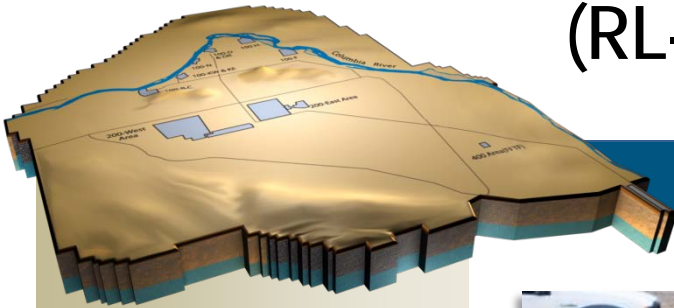


Section D

Soil and Groundwater Remediation Project (RL-0030)



Monthly Performance Report

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A worker bonds two pieces of high-density polyethylene (HDPE) piping. Over 42 miles of HDPE piping is being installed to connect the DX groundwater treatment facility to wells in the 100-HR-3 area.

PROJECT SUMMARY

American Recovery and Reinvestment Act (ARRA)

Recovery Act dollars are at work across the Central Plateau and along the Columbia River, constructing two groundwater treatment facilities and numerous wells that will be used for monitoring, extracting, and remediating groundwater near the Columbia River. Within the 100-HR-3 Operable Unit, the construction of the 11,500 square foot DX Groundwater Treatment Facility continued with the erection of the structural steel for the main process building shell. This phase of the facility construction is 60% complete. In addition to the main process building, two groundwater transfer buildings are being constructed to support the 600 gallons per minute facility. The foundation and slab of each transfer building was completed and the erection of the first transfer building is 15% complete. Overall, the construction of the facility is ahead of schedule. Recovery Act funding has allowed CHPRC to prioritize the DX project and accelerate its construction, whereas it might not have started until much later under base funding. The DX pump-and-treat system is being designed to help protect the Columbia River by cleaning up chromium-contaminated groundwater in the 100 Area.

Additionally, Recovery Act funding is being used across the Hanford Site to prepare for and complete the drilling of numerous wells that will be used for monitoring, extracting, and remediating groundwater.

Recent progress includes:

- 100-NR-2: Drilling on the 171 wells for the expansion of the strontium-90 apatite barrier continued with 34 wells in process. The 34 wells have been drilled to total depth and eleven of the 34 have been constructed and developed. As a result of low Columbia River water elevations, the development of the remaining wells is progressing slower than expected. Therefore, the development of the wells will continue to be dependent on the water elevations.
- 100-HR-3 H Area: Overall, 25 wells are being installed in support of the new DX Groundwater Treatment Facility. The first twelve wells have been drilled, constructed, and developed. The remaining 13 well locations were approved by the State Historic Preservation Officer enabling the planning and field work to continue.
- 100-HR-3 D Area: Overall, 14 wells are being installed in support of the Remedial Process Optimization effort to increase the productivity of the treatment facilities. Six wells are in process with all six being drilled to total depth and constructed. Four of the six wells have been developed. The remaining eight of the 14 well locations were approved by the State Historic Preservation Officer enabling the planning and field work to continue.
- 100-BC-5: Drilling continued on two wells of the four wells. One of the wells was drilled to total depth and constructed.
- 200-ZP-1 Expansion: Overall, 20 wells are being installed in support of the new 200 West Groundwater Treatment Facility, with 17 of the 20 wells being installed with ARRA funding (three were installed in FY 2009 with base funding). Currently, five of the six wells have been drilled to total depth and constructed with two of these wells being developed. The documentation necessary to install the remaining eleven wells continued.
- 200-BP-5: The drilling of two of the three wells was initiated in November.

Base

Approval to proceed with road and pad installation and drilling of the final two wells required to support Phase 2 realignment of the KX and KR4 pump-and-treat systems was received, and construction of roads/pads was initiated. Both the 100-KR-4 Remedial Process Optimization technical memorandum and the 100-KR-4 Interim Action Monitoring Plan Supplement were provided to RL for review. Proposed locations for wells required for K Decision Unit remedial investigation and for Phase 3 realignment of the 100-KR-4 pump-and-treat systems were walked down with representatives of the Tribal Nations in preparation for upcoming drilling activities.

EPC Projects in Support of S&GRP**ARRA**

Concerns with pipe and well locations in the 200 West Area near the burial grounds is an issue. An USQD is being prepared by Waste and Fuels. A white paper discussing Tc-99 inventory and impact to the ERDF life span is being prepared. Five road crossings have been completed and grubbing for transfer piping has been started. Bids are to be received December 11, 2009, for construction of the extraction and injection buildings. The RFP Process Facility site civil and construction will be released the week of December 7, 2009.

Work continued on preparation of the 200W Area Pump and Treat Project 90% designs for the Process Facility and Balance of Plant. Additional design work is required to incorporate changes in the equipment sizing and the lime addition system. Balance of Plant mobilization is in progress and includes procurement of materials, well rack fabrication and start of field work on road crossings.

Base

Modutank 3 construction is 98% complete. Design changes are required to modify the truck unloading dock. Modutank 3 construction will be complete early December 2009. Loading dock modifications will be complete late December 2009.

Continued construction of electrical and mechanical modifications on the KX and KR4 Phase II pump and treat expansion. Antennas were placed at extraction wells 199-K-178, 199-K-171, and 199-K-153 and the KX Process Building. These antennas are part of a wireless communication system to transmit process operation parameters from the well heads to the KX Process Building.

- In November, 154 well locations were sampled with a total of 599 samples being collected.
- 541 aquifer tube samples were collected from 182 tubes at 103 sites.

S&GRP EMS Objectives and Target Status

Objective #	Objective	Target	Due Date/Status	Completion Date
09-EMS-SGWR-OB-01	Take actions necessary to protect the Columbia River by 2012.	Expand the HR-3 treatment system(s) to achieve a functional operational capacity of 500 gpm.	12/31/10 – on schedule	
09-EMS-SGWR-OB-03	Reduce the number of groundwater sampling events conducted annually.	Reduce the number of baseline sampling events by 10% in calendar year 2010	12/31/10 – on schedule	
10-EMS-SGWR-OB1-T1	Take actions necessary to protect the Columbia River by 2012.	Treat 430,000,000 gallons of 100 Area (D, H & K Area) groundwater. Down time associated with adding new capacity, re-alignments, and aquifer tests will require adjustments to the total gallons to be treated under this target.		
		Review and tally total number of gallons treated.	As of November month end, 62.6 million gallons have been treated.	
		Treat up to 430 million gallons of 100 Area groundwater.	9/30/10	
10-EMS-SGWR-OB2-T1	Construct a new groundwater treatment facility that satisfies the pump-and-treat component of the 200-ZP-1 Operable Unit Record of Decision's selected remedy.	Construct new 200 West Area pump and treat facility to remediate groundwater which was impacted from past production operations.		
		Start construction of road crossings.	11/30/09 – Five road crossings have been completed and grubbing for transfer piping has been started.	Road crossing construction started on 11/2/2009
		Start early civil construction.	03/30/10 – started	
		Start construction of groundwater extraction buildings.	03/30/10 – started	
		Complete treatment facility construction.	12/31/11	
10-EMS-SGWR-OB3-T1	100-K Area Waste Site Remediation	Initiate and sustain remediation of waste sites at 100-K Area by 11/30/09.		
		Initiate and sustain progress toward Group 1 waste site remediation at 100-K.	11/30/09 – under way	Activity started on 9/26/2009
		Complete Group 1 waste site remediation.	9/30/11	

TARGET ZERO PERFORMANCE

	CM Quantity	FYTD Quantity	Comment
Days Away, Restricted or Transferred	1	1	10/28/09 - An employee was stacking cases of bottled water when a back spasm occurred. The employee was taken to first aid for evaluation. Subsequently the individual was taken to Kadlec hospital for further evaluation. The teamster was diagnosed for a muscle pull and was given a prescription pain shot for discomfort and was also provided a prescription muscle relaxer. A five pound lifting restriction has been assigned. 20524
Total Recordable Injuries	1	1	Same as above.
First Aid Cases	6	10	<p>11/04/09 - An employee was taken to the 200 West AMH with pain in elbow. A pop was felt in elbow at the end of day on Tuesday while handling instruments but no other discomfort or pain. The next morning, experienced pain and discoloration on the elbow where the pop occurred. Reported the event to manager on arrival and was taken to AMH for evaluation. (20535)</p> <p>11/06/09 - In the 100D Area, an employee was bonding HDPE piping when the wind blew particles under safety glasses and into the left eye. Employee self treated and then was taken to AMH for medical evaluation pertaining to the incident. First aid treatment was provided and employee was returned to work without restriction. (20544)</p> <p>11/13/09 - An employee was supporting work at the BCCA remediation site when something was blown into their eye. Employee self treated and returned to work. Later that afternoon, the employee's eye was still irritated so they returned to the office, informed the supervisor and was taken to AMH. Employee was treated and returned to work without restriction. Still having eye irritation, the employee returned to AMH on 11/15/09, was treated and released to work without restrictions. (20551) ARRA</p> <p>11/17/09 - An employee pinched the small finger of their right hand while setting cross members of structural steel at 100 DX. Employee was wearing proper PPE for the task. Employee self-</p>

	CM Quantity	FYTD Quantity	Comment
			<p>treated. (20583) ARRA 11/18/2009 - While using a cordless screw driver, the screw driver slipped, resulting in a minor injury to the employee's left index finger. Leather gloves were worn initially but it was difficult to hold the screws with the leather gloves on so the employee removed them and put on cotton gloves. Employee self-treated with a Band-Aid and returned to work. The incident was reported on 11/19/09. (20572) ARRA 11/19/09 - Employee was walking across parking lot to meet van pool when another employee stepped on their foot, which was still healing from surgery. Employee was feeling pain Monday morning so he informed his supervisor of the event and was taken to AMH. Employee was treated with OTC medication and released to work with no additional restriction as a result of this event. (20575)</p>
Near-Misses	0	0	N/A

KEY ACCOMPLISHMENTS

30.01 Integration and Assessment

Base

Environmental Strategic Planning

Continued efforts to solicit feedback on the CP Cleanup Completion Strategy from various public and stakeholder interests, and continued preparations for the negotiation of the strategy with the Regulators. Demonstrated the CP Cleanup Completion Strategy site evaluation process for evaluation of individual waste sites. Developed a draft "document hierarchy" for implementation of the Central Plateau Cleanup Completion Strategy. This hierarchy identifies the CERCLA (and supporting documents) which will be produced to support decisions and implementation of the strategy. Initiated a coordinated CHPRC review of the Tank Closure and Waste Management EIS.

Document Review & Standardization

The O&M Plan – Pump and Treat System, EE/CA, and Action Memorandum Annotated Outlines are complete. Regulatory agencies agreed with the O&M revisions and have decided to use the EE/CA and Action Memorandum outlines without commenting due to competing resources. Comments from DOE on the RACR annotated outline are being worked with WCH, and the RD/RA annotated outline comments from EPA are being incorporated.

Risk and Modeling Integration Group

The Outer Area baseline risk assessment approach has been developed and is under review. The 100-N groundwater conceptual model revisions have been incorporated and finalized. The basalt surface map supporting the development of the 200-BP-5 OU conceptual model has been completed.

Modeling software QA procedures were presented to the GAO audit team. An outline for the GW protection technical basis document.

Environmental Database Management

CHPRC letter titled, "Reporting Information to the Waste Information Data System" was sent to the MSA, WCH, and WRPS in response to the CHPRC CAP that addressed Surveillance Report S-09-SED-PRC- 009, Biological Control Program, Waste Information Data System, and Near Facility Environmental Radiological Monitoring.

CHPRC is working with LMIT to develop prototype software that would allow someone using a portable computer connected to a GPS device to determine the location of the laptop and retrieve information about the Site at that location.

Well Drilling and Decommissioning

ARRA

- Initiated drilling for 171 wells at 100-NR-2; 31 wells drilled to date, 20 wells were drilled in November and eight of the 11 were constructed (completed) in November.
- Continued drilling on the sixth of six 200-ZP-1 extraction wells; five wells are at total depth.
- Initiated drilling the thirty-five RPO wells at 100-HR-3 (H area).
- Initiated drilling two of four wells at 100-BC-5.
- Initiated drilling fourteen wells at 100-HR-3 (D Area); six wells drilled to date; three wells drilled and constructed in November.

Base

- Completed construction and development of all three wells at 200-ZP-1.
- Completed three of five wells at 100-KR-4.
- One well decommissioned in November.

River Corridor

30.10 100-BC-5 Operable Unit

ARRA

Drilling of two of the BC-5 four wells (C7505 and C7506) continued, with C7505 advanced to approximately 178 feet below ground surface (ft bgs) and with C7506 drilled to a total depth of approximately 183 ft bgs. All sampling complete on C7506, and well completion activities will begin in December.

Base

Received formal EPA comments on the Draft A of the 100-BC Decision Unit Work Plan Addendum and SAP on November 25, 2009. Work is underway to incorporate comments into the Rev. 0 version.

In response to the preliminary WCH river-pore sampling results, evaluated additional proposed activities to further refine the conceptual site model for 100-BC. These activities may potentially include additional aquifer tube installations, additional river-pore sampling, groundwater model development, and subsequent model-simulation activities.

At the direct request of RL, planning and preparation activities were conducted to sample the base of the 100-B-27 waste-site excavation.

30.11 100-KR-4 Operable Unit

Base

The following groundwater treatment was conducted 100-KR-4 Operable Unit:

- Approximately 3.2 million gallons at the KR4 pump and treat system.
- Approximately 16.2 million gallons pumped at the KX system.

- Approximately 8.5 million gallons pumped at the KW system.

The KR4 and KX systems remain under construction related to Phase 2 realignment. KR4 transfer building 1 remained out of service due to construction; KX transfer building 1 operated at reduced flow due to construction. Approval to proceed with road and pad installation and drilling of the final two wells required to support Phase 2 realignment of the KX and KR4 pump-and-treat systems was received, and construction of roads/pads was initiated.

A draft FRD was prepared for the Phase 3 realignment of the 100-KR-4 pump-and-treat systems and was provided for engineering review. Phase 3 realignment will impact all three systems by adding three new extraction wells to the systems, realigning wells from the KR4 system to the KX system, reducing long line lengths associated with four KX system wells to improve operability, and providing spare extraction well connection capacity to the KX and KR4 systems. Phase 3 implementation is necessary to ensure the 2012 Tri-Party Agreement target for river protection is met.

Both the 100-KR-4 Remedial Process Optimization technical memorandum and the 100-KR-4 Interim Action Monitoring Plan Supplement were provided to RL for review. The K Decision Unit Addendum to the 100 Areas RI/FS Workplan was in final review prior to clearance and release.

Proposed locations for wells required for K Decision Unit remedial investigation and for Phase 3 realignment of the 100-KR-4 pump-and-treat systems were walked down with representatives of the Tribal Nations in preparation for upcoming drilling activities. Preparatory paperwork to support installation of the RI wells was initiated. Two of the proposed RI wells cannot be drilled in the approved locations, and alternative locations are being evaluated. Consultation with Tribal Nations regarding three of the four proposed Phase 3 wells continued throughout the month.

30.12 100-NR-2 Operable Unit

ARRA

Drilling of the multipurpose wells continues using sonic drilling methods. As of the end of November, 31 wells have been drilled and completed with three of those being continuously sampled for evaluation of the existing Apatite Permeable Reactive Barrier (PRB).

Base

Awaiting RL approval of the 100-N Eco Risk Document (Revision 1) as transmitted on October 5, 2009.

Field preparations for the Jet Injection Treatability Test were conducted with contractor mobilization now complete. Jet Injection activities are expected to begin on December 3, 2009.

While awaiting RL approval on the Draft A Proposed Plan for Amending the Interim Record of Decision, as transmitted on September 30, 2009, RL chose to include WCH material to support the 100-NR-1 OU. This change required a Draft B to be produced. In process to approve, release, and transmit this Draft B version to RL to meet the TPA milestone (TPA milestone M-16-14B, due 12/31/09).

Resolution of the informal RL and Ecology comments continues for the 100-N Integrated Groundwater Sampling and Analysis Plan.

Engineering continues on the design for an injection system for the Apatite Barrier expansion. A 30% design-review meeting was held on November 17, 2009. The 60% design review is planned for December 17, 2009. Additional planning activities, including the production of a Treatability Test Plan, are underway.

Work continues on Draft A of the 100-N Decision Unit Work Plan Addendum to actively address RL concerns. Meetings were held to update RL on the document revision progress. The Draft A documents are expected to be submitted to RL by December 10, 2009 (supporting TPA milestone M-015-61, due 12/31/09).

Phytoremediation and TPH studies are continuing with PNNL as planned. All field data-collection work

is essentially complete, and the final reports are being produced.

30.13 100-HR-3 Operable Unit

ARRA

The following groundwater treatment was conducted at 100-HR-3 Operable Unit:

- Approximately 2.6 million gallons pumped at 100-HR-3.
- Approximately 0.8 million gallons pumped at 100-DR-5.

HR-3 operated at below normal levels as the H Area Aquifer Test was completed. The rebound study was extended to examine the influence of the river at high water. Due to the chromium concentrations measured in the RUM wells, two RUM wells are being reconfigured for long-term operation as extraction wells.

DR-5 also operated at below normal flows because two of the extraction wells, 199-D5-20 and -32, were out of service. Construction has now resumed and the well realignment will proceed.

The DX design team completed the formal 90% design review on November 5, 2009. Design comments are being incorporated, and the 100% final design will be issued for construction mid-December. DX will have an operational capacity of 600 gpm with completion of ATP by 12/31/2010 in order to achieve the TPA and PBI. DX and HX systems together provide 1,300 gpm new treatment capacity versus the 1,000 gpm capacity used in the modeling. Ion exchange vessels for both systems are designed to operate on either Purolite A500 or ResinTech SIR-700 resins. BCRs documenting these changes are in preparation.

Long lead procurements of the ion exchange skids for both 100-DX (6 trains) and 100-HX (7 trains) have been placed. The first two skids for 100-DX arrive in February. A kick-off meeting was held with the fabricator (Monarch Water Systems) in Xenia, Ohio on November 12, 2009. In addition, representatives from engineering, operations, and maintenance visited the Boomsnub Superfund site in Vancouver, Washington to look for lessons learned, operational/design efficiencies. Boomsnub uses the SIR-700 resin planned for use at the 100DX and 100HX pump and treat plants.

DX construction started in July with road crossings, yard piping and well rack fabrication. 96% of road crossings have been completed. The remaining road crossings next to the process building will be completed when the building contractor has demobilized to avoid congestion hazards. All HPDE piping has been laid and bonded, with the exception of piping tie-ins to the buildings and wells, and piping that will run over land bridges across remediation trenches yet to be completed by WCH. The building contractor has completed the foundations for all three buildings, and started erecting the process building.

Base

Resin tests at DR-5 continued with ResinTech SIR-700 still removing chromium since the first series started on March 10, 2009 (over 54,000 bed volumes through November). The spent resin TCLP test has shown spent SIR-700 to be a dangerous waste, so that stabilization will be required before disposal.

RPO modeling has been completed on five alternatives to the current baseline designed to meet 2012 and 2020 TPA Target Milestones. Alternative 5 is projected to achieve both targets and is being implemented through an approved BCR. It increases the number of new wells from 49 to 70. RPO is now addressing the incorporation of chemical and/or biological remediation into the remedy to accelerate meeting the 2020 TPA target milestone.

Comment resolution on the RI/FS Work Plan and Addendum 1 is nearing completion. Groundwater sampling commenced to support the Decision Unit Risk Assessment was conducted in accordance with a mini-SAP.

30.14 100-FR-3 Operable Unit

Base

Received formal EPA comments on the Draft A of the 100-F & IU-2/6 Decision Unit Work Plan

Addendum and SAP on November 25, 2009; work is underway to incorporate comments into the Rev. 0 version.

Central Plateau

30.20 200-BP-5 Operable Unit

Base

The L Well (C7514; adjacent C-1 Crib) and K Well (C5860; adjacent B-6 Reverse Well) were drilled and sampled to depths of 301 and 104 ft bgs, respectively. Drilling of the M well (adjacent B-12 Crib) will start following completion of the L well. All three wells will be drilled to basalt (~380 ft). Completed the planning for depth discrete groundwater sampling of 14 wells in the B Complex Area; fieldwork is expected to start in early December. Revision of the draft 200-BP-5 conceptual model report is in process.

The preparation of the 200-BP-5 Remedial Investigation (RI) Report continued. Supporting activities include a data quality assessment (DQA) of groundwater data and refinement of the hydrogeological physical model for the OU. Initiated work on the 200-BP-5 DQO in support of the 200-BP-5 B Complex Treatability Test Plan.

A technical briefing to DOE, regulators, tribal nations and other site contractors was held November 18, 2009 on the results of the Landstreamer/Gimbaled Geophone Acquisition of High-Resolution Seismic Reflection data collected in the 200-BP-5 OU north of the 200 Areas. The field activities conducted in June 2009 were a collaborative effort between DOE, the CHPRC, and the Confederated Tribes of the Umatilla Indian Reservation (CTUIR) to gather information that would support the refinement of the top of basalt structure in the Gable Mountain Gap vicinity. The results presented by the CTUIR and Montana Tech of the University of Montana were positive for resolving and refining the top of basalt structure and well received by the attendees.

30.21 200-PO-1 Operable Unit

Base

Continued work on the draft remedial investigation (RI) report.

30.22 200-UP-1 Operable Unit

Base

Ecology comments on the Draft A of Revision 3 to the 200-UP-1 OU Groundwater Remedial Design/Remedial Action Work Plan (DOE/RL-97-36, Rev. 3) were received on November 12, 2009, and were minor in nature. Comments are in the process of being incorporated into the final document.

A DOE briefing was held November 5, 2009, to discuss the draft memo-to-file prepared to correct language in the interim 200-UP-1 ROD and indicating that carbon tetrachloride is not an F001 listed waste but instead is a dangerous waste.

The U Plant pump and treat system has been shutdown since October 15, 2009 due to an ETF outage, which is expected to last until mid-December. A well camera survey and redevelopment activity is being planned for early December to enhance extraction well production.

30.23 200-ZP-1 Operable Unit

Eleven of 14 groundwater extraction wells are currently online pumping water at a rate of approximately 250 gpm. Extraction well 299-W15-44 is off line as it will be replaced by new extraction well C7017 (EW-1). Three other extraction wells are offline due to minor technical difficulties that were repaired. Work to get these extraction wells back on line is currently being scheduled.

Approximately 10.8 million gallons of groundwater were treated in November.

Depth-discrete groundwater samples are currently being collected and analyzed during the drilling of six

new extraction wells C7024 (EW-4), C7027 (EW-5), C7026 (EW-8), C7494 (EW-15), C7028 (EW-18), and C7029 (EW-19). These well have all reached total depth. Performed WSCF analyses on depth-discrete groundwater samples collected from these wells. The drilling of the next 11 wells will begin soon. The Performance Monitoring Plan/Integrated Monitoring Plan is currently out for RL and EPA review.

Two extraction wells in the vicinity of the T Tank Farm are currently offline as repairs are being made to the ETF facility. These well are expected to be back on line in the next week.

30.24 200-PW-1 Soil Vapor Extraction (SVE)

Base

Active SVE operations have ended for the winter months; passive SVE operations are ongoing. Heaters within the active SVE units are operating to prevent freezing. GAC heater units are on order to help the units operate more efficiently in colder temperatures.

30.30 300 FF-5 Operable Unit

Base

EPA DRAFT comments to the RI/FS Work Plan and SAP Draft A have been received and are being reviewed. Formal comments are expected ahead of the December 29, 2009, scheduled date.

Geophysical testing will continue prior to initiation of infiltration testing during low river stage anticipated to be in February or March of 2010.

30.31 Regulatory Decisions and Integration

ARRA

- Completed drilling and sampling activities on the vadose portion of the “L” well.
- Responded to Agency comments on the 200-BC-1 Treatability Test Report. Preparing Rev. 0.
- Completed geophysical investigations report for four of the 200-SW-2 landfills.
- Completed draft characterization report for 200-SW-2 passive organic vapor sampling at approximately 350 locations in 200-East/West Area landfills.
- Transmitted 200-MG-1 Action Memorandum (Draft A) for 37 remaining waste sites in the outer area to RL for their approval and transmittal to Ecology for review.
- Completed 200-MG-1 Removal Action Work Plan (Rev. 0), including RL and Ecology approvals
- Received Ecology’s approval for the 200-MG-1 Sampling and Analysis Plan for 11 waste sites.
- Initiated a series of technical and regulatory approval path forward meetings in an effort to accelerate the approval process for the NRDWL and SWL closure plans.

Base

- Completed two draft Borehole Summary Reports for boreholes drilled at the 216-A-2 and 216-A-21 cribs plus boreholes drilled at the 216-A-5 and 216-S-1/2 cribs
- Transmitted Draft C FS for the 200-CW-5 to RL for review and comment
- Completed Burial Ground Sampling and Analyses Report for July – September 2009 in support of TPA milestone M-91-40, Requirement 2.

30.32 Deep Vadose Zone Treatability Test Project

Base

- Deep Vadose Desiccation Pilot Test: Pilot Test activities for Desiccation are underway with the primary focus on establishing a contract for drilling of 20 boreholes needed for instrumenting and logging for the Pilot Test. The RFP for these boreholes will be issued by December 10, 2009. A Statement of Work has been drafted and will be issued as an RFP for procurement of a dry air delivery system for the project. Additionally, a MSA continues design in preparation for field

work for the 13.8 KV power supply needed to operate the three phase 480 volt equipment used in the Pilot Test.




- The Characterization Test Report has been reviewed by RL and comments are now being incorporated, to be followed by technical editing. This test report is anticipated to be transmitted to RL by December 17, 2009 and satisfies a performance incentive goal due January 30, 2010.
- Desiccation Lab Testing: Additional testing has been initiated that will investigate re-wetting as a result of recharge and water vapor transport and will be used to model long term affects of re-wetting desiccated soils.
- Uranium Sequestration Testing: The test report on Uranium Sequestration was transmitted to RL for review and comment and should be returned to CHPRC by December 10, 2009, to be followed by comment incorporation and final editing. This report will be included in a related TPA milestone due on January 31, 2010. Additional testing has been selected to be performed in FY 2010 to support a large scale field test to be performed in FY 2011.
- Soil Flushing: PNNL has written a Test Plan and initiated laboratory testing to evaluate soil flushing as a mechanism to contact targeted contamination in the vadose zone with a leaching solution. The laboratory will be performing these tests to evaluate kinetics and stability of solubilization of Tc-99 and uranium, transport properties of the solubilized Tc-99 and uranium, and impact of vadose zone sediment properties on leaching solution processes. Additional modeling will also be performed to assess distribution, location, and stratigraphic factors that control the distribution of vadose contaminants and movement of injected fluids.
- Grouting: PNNL has prepared a Test Plan and initiated laboratory testing to evaluate grouting as a mechanism to contact targeted contamination in the vadose zone to react, stabilize, or isolate the contaminants. The laboratory will also use these results to model the grouting lab work to assess the distribution, location, and stratigraphic factors that control the distribution of vadose zone contaminants.




MAJOR ISSUES























None identified.

RISK MANAGEMENT STATUS

Unassigned Risk
Risk Passed
New Risk

 Working - No Concerns
 Working - Concern
 Working - Critical

 Increased Confidence
 No Change
 Decreased Confidence

Risk Title	Risk Strategy/Handling	Assessment		Comments
		Month	Trend	
SGW-001: 100-D Treatment Technology Selection Change	Review draft RD/RAWP with regulators; maintain close interface to minimize impact of regulatory changes.			RD/RAWP approval behind schedule, but no issues identified to date
SGW-003A: Central Plateau Drilling - 200W P&T	Accelerate FY 2010 wells into FY 2009; utilize rotary drilling vs. cable-tool; modify vadose zone sampling approach			Re-drilling is required on 2 of 6 wells currently being installed due to hitting refusal on 7026 and failure of the well screen on 7494. Currently mobilizing for next 11 wells.
SGW-003: Central Plateau Well Drilling Demands	Adjust drilling schedules; cross-train workforce; evaluate. sample parameters.			On schedule for all Central Plateau wells.
SGW-016: 300-FF-5 Infiltration Barrier Treatability Test	Review BPA river level projections to time treatability test; accept risk.			Due to river levels the infiltration test has been moved to February 2010; this does not impact the schedule.
SGW-035: 200 W P&T Single Wall Piping	Discuss alternate leak detection in RD/RAWP; engage regulators early.			A Positive Potential Inadequacy Safety Analysis (PISA) for the existing ZP-1 and other site piping in the near vicinity of the Burial Grounds was declared with subsequent analysis will be conducted during November 2009, which may impact the routing of injection well piping.
SGW-037: 100-NR-2 Infiltration Gallery Pilot Test	Risk accepted without mitigation.			No issues expected at this time.
SGW-050: Regulatory Strategy for Decision Docs	Continue to support RL in strategy negotiations with Agencies.			Now two months past the agreement date; revised cleanup strategy will translate to a revised regulatory document approach.
SGW-051: Aggressive Schedule for 200 West P&T	Concurrent document/procurement process.			On schedule with procurements; behind schedule on design but have a recovery plan in place.
SGW-031: P&T Design Changes - 100 D	Minimize parallel design/construct/ regulatory activities; finalize design prior to contract award; coordinate well locations with WCH.			We have walked down the majority of the piping routes and road locations with WCH; design is now 90%.
SGW-047: Purgewater System Regulatory Issues	Engage regulators in changes in path forward and in design process.			Working with Ecology to expand review of planned approach.
SGW-069: 100-HR-3 ISRM Barrier Amendment - Hexavalent Chromium Continues to Move through Barrier	Monitor zero valent iron injection; add four wells to P&T.			Laboratory testing is nearing completion. The ISRM will not be amended with ZVI, but rather the 4 P&T wells installed.

PROJECT BASELINE PERFORMANCE

Current Month

(\$M)

WBS 030/ RL-0030 Soil and Groundwater Remediation	Budgeted Cost of Work Scheduled	Budgeted Cost of Work Performed	Actual Cost of Work Performed	Schedule Variance (\$)	Schedule Variance (%)	Cost Variance (\$)	Cost Variance (%)	Budget at Completion (BAC)
ARRA	6.5	6.8	4.8	0.3	4.5	2.0	29.3	208.1
Base	<u>10.0</u>	<u>9.0</u>	<u>10.4</u>	<u>(1.0)</u>	-10.1	<u>-1.4</u>	-15.6	<u>1,143.5</u>
Total	16.6	15.8	15.3	-0.7	-4.4	0.6	3.7	1,351.6

Numbers are rounded to the nearest \$0.1M.

ARRA

CM Schedule Performance: (+\$0.3M/+4.5%) is within reporting thresholds:

The Primary Contributor to the current month positive schedule variance is the DX construction activities. This and other variances that exceed the reporting thresholds are as follows:

100-HR-3 Operable Unit (+\$1.8M)

The primary contributor to the current month schedule variance is the acceleration of procurement and construction activities for DX for 100-HR-3 Operable Unit. These activities were planned to begin in February 2010.

Regulatory Decision/Closure (+\$0.3M)

The current month positive cost variance is primarily due efficiencies obtained in Multi Incremental Sampling by using the same contractor who is working the BC Control area. This has reduced the mobilization effort and cost.

Drilling (-\$0.4M)

Primary contributors to the current month schedule variance are delays in: ZP-1 roads and pads for well construction to support well drilling are delayed due to cultural reviews, and BC-5 well drilling due to late mobilization of subcontractor and additional sampling requirements for the Remedial Investigation/Feasibility (RI/FS) Study. PMB Rev. 2 extends drilling durations to account for the RI/FS sampling requirements. The drilling subcontractor will recover the ZP-1 schedule variance utilizing multiple drilling rigs.

Ramp-up and Transition (-\$0.6M)

The negative schedule variance is primarily due to delays in decision on site location, size of facilities and site layout, which has delayed the initial design work and continues to impact schedule as the project is entering in to the construction activities phase. The project baseline for this scope of work is being revised in the PMB, Rev. 2 BCR to implement the final scope decisions with updates to the schedule and budget accordingly.

200-ZP-1 Operable Unit (-\$0.7M)

The current month negative schedule variance is primarily due to the following factors: 1) continued delays in preparation of the Process facility design resulting from changes in the facility footprint due to updated long lead equipment specification information, and inclusion of the Lime Stabilization system, and revisions to mass balance calculations; 2) delays in road crossing construction, and associated construction support; offset by accelerated performance of electrical well rack fabrication. Originally the delays associated with the road crossings were associated with changing well location which impacted

BOP design and material procurement and bid package preparation. Construction is underway with approximately 5 of 65 road crossings complete through November month end; 3) delays in transfer facility procurement, (procurement is underway for the two transfer buildings); and 4) delays in mobilization for Process Facility construction due to delays in bid package preparation resulting from continuing process facility design changes. This scope is not on the critical path and is expected to progress fairly rapidly once started.

CM Cost Performance: (+\$2.0M/+29.3%)

The primary contributors to the positive cost variance are as follows:

PBS RL-30 UBS, G&A, and DD (+\$0.7M)

A positive cost variance of \$3.0M/28.7% distributed by weighted percentage to the Base and ARRA PBSs resulted from a directed hold back of RL provided service that will be maintained by RL instead of CHPRC (RL letter 10-PIC-0009, dated November 10, 2009). CHPRC had accrued approximately \$0.9M in October and planned to accrue an additional \$0.9M in November for these activities, that included Bonneville Power Administration, General Services Administration, Occupational Medicine and building rents. The next result of the withdrawal through November was \$1.8M. The remaining \$ 1.2M variance resulted from lower charges for Retiree Insurance premiums and Pension Plan Contributions (\$0.4M); the employee incentive program not yet approved (\$0.3M); lower than planned cost for desktop/telecom services due to lag in hiring of ARRA staff (\$0.3M); and other minor adjustments.

100 HR-3 Operable Unit (+\$0.5M)

The positive cost variance is due to accruals from October being higher than actual invoices which resulted in a cost reversal in November. Additionally, efficiencies continue in HR-3 pump and treat activities. It is anticipated that the positive cost variance will continue.

200 ZP-1 Operable Unit (+\$0.4M)

The current month positive cost variance is primarily due to the following factors: 1) performance for road crossing construction with no costs incurred; costs were incorrectly charged against the BASE road crossing CACN, 2) performance for electrical well rack fabrication that was costed in prior months, and 3) various miscellaneous offsets. Cost corrections will be done as appropriate. A revised progress payment schedule that aligns with recently awarded long lead equipment contracts will be implemented in PMB Rev 2.

Regulatory Decision/Closure (+\$0.4M)

The positive cost variance is due to the efficiencies realized by assigning Multi Incremental Sampling scope to the same contractor who is working on the BC Control area. The favorable cost variance will be funds managed to cover unanticipated waste characterization sampling cost.

Base

CM Schedule Performance (-\$1.0M/-10.1%)

The following variance exceeded reporting thresholds and is the primary contributor to the negative cost variance:

100-KR-4 OU (-\$0.6M)

The primary contributors to the current month schedule variance are as follows:

- Bioremediation Test Plan and test completion are behind schedule. Remedial Process Optimization (RPO) evaluations indicate the conduct of a bio treatability test will not be a component of the KR4 remedial action. Activities related to the bio treatability test will be removed from the baseline as part of PMB Rev. 2.
- Equipment/material installation for Phase 2 Well realignment has been delayed due to additional requirements for work process planning as a result of a lock-out/tag-out incident. Work is expected to be recovered later in the fiscal year with no anticipated impact to follow-on work.

- Completion of Phase 2 facility modifications were also delayed due to the extended time required to address Tribal cultural sensitivities associated with the well locations and the lack of tribal personnel available to complete the cultural review process associated with well siting. As a result, lab analysis/data evaluation work will be delayed until January. Work is expected to be recovered later in the fiscal year with no anticipated impact to follow-on work.

CM Cost Performance (-\$1.4M/-15.6%)

Various positive and negative cost variances contributed to the negative cost variance. Variances that exceeded thresholds are as follows:

GW Monitoring & Performance Assessments (-\$0.7M)

WSCF cost in November was for October and November WSCF analysis, resulting in an overrun for the current month. Also more sampling was done in October and November than during a typical month compounding the current month overrun. It is anticipated that the sampling cost will normalize for the remainder of the year with no additional growth in the WSCF overrun.

100-NR-2 OU (+\$0.4M)

Chemical treatment, maintenance, and reporting efficiencies were obtained during the month and are expected to result in continued under runs.

100-HR-3 Operable Unit (-\$0.3M)

Cost variance is due to extension of design effort in DX resulting from changes to IX trains, resin, and chemical treatment addition. The overrun in design activities will continue until implementation of PMB Rev 2.

200 ZP-1 Operable Unit (-\$0.5M)

The current month negative cost variance is primarily due to the following factors: 1) road crossing construction costs incorrectly charged against the BASE road crossing CACN, and 2) greater than anticipated costs to prepare the Process Facility Design due to design changes including items such as: provision for mechanical sludge treatment, provision for acid storage system, mass balance calculations for non-COC constituents, LEED certification, and changes in the facility footprint due to updated long lead equipment specifications information and inclusion of the Lime Addition system. Overruns are expected to continue in the design activities and will be covered through funds management.

300 FF-5 Operable Unit (-\$0.7M)

The current month overrun is a result of an over accrual for November for PNNL. PNNL has committed to send preliminary accrual input to allow CH overview prior to closure of accrual system each month.

Contract-to-Date (\$M)

WBS 030/ RL-0030 Soil and Groundwater Remediation	Budgeted Cost of Work Scheduled	Budgeted Cost of Work Performed	Actual Cost of Work Performed	Schedule Variance (\$)	Schedule Variance (%)	Cost Variance (\$)	Cost Variance (%)	Budget at Completion (BAC)
ARRA	19.8	25.1	19.3	5.3	26.7	5.7	22.8	208.1
Base	<u>140.2</u>	<u>136.2</u>	<u>131.0</u>	<u>(4.0)</u>	-2.8	<u>5.2</u>	3.8	<u>1,143.5</u>
Total	160.0	161.3	150.4	1.4	0.8	10.9	6.8	1,351.6

Numbers are rounded to the nearest \$0.1M.

ARRA

CTD Schedule Performance: (+\$5.3M/+26.7%)

The primary contributors to the CTD positive schedule variance are as follows:

100-HR-3 Operable Unit (+\$6.5M)

The primary contributor to the CTD positive schedule variance is 100-HR-3 Operable Unit. Procurement and construction activities have been accelerated; these activities were planned to begin in February 2010.

Ramp-up and Transition (-\$0.9M)

The negative schedule variance is primarily due to delays in decision on site location, size of facilities and site layout, which has delayed the initial design work and continues to impact schedule as the project is entering in to the construction activities phase. The project baseline for this scope of work is being revised in the PMB, Rev. 2 BCR to implement the final scope decisions with updates to the schedule and budget accordingly

CTD Cost Performance: (+\$5.7M/+22.8%)

The primary contributors to the CTD positive cost variance are:

Drilling (+\$0.9M)

The positive cost variance is due to efficiencies obtained in drilling for NR-2, and HR-3 wells. Cost efficiencies are being obtained through an aggressive drilling schedule with savings in support personnel, faster drilling methods and the fact that the HR-3 well depths have been less than originally planned. Efficiencies in NR-2 and HR-3 are expected to continue resulting in additional positive cost variance.

100-HR-3 Operable Unit (+\$1.6M)

Major contributor to the CTD positive cost variance is efficiencies experienced on DX construction. HR-3 pump and treat also contributed to the under run. In addition, October accruals were higher than actual invoices resulting in a current month cost reversal in November. PMB Rev. 2 will address this cost variance.

Regulatory Decision & Closure Integration (+\$1.6M)

In Multi Incremental Sampling savings have been achieved as follows: 1) it has been determined that waste can be direct hauled to ERDF, eliminating the time that would have been needed to develop a container transfer area and avoiding related environmental impacts, 2) using the BC Control area subcontractor reduced the time and scope of the mobilization effort, and 3) existing work planning documents were updated. These include a Health and Safety Plan (HASP), Sampling Analysis Plan (SAP), and waste control plan.

PBS RL-30 UBS, G&A, and DD (+\$1.4M)

A positive variance of \$20.4M/18% distributed by weighted percentage to the Base and ARRA PBSs resulted from lower than expected FY 2009 G&A costs due to company level and Other Hanford Pass-

back lower and Other Provided Services to PRC from the MSA assessments coupled with a lag in hiring overhead staff required to support the ARRA program increases during FY 2009. Additionally, continuing delays in Safety and Health programs for Phase II ISMS and finalization of the J13/J14 contracted work scope, Transfer of RL Assessments from PRC to RL in FY 2010, and other minor adjustments such as additional pass-backs from Fluor Federal Services contributed to the net positive variance.

Base

CTD Schedule Performance (-\$4.0M/-2.8%)

The following variance exceeds the reporting threshold:

100-KR-4 OU (-\$1.3M)

The primary contributors to the negative CTD schedule variance are as follows:

- Bioremediation Test Plan and test completion are behind schedule. Remedial Process Optimization (RPO) evaluations indicate the conduct of a bio treatability test will not be a component of the KR4 remedial action. Activities related to the bio treatability test will be removed from the baseline as part of PMB Rev. 2.
- Equipment/material installation for Phase 2 Well realignment has been delayed due to additional requirements for work process planning as a result of a lock-out/tag-out incident. Work is expected to be recovered later in the fiscal year with no anticipated impact to follow-on work.
- Completion of Phase 2 facility modifications were also delayed due to the extended time required to address Tribal cultural sensitivities associated with the well locations and the lack of tribal personnel available to complete the cultural review process associated with well siting. As a result, lab analysis/data evaluation work will be delayed until January. Work is expected to be recovered later in the fiscal year with no anticipated impact to follow-on work.

CTD Cost Performance (+\$5.2M/+3.8%)

Various positive variances that did not exceed reporting thresholds contributed to the positive cost variance. Primary contributors to the positive variance that exceed reporting thresholds are as follows:

Integration and Assessments (+\$1.1M)

The cumulative under run can be primarily attributed to efficiencies obtained in three control accounts: Remediation Science and Technology is under budget for the (level of effort) horizontal drilling initiative contract - award was delayed resulting in a CTD cost under run; Systematic Planning Integration has achieved efficiencies and used less subcontract resources than planned; and Sample Management and Reporting activities are being performed for less labor than planned. Horizontal drilling is now taking place and this portion of the cost variance will be eliminated over the coming months. Other efficiencies that have been achieved in Systematic Planning Integration and Sample Management and Reporting are expected to continue.

GW Monitoring & Performance Assessments (-\$1.3M)

CTD overruns are primarily due to FY 2009 WSCF cost that was higher than planned and have been handled through funds management within the project.

100-KR-4 OU (+\$0.9M)

The primary contributor to positive cost variance is a result of efficiencies in KR-4, KW, and KX remedial actions and maintenance activities. These activities will be evaluated for corrective action.

100-NR-2 OU (+\$1.1M)

Chemical treatment and maintenance scope efficiencies have been obtained. In addition reporting for RI/FS Work Plan and the Interim Proposed Plan have been done for less than planned. Efficiencies are expected to continue.

200-ZP-1 Operable Unit (+\$0.8M)

The positive cost variance is largely the result of the following factors: the Interim Operations Control Account reflects significant progress and cost under runs have been achieved to date for Annual System Calibration. The design of the permanent hookup of well EW-1 (C7017) was lower than planned since we were able to incorporate minor changes to an existing design. Cost for performing general operating and maintenance and minor modification activities have been lower than planned as the system has been running smoothly. Efficiencies have been obtained to-date pertaining to design/construction of the 200W Area P&T, primarily in the areas of RD/RA Work Plan preparation, construction of the Aquifer Test System as well as Aquifer Testing and BOP design preparation.

300 FF-5 Operable Unit (-\$1.1M)

The CTD overrun is a result of an over accrual for November for PNNL. This will be corrected in December. PNNL has committed to send preliminary accrual input to allow CH overview prior to closure of accrual system each month. In addition, FY 2009 field studies work was more expensive than planned. The project is evaluating potential funding sources through funds management.

PBS RL-30 UBS, G&A/DD (+\$1.2M)

A positive cost variance of \$3.0M/28.7% distributed by weighted percentage to the Base and ARRA PBSs resulted from a directed hold back of RL provided service that will be maintained by RL instead of CHPRC (RL letter 10-PIC-0009, dated November 10, 2009). CHPRC had accrued approximately \$0.9M in October and planned to accrue an additional \$0.9M in November for these activities, that included Bonneville Power Administration, General Services Administration, Occupational Medicine and building rents. The next result of the withdrawal through November was \$1.8M. The remaining \$1.2M variance resulted from lower charges for Retiree Insurance premiums and Pension Plan Contributions (\$0.4M); the employee incentive program not yet approved (\$0.3M); lower than planned cost for desktop/telecom services due to lag in hiring of ARRA staff (\$0.3M); and other minor adjustments.

Contract Performance Report Formats are provided in Appendices A and A-1.

FUNDS vs. SPEND FORECAST (\$M)

WBS 030/ RL-0030 Soil and Groundwater Remediation	FY 2010		
	Projected Funding	Spending Forecast (Actuals)	Variance
ARRA	146.0	149.0	(3.0)
Base	146.4	132.7	13.7
Total	292.4	281.7	10.7

Numbers are rounded to the nearest \$0.1M.

Funds/Variance Analysis

Funding has been adjusted to reflect the FY 2010 funding levels for RL30 ARRA and Base activities.

Critical Path Schedule

Critical path analysis can be provided upon request.

Estimate at Completion (EAC)

The BAC and EAC now include the PRC contract period (FY 2009 through FY 2018).

Baseline Change Requests

None for November.

MILESTONE STATUS

Tri-Party Agreement (TPA) milestones represent significant events in project execution. DOE Enforceable Agreement milestones were established to provide high-level visibility to critical deliverables and specific status on the accomplishment of these key events. The PRC Baseline submitted in June defines CHPRC planning with respect to TPA milestones.

Number	Title	Type	Due Date	Actual Date	Forecast Date	Status/ Comment
M-015-40E	Parties Will Complete Negotiations And DOE Will Submit Change Packages W/New Milestones For RI/FS Process For Specified Operable Units	TPA	12/31/09			Due date to be moved to 2/28/10 by change request M-15-08-07 (to be signed week of 12/7/09)
M-015-61	Submit RI/FS Work Plan for the 100-NR-1 and 100-NR-2 OUs	TPA	12/31/09			On schedule
M-016-14B	Submit a draft CERCLA proposed plan, 100-NR-1/2	TPA	12/31/09			CHPRC-0900742 sent to RL on 12/9/09
M-016-112A	Complete Demos For Biostimulation And Electrocoagulation	TPA	12/31/09			On schedule. Electrocoagulation work complete 10/19/09 by CHPRC. PNNL has Biostimulation portion of milestone.
M-015-54	Submit Report on Reactive Gas Testing for Sequestration of Uranium	TPA	1/31/10			On schedule
M-015-44B	Submit 200-MW-1 OU FS to EPA	TPA	2/28/10			On schedule
M-91-40L-025	Submit Oct-Dec 1 st Quarter FY10 Burial Ground Sample Results	TPA	3/15/10		2/28/10	On schedule
M-024-58C	Initiate Discussions of Well Commitments	TPA	6/1/10			On schedule
M-091-40L-026	Submit 2 nd Qtr FY10 Burial Ground Sample Results	TPA	6/15/10		5/30/10	On schedule
M-015-83	Submit Proposed Plan for 200-UW-1	TPA	6/30/10			On schedule

Number	Title	Type	Due Date	Actual Date	Forecast Date	Status/ Comment
M-016-155	Submit Revised RD/RA Work Plans for 100A in Accordance With M-016-150 ROD	TPA	6/30/10			On schedule
M-024-61-T01	Conclude Discussions of Well Commitments	TPA	8/1/10		7/30/10	On schedule
M-016-124	Submit 200-ZP-1 Remedial Design Report	TPA	8/31/10			On schedule
M-091-40L-027	Submit 3 rd Quarter FY10 Burial Ground Sample Results	TPA	9/15/10		8/30/10	On schedule
M-015-51	Submit Revised FS Report and Proposed Plan to EPA for 200-BC-1 OU	TPA	9/30/10			On schedule
M-015-17A	Submit a 200-UP-1 OU Combined Remedial Investigation and FS Report and Proposed Plan	TPA	9/30/10			On schedule

SELF-PERFORMED WORK

The Section H. clause entitled "Self-Performed Work" is addressed in the Overview.

GOVERNMENT FURNISHED SERVICES AND INFORMATION (GFS/I)

None currently identified.