



Bethpage water district and H2M install first perchlorate removal plant in N.Y. State

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The Bethpage Water District and Holzmacher, McLendon & Murrell, P.C. (H2M) of Melville, NY, a multi-disciplined engineering and architectural service firm, recently completed the first drinking water treatment system for perchlorate removal approved in New York State. The water treatment plant was approved for operation in July 2008 by the Nassau County and New York State Departments of Health.

Naturally occurring and manmade perchlorate is typically found in the form of salts such as ammonium perchlorate, potassium perchlorate, sodium perchlorate and lithium perchlorate (less common). It persists in the environment when solid salts of perchlorate dissolve in water. With solubility similar to common table salt, perchlorate is extremely soluble, making it difficult to remove from water by conventional treatment processes. Perchlorate is extremely mobile in groundwater environments and can persist for very long periods of time due to the strong chloride-oxygen chemical bond.

Man-made perchlorate is most commonly used as the oxidizer and the primary ingredient in solid rocket fuel. Other uses are for fireworks, road flares, munitions, air bag inflator charges and matches. Perchlorate is also an impurity in chemical fertilizers and agricultural chemical compounds. The United States Environmental Protection Agency is still studying the prevalence, health effects and exposure pathways of perchlorate, so a federal drinking water standard has not been set. New York State has set an action level of 18 micrograms per liter (ug/l) for perchlorate, which if reached would require a well to be either treated or lost from service.

Following successful completion of a year long small scale pilot study finding that a cost-effective solution to remove perchlorate, through a fixed bed ion exchange process was attainable, the Bethpage Water District decided to implement the treatment process for one of its supply wells which had trace levels of perchlorate well below the 18 ug/l action level. Although there is no federal standard, the District wished to be out in front of the treatment technology in anticipation of a standard, while at the same time providing drinking water of the highest quality. With the new perchlorate removal system successfully in place and operating, a now proven treatment technology is available to the District and other water suppliers in New York State for the removal of perchlorate once a drinking water standard is set.

For further information on this and many other projects visit our website at www.h2m.com.

Founded in 1933, H2M has grown to be one of the most respected professional consulting firms in the Northeast, providing full-service engineering, architecture, environmental services, and laboratory analysis.

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