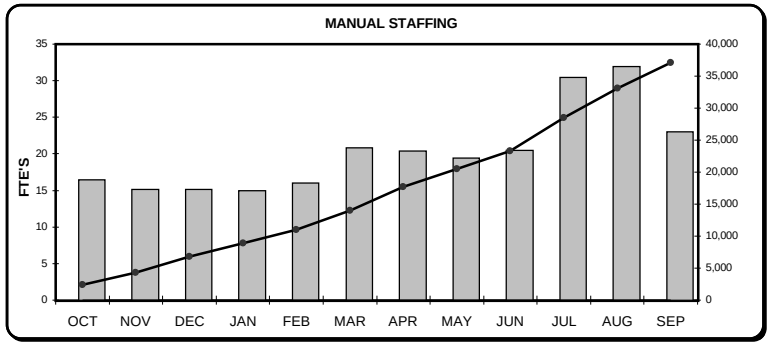
(Dollars in Thousands)

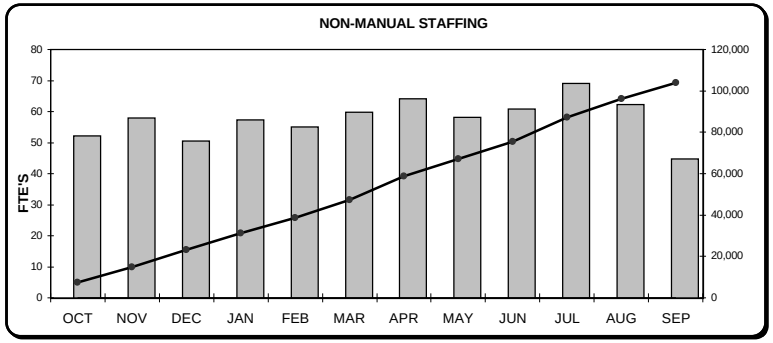


	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
FY-01 DWP (10/01/2000)	$ 2,713	$ 2,472	$ 2,684	$ 2,717	$ 2,513	$ 3,276	$ 4,049	$ 3,344	$ 3,142	$ 3,603	$ 2,972	$ 2,732	**$ 36,218**
CURRENT PERIOD													
BCWS	$ 2,713	$ 2,472	$ 2,684	$ 2,717	$ 2,513	$ 3,276	$ 4,049	$ 3,344	$ 3,142	$ 3,603	$ 2,972	$ 2,732	**$ 36,218**
BCWP	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**
ACWP	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**
ETC	$ 2,713	$ 2,472	$ 2,684	$ 2,717	$ 2,513	$ 3,276	$ 4,049	$ 3,344	$ 3,142	$ 3,603	$ 2,972	$ 2,732	**$ -**
CUMULATIVE/YEAR TO DATE													
BCWS	$ 2,713	$ 5,185	$ 7,869	$ 10,586	$ 13,099	$ 16,375	$ 20,425	$ 23,769	$ 26,911	$ 30,514	$ 33,486	**$ 36,218**	
BCWP	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**	
ACWP	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**	
EAC	$ 2,713	$ 5,185	$ 7,869	$ 10,586	$ 13,099	$ 16,375	$ 20,425	$ 23,769	$ 26,911	$ 30,514	$ 33,486	**$ 36,218**	

FY 2001 AREA STAFFING PLAN







	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	Realization
TOTAL STAFFING													
ACTUAL FTE's	-	-	-	-	-	-	-	-	-	-	-	-	
FORECAST FTE's	68.7	73.0	65.6	72.2	71.1	80.5	84.4	77.5	81.3	99.5	94.2	67.7	**78.2**
MONTHLY ACTUAL/FORCST HRS	9891	9418	10835	9813	9669	11600	15195	11155	11053	17109	13567	11702	**141007**
ACCUM ACTUAL/FORCST HRS	9891	19309	30145	39958	49627	61227	76422	87577	98630	115738	129305	141007	
CURRENT BUDGET FTEs	68.7	73.0	65.6	72.2	71.1	80.5	84.4	77.5	81.3	99.5	94.2	67.7	
MANUAL STAFFING													
ACTUAL FTE's	-	-	-	-	-	-	-	-	-	-	-	-	
FORECAST FTE's	16.5	15.1	15.1	14.9	16.0	20.8	20.4	19.4	20.5	30.5	31.9	23.0	**20.6**
MONTHLY ACTUAL/FORCST HRS	2372	1952	2500	2031	2182	2994	3668	2794	2786	5239	4601	3976	**37094**
ACCUM ACTUAL/FORCST HRS	2372	4324	6824	8854	11036	14030	17698	20492	23278	28517	33118	37094	
CURRENT BUDGET FTEs	16.5	15.1	15.1	14.9	16.0	20.8	20.4	19.4	20.5	30.5	31.9	23.0	
NON-MANUAL STAFFING													
ACTUAL FTE's	-	-	-	-	-	-	-	-	-	-	-	-	
FORECAST FTE's	52.2	57.9	50.5	57.2	55.1	59.8	64.0	58.0	60.8	69.0	62.3	44.7	**57.6**
MONTHLY ACTUAL/FORCST HRS	7520	7466	8336	7783	7487	8606	11528	8360	8267	11870	8966	7726	**103913**
ACCUM ACTUAL/FORCST HRS	7520	14985	23321	31104	38591	47197	58725	67085	75352	87222	96187	103913	
CURRENT BUDGET FTEs	52.2	57.9	50.5	57.2	55.1	59.8	64.0	58.0	60.8	69.0	62.3	44.7	

FY 2001 AREA BASELINE STAFFING FORECAST BY RESOURCE

[Reflects $35.7M Budget Scope]

Labor Resource	FY 2001 Total Hours	FY 2001 FTE's OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	Total Realized
Non-Bargaining Labor														
BHI														
21700 PLANNING & CONTROLS	10,070	4.8	4.6	5.1	5.1	4.7	4.7	4.9	5.5	6.9	7.5	7.2	5.6	5.6
31750 ENVIRONMENTAL LEADS	1,835	1.0	1.1	0.9	1.1	1.1	1.2	0.9	1.0	1.1	1.1	1.0	0.8	1.0
31751 SAMPLE AND DATA MANAGMENT	2,300	1.0	1.2	1.1	1.1	1.2	1.3	1.4	1.3	1.0	1.4	1.6	1.4	1.3
31752 ENVIRONMENTAL SPECIALISTS	4,123	2.1	2.1	2.1	2.5	1.9	1.6	3.1	1.8	2.2	3.2	2.6	1.9	2.3
31754 REGULATORY SUPPORT	2,546	1.2	1.4	1.9	2.0	1.3	1.0	1.3	1.1	1.6	1.5	1.2	1.4	1.4
32711 DESIGN ENG - PROJECT ENGINEERS	441	0.4	0.3	0.3	0.1	0.1	0.3	0.2	0.2	0.3	0.3	0.1	0.2	0.2
32712 DESIGN ENG - E&T TASK LEADS	46	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0
32721 DESIGN ENG - ENGINEERS	2,967	1.6	1.6	1.7	1.7	1.5	1.8	1.7	1.5	1.8	1.8	1.9	1.2	1.6
33700 AUTOMATION TECHNOLOGY	762	0.4	0.4	0.4	0.6	0.4	0.5	0.5	0.5	0.4	0.4	0.3	0.4	0.4
41700 PROCUREMENT	1,917	1.0	0.7	0.8	0.8	1.0	1.2	1.6	1.0	1.3	1.4	1.1	0.8	1.1
51700 PROJECT MANAGEMENT	366	0.4	0.5	0.2	0.1	0.1	0.3	0.1	0.2	0.3	0.2	0.1	0.1	0.2
53700 FIELD SUPPORT MANAGEMENT	10						0.1	0.0						0.0
53710 FIELD SUPPORT - CRAFT SUPERVISION	6,412	2.8	2.8	2.9	3.1	3.1	4.2	4.0	3.9	3.4	4.0	4.4	3.9	3.6
53720 FIELD SUPPORT ENGINEERING	6,774	3.1	3.2	3.0	3.6	3.5	4.5	3.9	4.7	3.1	4.3	4.5	3.6	3.8
53740 FIELD SUPPORT - SUBCONTRACT STR	5,723	2.1	2.4	2.0	2.1	2.1	2.4	3.7	3.3	3.7	6.3	5.4	2.2	3.2
53750 FIELD SUPPORT WASTE MANAGEMENT	5,873	2.8	2.9	3.1	3.0	2.9	2.8	3.1	3.1	3.6	4.4	4.1	3.1	3.3
54700 FACILITIES AND OFFICE SERVICES	20							0.0	0.0	0.0	0.0	0.0	0.0	0.0
55700 ADMINISTRATIVE SUPPORT SERVICES	2,602	1.2	1.3	1.1	1.6	1.4	1.4	1.2	1.4	1.9	1.7	1.7	1.5	1.4
58710 SAFETY AND HEALTH PROGRAM SUPP	605	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
58722 S&H RADCON ENGINEER	758	0.3	0.3	0.3	0.4	0.3	0.4	0.6	0.6	0.4	0.6	0.6	0.3	0.4
58733 S&H INDUSTRIAL SAFETY	538	0.2	0.2	0.2	0.2	0.2	0.3	0.4	0.4	0.2	0.4	0.4	0.2	0.3
58740 S&H QUALITY SERVICES	124	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
62700 HUMAN RESOURCES/LABOR RELATION	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
71700 EXTERNAL AFFAIRS	836	0.7	0.9	0.4	0.2	0.2	0.3	0.6	0.7	0.5	0.5	0.4	0.2	0.5
BHI	**57,650**	**27.5**	**28.5**	**28.0**	**29.6**	**27.6**	**30.8**	**33.7**	**32.6**	**34.0**	**41.4**	**39.2**	**29.0**	**32.0**
CHI														
21C00 PROJECT CONTROLS	1,590	0.8	0.7	0.8	0.7	0.7	0.8	0.7	0.7	1.2	1.3	1.3	0.8	0.9
31C53 REG SUPPORT AND ENVIRON SCIENCE	1,738	1.1	1.6	1.2	1.3	1.3	1.4	1.5	0.8	0.7	0.3	0.2	0.2	1.0
31C54 ENVIRONMENTAL ENGINEERING	2,520	1.5	2.4	2.0	1.7	1.8	1.7	1.6	1.5	1.2	0.8	0.5	0.4	1.4
31C62 DESIGN ENGINEERING	3,817	0.9	1.4	1.1	1.8	2.6	3.5	3.0	2.5	2.3	2.1	2.7	1.6	2.1
31C63 GEOSCIENCES/MODELING	27,043	14.5	15.9	12.2	17.3	15.1	16.5	18.3	15.0	15.7	18.3	13.6	8.2	15.0
31C64 CADD	471	0.3	0.8	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.1	0.0	0.3
31C74 ANALYTICAL FIELD SERVICES	3,272	2.6	3.1	1.7	1.3	2.3	1.4	1.4	1.4	2.3	1.4	1.3	2.0	1.8
31C75 SAMPLE AND DATA MANAGEMENT	2,621	1.1	1.4	1.2	1.4	1.6	1.4	1.6	1.5	1.5	1.6	1.6	1.4	1.5
31C90 MANAGEMENT - ENVIRON SCIENCE AN	188	0.4	0.4	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
55C00 ADMINISTRATIVE SERVICES	2,283	0.9	1.3	1.3	1.2	1.4	1.7	1.5	1.4	1.3	1.2	1.2	0.7	1.3
58C32 QUALITY SERVICES	8	0.1												0.0
58C33 HEALTH AND SAFETY	88	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
CHI	**45,639**	**24.3**	**29.1**	**22.2**	**27.4**	**27.1**	**28.6**	**29.9**	**25.1**	**26.5**	**27.2**	**22.6**	**15.3**	**25.3**
THI														
58T21 S&H RADCON SUPERVISOR	568	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.3	0.3
58T31 S&H INDUSTRIAL HYGIENE	44	0.1						0.1	0.0	0.0	0.0	0.0	0.0	0.0
THI	**612**	**0.4**	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**	**0.4**	**0.3**	**0.3**	**0.4**	**0.4**	**0.3**	**0.3**
Non-Bargaining Labor	**103,901**	**52.2**	**57.9**	**50.5**	**57.2**	**55.0**	**59.8**	**64.0**	**58.0**	**60.8**	**69.0**	**62.3**	**44.7**	**57.6**
Bargaining Labor														
BHI														
10710 HAMTC CARPENTERS	960	0.4	0.4	0.4	0.4	0.8	1.1	0.6	0.5	0.5	0.5	0.4	0.4	0.5
10712 HAMTC POWER OPERATORS	1,210	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	1.9	2.6	1.0	0.7
10713 HAMTC HEAVY EQUIPMENT OPERATOR	502	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.7	0.7	0.6	0.3
10714 HAMTC CRANE OPERATORS	320	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.5	0.2
10715 HAMTC D & D WORKERS	540										1.2	1.2	0.9	0.3
10716 HAMTC ELECTRICIANS	2,094	1.4	0.9	1.0	0.9	1.1	1.2	1.2	1.1	1.1	1.2	1.6	1.1	1.2
10718 HAMTC HEAVY DRIVERS	7,734	4.9	3.9	3.4	3.6	3.8	4.1	4.5	3.7	3.7	5.5	5.4	4.6	4.3
10723 HAMTC MATERIAL COORDINATORS	200	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
10724 HAMTC MILLWRIGHTS	948	0.3	0.4	0.4	0.4	0.4	0.3	0.5	0.5	0.4	0.8	1.2	0.6	0.5
10728 HAMTC NUCLEAR PROCESS OPERATO	10,967	4.8	4.8	4.8	4.9	4.9	7.3	6.8	6.8	6.9	6.8	6.8	6.8	6.1
10729 HAMTC PAINTERS	419	0.2	0.2	0.2	0.2	0.4	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
10730 HAMTC PIPEFITTERS	1,687	0.7	0.6	0.7	0.6	0.7	0.8	1.0	1.0	0.7	1.5	1.7	1.0	0.9
10734 HAMTC RIGGERS	167	0.0	0.0	0.1	0.0	0.0	0.3	0.1	0.1	0.0	0.1	0.1	0.1	0.1
10737 HAMTC INSTRUMENT SPECIALISTS	3,644	1.0	1.0	1.5	1.0	1.3	1.6	2.3	2.5	2.9	2.7	3.4	2.6	2.0
BHI	**31,392**	**14.3**	**12.8**	**13.0**	**12.6**	**13.7**	**17.7**	**17.8**	**16.9**	**17.1**	**24.1**	**26.2**	**20.4**	**17.4**
THI														
10T25 HAMTC RAD CON TECHNICIANS	5,144	2.1	2.2	2.0	2.2	2.2	3.0	2.4	2.3	3.0	5.3	4.9	2.4	2.9
10T27 HAMTC INDUSTRIAL HYGIENE TECHNIC	556	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.4	1.1	0.8	0.2	0.3
THI	**5,700**	**2.2**	**2.4**	**2.1**	**2.3**	**2.4**	**3.1**	**2.6**	**2.5**	**3.4**	**6.4**	**5.7**	**2.6**	**3.2**
Bargaining Labor	**37,092**	**16.5**	**15.1**	**15.1**	**14.9**	**16.0**	**20.8**	**20.4**	**19.4**	**20.5**	**30.5**	**31.9**	**23.0**	**20.6**
Groundwater/Vadose Integration Projec	**140,993**	**68.7**	**73.0**	**65.6**	**72.2**	**71.1**	**80.5**	**84.4**	**77.4**	**81.3**	**99.5**	**94.2**	**67.7**	**78.2**

SUPPLEMENTAL FUNDING PLAN – RL-ER08 (6 Pages)

Project Priority	Outcomes (R-River, P-Plateau, M-Multi)	CA No.	Description of Work	Impact if Not Funded	Supplemental Requirements ($K Impacted)		
					FY01	FY02	FY03
5 ROD Related	**R**	**PE3212**	**100-HR-3 OU** Install an additional monitoring well at 100-D downstream from 199-D8-70. $120.0 Prepare estimates of the Cr+6 mass in the aquifer in the targeted area, and estimate the time required for the current pump-and-treat system to achieve the current compliance level. $20.0 Install 3 additional aquifer tubes upriver of the DD-50 site and install 3 additional aquifer tubes down river of the DD-12 site. This effort will consist of plans, installation, and report. $65.0	Northeasterly extent of Cr+6 plume is poorly defined. This effort will expedite the determination of the final remedy. This will aid delineating the extent of the Cr+6 "hot spot" plume and delineating elevated tritium.	$205.0		
5	**R**	**PC4212**	**100-KR-4 OU** Prepare estimates of the Cr+6 mass in the aquifer in the targeted area, and estimate the time required for the current pump-and-treat system to achieve the current compliance level. $20.0	This effort will expedite the determination of the final remedy.	$20.0		
5	**R**	**PG2202**	**100-NR-2** Perform an evaluation/feasibility study regarding petroleum recovery	This effort will expedite the determination of the final remedy.	$30.0		

SUPPLEMENTAL FUNDING PLAN – RL-ER08 (6 Pages)

Project Priority	Outcomes (R-River, P-Plateau, M-Multi)	CA No.	Description of Work	Impact if Not Funded	Supplemental Requirements ($K Impacted)		
					FY01	FY02	FY03
5	**R**	**PT1212**	**200-UP-1 OU** Install three additional wells to track migration of the contaminant plumes and to measure the hydraulic gradient. Declining water levels will leave multiple existing monitoring wells unsampleable the coming year, as the water table falls below the bottom of the well screens. $510.0 Reset the pump at the top of the water table at well 299-W19-36 and collect samples at low flow rates, and/or perform vertical profile sampling at this well to establish Tc-99 concentration trends with depth. Technetium-99 layering is probable in the aquifer, but has not been quantified. $40.0	Maintaining vertical control of water levels is essential during this period of water table decline. Without replacement wells, it may not be possible to correctly identify groundwater gradient and flow direction to support remedial actions. Understanding the vertical contaminant distribution is essential to proper risk assessment, remedial system design, and optimal operation of remedial systems.	$550.0		

SUPPLEMENTAL FUNDING PLAN – RL-ER08 (6 Pages)

Project Priority	Outcomes (R-River, P-Plateau, M-Multi)	CA No.	Description of Work	Impact if Not Funded	Supplemental Requirements ($K Impacted)		
					FY01	FY02	FY03
5	**P**	**PU1205**	**200-ZP-1 OU** Well 299-W14-09 should be reconfigured for sampling at both the top of the unconfined aquifer and below the Lower Mud Unit in the confined aquifer. $60.0 Install one characterization monitoring well within the PFP secure area. Sample and analyze soil for CCl_4 during drilling and sample groundwater for CCL_4 and radionuclides. Historic PFP activities are the primary source of carbon tetrachloride contamination in the 200 W Area. Additional characterization at PFP will support evaluation of the potential presence of DNAPL in the vadose and aquifer. $210.0 Install two additional monitoring wells to delineate the plume down-gradient of the pump-and-treat system. These wells should be completed at varying depths above the lower mud unit and samples analyzed for radionuclides and carbon tetrachloride. Include laboratory tests to quantify the partitioning coefficient (Kd). $330.0 Evaluate the effectiveness of reconfiguring well 299-W15-31A as an extraction well. This effort will require pulling the pump and redeveloping this well and performing a limited pumping test. Hook up to the treatment system is not included. $15.0	Additional characterization is required and this could reduce well installation costs Without thorough definition of remaining contaminant inventories, estimates of time to complete remediation are inaccurate and unreliable. Without complete definition of the plume location and characteristics, remediation effectiveness and associated risks cannot be assessed. Since this well is located in the highest carbon tetrachloride concentration area, this strategy should expedite the remediation effort and reduce capital costs.	$615.0		
5	P	PU2405	**200-ZP-2 PIT Test Implementation:** BHI support to conduct a partitioning interwell tracer test (PITT) to determine carbon tetrachloride in the deep vadose.	Without new data it will be difficult ot make remediation decisions and would not comply with the 200-ZP-2 Interim Record of Decision (e.g., Z-9 DNAPL Investigation)	$1,000.0	$0.0	$0.0

SUPPLEMENTAL FUNDING PLAN – RL-ER08 (6 Pages)

Project Priority	Outcomes (R-River, P-Plateau, M-Multi)	CA No.	Description of Work	Impact if Not Funded	Supplemental Requirements ($K Impacted)		
					FY01	FY02	FY03
5	R	P61202	**618-11 Burial Ground Tritium Investigation:** Includes establishing well locations, constructing 3 wells, sample collection and analysis	Characterization of High Tritium GW values throughout the site tritium plume will not be completed	$414.2		
5	P	P61202	**Purge Water Waste Minimization:** One-year long field demonstration of the Savannah River Purge water Management system (PWMS). Includes pre-test planning activities (DQO, test plan, waste management plan, design), procurement, field test, and evaluation. FY01 FY02 Technical Coordination: $22K $23K Pre-test activities: $125K $0K Field Demonstration: $69K $45K Waste Management: $2K $3K Evaluation $0K $62K	Potential saving may not be realized.	$218.0	$133.0	
5	P	P61202	**NETL Industry Program:** Vendor will be funded by NETL Industry Programs (EM-50) to develop and deploy innovative technologies to access the deep vadose zone and determine DNAPL concentrations in soil and groundwater. This is planned to be a 3-year multimillion dollar program. EM-40 funds will ne needed to support the planning activities in FY01 and support the field demonstration in FY02-03. Supplemental funding will not be required until the second quarter. FY01 FY02 FY03 Planning $20K Phase I field work $30K (15-day pilot study) Phase II field work $64K (30-day demo)	Substantial EM-50 funding will not be leveraged; characterization needed to support alternative remediation technologies will either not be performed or will be accomplished solely with EM-40 funds. Verification of other characterization technologies (e.g. PITT) will not be performed.	$20.0	$30.0	$64.0

SUPPLEMENTAL FUNDING PLAN – RL-ER08 (6 Pages)

Project Priority	Outcomes (R-River, P-Plateau, M-Multi)	CA No.	Description of Work	Impact if Not Funded	Supplemental Requirements ($K Impacted)		
					FY01	FY02	FY03
5	M	P41205	**Groundwater Modeling:** Complete inverse modeling and report preparation associated with a second Alternate Conceptual Model prepared in FY01; peer review site visits.	Completion of an additional Alternate Conceptual Model will be delayed until later years, delaying required improvements to the sitewide numerical model. External peer review of modeling approach and results will not be accomplished.	$217.0		
5	M	P41206	**Hydrologic Assessment:** Detailed vertical hydrologic testing and analysis to determine hydraulic properties vertically distributed within the unconfined aquifer.	Additional identified data uncertainties associated with the sitewide conceptual and numerical model will continue to be lacking.	$78.0		
4	M	P41207	**Groundwater Well Installation:** Install an additional 5 wells to meet AEA requirements.	Uncertainty on the levels and distribution of contaminants in groundwater will remain for some sitewide plumes and at K Basins.	$79.0		
3	P	P49108	**RCRA Well Installation:** Anticipate 5 additional RL wells	TPA milestones	$1,000.0		
5	R	P51202	**Well Decommissioning**	Will not complete long term strategy to abandon/decommission wells	$0.0	$2,000.0	$2,000.0

SUPPLEMENTAL FUNDING PLAN – RL-ER08 (6 Pages)

Project Priority	Outcomes (R-River, P-Plateau, M-Multi)	CA No.	Description of Work	Impact if Not Funded	Supplemental Requirements ($K Impacted)		
					FY01	FY02	FY03
5	P	N/A	**Uranium Plume Investigation:** BHI support to MSE's technical test plan (EM-50), Subtask M, for investigation of the uranium groundwater plume in the 200 Area. Their Technical Task Plan focuses on collecting information and assessing potential remediation approaches for contamination specific to the 200-UP-1 and 200-UP-2 Operable Unites. Collection of core samples in the uranium groundwater plume will be tested to improve uncertainties in source term and chemical behavior of uranium. The boring will be completed as a RCRA groundwater monitoring well or performance monitoring well. FY01 Technical Coordination $20K Pre-test activities $35K Drilling/construction $103K Waste Management $12K Closeout $10K	Long term final solution will be delayed.	$180.0	TBD	TBD
5	M	N/A	**In-Situ Groundwater Sensor:** Support MSE-Technology Applications in their EM-50 funded work to develop and deploy in situ groundwater sensors at 100-N. Work will include review of work plan, development of Waste Control Plan, and field support for deploying sensors. Some infrastructure support may also be necessary FY01 FY02 Planning $20K Support for field implementation $40K	Benefits associated with enhanced characterization of spatial and temporal changes in the Sr-90 plume will not be realized. Advanced monitoring associated with future source removal using alternative remediation technologies (currently considered in an ITRD) will be accomplished solely with EM-40 funds.	$20.0	$40.0	

SUPPLEMENTAL FUNDING PLAN – RL-ER02

Project Priority	Outcomes (R-River, P-Plateau, M-Multi)	CA No.	Description of Work	Impact if Not Funded	Supplemental Requirements ($K Impacted)		
					FY01	FY02	FY03
			200 AREA REMEDIAL ACTIONS				
			(See Additional Authorization Tab for Details)				

SUPPLEMENTAL FUNDING PLAN – RL-VZ01 (4 Pages)

Project Priority	Outcomes (R-River, P-Plateau, M-Multi)	CA No.	Description of Work	Impact if Not Funded	Supplemental Requirements ($K Impacted)		
					FY01	FY02	FY03
5	R	P71502	**COS**: Inventory Technical Element Support for SAC Rev. 1	Technical credibility of SAC, Rev 1 for release sites with no reported inventory jeopardized.	$58.0		
5	R	P71502	**COS:** Vadose Technical Element: Improve databases and develop algorithms to better interpret and apply existing data sets	Existing data will be underutilized affecting the quality of site assessments and perhaps unnecessary field collection of data.	$165.0		
5	R	P71502	**COS**: River Technical Element: Ecological characterization activities along the river and measurement of contamination levels in the river necessary to support SAC Rev. 1	Technical credibaility of SAC, Rev 1 jeopardized for baseline river data and contributions from offsite sources.	$550.0		
5	R	P71503	**SAC:** Prepare Alternative Assessment	• Alternatives to Hanford Site Disposition Baseline will not be examined • Utility of SAC for evaluating cleanup alternatives will not be demonstrated	$41.6		

SUPPLEMENTAL FUNDING PLAN – RL-VZ01 (4 Pages)

Project Priority	Outcomes (R-River, P-Plateau, M-Multi)	CA No.	Description of Work	Impact if Not Funded	Supplemental Requirements ($K Impacted)		
					FY01	FY02	FY03
5	R	P71503	**SAC:** Prepare Risk Metric Development	• Uncertainty will remain very high in the human health and economic impact assessments for SAC (Rev. 1) reducing the utility of the results. • Existing information required to prioritize and focus risk efforts in Science and Technology and Characterization of Systems elements of the GW/VZ project will not be assembled	$714.4		
5	R	P71503	**SAC:** Peer Review Support	• No increased involvement of other national laboratories in SAC implementation • Lack of acceptance of assessment results produced by SAC team because of almost exclusively Hanford participants on team	$70.0		
5	R	P71504	**S&T**: Biological fate and transport assessment of riparian vegetation to changing concentrations of nutrient and non-nutrient metals that enter the surface-water environment via groundwater contaminant plumes. SAC Rev. 1 related.	Work identified in the S&T roadmap not performed. Data needed for ecological risk assessments in support of the SAC will be missing.	$260		

SUPPLEMENTAL FUNDING PLAN – RL-VZ01 (4 Pages)

Project Priority	Outcomes (R-River, P-Plateau, M-Multi)	CA No.	Description of Work	Impact if Not Funded	Supplemental Requirements ($K Impacted)		
					FY01	FY02	FY03
5	M	P71504	**S&T:** Contaminant bioavailability in human health risk assessment to determine the role of speciation, adsorption, complexation, and other environmental factors on availability for human intake of key contaminants.	Work identified in the S&T roadmap not performed. Data needed for human health risk assessments in support of the SAC will be missing.	$250		
5	M	P71504	**S&T**: Risk perception trigger mechanisms in economic impact assessments to predict how residents, recreationists, consumers of agricultural products, and other stakeholder groups process and respond to information concerning risks posed by environmental contamination, resulting in economic market responses.	Work identified in the S&T roadmap not performed. Data and methods needed for economic impact assessments in support of the SAC will be missing.	$150		
5	R	P71504	**S&T:** Field investigations of groundwater/river interface. The target is a better understanding of the uptake of metals and radionuclides by periphyton coatings on sediments at the interface, especially the riparian zone. This will lead to a better description of where contaminants are accumulating, their sources (other vs. Hanford), and possibly new information on transfer coefficients. Also includes hydraulic property measurements.	Work identified in the S&T roadmap not performed. Field data needed for evaluation of the groundwater/river interface in support of the SAC and regulatory evaluations will be missing.	$410		
5	P	P71504	**S&T:** Field investigation at representative sites – wrap around science for Z-11 milestone in support of the 200 Area Assessment Project. Laboratory study of cores from Z-11 to develop enhanced conceptual model of contaminant transport.	Work identified in the S&T roadmap not performed. Laboratory experimentation in support of the 200 Area Assessment Project not performed.	$311		
5	P	P71504	**S&T:** Vadose zone transport field study – additional field measurements and analyses for the FY01 field test to evaluate moisture and tracer movement, primarily laboratory analyses of tracers.	Work identified in the S&T roadmap not performed. Quality of the field test may be impacted.	$329		

SUPPLEMENTAL FUNDING PLAN – RL-VZ01 (4 Pages)

Project Priority	Outcomes (R-River, P-Plateau, M-Multi)	CA No.	Description of Work	Impact if Not Funded	Supplemental Requirements ($K Impacted)		
					FY01	FY02	FY03
5	M	P71504	**S&T:** Develop S&T roadmap for soil and groundwater remediation technical element	Work identified in the S&T roadmap not performed. Roadmap for remediation element will not exist; may impact leveraging of EM-50 and other work.	$322		

DESCRIPTION

OBJECTIVE

The Hanford Site GW/VZ Integration Project (Integration Project) was established in 1997 to develop the technical capability and scientific information needed to perform site-wide assessments of the potential effects of Hanford Site soil and groundwater contaminants on human, economic, and ecological systems, as well a local cultures. More specifically, the risk assessment methodologies, computer models, and data developed by the project will help inform and influence key decisions by regulators and DOE on the selection of cleanup goals and technologies.

The overall Integration Project mission will be accomplished over a long period of time, which is consistent with the schedule for implementing key remediation decisions. However, the project also provides vital near-term benefits to the Hanford Site by coordinating and focusing site characterization efforts, eliminating redundancies and overlaps, developing methods to evaluate risks and impacts on a broad scale, and putting key assessment information under site configuration control.

The Integration Project has adopted a mission that was framed through a series of meetings with regulators, Tribal Nations, stakeholders, and the State of Oregon. The mission focuses the project on developing a credible, technically defensible assessment of the cumulative effects of Hanford Site wastes in order to provide risk information (public, environmental, and cultural/ socioeconomic) to inform and influence cleanup decisions. Incorporating the information that is supplied by the Integration Project into the cleanup decision process is a new, important, and fundamental evolution of DOE's management strategy for the Hanford Site.

TECHNICAL CONTENT

The following provides a summary of the top-level objectives of the project, which are aligned to the vision of the site:

1. SAC analysis of points of compliance and action levels for groundwater by 2001.

2. Obtain regulatory agreements for river and plateau points of compliance and action levels for groundwater by 2001.

3. SAC will support regulatory risk analysis for the Hanford Site (ORP and RL) Remediation Baseline by 2004.

4. "Validation" of regulatory risk by 2005.

5. Determine long-term actions for remediation of 100 Area groundwater by 2006.

6. Complete S&T Roadmap for remediation by 2001.

7. Complete operational groundwater model by 2002.

8. Complete data and conceptual documentation by 2003.

9. Complete S&T Roadmap for monitoring (though ongoing monitoring) by 2003.

10. Complete S&T waste site inventory and vadose zone transport by 2003.

11. Complete biological/ecological impact assessment for strontium and chromium by 2004.

12. Complete S&T for groundwater river interface by 2004.

13. Support Composite Analysis update by 2004.

14. Complete 200 Area "high risk" waste site assessment by 2004.

1.5 Complete tank farm vadose zone assessment by 2004.

16. Support CERCLA 5-year review in 2005.

17. Design of surface and subsurface barriers for interim actions (cribs, tank farms, etc.) will be complete by 2005.

18. Monitoring will have evolved to a state-of-the-art system that will be designed to serve the Hanford Site through closure by 2006.

19. Determine long-term actions for remediation of 200 Area groundwater by TBD.

The following sections summarize the scope of the key endeavors, in accordance with the Integration Project's WBS.

Management and Integration

The Management and Integration scope includes technical reviews, public involvement, integration planning, and data configuration.

Technical Review

The technical review task includes the expert panel, associated subpanels, the NAS, and project-specific reviews.

A technical expert panel has been established to address specific technical or management issues. The panel focuses on problem resolution and technical reviews. The purpose of the external panel is to provide DOE with technical observations and recommendations regarding the planning, execution, and interpretation of results from the Integration Project. The panel reports to RL. The expert panel operates through written procedures that address requirements, protocols, the timeliness of producing panel reports, and a formal recommendation and comment resolution tracking and response process. The expert panel has the ability to establish subpanels that are composed of experts who are focused on a specific technical topics, according to project needs.

Another process for independent review that is being pursued by the DOE is through the NAS. The DOE has requested that independent, external peer reviews be conducted by the NAS on a periodic basis. These reviews will be coordinated with the expert panel, and conducted to avoid conflicts of interest (or any bias) potentially associated with conclusions and recommendations. In accordance with NAS standards, this review will consist of highly qualified technical experts.

The Hanford Site projects use various forms of internal technical and peer review to ensure quality and technically sound products. Those reviews associated with groundwater and vadose zones activities will be coordinated with the Integration Project to ensure efficient use of resources (and results) that address the overall needs of the Hanford Site.

Public Involvement

The PI effort supports effective and real-time project participation, as well as involvement by all interested audiences. There are various ways of communicating with and participating in the progress of the Integration Project. Effective dialogue between the Integration Project team and interested audiences will communicate issues, values, and concerns that affect decision-making processes. These methods include the following:

- **Tribal Governments:** Direct discussions and involvement on an informal basis will be offered and conducted upon request, and/or based on project needs. Consultations, including a more formal interface with Tribal Governments, will be conducted in conjunction with the RL OEA.

- **Hanford Advisory Board:** Information will be provided to the HAB's ER Committee and PI Committee. The ER Committee will determine when project information should be presented to the full board, and if draft advice should be presented to the full board. The Integration Project Team will provide the ER Committee with current status information at their monthly meetings. Updated status information will be provided to the PI Committee at the Tri-Party Agreement quarterly PI planning meetings.

- **One-on-Ones:** These are individual discussions held with interested audiences.

- **Media Relations:** Regional communication of specific information will be made to general audiences through the media. The use of press releases, media availability, interviews, and other communication methods and mechanisms will be employed to meet communication and project goals.

- **Project Team Meetings:** Project team meetings will be held routinely to facilitate a detailed dialogue. Meetings will be held at regular intervals, and will be open to all interested audiences. Meeting notes will be distributed to the mailing list.

Integration Planning

The Integration Planning task consists of a series of activities that provide overall documentation, integration planning, and system engineering for the GW/VZ Integration Project.

This task provides for the development and update of project documentation, such as the Project Management Plan, the Project Description, the Project Baseline, the LRP, and the DWP.

Relative to project integration, this task integrates with DOE, FH, and PNNL strategic planning for the Hanford Site, the Hanford Site systems engineering, and reviews strategic issues. This task also supports the customer and regulatory interfaces through the Regulatory and Policy Working Groups.

Data Configuration

This task provides for the planning, development, administration, and maintenance of the configuration controls necessary to support the GW/VZ Integration Project. Existing databases, protocols, procedures, and guidelines are reviewed, modified, and (if needed) created to support the project's mission. Project position papers will be authored to maintain the project's position on various topics (e.g., data qualification). Management and Integration (configuration control) will also interface with the core projects, Hanford Site contractors/subcontractors, stakeholders, and regulators to ensure that controls that are put in place will lead to acceptable and defensible RL conclusions/recommendations that support the overall cleanup mission.

Four tasks have been defined to build the GW/VZ Integration Project configuration control system. They are as follows:

Quality Assurance: The goal of the this activity is to establish the controls necessary to ensure that traceable, transparent, reviewed, reproducible, and retrievable (T_2R_3) data, documents, and/or information are supplied, evaluated, and produced by the GW/VZ Integration Project, and by the core projects and site contractors/subcontractors. To meet this goal, configuration control will adopt, establish, implement, and administer project-specific GW/VZ QA protocols. The QA protocols will not duplicate or recreate what is already in-place, as stated in the BHI general QA plan, in the approved QA plans for teaming partners, core projects, or site contractors/subcontractors.

Management Protocol: Configuration control will evaluate the protocols/procedures/guidelines that are presently written and in place (e.g., BHI, PNNL, FH, core projects or contractors/ subcontractors) to determine their applicability to achieving the stated mission of the GW/VZ Integration Project. Whenever possible, protocols that exist will be adopted and used with minor revision and/or modification and applied to the GW/VZ Integration Project. In some cases, however, it has already been determined that the needed protocols have not been written or developed.

Configuration Control Database(s): Several relational databases are needed to support the GW/VZ Integration Project. These databases will be controlled, maintained, and administered under the configuration control activity. The databases serve three primary purposes:

- Definition and maintenance of the GW/VZ Integration Project's position on technical and non-technical issues and activities.
- Allowing stakeholders, site, and project participant access to official, project positions.
- Ensuring that data/parameters/electronic deliverables are consistent and of high quality.

Various types of information (e.g., stakeholder issues, FEPs) input/output, reduced/interpreted data, qualified core project data and information) will be under configuration control and included in these databases.

Internet-Based Virtual Library: The functions and activities conducted and performed by the GW/VZ Integration Project lend themselves to building a Hanford Site web-based public virtual library that is under configuration control. The purpose of the library will be to make all information (e.g., maps, illustrations, data, databases, documents, and protocols) easily and readily available to RL personnel, core projects, site contractors/subcontractors, stakeholders, regulators, and the public. The library will provide ties to important data, databases, models, and documents.

Characterization of Systems

The focus of this activity is to coordinate and optimize GW/VZ and Columbia River characterization, data collection, and interpretation. The basis for this activity is that data must be available when needed, and the data must be maintained and used in a consistent and technically defensible manner.

The Integration Project, through the characterization of systems task, must effectively manage interfaces with other site projects that either directly or indirectly use or provide information relative to the GW/VZ and Columbia River. The Hanford Site projects that interface with the Integration Project are listed in Table 1-1.

Table 1-1. Key Interfaces with the Integration Project.

Responsible Project	Activity
Office of River Protection	Immobilized Low-Activity Waste
Office of River Protection	Tank Farms Vadose Zone Characterization
Waste Management	Solid Waste Management
Environmental Restoration	Groundwater Monitoring and Modeling
Environmental Restoration	Well Installation
Environmental Restoration	Vadose Zone Monitoring
Environmental Restoration	Groundwater Remedial Actions
Environmental Restoration	100/200/300 Area Remedial Actions and Assessments
Environmental Assurance Policy and Permits	Environmental Monitoring (Columbia River)

Characterization of systems consists of a series of activities that accomplishes the following:

- Capture and integrate technical knowledge by evaluating FEPs.
- Disposition of technical issues.
- Communicate technical knowledge through revised site conceptual models.
- Integrate field characterization and assessment modeling activities across site projects.

Performance of the first three listed activities results in the development of consistent, integrated system-level conceptual models of the Hanford Site that include the key technical elements of inventory, vadose zone, groundwater, the Columbia River, and biological systems.
A conceptual model is a description of the natural system that is supported through documented evaluations of pertinent FEPs. Models will be developed that address both regional (far field) and local (near field) scales.

Implementation of the last activity results in the coordination and integration of Hanford Site vadose zone, groundwater, and Columbia River field characterization work to ensure that data collection is being optimized. Performance of this task will result in the development of a consolidated schedule and actions for efficient field characterization that:

- Consolidates field characterization needs for core projects, S&T, and SAC.
- Evaluates the sequencing of the needs.
- Identifies planned field work that will or could meet a data need.
- Actively facilitates the inclusion of priority work scope into field activities.

The primary method of tying data needs to field activities is participation in DQO planning sessions.

The last activity also ensures that there is a forum to integrate the projects that perform numerical modeling to support impact assessments.

System Assessment Capability

The SAC is composed of a set of quantitative (e.g., numerical models and data) and qualitative (e.g., rules on cultural values) tools and information that will be used to assess Hanford Site cumulative impacts on water resources, living systems, cultures, and regional economics. A key element of the systems being assessed is the Columbia River. The results of this cumulative impact assessment will allow site-specific cleanup decisions and disposal authorizations to be made in the context of overall Hanford Site impacts on the region. The SAC will also provide useful information for making such site operational decisions as cleanup prioritization, funding allocation, and the need for additional data. In the long term, the SAC will provide important information to Hanford Site closure decisions.

The SAC will be improved through iterative cycles until the users are satisfied that it provides sufficiently complete and defensible impact assessments of the Hanford Site. Assessments completed through the SAC will address future impacts of waste remedial action and disposal in the near-river region of the 100 and 300 Areas, and in the Central Plateau region of the 200 Areas. The SAC will address a broad range of human health, ecological, cultural, and economic risks and impacts. These impact assessments will seek to quantify and otherwise describe site-wide system impacts, and will provide estimates of water quality in the groundwater system and in the Columbia River adjacent to and downstream of the site.

The SAC will continue to be developed through an open process that provides for regulator, Tribal Nation, and stakeholder input. SAC staff will meet with regulators, Tribal Nations, and stakeholders to exchange information, and the open project meetings will be used to provide progress updates. Based on the expectations for the SAC, S&T needs and core project support expectations will also be identified. Two important aspects to the analysis will include understanding the uncertainty in the initial assessments results and the approach to the risk and impact assessment.

Science and Technology

The GW/VZ Integration Project recognizes that there are gaps in Hanford Site's knowledge and data for the following technical elements: inventory vadose zone, groundwater, river, risk, monitoring, and remedial options. Information and data concerning these technical elements

are required to adequately predict the movement of contaminants in the subsurface and surface environments, and to subsequently design and monitor remedial options.

The objective of the S&T endeavor is to provide the understanding, knowledge, data, tools, and methodologies that come out of an applied research approach that is not available from individual projects. The information developed by the S&T effort will be provided to projects (and to the SAC) to help inform and influence remediation and closure decisions at the Hanford Site. The scope of the S&T program encompasses the inventory, vadose zone, groundwater, Columbia River, and risk technical elements, which are needed to describe the controlling features and processes in each of these environmental settings. Physical, chemical, and biological features, events, and processes are all considered.

WORK STATEMENT

Management and Integration

FY01

Integration Planning

- Develop programmatic interface agreements between the Integration Project and other site projects. System Engineering will draw support from characterization and SAC development activities as needed to arrive at appropriate interface requirements.
- Set up and lead the Regulatory Path Forward Work Group meetings, as needed.
- Develop required information to support the working group. Interface with the ongoing Hanford Site strategic planning efforts and the HAB.
- Support DWP preparation.

Peer Review

- The GW/VZ Expert Panel provides broad oversight, including merit and technical review, of GW/VZ Integration Project activities. One expert panel will be conducted.
- Subpanels of the GW/VZ Expert Panel provide technical or management reviews for the GW/VZ Integration Project. Three subpanel meetings will be conducted.
- A NAS panel will focus on the science and technology component of the GW/VZ Integration Project. One onsite panel meeting will be conducted.

Public Involvement

- Ensure that the project considers and reflects the values and input from regulatory agencies, the State of Oregon, Tribal Nations, and members of the public.
- Ensure that the project communicates early and often, to allow maximum input in the project decision-making processes.

Data Configuration

- Provide traceable, transparent, reviewed, reproducible, and retrievable (T2R3) data and/or information from the GW/VZ Integration Project to aid in RL decision making.
- Adapt or modify existing configuration control systems, protocols, and databases (when possible) to avoid unnecessary expenditure of funds and duplication of resources.
- Establish the second stage of the Internet-Based Virtual Library that includes databases, documents (etc.) that are completed by or support the GW/VZ Integration Project.

FY02

Integration Planning

- Provide GW/VZ Integration Project documentation and planning tasks. Additionally, provide the primary interface for Hanford Site strategic planning.
- Implement a regulatory framework.
- Provide System Engineering support to the GW/VZ Integration Project.

Peer Review

- The GW/VZ Expert Panel provides broad oversight, including merit and technical reviews, for the GW/VZ Project. Two expert panels will be conducted.
- Subpanels of the GW/VZ Expert Panel provide technical or management reviews for the GW/VZ Project. Three meetings will be conducted.
- A NAS panel will focus on the science and technology component of the GW/VZ Integration Project.

Public Involvement

- Ensure that the project considers and reflects the values and input from regulatory agencies, the State of Oregon, Tribal Nations, and members of the public.
- The project communicates early and often to allow maximum input in the project decision-making processes.

Data Configuration

- Provide traceable, transparent, reviewed, reproducible, and retrievable (T2R3) data and/or information from the GW/VZ Integration Project to aid in RL decision making.
- Maintain configuration control systems, protocols, and databases.
- Establish the third stage of the Internet-Based Virtual Library that includes databases, documents (etc.) that are completed by or support the GW/VZ Integration Project.

FY03

Integration Planning

- Provide GW/VZ Integration Project documentation and planning tasks. Additionally, provide the primary interface for Hanford Site strategic planning.
- Implement a regulatory framework.
- Provide System Engineering support to the GW/VZ Integration Project.

Peer Review

- The GW/VZ Expert Panel provides broad oversight, including merit and technical reviews, for the GW/VZ Project. Two expert panels will be conducted.
- Subpanels of the GW/VZ Expert Panel provide technical or management reviews for the GW/VZ Project. Three meetings will be conducted.
- A NAS panel will focus on the science and technology component of the GW/VZ Integration Project.

Public Involvement

- Ensure that the project considers and reflects the values and input from regulatory agencies, the State of Oregon, Tribal Nations, and members of the public.
- The project will communicate early and often to allow maximum input in the project decision-making processes.

Data Configuration

- Provide traceable, transparent, reviewed, reproducible, and retrievable (T2R3) data and/or information from the GW/VZ Integration Project to aid in RL decision making.
- Maintain configuration control systems, protocols, and databases.
- Maintain support of the Internet-Based Virtual Library that includes databases, documents (etc.) that are completed by or support the GW/VZ Integration Project.

Characterization of Systems

FY01

- Continue revision of conceptual models by technical elements and key interfaces.
- Resolve technical issues by evaluating relevant FEPs and prepare and document resolution and update Technical Issues database.
- Document site knowledge and conduct peer review of site knowledge.

- Incorporate new technical gaps and needs into consolidated list of field characterization needs.

- Focus efforts on opportunities to improve site integration of characterization and numerical modeling.

FY02

- Revise site conceptual models.

- Provide input into the development of SAC Rev. 1 requirements development.

- Implement technical issue protocol (resolve technical issues, draft project positions, review and comment resolution, populate database, update Internet with technical issue evaluations).

- Prepare and issue a draft data package for implementation of SAC Rev. 1, which will include new characterization data.

- Document technical gaps and needs and partner with S&T and core projects to include these needs into work planning.

- Review and reevaluate the list of field characterization needs.

FY03

- Update current state of knowledge and assessment-specific application descriptive information on an as-needed basis.

- Add new Hanford Features and Processes as they are identified through internal and external peer reviews, and the technical management task.

- Implement technical issue protocol (resolve technical issues, draft project positions, review and comment resolution, populate database, update internet with technical issue evaluations).

- Document technical gaps and needs, and partner with S&T and core projects to include these needs into work planning.

- Review and reevaluate the list of field characterization needs.

System Assessment Capability

FY01

- Complete historical matching case analysis and the required analysis for the initial assessment performed with the SAC Rev. 0.

- Complete analyses for risk and impact for the initial assessment performed with the SAC Rev. 0.

- Draft the SAC Rev. 0 testing and evaluation report.

FY02

- Develop requirements for SAC Rev. 1 and related assessment. This will include the ability to meet 2004 CA requirements.
- Complete design document for SAC Rev. 1.
- Assemble SAC Rev. 1.
- Assemble the data required to perform the initial assessment with SAC Rev. 1.

FY03

- Complete testing of SAC Rev. 1.
- Complete historical matching case analysis and the required analysis for the initial assessment with SAC Rev. 1.

Science and Technology

FY01

- Develop mass-balanced estimates of soil waste site inventories.
- Complete laboratory and reactive transport modeling studies that "wrap around" S-SX Tank Farm characterization efforts and initiate studies at B-BX-BY and the Z-11 Ditch.
- Conduct field experiments to investigate vadose zone transport phenomena under controlled conditions (inject concentrated salt tracer) and evaluate advanced characterization technologies.
- Develop enhanced conceptual models of groundwater/river interactions to better understand migration of contaminants into the Columbia River.
- Conduct laboratory studies to quantify the kinetics of biological uptake and key contaminants for aquatic species and riparian vegetation and enhance existing toxicological models.
- Interface with the NAS.

FY02

- Revise the S&T plan and roadmap to include the remediation technical element and incorporate the NAS study results and results of SAC Rev. 0.
- Complete mass-balance estimates of soil waste site inventories.

- Complete laboratory and reactive transport studies for the B-BX-BY Tank Farm and Z-11 Ditch investigations and initiate studies at T-TX-TY.

- Conduct field experiments to investigate vadose zone transport phenomena under controlled conditions (dilute tracer in deep sediments).

- Complete the conceptual and numerical models of groundwater/river interaction to estimate groundwater discharge to the river's ecosystem.

- Complete laboratory studies and model development for biological uptake for aquatic species and riparian vegetation.

FY03

- Revise S&T roadmap to include monitoring technical element.

- Complete laboratory and reactive transport studies for the T-TX-TY Tank Farm and a scavenged waste site.

- Conduct field experiments to investigate vadose zone transport phenomena under controlled conditions (concentrated salt tracer in deep sediments).

ASSUMPTIONS

No budget allowance has been included to support changes associated with Phase II Budget Update Guidance for the ER Baseline update. Guidance will not be available, until September FY00. Upon receipt, a BCP, as appropriate, will be initiated and approved prior to commencing work activities.

Management and Integration

Integration Planning

- Regulatory Path Forward Work Group will be supported with participation of regulators and stakeholders. Implementation (renegotiations, scope revisions) of recommendations of the work group will be funded by individual project.

- The Project Requirements Document and other interface documents will be reviewed by DOE, but will not require public review. Work dependent on these documents may proceed prior to DOE approval.

- The GW/VZ Integration Project will be incorporated into the overall ERC Baseline and LRP.

- Data management integration issues to be addressed under Hanford Site contracting strategy.

Peer Review

- The GW/VZ Expert Panel and subpanel activities will be funded by the GW/VZ Integration Project.
- Core project preparation and participation will be funded by the core projects.
- Technical comment resolution in response to subpanel and NAS comments will be addressed and performed by the responsible group.
- The NAS panel will be funded by DOE-HQ, per RL guidance for the GW/VZ Integration Project.

Public Involvement

- GW/VZ will provide an information sharing/public involvement forum for all of the Hanford Site's core projects (open project team meetings, calendar of events, and public review opportunities).
- "One-on-one" meetings with interested groups is the preferred outreach venue.
- Public involvement for the project has been integrated into the project tasks (i.e., SAC, S&T, Regulatory Path Forward).

Data Configuration

- The GW/VZ Integration Project QA program is based on CERCLA and RCRA requirements and DOE order.
- The existing structure of databases will be suitable, with minor modification, for use by the project.
- The FEPs or equivalent database will track technical issues.
- The Internet-Based Virtual Library will be released to the GW/VZ Integration Project and the public in three stages that are pre-approved by RL and Security before release.

Characterization of Systems

- The FEPs evaluation process used at other DOE sites forms a technically sound basis for evaluating site technical knowledge and resolving technical issues.
- The conceptual model core team will be composed of leads from BHI, PNNL, FH, and RPP.
- The initial evaluation of FEPs must be completed prior to conceptual model finalization.
- Concerns raised during peer review can be addressed within scope and schedule.

- Technical issues are cross-cutting; therefore, the technical issue resolution team will consist of leads from Characterization of Systems (COS), site projects, and S&T and SAC technical teams.

- The existing DQO process employed by the core projects is adequate for characterization needs.

- A modeling coordination team will be adequate to provide consistency in modeling approaches across site projects.

- The SAC project team will provide timely input of data requirements for SAC Rev. 1 for Characterization of Systems.

System Assessment Capability

- The existing consolidated groundwater model is sufficient for use in SAC Rev. 0.

- The S&T efforts associated with the development or adaptation of the SAC will provide timely input to the SAC project team.

- Assessments performed with SAC Rev. 1 will rely on the Characterization of Systems task for the data needed to support the assessment.

- The initial assessment will analyze the Hanford Site Disposition Baseline and will include a subset of the radioactive and hazardous chemical contaminants expected to dominate risk and impacts.

- No significant issues will be raised by NAS or Expert Panel reviews. If significant issues are identified, BCPs will be developed to address the impact.

- SAC Rev. 1 capability will be an enhancement of Rev. 0, not a complete redesign.

- Planned activities are sufficient to gain regulator and DOE acceptance as a viable regulatory tool.

Science and Technology

- S&T funding through the Integration Project (minimum of $5M/year) will be provided to PNNL by Fin Plan and PNNL will subcontract directly with the other national laboratories to conduct the work.

- It is assumed that Environmental Management Science Program (EMSP) funding provided during FY99 ($1M) can be carried over.

- Other national laboratories will continue to provide resources to the GW/VZ Integration Project as needed.

- Issues raised by the NAS and GW/VZ Integration Project Expert Panel can be addressed within current scope and schedule.

- Work planned by core projects (RPP Tank Farm Vadose Zone and ILAW, 200 Area Characterization, Groundwater Project, Surface Environmental Surveillance Project), where interfaces with S&T have been identified, will be funded and proceed as scheduled.

- Other core projects will fund the work within their baselines (e.g., coring, sample retrieval with Environment, Safety, and Health [ES&H], and basic characterization). S&T will provide funding for marginal costs such as sample distribution and additional scientific study; S&T will receive a sufficient quantity of each contaminated sample for "wrap-around" science.

- SCFA will provide funding to support vadose zone characterization of tank farms and surface barrier performance monitoring.

- EMSP projects will provide select contributions to "wrap around" science and vadose zone transport field studies.

- "Reasonable" samples will be distributed to EMSP investigators and the multi-laboratory S&T research team compliant with ES&H and waste management requirements.

- An existing field site (e.g., Sisson and Lu Injection site in the 200 East Area) will be sufficient for FY01 vadose zone field study experiments, and PNNL will have ES&H.

- An existing field site for the final years of testing (FY02 and FY03) will be identified that can be either trenched in cooperation with ongoing activities or is a site (trench) that has been opened and currently not in use.

Prepared By:	K. N. Swan
ERC Project Manager:	M. J. Graham
DOE Project Manager:	K. M. Thompson

Groundwater/Vadose Zone Integration Project
CODE OF ACCOUNT STRUCTURE CHART

1.4.10.1.7.11 VZ01 Site-Wide Groundwater/Vadose Zone Integration Project
1.4.10.1.7.11.03 Hanford Site Groundwater Management - Vadose Integration

1.4.10.1.7.11.03.27 P7 GW/Vadose Zone Integration Project

1.4.10.1.7.11.03.27.01 P71 GW/Vadose Zone Integration Project

1.4.10.1.7.11.03.27.01.35 P715 GW/Vadose Zone Integration of Vadose Zone Activities

1.4.10.1.7.11.03.27.01.35.01 P71501 GW/Vadose Zone Management and Integration

HVADP1 PHASE III - GW/VADOSE ZONE IMPLEMENTATION
- HVADP1YN61 MISSION ANALYSIS

HVCOM1 GW/VZ COMMON
- HVCOM1YC10 PC ACQUISITIONS AND MAINTENANCE
- HVCOM1YN60 LONG RANGE PLANNING
- HVCOM1YN80 DETAILED WORK PLAN, MAP
- HVCOM1YNB0 PROJECT BASELINE SUMMARY, PRIORITY LISTS, IPL'S

HVDCP1 DATA CONFIGURATION
- HVDCP11542 CONFIGURATION CONTROL DATABASE
- HVDCP11543 MANAGEMENT PROTOCOLS
- HVDCP11544 INTERNET BASED VIRTUAL LIBRARY
- HVDCP1YN70 BASELINE MANAGEMENT & CHANGE CONTROL
- HVDCP1YN90 PROJECT PLANNING, SCHEDULING & COST CONTROL
- HVDCP1YND0 PROJECT STAFF REPORTS, REVIEW, PRESENTATIONS

HVEAP1 PUBLIC INVOLVEMENT
- HVEAP11521 PUBLIC PARTICIPATION
- HVEAP11522 CONGRESSIONAL REPORT
- HVEAP11523 PROJECT WEBSITE
- HVEAP1YN70 BASELINE MANAGEMENT & CHANGE CONTROL
- HVEAP1YN90 PROJECT PLANNING, SCHEDULING & COST CONTROL

HVMISM MANAGEMENT/INTEGRATION COMBINED SITES
- HVMISM1500 GW/VZ MANAGEMENT AND INTEGRATION
- HVMISMY000 DIRECT PROJECT SUPPORT

HVPLP1 INTEGRATION PLANNING
- HVPLP11513 SYSTEMS ENGINEERING
- HVPLP1YN50 STRATEGIC PLANNING
- HVPLP1YN70 BASELINE MANAGEMENT & CHANGE CONTROL
- HVPLP1YN90 PROJECT PLANNING, SCHEDULING & COST CONTROL
- HVPLP1YT20 CUSTOMER/REGULATORY INTERFACE ACTIVITY

HVPRP1 PEER REVIEW
- HVPRP11531 EXPERT PANEL
- HVPRP11532 PANEL SUB PANEL
- HVPRP11533 TECHNICAL/PEER REVIEW
- HVPRP1Y210 CONTRACT ADMINISTRATION
- HVPRP1YN70 BASELINE MANAGEMENT & CHANGE CONTROL
- HVPRP1YN90 PROJECT PLANNING, SCHEDULING & COST CONTROL

1.4.10.1.7.11.03.27.01.35.02 P71502 Characterization of Systems

HVCHP1 CHARACTERIZATION OF SYSTEMS
- HVCHP11600 CHARACTERIZATION OF SYSTEMS
- HVCHP11611 CONCEPTUAL MODEL STANDARDIZATION
- HVCHP11612 TECHNICAL ISSUE EVALUATION
- HVCHP11613 COORDINATION AND INTEGRATION OF CHARACTERIZATION
- HVCHP1Y120 SUPERVISION
- HVCHP1YN70 BASELINE MANAGEMENT & CHANGE CONTROL
- HVCHP1YN90 PROJECT PLANNING, SCHEDULING & COST CONTROL

Groundwater/Vadose Zone Integration Project
CODE OF ACCOUNT STRUCTURE CHART

1.4.10.1.7.11.03.27.01.35.03 P71503 System Assessment Capability

HVSCP0 DEVELOP ASSESSMENT CAPABILITY - REV 0

HVSCP01521 PUBLIC PARTICIPATION
HVSCP01533 TECHNICAL/PEER REVIEW
HVSCP01612 TECHNICAL ISSUE EVALUATION
HVSCP01720 ASSESSMENT DESIGN DOCUMENT
HVSCP01730 ASSESSMENT DATA GATHERING
HVSCP01740 ASSEMBLE CAPABILITY
HVSCP0Y120 SUPERVISION
HVSCP0Y220 ADMINISTRATIVE SUPPORT
HVSCP0YN60 LONG RANGE PLANNING
HVSCP0YN70 BASELINE MANAGEMENT & CHANGE CONTROL
HVSCP0YN90 PROJECT PLANNING, SCHEDULING & COST CONTROL
HVSCP0YND0 PROJECT STAFF REPORTS, REVIEW, PRESENTATIONS

HVSCP1 DEVELOP ASSESSMENT CAPABILITY - REV 1

HVSCP11710 DETERMINE ASSESSMENT REQUIREMENTS

HVSCSM SYS ASSES. CAPABILITIES COMBINED SITES

HVSCSM1700 DEVELOP ASSESSMENT CAPABILITY

HVSDP0 PERFORM ASSESSMENT - REV 0

HVSDP01760 HISTORICAL MATCHING
HVSDP01765 MODEL RUNS AND RISK/IMPACT PREDICTIONS
HVSDP01770 System Assessment Capability
HVSDP01780 RISK CHARACTERIZATION
HVSDP01790 ASSESSMENT REPORT
HVSDP01795 ASSESSMENT SUMMARY REPORT

1.4.10.1.7.11.03.27.01.35.04 P71504 Science and Technology (PNNL Fin Plan)

HVADP1 PHASE III - GW/VADOSE ZONE IMPLEMENTATION

HVADP11360 ROAD MAPPING PROCESS

HVSTP1 SCIENCE & TECHNOLOGY

HVSTP11810 Science and Technology (PNNL Fin Plan)

WORK BREAKDOWN STRUCTURE INDEX

PBS	Indenture Level							Title	HQ/ERC WBS #	B&R #
	5	6	7	8	9	10	11			
RL-VZ01		X						Site-Wide Groundwater/Vadose Zone Integration Project	1.4.10.1.7.11	EW02J1290
RL-VZ01			X					Hanford Site Groundwater Management - Vadose Integration	1.4.10.1.7.11.03	EW02J1290
RL-VZ01				X				GW/Vadose Zone Integration Project	1.4.10.1.7.11.03.27	EW02J1290
RL-VZ01					X			GW/Vadose Zone Integration Project	1.4.10.1.7.11.03.27.01	EW02J1290
RL-VZ01						X		GW/Vadose Zone Integration of Vadose Zone Activities	1.4.10.1.7.11.03.27.01.35	EW02J1290
RL-VZ01							X	GW/Vadose Zone Management and Integration	1.4.10.1.7.11.03.27.01.35.01	EW02J1290
RL-VZ01							X	Characterization of Systems	1.4.10.1.7.11.03.27.01.35.02	EW02J1290
RL-VZ01							X	System Assessment Capability	1.4.10.1.7.11.03.27.01.35.03	EW02J1290
RL-VZ01							X	Science and Technology (PNNL Fin Plan)	1.4.10.1.7.11.03.27.01.35.04	EW02J1290

MAJOR PROCUREMENT PLAN - FY 2001

Cost Account	Task	Type of Contract	Start Date	End Date	FY01 Burdened Budget/EAC ($K)
Misc.	National Laboratory Support	TBD	10/00	09/01	103
P71501	Data Configuration - Internet Virtual Library Support	FP	10/00	09/01	347
P71501	Peer Review - Expert Panel/Subpanels	FP	11/00	09/01	323
P71502	Characterization of Systems - Conceptual Model Standardization	FP	10/00	08/01	72
P71504	Science & Technology Fin Plan	FP	10/00	09/01	4,900
Misc	Misc.Subcontracts/PNNL Resources	FP/FUP/W/0	10/00	09/01	3,532
	Total				9,278

MAJOR PROCUREMENT PLAN - FY 2002

Cost Account	Task	Type of Contract	Start Date	End Date	FY02 Burdened Budget/EAC ($K)
Misc.	National Laboratory Support	TBD	10/01	09/02	77
P71501	Data Configuration - Internet Virtual Library Support	FP	10/01	09/02	359
P71501	Peer Review - Expert Panel/Subpanels	FP	11/01	09/02	309
P71502	Characterization of Systems - Conceptual Model Standardization	FP	10/01	06/02	87
P71504	Science & Technology - Fin Plan	Fin Plan	10/01	09/02	4,700
Misc	Misc.Subcontracts/PNNL Resources	FP/FUP/W/O	10/01	09/02	3,560
	Total				9,092

MAJOR PROCUREMENT PLAN - FY 2003

Cost Account	Task	Type of Contract	Start Date	End Date	FY03 Burdened Budget/EAC ($K)
Misc.	National Laboratory Support	TBD	10/02	09/03	84
P71501	Data Configuration - Internet Virtual Library Support	FP	10/02	09/03	369
P71501	Peer Review - Expert Panel/Subpanels	FP	11/02	08/03	317
P71502	Characterization of Systems - Conceptual Model Standardization	FP	10/02	09/03	77
P71504	Science & Technology - Fin Plan	Fin Plan	10/02	09/03	4,700
Misc	Misc. Subcontracts/PNNL Resources	FP/FUP/W/O	10/02	09/03	3,217
	Total				8,764

PBS BUDGET BASELINE TABLE

CA #	Description	HOURS			$1,000			
		Non Manual	Manual	Total	Labor	Material/ Eqpt/Other	SC	Total
		FY 2001						
P71501	GW/Vadose Zone Management and Integration	13,754		13,754	996	49	1,026	2,071
P71502	Characterization of Systems	3,060		3,060	242	158	1,100	1,500
P71503	System Assessment Capability	1,464		1,464	103	8	2,252	2,362
P71504	Science and Technology (PNNL Fin Plan)				0	0	4,900	4,900
	Subtotal GW/Vadose Zone Integration Project	**18,279**		**18,279**	**1,341**	**215**	**9,278**	**10,833**
	FY 2001 TOTAL	**18,279**		**18,279**	**1,341**	**215**	**9,278**	**10,833**
		FY 2002						
P71501	GW/Vadose Zone Management and Integration	14,119		14,119	1,082	13	1,043	2,139
P71502	Characterization of Systems	3,060		3,060	239	32	1,229	1,500
P71503	System Assessment Capability	2,592		2,592	210	99	2,120	2,428
P71504	Science and Technology (PNNL Fin Plan)				0	0	4,700	4,700
	Subtotal GW/Vadose Zone Integration Project	**19,771**		**19,771**	**1,531**	**144**	**9,092**	**10,767**
	FY 2002 TOTAL	**19,771**		**19,771**	**1,531**	**144**	**9,092**	**10,767**
		FY 2003						
P71501	GW/Vadose Zone Management and Integration	13,027		13,027	1,032	13	1,033	2,079
P71502	Characterization of Systems	2,536		2,536	211	516	773	1,500
P71503	System Assessment Capability	1,997		1,997	162	8	2,258	2,428
P71504	Science and Technology (PNNL Fin Plan)				0	0	4,700	4,700
	Subtotal GW/Vadose Zone Integration Project	**17,560**		**17,560**	**1,405**	**538**	**8,764**	**10,706**
	FY 2003 TOTAL	**17,560**		**17,560**	**1,405**	**538**	**8,764**	**10,706**

PBS#: RL-VZ01

HQ/ERC WBS#: 1.4.10.1.7.11

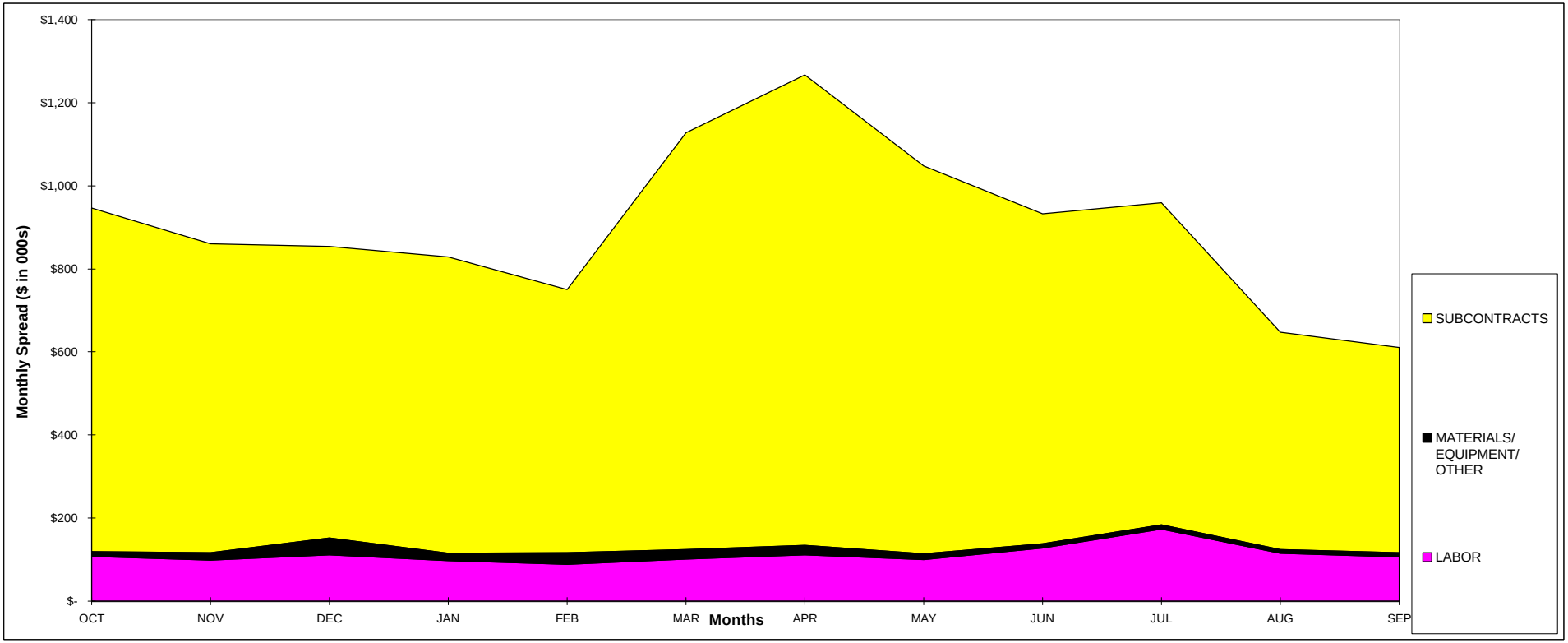
TITLE: Site-Wide Groundwater/Vadose Zone Integration Project

Subproject Strategy

October 1, 2000

FY 2001 PBS BASELINE EXPENDITURE FORECAST

(Dollars in Thousands)



	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
LABOR	$ 108	$ 99	$ 112	$ 97	$ 89	$ 102	$ 111	$ 101	$ 128	$ 173	$ 115	$ 106	$ 1,341
MATERIALS/ EQUIPMENT/ OTHER	$ 11	$ 17	$ 40	$ 18	$ 28	$ 23	$ 22	$ 14	$ 10	$ 11	$ 10	$ 10	$ 215
SUBCONTRACTS	$ 827	$ 744	$ 702	$ 713	$ 634	$ 1,004	$ 1,133	$ 934	$ 794	$ 776	$ 522	$ 495	$ 9,278
BUDGET CURRENT	$ 946	$ 860	$ 855	$ 829	$ 751	$ 1,128	$ 1,267	$ 1,048	$ 933	$ 959	$ 647	$ 611	$ 10,833
BUDGET BASELINE (DWP)	$ 946	$ 860	$ 855	$ 829	$ 751	$ 1,128	$ 1,267	$ 1,048	$ 933	$ 959	$ 647	$ 611	$ 10,833
ACTUALS	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
MONTHLYFORECAST	$ 946	$ 860	$ 855	$ 829	$ 751	$ 1,128	$ 1,267	$ 1,048	$ 933	$ 959	$ 647	$ 611	$ 10,833
CUMULATIVE EAC	$ 946	$ 1,806	$ 2,661	$ 3,490	$ 4,240	$ 5,368	$ 6,635	$ 7,683	$ 8,616	$ 9,575	$ 10,222	**$ 10,833**	$ 10,833

PBS#: RL-VZ01

HQ/ERC WBS#: 1.4.10.1.7.11

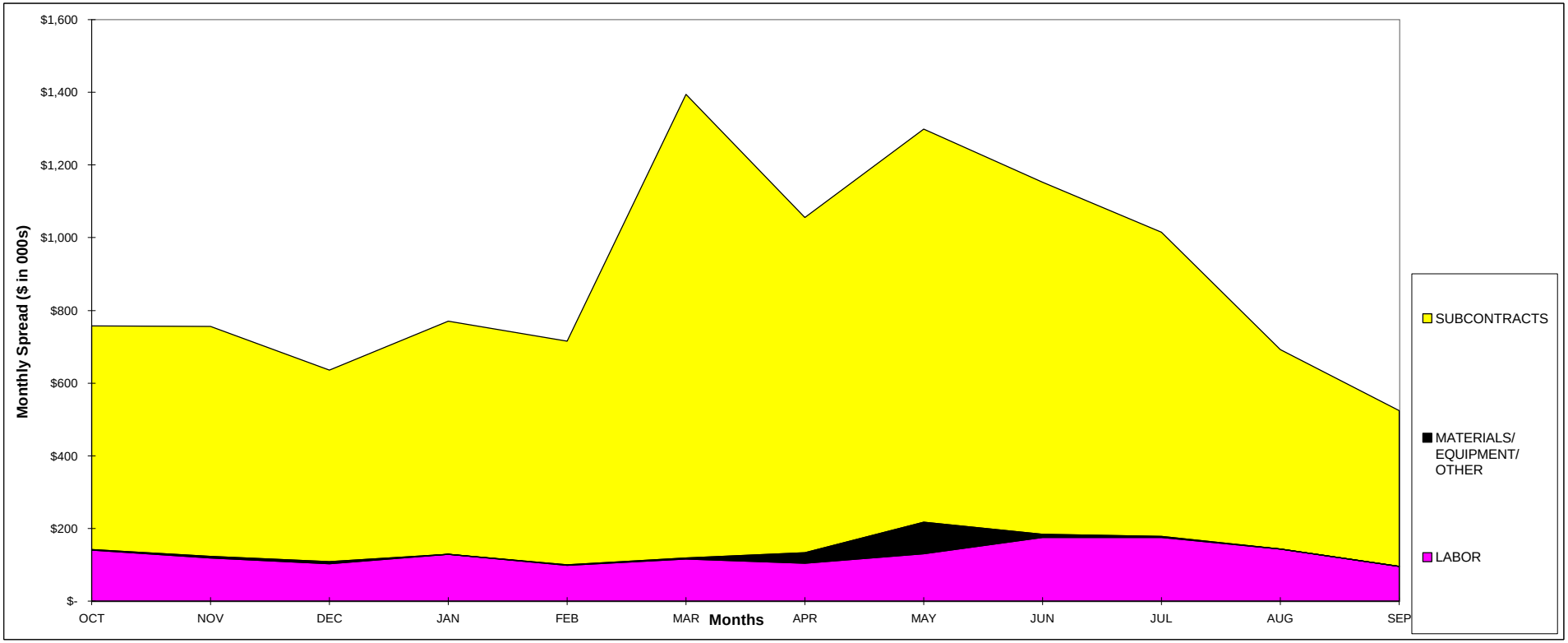
TITLE: Site-Wide Groundwater/Vadose Zone Integration Project

Subproject Strategy

October 1, 2000

FY 2002 PBS BASELINE EXPENDITURE FORECAST

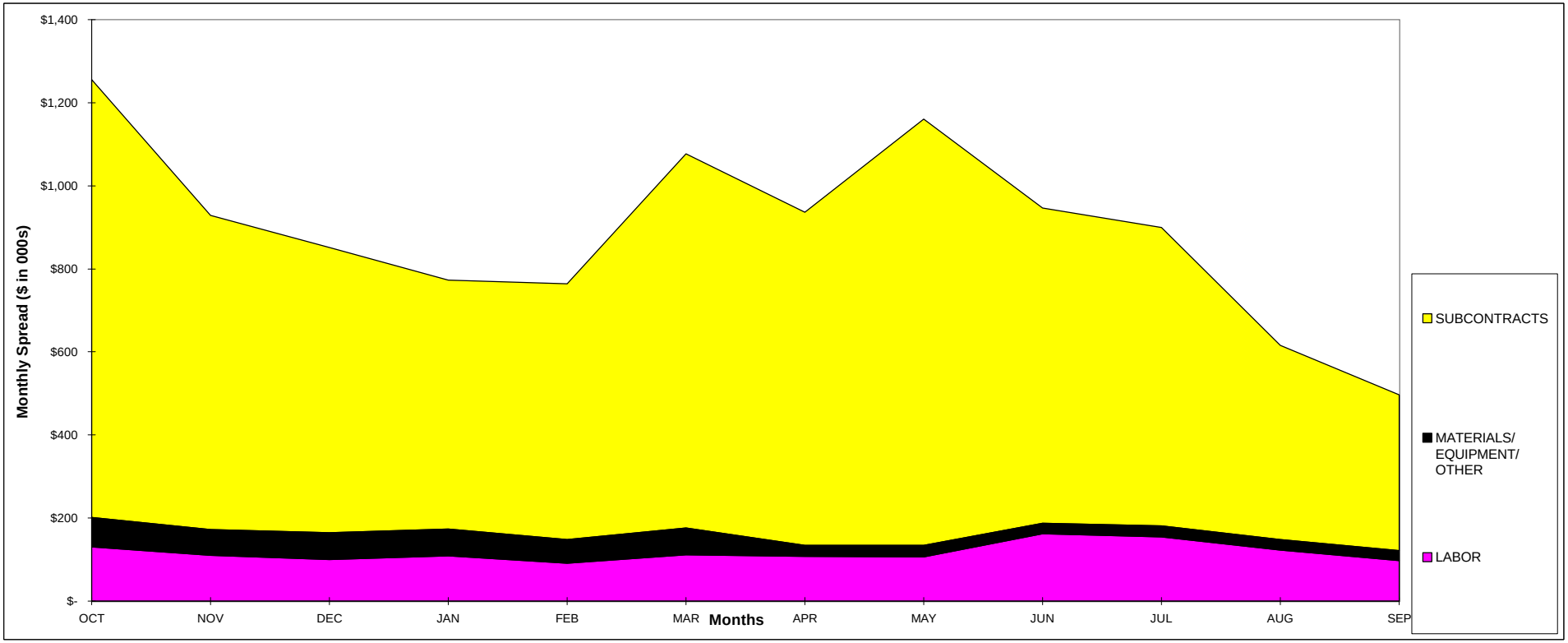
(Dollars in Thousands)



	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
LABOR	$ 141	$ 119	$ 103	$ 129	$ 98	$ 116	$ 104	$ 131	$ 176	$ 176	$ 143	$ 96	$ 1,531
MATERIALS/ EQUIPMENT/ OTHER	$ 2	$ 4	$ 6	$ 0	$ 1	$ 2	$ 29	$ 87	$ 9	$ 3	$ 1	$ 0	$ 144
SUBCONTRACTS	$ 614	$ 632	$ 527	$ 641	$ 615	$ 1,276	$ 923	$ 1,080	$ 968	$ 837	$ 548	$ 428	$ 9,092
BUDGET CURRENT	$ 757	$ 756	$ 636	$ 771	$ 715	$ 1,394	$ 1,056	$ 1,298	$ 1,153	$ 1,015	$ 692	$ 524	$ 10,767
BUDGET BASELINE (DWP)	$ 757	$ 756	$ 636	$ 771	$ 715	$ 1,394	$ 1,056	$ 1,298	$ 1,153	$ 1,015	$ 692	$ 524	$ 10,767
ACTUALS	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
MONTHLYFORECAST	$ 757	$ 756	$ 636	$ 771	$ 715	$ 1,394	$ 1,056	$ 1,298	$ 1,153	$ 1,015	$ 692	$ 524	$ 10,767
CUMULATIVE EAC	$ 757	$ 1,513	$ 2,148	$ 2,919	$ 3,634	$ 5,029	$ 6,085	$ 7,383	$ 8,535	$ 9,551	$ 10,243	**$ 10,767**	$ 10,767

FY 2003 PBS BASELINE EXPENDITURE FORECAST

(Dollars in Thousands)



	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
LABOR	$ 130	$ 111	$ 100	$ 109	$ 91	$ 112	$ 107	$ 107	$ 162	$ 155	$ 123	$ 98	$ 1,405
MATERIALS/ EQUIPMENT/ OTHER	$ 72	$ 61	$ 65	$ 65	$ 57	$ 63	$ 27	$ 27	$ 25	$ 26	$ 25	$ 24	$ 538
SUBCONTRACTS	$ 1,054	$ 757	$ 687	$ 600	$ 616	$ 901	$ 802	$ 1,027	$ 760	$ 718	$ 467	$ 375	$ 8,764
BUDGET CURRENT	$ 1,255	$ 929	$ 852	$ 773	$ 765	$ 1,077	$ 936	$ 1,161	$ 947	$ 899	$ 615	$ 497	$ 10,706
BUDGET BASELINE (DWP)	$ 1,255	$ 929	$ 852	$ 773	$ 765	$ 1,077	$ 936	$ 1,161	$ 947	$ 899	$ 615	$ 497	$ 10,706
ACTUALS	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
MONTHLYFORECAST	$ 1,255	$ 929	$ 852	$ 773	$ 765	$ 1,077	$ 936	$ 1,161	$ 947	$ 899	$ 615	$ 497	$ 10,706
CUMULATIVE EAC	$ 1,255	$ 2,184	$ 3,036	$ 3,810	$ 4,574	$ 5,651	$ 6,587	$ 7,748	$ 8,695	$ 9,594	$ 10,209	**$ 10,706**	$ 10,706

COST ACCOUNT PLAN

KEY PROJECT TEAM MEMBERS

Task Lead (CAM):	**T. M. Wintczak**
DOE-RL PM:	**K. M. Thompson**
Project Engineer:	**G. B. Mitchem**
Field Support:	**N/A**
QS&H:	**N/A**
Project Controls:	**M. J. Leverson/J. N. Schilling**
PSS Rep:	**N/A**
Other:	**N/A**

WORK DESCRIPTION (Provide general work description of facility/building.)

General Description:

Management and Integration

The Management and Integration scope includes technical reviews, public involvement, integration planning, and data configuration.

Technical Review

The technical review task includes the expert panel, associated subpanels, the National Academy of Sciences (NAS), and project-specific reviews.

A technical expert panel has been established to address specific technical issues. The panel focuses on problem resolution and technical reviews. The purpose of the external panel is to provide DOE with technical observations and recommendations regarding the planning, execution, and interpretation of results from the Integration Project. The panel reports to the DOE Richland Operations Office (RL). The expert panel operates through written procedures that address requirements, protocols, the timeliness of producing panel reports, and a formal recommendation and comment resolution tracking and response process. The expert panel has the ability to establish subpanels that are composed of experts who are focused on specific technical topics, according to project needs.

Another process for independent review that is being pursued by the DOE is through the NAS. The DOE has requested that independent, external peer reviews be conducted by the NAS on a periodic basis. These reviews will be coordinated with the expert panel, and conducted to avoid conflicts of interest (or any bias) potentially associated with conclusions and recommendations. In accordance with NAS standards, the reviews will be performed by highly qualified technical experts.

The Hanford Site projects use various forms of internal technical and peer reviews to ensure quality and technically sound products. The reviews associated with groundwater and vadose zones activities will be coordinated with the Integration Project to ensure efficient use of resources (and results) that address the overall needs of the Hanford Site.

Public Involvement

The Public Involvement effort supports effective and real-time project participation, as well as involvement by all interested audiences. There are various ways of communicating with and participating in the progress of the Integration Project. Effective dialogue between the Integration Project team and interested audiences will communicate issues, values, and concerns that affect decision-making processes. These methods include the following:

Tribal Governments: Direct discussions and involvement on an informal basis will be offered and conducted upon request, and/or based on project needs. Consultations, including a more formal interface with Tribal Governments, will be conducted in conjunction with the RL Office of External Affairs (OEA).

Hanford Advisory Board (HAB): Information will be provided to the HAB's Environmental Restoration (ER) Committee and Public Involvement Committee. The ER Committee will determine when project information should be presented to the full board, and if draft advice should be presented to the full board. The Integration Project Team will provide the ER Committee with current status information at their monthly meetings. Updated status information will be provided for discussion at the Tri-Party Agreement quarterly public involvement planning meetings that are held in conjunction with the public involvement meetings.

One-on-Ones: These are individual discussions held with interested audiences.

Media Relations: Regional communication of specific information will be made to general audiences through the media. The use of press releases, media availability, interviews, and other communication methods and mechanisms will be employed to meet communication and project goals.

Project Team Meetings: Project team meetings will be held routinely to facilitate a detailed dialogue. Meetings will be held at regular intervals, and will be open to all interested audiences. Meeting notes will be distributed to the mailing list.

Integration Planning

The Integration Planning task consists of a series of activities that provide overall documentation, integration planning, and system engineering for the Integration Project.

This task provides for the development and update of project documentation, such as the Project Management Plan, the Project Description, the System Engineering Management Plan (SEMP), the Project Baseline, the Long Range Plan, and the Detailed Work Plan (DWP).

Relative to project integration, this task integrates with DOE, FH, and PNNL strategic planning for the Hanford Site, the Hanford Site systems engineering, and reviews strategic issues. This task also supports the customer and regulatory interfaces through the Regulatory and Policy Working Groups.

Data Configuration

This task provides for the planning, development, administration, and maintenance of the configuration controls necessary to support the Integration Project. Existing databases, protocols, procedures, and guidelines are reviewed, modified, and (if needed) created to support the project's mission. Project position papers will be authored to maintain the project's stance on various topics (e.g., data qualification). Management and Integration (configuration control) will also interface with the core projects, Hanford Site contractors/subcontractors, stakeholders, and regulators to ensure that controls

that are put in place will lead to acceptable and defensible RL conclusions/recommendations that support the overall cleanup mission.

Four tasks have been defined to build the Integration Project configuration control system. They are as follows:

Quality Assurance (QA): The goal of this activity is to establish the controls necessary to ensure that traceable, transparent, reviewed, reproducible, and retrievable (T2R3) data, documents, and/or information are supplied, evaluated, and produced by the Integration Project, and by the core projects and site contractors/subcontractors. To meet this goal, Configuration control will adopt, establish, implement, and administer project-specific Integration Project QA protocols. The QA protocols will not duplicate or recreate what is already in-place, as stated in the Bechtel Hanford Inc. (BHI) general QA plan, in the approved QA plans teaming partners, core projects, or site contractors/subcontractors.

Management Protocols: Configuration control will evaluate the protocols/procedures/guidelines that are presently written and in-place (e.g., BHI, PNNL, FDH, core projects or contractors/subcontractors) to determine their applicability to achieving the stated mission of the Integration Project. Whenever possible, protocols that exist will be adopted and used with minor revision and/or modification and applied to the Integration Project. In some cases, however, it has already been determined that the needed protocols have not been written or developed.

Configuration Control Database(s): Several relational databases are needed to support the Integration Project. These databases will be controlled, maintained, and administered under the configuration control activity. The databases serve three primary purposes:

- Defining and maintaining the Integration Project's position on technical and non-technical issues and activities.
- Allowing stakeholders, site, and project participant access to official project positions.
- Ensuring that data/parameters/electronic deliverables are consistent and of high quality.

Various types of information (e.g., stakeholder issues, features, events, and processes [FEPs] input/output, reduced/interpreted data, qualified core project data and information) will be under configuration control and included in these databases.

Internet-Based Virtual Library: The functions and activities conducted and performed by the Integration Project lend themselves to building a Hanford Site web-based public virtual library that is under configuration control. The purpose of the library will be to make all information (e.g., maps, illustrations, data, databases, documents, and protocols) easily and readily available to RL personnel, core projects, site contractors/subcontractors, stakeholders, regulators, and the public. The library will be structured based on Hanford Geographic Information System layers with relational ties to data, databases, models, and documents.

TASKS TO BE PERFORMED IN FY 2001:

Integration Planning

- Develop programmatic interface agreements between the Integration Project and other site projects. System Engineering will draw support from characterization and System Assessment Capability (SAC) development activities as needed to arrive at appropriate interface requirements.

- Facilitate strategy development to support baseline, long-range plan, and fiscal year planning.
- Set up and lead Regulatory Path Forward Working Group meetings as needed.
- Develop required information to support the working group. Interface with the ongoing Hanford Site strategic planning efforts and the HAB.
- Develop and revise the Integration Project baseline based on the FY01-FY03 DWP, Annual Work Plans, and Multi-Year Work Plan.
- Support DWP preparation.

Peer Review

- The Integration Project Expert Panel provides broad oversight, including merit and technical reviews, for the Integration Project. One expert panel meeting will be conducted.
- Three subpanels of the Expert Panel will be conducted to provide technical or management reviews for the Integration Project.
- One NAS panel will be conducted and will focus on the science and technology component of the Integration Project.

Public Involvement

- Ensure that the project considers and reflects the values and input from regulatory agencies, the State of Oregon, Tribal Nations, and members of the public.
- The project will communicate early and often to allow maximum input in the project decision-making processes. This will be accomplished through open project meetings, maintaining a project distribution list to ensure that the preferred method of communication is identified, conducting relationship building meetings, supporting HAB meetings, and developing and maintaining a multimedia kiosk.
- Prepare two Congressional reports.
- Maintain the Integration Project communications web site.

Data Configuration

- Administer, maintain, and control the Issues and FEPs databases.
- Develop, implement, and administer the Data/Parameters/Electronic Deliverables database.
- Train Integration Project, RL, core projects, site contractors/subcontractors, and stakeholders on the content and use of the Issues, FEPs, and Data/Parameters/Electronic Deliverables databases.
- Update and maintain the Requirements Management database.

- Administer, maintain, and control the Integration Project protocols.

- Develop Data and Parameters protocol.

- Establish the second stage of the virtual library that includes databases, documents (etc.) that are completed by or support the Integration Project.

- Maintain, administer, and manage the virtual library.

TASKS TO BE PERFORMED IN FY 2002:

Integration Planning

- Update the Project Requirements document as required.
- Update and generate additional programmatic interface documents as required.
- Update logic diagrams as required.
- Update the SEMP as required.
- Prepare the DWP.

Peer Review

- The Expert Panel provides broad oversight, including merit and technical reviews, for the Integration Project. Two expert panel meetings will be conducted.

- Three subpanels of the Expert Panel will be conducted to provide technical or management reviews for the Integration Project.

Public Involvement

- Ensure that the project considers and reflects the values and input from regulatory agencies, the State of Oregon, Tribal Nations, and members of the public.

- The project will communicate early and often to allow maximum input in the project decision-making processes. This will be accomplished through open project meetings, maintaining a project distribution list to ensure that the preferred method of communication is identified, conducting relationship building meetings, supporting HAB meetings, and developing and maintaining a multimedia kiosk.

- Maintain the Integration Project communications web site.

- Prepare two Congressional reports.

Data Configuration

- Administer, maintain, and control the Issues and FEPs databases.

- Administer/maintain the Data/Parameters/Electronic Deliverables database.

- Train Integration Project, RL, core projects, site contractors/subcontractors, and stakeholders on the content and use of the Issues, FEPs, and Data/Parameters/Electronic Deliverables databases.
- Maintain Integration Project web-based databases. Update and maintain the Requirements Management database.
- Administer, maintain, and control the Integration Project protocols.
- Train Integration Project personnel to implement the Integration Project protocols.
- Inform RL, core projects, and site contractors/subcontractors of any new protocols.
- Maintain Integration Project protocols on the web. Work with core projects and site contractors to gain acceptance of protocols.
- Continue adding features and relational links to the virtual library.
- Establish the third stage of the virtual library that includes databases, documents (etc.) that are completed by or support the Integration Project. Maintain, administer, and manage the virtual library, first and second stages.

TASKS TO BE PERFORMED IN FY 2003:

Similar to FY02.

MAJOR PRODUCTS AND DELIVERABLES (Including Readiness Assessment, AHA, Characterization, Demolition, DQO, Milestones – *Tri-Party Agreement* and others.)

Deliverables	Date
Integration Planning	
• Integration Project Cost and Schedule Baseline update for ERC Baseline.	
• Integration Project Long Range Plan update for ERC LRP.	
Peer Review	
• Expert panel and subpanel reports.	
Public Involvement	
• Bimonthly open project team meetings conducted and meeting minutes prepared.	
• Semi-annual project report.	
Data Configuration	
• Implement Data/Parameters/Electronic Deliverables database.	
• Define and document the remaining two phases in the Integration Project virtual library development.	

BASIS/ASSUMPTIONS (Identify basis for estimate: i.e., MCASES, like facility, non-contaminated, etc. Also include key assumptions and constraints, including any spread of waste handling considerations.)

- No budget allowance has been included to support changes associated with Phase II Budget Update Guidance for the ER Baseline update. Guidance will not be available until September FY00. Upon receipt, a BCP, as appropriate, will be initiated and approved prior to commencing work activities.

Integration Planning

- Regulatory Path Forward Work Group will be supported with participation of regulators and stakeholders. Implementation (renegotiations, scope revisions) of recommendations of the work group will be funded by individual projects.

- The Project Requirements document and other interface documents will be reviewed by DOE, but will not require public review. Work dependent on these documents may proceed prior to DOE approval.

- The Integration Project will be incorporated into the overall ERC baseline and Long Range Plan.

Peer Review

- The Integration Project Expert Panel and subpanel activities will be funded by the Integration Project.

- Core project preparation and participation will be funded by the core projects.

- Comment resolution and tracking in response to subpanel and NAS comments will be funded and performed by the group responsible for the revised material.

- The NAS panel will be funded by DOE-HQ, per RL guidance for the Integration Project.

Public Involvement

- Provide an information sharing/public involvement forum for all Hanford Site Core Projects (open project team meetings, calendar of events, and public review opportunities).

- Conduct “one-on-one” meetings with interested groups as the preferred outreach venue.

- Public involvement for the project has been integrated into the project tasks (i.e., SAC, Science and Technology, Regulatory Path Forward).

Data Configuration

- Integration Project QA program will be based on CERCLA and RCRA requirements.

- Existing structure of databases will be suitable, with minor modification, for use by the project.

- The issues database will track non-technical issues.

- The FEPs or equivalent database will track technical issues.

- Provide an internet-based Integration Project virtual library.
- The virtual library will be released to the project and the public in three stages that are pre-approved by RL and security before release.
- The impact of increased DOE security requirements will not be significant.

SUBCONTRACT STRATEGY (i.e., office trailer setup, tp&l.) List major subcontracts and scope including fiscal year and type (FP or FUP).

Subcontract	FY	Type of Contract	Scope
Expert Panel	01		Member support for expert and sub panel meetings
Hydrogeologic	01		Continued development and maintenance of the Virtual Library program.
Expert Panel & Hydrogeologic	02		Scope similar to FY01
Expert Panel & Hydrogeologic	03		Scope similar to FY01

WORK ORDERS (i.e., work to be performed by FDH or Hanford Utilities Group.) List major work orders including fiscal year.

Company	FY	Scope
FDH	01	Management and engineering support of FEPs, the PRD, systems engineering, panel meetings, project baseline summary and strategic planning support.
PNNL	01	CAM, Task Lead and scientist/engineer support for panel meetings, integration planning, protocol reviews, project baseline summary, strategic planning, and support of the detailed work plan process.
FDH & PNNL	02	Scope similar to FY01
FDH & PNNL	03	Scope similar to FY01

MATERIAL/EQUIPMENT/OTHER DIRECT COST REQUIREMENTS (Identify purchase items or other direct costs and assumptions.)

Description	FY	Scope
IBM-compatible NT Servers (2)	01	Provide servers and software to support the Internet
Cold Fusion Software (2)	01	Based Virtual Library.
Virtual Mining/NetCharts (2)	01	
SQL Server (2)	01	

COST ACCOUNT PLAN

KEY PROJECT TEAM MEMBERS

Task Lead (CAM):	**B. H. Ford**
DOE-RL PM:	**K. M. Thompson**
Project Engineer:	**G. B. Mitchem**
Field Support:	**N/A**
QS&H:	**N/A**
Project Controls:	**E. C. Long**
PSS Rep:	**N/A**
Other:	**N/A**

WORK DESCRIPTION (Provide general work description of facility/building.)

General Description:

The Characterization of Systems consists of a series of activities that:

- Disposition technical issues
- Capture and integrate technical knowledge (Hanford features, events, and processes [HFEPs])
- Communicate technical knowledge through revised site conceptual models
- Integrate field characterization activities across site projects.

Performance of the first three listed activities results in the development of consistent, integrated system-level conceptual models of the Hanford Site that include the key technical elements of inventory, vadose zone, groundwater, the Columbia River, and biological systems. The objective is to document technical knowledge about the Hanford Site and how that knowledge is applied when performing impact/risk assessments. A conceptual model is a description of the natural system that is supported through documented evaluations of pertinent features, events, and processes (FEPs). Models will be developed that address both regional (far-field) and local (near-field) scales.

Implementation of the last activity results in the coordination and integration of Hanford Site vadose zone, groundwater, and Columbia River field characterization work to ensure that data collection is being optimized. Performance of this task will result in the development of a consolidated schedule and actions for efficient field characterization that:

- Consolidates field characterization needs for core projects, science and technology (S&T), and System Assessment Capability (SAC).
- Evaluates the sequencing of the needs.
- Identifies planned field work that will or could meet a data need.
- Actively facilitates the inclusion of priority work scope into field activities.

The primary method of tying data needs to field activities is participation in data quality objective (DQO) planning sessions.

TASKS TO BE PERFORMED IN FY 2001:

- Revise site conceptual models.
- Continue placement of configuration controlled information and conceptual models on the Internet.
- Implement technical issue protocol:
  - Resolve technical issues
  - Draft project positions
  - Review and comment resolution
  - Populate database
  - Update Internet with technical issue evaluations.
- Document technical gaps and needs and partner with S&T and core projects to include these needs into work planning.
- Participate in S&T and core project planning process.
- Review and reevaluate the list of field characterization needs.
- Participate in DQO sessions.

TASKS TO BE PERFORMED IN FY 2002:

- Revise site conceptual models.
- Provide input into the development of SAC Rev. 1 requirements development.
- Continue placement of configuration-controlled information and conceptual models on the Internet.
- Implement technical issue protocol:
  - Resolve technical issues
  - Draft project positions
  - Review and comment resolution
  - Populate database
  - Update Internet with technical issue evaluations.
- Prepare and issue a draft data package for implementation of SAC Rev. 1.
- Document technical gaps and needs, and partner with S&T and core projects to include these needs into work planning.
- Review and reevaluate the list of field characterization needs.
- Participate in DQO sessions.

GW/VZ CHARACTERIZATION OF SYSTEMS **P71502**
1.4.10.1.7.11.03.27.01.35.02

TASKS TO BE PERFORMED IN FY 2003:

- Update current state of knowledge and assessment-specific application descriptive information on an as-needed basis.
- Add new HFEPs as they are identified through internal and external peer reviews, and the technical management task.
- Continue placement of configuration-controlled information and conceptual models on the Internet.
- Implement technical issue protocol:
  - Resolve technical issues
  - Draft project positions
  - Review and comment resolution
  - Populate database
  - Update Internet with technical issue evaluations.
- Document technical gaps and needs and partner with S&T and core projects to include these needs into work planning.
- Review and reevaluate the list of field characterization needs.
- Participate in DQO sessions.

MAJOR PRODUCTS AND DELIVERABLES (Including Readiness Assessment, AHA, Characterization, Demolition, DQO, Milestones – *Tri-Party Agreement* and others.)

Deliverables	Date
• Fiscal year end summary report (includes technical gaps and needs).	September 30, 2001
• Input of HFEPs to SAC Rev. 1 requirements	December 15, 2001
• Draft HFEP review packages	February 27, 2002
• Internal draft conceptual model for SAC Rev. 1	March 31, 2002
• Final HFEP review packages	April 3, 2002
• Final HFEP Data Package for SAC Rev. 1	September 30, 2002
• Configuration-controlled web-based conceptual model descriptions with links to data repository	September 30, 2002
• Final draft conceptual model for SAC Rev. 1	September 30, 2002

Deliverables	Date
• Fiscal year end summary report (includes technical gaps and needs)	September 30, 2002
• Fiscal year end summary report (includes technical gaps and needs)	September 30, 2003

BASIS/ASSUMPTIONS (Identify basis for estimate: i.e., MCASES, like facility, non-contaminated, etc. Also include key assumptions and constraints, including any spread of waste handling considerations.)

- No budget allowance has been included to support changes associated with Phase II Budget Update Guidance for the ER Baseline update. Guidance will not be available until September FY00. Upon receipt, a BCP, as appropriate, will be initiated and approved prior to commencing work activities.
- The use of the FEPs evaluation process used at other DOE sites is technically sound and is acceptable as the basis for evaluating site technical knowledge and resolving technical issues.
- The conceptual model core team will be comprised of leads from BHI, PNNL, and RPP. The core team members will draw on site resources (e.g., representatives from site projects and S&T technical leads) as necessary during conceptual model revision.
- The Integration Project provides funding for core team members.
- Site projects provide funding for supporting staff.
- The initial evaluation of FEPs (HVCHP1-1612) is completed prior to conceptual model finalization.
- Concerns raised during peer review can be addressed within scope and schedule.
- The technical issue team will be comprised with leads for each technical element, and integrated teams from site projects and S&T technical teams.
- DQO workshops are the focal point for bringing together the characterization needs with project activities.
- Approximately 2,000 HFEPs (with approximately 400 HFEPs identified as “high” priority HFEPs) are to be dispositioned by the Characterization of Systems task.
- Based on the complexity of the issue and the maturity of understanding, FEPs resolution will be based on the following:
  - HFEPs will be aggregated and evaluated/resolved in groups whenever possible.
  - The resolution of HFEPs will be prioritized. The most important (e.g., impact release) will be addressed first. Other HFEPs will be addressed over time as resources allow.
  - Work used to develop project positions will be adequately qualified (data codes).
  - Outside laboratories will provide independent technical review of HFEPs resolution.

SUBCONTRACT STRATEGY (i.e., office trailer setup, tp&l.) List major subcontracts and scope including fiscal year and type (FP or FUP).

Subcontract	FY	Type of Contract	Scope
HydroGeologic	01	FP	Place Conceptual Models on the web.
HydroGeologic	02	FP	Place Conceptual Models on the web.
HydroGeologic	03	FP	Place Conceptual Models on the web.

WORK ORDERS (i.e., work to be performed by FDH or Hanford Utilities Group.) List major work orders including fiscal year.

Company	FY	Scope
FH	01	FEPs disposition, PRD and Model Preparation and coordination, Modeling Coordinating Team support.
PNNL	01	FEPs disposition, PRD and Model Preparation and coordination, Modeling Coordinating Team support.
FH	02	Support Conceptual Model Standardization, FEPs PRD and Model Preparation, maintain FEPs database, Model Coordinating Team support
PNNL	02	Same as FY01
FH	03	Same as FY01, add maintain FEPs database
PNNL	03	Same as FY01, add maintain FEPs database
National Labs (DOERS)	01	Provide support for PRDs and conceptual models
National Labs (DOERS)	02	Provide support for PRDs and conceptual models
National Labs (DOERS)	03	Provide support for PRDs and conceptual models

MATERIAL/EQUIPMENT/OTHER DIRECT COST REQUIREMENTS (Identify purchase items or other direct costs and assumptions.)

Description	FY	Scope
Lab analytical services	01	Support Characterization requirements.
Lab analytical services	02	Support Characterization requirements.
Lab analytical services	03	Support Characterization requirements.

COST ACCOUNT PLAN

KEY PROJECT TEAM MEMBERS

Task Lead (CAM):	**R. W. Bryce**
DOE-RL:	**K. M. Thompson/R. D. Hildebrand**
Project Engineer:	**G. B. Mitchem**
Field Support:	**N/A**
QS&H:	**N/A**
Project Controls:	**D. R. Kuhl**
PSS Rep:	**N/A**
Other:	**N/A**

WORK DESCRIPTION (Provide general work description of facility/building.)

General Description:

This task provides for the planning and development of the System Assessment Capability (SAC) and its use in performing assessments of the Hanford Site's impact on the region. The SAC will include the tools and information needed to perform a site-wide assessment of the risks and impacts related to contaminant sources remaining at Hanford at the time of site closure. Impacts to human health, the ecology, the culture, and socioeconomic conditions will be evaluated.

The Integration Project will coordinate this effort and will work with DOE, other Hanford Site projects, regulators, stakeholders, and Tribal Nations to develop the requirements for and design of this capability.

In the near-term, this task will focus on an initial assessment, which may lack detail in some aspects of its representation of the waste inventory, environmental pathways, and potential impacts. As a proof-of-principle, the initial SAC will demonstrate that an assessment of the scale and scope of the Hanford Site and the Columbia River can be conducted. While the initial assessment will be limited in some respects, the assessment is being designed to:

- Examine radioactive and hazardous chemical contaminants that are expected to be the dominant contributors to risk and impacts.
- Determine the long-term migration and fate of contaminants in the Hanford Site operational areas (i.e., 100, 200, and 300 Areas).
- Include a quantification of uncertainty.
- Include quantitative and qualitative risk and impact metrics.

The SAC will continue to be developed through an open process that provides for regulator, Tribal Nations, and stakeholder input. The SAC team members will continue to meet with interested parties to exchange information and obtain input on the development and use of SAC. Based on the expectations for the SAC, science and technology (S&T) needs and Core Project support expectations will also be identified. Two important aspects to the analysis will be the nature of the requirement for addressing uncertainty in the initial SAC model and the approach to the risk and impact assessment.

During FY99 the conceptual model for the initial assessment was developed, and preliminary information on the architecture, platform, and data management approach for the assessment was generated. During FY 00, SAC Rev. 0 was developed and tested.

TASKS TO BE PERFORMED IN FY 2001:

During FY01, the SAC Rev. 0 assessment will be completed and published. Activities to achieve this include the following:

Data Gathering: Data required to conduct the history matches and required analyses will be assembled during this step. The SAC Rev. 0 effort will rely on available data, and will invest in its assembly, review, and acceptance. Data gathering was initiated in FY00 and will be completed in FY01.

Historical Matching: Historical matching will compare the SAC (Rev. 0) results to Hanford Site observations at the scale of a system model and provide a basis for confidence in the simulation capability.

Model Runs/Impact Predictions: The capability will be used to perform the initial assessment simulations for the release, migration, and fate of contaminants. The required analyses will be performed as outlined in the assessment design document. Using the predicted contaminant distributions from the analyses of contaminant migration (e.g., spatial maps of contamination at specific moments in time), the risk assessment and impact predictions will illustrate quantitative and qualitative impacts to human health, ecological health, cultural impacts, and economic impacts. The analyses outlined in the design document will be performed (BHI-01365).

Assessment Report: An assessment summary document to communicate insights gained from the initial assessment and to demonstrate potential uses of the results will be prepared.

Issues Management: SAC team members will participate in the Technical Issues Review Team.

Management Support: Consistent with the management for completion of SAC Rev. 0 simulations and final reports, the management activities of FY00 will be duplicated during FY01 to ensure public involvement in the activity, and planning, tracking, and management of the SAC effort.

SAC Peer Review: Technical peer reviews will continue to ensure technical credibility of results. During FY01, results of history matching for the initial assessment will be reviewed as well as the Test and Evaluation report.

Assemble Capability (Data Extractors): Data extractors will be developed for the four interfaces of the inventory and environmental pathway models: inventory to release, release to vadose zone, vadose zone to groundwater, and groundwater to river. Each of these extractors will provide the time history of mass flux across a given interface. The extractors will be designed to enable analysts to back track notable risks and impacts to their origin – operating area and waste type. These extractors are essential to analyzing history matching results and predictions. An additional extractor will be developed to calculate the Hanford Site contribution to risk from background information and total impact predictions.

TASKS TO BE PERFORMED IN FY 2002:

The cycle of design, assembly, and history matching, and conduct of required analyses will begin for SAC Rev. 1 in FY02. A similar schedule for activities is assumed for SAC Rev. 1 in FY02 as will occur for SAC Rev. 0 in FY00.

Assessment Design Documentation: A requirements document for SAC Rev. 1 will be developed to provide a basis for the design that reflects current DOE, regulatory, stakeholder, and Tribal Nation requirements. The assessment design specification, the verification and history matching test plan, and the required analyses for SAC Rev. 1 will be developed on the basis of these requirements.

Assemble Capability: This will involve the assembly and adaptation of capabilities detailed in the "assessment design specification." The SAC Rev. 1 will be focused on the creation of an efficient simulation capability producing an uncertainty-based estimate of future risk and impact. It will not be constrained by existing technology and, therefore, it is assumed that some original development will be required during FY02.

Data Gathering: The SAC Rev. 1 effort will rely on the Characterization of Systems task to define the accepted and supported conceptual models for incorporation into the SAC Rev. 1 prototype.

SAC Peer Review: Technical/peer reviews will continue to ensure the technical credibility of the results. During FY02, design of SAC Rev. 1 will be reviewed.

Issues Management: SAC team members will participate in the Technical Issues Review Team.

Management Support: Consistent with the management for initiation and conduct of the SAC Rev. 1 product, the management activities of FY00 will be duplicated during FY02 to ensure public involvement in the activity, and planning, tracking, and management of the SAC effort.

TASKS TO BE PERFORMED IN FY 2003:

Historical Matching: Historical matching will calibrate the SAC Rev. 1 capability to Hanford Site observations at the scale of a system model and provide a basis for confidence in the simulation capability.

Model Runs/Impact Predictions: The capability will be used to perform the initial assessment simulations for the release, migration, and fate of contaminants. The required analyses will be performed as outlined in the assessment design document. Using the predicted contaminant distributions from the analyses of contaminant migration (e.g., spatial maps of contamination at specific moments in time), the risk assessment and impact predictions will illustrate quantitative and qualitative impacts to human health, ecological health, cultural impacts, and economic impacts. The analyses outlined in the design document will be performed.

Assessment Summary Document: During FY03, results of the assessment will be placed in the context of the purpose of the assessment and interpreted in terms of their uncertainty.

Assessment Report: The final Assessment report for SAC Rev. 1 will include the results of the verification and history matching test cases.

The completion of the Assessment Summary document and the Assessment report will occur in FY04.

Management Support: Consistent with the management for initiation and conduct of the SAC Rev. 1 product, the management activities of FY00 will be duplicated during FY03 to ensure public involvement in the activity, and planning, tracking, and management of the SAC effort.

MAJOR PRODUCTS AND DELIVERABLES (Including Readiness Assessment, AHA, Characterization, Demolition, DQO, Milestones – *Tri-Party Agreement* and others.)

Deliverables	Date

FY01

- Draft A of Test and Evaluation report (on the assembled, verified, and history-matched SAC Rev. 0).
- Technical Review Team reports on history match for initial assessment.

FY02

- Technical Review Team Report on SAC Rev. 0 Test and Evaluation Report.
- Assessment Design document for SAC Rev. 1.
- Technical Review Team report on Assessment Design document.

FY03

- Report describing SAC Rev. 1 capability and results of testing performed to ensure performance of the capability.

BASIS/ASSUMPTIONS (Identify basis for estimate: i.e., MCASES, like facility, non-contaminated, etc. Also include key assumptions and constraints, including any spread of waste handling considerations.)

- No budget allowance has been included to support changes associated with Phase II Budget Update Guidance for the ER Baseline update. Guidance will not be available until September FY00. Upon receipt, a BCP, as appropriate, will be initiated and approved prior to commencing work activities.

- The S&T efforts associated with the development or adaptation of the SAC will provide timely input to the SAC project team.

- Assessments performed with SAC Rev. 1 will rely on the Characterization of Systems task for the data needed to support the assessment.

- RL will provide the SAC task with the decisions, plans, and drivers for a system assessment, and will indicate both when it is needed and how it will be used.

- The SAC Rev. 0 will be based predominantly on existing technology modified to reflect uncertainty. Examples of existing technology will be drawn from analyses completed in the past decade (e.g., the Hanford Environmental Dose Reconstruction [HEDR] project, the Composite Analysis (CA), and the Retrieval Performance Evaluation [RPE]). The consolidated groundwater project will provide the Hanford Site's existing groundwater model to the assessment. To complete an initial assessment as soon as possible, the environmental pathway will be based on existing technology but will be updated to include uncertainty.

- The existing consolidated groundwater model is sufficient for use in SAC Rev. 0.

- Alternative assessments will be limited to simple deviations from the Hanford Site Disposition Baseline. Significant deviations from the HSDB such as the “no action alternative” would require software modification and require a BCP.

- No specific actions will be raised by NAS or Expert Panel reviews.

- RL, EPA, and Washington State Department of Ecology will participate in defining the basis for the assumptions defining the Alternative Assessments to be performed.

- RL, EPA, and the Washington State Department of Ecology will participate in defining the basis for conduct of the SAC Rev. 1 effort.

- The Test and Evaluation report and Assessment Summary document will provide sufficient information for regulators, stakeholders, and Tribal Nations to evaluate the capability and identify improvements for SAC Rev. 1.

- The SAC Rev. 1 capability will be an enhancement of Rev. 0, not a complete redesign.

SUBCONTRACT STRATEGY (i.e., office trailer setup, tp&l.) List major subcontracts and scope including fiscal year and type (FP or FUP).

Subcontract	FY	Type of Contract	Scope
National laboratories	01	FP	Project support
TBD	01		Project support

WORK ORDERS (i.e., work to be performed by FDH or Hanford Utilities Group.) List major work orders including fiscal year.

Company	FY	Scope
PNNL	01	Project support
PNNL	02	Project support
PNNL	03	Project support

MATERIAL/EQUIPMENT/OTHER DIRECT COST REQUIREMENTS (Identify purchase items or other direct costs and assumptions.)

Description	FY	Scope
Video conferencing	01	Project support
Computer and software	01	Hardware and software license

COST ACCOUNT PLAN

KEY PROJECT TEAM MEMBERS

Task Lead (CAM):	**M. D. Freshley**
DOE-RL:	**K. M. Thompson**
Project Engineer:	**G. B. Mitchem**
Field Support:	**N/A**
QS&H:	**N/A**
Project Controls:	**L. R. Burns**
PSS Rep:	**N/A**
Other:	**N/A**

WORK DESCRIPTION (Provide general work description of facility/building.)

General Description:

The Groundwater/Vadose Zone Integration Project (Integration Project) recognizes that there are gaps in the Hanford Site's knowledge and data for the vadose zone, groundwater, river, inventory, risk, remediation, and monitoring technical elements that are required to adequately predict the movement of contaminants in the subsurface and surface environments, their ecological, human health, economic, and socio-cultural impacts, and to subsequently design and monitor remedial options. The objective of the Science and Technology (S&T) endeavor is to provide new knowledge, data, tools, and the understanding needed to enable the Integration Project's mission. S&T activities are focused on resolving key technical issues that help inform and influence decisions on remediation and closure of tank farms and contaminated soil sites, in partnership with both the system assessment capability (SAC) and core projects. The identified scientific and technical challenges and the approach to address them are collected into a roadmap, which defines the problems, challenges, and gaps in identified technical areas and establishes a path to solution. Specific S&T investigations are being initiated in FY99, FY00, and FY01, and continuing through the duration of this planning cycle to address the key gaps in knowledge. The roadmap is updated annually to reflect work that has been accomplished, new areas of scope such as remediation and monitoring technical elements, and changes to the Hanford Site plans and paths to solution.

TASKS TO BE PERFORMED IN FY 2001:

- Revise the S&T roadmap to include the soil and groundwater remediation technical element and continue to implement.
- Interface with the Environmental Management Science Program (EMSP), core projects, SAC, and Characterization of Systems tasks.
- Reconcile the existing soil waste inventory estimates with characterization data and develop mass-balanced soil waste inventories for SAC, Rev. 1.
- Complete "wrap-around" scientific studies of samples obtained from the slant borehole beneath SX-108 to evaluate mineralogic associations and potential for transport of key contaminants to provide input to the RPP field investigation report for WMA S-SX, perform scientific studies on contaminated cores collected proximate to "dilute-waste" single-shell tanks (BX-102 and B-112) in

collaboration with RPP, and initiate a modest scientific study in association with the 200 Area Characterization Project to evaluate actinide containing sediments from three different waste site groupings (Z-11/Z-9 ditches and cribs; scavenged wastes, Pu/organic-rich process wastes).

- Perform vadose zone transport field studies, including completing analysis of the field test completed during FY00 involving a dilute tracer, conducting a joint transport modeling/field study review workshop to ensure integration and coordination between modeling and field data collection activities, and conducting the FY01 field test using a high-salt tracer.

- Complete and document SX tank farm modeling studies initiated during FY00 to address key features of flow, transport, and reaction processes for input to the RPP S-SX field investigation report, more comprehensive simulations of the SX tank farm to evaluate strongly coupled and non-ideal processes; evaluate the applicability of approximations to simplify aspects of the fully-coupled multi-scale contaminant migration problem; assist in the design and analysis of vadose zone transport field studies and laboratory experiments; and perform analyses of three different waste site groupings (Z-11/Z-9 ditches and cribs, scavenged wastes, Pu/organic-rich process wastes) to address differences between major waste types and release scenarios.

- Extend detailed analyses of aquifer/river interactions performed at the 100 H area to other reactor areas along the Columbia River.

- Initiate laboratory studies to quantify the kinetics of biological uptake and elimination in two aquatic organisms and a riparian plant, including analyses of toxic effects correlated with tissue concentrations of the contaminant(s), and determine the effects of exposure history on the kinetics of nutrient/analog contaminants, and enhance existing toxicological response models based on experimental outcomes.

TASKS TO BE PERFORMED IN FY 2002:

- Revise the S&T plan and roadmap to reflect the National Academy of Sciences (NAS) study comments and continue to implement, including initiation of work associated with the remedation portion of the roadmap.

- Interface with EMSP, core projects, SAC, and Characterization of Systems tasks.

- Complete estimates of contaminant and volume inventories for each of the soil waste site groups at the Hanford Site and reconcile existing estimates with field characterization data.

- Complete scientific studies of core samples from BX-102 and B-112 and conduct supporting laboratory experimentation with contaminated and uncontaminated materials to provide input to the RPP field investigation report for WMA B-BX-BY, initiate selected laboratory studies for core samples that will be collected beneath leaked “concentrated” high-level waste tanks in the T-TX-TY tank farm, and complete actinide geochemical studies for Z-11 ditch sediments.

- Perform vadose zone transport field studies consisting of tracer tests in deep Hanford Site sediments using dilute tracers (≤1M), and conduct a joint transport modeling/field study review workshop to ensure integration and coordination between modeling and field data collection activities.

- Complete and document modeling studies for the 200 Area soil waste sites and B-BX-BY tank farms and integrate models and data for different purposes on different scales into a comprehensive model of contaminant fate and transport in the Hanford Site vadose zone.

- Complete the conceptual and numerical models of groundwater/river interaction that establish a technical basis for estimates of groundwater discharge to the river's ecosystem.

- Complete the laboratory studies of exposure history and adaptive responses for the suite of nutrient/analog chemicals, and complete the ecological adaptive response and toxicological response models and validate model results.

TASKS TO BE PERFORMED IN FY 2003:

- Revise the S&T roadmap to include the environmental monitoring technical element and continue to implement.

- Interface with EMSP, core projects, SAC, and Characterization of Systems tasks.

- Complete wrap-around science on core samples from WMA T-TX-TY focused on key contaminants and hydrochemical issues identified in the implementation plan, and complete studies on actinide and fission product hydrogeochemistry on soils from a scavenged waste site.

- Complete vadose zone transport field studies for tracer tests in deep Hanford Site sediments using concentrated salt tracers (≥1M) that incorporate reactive species of interest.

- Complete and document modeling studies for T-TX-TY tank farms and summarize and document recommendations for process model representations and coupling formulations for various application conditions for RPP, core projects, and SAC.

MAJOR PRODUCTS AND DELIVERABLES (Including Readiness Assessment, AHA, Characterization, Demolition, DQO, Milestones – *Tri-Party Agreement* and others.)

Deliverables	Date

Key outcomes for the next three fiscal years include the following:

- Revisions of the S&T Plan (FY02), roadmap (FY01, FY02, FY03), and integrated S&T needs (FY01, FY02, FY03)

- Data, models, and estimates of soil waste inventories for input to SAC, Rev. 1 (FY02)

- Conceptual models of subsurface water flow and contaminant transport at representative sites (WMA S-SX in FY01, WMA B-BX-BY and Z-11 ditch in FY02, WMA T-TX-TY and a scavenged waste site in FY03)

- Field tests and data sets for shallow vadose zone sediments using dilute and high salt tracers (FY01), deep vadose zone sediments using dilute tracers (FY02) and high salt tracers (FY03)

- Advanced transport modeling results for WMA S-SX (FY01), WMA B-BX-BY and 200 Area soil sites (FY02), and T-TX-TY (FY03)
- Conceptual and numerical models of the groundwater/river interface (FY02)
- Results of laboratory studies of exposure history and adaptive responses for a suite of nutrient/analog chemicals and validated adaptive and toxicological response models (FY02).

Documents:

- Revisions of the S&T plan (FY02) and roadmap (FY01, FY02, FY03)
- Reports on methodology and updated data on chemical sewers, plant cooling water, scavenging waste, and surface spills to SAC Rev. 1 (FY01 and FY02)
- Interim science input to “Field Reports” on individual representative sites for RPP Tank Farm Vadose Zone Program and the 200 Area Waste Sites Assessment projects (FY01, FY02, FY03)
- Interim integrated vadose zone science report to SAC to support interim analyses (FY02)
- VZ-Final Report 1 (from S&T Roadmap) that provides tank farm assessment tools to support SST retrieval and tank closure decisions (FY03)
- Detailed test plans (FY01 and FY02) and analyses of vadose zone transport field studies (FY01, FY02, FY03)
- Reports on advanced transport modeling analyses of WMA S-SX (FY01), WMA B-BX-BY and 200 Area soil sites (FY02), and SAC and WMA T-TX-TY (FY03)
- Reports on results for studies of groundwater/river interface (FY01 and FY02)
- Report documenting the exposure/adaptive response laboratory measurements and models (FY02)
- Peer review publications on critical Hanford Site science issues related to contaminant geochemistry and transport, transport modeling, groundwater-river interactions, and risk (FY01, FY02, FY03)

External Communications:

- Meetings and summaries for the remediation (FY01) and monitoring (FY03) workshops to develop input to the S&T plan and roadmap
- Workshops with EMSP investigators to establish linkages with the Integration Project for research and incorporate results (FY01, FY02)
- Workshops for planning vadose zone transport field studies and integration with modeling (FY01, FY02, FY03)

BASIS/ASSUMPTIONS (Identify basis for estimate: i.e., MCASES, like facility, non-contaminated, etc. Also include key assumptions and constraints, including any spread of waste handling considerations.)

- S&T funding through the Integration Project (minimum of $5M/year) will be provided to PNNL by Fin Plan and that PNNL subcontracts directly with the other national laboratories to conduct the work. The subcontracting fee for PNNL is 3%.
- Assumes that EMSP funding provided during FY99 ($1M) can be carried over.
- Other national laboratories will continue to provide resources to the Integration Project, as needed.
- BHI technology office staff will be available (at no cost to the Integration Project) to support development of Integrated Needs.
- Assumes no major changes to the format of S&T plan, roadmap, and Integrated Needs.
- Issues raised by the NAS and Integration Project Expert Panel can be addressed within current scope and schedule.
- Peer review of S&T products in the form of journal manuscripts will be accepted as adequate by the Integration Project Expert Panel.
- Work planned by core projects (RPP Tank Farm Vadose Zone and ILAW, 200 Area Characterization, Groundwater Project, Surface Environmental Surveillance Project) where interfaces with S&T have been identified will be funded and proceed as scheduled.
- Other core projects will pay for coring, sample retrieval with ES&H, and basic characterization. S&T will provide funding for marginal costs; S&T will receive at least 500 g of each contaminated sample for “wrap-around” science.
- SCFA will provide funding to support vadose zone characterization of tank farms and surface barrier performance monitoring.
- EMSP projects will provide select contributions to “wrap around” science and vadose zone transport field studies.
- ES&H and waste management issues will not limit the distribution of “reasonable” samples to EMSP investigators or the multi-laboratory S&T research team.
- An existing field site (e.g., Sisson and Lu Injection site in 200 East Area) will be sufficient for FY01 vadose zone field study experiments and responsibilities for ES&H will be with PNNL. An existing field site for final years of testing (FY02 and FY03) be identified that can be either trenched in cooperation with ongoing activities or is a site (trench) that has been opened and currently not in use.

DESCRIPTION

OBJECTIVE

The objective of the 200 Area Remedial Action Project effort is to complete the cleanup of soil-contaminated sites (non-tank farm related) consistent with the 200 Area RI/FS Implementation Plan, Tri-Party Agreement milestones, and site-wide planning outcomes for the Central Plateau.

TECHNICAL CONTENT

CERCLA and RCRA assessment activities will be performed for the 200-CW-1 Gable/B Pond and Ditches Cooling Water Group, to include completion of an RI report (summarizing the field characterization results) and preparation of a FS report (with a RCRA TSD closure plan).

CERCLA and RCRA assessment activities will be performed for the 200-PW-2 Uranium-Rich Process Waste Group, including preparation of an RI/FS work plan, along with a TSD unit sampling plan that defines the remedial investigation program and field characterization activities.

200 Area site-wide activities will also be performed, including project integration and general support.

WORK STATEMENT

Operable Unit 200-BP-1

FY01: See the supplemental form in the Additional Authorization section.

FY02: See the supplemental form in the Additional Authorization section.

FY03: See the supplemental form in the Additional Authorization section.

Operable Unit 200-PK NPL Common

FY01

200-CW-1:	Complete the RI report. Initiate the FS report and TSD closure plan.
200-CS-1:	See the supplemental form in the Additional Authorization section.
200-CW-5:	See the supplemental form in the Additional Authorization section.
200-TW-1:	See the supplemental form in the Additional Authorization section.
200-TW-2:	See the supplemental form in the Additional Authorization section.
200-PW-2:	Complete the RI/FS work plan and the TSD unit sampling plan.
200-PW-1:	See the supplemental form in the Additional Authorization section.
200-LW-1:	See the supplemental form in the Additional Authorization section.
200-MW-1:	See the supplemental form in the Additional Authorization section.
200 Common:	General support for 200 Area-wide activities.

FY02

200-CW-1: See the supplemental form in the Additional Authorization section.
200-CS-1: See the supplemental form in the Additional Authorization section.
200-CW-5: See the supplemental form in the Additional Authorization section.
200-TW-1: See the supplemental form in the Additional Authorization section.
200-TW-2: See the supplemental form in the Additional Authorization section.
200-PW-2: See the supplemental form in the Additional Authorization section.
200-PW-1: See the supplemental form in the Additional Authorization section.
200-LW-1: See the supplemental form in the Additional Authorization section.
200-MW-1: See the supplemental form in the Additional Authorization section.
200 Common: General support for 200 Area-wide activities.

FY03

200-CW-1: See the supplemental form in the Additional Authorization section.
200-CS-1: See the supplemental form in the Additional Authorization section.
200-CW-5: See the supplemental form in the Additional Authorization section.
200-TW-1: See the supplemental form in the Additional Authorization section.
200-TW-2: See the supplemental form in the Additional Authorization section.
200-PW-2: See the supplemental form in the Additional Authorization section.
200-PW-1: See the supplemental form in the Additional Authorization section.
200-LW-1: See the supplemental form in the Additional Authorization section.
200-MW-1: See the supplemental form in the Additional Authorization section.
200 Common: General support for 200 Area-wide activities.

ASSUMPTIONS

- Sufficient funding will be identified in FY01 through FY03 to perform the work scope identified in the supplemental funding plan. This funding is necessary to maintain compliance and to continue to support the Central Plateau outcomes.

- An "Alternative Baseline" approach will be worked to agreement with the regulators for the 200 Area Remedial Action Project. The planning basis includes the following:

  - A Tri-Party Agreement Change Package will be prepared to replace the 200-PW-4 OU work plan with the 200-PW-1 OU work plan (M-13-26).

  - A Tri-Party Agreement Change Package will be prepared to move Tri-Party Agreement Milestone M-20-39 out past the FY01-FY03 DWP window. This milestone currently requires submittal of a Draft A closure plan for the 216-S-10 pond/ditch by 02/28/2003.

  - 12 of the 23 OU assessments will be completed through FY08.

  - The remaining 11 OU assessments, if required, will be completed after FY08.

  - Remediation of 200 Area OUs will commence in or after FY07.

- The 200 Area RI/FS Implementation Plan defines the need and content of 200 Area RI/FS work plans, along with the TSD Unit Sampling Plan. It also defines the framework for implementing characterization and remediation activities in the 200 Areas, and identifies the waste site groupings and sites to be characterized.

- Public review of 200 Area RI/FS work plans is only assumed for the 200-TW-1 and 200-TW-2 OUs (which are included under the FY01 Supplemental Funding Plan).

- Geophysical logging of existing boreholes will not be conducted in FY01, in order to conduct an integrated effort with the Grand Junction Operations Office vadose monitoring activity in later fiscal years.

Prepared By:	K. N. Swan	**Date:**	
ERC Project Manager:	M. J. Graham	**Date:**	
DOE Project Manager:	B. L. Foley		

Groundwater Management Project
CODE OF ACCOUNT STRUCTURE CHART

1.4.10.1.1.02 ER02 200 Area Environmental Restoration Remedial Action
1.4.10.1.1.02.05 200 Area Remedial Action

1.4.10.1.1.02.05.25 PK 200 Area NPL Common Source Assessment

1.4.10.1.1.02.05.25.02 PK2 200-PW-2 Operable Unit

1.4.10.1.1.02.05.25.02.31 PK21 200-PW-2 Operable Unit Assessment

1.4.10.1.1.02.05.25.02.31.01 PK2101 200-PW-2 Uranium-Rich Process Waste Group Assessment

B20PW2 200-PW-2 URANIUM RICH PROCESS WASTE
B20PW211VC REMEDIAL INVESTIGATION FEASIBILITY WORK PLAN
B20PW2Y120 SUPERVISION

1.4.10.1.1.02.05.25.07 PK7 200-CW-1 Operable Unit

1.4.10.1.1.02.05.25.07.31 PK71 200-CW-1 Operable Unit Assessment

1.4.10.1.1.02.05.25.07.31.01 PK7101 200-CW-1 Gable Mtn/B-Pond and Ditches Cooling Water Group Assess

B20CW1 200 -CW-1 GABLE MOUNTAIN B POND
B20CW1D10C COMPOSE DRAFT REPORT (RI) (CH2MHILL)

1.4.10.1.1.02.05.25.13 PKD 200-CS-1 Operable Unit

1.4.10.1.1.02.05.25.13.31 PKD1 200-CS-1 Operable Unit Assessment

1.4.10.1.1.02.05.25.13.31.01 PKD101 200-CS-1 Chemical Sewer Group Assessment

B20CS1 200-CS-1 CHEMICAL SEWER
B20CS11U0C MISC. PLANNING; DOCUMENTATION (RAD SURVEY,ALARA REVIEW)(CH2MHILL)

1.4.10.1.1.02.05.25.24 PKR 200 Area NPL Common Source

1.4.10.1.1.02.05.25.24.31 PKR1 200 Area NPL Common Source Assessment

1.4.10.1.1.02.05.25.24.31.01 PKR101 200 Area NPL Common Source Assessment Activities

B20ACA 200 AREA COMMON
B20ACAY12C SUPERVISION (CH2MHILL)
B20ACAY22C ADMINISTRATIVE SUPPORT (CH2MHILL)
B20ACAYH8C DOE SPECIAL INFORMATION REQUESTS / BUDGET EXCERCISES.(CH2MHILL)
B20ACAYN8C DETAILED WORK PLAN (CH2MHILL)
B20ACAYN9C PROJECT PLANNING, SCHEDULING & COST CONTROL (CH2MHILL)

WORK BREAKDOWN STRUCTURE INDEX

PBS	Indenture Level							Title	HQ/ERC WBS #	B&R #
	5	6	7	8	9	10	11			
RL-ER02		X						200 Area Environmental Restoration Remedial Action	1.4.10.1.1.02	EW02J1020
RL-ER02			X					200 Area Remedial Action	1.4.10.1.1.02.05	EW02J1020
RL-ER02				X				200 Area NPL Common Source Assessment	1.4.10.1.1.02.05.25	EW02J1020
RL-ER02					X			200-PW-2 Operable Unit	1.4.10.1.1.02.05.25.02	EW02J1020
RL-ER02						X		200-PW-2 Operable Unit Assessment	1.4.10.1.1.02.05.25.02.31	EW02J1020
RL-ER02							X	200-PW-2 Uranium-Rich Process Waste Group Assessment	1.4.10.1.1.02.05.25.02.31.01	EW02J1020
RL-ER02					X			200-CW-1 Operable Unit	1.4.10.1.1.02.05.25.07	EW02J1020
RL-ER02						X		200-CW-1 Operable Unit Assessment	1.4.10.1.1.02.05.25.07.31	EW02J1020
RL-ER02							X	200-CW-1 Gable Mtn/B-Pond and Ditches Cooling Water Group Assess	1.4.10.1.1.02.05.25.07.31.01	EW02J1020
RL-ER02					X			200 Area NPL Common Source	1.4.10.1.1.02.05.25.24	EW02J1020
RL-ER02						X		200 Area NPL Common Source Assessment	1.4.10.1.1.02.05.25.24.31	EW02J1020
RL-ER02							X	200 Area NPL Common Source Assessment Activities	1.4.10.1.1.02.05.25.24.31.01	EW02J1020

MAJOR PROCUREMENT PLAN - FY 2001

Cost Account	Task	Type of Contract	Start Date	End Date	FY01 Burdened Budget/EAC ($K)
	None.				

MAJOR PROCUREMENT PLAN - FY 2002

Cost Account	Task	Type of Contract	Start Date	End Date	FY02 Burdened Budget/EAC ($K)
	None.				

MAJOR PROCUREMENT PLAN - FY 2003

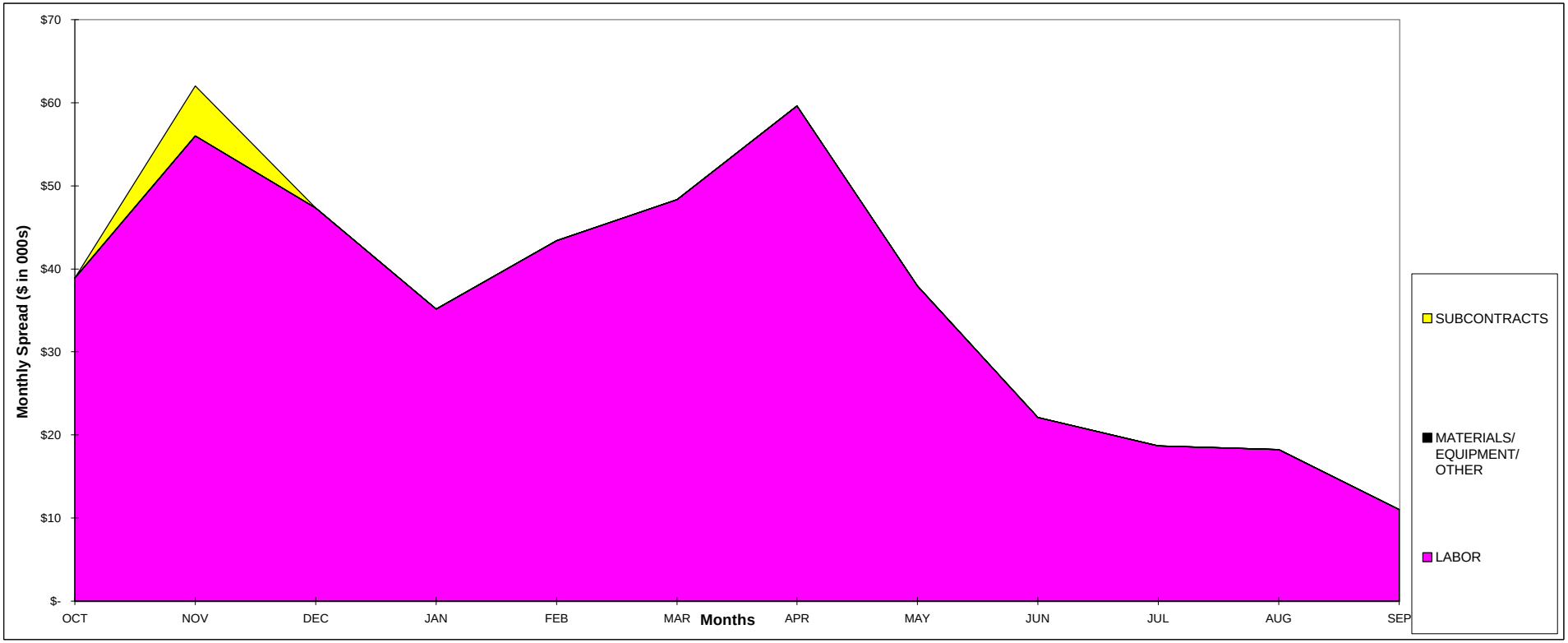
Cost Account	Task	Type of Contract	Start Date	End Date	FY03 Burdened Budget/EAC ($K)
	None.				

PBS BUDGET BASELINE TABLE

CA #	Description	HOURS			$1,000			
		Non Manual	Manual	Total	Labor	Material/ Eqpt/Other	SC	Total
		FY 2001						
PK2101	200-PW-2 Uranium-Rich Process Waste Group Assessment	340		340	27	0	6	33
	Subtotal 200-PW-2 Operable Unit	**340**		**340**	**27**	**0**	**6**	**33**
PK7101	200-CW-1 Gable Mtn/B-Pond and Ditches Cooling Water Group Ass	4,501		4,501	366	0	0	366
	Subtotal 200-CW-1 Operable Unit	**4,501**		**4,501**	**366**	**0**	**0**	**366**
PKR101	200 Area NPL Common Source Assessment Activities	554		554	44	0	0	44
	Subtotal 200 Area NPL Common Source	**554**		**554**	**44**	**0**	**0**	**44**
	FY 2001 TOTAL	**5,395**		**5,395**	**437**	**0**	**6**	**443**
		FY 2002						
PKR101	200 Area NPL Common Source Assessment Activities				0	1,246	0	1,246
	Subtotal 200 Area NPL Common Source				**0**	**1,246**	**0**	**1,246**
	FY 2002 TOTAL				**0**	**1,246**	**0**	**1,246**
		FY 2003						
PKR101	200 Area NPL Common Source Assessment Activities				0	1,294	0	1,294
	Subtotal 200 Area NPL Common Source				**0**	**1,294**	**0**	**1,294**
	FY 2003 TOTAL				**0**	**1,294**	**0**	**1,294**

FY 2001 PBS BASELINE EXPENDITURE FORECAST

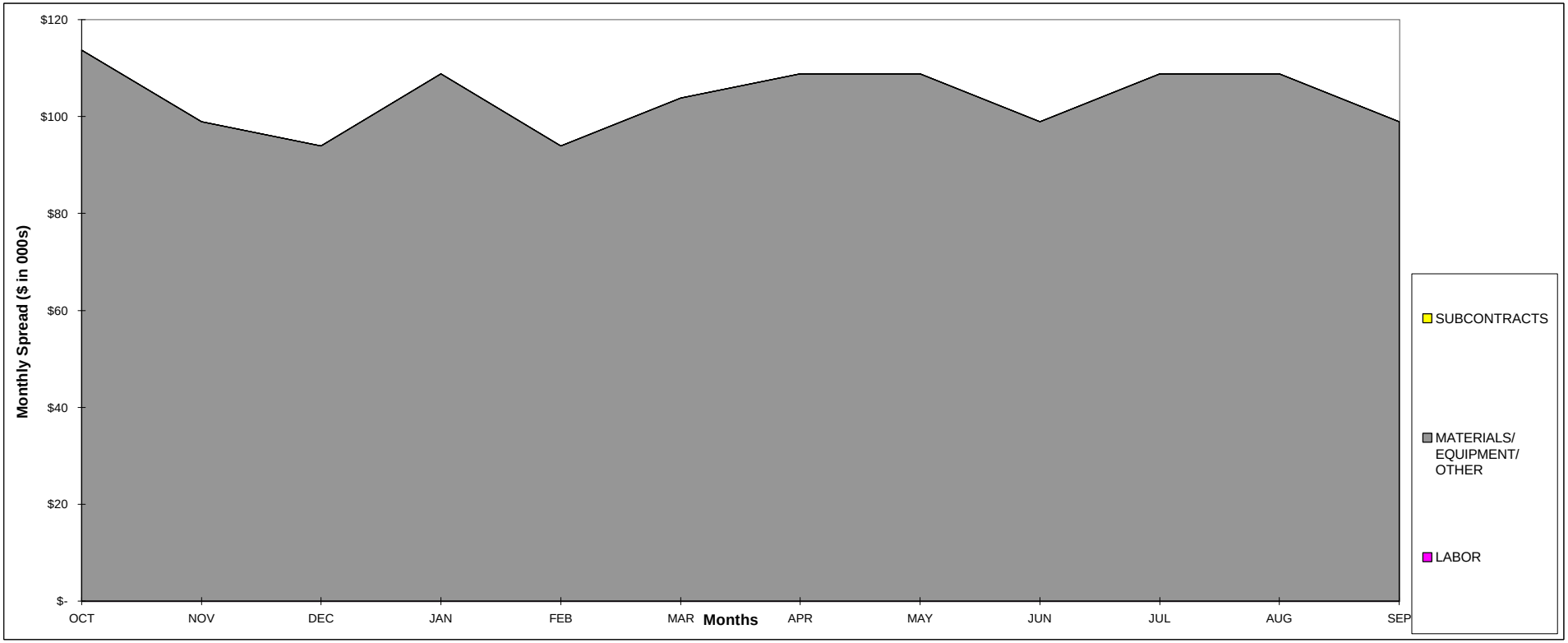
(Dollars in Thousands)



	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
LABOR	$ 39	$ 56	$ 47	$ 35	$ 43	$ 48	$ 60	$ 38	$ 22	$ 19	$ 18	$ 11	$ 437
MATERIALS/ EQUIPMENT/ OTHER	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
SUBCONTRACTS	$ -	$ 6	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 6
BUDGET CURRENT	$ 39	$ 62	$ 47	$ 35	$ 43	$ 48	$ 60	$ 38	$ 22	$ 19	$ 18	$ 11	$ 443
BUDGET BASELINE (DWP)	$ 39	$ 62	$ 47	$ 35	$ 43	$ 48	$ 60	$ 38	$ 22	$ 19	$ 18	$ 11	$ 443
ACTUALS	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
MONTHLYFORECAST	$ 39	$ 62	$ 47	$ 35	$ 43	$ 48	$ 60	$ 38	$ 22	$ 19	$ 18	$ 11	$ 443
CUMULATIVE EAC	$ 39	$ 101	$ 148	$ 183	$ 227	$ 275	$ 335	$ 373	$ 395	$ 413	$ 432	**$ 443**	$ 443

FY 2002 PBS BASELINE EXPENDITURE FORECAST

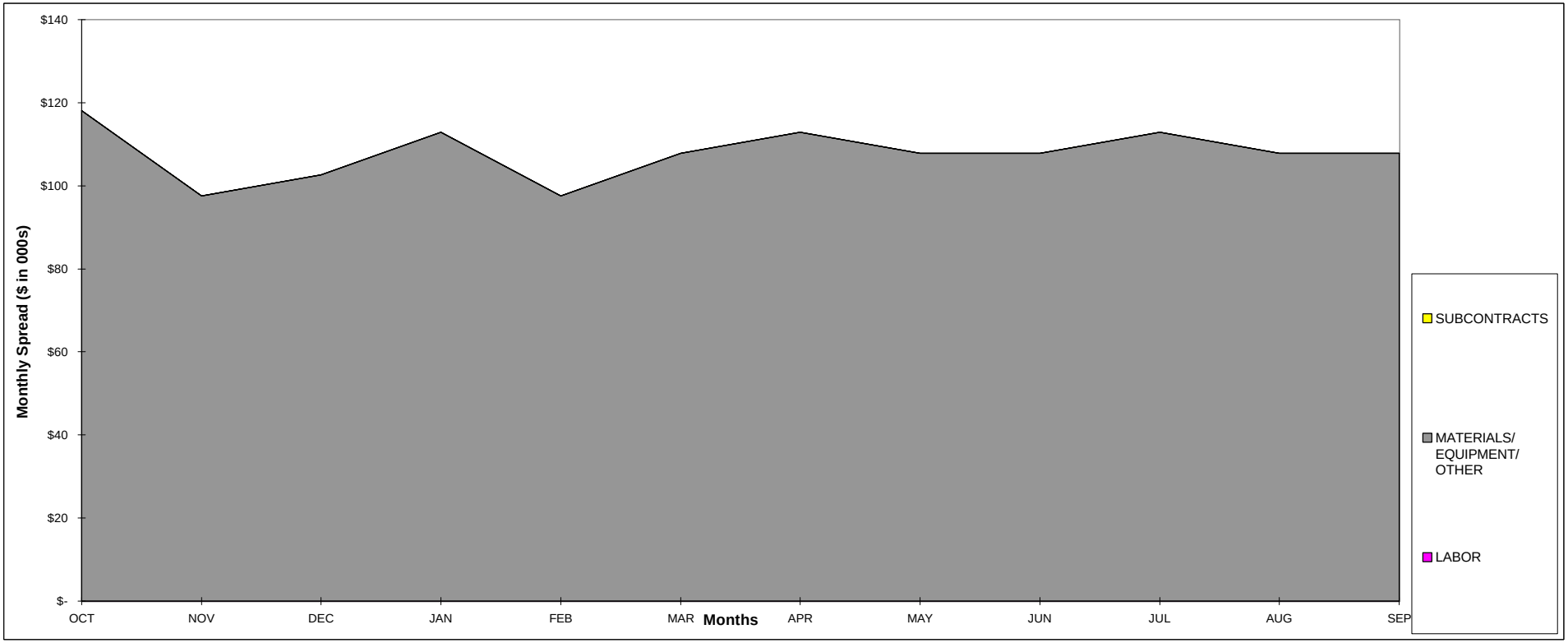
(Dollars in Thousands)



	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
LABOR	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
MATERIALS/ EQUIPMENT/ OTHER	$ 114	$ 99	$ 94	$ 109	$ 94	$ 104	$ 109	$ 109	$ 99	$ 109	$ 109	$ 99	$ 1,246
SUBCONTRACTS	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
BUDGET CURRENT	$ 114	$ 99	$ 94	$ 109	$ 94	$ 104	$ 109	$ 109	$ 99	$ 109	$ 109	$ 99	$ 1,246
BUDGET BASELINE (DWP)	$ 114	$ 99	$ 94	$ 109	$ 94	$ 104	$ 109	$ 109	$ 99	$ 109	$ 109	$ 99	$ 1,246
ACTUALS	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
MONTHLYFORECAST	$ 114	$ 99	$ 94	$ 109	$ 94	$ 104	$ 109	$ 109	$ 99	$ 109	$ 109	$ 99	$ 1,246
CUMULATIVE EAC	$ 114	$ 213	$ 307	$ 415	$ 509	$ 613	$ 722	$ 831	$ 930	$ 1,038	$ 1,147	**$ 1,246**	$ 1,246

FY 2003 PBS BASELINE EXPENDITURE FORECAST

(Dollars in Thousands)



	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
LABOR	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
MATERIALS/ EQUIPMENT/ OTHER	$ 118	$ 98	$ 103	$ 113	$ 98	$ 108	$ 113	$ 108	$ 108	$ 113	$ 108	$ 108	$ 1,294
SUBCONTRACTS	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
BUDGET CURRENT	$ 118	$ 98	$ 103	$ 113	$ 98	$ 108	$ 113	$ 108	$ 108	$ 113	$ 108	$ 108	$ 1,294
BUDGET BASELINE (DWP)	$ 118	$ 98	$ 103	$ 113	$ 98	$ 108	$ 113	$ 108	$ 108	$ 113	$ 108	$ 108	$ 1,294
ACTUALS	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
MONTHLYFORECAST	$ 118	$ 98	$ 103	$ 113	$ 98	$ 108	$ 113	$ 108	$ 108	$ 113	$ 108	$ 108	$ 1,294
CUMULATIVE EAC	$ 118	$ 216	$ 318	$ 431	$ 529	$ 636	$ 749	$ 857	$ 965	$ 1,078	$ 1,186	$ 1,294	$ 1,294

COST ACCOUNT PLAN

KEY PROJECT TEAM MEMBERS

Task Lead (CAM):	**B. H. Ford**
DOE-RL:	**B. L. Foley**
Project Engineer:	**G. B. Mitchem**
Field Support:	**R. J. Fabre**
QS&H:	**N/A**
Project Controls:	**D. L. Kietzman/R. A. Damskov**
PSS Rep:	**C. D. Wittreich**
Other:	**L. C. Hulstrom (CHI Lead)**

WORK DESCRIPTION (Provide general work description of facility/building.)

General Description:

Perform assessment activities for the 200-PW-2 Uranium-Rich Process Waste Group Operable Unit to include completion of the RI/FS work plan and TSD sampling and analysis plan.

TASKS TO BE PERFORMED IN FY 2001:

Complete RI/FS work plan and TSD sampling and analysis.

TASKS TO BE PERFORMED IN FY 2002:

See supplemental form.

TASKS TO BE PERFORMED IN FY 2003:

See supplemental form.

MAJOR PRODUCTS AND DELIVERABLES (Including Readiness Assessment, AHA, Characterization, Demolition, DQO, Milestones – *Tri-Party Agreement* and others.)

Deliverables	Date
• RI/FS Work Plan/TSD SP – Decisional Draft to RL	11/13/00
• RI/FS Work Plan/TSD SP – Draft A to RL	12/13/00
• RI/FS Work Plan/TSD SP – Tri-Party Agreement Milestone M-13-25	12/29/00
• RI/FS Work Plan/TSD SP – Rev. 0	02/22/01

BASIS/ASSUMPTIONS (Identify basis for estimate: i.e., MCASES, like facility, non-contaminated, etc. Also include key assumptions and constraints, including any spread of waste handling considerations.)

- The estimates provided are based on a combination of historical actual data for similar activities and judgment for new activities. The estimates by resource and task (i.e., code of account) are provided in detailed backup estimating sheets.

- The scope is based on the framework provided in the 200 Area RI/FS Implementation Plan, DOE/RL-98-28, Rev. 0 (200A IP) for 200 Area assessment activities and meeting regulatory requirements. The 200 Area Implementation Plan defines the waste groups and associated representative waste sites; the steps required to complete the assessment process; the integrated RI/FS and RCRA TSD process to be followed; a characterization strategy based on the analogous site approach, 200 Area common background information, and plans that will be incorporated into the work plan by reference; and a work plan schedule based on Tri-Party Agreement change package M-13-97-1. Prioritization of operable units is provided in Tri-Party Agreement Change Package M-13-97-1. The 200-PW-2 project schedule supports fulfillment of Tri-Party Agreement Milestone M-13-25 for submittal of the RI/FS work plan by December 31, 2000.

- The previous 200 Area work plan efforts conducted under the Implementation Plan provide the basis for the scope and schedule for the work plan estimate. The scope includes DQOs, the work plan, a sampling and analysis plan (SAP) (consisting of a quality assurance project plan (QAPjP) and field sampling plan), and a waste control plan. Preparation of the DQO summary report and the initial draft of the work plan are assumed to be completed in FY00. DQOs are assumed to be sufficiently detailed to support the preparation of a SAP. The general work plan schedule assumes a 5-workday combined ERC and RL review period followed by a 30-calender day regulator review period. No public review is assumed. Only minor changes/revision (80-hour effort) are assumed for each review cycle.

COST ACCOUNT PLAN

KEY PROJECT TEAM MEMBERS

Task Lead (CAM):	**B. H. Ford**
DOE-RL:	**B. L. Foley**
Project Engineer:	**G. B. Mitchem**
Field Support:	**R. J. Fabre**
QS&H:	**N/A**
Project Controls:	**D. L. Kietzman/R. A. Damskov**
PSS Rep:	**C. D. Wittreich**
Other:	**M. E. Todd (CHI Lead)**

WORK DESCRIPTION (Provide general work description of facility/building.)

General Description:

Perform CERCLA/RCRA assessment and remediation activities for the 200-CW-1 Gable Mountain/B Pond and Ditches Cooling Water Waste Group Operable Unit to include finalization of a remedial investigation report and the initiation and preparation of a feasibility study report and RCRA TSD closure plan through the decision draft.

TASKS TO BE PERFORMED IN FY 2001:

- Complete a remedial investigation report.
- Initiate a feasibility study report and TSD closure plan.

TASKS TO BE PERFORMED IN FY 2002:

See supplemental form.

TASKS TO BE PERFORMED IN FY 2003:

See supplemental form.

MAJOR PRODUCTS AND DELIVERABLES (Including Readiness Assessment, AHA, Characterization, Demolition, DQO, Milestones – *Tri-Party Agreement* and others.)

Deliverables	Date
• FS Report/TSD Closure Plan - Internal Draft to ERC	07/31/01
• FS Report/TSD Closure Plan - Decisional Draft to RL	09/12/01

BASIS/ASSUMPTIONS (Identify basis for estimate: i.e., MCASES, like facility, non-contaminated, etc. Also include key assumptions and constraints, including any spread of waste handling considerations.)

- The estimates provided are based on a combination of historical actual data for similar activities and judgment for new activities. The estimates by resource and task (i.e., code of account) are provided in detailed backup estimating sheets.

- The scope is based on the framework provided in the 200 Area RI/FS Implementation Plan, DOE/RL-98-28, Rev. 0 (200A IP), for 200 Area assessment activities, the 200-CW-1 work plan (DOE/RL-99-07, Rev. 0), and meeting regulatory requirements. The work plan defines the scope and schedule for the 200-CW-1 integrated RI/FS and RCRA TSD process to be followed.

- The FS report with a TSD unit closure plan is based on the scope defined in the 200 Area Implementation Plan (200A IP), the work plan, and CERCLA guidance for a final detailed feasibility study (FS). The FS report will evaluate a limited number of remedial alternatives (four) based on the screening analysis provided in the 200A IP and in the work plan. The closure plan will evaluate and identify a closure option for the RCRA TSD unit, and will be appended to the FS. The general schedule assumes 10-workday ERC and RL review periods, followed by a 30-calendar day regulator review period. This also assumes only minor changes/revision (106-hour effort) are needed for each review cycle. No separate public review is assumed; however, the FS with the TSD closure plan will be available during the public review of the proposed plan and proposed permit modification.

200 AREA COMMON

PKR101
1.4.10.1.1.02.05.25.24.31.01

COST ACCOUNT PLAN

KEY PROJECT TEAM MEMBERS

Task Lead (CAM): **B. H. Ford**
DOE-RL: **B. L. Foley**
Project Engineer: **G. B. Mitchem**
Field Support: **N/A**
QS&H: **N/A**
Project Controls: **D. L. Kietzman/R. A. Damskov**
PSS Rep: **C. D. Wittreich**
Other: **N/A**

WORK DESCRIPTION (Provide general work description of facility/building.)

General Description:

The 200 Area Common account will be used for issues relating to the 200 Area site-wide activities, to include project reporting, DOE project support, and regulator meetings and requests.

TASKS TO BE PERFORMED IN FY 2001:

Provide support for 200 Area miscellaneous activities and fieldwork.

TASKS TO BE PERFORMED IN FY 2002:

Provide support for 200 Area miscellaneous activities and fieldwork.

TASKS TO BE PERFORMED IN FY 2003:

Provide support for 200 Area miscellaneous activities and fieldwork.

MAJOR PRODUCTS AND DELIVERABLES (Including Readiness Assessment, AHA, Characterization, Demolition, DQO, Milestones – *Tri-Party Agreement* and others.)

Deliverables	Date
None identified.	

BASIS/ASSUMPTIONS (Identify basis for estimate: i.e., MCASES, like facility, non-contaminated, etc. Also include key assumptions and constraints, including any spread of waste handling considerations.)

The estimate is based on 200 Area task management resource requirements for oversight, project support, and other 200 Area activities.

DESCRIPTION

OBJECTIVE

The Hanford Site consolidated Groundwater Management Project has the overall goals of (1) focusing on remediation of groundwater and (2) long-term protection of groundwater resources. The consolidated groundwater management activity provides an integrated, site-wide evaluation of groundwater quality at the Hanford Site, along with assessments of the potential offsite impacts of RL operations. Through implementation of the Hanford Site-Wide Groundwater Remediation Strategy, in accordance with the Hanford Past-Practice Strategy, a pathway for performing accelerated IRMs for selected contaminant plumes is being accomplished. This strategy contains the spread and/or reduces the mass of major groundwater contamination plumes. The project is a core project within the GW/VZ Integrated Project team, to ensure the necessary coordination of activities to support site-wide remediation issues.

TECHNICAL CONTENT

With the exception of one in situ treatment barrier located in the 100 Areas, remediation of contaminated groundwater generally consists of groundwater extraction, surface treatment, and reinjection to the aquifer. Remediation of soil contamination using soil vapor extraction is also included within this scope. Process activities will be performed in order to evaluate system efficiency and aquifer response. The PNNL Groundwater Monitoring Project activities consist of monitoring network design, sampling collection, sample analysis, hydrologic characterization, data evaluation, and reporting for RCRA, CERCLA, and site-wide and operational activities. Seismic monitoring, vadose monitoring, and groundwater modeling are also included in the PNNL Groundwater Monitoring Project. Well installation, well maintenance, and abandonment are included in the Groundwater Management Project. The Groundwater Remediation Project is separated into three major areas: 100 Area Groundwater, 200 Area Groundwater, and Hanford Site Groundwater Management.

100 Area Groundwater Operable Units

The 100 Area is located in the northern portion of the Hanford Site, and includes nine nuclear reactors previously used for plutonium production. These reactors are grouped into six reactor areas, which are listed in order of upstream to downstream location: 100 B/C, 100 K, 100 N, 100 D, 100 H, and 100 F. Five groundwater OUs are designated for these areas: 100-BC-5, 100-KR-4, 100-NR-2, 100-HR-3, and 100-FR-3. Groundwater in the 100 D Area is consolidated with the 100-HR-3 OU. The 100-BC-5 and 100-FR-3 groundwater OUs are managed under Hanford Site Groundwater Management. Primary sources of contamination are cribs, french drains, trenches, ponds, retention basins, pipelines, and waste disposal sites. Principal contaminant plumes include strontium, tritium, chromium, and nitrate from the historical effluent discharges.

100-BC-5 Operable Unit

The work plan for 100-BC-5 was approved in August 1992. The LFI included the installation and sampling of 10 additional groundwater monitoring wells. The LFI report and associated QRA were completed in August 1993. Although groundwater contaminants are present, the LFI indicated that an interim remedial action was not warranted for this groundwater OU, because the contaminants are limited in distribution and are of relatively low concentration and/or low mobility. A FFS and focus sheet were completed and submitted to the regulators in October 1994, and were completed in October 1995. The focus sheet recommended removal of the OU from the IRM pathway, and continued monitoring and evaluation to maintain a technical baseline that supports the final ROD.

100-FR-3 Operable Unit

The work plan for 100-FR-3 was approved in 1992. The LFI included the installation and sampling of 13 groundwater monitoring wells. The LFI report and associated QRA were completed in October 1994. Groundwater contamination is present, but concentrations are such that risks to human health are not unacceptable (based on an occasional-use scenario). However, contaminants exceed ARAR levels. Therefore, the 100-FR-3 OU should remain on the IRM pathway, but remedial actions should be coordinated with overlying source OUs.
A TCE investigation was conducted during the summer 1995, and an FFS and focus sheet were prepared and submitted in 1995. The focus sheet recommended removal of the OU from the IRM pathway, and continued monitoring and evaluation to maintain a technical baseline that supports the final ROD. Monitoring activities are included in Hanford Site Groundwater Management.

100-HR-3 Operable Unit

The work plan for 100-HR-3, which includes the 100 D/DR and 100 H Areas and the adjacent 600 Area, was approved in September 1992. The LFI included installation of 12 new wells at 100 D/DR; 7 new wells at 100 H; and 3 new wells in the 600 Area (between 100 D/DR and 100 H). An LFI report, including the results of a QRA, was completed in September 1994. The report did not recommend an IRM for any of the three areas for human health risk. Chromium was identified as a contaminant of concern for ecological receptors in the river. An FFS and PP were completed in August 1995. The PP recommended a pump-and-treat IRM to address chromium movement with groundwater into the Columbia River. An interim ROD for the 100-HR-3 and 100-KR-4 OUs was issued in April 1996. The ROD specifies installation of a pump-and-treat system in 100-HR-3 to intercept the portions of the chromium plumes that impact the Columbia River. The objective of the IRM is protection of ecological receptors in the river substrate from exposure to hexavalent chromium. Construction was completed June 1997, followed by operation of the 100-HR-3 pump-and-treat system. In FY98, technetium-99 contamination was observed in the treatment system, resulting in handling the resin as a mixed waste. As a waste minimization activity, the treatment train was split from 100 D (non-contaminated) from the 100 H Area. An innovative technology, ISRM, was demonstrated in FY99 and FY00. A ROD amendment was issued to deploy the ISRM technology through FY00-FY03.

100-KR-4 Operable Unit

The work plan for 100-KR-4 was approved in September 1992. The LFI included the installation and sampling of seven new groundwater monitoring wells. An LFI report, including the results of a QRA, was completed in July 1994. The report concluded that an IRM was not warranted, based on human health risk, but IRMs could be justified for ecological concerns related to chromium. An FFS and PP were completed in September 1995. The PP recommends a pump-and-treat IRM to address chromium movement with groundwater into the river. The interim ROD for the 100-HR-3 and 100-KR-4 OUs was issued in April 1996. The ROD specifies installation of a pump-and-treat system in the 100-KR-4 Area to intercept the portions of the chromium plumes that impact the Columbia River. The objective of the IRM is protection of ecological receptors in the river substrate from exposure to hexavalent chromium. Construction of the 100-KR-4 pump-and-treat system was completed in September 1997. Operations began in October 1998.

100-NR-2 Operable Unit

The 100-NR-2 OU entails the groundwater beneath the 100-NR-1 OU. In 1994 an engineering evaluation/cost analysis for an expedited response action was prepared for consideration by the regulatory agencies. In September 1994 an action memorandum was issued for (1) design and implementation of a pump-and-treat system and (2) installation of a sheet pile barrier. The pump-and-treat system initiated operations in September 1995 and was modified for increased processing capacity in FY97. The system continues to operate at a nominal 227 L/min (60 gal/min), with zeolite change out occurring on approximately a 30-day cycle. The sheet pile barrier was abandoned after tests concluded the piles could not be driven into the ground. The LFI reports and QRAs for the NR-1/2 OUs were completed in 1995. The corrective measures study reports were completed during FY97. QRAs for the OUs were completed in 1995. An interim ROD titled “Interim Remedial Action Record Decision (ROD) for the 100-NR-1 and 100-NR-2 Operable Units of the Hanford 100-N Area" was issued October 7, 1999. The ROD addresses contaminated soil sites in the 100 N Area, the Shoreline site (N-Springs), and the groundwater beneath the 100 N Area. The selected remedy in the ROD is to continue pump and treat operations.

Hanford Site Groundwater Management

Operable Unit - Groundwater Monitoring: Contamination of soils and groundwater beneath the Hanford Site has resulted from waste management and disposal practices associated with 50 years of plutonium production, fuel processing, and fuel fabrication. RL has been assigned environmental restoration responsibilities for the Hanford Site, and has focused activities on remediation of soil and groundwater, long-term monitoring and assessment of the nature, extent, offsite impacts of groundwater contamination, and evaluation of the movement of contaminants in the soil column to groundwater. Soil remediation and soil characterization for remediation activities are performed by the Remedial Action Project. Long-term and remedial action groundwater monitoring, long-term soil monitoring, groundwater modeling, and seismic monitoring are all performed under the Hanford Site Groundwater Management Project.

Waste disposal sites that contributed the majority of all soil and groundwater contamination were located in proximity in operational areas around the Hanford Site. The 100 Area is located in the northern portion of the Hanford Site, and includes nine nuclear reactors previously used for plutonium production. These reactors are grouped into six reactor areas, which are listed in

order of upstream to downstream location: 100 B/C, 100 K, 100 N, 100 D, 100 H, and 100 F. Five groundwater OUs were designated under the CERCLA process for characterization possible remedial actions: 100-BC-5, 100-KR-4, 100-NR-2, 100-HR-3, and 100-FR-3. Three OUs (100-KR-4, 100-NR-2, and 100-HR-3) have IRMs (pump-and-treat systems) that are operating. The two remaining OUs were incorporated into the long-term monitoring of groundwater contamination in FY98. Six RCRA facilities are located in the 100 Area (1301-N, 1325-N, 1324-N/NA, 120-D-1, and 183-H). Of particular concern in the 100 Area is the proximity of the Columbia River. Groundwater in the 100 Area ultimately discharges to the Columbia River. Principal contaminant plumes in the 100 Areas include strontium-90, tritium, chromium, and nitrate. The most significant contaminants are chromium and strontium-90. Chromium is toxic to aquatic organisms, and strontium-90 is a human health risk at concentrations found in portions of the groundwater plumes.

The 200 Areas, located near the center of the Hanford Site, encompass the 200 West and 200 East Areas that contain facilities for reactor fuel processing and waste management. Four groundwater OUs are designated for the 200 Areas: 200-UP-1 and 200-ZP-1 in the 200 West Area, and 200-BP-5 and 200-PO-1 in the 200 East Area. Principal groundwater contaminant plumes in the 200 Areas include uranium and technetium (200-UP-1), carbon tetrachloride (200-ZP-1), plutonium, strontium, cobalt, and technetium (two plumes, 200-BP-5), and tritium and iodine (200-PO-1). Initial work for 200-BP-5 and 200-PO-1 was completed in FY97, and monitoring requirements for these two OUs are incorporated into the long-term monitoring network in FY98. Pump-and-treat operations are being performed in 200-UP-1 and 200-ZP-1. 19 RCRA facilities are located in the 200 Areas (216-S-10, 216-U-12, seven single-shell tank farms, four low-level burial grounds, 216-A-10, 216-A-36B, 216-A-37-1, 216-A-29, 216-B-3 pond, and 216-B-63). The purgewater TSD unit is managed within the scope until such time as the 200 Area ETF can process purgewater and the TSD unit can be closed.

The largest portion in the areal extent of the Hanford Site that requires groundwater monitoring is classified as the 600 Area. Very few waste sources are present in the 600 Area, but there are large-scale contaminant plumes (e.g., 200-PO-1, tritium, iodine-129, and nitrate) sourced from waste disposal areas that require monitoring.

The 300 Area is located in the southeast corner of the Hanford Site. The area was initially constructed as a fuels fabrication complex; later, research and development facilities were added. The 300-FF-5 OU underlies the 300 Area. Principal contaminants of concern are cis-1, 2-dichloroethene, trichloroethene, and uranium. An interim ROD has been issued for the 300-FF-5, which requires long-term monitoring and assessment. One RCRA facility is located in the 300 Area (300 Area process trenches).

The 1100 Area is located on the southern border of the Hanford Site. A number of vehicle maintenance, office, and construction wastes (including drums of organic liquids) were disposed in this area. The 1100-EM-1 groundwater OU underlies the waste sites in this area. A final ROD was issued for the OU in September 1993, which requires long-term monitoring and assessment for a TCE plume. No RCRA facilities exist in this area.

Integrating activities, in addition to the groundwater monitoring and evaluation, that are of technical importance include the development and maintenance of a Hanford Site standard groundwater model, seismic monitoring and interpretation, and vadose zone monitoring. The Hanford Site groundwater model is to be developed as a collaborative effort between RL, contractors, regulators, Tribal Nation representatives, and stakeholders. Well drilling,

maintenance, remediation, and abandonment are also within the scope of the Hanford Site Groundwater Management, to ensure the integrity of monitoring activities.

100-NPL Common: This supports the RCRA, CERCLA, and RL processes associated with management planning, and evaluating human health/environmental risks derived from past and current activities at the Hanford Site that have impacted or may impact groundwater and the Columbia River.

200 Area Groundwater Operable Units: The 200 Area, located near the center of the Hanford Site, encompasses the 200 West and 200 East Areas that contain reactor fuel processing and waste management facilities. Four groundwater OUs are designated for the 200 Areas: 200-UP-1 and 200-ZP-1 in the 200 West Area, and 200-BP-5 and 200-PO-1 in the 200 East Area. Primary sources of contamination were liquid waste disposal structures (e.g., cribs, trenches, and ponds). One source OU, 200-ZP-2 in the 200 West Area, has been included in the Groundwater Remediation Project. Remediation strategies for waste sites associated with discharges from the Z Plant will require coordination between 200-ZP-1 and 200-ZP-2. Monitoring activities for 200-BP-5 and 200-PO-1 OUs are included in the Hanford Site Groundwater Management. The 200-PO-1 OU contaminant plume(s) cover approximately 80-85 square miles.

200-UP-1 Operable Unit: The 200-UP-1 OU underlies the U Plant and S Plant aggregate areas, which are located in the southern half of the 200 West Area. The OU addresses the contamination identified in the aquifer soils and groundwater within its boundary. Over 25 contaminants are known to have exceeded drinking water standards in the OU. The highest priority contaminants include uranium, technetium, carbon tetrachloride, and nitrate. Pump-and-treat technology will be used to remediate these plumes. A treatability test was completed in FY95 to define the treatment technology. Initial system upgrades were completed in FY95. The system operated through February 1997. Treatment of groundwater was transferred to the ETF in March 1997. Minor electrical modifications were completed in July 1998 to isolated pump controls. The pilot-scale system went through decontamination and decommissioning (D&D) in August 1998. Monitoring activities are included in Hanford Site Groundwater Management.

200-ZP-1 Operable Unit: The 200-ZP-1 OU underlies the Z Plant and T Plant aggregate areas, which are located in the northern half of the 200 West Area. The OU addresses the contamination identified in the aquifer soils, and the groundwater within its boundary. The contaminants of concern are carbon tetrachloride, chloroform, and trichlorethylene. Contaminated groundwater is treated with an air-stripping unit, followed by vapor-phase GAC polishing. An interim ROD has been issued requiring remediation of the 2,000-3,000 ppb carbon tetrachloride plume northwest of Z Plant (excluding the T Plant plume). Remediation efforts will be completed in three phases. Phase I was initiated in FY94, and consists of a pilot-scale treatability test. Phase II upgrades, consisting of design, procurement, construction, and operation of a 568-L/min (150-gal/min) air-stripping system, were completed in FY96. Phase III included adding three new extraction wells and four new injection wells, and was completed in August 1997.

200-ZP-2 Operable Unit: The 200-ZP-2 source OU addresses contaminated soils associated with Z Plant operations. An ERA is currently being performed to remove carbon tetrachloride from the vadose zone beneath the 200-ZP-2 OU. The remediation strategy for this response action is to obtain an industrial cleanup standard for vadose zone soils, as directed by MTCA.

Three vapor extraction units were operated in FY97. Treatment systems and well field responses will be monitored and expanded (as appropriate). During FY97 all systems were turned off to conduct a rebound study. Due to low carbon tetrachloride concentration and rebound, remediation activities using a single system were initiated in FY97. One transportable system will be operated in FY01.

WORK STATEMENT

100-HR-3 Operable Unit

FY01

Chemical Treatment Ion Exchange: Treatment options include all activities and costs associated with procurement, construction, operation, maintenance, performance monitoring, and waste management of an ion-exchange pump-and-treat system for 100-HR-3, which includes all those activities normally associated with the standard operation of an industrial wastewater treatment process. Trained personnel and specific procedures will be provided to operate the 100-HR-3 pump-and-treat system in a manner that conforms with the guidelines related to the operation of facilities at DOE sites.

Tasks include provision of manual labor for all activities normally associated with the standard maintenance of an industrial wastewater treatment process.

Performance sampling will be conducted in accordance with approved plans/documents for the extraction and injection wells, and the treatment system sample points. Sampling includes chemical and water table measurements (as necessary) for all wells. Performance monitoring includes sample preparation, sample management, data validation, data review, field data management, and final data management. A project-specific database will be maintained to aid in data analysis and reporting. Sampling plans will be updated to include revisions since startup.

Management will be provided for waste associated with the operation of the ion-exchange system for the 100-HR-3 pump and treat. Waste management support for spent resin and miscellaneous equipment includes waste labeling, routine surveillance, waste designation, coordination of waste shipments for regeneration/disposal, regeneration costs, disposal costs, disposal of process samples, waste profiling, and waste packaging/loading.

Operations include general engineering services, evaluating the need for upgrades, preparation of FCNs and DCNs, updating the PLC logic, chromium analyzer, process data evaluation, and closeout of the design process.

Chemical Treatment – In Situ Redox Manipulation: Tasks include those activities associated with Phase II of the barrier implementation, which includes the construction of 24 injection/ withdrawal wells and 4 groundwater compliance monitoring wells.

Tasks include those activities associated with the implementation of the ISRM. Includes project management, manual/non-manual labor, and subcontract support. Trained personnel and specific procedures will be provided during ISRM operations implementation. Processes include injection, reaction, and withdrawal of chemicals and waste byproducts used to complete ISRM barrier installations.

Tasks include those activities associated with the maintenance of the ISRM barrier, including compliance wells.

Management will be provided for waste associated with the operation of the ISRM. Waste management includes the disposal of soil and groundwater, as needed during well installations, chemical injection/withdrawal ISRM well operations, and miscellaneous waste disposal. Waste management support includes waste sampling and evaluations, profiling, labeling, disposal costs, and management.

Tasks include those activities associated with the use and maintenance of the site-specific ISRM evaporation pond to contain and evaporate well extraction water from ISRM emplacement activities.

Performance and compliance sampling and monitoring will be conducted in accordance with approved plans and documents. Sampling includes chemical and water table measurements for well installations, injection/withdrawal activities, waste management selection, and performance compliance objects. Performance and compliance monitoring includes sample preparation, sample analysis, sample management, data validation, data evaluation, field screening, and management.

Development and distribution of ISRM reports is also included. Reports shall include data quarterly monitoring summaries, annual ISRM monitoring evaluations, annual installation summaries, and client and regulatory information requests, including off-project reviews.

FY02

Chemical Treatment Ion Exchange: Same as FY01.

Chemical Treatment – In Situ Redox Manipulation: Same as FY01, but with Phase III.

FY03

Chemical Treatment Ion Exchange: Same as FY01.

Chemical Treatment – In Situ Redox Manipulation: Tasks include those activities associated with the maintenance of the ISRM barrier and compliance wells.

Tasks include those activities associated with the maintenance and closure of the site-specific ISRM evaporation pond used to contain and evaporate well extraction water from ISRM emplacement activities.

Performance and compliance sampling and monitoring will be conducted in accordance with approved plans and documents. Sampling includes chemical and water table measurements for well installations, injection/withdrawal activities, waste management selection, and performance compliance objects. Performance and compliance monitoring includes sample preparation, sample analysis, sample management, data validation, data evaluation, field screening, and management.

Development and distribution of ISRM reports is also included. Reports shall include quarterly data monitoring summaries, annual ISRM monitoring evaluations, annual installation summaries, and client and regulatory information requests, including off-project reviews.

100-KR-4 Operable Unit

FY01

Chemical Treatment Ion Exchange: Treatment options include all activities and costs associated with procurement, construction, operation, maintenance, performance monitoring, and waste management of an ion-exchange pump-and-treat system for 100-KR-4, which includes all those activities normally associated with the standard operation of an industrial wastewater treatment process. Trained personnel and specific procedures will be provided to operate the 100-KR-4 pump-and-treat system in a manner that conforms with the guidelines related to the operation of facilities at DOE sites.

Tasks include provision of manual labor for all activities normally associated with the standard maintenance of an industrial wastewater treatment process.

Performance sampling will be conducted in accordance with approved plans/documents for the extraction and injection wells, and the treatment system sample points. Sampling includes chemical and water table measurements (as necessary) for all wells. Performance monitoring includes sample preparation, sample management, data validation, data review, field data management, and final data management. Sampling plans will be updated to include revisions since startup.

Management will be provided for waste associated with the operation of the ion-exchange system for the 100-KR-4 pump and treat. Waste management support for spent resin and miscellaneous equipment shall include waste labeling, routine surveillance, waste designation, coordination of waste shipments for regeneration/disposal, regeneration costs, disposal costs, disposal of process samples, waste profiling, and waste packaging/loading.

Operations include general engineering services, evaluating the need for upgrades, preparation of FCNs and DCNs, updating the PLC logic, and process data evaluation.

FY02

Chemical Treatment Ion Exchange: Same as FY00.

FY03

Chemical Treatment Ion Exchange: Same as FY01.

100-NR-2 Operable Unit

FY01

Chemical Treatment Ion Adsorption: This task includes all activities normally associated with the operation of the treatment process including project management and manual/non-manual field support. Trained personnel and specific procedures are provided to operate the 100-NR-2 pump-and-treat system in a manner that conforms with guidelines related to the operation of facilities at the Hanford Site.

Tasks include all labor (craft/non-manual) and supervision for all activities normally associated with the operation of a treatment process. This includes all industrial, hazardous, and radiological safety activities.

Performance sampling will be conducted in accordance with approved plans/documents for the extraction and injection wells and treatment system sampling points. Sampling includes chemical/radiological and water table measurements (as necessary). Performance monitoring includes sample preparation, analysis, sample management, data validation, data reviews, field data, and management. Hydraulic/chemical analysis of aquifer data is budgeted in Long-Term Monitoring. Performance monitoring will be performed in accordance with BHI-01165, N Springs Expedited Response Action Performance Monitoring Plan. The RDR/RAWP is required to be completed in FY01.

Management will be provided for waste associated with operation and maintenance of the treatment system. Waste management support for spent clino resin and miscellaneous equipment shall include labeling, routine surveillance, waste designation, coordination of waste shipments for disposal to the Environmental Restoration Disposal Facility (ERDF), ETF, disposal costs, disposal of process samples, waste profiles, and packaging/loading.

FY02

Chemical Treatment Ion Adsorption: Same as FY01.

FY03

Chemical Treatment Ion Adsorption: Same as FY01.

100 Area Groundwater River Corridor Common

FY01

Project Support Costs: These costs include overall management and functional support for the 100 Area OU remediation activities, including overall management of the project activities by task lead; functional group oversight, which includes technical review and oversight by functional groups; project meetings/miscellaneous, which include attendance at monthly project status meetings; Planning and Controls; project administration; clerical support; and project engineering support. Development of RDR/RAWPs and O&M plans is included.

FY02

Project Support: Same as FY01 with the exception that development of groundwater strategy documents and plan revisions will commence.

FY03

Project Support: Same as FY01 with the exception that development of groundwater strategy documents and plan revisions will be completed.

Groundwater Management

FY01

Project Support Costs: This involves overall management and functional support for the activities, including overall management of the project activities by task lead; functional group oversight, which includes technical review and oversight by functional groups; project meetings/miscellaneous, which include attendance at monthly project status meetings; Planning and Controls; project administration, clerical support, and project engineering support. It also includes overall project management for interim groundwater monitoring of OUs at 100-HR-3, 100-KR-4,100-NR-2, 200-ZP-1, 200-UP-1; long-term groundwater monitoring; seismic monitoring and groundwater well maintenance; database; decommissioning; groundwater modeling; and groundwater well installation.

Long-Term Monitoring: This consists of modutank operations and closure, groundwater, and seismic monitoring activities, along with the groundwater modeling necessary to support long-term landlord surveillance and maintenance responsibilities at the Hanford Site. Groundwater conditions will be evaluated to meet regulatory requirements, agreements, and DOE orders. Seismic monitoring includes all activities to operate, maintain, and interpret data derived from a 41-station seismic and 6-station strong motion accelerometer arrays on the Hanford Site and nearby surrounding areas. Groundwater modeling focuses on the development of consensus conceptual and numerical models of Hanford Site geology, hydrology, and contaminant transport.

Well Maintenance, Remediation, and Abandonment: Routine and non-routine well maintenance will be performed to support groundwater monitoring activities (e.g., head repair; removal, inspection, repair/replacement, and reinstallation of sampling equipment; camera surveys; well cleaning; well development; and equipment retrieval/removal). Updates will be provided to the electronic database containing well construction information. Maintenance will be provided for well as-built diagrams, along with maintenance and updating of electronic well document files. In addition, Internet access to well information will be maintained and updated, as necessary. Well decommissioning (abandonment) or remediation activities will be carried over from FY00 scope.

Interim Action Monitoring: This includes all activities and costs associated with planning, scheduling, collection, analysis, data management, and evaluation of routine groundwater samples for the 100-HR-3, 100-KR-4, 100-NR-2, 200-UP-1, 200-ZP-1, and 200-ZP-2 OUs. Monitoring planning is to be based on approved sampling plans or regulatory agreements. This activity includes performance of the management, planning, coordination, and implementation of maintenance on groundwater monitoring wells used for groundwater monitoring in the OU.

RCRA Monitoring Installation: This includes all drilling activities necessary to support drilling RCRA monitoring wells as agreed to by DOE and Ecology.

FY02

Project Support Costs: Same as FY01.

Long-Term Monitoring: Same as FY01 (there may be some differences in deliverables).

Well Maintenance, Remediation, and Abandonment: Same as FY01.

Interim Action Monitoring: Same as FY01.

RCRA Well Installation: Same as FY01.

FY03

Project Support Costs: Same as FY01.

Long-Term Monitoring: Same as FY01 (there may be some differences in deliverables).

Well Maintenance, Remediation, and Abandonment: Same as FY01.

Interim Action Monitoring: Same as FY01.

RCRA Well Installation: Same as FY01

200-UP-1 Operable Unit

FY01

Chemical Treatment: An extraction well will be maintained to operate at a minimum of 189 L/min (50 gal/min) and pumped to the ETF for treatment. Waste management activities will be necessary to manage waste that does not meet ERDF waste acceptance criteria. One extraction well will be constructed.

FY02 and FY03

Groundwater monitoring and reporting are included under Interim Action Monitoring. No system operations are included.

200-ZP-1 Operable Unit

FY01

Physical Treatment: In accordance with the 200-ZP-1 interim ROD, 200-ZP-1 will concentrate on hydraulically containing the 2,000- to 3,000-ppb contour of a large volatile organic compound plume that is located northwest of the 234-5Z (Z Plant) complex. This includes operation of an air-stripping pump-and-treat system. Treatment options include all activities and costs associated with procurement, construction, maintenance, performance monitoring, and waste management of an air-stripping pump-and-treat system. The system will be operated by trained craft in a manner that conforms with the guidelines related to the operation of facilities at DOE sites. One extraction well will be constructed.

Operations include general engineering services, evaluating the need for upgrades, preparation of FCNs and DCNs, updating the PLC logic, process data evaluation. Weekly reports will be provided for system availability of processed water, and for mass removal of contaminants.

FY02 and FY03

Physical Treatment: Same as FY01.

200-ZP-2 Operable Unit

FY 01

Physical Treatment: The passive system will be operated including performance monitoring. Activities for DNAPL investigation will be initiated.

FY02

Physical Treatment: Same as FY01.

FY03

Physical Treatment: Same an FY01.

200 Area Groundwater Plateau Common

FY01

Project Support Costs: These costs include overall management and functional support for the 200 Area OU remediation activities, including overall management of the project activities by task lead; functional group oversight, which includes technical review and oversight by functional groups; project meetings/miscellaneous, which include attendance at monthly project status meetings; Planning and Controls; project administration, clerical support, and project engineering support. Prepare DQO for extraction well construction at 200-UP-1 and 200-ZP-1.

FY02

Project Support: Same as FY01, except no DQO will be performed.

FY03

Project Support: Same as FY02.

ASSUMPTIONS

General

- The DNAPL investigation at 200-ZP-2 is only partially funded. The balance of funding is included as supplemental.
- Grand Junction monitoring/logging is funded separately by RL. PNNL technical support is in the scope of ER08.
- No EM-50 funding is included for ISRM deployment.

- Five RL RCRA wells (M-24) will be installed in FY01, and five non-RCRA wells will be identified as supplemental scope. RCRA wells for ORP will be identified later, and fund the required effort. Additional RL RCRA wells will likely be required (see Additional Authorization Tab).

- CA addendum and ongoing CA maintenance activities will be performed within the Modeling cost account under the Groundwater Monitoring Program until responsibilities for this scope are transferred to the SAC element of the GW/VZ Integration Project in FY03.

- Ongoing groundwater model consolidation activities will continue to be performed under the Modeling cost account within the Groundwater Monitoring Program with a target of providing an operable site-wide groundwater modeling capability by the end of FY02.

- Ongoing model maintenance and configuration control of the interim site-wide groundwater model is being provided by the Modeling cost accounts within the Groundwater Monitoring Program.

- No budget allowance has been included to support changes associated with Phase II Budget Update Guidance for the ER baseline update. Guidance will not be available until September FY00. Upon receipt, a BCP will be initiated and approved prior to commencing work activities.

- No budget has been included to support outcomes of the ITRD effort at 100-NR-2.

Operations

- No enhancements (excluding extraction wells at 200-ZP-1 and 200-UP-1) to the current pump-and-treat systems are funded. Enhancements are likely to be required resulting from the CERCLA 5-year review.

- No major change in subcontract costs to collect samples will occur.

- Off-shift or back-shift support is based on historical experience.

- No major equipment upgrades will be required to maintain the pump-and-treat systems.

Regulatory

- Changes to current pump-and-treat operations and long-term monitoring due to the CERCLA 5-year review will be planned after receipt of EPA's 5-year report.

- CERCLA 5-year review will require revision to the Long Range Plan for continued operations of systems.

- Results of ongoing U.S. Fish and Wildlife studies on the effects of chromium on salmon and the status change of the Hanford Reach (as a monument) will not change operating parameters.

- Regulatory approval to proceed with modutank closures will be received by March 31, 2001.

- Modutank DQO, Engineering Evaluation/Cost Analysis (EE/CA), Closure Plan, and Sampling and Analysis Plan completed in FY00.

Waste

- Well services waste from wells, aquifer tubes, or seeps whose primary purpose is monitoring for RCRA TSDs (outside of tank farm fence) or Atomic Energy Act will be handled as RCRA waste at the 100 N 90-day pad.

- Well services waste from wells, aquifer tubes, or seeps that are used for CERCLA monitoring will be managed according to a regulator-approved document such as a waste management or control plan and stored at the appropriate OU-specific waste site and disposed accordingly.

- Waste from well drilling activities for the M-24 RCRA compliance wells will be handled as RCRA waste.

- There will be no change in waste handling practices for the waste from the operations of the pump-and-treat systems.

- The ETF is available to receive and treat purgewater starting in FY01and continue to receive water from 200-UP-1.

- Resin regeneration is not on a regulatory clock for disposition.

- The update of the Purgewater Strategy will not result in a significant change to how purgewater is handled in the field.

Prepared By:	K. N. Swan
ERC Project Manager:	M. J. Graham
DOE Project Manager:	K. M. Thompson

Groundwater Management Project
CODE OF ACCOUNT STRUCTURE CHART

1.4.10.1.1.08 ER08 Groundwater Management Project
1.4.10.1.1.08.02 100 Area Groundwater Remedial Action

1.4.10.1.1.08.02.06 PC 100-KR GW Remedial Actions

1.4.10.1.1.08.02.06.04 PC4 100-KR-4 GW Operable Unit

1.4.10.1.1.08.02.06.04.32 PC42 100-KR-4 GW Remediation

1.4.10.1.1.08.02.06.04.32.12 PC4212 100-KR-4 GW Chemical Treatment Process

R10KR4 100-KR-4 PUMP & TREAT

R10KR4C512 PROCURE (EXPENSE)
R10KR4C540 OPERATIONS
R10KR4C550 MAINTENANCE
R10KR4C560 PERFORMANCE MONITORING
R10KR4C56C PERFORMANCE MONITORING (CH2MHILL)
R10KR4C570 WASTE MANAGEMENT
R10KR4C571 RESIN REGENERATION
R10KR4C572 RESIN ANALYSIS
R10KR4Y211 CULTURAL RESOURCES

1.4.10.1.1.08.02.08 PE 100-HR GW Remedial Actions

1.4.10.1.1.08.02.08.03 PE3 100-HR-3 GW Operable Unit

1.4.10.1.1.08.02.08.03.32 PE32 100-HR-3 GW Remediation

1.4.10.1.1.08.02.08.03.32.01 PE3201 100-HR-3 GW Project Support costs

R10HR3 100-HR-3 PUMP & TREAT

R10HR3YN80 DETAILED WORK PLAN, MAP

1.4.10.1.1.08.02.08.03.32.12 PE3212 100-HR-3 GW Chemical Treatment Process

R10HR3 100-HR-3 PUMP & TREAT

R10HR3C512 PROCURE (EXPENSE)
R10HR3C540 OPERATIONS
R10HR3C550 MAINTENANCE
R10HR3C560 PERFORMANCE MONITORING
R10HR3C56C PERFORMANCE MONITORING (CH2MHILL)
R10HR3C570 WASTE MANAGEMENT
R10HR3C571 Resin Regeneration Waste Management
R10HR3C572 OFFSITE RESIN ANALYSIS
R10HR3ZZZZ NOT APPLICABLE TO HTRW

R1XHR3 100-HR-3 PUMP & TREAT - TRANSFER

R1XHR3ZZZZ NOT APPLICABLE TO HTRW

1.4.10.1.1.08.02.08.03.32.14 PE3214 100-HR-3 In-Situ Redox Manipulation

R10HR3 100-HR-3 PUMP & TREAT

R10HR3C160 PERFORMANCE MONITORING
R10HR3C16C ISRM CHI PERFORMANCE MONITORING
R10HR3C170 WASTE MANAGEMENT
R10HR3C18C ISRM PROJECT SPECIFIC DATABASE
R10HR3C19C ISRM WATER-LEVEL MONITORING

Groundwater Management Project
CODE OF ACCOUNT STRUCTURE CHART

T10HR3 100-HR-3 PUMP & TREAT

T10HR3C121 PLANNING
T10HR3C122 ISRM WELL DRILLING
T10HR3C140 OPERATIONS
T10HR3C141 ISRM OPERATIONS PLANNING
T10HR3C150 ISRM BARRIER MAINTENANCE
T10HR3ZZZZ NOT APPLICABLE TO HTRW

1.4.10.1.1.08.02.09 PG 100-NR GW Remedial Action

1.4.10.1.1.08.02.09.02 PG2 100-NR-2 GW Operable Unit

1.4.10.1.1.08.02.09.02.32 PG22 100-NR-2 GW Operable Unit Remediation

1.4.10.1.1.08.02.09.02.32.02 PG2202 100-NR-2 GW ERA Implementation

R10NR2 100-NR-2 PUMP & TREAT

R10NR2C512 PROCURE (EXPENSE)
R10NR2C540 OPERATIONS
R10NR2C550 MAINTENANCE
R10NR2C560 PERFORMANCE MONITORING
R10NR2C56C PERFORMANCE MONITORING (CH2MHILL)
R10NR2C570 WASTE MANAGEMENT

1.4.10.1.1.08.02.29 PH 100 Area GW Remedial Action River Corridor Common

1.4.10.1.1.08.02.29.01 PH1 100 Area GW Remedial Action River Corridor Common Operable Unit

1.4.10.1.1.08.02.29.01.32 PH12 100 Area GW Remedial Action River Corridor Common Remediation

1.4.10.1.1.08.02.29.01.32.01 PH1201 100 Area GW Remedial Action River Corridor Com

R100CM 100 AREA GW REMEDIAL ACTION RIVER CORRIDOR COMMON

R100CMC580 MODIFICATIONS TO PLANS
R100CMY110 MANAGEMENT
R100CMY120 SUPERVISION
R100CMY12C SUPERVISION(CH2MHILL)
R100CMY22C ADMINISTRATIVE SUPPORT (CH2MHILL)
R100CMY4B0 PROJECT ENGINEERING
R100CMYF60 SAFETY ENGINEER
R100CMYH10 STAFF/SAFETY MEETINGS/SAFETY COMMITTEE / ON-SITE
R100CMYH40 GENERAL TRAINING (INSTRUCTOR, COORDINATION & CLASS TIME)
R100CMYH60 PROCEDURES (READING / TRAINING / DEV / MAINTENANCE)
R100CMYH80 DOE SPECIAL INFORMATION REQUESTS / BUDGET EXCERCISES.
R100CMYN50 STRATEGIC PLANNING
R100CMYN70 BASELINE MANAGEMENT & CHANGE CONTROL
R100CMYN80 DETAILED WORK PLAN, MAP
R100CMYN8C DETAILED WORK PLAN, MAP (CH2MHILL)
R100CMYN90 PROJECT PLANNING, SCHEDULING & COST CONTROL
R100CMYN9C PROJECT PLANNING, SCHEDULING & COST CONTROL (CH2MHILL)
R100CMYND0 PROJECT STAFF REPORTS, REVIEW, PRESENTATIONS
R100CMYT20 CUSTOMER/REGULATORY INTERFACE ACTIVITY

Groundwater Management Project
CODE OF ACCOUNT STRUCTURE CHART

1.4.10.1.1.08.03 Hanford Site Groundwater Management

1.4.10.1.1.08.03.24 P4 Groundwater Monitoring

1.4.10.1.1.08.03.24.01 P41 GW Monitoring

1.4.10.1.1.08.03.24.01.02 P412 GW Monitoring Remediation

1.4.10.1.1.08.03.24.01.02.01 P41201 GW Project Support Costs

HGWPSC GW PROJECT SUPPORT COSTS

HGWPSCY110 MANAGEMENT
HGWPSCY120 SUPERVISION
HGWPSCY210 CONTRACT ADMINISTRATION
HGWPSCYF60 SAFETY ENGINEER
HGWPSCYFB0 QUALITY PROGRAM
HGWPSCYH10 STAFF/SAFETY MEETINGS/SAFETY COMMITTEE / ON-SITE
HGWPSCYH80 DOE SPECIAL INFORMATION REQUESTS / BUDGET EXCERCISES.
HGWPSCYN70 BASELINE MANAGEMENT & CHANGE CONTROL
HGWPSCYN80 DETAILED WORK PLAN, MAP
HGWPSCYN90 PROJECT PLANNING, SCHEDULING & COST CONTROL
HGWPSCYND0 PROJECT STAFF REPORTS, REVIEW, PRESENTATIONS

1.4.10.1.1.08.03.24.01.02.02 P41202 GW Long Term Monitoring

HGWCLS GW MONITORING FACILITY CLOSURE

HGWCLS2173 CLOSURE
HGWCLS2174 MODUTANK CLOSURE
HGWCLS21B0 REPORTS TO REGULATORS
HGWCLS3510 SAMPLE COLLECTION
HGWCLS3B00 OFF-SITE LABORATORY ANALYSIS
HGWCLS3C00 ON-SITE LABORATORY ANALYSIS
HGWCLS4114 WASTE MANAGEMENT

HGWLTM GW LONG TERM MONITORING

HGWLTM1100 TECHNICAL PLANNING
HGWLTM2171 OPERATION AND MAINTENANCE
HGWLTM2172 PURGEWATER TRUCKS AND DRIVERS
HGWLTM3540 REPORTING

1.4.10.1.1.08.03.24.01.02.03 P41203 PNNL: GW Seismic Monitoring

HGWLTM GW LONG TERM MONITORING

HGWLTM3810 PNNL: GW Seismic Monitoring

1.4.10.1.1.08.03.24.01.02.04 P41204 PNNL: GW Vadose Monitoring

HGWLTM GW LONG TERM MONITORING

HGWLTM3310 PNNL: GW Vadose Monitoring

1.4.10.1.1.08.03.24.01.02.05 P41205 PNNL: GW Modeling

HGWLTM GW LONG TERM MONITORING

HGWLTM3D0P PNNL: GW Modeling

Groundwater Management Project
CODE OF ACCOUNT STRUCTURE CHART

1.4.10.1.1.08.03.24.01.02.06 P41206 PNNL: GW Monitoring

HGWLTM GW LONG TERM MONITORING

HGWLTM100P PNNL: GW Monitoring
HGWLTM120P PNNL: GW Monitoring
HGWLTM350P PNNL: GW Monitoring
HGWLTM351P PNNL: GW Monitoring
HGWLTM355P PNNL: GW Monitoring
HGWLTM3B0P PNNL: GW Monitoring
HGWLTM3C0P PNNL: GW Monitoring
HGWLTM3E0P PNNL: GW Monitoring
HGWLTMY11P PNNL: GW Monitoring

1.4.10.1.1.08.03.24.01.02.07 P41207 PNNL: GW Well Installation

HGWLTM GW LONG TERM MONITORING

HGWLTM320P PNNL: GW Well Installation

1.4.10.1.1.08.03.24.01.02.0P P4120P PNNL: GW Project Support

HGWPSC GW PROJECT SUPPORT COSTS

HGWPSCY00P PNNL: GW Project Support

1.4.10.1.1.08.03.24.09 P49 RCRA and GW Monitoring (7340)

1.4.10.1.1.08.03.24.09.31 P491 RCRA and GW Monitoring Landlord (7340)

1.4.10.1.1.08.03.24.09.31.08 P49108 7340-1 GW Well Installation (Expense)

HRCRA1 RCRA WELL INSTALLATION CY01

HRCRA11100 TECHNICAL PLANNING

JRCRA0 RCRA WELL INSTALLATION CY00

JRCRA03200 WELL INSTALLATION (CAPITAL)

JRCRA1 RCRA WELL INSTALLATION CY01

JRCRA13200 WELL INSTALLATION (CAPITAL)

1.4.10.1.1.08.03.25 P5 Hanford Site GW Well Maint., Refurbishment, Abandonment

1.4.10.1.1.08.03.25.01 P51 GW Well Maintenence, Refurbishment, Abandonment

1.4.10.1.1.08.03.25.01.02 P512 GW Well Maintenence, Refurbishment, Abandonment Landlord

1.4.10.1.1.08.03.25.01.02.02 P51202 GW Maintenence, Refurbishment, Abandonment

HGWMRA GW MAINTENANCE, REFURBISHMENT, ABANDONMENT

HGWMRA4111 ROUTINE MAINTENANCE
HGWMRA4112 NON-ROUTINE MAINTENANCE
HGWMRA4113 WELL IDENTIFICATION/START CARD
HGWMRA4114 WASTE MANAGEMENT
HGWMRA4133 NON-OU WELLS
HGWMRA4134 WELL DECOMMISSIONING
HGWMRA4140 DATABASE

Groundwater Management Project
CODE OF ACCOUNT STRUCTURE CHART

1.4.10.1.1.08.03.26 P6 Hanford Site Interim Action GW Monitoring

1.4.10.1.1.08.03.26.01 P61 Interim Action GW Monitoring

1.4.10.1.1.08.03.26.01.02 P612 Interim Action GW Monitoring Landlord

1.4.10.1.1.08.03.26.01.02.02 P61202 GW Interim Action Monitoring

H10COM 100-NPL-COMMON

H10COM3510 SAMPLE COLLECTION
H10COM351C SAMPLE COLLECTION(CH2MHILL)
H10COM354C REPORTING (CH2MHILL)
H10COM3B00 OFF-SITE LABORATORY ANALYSIS
H10COM3C0C ON-SITE LABORATORY ANALYSIS(CH2MHILL)
H10COM3E00 SAMPLE DATA MANAGEMENT

H10HR3 100-HR-3 PUMP & TREAT

H10HR31100 TECHNICAL PLANNING
H10HR33510 SAMPLE COLLECTION
H10HR33540 REPORTING
H10HR3354C REPORTING (CH2MHILL)
H10HR33B00 OFF-SITE LABORATORY ANALYSIS
H10HR33C0C ON-SITE LABORATORY ANALYSIS(CH2MHILL)
H10HR33E00 SAMPLE DATA MANAGEMENT
H10HR34111 ROUTINE MAINTENANCE
H10HR34112 NON-ROUTINE MAINTENANCE

H10KR4 100-KR-4 PUMP & TREAT

H10KR41100 TECHNICAL PLANNING
H10KR43510 SAMPLE COLLECTION
H10KR43540 REPORTING
H10KR4354C REPORTING (CH2MHILL)
H10KR43B00 OFF-SITE LABORATORY ANALYSIS
H10KR43C0C ON-SITE LABORATORY ANALYSIS(CH2MHILL)
H10KR43E00 SAMPLE DATA MANAGEMENT
H10KR44111 ROUTINE MAINTENANCE
H10KR44112 NON-ROUTINE MAINTENANCE

H10NR2 100-NR-2 PUMP & TREAT

H10NR21100 TECHNICAL PLANNING
H10NR23510 SAMPLE COLLECTION
H10NR23540 REPORTING
H10NR2354C REPORTING (CH2MHILL)
H10NR23B00 OFF-SITE LABORATORY ANALYSIS
H10NR23C0C ON-SITE LABORATORY ANALYSIS(CH2MHILL)
H10NR23E00 SAMPLE DATA MANAGEMENT
H10NR24111 ROUTINE MAINTENANCE
H10NR24112 NON-ROUTINE MAINTENANCE

H20UP1 200-UP-1 PUMP & TREAT

H20UP11100 TECHNICAL PLANNING
H20UP13510 SAMPLE COLLECTION
H20UP13540 REPORTING
H20UP1354C REPORTING (CH2MHILL)
H20UP13B00 OFF-SITE LABORATORY ANALYSIS
H20UP13C00 ON-SITE LABORATORY ANALYSIS
H20UP13C0C ON-SITE LABORATORY ANALYSIS(CH2MHILL)
H20UP13E00 SAMPLE DATA MANAGEMENT
H20UP14111 ROUTINE MAINTENANCE
H20UP14112 NON-ROUTINE MAINTENANCE

Groundwater Management Project
CODE OF ACCOUNT STRUCTURE CHART

H20ZP1 200-ZP-1 PUMP & TREAT

H20ZP11100 TECHNICAL PLANNING
H20ZP13510 SAMPLE COLLECTION
H20ZP13540 REPORTING
H20ZP1354C REPORTING (CH2MHILL)
H20ZP13B00 OFF-SITE LABORATORY ANALYSIS
H20ZP13C0C ON-SITE LABORATORY ANALYSIS(CH2MHILL)
H20ZP13E00 SAMPLE DATA MANAGEMENT
H20ZP14111 ROUTINE MAINTENANCE
H20ZP14112 NON-ROUTINE MAINTENANCE

H61811 618-11 BURIAL GROUND

H618113510 SAMPLE COLLECTION
H618113530 DATA EVALUATION
H618113540 REPORTING
H618113B00 OFF-SITE LABORATORY ANALYSIS

HGWIAM GW INTERIM ACTION MONITORING

HGWIAMY12C SUPERVISION
HGWIAMY22C ADMINISTRATIVE SUPPORT(CH2MHILL)
HGWIAMYN8C DETAILED WORK PLAN, MAP(CH2MHILL)
HGWIAMYN9C PROJECT PLANNING, SCHEDULING & COST CONTROL(CH2MHILL)

Groundwater Management Project
CODE OF ACCOUNT STRUCTURE CHART

1.4.10.1.1.08.06 200 Area Groundwater Remedial Action

1.4.10.1.1.08.06.16 PT 200-UP GW Remedial Actions

1.4.10.1.1.08.06.16.01 PT1 200-UP-1 GW Operable Unit

1.4.10.1.1.08.06.16.01.32 PT12 200-UP-1 GW Remediation

1.4.10.1.1.08.06.16.01.32.12 PT1212 200-UP-1 GW Chemical Treatment Operation

R20UP1 200-UP-1 PUMP & TREAT
- R20UP1C512 PROCURE (EXPENSE)
- R20UP1C540 OPERATIONS
- R20UP1C550 MAINTENANCE
- R20UP1C560 PERFORMANCE MONITORING
- R20UP1C56C PERFORMANCE MONITORING (CH2MHILL)
- R20UP1C570 WASTE MANAGEMENT

T20UP1 200-UP-1 PUMP & TREAT
- T20UP1C522 DRILL EXTRACTION WELL

1.4.10.1.1.08.06.17 PU 200-ZP GW Remedial Actions

1.4.10.1.1.08.06.17.01 PU1 200-ZP-1 GW Operable Unit

1.4.10.1.1.08.06.17.01.32 PU12 200-ZP-1 GW Remediation

1.4.10.1.1.08.06.17.01.32.01 PU1201 200-ZP-1 GW Project Support costs

R100CM 100 AREA GW REMEDIAL ACTION RIVER CORRIDOR COMMON
- R100CMC58C MODIFICATIONS TO PLANS (CH2MHILL)

1.4.10.1.1.08.06.17.01.32.05 PU1205 200-ZP-1 GW Physical Treatment Process

R20ZP1 200-ZP-1 PUMP & TREAT
- R20ZP1D712 PROCURE (EXPENSE)
- R20ZP1D740 OPERATIONS
- R20ZP1D750 MAINTENANCE
- R20ZP1D760 PERFORMANCE MONITORING
- R20ZP1D76C PERFORMANCE MONITORING (CHTMHILL)
- R20ZP1D770 WASTE MANAGEMENT
- R20ZP1D771 REGENERATION

T20ZP1 200-ZP-1 PUMP & TREAT
- T20ZP1D722 DRILL EXTRACTION WELL

1.4.10.1.1.08.06.17.02 PU2 200-ZP-2 GW (Vapor)

1.4.10.1.1.08.06.17.02.34 PU24 200-ZP-2 GW RCRA/CERCLA Interim Removal Actions

1.4.10.1.1.08.06.17.02.34.05 PU2405 200-ZP-2 GW Physical Treatment Operation

R20ZP2 200-ZP-2 PUMP & TREAT
- R20ZP2DP12 PROCURE (EXPENSE)
- R20ZP2DP40 OPERATIONS
- R20ZP2DP50 MAINTENANCE
- R20ZP2DP60 PERFORMANCE MONITORING
- R20ZP2DP61 WELL CONSTRUCTION - SAMPLING & ANALYSIS
- R20ZP2DP6C PERFORMANCE MONITORING(CH2MHILL)
- R20ZP2DP70 WASTE MANAGEMENT
- R20ZP2DP71 WELL CONSTRUCTION - WASTE MANAGEMENT

Groundwater Management Project
CODE OF ACCOUNT STRUCTURE CHART

T20ZP2 200-ZP-2 PUMP & TREAT
T20ZP2DP21 PLANNING/DOCUMENTATION
T20ZP2DP22 PROCUREMENT

1.4.10.1.1.08.06.17.02.34.14 PU2414 200-ZP-2 GW D&D

R20ZP2 200-ZP-2 PUMP & TREAT
R20ZP2J200 FACILITY SHUTDOWN ACTIVITIES

1.4.10.1.1.08.06.30 PX 200 Area GW Remedial Action Plateau Common

1.4.10.1.1.08.06.30.01 PX1 200 Area GW Remedial Action Plateau Common Operable Unit

1.4.10.1.1.08.06.30.01.32 PX12 200 Area GW Remedial Action Plateau Common Remediation

1.4.10.1.1.08.06.30.01.32.01 PX1201 200 Area GW Remedial Action Plateau Common Su

R200CM 200 AREA GW REMEDIAL ACTION RIVER CORRIDOR COMMON
R200CMC521 TECHNICAL PLANNING
R200CMY110 MANAGEMENT
R200CMY120 SUPERVISION
R200CMY12C SUPERVISION(CH2MHILL)
R200CMY22C ADMINISTRATIVE SUPPORT (CH2MHILL)
R200CMY4B0 PROJECT ENGINEERING
R200CMYF60 SAFETY ENGINEER
R200CMYH10 STAFF/SAFETY MEETINGS/SAFETY COMMITTEE / ON-SITE
R200CMYH40 GENERAL TRAINING (INSTRUCTOR, COORDINATION & CLASS TIME)
R200CMYH60 PROCEDURES (READING / TRAINING / DEV / MAINTENANCE)
R200CMYH80 DOE SPECIAL INFORMATION REQUESTS / BUDGET EXCERCISES.
R200CMYN50 STRATEGIC PLANNING
R200CMYN70 BASELINE MANAGEMENT & CHANGE CONTROL
R200CMYN80 DETAILED WORK PLAN, MAP
R200CMYN8C DETAILED WORK PLAN, MAP (CH2MHILL)
R200CMYN90 PROJECT PLANNING, SCHEDULING & COST CONTROL
R200CMYN9C PROJECT PLANNING, SCHEDULING & COST CONTROL (CH2MHILL)
R200CMYND0 PROJECT STAFF REPORTS, REVIEW, PRESENTATIONS
R200CMYT20 CUSTOMER/REGULATORY INTERFACE ACTIVITY

WORK BREAKDOWN STRUCTURE INDEX

PBS	Indenture Level 5	6	7	8	9	10	11	Title	HQ/ERC WBS #	B&R #
RL-ER08		X						Groundwater Management Project	1.4.10.1.1.08	EW02J1080
RL-ER08			X					100 Area Groundwater Remedial Action	1.4.10.1.1.08.02	EW02J1080
RL-ER08				X				100-KR GW Remedial Actions	1.4.10.1.1.08.02.06	EW02J1080
RL-ER08					X			100-KR-4 GW Operable Unit	1.4.10.1.1.08.02.06.04	EW02J1080
RL-ER08						X		100-KR-4 GW Remediation	1.4.10.1.1.08.02.06.04.32	EW02J1080
RL-ER08							X	100-KR-4 GW Chemical Treatment Process	1.4.10.1.1.08.02.06.04.32.12	EW02J1080
RL-ER08				X				100-HR GW Remedial Actions	1.4.10.1.1.08.02.08	EW02J1080
RL-ER08					X			100-HR-3 GW Operable Unit	1.4.10.1.1.08.02.08.03	EW02J1080
RL-ER08						X		100-HR-3 GW Remediation	1.4.10.1.1.08.02.08.03.32	EW02J1080
RL-ER08							X	100-HR-3 GW Chemical Treatment Process	1.4.10.1.1.08.02.08.03.32.12	EW02J1080
RL-ER08							X	100-HR-3 In-Situ Redox Manipulation	1.4.10.1.1.08.02.08.03.32.14	EW02J1080
RL-ER08				X				100-NR GW Remedial Action	1.4.10.1.1.08.02.09	EW02J1080
RL-ER08					X			100-NR-2 GW Operable Unit	1.4.10.1.1.08.02.09.02	EW02J1080
RL-ER08						X		100-NR-2 GW Operable Unit Remediation	1.4.10.1.1.08.02.09.02.32	EW02J1080
RL-ER08							X	100-NR-2 GW ERA Implementation	1.4.10.1.1.08.02.09.02.32.02	EW02J1080
RL-ER08				X				100 Area GW Remedial Action River Corridor Common	1.4.10.1.1.08.02.29	EW02J1080
RL-ER08					X			100 Area GW Remedial Action River Corridor Common Operable Unit	1.4.10.1.1.08.02.29.01	EW02J1080
RL-ER08						X		100 Area GW Remedial Action River Corridor Common Remediation	1.4.10.1.1.08.02.29.01.32	EW02J1080
RL-ER08							X	100 Area GW Remedial Action River Corridor Common Support	1.4.10.1.1.08.02.29.01.32.01	EW02J1080
RL-ER08			X					Hanford Site Groundwater Management	1.4.10.1.1.08.03	EW02J1080
RL-ER08				X				Groundwater Monitoring	1.4.10.1.1.08.03.24	EW02J1080
RL-ER08					X			GW Monitoring	1.4.10.1.1.08.03.24.01	EW02J1080
RL-ER08						X		GW Monitoring Remediation	1.4.10.1.1.08.03.24.01.02	EW02J1080
RL-ER08							X	GW Project Support Costs	1.4.10.1.1.08.03.24.01.02.01	EW02J1080
RL-ER08							X	GW Long Term Monitoring	1.4.10.1.1.08.03.24.01.02.02	EW02J1080

WORK BREAKDOWN STRUCTURE INDEX

PBS	Indenture Level 5	6	7	8	9	10	11	Title	HQ/ERC WBS #	B&R #
RL-ER08							X	PNNL: GW Seismic Monitoring	1.4.10.1.1.08.03.24.01.02.03	EW02J1080
RL-ER08							X	PNNL: GW Vadose Monitoring	1.4.10.1.1.08.03.24.01.02.04	EW02J1080
RL-ER08							X	PNNL: GW Modeling	1.4.10.1.1.08.03.24.01.02.05	EW02J1080
RL-ER08							X	PNNL: GW Monitoring	1.4.10.1.1.08.03.24.01.02.06	EW02J1080
RL-ER08							X	PNNL: GW Well Installation	1.4.10.1.1.08.03.24.01.02.07	EW02J1080
RL-ER08							X	PNNL: GW Project Support	1.4.10.1.1.08.03.24.01.02.0P	EW02J1080
RL-ER08					X			RCRA and GW Monitoring (7340)	1.4.10.1.1.08.03.24.09	EW02J1080
RL-ER08						X		RCRA and GW Monitoring Landlord (7340)	1.4.10.1.1.08.03.24.09.31	EW02J1080
RL-ER08							X	7340-1 GW Well Installation (Expense)	1.4.10.1.1.08.03.24.09.31.08	EW02J1080
RL-ER08				X				Hanford Site GW Well Maint., Refurbishment, Abandonment	1.4.10.1.1.08.03.25	EW02J1080
RL-ER08					X			GW Well Maintenence, Refurbishment, Abandonment	1.4.10.1.1.08.03.25.01	EW02J1080
RL-ER08						X		GW Well Maintenence, Refurbishment, Abandonment Landlord	1.4.10.1.1.08.03.25.01.02	EW02J1080
RL-ER08							X	GW Maintenence, Refurbishment, Abandonment	1.4.10.1.1.08.03.25.01.02.02	EW02J1080
RL-ER08				X				Hanford Site Interim Action GW Monitoring	1.4.10.1.1.08.03.26	EW02J1080
RL-ER08					X			Interim Action GW Monitoring	1.4.10.1.1.08.03.26.01	EW02J1080
RL-ER08						X		Interim Action GW Monitoring Landlord	1.4.10.1.1.08.03.26.01.02	EW02J1080
RL-ER08							X	GW Interim Action Monitoring	1.4.10.1.1.08.03.26.01.02.02	EW02J1080
RL-ER08			X					200 Area Groundwater Remedial Action	1.4.10.1.1.08.06	EW02J1080
RL-ER08				X				200-UP GW Remedial Actions	1.4.10.1.1.08.06.16	EW02J1080
RL-ER08					X			200-UP-1 GW Operable Unit	1.4.10.1.1.08.06.16.01	EW02J1080
RL-ER08						X		200-UP-1 GW Remediation	1.4.10.1.1.08.06.16.01.32	EW02J1080
RL-ER08							X	200-UP-1 GW Chemical Treatment Operation	1.4.10.1.1.08.06.16.01.32.12	EW02J1080
RL-ER08				X				200-ZP GW Remedial Actions	1.4.10.1.1.08.06.17	EW02J1080
RL-ER08					X			200-ZP-1 GW Operable Unit	1.4.10.1.1.08.06.17.01	EW02J1080
RL-ER08						X		200-ZP-1 GW Remediation	1.4.10.1.1.08.06.17.01.32	EW02J1080

WORK BREAKDOWN STRUCTURE INDEX

PBS	Indenture Level							Title	HQ/ERC WBS #	B&R #
	5	6	7	8	9	10	11			
RL-ER08							X	200-ZP-1 GW Physical Treatment Process	1.4.10.1.1.08.06.17.01.32.05	EW02J1080
RL-ER08					X			200-ZP-2 GW (Vapor)	1.4.10.1.1.08.06.17.02	EW02J1080
RL-ER08						X		200-ZP-2 GW RCRA/CERCLA Interim Removal Actions	1.4.10.1.1.08.06.17.02.34	EW02J1080
RL-ER08							X	200-ZP-2 GW Physical Treatment Operation	1.4.10.1.1.08.06.17.02.34.05	EW02J1080
RL-ER08				X				200 Area GW Remedial Action Plateau Common	1.4.10.1.1.08.06.30	EW02J1080
RL-ER08					X			200 Area GW Remedial Action Plateau Common Operable Unit	1.4.10.1.1.08.06.30.01	EW02J1080
RL-ER08						X		200 Area GW Remedial Action Plateau Common Remediation	1.4.10.1.1.08.06.30.01.32	EW02J1080
RL-ER08							X	200 Area GW Remedial Action Plateau Common Support	1.4.10.1.1.08.06.30.01.32.01	EW02J1080

MAJOR PROCUREMENT PLAN - FY 2001

Cost Account	Task	Type of Contract	Start Date	End Date	FY01 Burdened Budget/EAC ($K)
P49108/PT1212/ PU1205	Well Drilling (RCRA,UP1,ZP1)	FP	06/01	09/01	364
PT1212/PU1205	Well Drilling (200-UP-1/ZP-1)	FP	06/01	08/01	132
P51202/P61202	Routine Well Maintenance	FUP	10/00	09/01	402
P61202	Off-Site Analysis	FUP	10/00	09/01	215
P61202	Sample Collection	FUP	10/00	09/01	164
PE3212/PC4212	Resin Regeneration	FUP	10/00	09/01	127
PE3212/PC4212	Resin Analysis	FUP	10/00	09/01	279
PE3214	Site Prep for Well Drilling	FP	12/00	09/01	108
PE3214	Well Drilling	FP	01/01	06/01	751
PU2405	DNAPL Investigation	FP	04/01	09/01	991
Various	PNNL GW Monit. Fin Plan	Fin Plan	10/00	09/01	9,580
Misc.	Misc. Subcontracts/PNNL	FP/FUP/W/O	10/00	09/01	1,640
	Total				14,753

MAJOR PROCUREMENT PLAN - FY 2002

Cost Account	Task	Type of Contract	Start Date	End Date	FY02 Burdened Budget/EAC ($K)
P49108	Well Drilling	FP	06/05/02	09/04/02	374
P51202	Routine Well Maintenance	FUP	10/01/01	09/30/02	329
P61202	Off-Site Analysis	FUP	10/01/01	09/30/02	221
P61202	Sample Collection	FUP	10/01/01	09/30/02	168
P3212/PC4212	Resin Regeneration	FUP	10/01/01	09/30/02	130
PE3212/PC4212	Resin Analysis	FUP	10/01/01	09/30/02	286
PE3214	Site Prep for Well Drilling	FP	12/11/01	09/28/02	127
PE3214	Well Drilling	FP	01/08/02	07/01/02	772
Various	PNNL GW Monit. Fin Plan	Fin Plan	10/01/01	09/30/02	9,839
Misc.	Misc. Subcontracts/PNNL	FP/FUP/W/O	10/01/01	09/30/02	1,465
	Total				13,711

MAJOR PROCUREMENT PLAN - FY 2003

Cost Account	Task	Type of Contract	Start Date	End Date	FY03 Burdened Budget/EAC ($K)
P49108	Well Drilling	FP	06/04/03	09/03/03	421
P51202	Routine Well Maintenance	FUP	10/01/02	09/30/03	338
P61202/PE3214	Off-Site Analysis	FUP	10/01/02	09/30/03	227
P61202	Sample Collection	FUP	10/01/02	09/30/03	173
P3212/PC4212	Resin regeneration	FUP	10/01/02	09/30/03	133
PE3212/PC4212	Resin analysis	FUP	10/01/02	09/30/03	294
PT1212	Install 6 Monitoring Wells	FP	10/01/02	03/28/03	1,258
Various	PNNL GW Monit. Fin Plan	Fin Plan	10/01/02	09/28/03	10,104
Misc.	Misc. Subcontracts/PNNL	FP/FUP/W/O	10/01/02	09/28/03	1,594
	Total				14,542

PBS BUDGET BASELINE TABLE

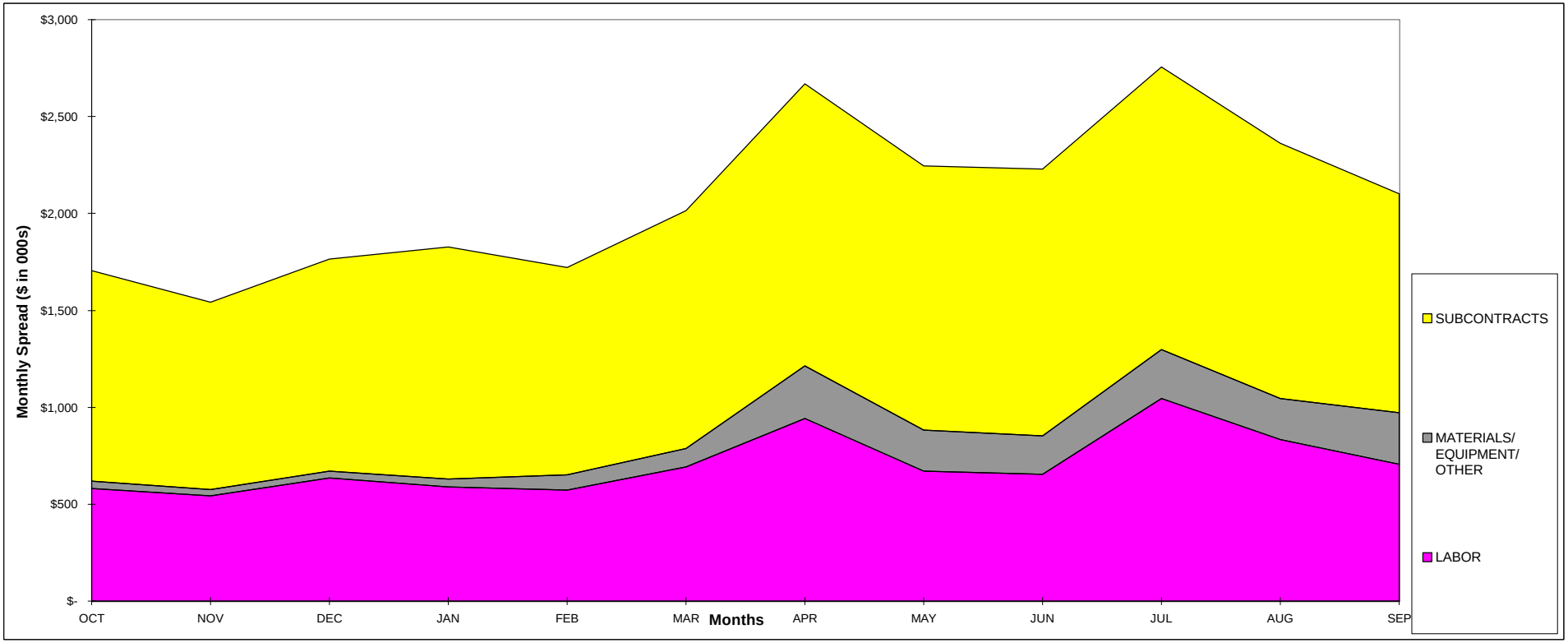
CA #	Description	HOURS Non Manual	HOURS Manual	HOURS Total	$1,000 Labor	$1,000 Material/ Eqpt/Other	$1,000 SC	$1,000 Total
		FY 2001						
P41201	GW Project Support Costs	4,421	151	4,572	358	0	0	358
P41202	GW Long Term Monitoring	2,852	5,512	8,364	543	53	71	667
P41203	PNNL: GW Seismic Monitoring				0	0	564	564
P41204	PNNL: GW Vadose Monitoring				0	0	30	30
P41205	PNNL: GW Modeling				0	0	887	887
P41206	PNNL: GW Monitoring				0	0	7,286	7,286
P41207	PNNL: GW Well Installation				0	0	143	143
P4120P	PNNL: GW Project Support				0	0	670	670
	Subtotal GW Monitoring	**7,274**	**5,663**	**12,936**	**902**	**53**	**9,651**	**10,606**
P49108	7340-1 GW Well Installation (Expense)	4,299	1,388	5,687	438	42	544	1,023
	Subtotal RCRA and GW Monitoring (7340)	**4,299**	**1,388**	**5,687**	**438**	**42**	**544**	**1,023**
P51202	GW Maintenence, Refurbishment, Abandonment	5,740	1,891	7,631	518	14	300	832
	Subtotal GW Well Maintenence, Refurbishment, Abandonment	**5,740**	**1,891**	**7,631**	**518**	**14**	**300**	**832**
P61202	GW Interim Action Monitoring	10,952	1,187	12,140	902	47	1,099	2,049
	Subtotal Interim Action GW Monitoring	**10,952**	**1,187**	**12,140**	**902**	**47**	**1,099**	**2,049**
PC4212	100-KR-4 GW Chemical Treatment Process	5,602	5,253	10,855	753	55	293	1,101
	Subtotal 100-KR-4 GW Operable Unit	**5,602**	**5,253**	**10,855**	**753**	**55**	**293**	**1,101**
PE3212	100-HR-3 GW Chemical Treatment Process	5,563	5,236	10,799	747	68	222	1,037
PE3214	100-HR-3 In-Situ Redox Manipulation	13,744	2,945	16,689	1,259	1,118	1,235	3,612
	Subtotal 100-HR-3 GW Operable Unit	**19,308**	**8,181**	**27,488**	**2,006**	**1,186**	**1,457**	**4,649**
PG2202	100-NR-2 GW ERA Implementation	6,070	5,776	11,846	823	101	34	958
	Subtotal 100-NR-2 GW Operable Unit	**6,070**	**5,776**	**11,846**	**823**	**101**	**34**	**958**
PH1201	100 Area GW Remedial Action River Corridor Common Support	7,553	976	8,530	654	0	0	654
	Area GW Remedial Action River Corridor Common Operable Unit	**7,553**	**976**	**8,530**	**654**	**0**	**0**	**654**
PT1212	200-UP-1 GW Chemical Treatment Operation	1,356	441	1,797	137	22	92	251
	Subtotal 200-UP-1 GW Operable Unit	**1,356**	**441**	**1,797**	**137**	**22**	**92**	**251**
PU1205	200-ZP-1 GW Physical Treatment Process	5,148	4,889	10,037	704	149	229	1,082
	Subtotal 200-ZP-1 GW Operable Unit	**5,148**	**4,889**	**10,037**	**704**	**149**	**229**	**1,082**
PU2405	200-ZP-2 GW Physical Treatment Operation	1,776	940	2,717	189	54	1,050	1,293
	Subtotal 200-ZP-2 GW (Vapor)	**1,776**	**940**	**2,717**	**189**	**54**	**1,050**	**1,293**
PX1201	200 Area GW Remedial Action Plateau Common Support	5,162	508	5,671	441	0	3	444
	al 200 Area GW Remedial Action Plateau Common Operable Unit	**5,162**	**508**	**5,671**	**441**	**0**	**3**	**444**
	FY 2001 TOTAL	**80,240**	**37,094**	**117,334**	**8,467**	**1,722**	**14,753**	**24,942**
		FY 2002						
P41201	GW Project Support Costs	4,319	151	4,470	359	0	0	359
P41202	GW Long Term Monitoring	1,175	6,079	7,254	443	19	0	462
P41203	PNNL: GW Seismic Monitoring				0	0	514	514
P41204	PNNL: GW Vadose Monitoring				0	0	82	82
P41205	PNNL: GW Modeling				0	0	873	873
P41206	PNNL: GW Monitoring				0	0	7,415	7,415
P41207	PNNL: GW Well Installation				0	0	103	103
P4120P	PNNL: GW Project Support				0	0	852	852
	Subtotal GW Monitoring	**5,494**	**6,230**	**11,724**	**802**	**19**	**9,839**	**10,660**
P49108	7340-1 GW Well Installation (Expense)	4,299	1,388	5,687	450	43	558	1,051
	Subtotal RCRA and GW Monitoring (7340)	**4,299**	**1,388**	**5,687**	**450**	**43**	**558**	**1,051**
P51202	GW Maintenence, Refurbishment, Abandonment	5,737	1,891	7,628	532	329	376	1,238
	Subtotal GW Well Maintenence, Refurbishment, Abandonment	**5,737**	**1,891**	**7,628**	**532**	**329**	**376**	**1,238**
P61202	GW Interim Action Monitoring	8,799	991	9,791	746	123	889	1,758
	Subtotal Interim Action GW Monitoring	**8,799**	**991**	**9,791**	**746**	**123**	**889**	**1,758**
PC4212	100-KR-4 GW Chemical Treatment Process	4,939	4,433	9,372	666	297	275	1,238
	Subtotal 100-KR-4 GW Operable Unit	**4,939**	**4,433**	**9,372**	**666**	**297**	**275**	**1,238**

PBS BUDGET BASELINE TABLE

CA #	Description	HOURS Non Manual	HOURS Manual	HOURS Total	$1,000 Labor	$1,000 Material/ Eqpt/Other	$1,000 SC	$1,000 Total
PE3212	100-HR-3 GW Chemical Treatment Process	5,067	4,776	9,843	697	429	228	1,355
PE3214	100-HR-3 In-Situ Redox Manipulation	12,663	2,991	15,654	1,205	1,164	1,282	3,651
	Subtotal 100-HR-3 GW Operable Unit	**17,730**	**7,767**	**25,497**	**1,902**	**1,593**	**1,510**	**5,006**
PG2202	100-NR-2 GW ERA Implementation	5,406	4,964	10,370	738	147	35	920
	Subtotal 100-NR-2 GW Operable Unit	**5,406**	**4,964**	**10,370**	**738**	**147**	**35**	**920**
PH1201	100 Area GW Remedial Action River Corridor Common Support	7,125	976	8,101	648	0	1	649
	Area GW Remedial Action River Corridor Common Operable Unit	**7,125**	**976**	**8,101**	**648**	**0**	**1**	**649**
PT1212	200-UP-1 GW Chemical Treatment Operation	679	218	897	69	18	5	93
	Subtotal 200-UP-1 GW Operable Unit	**679**	**218**	**897**	**69**	**18**	**5**	**93**
PU1205	200-ZP-1 GW Physical Treatment Process	3,930	4,504	8,435	599	90	153	843
	Subtotal 200-ZP-1 GW Operable Unit	**3,930**	**4,504**	**8,435**	**599**	**90**	**153**	**843**
PU2405	200-ZP-2 GW Physical Treatment Operation	1,616	1,023	2,639	188	42	69	299
	Subtotal 200-ZP-2 GW (Vapor)	**1,616**	**1,023**	**2,639**	**188**	**42**	**69**	**299**
PX1201	200 Area GW Remedial Action Plateau Common Support	3,949	487	4,436	355	0	0	355
	al 200 Area GW Remedial Action Plateau Common Operable Unit	**3,949**	**487**	**4,436**	**355**	**0**	**0**	**355**
	FY 2002 TOTAL	**69,704**	**34,874**	**104,577**	**7,696**	**2,703**	**13,711**	**24,110**
		FY 2003						
P41201	GW Project Support Costs	4,422	151	4,573	378	22	0	400
P41202	GW Long Term Monitoring	487	2,960	3,447	210	33	0	242
P41203	PNNL: GW Seismic Monitoring				0	0	527	527
P41204	PNNL: GW Vadose Monitoring				0	0	84	84
P41205	PNNL: GW Modeling				0	0	897	897
P41206	PNNL: GW Monitoring				0	0	7,615	7,615
P41207	PNNL: GW Well Installation				0	0	105	105
P4120P	PNNL: GW Project Support				0	0	875	875
	Subtotal GW Monitoring	**4,909**	**3,111**	**8,020**	**588**	**55**	**10,104**	**10,746**
P49108	7340-1 GW Well Installation (Expense)	4,299	1,388	5,687	462	44	573	1,079
	Subtotal RCRA and GW Monitoring (7340)	**4,299**	**1,388**	**5,687**	**462**	**44**	**573**	**1,079**
P51202	GW Maintenence, Refurbishment, Abandonment	5,737	1,891	7,628	547	362	386	1,295
	Subtotal GW Well Maintenence, Refurbishment, Abandonment	**5,737**	**1,891**	**7,628**	**547**	**362**	**386**	**1,295**
P61202	GW Interim Action Monitoring	8,801	991	9,792	765	150	913	1,828
	Subtotal Interim Action GW Monitoring	**8,801**	**991**	**9,792**	**765**	**150**	**913**	**1,828**
PC4212	100-KR-4 GW Chemical Treatment Process	4,948	4,793	9,742	709	312	282	1,303
	Subtotal 100-KR-4 GW Operable Unit	**4,948**	**4,793**	**9,742**	**709**	**312**	**282**	**1,303**
PE3212	100-HR-3 GW Chemical Treatment Process	5,067	4,777	9,845	716	429	226	1,370
PE3214	100-HR-3 In-Situ Redox Manipulation	6,188	2,461	8,648	655	53	529	1,237
	Subtotal 100-HR-3 GW Operable Unit	**11,255**	**7,238**	**18,493**	**1,372**	**482**	**754**	**2,608**
PG2202	100-NR-2 GW ERA Implementation	5,605	5,446	11,050	807	101	36	945
	Subtotal 100-NR-2 GW Operable Unit	**5,605**	**5,446**	**11,050**	**807**	**101**	**36**	**945**
PH1201	100 Area GW Remedial Action River Corridor Common Support	6,868	976	7,844	644	0	1	646
	Area GW Remedial Action River Corridor Common Operable Unit	**6,868**	**976**	**7,844**	**644**	**0**	**1**	**646**
PT1212	200-UP-1 GW Chemical Treatment Operation	11,139	1,908	13,047	1,067	19	1,264	2,349
	Subtotal 200-UP-1 GW Operable Unit	**11,139**	**1,908**	**13,047**	**1,067**	**19**	**1,264**	**2,349**
PU1205	200-ZP-1 GW Physical Treatment Process	4,383	4,624	9,007	659	93	157	909
	Subtotal 200-ZP-1 GW Operable Unit	**4,383**	**4,624**	**9,007**	**659**	**93**	**157**	**909**
PU2405	200-ZP-2 GW Physical Treatment Operation	1,616	1,023	2,639	193	43	71	307
	Subtotal 200-ZP-2 GW (Vapor)	**1,616**	**1,023**	**2,639**	**193**	**43**	**71**	**307**
PX1201	200 Area GW Remedial Action Plateau Common Support	3,715	488	4,203	347	0	0	347
	al 200 Area GW Remedial Action Plateau Common Operable Unit	**3,715**	**488**	**4,203**	**347**	**0**	**0**	**347**
	FY 2003 TOTAL	**73,274**	**33,877**	**107,151**	**8,160**	**1,661**	**14,542**	**24,363**

FY 2001 PBS BASELINE EXPENDITURE FORECAST

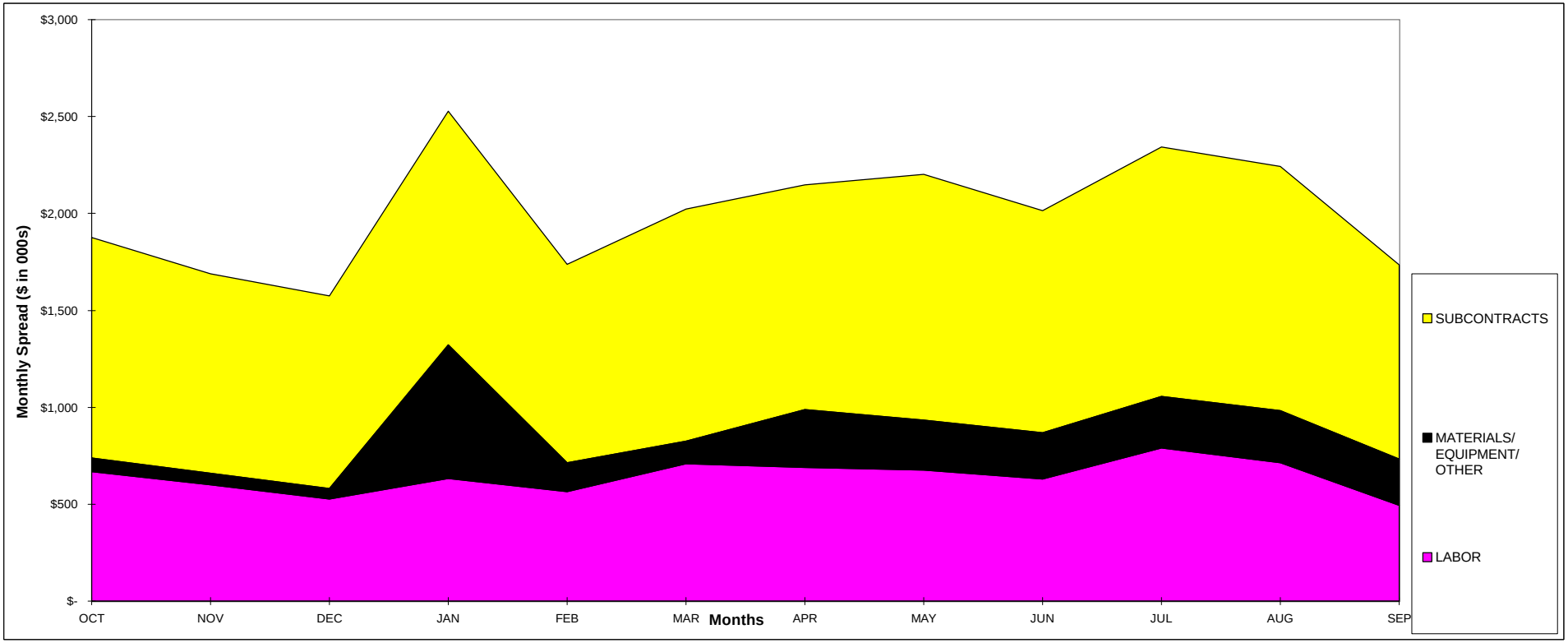
(Dollars in Thousands)



	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
LABOR	$ 580	$ 543	$ 636	$ 590	$ 572	$ 692	$ 941	$ 672	$ 655	$ 1,045	$ 835	$ 707	$ 8,467
MATERIALS/ EQUIPMENT/ OTHER	$ 38	$ 32	$ 35	$ 39	$ 78	$ 94	$ 272	$ 210	$ 197	$ 252	$ 211	$ 265	$ 1,722
SUBCONTRACTS	$ 1,088	$ 968	$ 1,094	$ 1,199	$ 1,071	$ 1,229	$ 1,455	$ 1,365	$ 1,378	$ 1,460	$ 1,316	$ 1,129	$ 14,753
BUDGET CURRENT	$ 1,706	$ 1,542	$ 1,765	$ 1,828	$ 1,721	$ 2,016	$ 2,668	$ 2,246	$ 2,230	$ 2,756	$ 2,362	$ 2,102	$ 24,942
BUDGET BASELINE (DWP)	$ 1,706	$ 1,542	$ 1,765	$ 1,828	$ 1,721	$ 2,016	$ 2,668	$ 2,246	$ 2,230	$ 2,756	$ 2,362	$ 2,102	$ 24,942
ACTUALS	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
MONTHLYFORECAST	$ 1,706	$ 1,542	$ 1,765	$ 1,828	$ 1,721	$ 2,016	$ 2,668	$ 2,246	$ 2,230	$ 2,756	$ 2,362	$ 2,102	$ 24,942
CUMULATIVE EAC	$ 1,706	$ 3,248	$ 5,013	$ 6,841	$ 8,563	$ 10,578	$ 13,246	$ 15,493	$ 17,722	$ 20,479	$ 22,840	**$ 24,942**	$ 24,942

FY 2002 PBS BASELINE EXPENDITURE FORECAST

(Dollars in Thousands)



	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
LABOR	$ 668	$ 600	$ 528	$ 632	$ 564	$ 709	$ 688	$ 677	$ 630	$ 790	$ 714	$ 494	$ 7,696
MATERIALS/ EQUIPMENT/ OTHER	$ 71	$ 59	$ 53	$ 689	$ 150	$ 115	$ 299	$ 257	$ 238	$ 266	$ 268	$ 239	$ 2,703
SUBCONTRACTS	$ 1,136	$ 1,030	$ 995	$ 1,206	$ 1,024	$ 1,198	$ 1,160	$ 1,266	$ 1,146	$ 1,288	$ 1,261	$ 1,001	$ 13,711
BUDGET CURRENT	$ 1,876	$ 1,689	$ 1,575	$ 2,527	$ 1,738	$ 2,022	$ 2,148	$ 2,201	$ 2,014	$ 2,343	$ 2,243	$ 1,735	$ 24,110
BUDGET BASELINE (DWP)	$ 1,876	$ 1,689	$ 1,575	$ 2,527	$ 1,738	$ 2,022	$ 2,148	$ 2,201	$ 2,014	$ 2,343	$ 2,243	$ 1,735	$ 24,110
ACTUALS	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
MONTHLYFORECAST	$ 1,876	$ 1,689	$ 1,575	$ 2,527	$ 1,738	$ 2,022	$ 2,148	$ 2,201	$ 2,014	$ 2,343	$ 2,243	$ 1,735	$ 24,110
CUMULATIVE EAC	$ 1,876	$ 3,565	$ 5,140	$ 7,667	$ 9,404	$ 11,427	$ 13,575	$ 15,775	$ 17,789	$ 20,133	$ 22,375	**$ 24,110**	$ 24,110

PBS#: RL-ER08

HQ/ERC WBS#: 1.4.10.1.1.08

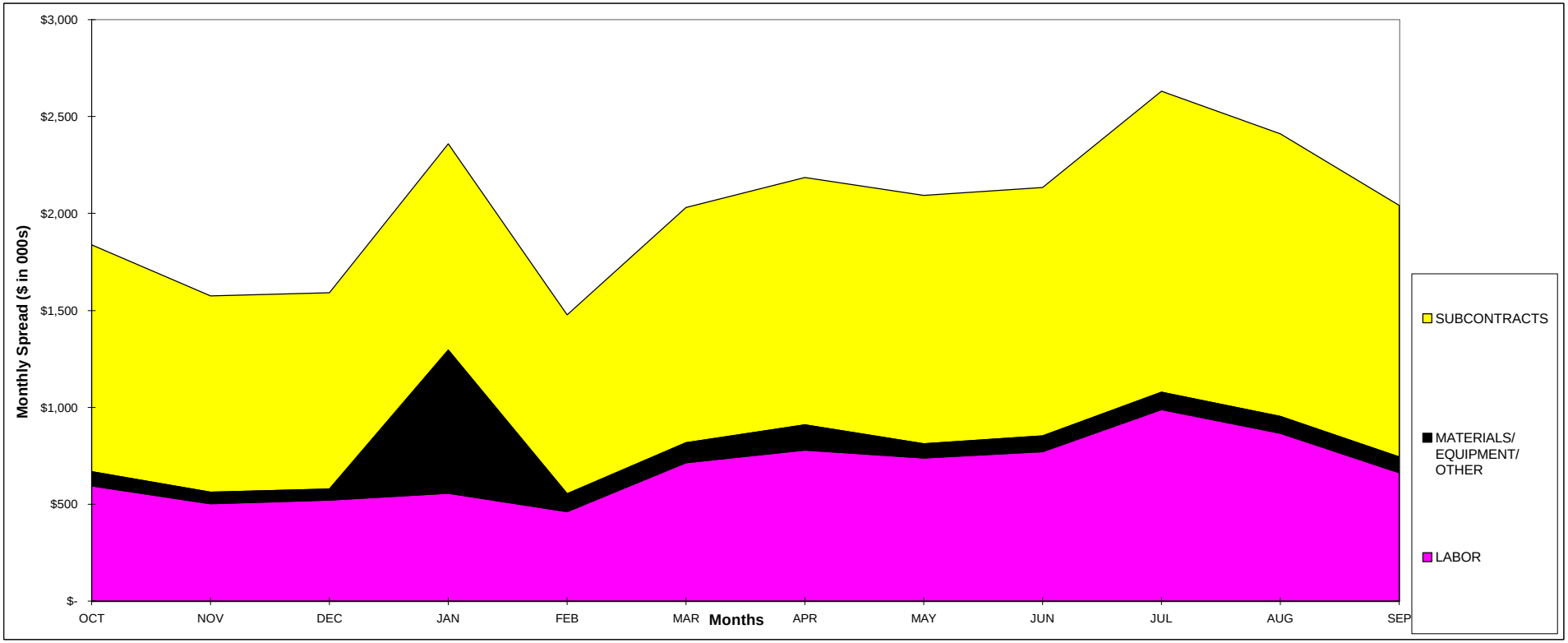
TITLE: Groundwater Management Project

Subproject Strategy

October 1, 2000

FY 2003 PBS BASELINE EXPENDITURE FORECAST

(Dollars in Thousands)



	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
LABOR	$ 595	$ 503	$ 522	$ 556	$ 462	$ 714	$ 778	$ 739	$ 771	$ 989	$ 867	$ 663	$ 8,160
MATERIALS/ EQUIPMENT/ OTHER	$ 73	$ 58	$ 57	$ 738	$ 91	$ 103	$ 130	$ 73	$ 82	$ 89	$ 87	$ 80	$ 1,661
SUBCONTRACTS	$ 1,169	$ 1,013	$ 1,014	$ 1,065	$ 925	$ 1,214	$ 1,276	$ 1,281	$ 1,282	$ 1,551	$ 1,457	$ 1,297	$ 14,542
BUDGET CURRENT	$ 1,837	$ 1,574	$ 1,592	$ 2,359	$ 1,478	$ 2,031	$ 2,184	$ 2,092	$ 2,135	$ 2,630	$ 2,410	$ 2,040	$ 24,363
BUDGET BASELINE (DWP)	$ 1,837	$ 1,574	$ 1,592	$ 2,359	$ 1,478	$ 2,031	$ 2,184	$ 2,092	$ 2,135	$ 2,630	$ 2,410	$ 2,040	$ 24,363
ACTUALS	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
MONTHLYFORECAST	$ 1,837	$ 1,574	$ 1,592	$ 2,359	$ 1,478	$ 2,031	$ 2,184	$ 2,092	$ 2,135	$ 2,630	$ 2,410	$ 2,040	$ 24,363
CUMULATIVE EAC	$ 1,837	$ 3,411	$ 5,004	$ 7,363	$ 8,841	$ 10,872	$ 13,056	$ 15,148	$ 17,283	$ 19,912	$ 22,323	**$ 24,363**	$ 24,363

COST ACCOUNT PLAN

KEY PROJECT TEAM MEMBERS

Task Lead (CAM): **J. A. Armatrout**
DOE-RL PM: **M. J. Furman**
Project Engineer: **G. B. Mitchem**
Field Support: **R. J. Fabre**
QS & H: **C. H. St. John**
Project Controls: **W. A. Pelly**
PSS Rep: **T. A. Lee**
Other (Subtask Lead): **G. A. Day**

WORK DESCRIPTION (Provide general work description of facility/building.)

General Description:

The Project Support cost account includes all management and administrative activities conducted for P41202, "Long Term Monitoring," P51202, "Well Maintenance and Abandonment/Decommissioning," and P61202, "Interim Action Monitoring." It includes the overall project management for groundwater monitoring of operable units 100-HR-3, 100-KR-4, 100-NR-2, 200-UP-1, 200-ZP-1, and well maintenance, database, decommissioning, and long-term monitoring (BHI).

TASKS TO BE PERFORMED IN FY 2001:

- Task management, which includes the overall management of the project activities by the task lead(s).
- Functional group oversight, which includes technical review and oversight by functional management.
- Project meetings/miscellaneous, which includes attendance at monthly project status meetings.
- Planning and Controls activities.
- Project administration and clerical support.
- Project engineering support.

TASKS TO BE PERFORMED IN FY 2002:

Same as FY01.

TASKS TO BE PERFORMED IN FY 2003:

Same as FY01.

GW PROJECT SUPPORT COSTS

P41201
1.4.10.1.1.08.03.24.01.02.01

MAJOR PRODUCTS AND DELIVERABLES (Including Readiness Assessment, AHA, Characterization, Demolition, DQO, Milestones – *Tri-Party Agreement* and others.)

Deliverables	Date
• Prepare a progress report (cost and schedule) for monthly progress reviews with RL	Monthly
• Prepare the Detailed Work Plan package and submit final draft to RL for review	Annual

BASIS/ASSUMPTIONS (Identify basis for estimate: i.e., MCASES, like facility, non-contaminated, etc. Also include key assumptions and constraints, including any spread of waste handling considerations.)

Estimates are based on FY99 actual cost history, FY00 EACs, and best work practices.

COST ACCOUNT PLAN

KEY PROJECT TEAM MEMBERS

Task Lead (CAM): **J. A. Armatrout**
DOE-RL PM: **M. J. Furman**
Project Engineer: **G. B. Mitchem**
Field Support: **R. J. Fabre**
QS & H: **C. H. St. John**
Project Controls: **W. A. Pelly**
PSS Rep: **T. A. Lee**
Other (Subtask Lead): **G. A. Day**

WORK DESCRIPTION (Provide general work description of facility/building.)

General Description:

The work scope for this cost account consists of technical planning, reporting of groundwater long-term monitoring and operation, management, and closure of the modutanks in support of long-term landlord responsibilities at the Hanford Site. Groundwater monitoring is performed to evaluate and report groundwater conditions in order to meet regulatory requirements, agreements, and DOE orders.

TASKS TO BE PERFORMED IN FY 2001:

- Technical planning involves support of long-term monitoring, including other site contractor's needs. Technical planning includes review of all regulatory required documents in support of landlord responsibilities, including reporting on CERCLA monitoring activities in the Hanford Site Annual Report. Operate and maintain the modutanks, including activities in support of modutank closure. Supply purgewater trucks and drivers to support long-term monitoring.

TASKS TO BE PERFORMED IN FY 2002:

Same as FY01, with completion of the closure of the modutanks.

TASKS TO BE PERFORMED IN FY 2003:

Same as FY01, except no activities on the modutanks.

MAJOR PRODUCTS AND DELIVERABLES (Including Readiness Assessment, AHA, Characterization, Demolition, DQO, Milestones – *Tri-Party Agreement* and others.)

Deliverables	Date
Input to Annual Groundwater Report	Annual

BASIS/ASSUMPTIONS (Identify basis for estimate: i.e., MCASES, like facility, non-contaminated, etc. Also include key assumptions and constraints, including any spread of waste handling considerations.)

- Routine operations and maintenance activities will be performed at the modutanks.
- No unusual activities or monitoring will occur at RCRA sites, or at the modutanks, that may require extensive involvement of regulatory support.
- Modutank sludge will be sent to ERDF (ERDF acceptance criteria received by March 31, 2001).
- Regulatory approval to proceed with modutank closure will be received by March 31, 2001.
- No NOC (Notice of Construction) or air monitoring plan will be required for modutank closure.
- Modutank closure will be initiated in FY01 and completed in FY02.
- Modutank DQO, EE/CA, closure plan and sampling and analysis plan will be completed in FY00 and regulatory approval received by March 31, 2001.

SUBCONTRACT STRATEGY (i.e., office trailer setup, tp&l.) List major subcontracts and scope including fiscal year and type (FP or FUP).

Subcontract	FY	Type of Contract	Scope
Off-site analysis	01	FUP	Off-site analysis for modutank closure

WORK ORDERS (i.e., work to be performed by FDH or Hanford Utilities Group.) List major work orders including fiscal year.

Company	FY	Scope
Fluor Hanford	01	On-site analysis supporting modutank closure
Fluor Hanford	01	Supporting modutank closure
Fluor Hanford	01	Weed control and retrofit and recert.

MATERIAL/EQUIPMENT/OTHER DIRECT COST REQUIREMENTS (Identify purchase items or other direct costs and assumptions.)

Description	FY	Scope
Miscellaneous equipment	01	Modutank closure, purgewater trucks
Miscellaneous equipment	02	Modutank closure, purgewater trucks
Miscellaneous equipment	03	Purgewater trucks

WASTE DISPOSAL (ERDF) QUANTITIES (Provide quantities in metrics.)

Type of Material	FY 2001	FY 2002	FY 2003
Purgewater (L)			
ERDF – Bulk Waste			
Soils (metric tons)		227	
Rubble and concrete under 0.6 m (metric tons)		227	
ERDF – Special Handling			
Concrete/asphalt (metric tons)			
Steel plate (metric tons)			
Piping/tube steel (metric tons)			
Regulated asbestos-containing materials (m^3)			
Misc. metal/building debris/structural steel/conduit (metric tons)			
Equipment (pumps, clarifiers, spiders, etc.) (metric tons)			
Other (metric tons)			
FH Waste Disposal			
Mixed waste (TRU) (m^3)			
PCBs (container)			
RCRA waste (container)			
Nonregulated waste (metric tons)			
200 Effluent Treatment Facility			
ERDF leachate (L)			
Other (L)			
Inert Demolition Landfills			
Offsite			
Nonradioactive hazardous (container)			
Recyclable (container)			
Other (container)			
Excess chemicals			

COST ACCOUNT PLAN

KEY PROJECT TEAM MEMBERS

Task Lead (CAM):	**J. S. Fruchter**
DOE-RL:	**K. M. Thompson**
Project Engineer:	**N/A**
Field Support:	**N/A**
QS&H:	**N/A**
Project Controls:	**L. R. Burns**
PSS Rep:	**N/A**
Other:	**S. P Reidel**

WORK DESCRIPTION (Provide general work description of facility/building.)

General Description:

Collect, archive, interpret, and report results of seismic data from Hanford Seismic Monitoring Network and Hanford Strong Motion Accelerometer Network; maintain Hanford Seismic Monitoring Network, Hanford Strong Motion Accelerometer Network, and Eastern Washington Seismic Network; and provide seismic support to DOE, as needed. This task is needed to comply with DOE Order 420.1, Facility Safety, which requires facilities to be monitored for the magnitude and impact of a seismic event on facilities.

TASKS TO BE PERFORMED IN FY 2001:

Task 1: Interpretation and Reporting

Analyze and interpret seismic data for all sources that trigger the Hanford Seismic Monitoring Network and Hanford Strong Motion Accelerometer Network. Evaluate all seismic events that occur in Eastern Washington for impact on the Hanford Site and Hanford Seismic Hazards assessment. Maintain and publish a record of the sources proximal to the Hanford Site (within 45°-46° latitude and 119°-120° longitude), their seismic and tectonic properties, and interpretations. Update and maintain catalog of all instrumentally recorded seismic events within 45°-46° latitude and 119°-120° longitude. Ensure accurate event identification, location, and magnitude determination by second-person review and comparison to results from regional (University of Washington) and national (U.S. Geological Survey) seismic monitoring systems. Provide software for the automatic event detection, location, and notification systems, and interactive analysis systems, and report results on the Seismic Web Page. Document the seismic activity and interpretations in quarterly and annual reports, and special reports as requested by DOE. Provide DOE with information and assessment of the U.S. Geological Survey Seismic Hazards Program on the Hanford Site and facilities. Develop cooperative ties and data exchange with the U.S. Geological Survey and other regional elements of the Advanced National Seismic System, providing notification of significant earthquakes that affect the Hanford region. Provide DOE and Hanford Site contractors support for earthquake emergency response and seismic hazard assessment.

Major Product and Deliverable Dates

- Complete the annual seismic monitoring report for FY00 by December 31, 2000.
- Complete four quarterly seismic reports for FY01.
- Provide special reports and information as needed.

Task 2: Operations and Maintenance

Collect and process raw seismic data from the Hanford Seismic Monitoring Network and Hanford Strong Motion Accelerometer Network. Operate automatic event detection, location, and notification systems, and interactive analysis systems on a variety of computer systems. Maintain and operate the Hanford seismic array and Eastern Washington seismic array and the Hanford Strong Motion Accelerometer Network in proper working order, including repairing seismic stations, moving or replacing stations as necessary to maintain the highest quality data and to ensure adequate coverage of the monitoring area, and maintaining data transmission routes. Maintain contracts with the Bonneville Power Administration and University of Washington to provide continuous flow of seismic data and interpretation for the Eastern Washington Seismic Network, and support the DOE and Hanford Site emergency services as requested.

TASKS TO BE PERFORMED IN FY 2002:

Same as FY01.

TASKS TO BE PERFORMED IN FY 2003:

Same as FY02.

MAJOR PRODUCTS AND DELIVERABLES (Including Readiness Assessment, AHA, Characterization, Demolition, DQO, Milestones – *Tri-Party Agreement* and others.)

Deliverables	Date
• Fully operational, optimally located seismic stations and reliable data telemetry to produce high quality data at the recording center. Delivery of data is 24 hr/day; 365 days/yr	Daily
• Annual Monitoring Report for Hanford Seismic Network	Annual
• Four Quarterly Reports for Hanford Seismic Network	Quarterly
• Annual and Four Quarterly Reports for Eastern Washington Regional Seismic Network	Quarterly
• Provide special reports and information as needed	As required

BASIS/ASSUMPTIONS (Identify basis for estimate: i.e., MCASES, like facility, non-contaminated, etc. Also include key assumptions and constraints, including any spread of waste handling considerations.)

- Hanford Seismic Network: Analysis of raw data 8 hours/week; identification of events 3 hours/week; interpretation of events 2 hours/week; record keeping 5 hours/week; reporting 6.5 weeks/year.
- Hanford Strong Motion Accelerometer Analysis 2 hours/week; identification 3 hours/week; interpretation 1 hour/week; record keeping 2 hours/week; reporting 2.2 weeks/year.
- Computer software 2 days/month.

- Computer systems will require upgrades and replacements to maintain compatibility with University of Washington and U.S. Geological Survey seismic systems.

- Administrative 1 hour/day.

- Subcontract with University of Washington, Geophysics Program for Eastern Washington analysis.

- Operations and maintenance 30 hours/week. Includes repairs to network one person in field and one in shop where data are sent. At remote stations, in poor weather conditions, and/or with certain types of repairs or installations, two people are required in field. It is assumed that, on the average, four stations or data links must be repaired per month. Due to increased anthropogenic noise it is assumed that 2 stations will need to be moved per year. With the move from the 337 Building to Sigma V, all telephone links were replaced with radio links. This has resulted in some interference between links that will require upgrades in sites over the next several years. In addition, in the future some radio links will be replaced with digital telemetry.

- Subcontract with Hanford Radio Maintenance Services.

- Quarterly reports are necessary to keep the technical community apprised of seismic activity on the Hanford Site. The quarterly schedule is consistent with the established practice for the University of Washington Geophysics Program and the U.S. Geological Survey Seismic Program to which this project is linked and is an integral part of the Pacific Northwest Seismograph Network and a member of the Council of the National Seismic System.

COST ACCOUNT PLAN

KEY PROJECT TEAM MEMBERS

Task Lead (CAM):	**J. S. Fruchter**
DOE-RL:	**R. D. Hildebrand**
Project Engineer:	**N/A**
Field Support:	**N/A**
QS&H:	**N/A**
Project Controls:	**L. R. Burns**
PSS Rep:	**N/A**
Other:	**D. G. Horton**

WORK DESCRIPTION (Provide general work description of facility/building.)

General Description:

Work with MacTec-ERS to prepare a monitoring plan for monitoring past-practice liquid waste disposal facilities. The plan is to be implemented in FY02.

TASKS TO BE PERFORMED IN FY 2001:

Work with MacTec-ERS to prepare a monitoring plan for monitoring past-practice liquid waste disposal facilities. The plan is to be based on "Monitoring Guidance for Vadose Zone Monitoring of Liquid Waste Disposal Facilities for the Hanford Groundwater Project," PNNL-11958, Rev. 2. The plan is to be implemented in FY02. All appropriate monitoring techniques are to be considered.

TASKS TO BE PERFORMED IN FY 2002:

None.

TASKS TO BE PERFORMED IN FY 2003:

None.

MAJOR PRODUCTS AND DELIVERABLES (Including Readiness Assessment, AHA, Characterization, Demolition, DQO, Milestones – *Tri-Party Agreement* and others.)

Deliverables	Date

BASIS/ASSUMPTIONS (Identify basis for estimate: i.e., MCASES, like facility, non-contaminated, etc. Also include key assumptions and constraints, including any spread of waste handling considerations.)

- MacTec-ERS has responsibility for the monitoring plan deliverables.
- It is assumed that PNNL's support to the plan will be approximately 280 hours labor.

COST ACCOUNT PLAN

KEY PROJECT TEAM MEMBERS

Task Lead (CAM):	**J. S. Fruchter**
DOE-RL:	**R. D. Hildebrand**
Project Engineer:	**N/A**
Field Support:	**N/A**
QS&H:	**N/A**
Project Controls:	**L. R. Burns**
PSS Rep:	**N/A**
Other:	**M. P. Bergeron**

WORK DESCRIPTION (Provide general work description of facility/building.)

General Description:

The work scope for this cost account consists of:

- **Site-Specific Applications:** Performing specific applications of the consolidated site-wide groundwater flow and transport model at the Hanford Site identified by the Hanford Groundwater Project (HGWP) and other Hanford Site projects.

- **Model Maintenance:** Maintaining and provide general technical support for a consolidated site-wide groundwater flow and transport model for use at the Hanford Site.

- **Model Development and Consolidation:** Development of a consolidated site-wide groundwater flow and transport model for use at the Hanford Site.

TASKS TO BE PERFORMED IN FY 2001:

Site-Specific Applications

Composite Analysis (CA) of Sources in 200 Area Plateau: Perform specific groundwater modeling applications as identified by RL through the HGWP. The current application is related to follow-up activities associated with Composite Analysis for Low-Level Waste Disposal in the 200 Area Plateau of the Hanford Site. Specific scope for FY01 involves performing the following:

- An addendum analysis to the CA of the combined impact of all radioactive source areas not considered in the initial CA.

- Ongoing maintenance for the CA as outlined in its current maintenance plan issued in FY00.

The scope of the work described herein is required to meet conditions specified in DOE's "Conditional Acceptance of the Immobilized Low-Activity Tank Waste Disposal Facility Performance Assessment and the Hanford Site 200 Plateau Composite Analysis," dated October 20, 1999, and "Disposal Authorization Statement for the Department of Energy Hanford Site Low-Level Radioactive Waste Disposal Facilities," attachment to the letter from the Chairman of the Defense Nuclear Facilities Safety Board, dated October 25, 1999.

A baseline assumption of ongoing work supporting the CA is that the scope associated with future iterations of the CA will be transferred and undertaken by the Systems Assessment Capability (SAC) task of the Groundwater/Vadose Zone (GW/VZ) Integration Project. Other than annual evaluations of the CA as required by the CA maintenance plan, the next iteration will not be completed until FY04.

CA Maintenance: In accordance with DOE M 435.1-l requirements for CA maintenance, the Hanford Site is responsible for making an annual determination of the continued adequacy of the composite analysis. The annual determination provides the mechanism by which the site evaluates whether current and planned site activities are consistent with the CA and, therefore, whether the conclusions of the CA remain valid. This allows potential problems to be identified and managed before they affect site operations. The result of the review should be documented in a memorandum that indicates the determination was made, the basis for the determination, and any specific actions to be taken as a result of the review. The review should include consideration of the following:

- Sources of residual radioactive material
- Land use
- Results of monitoring
- Research and development activities and other relevant factors.

Maintenance of the CA will also provide resolution to several comments provided in the Final Report for the Hanford Site 200 Area Plateau CA and the Immobilized Low-Activity Tank Waste Performance Assessment. An annual determination will be performed in each of the fiscal years of this DWP, and a review memorandum will be provided to DOE-HQ in December following each fiscal year. A summary of review activities performed in FY00 will be provided to DOE-HQ in December 2000.

Model Maintenance

Routine Maintenance: Perform file structure and database maintenance and tape backups of computational workstations containing the site-wide groundwater model and associated databases. Maintain records format and reference library for the files of hydrogeologic interpretations and property values used in the associated modeling databases.

Currently, this task has the responsibility of maintaining not only the most current interpretation of the aquifer system, but also a set of alternative conceptual models that will be evaluated to assess system uncertainty. These conceptual and numerical model databases and files will be made available to site staff in conducting future revisions of the CA, SAC assessments, Immobilized Low-Activity Waste (ILAW) Disposal Facility, and other Hanford Site analyses. In FY01, this model maintenance and configuration control will be critical to use of the site-wide model in support to the SAC Rev. 0 analysis and the ILAW performance assessment that will be performed in FY01.

In FY01, inverse model calibration will be performed on two additional alternative conceptual models. A record system will be maintained so that each model calibration (input and output files) and documented in final reports are referenced to specific versions of the codes and model parameter databases used in the analysis for each conceptual model.

Site-Wide Model/Code Technical Support: Provide level-of-effort trouble shooting for users of the site-wide model and associated codes and databases. Provide technical assistance and support for the refinement and modification to the CFEST-96 flow and transport code and associated utility codes on an as-needed basis to ongoing model applications. Code support services will largely be provided by CFEST Co. located in Irvine, California.

Web Site Maintenance: Provide ongoing support to a web site to facilitate public access to the latest information on the HGWP Modeling Task including past and current technical reports, technical issues and concerns raised during the model consolidation process and their ultimate resolutions, meeting minutes for past meetings and a calendar for upcoming events, and descriptions of the most current conceptual models of the unconfined aquifer system and associated databases.

Model Development & Consolidation

Alternative Conceptual Models: Continue implementation of the site-wide groundwater model consolidation activities related to refinement and calibration of alternative conceptual models (ACMs) as suggested by external peer review. Document the results of these activities and their implications of site-wide groundwater model predictions of flow and contaminant transport and their uncertainty.

Uncertainty Analysis Framework: Implement and evaluate an analysis framework recommended in FY00 to assess uncertainty in results produced by the range of alternative site-wide groundwater conceptual and numerical models. The focus of this task will be to evaluate the combined effect of conceptual model uncertainty and model parameter uncertainty over the range of ACMs developed and calibrated. In FY01, the task will specifically focus on comparing the parameter distributions derived from the initial inverse calibrated model with those developed in the prior model. The evaluation will include initial estimates of first-order estimates of model parameter uncertainty from the newly calibrated models using UCODE with the transient inverse procedure. Conceptual model and initial model parameter uncertainty between the initial and the two additional calibrated ACMs will also be examined as they become available in latter half of the fiscal year.

External Peer Review: The current external peer review panel assembled to review the site-wide groundwater flow and transport will be retained for periodic review of the modeling task activities. Specifically, they will provide independent technical review of the ACMs selected for inverse calibration and the overall technical approach and strategy being used to address uncertainty in site-wide groundwater flow and transport results using the ACMs. This task includes the peer review panel's activities as well as PNNL interaction with the panel. Two informal site visits designed for informal consultations with the panel members are planned.

Subcontractor Support: Subcontractor support will be needed to assist project staff in the model parameterization of the alternative conceptual and numerical models and evaluation of model uncertainty. Key subcontractors will include the Technical University of Catalonia, Barcelona, Spain, and the University of Arizona.

TASKS TO BE PERFORMED IN FY 2002:

Site-Specific Applications – CA maintenance activities will continue as described in FY01.

Model Maintenance

Routine Maintenance: Perform file structure and database maintenance and tape backups of computational workstations containing the site-wide groundwater model and associated databases. Maintain records format and reference library for the files of hydrogeologic interpretations and property values used in the associated modeling databases.

Site-Wide Model/Code Technical Support: Continue to provide level-of-effort trouble shooting for users of the site-wide model and associated codes and databases. Provide technical assistance and support for the refinement and modification to the CFEST-96 flow and transport code and associated utility codes on an as-needed basis to ongoing model applications.

Web Site Maintenance: Continue to provide ongoing support to a web site to facilitate public access to the latest information on the HGWP Modeling Task.

Model Development & Consolidation: Work will be completed on the inverse calibration of two additional alternative site-wide conceptual and numerical models and continue implementation of the uncertainty analysis framework with these new models. The ultimate goal this fiscal year is to complete the inverse calibration phase of the site-wide model and to provide an initial operable site-wide groundwater flow and transport model for site applications in FY03. This work will continue to undergo ongoing review from the assigned external peer review group on an as-needed basis and receive feedback from involved technical representatives of the regulatory agencies, stakeholders, and Tribal Nations. Staff involved in this effort will continue to work closely with staff involved in the SAC under the GW/VZ Integration Project to ensure consistency.

TASKS TO BE PERFORMED IN FY 2003:

Site-Specific Applications – CA maintenance activities will continue as described in FY01.

Model Maintenance: Continue review and update of the alternative site-wide conceptual and numerical models as new data become available and perform configuration control as needed.

Model Development & Consolidation: Current plans would be to perform a thorough internal (site contractor and RL) and external review (peer review and regulator) of the capabilities developed during the calibration and uncertainty framework activities performed in FY00-FY02. If capabilities developed are found to be acceptable for site use in future analyses of the groundwater pathway and its uncertainty, this specific task would be transitioned to long-term maintenance of the site-wide groundwater modeling capability under the model maintenance task. The model maintenance will use new information to improve the understanding and estimates of conceptual model and model parameter uncertainty in model predictions.

MAJOR PRODUCTS AND DELIVERABLES (Including Readiness Assessment, AHA, Characterization, Demolition, DQO, Milestones – *Tri-Party Agreement* and others.)

Deliverables	Date
Site Specific Applications	
• FY00 annual determination on adequacy of Composite Analysis	12/31/01
• PNNL Report Addendum to Revision 0 of the Composite Analysis Report (DOE-HQ report)	09/30/01
• FY01 annual determination on adequacy of Composite Analysis	12/31/01
• FY02 annual determination on adequacy of Composite Analysis	12/31/01

PNNL - GROUNDWATER MODELING **P41205**
1.4.10.1.1.08.03.24.01.02.05

Deliverables	Date
Model Maintenance	
• User's manual for Modified Version of CFEST computer code	09/30/01
• User's manual for Modified Version of UCODE computer code	09/30/01
• Final PNNL report providing a summary of the Operable Groundwater Models for Use at Hanford	09/30/03
• Long-term Model Maintenance Plan	09/30/03
Model Development & Consolidation	
• Two PNNL reports documenting inverse model calibration of two additional alternative conceptual models in FY01	09/30/01
• PNNL report on testing and implementation of Uncertainty Analysis Framework with initial and two additional calibrated ACMs	09/30/01
• Two PNNL reports documenting Inverse model calibration of two additional alternative conceptual models in FY02	09/30/02
• PNNL report on testing and implementation of Uncertainty Analysis Framework with initial and two additional calibrated ACMs	09/30/02

BASIS/ASSUMPTIONS (Identify basis for estimate: i.e., MCASES, like facility, non-contaminated, etc. Also include key assumptions and constraints, including any spread of waste handling considerations.)

Site-Specific Applications

Composite Analysis: The work will use the same analysis capabilities developed in the initial CA. This analysis will leverage information developed in inventory-related activities currently planned within the SAC and Science and Technology (S&T) elements of the GW/VZ Integration Project in FY00. Results of the GW/VZ Integration Project inventories will significantly improve current estimates of total site inventories and its allocation to major waste facilities, thereby putting the CA in a credible position to address the impacts of the sources in question. The SAC and S&T efforts will result in end products available for use by the CA team in the first quarter of FY01.

CA Maintenance: This work will follow the CA Maintenance Plan developed in March 2000. Preparation of the annual summary for activities performed in FY00 will occur in the fall of calendar year 2000.

Annual determination activities in each fiscal year will consist of staff monitoring and periodic meetings with technical representatives of key programs to reevaluate key assumptions made in the initial CA and the CA addendum and identify new developments at the Hanford Site in the areas of inventories, source-term releases, end-states, vadose zone flow and transport, groundwater flow and transport, dose calculations, and receptor points. Key program activities that will be monitored during the year include the Hanford groundwater project, Solid Waste Burial ground programs, ILAW PA program, Tank Waste Retrieval programs, the GW/VZ Integration Project, including the S&T and the SAC elements, and key

remediation activities with the ERC program (remediation in the 100 and 600 Areas, ERDF, Canyon Disposition, 200 Area Characterization, etc.).

Model Maintenance

Routine Maintenance: Based on previous levels of effort, this task will encompass activities which ensure that codes and databases are properly controlled and the files on each workstation are properly backed up and, if necessary, archived.

Site-Wide Mode/Code Technical Support: Pre- and post-processing software and hardware will need to be upgraded as part on ongoing model maintenance and configuration control. Contractor support will be required to provide on going support to maintenance, upgrades, and required modification to the CFEST-96 codes and associated pre- and post-processing software. Development of user's manuals for the modified versions of the CFEST and UCODE computer codes will require subcontractor support from CFEST CO. of Irvine, California, and the Colorado School of Mines. The levels of effort from the CFEST CO. and the Colorado School of Mines to support preparation of the user's manuals is included.

Web Site Maintenance: Level of effort required for support the Modeling Task Web Site is included.

Model Development/Consolidation

Model Calibration: It is assumed that the next model calibration of the two models will implement the same calibration strategy implemented in FY00 (transient flow conditions from 1944 to present). This calibration phase will provide a set of calibrated base case and alternative conceptual models that can be used in uncertainty analysis of the groundwater pathway by the end of FY02. These products will provide the foundation of the groundwater module components that will be used in the performance assessment of the ILAW disposal facilities, in planned revisions of the SAC, and other applications requiring uncertainty analysis of the groundwater pathway. In FY01, the SAC Rev. 0 analysis and the ILAW performance assessment are expected to make use of the conceptual and numerical model calibrated in FY00. The effort for each calibration will require the following:

- Support for two scientists and general support staff for the model data input preparation, model design, and inverse modeling itself is included.

- Support for two scientists and report preparation staff to prepare the final report for each calibrated ACM is included.

- Additional work on ACM data gathering and preparation will be performed to develop necessary information for calibration of additional ACMs in FY02. The effort for data gathering and preparation will require the following:

  - This subtask will be supported with a subcontract to DB Stephens and Associates. This subtask will be leveraged and supported by a separate S&T joint project between PNNL and the Russian Academy of Science (RAS) to pursue the integration of geostatistics and inverse modeling for flow and transport modeling of the Hanford Site. The joint effort with RAS is being funded by DOE-HQ and has fairly high visibility. DOE-HQ has indicated that the project was included in the future in the S&T roadmap for the GW/VZ Integration Project.

  - Evaluation of time-dependent potential surfaces within the basalt uppermost-confined aquifer to facilitate simulation on long-term areal leakage from the basalts is included.

- Staff support to evaluate the mass balance between reported water pumped from river intakes and reported discharges to ground to assess the amount of uncertainty in estimates of artificial recharge in historical records is included.

- Staff support to evaluate the uncertainty in natural recharge estimates for the period of inverse calibration (1944 to present) is included.

- Staff support to evaluate and develop information related to existing plume (tritium, iodine-129, carbon tetrachloride, etc.) behavior and sources for a potential inverse model calibration using historical information on contaminant transport is included.

Uncertainty Analysis Framework: In FY01, PNNL staff will initiate implementation of the approach and strategy with the initial model calibrated in FY00. For planning purposes:

- Scientific staff support in the uncertainty analysis of the initial calibrated model is included.

- Support for the uncertainty analysis of the two newly calibrated models is included.

- Support of two scientists for report preparation staff will be required to prepare the final report of this uncertainty analysis.

- In implementation of this analysis strategy with the initial calibrated model, staff involved in this task will work very closely staff evaluating and implementing uncertainty analysis within the SAC being developed under the GW/VZ Integration Project.

External Technical Support: Subcontractor support from the Technical University of Catalonia, Barcelona, Spain, and the University of Arizona will be needed to assist project staff in the model parameterization of the alternative conceptual and numerical models and evaluation of model uncertainty.

External Peer Review: It is also assumed that the current external peer review team will be retained for periodic review of the modeling task activities. In FY01, it is assumed that the peer review panel will make two site visits to facilitate informal consultation with project staff on the range of alternative conceptual models and the model calibration efforts completed in FY00 and initiated in early 2001. Funding for the panel will require support for up to 40 hours of time for each of the three reviewers. This estimate includes 2 days of time per the site visit and associated travel and per diem costs. It is also assumed that support will be required for PNNL staff for meeting preparations and attendance at meetings during each site visit. PNNL staff will also be expected to provide additional data and information requested by the reviewers during and after the site visit. The level of effort is based on costs incurred in FY99.

SUBCONTRACT STRATEGY (i.e., office trailer setup, tp&l.) List major subcontracts and scope including fiscal year and type (FP or FUP).

Subcontract	FY	Type of Contract	Scope
PNNL	01	FP	Modeling
PNNL	02	FP	Modeling
PNNL	03	FP	Modeling

COST ACCOUNT PLAN

KEY PROJECT TEAM MEMBERS

Task Lead (CAM):	**J. S. Fruchter**
DOE-RL:	**M. J. Furman**
Project Engineer:	**N/A**
Field Support:	**N/A**
QS&H:	**N/A**
Project Controls:	**L. R. Burns**
PSS Rep:	**N/A**
Other:	**S. P. Luttrell**

WORK DESCRIPTION (Provide general work description of facility/building.)

General Description:

The work scope for this cost account consists of groundwater monitoring necessary to support long-term landlord responsibilities at the Hanford Site. Groundwater monitoring is performed to evaluate and report groundwater conditions to meet regulatory requirements, agreements, and DOE orders. It includes all work necessary to collect and analyze groundwater samples, interpret their significance, and report the results.

TASKS TO BE PERFORMED IN FY 2001:

Management: Provide coordination, integration, review, and guidance to project activities.

Monitoring Network Design: Provide monitoring and well installation plans and coordination for Hanford Site facilities/areas to develop and maintain a compliant and minimum-safe groundwater monitoring program. Revised groundwater monitoring plans will be written for K Basins, 100-N RCRA facilities, 300 Area Process Trenches, and S-10 Pond and Ditch; a phase 2 assessment plan will be written for SST U; and final status monitoring plans will be written for the 200 East Area Low-Level Burial Grounds and the 200 West Area Low-Level Burial Grounds.

Groundwater Sampling: Schedule and coordinate wells to be sampled and analyses to be performed at onsite and offsite laboratories. Conduct coordination and management of sample scheduling, collection, and troubleshooting. Sampling, provided by subcontractor, includes radiological monitoring, purgewater containment/disposal, documentation and chain-of-custody, delivery to laboratories, and reporting. Coordinate water level measurements; the subcontractor performs water level monitoring.

Analysis: Provide interface with analytical laboratories (technical SOW, audits, communications); conduct Quality Control program (field and lab QC); subcontractor provides analysis of samples as directed (includes shipping, storage, reporting results, and residual sample and waste disposal).

Data Processing: Provide management of groundwater data, including tracking status of sample analysis and related information, verifying/validating data loading analytical data into HEIS and project databases and maintaining records related to data management. Maintain project databases and data loading/reporting capabilities, and maintain such to be consistent with HEIS and the Sample Data Tracking (SDT) System.

Interpretation and Reporting: Provide technical oversight and coordination for RCRA, CERCLA (long-term monitoring), AEA, and WAC permitted facilities/areas. Provide bi-weekly reviews of groundwater chemistry data, and evaluate water quality and flow dynamics to determine facility impact to groundwater. Evaluate and report on impacts of CERCLA actions on groundwater. Conduct groundwater quality assessment activities to determine source/rate/extent of contamination. Report groundwater analysis and statistical evaluation results annually in a comprehensive report and quarterly to fulfill RCRA record-keeping and reporting requirements. Prepare informal monthly reports, letter reports, and formal reports as described in the specific subtask plans. Respond to required actions as defined by the regulations and/or DOE orders.

Strategic Monitoring Technology: Develop and apply innovative approaches to monitoring and evaluation of groundwater flow and hydrochemistry, including field analysis methods for technetium-99, review of complexation-enhanced mobility of contaminants, and application of alternate statistical methods to anomaly detection.

Hydrologic Assessment: Interpret regional water-level data, construct water-table map and hydrographs, and evaluate groundwater flow dynamics in support of groundwater monitoring and contaminant migration. Conduct colloidal borescope investigations to determine flow rate and direction in very low-gradient areas in 200 East Area. Conduct hydrologic tests (including tracer injection/dilution, tracer pump-back, constant-rate, recovery, and step-drawdown) in new wells, and analyze and report test data to determine hydrologic and transport properties in association with groundwater assessment activities. Perform this suite of tests as well as vertical flowmeter and vertical chemistry profiling in a well location to provide hydrologic and transport information to support model parameter estimation. Evaluate and remove external effects from water-level data for refinement of groundwater flow direction and hydraulic gradient conditions. Provide new data for addition to parameter database used in groundwater models.

TASKS TO BE PERFORMED IN FY 2002:

Same scope as FY01.

TASKS TO BE PERFORMED IN FY 2003:

Same as FY01.

MAJOR PRODUCTS AND DELIVERABLES (Including Readiness Assessment, AHA, Characterization, Demolition, DQO, Milestones – *Tri-Party Agreement* and others.)

Deliverables	Date
Monitoring Network Design	
• LLBG Final Status Monitoring Plans (West and East)	9/30/01
• SST U Assessment Plan	9/30/01
Data Processing	
• Purgewater implementation list	11/30/00; 05/31/01

PNNL - GROUNDWATER MONITORING

P41206
1.4.10.1.1.08.03.24.01.02.06

Deliverables	Date
Interpretation and Reporting	
• RCRA Quarterly Reports	10/00; 1/01; 4/01; 7/01
• Annual Groundwater Monitoring report for FY00	3/01/01
• Reports on annual Assessment Results: SSTs S-SX, T, and TX-TY	9/15/01
Strategic Monitoring Technology	
• Analytical procedure for field analysis of technetium-99	5/31/01
Hydrologic Assessment	
• March 2001 Hanford Site water-table map	7/31/01
• Final PNNL report on results of hydrologic tests conducted in wells installed in 2000	9/30/01

BASIS/ASSUMPTIONS (Identify basis for estimate: i.e., MCASES, like facility, non-contaminated, etc. Also include key assumptions and constraints, including any spread of waste handling considerations.)

- This cost account includes groundwater monitoring, evaluation, and reporting necessary to understand the impact on groundwater quality from 24 RCRA sites, six CERCLA groundwater operable units, regional-scale contaminant plumes, the Solid Waste Landfill, the K Basins, and the 400 Areas Process Ponds. Assume funding support for two of the State 216-permitted sites (TEDF and SALDS) will be provided by Fluor Hanford, Inc. Assume Low-Level Burial Grounds will be in the Hanford Site Permit in 2002. Assume SST U farm will require groundwater quality assessment. Assume no other major changes to monitoring status.

- Cost basis is historical information and trends for PNNL labor, and estimates from subcontract support.

- Sample schedules are based on groundwater monitoring plans, Tri-Party Agreement change forms, operations and maintenance plans, and sampling plans; assume 1,296 sampling trips will be conducted. Assume BHI will fund and oversee purgewater containment and disposal. Assume 1,504 water level measurements will be made. Assume current contracts will be in place to support all work.

- Assume 61 hexavalent analyses and 17 isotopic uranium analyses will be conducted in PNNL labs. Assume 100 total activity analyses conducted by WSCF.

- Assume 13,861 sample analyses will be conducted by current offsite analytical contractor, with 3% cost escalation, and a lab QC cost of 25%. Additional efforts will be necessary to maintain backup laboratory capability. Assume contracts will be in place to support all planned work. Assume two audits of analytical laboratories.

- Assume HEIS and SDT continue as an integrated system; assume current laboratories will continue to deliver results in the same format as current reports; assume Wells Information System (managed by ERC) will be able to retrieve and store hydraulic head and other water-level data by November 15, 2000.

- Evaluate and report on groundwater monitoring for all the facilities indicated above. Assume that regulatory required annual reports on groundwater quality assessments will be included in the annual groundwater monitoring report as a summary if not reported separately. Assumes that CERCLA source operable unit information (source removal, soil excavation, pump and treat, etc.) will be made available to the groundwater monitoring project in a timely manner. Assume that data from new wells drilled in CY00 will be available and included in the assessment reports for those sites where the wells are drilled.

- Colloidal borescope work will be performed in 30 existing wells by subcontract personnel, with support from PNNL staff. Slug test analyses will be performed for 15 tests, which will be conducted under the Well Installation cost account. Suite of hydrologic tests identified under work description will be conducted in seven wells constructed at single-shell tank farms in CY00. Detailed hydrologic characterization that includes vertical profiling will be conducted in one well.

SUBCONTRACT STRATEGY (i.e., office trailer setup, tp&l.) List major subcontracts and scope including fiscal year and type (FP or FUP).

Subcontract	FY	Type of Contract	Scope
PNNL	01	FP	Well installation
PNNL	02	FP	Well installation
PNNL	03	FP	Well installation

COST ACCOUNT PLAN

KEY PROJECT TEAM MEMBERS

Task Lead (CAM): **J. S. Fruchter**
DOE-RL: **M. J. Furman**
Project Engineer: **N/A**
Field Support: **N/A**
QS&H: **N/A**
Project Controls: **L. R. Burns**
PSS Rep: **N/A**
Other: **B. A. Williams**

WORK DESCRIPTION (Provide general work description of facility/building.)

General Description:

Well installation coordination, planning, and technical activities associated with identification, subsurface characterization, and installation of RCRA monitoring wells. This work scope provides administrative and technical task management for the selection and prioritization of new wells to be installed via the data quality objective (DQO) process. This scope also includes meetings and workshops intended to select new wells for installation and approval of the interim Tri-Party Agreement Milestone M-24-00, and the preparation of the description of work (DOW) to BHI for well drilling and construction. This scope also provides for borehole geophysical logging, geologic support, sediment and water sampling and analysis, interpretation, and data reporting. This task also has responsibility for the maintenance of the geologic sample library located in the 200 East Area. This work does not include actual drilling and well construction for the RCRA wells.

In addition, this task supports the maintenance of adequate long-term regional AEA groundwater contaminant monitoring for the site, using the DQO process to strategically locate and replace/enhance AEA monitoring wells at key groundwater/contaminant intercept points along known flow paths.

TASKS TO BE PERFORMED IN FY 2001:

This task provides the technical direction, coordination/oversight for RCRA and AEA well installations, including DQOs and well performance design requirements. Coordinate and document the DQO process to select, integrate, and prioritize well locations. Determine Tri-Party Agreement drilling milestones; support Tri-Party Agreement milestone negotiations and presentations (DOE and regulatory). Provide DOW to other contractors (e.g., BHI, WMTS), including number, location, and well design and subsurface characterization requirements. Provide field technical oversight/coordination during drilling and well construction. Provide oversight geologist and support hydrogeologic borehole characterization and slug testing. Provide for geophysical logging, data interpretation, sampling and analysis activities, and independent review and acceptance of completed well work. Support for installation of five RCRA wells will be provided in FY01.

Coordination/Management: This activity is responsible for tracking and reporting the "cost, scope, and schedule" for the Well Installation task. Deliverables are summarized below. Activity schedule is driven by the date of the drilling contract award and drilling schedules provided by others. The coordination and management activity includes well planning meetings and discussions with all site contractors, DOE, and the regulators in order to provide an efficient, integrated, and acceptable well installation list (DQO

process) that is ultimately approved under Tri-Party Agreement Milestone M-24-00. After the number of new wells is approved (via Tri-Party Agreement Milestone M-24-00) subcontractor contracts for services as defined in the planning documents. A DOW to BHI is prepared, specifying all pertinent technical design requirements, locations, characterization, etc.

The wells are tracked from initial drilling through completion to ensure that they meet the design requirements specified in the DOW. The point of contact is also the technical lead responsible for resolving all issues related to characterization and design. Drilling meetings are attended to address any issues/problems requiring well design changes. Finally, the wells are accepted as "sample ready" after a document review and final drilling contractor walk-through. Borehole data reports are reviewed and approved for publication/distribution.

This activity also provides support for operation of the geologic sample library.

Geophysical Logging: This activity is responsible for acquisition of contract services for the subsurface borehole geophysical logging activities defined in the DQO for new borehole drilling. Cost, scope, and schedule are negotiated, accepted, and then tracked to completion. Five boreholes will be logged. This activity provides the logging point of contact for technical issues, and provides some interpretation and characterization of results related to borehole geophysics. Deliverables include a hardcopy and electronic copy of geophysical data results and log plots.

Geologist Support/Technical: A qualified geologist provides technical oversight and support for detailed sampling and characterization in the field during drilling. Detailed sampling and characterization activities are defined in the DQO and in the DOW as specified in well data sheets and plans.

Sediment Sample Analysis: This task provides for sediment sample analysis. Subsurface soil sampling requirements are defined in the specific well data sheets, the DQO document, or planning documents.

Water Sample Collection and Analysis: This task provides for depth-specific water sample collection and subsequent analysis during borehole drilling. Requirements are defined in the DQO document, well data sheets, and planning documents.

Slug Testing: This activity provides slug testing of new boreholes after the construction of new wells. Five slug tests will be conducted. The results will be analyzed under the Groundwater Monitoring cost account.

Borehole Data Packages: This task will compile all new well construction, completion, sampling, and characterization data and results into a borehole data package. Deliverables include published data packages by facility.

Geologic Sample Library: This task provides for the maintenance of the geologic sample library. New samples are cataloged and filed, electronic databases are updated/maintained, and sample transfer/checkout and usage is monitored.

TASKS TO BE PERFORMED IN FY 2002:

Same as FY01; five wells tentatively identified for installation.

PNNL - GW WELL INSTALLATION **P41207**
1.4.10.1.1.08.03.24.01.02.07

TASKS TO BE PERFORMED IN FY 2003:

Same as FY02; five wells tentatively identified for installation.

MAJOR PRODUCTS AND DELIVERABLES (Including Readiness Assessment, AHA, Characterization, Demolition, DQO, Milestones – *Tri-Party Agreement* and others.)

Deliverables	Date
• CY01 DQO documenting well selection process and data requirements	12/15/00
• Tri-Party Agreement Milestone M-24-00M (CY01) interim change form submittal	03/05/01
• Description of Work to BHI for installation of CY01 RCRA and AEA wells	03/31/01
• Letter to BHI - Acceptance of completed wells for ten CY00	12/31/00
• Letter to DOE concurring well acceptance of ten CY00 wells	12/31/00
• Letter to DOE, Tri-Party Agreement office confirming completion of Milestone M-24-00L (CY00)	12/31/00
• Letter to BHI - Acceptance of completed wells for five CY01 wells	4/30/01
• Letter to DOE, Tri-Party Agreement office confirming completion of five M-24-00M wells (CY01)	4/30/01

BASIS/ASSUMPTIONS (Identify basis for estimate: i.e., MCASES, like facility, non-contaminated, etc. Also include key assumptions and constraints, including any spread of waste handling considerations.)

- Assume five (5) RCRA wells will be installed in CY01 in support of ER-08 needs based on funding levels. Well installation is necessary to maintain compliance with Federal and state regulations and to maintain Hanford Site minimum-safe responsibilities. Funding for additional RCRA wells will need to come from other sources (e.g., ORP). No funding is available for AEA wells (to replace dry wells and to support K Basins monitoring).

- Assume support for the rig standby/driller support for all soil and groundwater sample collection during RCRA borehole drilling will be from a different cost account. Five boreholes will be logged with geophysical spectral gamma and neutron-neutron tools. All five wells will be slug tested after the final well construction activities are completed.

  RCRA wells that are tentatively planned for CY01 include:

  – 3 wells at RCRA past-practice (interim status) TSDs – 2 assessment wells (one upgradient and one downgradient) at U-12 crib, and 1 detection well (upgradient) at S-10 Pond and Ditch.

  – 2 wells for Waste Management final status TSDs – 2 detection/replacement wells at LLBG.

  NOTE: Final well locations will be determined through a series of summer 2000 workshops with the regulators.

- Assume that expense/characterization support for the 5 wells is funded by this cost account. Assume that others will provide characterization and related expense costs for any additional wells that may be funded from other sources. Assume integration and coordination with the Science and Technology element of the Groundwater/Vadose Zone Integration Project to optimize use of resources.

- Work that will be planned for FY01 includes the acceptance of CY00 completed wells (M-24-00L), completion of CY01 new well DQO, preparation of Tri-Party Agreement Milestone M-24-00M (CY01), completion of CY01 DOW, and the drilling of M-24-00M (CY01) wells. Assumes PNNL will provide and manage subcontract services for geophysical logging, soil and water sampling and analysis, and aquifer testing support activities.

SUBCONTRACT STRATEGY (i.e., office trailer setup, tp&l.) List major subcontracts and scope including fiscal year and type (FP or FUP).

Subcontract	FY	Type of Contract	Scope
PNNL	01	FP	Well installation
PNNL	02	FP	Well installation
PNNL	03	FP	Well installation

COST ACCOUNT PLAN

KEY PROJECT TEAM MEMBERS

Task Lead (CAM): **J. S. Fruchter**
DOE-RL: **M. J. Furman**
Project Engineer: **N/A**
Field Support: **N/A**
QS&H: **N/A**
Project Controls: **L. R. Burns**
PSS Rep: **N/A**
Other: **N/A**

WORK DESCRIPTION (Provide general work description of facility/building.)

General Description:

Project support provides the management, general administrative, planning, and reporting support necessary to maintain a functioning project. Specific technical areas within the project that receive this support are groundwater monitoring, seismic monitoring, vadose zone monitoring, groundwater modeling, and new well installation. The six subtasks included in this task are Management Oversight, Administration, Procedures, Meetings and Information Requests (procedure development/maintenance, safety/staff meeting, and DOE Information Requests), Planning and Control Processes (cost controls, contract administration, DWP development, and project reporting), and DOE/Regulatory Interface Support (customer/regulator interface, internet development/maintenance tasks). This statement provides a summary for those six subtasks that are explained in more detail in their individual scope statements.

Management Oversight: Manage the general activities of project staff engaged in groundwater monitoring, seismic monitoring, vadose zone monitoring, groundwater modeling, and new well installation. This is a level-of-effort task.

Administration: This task includes general administrative, secretarial, and clerical support to provide office support services. This also includes maintenance of project records (RIDS). These activities are performed on a level-of-effort basis except for the annual transfer of project records to long-term storage.

Procedures, Meetings and Information Requests: Major subtasks within this task are:

- Development and revision of project procedures, QA plans, and health and safety plans.
- Preparation and conduct of safety/staff meetings.
- Response to DOE information requests.

Planning and Control Processes: This task is responsible for project scope, schedule, and budget planning, tracking, and reporting. The seven subtasks within this task provide all of the project financial accounting within the project.

DOE/Regulatory Interface Support: This is a level-of-effort task in support of DOE/regulatory interactions including preparation for and attendance at meetings with the customer and regulators; preparation of specific reports, presentation materials, and data packages; and other tasks to facilitate

regulatory negotiations not already part of defined task. Specific actions in this task are activated on DOE request and are performed following the delineation of the work in each request.

TASKS TO BE PERFORMED IN FY 2001:

Plan, organize, and provide top-level guidance and direction for overall project performance. Also provide project-level cost and schedule control, tracking, and reporting. Coordinate the Groundwater Monitoring Project work scope with DOE, Richland Operations, the GW/VZ Integration Project and the Office of River Protection, including participation in planning, peer reviews, and periodic project meetings.

Management Oversight: This task is responsible for project assignments; coordination of project tasks; prioritization of work activities and responsibilities; review and accounting of project activities; and communicating with project staff, PNNL line management, DOE, and other Hanford Site contractors. This task is responsible for reviewing project costs, scope, and schedules and implementing corrective measures as necessary.

Administration: The primary activities included in this task are typing, word processing, setting up meetings and appointments, maintaining project records, and providing general administrative assistance to individuals engaged in managerial and technical activities.

Procedures, Meetings and Information Requests: Procedures used in association with groundwater monitoring, including specific procedures in PNL-MA-597, will be prepared or revised to reflect changing operations and to include new tasks. Training to specific procedures will be performed in this task. This task also includes maintenance of a current file of subcontractor procedures.

Regularly scheduled bi-weekly meetings to plan, organize, and provide top-level guidance and direction for the overall project and specific monitoring, modeling, and well installation tasks. These meetings provide a technical forum to discuss problems and solutions common to all monitoring tasks as well as to give and receive managerial feedback on specific tasks.

DOE information requests are level-of-effort tasks and will be planned as they arise. These requests are for information, presentations, documentation, and other such items requested by the DOE manager or DOE technical representatives for the Groundwater Management Program. These tasks are additional tasks beyond the current work scope and consist of activities that would not normally be performed.

Planning and Control Processes:

- Baseline management and change control: Baseline change records are prepared and the project accounting is revised for FY02 and change records for specific baseline changes throughout FY01 will be prepared as agreed to by PNNL and DOE.

- Preparation of the detailed work plan for FY02-FY04: Develop the DWP for FY02 through FY04. This involves developing the work scope that will be performed, negotiating that scope with DOE, preparing a detailed budget proposal, negotiating of the budget with DOE, and submitting scope statement, schedule, and budget to BHI in Parade format for incorporation into the ER DWP.

- Planning, scheduling, and cost control: This subtask involves the daily, weekly, and monthly tracking and accounting for work scope performed, schedule status, and project budget spent. This is all done on an earned-value basis of status tracking, using the P-3 system. This includes both PNNL costs as well as subcontract costs.

- Staff reports, reviews, and presentations: Data from the cost control subtask are used to develop monthly status reports that are presented to DOE. These status reports reflect the work scope completed, schedule and cost status, problems, accomplishments, and labor tracking. These data are supplied to BHI on a monthly schedule for incorporation into the Groundwater/Vadose Zone Integration Project monthly report.

- Financial/technical audits: Audits, both financial and technical, occur infrequently. This task provides the labor to support DOE in such audits by the GAO, IG, or other auditing agencies. Past audits have include these agencies as well as by BHI requested by RL.

- Progress tracking system (PTS) input: Cost data from the PNNL financial system are provided to BHI for incorporation into a monthly cost report.

- Off-project budget requests: This tasks consists of support to RL in responding to DOE-HQ requests for funding and budget change information and requests from Hanford Site management. This includes unscheduled work requested by RL.

DOE/Regulatory Interface Support: Provide support to RL in communicating project findings to the regulators and public via briefings, press releases, press interviews, and press conferences; DOE directed presentations on various project tasks to the HAB, GAO, state agencies, RL and HQ staff, and other Hanford contractors; and development of general presentation materials, viewgraphs, slides, and posters for use by DOE and contractor personnel. The manager of the DOE groundwater management program or DOE technical representatives will activate this task on request to perform a specified work scope.

TASKS TO BE PERFORMED IN FY 2002:

Same as FY01.

TASKS TO BE PERFORMED IN FY 2003:

Same as FY01.

MAJOR PRODUCTS AND DELIVERABLES (Including Readiness Assessment, AHA, Characterization, Demolition, DQO, Milestones – *Tri-Party Agreement* and others.)

Deliverables	Date

BASIS/ASSUMPTIONS (Identify basis for estimate: i.e., MCASES, like facility, non-contaminated, etc. Also include key assumptions and constraints, including any spread of waste handling considerations.)

- Labor costs associated with the management of specific tasks associated with groundwater monitoring, modeling, seismic monitoring, vadose zone monitoring, and well drilling are included in those tasks.

- Labor rates are based on DOE/PNNL approved rates for FY01, FY02, and FY03.

PNNL - GROUNDWATER PROJECT SUPPORT

P4120P
1.4.10.1.1.08.03.24.01.02.0P

SUBCONTRACT STRATEGY (i.e., office trailer setup, tp&l.) List major subcontracts and scope including fiscal year and type (FP or FUP).

Subcontract	FY	Type of Contract	Scope
PNNL	01	FP	Project support
PNNL	02	FP	Project support
PNNL	03	FP	Project support

COST ACCOUNT PLAN

KEY PROJECT TEAM MEMBERS

Task Lead (CAM):	**J. A. Armatrout**
DOE-RL:	**M. Furman**
Project Engineer:	**J. D. Isaacs**
Field Support:	**R. J. Fabre**
QS&H:	**C. H. St. John**
Project Controls:	**W.A. Pelly**
PSS Rep:	**T. A. Lee**
Other (Subtask Lead):	**G. A. Day**

WORK DESCRIPTION (Provide general work description of facility/building.)

General Description:

Install 5 groundwater monitoring wells associated with RCRA monitoring activities. Work activities include project management, procurement of drilling services, drilling subcontract, field support during construction (e.g., STR, well site geologist), and project closeout.

TASKS TO BE PERFORMED IN FY 2001:

Same as general description.

TASKS TO BE PERFORMED IN FY 2002:

Same as general description.

TASKS TO BE PERFORMED IN FY 2003:

Same as general description.

MAJOR PRODUCTS AND DELIVERABLES (Including Readiness Assessment, AHA, Characterization, Demolition, DQO, Milestones – *Tri-Party Agreement* and others.)

Deliverables	Date
Complete 5 groundwater monitoring wells	09/04/01

BASIS/ASSUMPTIONS (Identify basis for estimate: i.e., MCASES, like facility, non-contaminated, etc. Also include key assumptions and constraints, including any spread of waste handling considerations.)

- Schedule and estimate pro-rated from on BCP 20-067 "Install 15 RCRA monitoring wells."
- Assume air rotary drilling.
- Drilling spoils to be handled as RCRA waste.
- Subcontractor to drill and transport purge water to ETF.
- Characterization sampling and testing funded by others.

- DQO preparation and obtaining regulatory agreement on well location by PNNL.
- Waste from well drilling activities for the M-24 wells will be handled as RCRA waste.

Predrilling Activities:

- Task plan preparation
- Ecological and cultural reviews
- Field walkdowns and stake well locations
- Field planning and work package preparation
- Waste control/SWMII preparation
- Excavation permit
- PFWR
- Bid/evaluate/award
- Site preparation of roads to all wells.

Drilling:

- Approximately 300 ft/well.

SUBCONTRACT STRATEGY (i.e., office trailer setup, tp&l.) List major subcontracts and scope including fiscal year and type (FP or FUP).

Subcontract	FY	Type of Contract	Scope
Well drilling	01	FP	Construct wells
Well drilling	02	FP	Construct wells
Well drilling	03	FP	Construct wells

WORK ORDERS (i.e., work to be performed by FDH or Hanford Utilities Group.) List major work orders including fiscal year.

Company	FY	Scope
Fluor Hanford	01	Well drilling support
Fluor Hanford	02	Well drilling support
Fluor Hanford	03	Well drilling support

MATERIAL/EQUIPMENT/OTHER DIRECT COST REQUIREMENTS (Identify purchase items or other direct costs and assumptions.)

Description	FY	Scope
Miscellaneous equipment and material	01	Well drilling support
Miscellaneous equipment and material	02	Well drilling support
Miscellaneous equipment and material	03	Well drilling support

COST ACCOUNT PLAN

KEY PROJECT TEAM MEMBERS

Task Lead (CAM): **J. A. Armatrout**
DOE-RL PM: **M. J. Furman**
Project Engineer: **G. B. Mitchem**
Field Support: **R. J. Fabre**
QS & H: **C. H. St. John**
Project Controls: **W. A. Pelly**
PSS Rep: **T. A. Lee**
Other (Subtask Lead): **G. A. Day**

WORK DESCRIPTION (Provide general work description of facility/building.)

General Description:

Perform the management, planning, coordination, and implementation of routine (cyclical) and non-routine maintenance for Hanford Site groundwater monitoring wells. Provide for the management, planning, coordination, and implementation of well decommissioning for the Hanford Site. Provide for the operation and maintenance of a well database for all Hanford Site wells that can be accessed for information on well maintenance and decommissioning.

TASKS TO BE PERFORMED IN FY 2001:

Maintenance: Perform wellhead repair; removal, inspection, repair/replacement, and reinstallation of sampling equipment; camera surveys; well cleaning; well development; and equipment retrieval/removal, for wells that are sampled for long-term monitoring.

Database: Perform maintenance/operation and updating of the electronic database containing well construction information, and maintenance of electronic well document files. In addition, intranet access to well information will be maintained and updated as necessary.

Decommissioning/Abandonment of Wells: None.

TASKS TO BE PERFORMED IN FY 2002:

Same as FY01.

TASKS TO BE PERFORMED IN FY 2003:

Same as FY01.

MAJOR PRODUCTS AND DELIVERABLES (Including Readiness Assessment, AHA, Characterization, Demolition, DQO, Milestones – *Tri-Party Agreement* and others.)

Deliverables	Date
Summary of decommissioning activities	Annually

BASIS/ASSUMPTIONS (Identify basis for estimate: i.e., MCASES, like facility, non-contaminated, etc. Also include key assumptions and constraints, including any spread of waste handling considerations.)

Maintenance

- Routine maintenance scheduling is based on priorities established in the Hanford Site RCRA Permit and the dynamic well sampling database.
- Estimates are based on FY00 EACs, and best work practices. Maintenance services will be subcontracted.

Waste Management

- Disposal per site-specific waste management instruction.
- No waste from wells inside tank farm facilities.
- Well services waste from wells, aquifer tubes, or seeps, whose only purpose is monitoring for RCRA TSD's (outside of tank farm fence) or Atomic Energy Act, will be handled as RCRA waste at the 100-N 90-day pad.
- Well services waste from wells, aquifer tubes, or seeps that are used for CERCLA monitoring will be handled according to a regulator-approved document such as a waste management plan or waste control plan and stored at the appropriate OU-specific waste site.
- The multi-media investigation will have no impact on waste handling during FY01-FY03.

Decommissioning

- Decommissioning activities will occur in wells selected from the well decommissioning database.

Database

- Database will be maintained, updated, and revised as needed.

Remediation

- No funding for well remediation has been identified for FY01 through FY03.

SUBCONTRACT STRATEGY (i.e., office trailer setup, tp&l.) List major subcontracts and scope including fiscal year and type (FP or FUP).

Subcontract	FY	Type of Contract	Scope
WMNW	01	FUP	Well maintenance
WMNW	02	FUP	Well maintenance
WMNW	03	FUP	Well maintenance

MATERIAL/EQUIPMENT/OTHER DIRECT COST REQUIREMENTS (Identify purchase items or other direct costs and assumptions.)

Description	FY	Scope
Equipment	01	Well maintenance
Equipment	02	Well maintenance
Equipment	03	Well maintenance
Miscellaneous material	01	Well maintenance
Miscellaneous material	02	Well maintenance
Miscellaneous material	03	Well maintenance

WASTE DISPOSAL (ERDF) QUANTITIES (Provide quantities in metrics.)

Type of Material	FY 2001	FY 2002	FY 2003
Purgewater (L)			
ERDF - Bulk Waste			
Soils (metric tons)			
Rubble and concrete under 0.6 m (metric tons)			
ERDF - Special Handling			
Concrete/asphalt (metric tons)			
Steel plate (metric tons)			
Piping/tube steel (metric tons)			
Regulated asbestos-containing materials (m^3)			
Misc. metal/building debris/structural steel/conduit (metric tons)			
Equipment (pumps, clarifiers, spiders, etc.) (metric tons)			
Other (metric tons)			
FH Waste Disposal			
Mixed waste (TRU) (m^3)			
PCBs (container)			
RCRA waste (container)	50 drums	50 drums	50 drums
Nonregulated waste (metric tons)			
200 Effluent Treatment Facility			
ERDF leachate (L)			
Other (L)			
Inert Demolition Landfills			
Offsite			
Nonradioactive hazardous (container)			
Recyclable (container)			
Other (container)			
Excess chemicals			

COST ACCOUNT PLAN

KEY PROJECT TEAM MEMBERS

Task Lead (CAM):	**J. A. Armatrout**
DOE-RL PM:	**M. J. Furman**
DOE-RL PM:	**A.C. Tortoso**
Project Engineer:	**G. B. Mitchem**
Field Support:	**R. J. Fabre**
Project Controls:	**W. A. Pelly**
PSS Rep.:	**T. A. Lee**
Other (Subtask Lead):	**G. A. Day**

WORK DESCRIPTION (Provide general work description of facility/building.)

General Description:

Provide for the planning, scheduling, collection, analysis, data management, and evaluation of routine groundwater samples and aquifer sampling tubes for the 100-HR-3, 100-KR-4, 100-NR-2, 200-UP-1, and 200-ZP-1 operable units. Aquifer sampling tubes for the 100 common area and characterization activities are also included in this cost account. Monitoring planning is to be based on approved sampling plans(s) or regulatory agreements. Perform the management, planning, coordination, and maintenance on groundwater monitoring wells used for groundwater monitoring in the operable unit.

TASKS TO BE PERFORMED IN FY 2001:

- Review DQOs; prepare/revise sampling plans; transmit sampling requirements.
- Coordinate sampling schedules with other Hanford Site projects; and coordinate laboratory resources (on- and offsite), field sample collection, storage/transport/delivery of samples, and transmittal of records to requesting organization.
- Receive and verify data; update databases as required.
- Perform wellhead repair; removal, inspection, repair/replacement, and reinstallation of sampling equipment retrieval/removal.
- Complete Phase II - A tritium investigation report and DQO/SAP at the 618-11 Burial Ground.

TASKS TO BE PERFORMED IN FY 2002:

Same as FY01, except the Tritium Investigation is assumed complete in FY01.

TASKS TO BE PERFORMED IN FY 2003:

Same as FY02.

GW INTERIM ACTION MONITORING

P61202
1.4.10.1.1.08.03.26.01.02.02

MAJOR PRODUCTS AND DELIVERABLES (Including Readiness Assessment, AHA, Characterization, Demolition, DQO, Milestones – *Tri-Party Agreement* and others.)

Deliverables	Date
• Technical Memoranda	Quarterly
• Annual Summary Report Decisional Draft for 100-HR-3 and 100-KR-4	Annually
• Annual Summary Report Decisional Draft for 100-NR-2, 200-UP-1, and 200-ZP-1	Annually
• Tritium Investigation Report	See Schedule

BASIS/ASSUMPTIONS (Identify basis for estimate: i.e., MCASES, like facility, non-contaminated, etc. Also include key assumptions and constraints, including any spread of waste handling considerations.)

- Estimates are based on FY00 actuals (where applicable), and best work practices.
- Sample collection will be managed by a BHI subcontractor.
- Well maintenance is based on cost data from FY00.
- Tritium costs based on 618-11 Site Characterization Plan.

SUBCONTRACT STRATEGY (i.e., office trailer setup, tp&l.) List major subcontracts and scope including fiscal year and type (FP or FUP).

Subcontract	FY	Type of Contract	Scope
WM	01	FUP	Sampling and well maintenance
WM	02	FUP	Sampling and well maintenance
WM	03	FUP	Sampling and well maintenance
Thermo Retec Severn Trent	01	FUP	Offsite lab analysis
Thermo Retec Severn Trent	02	FUP	Offsite lab analysis
Thermo Retec Severn Trent	03	FUP	Offsite lab analysis
PNNL	01	FUP	Sampling coordination
PNNL	02	FUP	Sampling coordination
PNNL	03	FUP	Sampling coordination

WORK ORDERS (i.e., work to be performed by FDH or Hanford Utilities Group.) List major work orders including fiscal year.

Company	FY	Scope
Fluor Hanford, WMNW	01	Sample collection
Fluor Hanford, WMNW	02	Sample collection
Fluor Hanford, WMNW	03	Sample collection

MATERIAL/EQUIPMENT/OTHER DIRECT COST REQUIREMENTS (Identify purchase items or other direct costs and assumptions.)

Description	FY	Scope
Miscellaneous material	01	Well maintenance and sampling
Miscellaneous material	02	Well maintenance and sampling
Miscellaneous material	03	Well maintenance and sampling
Miscellaneous equipment	01	Well maintenance and sampling
Miscellaneous equipment	02	Well maintenance and sampling
Miscellaneous equipment	03	Well maintenance and sampling

WASTE DISPOSAL (ERDF) QUANTITIES (Provide quantities in metrics.)

Type of Material	FY 2001	FY 2002	FY 2003
Purgewater (L)			
ERDF - Bulk Waste			
Soils (metric tons)			
Rubble and concrete under 0.6 m (metric tons)			
ERDF - Special Handling			
Concrete/asphalt (metric tons)			
Steel plate (metric tons)			
Piping/tube steel (metric tons)			
Regulated asbestos-containing materials (m^3)			
Misc. metal/building debris/structural steel/conduit (metric tons)			
Equipment (pumps, clarifiers, spiders, etc.) (metric tons)	0.2	0.2	0.2
Other (metric tons)			
FH Waste Disposal			
Mixed waste (TRU) (m^3)			
PCBs (container)			
RCRA waste (container)			
Nonregulated waste (metric tons)			
200 Effluent Treatment Facility			
ERDF leachate (L)			
Other (L)			
Inert Demolition Landfills			

Type of Material	FY 2001	FY 2002	FY 2003
Offsite			
Nonradioactive hazardous (container)			
Recyclable (container)			
Other (container)			
Excess chemicals			

COST ACCOUNT PLAN

KEY PROJECT TEAM MEMBERS

Task Lead (CAM):	**J. A. Armatrout**
DOE-RL:	**A. C. Tortoso**
Project Engineer:	**G. B. Mitchem**
Field Support:	**R. J. Fabre**
QS&H:	**C. H. St. John**
Project Controls:	**B. M. Wallace**
PSS Rep:	**T. A. Lee**
Other (Subtask Lead):	**G. A. Day**

WORK DESCRIPTION (Provide general work description of facility/building.)

General Description:

This cost account package includes all activities and costs associated with procurement, construction, operation, maintenance, performance monitoring, and waste management of an ion-exchange pump-and-treat system for the 100-KR-4 OU. Groundwater monitoring and analysis will be completed in Interim Action Monitoring.

TASKS TO BE PERFORMED IN FY 2001:

- This task includes all those activities normally associated with the typical operation of an industrial wastewater treatment process, including project management and manual/non-manual support. Trained personnel and specific procedures will be provided to operate the 100-KR-4 pump-and-treat system in a manner that conforms with the guidelines related to the operation of facilities at DOE sites.

- Tasks include provision of all labor and project management (manual/non-manual) for all those activities normally associated with the standard maintenance of an industrial wastewater treatment process.

- Performance sampling will be conducted in accordance with approved plans/documents for the extraction and injection wells and the treatment system sample points. Sampling includes chemical and water table measurements (as necessary) for all wells. Performance monitoring includes sample preparation, sample analysis, sample management, data validation, data review, field data, and management.

- Management will be provided for waste associated with the operation of the ion-exchange system for the 100-KR-4 pump and treat. Waste management support for spent resin and miscellaneous equipment shall include waste labeling, routine surveillance, waste designation, coordination of waste shipments for regeneration/disposal, regeneration costs, disposal costs, disposal of process samples, waste profiling, and waste packaging/loading.

100-KR-4 GW CHEMICAL TREATMENT PROCESS **PC4212**

1.4.10.1.1.08.02.06.04.32.12

TASKS TO BE PERFORMED IN FY 2002:

Same as FY01.

TASKS TO BE PERFORMED IN FY 2003:

Same as FY01.

MAJOR PRODUCTS AND DELIVERABLES (Including Readiness Assessment, AHA, Characterization, Demolition, DQO, Milestones – *Tri-Party Agreement* and others.)

Deliverables	Date
Performance Evaluation Report	

BASIS/ASSUMPTIONS (Identify basis for estimate: i.e., MCASES, like facility, non-contaminated, etc. Also include key assumptions and constraints, including any spread of waste handling considerations.)

- Assumes 5-year review requires continued operations of pump-and-treat system until final remedy can be implemented.
- The pump and treat system will be operated on a 24-hour basis. A portion of the system will be taken offline for scheduled resin changeouts and for environmental conditions that fall outside the operational limits of the system (e.g., unseasonal weather conditions scheduled/unscheduled power interruptions).
- Estimates are based on 100-KR-4 FY00 actual costs.
- Minor upgrades are assumed to be part of maintenance.
- Resin changeout will occur nominally every 30 days. Two days are required for each changeout.
- The scope of sampling is defined in the 100-HR-3/KR-4 RD/RA plan and Tri-Party Agreement agreements.
- Cultural Resources evaluation will occur monthly.
- Non-radioactive resins will be regenerated by off-site vendor (CERCLA authorized vendor).
- System will operate at 90% availability. In estimating availability, the following assumptions were used: existing wells supply sufficient water; and radiological conditions do not cause substantive change to operations. Total available hours will not include time required for resin changeouts and conditions outside of operating limits.
- Waste will be disposed of at ERDF.
- No new wells are planned in FY01.
- No major upgrades are required.

- Results of ongoing U.S. Fish and Wildlife studies on the effects of chromium on salmon do not change operating parameters.
- System operates to 11 ppb/cr value stated in ROD.
- Sample labor hours/well will remain at the FY00 level.
- Work force stability requires training one new operator per year.
- 50% of the resins at 100-KR-4 are not radioactive, but cannot be released for regeneration by the offsite vendor.
- Current resin inventory and regeneration provides adequate amounts for FY01. Resin will be purchased in FY02 and FY03.

REMEDIATION QUANTITIES (Provide quantities in metrics.)

Type of Remediation	FY 2001	FY 2002	FY 2003
Excavation (metric tons)			
Building area (m^2)			
Concrete (m^3)			
Asbestos (m^3)			
Transite (m^2)			
Structural steel (metric tons)			
Samples (each)			
Water treated (L)	223,223	223,223	223,223
Other			

SUBCONTRACT STRATEGY (i.e., office trailer setup, tp&l.) List major subcontracts and scope including fiscal year and type (FP or FUP).

Subcontract	FY	Type of Contract	Scope
BHI	01	FP	Resin regen, resin & sample analysis, AFDS, weed control, well maint.
BHI	02	FP	Resin regen, resin & sample analysis, AFDS, weed control, well maint.
BHI	03	FP	Resin regen, resin & sample analysis, AFDS, weed control, well maint.

MATERIAL/EQUIPMENT/OTHER DIRECT COST REQUIREMENTS (Identify purchase items or other direct costs and assumptions.)

Description	FY	Scope
2 AFDS, bottles, software, motors	01	Pumps, misc.
Purchase resin, bottles, software, motors	02	Purchase 12 months of resin, pumps, and misc.
Purchase resin, bottles, software, motors	03	Purchase 12 months of resin, pumps, and misc.

CONSTRUCTION EQUIPMENT REQUIREMENTS & ASSUMPTIONS

Description	Usage Date		Comments/Assumptions
	FY Start	FY Finish	
Crane, forklift, flatbed truck	01	03	Resin loading, general operations

WASTE DISPOSAL (ERDF) QUANTITIES (Provide quantities in metrics.)

Type of Material	FY 2001	FY 2002	FY 2003
Purgewater (L)			
ERDF - Bulk Waste			
Soils (metric tons)			
Rubble and concrete under 0.6 m (metric tons)			
ERDF - Special Handling			
Concrete/asphalt (metric tons)			
Steel plate (metric tons)			
Piping/tube steel (metric tons)			
Regulated asbestos-containing materials (m^3)			
Misc. metal/building debris/structural steel/conduit (metric tons)			
Equipment (pumps, clarifiers, spiders, etc.) (metric tons)			
Other (metric tons) Resins 1000^{ft3} @ $50\#^{ft3}$	11	11	11
FH Waste Disposal			
Mixed waste (TRU) (m^3)			
PCBs (container)			
RCRA waste (container)			
Nonregulated waste (metric tons)			
200 Effluent Treatment Facility			
ERDF leachate (L)			
Other (L)			

100-KR-4 GW CHEMICAL TREATMENT PROCESS

PC4212
1.4.10.1.1.08.02.06.04.32.12

Type of Material	FY 2001	FY 2002	FY 2003
Inert Demolition Landfills			
Offsite			
Nonradioactive hazardous (container)			
Recyclable (container)			
Other (container)	1	1	1
Excess chemicals			

COST ACCOUNT PLAN

KEY PROJECT TEAM MEMBERS

Task Lead (CAM):	**J. A. Armatrout**
DOE-RL:	**A. C. Tortoso**
Project Engineer:	**G. B. Mitchem**
Field Support:	**R. J. Fabre**
QS&H:	**C. H. St. John**
Project Controls:	**B. M. Wallace**
PSS Rep:	**T. A. Lee**
Other (Subtask Lead):	**G. A. Day**

WORK DESCRIPTION (Provide general work description of facility/building.)

General Description:

This cost account includes all activities and costs associated with procurement, construction, operation, maintenance, performance monitoring, and waste management of an ion-exchange pump-and-treat system for the 100-HR-3 Operable Unit (OU). Groundwater monitoring collection and analysis will be completed in interim action.

TASKS TO BE PERFORMED IN FY 2001:

- This task includes those activities normally associated with the typical operation of an industrial wastewater treatment process, including project management and manual/non-manual support. Trained personnel and specific procedures are provided to operate the 100-HR-3 pump-and-treat system in a manner that conforms with the guidelines related to the operation of the facilities at DOE sites.

- Tasks include provision of all labor and manual/non-manual supervision for those activities normally associated with the standard maintenance of an industrial wastewater treatment process.

- Performance sampling will be conducted in accordance with approved plans/documents for the extraction and injection wells and the treatment system sample points. Sampling includes chemical and water table measurements (as necessary) for all wells. Performance monitoring includes sample preparation, sample analysis, sample management, data validation, data review, field data, and management.

- Management will be provided for waste associated with the operation and maintenance of the ion-exchange system for the 100-HR-3 pump and treat, including sampling analyses. Waste management support for spent resin and miscellaneous equipment shall include waste labeling, routine surveillance, waste designation, coordination of waste shipments for regeneration/disposal, regeneration costs, disposal costs, disposal of process samples, waste profiling, and waste packaging/loading.

100-HR-3 GW CHEMICAL TREATMENT PROCESS **PE3212**

1.4.10.1.1.08.02.08.03.32.12

TASKS TO BE PERFORMED IN FY 2002:

Same as FY01.

TASKS TO BE PERFORMED IN FY 2003:

Same as FY01.

MAJOR PRODUCTS AND DELIVERABLES (Including Readiness Assessment, AHA, Characterization, Demolition, DQO, Milestones – *Tri-Party Agreement* and others.)

Deliverables	Date

BASIS/ASSUMPTIONS (Identify basis for estimate: i.e., MCASES, like facility, non-contaminated, etc. Also include key assumptions and constraints, including any spread of waste handling considerations.)

- Assumes 5-year review requires continued operations of pump-and-treat system until a final remedy can be implemented.
- The pump-and-treat system will be operated on a 24-hour basis except for environmental conditions that fall outside the operational limits of the system (e.g., unseasonal weather conditions scheduled/unscheduled power interruptions).
- Waste will be disposed of at ERDF.
- Spent resin from the D HR-3 Area will be shipped offsite for regeneration.
- Spent resin from the H HR-3 Area will be disposed of at ERDF (50%).
- Radioactive resin will be treated and disposed of at ERDF.
- Non-radioactive resins will be regenerated by offsite vendor (CERCLA authorization maintained).
- Estimates are based on 100-HR-3 FY99/00 actual costs.
- The scope of sampling is defined in the 100-HR-3/KR-4 RD/RA plan and Tri-Party Agreement agreements.
- Resin changeout will occur nominally every 30 days. Two days will be required to complete each changeout.
- The system operates per the ROD.
- No new production or monitoring wells will be required for FY00.
- The system will operate at 90% availability. In estimating availability, the following assumptions were used: existing wells supply sufficient water, and radiological conditions do not cause substantive

change to operations. Total available hours will not include time required for conditions outside of operating limits.

- Results of ongoing U.S. Fish and Wildlife studies on the effects of chromium on salmon do not change operating parameters.
- Workforce stability requires training one new operator per year.
- Resin inventory is adequate for operations.
- Current resin inventory and regeneration provides adequate amounts for FY01. Resin will be purchased in FY02 and FY03.
- Totes on hand as of 9/30/00 are adequate to support regeneration activity.

REMEDIATION QUANTITIES (Provide quantities in metrics.)

Type of Remediation	FY 2001	FY 2002	FY 2003
Excavation (metric tons)			
Building area (m^2)			
Concrete (m^3)			
Asbestos (m^3)			
Transite (m^2)			
Structural steel (metric tons)			
Samples (each)			
Water treated (L)	309,079,000	309,079,000	309,079,000
Other			

SUBCONTRACT STRATEGY (i.e., office trailer setup, tp&l.) List major subcontracts and scope including fiscal year and type (FP or FUP).

Subcontract	FY	Type of Contract	Scope
BHI	01	FP	Resin regen/resin analysis/Well maint/weed control
BHI	02	FP	Resin regen/resin analysis/Well maint/weed control
BHI	03	FP	Resin regen/resin analysis/Well maint/week control

MATERIAL/EQUIPMENT/OTHER DIRECT COST REQUIREMENTS (Identify purchase items or other direct costs and assumptions.)

Description	FY	Scope
Software	01	Remote Monitoring Implementation testing
Misc materials/drums/pumps/motors	01	Resin loading/general operations, defective replacement

CONSTRUCTION EQUIPMENT REQUIREMENTS & ASSUMPTIONS

Description	Usage Date		Comments/Assumptions
	FY Start	FY Finish	
Forklift, flat bed truck, purgewater truck	01	03	Operations and maintenance

WASTE DISPOSAL (ERDF) QUANTITIES (Provide quantities in metrics.)

Type of Material	FY 2001	FY 2002	FY 2003
Purgewater (L)			
ERDF - Bulk Waste			
Soils (metric tons)			
Rubble and concrete under 0.6 m (metric tons)			
ERDF - Special Handling			
Concrete/asphalt (metric tons)			
Steel plate (metric tons)			
Piping/tube steel (metric tons)			
Regulated asbestos-containing materials (m^3)			
Misc. metal/building debris/structural steel/conduit (metric tons)			
Equipment (pumps, clarifiers, spiders, etc.) (metric tons)			
Other (metric tons)	22	22	22
FH Waste Disposal			
Mixed waste (TRU) (m^3)			
PCBs (container)			
RCRA waste (container)			
Nonregulated waste (metric tons)			
200 Effluent Treatment Facility			
ERDF leachate (L)			
Other (L)			
Inert Demolition Landfills			
Offsite			
Nonradioactive hazardous (container)			
Recyclable (container)			
Other (container)	1	1	1
Excess chemicals			

COST ACCOUNT PLAN

KEY PROJECT TEAM MEMBERS

Task Lead (CAM):	**J. A. Armatrout**
DOE-RL:	**A. C. Tortoso**
Project Engineer:	**G. B. Mitchem**
Field Support:	**R. J. Fabre**
QS&H:	**C. H. St. John**
Project Controls:	**B. M. Wallace**
PSS Rep:	**T. A. Lee**
Other (Subtask Lead):	**D. F. OBenauer**

WORK DESCRIPTION (Provide general work description of facility/building.)

General Description:

The cost account includes all activities and cost associated with procurement, construction, operations, maintenance, performance monitoring, and waste management of the In Situ Redox Manipulation (ISRM) permeable treatment zone in the 100-D/DR Area, 100-HR-3 Operable Unit.

Compliance monitoring collection, analysis, and reporting is included until complete.

Project support (management, project controls, engineering, DOE/regulator information requests, etc.) is included in the Groundwater River Corridor Common-Project Support, Cost Account Plan PH1201.

TASKS TO BE PERFORMED IN FY 2001:

- Tasks include those activities associated with the construction of 24 injection/withdrawal wells and 4 groundwater compliance monitoring wells. Includes project management, manual/non-manual labor support, subcontracts, and subcontract management.

- Tasks include those activities associated with the implementation of the ISRM. Includes project management, manual/non-manual labor, and subcontract support. Trained personnel and specific procedures are provided during ISRM operations implementation. Processes include injection, reaction, and withdrawal of chemicals and waste byproducts used to complete ISRM barrier installations.

- Tasks include those activities associated with the maintenance of the ISRM barrier, including compliance wells. Includes all internal equipment, manual/non-manual labor, subcontracts, and project management for those activities.

- Management will be provided for waste associated with the operation of the ISRM. Waste management includes the disposal of soil and groundwater, as needed during well installations, chemical injection/withdrawal ISRM well operations, and miscellaneous waste disposal. Waste management support includes waste sampling and evaluations, profiling, labeling, disposal costs, and management.

- Tasks include those activities associated with the use and maintenance of the site-specific ISRM evaporation pond to contain and evaporate well extraction water from ISRM emplacement activities. Includes all manual/non-manual labor, subcontracts, and project management for those activities.

- Dates identified in the ROD will be met.

- Performance and compliance sampling and monitoring will be conducted in accordance with approved plans and documents. Sampling includes chemical and water table measurements for well installations, injection/withdrawal activities, waste management selection, and performance compliance objects. Performance and compliance monitoring includes sample preparation, sample analysis, sample management, data validation, data evaluation, field screening, and management. Includes manual/non-manual labor, subcontracts, and project management for those activities.

- Development and distribution of ISRM reports. Reports shall include data quarterly monitoring summaries, annual ISRM monitoring evaluations, annual installation summaries, and client and regulatory information requests, including off-project reviews. Includes manual/non-manual labor, subcontracts, and project management for those activities.

TASKS TO BE PERFORMED IN FY 2002:

Same as FY01.

TASKS TO BE PERFORMED IN FY 2003:

- Tasks include those activities associated with the maintenance of the ISRM barrier and compliance wells. Includes manual/non-manual labor, subcontracts, and project management for those activities.

- Tasks include those activities associated with the maintenance and closure of the site-specific ISRM evaporation pond used to contain and evaporate well extraction water from ISRM emplacement activities. Includes manual/non-manual labor, subcontracts, waste sampling and disposal, and project management for those activities.

- Performance and compliance sampling and monitoring will be conducted in accordance with approved plans and documents. Sampling includes chemical and water table measurements for well installations, injection/withdrawal activities, waste management selection, and performance compliance objects. Performance and compliance monitoring includes sample preparation, sample analysis, sample management, data validation, data evaluation, field screening, and management. Includes manual/non-manual labor, subcontracts, and project management for those activities.

- Development and distribution of ISRM reports. Reports shall include quarterly data monitoring summaries, annual ISRM monitoring evaluations, annual installation summaries, and client and regulatory information requests, including off-project reviews. Includes manual/non-manual labor, subcontracts, and project management for those activities.

MAJOR PRODUCTS AND DELIVERABLES (Including Readiness Assessment, AHA, Characterization, Demolition, DQO, Milestones – *Tri-Party Agreement* and others.)

Deliverables	Date
FY01 Deliverable	
• Install 24 ISRM barrier wells, including injections/withdrawal of chemicals to create aquifer remediation reduction zone	9/28/01
• Complete barrier well installations	6/30/01
• Initiate injections	4/02/01
• Complete injections	9/28/01
• Annual Performance Evaluation Report (Decisional)	4/02/01
• Quarterly Data Reports	4 reports per year
• M-16-27A complete 100-HR-3 Phase I	12/31/00
• M-16-27B complete 100-HR-3 Phase II	12/31/01
• M-16-27C complete 100-HR-3 Phase III	9/30/02

BASIS/ASSUMPTIONS (Identify basis for estimate: i.e., MCASES, like facility, non-contaminated, etc. Also include key assumptions and constraints, including any spread of waste handling considerations.)

FY01 Basis/Assumptions

- Barrier orientation is assumed to be parallel to the Columbia River and installed under the guidance of the RDR/RAWP as issued in FY00.
- Assume air-rotary well drilling methods at distances greater than approximately 45 m (150 ft) from the existing ISRM barrier. Non-air-intrusive well drilling methods at distances up to approximately 45 m (150 ft) from the existing ISRM barrier.
- The majority of the injection/withdrawal groundwater removed during well ISRM barrier emplacement activities (90%) will be disposed to the ISRM site-specific evaporation pond.
- Quarterly and annual performance/compliance monitoring sampling and reporting funded under ER08 Long-Term Monitoring CAP P41202.
- No EM-50 funding is assumed.
- Work schedule and cost estimate to meet ROD Amendment commitments (EPA, 10/99).

100-HR-3 IN-SITU REDOX MANIPULATION

PE3214
1.4.10.1.1.08.02.08.03.32.14

SUBCONTRACT STRATEGY (i.e., office trailer setup, tp&l.) List major subcontracts and scope including fiscal year and type (FP or FUP).

Subcontract	FY	Type of Contract	Scope
Drilling & site prep	01	FP	Well and Pump Installations, survey, road/pad prep
Drilling & site prep	02	FP	Well and Pump Installations, survey, road/pad prep
Well Support	03	FP	Pump Installations

WORK ORDERS (i.e., work to be performed by FDH or Hanford Utilities Group.) List major work orders including fiscal year.

Company	FY	Scope
FH	01	Excavation Permits / sampling support
FH	02	Excavation Permits
FH	03	Permits to decommission Evaporation Pond

MATERIAL/EQUIPMENT/OTHER DIRECT COST REQUIREMENTS (Identify purchase items or other direct costs and assumptions.)

Description	FY	Scope
Chemical and Pumps	01	Sodium Dithionite, Well Pumps
Chemical and Pumps	02	Sodium Dithionite, Well Pumps
Pumps	03	Well Pumps

CONSTRUCTION EQUIPMENT REQUIREMENTS & ASSUMPTIONS

Description	Usage Date		Comments/Assumptions
	FY Start	FY Finish	
Trailers, Trucks, Tanks	01	02	Injection/Withdrawal Activities
55-Gallon Drums	01	02	Well Drilling Cuttings
Construction Equipment	03	03	Evaporation Pond Demobilization

WASTE DISPOSAL (ERDF) QUANTITIES (Provide quantities in metrics.)

Type of Material	FY 2001	FY 2002	FY 2003
Purgewater (L) (evaporation pond)	379,000 L	1,893,000 L	379,000 L
ERDF - Bulk Waste			
Soils (metric tons) (drill cuttings)	7 cm	6 cm	
Rubble and concrete under 0.6 m (metric tons)			
ERDF - Special Handling			
Concrete/asphalt (metric tons)			
Steel plate (metric tons)			
Piping/tube steel (metric tons)			
Regulated asbestos-containing materials (m^3)			
Misc. metal/building debris/structural steel/conduit (metric tons)			
Equipment (pumps, clarifiers, spiders, etc.) (metric tons)			
Other (metric tons) (pond sand & precipitants) (pond liner)			1020 cm 4100 cm
FH Waste Disposal			
Mixed waste (TRU) (m^3)			
PCBs (container)			
RCRA waste (container)			
Nonregulated waste (metric tons)			
200 Effluent Treatment Facility			
ERDF leachate (L)			
Other (L)			
Inert Demolition Landfills			
Offsite			
Nonradioactive hazardous (container)			
Recyclable (container)			
Other (container)			
Excess chemicals			

COST ACCOUNT PLAN

KEY PROJECT TEAM MEMBERS

Task Lead (CAM):	**J. A. Armatrout**
DOE-RL:	**A. C. Tortoso**
Project Engineer:	**G. B. Mitchem**
Field Support:	**R. J. Fabre**
QS&H:	**C. H. St. John**
Project Controls:	**B. M. Wallace**
PSS Rep:	**T. A. Lee**
Other (Subtask Lead):	**G. A. Day**

WORK DESCRIPTION (Provide general work description of facility/building.)

General Description:

The work scope for this cost account includes operation, maintenance, and monitoring of the 100-NR-2 pump-and-treat system. The extraction well network will be operated in such a way to optimize the reduction of the net groundwater flux to the Columbia River. The treatment system will operate to maintain an average strontium-90 removal rate of 90%.

TASKS TO BE PERFORMED IN FY 2001:

- This task includes all activities normally associated with the operation of the treatment process including project management and manual/non-manual field support. Trained personnel and specific procedure are provided to operate the 100-NR-2 pump-and-treat system in a manner that conforms with guidelines related to the operation of facilities at the Hanford Site.

- Tasks include all labor (craft/non-manual) and supervision for all activities normally associated with the operation of a treatment process. This includes all industrial, hazardous, and radiological safety activities.

- Performance sampling will be conducted in accordance with approved plans/documents for the extraction and injection wells and treatment system sampling points. Sampling includes chemical/ radiological and water table measurements (as necessary). Performance monitoring includes sample preparation, analysis, sample management, data validation, data reviews, field data, and management. Hydraulic/chemical analysis of aquifer data is budgeted in Long-Term Monitoring. Performance monitoring will be performed in accordance with BHI-01165, N Springs Expedited Response Action Performance Monitoring Plan: Update.

- Management will be provided for waste associated with operation and maintenance of the treatment system. Waste management support for spent clino resin and miscellaneous equipment shall include labeling, routine surveillance, waste designation, coordination waste shipments for disposal to ERDF, ETF, disposal costs, disposal of process samples, waste profiles, and packaging/loading.

TASKS TO BE PERFORMED IN FY 2002:

Same as FY01.

TASKS TO BE PERFORMED IN FY 2003:

Same as FY01.

MAJOR PRODUCTS AND DELIVERABLES (Including Readiness Assessment, AHA, Characterization, Demolition, DQO, Milestones – *Tri-Party Agreement* and others.)

Deliverables	Date
• Annual Performance Report	12/22/00
• Semi-Annual Technical Memo	05/26/01
• Weekly System Status Reporting	Weekly

BASIS/ASSUMPTIONS (Identify basis for estimate: i.e., MCASES, like facility, non-contaminated, etc. Also include key assumptions and constraints, including any spread of waste handling considerations.)

- Assumes 5-year review requires continued operations of the pump-and-treat system until a final remedy can be implemented.
- The estimates are based on 100-NR-2 FY99/FY00 actual EAC cost and engineering judgement.
- The pump-and-treat system will be operated on a 24-hour basis. The system will be taken offline for scheduled clino changeouts and for environmental conditions that fall outside the operational limits of the system (e.g., unseasonal weather conditions). It is expected that the system will be down 39 days per year for clino changeouts.
- Three days per clino changeout are assumed during which additional maintenance can occur, if needed.
- It is assumed the plant does not operate during changeout; radiological conditions do not cause substantive change to operations; the operation configuration will be consistent with case 3 as defined in DOE/RL-95-110, Rev. 0, and no new wells. An analysis of the operational configuration will be done in preparation of the semi-annual or annual report to determine the effectiveness of the current configuration to reduce the net flux of groundwater to the Columbia River.
- Any actions identified in the NR-2 ROD or/and ITRD are included in supplemental list.
- Workforce stability requires training one new operator per year.
- The surface remediation activities will not affect the pump-and-treat operation.
- Implementation of ITRD recommendations are not included.

REMEDIATION QUANTITIES (Provide quantities in metrics.)

Type of Remediation	FY 2001	FY 2002	FY 2003
Excavation (metric tons)			
Building area (m^2)			
Concrete (m^3)			
Asbestos (m^3)			
Transite (m^2)			
Structural steel (metric tons)			
Samples (each)			
Water treated (L)	102,999	102,999	102,999
Other			

SUBCONTRACT STRATEGY (i.e., office trailer setup, tp&l.) List major subcontracts and scope including fiscal year and type (FP or FUP).

Subcontract	FY	Type of Contract	Scope
BHI	01	FP	Weed control/maintenance
BHI	02	FP	Weed control/maintenance
BHI	03	FP	Weed control/maintenance
FH	01	FUP	Offsite Sample Analysis
FH	02	FUP	Offsite Sample Analysis
FH	03	FUP	Offsite Sample Analysis

WORK ORDERS (i.e., work to be performed by FDH or Hanford Utilities Group.) List major work orders including fiscal year.

Company	FY	Scope
FH (Westinghouse)	01	Prepare liners for clino boxes.
FH (Westinghouse)	02	Prepare liners for clino boxes.
FH (Westinghouse)	03	Prepare liners for clino boxes.

MATERIAL/EQUIPMENT/OTHER DIRECT COST REQUIREMENTS (Identify purchase items or other direct costs and assumptions.)

Description	FY	Scope
Transducers, clino, pumps, motors, misc.	01	Replace defective equipment/spent clino, Performance Monitoring
Transducers, clino, pumps, motors, misc.	02	Replace defective equipment/spent clino, Performance Monitoring
Transducers, clino, pumps, motors, misc.	03	Replace defective equipment/spent clino, Performance Monitoring
Lumber, sealant, nails, plastic, misc.	01	Clino box and liner construction
Lumber, sealant, nails, plastic, misc.	02	Clino box and liner construction
Lumber, sealant, nails, plastic, misc.	03	Clino box and liner construction

CONSTRUCTION EQUIPMENT REQUIREMENTS & ASSUMPTIONS

Description	Usage Date		Comments/Assumptions
	FY Start	FY Finish	
Motor grader, fork lift, crane, truck	01	03	Road maintenance, general support, clino loading

WASTE DISPOSAL (ERDF) QUANTITIES (Provide quantities in metrics.)

Type of Material	FY 2001	FY 2002	FY 2003
Purgewater (L)			
ERDF - Bulk Waste			
Soils (metric tons)			
Rubble and concrete under 0.6 m (metric tons)			
ERDF - Special Handling			
Concrete/asphalt (metric tons)			
Steel plate (metric tons)			
Piping/tube steel (metric tons)			
Regulated asbestos-containing materials (m^3)			
Misc. metal/building debris/structural steel/conduit (metric tons)			
Equipment (pumps, clarifiers, spiders, etc.) (metric tons)			
Other (metric tons) clino 13 x 20 K			
FH Waste Disposal			
Mixed waste (TRU) (m^3)			
PCBs (container)			
RCRA waste (container)			
Nonregulated waste (metric tons)			

Type of Material	FY 2001	FY 2002	FY 2003
200 Effluent Treatment Facility			
ERDF leachate (L)			
Other (L) Sample liquids	50 L	50 L	50 L
Inert Demolition Landfills			
Offsite			
Nonradioactive hazardous (container)			
Recyclable (container)			
Other (container) MSW	1	1	1
Excess chemicals			

COST ACCOUNT PLAN

KEY PROJECT TEAM MEMBERS

Task Lead (CAM):	**J. A. Armatrout**
DOE-RL:	**A. C. Tortoso**
Project Engineer:	**G. B. Mitchem**
Field Support:	**R. J. Fabre**
QS&H:	**C. H. St. John**
Project Controls:	**B. M. Wallace**
PSS Rep:	**T. A. Lee**
Other (Subtask Lead):	**G. A. Day**

WORK DESCRIPTION (Provide general work description of facility/building.)

General Description:

100 Area operable units covered under the scope of this cost account is to provide overall management and functional support for the Groundwater River Corridor direct projects, including EM-40-funded In Situ Redox Manipulation activities.

TASKS TO BE PERFORMED IN FY 2001:

- Task management, including overall management of project activities by the task lead.
- Functional group oversight, including technical review and oversight by functional groups.
- Project meetings/miscellaneous, including attendance at monthly project status meetings.
- Planning and Controls, including labor for Planning and Controls.
- Project administration and clerical support.
- Project engineering support.
- Technical support.
- O&M Plan revision to incorporate the 300-FF-5 ESD.
- RDR/RA work package development for the GW 100-NR-2 operations as required by the ROD signed 9/99.
- O&M plan and SAP development for the N-Springs pump-and-treat system.

TASKS TO BE PERFORMED IN FY 2002:

Same as FY01.

100 AREA GW REMEDIAL ACTION RIVER CORRIDOR COMMON SUPPORT **PH1201**
1.4.10.1.1.08.02.29.01.32.01

TASKS TO BE PERFORMED IN FY 2003:

Same as FY01.

MAJOR PRODUCTS AND DELIVERABLES (Including Readiness Assessment, AHA, Characterization, Demolition, DQO, Milestones – *Tri-Party Agreement* and others.)

Deliverables	Date
• Monthly Progress Review Package	Monthly
• Detailed Work Plan	Annually
• Complete 300-FF-5 O&M Plan	4/30/01
• Complete 100-KR-4 Sampling Plan	9/24/01
• Final 100-NR-2 RD/RA Work Plan	8/15/01

BASIS/ASSUMPTIONS (Identify basis for estimate: i.e., MCASES, like facility, non-contaminated, etc. Also include key assumptions and constraints, including any spread of waste handling considerations.)

Estimate based on FY00 actuals and engineering judgement:

- CERCLA 5-year review conducted in FY00. Review will require revision of the Baseline and Long Range Plan.

COST ACCOUNT PLAN

KEY PROJECT TEAM MEMBERS

Task Lead (CAM):	**J. A. Armatrout**
DOE-RL:	**A. C. Tortoso**
Project Engineer:	**G. B. Mitchem**
Field Support:	**R. J. Fabre**
QS&H:	**C. H. St. John**
Project Controls:	**S. M. McPeek**
PSS Rep:	**T. A. Lee**
Other (Subtask Lead):	**G. A. Day**

WORK DESCRIPTION (Provide general work description of facility/building.)

General Description:

The extraction well will be maintained to operate. Groundwater monitoring and collection will be completed in Interim Action Monitoring.

TASKS TO BE PERFORMED IN FY 2001:

Operate and maintain a single extraction well for removal of Uranium and Technetium 99. Continue water-level monitoring, evaluation, and reporting.

Construct one extraction well.

TASKS TO BE PERFORMED IN FY 2002:

Same as FY01.

TASKS TO BE PERFORMED IN FY 2003:

Same as FY01.

MAJOR PRODUCTS AND DELIVERABLES (Including Readiness Assessment, AHA, Characterization, Demolition, DQO, Milestones – *Tri-Party Agreement* and others.)

Deliverables	Date
• Annual Report Decisional Draft	Annually
• Construct one extraction well	FY01

BASIS/ASSUMPTIONS (Identify basis for estimate: i.e., MCASES, like facility, non-contaminated, etc. Also include key assumptions and constraints, including any spread of waste handling considerations.)

- Extraction well will require maintenance and pump replacement in FY01.
- Estimate based on FY99 and FY00 actuals and engineering judgement.

- Waste generated during Operations & Maintenance activities will be disposed at ERDF.
- ERDF leachate transfer costs are covered by Remedial Action Cost Accounts
- Aquifer sampling/reporting will be completed under Long Term Monitoring.
- The ETF will provide sufficient treatment capacity such that onsite treatment is not required.
- The extraction pump will be operated on a 24-hour basis; the pump will be taken offline for scheduled outages and maintenance and for conditions that fall outside the operational limits of the system (e.g., unseasonal weather conditions).
- Water will be treated at ETF for no additional charge to ER.
- ETF will determine extraction well operations based on facility availability.
- The flow rate from the extraction well will be maintained at a nominal 50 gpm.
- Work force stability requires training one (1) new operator per year.
- Operations will continue until a technology becomes available to treat the uranium.
- CERCLA 5 year review requires continued operations.
- Six (6) new monitoring wells will be drilled in FY03 only.
- Well drilling waste to be disposed of at ERDF.
- Drilling estimate is a rough order-of-magnitude due to late scope addition in the DWP review cycle.

REMEDIATION QUANTITIES (Provide quantities in metrics.)

Type of Remediation	FY 2001	FY 2002	FY 2003
Excavation (metric tons)			
Building area (m^2)			
Concrete (m^3)			
Asbestos (m^3)			
Transite (m^2)			
Structural steel (metric tons)			
Samples (each)			
Water treated (L)	77,270	77,270	77,270
Other			

SUBCONTRACT STRATEGY (i.e., office trailer setup, tp&l.) List major subcontracts and scope including fiscal year and type (FP or FUP).

Subcontract	FY	Type of Contract	Scope
BHI	01	FP	Weed control
BHI	01	FP	Drill 1 well/road prep./survey location
BHI	02	FP	Weed control/well maintenance
BHI	03	FP	Weed control
BHI	03	FP	Drill 6 new monitoring wells

MATERIAL/EQUIPMENT/OTHER DIRECT COST REQUIREMENTS (Identify purchase items or other direct costs and assumptions.)

Description	FY	Scope
Replacement parts, drums, misc, equip	01	Replacement of defective equipment and controls
Replacement parts, drums, misc, equip	02	Replacement of defective equipment and controls
Replacement parts, drums, misc, equip	03	Replacement of defective equipment and controls

WASTE DISPOSAL (ERDF) QUANTITIES (Provide quantities in metrics.)

Type of Material	FY 2001	FY 2002	FY 2003
Purgewater (L)			
ERDF – Bulk Waste			
Soils (metric tons)			
Rubble and concrete under 0.6 m (metric tons)			
ERDF – Special Handling			
Concrete/asphalt (metric tons)			
Steel plate (metric tons)			
Piping/tube steel (metric tons)			
Regulated asbestos-containing materials (m^3)			
Misc. metal/building debris/structural steel/conduit (metric tons)			
Equipment (pumps, clarifiers, spiders, etc.) (metric tons)			
Other (metric tons)		0.2	
FH Waste Disposal			
Mixed waste (TRU) (m^3)			
PCBs (container)			
RCRA waste (container)			
Nonregulated waste (metric tons)			

200-UP-1 GW CHEMICAL TREATMENT OPERATION

PT1212
1.4.10.1.1.08.06.16.01.32.12

Type of Material	FY 2001	FY 2002	FY 2003
200 Effluent Treatment Facility			
ERDF leachate (L)	10	10	10
Other (L)			
Inert Demolition Landfills			
Offsite			
Nonradioactive hazardous (container)			
Recyclable (container)			
Other (container)			
Excess chemicals			

COST ACCOUNT PLAN

KEY PROJECT TEAM MEMBERS

Task Lead (CAM):	**J. A. Armatrout**
DOE-RL:	**A. C. Tortoso**
Project Engineer:	**G. B. Mitchem**
Field Support:	**R. J. Fabre**
QS&H:	**C. H. St. John**
Project Controls:	**S. M. McPeek**
PSS Rep:	**T. A. Lee**
Other (Subtask Lead):	**G. A. Day**

WORK DESCRIPTION (Provide general work description of facility/building.)

General Description:

This account includes all activities and costs associated with procurement, operation, maintenance, performance monitoring, project management, and waste management of a groundwater air stripping pump and treat system for 200-ZP-1. Groundwater monitoring and collection performed in Interim Action Monitoring.

TASKS TO BE PERFORMED IN FY 2001:

- This task includes all activities normally associated with the standard operation of an industrial wastewater treatment process including project management and manual/non-manual field support. Trained personnel and specific procedure are provided to operate the 200-ZP-1 pump and treat system in a manner that conforms with guidelines related to the operation of facilities at the Hanford DOE site.

- Tasks include all labor (craft and non-manual) and project management for all activities normally associated with the operation of a standard wastewater treatment process. This includes all industrial, hazardous, and radiological safety activities.

- Performance sampling will be conducted in accordance with approved plans/documents for the extraction and injection wells and treatment system sampling points. Sampling includes chemical and water table measurements (as necessary). Performance monitoring includes sample preparation, analysis, sample management, data validation, data reviews, field data and management. Hydraulic/chemical analysis of aquifer data is budgeted in Long-Term Monitoring.

- Management will be provided for waste associated with operation of the air stripping system. Waste management support for spent Granular Activated Carbon (GAC) and miscellaneous equipment shall include labeling, routine/non-routine surveillance, waste designation, coordination, waste shipments for disposal and regeneration, regeneration costs, disposal costs, disposal of process samples, waste profiles, and packaging/loading.

- Construct one extraction well.

200-ZP-1 GW PHYSICAL TREATMENT PROCESS **PU1205**
1.4.10.1.1.08.06.17.01.32.05

TASKS TO BE PERFORMED IN FY 2002:

Same as FY01, except no extraction wells to be constructed.

TASKS TO BE PERFORMED IN FY 2003:

Same as FY02.

MAJOR PRODUCTS AND DELIVERABLES (Including Readiness Assessment, AHA, Characterization, Demolition, DQO, Milestones – *Tri-Party Agreement* and others.)

Deliverables	Date
• Maintain system availability at 90% or greater	9/30/01
• Complete Remote Monitoring Implementation	4/27/01

BASIS/ASSUMPTIONS (Identify basis for estimate: i.e., MCASES, like facility, non-contaminated, etc. Also include key assumptions and constraints, including any spread of waste handling considerations.)

- Assumes 5-year review requires continued operations of pump and treat system until final remedy can be implemented.
- The GAC regeneration contract will be managed through FH. GAC change-out twice per year. GAC change-out will require two days each.
- The pump and treat system will be operated on a 24-hour basis; the system will be taken offline for scheduled maintenance and for environmental conditions that fall outside the operational limits of the system (e.g., unseasonal weather conditions).
- The scope of sampling is defined in the RD/RA plan.
- No new boreholes are included.
- Estimates are based on 200-ZP-1 FY00 EACs and Engineering judgement.
- Minor system upgrades identified in FY00.
- Workforce stability requires training one (1) new operator per year.
- Perform three B&K changeouts, 1 annual system calibration, and up to 2 GAC changeouts.
- Algae automation system completed in FY00.
- Well drilling waste to be disposed of at ERDF.
- No site access limitations due to site security requirements at PFP.
- Drilling estimate is rough order-of-magnitude due to late scope addition in DWP review cycle.

REMEDIATION QUANTITIES (Provide quantities in metrics.)

Type of Remediation	FY 2001	FY 2002	FY 2003
Excavation (metric tons)			
Building area (m^2)			
Concrete (m^3)			
Asbestos (m^3)			
Transite (m^2)			
Structural steel (metric tons)			
Samples (each)			
Water treated (L)	274,736	274,736	274,736
Other			

SUBCONTRACT STRATEGY (i.e., office trailer setup, tp&l.) List major subcontracts and scope including fiscal year and type (FP or FUP).

Subcontract	FY	Type of Contract	Scope
BHI	01	FP	Offsite lab/samples/filter/maintenance/B&K Cal. Stds.
BHI	01	FP	Construct extraction well/road to well/survey location
BHI	02	FP	Offsite lab/samples/filter/maintenance/B&K Cal. Stds.
BHI	03	FP	Offsite lab/samples/filter/maintenance/B&K Cal. Stds.
WMTSI	01	FUP	Well maintenance
WMTSI	02	FUP	Well maintenance
WMTSI	03	FUP	Well maintenance

WORK ORDERS (i.e., work to be performed by FDH or Hanford Utilities Group.) List major work orders including fiscal year.

Company	FY	Scope
FDH	01	Solid waste/filter disposal/GAC regeneration/Well Maint
FDH	02	Solid waste/filter disposal/GAC regeneration/Well Maint
FDH	03	Solid waste/filter disposal/GAC regeneration/Well Maint

MATERIAL/EQUIPMENT/OTHER DIRECT COST REQUIREMENTS (Identify purchase items or other direct costs and assumptions.)

Description	FY	Scope
Valves/pump/chemicals/bottles/cal stds Software,desicant,filters,tower pkg,drum	01	Maintenance, sample collection, Remote Monitoring Implementation, waste disposal
Valves/pump/chemicals/bottles/cal stds	02	Maintenance, sample collection, Remote Monitoring Implementation, waste disposal
Valves/pump/chemicals/bottles/cal stds	03	Maintenance, sample collection, Remote Monitoring Implementation, waste disposal

CONSTRUCTION EQUIPMENT REQUIREMENTS & ASSUMPTIONS

Description	Usage Date		Comments/Assumptions
	FY Start	FY Finish	
Forklifts, crane, ATV	01	03	Maintenance activities

WASTE DISPOSAL (ERDF) QUANTITIES (Provide quantities in metrics.)

Type of Material	FY 2001	FY 2002	FY 2003
Purgewater (L)			
ERDF – Bulk Waste			
Soils (metric tons)			
Rubble and concrete under 0.6 m (metric tons)			
ERDF – Special Handling			
Concrete/asphalt (metric tons)			
Steel plate (metric tons)			
Piping/tube steel (metric tons)			
Regulated asbestos-containing materials (m^3)			
Misc. metal/building debris/structural steel/conduit (metric tons)			
Equipment (pumps, clarifiers, spiders, etc.) (metric tons)			
Other (metric tons)			
FH Waste Disposal			
Mixed waste (TRU) (m^3)			
PCBs (container)			
RCRA waste (container)			
Nonregulated waste (metric tons)			
200 Effluent Treatment Facility			
ERDF leachate (L)			
Other (L)	18,925	18,925	18,925
Inert Demolition Landfills			
Offsite			
Nonradioactive hazardous (container)	$16yd^3$/container	$16yd^3$/container	$16yd^3$/container
Recyclable (container)			
Other (container)	9 canisters ≈ $1{,}000^{3ft}$	9 canisters ≈ $1{,}000^{3ft}$	9 canisters ≈ $1{,}000^{3ft}$
Excess chemicals			

COST ACCOUNT PLAN

KEY PROJECT TEAM MEMBERS

Task Lead (CAM):	**J. A. Armatrout**
DOE-RL:	**A. C. Tortoso**
Project Engineer:	**G. B. Mitchem**
Field Support:	**R. J. Fabre**
QS&H:	**C. H. St. John**
Project Controls:	**S. M. McPeek**
PSS Rep:	**T. A. Lee**
Other (Subtask Lead):	**G. A. Day**
Other: (Pitt Task Lead):	**R. L. Jackson**

WORK DESCRIPTION (Provide general work description of facility/building.)

General Description:

This account includes all activities and costs associated with procurement, operations, maintenance, performance monitoring, project management, and waste management of a vapor extraction system.

TASKS TO BE PERFORMED IN FY 2001:

- **Task 1. Operate Passive System:** Wells will be characterized periodically to optimize well field performance. Spent granular activated carbon will be sent to an offsite contractor for regeneration and/or disposal.

- **Task 2. DNAPL Investigation:** Provide BHI support to conduct a partitioning interwell tracer test (PITT) to determine carbon tetrachloride in the deep vadose. Provide project management support and procure contractor to define and perform the DNAPL investigation.

TASKS TO BE PERFORMED IN FY 2002:

Maintain active and passive vapor extraction system.

TASKS TO BE PERFORMED IN FY 2003:

Maintain active and passive vapor extraction system.

MAJOR PRODUCTS AND DELIVERABLES (Including Readiness Assessment, AHA, Characterization, Demolition, DQO, Milestones – *Tri-Party Agreement* and others.)

Deliverables	Date

200-ZP-2 GW PHYSICAL TREATMENT OPERATION **PU2405**
1.4.10.1.1.08.06.17.02.34.05

BASIS/ASSUMPTIONS (Identify basis for estimate: i.e., MCASES, like facility, non-contaminated, etc. Also include key assumptions and constraints, including any spread of waste handling considerations.)

- No well maintenance is required in FY01.
- Well maintenance is required in FY02 and FY03.
- Hazardous waste granular activated carbon is disposed through FH.
- Wells will be monitored (field screened - CCl_4) to ensure no further degradation of the aquifer or impacts to worker safety.
- A performance report will be prepared during the third quarter of the year.
- CERCLA authorization for offsite disposal is maintained by the receiving facility.
- The cost for the DNAPL/PITT investigation (vadose) is a rough-order-of-magnitude estimate. After obtaining a final estimate from Duke and developing the associated BHI and PNNL support costs, a baseline change package will be prepared to define the scope and schedule for FY01. It is anticipated that the information for the baseline change package will be available by the end of December 2000.

SUBCONTRACT STRATEGY (i.e., office trailer setup, tp&l.) List major subcontracts and scope including fiscal year and type (FP or FUP).

Subcontract	FY	Type of Contract	Scope
BHI	01	FUP/FP	Offsite lab analysis, weed control, Partitioning Interwell Tracer Test (PITT)
BHI	02	FUP/FP	Offsite lab analysis, weed control, Instrument Calib
BHI	03	FUP/FP	Offsite lab analysis, weed control, Instrument Calib

WORK ORDERS (i.e., work to be performed by FDH or Hanford Utilities Group.) List major work orders including fiscal year.

Company	FY	Scope
FDH	01	GAC regeneration, MSW/
FDH	02	Well Maint, GAC regen, MSW/filter disposal, DOP test
FDH	03	Well Maint, GAC regen, MSW/filter disposal, DOP test

MATERIAL/EQUIPMENT/OTHER DIRECT COST REQUIREMENTS (Identify purchase items or other direct costs and assumptions.)

Description	FY	Scope
New GAC, Equip, bottles, pumps, misc.	01	Sample collection, GAC change outs, and maintenance
New GAC, Equip, bottles, pumps, misc.	02	Sample collection, GAC change outs, and maintenance
New GAC, Equip, bottles, pumps, misc.	03	Sample collection, GAC change outs, and maintenance

COST ACCOUNT PLAN

KEY PROJECT TEAM MEMBERS

Task Lead (CAM):	**J. A. Armatrout**
DOE-RL:	**A. C. Tortoso**
Project Engineer:	**G. B. Mitchem**
Field Support:	**R. J. Fabre**
QS&H:	**C. H. St. John**
Project Controls:	**S. M. McPeek**
PSS Rep:	**T. A. Lee**
Other (Subtask Lead):	**G. A. Day**

WORK DESCRIPTION (Provide general work description of facility/building.)

General Description:

The scope of this cost account is to provide overall management and functional support for the Groundwater 200 Area Plateau direct project remediation activities.

TASKS TO BE PERFORMED IN FY 2001:

- Task management, including overall management of project activities by the task lead.
- Potential remedial alternatives evaluation and DNAPL characterization.
- Functional group oversight, including technical review and oversight by functional groups.
- Project meetings/miscellaneous, including attendance at monthly project status meetings.
- Planning and Controls, including labor for Planning and Controls.
- Project administration and clerical support.
- Project engineering support.
- Perform DQO, DOW, and bid specification to drill extraction wells for 200-UP-1 and 200-ZP-1.

TASKS TO BE PERFORMED IN FY 2002:

Same as FY01, except complete the 200 Area Plateau Groundwater Remediation Strategy (Draft Rev. 0) for public review, and no DQO/DOW for 200-UP-1 and 200-ZP-1 wells.

TASKS TO BE PERFORMED IN FY 2003:

Same as FY01.

MAJOR PRODUCTS AND DELIVERABLES (Including Readiness Assessment, AHA, Characterization, Demolition, DQO, Milestones – *Tri-Party Agreement* and others.)

Deliverables	Date
• Monthly Progress Review Package	Monthly
• Detailed Work Plan	Annually

200 AREA GW REMEDIAL ACTION PLATEAU COMMON SUPPORT **PX1201**
1.4.10.1.1.08.06.17.01.32.01

BASIS/ASSUMPTIONS (Identify basis for estimate: i.e., MCASES, like facility, non-contaminated, etc. Also include key assumptions and constraints, including any spread of waste handling considerations.)

- Based on FY00 actuals.

Page

AREA PROJECT DESCRIPTION 1-1

AREA TECHNICAL BASELINE 2-1

AREA SCHEDULE BASELINE 3-1

AREA COST/STAFF BASELINE 4-1

Groundwater/Vadose Zone Integration Project 5-1

INTRODUCTION

This section identifies the scope to be funded by additional authorization funds. The funding will be supplied by RL from other site sources. Upon receipt of the funds, this scope will be incorporated into the baseline via the baseline change process.

DESCRIPTION

OBJECTIVE

The objective of the 200 Area Remedial Action Project effort is to complete the cleanup of soil-contaminated sites (non-tank farm related sites) consistent with the 200 Area RI/FS Implementation Plan, Tri-Party Agreement milestones, and site-wide planning outcomes for the Central Plateau.

TECHNICAL CONTENT

Continue 200-BP-1 Hanford Prototype Barrier long-term performance monitoring.

CERCLA and RCRA assessment activities will be performed for the 200-CW-1 Gable/B Pond and Ditches Cooling Water Group to include the preparation of a proposed plan and proposed RCRA permit modification.

CERCLA and RCRA assessment activities will be performed for the 200-CS-1 Chemical Sewer Group, including field characterization.

CERCLA assessment activities will be performed for the 200-TW-1 Scavenged Waste Group, including finalizing an RI/FS work plan that defines the remedial investigation program and performing field characterization.

CERCLA assessment activities will be performed for the 200-TW-2 Tank Waste Group, including finalizing of an RI/FS work plan defining the remedial investigation program and performing field characterization.

CERCLA assessment activities will be performed for the 200-PW-1 Plutonium/Organic-Rich Process Waste Group, including preparation of an RI/FS work plan that defines the remedial investigation program. (Pending approval of a Tri-Party Agreement change package.)

200 Area site-wide activities will also be performed, including project integration, waste site reclassification (WIDS update), and general support. Initiate activities and planning to support a CERCLA-based full-scale treatability test of a modified RCRA C surface barrier on a waste site(s) in the 200 Area. These activities will initially be based on recommendations from the 200-BP-1 Treatability Test Report for the Hanford Barrier. Activities include evaluating borrow sources for fine-grained soil and issuing a report of results.

WORK STATEMENT

Operable Unit 200-BP-1

FY01: Continue 200-BP-1 Hanford Prototype Barrier long term performance.

FY02: See supplemental form.

FY03: See supplemental form.

Operable Unit 200-PK NPL Common

FY01

200-CW-1: Initiate the proposed plan and proposed RCRA permit modification.
200-CS-1: Complete remedial investigation field work.
200-TW-1: Initiate remedial investigation field work.
200-TW-2: Initiate remedial investigation field work.
200-PW-1: Complete RI/FS work plan.
200 Common: Additional support for 200 Area-wide activities. Initiate treatability testing for an alternative barrier.

FY02

200-CW-1: See supplemental form.
200-CS-1: See supplemental form.
200-CW-5: See supplemental form.
200-TW-1: See supplemental form.
200-TW-2: See supplemental form.
200-PW-1: See supplemental form.
200-PW-2: See supplemental form.
200-LW-1: See supplemental form.
200-MW-1: See supplemental form.
200 Common: See supplemental form.

FY03

200-CW-1: See supplemental form.
200-CS-1: See supplemental form.
200-CW-5: See supplemental form.
200-TW-1: See supplemental form.
200-TW-2: See supplemental form.
200-PW-2: See supplemental form.
200-PW-1: See supplemental form.
200-LW-1: See supplemental form.
200-MW-1: See supplemental form.
200 Common: See supplemental form.

ASSUMPTIONS

- Sufficient funding will be identified in FY01 through FY03 to perform the work scope identified in the supplemental funding plan. This funding is necessary to maintain compliance and to continue to support the Central Plateau outcomes.

- An "Alternative Baseline" approach will be worked to agreement with the regulators for the 200 Area Remedial Action Project. The planning basis includes the following:

  - A Tri-Party Agreement Change Package will be prepared to replace the 200-PW-4 OU work plan with the 200-PW-1 OU work plan (M-13-26).

  - A Tri-Party Agreement Change Package will be prepared to move Tri-Party Agreement Milestone M-20-39 out past the FY01-FY03 DWP window. This milestone currently requires submittal of a Draft A closure plan for the 216-S-10 pond/ditch by 02/28/2003.

  - 12 of the 23 OU assessments will be completed through FY08.

  - The remaining 11 OU assessments, if required, will be completed after FY08.

  - Remediation of 200 Area OUs will commence in or after FY07.

- The 200 Area RI/FS Implementation Plan defines the need and content of 200 Area RI/FS work plans, along with the TSD Unit Sampling Plan. It also defines the framework for implementing characterization and remediation activities in the 200 Areas, and identifies the waste site groupings and sites to be characterized.

- Public review of 200 Area RI/FS work plans is only assumed for the 200-TW-1 and 200-TW-2 OUs (which are included under the FY01 Supplemental Funding Plan).

- Geophysical logging of existing boreholes will not be conducted in FY01, in order to conduct an integrated effort with the Grand Junction Operations Office vadose monitoring activity in later fiscal years.

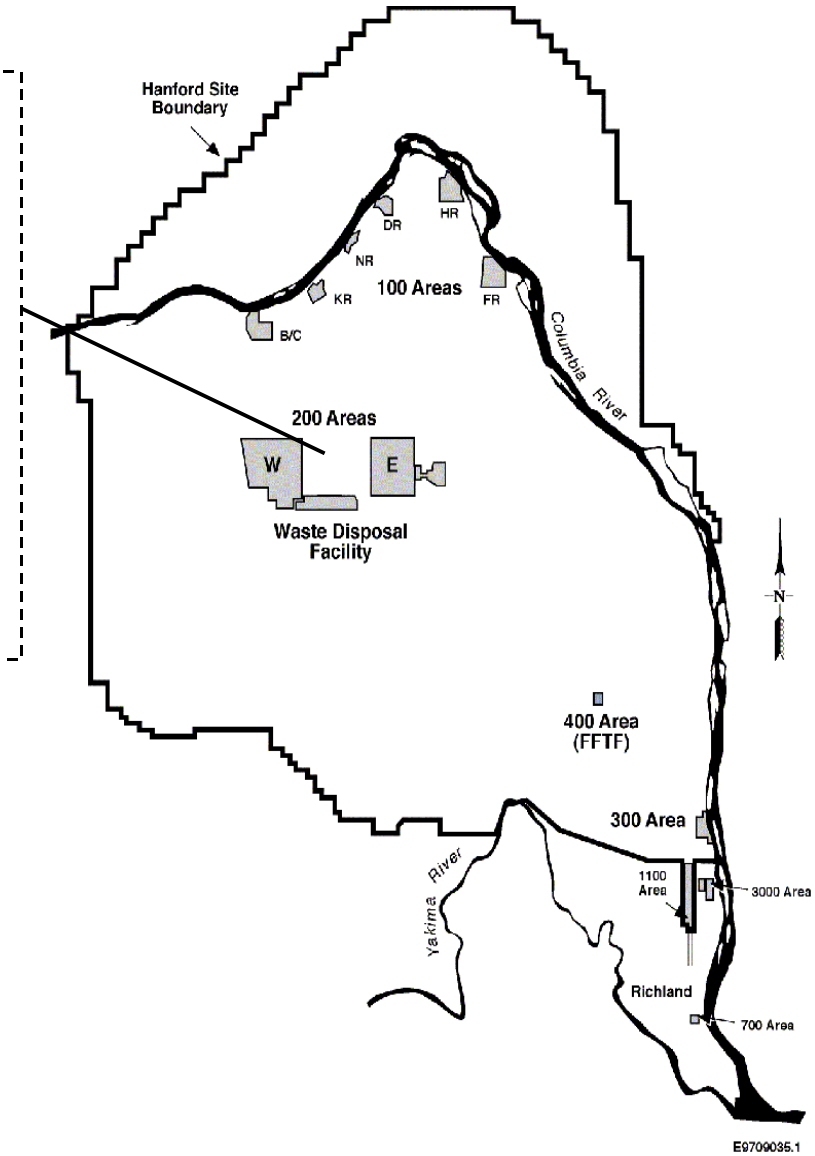
Prepared By:	K. N. Swan	**Date:**	09/07/00
ERC Project Manager:	M. J. Graham	**Date:**	09/07/00
DOE Project Manager:	B. L. Foley		

FY01 ACTION PLAN

200 Area Remedial Action – ER02

200 Area Remedial Action

- Initiate 200-CW-1 Proposed Plan/proposed permit modification.
- Complete 200-TW-1 and 200-TW-2 RI/FS Work Plan.
- Initiate 200-TW-1 Remedial Investigation field work.
- Initiate 200-TW-2 Remedial Investigation field work.
- Complete 200-PW-1 RI/FS Work Plan.
- Initiate 200-CS-1 Remedial Investigation field work.
- Continue Hanford Barrier long-term performance monitoring.
- Initiate the alternative barrier (Modified RCRA C) treatability test.
- Complete WIDS update activity.
- Provide general support for 200 Area project activities.

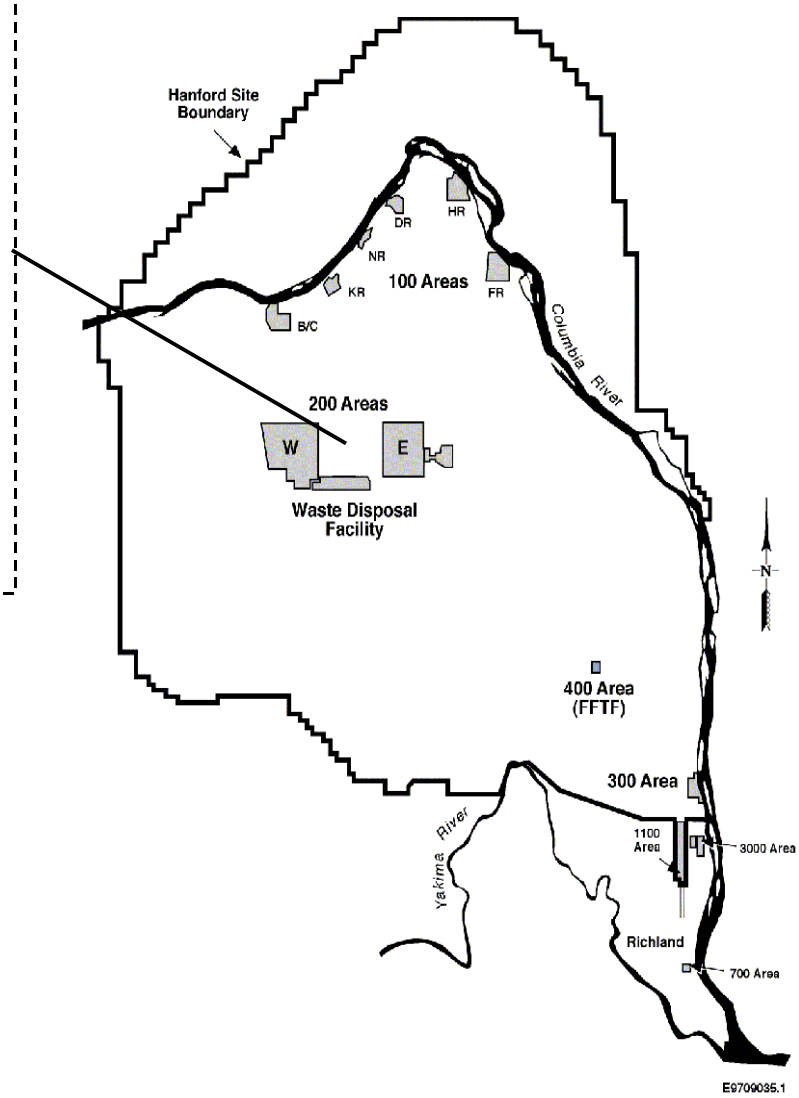


FY02 ACTION PLAN

200 Area Remedial Action – ER02

Additional Authorization 200 Area Remedial Action Funding

- Complete the 200-CW-1 Proposed Plan/permit modification.
- Initiate 200-CW-1 ROD support.
- Complete the 200-TW-1 Remedial Investigation Report.
- Complete the 200-TW-2 Remedial Investigation Report.
- Continue 200-CS-1 Remedial Investigation field work.
- Complete 200-CW-5 Remedial Investigation field work.
- Complete 200-PW-2 Remedial Investigation field work.
- Complete 200-PW-1 Remedial Investigation field work.
- Complete 200-LW-1 RI/FS Work Plan.
- Continue Hanford Barrier long-term performance monitoring.
- Continue alternative barrier (Modified RCRA C) treatability test.
- Provide general support for 200 Area project activities.

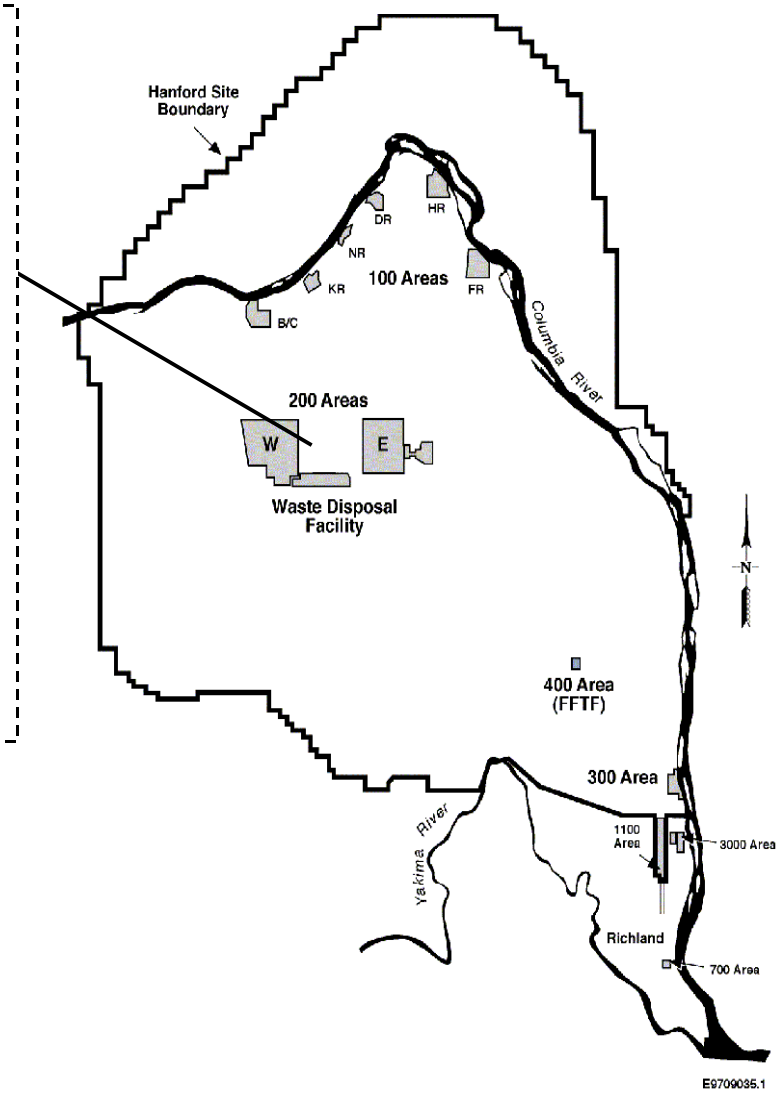


FY03 ACTION PLAN

200 Area Remedial Action – ER02

Additional Authorization 200 Area Remedial Action Funding

- Complete 200-CW-1 ROD support.
- Complete the 200-TW-1 Feasibility Study Report.
- Complete the 200-TW-2 Feasibility Study Report.
- Complete the 200-CS-1 Remedial Investigation field work.
- Complete the 200-CW-5 Remedial Investigation Report.
- Complete the 200-PW-2 Remedial Investigation Report.
- Complete the 200-PW-1 Remedial Investigation Report.
- Complete the 200-LW-1 Remedial Investigation field work.
- Complete the 200-MW-1 RI/FS Work Plan.
- Continue the Hanford Barrier long-term performance monitoring.
- Continue alternative barrier (Modified RCRA C) treatability test.
- Provide general support for 200 Area project activities.

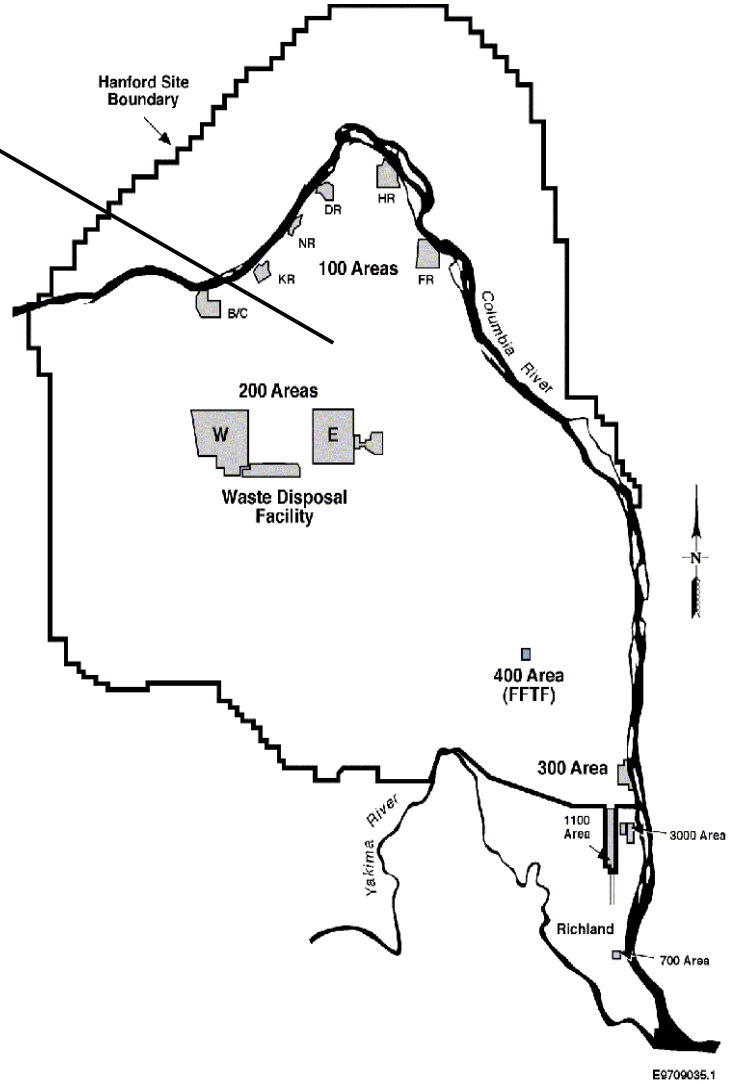


FY01 ACTION PLAN

Groundwater Management Project – ER08

Groundwater Management

- Grand Junction vadose zone monitoring/ logging support.

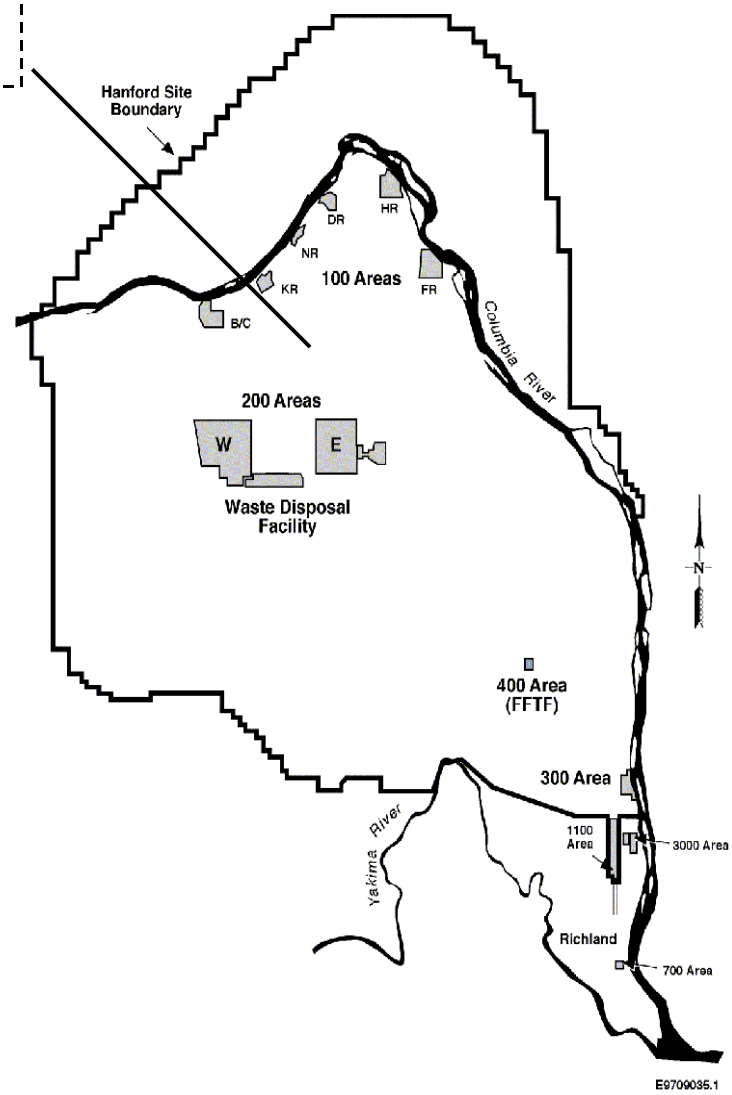


FY02 ACTION PLAN

Groundwater Management Project – ER08

Groundwater Management

- No additional authorized funding.

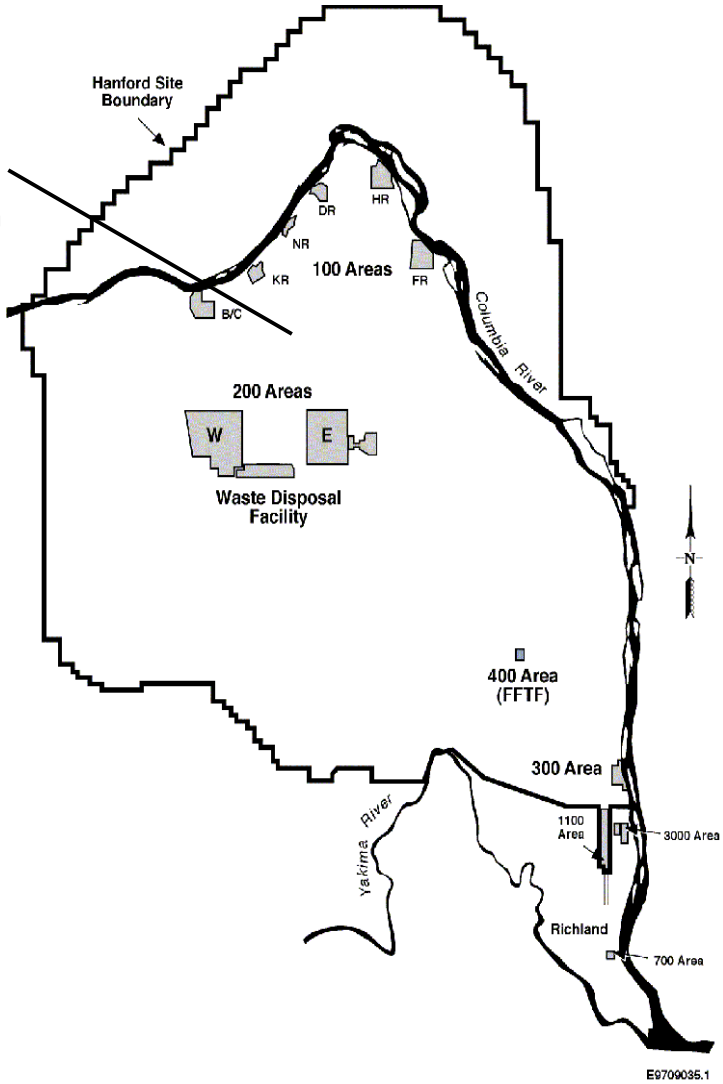


FY03 ACTION PLAN

Groundwater Management Project – ER08

Groundwater Management

- No additional authorized funding.



1.4.10.1 Richland Environmental Restoration Project

1.4.10.1.1 Remedial Action

1.4.10.1.1.02 ER02 200 Area Environmental Restoration Remedial Action

1.4.10.1.1.02.05 200 Area Remedial Action

1.4.10.1.1.02.05.10 PL 200-BP Remedial Action
1.4.10.1.1.02.05.10.01 PL1 200-BP-1 Operable Unit
1.4.10.1.1.02.05.10.01.31 PL11 200-BP-1 Operable Unit Assessment
1.4.10.1.1.02.05.10.01.31.01 PL1101 200-BP-1 Hanford Prototype Barrier Study

1.4.10.1.1.02.05.25 PK 200 Area NPL Common Source Assessment
1.4.10.1.1.02.05.25.01 PK1 200-PW-1 Operable Unit
1.4.10.1.1.02.05.25.01.31 PK11 200-PW-1 Operable Unit Assessment
1.4.10.1.1.02.05.25.01.31.01 PK1101 200-PW-1 Plutonium/Organic-Rich Process Waste Group Assessment
1.4.10.1.1.02.05.25.02 PK2 200-PW-2 Operable Unit
1.4.10.1.1.02.05.25.02.31 PK21 200-PW-2 Operable Unit Assessment
1.4.10.1.1.02.05.25.02.31.01 PK2101 200-PW-2 Uranium-Rich Process Waste Group Assessment
1.4.10.1.1.02.05.25.07 PK7 200-CW-1 Operable Unit
1.4.10.1.1.02.05.25.07.31 PK71 200-CW-1 Operable Unit Assessment
1.4.10.1.1.02.05.25.07.31.01 PK7101 200-CW-1 Gable Mtn/B-Pond and Ditches Cooling Water Group Asse
1.4.10.1.1.02.05.25.13 PKD 200-CS-1 Operable Unit
1.4.10.1.1.02.05.25.13.31 PKD1 200-CS-1 Operable Unit Assessment
1.4.10.1.1.02.05.25.13.31.01 PKD101 200-CS-1 Chemical Sewer Group Assessment
1.4.10.1.1.02.05.25.17 PKH 200-TW-1 Operable Unit
1.4.10.1.1.02.05.25.17.31 PKH1 200-TW-1 Operable Unit Assessment
1.4.10.1.1.02.05.25.17.31.01 PKH101 200-TW-1 Scavenged Waste Group Assessment
1.4.10.1.1.02.05.25.18 PKJ 200-TW-2 Operable Unit
1.4.10.1.1.02.05.25.18.31 PKJ1 200-TW-2 Operable Unit Assessment
1.4.10.1.1.02.05.25.18.31.01 PKJ101 200-TW-2 Tank Waste Group Assessment
1.4.10.1.1.02.05.25.24 PKR 200 Area NPL Common Source
1.4.10.1.1.02.05.25.24.31 PKR1 200 Area NPL Common Source Assessment
1.4.10.1.1.02.05.25.24.31.01 PKR101 200 Area NPL Common Source Assessment Activities

1.4.10.1.1.08 ER08 Groundwater Management Project

1.4.10.1.1.08.02 100 Area Groundwater Remedial Action

1.4.10.1.1.08.02.06 PC 100-KR GW Remedial Actions
1.4.10.1.1.08.02.06.04 PC4 100-KR-4 GW Operable Unit
1.4.10.1.1.08.02.06.04.32 PC42 100-KR-4 GW Remediation
1.4.10.1.1.08.02.06.04.32.12 PC4212 100-KR-4 GW Chemical Treatment Process

1.4.10.1.1.08.02.08 PE 100-HR GW Remedial Actions
1.4.10.1.1.08.02.08.03 PE3 100-HR-3 GW Operable Unit
1.4.10.1.1.08.02.08.03.32 PE32 100-HR-3 GW Remediation
1.4.10.1.1.08.02.08.03.32.01 PE3201 100-HR-3 GW Project Support costs
1.4.10.1.1.08.02.08.03.32.12 PE3212 100-HR-3 GW Chemical Treatment Process
1.4.10.1.1.08.02.08.03.32.14 PE3214 100-HR-3 In-Situ Redox Manipulation

1.4.10.1.1.08.02.09 PG 100-NR GW Remedial Action
1.4.10.1.1.08.02.09.02 PG2 100-NR-2 GW Operable Unit
1.4.10.1.1.08.02.09.02.32 PG22 100-NR-2 GW Operable Unit Remediation
1.4.10.1.1.08.02.09.02.32.02 PG2202 100-NR-2 GW ERA Implementation

1.4.10.1.1.08.02.29 PH 100 Area GW Remedial Action River Corridor Common
1.4.10.1.1.08.02.29.01 PH1 100 Area GW Remedial Action River Corridor Common Operable Unit
1.4.10.1.1.08.02.29.01.32 PH12 100 Area GW Remedial Action River Corridor Common Remediation
1.4.10.1.1.08.02.29.01.32.01 PH1201 100 Area GW Remedial Action River Corridor Common Support

1.4.10.1.1.08.03 Hanford Site Groundwater Management

1.4.10.1.1.08.03.24 P4 Groundwater Monitoring
1.4.10.1.1.08.03.24.01 P41 GW Monitoring
1.4.10.1.1.08.03.24.01.02 P412 GW Monitoring Remediation
1.4.10.1.1.08.03.24.01.02.01 P41201 GW Project Support Costs
1.4.10.1.1.08.03.24.01.02.02 P41202 GW Long Term Monitoring
P4120G
1.4.10.1.1.08.03.24.09 P49 RCRA and GW Monitoring (7340)
1.4.10.1.1.08.03.24.09.31 P491 RCRA and GW Monitoring Landlord (7340)
1.4.10.1.1.08.03.24.09.31.08 P49108 7340-1 GW Well Installation (Expense)

1.4.10.1.1.08.03.25 P5 Hanford Site GW Well Maint., Refurbishment, Abandonment
1.4.10.1.1.08.03.25.01 P51 GW Well Maintenence, Refurbishment, Abandonment
1.4.10.1.1.08.03.25.01.02 P512 GW Well Maintenence, Refurbishment, Abandonment Landlord
1.4.10.1.1.08.03.25.01.02.02 P51202 GW Maintenence, Refurbishment, Abandonment

1.4.10.1.1.08.03.26 P6 Hanford Site Interim Action GW Monitoring
1.4.10.1.1.08.03.26.01 P61 Interim Action GW Monitoring
1.4.10.1.1.08.03.26.01.02 P612 Interim Action GW Monitoring Landlord
1.4.10.1.1.08.03.26.01.02.02 P61202 GW Interim Action Monitoring

1.4.10.1.1.08.06 200 Area Groundwater Remedial Action

1.4.10.1.1.08.06.16 PT 200-UP GW Remedial Actions
1.4.10.1.1.08.06.16.01 PT1 200-UP-1 GW Operable Unit
1.4.10.1.1.08.06.16.01.32 PT12 200-UP-1 GW Remediation
1.4.10.1.1.08.06.16.01.32.12 PT1212 200-UP-1 GW Chemical Treatment Operation

1.4.10.1.1.08.06.17 PU 200-ZP GW Remedial Actions
1.4.10.1.1.08.06.17.01 PU1 200-ZP-1 GW Operable Unit
1.4.10.1.1.08.06.17.01.32 PU12 200-ZP-1 GW Remediation
1.4.10.1.1.08.06.17.01.32.01 PU1201 200-ZP-1 GW Project Support costs
1.4.10.1.1.08.06.17.01.32.05 PU1205 200-ZP-1 GW Physical Treatment Process
1.4.10.1.1.08.06.17.02 PU2 200-ZP-2 GW (Vapor)
1.4.10.1.1.08.06.17.02.34 PU24 200-ZP-2 GW RCRA/CERCLA Interim Removal Actions
1.4.10.1.1.08.06.17.02.34.05 PU2405 200-ZP-2 GW Physical Treatment Operation
1.4.10.1.1.08.06.17.02.34.14 PU2414 200-ZP-2 GW D&D

1.4.10.1.1.08.06.30 PX 200 Area GW Remedial Action Plateau Common
1.4.10.1.1.08.06.30.01 PX1 200 Area GW Remedial Action Plateau Common Operable Unit
1.4.10.1.1.08.06.30.01.32 PX12 200 Area GW Remedial Action Plateau Common Remediation
1.4.10.1.1.08.06.30.01.32.01 PX1201 200 Area GW Remedial Action Plateau Common Support

1.4.10.1.7 Site-Wide Groundwater/Vadose Zone Integration Project

1.4.10.1.7.11 VZ01 Site-Wide Groundwater/Vadose Zone Integration Project
1.4.10.1.7.11.03 Hanford Site Groundwater Management - Vadose Integration

1.4.10.1.7.11.03.27 P7 GW/Vadose Zone Integration Project
1.4.10.1.7.11.03.27.01 P71 GW/Vadose Zone Integration Project
1.4.10.1.7.11.03.27.01.35 P715 GW/Vadose Zone Integration of Vadose Zone Activities
1.4.10.1.7.11.03.27.01.35.01 P71501 GW/Vadose Zone Management and Integration
1.4.10.1.7.11.03.27.01.35.02 P71502 Characterization of Systems
1.4.10.1.7.11.03.27.01.35.03 P71503 System Assessment Capability
1.4.10.1.7.11.03.27.01.35.04 P71504 Science and Technology (PNNL Fin Plan)

WORK BREAKDOWN STRUCTURE INDEX

PBS	Indenture Level 5	6	7	8	9	10	11	Title	HQ/ERC WBS #	B&R #
RL-ER02		X						200 Area Environmental Restoration Remedial Action	1.4.10.1.1.02	EW02J1020
RL-ER02			X					200 Area Remedial Action	1.4.10.1.1.02.05	EW02J1020
RL-ER02				X				200-BP Remedial Action	1.4.10.1.1.02.05.10	EW02J1020
RL-ER02					X			200-BP-1 Operable Unit	1.4.10.1.1.02.05.10.01	EW02J1020
RL-ER02						X		200-BP-1 Operable Unit Assessment	1.4.10.1.1.02.05.10.01.31	EW02J1020
RL-ER02							X	200-BP-1 Hanford Prototype Barrier Study	1.4.10.1.1.02.05.10.01.31.01	EW02J1020
RL-ER02				X				200 Area NPL Common Source Assessment	1.4.10.1.1.02.05.25	EW02J1020
RL-ER02					X			200-PW-1 Operable Unit	1.4.10.1.1.02.05.25.01	EW02J1020
RL-ER02						X		200-PW-1 Operable Unit Assessment	1.4.10.1.1.02.05.25.01.31	EW02J1020
RL-ER02							X	200-PW-1 Plutonium/Organic-Rich Process Waste Group Assessment	1.4.10.1.1.02.05.25.01.31.01	EW02J1020
RL-ER02					X			200-CW-1 Operable Unit	1.4.10.1.1.02.05.25.07	EW02J1020
RL-ER02						X		200-CW-1 Operable Unit Assessment	1.4.10.1.1.02.05.25.07.31	EW02J1020
RL-ER02							X	200-CW-1 Gable Mtn/B-Pond and Ditches Cooling Water Group Assess	1.4.10.1.1.02.05.25.07.31.01	EW02J1020
RL-ER02					X			200-CS-1 Operable Unit	1.4.10.1.1.02.05.25.13	EW02J1020
RL-ER02						X		200-CS-1 Operable Unit Assessment	1.4.10.1.1.02.05.25.13.31	EW02J1020
RL-ER02							X	200-CS-1 Chemical Sewer Group Assessment	1.4.10.1.1.02.05.25.13.31.01	EW02J1020
RL-ER02					X			200-TW-1 Operable Unit	1.4.10.1.1.02.05.25.17	EW02J1020
RL-ER02						X		200-TW-1 Operable Unit Assessment	1.4.10.1.1.02.05.25.17.31	EW02J1020
RL-ER02							X	200-TW-1 Scavenged Waste Group Assessment	1.4.10.1.1.02.05.25.17.31.01	EW02J1020
RL-ER02					X			200-TW-2 Operable Unit	1.4.10.1.1.02.05.25.18	EW02J1020
RL-ER02						X		200-TW-2 Operable Unit Assessment	1.4.10.1.1.02.05.25.18.31	EW02J1020
RL-ER02							X	200-TW-2 Tank Waste Group Assessment	1.4.10.1.1.02.05.25.18.31.01	EW02J1020
RL-ER02					X			200 Area NPL Common Source	1.4.10.1.1.02.05.25.24	EW02J1020
RL-ER02						X		200 Area NPL Common Source Assessment	1.4.10.1.1.02.05.25.24.31	EW02J1020
RL-ER02							X	200 Area NPL Common Source Assessment Activities	1.4.10.1.1.02.05.25.24.31.01	EW02J1020

WORK BREAKDOWN STRUCTURE INDEX

PBS	Indenture Level							Title	HQ/ERC WBS #	B&R #
	5	6	7	8	9	10	11			
RL-ER08		X						Groundwater Management Project	1.4.10.1.1.08	EW02J1080
RL-ER08			X					Hanford Site Groundwater Management	1.4.10.1.1.08.03	EW02J1080
RL-ER08				X				Groundwater Monitoring	1.4.10.1.1.08.03.24	EW02J1080
RL-ER08					X			GW Monitoring	1.4.10.1.1.08.03.24.01	EW02J1080
RL-ER08						X		GW Monitoring Remediation	1.4.10.1.1.08.03.24.01.02	EW02J1080
RL-ER08							X	Borehole Logging Support by Grand Junction	1.4.10.1.1.08.03.24.01.02.0G	EW02J1080

RESPONSIBILITY ASSIGNMENT MATRIX

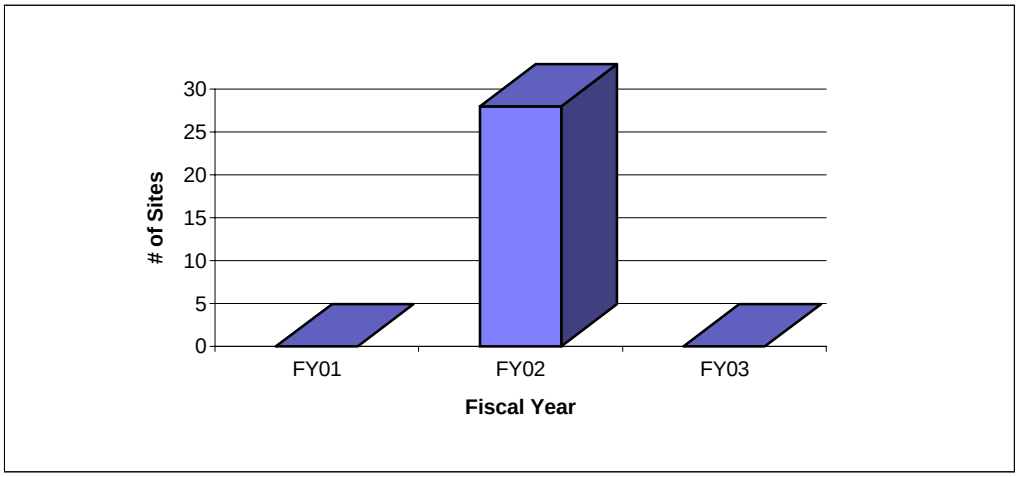
OU	CA #	WBS #	Description	Responsibility	
				ERC	RL
		1.4.10.1.1	Remedial Action	HUGHES MC	BILSON HE
200 Area RA		1.4.10.1.1.02	200 Area Environmental Restoration Remedial Action	FORD BH	ROBERTSON OC
200 Area RA		1.4.10.1.1.02.05	200 Area Remedial Action	FORD BH	ROBERTSON OC
200-BP	PL	1.4.10.1.1.02.05.10	200-BP Remedial Action	FORD BH	FOLEY BL
200-BP-1	PL1	1.4.10.1.1.02.05.10.01	200-BP-1 Operable Unit	FORD BH	FOLEY BL
200-BP-1	PL11	1.4.10.1.1.02.05.10.01.31	200-BP-1 Operable Unit Assessment	FORD BH	FOLEY BL
200-BP-1	PL1101	1.4.10.1.1.02.05.10.01.31.01	200-BP-1 Hanford Prototype Barrier Study	FORD BH	FOLEY BL
200 NPL Common	PK	1.4.10.1.1.02.05.25	200 Area NPL Common Source Assessment	FORD BH	FOLEY BL
200-PW-1	PK1	1.4.10.1.1.02.05.25.01	200-PW-1 Operable Unit	FORD BH	FOLEY BL
200-PW-1	PK11	1.4.10.1.1.02.05.25.01.31	200-PW-1 Operable Unit Assessment	FORD BH	FOLEY BL
200-PW-1	PK1101	1.4.10.1.1.02.05.25.01.31.01	200-PW-1 Plutonium/Organic-Rich Process Waste Group Assessment	FORD BH	FOLEY BL
200-CW-1	PK7	1.4.10.1.1.02.05.25.07	200-CW-1 Operable Unit	FORD BH	FOLEY BL
200-CW-1	PK71	1.4.10.1.1.02.05.25.07.31	200-CW-1 Operable Unit Assessment	FORD BH	FOLEY BL
200-CW-1	PK7101	1.4.10.1.1.02.05.25.07.31.01	200-CW-1 Gable Mtn/B-Pond and Ditches Cooling Water Group Assess	FORD BH	FOLEY BL
200-CS-1	PKD	1.4.10.1.1.02.05.25.13	200-CS-1 Operable Unit	FORD BH	FOLEY BL
200-CS-1	PKD1	1.4.10.1.1.02.05.25.13.31	200-CS-1 Operable Unit Assessment	FORD BH	FOLEY BL
200-CS-1	PKD101	1.4.10.1.1.02.05.25.13.31.01	200-CS-1 Chemical Sewer Group Assessment	FORD BH	FOLEY BL
200-TW-1	PKH	1.4.10.1.1.02.05.25.17	200-TW-1 Operable Unit	FORD BH	FOLEY BL
200-TW-1	PKH1	1.4.10.1.1.02.05.25.17.31	200-TW-1 Operable Unit Assessment	FORD BH	FOLEY BL
200-TW-1	PKH101	1.4.10.1.1.02.05.25.17.31.01	200-TW-1 Scavenged Waste Group Assessment	FORD BH	FOLEY BL
200-TW-2	PKJ	1.4.10.1.1.02.05.25.18	200-TW-2 Operable Unit	FORD BH	FOLEY BL
200-TW-2	PKJ1	1.4.10.1.1.02.05.25.18.31	200-TW-2 Operable Unit Assessment	FORD BH	FOLEY BL
200-TW-2	PKJ101	1.4.10.1.1.02.05.25.18.31.01	200-TW-2 Tank Waste Group Assessment	FORD BH	FOLEY BL
200 NPL Common	PKR	1.4.10.1.1.02.05.25.24	200 Area NPL Common Source	FORD BH	FOLEY BL
200 NPL Common	PKR1	1.4.10.1.1.02.05.25.24.31	200 Area NPL Common Source Assessment	FORD BH	FOLEY BL

RESPONSIBILITY ASSIGNMENT MATRIX

OU	CA #	WBS #	Description	Responsibility	
				ERC	RL
200 NPL Common	PKR101	1.4.10.1.1.02.05.25.24.31.01	200 Area NPL Common Source Assessment Activities	FORD BH	FOLEY BL
GW Management		1.4.10.1.1.08	Groundwater Management Project	ARMATROUT JF	TORTOSO AC
HSGWM		1.4.10.1.1.08.03	Hanford Site Groundwater Management	ARMATROUT JF	FURMAN MJ
GW Monitoring	P4	1.4.10.1.1.08.03.24	Groundwater Monitoring	ARMATROUT JF	FURMAN MJ
GW Monitoring	P41	1.4.10.1.1.08.03.24.01	GW Monitoring	ARMATROUT JF	FURMAN MJ
GW Monitoring	P412	1.4.10.1.1.08.03.24.01.02	GW Monitoring Remediation	ARMATROUT JF	FURMAN MJ

AREA REMEDIATION QUANTITIES PRODUCTION RATES

Number of Sites Assessed



	FY01	FY02	FY03
Each	0	28	0

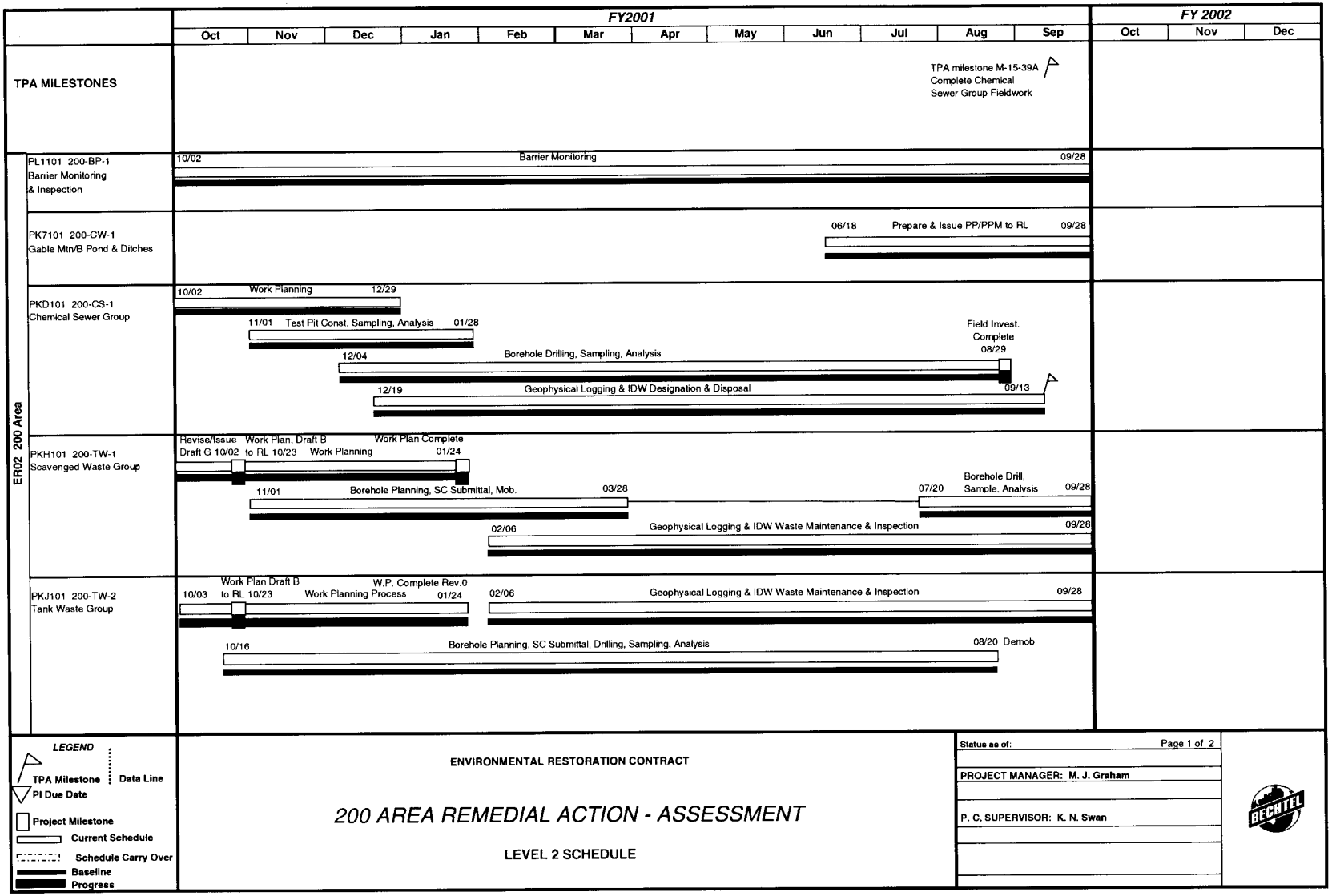
200 Area Waste Sites

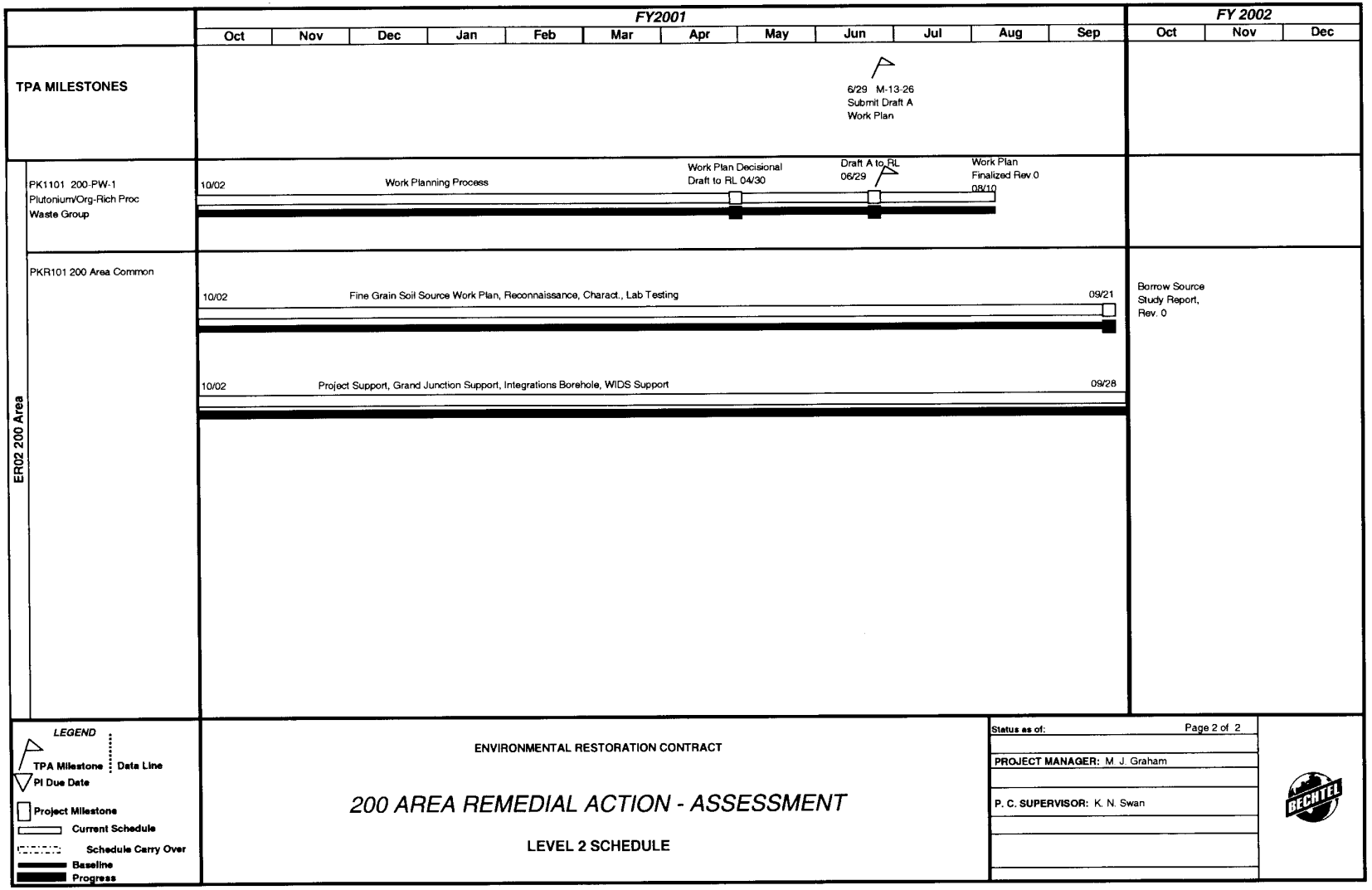
FY01	FY02	FY03
None	***1=PP***	***None***
	CW-1 = 28 WS	

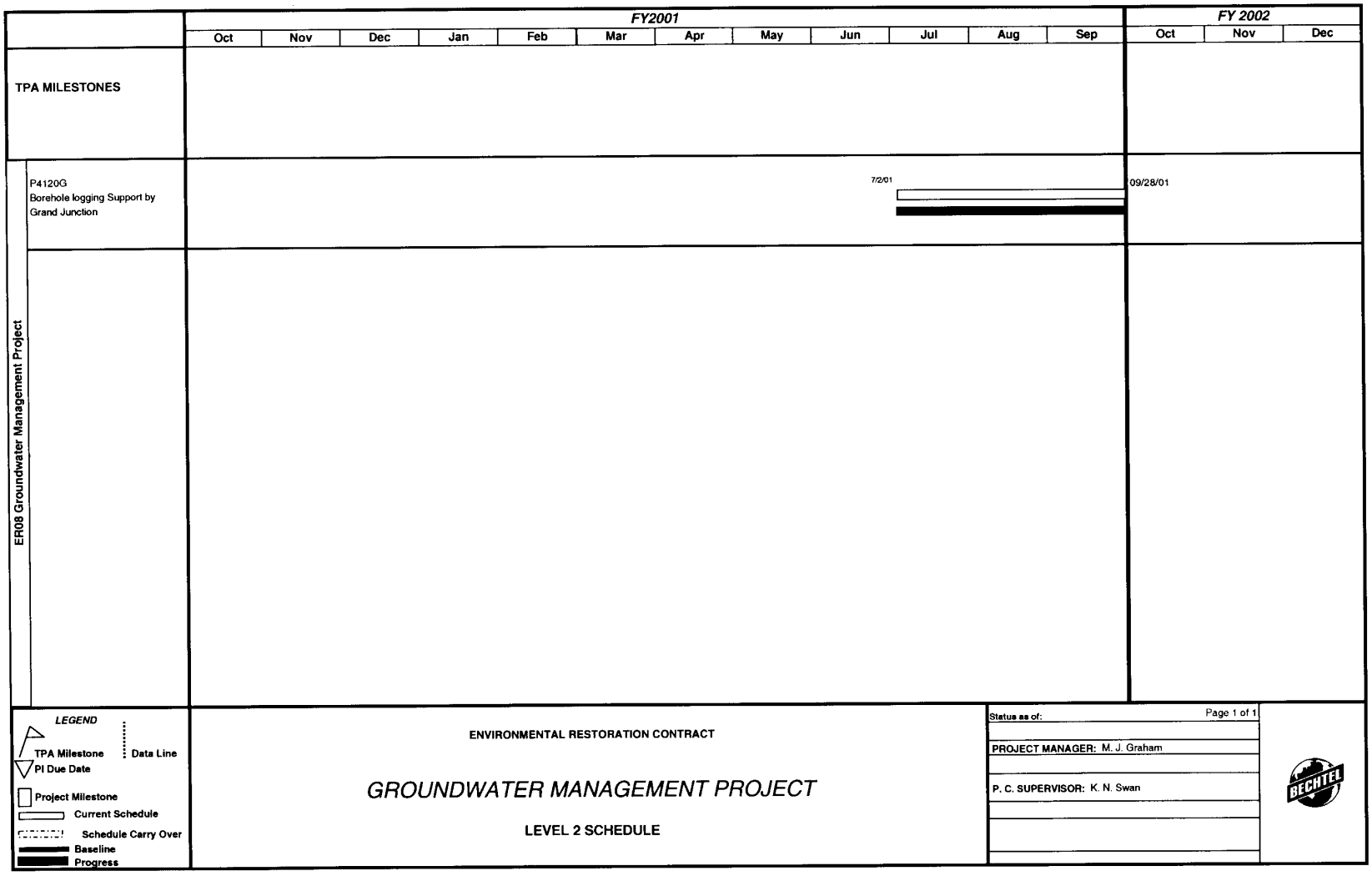
NOTE: This assumes that sufficient funding will be identified in FY02.

200-CW-1 Proposed Plan that is due to the regulators by November 30, 2001 (TPA milestone M-15-39A)

PP = Proposed Plan
WS = Waste Sites


FY2001
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
FY 2002
Oct
Nov
Dec
TPA MILESTONES
TPA milestone M-15-39A Complete Chemical Sewer Group Fieldwork
ER02 200 Area
PL1101 200-BP-1 Barrier Monitoring & Inspection
10/02
Barrier Monitoring
09/28
PK7101 200-CW-1 Gable Mtn/B Pond & Ditches
06/18
Prepare & Issue PP/PPM to RL
09/28
PKD101 200-CS-1 Chemical Sewer Group
10/02
Work Planning
12/29
11/01
Test Pit Const, Sampling, Analysis
01/28
Field Invest. Complete 08/29
12/04
Borehole Drilling, Sampling, Analysis
12/19
Geophysical Logging & IDW Designation & Disposal
09/13
PKH101 200-TW-1 Scavenged Waste Group
Revise/Issue Draft G 10/02
Work Plan, Draft B to RL 10/23
Work Planning
Work Plan Complete 01/24
11/01
Borehole Planning, SC Submittal, Mob.
03/28
07/20
Borehole Drill, Sample, Analysis
09/28
02/06
Geophysical Logging & IDW Waste Maintenance & Inspection
09/28
PKJ101 200-TW-2 Tank Waste Group
10/03
Work Plan Draft B to RL 10/23
Work Planning
W.P. Complete Rev.0 Process 01/24
02/06
Geophysical Logging & IDW Waste Maintenance & Inspection
09/28
10/16
Borehole Planning, SC Submittal, Drilling, Sampling, Analysis
08/20 Demob
LEGEND
TPA Milestone
Data Line
PI Due Date
Project Milestone
Current Schedule
Schedule Carry Over
Baseline
Progress
ENVIRONMENTAL RESTORATION CONTRACT
200 AREA REMEDIAL ACTION - ASSESSMENT
LEVEL 2 SCHEDULE
Status as of:
Page 1 of 2
PROJECT MANAGER: M. J. Graham
P. C. SUPERVISOR: K. N. Swan
BECHTEL


FY2001
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
FY 2002
Oct
Nov
Dec
TPA MILESTONES
6/29 M-13-26
Submit Draft A
Work Plan
ER02 200 Area
PK1101 200-PW-1
Plutonium/Org-Rich Proc
Waste Group
10/02
Work Planning Process
Work Plan Decisional
Draft to RL 04/30
Draft A to RL
06/29
Work Plan
Finalized Rev.0
08/10
PKR101 200 Area Common
10/02
Fine Grain Soil Source Work Plan, Reconnaissance, Charact., Lab Testing
09/21
Borrow Source
Study Report,
Rev. 0
10/02
Project Support, Grand Junction Support, Integrations Borehole, WIDS Support
09/28
LEGEND
TPA Milestone
Data Line
PI Due Date
Project Milestone
Current Schedule
Schedule Carry Over
Baseline
Progress
ENVIRONMENTAL RESTORATION CONTRACT
200 AREA REMEDIAL ACTION - ASSESSMENT
LEVEL 2 SCHEDULE
Status as of:
Page 2 of 2
PROJECT MANAGER: M. J. Graham
P. C. SUPERVISOR: K. N. Swan
BECHTEL


FY2001
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
FY 2002
Oct
Nov
Dec
TPA MILESTONES
ER08 Groundwater Management Project
P4120G
Borehole logging Support by
Grand Junction
7/2/01
09/28/01
LEGEND
TPA Milestone
PI Due Date
Data Line
Project Milestone
Current Schedule
Schedule Carry Over
Baseline
Progress
ENVIRONMENTAL RESTORATION CONTRACT
GROUNDWATER MANAGEMENT PROJECT
LEVEL 2 SCHEDULE
Status as of:
Page 1 of 1
PROJECT MANAGER: M. J. Graham
P. C. SUPERVISOR: K. N. Swan
BECHTEL

TRI-PARTY AGREEMENT MILESTONES

PBS	Milestone No.	Compliance Date	Milestone Description	OU	Comments
ER02	M-13-26	06/30/01	Submit General Process Waste Group (200-PW-4) Work Plan	200-PW-4	Compliance date will be met with additional authorization funds. Proposed TPA Change Package to replace 200-PW-4 with 200-PW-1
ER02	M-15-38A	11/30/01	Submit Draft A Gable Mountain Pond/ B Pond and Ditch Cooling Water Group Feasibility Study and 216-B-3 Pond System RCRA TSD Unit Closure Plan and Submit Draft A Gable Mountain Pond/B Pond and Ditch Cooling Water Group Proposed Plan/Proposed RCRA Permit Modification	200-CW-1	Compliance date will be met with additional authorization funds
ER02	M-13-00L	12/31/01	Submit 3 200 NPL RI/FS (RFI/CMS) Work Plans	200-NPL Common	Compliance date will be met with additional authorization funds
ER02	M-15-40A	09/30/02	Complete U Pond/Z Ditches Cooling Water Group Field Work Through Sample Collection and Analysis		Compliance date will be met with additional authorization funds
ER02	M-13-00M	12/31/02	Submit 3 200 NPL RI/FS (RFI/CMS) Work Plans	200-NPL Common	Compliance date will be met with additional authorization funds
ER02	M-20-39	02/28/03	Submit 216-S-10 Pond and Ditch Closure/Post Closure Plan to Ecology in Coordination with the Work Plan for the Chemical Sewer Group (to be coordinated with M-13-21)	200-CS-1	Assume TPA Change Package is approved to defer closure plan past FY01-03 DWP window
ER02	M-15-40B	05/31/03	Submit Draft A U Pond/Z Ditches Cooling Water Group Remedial Investigation Report		Compliance date will be met with additional authorization funds
ER02	M-15-39A	09/30/03	Complete Chemical Sewer Group Field Work Through Sample Collection and Analysis		Compliance date will be met with additional authorization funds

PBS BUDGET BASELINE TABLE

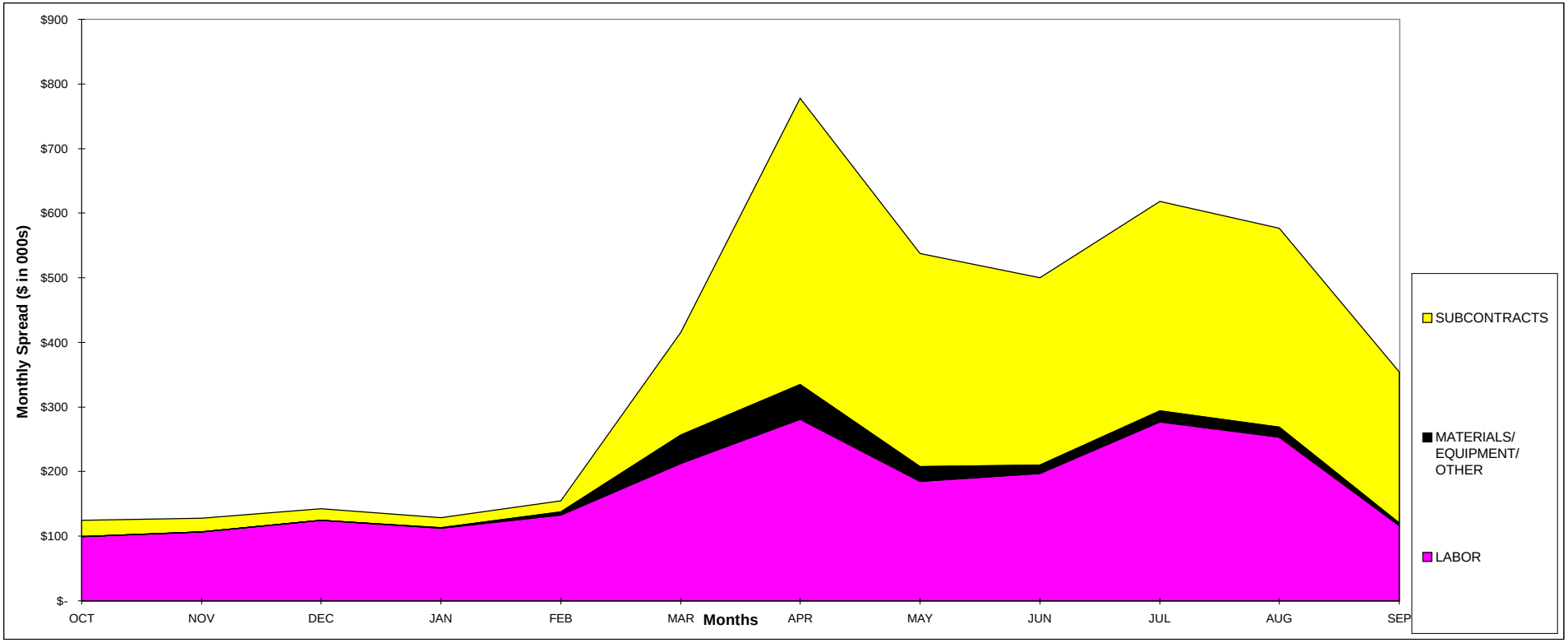
CA #	Description	HOURS			$1,000			
		Non Manual	Manual	Total	Labor	Material/ Eqpt/Other	SC	Total
		FY 2001						
PK1101	200-PW-1 Plutonium/Organic-Rich Process Waste Group Assessm	1,751		1,751	144	0	43	187
	Subtotal 200-PW-1 Operable Unit	**1,751**		**1,751**	**144**	**0**	**43**	**187**
PK7101	200-CW-1 Gable Mtn/B-Pond and Ditches Cooling Water Group Ass	605		605	50	0	0	50
	Subtotal 200-CW-1 Operable Unit	**605**		**605**	**50**	**0**	**0**	**50**
PKD101	200-CS-1 Chemical Sewer Group Assessment	3,121	1,764	4,885	362	42	397	801
	Subtotal 200-CS-1 Operable Unit	**3,121**	**1,764**	**4,885**	**362**	**42**	**397**	**801**
PKH101	200-TW-1 Scavenged Waste Group Assessment	3,069	1,159	4,228	327	22	405	754
	Subtotal 200-TW-1 Operable Unit	**3,069**	**1,159**	**4,228**	**327**	**22**	**405**	**754**
PKJ101	200-TW-2 Tank Waste Group Assessment	6,403	2,860	9,263	718	103	1,123	1,945
	Subtotal 200-TW-2 Operable Unit	**6,403**	**2,860**	**9,263**	**718**	**103**	**1,123**	**1,945**
PKR101	200 Area NPL Common Source Assessment Activities	6,193		6,193	483	9	159	651
	Subtotal 200 Area NPL Common Source	**6,193**		**6,193**	**483**	**9**	**159**	**651**
PL1101	200-BP-1 Hanford Prototype Barrier Study	180		180	15	0	55	70
	Subtotal 200-BP-1 Operable Unit	**180**		**180**	**15**	**0**	**55**	**70**
	FY 2001 TOTAL	**21,322**	**5,783**	**27,105**	**2,098**	**176**	**2,183**	**4,457**

PBS BUDGET BASELINE TABLE

CA #	Description	HOURS			$1,000			
		Non Manual	Manual	Total	Labor	Material/ Eqpt/Other	SC	Total
		FY 2001						
P4120G	Borehole Logging Support by Grand Junction				0	0	800	800
	Subtotal GW Monitoring				**0**	**0**	**800**	**800**
	FY 2001 TOTAL				**0**	**0**	**800**	**800**

FY 2001 PBS BASELINE EXPENDITURE FORECAST

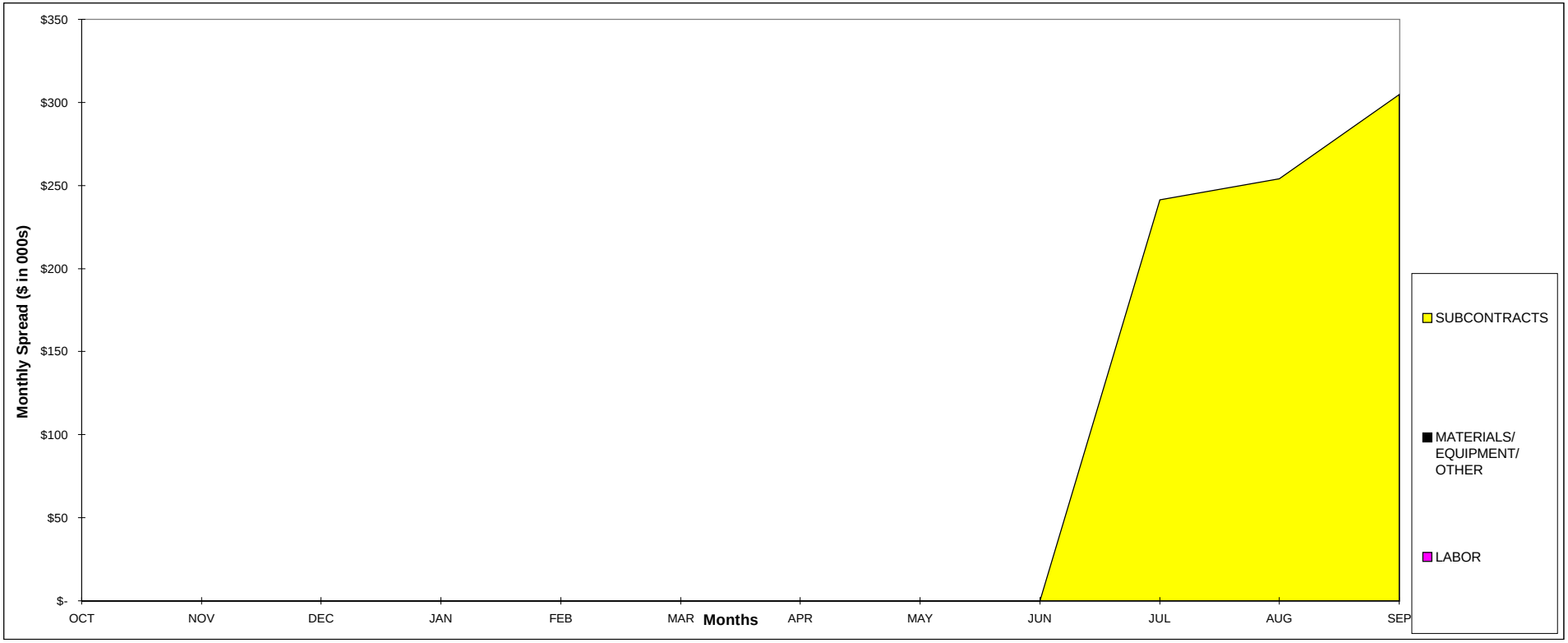
(Dollars in Thousands)



	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
LABOR	$ 99	$ 107	$ 124	$ 112	$ 133	$ 213	$ 281	$ 185	$ 197	$ 277	$ 253	$ 117	$ 2,098
MATERIALS/ EQUIPMENT/ OTHER	$ -	$ -	$ -	$ 1	$ 4	$ 44	$ 54	$ 23	$ 14	$ 17	$ 16	$ 4	$ 176
SUBCONTRACTS	$ 25	$ 21	$ 19	$ 15	$ 17	$ 159	$ 442	$ 329	$ 290	$ 324	$ 308	$ 234	$ 2,183
BUDGET CURRENT	$ 125	$ 128	$ 143	$ 128	$ 154	$ 416	$ 777	$ 537	$ 500	$ 618	$ 577	$ 354	$ 4,457
BUDGET BASELINE (DWP)	$ 125	$ 128	$ 143	$ 128	$ 154	$ 416	$ 777	$ 537	$ 500	$ 618	$ 577	$ 354	$ 4,457
ACTUALS	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
MONTHLYFORECAST	$ 125	$ 128	$ 143	$ 128	$ 154	$ 416	$ 777	$ 537	$ 500	$ 618	$ 577	$ 354	$ 4,457
CUMULATIVE EAC	$ 125	$ 252	$ 395	$ 524	$ 678	$ 1,094	$ 1,871	$ 2,408	$ 2,908	$ 3,526	$ 4,103	**$ 4,457**	$ 4,457

FY 2001 PBS BASELINE EXPENDITURE FORECAST

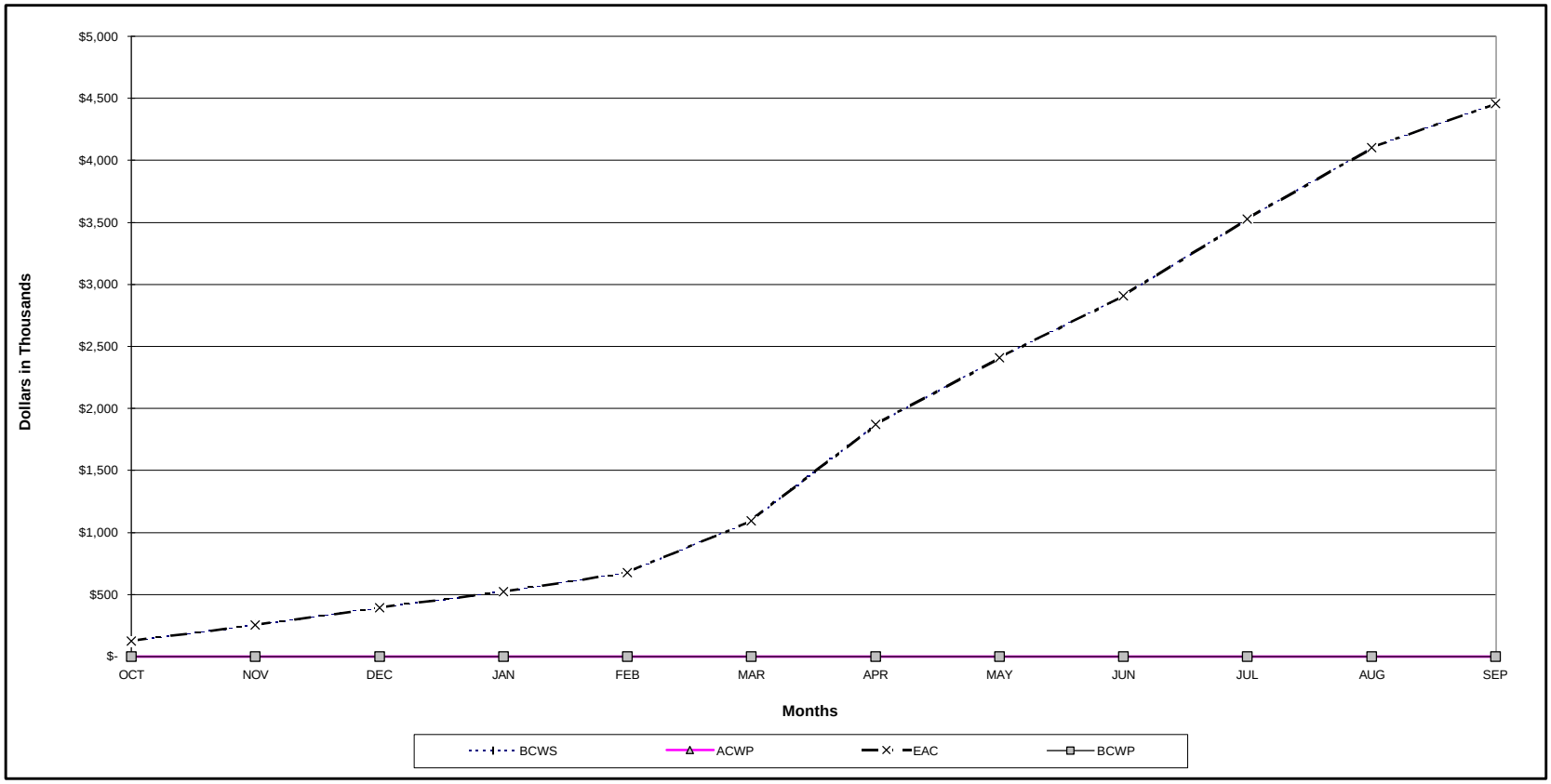
(Dollars in Thousands)



	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
LABOR	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
MATERIALS/ EQUIPMENT/ OTHER	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
SUBCONTRACTS	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 241	$ 254	$ 305	$ 800
BUDGET CURRENT	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 241	$ 254	$ 305	$ 800
BUDGET BASELINE (DWP)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 241	$ 254	$ 305	$ 800
ACTUALS	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
MONTHLYFORECAST	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 241	$ 254	$ 305	$ 800
CUMULATIVE EAC	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 241	$ 495	**$ 800**	$ 800

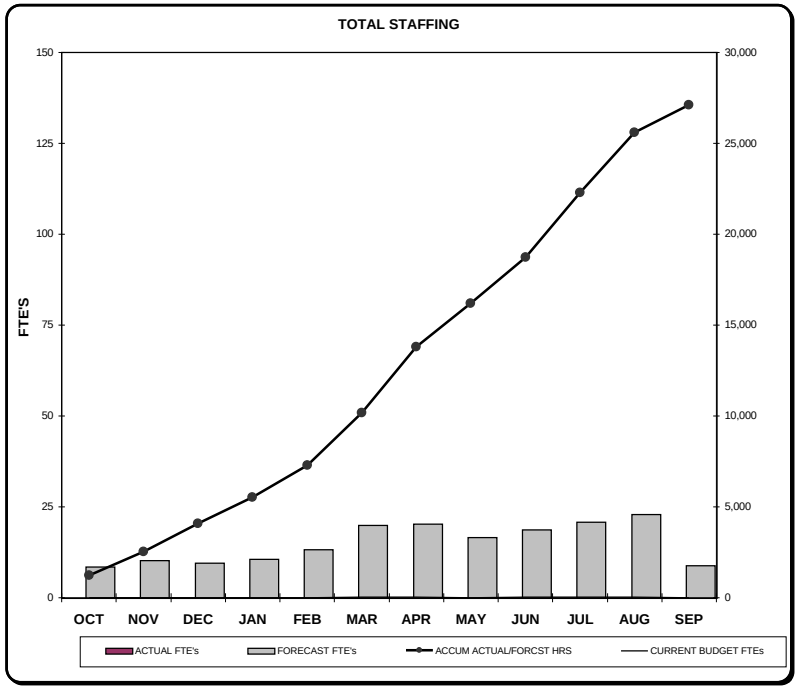
FY 2001 PBS PERFORMANCE GRAPH

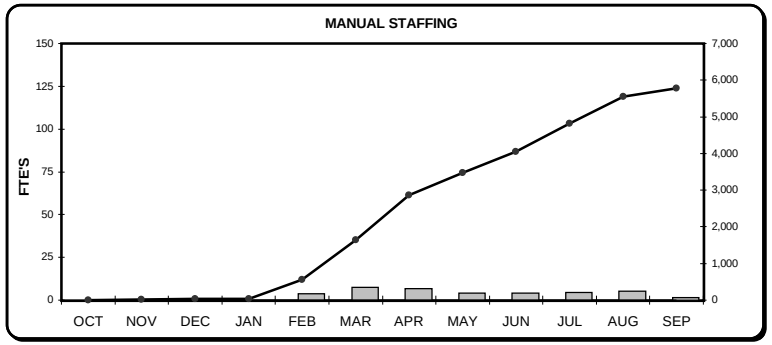
(Dollars in Thousands)

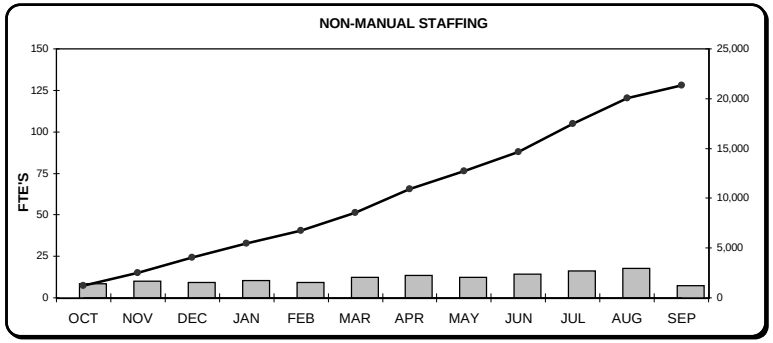


	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
FY-01 DWP (10/01/2000)	$ 125	$ 128	$ 143	$ 128	$ 154	$ 416	$ 777	$ 537	$ 500	$ 618	$ 577	$ 354	**$ 4,457**
CURRENT PERIOD													
BCWS	$ 125	$ 128	$ 143	$ 128	$ 154	$ 416	$ 777	$ 537	$ 500	$ 618	$ 577	$ 354	**$ 4,457**
BCWP	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**
ACWP	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**
ETC	$ 125	$ 128	$ 143	$ 128	$ 154	$ 416	$ 777	$ 537	$ 500	$ 618	$ 577	$ 354	**$ -**
CUMULATIVE/YEAR TO DATE													
BCWS	$ 125	$ 252	$ 395	$ 524	$ 678	$ 1,094	$ 1,871	$ 2,408	$ 2,908	$ 3,526	$ 4,103	**$ 4,457**	
BCWP	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**	
ACWP	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**	
EAC	$ 125	$ 252	$ 395	$ 524	$ 678	$ 1,094	$ 1,871	$ 2,408	$ 2,908	$ 3,526	$ 4,103	**$ 4,457**	

FY 2001 PBS STAFFING PLAN







	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	Realization
TOTAL STAFFING													
ACTUAL FTE's	-	-	-	-	-	-	-	-	-	-	-	-	
FORECAST FTE's	8.4	10.1	9.5	10.5	13.1	19.9	20.2	16.6	18.7	20.8	22.8	8.8	**15.0**
MONTHLY ACTUAL/FORCST HRS	1217	1307	1568	1427	1786	2866	3632	2384	2542	3572	3283	1521	**27105**
ACCUM ACTUAL/FORCST HRS	1217	2524	4092	5519	7306	10171	13803	16187	18729	22301	25584	27105	
CURRENT BUDGET FTEs	8.4	10.1	9.5	10.5	13.1	19.9	20.2	16.6	18.7	20.8	22.8	8.8	
MANUAL STAFFING													
ACTUAL FTE's	-	-	-	-	-	-	-	-	-	-	-	-	
FORECAST FTE's	0.0	0.1	0.1	0.1	3.8	7.6	6.7	4.2	4.3	4.4	5.2	1.3	**3.2**
MONTHLY ACTUAL/FORCST HRS	3	10	14	11	519	1089	1215	608	582	760	746	226	**5783**
ACCUM ACTUAL/FORCST HRS	3	13	27	38	557	1646	2861	3469	4051	4811	5557	5783	
CURRENT BUDGET FTEs	0.0	0.1	0.1	0.1	3.8	7.6	6.7	4.2	4.3	4.4	5.2	1.3	
NON-MANUAL STAFFING													
ACTUAL FTE's	-	-	-	-	-	-	-	-	-	-	-	-	
FORECAST FTE's	8.4	10.1	9.4	10.4	9.3	12.3	13.4	12.3	14.4	16.3	17.6	7.5	**11.8**
MONTHLY ACTUAL/FORCST HRS	1214	1297	1554	1416	1267	1776	2417	1776	1960	2811	2538	1294	**21322**
ACCUM ACTUAL/FORCST HRS	1214	2511	4065	5481	6749	8525	10942	12718	14679	17490	20028	21322	
CURRENT BUDGET FTEs	8.4	10.1	9.4	10.4	9.3	12.3	13.4	12.3	14.4	16.3	17.6	7.5	

FY 2001 AREA BASELINE STAFFING FORECAST BY RESOURCE

[Reflects $35.7M Budget Scope]

Labor Resource	FY 2001 Total Hours	FY 2001 FTE's OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	Total Realized
Non-Bargaining Labor														
BHI														
21700 PLANNING & CONTROLS	406	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.4	0.4	0.2	0.2	0.2
31750 ENVIRONMENTAL LEADS	974	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.9	1.0	0.6	0.4	0.5
31751 SAMPLE AND DATA MANAGMENT	170	0.0	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.2	0.1	0.1
31752 ENVIRONMENTAL SPECIALISTS	118		0.0	0.0	0.0	0.0	0.0	0.1		0.1	0.2	0.2	0.2	0.1
31754 REGULATORY SUPPORT	106		0.0	0.0	0.0	0.0		0.0		0.0	0.2	0.2	0.2	0.1
32712 DESIGN ENG - E&T TASK LEADS	95								0.1	0.1	0.1	0.2	0.1	0.1
32721 DESIGN ENG - ENGINEERS	12							0.1	0.0					0.0
32727 DESIGN ENG - NUCLEAR/SAFETY ANAL	4	0.0	0.0	0.0										0.0
41700 PROCUREMENT	437		0.1	0.6	0.7	0.6	0.5	0.2	0.1	0.1	0.0			0.2
53720 FIELD SUPPORT ENGINEERING	1,093	0.2	1.1	1.1	1.0	1.3	1.5	0.5	0.4	0.3	0.1			0.6
53740 FIELD SUPPORT - SUBCONTRACT STR	2,430					0.7	1.9	2.9	2.0	2.1	2.4	3.2	0.5	1.4
53750 FIELD SUPPORT WASTE MANAGEMENT	324					0.0	0.1	0.1	0.1	0.2	0.2	0.9	0.6	0.2
58722 S&H RADCON ENGINEER	549	0.1	0.3	0.3	0.3	0.2	0.4	0.7	0.4	0.3	0.3	0.4	0.1	0.3
58723 S&H RADCON H.P./SUPPORT SERVICES	6		0.0	0.0	0.0	0.0		0.0						0.0
58733 S&H INDUSTRIAL SAFETY	562	0.0	0.1	0.3	0.2	0.1	0.4	1.0	0.5	0.3	0.3	0.3	0.1	0.3
BHI	**7,286**	**1.0**	**2.4**	**3.0**	**2.9**	**3.6**	**5.3**	**6.3**	**4.5**	**5.0**	**5.4**	**6.3**	**2.3**	**4.0**
CHI														
21C00 PROJECT CONTROLS	1,627	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.2	1.3	1.3	1.2	0.8	0.9
31C53 REG SUPPORT AND ENVIRON SCIENCE	669	0.5	0.8	0.6	0.5	0.3	0.1	0.1	0.0	0.2	0.6	0.7	0.2	0.4
31C54 ENVIRONMENTAL ENGINEERING	5,792	3.9	3.9	3.6	4.1	3.0	2.6	2.5	2.7	3.0	3.6	4.0	1.9	3.2
31C62 DESIGN ENGINEERING	24									0.0	0.1	0.1		0.0
31C63 GEOSCIENCES/MODELING	858	0.5	0.6	0.5	1.0	0.7	0.3	0.2	0.1	0.5	0.5	0.5	0.3	0.5
31C64 CADD	90	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
31C74 ANALYTICAL FIELD SERVICES	1,756	0.1	0.2	0.2	0.2	0.2	1.2	1.0	1.5	1.9	2.2	2.0	0.8	1.0
31C75 SAMPLE AND DATA MANAGEMENT	327	0.0	0.1	0.1	0.1	0.0	0.1	0.2	0.3	0.4	0.3	0.3	0.3	0.2
31C90 MANAGEMENT - ENVIRON SCIENCE AN	11	0.0	0.0	0.0	0.0	0.0	0.0							0.0
55C00 ADMINISTRATIVE SERVICES	787	0.8	0.4	0.4	0.6	0.2	0.2	0.2	0.3	0.4	0.6	0.7	0.4	0.4
58C33 HEALTH AND SAFETY	220	0.8	0.8	0.1										0.1
CHI	**12,161**	**7.4**	**7.6**	**6.4**	**7.4**	**5.2**	**5.2**	**4.9**	**6.2**	**7.7**	**9.2**	**9.5**	**4.7**	**6.7**
THI														
58T21 S&H RADCON SUPERVISOR	648	0.0	0.1	0.1	0.1	0.1	0.6	1.2	0.6	0.4	0.4	0.4	0.1	0.4
58T31 S&H INDUSTRIAL HYGIENE	1,055					0.4	1.3	1.0	0.8	1.1	1.0	1.1	0.2	0.6
58T50 S&H RADIO CHEMISTRY	172							0.1	0.2	0.2	0.3	0.3	0.1	0.1
THI	**1,875**	**0.0**	**0.1**	**0.1**	**0.1**	**0.5**	**1.8**	**2.3**	**1.6**	**1.7**	**1.7**	**1.9**	**0.4**	**1.0**
Non-Bargaining Labor	**21,322**	**8.4**	**10.1**	**9.4**	**10.4**	**9.3**	**12.3**	**13.4**	**12.3**	**14.4**	**16.3**	**17.6**	**7.5**	**11.8**
Bargaining Labor														
BHI														
10710 HAMTC CARPENTERS	135					0.4	0.3	0.1	0.0	0.1	0.0	0.0	0.1	0.1
10712 HAMTC POWER OPERATORS	16					0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10713 HAMTC HEAVY EQUIPMENT OPERATOR	373					0.1	0.8	0.4	0.2	0.3	0.3	0.3	0.1	0.2
10714 HAMTC CRANE OPERATORS	240					1.0	0.7							0.1
10715 HAMTC D & D WORKERS	40										0.1	0.2		0.0
10716 HAMTC ELECTRICIANS	140					0.4	0.2	0.1		0.0	0.0	0.1	0.0	0.1
10718 HAMTC HEAVY DRIVERS	1,216					1.2	2.2	1.3	0.7	0.8	0.7	0.8	0.3	0.7
10723 HAMTC MATERIAL COORDINATORS	45							0.0	0.0	0.1	0.1	0.1	0.0	0.0
10729 HAMTC PAINTERS	102					0.1	0.2	0.0	0.0	0.1	0.1	0.1	0.1	0.1
BHI	**2,307**					**3.3**	**4.4**	**1.9**	**1.0**	**1.3**	**1.3**	**1.7**	**0.5**	**1.3**
THI														
10T25 HAMTC RAD CON TECHNICIANS	3,476	0.0	0.1	0.1	0.1	0.5	3.2	4.8	3.2	3.0	3.1	3.5	0.8	1.9
THI	**3,476**	**0.0**	**0.1**	**0.1**	**0.1**	**0.5**	**3.2**	**4.8**	**3.2**	**3.0**	**3.1**	**3.5**	**0.8**	**1.9**
Bargaining Labor	**5,783**	**0.0**	**0.1**	**0.1**	**0.1**	**3.8**	**7.6**	**6.7**	**4.2**	**4.3**	**4.4**	**5.2**	**1.3**	**3.2**
Groundwater/Vadose Integration Projec	**27,105**	**8.4**	**10.1**	**9.5**	**10.5**	**13.1**	**19.9**	**20.2**	**16.6**	**18.7**	**20.8**	**22.8**	**8.8**	**15.0**

SUPPLEMENTAL FUNDING PLAN – ER02

Project Priority	Outcomes (R-River, P-Plateau, M-Multi)	CA No.	Description of Work	Impact if Not Funded	Supplemental Requirements ($K Impacted)		
					FY01	FY02	FY03
			200 AREA REMEDIAL ACTIONS				
3	**P**	**PK7101**	200-CW-1 RI/FS FY01 FY02 FY03 Proposed Plan/RCRA PM $49.7 $30 ROD Support $112 $75	TPA Noncompliance: (M-15-38A)	$49.7	$142.0	$75.0
3	**P**	**PKH101**	200-TW-1 RI/FS FY01 FY02 FY03 Workplan Completion $27.8 Fieldwork $725.7 RI Report $394 FS Report $455 Remedial Investigation Fieldwork includes 1 borehole at one waste site.	Potential TPA Noncompliance: Pending TPA Change Package identifies these activities as Interim TPA milestones.	$753.5	$394.0	$455.0
3	**P**	**PKJ101**	200-TW-2 RI/FS FY01 FY02 FY03 Workplan Completion $29.5 Fieldwork $1,915.5 RI Report $394 FS Report $455 Remedial Investigation Fieldwork includes 2 boreholes and 5 drive casings at two waste sites.	Potential TPA Noncompliance: Pending TPA Change Package identifies these activities as Interim TPA milestones.	$1,945.0	$394.0	$455.0
3 5 5	**P**	**PKR101**	200 Area Common Project Support and GW/VZ Integration FY01 FY02 FY03 Project Support $358.5 $450 $450 Barrier Treatability Test $281.9 $841 $1176 WIDs Update $10.5	TPA Noncompliance. Project support and planning activities. Delay in reaching remedial action decisions in Central Plateau.	$650.9	$1291.0	$1626.0

Project Priority	Outcomes (R-River, P-Plateau, M-Multi)	CA No.	Description of Work	Impact if Not Funded	Supplemental Requirements ($K Impacted)		
					FY01	FY02	FY03
3	**P**	**PKD101**	200-CS-1 RI/FS FY01 FY02 FY03 RI Fieldwork $801.3 $584 $484 Remedial Investigation Fieldwork includes 3 boreholes and 10 test pits at 3 waste sites.	FY03 TPA Noncompliance: (M-15-39A)	$801.3	$584.0	$484.0
3	**P**	**PKB101**	200-CW-5 RI/FS FY01 FY02 FY03 RI Fieldwork $1520 RI Report $394 Remedial Investigation Fieldwork includes 3 boreholes and 15 drive casings at one waste site.	FY02 & 03 TPA Noncompliance: (M-15-40A & M-15-40B)	$0.0	$1,520.0	$394.0
3	**P**	**PK2101**	200-PW-2 RI/FS FY01 FY02 FY03 Fieldwork $0 $1477 RI Report $354 Remedial Investigation Fieldwork includes 4 boreholes and 6 drive casings at four waste sites.	Potential TPA Noncompliance: Work plan schedule will be used to define additional TPA interim milestones.	$0.0	$1,477.0	$354.0
3	**P**	**PK1101**	200-PW-1 RI/FS FY01 FY02 FY03 Workplan $186.9 RI Fieldwork $1,711 RI Report $394 Remedial Investigation Fieldwork includes 4 boreholes at 2 waste sites.	TPA Noncompliance: Pending TPA Change Package identifies the work plan activity as an Interim TPA milestone.	$186.9	$1711.0	$394.0

Project Priority	Outcomes (R-River, P-Plateau, M-Multi)	CA No.	Description of Work	Impact if Not Funded	Supplemental Requirements ($K Impacted)		
					FY01	FY02	FY03
3	**P**	**PKE101**	200-LW-1 RI/FS FY01 FY02 FY03 Workplan $0.0 $360 RI Fieldwork $1190 Remedial Investigation Fieldwork includes 2 boreholes and 4 test pits at 2 waste sites.	TPA Noncompliance: Pending TPA Change Package identifies the work plan activity as an Interim TPA milestone.	$0.0	$360.0	$1190.0
3	**P**	**PKG101**	200-MW-1 RI/FS FY01 FY02 FY03 Workplan $0.0 $0.0 $211	TPA Noncompliance: Pending TPA Change Package identifies this work plan as an Interim TPA milestone.	$0.0	$0.0	$211.0
5	**P**	**PKL1101**	Continue 200-BP-1 Hanford Prototype Barrier performance monitoring.	Delay in reaching remedial action decisions in Central Plateau.	$70.0	$70.0	$70.0

SUPPLEMENTAL FUNDING PLAN – ER08

Project Priority	Outcomes (R-River, P-Plateau, M-Multi)	CA No.	Description of Work	Impact if Not Funded	Supplemental Requirements ($K Impacted)		
					FY01	FY02	FY03
5	**P**	**P4120G**	Borehole Logging Support by Grand Junction	Delay in establishing a vadose zone monitoring program	$800.0	$0.0	$0.0

MAJOR PROCUREMENT PLAN - FY 2001

Cost Account	Task	Type of Contract	Start Date	End Date	FY01 Burdened Budget/EAC ($K)
PKH101	Borehole Sample,Lab Analysis	FUP	07/01	09/01	154
PKJ101	Borehole Sample Laboratory Analysis	FUP	05/01	09/01	309
PKR101	Field Characterization & Lab Testing	FUP	03/01	06/01	148
PKD101	Test Pit Sample Laboratory Analysis	FUP	02/01	05/01	144
PKD101/PKH101/PKJ101	Borehole drilling/drive casing	FUP	03/01	08/01	711
PKD101/PKH101/PKJ101	Perform geophysical logging	FUP	03/01	09/01	195
MISC.	Misc. Subcontracts	FUP	10/00	09/01	522
	Total				2183

MAJOR PROCUREMENT PLAN - FY 2002

Cost Account	Task	Type of Contract	Start Date	End Date	FY02 Burdened Budget/EAC ($K)
	FY02 procurements not detailed.				

MAJOR PROCUREMENT PLAN - FY 2003

Cost Account	Task	Type of Contract	Start Date	End Date	FY03 Burdened Budget/EAC ($K)
	FY03 procurements not detailed.				

MAJOR PROCUREMENT PLAN - FY 2001

Cost Account	Task	Type of Contract	Start Date	End Date	FY01 Burdened Budget/EAC ($K)
P4120G	Borehole Logging Support by Grand Junction	Fin Plan	07//01	09/01	800
	Total				800

MAJOR PROCUREMENT PLAN - FY 2002

Cost Account	Task	Type of Contract	Start Date	End Date	FY02 Burdened Budget/EAC ($K)
	None	-	-	-	0
	Total				0

MAJOR PROCUREMENT PLAN - FY 2003

Cost Account	Task	Type of Contract	Start Date	End Date	FY03 Burdened Budget/EAC ($K)
	None	-	-	-	0
	Total				0

COST ACCOUNT PLAN

KEY PROJECT TEAM MEMBERS

Task Lead (CAM):	**B. H. Ford**
DOE-RL:	**B. L. Foley**
Project Engineer:	**G. B. Mitchem**
Field Support:	**N/A**
QS&H:	**N/A**
Project Controls:	**D. L. Kietzman/R. A. Damskov**
PSS Rep:	**C. D. Wittreich**
Other:	**N/A**

WORK DESCRIPTION (Provide general work description of facility/building.)

General Description:

The 200 Area Common account will be used for issues relating to 200 Area site-wide activities, including technology needs, annual evaluation of operable unit prioritization, integration with core projects under the GW/VZ Integration Project, briefing expert panels and similar groups, other ERC and non-ERC projects/programs, waste site transfers, regulator meetings/requests, web page support, maintaining the baseline, and other 200 Area general activities. This includes 200 Area task management for oversight of field characterization and other 200 Area activities (team meetings, budget updates, progress reviews, etc.), and DOE project support, status meetings, and requests. This also includes general oversight support from project controls, field support, regulatory leads, environmental leads, health and safety, QA, administrative support, and other necessary support.

Initiate a CERCLA-based full-scale treatability test of a modified RCRA C surface barrier on waste site(s) in the 200 Area.

TASKS TO BE PERFORMED IN FY 2001:

- Provide additional support for 200 Area miscellaneous activities and fieldwork.
- Complete borrow source study for fine-grained barrier material and issue report.

TASKS TO BE PERFORMED IN FY 2002: - SUPPLEMENTAL

- Provide support for 200 Area miscellaneous activities and fieldwork.
- The following tasks are expected to support/position the project for remedial action decisions involving modified RCRA C surface barriers:
  - Evaluate the need for asphalt layer durability testing.
  - Complete intermediate remedial design of the alternative surface barrier.
  - Complete a decisional draft treatability test plan for performance monitoring of the alternative surface barrier.

200 AREA NPL COMMON SOURCE ASSESSMENT ACTIVITIES **PKR101**
1.4.10.1.1.02.05.25.24.31.01

TASKS TO BE PERFORMED IN FY 2003: - SUPPLEMENTAL

- Provide support for 200 Area miscellaneous activities and fieldwork.

- No specific surface barrier treatability test activities are defined. The following tasks are expected to support/position the project for remedial action decisions involving graded surface barriers:

  – Complete the final remedial design for the alternative surface barrier.
  – Complete the treatability test plan for performance monitoring of the alternative surface barrier.
  – Procure construction services and initiate construction of the alternative surface barrier.

MAJOR PRODUCTS AND DELIVERABLES (Including Readiness Assessment, AHA, Characterization, Demolition, DQO, Milestones – *Tri-Party Agreement* and others.)

Deliverables	Date
• Borrow Source Study Report - Rev. 0	09/21/01
• Treatability Test Plan - Internal Draft to ERC	08/02/02
• Treatability Test Plan - Decisional Draft to RL	09/06/02
• Treatability Test Plan - Draft A to RL	10/11/02
• Treatability Test Plan - Rev. 0	12/16/02
• Complete Final Remedial Design Package	11/29/02
• Initiate Surface Barrier Construction	06/11/03

BASIS/ASSUMPTIONS (Identify basis for estimate: i.e., MCASES, like facility, non-contaminated, etc. Also include key assumptions and constraints, including any spread of waste handling considerations.)

The project support estimate for 200 Area miscellaneous activities and fieldwork is based on 200 Area task management resource requirements for oversight of field characterization, GW/VZ integration, and other 200 Area activities.

Treatability Test

- The treatability test activities estimates are based on a combination of historical data for similar activities, on judgment for new activities, and on the MCACES construction cost model for the modified RCRA C surface barrier design. The bases for the estimates by resource and task (i.e., code of account) are provided in detailed backup information.

- It is assumed that the treatability test will be performed on a full-scale barrier of the modified RCRA C surface barrier design that was developed in the 200 Area Engineered Barrier Focused Feasibility Study Report (DOE/RL-93-33, Rev. 1), and with an area of 91,000 ft^2. It is also assumed that a recommendation included in the "200-BP-1 Prototype Barrier Treatability Test Report"; (DOE/RL-99-11 Rev. 0) will be selected. The scope for FY01 includes the location of a suitable borrow source for the upper fine-grained layers of the barrier, based on the assumption that the McGee Ranch borrow site is no longer available for mining. The borrow source study activity includes the preparation of a study plan, field reconnaissance of 3 alternative borrow sites to locate a preferred site, fieldwork and lab testing to characterize the material inventory, and the physical and hydrologic soil properties at the preferred borrow site, and a report. The scope of the fieldwork assumes a similar level of effort to that performed at the McGee Ranch borrow site (Skelly, 1994).

- Assuming that a suitable and available source of fine-grained soil is located, and a waste site has been selected to perform the treatability test in FY01, remedial design will be initiated in FY02 and completed in early FY03. An activity to evaluate the need for durability testing of the asphalt layer will be performed. Remedial design assumes a four-step design process, including developing the design/performance basis, and preliminary, intermediate, and final designs. The cost basis for design (preliminary, intermediate, and final) is approximately 10% of the cost of construction, based on an MCASES cost model of a 91,000 ft^2 modified RCRA C barrier, plus technology support (50K) from PNNL. This assumes a barrier will be constructed on a waste site with subsurface contamination only, and no hazard classification will be needed. The design incorporates lessons learned from the Hanford Barrier treatability test report , but assumes no major changes from the preliminary design in the 200 Area engineered barrier focused feasibility study. This also assumes a suitable water balance model is available to support the design activity, and that all the model input data needs (e.g., physical and hydrological properties of the fine-grained soil) are available of suitable quality and quantity prior to the start of design. In addition, it is assumed that a field investigation at the treatability test site will be required prior to the start of the preliminary remedial design to assess foundation/site treatment needs and barrier sizing. This assumes geotechnical conditions and the horizontal extent of contamination can be characterized using cone penetrometer technology.

- A treatability test plan will be prepared in parallel with remedial design, which assumes a level of effort similar to the 200-BP-1 treatability test plan (DOE/RL-93-27, Rev.0). In addition, this includes a DQO development activity similar to an RI/FS work plan. The scope of the plan will focus on stability, vegetation, and hydrologic performance monitoring data needs and associated monitoring equipment, and will include a QA plan. Regulator approval is required and only minor changes/revision are needed for each review cycle (BHI, RL, EPA).

- Following completion of the treatability test plan and remedial design, a procurement construction package will be prepared in FY03, followed by a construction bid and award activity, followed by a pre-construction activity. Barrier construction will be initiated per the FY03 plan. This assumes 66% of barrier construction will be completed in FY03, and the remainder in FY04.

COST ACCOUNT PLAN

KEY PROJECT TEAM MEMBERS

Task Lead (CAM):	**B. H. Ford**
DOE-RL:	**B. L. Foley**
Project Engineer:	**G. B. Mitchem**
Field Support:	**R. J. Fabre**
QS&H:	**N/A**
Project Controls:	**D. L. Kietzman/R. A. Damskov**
PSS Rep:	**C. D. Wittreich**
Other:	**J. D. Ludowise (CHI Lead)**

WORK DESCRIPTION (Provide general work description of facility/building.)

General Description:

Perform CERCLA assessment activities for the 200-PW-1 Plutonium/Organic-Rich Process Waste Group Operable Unit, to include preparation of a group-specific RI/FS work plan defining the field investigation program.

Other tasks will be required in FY02 and FY03 to be compliant with Tri-Party Agreement milestones; however, these tasks have not been specifically identified for this cost account. These tasks are listed below, as well as on the supplemental form, and will be further developed in future DWP efforts as funding becomes more clearly defined.

TASKS TO BE PERFORMED IN FY 2001:

- Complete a group-specific work plan for characterization of representative sites.

TASKS TO BE PERFORMED IN FY 2002: SUPPLEMENTAL

- No tasks are specifically identified. To be compliant with Tri-Party Agreement milestones, the following task will be required:
  - Complete remedial investigation field work.

TASKS TO BE PERFORMED IN FY 2003: SUPPLEMENTAL

- No tasks are specifically identified. To be compliant with Tri-Party Agreement milestones, the following task will be required:
  - Complete remedial investigation report.

200-PW-1 (NPL COMMON)

PK1101
1.4.10.1.1.02.05.25.01.31.01

MAJOR PRODUCTS AND DELIVERABLES (Including Readiness Assessment, AHA, Characterization, Demolition, DQO, Milestones – *Tri-Party Agreement* and others.)

Deliverables	Date
• RI/FS Work Plan - Internal Draft to ERC	03/26/01
• RI/FS Work Plan - Decisional Draft to RL	04/30/01
• RI/FS Work Plan - Draft A to RL	06/05/01
• RI/FS Work Plan - Proposed Tri-Party Agreement Milestone M-13-26	06/30/01
• RI/FS Work Plan - Rev. 0	08/10/01

BASIS/ASSUMPTIONS (Identify basis for estimate: i.e., MCASES, like facility, non-contaminated, etc. Also include key assumptions and constraints, including any spread of waste handling considerations.)

- The estimates provided are based on historical actual data for similar activities. The estimates by resource and task (i.e., code of account) are provided in accompanying estimating sheets. Detailed backup information used to generate the estimating sheets for complex tasks is also provided.

- The scope is based on the framework provided in the 200 Area RI/FS Implementation Plan (DOE/RL-98-28, Rev. 0 [200A IP]) for 200 Area assessment activities, on previously completed work plans, and on regulatory requirements. The 200A IP defines (1) the waste groups and associated representative waste sites; (2) the steps required to complete the assessment process; and (3) a characterization strategy based on the analogous site approach, 200 Area common background information, and plans that will be incorporated into the work plan by reference. Prioritization of operable units is provided in Tri-Party Agreement Change Package M-13-97-1. 200-PW-1 is assumed for fulfilling Milestone M-13-26. This further assumes that a Tri-Party Agreement change package was prepared and approved in FY00 replacing the existing Milestone M-13-26 for submittal of the Draft A Work Plan for 200-PW-4 with submittal of the Draft A Work Plan for 200-PW-1. Addressing 200-PW-1 earlier in the priorities for the operable units permits better integration with Groundwater/Vadose Zone Project core projects requirements.

- The previous 200-CW-1 and 200-CS-1 work plan efforts provide the basis for the scope and schedule for the work plan estimate. The scope includes DQOs, the work plan, a sampling and analysis plan (SAP) (consisting of a QAPjP and Field Sampling Plan), and a Waste Control Plan. DQOs are assumed to be sufficiently detailed to support the preparation of a SAP. The general work plan schedule assumes 10-work day ERC and RL review periods, followed by a 30-calender day regulator review period. No public review is assumed. Only minor changes/revisions (80 hour effort) are assumed for each review cycle.

COST ACCOUNT PLAN

KEY PROJECT TEAM MEMBERS

Task Lead (CAM):	**B. H. Ford**
DOE-RL:	**B. L. Foley**
Project Engineer:	**G. B. Mitchem**
Field Support:	**R. J. Fabre**
QS&H:	**N/A**
Project Controls:	**D. L. Kietzman/R. A. Damskov**
PSS Rep:	**C. D. Wittreich**
Other:	**M. E. Todd (CHI Lead)**

WORK DESCRIPTION (Provide general work description of facility/building.)

General Description:

Perform CERCLA/RCRA assessment and remediation activities for the 200-CW-1 Gable Mountain/B-Pond and Ditches Cooling Water Waste Group Operable Unit, to include initiation of a proposed plan with proposed RCRA Permit Modification in FY01.

Other tasks will be required in FY02 and FY03 to be compliant with Tri-Party Agreement milestones; however, these tasks have not been specifically identified for this cost account. These tasks are listed below, as well as on the supplemental form, and will be further developed in future DWP efforts as funding becomes more clearly defined.

TASKS TO BE PERFORMED IN FY 2001:

- Initiate a group-specific proposed plan with a proposed RCRA Permit Modification.

TASKS TO BE PERFORMED IN FY 2002: SUPPLEMENTAL

- No tasks are specifically identified. To be compliant with Tri-Party Agreement milestones, and to support site-wide planning outcomes for the Central Plateau, the following task will be required:
  - Complete an FS report and TSD closure plan.
  - Complete a group-specific proposed plan with proposed RCRA Permit Modification.

TASKS TO BE PERFORMED IN FY 2003: SUPPLEMENTAL

- Support the ROD and permit modification process.

200-CW-1 GABLE MTN/B-POND & DITCHES COOLING WATER GROUP ASSESSMENT **PK7101**
1.4.10.1.1.02.05.25.07.31.01

MAJOR PRODUCTS AND DELIVERABLES (Including Readiness Assessment, AHA, Characterization, Demolition, DQO, Milestones – *Tri-Party Agreement* and others.)

Deliverables	Date
• Feasibility Study/Closure Plan – Tri-Party Agreement Milestone M-15-38A	11/30/01
• Proposed Plan/Proposed RCRA PM - Internal Draft to ERC	08/23/01
• Proposed Plan/Proposed RCRA PM - Decisional Draft to RL	09/28/01
• Proposed Plan/Proposed RCRA PM - Tri-Party Agreement Milestone M-15-38A	11/30/01

BASIS/ASSUMPTIONS (Identify basis for estimate: i.e., MCASES, like facility, non-contaminated, etc. Also include key assumptions and constraints, including any spread of waste handling considerations.)

- The estimates provided are based on a combination of historical actual data for similar activities and judgment for new activities.

- The scope is based on the framework provided in the 200 Area RI/FS Implementation Plan (DOE/RL-98-28, Rev. 0 [200A IP]), for 200 Area assessment activities, the 200-CW-1 Work Plan (DOE/RL-99-07, Rev. 0), and meeting regulatory requirements. The work plan defines the scope and schedule for the 200-CW-1 integrated RI/FS and RCRA TSD process to be followed.

- Fieldwork (including waste disposal) and the RI report are assumed to be completed in FY00, and by November 30, 2000, in FY01.

- The proposed plan with proposed RCRA PM are based on the scope defined in the 200A IP, the work plan, the RI report, the draft FS, and CERCLA guidance for preparing proposed plans. The feasibility study and closure plan are assumed to be started in FY01 and to be sufficiently complete to support the preparation of the proposed plan with proposed RCRA PM. These documents have a single Tri-Party Agreement milestone for submittal of both Draft A documents on November 30, 2001. The schedule assumes 10-work day ERC and RL review periods, followed by a 90-calendar day regulator review. This assumes only minor changes/revision (60 hour effort) are needed for each review cycle. This also assumes that the plan/modification will be issued for public review in FY03.

COST ACCOUNT PLAN

KEY PROJECT TEAM MEMBERS

Task Lead (CAM):	**B. H. Ford**
DOE-RL:	**B. L. Foley**
Project Engineer:	**G. B. Mitchem**
Field Support:	**R. J. Fabre**
QS&H:	**N/A**
Project Controls:	**D. L. Kietzman/R. A. Damskov**
PSS Rep:	**C. D. Wittreich**
Other:	**C. S. Cearlock (CHI Lead)**

WORK DESCRIPTION (Provide general work description of facility/building.)

General Description:

Perform CERCLA/RCRA assessment activities for the 200-CS-1 Chemical Sewer Group Operable Unit, to include completion of a field characterization at the 216-S-10 Pond/Ditch TSD site and a borehole and test pit summary report summarizing the field characterization results in FY01.

Other tasks will be required in FY02 and FY03 to be compliant with Tri-Party Agreement milestones; however, these tasks have not been specifically identified for this cost account. These tasks are listed below, as well as on the supplemental form, and will be further developed in future DWP efforts as funding becomes more clearly defined.

TASKS TO BE PERFORMED IN FY 2001:

- Complete field characterization at the 216-S-10 Pond/Ditch RCRA TSD Units (representative waste site), to include 6 test pits and 1 borehole.
- Complete soil sample analyses and data validation.
- Complete a borehole/test pit summary report.

TASKS TO BE PERFORMED IN FY 2002: SUPPLEMENTAL

- No tasks are specifically identified. To be compliant with Tri-Party Agreement Milestone M-15-39A, the following tasks will be required:
  - Complete field characterization at the 216-B-63 ditch.
  - Complete soil sample analyses and data validation.
  - Complete a borehole/test pit summary report.
- To be compliant with Tri-Party Agreement Milestone M-20-39, initiate the 216-S-10 pond/ditch RCRA TSD Unit Closure Plan/Post Closure Plan.

200-CS-1 CHEMICAL SEWER WASTE GROUP ASSESSMENT **PKD101**
1.4.10.1.1.02.05.25.13.31.01

TASKS TO BE PERFORMED IN FY 2003: SUPPLEMENTAL

- No tasks are specifically identified. To be compliant with Tri-Party Agreement Milestone M-15-39A, the following tasks will be required:
  - Complete field characterization at the 216-A-29 ditch.
  - Complete soil sample analyses and data validation.
  - Complete a borehole/test pit summary report.

MAJOR PRODUCTS AND DELIVERABLES (Including Readiness Assessment, AHA, Characterization, Demolition, DQO, Milestones – *Tri-Party Agreement* and others.)

Deliverables	Date
• Complete test pit sampling	4/30/01
• Complete soil analyses and data validation	8/01/01
• Complete field report	8/29/01
• Complete Chemical Sewer Group field work – Tri-Party Agreement Milestone M-15-39A	9/30/03

BASIS/ASSUMPTIONS (Identify basis for estimate: i.e., MCASES, like facility, non-contaminated, etc. Also include key assumptions and constraints, including any spread of waste handling considerations.)

- The estimates provided are based on a combination of historical actual data for similar activities and judgement for new activities. The estimates by resource and task (i.e., code of account) are provided in backup documentation.

- The scope is based on the framework provided in the 200 Area RI/FS Implementation Plan (DOE/RL-98-28, Rev. 0 [200A IP]) for 200 Area assessment activities, the 200-CS-1 Work Plan (DOE/RL-99-39, Rev. 0), and meeting regulatory requirements. The work plan defines the scope and schedule for 200-CS-1 field characterization needs, and the integrated RI/FS and RCRA TSD process to be followed.

- Field characterization will be limited to the 216-S-10 pond and ditch TSD unit identified in the work plan in FY01. DQOs can be satisfied by soil samples (48) collected though one borehole (totaling 225 linear ft) and six test pits. A site-specific borehole summary report will be prepared as a BHI document (requiring an ERC review only) following completion of sampling and analysis. Investigation derived waste (IDW) solids will be disposed to the ERDF, and decontamination liquids will be disposed as purgewater. Any samples provided to support Science and Technology needs will be managed by Science and Technology under an approved waste control plan.

- This assumes a Tri-Party Agreement Change Package will be approved to defer closure plan past FY01-03 DWP window.

200-CS-1 CHEMICAL SEWER WASTE GROUP ASSESSMENT **PKD101**
1.4.10.1.1.02.05.25.13.31.01

SUBCONTRACT STRATEGY (i.e., office trailer setup, tp&l.) List major subcontracts and scope including fiscal year and type (FP or FUP).

Subcontract	FY	Type of Contract	Scope
Geophysical logging	01	FP	Perform geophysical logging of the new borehole
Drilling	01	FP	Borehole drilling
Analytical	01	FP	Perform sample analysis

WORK ORDERS (i.e., work to be performed by FDH or Hanford Utilities Group.) List major work orders including fiscal year.

Company	FY	Scope
Numatec, Dyncorp	01	Setup and operate temporary air monitoring station for the 216-S-10 Pond investigation activities

CONSTRUCTION EQUIPMENT REQUIREMENTS & ASSUMPTIONS

Description	Usage Date		Comments/Assumptions
	FY Start	FY Finish	
Excavator	01	3/01	Bucket excavator capable of collecting 25-ft deep contaminated soil samples via test pits. Start to end of pit construction
Generator	01	4/01	Provide power for near field air monitor and site

WASTE DISPOSAL (ERDF) QUANTITIES (Provide quantities in metrics.)

Type of Material	FY 2001	FY 2002	FY 2003
Purgewater (L)			
ERDF – Bulk Waste			
Soils (metric tons)			
Rubble and concrete under 0.6 m (metric tons)			
ERDF – Special Handling			
Concrete/asphalt (metric tons)			
Steel plate (metric tons)			
Piping/tube steel (metric tons)			
Regulated asbestos-containing materials (m^3)			
Misc. metal/building debris/structural steel/conduit (metric tons)			
Equipment (pumps, clarifiers, spiders, etc.) (metric tons)			
Other (metric tons)	2.0		

Type of Material	FY 2001	FY 2002	FY 2003
FH Waste Disposal			
Mixed waste (TRU) (m^3)			
PCBs (container)			
RCRA waste (container)			
Nonregulated waste (metric tons)			
200 Effluent Treatment Facility			
ERDF leachate (L)			
Other (L)	200 (L) Drilling Decon Liquid		
Inert Demolition Landfills			
Offsite			
Nonradioactive hazardous (container)			
Recyclable (container)			
Other (container)			
Excess chemicals			

COST ACCOUNT PLAN

KEY PROJECT TEAM MEMBERS

Task Lead (CAM):	**B. H. Ford**
DOE-RL:	**B. L. Foley**
Project Engineer:	**G. B. Mitchem**
Field Support:	**R. J. Fabre**
QS&H:	**N/A**
Project Controls:	**D. L. Kietzman/R. A. Damskov**
PSS Rep:	**C. D. Wittreich**
Other:	**N/A**

WORK DESCRIPTION (Provide general work description of facility/building.)

General Description:

No CERCLA assessment activities have been specifically identified for the 200-LW-1 300 Area Chemical Laboratory Waste Group Operable Unit.

Other tasks will be required in FY02 and FY03 to be compliant with Tri-Party Agreement milestones; however, these tasks have not been specifically identified for this cost account. These tasks are listed below as well as on the supplemental form and will be further developed in future DWP efforts as funding becomes more clearly defined.

TASKS TO BE PERFORMED IN FY 2001:

- None.

TASKS TO BE PERFORMED IN FY 2002: SUPPLEMENTAL

- No tasks specifically identified. To be compliant with Tri-Party Agreement milestones, the following task will be required:
  - Complete a group-specific work plan for characterization of representative sites.

TASKS TO BE PERFORMED IN FY 2003: SUPPLEMENTAL

- No tasks specifically identified. To be compliant with Tri-Party Agreement milestones, the following task will be required:
  - Complete remedial investigation field work.

MAJOR PRODUCTS AND DELIVERABLES (Including Readiness Assessment, AHA, Characterization, Demolition, DQO, Milestones – *Tri-Party Agreement* and others.)

Deliverables	Date
None.	

200-LW-1 300 AREA (NPL COMMON)

PKE101
1.4.10.1.1.02.05.25.14.31.01

BASIS/ASSUMPTIONS (Identify basis for estimate: i.e., MCASES, like facility, non-contaminated, etc. Also include key assumptions and constraints, including any spread of waste handling considerations.)

None identified.

COST ACCOUNT PLAN

KEY PROJECT TEAM MEMBERS

Task Lead (CAM):	**B. H. Ford**
DOE-RL:	**B. L. Foley**
Project Engineer:	**G. B. Mitchem**
Field Support:	**R. J. Fabre**
QS&H:	**N/A**
Project Controls:	**D. L. Kietzman/R. A. Damskov**
PSS Rep:	**C. D. Wittreich**
Other:	**J. D. Ludowise (CHI Lead)**

WORK DESCRIPTION (Provide general work description of facility/building.)

General Description:

Perform CERCLA assessment activities for the 200-MW-1 Miscellaneous Waste Group Operable Unit. No scope is identified for FY01 and FY02.

Other tasks will be required in FY02 and FY03 to be compliant with Tri-Party Agreement milestones; however, these tasks have not been specifically identified for this cost account. These tasks are listed below, as well as on the supplemental form, and will be further developed in future DWP efforts as funding becomes more clearly defined.

TASKS TO BE PERFORMED IN FY 2001:

- None.

TASKS TO BE PERFORMED IN FY 2002: SUPPLEMENTAL

- None.

TASKS TO BE PERFORMED IN FY 2003: SUPPLEMENTAL

- No tasks are specifically identified. To be compliant with Tri-Party Agreement milestones, the following task will be required:
  - Complete a group-specific work plan for characterization of representative sites.

MAJOR PRODUCTS AND DELIVERABLES (Including Readiness Assessment, AHA, Characterization, Demolition, DQO, Milestones – *Tri-Party Agreement* and others.)

Deliverables	Date
None currently identified.	

200-MW-1 MISCELLANEOUS WASTE GROUP ASSESSMENT **PKG101**

1.4.10.1.1.02.05.25.16.31.01

BASIS/ASSUMPTIONS (Identify basis for estimate: i.e., MCASES, like facility, non-contaminated, etc. Also include key assumptions and constraints, including any spread of waste handling considerations.)

None currently identified.

COST ACCOUNT PLAN

KEY PROJECT TEAM MEMBERS

Task Lead (CAM):	**B. H. Ford**
DOE-RL:	**B. L. Foley**
Project Engineer:	**G. B. Mitchem**
Field Support:	**R. J. Fabre**
QS&H:	**N/A**
Project Controls:	**D. L. Kietzman/R. A. Damskov**
PSS Rep:	**C. D. Wittreich**
Other:	**M. E. Todd (CHI Lead)**

WORK DESCRIPTION (Provide general work description of facility/building.)

General Description:

Perform assessment activities for 200-TW-1 Scavenged Waste Group Operable Unit, to include completion of the RI/FS work plan for 200-TW-1 and 200-TW2 OUs, completion of field characterization, and initiation of laboratory analysis.

Other tasks will be required in FY02 and FY03 to be compliant with proposed Tri-Party Agreement milestones; however, these tasks have not been specifically identified for this cost account. These tasks are listed below, as well as on the supplemental form, and will be further developed in future DWP efforts as funding becomes more clearly defined.

TASKS TO BE PERFORMED IN FY 2001:

- Complete the Rev. 0 group-specific work plan for characterization of a representative waste site.
- Complete field characterization activities for one CERCLA past-practice representative waste site (216-T-26 Crib) to include one borehole.
- Initiate laboratory analysis of soil samples.

TASKS TO BE PERFORMED IN FY 2002: SUPPLEMENTAL

- No tasks are specifically identified. To be compliant with proposed Tri-Party Agreement milestones, the following tasks will be required:
  - Complete laboratory analysis and data evaluation.
  - Complete a remedial investigation report.

TASKS TO BE PERFORMED IN FY 2003: SUPPLEMENTAL

- No tasks are specifically identified. To be compliant with proposed Tri-Party Agreement milestones, the following tasks will be required:
  - Initiate an FS report.
  - Initiate a proposed plan.

200-TW-1 SCAVENGED WASTE GROUP ASSESSMENT **PKH101**

1.4.10.1.1.02.05.25.17.31.01

MAJOR PRODUCTS AND DELIVERABLES (Including Readiness Assessment, AHA, Characterization, Demolition, DQO, Milestones – *Tri-Party Agreement* and others.)

Deliverables	Date
• RI/FS Work Plan – Draft B to RL	10/23/00
• RI/FS Work Plan – Rev. 0	01/24/01
• Complete borehole drilling and sampling	09/07/01

BASIS/ASSUMPTIONS (Identify basis for estimate: i.e., MCASES, like facility, non-contaminated, etc. Also include key assumptions and constraints, including any spread of waste handling considerations.)

- The estimates provided are based on a combination of historical and actual data for similar activities, and on judgment for new activities. The estimates by resource and task (i.e., code of account) are provided in backup documentation.

- The previous operable unit work plan efforts provide the basis for typical work plan scope and schedule estimate. The scope of the work plan includes the revision of the work plan, based on regulatory comments assumed to be received in FY00, the issuance of a Draft B revision for public review, and completing the work plan based on public review comments. This assumes a public review will be required. Only minor changes/revision (80 hour effort) are assumed for each review cycle. The 200-TW-2 Tank Waste Operable Unit work planning was performed in parallel with the 200-TW-1 Operable Unit, and a single combined work plan was prepared. 200-TW-1 and 200-TW-2 will be managed under separate accounts. Fieldwork preparations can begin following the issuance of the Draft A work plan; however, contract awards and actual fieldwork cannot start until the work plan is approved or authorization is provided by the lead regulatory agency and RL.

- Field characterization required for one (216-B-46 Crib) of two representative waste sites has been completed as part of the previous 200-BP-1 RI, and only one representative waste site will be characterized. Soil samples (11) collected though one vadose zone borehole (216-T-26) totaling 225 linear ft can satisfy DQOs. A borehole is used instead of test pits because of the potential for high concentrations of radionuclides (assumed to be similar to a TRU site). Additional borings, COCs, sample numbers, or changes to the representative waste sites could be impacted by requirements of other core projects, which would impact the schedule and budget for this operable unit. Additional costs for core project requirements will be the responsibility of the project(s) requesting the changes. Investigation derived waste (IDW) solids will be managed until future disposal to ERDF (beyond FY01), and decontamination liquids will be disposed as purgewater (beyond FY01). Because of the potential for high concentrations of radionuclides, one drum is assumed to be TRU waste requiring special handling and disposal.

- Any samples provided to support Science and Technology needs will be managed by Science and Technology under an approved waste control plan.

200-TW-1 SCAVENGED WASTE GROUP ASSESSMENT **PKH101**
1.4.10.1.1.02.05.25.17.31.01

SUBCONTRACT STRATEGY (i.e., office trailer setup, tp&l.) List major subcontracts and scope including fiscal year and type (FP or FUP).

Subcontract	FY	Type of Contract	Scope
Drilling	01	FP	Borehole drilling
Geophysical	01	FP	Borehole logging
Offsite Laboratory	01	FP	Soil sample analysis
Waste Management	01	FP	Management of TRU waste

WORK ORDERS (i.e., work to be performed by FDH or Hanford Utilities Group.) List major work orders including fiscal year.

Company	FY	Scope
FDH	01	Sample shipment and decontamination

MATERIAL/EQUIPMENT/OTHER DIRECT COST REQUIREMENTS (Identify purchase items or other direct costs and assumptions.)

Description	FY	Scope
Materials for boreholes	01	1 borehole
Sampling materials	01	11 samples from 1 boreholes
Drill site equipment	01	Trailer and other support equipment

CONSTRUCTION EQUIPMENT REQUIREMENTS & ASSUMPTIONS

Description	Usage Date		Comments/Assumptions
	FY Start	FY Finish	
Excavator			
Front Loader			
Water Truck			
Generator	01	01	For mobile power for drilling sites

COST ACCOUNT PLAN

KEY PROJECT TEAM MEMBERS

Task Lead (CAM):	**B. H. Ford**
DOE-RL:	**B. L. Foley**
Project Engineer:	**G. B. Mitchem**
Field Support:	**R. J. Fabre**
QS&H:	**N/A**
Project Controls:	**D. L. Kietzman/R. A. Damskov**
PSS Rep:	**C. D. Wittreich**
Other:	**M. E. Todd (CHI Lead)**

WORK DESCRIPTION (Provide general work description of facility/building.)

General Description:

Perform CERCLA assessment activities for the 200-TW-2 Tank Waste Group Operable Unit, to include completion of the RI/FS work plan for the 200-TW-1 and 200-TW2 OUs, and field characterization and initiation of laboratory analysis.

Other tasks will be required in FY02 and FY03 to be compliant with proposed Tri-Party Agreement milestones; however, these tasks have not been specifically identified for this cost account. These tasks are listed below, as well as on the supplemental form, and will be further developed in future DWP efforts as funding becomes more clearly defined.

TASKS TO BE PERFORMED IN FY 2001:

- Complete the Rev. 0 group-specific work plan for characterization of representative waste sites.
- Complete field characterization activities at two (216-B-38 trench and 216-B-7A&B cribs) RCRA past-practice representative waste sites, to include 5 drive casings and 2 boreholes.
- Initiate laboratory analysis of soil samples.

TASKS TO BE PERFORMED IN FY 2002: SUPPLEMENTAL

- No tasks are specifically identified. To be compliant with proposed Tri-Party Agreement milestones, the following tasks will be required:
  - Complete laboratory analysis and data evaluation.
  - Complete a remedial investigation report.

TASKS TO BE PERFORMED IN FY 2003: SUPPLEMENTAL

- No tasks are specifically identified. To be compliant with proposed Tri-Party Agreement milestones, the following tasks will be required:
  - Initiate an FS report.
  - Initiate a proposed plan with a proposed RCRA Permit Modification.

200-TW-2 OPERABLE UNIT ASSESSMENT **PKJ101**

1.4.10.1.1.02.05.25.18.31.01

MAJOR PRODUCTS AND DELIVERABLES (Including Readiness Assessment, AHA, Characterization, Demolition, DQO, Milestones – *Tri-Party Agreement* and others.)

Deliverables	Date
• RI/FS Work Plan - Draft B to RL	10/23/00
• RI/FS Work Plan - Rev. 0	01/24/01
• Complete FY01 borehole drilling and sampling	07/26/01

BASIS/ASSUMPTIONS (Identify basis for estimate: i.e., MCASES, like facility, non-contaminated, etc. Also include key assumptions and constraints, including any spread of waste handling considerations.)

- The estimates provided are based on a combination of historical actual data for similar activities, and on judgment for new activities.

- The previous operable unit work plan efforts provide the basis for typical work plan scope and schedule estimate. The scope of the work plan includes the revision of the work plan, based on regulatory comments assumed to be received by 9/30/00, the issuance of a Draft B revision for public review, and completing the work plan based on public review comments. This assumes a public review will be required. Only minor changes/revision (80 hour effort) are assumed for each review cycle. The 200-TW-2 Tank Waste Operable Unit work planning will be performed in parallel the 200-TW-1 Operable Unit, and a single combined work plan will be prepared. 200-TW-1 and 200-TW-2 will be managed under separate accounts. Fieldwork preparations can begin following the issuance of the Draft A work plan; however, contract awards and actual fieldwork cannot start until the work plan is approved or authorization is provided by the lead regulatory agency and RL.

- Field characterization will be limited to two representative waste sites (216-B-7A&B cribs and 216-B-38 trench), as identified in the 200A IP and the work plan. The remaining representative site (216-B-5 reverse well) has enough existing radiological data to support remedial action decisions. Chemical data from 216-B-7A/B will be used to support remedial action decisions at 216-B-5 for chemical constituents. Soil samples (24) collected though two vadose zone boreholes totaling 515 linear ft can satisfy DQOs. Boreholes are used instead of test pits because of the potential for high concentrations of radionuclides (assumed to be similar to a TRU site). In addition, five drive casings will be installed at the 216-B-38 site to permit geophysical logging in support of locating the borehole. Additional borings, COCs, sample numbers, or changes to the representative waste sites could be impacted by requirements of other core projects, which would impact the schedule and budget for this operable unit. Additional costs for core project requirements will be the responsibility of the project(s) requesting the changes. Investigation derived waste (IDW) solids will be managed onsite until future disposal to the ERDF (beyond FY01), and decontamination liquids will be disposed as purgewater (beyond FY01). Because of the potential for high concentrations of radionuclides, one drum per boring is assumed to be TRU waste requiring special handling and disposal.

- Any samples provided to support Science and Technology needs will be managed by Science and Technology under an approved waste control plan.

200-TW-2 OPERABLE UNIT ASSESSMENT

PKJ101
1.4.10.1.1.02.05.25.18.31.01

SUBCONTRACT STRATEGY (i.e., office trailer setup, tp&l.) List major subcontracts and scope including fiscal year and type (FP or FUP).

Subcontract	FY	Type of Contract	Scope
Drilling	01	FP	Borehole drilling and drive casings
Geophysical	01	FP	Borehole logging; drive casing logging
Offsite laboratory	01	FP	Soil sample analysis
Waste management	01	FP	Management of TRU waste

WORK ORDERS (i.e., work to be performed by FDH or Hanford Utilities Group.) List major work orders including fiscal year.

Company	FY	Scope
FDH	01	Sample shipment and decontamination

MATERIAL/EQUIPMENT/OTHER DIRECT COST REQUIREMENTS (Identify purchase items or other direct costs and assumptions.)

Description	FY	Scope
Materials for drive casings	01	5 driven casings
Materials for boreholes	01	2 boreholes
Sampling materials	01	24 samples from 2 boreholes
Drill site equipment	01	Trailer and associated support equipment

CONSTRUCTION EQUIPMENT REQUIREMENTS & ASSUMPTIONS

Description	Usage Date		Comments/Assumptions
	FY Start	FY Finish	
Excavator			
Front loader			
Water truck			
Generator	01	01	For mobile power for drilling sites.

200-BP-1 HANFORD PROTOTYPE BARRIER STUDY **PL1101**
1.4.10.1.1.02.05.10.01.31.01

COST ACCOUNT PLAN

KEY PROJECT TEAM MEMBERS

Task Lead (CAM):	**B. H. Ford**
DOE-RL:	**B. L. Foley**
Project Engineer:	**G. B. Mitchem**
Field Support:	**R. J. Fabre**
QS&H:	**N/A**
Project Controls:	**E. M. Caparas/R. Damskov**
PSS Rep:	**C. D. Wittreich**
Other:	**N/A**

WORK DESCRIPTION (Provide general work description of facility/building.)

General Description:

The 200-BP-1 Operable Unit has been the site of a treatability test for a prototype Hanford Barrier, to demonstrate the suitability of using surface barrier technology at the Hanford Site. The work scope includes a minimal level of continued annual monitoring of the prototype Hanford Barrier, and annual inspection and maintenance activities.

TASKS TO BE PERFORMED IN FY 2001:

- Prototype Hanford Barrier monitoring and issuance of annual letter report.

TASKS TO BE PERFORMED IN FY 2002: SUPPLEMENTAL

- No specific activities are defined. The following tasks are expected in order to maintain a minimal long-term barrier performance monitoring program for the Hanford Barrier to support/position the project for remedial action decisions involving graded surface barriers:
  - Prototype Hanford Barrier monitoring and issuance of annual letter report.

TASKS TO BE PERFORMED IN FY 2003: SUPPLEMENTAL

- No specific activities are defined. The following tasks are expected in order to maintain a minimal long-term barrier performance program of the Hanford Barrier to support/position the project for remedial action decisions involving graded surface barriers:
  - Prototype Hanford Barrier monitoring and issuance of annual letter report.

200-BP-1 HANFORD PROTOTYPE BARRIER STUDY **PL1101**

1.4.10.1.1.02.05.10.01.31.01

MAJOR PRODUCTS AND DELIVERABLES (Including Readiness Assessment, AHA, Characterization, Demolition, DQO, Milestones – *Tri-Party Agreement* and others.)

Deliverables	Date
• FY01 Annual Hanford Barrier Monitoring Report to RL	09/30/01
• FY02 Annual Hanford Barrier Monitoring Report to RL	09/30/02
• FY03 Annual Hanford Barrier Monitoring Report to RL	09/30/03

BASIS/ASSUMPTIONS (Identify basis for estimate: i.e., MCASES, like facility, non-contaminated, etc. Also include key assumptions and constraints, including any spread of waste handling considerations.)

- Assumes monitoring of barrier stability (riprap sideslope creep gauges, settlement markers, and surface stakes), one annual animal intrusion inspection and vegetation survey. Drainage/moisture measurements will be performed similar to FY00. Results will be issued as a letter report.

- Assumes that a ROD for the operable unit will not be completed in the FY01-FY03 timeframe.

WORK ORDERS (i.e., work to be performed by FDH or Hanford Utilities Group.) List major work orders including fiscal year.

Company	FY	Scope
PNNL	01	Barrier monitoring
PNNL	02	Barrier monitoring
PNNL	03	Barrier monitoring

COST ACCOUNT PLAN

KEY PROJECT TEAM MEMBERS

Task Lead (CAM):	**B. H. Ford**
DOE-RL:	**B. L. Foley**
Project Engineer:	**G. B. Mitchem**
Field Support:	**R. J. Fabre**
QS&H:	**N/A**
Project Controls:	**D. L. Kietzman/R. A. Damskov**
PSS Rep:	**C. D. Wittreich**
Other:	**L. C. Hulstrom (CHI Lead)**

WORK DESCRIPTION (Provide general work description of facility/building.)

General Description:

CERCLA assessment activities for the 200-PW-2 Uranium-Rich Process Waste Group Operable Unit for FY01 are identified in the DWP as authorized and funded scope.

Tasks will be required in FY02 and FY03 to be compliant with expected Tri-Party Agreement milestones, based on the work plan schedule, and have been identified as supplemental pending additional authorized funding. These tasks are listed below and will be further developed in future DWP efforts as funding becomes more clearly defined. See the supplemental form for more information.

TASKS TO BE PERFORMED IN FY 2001:

- No supplemental activities are identified for FY01.

TASKS TO BE PERFORMED IN FY 2002: SUPPLEMENTAL

- To be compliant with Tri-Party Agreement milestones, the following task will be required:
  - Complete remedial investigation field work.

TASKS TO BE PERFORMED IN FY 2003: SUPPLEMENTAL

- To be compliant with Tri-Party Agreement milestones, the following task will be required:
  - Complete remedial investigation report.

MAJOR PRODUCTS AND DELIVERABLES (Including Readiness Assessment, AHA, Characterization, Demolition, DQO, Milestones – *Tri-Party Agreement* and others.)

Deliverables	Date
None currently identified.	

200-PW-2 URANIUM-RICH PROCESS WASTE GROUP ASSESSMENT **PK2101**

1.4.10.1.1.02.05.25.02.31.01

BASIS/ASSUMPTIONS (Identify basis for estimate: i.e., MCASES, like facility, non-contaminated, etc. Also include key assumptions and constraints, including any spread of waste handling considerations.)

None currently identified.

COST ACCOUNT PLAN

KEY PROJECT TEAM MEMBERS

Task Lead (CAM):	**B. H. Ford**
DOE-RL:	**B. L. Foley**
Project Engineer:	**R. B. Mitchem**
Field Support:	**R. J. Fabre**
QS&H:	**N/A**
Project Controls:	**D. L. Kietzman/R. A. Damskov**
PSS Rep:	**C. D. Wittreich**
Other:	**R. G. Bauer (CHI Lead)**

WORK DESCRIPTION (Provide general work description of facility/building.)

General Description:

No CERCLA assessment activities have been identified for the 200-CW-5 U-Pond/Z-Ditches Cooling Water Group Operable Unit for FY01.

Tasks will be required in FY02 and FY03 to be compliant with Tri-Party Agreement milestones, and are considered supplemental pending additional authorized funding. These tasks are listed below, and will be further developed in future DWP efforts as funding becomes more clearly defined. See the supplemental form for more information.

TASKS TO BE PERFORMED IN FY 2001:

- None.

TASKS TO BE PERFORMED IN FY 2002: SUPPLEMENTAL

- To be compliant with Tri-Party Agreement milestones, the following task will be required:
  - Complete remedial investigation field work.

TASKS TO BE PERFORMED IN FY 2003: SUPPLEMENTAL

- To be compliant with Tri-Party Agreement milestones, the following task will be required:
  - Complete remedial investigation report.

MAJOR PRODUCTS AND DELIVERABLES (Including Readiness Assessment, AHA, Characterization, Demolition, DQO, Milestones – *Tri-Party Agreement* and others.)

Deliverables	Date
Complete sampling and analysis: Tri-Party Agreement Milestone M-15-40A	09/30/02

200-CW-5 U-POND/Z- DITCHES COOLING WATER GROUP ASSESSMENT **PKB101**

1.4.10.1.1.02.05.25.11.31.01

BASIS/ASSUMPTIONS (Identify basis for estimate: i.e., MCASES, like facility, non-contaminated, etc. Also include key assumptions and constraints, including any spread of waste handling considerations.)

None currently identified.

COST ACCOUNT PLAN

KEY PROJECT TEAM MEMBERS

Task Lead (CAM): **J. A. Armatrout**
DOE-RL: **K. M. Thompson**
Project Engineer: **G. B. Mitchem**
Field Support: **N/A**
QS&H: **N/A**
Project Controls: **W. A. Pelly**
PSS Rep: **T. A. Lee**
Other: **N/A**

WORK DESCRIPTION (Provide general work description of facility/building.)

General Description:

Perform vadose zone monitoring and borehole geophysical logging at 200 Area source operable unit waste sites (ponds, cribs and trenches). Work will be performed through the DOE Grand Junction office. The work scope includes the review of existing borehole logging data and the collection of new baseline spectral gamma and moisture borehole logging data at waste sites.

TASKS TO BE PERFORMED IN FY 2001:

- Review and assessment of existing historical geophysical logging data (vadose zone).

TASKS TO BE PERFORMED IN FY 2002:

- None.

TASKS TO BE PERFORMED IN FY 2003:

- None.

MAJOR PRODUCTS AND DELIVERABLES (Including Readiness Assessment, AHA, Characterization, Demolition, DQO, Milestones – *Tri-Party Agreement* and others.)

Deliverables	Date
None identified.	

BASIS/ASSUMPTIONS (Identify basis for estimate: i.e., MCASES, like facility, non-contaminated, etc. Also include key assumptions and constraints, including any spread of waste handling considerations.)

The work scope, budget, and schedule is based on a draft letter from M. C. Butherus, MACTEC, to Joel D. Berwick, DOE-GJO, "Hanford FY2001 Proposed Work Scope," dated 6/26/2000. The work is to be performed through a contract with the DOE Grand Junction office. The funding will be transferred to the DOE Grand Junction office.

DISTRIBUTION

ONSITE
74 copies

U.S. Department of Energy
Richland Operations Office

K. D. Cameron	A5-58
B. L. Foley	H0-12
M. J. Furman	A5-13
R. E. Gerton	H0-12
R. D. Glenn	A4-35
C. H. Gunion (3)	A5-16
J. P. Hanson	K8-50
M. K. Harmon (2)	Hold
R. D. Hildebrand	A5-13
R. A. Holten	A5-16
J. M. Nelson	H0-12
F. R. Serier (2)	A6-52
K. M. Thompson	A5-13
A. C. Tortoso	H0-12
RL Public Reading Room	H2-53

Pacific Northwest National Laboratory

G. W. McNair	H0-21

ERC

J. F. Armatrout	H0-09
J. S. Arnold	H0-11
J. V. Borghese	H0-19
R.W. Bryce	K6-75
L. R. Burns	K6-94
D.M. Clemens	H0-11
G.A. Day	H0-19
M. R. Duncan	H0-11
S. C. Foelber	H0-09
B. H. Ford	H0-19
L. A. Frank	H0-11
M.D. Freshley	H0-21
J. S. Fruchter	K6-96
M. J. Graham	H0-09
J. M. Grover	H9-02
R. S. Hajner	H0-11
M. R. Hood	X0-17
R. L. Jackson	H0-19
D.L. Kietzman	H0-19
D. R. Kuhl	H0-19
J.A. Lapierre	H0-11
T.A. Lee	H9-02

ERC (cont.)

L. W. Lingle	H0-11
E. C. Long	H0-21
S. M. McPeek	H0-19
G. B. Mitchem	H0-21
J. D. Moroney, III	X0-34
W. A. Pelly	H0-19
N. J. Rayner	H0-11
J. N. Schilling	H0-21
W. B. Shoaf	H0-05
C. B. Simpson	H0-11
E. C. Stevens	H0-11
K. N. Swan	H0-19
J. E. Tarpinian	H0-09
B.M. Wallace	H0-19
J. L. Walsh	H0-11
M. R. Watson	H0-11
T. M. Wintczak	H0-21
Document & Information Services (2)	H0-09
Hanford Technical Library	P8-55
Extra Copies for RFPs (2)	H0-11
Extra Copies (10)	H0-11