

Project Profile

*Brandywine Elementary School
New Palestine, Indiana
AD26 Arsenic, Iron, Manganese Removal System*



Background

In July 2009, AdEdge Technologies Inc. (AdEdge) was contacted by Ladd Engineering, Inc. to provide a proposal for the Brandywine Elementary School in the Southern Hancock School District. Shortly thereafter, AdEdge was selected to provide a potable water treatment system to the school to reduce elevated levels of arsenic, iron, and manganese that exceeded drinking water standards. Brandywine Elementary School has approximately 330 students and a daily usage of 5,000 gallons of water per day. The selected system was an AdEdge AD26 oxidation/filtration treatment system rated for 65 gallons per minute (gpm). Incoming iron concentration is 1.2 milligrams per liter (mg/L), manganese is 0.045 mg/L, and arsenic is 0.011 mg/L. The AdEdge system was selected over other options due to the previous success and IDEM permitted installations for removing these contaminants. IDEM typically requires filtration systems to be sized at 3 gpm/sq ft loading rate, but due to AdEdge's success using the AD26 technology in other applications including a successful US EPA Arsenic Demonstration Project in Clinton, IN, IDEM approved the AD26 system's >6.0 gpm/sq ft loading rate. AdEdge assisted Ladd Engineering with the preparation of the design submittals to obtain all regulatory permits. The system was designed, fabricated, installed, and started up in approximately two months and placed into full time operation in October 2009.



Treatment System

A modular AD26 oxidation/filtration treatment system was designed for the school. Most schools are burdened with limited space for a system as was the case with Brandywine. The versatility of the modular systems, combined with their smaller footprint due to higher loading rates, allowed design of a system that was accommodated in the existing space so that a separate building or expansion was not needed. The modular system at Brandywine Elementary consists of two 30-inch diameter carbon steel vessels with side mounted control valves, pressure gauges, flow meters, and the NSF approved AD26 media. The carbon steel vessels were plumbed in parallel configuration in the field along with all Interconnecting plumbing. The site used its existing chlorination module prior to the AD26 system to optimize the removal process for arsenic, iron, and manganese. The groundwater supply well following chlorine injection is routed through the system then to pressure storage. AdEdge has deployed the AD26 technology in many community and non-community public water system applications successfully throughout the U.S. and Canada for arsenic, iron, and manganese.



Performance

The modular treatment system is equipped with automatic controls, backwashing features, switches, gauges, flow meters, and sample ports for a complete functioning unit. Since commissioning the system in early October 2009, the system is removing arsenic to below detection. Iron and manganese are both being reduced to trace amounts after treatment. IDEM has recognized the AD26 treatment technology as a viable arsenic, iron, and manganese removal design for Indiana.

For More Information Contact

AdEdge Technologies, Inc.
Mr. Greg Gilles, Vice President
5152 Belle Wood Court, Suite A
Buford, Georgia 30518
(678) 835-0052 * (678) 835-0057 Fax
www.adedgetechnologies.com

Gary Ladd
Ladd Engineering, Inc.
(765) 482-9219
laddengineering@comcast.net

Mr. Don Perdue
Southern Hancock School Dist.
Director of Bldg and Maint.
4711 South 500 West
New Palestine, IN 46163
(371) 861-2129