

Thomas J. Crowley, P.E.



A Better Way

As its traditional ion exchange process grew more expensive for perchlorate treatment, the West Valley Water District (WVWD) sought change with a new bioremediation plant. Assistant General Manager Thomas J. Crowley, P.E., recently discussed making the switch with WQP Managing Editor Rebecca Wilhelm.

Rebecca Wilhelm: What conditions necessitated the new plant?

Thomas J. Crowley: The majority of the perchlorate contamination in the Rialto-Colton Basin is believed to be attributed to both historical disposal practices associated with the former Rialto [Calif.] Backup Ammunition Storage Point, and more recent activities at and near the County of San Bernardino's Mid-Valley Sanitation Landfill (a property referred to as the 160-acre parcel) and other subsequent overlying uses in the northern portion of the basin.

The source of the nitrate contamination in groundwater in the basin is not fully understood; however, past agricultural activities are believed to be one probable source.

The loss of two groundwater drinking wells due to groundwater contamination has made it difficult for WVWD and the city of Rialto to maintain operation flexibility and to meet seasonal peak water demands. Because of rising perchlorate concentrations, Rialto declared a water supply emergency and joined with the district in an effort to stabilize local water supplies.

Wilhelm: What is perchlorate, where does it come from and what is its impact on human health?

Crowley: Perchlorate is both a naturally occurring and man-made chemical that is used to produce rocket fuel, fireworks, flares and explosives. Perchlorate can also be present in bleach and in some fertilizers.

In 2008, the deputy director for scientific affairs of the Office of Environmental Health Hazard Assessment stated in testimony before the U. S. Senate that:

"Our health concern is this: Perchlorate inhibits the uptake of iodine, an essential nutrient, by the thyroid gland. Inadequate iodine uptake disrupts proper thyroid

function. Thyroid hormones help regulate the growth and maturation of tissues, particularly the brain. Disruption of these hormones due to iodine deficiency can lead to impaired growth and development in fetuses. Several epidemiological studies indicate that iodine deficiency during pregnancy may affect brain development and may cause intellectual deficits in children."

Wilhelm: When will the plant be completed?

Crowley: We hope to finish the construction of the plant in the summer of 2012, and begin delivering water to the system by 2013.

Wilhelm: How did the WVWD and city of Rialto decide on Envirogen technology?

Crowley: We have been using an effective treatment to clean the water, but it is expensive. That traditional method, ion exchange, removes the perchlorate only, and the changeout rates of the filtering media is what makes the process so expensive for higher levels of perchlorate.

Our primary issues were the multiple contaminants and the elevated concentrations of perchlorate and nitrate. We were aware of the bioremediation technology from the other bioremediation treatment plants Envirogen has been operating in the West, but those treatment plants are not treating drinking water. In 2002, when the State Department of Health Service gave its "conditional acceptance" for using bioremediation for the removal of perchlorate from the public drinking water supply, we knew we had another option.

An extensive research study was conducted at an adjacent city of Rialto well. Envirogen's bioremediation technology provided a wellhead treatment at that well that demonstrated the successful and cost-effective removal

of the perchlorate and nitrate in the groundwater.

The next step was to secure funding for construction of a full-scale bioremediation water treatment plant. After we were successful in securing almost the entire cost of construction through grants and other government programs, we knew we were on the road to cleaning up the region's contaminant issue.

Wilhelm: Please explain how the new technology works. How is it unique?

Crowley: Bioremediation allows natural processes to clean up harmful chemicals in the water. Microscopic "bugs," or microbes, consume certain harmful chemicals, such as perchlorate and nitrates. When the microbes digest the pollutants there is nothing left except water and harmless gasses. Only a small amount of waste is left at the end of the process.

We will be sending the treated water through a multi-media filter before it enters the drinking water system. Envirogen's bioremediation technology is not what is unique—it has been used for some time. What makes this project unique is that this will be the first time a permit will be issued for using bioremediation technology for drinking water. *wqp*

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For more information on this subject write in 1009 on the reader service card or visit www.wqpmag.com/lm.cfm/wq041109.

New York Sees First Natural Gas Drilling Contamination Claim

Napoli Bern Ripka & Associates LLP filed a claim against the Anschutz Exploration Corp. on behalf of nine families for the contamination of their



drinking water due to natural gas exploration and drilling operations

in Horseheads, N.Y. The complaint alleges that the contamination reduced property values and jeopardized the families' health. The lawsuit is the first in New York state for natural gas drilling contamination.

Culligan Sells Company-Owned Franchises



Culligan International Co. announced that it will sell more than 100 company-owned

dealerships in North America. Many are located in large metropolitan markets such as Los Angeles, Dallas, Milwaukee, Toronto and Denver. Culligan said it is undertaking this initiative as part of its priority to focus on strengthening its position as the best franchisor in the water treatment industry.

PMI Adopts New Name

The Plumbing Manufacturers Institute changed its name to Plumbing Manufacturers Intl. (PMI). The organization chose the new name to preserve the reputation and recognition of PMI, while reflecting its worldwide involvement and outreach.

Water For People Marks 20-Year Milestone

Water For People celebrated its 20th anniversary of working to improve access to safe drinking water and improved sanitation. The organization was founded in 1991 by the American Water Works Assn. Today it works in 11 developing countries in Asia, Africa, Central America and South America.

Networking News

Aqua-Chem Inc. acquired Enviro-Solutions LLC.

Watts Water Technologies Inc. elected Merilee Raines to the board of directors. *wqp*

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