



News Release

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For Immediate Release

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USGS releases comprehensive study of groundwater quality in Central Sierra Nevada

Some compounds of concern detected, but most are far below health-based thresholds

Volatile organic compounds (VOCs) and pesticides were detected in less than one-third of the 30 wells sampled in a wide-ranging survey of groundwater quality in the central Sierra Nevada, the U.S. Geological Survey (USGS) says in a new report. The detections of these constituents were all at levels far below health-based thresholds.

Under the State Water Resources Control Board's Groundwater Ambient Monitoring and Assessment (GAMA) Program, the USGS California Water Science Center is project lead for the Priority Basin Assessment Project, which is testing groundwater quality throughout California. The Central Sierra Nevada Study Unit – one of 36 across the state – involved testing 30 wells in the mountain portion of Madera County, just south of Yosemite National Park.

USGS scientists tested for more than 250 constituents – both naturally occurring and human-produced. Most of those detected were found at concentrations below drinking-water standards or thresholds. Six naturally occurring constituents -- fluoride, arsenic, molybdenum, uranium, gross-alpha radioactivity, and radon-222 -- were detected at concentrations higher than thresholds set for health-based regulatory purposes. Three additional constituents -- pH, iron and manganese -- were detected at concentrations above thresholds set for aesthetic concerns.

Volatile organic compounds (VOCs), generally from petroleum products, and pesticides were detected in less than one-third of the samples and generally at less than one one-hundredth of a health-based threshold.

The GAMA program's main objectives are to improve statewide ambient groundwater quality monitoring and assessment and to increase the availability of information about groundwater quality to the public. GAMA does not attempt to evaluate the quality of water delivered to consumers; after withdrawal from the ground, water typically is treated, disinfected, or blended with other waters to maintain water quality. Regulatory thresholds apply to water that is served to the consumer, not to raw ground water.

However, to provide some context for the results, concentrations of constituents measured in the raw groundwater were compared with health-based thresholds established by the U.S. Environmental Protection Agency and California Department of Public Health, and thresholds established for aesthetic concerns by the state. Therefore, any comparisons of the results of this study to drinking-water standards are for illustrative purposes and do not indicate compliance or non-compliance to those standards.

“The ability to detect the presence of man-made compounds in public-supply wells at ultra-low concentrations is important for the protection of our water resources,” said Dr. Kenneth Belitz, GAMA Program Chief Scientist. “Our goal is to understand how these compounds are transported from the landscape and into the aquifer system.”

The report, “Ground-water quality in the central Sierra study unit, California, 2006: Results from the California GAMA program: U.S. Geological Survey Data Series 335, 60 pages,” by Matthew Ferrari, Miranda J. Fram and Belitz, is available online at <http://pubs.usgs.gov/ds/335/>.

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The U.S. Geological Survey's [California Water Science Center](http://ca.water.usgs.gov/) (<http://ca.water.usgs.gov/>) operates project offices in Sacramento and San Diego where more than 130 scientists bring a broad range of disciplines to modern water-management issues. The center also has nine field offices where scientists and technicians gather hydrologic data on California's surface-water and ground-water resources.

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