



Phase 1 Characterization Sampling and Analysis Plan (CSAP) West Valley Demonstration Project (WVDP)

Mark Bellis
West Valley Demonstration Project
Department of Energy

Robert Johnson, Ph.D. and Lisa Durham
Environmental Science Division
Argonne National Laboratory

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Disclaimer

The proposed decommissioning approach and associated CSAP activities are based on the preferred alternative in the Final Environmental Impact Statement for Decommissioning and/or Long-Term Stewardship at the West Valley Demonstration Project and Western New York Nuclear Service Center, which is referred to as the Decommissioning EIS. If changes to that document occur during the course of the National Environmental Policy Act process that affect the CSAP, such as changes to the preferred alternative, or if a different approach is selected in the Record of Decision, the CSAP will be revised as necessary to reflect the changes.



Relationship Between EIS, Phase 1 DP, CSAP, and FSSP

- The EIS for Decommissioning and/or Long Term Stewardship analyses the environmental impacts of reasonable alternatives, including the preferred alternative for the WVDP (ROD not yet signed)
- The Phase 1 DP specifies decommissioning activities required to be consistent with the preferred alternative in the EIS
- The CSAP and FSSP (Final Status Survey Plan) are supporting documents that provide additional detail to implement the Phase 1 DP
- Both the CSAP and FSSP are currently in NRC review

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The Phase 1 Decommissioning Plan (DP) Provides Foundation for Phase 1 CSAP Activities

- Defines those portions of the WVDP within Phase 1 DP scope
- Identifies radionuclides of interest for Phase 1 DP activities
- Develops cleanup guidelines for soils (surface and subsurface) that meet the unrestricted release criteria of 10 CFR 20.1402
- Describes activities required to meet Phase 1 DP objectives (e.g., Main Plant Process Building removal and Waste Management Area 1 (WMA 1) and WMA 2 subsurface soil excavation)

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Phase 1 DP Activities Require Information About Contamination Status of the WVDP Premises

- Where is surface soil contamination above Phase 1 DP cleanup goals?
- Where is subsurface soil contamination present?
- What is the contamination status of drainage features and stream sediments within the WVDP premises?
- What should be the lateral and vertical extent of WMA 1 and WMA 2 excavations to remove subsurface contamination above cleanup goals?
- What kinds of soil waste streams can be expected from Phase 1 decommissioning activities?

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CSAP Purpose: Provide Information to Support Phase 1 DP Activities and Inform Phase 2 Decision-Making

- CSAP data collection objectives divided into four main categories:
 - Pre-design to support appropriate Phase 1 DP designs
 - Remedial action support to guide Phase 1 DP activities while underway
 - Post-remediation to document contamination status for those areas not undergoing Phase 1 Final Status Survey data collection
 - Inform Phase 2 decision-making
- Within each category, specific goals have been defined:
 - Evaluate list of radionuclides of interest for each WMA
 - Establish background data sets, as necessary
 - Determine extent of surface contamination above DCGL standards
 - Etc.

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Phase 1 CSAP Tightly Integrated with Phase 1 Final Status Survey Plan (FSSP)

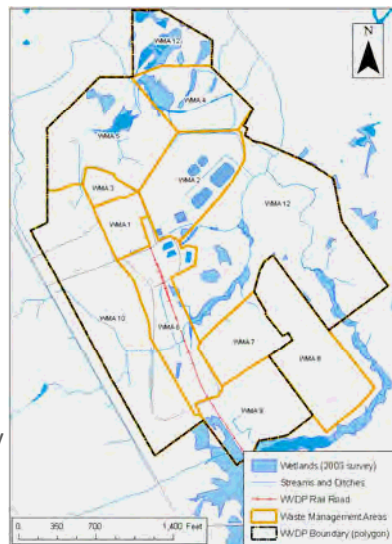
- Phase 1 FSSP describes the data that must be collected to demonstrate that soils in any particular area have met Phase 1 DP requirements
- FSSP will apply to soils exposed as part of the WMA 1 and WMA 2 deep excavations, and potentially to surface soils outside those excavations where subsurface contamination is not present
- FSSP and CSAP have very prescriptive requirements regarding sampling and analysis of soils
- CSAP written so that data collected to support characterization can potentially be used for FSSP purposes

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Phase 1 CSAP Pre-Design Data Collection Organized Around Waste Management Areas

- 12 WMAs, 10 of which are pertinent to Phase 1 DP
 - WMA 1 – Main plant area
 - WMA 2 – Rad waste water management
 - WMA 3 – Waste tank farm
 - WMA 4 – CDDL
 - WMA 5 – Waste processing/storage area
 - WMA 6 – Support facilities
 - WMA 7 – NDA
 - WMA 9 – Drum cell area
 - WMA 10 – Parking lots, etc.
 - WMA 12 – Largely un-impacted areas
- WMAs encompass areas relatively consistent in prior use



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Phase 1 CSAP Pre-Design Data Collection Includes Several Common Data Collection Activities for all WMAs

- Historical aerial photograph analysis
- Site-wide gamma walkover survey
- Site-wide buried infrastructure inventory
- Surface soil sampling where potential concerns have been identified
- Subsurface soil sampling where potential concerns have been identified
- Drainage feature/stream sediment sampling

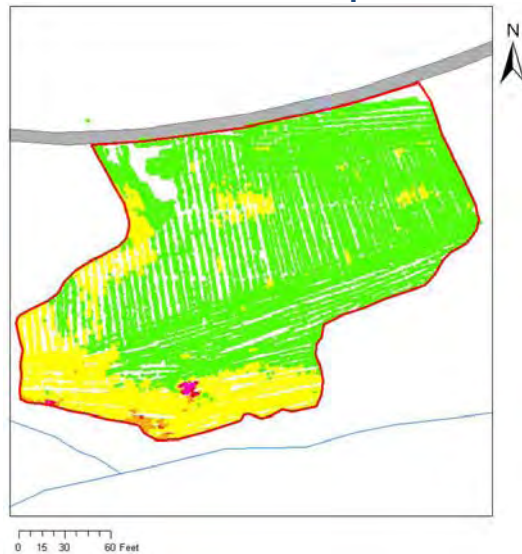
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Gamma Walkover Surveys Invaluable for Mapping Surface Contamination Footprints



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Buried Infrastructure Inventory/Mapping Important for a Number of Reasons

- A potential hazard to site characterization activities/subsurface soil sampling
- Potentially associated with buried contamination:
 - Leaking pipes
 - Conduit/preferential flow path for contaminated groundwater
 - Potential historical use of impacted soils for backfill



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Surface and Subsurface Soil Sampling Intensity Varies depending on the WMA

- Phase 1 CSAP has an appendix for each WMA detailing pre-design sampling requirements
- Sampling intensity is a function of WMA history, known or suspected releases, and existing data
- At least some sampling will be done in every WMA, and for some WMAs sampling will be fairly intensive (e.g., WMA 5)



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Historical Air Photos Invaluable for Identifying Potential Soil Contamination Issues

- Air photos show the locations where historical activities may have resulted in soil contamination
- Air photos identify surface disturbances that might have buried or relocated surface soil contamination



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An Important Goal is to Better Understand Which Radionuclides are of Concern

- Phase 1 DP identified 18 radionuclides of interest and an additional 12 of potential interest
- Very unlikely that all 30 of these radionuclides are present in the environment at measurable levels
- Historical data indicate Sr-90 and Cs-137 will likely be the contaminants most frequent at levels that would require remediation
- Pre-design soil sampling will verify that observation by analyzing at least some samples from each WMA for all 30 radionuclides, and most samples for the 18 radionuclides of interest

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Another Goal is to Potentially Turn Select Areas "Grey" to "Green"

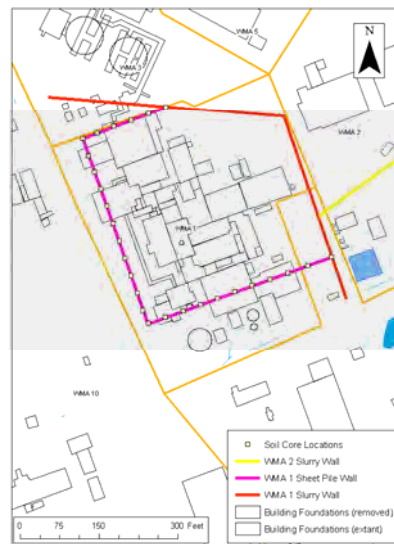
- Initial Phase 1 CSAP walkover surveys and surface/subsurface soil sampling will determine contamination status
- If no obvious concerns, area may be designated ready for Final Status Survey (FSS) data collection
- This applies to areas where there is no contamination at depths below 1 m and are outside Phase 2 areas (e.g., NDA)
- FSS data collection will verify that Phase 1 DP goals have been achieved



WMA 1 and WMA 2 Will Have the Greatest Intensity of Sampling to Support Planned Excavations

Pre-design sampling will address:

- Where is subsurface contamination present?
- What radionuclides can we expect to encounter?
- What will the contamination status of the excavation walls likely be?
- What type of soil waste streams will be generated and how much?



WMA 1 and WMA 2 Will Have the Greatest Intensity of Sampling to Support Planned Excavations (cont.)

Excavation support sampling will address:

- When can excavation stop in the Lavery Till?
- Did contamination migrate along the foundation piles into the Lavery Till beneath WMA 1?



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Questions?



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