

# ARRA Weekly Report



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## OVERVIEW

CH2M HILL Plateau Remediation Company (CHPRC) is using funds from the American Recovery and Reinvestment Act (Recovery Act) to accelerate cleanup and demolition efforts across the Central Plateau and along the river corridor to help pursue the U.S. Department of Energy 2015 vision and shrink the Hanford Site cleanup footprint.

### RL-0011 Nuclear Materials Stabilization & Disposition

CHPRC is accelerating critical decontamination and decommissioning (D&D) of the Plutonium Finishing Plant (PFP), a task that includes removing over 170 glove boxes/laboratory hoods and other highly contaminated equipment that once supported plutonium production and processing.

### RL-0013 Solid Waste Stabilization & Disposition

Recovery Act funds are allowing CHPRC to accelerate retrieval of 2,500 m<sup>3</sup> of suspect transuranic (TRU) waste, eliminate 1,800 m<sup>3</sup> of mixed low-level and low-level waste (MLLW and LLW), and accelerate the overall cleanup of legacy waste and fuels on the Hanford Site.

### RL-0030 Soil & Groundwater Remediation, Groundwater/Vadose zone

In the ongoing effort to protect the Columbia River, CHPRC is using Recovery Act funding to construct two groundwater treatment facilities and drill 344 wells that will be used for monitoring, extracting, and remediating groundwater.

### RL-0040 Nuclear Facility D&D – Remainder of Hanford

Across the Central Plateau and along the outer zone of the Hanford Site, CHPRC is accelerating the demolition of facilities to reduce mortgage costs on buildings that are no longer of service and provide access to waste sites located underneath.

### RL-0041 Nuclear Facility D&D – River Corridor Closure Project

In the 100K Area along the Columbia River, CHPRC is demolishing 12 buildings and remediating 49 wastes sites to clear the area and prepare for the disposition of two reactors, K East and K West.

## ACCOMPLISHMENTS

### RL-0011 Nuclear Materials Stabilization & Disposition

#### RL-0011.R1: Plutonium Finishing Plant D&D

Twelve of 19 planned field work teams are now deployed to perform D&D scope in their assigned areas of the PFP complex; eight of these are supported by Recovery Act funding. In the 234-5Z building, D&D work is now concurrently underway in all three of the former PFP laboratories:

- Three hoods in room 221E of the Standards Laboratory were isolated from the building's ventilation system and are fully prepared for removal and transfer to waste operations.
- In the Analytical Laboratory, process equipment removal was initiated in three glove boxes in room 136, and chemical decontamination was initiated on the last glove box in room 146.
- In the Plutonium Process Support Laboratory, a chiller in room 187 was electrically isolated in preparation for removal before work begins on five hoods also located in room 187.

Also in the former production areas of 234-5Z building, process equipment removal continued on four glove boxes and decontamination efforts continued on two glove boxes.



Photo 1

Laboratory hoods that workers are preparing to remove from room 187 of the Plutonium Process Support Laboratory. Workers recently completed electrical isolation of a chiller in the room and will continue to isolate the hoods and associated equipment during the upcoming weeks.

## RL-0013 Solid Waste Stabilization & Disposition

### RL-0013C:R1.1: Mixed Low-Level Waste (MLLW) Treatment

Of the 1,800 m<sup>3</sup> planned for treatment and disposal under the Recovery Act:

- 655 m<sup>3</sup> of the 1,800 m<sup>3</sup> have been shipped to date including:
  - 267 m<sup>3</sup> of LLW have been treated and disposed.
  - 388 m<sup>3</sup> are at off-site treatment facilities awaiting processing. Treatment is scheduled for FY 2010.

### RL-0013C:R1.2: Transuranic (TRU) Waste

Of the 2,500 m<sup>3</sup> of suspect TRU waste planned for retrieval under the Recovery Act:

- 17.7 m<sup>3</sup> are staged, pending shipment.
- 428.6 m<sup>3</sup> have been shipped to a treatment, storage, or disposal facility.

Removal activities continued in 3A Trench 17 where workers completed the excavation of the east ramp and continued site preparation for the disassembly of Box 82. The burial ground 3A Removal Team incorporated comments from the Hazard Review Board (HRB) meeting to be resubmitted to the HRB on Dec. 3. Other activities in the 3A burial ground occurred in Trench 8 where workers continued assembling data for containers targeted for retrieval, identified an area for ground-penetrating radar mapping (GPR), and drafted a statement of work (SOW) for GPR services.

#### *Alpha Caisson Retrieval Project*

The Alpha Caisson Retrieval Project Management Group kicked off the independent project review team in support of the project review board meeting on Nov. 24.

#### *TRU Project Drum Repackaging*

Of the 1,210 drums (400 m<sup>3</sup>) planned to be characterized and repackaged in fiscal year 2010:

- 531 drums have been quick-scanned to date.
- Repack instructions (corrective actions) for 701 drums have been developed.

## RL-0030 Soil & Groundwater Remediation, Groundwater/Vadose zone

### RL-0030.R1: Central Plateau Soil & Groundwater

Recovery Act funding is being used across the Hanford Site to prepare for the drilling of numerous wells that will be used for monitoring, extracting, and remediating groundwater. Recent progress includes (listed by site or operable unit):

- *100-NR-2*: Drilling on 171 wells to expand the apatite barrier continued with 28 wells in process; 28 of the wells are drilled to total depth, and 10 of the wells are constructed and developed. Development of the shallow wells will continue when the river elevation is sufficient.
- *100-HR-3*: In the D Area, a total of 14 wells will be drilled in support of the new DX Groundwater Treatment Facility. To date, six wells are drilled to total depth and four are constructed and developed. The remaining well locations are being prepared for drilling activities.
- *200-BP-5*: Drilling on two of the three wells continued last week with current depths of 47 and 261 feet, respectively.
- *200-ZP-1 Expansion*: Drilling continued on six wells. Two of the six wells are developed, three of the six wells are under construction, and one of the six wells continues to be drilled (current depth is 500 feet).
- *100-BC-5*: Drilling continued on two of the four planned wells with current depths of 183 and 169 feet, respectively.





Photo 2

*Drilling continues in the 100-HR-3 D Area, where CHPRC is using Recovery Act funds to construct 14 wells to support the new DX Groundwater Treatment Facility.*



Photo 3

Workers drill one of two wells currently in process in the 100-BC-5 operable unit, where CHPRC is using Recovery Act funding to drill four wells to address hexavalent chromium contamination in the soil.

## RL-0040 Nuclear Facility D&D – Remainder of Hanford

### RL-0040.R1.1: U Plant/Other D&D

Within the U Plant Canyon, equipment relocation continued and repair work was performed in several areas. No additional contamination fixative was applied during the week. Asbestos abatement continued to prepare the 224-U and 224-UA buildings for demolition later this fiscal year. In the 224-U building,



workers also continued preparations for removing residual acid from tanks in the C Cell, one of several structures containing hazardous materials that must be removed before the building can be demolished.

Work planning continued for the upcoming cleanout of the 209-E building as well as for demolition of nine industrial facilities in the 200 East core area. These facilities, as well as the 614 building located just outside 200 East Area, are scheduled for demolition this year.

Fabrication continued on the remaining heavy equipment being procured for accelerated D&D on the Central Plateau.



Photo 4

*A worker drains cooling water from a tank in the 224-U building, one of three remaining U Plant ancillary facilities that will be demolished with the support of Recovery Act funding.*





Photo 5

*Asbestos abatement continues to prepare the U Plant ancillary facilities for demolition.*



Photo 6

*Workers inspect a heavy haul trailer being fabricated to support demolition on the Central Plateau.*

#### RL-0040.R1.2: Outer Zone D&D/Waste Sites

##### *Facility D&D*

Soil sampling is continuing in the former sites of the 212-NPR interim storage buildings in the 200 North Area. Backfilling and revegetation will take place after sample results are obtained. The majority of the D&D crew from the 212-NPR demolition project will transition to support D&D on the Arid Lands Ecology reserve (ALE), where asbestos abatement is ongoing and the D&D team is mobilizing equipment and materials to be used during demolition. Approximately 20 Recovery Act hires will mobilize to the site in December and demolition is expected to begin in early 2010.





Photo 7

*An excavator enters the site of the former 212-P building in the 200 North Area. CHPRC is sampling and surveying the soil before backfilling and revegetating the area.*

### *Waste Sites*

Recent progress in remediation of outer zone waste sites includes (listed by site or operable unit):

- *200-MG-1:* Review of the Response Action Completion Reports (RACR) for waste sites 200-E-110 and 600-21 was completed and forwarded to the U.S. Department of Energy; the RACR for waste site 600-51 is in process; and the field survey for waste site 600-36 is complete.
- *200-CW-3:* Remediation continued at the 216-N-1 waste site, which is one of three ponds in the 200-CW-3 operable unit that received releases from the 212-NPR interim fuel storage buildings.
- *BC Control Area:* Soil remediation continued. Approximately 10,000 tons of soil have been removed and disposed of in the Environmental Restoration Disposal Facility.





Photo 8

*Remediation continues at the 216-N-1 waste site, located in the 200-CW-3 operable unit in the 200 North Area. Recovery Act funds were used in early 2009 to sample the 200-CW-3 sites, which received releases from the former 212-NPR interim fuel storage buildings.*



Photo 9

*A CHPRC employee directs a super dump truck at the 216-N-1 waste site. The site was approved for the use of super dump trucks, which can carry more material than traditional roll-on/roll-off containers and allow for direct dumping into the Environmental Restoration Disposal Facility.*

## RL-0041 Nuclear Facility D&D – River Corridor Closure Project

RL-0041.R1.1: 100K Area Remediation D&D/Waste Sites

### *Facility D&D*

Demolition began on the 183KW Sedimentation Basin with workers beginning from the outer wall of the approximately 300,000-square-foot structure and gaining access to sample the surface of the basin floor. Results from the sampling will determine disposal requirements for the demolition debris.





Photo 10

*Workers enter the work site of the 183KW Sedimentation Basin, where CHPRC demolished part of the outside wall to provide access for workers to begin sampling the basin floor.*





Photo 11

*Demolition continues in the 183KW Sedimentation Basin. CHPRC is demolishing the approximately 300,000-square-foot basin that once held water used to cool the K West reactor.*

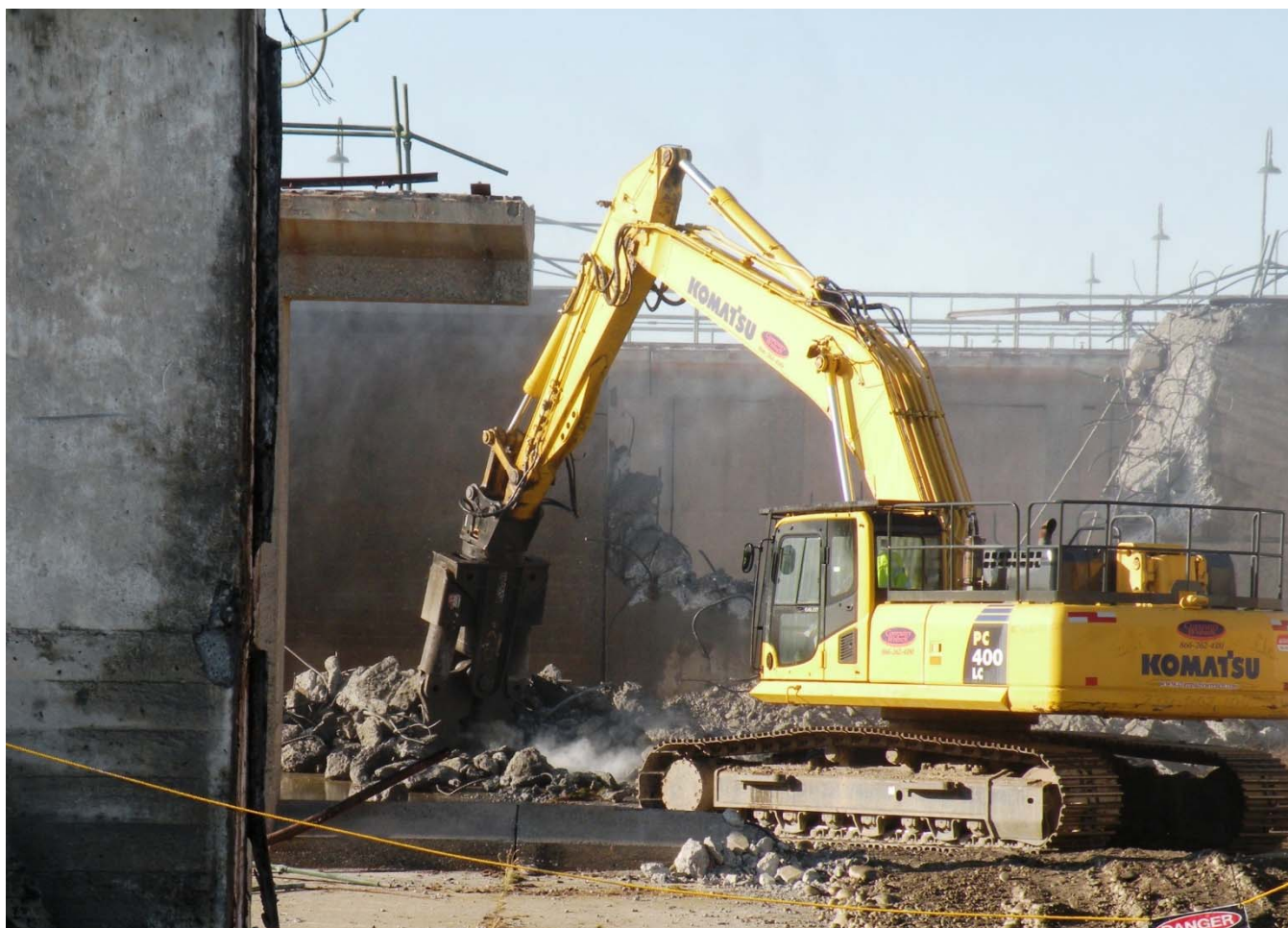


Photo 12

A Komatsu breaks up debris from the wall of the 183KW Sedimentation Basin. Depending on sample results, the debris will be disposed of in the Environmental Restoration Disposal Facility or staged and used for backfill after demolition is complete.

#### Waste Sites

Remediation is in progress for the UPR-100K-1 waste site beneath the former K East Fuel Storage Basin and the pipeline waste site 100-K-56. Work also continued in the 100-K-3 and -47 pipeline waste sites. At 100-K-3, the ducts previously identified by GPR scans were opened and asbestos was found, requiring work plans to be amended. The work plans were completed and the field activities will be initiated next week. At 100-K-47, excavation away from the identified line was initiated to sever the 100-K-47 lines from the outfall effluent line. The planning, review, and approval for this activity continued last week.

## UPCOMING EVENTS

### RL-0011 Nuclear Materials Stabilization & Disposition

RL-0011.R1: Plutonium Finishing Plant D&D

- Remove three hoods from room 221E.
- Complete chemical decontamination and radiological surveys of glove box 146-5.
- Complete process equipment removal from glove boxes 136-1,2,3.
- Continue decontamination of glove boxes HC-230C-3 and HC-60.

- Complete process equipment removal on glove boxes HA-19B1 and -B2, HA-46, and HC-227S.
- Reassess the radiological status and determine a disposition path for six glove boxes previously removed from rooms 131 and 137 of the Analytical Laboratory.
- Complete removal/return of the 2734-ZJ nitrogen storage tank to the vendor and remove remaining appurtenances to slab-on-grade.
- Initiate deactivation of excess safety showers and lights in 234-5Z building.

## RL-0013 Solid Waste Stabilization & Disposition

### RL-0013C:R1.1: MLLW Treatment

- Planned shipment of 6.8 m<sup>3</sup> (21 drums) of MLLW debris on Dec. 1 from the Waste Receiving and Processing Facility to Perma-Fix Northwest.

### RL-0013C:R1.2: TRU Waste

- 3A Trench 17 Removal:
  - Complete hand excavation at bottom of Box 3 to allow for installation of support plates to assist in lifting the box.
  - Complete engineering evaluation, critical lift plan, and shoring box design plans for Box 3.
  - Excavate around the bottom of Box 12 and perform an engineering evaluation on the box.
  - Update work package documents for Boxes 80 and 82 to include comments from the HRB.
  - Continue site preparation for the disassembly of Box 82.
- Complete SOW for GPR mapping in 3A Trench 8.
- Begin development of 3A Trench 8 site logistics and operating plan for waste removal.
- Alpha Caisson Retrieval:
  - Safety Design Integration Team hazards analysis meeting on the Waste Retrieval System schedule for the week of Nov. 30.
  - Final design review meeting on the Waste Processing System (WPS) will be held Dec. 2.
  - Finalize the Work Breakdown Structure for the WPS Conceptual Design Report by Dec. 2.
  - The Project Review Board meeting is scheduled for Dec. 14.
  - Issue the Technical Readiness Report on Dec. 15.
  - Issue the Conceptual Design Report for review on Dec. 21.

## RL-0030 Soil & Groundwater Remediation, Groundwater/Vadose zone

### RL-0030.R1: Central Plateau Soil & Groundwater

- Continue construction of the DX Pump-and-Treat Facility.
- Continue drilling at 200-ZP-1, 100-HR-3-H, 100-HR-3-D, 100-BC-5, and 100-NR-2.
- Continue development of decision documentation.

## RL-0040 Nuclear Facility D&D – Remainder of Hanford

### RL-0040.R1.1: U Plant/Other D&D

- Receive delivery of the remaining D&D heavy equipment.
- Continue asbestos removal and other preparations for demolition of U Plant ancillary facilities.
- Continue applying contamination fixative within the U Plant Canyon and relocating equipment into cells beneath the canyon deck.
- Complete preparations for demolishing the 200 East Area core industrial complex.
- Complete detailed planning for cleanout of the 209-E building.



**RL-0040.R1.2: Outer Zone D&D/Waste Sites**

- Complete surveys and sampling at the site of the former 212-NPR buildings.
- Complete asbestos abatement, mobilize resources, and begin preparations for demolishing the lower ALE facilities on Rattlesnake Mountain.
- Continue remediation at the BC Control Area and 200-CW-3 waste sites.

**RL-0041 Nuclear Facility D&D – River Corridor Closure Project****RL-0041.R1.1: 100K Area Remediation D&D/Waste Sites**

- Continue remediation of the waste site beneath the former K East Fuel Storage Basin and the pipeline waste sites (100-K-47, 100-K-56, and 100-K-3).
- Continue demolition of the 183KW Sedimentation Basin.
- Continue asbestos removal from 183.1 KW Headhouse.
- Continue Preliminary Design activities for the 105KE Reactor Core Removal.
- Continue debris removal from the KW basin.
- Complete comment resolution for River Water Isolation, Electrical Power Isolation, and the KW Basin Airborne Contamination Remediation projects.
- Perform the reactor Graphite Tumble Test to obtain dusting properties of the reactor graphite.