

Groundwater information meeting in Santa Fe draws large turnout



Michael Dale, right, of the New Mexico Environment Department's DOE-Oversight Bureau discusses groundwater monitoring and surveillance strategies and philosophies with Charlie Nylander, left, program manager of the Lab's Groundwater Protection Program (RRES-GP), and Kim Granzow, also of NMED-OB. The trio had gathered in Santa Fe recently with other scientists and members of the public to discuss groundwater issues in Los Alamos and surrounding areas. The annual public meeting included numerous poster presentations focusing on differing aspects of the geology and hydrology of the Pajarito Plateau, the Laboratory's groundwater and drinking water testing results and efforts under way to understand the flow and transport of water beneath the Laboratory. The meeting was well attended and was intended to provide the public with a wealth of information about groundwater and how it can be affected by past or present Laboratory operations. As part of the Laboratory's ongoing commitment to environmental stewardship, Laboratory environmental scientists have been working cooperatively and closely with representatives of the state Environment Department on subjects of mutual interest. Photo by James E. Rickman

Los Alamos water is safe to drink

by James E. Rickman

Because of recent headlines about the possible detection of perchlorate in Los Alamos National Laboratory tap water, Laboratory officials wanted to provide employees with information that Los Alamos' water supply meets all state and federal drinking water standards and is safe to drink.

Laboratory hydrologists, Los Alamos County water system operators and state regulatory agency personnel all regularly sample the Los Alamos drinking water supply and analyze it for a suite of possible contaminants. Analyses of these samples have consistently shown that the drinking water supply in Los Alamos is of excellent quality.

Recent tests of tap water in the Laboratory's main technical area by representatives of the New Mexico Environment Department's Department of Energy Oversight Bureau were analyzed using a relatively new ultra-low perchlorate-detection technique that has yet to be approved or adopted by the U.S. Environmental Protection Agency, which regulates drinking water at the national level. The results of the tap-water analyses using this new method — known as Liquid Chromatography/Mass Spectrometry/Mass Spectrometry, or LC/MS/MS for short — indicated the possibility of perchlorate in the tap water at concentrations of 0.24 and 0.5 parts per billion.

Although currently there is no drinking water standard for perchlorate, the EPA has issued interim guidance that perchlorate concentrations in drinking water should not exceed four to 18 parts per billion. The levels NMED recently detected and announced are significantly below those concentrations.

Perchlorate is a non-radioactive chemical used in gunpowder, rocket fuel, high explosives, fireworks, radiochemistry experiments and automobile airbags. Perchlorate has been linked to thyroid dysfunction, making it a potential health hazard.

Perchlorate contamination of drinking water became an issue in 1998, when EPA added the chemical to its Safe Drinking Water Act Contaminant Candidate List and

released guidance that perchlorate concentrations in drinking water should remain below the four to 18 parts per billion threshold. The agency eventually intends to set a drinking water standard for the chemical.

The Laboratory has been monitoring drinking water supplies for perchlorate ever since EPA's 1998 announcement. In fact, the Laboratory was the first institution to detect perchlorate at concentrations of two to three parts per billion in a Los Alamos drinking water supply well (the Otowi-1 well) in 2000. The Laboratory announced the discovery in conjunction with DOE and county officials once the discovery was confirmed. Otowi-1 is one of many water-supply wells and does not regularly contribute to Los Alamos drinking water supplies.

The Laboratory is interested in potentially using the LC/MS/MS ultra-low perchlorate detection technique for its tests of drinking water to achieve a lower detection limit. However, the method suffers from several technical and quality-control uncertainties that have yet to be resolved. Laboratory hydrologists are working with DOE and industry experts to develop methods to overcome these uncertainties. Once those methods have been developed, the Laboratory will conduct a performance evaluation of the LC/MS/MS technique to determine whether it can be used to reliably measure perchlorate contamination in water.

Until that determination is made, the Laboratory will continue to use EPA's approved detection method to test Los Alamos drinking water supply. The method has a nominal detection limit of four parts per billion. To date, tests using the approved method have not detected perchlorate in Los Alamos tap water or in drinking-water-supply wells other than Otowi-1. All tests indicate that Los Alamos' drinking water quality is excellent.

Because perchlorate readily moves with water, the Laboratory also is working to reduce or eliminate perchlorate in the environment, particularly Mortandad Canyon.

Last year, an ion-exchange filtration system was added to the Laboratory's TA-50 Radioactive Liquid Waste Treatment Facility, which discharges into Mortandad Canyon. That filtration system has reduced

perchlorate in RLWTF effluent to below the perchlorate detection limit for EPA's approved testing method.

In addition, in the last month, the Lab completed its Passive Reactive Barrier in Mortandad Canyon. The PRB is designed to scrub the canyon's shallow groundwater of perchlorate from historic discharges before that water can continue downstream or toward deeper groundwater bodies.

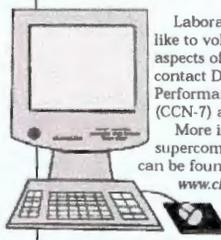
The Laboratory has an extensive groundwater monitoring and surveillance program for all areas of the Laboratory and continues to install new monitoring wells. The program has helped researchers gain a better understanding of how groundwater moves beneath the Pajarito Plateau and how legacy and current operations have affected or could affect the deep aquifer.

"The Laboratory is committed to being a good steward of the environment; our operations affect our quality of life and the quality of life of our regional neighbors. The Laboratory will continue to do whatever it takes to maintain its stewardship responsibilities and ensure that our community and the region remain a safe place in which to live and work," said Beverly Ramsey, Risk Reduction and Environmental Stewardship (RRES) Division leader.

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LANL: (General) (Groundwater, perchlorate)