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Spreading Perchlorate Woes
 Trouble Property Developers

Contamination From Chemical Dumped
 During Cold War Hinders Growth Plans

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Several of the nation's fastest-growing areas -- including Las Vegas, Texas and Southern California -- could face debilitating water shortages because of groundwater contamination by perchlorate, the main ingredient of solid rocket fuel.

The chemical, dumped widely during the Cold War at military bases and defense-industry sites, has seeped into water supplies in 22 states. The U.S. Environmental Protection Agency and the Department of Defense are embroiled in a bitter dispute over perchlorate's health effects, with the EPA recommending a strict drinking-water limit that the Pentagon opposes as too costly. Yet even without a national standard, state regulators and water purveyors are taking no chances: Dozens of perchlorate-tainted wells have been shuttered nationwide, casting a pall on growth plans in several parched areas.

Perchlorate is what scientists call an endocrine disrupter, a chemical that can alter hormonal balances -- thyroid hormones, in this case -- and thus impede metabolism and brain development, particularly among newborns. The chemical isn't believed to enter the body through the skin, so bathing in contaminated water isn't considered dangerous. The real debate is over how much ingested perchlorate causes harm. The outcome of that argument will ultimately determine how much the Pentagon and its defense contractors will have to spend to cleanse the chemical from the nation's drinking supplies.

The EPA has urged the Pentagon to undertake widespread testing for perchlorate in groundwater, but the Defense Department has resisted. Its official policy, issued last month, allows testing only where a "reasonable basis" exists to suspect perchlorate contamination is both present and "could threaten public health."

One major problem is that perchlorate is turning up in many unexpected places, including at military training and test ranges where rockets and missiles -- with their large quantities of solid propellants -- aren't believed to have been used. Some scientists believe other types of munitions that used tiny amounts of perchlorate may be the culprits. Many of the ordinary military ranges with perchlorate pollution lie on the outskirts of growing cities, in places that were once distant

THE CLEAN UP

- [Page One: Perchlorate Runoff Flows to Water Supply of Millions](#)⁵

12/16/02

- [Page One: Debate Rages Over Safe Levels of Toxin for Adults and Infants](#)⁶

12/16/02

- [California Prepares to Fight a Cold War Contaminant](#)⁷

09/12/02

MORE INFORMATION

- Read more on perchlorate on the EPA's Web site: <http://www.epa.gov/safewater/ccl/perchlor/perchlo.html>¹
- For more health coverage, visit the Online Journal's [Health Industry Edition at wsj.com/health](http://www.wsj.com/health)² and receive daily [health e-mails](#)³.

from civilian neighborhoods but now serve as watersheds and open space for sprawling suburban communities.

A SPREADING PROBLEM

Some details on eight of the 75 perchlorate nationwide. The U.S. Environmental Protection Agency's recommended safety level for perchlorate is 10 parts per billion.

Location	Where Found	Maximum Concentration (Parts per Billion)
Mather Air Force Base; Rancho Cordova, Calif	Monitoring well	640
NASA lab; Pasadena, Calif.	Water-supply well	5
Hills, Iowa	Private well	3
Aberdeen Proving Ground, Md.	Water-supply well	1
Mead, Neb.	Monitoring well	2
Henderson, Nev.	Monitoring well	3,700
Accomack County, Texas	Public water supply	4
Ogallala Aquifer, Va.	Public water supply	3

Source: EPA

For example, though the Navy said no perchlorate was used at the firing range at the Marine Corps Air Station in El Toro, Calif., the chemical showed up in groundwater tests beneath a site considered for a public park, according to attorney Greg Hurley of the site's restoration advisory board. Likewise, in Bourne, Mass., on Cape Cod, a perchlorate plume that has shuttered half the town's wells emanated from the nearby Massachusetts Military Reserve, a training range for

National Guard troops. And the plume that has curtailed 20% of the water supply of Aberdeen, Md., outside Washington D.C., began at Aberdeen Proving Ground, an Army training and munitions-test site. Representatives for the Army and National Guard acknowledge the perchlorate plumes originated from their ranges, and both services have assigned large teams of environmental experts to address the problem.

"Perchlorate is throwing a wrench in the works all over," says Lenny Siegel, who runs the Center for Public Environmental Oversight, a nonprofit group in Mountain View, Calif., that works with communities on military cleanups. "They've only started looking for it recently, and as far as I know, everywhere they've looked, they've found it."

The situation is most acute in the hills and desert frontier east of Los Angeles, where the military and its private contractors flocked to the wide-open spaces before and after the Second World War. Now, in one of the few bright spots of the national economy, those spaces are rapidly filling up with new homes that buyers line up to purchase before they are even finished.

The perennial California constraint is water, so the discovery of perchlorate in cherished underground aquifers throughout Southern California -- and in the mighty Colorado River itself, the water source for more than 15 million households in the region -- is raising alarm. The city of Rialto in San Bernardino County, for example, has lost half its water capacity to perchlorate contamination in recent months, with an additional 10% to 20% of its supply under threat from the spreading plume. Rialto and several nearby cities and water utilities have asked the Pentagon and defense contractors believed responsible for the pollution for emergency funds to buy replacement water, but have so far been denied.

Now Rialto is faced with a critical decision: how to slake existing water demand, while providing huge quantities of extra water needed for dust control to complete a crucial project on highway 210, without further spreading the perchlorate contamination. One proposal, to use recycled wastewater, would entail transporting water from the city's treatment plant in as many as 1,000 trucks a week. But the highway that would be used, Interstate 5, is so choked with traffic that the one-mile drive can take more than an hour.

"How can we expect our economy to hold if the freeway doesn't get built?" asks Bradley Baxter, Rialto's director of public works. "This perchlorate crisis could stop development in the city altogether."

The city of Santa Clarita in Los Angeles County, northeast of the San Fernando Valley, has had similar problems resolving perchlorate pollution at a 987-acre site once used for munitions manufacturing in the heart of the fast-growing Santa Clarita Valley. The city has lost three of its 13 drinking wells to perchlorate, which has seeped into both the shallow and deep aquifers in the area. For years, the city has planned homes and roads to be built on the so-called Whittaker-Bermite property to fill in the suburbs, which grew around the site like a doughnut, but local and state regulators, who found the perchlorate plume in 1997, couldn't prod successive owners of the land to clean it up.

Last month, California's Department of Toxic Substances Control ordered the original munitions maker that owned the site, **Meggitt PLC's** Whittaker unit, to begin cleanup immediately, but the company has yet to respond, says William Manetta, president of Santa Clarita Water Co. "Here we are five years later, and nothing has changed. Our wells are just sitting there," he says.

Whittaker's outside lawyer, Joseph Armao, says the company intends to fulfill any cleanup obligations it has, but it remains unclear whether Santa Clarita's perchlorate plume emanates from Whittaker's former manufacturing site. The attorney also said it is "only fair" that the Defense Department take responsibility for the perchlorate problem, because it furnished and oversaw much of the chemical's use.

Perchlorate has also turned up, from unknown causes, in the Ogallala aquifer, the major water source for nine West Texas counties near Midland. So far, no wells have been shut, though concentrations have been detected as high as 30 parts per billion, or 30 times the level the EPA recommends as safe. Warnings have been issued in some areas for people not to drink the water. Elsewhere in Texas, near Waco, the chemical has surfaced in wells at the McGregor Naval Weapons Plant, and downstream in the South Bosque River, which supplies water to the city of Waco.

In Nevada, the drinking supply for Las Vegas, which draws most of its water from Lake Mead above the Hoover Dam, this year contained perchlorate in levels 10 times what the EPA says is safe, according to data provided by the Southern Nevada Water Authority.

In nearby Henderson, perchlorate concerns are complicating plans to build a 9,000-home community on the 2,300-acre site of old industrial-waste ponds. The ponds drained toxic substances from several factories, including the one that manufactured the perchlorate that seeped into Lake Mead and the Colorado River.

The project's developer, Basic Management Inc.'s LandWell unit, has submitted two draft "Closure Plans" for the site in the past 18 months to Nevada's Division of Environmental Protection. But division officials say neither draft adequately characterizes the environmental risks associated with building the \$350 million project on top of former industrial-waste ponds. In particular, the "Closure Plans" make assumptions about the source and flow of the area's perchlorate plume that need to be verified, Nevada officials say.

Dan Stewart, chief executive of Basic Management, says the developer is completing the necessary studies and is committed to doing whatever it takes to clean the area properly. He says the company has already fully paid for two insurance policies to cap its environmental liability and is eager to move ahead with the project, named Provenance. "None of us went into this with our eyes shut," Mr. Stewart says.

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