



U.S. DEPARTMENT *of* ENERGY

Office of Environmental Management

Los Alamos Legacy Cleanup & Hexavalent Chromium Plume Update

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December 17, 2025



U.S. DEPARTMENT
of **ENERGY**

Office of Environmental
Management

Bottom Line Up Front

- FY 2025 legacy waste shipment metrics exceeded
- Expanding legacy waste activities in FY 2026 to accelerate disposition
- DOE is meeting commitments in the 2016 Compliance Order on Consent
- Establishing adaptive site management plan for hexavalent chromium plume
- Continuing regular engagement with pueblos, local governments, stakeholders, & the public



TRU Waste Mobile Loading

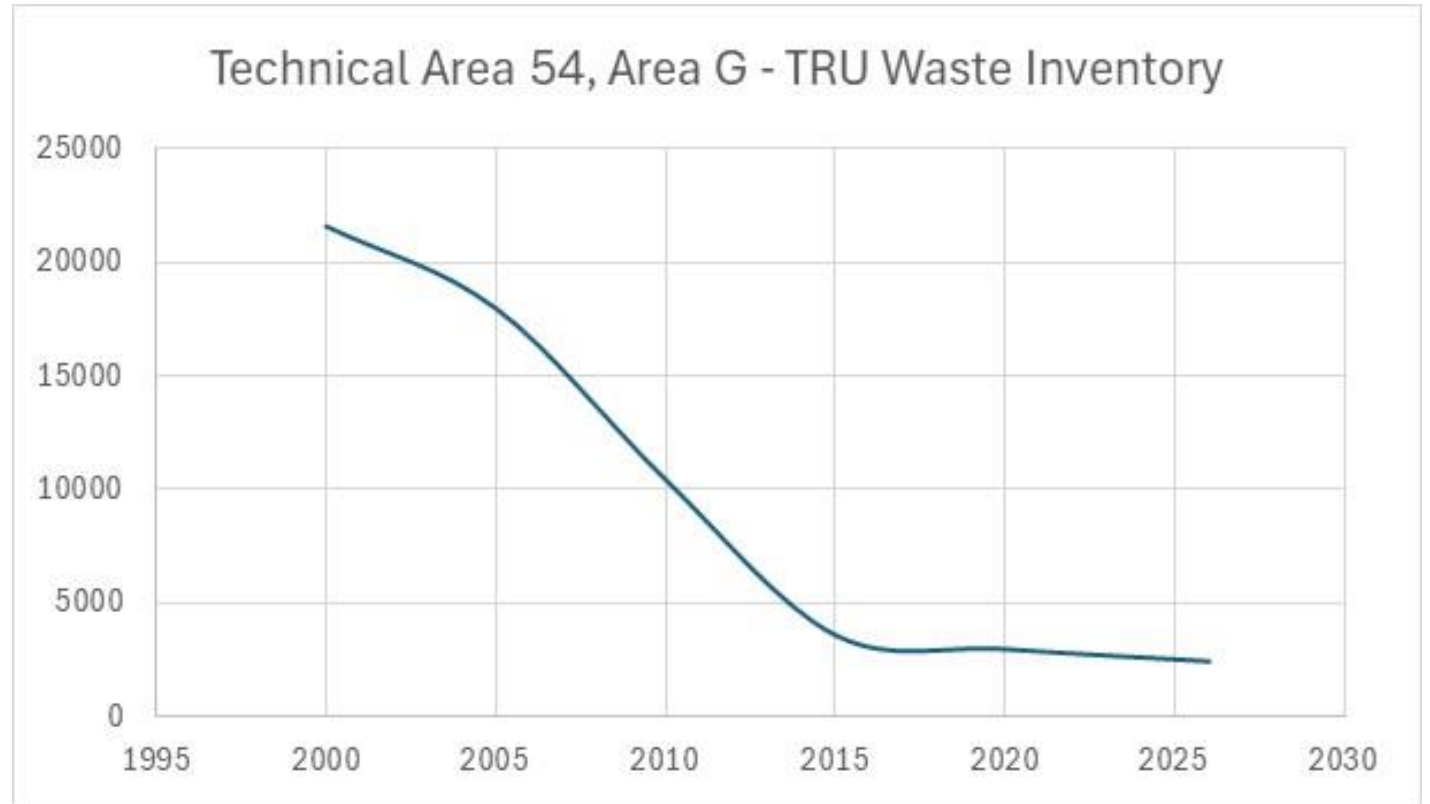
Mission



MISSION: Safely, effectively, efficiently, & transparently complete the cleanup of legacy contamination & waste (pre-1999) resulting from nuclear weapons development & government-sponsored nuclear research during the Manhattan Project & Cold War era at LANL

Legacy Waste Characterization & Disposition

- **LEGACY WASTE:** defense-related TRU waste retrieved, buried, &/or generated prior to Oct 1, 1999
- Shipped 193.4 m³ of TRU waste in FY 2025, exceeding goal of 62 m³
- Los Alamos has an “at-ready” agreement with WIPP; LANL shipments take priority



28,526 TRU WASTE CONTAINERS SHIPPED TO WIPP SINCE 1999

Buried Waste Retrieval: Corrugated Metal Pipes (CMPs)



CMP Retrieval at Area G



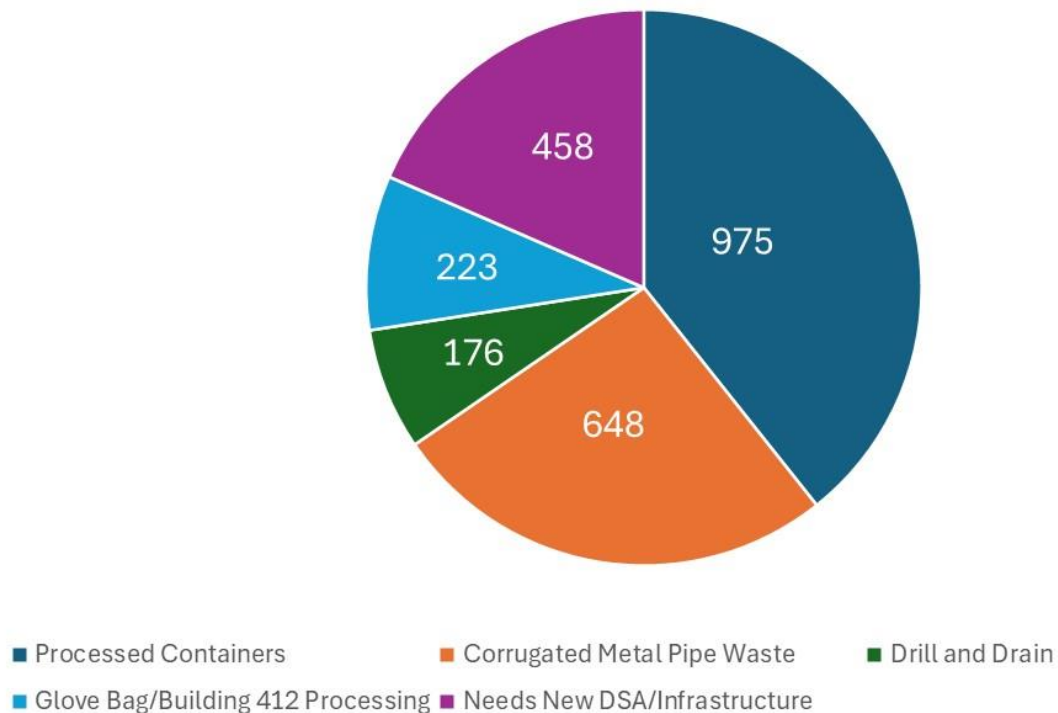
CMP segment lowered into a standard waste box

- Cemented TRU waste from Cold War era
- Completed retrieval & size-reduction
- Shipments to WIPP began late May 2025

~20% OF CMP WASTE SHIPPED OFF-SITE TO DATE

Above-Ground Waste Inventory & Future Activities

Technical Area 54, Area G: Current Above-Ground Inventory



Processed Legacy Waste Containers

- Establishing re-processing & disposition capability in FY 2026
- Allows portion of inventory to be more appropriately characterized as low-level waste for disposition at commercial disposal facilities, preserving capacity at WIPP
- Allows legacy waste disposition during WIPP outages

Disposal Overpack Containers

- Acquiring Upender repositioning machine, providing additional on-site capability
- Increased disposition efficiency & risk avoidance

Ion Beam Facility Disposition

FACILITY:

- Built in 1951, housed two accelerators
- 60,000 sq ft, decommissioned in 1999

SCOPE:

- Surveying & sampling, demolition, & slab removal
- PCB soil remediation currently underway
- Demolition of administrative wing & horizontal accelerator to begin first half of 2026



REDUCES RISK OF EXCESS CONTAMINATED FACILITY

Meeting Consent Order Commitments

- All FY 2025 Milestones completed
- FY 2026 planning completed with New Mexico Environment Department (NMED)
- Annual joint public meeting with EM-LA & NMED planned for early next year
- Certificates of Completion issued by NMED for 589 of 1,405 known or suspected contaminated sites in the Consent Order



Excavation of contaminated soil from LANL legacy operations

42% OF CONSENT ORDER SITES COMPLETED

Hexavalent Chromium Plume

Source: 1956-1972, potassium dichromate, with active ingredient hexavalent chromium, was used as a corrosion inhibitor at LANL's non-nuclear power plant

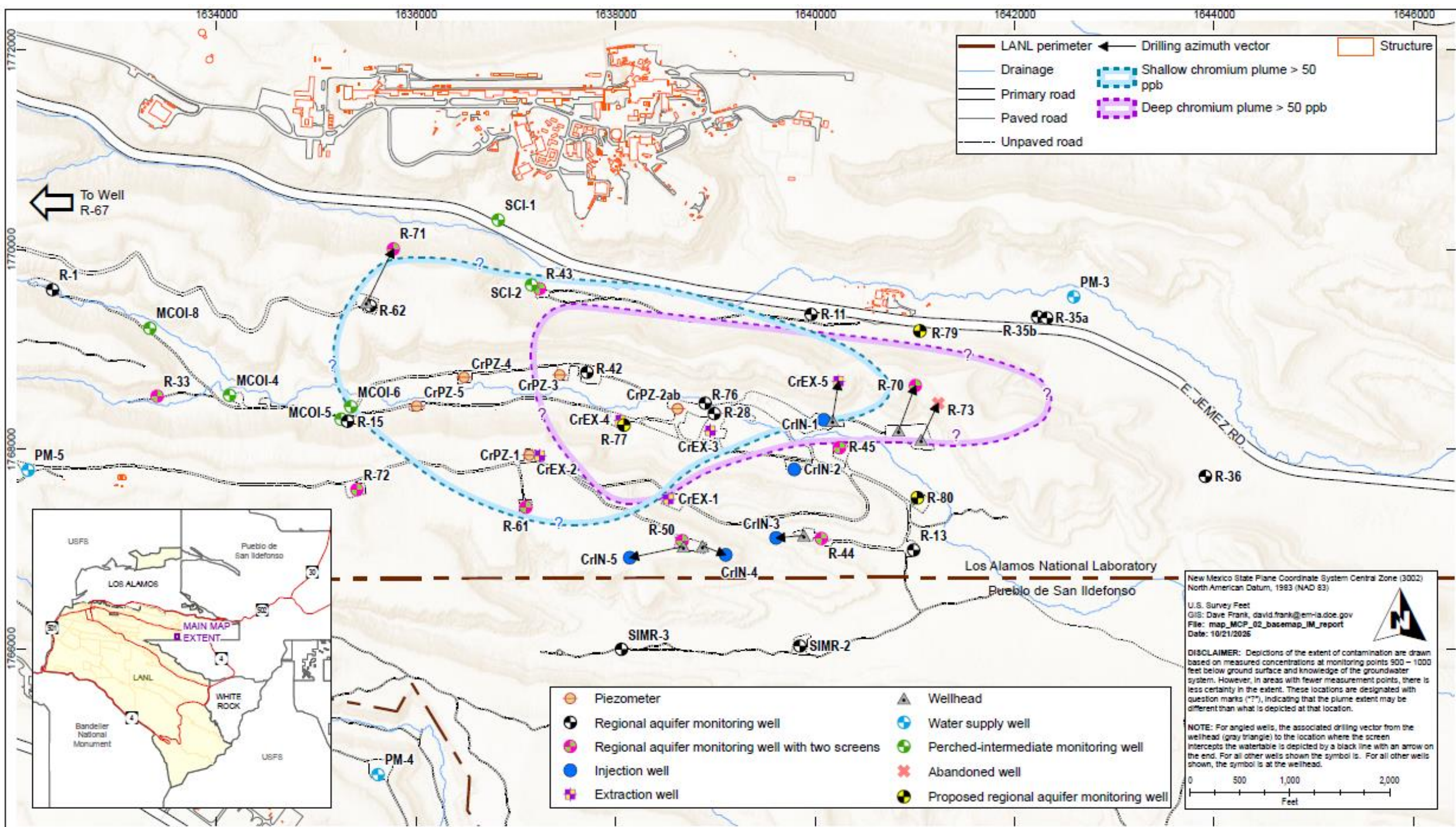
Discovery: 2004 first detection above New Mexico groundwater standard of 50 micrograms per liter ($\mu\text{g/L}$)

Location: In regional groundwater aquifer ~1,000 feet beneath Mortandad & Sandia Canyons at LANL

Size: ~1 mile long x $\frac{1}{2}$ mile wide



NO IMMEDIATE THREAT TO PUBLIC OR PRIVATE DRINKING WATER WELLS



Extensive Collaboration Since 2004

- 17 monitoring wells
- Chromium Interim Measures (IM) approved by NMED to prevent migration of plume beyond LANL boundary via pump & treat
 - 10 wells
 - Water treatment system
 - Supporting infrastructure
- Convened Expert Technical Review Team for analysis on complex technical disputes
- Significant collaboration with NMED, Office of the State Engineer, & Pueblo de San Ildefonso



Water Treatment System

Expert Technical Review

RECOMMENDATIONS

Restart Interim Measures

Transition modeling software to MODFLOW & improve the model

Drill monitoring wells to fill data gaps

Implement Adaptive Site Management

Use of dual-screened wells



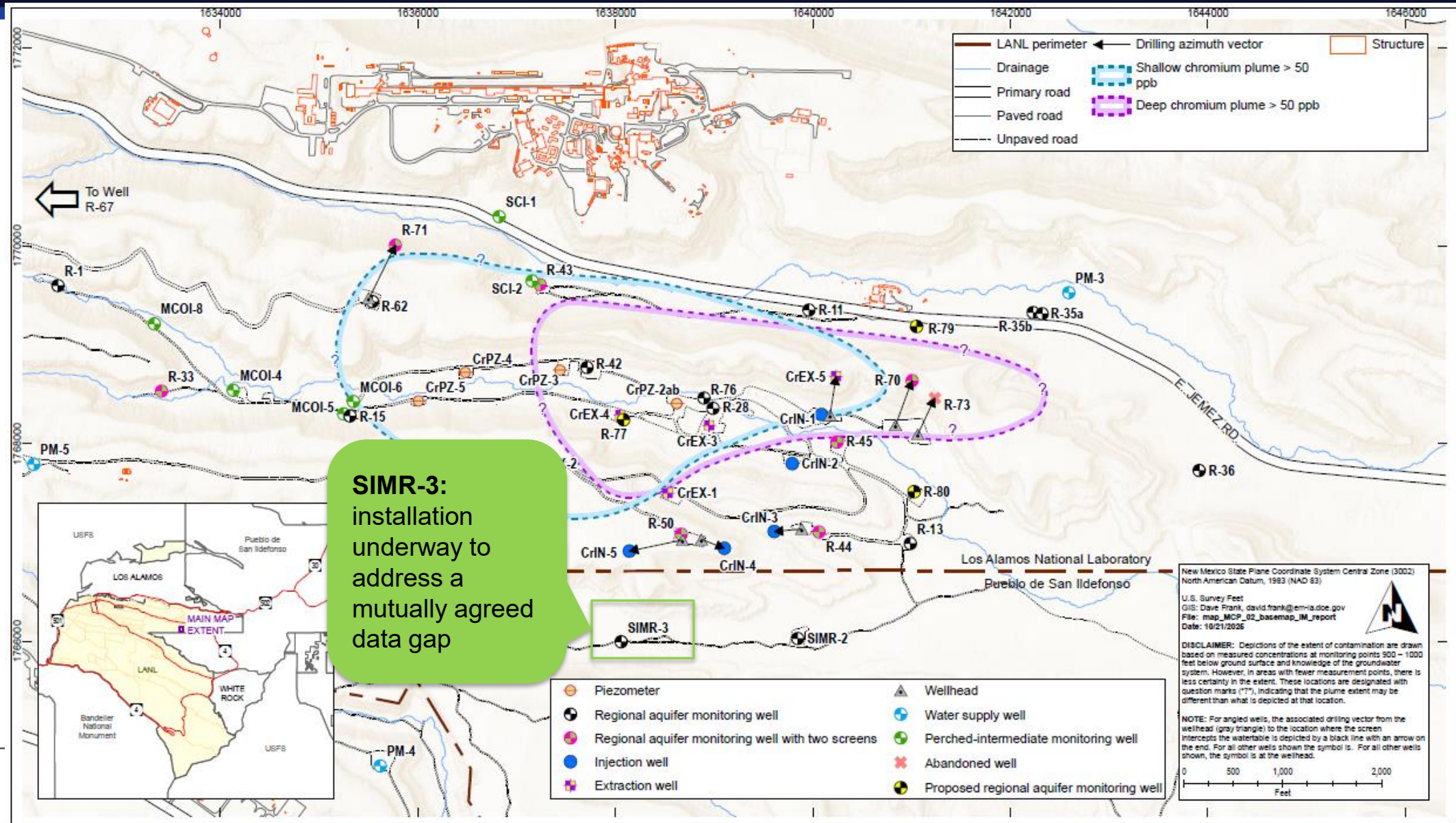
Team of experts from the Network of National Laboratories for Environmental Management & Stewardship, industry, academia, & U.S. EPA Region 6

Interim Measures (IM) Operations

May 2018	IM Operations commenced
Mar 2023	IM operations ceased following direction from NMED to cease injection
Sept 2024	IM operations partially resumed in alignment with NMED authorization
Nov 2025	IM operations ceased following direction from NMED to cease injection

EMPIRICAL DATA DEMONSTRATE IM OPERATIONS EFFECTIVELY REDUCE CHROMIUM CONCENTRATIONS

Current Well Drilling



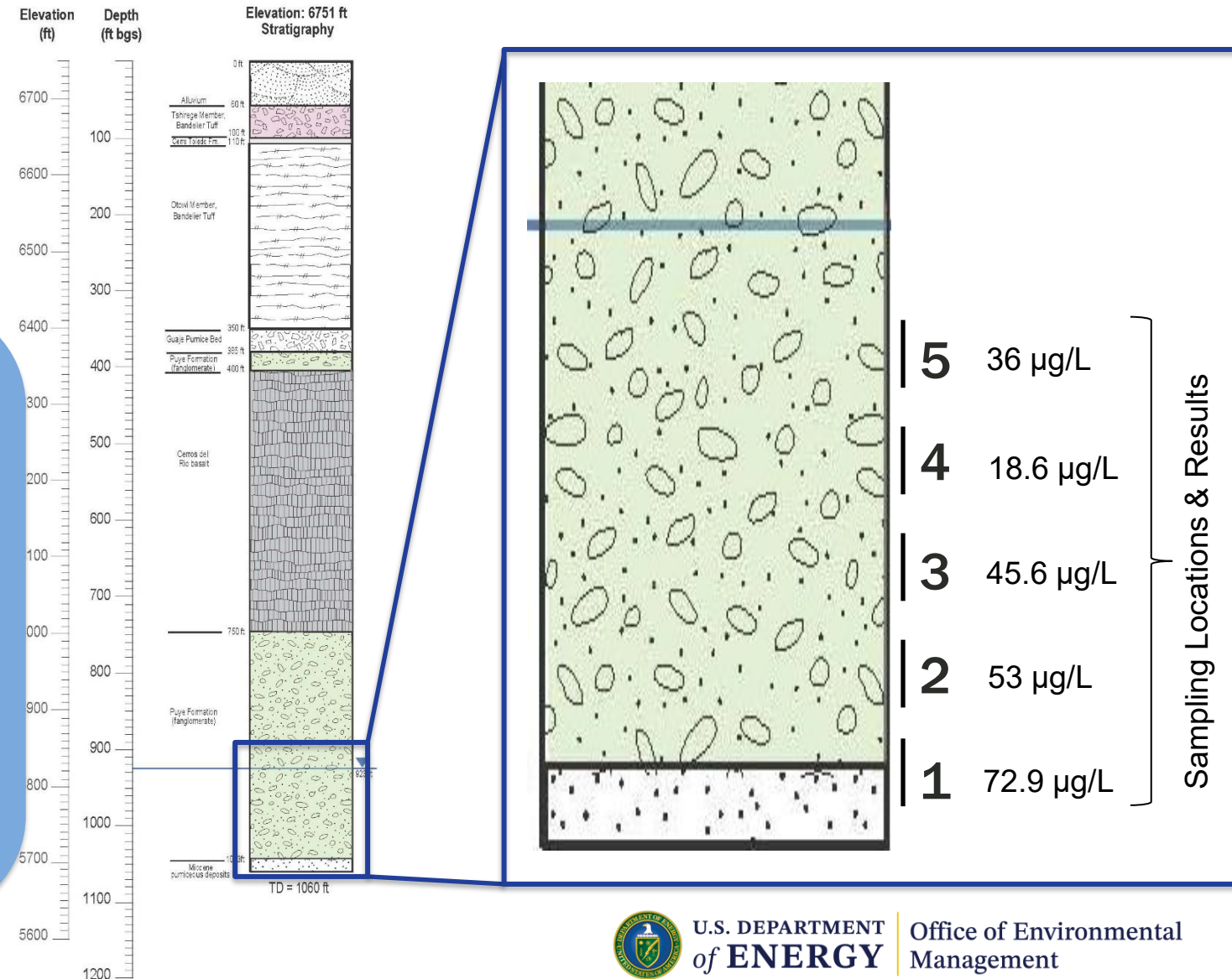
Zonal Sampling at SIMR-3

Zonal sampling is intended to inform well design, specifically screen location

- Zone of highest concentration
- Zone of highest permeability

Zonal sampling is not intended to predict long-term trends in the regional aquifer

- Disturbance due to drilling can create temporary conditions beyond the normal aquifer environment
- Normal aquifer environment should be established via a trend of monthly sampling following well installation



Next Steps for Hexavalent Chromium

- Complete installation of SIMR-3 & begin monthly sampling as quickly as possible
- Consult with Pueblo de San Ildefonso
- Evaluate & refine conceptual site model
- Analyze opportunities to modify interim measures
- Continue adaptive site management with NMED, Office of the State Engineer, Pueblo de San Ildefonso, & Los Alamos County



Stakeholder Engagement



Summary

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