

# **Department of Energy Richland Operations Office**



## ***Hanford Site Update***

***Pasco-Kennewick Rotary Club***

**Dave Brockman, Manager**

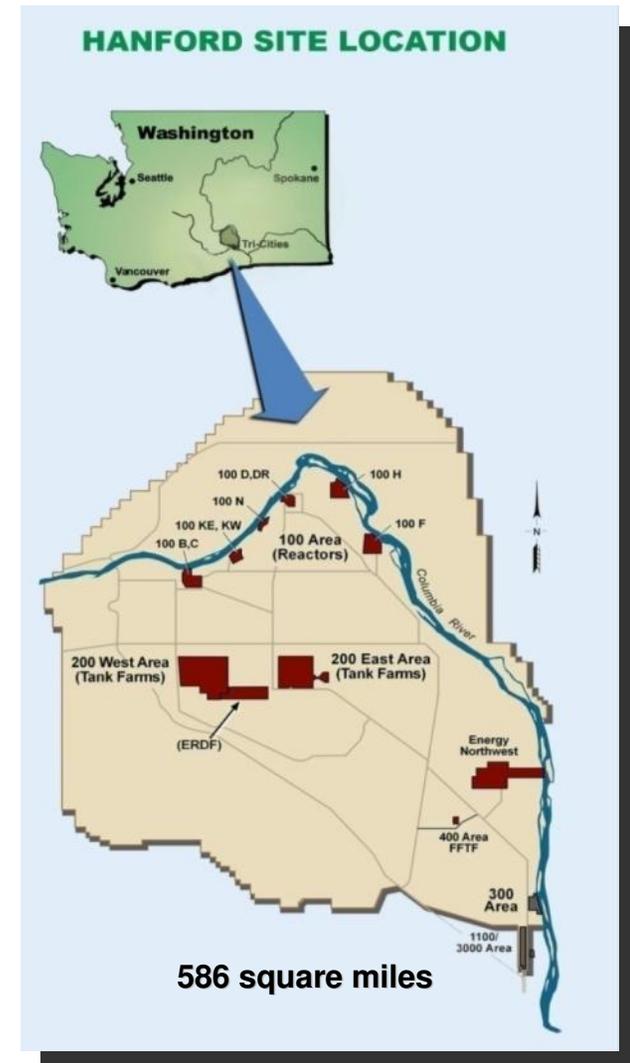
**Richland Operations Office, U.S. Department of Energy**

**October 14, 2009**

# The Hanford Site

October 2009

- 586 square miles  
(half the size of Rhode Island)
- 50 miles of the Columbia River runs through Hanford
- Constructed in WWII as part of the Manhattan Project
- Former mission: Produce plutonium
- Produced approx. two-thirds of nation's supply of plutonium, 1944-1989
- Peak employment was 50,000 during construction
- Current employment: 11,500



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# 20 Years of Cleanup Progress

October 2009

- We have made progress in reducing environmental risk and have eliminated some of the most urgent risks
  - 2,300 tons of corroding spent nuclear fuel dried, moved to safe storage in the Central Plateau
  - 20 tons of unstable plutonium in various forms stabilized, packaged and shipped off site
  - Treating 50 million gallons of contaminated groundwater each month
  - 49,000 out of 70,000 drums worth of solid, radioactive waste (transuranic) retrieved
  - Demolished 196 out of 625 facilities along the Columbia River, 5 of 8 reactors placed in interim safe storage
  - Cleaned up 451 of approx. 800 waste sites along the Columbia River
  - Disposed of 8.6 million tons of waste in Environmental Restoration Disposal Facility



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# the 2015 Vision

## Hanford Site Cleanup

### Safe and Effective Cleanup that Protects the Columbia River

#### Richland Operations Office

- Reduces the Active Site Footprint of Cleanup to 75 Square Miles (586 → 75)
- Significantly Reduces Long-Term Mortgage Costs
- At Completion, Shifts Emphasis and Resources to Full Scale Cleanup of the Central Plateau (75 square miles)
- Reduces Costs by "Right Sizing" Hanford's Infrastructure via a Mission Support Contract
- Minimizes Injury to Natural Resources

#### B & C Area

- ✓ Interim Safe Storage of C Reactor Complete
- ✓ B Reactor Designated as a Museum or Interim Safe Storage Complete
- ✓ All B & C Area Final ROD Remedial Actions Complete
- ✓ All B & C Area Groundwater Remedies Implemented
- ✓ 6 Facilities Demolished
- ✓ 40 Waste Sites Remediated
- ✓ ~381,000 Tons of Soil Removed

#### N Area

- ✓ Interim Safe Storage of N Reactor Complete
- ✓ All N Area Final ROD Remedial Actions Complete and TSD Units Closed
- ✓ All N Area Groundwater Remedies Implemented
- ✓ 108 Facilities Demolished
- ✓ 61 Waste Sites Remediated
- ✓ ~157,000 Tons of Soil Removed

#### D & H Area

- ✓ Interim Safe Storage of D, DR, and H Reactors Complete
- ✓ All D & H Area Final ROD Remedial Actions Complete
- ✓ All D & H Area Groundwater Remedies Implemented
- ✓ 16 Facilities Demolished
- ✓ 56 Waste Sites Remediated
- ✓ ~1,700,000 Tons of Soil Removed

#### IU2 & IU6 Areas

- ✓ Interim Safe Storage of F Reactor Complete
- ✓ All IU2 & IU6 Area Final ROD Remedial Actions Complete
- ✓ All IU2 & IU6 Area Final ROD Groundwater Remedial Actions Complete
- ✓ 1 Facility Demolished
- ✓ 50 Waste Sites Remediated
- ✓ ~962,000 tons of Soil Removed

#### K Area

- ✓ K East Basin Demolished
- ✓ Interim Safe Storage of K East Reactor Complete
- ✓ K West Sludge Removed from the River Corridor
- ✓ Interim Safe Storage of K West Reactor Initiated
- ✓ All K Area Final ROD Remedial Actions Complete and TSD Units Closed with the exception of those associated with K West
- ✓ All K Area Groundwater Remedies Implemented
- ✓ 2,300 Tons of Scrap Nuclear Fuel Removed
- ✓ 109 Facilities Demolished
- ✓ 2 Waste Sites Remediated
- ✓ ~361,000 Tons of Soil Removed

#### Central Plateau Cleanup

- ✓ All 200 West Carbon Tetrachloride, Uranium and Technetium 99 Groundwater Remedies Implemented
- ✓ Conduct Additional Cleanup as Funds Become Available



#### Plutonium Finishing Plant Complex

- ✓ All Special Nuclear Material Shipped Off-site
- ✓ Slightly Irradiated Fuel Shipped to the Canister Storage Building for Safe Guarding
- ✓ PFP Complex Reduced to Slab on Grade
- ✓ 18 Facilities Demolished

#### 400 Area

- ✓ Fast Flux Test Facility in Surveillance and Maintenance

#### 300 Area

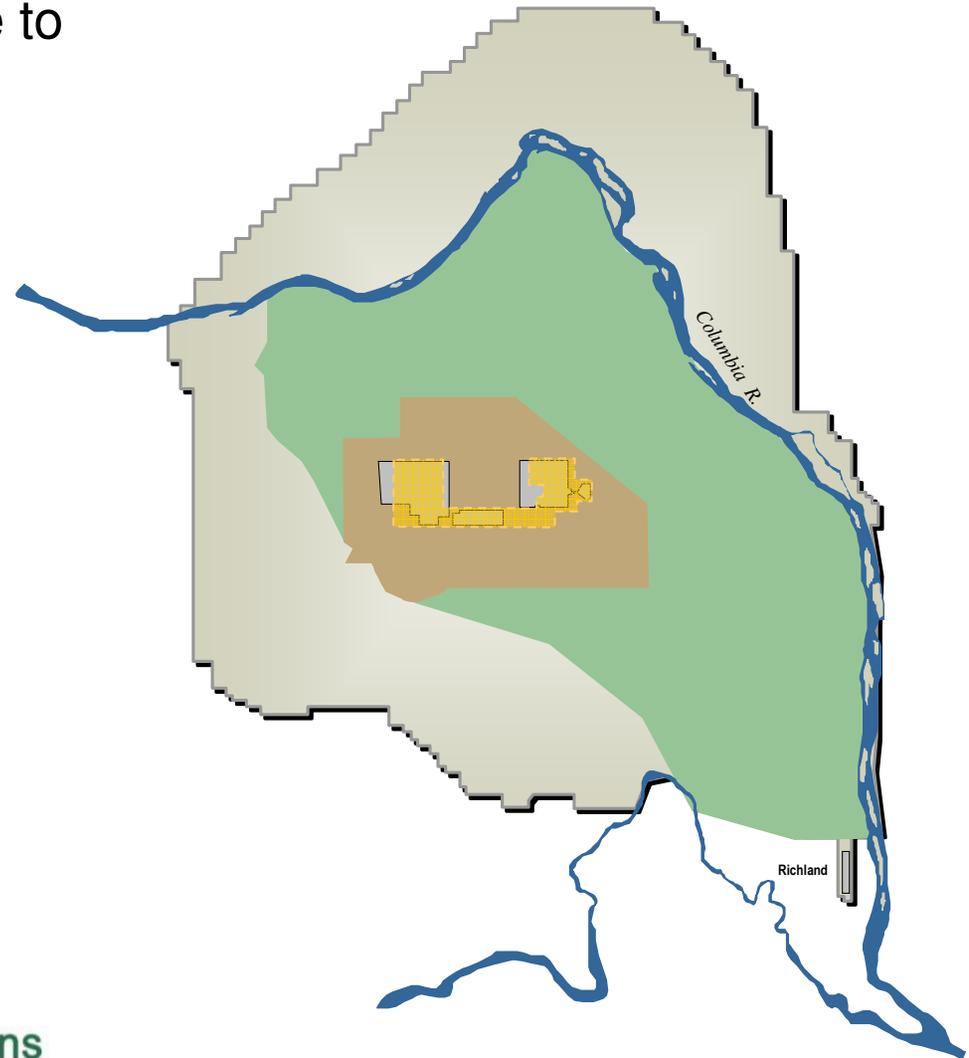
- ✓ All 300 Area Final ROD Remedial Actions Complete and TSD Units Closed
- ✓ All 300 Area Groundwater Remedies Implemented
- ✓ 186 Facilities Demolished
- ✓ 95 Waste Sites Remediated
- ✓ ~923,000 Tons of Soil Removed
- ✓ Final Remediation of 618-10 & 618-11 Burial Grounds Complete

# Strategy for Cleanup – Shrinking the Cleanup Footprint

October 2009

- Go from 586-square-mile site to 10 square miles
- Work in four areas

-  River Corridor (~210 sq. miles)
-  Central Plateau, Outer Zone (~65 sq. miles)
-  Central Plateau, Inner Zone (~10 sq. miles)
-  Hanford Reach National Monument (~300 sq. miles, including Arid Lands Ecology Reserve)



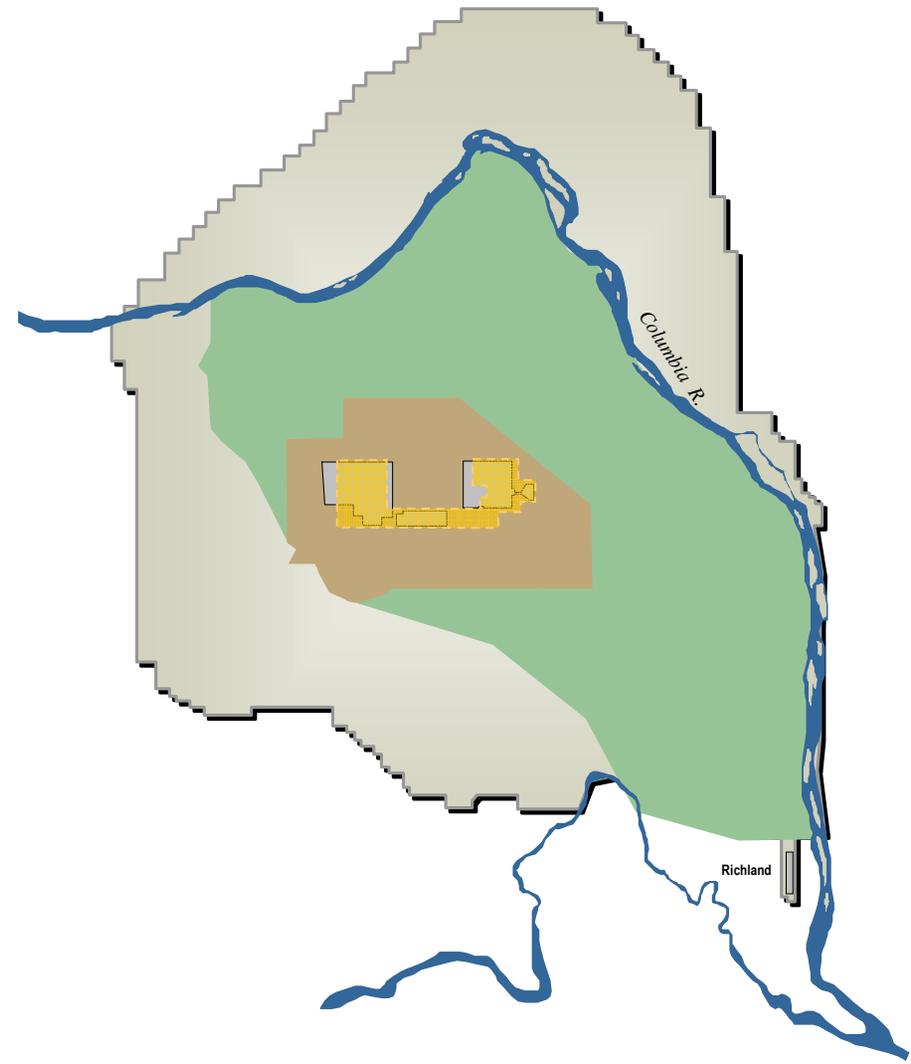
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# Strategy for Cleanup – Priorities

October 2009

- Protect the Columbia River
- Contain/treat contaminated groundwater
- Demolish facilities, clean up waste sites in River Corridor
- Clean out and demolish the high-hazard Plutonium Finishing Plant
- Remediate waste sites in Central Plateau Outer Area
- Retrieve solid radioactive waste (transuranic waste)



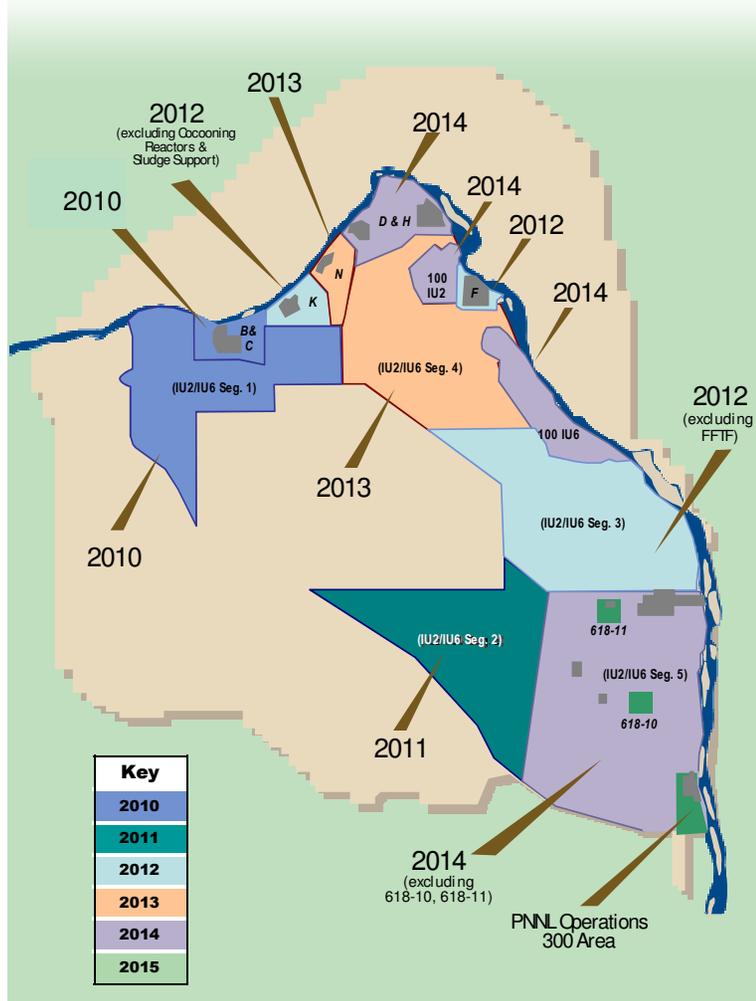
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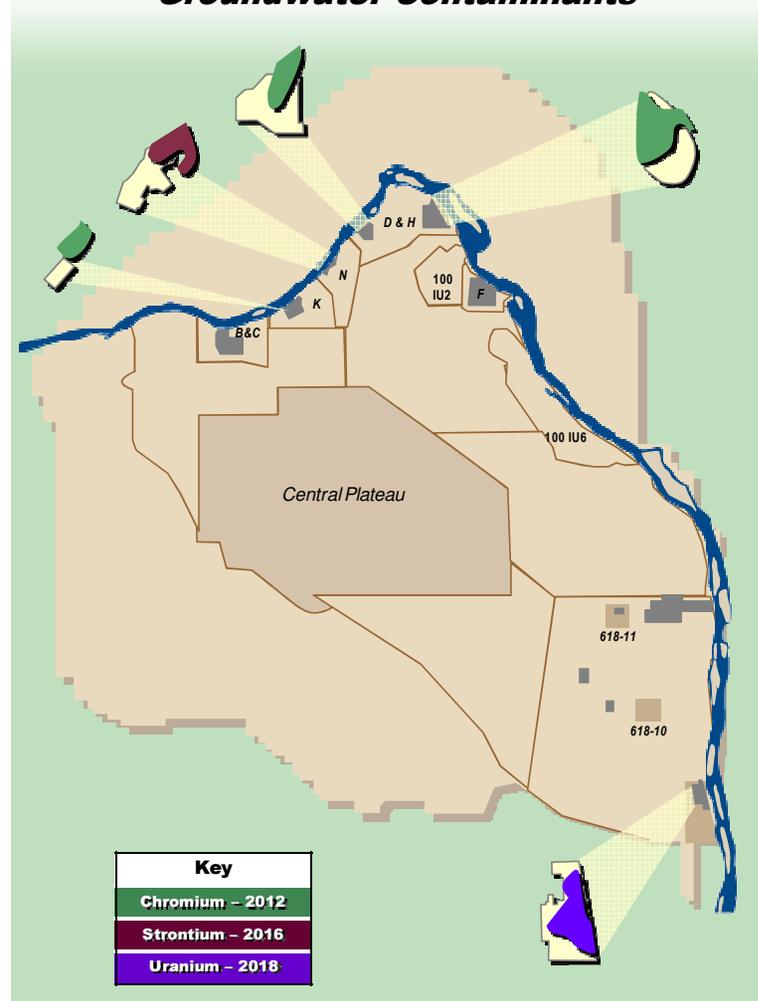
# River Corridor Cleanup

October 2009

### Waste Site and D&D Completion



### Containment of Key Groundwater Contaminants



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# Prime Contractors

October 2009

- Washington Closure Hanford: River Corridor Contractor
  - Remediating waste sites, demolishing facilities, operating the Environmental Restoration Disposal Facility
- CH2M HILL Plateau Remediation Company: Plateau Remediation Contractor
  - Remediating waste sites, cleaning out and demolishing facilities in 100-K Area and on Central Plateau
  - Retrieving and managing waste
  - Groundwater monitoring and remediation for the Site
- Mission Support Alliance: Integration Contractor
  - Information technology, fire and security, training



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# Economic Recovery Funding

October 2009

- DOE developed proposals for stimulus funding to be spent beginning this year with four priorities in mind
  - Creating/saving jobs
  - Shrinking the footprint of active site cleanup
  - Saving on lifecycle costs
  - Maintaining compliance with Tri-Party Agreement
- Consistent with priorities of regulatory agencies, tribes, and stakeholders
- Work scope covered by existing prime contracts, and most work could commence immediately
- Hanford Site will save or create up to 4,000 jobs



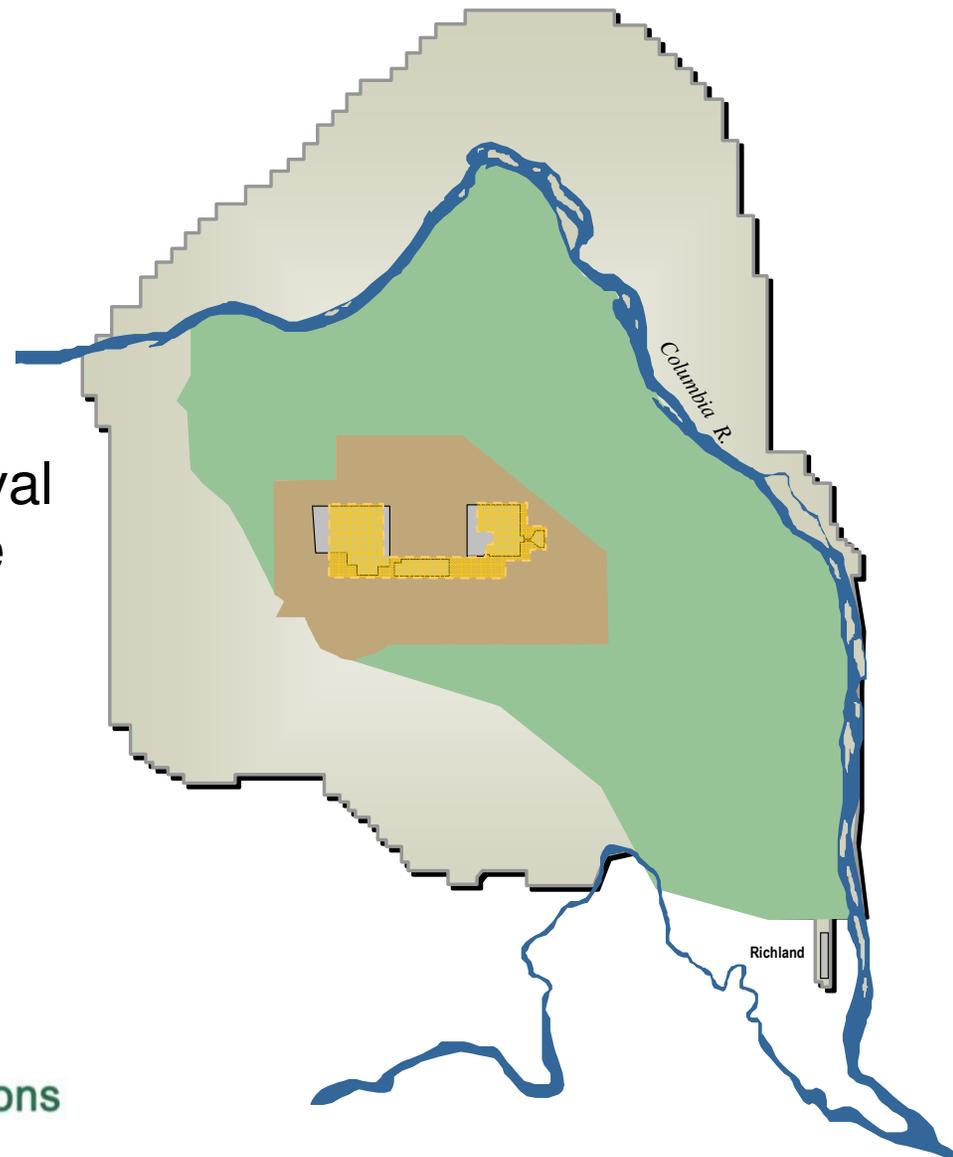
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# Goals of Recovery Act Funding

October 2009

- Accelerate cleanup along the Columbia River
- Accelerate demolition of the Plutonium Finishing Plant
- Allow for continued retrieval of solid, radioactive waste
- Accelerate footprint reduction
- Accelerate lifecycle cost reduction



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# Recovery Act Update

October 2009

DOE Richland Operation Office apportionment totals \$1.635 billion

- DOE authorized work to begin in April
- \$160 million spent through the end of September
- \$200 million in subcontracts awarded by DOE-Richland prime contractors for Recovery Act (ARRA) work
- Includes approx. \$153 million in subcontracts to small businesses
- Approximately 4,400 people are working on Hanford ARRA projects funded through DOE-Richland (headcount of people at least partially funded through DOE-RL contracts including those needed to fill material and service orders through the end of August)
- Work on several major projects underway
- Projects are on or ahead of schedule, with some activities already completed



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# Recovery Act Highlights

October 2009

- Finished retrieving last 300 of 1,300 deteriorating drums and containers from concrete vaults in 200 West Area



*Suspect transuranic waste was stored in the TV-7 concrete vaults*



*Working at night to avoid daytime heat*



*Drums were over packed during retrieval operations because of deterioration of original containers*



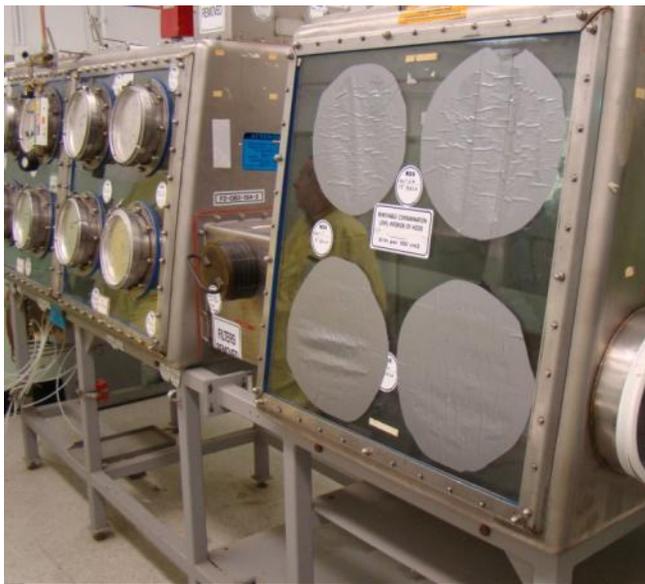
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# Recovery Act Highlights

October 2009

- D&D work at Plutonium Finishing Plant, 14 glove boxes or laboratory hoods removed from main building (234-5Z)



*Glove boxes in main 234-5Z building prior to removal*



*Workers use chemicals to decontaminate glove boxes*



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# Recovery Act Highlights

October 2009

- Demolished superstructures of 2 of 3 spent fuel facilities in 200 North Area, demolishing fuel basins



*Workers demolished the 212-R facility (left) and then began demolishing the 212-R basin (right)*



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# Recovery Act Highlights

October 2009

- D&D of ancillary facilities near K Reactors, removing equipment/debris from K West Reactor Basin



*Removing chlorine vault slab near K West Reactor (background)*



*K West Basin debris removal: cutting up long-handled tools*



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# Recovery Act Highlights

October 2009

- Installing wells for new 200 West Area groundwater treatment system



*CH2M HILL subcontractor Blue Star drilling a well (background) to support groundwater treatment*



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# Recovery Act Highlights

October 2009

- Expanding disposal facility for cleanup debris, Environmental Restoration Disposal Facility



*Washington Closure Hanford subcontractor DelHur Industries excavating 1.5 million cubic yards of soil to build a 9<sup>th</sup> disposal (super) cell at ERDF*



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# Recovery Act Highlights

October 2009

- Characterizing one of Hanford's most challenging waste sites in the River Corridor (618-10 Burial Ground)



*Aerial view of 618-10 Burial Ground*



*Taking measurements with a magnetometer*



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# Recovery Act Highlights

October 2009

- Demolished 15 large chemical tanks near U Canyon



*Before*



*During*



*After*



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# Hanford Funding Profile FY 2009 –2010

October 2009

	FY2009 (\$M)	FY2010 (\$M)
Appropriation	2,067.4	TBD
President's Budget Request	1,916.2	2,091.5

American Recovery and Reinvestment Act (FY09-FY11)	1,960.5
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*Note: Funding amounts include both Office of River Protection and Richland Operations Office*



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# Recovery Act Funding

October 2009

- Hanford Site information: [www.hanford.gov/recovery](http://www.hanford.gov/recovery)
- DOE-RL contractor websites (incl. information on hiring, subcontracting)
  - [www.plateauremediation.com](http://www.plateauremediation.com)
  - [www.washingtonclosure.com](http://www.washingtonclosure.com)
- U.S. Department of Energy website: [www.energy.gov/recovery](http://www.energy.gov/recovery)
- DOE Environmental Management Division website: [www.em.doe.gov/emrecovery/EMRecovery.aspx](http://www.em.doe.gov/emrecovery/EMRecovery.aspx)



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