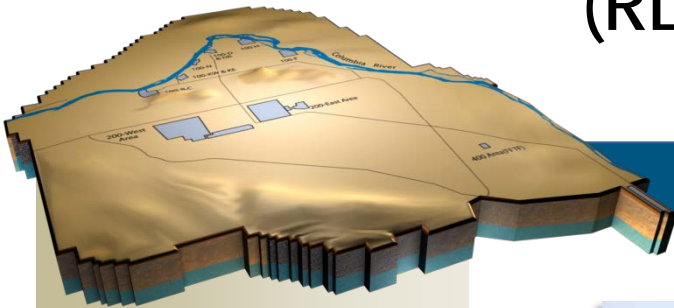


# Section D

## Soil and Groundwater Remediation Project (RL-0030)



### Monthly Performance Report

D. L. Foss  
Vice President and  
Project Manager for  
Soil and Groundwater  
Remediation Project

M. N. Jaraysi  
Vice President for  
Environmental Program  
and Strategic Planning

K. A. Dorr  
Vice President for  
Engineering, Projects  
and Construction

December 2010  
DOE/RL-2010-126-12, Rev. 0  
Contract DE-AC06-08RL14788  
Deliverable C.3.1.3.1 - 1



Ongoing structural steel erection of the Stair Towers  
for the Aerated Sludge Tank and Air Stripper at  
200W Groundwater Treatment Facility

## 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 drilling wells that will be used for monitoring, extracting, and remediating groundwater. Progress through the end of the fiscal month December is summarized in the table below.

Activity	December		Cumulative	
	Planned	Completed	Planned	Completed
Well Drilling (# of wells) -352	11	8	309	291
Well Decommissioning (# of wells) -350	14	10	213	186
100 DX P&T – Construction/Startup (%)	1	1	100	100
200 West P&T – Final Design (%)	-	-	100	100
200 West P&T – Construction (%)	0	4	42	40
200 West P&T – Testing/Startup (%)	6	10	23	27

### Base

Base work includes the pump-and-treat operations, Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) remedial processes, and documentation for the River Corridor and Central Plateau. The second of three rounds of aquifer tube sampling was completed at the 100-HR-3 Operable Unit. Sampling and groundwater treatment completed in December includes the following:

- 241 well locations were sampled with a total of 1,345 samples being collected
- 162 aquifer tube samples collected from 32 tubes at 18 locations
- 18.64M gallons groundwater treated by ZP-1 treatment facility
- 20.81M gallons groundwater treated by KX treatment facility
- 8.8M gallons groundwater treated by KW treatment facility
- KR-4 treatment facility shutdown in December for facility upgrades
- 7.5M gallons groundwater treated by HR-3 treatment facility
- .96M gallons groundwater treated by DR-5 treatment facility
- 14.64M gallons groundwater treated by DX treatment facility
- 71.3M gallons of groundwater treated total

## EMS Objectives and Target Status

Objective#	Objective	Target	Due Date	Status
09-EMS-SGWR-OB1-T3	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	Complete (12/20/10)
		Start construction for DX P&T facility	7/2/09	Complete (7/2/09)
		Construct DX P&T and transfer building	7/15/10	Complete (7/15/10)
		Construct 30 new wells for the P&T system	6/30/10	Complete (6/29/10)
		Finish construction of DX P&T system	10/31/10	Complete (10/28/10)
		Finish ATP for DX P&T system	12/30/10	Complete (12/16/10)
		HR-3 treatment systems are functional at 500 gpm	12/31/10	Complete (12/20/10)
09-EMS-SGWR-OB3-T2	Reduce the number of groundwater sampling events conducted annually	Reduce the number of sampling events by 2% in calendar year 2009	12/31/09	Complete
		Evaluate FY-end sample schedule relative to baseline planned sample schedule of 2,460 sample trips	10/31/09	Complete (5/30/09)
		Reduce the baseline planned sample schedule by at least 49 sample trips	12/31/09	Complete (10/12/09)
09-EMS-SGWR-OB3-T3	Reduce the number of groundwater sampling events conducted annually	Reduce the number of sampling events by 10% in calendar year 2010	12/31/10	Complete
		Evaluate FY-end sample schedule relative to baseline planned sample schedule of 2,768 sample trips	10/31/10	Complete (10/27/10)
		Reduce the baseline planned sample schedule by at least 277 sample trips	12/31/10	Complete
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	9/30/10	Complete
		Review and tally total number of gallons treated	Monthly	Treated 675.9 M gal thru 12/31/10
10-EMS-SGWR-OB2-T1	Construct a new GW treatment facility that satisfies the P&T component of the 200-ZP-1 OU ROD selected remedy	Construct new 200 West Area P&T facility to remediate GW which was impacted from past plutonium production operations	12/31/11	On schedule
		Start construction of road crossings	11/30/09	Complete (11/2/09)
		Start early civil construction	3/30/10	Complete (3/19/10)
		Start construction of GW extraction buildings	3/30/10	Complete (3/19/10)
		Complete treatment facility construction	12/31/11	On schedule
10-EMS-SGWR-OB3-T1	100-K Area Waste Site Remediation	Initiate and sustain remediation of waste sites at 100-K Area	11/30/09	Complete
10-EMS-SGWR-OB4-T1	Reduce Project Waste Generation	Track & quantify project cost savings from on-going waste reduction initiatives	1/31/11	On Schedule
		Track, quantify & report on drill cuttings RTEd in lieu of disposal at ERDF	30 days after CY Qtr-end	On Schedule
		Track, quantify & report on use of ERDF boxes in lieu 55-gallon drums	30 days after CY Qtr-end	On Schedule
		Track, quantify & report on purgewater generation avoidance	30 days after CY Qtr-end	On Schedule

## TARGET ZERO PERFORMANCE

	CM Quantity	Rolling 12 Month	Comment
Days Away, Restricted or Transferred	1	3	12/22/10 - Employee was scraping ice from government vehicle, walking to other side of vehicle to complete window scraping, slipped on patch of unseen black ice and fell on right leg. 21595 (EPC)
Total Recordable Injuries	1	4	12/13/10 - Employee picked up metal sheeting that had been cut, therefore a somewhat jagged edge was present. The employee's hand slid across the metal sheeting and cut through the employee's leather glove, cutting his right pinky finger. 21582 (EPC)
First Aid Cases	12	98	<p>12/1/10 – Case description not specified. 21547 (EPC)</p> <p>12/3/10 – Case description not specified. 21559 (EPC)</p> <p>12/6/10 - Employee was erecting a weather enclosure and bent over fastening tubing to the runner. A pipe leaning against an ecology block was jarred and fell over, hitting the employee in the head. The employee was wearing a hardhat. 21561 (EPC)</p> <p>12/6/10 - As employee was exiting vehicle, the employee lost their grip and fell approximately 6 feet to the ground. Received contusion/bruise to hip. 21564 (EPC)</p> <p>12/7/10 – Employees noticed odors at their job site but were unsure of origin. 21567 (EPC)</p> <p>12/8/10 – Smelled unusual odor in vicinity of work area. 21568 (EPC)</p> <p>12/8/10 - The employee was unloading HDPE pipe onto the ground from a truck. The trucks deck (working surface) was not level, and the pipe was more difficult to drop due to decking problems. The employee stepped on the pipe, as there was no other clear route of travel. The employee slipped on the wet pipe, falling onto the right shoulder and elbow area. 21569 (EPC)</p> <p>12/20/10 – Case description not specified. 21593 (EPC)</p> <p>12/21/10 – Case description not specified. 21592 (S&amp;GRP)</p> <p>12/27/10 - Cleaning gravel, placing plywood on rebar mat employee wounded hand. 21597 (EPC)</p> <p>12/29/10 – Employee had complaint of pain in left knee walking between trailers. 21604 (EPC)</p> <p>12/30/10 – After placing blankets on ground employee stepped into covered hole, strained right foot. 21606 (EPC)</p>
Near-Misses	0	2	N/A

## KEY ACCOMPLISHMENTS

### ARRA - GW CAPITAL ASSET

Drilling	December		Cumulative	
	Planned	Completed	Planned	Completed
M-24 -5 wells	0	0	5	5
200-ZP-1 West P&T Expansion -17 wells	1	0	16	15
Drilling Total	0	0	21	20

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

- 200 West Area Groundwater Treatment Facility –Structural steel erection has been initiated at all seven buildings (seventh building is S/SX which is base funded). Crews have placed approximately 83% of the containment slab on grade at all seven buildings.
- 100-DX Groundwater Treatment Facility - Completed Acceptance Test Plan (ATP) and turnover of the facility to SGW Operations
- 200E Unsecured Core Complex – S&GW2 – Final walkdown performed, building turn-over complete

### **EPC Projects in Support of S&GRP – Base**

- 200 West Area Groundwater Treatment Facility –S/SX transfer building site is under construction with the initiation of steel erection
- 100-HX Groundwater Treatment Facility - Process Building overhead door installations completed. Completed concrete pour of footings and stem walls for the H1 Transfer Building. Completed acid etch of H0 floor. Twenty four of twenty seven (88%) road crossings are complete. The remaining road crossings will be constructed in the spring. HDPE pipe laying and bonding is 65% complete.

### ARRA - GW OPERATIONS

#### **Well Drilling and Decommissioning – ARRA**

	December		Cumulative	
	Planned	Completed	Planned	Completed
KR-4 RPO – 4 wells	1	0	3	0
KR-4 RI/FS – 13 wells	1	1	11	7
100-NR-2 Barrier Emplacement – 171 wells	0	0	171	171
100-NR-2 RI/FS – 8 wells	1	0	4	0
100-HR-3 Bioremediation TT – 4 wells	1	0	1	0
100-HR-3 H Area RPO – 40 wells	0	0	40	37
100-HR-3 D Area RPO – 30 wells	0	0	30	30
100-HR-3 RI/FS – 15 wells	3	2	5	6
200-BP-5 “K” Well – 1 well	0	0	1	1
200-BP-5 “L” and “M” Well – 2 wells	0	0	2	2
100-BC-5 RI/FS – 6 wells	1	0	11	6
100-FR-3 – 3 wells	0	1	3	3
300 FF-5 RI/FS – 11 wells	2	4	6	8
Drilling Total	10	8	288	271
Decommissioning Total	14	10	213	186

## **BASE - GW OPERATIONS**

### **Environmental Strategic Planning:**

- Supported the December 8, 2010 Senior Executive Committee (SEC) meeting

### **Integration Management:**

- Completed technical meetings with RL to resolve methods and approached for addressing the following issues in River Corridor RI/FS evaluations: human health and ecological PRGs, the method for addressing remediated and unremediated (“to go”) waste sites, and modeling codes and applications
- Led an integrated DOE RL/CHPRC/WCH Senior Management kickoff meeting that focused on understanding and resolving technical issues that develop at the interface between the contractors, DOE, RL-0030 and RL-0041. The team will meet monthly and focus on issue resolution in order to meet the multiple River Corridor deadlines in 2011.
- Completed approval of the Hanford Environmental Data Integration Administrative Interface Agreement that defines the roles and responsibilities of prime contractors with regard to the Hanford site-wide data

### **Risk and Modeling Integration Group:**

- Completed the FY2010 Composite Analysis, Integrated Disposal Facility (IDF), and Low-Level Burial Ground performance assessment annual updates

### **River Corridor**

#### **100-BC-5 Operable Unit - Base**

- Completion of well C7784 was initiated, although problems with the well construction have delayed progress. Drilling and sampling activities concluded at RI/FS well C7783, with the borehole having advanced to a total depth of 193.8 ft below ground surface (bgs). Drilling was initiated at well C7787, but an obstruction was encountered that prevented the borehole from advancing past approximately 6 ft bgs. The borehole was decommissioned, and drilling of the replacement well C8244 was initiated within 5 ft of the original location.
- 
- The decisional draft of the document proposing expedited remedial actions to be implemented for meeting TPA Target Date M-016-110-T01 was reviewed by RL, and the resulting comments were resolved. The document is being updated to a Draft A for future regulatory review. The associated Action Memorandum was also drafted and underwent internal review

#### **100-KR-4 Operable Unit - Base**

- Completed construction walk down for KR-4 PLC upgrades and well head modifications. Power restored to KR-4 treatment and transfer buildings to initiate acceptance testing.
- Completed KR-4 transfer building #1 modifications for Phase 3 realignment to add two new future extraction wells (to be drilled) to the KR-4 P&T system
- RI/FS drilling and sampling continued with eight of thirteen wells completed

#### **100-NR-2 Operable Unit - Base**

- Collection of upwelling (river-porewater) samples from the bottom of the Columbia River along the 100-N shoreline was completed with all of the 13 planned locations sampled as planned in the associated NR-2 River Porewater Sampling Analysis Plan (SAP)
- The second round of spatial-and-temporal groundwater well sampling was completed with all of the 26 wells now sampled
- The third round of aquifer tube sampling planned under TPA-CN-353 was completed. This concludes the sampling requirements for this TPA CN (as also planned in the proposed 100-N RI/FS SAP). The associated analysis continues, and the analytical results will be included in the 100-N RI/FS Report.

- The revision to the NR-1/2 OU Interim Action Remedial Design/Remedial Action (RD/RA) Work Plan continued. An internal team review of the document was completed, and a full internal review began on December 30, 2010.
- To expedite the 100-N RI/FS well drilling work, the associated 100-N RI/FS SAP was finalized to a Rev. 0 to include the currently identified remedial-investigation activities prior to final approval of the work plan addendum. All Ecology comments were resolved, and the Rev. 0 SAP was released and approved by RL and Ecology on December 30, 2011.

#### **100-HR-3 Operable Unit - Base**

- The new DX pump-and-treat system was transitioned to operations in mid-December, completing TPA milestone M-16-111B, which required the HR-3 Operable Unit treatment capacity to reach 500 gpm
- DR-5 and HR-3 operated at normal capacity (~35 gpm and 200 gpm, respectively). The DR-5 system is being readied for shutdown and realignment of its wells to the DX pump-and-treat system.
- RI/FS well drilling and sampling continued with seven of fifteen wells completed
- RI/FS borehole drilling and sampling continued with two of ten boreholes completed
- RI/FS test pit installations continued with two of five test pits completed
- All RI/FS aquifer tube sampling was completed

#### **300-FF-5 Operable Unit - Base**

- Testing and evaluation of alternative infiltration sites has concluded. Two additional candidate sites for infiltration and shear-thinning fluid injection were selected based on geophysical modeling and field tests have been performed to evaluate surface conditions prior to a drilling campaign to install test monitoring wells.
- RI/FS drilling and sampling continued with nine of sixteen wells completed

#### **100-FR-3 Operable Unit - Base**

- Preparations are complete for the collection of additional upwelling (river-porewater) sampling under approved TPA-CN-391 to support the RI/FS efforts and the EE/CA evaluations
- Drilling and sampling concluded at RI/FS well C7791, with the borehole having advanced to a total depth of 116 ft bgs. The well was subsequently completed. As a result, all of the 3 RI/FS wells are now complete which satisfies the characterization well drilling and sampling requirements for the 100-F and IU-2/6 RI/FS SAP. The third round of spatial-and-temporal groundwater well sampling was completed for IU-2/6 OUs, and as a result, all of the IU-2/6 wells have now been sampled. This satisfies all of the spatial-and-temporal groundwater sampling requirements for the 100-F and IU-2/6 RI/FS SAP.
- The decisional draft of the document proposing expedited remedial actions to be implemented for meeting TPA Target Date M-016-110-T01 was reviewed by RL, and the resulting comments were resolved.

### **Central Plateau**

#### **200-BP-5 Operable Unit – Base**

- Completed a redline of the Draft A 200-BP-5 Treatability Test Plan incorporating regulator comments the week of December 20, 2010 for a final DOE/regulator check. The locations of the planned extraction well and monitoring well were staked with DOE participation.

#### **200-UP-1 Operable Unit – Base**

- Completed 100% design for the S-SX extraction system. Completed placement of structural fill and initiated concrete work for the S-SX transfer building.
- Transmitted a Decisional Draft SAP for S/SX extraction and monitoring wells to DOE for

review/approval on December 21, 2010. The SAP included integrated deep vadose zone and tank farm characterization needs.

#### **200-ZP-1 Operable Unit - Base**

- Nine of fourteen groundwater extraction wells are online pumping water at 405 gpm. Extraction well #5 is being kept offline due to low flow. Extraction wells 10 and 13 are offline due to low water levels. Extraction wells #4 and #7 are offline for repairs.
- The draft activated carbon report is with RL for review. Comments are due back January 14, 2011.
- Completed the drilling and sampling for 20 of 24 wells needed for the first phase of operation for the 200 West Treatment Facility. Injection well IW-4 recently reached total depth at 519 ft.

#### **Deep Vadose Zone - Base**

- Completed the second scoping session on December 7, 2010, with Ecology and EPA for the 200-DV-1 OU.
- Provided the draft Public Involvement Plan for the Deep Vadose Zone OU to DOE Communications and held a kickoff meeting for the up-coming public involvement activities associated with technology screening.
- Transmitted the Uranium Sequestration Field Test Plan and Sample Analysis Plan to Ecology on December 14, 2010 fulfilling requirements to meet TPA M-015-110C.

## **MAJOR ISSUES**

**Issue** – There are several examples of extended comment review on CERCLA documents; the most significant being 200-PO-1 RI Report and 100-N RI/FS Work Plan Addendum and SAP. The issues on these documents are different, 100-N the review period has extended 6 months, and after each review, additional comments are received. With the PO-1 documentation, 2 review extensions were requested and comments (draft) were not given until recently, but this has also stretched into a 6-month effort.




**Corrective Actions** – Timelines and back-up information on these two specific documents has been prepared and given to RL. It was suggested that this be a final topic at the SEC; however, it was determined that discussion would be initiated offline.




**Status** – CHPRC continues to work the parties involved to facilitate timely comment resolution; however, schedule variance and cost impacts are evident on both projects.













## 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	
<b>SGW-001: 100-D Treatment Technology Selection Change</b>	Review draft RD/RAWP with regulators; maintain close interface to minimize impact of changes.			No significant issues.
<b>SGW-050: Regulatory Strategy for Decision Docs</b>	Continue to support RL in strategy negotiations with Agencies.			CPCS and Mod 95 Proposal and BCR are being evaluated and developed.
<b>SGW-069: 100-HR-3 ISRM Barrier Amendment - Hexavalent Chromium Continues to Move Through Barrier</b>	Monitor zero valence iron injection; add four wells to P&T.			DOE and Ecology have agreed to the strategy and signed a memorandum documenting the changes as insignificant. For wells will be used to supplement the barrier and capture down-gradient chromium.
<b>SGW-080: 100-BC-5 Pump and Treat Required</b>	This risk is accepted as written and will be monitored throughout work execution.			Additional characterization is being conducted through the installation of RI/FS wells (underway), aquifer tubes (completed) and additional river-upwelling sampling (completed) to further define the extent and concentration of chrome in the plume in order to determine if an active remedial measure is required. Currently, remediation is not planned in the baseline for the OU. However, working with RL on the potential of conducting a Non-Time Critical Removal Action (EE/CA) to implement a hydraulic barrier/pump and treat combination to mitigate chromium migration to the river. The decisional draft of the EE/CA was reviewed by RI and is being updated to a Draft A for regulatory review. Additionally, a letter requesting RL direction was transmitted to RL and a response was returned that confirmed that RL's position on the need for expedited remedial measure to meet the TPA Target Date M-016-110-T01 by December 2012. In response, a NOC letter was transmitted to RL. RL responded to this NOC letter with direction (through Contract Mod 129 - Change Order 129 and letter 11-AMCP-0042) to provide a proposal to further evaluate and plan for immediate remedies in order to meet the M-016-110-T01 Target Date. This change proposal and the associated estimate are being developed.
<b>SGW-081: 100-FR-3 Pump and Treat Required</b>	This risk is accepted as written and will be monitored throughout work execution.			Additional characterization is being conducted through the installation of RI/FS wells (completed) and additional river-upwelling sampling (added scope under a TPA CN; near initiation) to further define the extent and concentration of chrome in the plume in order to determine if an active remedial measure is required. Currently, remediation is not planned in the baseline for the OU. However, working with RL on the potential of conducting a Non-Time Critical Removal Action (EE/CA) to implement a hydraulic barrier/pump and treat combination to mitigate chromium migration to the river. The decisional draft of the EE/CA was reviewed by RI and is being updated to a Draft A for regulatory review. Additionally, a letter requesting RL direction was transmitted to RL and a response was returned that confirmed that RL's position on the need for expedited remedial measure to meet the TPA Target Date M-016-110-T01 by December 2012. In response, a NOC letter was transmitted to RL. RL responded to this NOC letter with direction (through Contract Mod 129 - Change Order 129 and letter 11-AMCP-0042) to provide a proposal to further evaluate and plan for immediate remedies in order to meet the M-016-110-T01 Target Date. This change proposal and the associated estimate are being developed.

## RISK MANAGEMENT STATUS – Cont.

**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-003: Central Plateau Well Drilling Demands	Adjust drilling schedules; cross-train workforce; evaluate sample parameters.			No significant issues.
SGW-003A: Central Plateau Drilling - 200W P&T	Utilize rotary drilling and cable-tool; work closely to resolve subcontractor issues and manage schedule.			Drilling has been completed on the initial 20 wells with development ongoing at the final 2 well locations. The next 8 well contract has been awarded to a new subcontractor to Hanford and therefore the assessment will remain yellow until a performance record is established.
SGW-008B: Regulatory Document Comments for 100-HR-3	Routine meetings are being held with regulators during document development; no additional mitigation is feasible.			The RI/FS Work Plan Addendum and SAP were approved and issued; nothing else to report.
SGW-008U: Regulatory Document Comments for 200-SW-1/2	Routine meetings are being held with regulators during document development; no additional mitigation is feasible.			Agency workshops have been completed and the NRDWL/SWL closure plan is being revised to incorporate comments. Ecology approval of this final closure plan is pending their receipt of the revised document and RL's NEPA determination.
SGW-016: 300-FF-5 Infiltration Barrier Treatability Test	Review BPA river level projections to time treatability test; accept risk.			After multiple unsuccessful attempts to get the infiltration gallery functional, PNNL has developed a parallel approach, looking for shallow test sites in other locations and alternative emplacement technology development. A joint CHPRC/PNNL path forward has been developed and vetted by RL and EPA. Replanning efforts are
SGW-018: 100-HR-3 P&T Operating Efficiency	Add four wells to the baseline to increase the likelihood of meeting production rates at startup. Connect DR-5 wells to HR-3 P&T. Test use of horizontal well for increased water flow. Add 100-H wells to HR-3 P&T. Construct HX P&T system.			Beginning design to add one well to the HR-3 system to increase flow and remove mass during startup of DX and HX. Two RUM wells were added, bringing the operating flow to 200 gpm.
SGW-025: Industrial Accident During Drilling	Subcontractors are evaluated on safety performance prior to contract award and are required to work under CHPRC safety procedures, including using appropriate safety equipment and conducting pre-job briefings. No further mitigation is warranted. Risk is accepted.			No issues or incidents this month.
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.			DX project was turned over to operations on 12/17/2010. HX design has been modified to include transfer building and an eighth train.
SGW-031A: P&T Design Changes - 200 West	Identify required design changes early in the process to minimize schedule impact. Work closely with the client and regulators to minimize impact to schedule. Incorporate design changes quickly to minimize cost impacts and avoid rework. Supplement Eng/QA/QC support and contracts for special inspection so as to finalize engineering requirements.			The amount of change caused by the final issuance of the "issued for construction" drawings is yet to be determined.

## RISK MANAGEMENT STATUS – Cont.

**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-033: Well Casing Size/Screen Length	Ensure that sufficient budget is provided to cover drilling cost increases for larger diameter completion. Adjust schedules to account for additional drilling durations.			No issues at this time.
SGW-037: 100-NR-2 Infiltration Gallery Pilot Test	Risk accepted without mitigation.			Based on initiation problems encountered at the 300-FF-5 infiltration test, success at NR-2 is in question (likely to be worse field conditions). Alternative technology (jet injection) with higher likelihood of success has been successfully pilot tested and is being pursued for implementation. The actual tracer tests have been conducted in the field. Initial problems with possible short-circuiting near wells prompted well modifications to minimize the potential for this condition. Follow-on testing was completed that demonstrated very low infiltration rates (less than 0.8 cm/hr). The field data has been compiled and continues to be under evaluation.
SGW-051: Compressed Schedule for 200 West P&T Project Due to TPA Commitment	Project team will work closely with RL and the regulators to minimize the potential of unexpected design changes and to implement any required design changes quickly so as to minimize the schedule impact. Additional funding will be required to mitigate these issues. Contractor schedule compression will be supplemented with appropriate detail over time. Design schedule has been extended and has overlapped construction and no constructability reviews have occurred. Include funds to account for changes and claims in budget, compare design and estimate costs for changes, perform phased constructability reviews. Project is already exploring options to accelerate schedule more so than what was delivered in general contractor's proposal.			Concrete poured to-date is ~7,350 yd <sup>3</sup> (83% complete). Complete transfer buildings/turnover to GC by Feb11. BIO: Structural steel for building complete 01/03. RAD: Tanks req'd for building enclosure delivered. Enclosed on 01/07. Progress is consistent but delays associated with the issuance of IFC are already being experienced. Project is adding resources and working overtime to mitigate this risk.
SGW-056A: 300-FF-5 Infiltration Not Feasible for Wide-Spread Application	An infiltration test is being performed at 300-FF-5 for the contaminants of concern.			Alternatives to widespread application of infiltration from the surface are being developed in parallel with searching for candidate sites for surface infiltration tests. Replanning of the baseline for these new activities is ongoing. Alternatives include jet injection, application of engineering lithology, and well injections.
SGW-065: Bio/Chemical Remediation Fails	A design test is being planned for 100-D Area. This should eliminate some of the uncertainties with the potential side effects.			Well alignment for the test was revised to accommodate new modeling results and increase potential performance for the pump and treat system. The bioremediation TTP has been postponed pending prioritization issues.

## RISK MANAGEMENT STATUS – Cont.

**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-091: Material Procurement - 200 West P & T	Work closely with the BTR to ensure timely placement of procurement contracts, including any necessary expediting. Supplement engineering support for RCI submittal resolution, on-site focus review including vendor participation as needed. Provide incentives for vendors to compress schedule.			Project is conducting meetings to address RCIs twice per week. Vendor meetings occur weekly. 3D modeling employed to minimize probability of mis-configuration. Long lead equipment is arriving on-site and a plan is in-place for all remaining LLE. Confidence is increased and there is minimal concern remaining.
SGW-098: 200-W P&T - Schedule Impacts Due to Scope Increases	Contractor will hold periodic discussions with client and regulators to maintain a clear understanding of scope changes. As these issues are identified, they will be listed with other emerging issues. At this point, further mitigation tactics will be determined.			In order to maintain the schedule, significant additional team resources are being added to assist with training, submittals, RFIs, QA/QC, third party testing, management and oversight, and other services during construction. Issued for Construction (IFC) drawings have been released and this will facilitate timely completion of construction milestones. Work continues to support software, simulator, procedures, and CAT/ATP development.
SGW-108J: 200-UW-1 Increased Characterization Required	Incorporate additional deep boreholes into the baseline.			This risk has been realized and the project is working the issue. A BCR has been approved and the scope has been incorporated into the baseline.
WSR-042: Multi-Incremental Sampling - Increased Waste Sites	MIS Project designed to meet requirements; no further mitigation warranted.			No issues at this time.
WSR-043: Multi-Incremental Sampling - Hazard Categorization	Adjust baseline cost/schedule to reflect Haz Cat III categorization.			No issues at this time.

## 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 (%)
ARRA RL-0030.R1.1 GW Capital Asset	-0.1	5.4	6.0	5.5	3,728.8	(0.7)	-12.3
ARRA RI-0030.R1.2 GW Operations	2.2	4.1	5.2	1.9	88.2	(1.1)	-27.2
<b>ARRA Total</b>	<b>2.0</b>	<b>9.5</b>	<b>11.2</b>	<b>7.4</b>	<b>369.5</b>	<b>(1.8)</b>	<b>-18.7</b>
<b>Base</b>	<u>13.2</u>	<u>12.2</u>	<u>13.2</u>	<u>(1.0)</u>	-7.8	<u>(1.0)</u>	-8.3
<b>Total</b>	<b>15.3</b>	<b>21.7</b>	<b>24.4</b>	<b>6.4</b>	<b>41.9</b>	<b>(2.8)</b>	<b>-12.8</b>

### ARRA

#### CM Schedule Performance: (+\$7.4M/+369.5%)

Primary contributors to the schedule variance that exceed the reporting thresholds are as follows:

#### ARRA RL-0030.R1.1 GW Capital Assets (+\$5.5M)

##### 200-ZP-1 OU (+\$5.7M)

Implemented BCRA-R30-11-002R0 200 West Pump & Treat Construction Schedule Revision to more accurately report performance by incorporating the re-planning of 200 West P&T Facility as required based on the final design drawings. This BCRA did not change the overall budget but the FY11 budget distribution by month did change resulting in the current month point adjustment.

#### ARRA RL-0030.R1.2 GW Operations (+\$1.9M)

##### Ramp-up & Transition (+\$1.8M)

The positive variance reflects the recovery of the schedule delays from previous periods. Work was performed for activities planned in prior months.

#### CM Cost Performance: (-\$1.8M/-18.7%)

The primary contributors to the current month negative cost variance that exceed the reporting thresholds are as follows:

#### ARRA RL-0030.R1.1 GW Capital Asset (-\$0.7M)

##### 100 HR-3 Operable Unit (-\$0.4M)

Construction closeout and ATP activities for DX took longer and were more expensive than expected/planned. DX has now been turned over to operations.

##### 200-ZP-1 OU (-\$0.5M)

There was additional labor cost associated with the issuance of the IFC drawings. Project is reviewing staffing plan and evaluating processes to identify cost efficiencies.

#### ARRA RL-0030-R.1.2 GW Operations (-\$1.1M)

##### 200-ZP-1 OU (+\$0.3M)

Cost for Startup/Testing planning and procedure development activities accumulated slower than planned in baseline for December. It is expected that this scope will be completed for less than budgeted and these under runs are being evaluated along with overruns in other areas of the project in evaluating overall project impact and EAC.

##### Ramp-up & Transition (-\$1.1M)

The fit out contract/cost for S&GW maintenance facilities being greater than planned. Overall construction project is forecast to complete on budget.

**PBS RL-30 UBS, G&A, and DD (-\$0.3M)**

The negative cost variance is discussed in Appendix C

**Base****CM Schedule Performance (-\$1.0M/-7.8%)**

The primary contributors to the negative schedule variance that exceed the reporting thresholds are as follows:

**Drilling (-\$0.4M)**

Delay is due to the need to revise the 200-ZP-1 RFP to include the drilling of four wells with the option for an additional four wells as there is uncertainty with the number of wells that will be drilled. No long term impact is expected as a result of this change.

**100 KR-4 Operable Unit (-\$0.3M)**

Limited availability of funds has delayed subcontracted work for KW Bioremediation procurement and construction.

**100 HR-3 Operable Unit (+\$1.5M)**

HX construction activities (process building equipment procurement/installation, distribution of electricity and piping, and erect process building) are proceeding ahead of schedule.

**200-UP-1 Operable Unit (-\$0.3M)**

Less S-SX construction work was performed in December than scheduled. Overall CTD schedule variance for S-SX remains ahead of schedule.

**Regulatory Decision/Closure (-\$0.8M)**

Several activities are delayed or on hold due to developing discussions on the tentative agreement and or funding/prioritization issues resolution (Feasibility study, 200 West Decision Documents, 200 East Decision Documents).

**CM Cost Performance (-\$1.0M/-8.3%)**

The primary contributors to the negative cost variance that exceed the reporting thresholds are as follows:

**100 KR-4 Operable Unit (-\$0.6M)**

The unfavorable cost variance is due to:

1. Increased use of resources to expedite remedial investigation sampling and accompanying RI/FS report efforts
2. More labor required than expected to perform the O&M Level of Effort activities
3. Troubleshooting of the KR-4 PLC after system upgrades

Impact to overall contract completion cost is being evaluated.

**100 HR-3 Operable Unit (-\$0.4M)**

Primary drivers for the current month negative cost variance are as follows:

- 1) Additional time being spent on internal CERCLA document development that will be recovered in completed Draft A document
- 2) Unscheduled Pump & Treat resin regeneration for DR-5 needed due to later startup of DX than planned
- 3) Monitoring and Reporting cost overrun on the RD/RA Work Plan and Interim Action Monitoring Plan

**Regulatory Decision/Closure (-\$0.3M)**

An error was found in the database that caused rework in the U Zone, requiring additional QA and QC support. Also, additional estimating resources were required for support of change proposal reviews.

## 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)	Estimate at Completion (EAC)	Variance at Completion (VAC)
<b>ARRA RL-0030.R1.1 GW Capital Asset</b>	91.3	88.4	88.8	(2.9)	-3.2	(0.4)	-0.5	168.5	192.1	-23.6
<b>ARRA RI-0030.R1.2 GW Operations</b>	<u>63.6</u>	<u>61.0</u>	<u>55.7</u>	<u>(2.6)</u>	-4.1	<u>5.3</u>	8.7	<u>84.3</u>	<u>85.4</u>	<u>-1.1</u>
<b>ARRA Total</b>	<b>155.0</b>	<b>149.4</b>	<b>144.5</b>	<b>(5.5)</b>	<b>-3.6</b>	<b>4.9</b>	<b>3.3</b>	<b>252.7</b>	<b>277.5</b>	<b>-24.7</b>
<b>Base</b>	<u>298.0</u>	<u>293.3</u>	<u>291.5</u>	<u>(4.7)</u>	-1.6	<u>1.8</u>	0.6	<u>1,256.1</u>	<u>1,222.8</u>	<u>33.3</u>
<b>Total</b>	<b>453.0</b>	<b>442.7</b>	<b>436.0</b>	<b>(10.3)</b>	<b>-2.3</b>	<b>6.7</b>	<b>1.5</b>	<b>1,508.8</b>	<b>1,500.2</b>	<b>-8.6</b>

Numbers are rounded to the nearest \$0.1M.

### ARRA

#### CTD Schedule Performance: (-\$5.5M/-3.6%)

The primary contributors to the ARRA CTD negative schedule variance that exceed the reporting thresholds are as follows:

#### ARRA RL-0030.R1.1 GW Capital Asset (-\$2.9M)

##### 200 ZP-1 Operable Unit (-\$3.0M)

Delay is a result of late design delivery as long lead equipment vendors were not released to fabricate on schedule. The following procurement activities are behind: Fluidized Bed System, Fiberglass Reinforced Plastic Tanks, Electrical Cable, and Air Stripper. This schedule variance is expected to be recovered without a negative impact to the overall project completion date.

#### ARRA RL-0030.R1.2 GW Operations (-\$2.6M)

##### Drilling (-\$1.4M)

Drilling delays due to:

- 1) Management directed stop work and subsequent prioritization of RI/FS drilling (KW RPO, BC-5 RI/FS, and well decommissioning)
- 2) Delays SAPs (NR-2)
- 3) Priority ranking with funding uncertainties (HR-3 Bioremediation)

Drilling project is reviewing staffing plan and evaluating processes to identify cost efficiencies.

##### Ramp-up and Transition (-\$1.2M)

The negative schedule variance is the result of engineering delays and resource shortages experienced early in the project. A recovery plan is being worked with the project completion date expected to be in January 2011.

#### CTD ARRA Cost Performance: (+\$4.9M/+3.3%)

The primary contributors to the ARRA CTD positive cost variance that exceed the reporting thresholds are:

#### ARRA RL-0030.R1.2 GW Operations (+\$5.3M)

##### Drilling (+\$3.1M)

Efficiencies and savings obtained in drilling for 100-NR-2, 100-HR-3, and 200-BP-5 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.

Well decommissionings have also been completed for less than planned.

**Regulatory Decision and Closure Integration (+\$1.7M)**

Completing work scope more efficiently than planned, primarily in the areas of multi-incremental sampling (using existing documentation and direct haul rather than staging), and borehole drilling and landfill characterization (competitive subcontracting of drilling support and efficient field support).

**Base****CTD Schedule Performance (-\$4.7M/-1.6%)**

The following schedule variances exceed the reporting thresholds:

**Drilling (-\$1.0M)**

Delay is due to the need to revise the 200-ZP-1 RFP to include the drilling of four wells with the option for an additional four wells as there is uncertainty with the number of wells that will be drilled. No long term impact is expected as a result of this change.

**100 NR-2 OU (-\$0.8M)**

Unfavorable variance has resulted from:

- 1) Delays in RI/FS sampling and analytical work due to the additional time needed to complete approval of 100-N RI/FS work plan addendum and SAP
- 2) Delays in initiating the barrier expansion activities pending funding resolution

**100 HR-3 Operable Unit (+\$2.4M)**

HX construction activities (process building equipment procurement/installation, distribution of electricity and piping, and erect process building) are proceeding ahead of schedule.

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

S-SX construction activities planned later in FY2011 were performed early.

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

Delays are primarily related to:

- 1) Alternative Emplacement Investigation work due to funding prioritization. Impacts will be determined when funding is definitized.
- 2) Reprioritization of sampling resources earlier this fiscal year has delayed FF-5 specific drilling activities – recovery expected by mid FY11.

**Regulatory Decision/Closure (-\$2.0M)**

Several activities are delayed or on hold due to developing discussions on the tentative agreement and or funding/prioritization issues resolution (Feasibility study, 200 West Decision Documents, 200 East Decision Documents and Sampling Characterization).

**CTD Cost Performance (+\$1.8M/+0.6%)**

Primary contributors to the CTD positive cost variance that exceed the reporting thresholds are as follows:

**100-NR-2 OU (+\$1.9M)**

Performed chemical treatment and maintenance scope, jet grouting pilot test work, RI/FS Work Plan and Interim Proposed Plan Reporting more efficiently than planned.

**200-ZP-1 Operable Unit (+\$2.3M)**

- 1) Interim Operations reflects significant progress and cost under-runs have been achieved to date for Annual System Calibration.
- 2) Design of the permanent hookup of well EW-1 was lower than planned as only minor changes were needed to an existing design.
- 3) Cost for performing general operating and maintenance and minor modification activities have been lower than planned as the system has been running smoothly.
- 4) Cost for collecting depth-discrete groundwater and soil samples during the installation of new wells was less than planned.



200 PW-1 OU (+\$0.8M)

Labor and subcontract cost for general operations and minor mods support is less than planned. In addition, efficiencies and savings experienced with the SVE system testing, prior to March 1, 2010 and the completed removal of the two old SVE units.

Usage Based Services (-\$1.6M)

Increased cost associated with training due to the additional ARRA work in FY2010 and fleet services costs that occurred in FY2009 and FY2010. Overruns will continue to be funds-managed within the S&GRP project.

**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	FY2011		
	Projected Funding	Spending Forecast	Variance
<b>ARRA</b>	157.6	170.7	-13.1
<b>Base</b>	137.2	166.5	-29.3

Numbers are rounded to the nearest \$0.1M.

**Funds/Variance Analysis**

Funding includes FY2010 carryover and FY2011 new Budget Authority. The ARRA negative variance of \$13.1M reflects a projected PMB over run of \$34.7M offset by \$21.6M of reserve funds. The BASE negative variance of \$29.3M reflects a projected PMB over run of \$35.9M offset by \$6.6M of reserve funds. A CHPRC site integrated work scope prioritization plan is being developed to align work scope with proposed revised funding levels.

**Critical Path Schedule**

Critical path analysis can be provided upon request.

**Estimate at Completion (EAC)**

ARRA – The projected variance at completion is negative 9.7%. The RL-0030.R1.1 GW Capital Asset variance at completion for the 200 West pump-and-treat is a negative \$22.8M. The increased Project EAC is primarily driven by changes in the design between award of construction (60% design) and final design. Additional changes include schedule acceleration and increased cost for the Sludge Stabilization System installation as the design matured. Impact and corrective actions for the variance at completion are being addressed.

Base – The small projected variance at completion of positive 2.7% is spread among several operational areas and is not considered significant.

**Baseline Change Requests**

AWA-030-11-007R0, 100-BC-5 & 100-FR-4 Init Planning Contract Mod 129  
 AWA-030-11-008R0, Pore Water Sampling Supporting TPA-CN-391  
 BCR-030-11-006R0, Update Schedule for Revised TPA M-015-60, RL-30  
 BCR-PRC-11-010R0, PMB Alignment to Contract Price Adjustment Request  
 BCR-PRC-11-014R0, MR Adjustment for PRC Baseline, Rev 2 Update



BCRA-PRC-11-015R0, General Admin & FOC Change for Dec 2010  
 BCRA-R30-11-002R0, ZP-1 Pump & Treat Construction Schedule Revision

FY2011 Management Reserve:

ARRA = \$5.2M

Base = \$4.0M

None used in December, however BCR-PRC-11-014R0 was implemented re-evaluating risk profiles based on PMB schedule for PRC Baseline, Rev 2.

See management reserve table in the CHPRC Overview.

## MILESTONE STATUS

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 Revision 2 Update, implemented in September 2010, defines CHPRC planning with respect to TPA milestones. The following table is a one year look ahead of key milestones.

Number	Title	Type	Due Date	Actual Date	Forecast Date	Status/ Comment
M-015-110C	Submit Uranium Treat. Tech. Treatability Test Plan for 200-DV-1 OU to Ecology	TPA	12/31/10	12/14/10		Complete
M-016-111B	Expand Pump-and-Treat System at 100-HR-3 OU to 500 gpm Capacity	TPA	12/31/10	12/20/10		Complete
M-091-40L-029	Submit October to December 1st Quarter FY-11 Burial Ground Sample Results	TPA	3/15/11		2/28/11	On Schedule
M-015-60	Submit NR-1/2 Operable Unit RD/RA Work Plan	TPA	3/29/11		2/18/11	On Schedule.
M-024-58D	Initiate Discussions of Well Commitments	TPA	6/1/11		6/1/11	On Schedule
M-091-40L-030	Submit January to March 2nd Quarter FY-11 Burial Ground Sample Results	TPA	6/15/11		5/30/11	On Schedule
M-015-90	Submit RCRA Facility Investigation/Corrective Measures Study (RFI/CMS) and	TPA	6/30/11		6/30/11	On Schedule

Number	Title	Type	Due Date	Actual Date	Forecast Date	Status/ Comment
	Remedial Investigation/Feasibility Study (RI/FS) work plan for 200-IS-1 OU to Ecology					
M-015-70-T01	Submit Feasibility Study Report and Proposed Plan for the 100-HR-1, 100-HR-2, 100-HR-3, 100-DR-1 and 100-DR-2 Operable Units for groundwater and soil	TPA	11/24/11		9/15/11	On Schedule
M-015-66-T01	Submit CERCLA RI/FS Report and PP for the 100-KR-1, 100-KR-2 and 100-KR-4 Operable Units for groundwater and soil	TPA	9/21/11		9/13/11	On Schedule
M-024-62-T01	Conclude Discussions of Well Commitments	TPA	8/1/11		8/1/11	On Schedule
M-091-40L-031	Submit April to June 3rd Quarter FY-11 Burial Ground Sample Results.	TPA	9/15/11		8/30/11	On Schedule
M-015-82B	Initiate 200-BP-5 Aquifer Tests Within 6 months of TTP Approval	TPA	TBD (see status)		TBD	On Schedule. Due Date Won't be Finalized until TTP Produced under M-015-82A is Approved. TTP Currently in Regulatory Agency Review.

## 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.