



*River Corridor Closure Project*

# **Recovery Act Weekly Report**

For the week ending March 4, 2011

Contract DE-AC06-05RL14655

## Overview

Background Summary of Projects that Washington Closure Hanford (WCH) will accomplish using ARRA funds (pending definitization of scope and contract modifications).

### A. The Environmental Restoration Disposal Facility (ERDF)

ERDF is the hub of the WCH scope of work and supports a major portion of other Hanford contractor (OHC) waste disposal. Wastes collected from sites around the Hanford complex are brought to ERDF for treatment and disposal. WCH operates the ERDF and is currently using ARRA funds to upgrade and expand its capabilities to meet the needs of Hanford's accelerating mission.

### B. The 618-10 Burial Grounds

The trenches at 618-10 have long been regarded as some of Hanford's worst waste sites. Using ARRA funds, WCH will characterize the site. Intrusive and non-intrusive techniques will be used, and the subsequent analysis of data will enable the project to pursue remediation of the site safely and effectively.

### C. The 618-11 Burial Grounds

Along with 618-10, the 618-11 Burial Grounds are among the biggest challenges faced by WCH using ARRA funds. The 618-11 characterization work will require special care because of its proximity to the Energy Northwest Generating Facility, north of the 300 Area.

### D. Waste Site Remediation

WCH is employing ARRA funds to clean up many failed waste sites not originally part of its contract. Sites in the 100-F and IU 2&6 segments 1&2 are proposed for waste site remediation in the two year period starting in October 2009.

### E. Confirmatory Sampling of other new sites

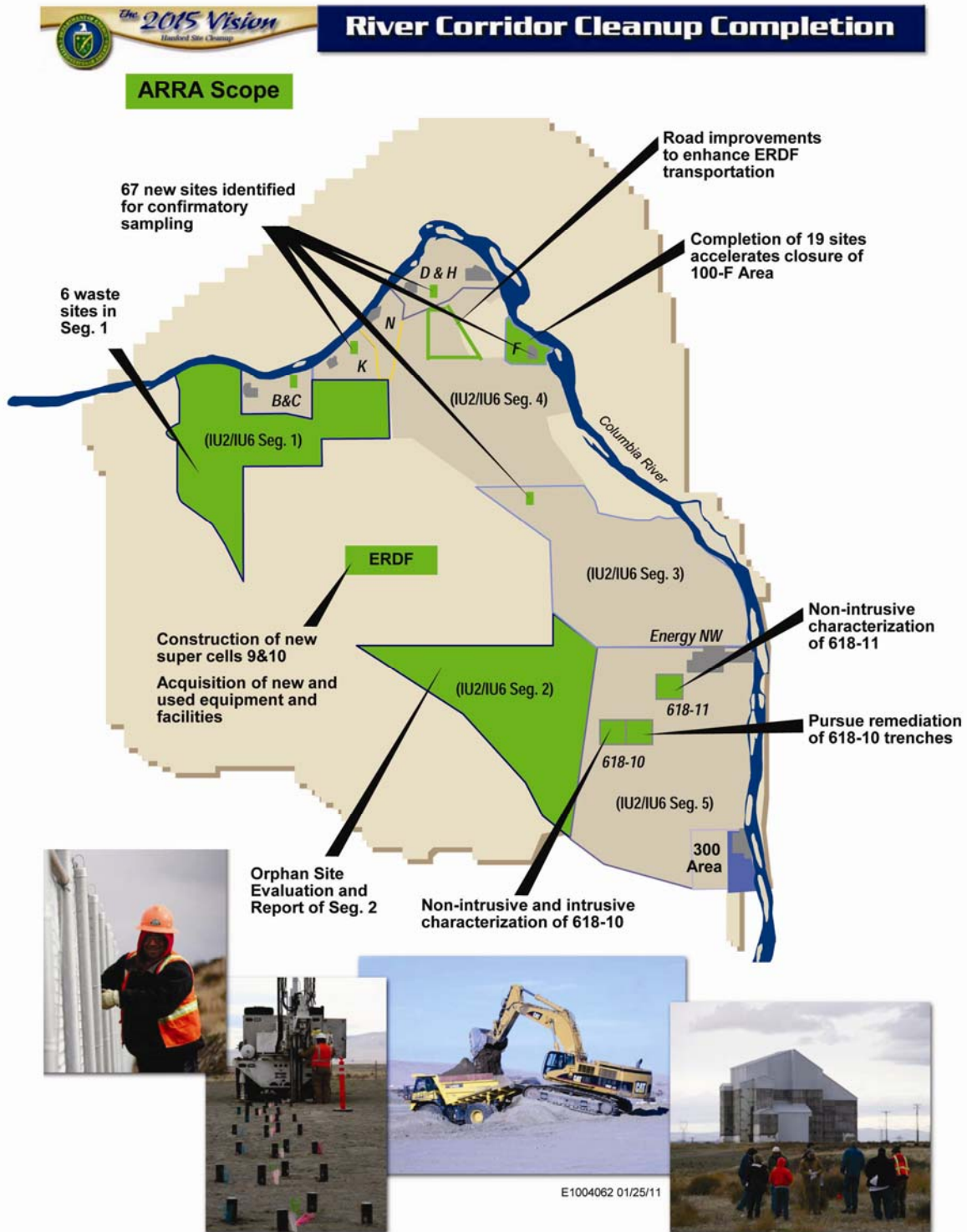
WCH is proposing to complete the early sampling process of 67 potential waste sites using ARRA funds. Confirmatory sampling is performed for sites that require additional information for determining if the site requires remediation.

This weekly report will provide evidence of these activities as they occur in support of ARRA.

The following figure illustrates the overall scope of WCH's ARRA projects.



# Overview (Continued)



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# Safety

## Safety Accomplishments

As of January 23, 2011, WCH and its subcontractors have worked 365,552 hours of ARRA scope with no safety incidents.

## Hazard Reductions

The River Corridor Closure Project provides a “Weekly Roundup” focusing on safety topics that affect Hanford Site workers. This week’s “Safety Awareness” focused on driving in gusty winds.

Driving on the Hanford Site can be dangerous during this time of year when wind gust can reach more than 50 miles per hour. Rapidly shifting gales can literally bump vehicles all over the road, perhaps even into one another. A strong wind can blow a car or truck off its course in a heartbeat. Here are eight simple steps for safety on a stormy street.

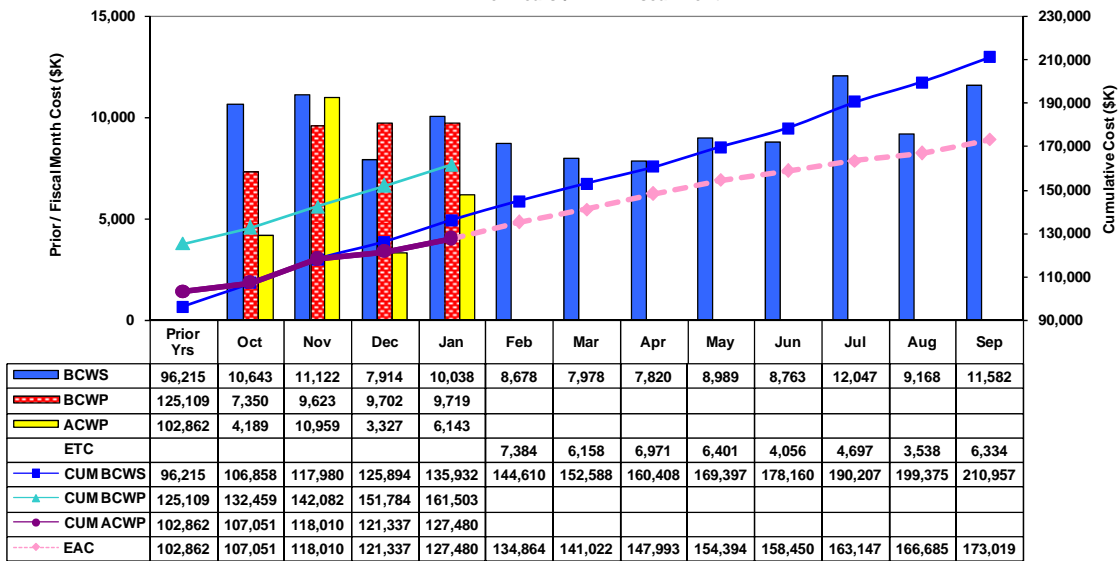
1. Slow down. Speed and wind together can make driving downright dangerous! Don’t hit the brakes, but decrease your speed gradually. Deceleration can increase your control on a gusty road.
2. Shut your windows. Wide open windows can create swirling drafts inside your vehicle, greatly diminishing your ability to control your direction and speed.
3. Set down your cell phone, soda, and sandwich. Keep both hands on the wheel in turbulent weather. You will need to pay attention fully, and you may suddenly need the extra strength for steering.
4. Share extra space with cyclists. Motorcycles and bikes are particularly vulnerable to wind currents. Offering additional room is not only a courtesy but caution.
5. Space your vehicle safely behind others. Allow extra following distances between your car and extra room with those around you.
6. Scan the roadway and spot hazards early. Objects blowing into your path may require additional attention or sudden action. Try to anticipate these, as swerving on a drafty roadway can be perilous.
7. Turn off the tunes and turn on the news. Listen to weather reports in your area. Be alert to travel advisories.
8. Stop, if needed. High-sided vehicles, such as vans, paneled trucks, and trailers, can act like sailboats on a windy road. A single stretch of highway exposed to cross-winds can become an open sea of sideways-shifting motorist. Sometimes, pulling over in a safe area is the most prudent action. Be sure to switch on your hazard lights, if you stop on the shoulder.



# Cost/Contract Status

Contract Mod #	Date	Scope	Obligated (\$M) (Inception to Date)	Not to Exceed (\$M) (Inception to Date)
099	4/9/09	ERDF Cell Expansion & Upgrades; 618-10 NIC	\$203.0	\$28.0
105	4/30/09	ERDF Cell Expansion & Upgrades; 618-10 NIC	\$203.0	\$44.5
126	7/23/09	H.37 Clause - Reporting Requirements	N/A	N/A
139	9/3/09	ERDF Cell Expansion & Upgrades; 618-10 NIC	\$253.6	\$44.5
142	9/30/09	ERDF Cell Expansion & Upgrades; 618-10 NIC; Phase 2 Scope	\$253.6	\$123.8
174	2/22/10	ERDF Cell Expansion & Upgrades; 618-10 NIC; Phase 2 Scope	\$248.2	\$123.8
182	3/25/10	ERDF Cell Expansion & Upgrades; 618-10 NIC; Phase 2 Scope	\$248.2	\$155.8
185	4/19/10	Phase 1 and Phase 2 Scope	\$248.2	\$178.0
192	4/27/10	Phase 1 and Phase 2 Scope	\$253.6	\$178.0
205	5/26/10	Reallocate Funds for Equipment and GPPs	\$253.6	\$178.0
210	6/23/10	Funding deobligation	\$229.3	\$178.0
217	8/4/10	Funding re-obligation	\$233.6	\$178.0
230	9/24/10	Phase 3 Definitization	\$233.6	\$178.0
241	11/22/10	Reallocate Funds for Equipment	\$233.6	\$178.0
242	12/1/10	Increase the Cost Authority on RL-0041.R2	\$233.6	\$196.6
247	12/16/10	Reallocate Funds for Capital Expenditures	\$233.6	\$196.6
253	1/18/11	Increase 41.R1 Cost Authority and reallocate funds for capital	\$233.6	\$214.4
266	2/17/10	Reallocate Funds for Capital Expenditures	\$233.6	\$214.4

RCC Project - ARRA  
Current Performance Measurement Baseline (PMB)  
Prior Years / FY11 Fiscal Month



ARRA Proposals 1, 2 and 3 Actuals (\$K)

Apportionment Number	Apportionment Title		January 2011	Inception To Date	Cost Authority
RL-0041.R1	ERDF Cell Expansion River Corridor Soil & Groundwater (618-10)	PMB	3,340	90,607	156,847
RL-0041.R2		PMB	2,803	36,872	57,566
<b>Sub Total</b>		<b>PMB</b>	<b>6,143</b>	<b>127,479</b>	<b>214,413</b>
<b>Fee</b>			<b>581</b>	<b>12,774</b>	
<b>Total</b>			<b>6,724</b>	<b>140,253</b>	

\* PMB = Performance Measurement Baseline.



## ERDF

### Super Cells 9 and 10 Construction

WCH completed construction of the dome covers for ERDF's two new leachate storage tanks and set them on the tanks. The tanks and 13-foot-high dome covers were designed by ColumbianTec Tank of Kansas City, Missouri. The dome covers were constructed by Darrell Thompson Tank of Bakersfield, California. They are made of structural steel and aluminum, and weigh about 27,400 pounds. The tanks measure 100 feet in diameter and have a capacity of about 425,000 gallons.



Workers from Lampson International prepare to raise the dome cover for Leachate Storage Tank No. 4 at the Environmental Restoration Disposal Facility. (Photo 1)

## ERDF (Continued)



*The dome covers for the new leachate storage tanks were constructed by Darrell Thompson Tanks & Construction of Bakersfield, California. (Photo 2)*

## ERDF (Continued)



*The 27,400-pound dome cover is placed on Leachate Storage Tank No. 4 at the Environmental Restoration Disposal Facility. (Photo 3)*

WCH continued to introduce waste in super cell 9, which was placed into service in mid-February. WCH and subcontractors TradeWind Services and DelHur Industries completed construction of the super cell with “zero” recordable injuries, 10 weeks ahead of schedule, and approximately \$6 million under budget.

In early February, TradeWind conducted final acceptance testing for super cell 10 with the U.S. Department of Energy, Richland Operations Office (RL) and the U.S. Environmental Protection Agency (EPA). Super cell 10, which was completed 7 months ahead of schedule, is scheduled to be placed into service later this month.



## ERDF (Continued)



*This aerial photo taken in mid-February shows waste being introduced into super cell 9 (lower left) at the Environmental Restoration Disposal Facility. (Photo 4)*

### **Facility and Equipment Upgrades**

WCH continues with construction of ERDF's new maintenance facilities. The project team is preparing to pour the third section of the concrete floor at the equipment maintenance facility/operations center. Construction of the interior walls continues at the container maintenance facility, and foundation work continues at the transportation maintenance facility.

The container maintenance facility will include a large container repair line, a maintenance shop, and a weld area. The equipment maintenance facility will include two service lines, an operational storage facility, a large concrete pad, and an exterior awning over a smaller concrete pad. The new operations center will help alleviate severe overcrowding of personnel and also accommodate new employees hired to handle the increasing waste volumes.

The expanded transportation maintenance facility will include two additional truck bays, a large concrete pad, an exterior awning that will cover two smaller concrete pads, and a conference room. The project began pouring the concrete footers on the east side of the building.

## ERDF (Continued)

Pacific Northwest National Laboratory (PNNL) is producing radio-frequency identification tags for a new waste container tracking system at ERDF. The system will accurately track waste shipments and equipment, and generate real-time reports.

WCH subcontractor DelHur Industries continues electrical work at ERDF's new batch plant. The batch plant will produce "flow fill" concrete used to mix with debris, ensuring no void space during disposal operations. In support of the batch plant, WCH purchased two concrete mixer trucks and a pump truck from Peters and Keatts Equipment Inc. Peters and Keatts is based in Lewiston, Idaho.

Electrical work for ERDF's new septic system has been completed. The system was designed by Columbia Engineers and Constructors, a small business based in Richland, Washington.

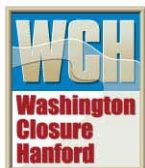
TradeWind continues with construction of the weather enclosures for the crest pads associated with cells 1 and 2. The enclosures were designed by Vista Engineering, a local company.

### Upcoming Activities

- Continue construction of the container maintenance facility.
- Continue construction of the equipment maintenance facility/operations center.
- Continue construction of the transportation maintenance facility.

### Video

[Click here to view video of dome cover being set on Leachate Storage Tank No. 4 at the Environmental Restoration Disposal Facility.](#)



## 618-10 Burial Ground

### Trench Remediation Project

WCH continues to prepare for full-scale remediation of the 618-10 Burial Ground trenches, which is scheduled to begin later this month. The project is conducting training and mockup exercises, and setting up water tanks and the drum-punch area.



*An excavator carefully places a drum inside a salvage container during mock-up exercises at the 618-10 Burial Ground. (Photo 5)*

The 618-10 Burial Ground operated from 1954 to 1963, receiving low- and high-level radioactive waste from 300 Area laboratories and fuel development facilities. Low-activity wastes were primarily disposed in 23 trenches, while the moderate- and high-activity wastes were disposed in 94 VPUs. The VPUs were constructed by welding five bottomless drums together and buried vertically about 10 feet apart.

## 618-10 Burial Ground (Continued)

In early September, WCH completed intrusive characterization field operations at the burial ground. Test pits were dug through a subset of disposal trenches and unearthing a limited number of drums to verify the condition and types of wastes that were disposed.

Several drums containing radioactive waste, a shipping cask, and miscellaneous waste were discovered during the intrusive trench characterization activities. The drums contained depleted uranium and uranium oxide. In addition, "concreted" 55-gallon drums also were discovered.

Based on the records research and the finds during intrusive characterization, the number of drums the burial ground may contain is estimated to be as many as 4,000. That includes an estimated 800 concreted drums that were used to dispose of highly radioactive waste nested inside a pipe surrounded by concrete. The pipe contains the waste and the concrete provides radiation shielding for its contents. Workers also found a cask with unknown contents, bollards, bottles, metal pieces, and other miscellaneous debris.

Nonintrusive characterization field activities were completed in May. The scope of activities carried out as part of nonintrusive characterization included geophysical delineation, in situ characterization using a multi-detector probe, and soil sampling from below a selection of 10 VPUs. During in situ characterization, measurements were collected for 100 cone penetrometers in the trench area and 375 cone penetrometers in the VPU area.

### Upcoming Activities

- Continue with construction site upgrades.
- Continue with training and mockups.



## 618-11 Burial Ground

### Nonintrusive Characterization Project

WCH continues to prepare for nonintrusive characterization field activities at the 618-11 Burial Ground. The purpose of nonintrusive characterization is to characterize the burial ground's contents without opening or exposing them to workers or the surface environment.

Similar to the 618-10 Burial Ground, 618-11 is one of WCH's most hazardous and complex cleanup projects. The site is located in the 300 Area, adjacent to Energy Northwest's commercial nuclear power plant (Columbia Generating Station) and near the Columbia River.

The 618-11 Burial Ground operated from March 1962 to December 1967 and contains three slope-sided trenches, five large caissons, and 50 vertical pipe units (VPUs). It received low- to high-activity waste from 300 Area laboratories and fuel development facilities.

Nonintrusive characterization activities will provide data and information for planning remediation strategies for the VPUs, caissons, and trenches. The scope of work includes geophysical delineation and in situ radiological characterization using a gross gamma activity logging instrument.

The project team is scheduled to start geophysical delineation of the burial ground next week. Geophysical delineation will help locate each of the VPUs and caissons. The delineation will be determined using reconnaissance-level magnetic field survey, detailed level magnetic and time domain electromagnetic induction (TDEMI) survey, and ground-penetrating radar (GPR) survey

Based on geophysical delineation results, the project team will drive two narrow steel cylinders called cone penetrometers around each VPU to an approximate depth of 6 feet below each VPU. The gamma logging probe will be inserted into the cone penetrometers to identify the location of radioactive materials within the VPUs. The project team is scheduled to begin installing cone penetrometers this spring.

The VPUs at the 618-11 Burial Ground are similar to those at 618-10. They typically were constructed by welding five, 55-gallon bottomless drums end to end. The caissons were constructed of corrugated metal pipe (8-feet in diameter, 10-feet long), with the top of the caisson 15 feet below grade and connected to the surface by a 3-foot diameter offset pipe with a dome-type cap. The trenches are 900 feet long by 500 feet wide and 25 feet deep.

Low- to-moderate-activity waste typically was disposed in the trenches, and moderate- to-high activity waste was disposed in the VPUs and caissons. Some high-activity waste was placed inside concreted-sealed drums and disposed in the trenches.



## 618-11 Burial Ground (Continued)



*In this July 1998 photo, the green rectangle is the 618-11 Burial Ground. The burial ground is adjacent to the Columbia Generating Station, a commercial nuclear plant. (Photo 6)*

## 100-F Area

WCH and subcontractor Ojeda Business Ventures are making significant progress with the remediation of 19 waste sites at 100-F Area. Field work began in September and will conclude this spring. Last week, the project team completed another 90-day safety campaign by conducting work without any first-aid or recordable accidents.

WCH continues to receive laboratory data from a test pit campaign at 100-F-57, where stained concrete and soil were found and the presence of hexavalent chromium was confirmed.

The project team completed excavation and loadout at 100-F-61 (stained soil) and 100-F-8 (underground injection control well), and continued excavation and loadout at 100-F-49 (old maintenance garage lube pit foundation, pipelines, and drywells). Work also is under way at 100-F-56 (surface debris, stains) and 100-F-58 (asbestos-containing surface debris).

Last month, WCH Hanford subcontractor Mission Support Alliance deactivated power lines to allow the project team to remove the final sections of pipe at 100-F-26:7. Before removing the pipelines, the project team safely and efficiently secured approximately 200 gallons of sodium dichromate from pipelines, preventing potential leaking and groundwater contamination. The liquid has been sampled and waste profiles are being developed.



## 100-F Area (Continued)



*An aerial view from the southeast shows 100-F Area, where Recovery Act dollars are funding the remediation of 19 waste sites. (Photo 7)*



## 100-F Area (Continued)



*An aerial view from the east side of F Reactor shows material from the test pit campaign at 100-F-57 that was placed on white plastic. (Photo 8)*

F Reactor operated from 1945 to 1965 as one of Hanford's nine surplus plutonium production reactors for the nation's nuclear weapons program. The reactor was cocooned in 2003. During reactor construction and operations, waste was disposed in unlined pits and trenches throughout the site.

The 100-F Area also was the home of the experimental animal farm (EAF), which from 1945 to 1976 operated adjacent to the reactor site. The EAF used animals for studying the potential effects of ionizing radiation exposure to humans in the occupational setting. Reactor and EAF sites in the 100-F Area contributed to the discharge of contaminated cooling water, other liquids, and solid wastes.

## 100-F Area (Continued)

WCH completed cleanup of 53 waste sites at F Area in 2008, loading out more than 408,000 tons of waste. However, during the course of cleanup, 19 additional waste sites were discovered. The sites are:

- 100-F-26:4 (process sewer pipeline section)
- 100-F-26:7 (sodium dichromate and sodium silicate pipelines)
- 100-F-44:8 (fuel oil pipelines)
- 100-F-44:9 (process sewer pipeline)
- 100-F-45 (buried riverbank effluent pipeline)
- 100-F-47 (electrical substation foundation)
- 100-F-48 (coal-pit debris)
- 100-F-49 (maintenance garage lube pit foundation, pipelines, drywells)
- 100-F-51 (fish laboratory footprint, pipelines)
- 100-F-55 (contaminated ash layer)
- 100-F-56 (scattered surface debris, stains)
- 100-F-57 (buried pipeline cradle debris)
- 100-F-58 (asbestos-containing surface debris)
- 100-F-60 (pipeline)
- 100-F-61 (stained soil site)
- 100-F-8 (French drains)
- 100-F-62 (animal farm septic lines)
- 100-F-63 (animal farm radioactive effluent lines)
- 600-351 (stained oil areas).

### Upcoming Activities

- Continue receiving lab data from test pit campaign at 100-F-57.
- Begin soil removal at 100-F-45.
- Complete excavation and loadout at 100-F49.



## Profile

Tam Brown was not planning to stay long when she began work as an administrative assistant last October at 100-F Area.



*Tam Brown joined Washington Closure Hanford's Field Remediation team at 100-F Area, where ARRA funding is supporting the cleanup of 19 waste sites. (Photo 9)*

## Profile (Continued)

Her job was to relieve another administrative assistant who was splitting time between 100-F and 100-K Areas, and it was only supposed to last two weeks. However, when work accelerated at both sites, Brown was asked to stay for two more weeks.

It's nearly five months later, and Brown, who works through Express Employment in Kennewick, Washington, is still supporting the 100-F Remediation Project. Washington Closure Hanford and subcontractor Ojeda Business Ventures are cleaning up 19 waste sites near F Reactor, one of Hanford's three original plutonium production reactors built as part of the Manhattan Project. The work is funded by the American Recovery and Reinvestment Act (ARRA) and is a key part of the U.S. Department of Energy's 2015 Vision for completing cleanup of the River Corridor.

Brown is originally from Vietnam but moved to nearby Kennewick, Washington, when she was 7-years-old. Like many others hired with ARRA funding at Hanford, she didn't know a whole lot about the Hanford mission.

"I have some relatives who work at Hanford, so I knew some of the basics," she said. "But when I got to 100-F, most of it was new to me."

It didn't take Brown long to get up to speed, though. She said the key was when project manager Jon Fancher invited her to attend the plan-of-the-day meetings.

"That's when everything really started to sink in," she said. "I got to know the people, the procedures, and the project. And everybody out here has been great. If I've got a question or a problem, there is always someone willing to help."

Fancher is impressed with how quickly Brown has adapted to the project. "Tam has everything you're looking for in an employee," he said. "She works hard, she's got a pleasant personality, and she'll do whatever she can to help the team."

The 100-F Remediation Project is scheduled to be completed later this spring. Brown said she hopes that it will be a springboard to another position at Hanford.

"Everything has worked out really well for me here," she said. "I'm very grateful for the opportunity."



## IU 2 & 6 Segment 1

WCH completed revegetation of the five IU 2&6 waste sites on November 30. Segment 1 encompasses about 23 square miles of the northwestern portion of the Hanford Site, away from the nine surplus plutonium production reactor areas. The waste sites were unique because they were primarily used for housing and support areas.

The remediation sites were:

- 600-341 (four areas that contained dry cell battery remnants and/or battery debris)
- 600-343 (residual ash from burned material and dumped asphalt in excavation trench)
- 600-344 (stained area)
- 600-345 (stained area with oil filters)
- 600-346 (four small fly-ash dump areas with metal debris).

Earlier this year a global positioning environmental radiological survey indicated that an additional site, 600-342, did not require additional remediation.



## Confirmatory Sampling

WCH completed sampling of ARRA confirmatory sites. Sampling was performed at 41 sites in accordance with the regulator approved work instructions that were completed earlier this year. Based on the sampling results, documentation is being prepared to recommend whether the sites require remediation. This documentation is then submitted to the DOE and the regulatory agencies for review and approval. The recommendations have been approved for more than 75% of the sites, and the remaining documents are under development or in the review and approval process.



## General

### Media, Visits, Press Releases

No significant media events this week.

### Contracting Actions

- 618-11 Burial Ground Non-Intrusive Characterization subcontract awarded to Northwind, Inc.

