



## *Hanford Advisory Board River and Plateau Committee*

# Environmental Restoration Disposal Facility (ERDF)



**Bryan Foley**  
*Richland Operations Office*

*February 9, 2016*



# ERDF Vertical Expansion Project

- Vertical Expansion allows for continued disposal of Hanford waste without a change in tempo of disposal operations.
  - Current ERDF cells (10) have a combined capacity of 18 million tons and contain 17.5 million tons of waste.
  - Without expansion, ERDF will be filled to capacity in 2017.
  - Excavating and constructing a new disposal cell takes approx. two years and costs approx. \$30 million.
  - Vertical expansion will provide additional waste disposal capacity equivalent to one super cell (approx. 3.6 million tons).
  - Vertical expansion will cover existing cells and future cells.



# ERDF Vertical Expansion

- The engineering design for vertical expansion meets regulatory requirements.
- The existing ERDF liner, leachate collection, and instrumentation systems (lysimeters) will support vertical expansion.
- Expanding the landfill vertically will avoid an estimated \$30 million in costs to construct another disposal cell.



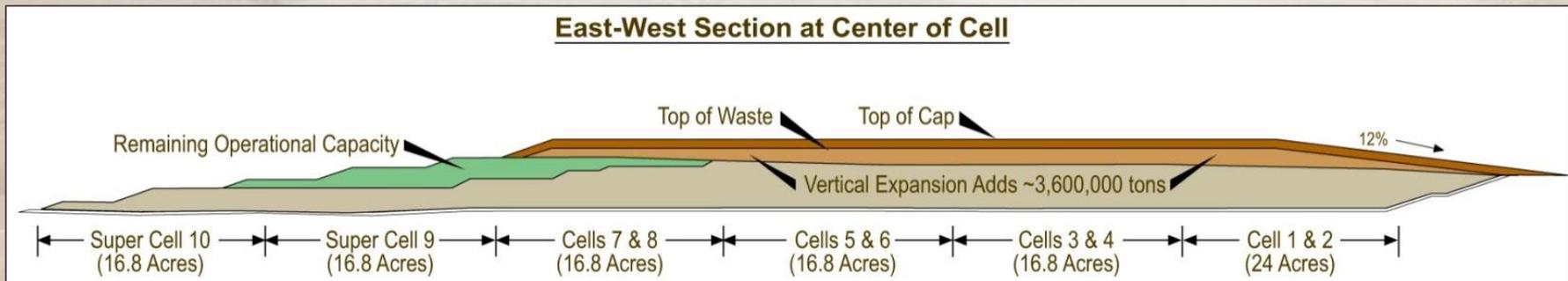
*Conceptual view showing the vertical expansion of the Environmental Restoration Disposal Facility (ERDF)*



# ERDF Vertical Expansion (cont'd)

- ERDF cells 1-4 have been filled and are protected with an interim cover.
- Cells 5 and 6 are full. Cells 7-10 are nearly filled to capacity.
- The cover over cells 1-4 will be removed or penetrated to ensure leachate generated from waste in the vertical expansion infiltrates into the underlying waste and leachate collection system.

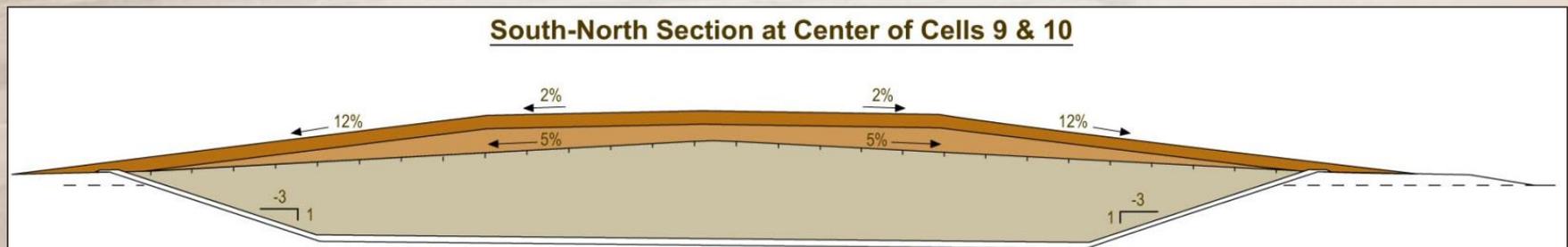
**East-West Section at Center of Cell**





# ERDF Vertical Expansion (cont'd)

- Vertical expansion will result in a 20-foot elevation increase.
- The uppermost surface of the waste fill will be shaped to form a crown and will be covered with a 2-percent grade and 12-percent side slopes.
- Surface water runoff (liquid that has not contacted waste) will continue to be controlled to minimize contact with waste.
- Fixatives, vegetative cover, aggregate surfacing, berms, and surface grading will continue to be used to minimize erosion.





# In-Trench Treatment – Safe and Simplified Operations

- In-trench treatment uses one method (grout) for all waste forms.
- Waste is never moved after treatment, assuring the integrity of macro-encapsulation.
  - Contaminant migration potential is eliminated upon completion of grouting
  - Curing process is complete in seven days
- Waste handling is at absolute minimum – one time



*Out-of-trench treatment for a long-length item*



*Applying polyurea coating at ERDF for macro-encapsulation*



# In-Trench Treatment – Safe and Simplified Operations (cont'd)

- Benefits of in-trench treatment
  - Disposal cell area is compliant and protects environment
  - More room to work: Not confined to small operations areas
  - Workers further from waste
  - Lower treatment cost
- Summary
  - Waiver approved in December
  - Controls and procedures are being finalized
  - In-trench treatment will begin soon



*Macro-encapsulating a grout pad at ERDF*



# ERDF Leachate

- ERDF leachate is currently transferred by pipeline to the Effluent Treatment Facility in the 200 East Area for treatment (ERDF is in the 200 West Area).
- The 200 West Area Pump and Treat Facility was added as an option for the treatment of ERDF Leachate.



*Two new leachate storage tanks were constructed at ERDF in 2011*



# ERDF Leachate (cont'd)

- EPA and DOE issued an Explanation of Significant Differences in October authorizing treatment of ERDF leachate at 200 West Pump and Treat Facility
- ERDF leachate pump station will be upgraded with new pumps and controls to transfer leachate
- CH2M HILL Plateau Remediation Company will construct upgrades to allow for first transfer as early as May



*Aerial of Environmental Restoration Disposal Facility in October*