



**U.S. DEPARTMENT *of* ENERGY**

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**Office of Environmental Management**

# Los Alamos Legacy Cleanup & Hexavalent Chromium Plume Update

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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



TRANSURANIC (TRU), LOW-LEVEL, & MIXED LOW-LEVEL



CONTAMINATED SOIL, LEGACY LANDFILLS



GROUNDWATER, SURFACE WATER, STORM WATER

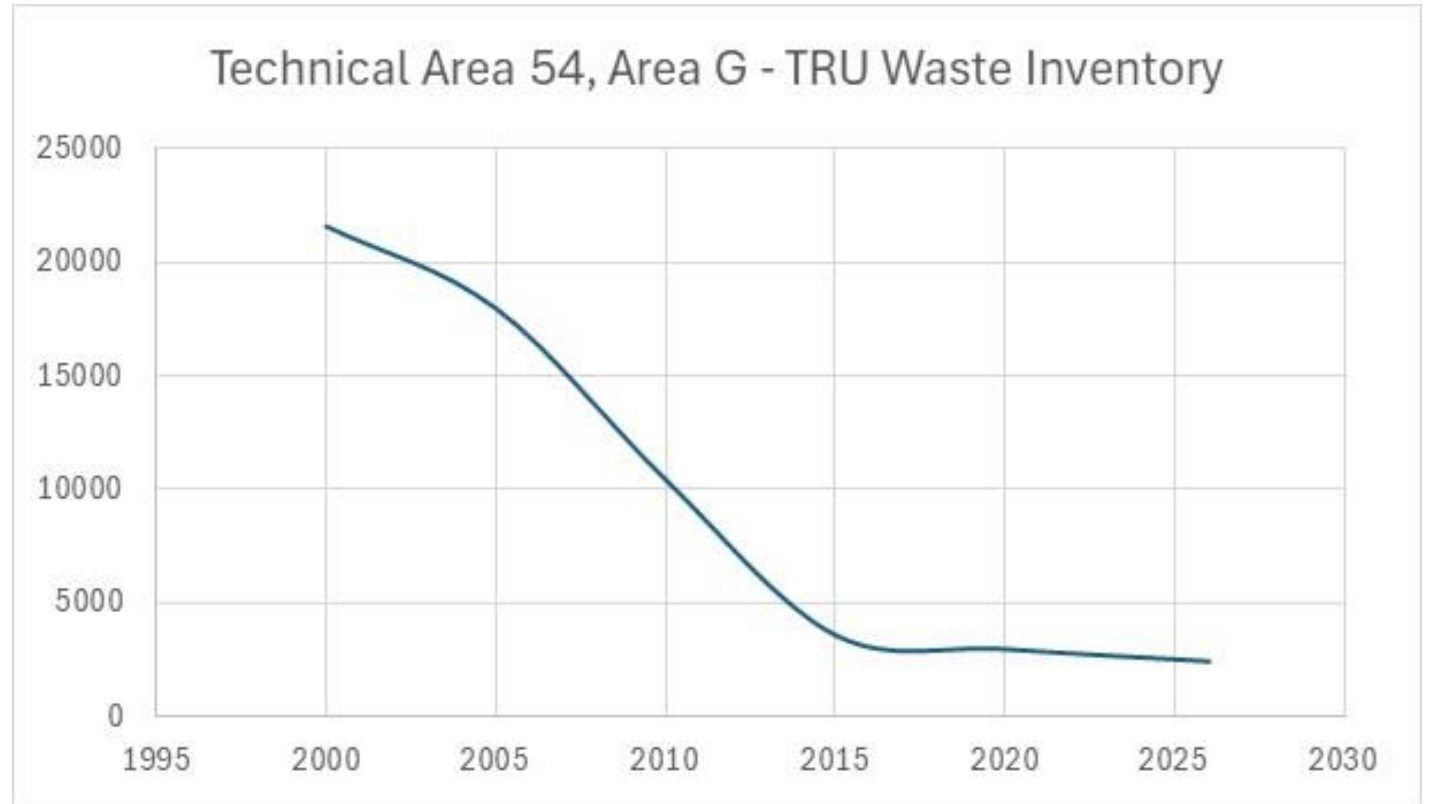


EXCESS FACILITY DISPOSITION

**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 m<sup>3</sup> of TRU waste in FY 2025, exceeding goal of 62 m<sup>3</sup>
- 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 (CMP)



*CMP Retrieval at Area G*



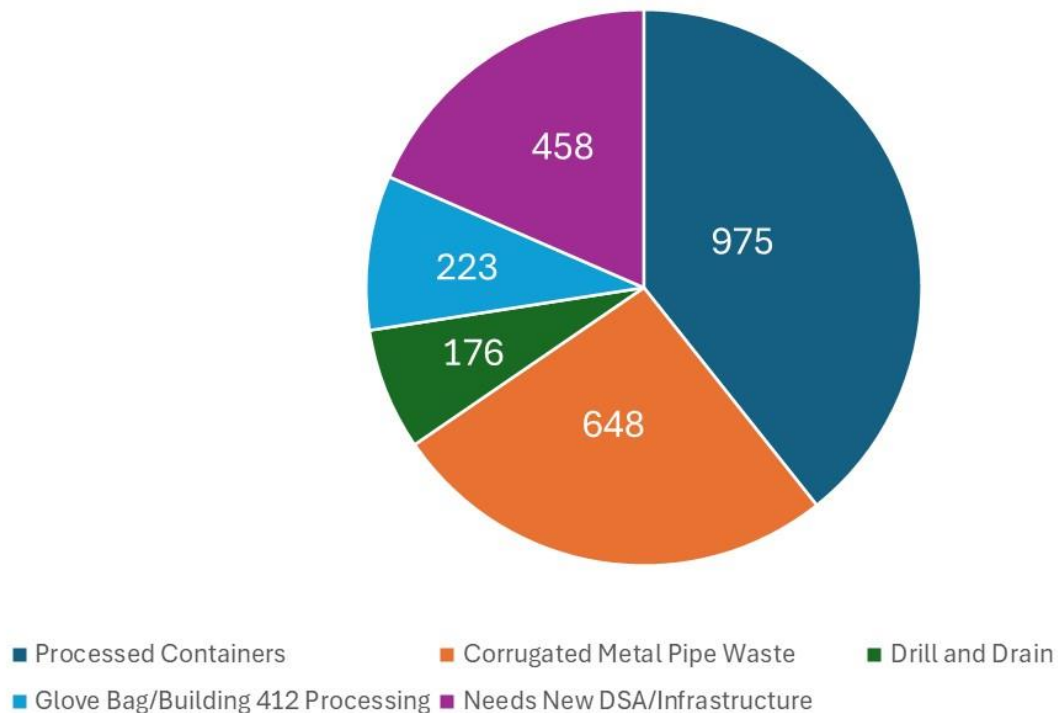
*CMP segment lowered into a standard waste box*

- 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 ( $\mu\text{g/L}$ )

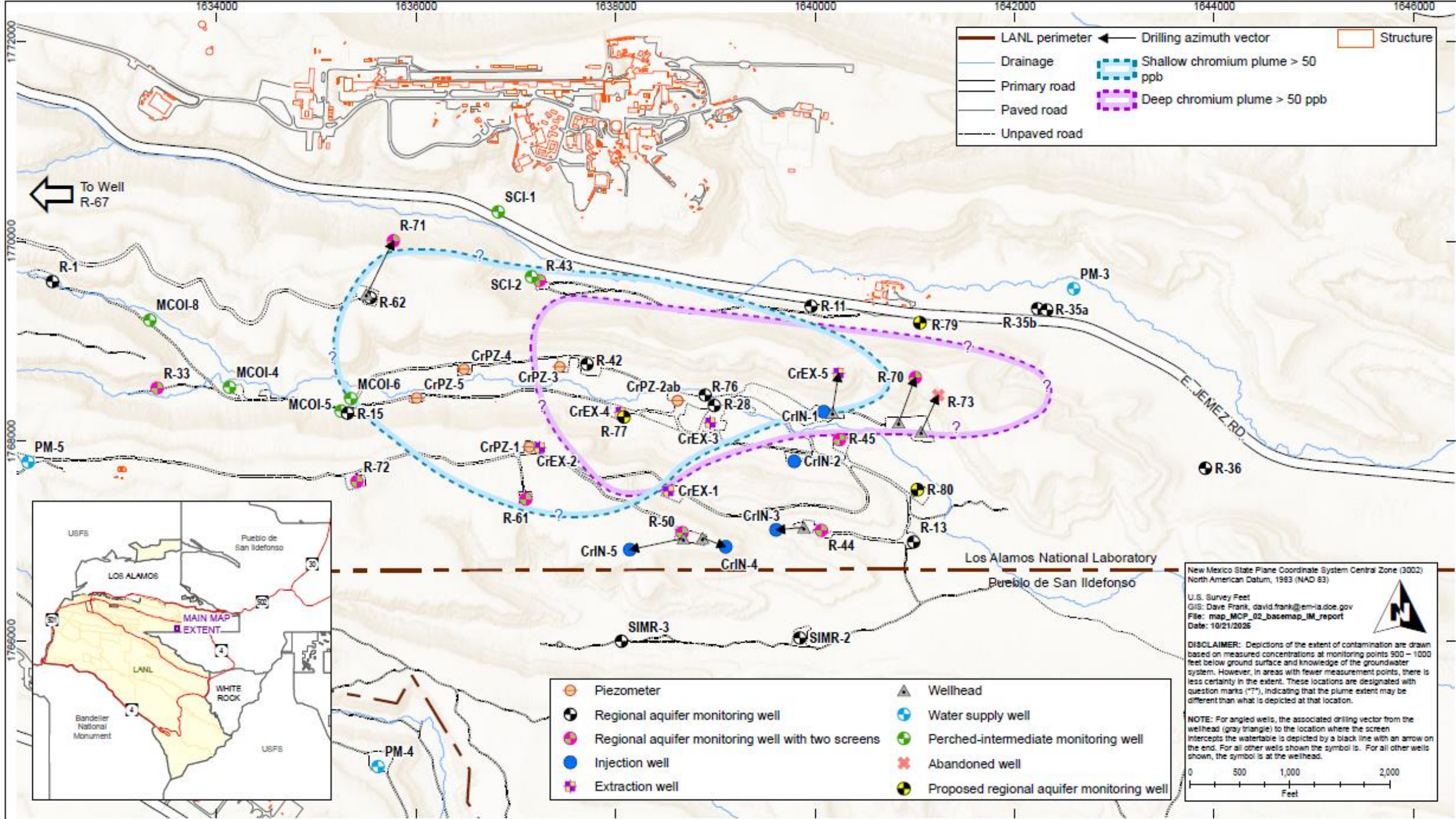
**Location:** In regional groundwater aquifer ~1,000 feet beneath Mortandad & Sandia Canyons at LANL

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



**NO IMMEDIATE THREAT TO PUBLIC OR PRIVATE DRINKING WATER WELLS**



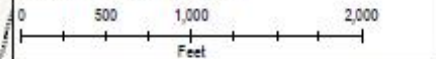


New Mexico State Plane Coordinate System Central Zone (3002)  
 North American Datum, 1983 (NAD 83)

U.S. Survey Feet  
 GIS: Dave Frank, david.frank@em-ha.doe.gov  
 File: map\_MCP\_02\_base\_map\_IM\_report  
 Date: 10/21/2025

**DISCLAIMER:** Depictions of the extent of contamination are drawn based on measured concentrations at monitoring points 900 – 1000 feet below ground surface and knowledge of the groundwater system. However, in areas with fewer measurement points, there is less certainty in the extent. These locations are designated with question marks ("?"), indicating that the plume extent may be different than what is depicted at that location.

**NOTE:** For angled wells, the associated drilling vector from the wellhead (gray triangle) to the location where the screen intercepts the water table is depicted by a black line with an arrow on the end. For all other wells shown the symbol is. For all other wells shown, the symbol is at the wellhead.





# 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

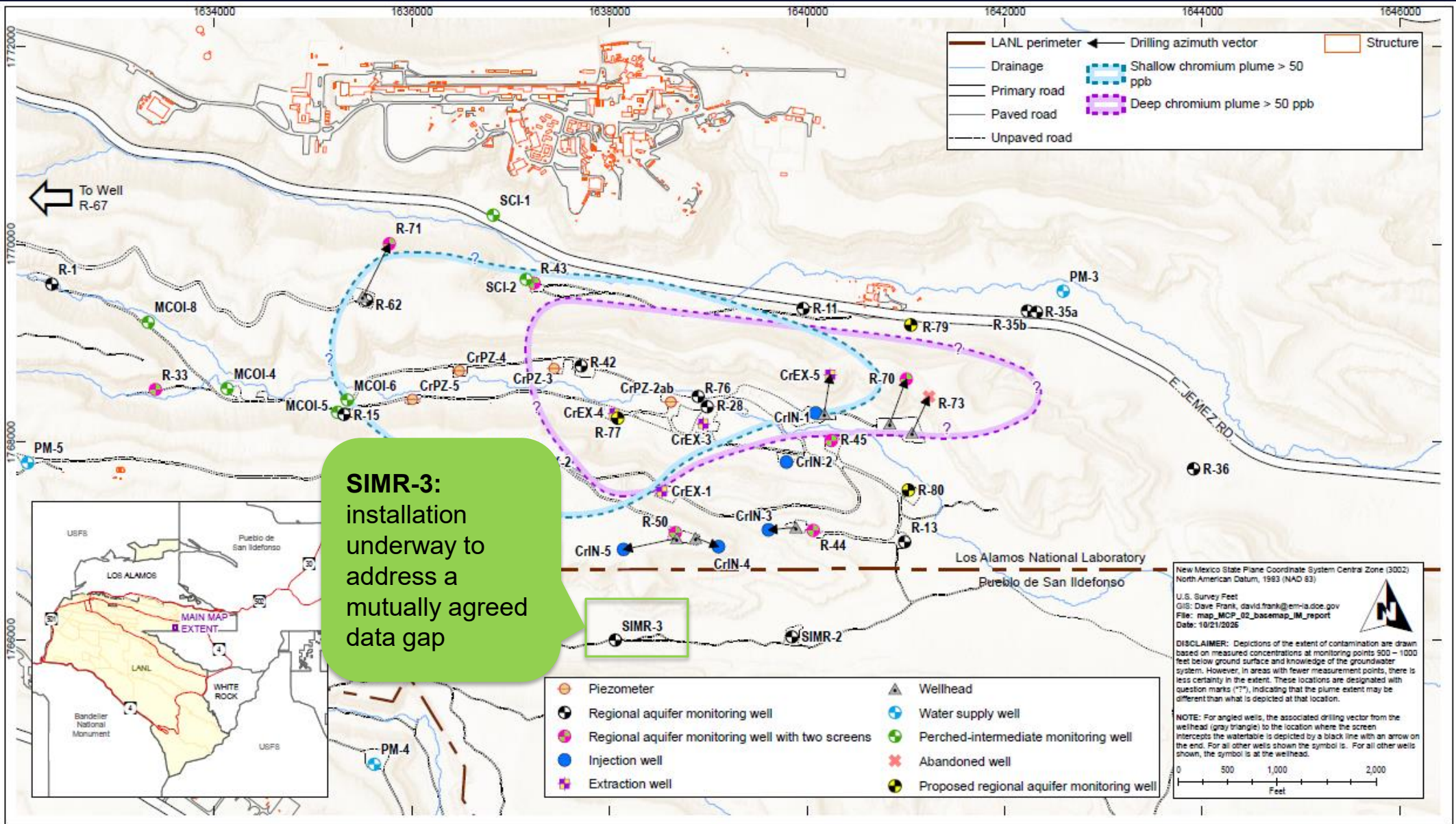
- May 2018** IM Operations commenced
- Mar 2023** IM operations ceased following direction from NMED to cease injection
- Sept 2024** IM operations partially resumed in alignment with NMED authorization
- Nov 2025** IM operations ceased following direction from NMED to cease injection

**EMPIRICAL DATA DEMONSTRATE IM OPERATIONS EFFECTIVELY REDUCE CHROMIUM CONCENTRATIONS**





# Current Well Drilling



**SIMR-3:**  
installation  
underway to  
address a  
mutually agreed  
data gap

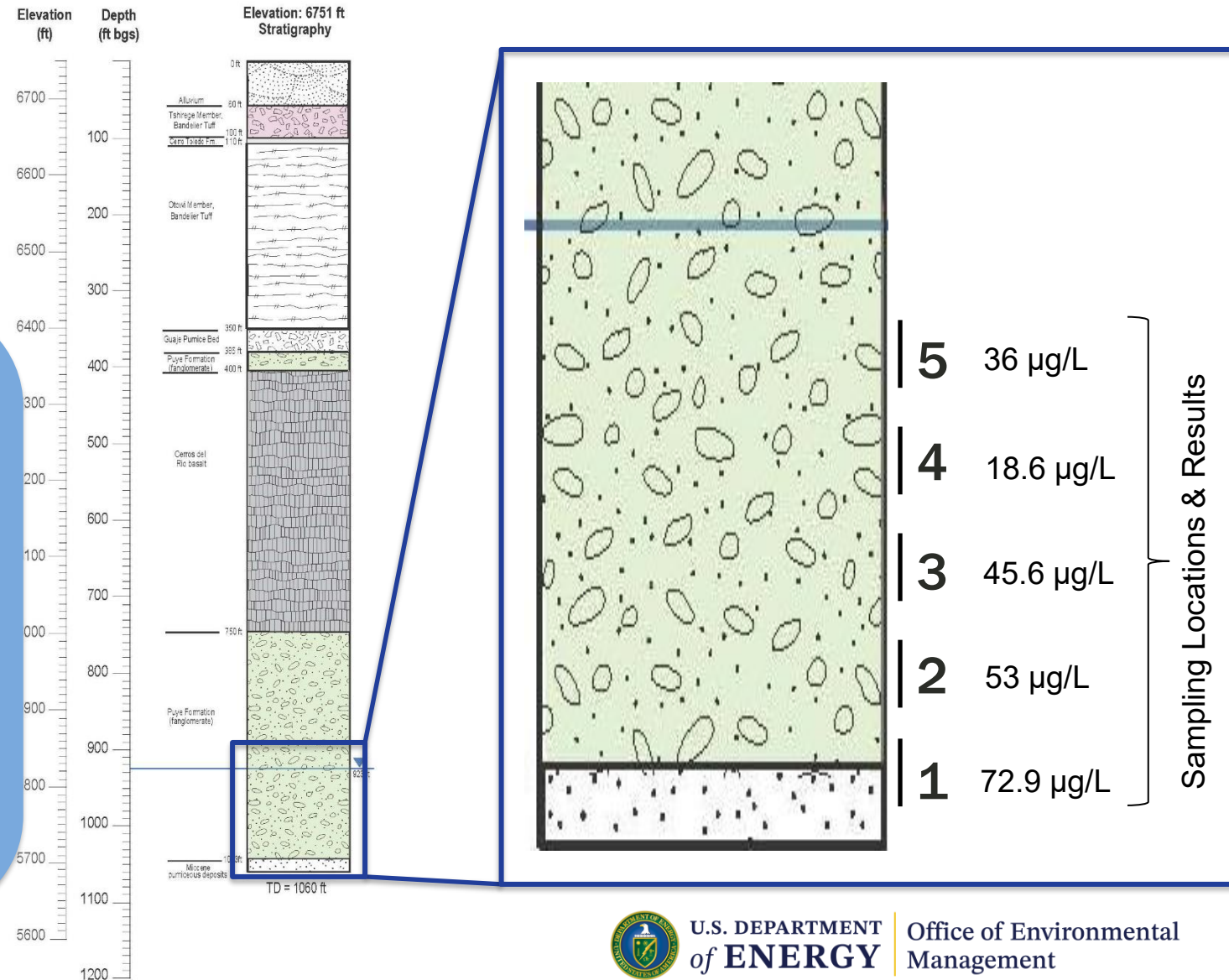
# Zonal Sampling at SIMR-3

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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