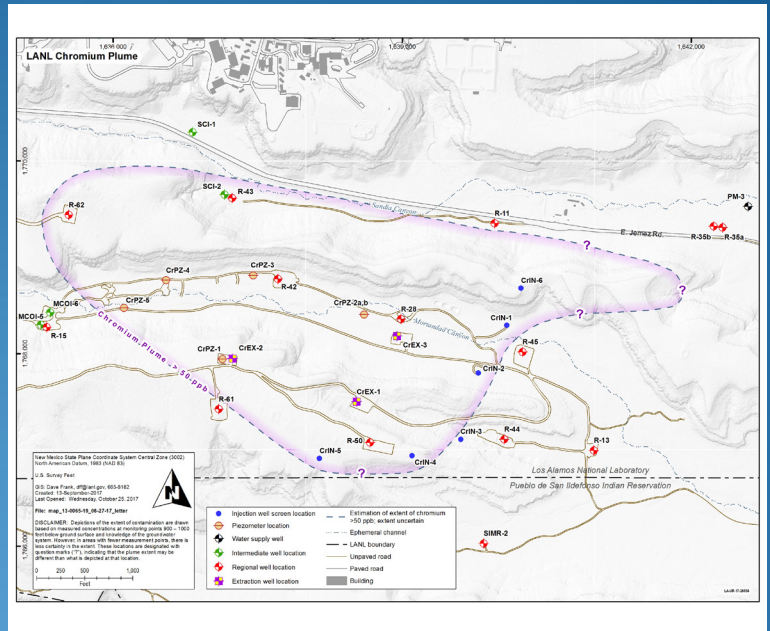




- A hexavalent chromium plume above the New Mexico groundwater standard of 50 parts per billion is present in the regional aquifer beneath Sandia and Mortandad canyons.
- The aquifer is 900–1,000 feet below ground surface. The plume is approximately one mile long x one-half mile wide and is located within the top 100 feet of the aquifer.
- Los Alamos County works closely with the Department of Energy and the Laboratory on their actions to address the plume. There is no contamination of chromium in any drinking water production wells.
- The Department of Energy and the Laboratory are taking action as part of their commitment to protect groundwater, the health and safety of New Mexico residents and the environment.
- The near-term goal (via the Interim Measure) is to control migration of the chromium plume while the Laboratory assesses the best cleanup method.

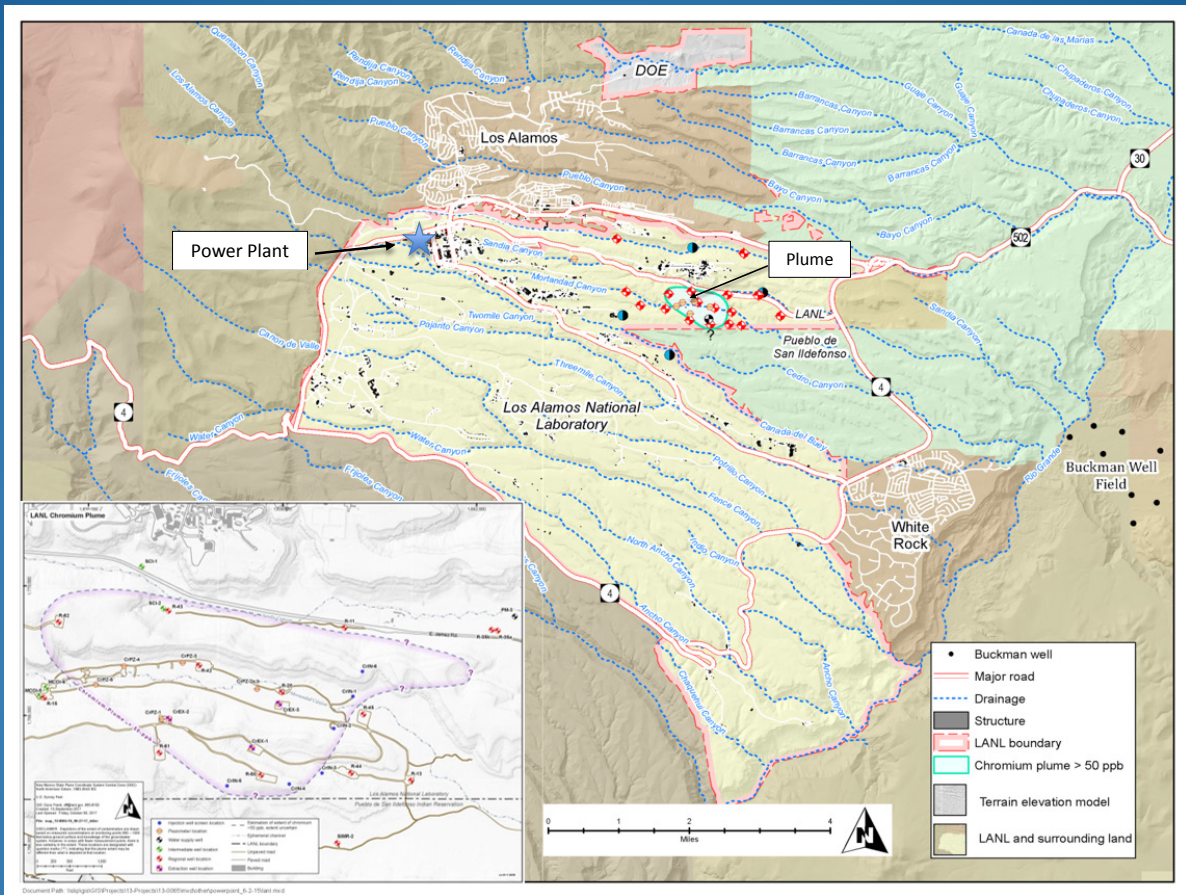


The chromium plume is located beneath Sandia and Mortandad canyons.



Storage basins in Mortandad Canyon store treated groundwater prior to land application.





- From 1956 to 1972, a non-nuclear power plant at Los Alamos National Laboratory periodically flushed water out of its cooling towers into Sandia Canyon. At that time, chromium was commonly used in the industry as a corrosion inhibitor in cooling tower systems.
- The water with chromium flowed down Sandia Canyon as surface water, penetrated the underlying rock layers, and ultimately seeped into the regional aquifer beneath Sandia and Mortandad canyons, the present location of the plume.
- The Laboratory discovered chromium in the regional aquifer during the installation of a groundwater monitoring well in late 2005.
- Since then, the Laboratory has conducted detailed scientific characterization of the nature and extent of the plume, involving the installation of 19 wells. The characterization of the plume provides the foundation for the development of a comprehensive remediation strategy. The Laboratory has also begun implementation of an Interim Measure to control plume migration.



The Los Alamos National Laboratory CHROMIUM campaigns

The Interim Measure



- The Department of Energy and the Laboratory have identified the need to conduct the Interim Measure to hydraulically control the downgradient migration of the chromium plume. The Interim Measure, approved by the New Mexico Environment Department, is needed to address the increasing concentration of chromium at the Laboratory boundary.
- The goal is to achieve and maintain less than 50 parts per billion of chromium contamination at the plume edge within the Laboratory boundary.
- The Interim Measure consists of extraction and injection wells, a centrally located treatment system, and piping and infrastructure tying it all together. Contaminated water will be extracted and treated. The treated water will then be injected along the plume edge.
- Chromium concentrations will be reduced at the plume edge and the plume footprint will be reduced in size.
- The Interim Measure will take place over the next several years until a final remedy has been identified and implemented.



An angled drill was used to install the injection well CrIN-4 and avoid sensitive areas.



The closed vault at injection well CrIN-5 helps reduce the project's footprint.





- In January 2018, the Interim Measure will be restarted along the Laboratory boundary with the Pueblo de San Ildefonso.
- Pumping from extraction wells will begin, with the injection of treated water into the injection wells CrIN-3, -4, and -5.
- In early 2018, a decision will be made on full-scale Interim Measure operations that include activities along the eastern edges of the plume.
- Small-scale tests will continue to be conducted to evaluate the ability to convert (change) hexavalent chromium to trivalent chromium in the aquifer. Trivalent chromium is considered an essential nutrient and doesn't move in groundwater.
- Testing will progress from small-scale tests performed in a laboratory to larger scale tests implemented in the field.
- These tests are part of the development of final remedial options that will be presented in a Corrective Measures Evaluation Report to the New Mexico Environment Department.

