

Groundwater Vadose Zone Executive Council

Hanford Advisory Board
River and Plateau Committee

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Discussion Topics

- Purpose of the Executive Council – Why was this established?
- Who participates?
- What are the integration topics of interest to the Council?
- Examples of groundwater and vadose zone integration
 - Deep Vadose Zone treatability testing leading to evaluation of measures to protect groundwater
 - B complex subsurface investigations and interim action to remove uranium-contaminated perched water

GW/VZ Executive Council Purpose

**INTERFACE AGREEMENT FOR COORDINATION
OF GROUNDWATER AND VADOSE ZONE
CLEANUP PROGRAMS**

MEMORANDUM OF AGREEMENT

Revision 2

Between
Office of River Protection (ORP)
And
Richland Operations Office (RL)

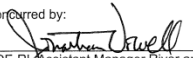

FOR

**GROUNDWATER AND VADOSE ZONE WORK SCOPE
INTEGRATION**

Approved by:

 8/17/12  8/21/12
DOE-RL Manager, Date DOE-ORP Manager, Date
Matthew S. McCormick Scott L. Samuelson

Concurred by:

 8.13.12
DOE-RL Assistant Manager River and Plateau Date
 7/27/12
DOE-ORP Assistant Manager Tank Farms Date

- Formed in 2006 to ensure implementation of commitments made to Congress to integrate Hanford's groundwater, vadose zone and risk assessment/modeling activities
- Charter and functions defined in a Memorandum of Agreement between DOE-RL and ORP. (August 2012 most recent update)
- Commitments to Congress
 - Consolidate modeling and risk assessment work for the Hanford Site
 - Consolidate groundwater and vadose zone activities under the Groundwater Remediation Project
 - Integrate groundwater, vadose zone, and source area cleanup decisions

Executive Council Participation

Membership:

- Chair, DOE-RL Assistant Manager for River and Plateau (JD Dowell)
- DOE-ORP Assistant Manager for Tank Farms (Tom Fletcher)
- DOE-RL Federal Project Director for Soil and Groundwater (Briant Charboneau)

Other Participants

- DOE-RL division directors (Central Plateau, River Corridor), Federal Project Directors (River Corridor Closure, K Basin Closure, Tank Farm Retrieval and Closure), others as appropriate
- Executive Council initiates supporting working groups, or “Multi-Project Teams,” as needed to focus on specific topics of interest. E.g., Deep Vadose Zone, Integrated Disposal Facility Performance Assessment, etc.

Executive Council meets approximately every other month

Integration Topics

- River Corridor and Central Plateau
- Central Plateau and Tank Farms
- Risk Integration

Integration Topics

- River Corridor and Central Plateau
 - Complete Remedial Investigations, Feasibility Studies and Proposed Plans for River Corridor Operable Units
 - Resolve cross-cutting policy issues (e.g., graded approach for soil remediation protective of groundwater)
 - Incorporate insights from Office of Science 300 Area studies into remediation approach
 - Ensure development and implementation of an approach to optimize 100 Area pump-and-treat systems
 - Track progress toward achievement of groundwater cleanup goals.

Integration Topics (continued)

- Central Plateau and Tank Farms
 - Update Hanford Site Cleanup Completion Framework and incorporate prior Central Plateau Cleanup Strategy
 - Maintain progress on solving deep vadose zone challenges in characterization, remediation, prediction, and monitoring
 - Integrate Waste Management Area C closure and corrective action with the Central Plateau Strategy
 - Continue implementation of the groundwater portion of the Central Plateau Strategy
 - Coordinate budget impacts analysis and prioritization between Central Plateau and Tank Farms.

Integration Topics (Continued)

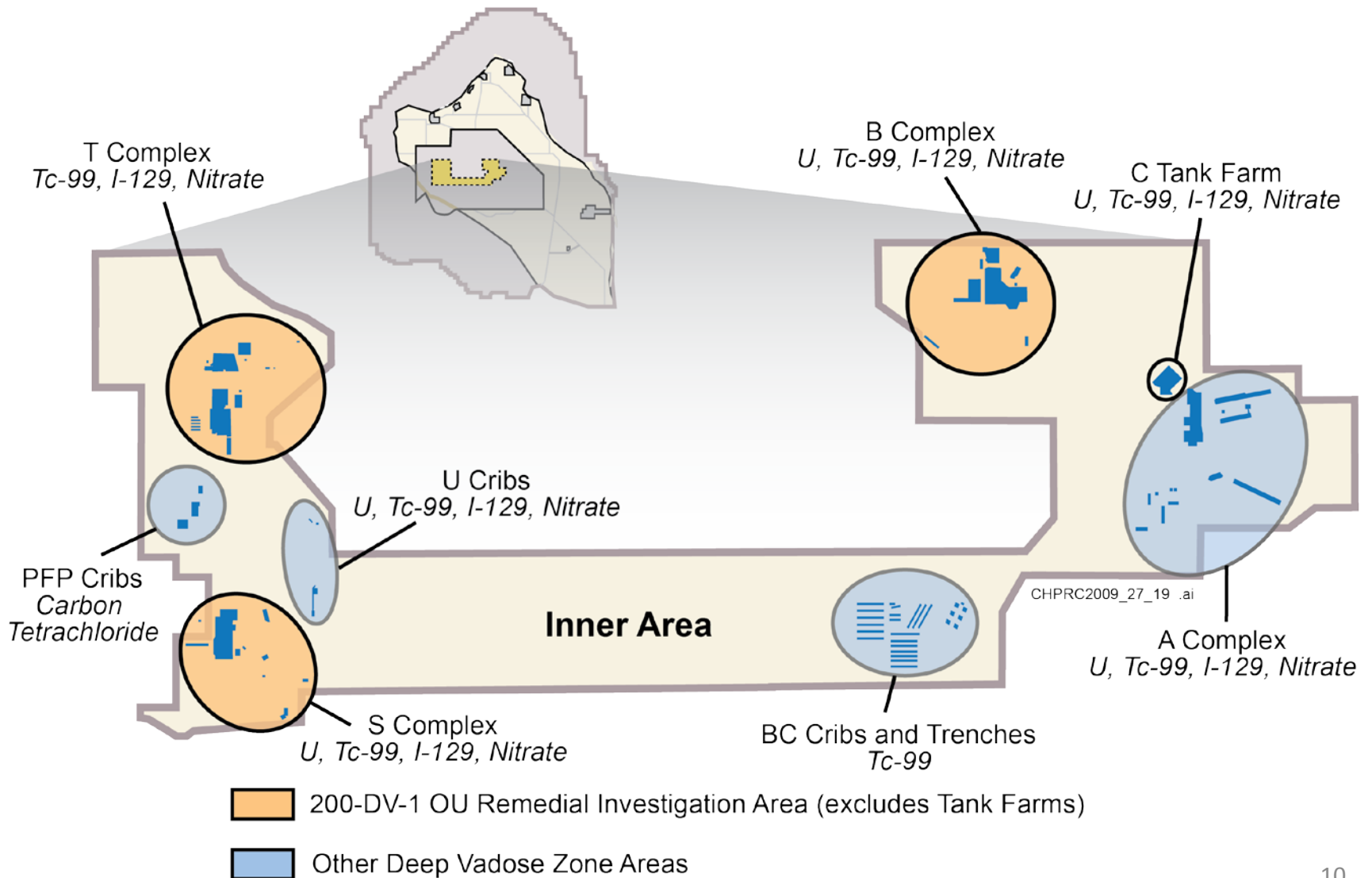
- Risk Integration
 - Establish and maintain configuration control over Hanford site performance assessment
 - Environmental Restoration Disposal Facility
 - Integrated Disposal Facility
 - Waste Management Area C
 - Maintain integrated schedule for performance assessment activities including DOE-HQ and NRC interfaces
 - Ensure successful transfer of TC&WM EIS subsurface modeling tools and supporting information to support future use by Hanford projects.

Example of GW/VZ Integration

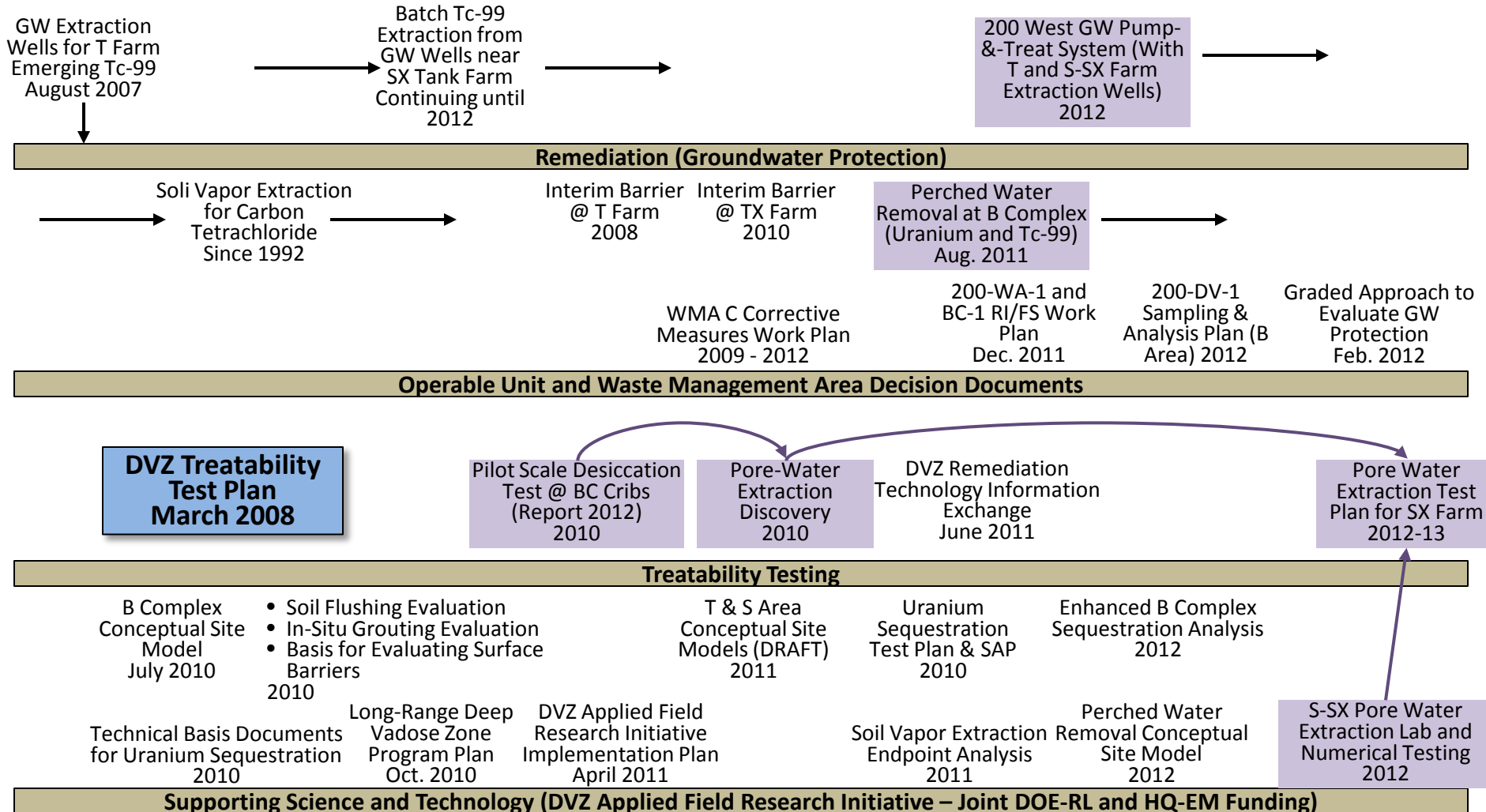
Deep Vadose Zone and Groundwater Protection

- Deep vadose zone threats to groundwater are from both tank farm past releases and non-tank farm sites.
- RL and ORP staff and contractors meet routinely to:
 - Understand emerging information
 - Assess priorities for action
 - Coordinate sampling, treatability tests, and remediation.
- Applied Field Research Initiative at PNNL co-funded by DOE-RL and EM-HQ
- Example coordination efforts:
 - S-SX Pore Water Extraction treatability test
 - B Area conceptual site model and perched water removal (from BX-102 SST release)
 - 200 West pump-and-treat system extraction wells capture emerging Tc-99 plumes from S-SX and T tank farms

Deep Vadose Zone Contamination in the Central Plateau



Recent Deep Vadose Zone and Groundwater Protection Activities



1. Plutonium and Americium Geochemistry at Hanford
2. I-129 speciation and basis for remediation decisions (200-UP-1)
3. Develop basis for uranium transport and attenuation. Uranium sequestration test plan.
4. S-SX pore water extraction test design. Testing of “wicking” materials
5. Perched water treatment approaches
6. Enhanced electrical resistivity tomography methods. Tracer gas testing to support quantification of moisture content and imaging subsurface infrastructure.
7. Foam delivery of remediation amendments
8. Flux-based remedy evaluation approach for the vadose zone including assessment of Monitored Natural Attenuation.
9. Surface barriers data compilation in collaboration with ORP/WRPS.
10. Systems based approaches to characterization, remediation and monitoring.

Discussion