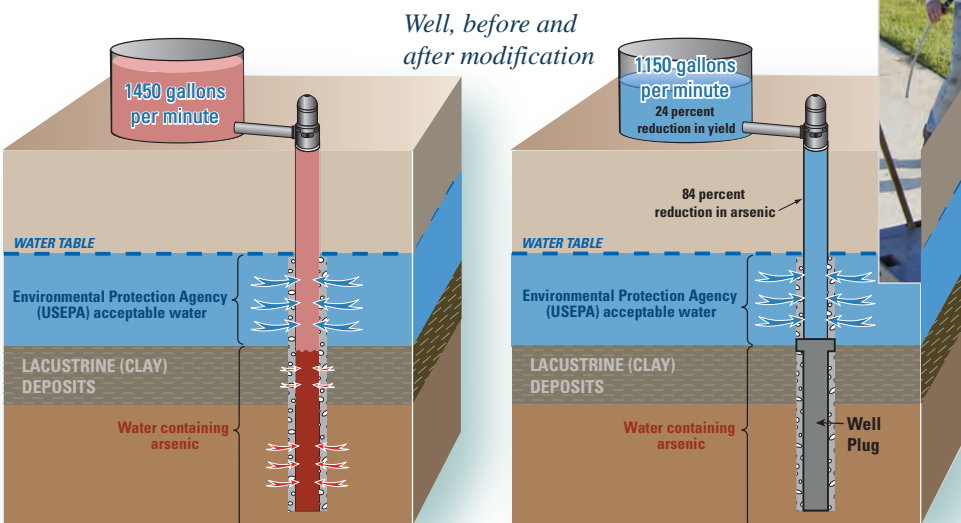


## USGS RESEARCH HELPS THE COUNTY OF LOS ANGELES ADDRESS NEW ARSENIC STANDARDS



In January 2006, the U.S. Environmental Protection Agency (USEPA) enacted stringent standards on arsenic in drinking water. The new limits raised concerns about wells in the Antelope Valley of northern Los Angeles County that had high levels of naturally occurring arsenic. To meet the new standard, Los Angeles County Waterworks District No. 40, part of the Los Angeles County Department of Public Works, considered building arsenic-removal facilities at a cost of nearly \$34 million. Instead, the District initiated a well-modification project that was based on the findings of a U.S. Geological Survey (USGS) scientific investigation.

Using a well flowmeter and down-hole sampler – invented by USGS scientists – the study team found that high-arsenic levels were concentrated in the deepest portions of the wells, 600 feet or more below the land surface. Using this finding, the District implemented a well modification pilot project where the deep portions of five wells were sealed off permanently, while preserving the ability to pump high-quality water from the upper sections. Well screens in the upper sections were first cleaned using an innovative sonic technique to increase the yield of high-quality water. The deeper sections then were sealed using micro-fine cement technology. The District now pumps water that meets the new USEPA standard for arsenic from the affected wells. Arsenic concentrations are lower by an average of 84 percent, while well yield is lower by only 24 percent. The total cost of the modification project for the five wells was \$608,580; a one-time net savings of 550 percent over construction of an arsenic-removal facility.



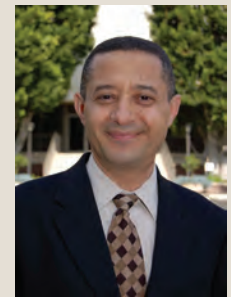
Not to scale



*“For over a decade, the USGS has supported our management of the Antelope Valley’s water resources by providing excellent scientific research, modeling, and analyses.*

*The well-modification project demonstrates the value of our cooperative efforts with the USGS.”*

Adam Ariki,  
Assistant Deputy Director,  
Los Angeles County  
Department of Public Works



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*USGS scientists invented a well flowmeter and down-hole sampler that can measure how ground-water quality changes with depth, and used the information to trace sources of natural and man-made contaminants.*