

Hexavalent Chromium Project Expert Technical Review

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Hexavalent Chromium Plume

- From 1956-1972, potassium dichromate, with the active ingredient hexavalent chromium, was commonly used as a corrosion inhibitor in power plants worldwide, including at Los Alamos National Laboratory (LANL)
- Plume discovered in 2004—first detection above New Mexico groundwater standard of 50 micrograms per liter
- ~1,000 feet beneath Mortandad & Sandia Canyons at LANL
- Approximately 1 mile long x ½ mile wide



Overlooking top of Mortandad Canyon & operation of Chromium Plume Control Interim Measures



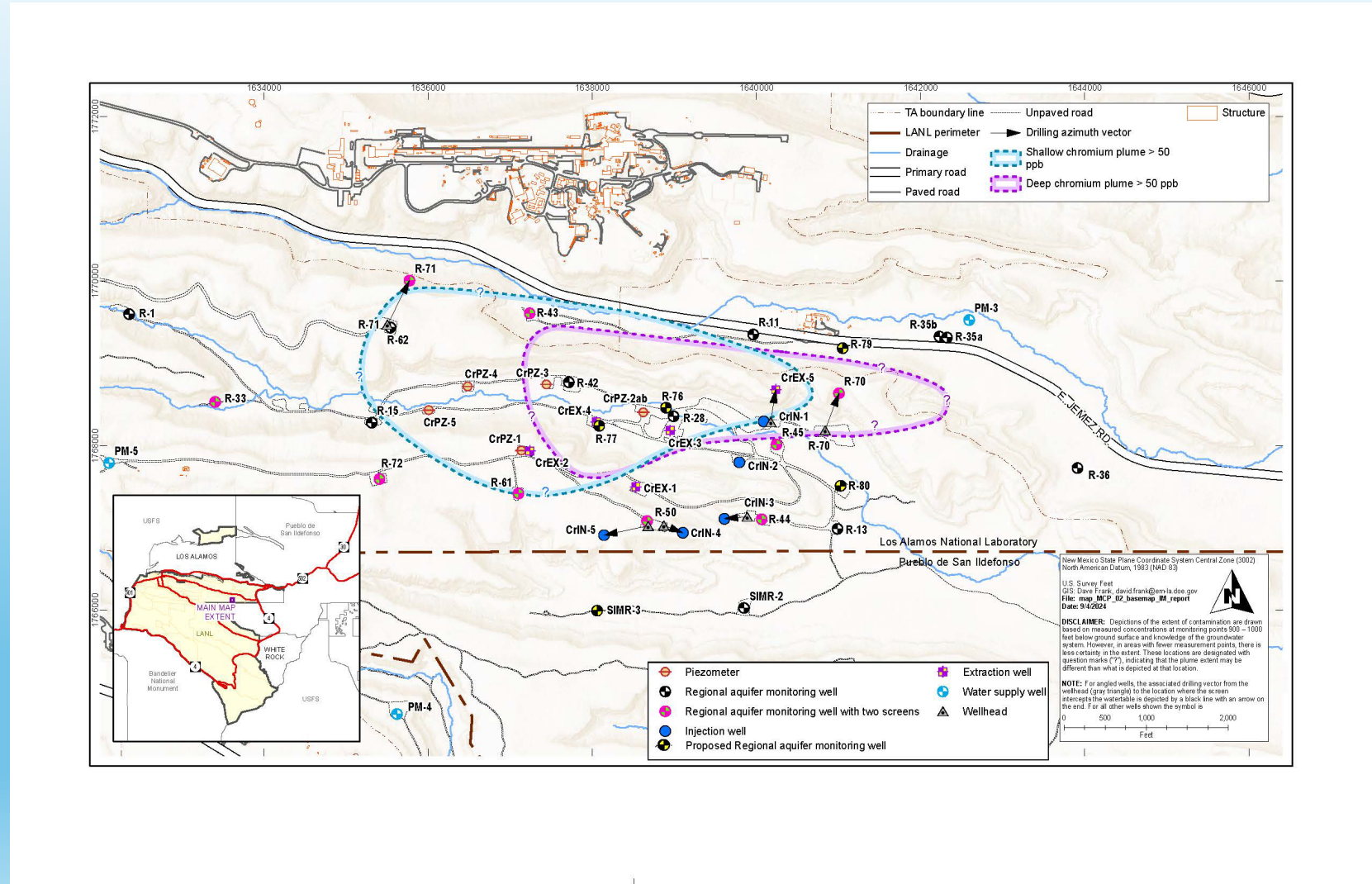
Chromium Plume Control Interim Measures (IM)

- PRIMARY OBJECTIVE: prevent migration of the plume beyond LANL boundary
- Full operation of the IM commenced 2018 (under NMED approved 2015 work plan)
- Hydraulic plume control IM consists of:
 - 5 extraction wells
 - Groundwater treatment system
 - 5 injection wells along downgradient plume edge
 - Over 3 miles of buried conveyance pipelines



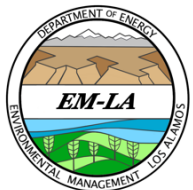
IM Operations

- Chromium concentration was increasing in R-45 Screen 2 since installation
- NMED believes use of nearby injection wells may have been forcing contamination deeper into regional aquifer in Eastern area
- March 30, 2023, IM operation was shutdown to comply with NMED direction to cease injection by April 1, 2023
 - Extraction not feasible without injection
- After IM shutdown, chromium concentrations in all but 1 well began rebounding immediately



Collaboration to Engage Expert Technical Review

- Acted on feedback from New Mexico Radioactive & Hazardous Materials Committee
- EM-LA & NMED agreed to evaluate 5 specific topics:
 1. Ability of Chromium IM to hydraulically control plume
 2. Plume modeling: is the model currently used appropriate
 3. NMED's proposed corrective actions & conditions
 4. Regulatory: readiness to propose & begin evaluating remedial alternatives
 5. Well design



Expert Technical Review



EM-LA & NMED jointly convened a team of experts from the Network of National Laboratories for Environmental Management & Stewardship, industry, academia, & the U.S. EPA, Region 6

Primary recommendation is to restart IM—using a portion of the original system—while other studies & field investigations move forward

EM-LA & NMED will work together to evaluate & prioritize the recommendations from the expert technical review [report](#)

EM-LA & NMED will mutually agree on implementation of the recommendations



Status of Chromium Plume Control IM

- EM-LA worked with NMED to resume partial operation of the IM September 30, 2024
- Since mid-November, the IM is running 24/7 at ~70% capacity with 2 extraction wells & 3 injection wells
- EM-LA continues monthly sampling

