nuclear watch new mexico

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Chromium Groundwater Contamination at Los Alamos Lab Far Greater Than Previously Expected; LANL's Treatment Plan Must Be Drastically Changed

Santa Fe, NM – The Los Alamos National Laboratory (LANL) has detected far more hexavalent chromium (Cr) contamination than previously estimated in the "sole source" regional groundwater aquifer that serves Los Alamos, Santa Fe and the Española Basin. Sampling in July from a new well meant to inject treated groundwater back into the aquifer detected chromium contamination five times greater than the New Mexico groundwater standard of 50 micrograms per liter (ug/L).

Hexavalent chromium is a known carcinogen, and is the culprit in many illnesses as depicted in the well-known film *Erin Brockovich*. A "sole source aquifer" is a designation given by the Environmental Protection Agency when an aquifer supplies at least 50 percent of the drinking water for its service area and there are no reasonably available alternative drinking water sources should the aquifer become contaminated. Nuclear Watch discovered the alarming data in obscure entries in the Lab's contamination database IntellusNM (http://intellusnm.com).

The location of the particular well, Chromium Injection Well 6 (CrIN-6), was chosen because LANL thought that it would be on the edge of the chromium groundwater plume where detection samples would be below the New Mexico standard of 50 ug/L, or in other words on the boundary of what legally requires treatment. Given this new information, if this new well is used to inject treated water, it will help push the contamination beyond Lab boundaries instead of blocking it. The thickness of the chromium plume at this location is not exactly known, but elsewhere it contaminates approximately the top 80 feet of the groundwater aquifer.

LANL's "Chromium Plume Interim Measures Plan", approved by the New Mexico Environment Department (NMED), is designed to remove chromium contaminated water from the center of the plume through extraction wells, treat it so it meets the state's ground water standard, and inject the treated water into the leading edge of the plume in an attempt to slow or halt the plume migration.

CrIN-6 is currently the last proposed injection well, while injection wells 1 through 5 are already active. The new data indicates that the leading edge of the plume passed CrIN-6's location some time ago. Injecting treated water into it now will only

serve to push the plume farther east toward San Ildefonso Pueblo and the Buckman Wells that the City of Santa Fe relies on for a third of its drinking water.

The new data suggest there will have to be will have to be a complete re-thinking of chromium groundwater treatment by LANL and NMED, with more wells needed to both accurately find the true boundary of the chromium plume and eventual treatment. This inevitably means that remediation will take longer and cost more, when at the same time NMED weakened its own regulatory authority through a revised Consent Order governing cleanup that it agreed to with the Department of Energy last year (for more, see background below).

Jay Coghlan, Nuclear Watch Director, commented, "Timely budgets for additional urgently needed cleanup work at Los Alamos are far from being a given. The 2016 Consent Order that NMED and DOE negotiated both weakened and delayed cleanup at LANL, and allows DOE to get out of cleanup by simply claiming that it is too expensive or difficult. But we demand that DOE find additional funding to immediately address this threat to New Mexico's precious water resources, without robbing other badly needed cleanup projects." In contrast, funding for the Lab's nuclear weapons that caused the contamination to begin with continues to grow.

NukeWatch Operations Director, Scott Kovac stated, "It is easy for data to get buried and never see the light of day in the Lab's contamination database. LANL should proactively keep the public continuously informed of important new developments. NMED and LANL must modify and expand the chromium groundwater treatment plan to meet this growing threat. The new well must not be used for injection, and instead treated water should be injected in front of the contaminant source to help permanently flush it out, instead of behind it which will push the contamination offsite."

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Background

Chart of samples data from Intellus NM compiled by Nuclear Watch. To locate data, go to http://intellusnm.com and search by Location ID.

Field Sample ID	Location ID	Sample Date	Parameter Name	Report Result	Report Units	Sample Time
CrIN6-17-142149	CrIN-6	07-16-2017	Chromium	247.24	ug/L	19:00
CrIN6-17-142150	CrIN-6	07-16-2017	Chromium	249.69	ug/L	23:00
CrIN6-17-142148	CrIN-6	07-17-2017	Chromium	262.07	ug/L	15:00
CrIN6-17-142151	CrIN-6	07-17-2017	Chromium	252.07	ug/L	03:00
CrIN6-17-142152	CrIN-6	07-17-2017	Chromium	260.22	ug/L	11:00
CrIN6-17-142154	CrIN-6	07-17-2017	Chromium	257.65	ug/L	07:00
CrIN6-17-142163	CrIN-6	07-17-2017	Chromium	259	ug/L	15:00

Chromium was released into the head of Sandia Canyon until 1972.

- Potassium dichromate was used in cooling towers as a corrosion inhibitor at a Laboratory power plant
- Up to 72,000 kg was released from 1956-72 in hexavalent form [Cr(VI)]

Discovered in 2004

- A Cr plume is in the regional aquifer at 900–1,000 feet below the canyon bottom at deepest, which places the Cr into the top of the aquifer
- Size was estimated at approximately 1 mile x 1/2 mile x <50 feet thick
- Plume edge is approximately 1/2 mile from the closest drinking water well

For how the 2016 Consent Order has weakened NMED's regulatory authority, see https://nukewatch.org/facts/nwd/Consent-Order-should-be-rescinded-9-10-17.pdf