

Victorville Water District, California

Located in the high desert of Southern California, the Victorville Water District (District) is an independent, special district serving residents of the City of Victorville and the County of San Bernardino, and encompasses approximately 27 square miles within the Victor Valley.

Challenge

The District has approximately 7,000 service connections and is 100 percent dependent on local groundwater, which is pumped to the system from nine wells. In January 2006, the USEPA changed the maximum contaminant level for arsenic in U.S. drinking water supplies from 50 to 10 ug/l. All nine of the District's wells exceeded this new standard. To comply with this change in regulations, the District started investigating a cost-effective, readily available and easily operated water treatment technology that would meet these new requirements and not be a financial burden to its customers nor a drain on its staff. The District also needed to consider that its population was poised to reach 65,000 during the next 25 years. The new technology had to also be expandable.

Solution

Envirogen Technologies, Inc. (Envirogen) mobilized its 100-gpm mobile ion exchange unit to one of the wells for a trial period of one year. On the basis of data and measurements collected during the treatment process, the simulation program enabled the engineers to adjust the treatment process on a real-time basis for optimal operation. During the demonstration, roughly 127 million gallons were successfully processed, with a recovery rate of 99.94 percent.

Once the validation study results were confirmed, Envirogen was contracted to install its 1,000-gpm arsenic removal system, based on the operating performance and reliability of the ion exchange system. The California Department of Public Health approved the turnkey approach, and the system went online. The Envirogen technology treats arsenic to non-detect levels, which places the District in a position to meet potentially more restrictive standards anticipated in California.

Results

- The District's selection of Envirogen's ion exchange system was influenced by the combination of low capital cost, ease of operation, low maintenance and operating costs, and low waste production.
- The system included a contractual guarantee of compliance with the arsenic MCL so that the District would pay only for treated water delivered (per acre-foot) that complies with the federal arsenic standard.
- The long-term contract allows the District to spend less capital up front and saves the "hidden costs" of operations and maintenance, both of which are provided by Envirogen.



The first large arsenic removal system to be permitted in California was a 1,000-gpm system installed for the Victorville Water District by Envirogen.

*"The large-scale demonstration test gave our district the confidence to move forward with a full-scale unit. We are proud to be the first water purveyor in the high desert to supply arsenic-free water to our customers."
Don Bartz, General Manager, BMWD*