



AMERICAN RECOVERY & REINVESTMENT ACT







Week Ending Feb. 18, 2011

CHPRC-01222

Contract DE-AC06-08RL14788 Modification MO47



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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 critical environmental cleanup across the Central Plateau and the 100K Area along the Columbia River to help pursue the U.S. Department of Energy (DOE) "2015 Vision" to shrink the Hanford Site cleanup footprint.

RL-0011 PLUTONIUM FINISHING PLANT D&D

CHPRC is accelerating critical decontamination and decommissioning work to cleanout and prepare the Plutonium Finishing Plant (PFP) for demolition by 2013, three years ahead of the Tri-Party Agreement milestone of September 2016.

RL-0013 SOLID WASTE STABILIZATION & DISPOSITION

CHPRC is accelerating cleanup of Hanford's legacy waste and fuels, including retrieving, repackaging, and shipping transuranic (TRU) waste and shipping mixed low-level waste (MLLW) and low-level waste (LLW) for treatment and/or disposal.

RL-0030 SOIL & GROUNDWATER REMEDIATION

In the ongoing effort to protect the Columbia River, CHPRC is constructing two groundwater treatment facilities; installing 265 wells for monitoring, extracting, and remediating groundwater; and decommissioning 280 wells that are no longer of service.

RL-0040 NUCLEAR FACILITY D&D REMAINDER OF HANFORD

Across the Central Plateau and along the outer zone of the Hanford Site, CHPRC is remediating 24 waste sites and decommissioning and demolishing (D&D) 34 facilities to reduce mortgage, surveillance, and maintenance costs on buildings that are no longer of service. The scope also includes cleanup along the outermost edges of the Hanford Site at the Arid Lands Ecology (ALE) Reserve and North Slope, preparing the U Plant for a first-of-its-kind canyon demolition, and preparing to disposition radioactive railcars in the 200 North Area.

RL-0041 100K AREA REMEDIATION

CHPRC is demolishing 15 reactor support facilities and sampling and/or remediating 23 waste sites to shrink the cleanup footprint of two reactors, K East and K West, located in the 100K Area along the Columbia River.

For More Information

To find out more about Recovery Act progress at the Hanford Site, visit <u>www.hanford.gov/recovery</u>.

For information about CHPRC, including weekly Recovery Act newsletters and videos, visit <u>www.plateauremediation.hanford.gov</u> or contact <u>chprcc@rl.gov</u>.



SUMMARY

The following chart outlines CHPRC's progress on its main Recovery Act work goals. Progress on subprojects and other Recovery Act-funded activities are detailed throughout this report and accompanied by a short progress video available on www.youtube.com/hanfordplateau.

PLUTONIUM FINISHING PLANT D&D





ACCOMPLISHMENTS

RL-0011 Nuclear Materials Stabilization & Disposition

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

ACTIVITY	PFP WASTE REMOVAL & DISPOSITION		
	Week of Feb. 18, 2011	Completed to Date with Recovery Act funding	
Gloveboxes/hoods removed	1	104 gloveboxes/hoods	
MLLW/LLW shipped	35 m³	2,393 m ³	
TRU shipped	13 m ³	406 m ³	
Non-radioactive waste shipped	-	23 m ³	
Process transfer line removed	-	367 feet	
Process vacuum system piping removed	44 feet	1,011 feet	
Asbestos removed	152 feet	13,624 feet	



A section of a glovebox is loaded into a container for shipping and disposal.

Photo 1

Process and Laboratory Areas

In the Analytical Laboratory, chemical decontamination with RadPro® was completed on glovebox 152-522, while equipment removal and external isolations continued on glovebox 145-1.



In the RMA/RMC Lines, the last section of the 70-foot-long HA-28 conveyor was relocated to the west end of Room 235B, bringing the total number of gloveboxes removed from PFP with Recovery Act funds to 104. Two additional D&D teams assigned to process area glovebox removal are now engaged and preparing for cleanout and removal of multiple gloveboxes in both the RMA and RMC Lines. To support the larger number of crews assigned to the process areas, preparations were completed to initiate rotating day-swing shift crews beginning next week. The final application of the Aspigel® decontamination product was completed on the upper sections of glovebox HA-19.

2736-Z/ZB Vault Complex

With all of the gloveboxes removed from the 2736-ZB vault support facility, the D&D team prepared to begin removal of the remaining exhaust filters and ductwork as needed to support readiness for demolition of the facilities later this year.



Glovebox 642-A is loaded into a container for shipping and disposal. This was the last of nine gloveboxes to be removed from the 2736-Z vault complex at the Plutonium Finishing Plant.

242-Z Americium Recovery Facility

The 242-Z D&D team continued external isolations and equipment removal from gloveboxes WT-4 and WT-5.



Infrastructure, support systems, and equipment removal

Gloveboxes 642-A and 642-B, previously removed from the vault complex, were shipped to Perma-Fix Northwest (PFNW) for size reduction and packaging for disposal as TRU waste. Glovebox 139-6 was transferred to Room 172 and is the fourth glovebox scheduled to be processed through the new centralized size reduction station. Progress in removing process vacuum system piping and transfer lines within the 234-5Z building continued, with 44 feet of process vacuum system removed last week for a total of more than 1,000 feet of the piping removed. Insulators removed 152 feet of asbestos insulation from piping and ductwork, bringing the total removed from PFP facilities with Recovery Act funds to more than 2.5 miles.



Working in a protective glovebag, a worker prepares a piece of process vacuum system piping for removal. CHPRC has removed more than 1,000 feet of the highly contaminated piping that runs throughout the 234-5Z building at the Plutonium Finishing Plant.





Workers apply labels to a piece of process vacuum system piping that is wrapped in protective covering and being prepared for removal from the Plutonium Finishing Plant facilities.

RL-0013 Solid Waste Stabilization & Disposition RL-0013C:R1.1: Mixed Low-Level Waste/Low-Level Waste Treatment

ACTIVITY

Ship 1,800 m³ of MLLW/LLW for treatment and disposal

SOLID WASTE STABILIZATION & DISPOSITION Total Completed with Recovery Act funds

Photo 4

- 1,154 m³ shipped
- $\circ~$ 1,003 m^{3} treated and disposed
- 151 m³ at offsite treatment facilities awaiting processing. Treatment is scheduled for FY11



One shipment was made from the Central Waste Complex (CWC) to IMPACT Services on Feb. 16. The shipment included 37 drums of MLLW reactive metals (11.572 m³) being sent to IMPACT Services for recycling. Residue waste that cannot be recycled from the shipment will be returned to Hanford for disposal in the Mixed Waste Disposal Units at the Low-Level Burial Grounds.



A shipment of 37 drums of mixed low-level waste reactive metals is loaded for shipment from the Central Waste Complex.

RL-0013C:R1.2: Transuranic Waste	

ACTIVITY	SOLID WASTE STABILIZATION & DISPOSITION Total Completed with Recovery Act funding	
Retrieve 2,500 m ³ of suspect TRU waste	 228 m³ are staged, pending shipment 843 m³ shipped to a treatment, storage, or disposal facility 	
Retrieve 50 m ³ of suspect remote-handled TRU waste	 44 m³ are staged, pending shipment. 1 m³ shipped to a treatment, storage, or disposal facility 	

The biological infestation has been mitigated in Trench 17 of the 3A burial ground and retrieval has resumed with excavation of Box 15. Stabilizing walls and roof were installed on the box and a shoring base, walls, and roof are being fabricated. The large fiberglass-reinforced plywood (FRP) box lifting fixture was re-painted and labeled. Box 17 (11.0 m³) was excavated and removed. A ramp and trench base were prepared to allow fork lift access for removal of Box 14.



In the 4B burial ground, workers hand-excavated and removed seven remote-handled (RH) drums from Trench 11, and they also located and excavated five $7 \times 4 \times 4$ foot FRP boxes and two $3 \times 3 \times 3$ foot concrete boxes for removal. The Mobile Drum Venting System procedure SW-100-154 was approved; the system is now operational.



In Trench 11 of the 4B burial ground, operators place a plastic bag around a waste drum in preparation for removal.

In the 12B burial ground, the first four drums (0.8 m^3) were removed from Trench 17. Excavation continued in Trench 27.





In the 12B burial ground, workers excavate a container of transuranic waste. This was one of the first drums of waste CHPRC removed from Trench 17 of the 12B burial ground.





Workers mark a waste drum, covered in protective plastic covering, before it is lifted from Trench 17 of the 12B burial ground.

TRU Repackaging & Shipments

ACTIVITY

Repackage 850 m³ of WIPP certifiable TRU waste Disposition 2,000 m³ of contacted-handled TRU waste SOLID WASTE STABILIZATION & DISPOSITION Total Completed with Recovery Act funding

- 654 m³ have been repackaged
- 938 m³ have been disposed

RL-0030 Soil & Groundwater Remediation, Groundwater/Vadose Zone

RL-0030.R1: Central Plateau Soil & Groundwater

	WELL DRILLING & DECOMMISSIONING		
ACTIVITY	Week of Feb 18, 2011	Complete to Date with Recovery Act funds	
Install 265 wells and/or boreholes along the river and in the Central Plateau	7 wells in progress	306	
Decommission 280 old wells and boreholes that are no longer of service	Planning in progress	188	



200 West Groundwater Treatment Facility

Construction activities continued with another project milestone reached: installation of process equipment on the Biological treatment pad. Construction of the process and transfer facilities also included (listed by facility):

- Process buildings
 - Radiological Building: Installation of process piping rough-in and translucent panels continued.
 - Bio-Process Building: Electrical grounding and installation of large bore process pipe continued. Installation of structural steel for the C- and A-line utility racks, the fire protection wet system, concrete containment curbs and concrete/masonry wall for the chemical room continued.
 - Bio Pad: Initiated installation of government-furnished equipment tanks. Continued concrete formwork for the splitter box and main mechanical duct bank. Touched up painting of the structural steel. Installation of conduit, sleeves, and cabling for lightening protection continued.
- Transfer buildings
 - Extraction Transfer Building #1: Installation of panels and service gear was performed by electric subcontractor.
 - Extraction Transfer Building #2: Process piping rough-in overhead continued and belowgrade installation was initiated.
 - Injection Transfer Building #1: Process piping rough-in continued.
 - Injection Transfer Building #2: Tube steel installation was initiated.
- *Lime Building (Sludge Stabilization System):* Ojeda Business Ventures LLC construction forces mobilized to site.





A worker prepares a tank for lifting and placement on the equipment pad for the Bio-Process Building.

CH2NIHILL Plateau Remediation Company



Large tanks are placed on the equipment pad for the Bio-Process building for the 200 West Groundwater Treatment Facility.

RL-0040 Nuclear Facility D&D – Remainder of Hanford RL-0040.R1.1: U Plant/Other D&D

CENTRAL PLATEAU FACILITIES DEMOLISHED WITH RECOVERY ACT FUNDS

- 211U Cold Chemical Makeup Tank Farm
- 211UA Cold Chemical Makeup Tank Farm Addition
- 203UX Gas Storage Facility
- 2701M Office Bldg
- 272E Fabrication, Mockup Shop Bldg
- 2716E Power Maintenance Storage Bldg*
- 2722W Welding Laboratory Bldg*
- 224UA UO3 Calcination/Load-out Facility
- 2710-W Coal Handlers Shed

- 2734EA Gas Cylinder Storage Bldg
 - 275E Carpenter Shop Bldg
 - MO104 Mobile Office
 - MO405 Mobile Office
 - MO840 Mobile Office
 - X8 Motor Car Shed*
 - 224U UO3 Plant Concentration/Load-out Bldg
 - 284WB Package Boiler Plant

TOTAL: 100,377 square feet

*Not part of the Key Performance Parameter

U Canyon



PLANNED FOR D&D/IN PROGRESS

- 284E Power House & Steam Plant
- 209E Critical Mass Laboratory
- 284W Power House & Steam Plant
- 2902-W Water Storage Tank*

With the grout batch plant and haul roads complete, asbestos abatement continued in U Canyon's pipe and process galleries as did interior core drilling for grout conveyance, with three 17-foot vertical core holes drilled and removed.

U Plant Ancillary Facilities Closure documentation is being prepared.

200 East Core Industrial Area

CHPRC subcontractor Clauss Construction is finished preparing the 284-E Power House exhaust chimneys, baghouses, and coal silo for explosive demolition planned for March 4.

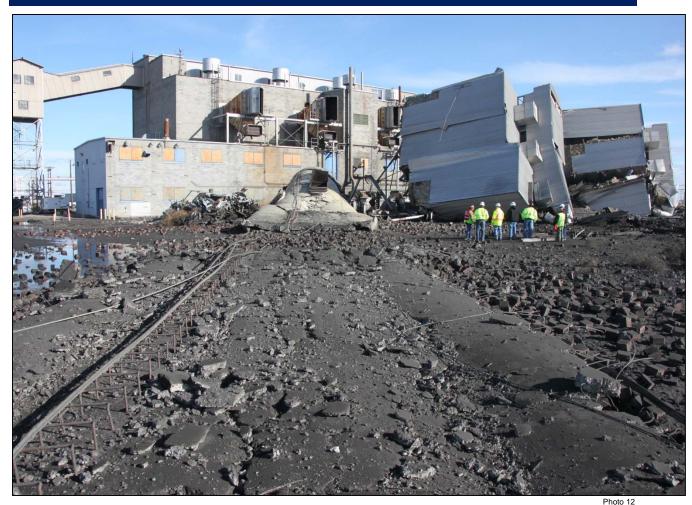
200 West Area Industrial Facilities

CHPRC subcontractors Clauss Construction and Controlled Demolition Inc. felled the 284-W Power House stacks and baghouses and the 2902-W water tower with explosive charges on Feb. 18. The demolition went according to plan, with water trucks and foggers deployed for dust suppression and no apparent damage sustained to the Power House building. Debris cleanup will begin at the site this week, with interior asbestos abatement ready to begin pending final sample results and engineering analyses. Additional photos and video footage of the demolition are available at <u>www.hanford.gov</u> and <u>www.plateauremediation.hanford.gov</u>.



A crew watches as two chimneys are safely lowered to the ground level at the 284-W Power House on Feb. 18.





The remains of the stacks and baghouses after they were lowered using explosive demolition techniques. Given the height of the structures - 250 feet and 90 feet tall, respectively – explosive demolition was selected as the safest method for the project.



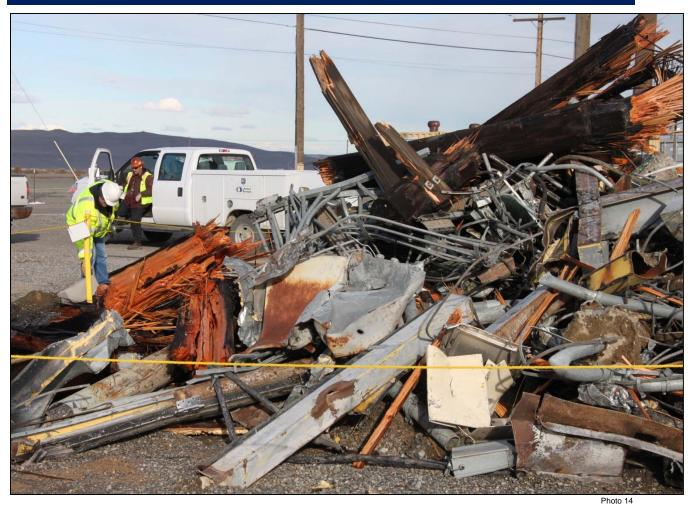


The remains of the 2902-W water tower after explosives were used to fell the 140-foottall structure. The water tower was built in the 1950s with a 100,000 gallon storage capacity. It has been out of service since 1998.

209-E Criticality Mass Laboratory

Workers continued load-out of process piping and other waste from the Mix Room and Critical Assembly Room (CAR), filling three Standard Waste Boxes for transport. CHPRC crews also began the removal of 209-E ancillary structures, demolishing the 2701-C Guard Station.





The remains of the 2701-C Guard Station, an ancillary structure to the 209-E Criticality Mass Laboratory.

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

OUTER ZONE FACILITIES DEMOLISHED WITH RECOVERY ACT FUNDS

212N Storage Building
212P Electrical Storage & Transformer Shop
212R Storage Building
614 Monitor Station
646 Radioecology Field Laboratory
6652G ALE Field Storage Building
6652H ALE Laboratory 1
6652I ALE Headquarters
6652J ALE Laboratory II
6652S Sentry Shed*
6634 ENW Tower and Building*
6635 Crown Castle/Cingular Tower and Building *
6637 Tri City Amateur Radio Tower and Building*
6632 Verizon Telephone Enclosure*

6652M Fallout Laboratory 6652R Acid Storage Shed 6652C Space Science Laboratory 6652CSHED Storage Building 6652D Pump House 6652T Fire Protection Lower Pump House 6652U Rattlesnake Mountain Upper Pump House 623A Plant Radio Relay Bldg T520-6 Navy MARS Radio Station 6631 Radio Telescope Pedestal* 6630 Hodges Well Pumphouse* 6636 Columbia Communication Tower and Building* 6633 Franklin County Communication Building*

*Not part of the Key Performance Parameter



North Slope Debris Removal

Personnel with CHPRC subcontractor Sealaska Environmental Services focused debris cleanup on Area 13 of the North Slope. Area 15 is complete, and Area 17 has been released for further work after a cultural review was completed on remaining sites.

Arid Lands Ecology Reserve

Revegetation of cleared sites on ALE is ongoing.

D&D of Railcars Located on the 212-R Rail Spur

CHPRC crews began draining residual liquids from the cars in preparation for decontamination, grouting, and eventual disposal.

Waste Sites

The following table showcases CHPRC's recent progress in outer zone waste remediation.

WASTE SITE IN PROGRESS	TONS OF CONTAMINATED SOIL REMOVED	
WASTE SITE IN PROGRESS	Week Ending Feb. 18, 2011	Total to Date with Recovery Act funds
600-286/287-PL	-	14,895
200-W-147-PL	-	6,450
BC Control Area	9,000	334,000

Recent activities regarding the outer zone waste sites also included (listed by operable unit or site):

- 200-MG-1
 - o 600-40: Additional direct push testing is anticipated to occur in March.
 - 600-220: A Baseline Change Request/Advanced Work Authorization is in process to authorize remove, treat, and disposal (RTD) activities. A culture report is being reviewed and is anticipated to be approved in March.
 - o 600-222: Site backfill is complete.
 - o 216-S-19: Direct push test sampling is anticipated next week.
 - 216-S-26: Site walk-downs were conducted. A kick-off meeting has been held with the vendor.
 - 600-281: Confirmatory Sampling No Further Action sampling was performed and RTD will be required. A culture report is being reviewed and anticipated to be approved in March.
 - 200-W-147-PL: Excavation is complete. Preparations for initial verification sampling are in process with sampling anticipated next week.
 - 600-275: Concrete debris removal to Pit #9 is complete. Additional excavation of one pit has been completed with sampling anticipated next week.
- 200-CW-3
 - o 216-N-4: Backfilling and contouring is in progress.
 - o 216-N-6: Stockpiling of clean backfill at the site is substantially complete.
 - 600-286-PL: Remediation is complete. Analytical results indicated the RTD is complete. The site has been down-posted and backfill is under way.
 - 600-287-PL: Remediation is complete. Analytical results indicate the RTD is complete. The site has been down-posted.
- BC Control Area
 - For Zone A, approximately 140 acres have been excavated and surveyed. Seeding is in progress with approximately 100 acres seeded. Seeding of the last 40 acres is anticipated in March.





An excavator removes soil from Zone A of the BC Control Area. The green area in the background indicates where CHPRC has seeded approximately 100 acres of Zone A after radioactively contaminated soils were removed.

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

RL-0041.R1.1: 100K Area Remediation

100K AREA FACILITIES DEMOLISHED WITH RECOVERY ACT FUNDS

- 183KW Chlorine Vault
- 183.1KW Headhouse
- 183.3KW Filter Basin
- 183.7 KW Pipe Tunnel110KE Gas Storage Facility
- MO048 Construction Lunch TrailerMO969 Ops/HPT Change Trailer

116KE Reactor Exhaust Stack

TOTAL: 485,643 square feet

• 118KE Horizontal Control Rod Storage

PLANNED FOR D&D/IN PROGRESS

- 183.4KW Clearwell
- 190KW Main Pump House
- 183.4KE Clearwell
- 115KE Gas Recirculation (subgrade structures)
 - 1605KE Guard House181KE River Pump House

117KE Exhaust Air Filter (subgrade structures)

• 190KE Main Pump House

Facility D&D

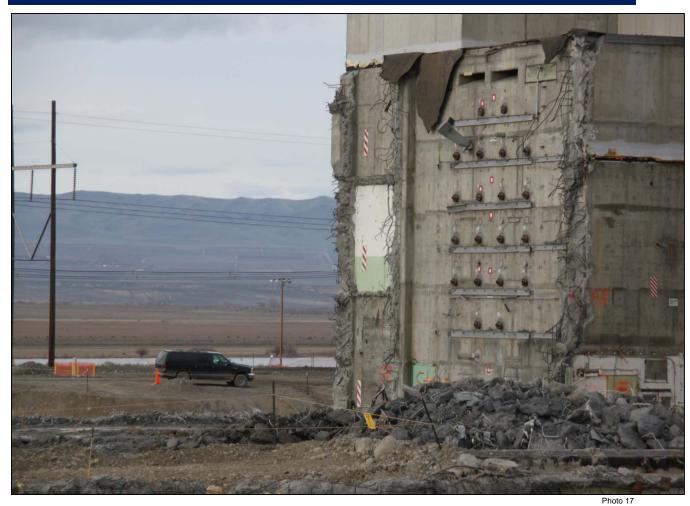
CHPRC crews completed demolition of the 105-KE Reactor building's administrative area (east side) and neared completion on the horizontal control rod rack room (west side) this week. Draining of the 183.2-KE sedimentation basins also continued in preparation for their demolition, with approximately 7 million gallons drained so far.





CHPRC's Recovery Act-funded demolition of the east side, or the administrative area, of the K East Reactor building is complete.





CHPRC's Recovery Act-funded demolition of the horizontal control rod rack room on the west side of the K East Reactor building is nearly complete.





CHPRC is draining the 183.2-KE Sedimentation Basins with approximately 7 million gallons drained last week.

Infrastructure Utilities Upgrade Project

Infrastructure and utilities upgrades neared completion this week, with testing of the A-9 substation, firewall construction in the Water Treatment Facility control room areas, and final testing and tie-ins of the new potable- and fire-water systems ongoing.





A worker prepares to test the A9 substation in the 100K Area. Infrastructure and utility upgrades in the area are nearing completion.

Waste Sites

Load-out of contaminated soil from the discharge chute waste site was completed on Feb. 8 with a total of more than 25,000 tons removed to date. Planning for the remediation of the 100-K-57 waste site continued.



UPCOMING EVENTS

RL-0011 Nuclear Materials Stabilization & Disposition

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

- Complete cleanout, isolate, and remove the last two gloveboxes in the Analytical Laboratory.
- Remove conveyor gloveboxes HC-3 and HC-4 in the RMC Line.
- Complete D&D and remove gloveboxes 2, 3, 4, 6, and 9 from room 179 of the Plutonium Process Development Laboratory; initiate D&D of gloveboxes 10, 11, and 12.
- Complete D&D of gloveboxes HA-7A and HC-15C.
- Complete cleanout of glovebox 200, isolate it from glovebox 100C, and begin preparations for dispositioning the three remaining Radioactive Acid Digestion Test Unit gloveboxes in place.
- Complete cleanout of the 232 scrubber cell and disposition glovebox HA-46 in place.
- Complete decontamination of HA-19B1 and B2 with Aspigel[®], and determine its effectiveness as an alternate decontamination process.
- Complete size reduction and packaging of glovebox 139-6 for disposal.
- Complete cold and dark isolations and prepare the 2736-Z vault complex for demolition.
- Continue removing process vacuum, process transfer piping and asbestos insulation from throughout 234-5Z building.

RL-0013 Solid Waste Stabilization & Disposition

RL-0013C:R1.1: MLLW Treatment

- One MLLW shipment (3.3 m³) planned from CWC to Perma-Fix Northwest (PFNW).
- One LLW shipment (2.5 m³) planned from CWC to PFNW.

RL-0013C:R1.2: TRU Waste

- TRU Retrieval
 - o 3A burial ground
 - Remove Trench 17 Box 27 temporary cover and fog under tarps; begin repairs and excavation around the box.
 - Complete pre-fabrication of Trench 17 Box 15 shoring box prepare box for retrieval
 - Complete excavation, removal, and portable assay of Boxes 15 and 14 in Trench 17.
 - Ship Box 33 (49.1 m³) from Trench 8 to the CWC.
 - Complete Trench 8 cleanup and closeout field activities.
 - o 4B/4C burial ground
 - Complete portable assay of eight waste containers at 4C.
 - Excavate and remove contact-handled waste containers (~13 m³) from Trench 11.
 - Excavate and remove RH waste containers (~7 m3) from Trench 11.
 - Complete and approve work package (WP 2X-11-7622) to remove large concrete box (46 m³) from 4B Trench 11.
 - Receive decision on the Plant Forces Work Review for building overpack containers for Box #101 in Trench 11.
 - o 12B burial ground
 - Continue excavating Trench 27.
 - Resolve safety concern on diesel fumes during excavation under the tent in trench 17.
- TRU Repackaging and Shipments
 - Three planned shipments.



- Suspect TRU Waste Shipments
 - One TRU-mixed waste shipment (11.0 m^3) planned from CWC to PFNW.

RL-0030 Soil & Groundwater Remediation, Groundwater/Vadose Zone

RL-0030.R1: Central Plateau Soil & Groundwater

- Continue construction of the 200 West Groundwater Treatment Facility.
- Continue well drilling and decommissioning.

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

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

- Continue drilling interior holes for grout conveyance access into U Canyon.
- Cleanup debris of demolished stacks and baghouses at the 284-W Power House site.
- Explosive demolition of the 284-E Power House's exhaust chimneys and baghouses on Mar. 4.

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

- Apply fixative to contaminated railcars.
- Continue backfilling the 216-N-4 and 216-N-6 waste sites.
- Continue seeding at Zone A of the BC Control Area.
- Continue remediation of BC Control Area and 200-MG-1 and 200-CW-3 waste sites.

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

RL-0041.R1.1: 100K Area Remediation

- Continue demolition preparations for the 181-KE River Pump House structure.
- Continue draining the 183.2-KE Sedimentation Basins.
- Continue excavating soil from 100K Area waste sites.

