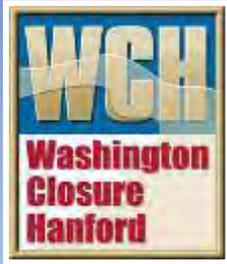


*DOE's Largest Environmental Cleanup Closure Project*



*River Corridor  
Closure Project*



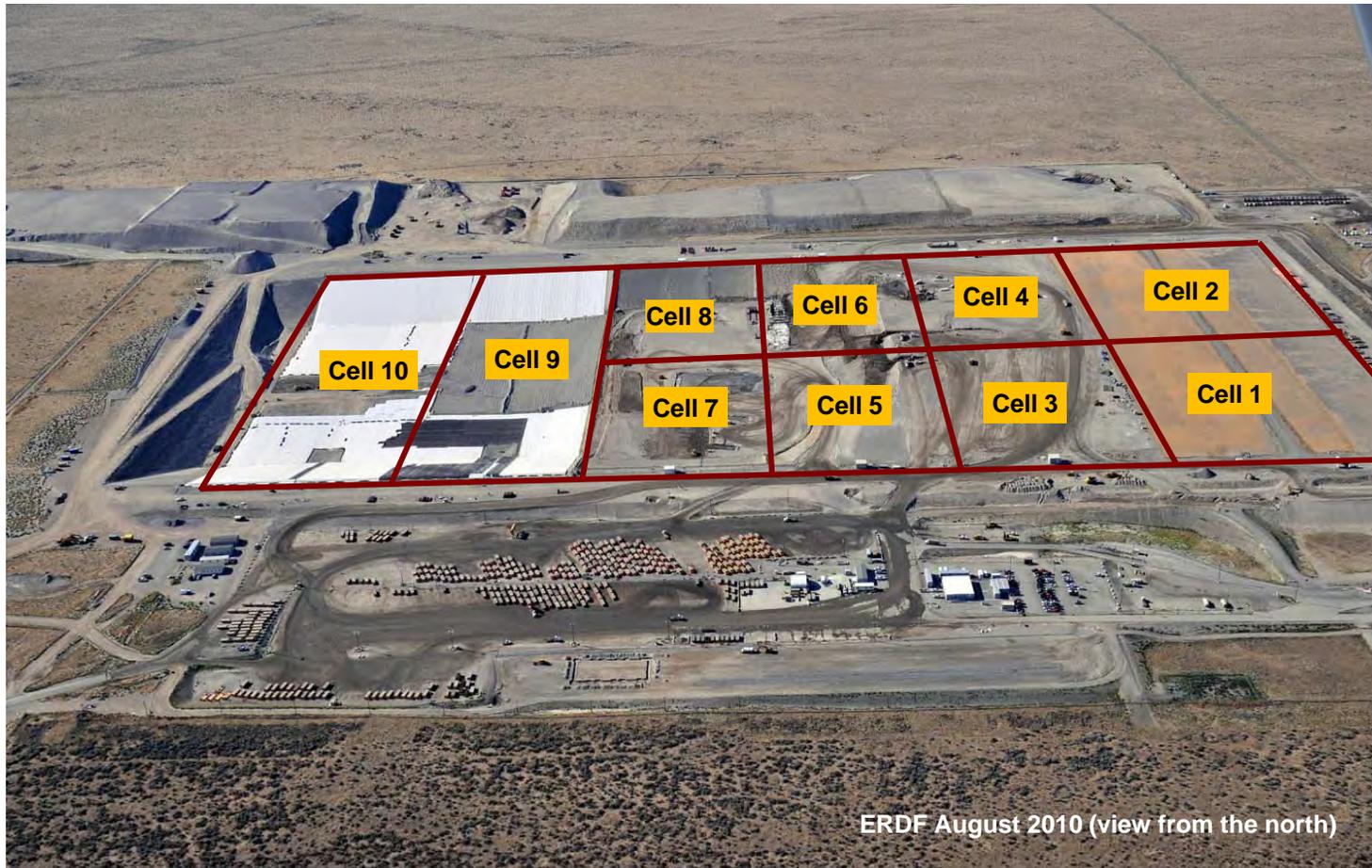
U.S. Department of Energy  
Richland Operations Office

# The ERDF Performance Assessment (PA) Progress Briefing

Hanford Advisory Board  
*River and Plateau Committee Meeting*

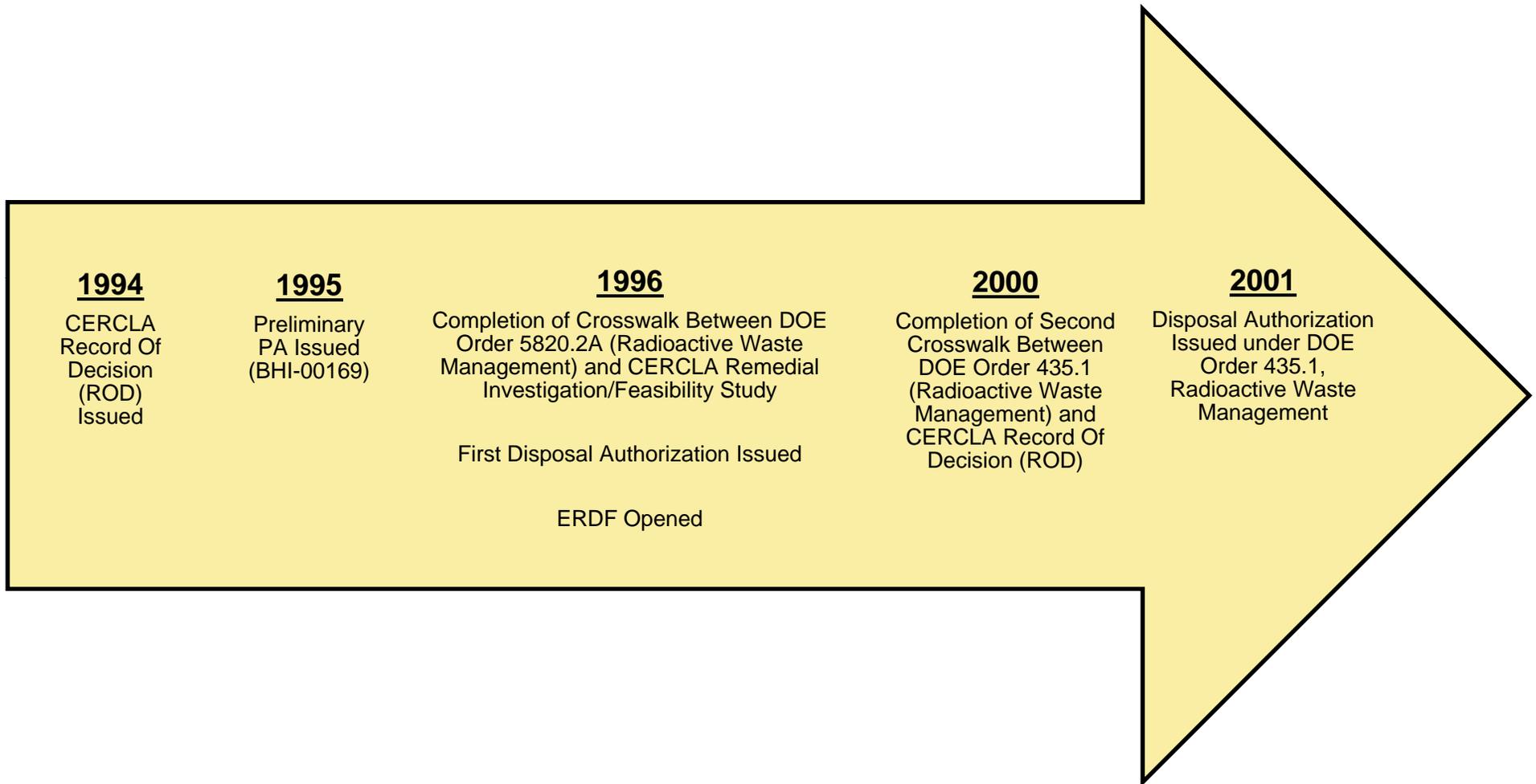
May 8, 2012

# ERDF - Layout



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# ERDF PA – History



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## ERDF PA – Purpose of Update

- The ERDF ROD Amendment authorizing super cells 9 & 10 (August 2009, Section VIII) requires the preparation of a PA prior to expansion of ERDF beyond cells 9 & 10
- New information (e.g., geology, hydrology, cap performance, waste characteristics) is available to update the facility performance to optimize the capability of ERDF
- Reaffirm that ERDF continues to meet long-term performance objectives provided in DOE Order 435.1, Radioactive Waste Management into the future
- Utilize DOE Order 435.1 annual maintenance requirements to address potential future waste streams
- The Hanford Advisory Board has recommended completion of a PA analysis to support ongoing ERDF disposal activities (HAB advice # 219)

## ERDF PA - Modeling Approach

- Types of analyses include contaminant migration pathways (groundwater and atmospheric) and exposure scenarios (dose)
  - Groundwater pathway (estimating groundwater contamination at near-field locations over time)
  - Atmospheric releases pathway
  - Exposure scenarios
- The modeling approach incorporates methodology adapted from the Draft Tank Closure and Waste Management Environmental Impact Statement (TC&WM EIS)

# Engineered System Conceptualization

- 4 Time periods
- Spatially variable recharge rates
- Temporally variable recharge rates
  - Uncertainty distributions

Phase	Conceptual Half Cross Section of the ERDF Area
Pre-operations	<p>Natural <b>Before 1996</b></p>
Operations	<p>Natural Disturbed Under construction <b>1996 - 2035</b></p>
Early Post Closure	<p>Natural Side slope Intact barrier and liner <b>2035 - 2135</b></p>
	<p>Natural Side slope Intact barrier and degraded liner <b>2135 - 2535</b></p>
Late Post Closure	<p>Natural Side slope Degraded barrier and degraded liner <b>After 2535</b></p>

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## ERDF PA - Preliminary Results

- Groundwater Pathway Modeling
  - No contaminant breakthrough at the 100 meter downgradient point of compliance in groundwater occurs within the 1,000 year compliance time period
  - Contaminants with distribution coefficient ( $K_d$ ) greater than 1 ml/g do not breakthrough in groundwater at the 100 meter downgradient point of compliance within the 10,000 year sensitivity and uncertainty evaluation time period
- Atmospheric Releases Pathway
  - Negligibly small airborne Radon flux (reduces with time)

*Predecisional Information for Internal Working Discussions Only. Do Not Release, Copy, or Disseminate.*

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## ERDF PA - Schedule

- Prepare Draft ERDF PA document
- DOE Low-Level Waste Disposal Facility Federal Review Group (LFRG) review
  - Dec. 2012 – May 2013
- Finalize ERDF PA document Sep. 2013



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