

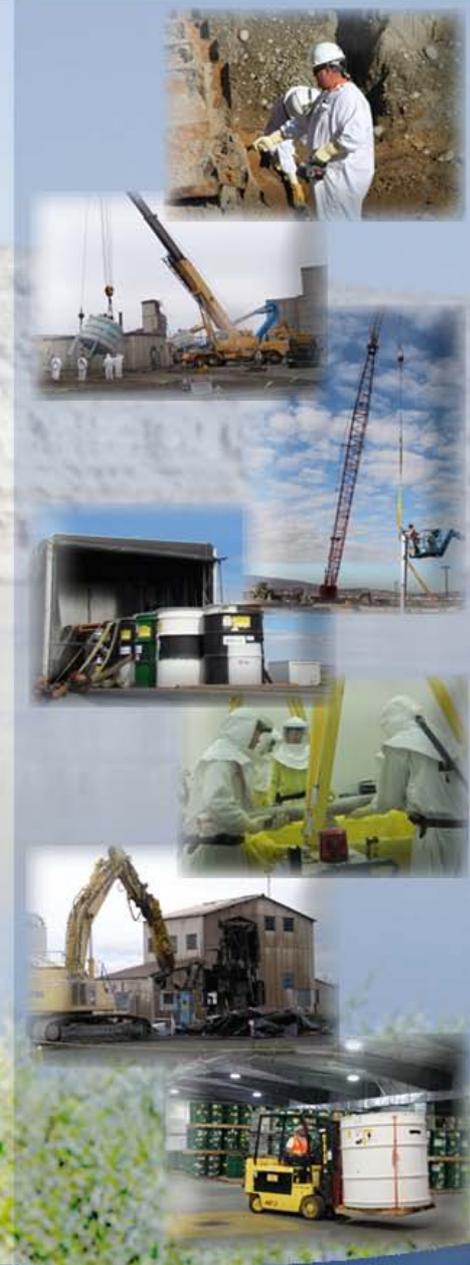
Department of Energy Richland Operations Office Agency Update

**Hanford Advisory Board
November 4, 2010**

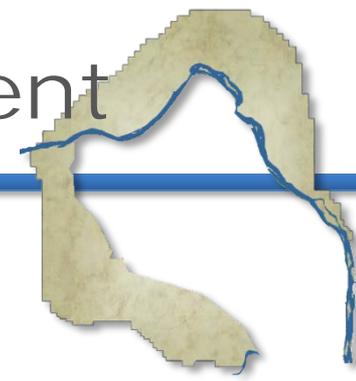
Nick Ceto

Record of Decision Program Manager

DOE Richland Operations Office



Hanford Reach National Monument



- Footprint of 290 square miles
 - 24 excess facilities
 - Hundreds of debris sites
- Progress to date
 - 107 square miles completed (18 percent cleanup footprint reduction)
 - 21 facilities demolished on Lower and Upper Arid Lands Ecology Reserve (more than 30,000 square feet)
 - 312 debris sites cleaned up
 - Timeline and footprint reduction
 - Completion date: September 30, 2011
 - 49 percent reduction of Hanford Site cleanup footprint (290 sq. mi.)



Cleanup on Rattlesnake Mountain



6652-C Nike Building/Space Science Laboratory during demolition

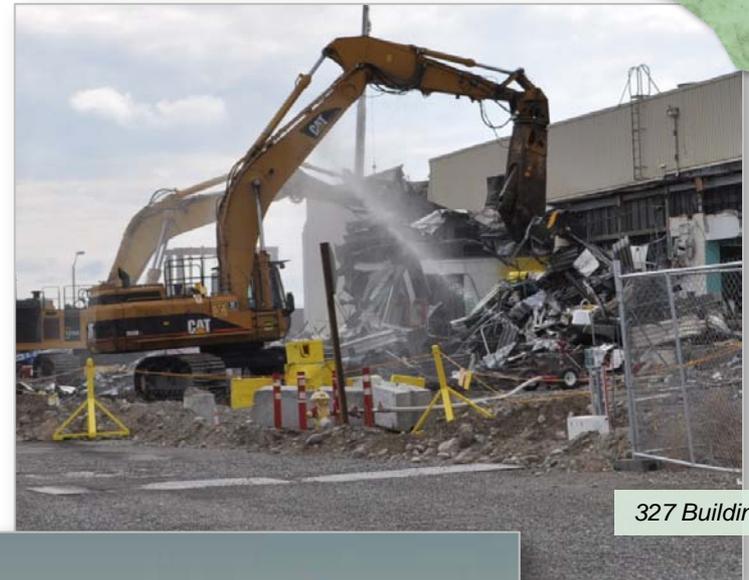


Removing abandoned truck from steep ravine on Arid Lands Ecology Reserve

River Corridor



- Footprint of 220 square miles
 - 522 excess structures
 - ~800 waste sites
 - Plumes of chromium, strontium-90 and uranium groundwater contamination
- Progress to date
 - 214 structures demolished
 - 482 waste sites remediated
 - 10 million tons of waste removed
 - DX facility (chromium removal along river) – installing final equipment, plan to start operating in December
 - HX facility (chromium removal along river) – started construction in July, exterior complete

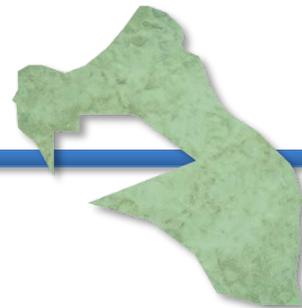


327 Building

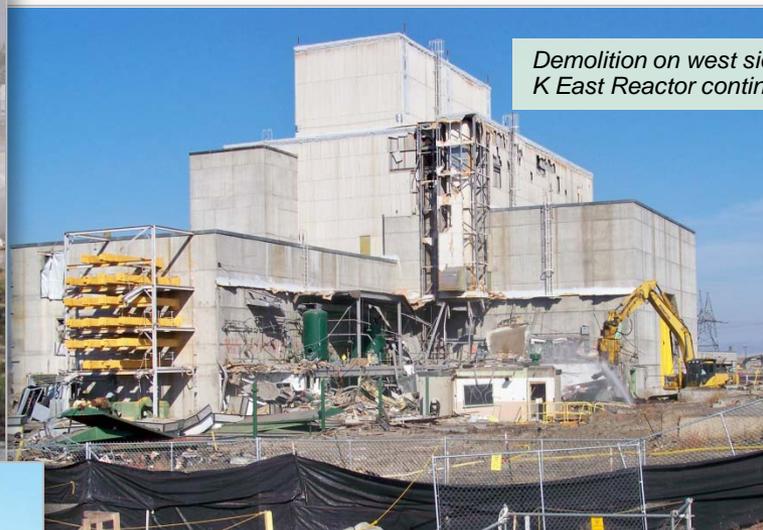


116KE Reactor Exhaust Stack

River Corridor – Progress Update



*Demolition of 337, 337B,
reactor stack using explosives*



*Demolition on west side of
K East Reactor continues*

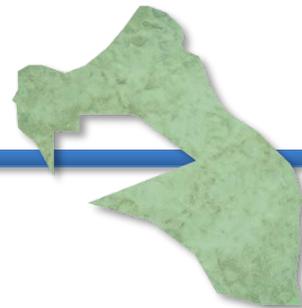


*Demolition of K West Reactor
water basin completed*



*Interim Safe Storage,
roof installation, N Reactor*

River Corridor – Progress Update

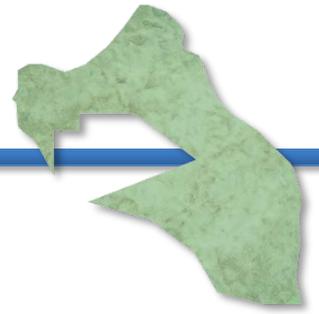


New Super Cells under construction at the Environmental Restoration Disposal Facility

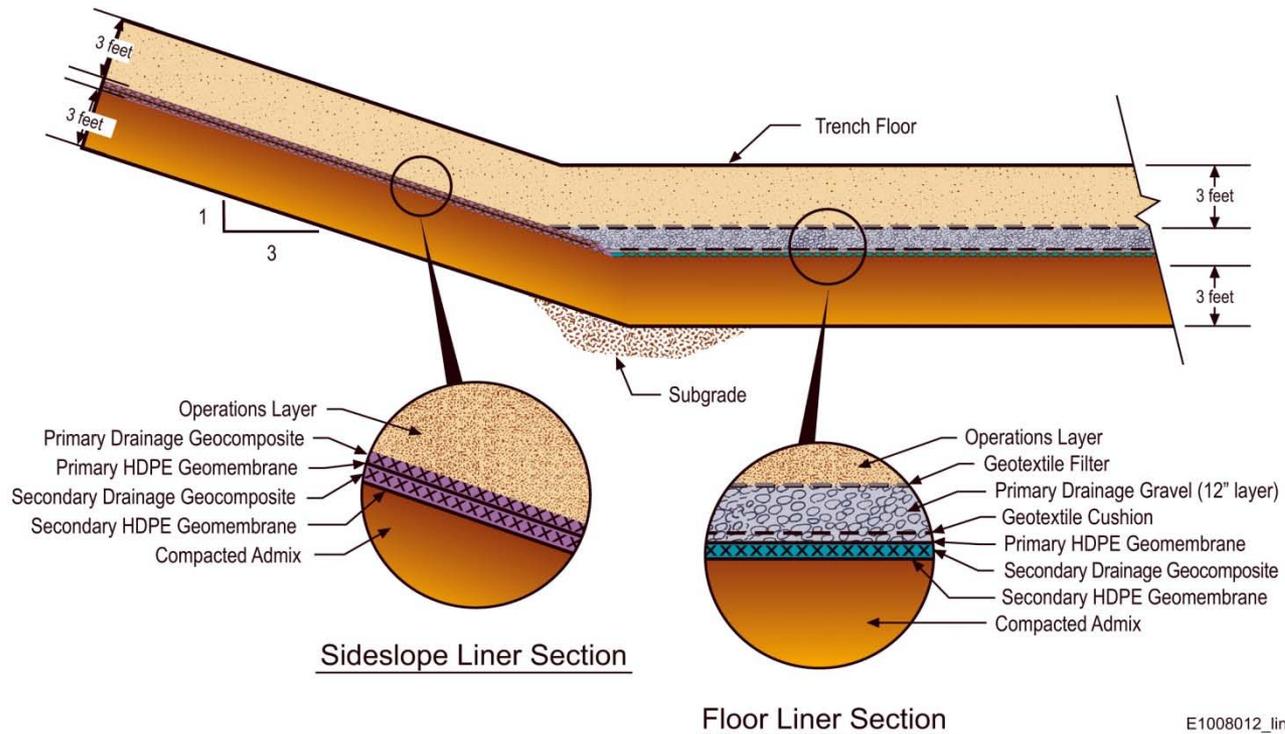


Installation of leachate collection system piping

River Corridor – Progress Update

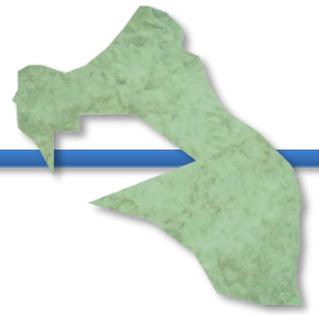


Environmental Restoration Disposal Facility Liner

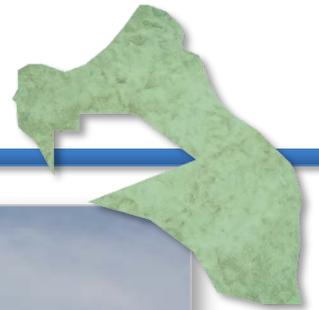


E1008012_liner

River Corridor – Progress Update



River Corridor – Project Focus



Demolition of reactor support structures on Columbia River in 100N and 100K Areas

- 4 water structures in 100-N Area
- 3 water structures at 100-K Area
- Hope to start work this winter following consultation with Federal and State agencies
- Work would take place during low-river period (Dec. 15 – March 15) to limit disturbance
- Access points and demolition schedule will be established in accordance with ecological and archaeological/cultural reviews

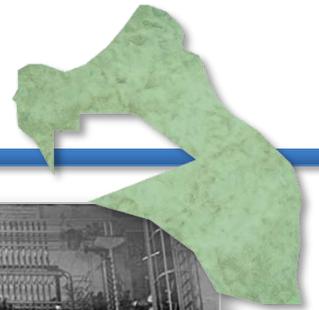


Prep work on 181-N river structure



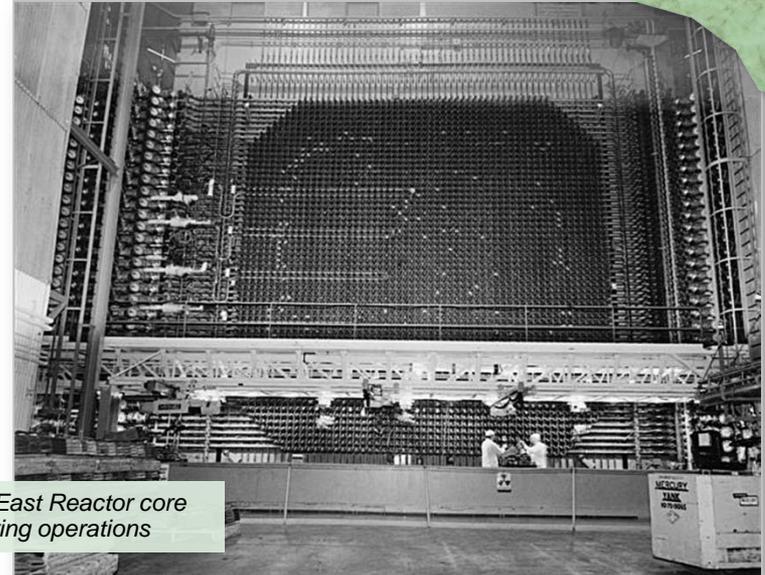
Water intake in 100K Area

River Corridor – Project Focus



105K East Reactor Decommissioning Engineering Evaluation/Cost-Assessment (EE/CA)

- *In 1993, DOE decided to “cocoon” the production reactors*
- *Since then, new approaches to core sampling and advanced robotics have been developed*
- *In July, DOE amended NEPA Record of Decision to allow accelerated dismantlement*
- *Preferred alternative in EE/CA issued Oct. 18 is accelerated dismantlement*
- *30-day public comment period runs through Nov. 17*
- *Action Memorandum will be issued following resolution of public comments and further evaluation of technical project and budget information*



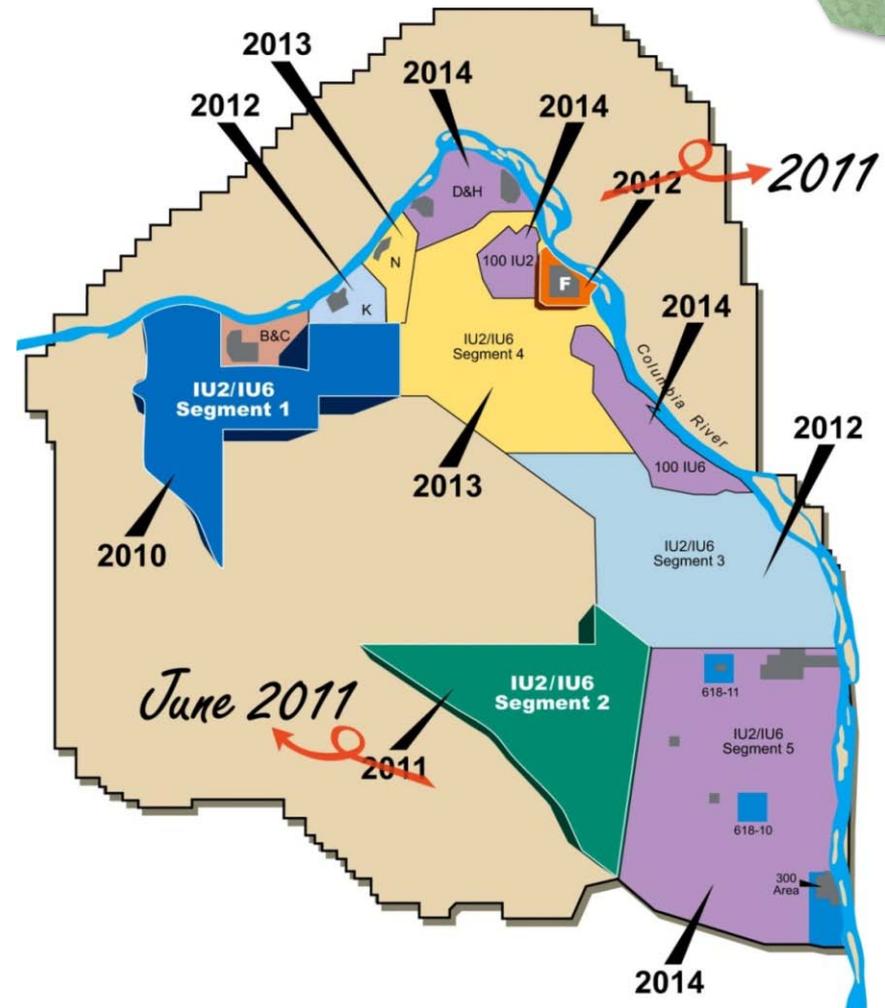
K East Reactor core during operations



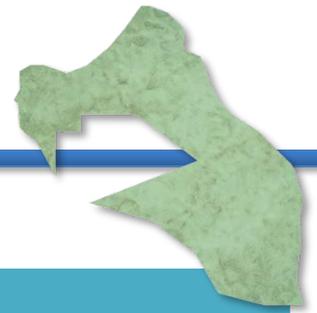
Artist's rendering – robotic removal of core

River Corridor

- Timeline and footprint reduction
 - *Planned footprint reduction of large areas through 2015*
 - *Final completion date of September 30, 2015*
 - *38 percent reduction of Hanford Site cleanup footprint (220 sq. mi.)*
 - *Groundwater treatment systems continue to operate*
- By 2015 (or earlier), the River Corridor will be the largest single EM project completion to date

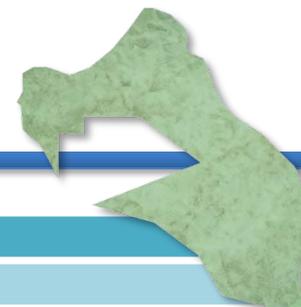


River Corridor Completion



DOE Closure Project Comparison				
Projects	Structures Demolished	Waste Sites Remediated	Total Cost (billions)	Waste Removed (tons)
Hanford – River Corridor	522 total <i>214 completed to date</i>	798 total <i>482 completed to date</i>	\$5.3 est. <i>\$3.1 to date</i>	<i>10M completed to date</i>
Fernald	223	5 operable units (multiple sites per unit)	\$4.4	6.2M
Mound	64	79	\$1.0	7.7M
Rocky Flats	800	371	\$6.4	.5M m ³ rad waste .8M m ³ debris

River Corridor Completion (*cont.*)



Closure Project Comparison (cont.)	
Projects	Specific Challenges
Hanford – River Corridor	<ul style="list-style-type: none"> • Entombment of 8 nuclear production reactors • 17 Hazard Category 2/3 nuclear facilities • Numerous waste sites evaluated as Hazard Category 2/3 nuclear facilities • 2,300 tons of spent nuclear fuel treated and stored • 3,100 tons of uranium retrieved and shipped • 2,958 tons of enriched uranium retrieved & shipped • 11 silos and 144 vertical pipe units containing nuclear material • 7 groundwater pump & treat facilities with capacity to treat 1.6 billion gallons per year for up to 10 years
Fernald	<ul style="list-style-type: none"> • 20 billion gallons of groundwater treated • 3 silos containing nuclear material • 1 million tons of waste pit sludge • 15,500 tons of nuclear metal
Mound	<ul style="list-style-type: none"> • Transfer 9 facilities to local community for re-use, including a Hazard Category 2 nuclear facility • 286,000 cubic meters of low-level/mixed low-level contaminated soil and debris
Rocky Flats	<ul style="list-style-type: none"> • Numerous “Special Items” • 21 tons of special nuclear materials • 14 metric tons of plutonium • 7 metric tons of enriched uranium • 7 grossly contaminated plutonium facilities, 41 beryllium-contaminated facilities, and 1,457 plutonium-contaminated glove boxes.

River Corridor Completion



- Project is ahead of schedule and under budget
- 10-year project is at the half-way mark and 60 percent complete
- Maintains an excellent safety record

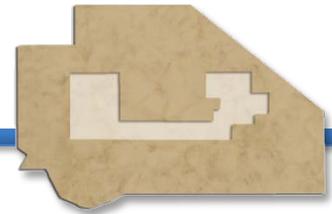


Installation of liner materials at ERDF



Demolition of N Reactor (105-N) Building

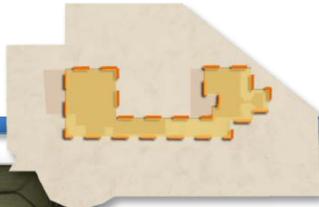
Central Plateau Outer Area



- Footprint of 65 square miles
 - 3 excess facilities
 - 16 (13) rail cars (EE/CA)
 - ~100 waste sites
- Progress to date
 - 3 facilities demolished
 - 22 waste sites undergoing remediation
 - 21 waste sites remediated
- Timeline and footprint reduction
 - Completion date: by September 30, 2020 (or earlier)
 - 11 percent reduction of Hanford Site cleanup footprint (65 sq. mi.)



Central Plateau Inner Area



Progress to date

- Stabilized 20 tons of plutonium-bearing material, shipped plutonium off-site
- All spent nuclear fuel consolidated in safe, dry, secure storage
- 106 of 238 large pieces of equipment (glove boxes) removed from Plutonium Finishing Plant
- U Canyon ancillary facilities demolished, equipment removed from canyon deck
- 271 structures demolished
- 10,760 cubic meters suspect-transuranic waste retrieved
- 200 West Area groundwater treatment system under construction
- Development of treatment technologies for contamination deep in soil underway (deep vadose zone)

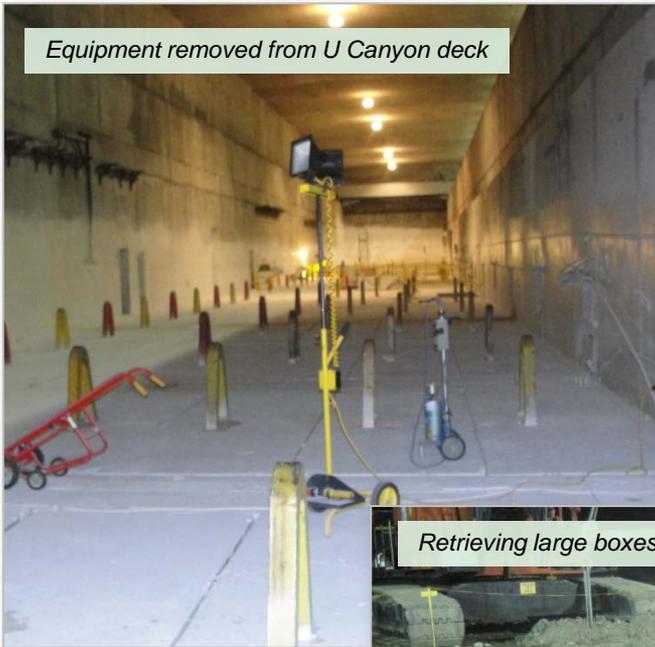


Removing glove box from Plutonium Finishing Plant



Demolishing 224-U Building next to U Canyon

Inner Area – Progress Update



Equipment removed from U Canyon deck



Removing contaminated process piping at the Plutonium Finishing Plant



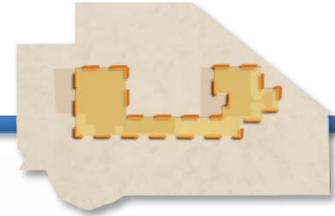
Retrieving large boxes from burial grounds

Groundwater Progress Update

- Six pump-and-treat systems operational
 - Treated a record 630 million gallons in FY10 (approx. 53 million gallons/month)
 - Drilled a record 270 wells in FY10
 - Monitoring, extraction, injection
- Update on construction of new 200 West pump & treat system
 - System will remove a variety of chemical and radiological contaminants on the Central Plateau; concrete placement, structural steel going up



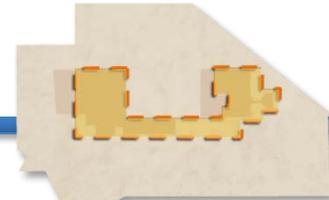
Central Plateau – TPA Changes



Two Tri-Party Agreement Milestones Change Packages Approved for Retrieval, Storage, and Shipment of Mixed Low-Level Waste and Transuranic Mixed Waste (milestone series M-091) and for Central Plateau Cleanup work (M-15)

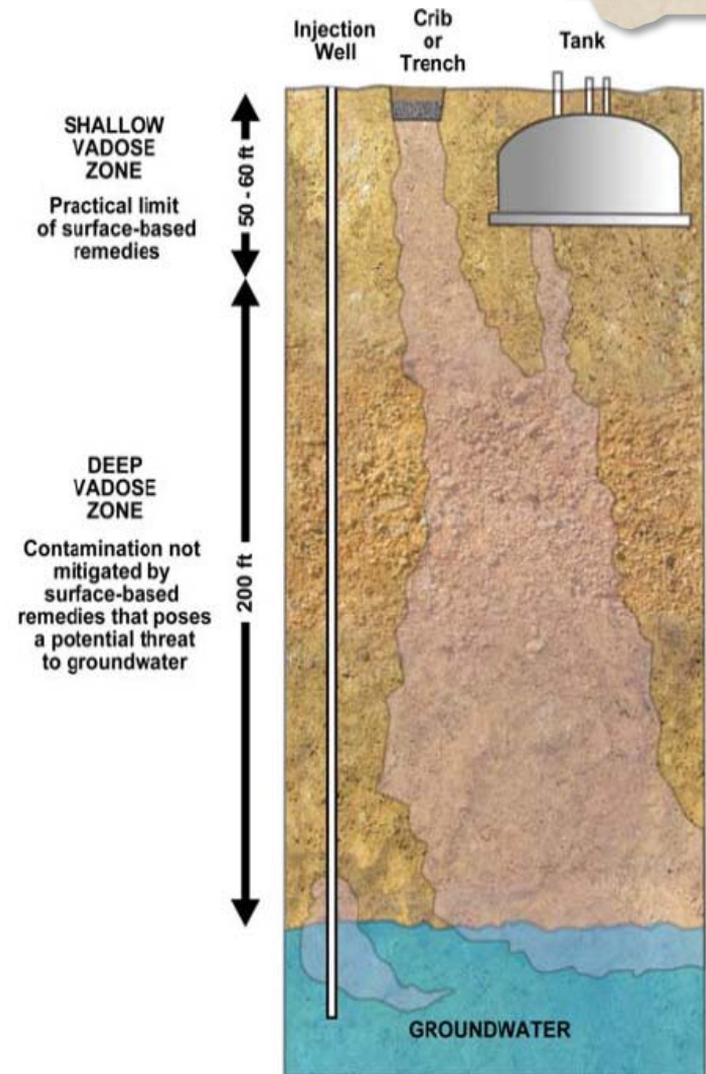
- *The M-091 changes realigned existing milestones and established new milestones for processing and shipping waste off site, including enforceable milestones for off-site shipment of TRUM waste*
- *The M-15 changes reflect a comprehensive, geographic approach for Central Plateau cleanup with milestones aligned to integrate cleanup of Central Plateau soils, facilities and groundwater*
- *New milestones were added to address cleanup of contamination deep in the soil (deep vadose zone)*
- *Comment Response documents available at <http://www.hanford.gov/?page=86>*

Central Plateau – Project Focus



Deep Vadose Zone Project

- Soil from ~50 ft. below ground surface to groundwater (about ~250 feet below surface)
- DOE will address deep vadose zone (DVZ) contamination through an integrated project team and an Applied Field Research Center
- Project will leverage DOE investments in science, applied research and site remediation to find solutions for characterization, remediation and monitoring the DVZ
- Interim actions (surface barriers) and technology field tests underway



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Recovery Act Update



HANFORD ARRA FUNDS

(as of Sept. 30, 2010)

	<i>Allocated</i>	<i>Spent to Date</i>
DOE Richland Operations Office	\$1,634,500,000	\$727,572,561
DOE Office of River Protection	\$326,035,000	\$141,150,097
Hanford Total	\$1,960,535,000	\$868,722,658

Recovery Act Update



- Overall, DOE-RL Recovery Act Projects are 12 percent under budget (costing less than projected)
- 11 of 13 projects are on schedule
- 2 projects behind schedule but expected to finish on schedule
 - 618-10 Burial Ground Remediation
 - Soil & Groundwater Remediation
- All work originally planned will be completed before the end of fiscal year 2011, as scheduled
- Work efficiencies (getting work done faster and/or at a lower cost than projected) are allowing DOE to fund \$150 million of additional projects through the end of fiscal year 2012

Challenges Ahead



- Future budgets
- Stopping Chromium contamination from reaching the Columbia River by 2012
- Deep vadose zone
- Broadening public outreach