

## Private wells in California farm area show high uranium

Ellen Knickmeyer, Associated Press

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SAN FRANCISCO (AP) — One in four household water wells in parts of California's Central Valley contains potentially harmful levels of uranium, a U.S. Geological Survey study said.

The federal study attributed the higher-than-expected uranium levels to farming in the Central Valley, which is one of the country's leading agricultural regions. Both heavy pumping of groundwater for irrigation, and man-made efforts to refill underground water aquifers, are leeching more naturally occurring uranium into underground water reserves used for drinking water supplies, the U.S. Geological Survey said.

The increased presence of uranium is mainly a problem in the east and south of the valley, where agricultural use of groundwater is drawing more uranium-bearing sediment out of granite formations, said [Bryant Jurgens](#), a research hydrologist at the geological survey's Sacramento office.

"Over time, it's going to occupy a larger and larger portion of the aquifer," Jurgens said of uranium-bearing groundwater. "So it is a concern."

One in four domestic wells in the eastern Central Valley, and one in five monitoring wells in agricultural areas of the valley, showed uranium at levels that would be unacceptable for public water systems, the study found.

Exposure to uranium at concentrated levels increases the risk of cancer and can damage kidneys.

The study, which calls the levels of uranium found in the California farm region's private wells surprising, is part of a report rounding up nationwide testing of 6,600 wells that draw from the country's main water aquifers.

Unlike public water systems, private water wells typically fall outside federal, state and local monitoring after they are drilled. The [California Division of Drinking Water](#) regularly urges county health departments to educate homeowners about the need to test private water wells for contaminants, said [George Kostyrko](#), spokesman for the state [Water Resources Control Board](#).

"Private water wells tend to have a higher rate of it because they're shallower," Kostyrko said of uranium.

Public water systems can treat for uranium by diluting the groundwater with fresher water, but that can be expensive, Jurgens said. Private well owners typically don't have that option, Jurgens said.

In the Central Valley's Kern County, environmental-health director [Donna Fenton](#) confirmed problems with uranium levels in some private water wells, but was unable to immediately say if it was an increasing problem, as the study suggested. Testing for uranium is required as part of getting a drilling permit for a new water well, Fenton said.

Roughly two-thirds of all groundwater used in California is pumped up in the Central Valley, primarily for farmers. A drought, now entering its fourth year, has sharply increased the dependence of farmers and other users on groundwater. The national report, released late last week, cut off in 2010, meaning it does not include any effect from increased use of groundwater during California's drought.

The Central Valley regularly ranks among the country's worst areas for water and air pollution. The U.S. Geological Survey study also noted that 29 percent of domestic water wells tested in the Central Valley showed nitrate levels — typically produced by fertilizer runoff from fields — are above the maximum acceptable amount. That compares with 4 percent nationwide.

The kind of permeable, unconfined aquifers found in the Central Valley are especially vulnerable to contamination, the study noted.

Nationwide, 22 percent of wells sampled showed at least one contaminant at a level high enough to cause concern, the study said.

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