



Overview of the Superfund Cleanup of Toxic & Radioactive Contamination at Livermore Lab

By Tri-Valley CAREs' executive director, Marylia Kelley, & environmental scientist, Peter Strauss, May 2017

Nuclear weapons activities at the Livermore Lab Main Site and its Site 300 high explosives testing range have resulted in hundreds of documented toxic and radioactive releases to our air, soil, groundwater and surface waters. These activities, and the dangers they pose, are ongoing.

Both locations are federal "Superfund" sites. The EPA placed the Livermore Lab Main Site, located on East Avenue in Livermore, CA, on its list of most poisoned sites in the country in 1987. Site 300, located on Corral Hollow Road near Tracy, joined the Superfund roster in 1990.

The cleanup of contaminated soil and groundwater aquifers at both locations is complex and includes multiple and often commingled plumes of hazardous and radioactive wastes, involving uranium, tritium, volatile organic compounds, high explosives, hexavalent chromium and others. The cleanup timeframe is multi-generational and will take 50-80 years, or more.

The necessity to address this pollution more urgent than ever, due in part to federal budgetary problems, which have the effect of doing "less" environmental protection rather than "more". Further, the Livermore Lab has delayed technical progress on the cleanup and abandoned crucial community involvement obligations.

Livermore Lab's Main Site is just over one square mile, houses nuclear materials, and sits in a heavily populated area less than 200 feet from an earthquake fault zone. The EPA has calculated that the largest off-site groundwater contaminant plume could affect City water wells. If that occurs, it is estimated to result in an additional one cancer for every thousand Livermore residents drinking the water.

Site 300 essentially encompasses 2 earthquake faults. It conducts Livermore Lab's major high explosives tests and has multiple old, unlined dumpsites with leaking radioactive and toxic wastes. Site 300 is 11 square miles and sits just west of downtown Tracy and east of Livermore. Like the Main Site, it is part of the U.S. Department of Energy (DOE) National Nuclear Security Administration nuclear weapons complex. Over the years, Tracy has expanded westward toward Site 300, and a residential development of 5,500 homes was recently approved near Site 300.

Since it was founded in 1955, Site 300 operations have included open-air blasts with high explosives and multiple toxic and radioactive materials used in nuclear weapons. Current operations include contained detonations, open-air blasts, explosive and hazardous waste burning, and radioactive and hazardous waste storage. Prevailing winds blow contamination into the Central Valley, and, particularly, to Tracy.

At Site 300, the EPA estimated the risk of drinking the water at pumped from wells at the fence line of this 11 square mile site was estimated to result in one cancer for every hundred people. *(turn over)*



In addition groundwater is used for irrigation near both of these sites. While we have not yet seen farmers trading off the risks of using contaminated water to grow food, that day may come unless there is a continued effort by Livermore Lab to contain and clean up the groundwater contaminant plumes.

After years of cleanup these risks have decreased; nevertheless it is still urgent that all potential drinking water be cleaned up. However, at the Main Site and Site 300, the Superfund cleanup process has gotten off-track, and too many decisions are being made informally and out of public view. The power of our voices is a vitally needed antidote to bureaucratic inertia and the pollution lurking in our environment.

Lab's "Public Involvement" is Broken

At the Main Site, Livermore Lab has not held a meeting of its official "Community Work Group" to oversee Superfund cleanup decisions for nearly five years. The public is being systematically excluded. At Site 300, a pressing problem is the lack of *any* official process to involve the public in Superfund cleanup decisions. There is no "Community Work Group."

Tri-Valley CAREs' Goals for Public Participation and Cleanup

Our overall aim is to improve the quality and quantity of the Superfund cleanup at the Livermore Lab Main Site and Site 300. We believe that the remedy choices and cleanup levels chosen must reflect the entire community's input, not just that of the polluter and the federal and state regulatory agencies. The public that bears the health risks must be given the tools and the opportunities to decide "how clean is clean?" and which technologies for conducting the cleanup are acceptable. Because the cleanup has taken so long, and is projected to last until the beginning of the next century, Livermore Lab needs to develop plans that inform and involve the community, so that community concerns are not overlooked.

The solution is to strengthen the overall participation of community residents in Superfund decision-making. We at Tri-Valley CAREs can help by conducting outreach to Spanish speakers, instituting an environmentally focused Youth Video Contest and other student activities, and conducting workshops and community meetings, such as the one we are planning this fall in Tracy. And, we have instituted a Tracy Superfund Advisory Committee. That said, we must also continue to insist that, as the polluter, Livermore Lab steps up to its public engagement responsibilities more fully.

Key Questions for the Future

Along with renewed public involvement, there is a need to improve the management of pollutants and the cleanup technologies used at the Main Site and Site 300.

At the Main Site, the Lab has deferred completing a focused feasibility study to address the commingling of radioactive tritium and chlorinated solvents. Presently there is no role for the community in remedy selection. Moreover, there are several "pilot projects" underway requiring greater community oversight. They involve bio-remediation, injection of zero-valent iron, and in-situ thermal treatment of contaminants. Decisions will be made about where and when to use these technologies. Residents need to be at the table.

At Site 300, there is incomplete characterization of contaminants in soils, particularly in two areas used for bomb design tests involving depleted uranium, or DU, as well as issues concerning high explosive contamination of soils and groundwater. The remedial investigation/feasibility study to determine the best DU cleanup technology and the cleanup levels to be attained is lagging behind schedule and lacking any regular public involvement process.

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