

Project Profile

Meadow Lake MHC
White Lake, MI
750 GPM Iron & Manganese System



Background

In February 2008 AdEdge Technologies, Inc. was selected as the sole vendor by Sun Communities, a nation wide owner and operator of Mobile Home Communities, to supply an iron and manganese treatment system, for the Meadow Lake MHC in White Lake, Michigan. The Meadow Lake MHC treatment system is the third packaged treatment system Sun Communities has purchased from AdEdge. The site consists of two wells that serve potable water to 430 connections and a population of 1,063 in the community. Several options were considered based on the need to remove iron from 0.90 ppm to meet EPA standards. An AdEdge AD26 oxidation / filtration system was selected as the best overall approach to simultaneously remove the iron and manganese from the community water supply. The packaged AD26 system utilizes an NSF 61 Certified manganese dioxide media (AD26) that is excellent for co-contaminant removal. The technology was selected based on overall cost, the small footprint, and simplicity of operation. Following award, all appropriate permitting documents were prepared and submitted to MDEQ for approval with the permit being granted in April 2008. The raw water quality of the combined wells is shown in the table to the right.



Treatment System

The AdEdge AD26 arsenic treatment train consists of a completely integrated packaged treatment system with six vessels (two triplexes) in parallel to treat up to 750 gallons per minute (gpm). A design filtration rate of 9 gpm/sq foot is nearly 3 times higher than conventional greensand filtration offering high efficiency removal with smaller vessels and lower cost. The AD26 automated system equipped with a PLC, automated butterfly valves, and control panel is integrated with chlorine addition and monitoring for process control and disinfection purposes. The system is pre-engineered, pre-piped, and skid mounted for ease of installation and operation. A continuous free chlorine monitor on the system allows the operator to maintain desired disinfection residual in the distribution system. The AD26 technology has been deployed successfully by AdEdge on many high iron, and manganese wells to date and as also on 3 full scale EPA arsenic demonstration projects.

Priority Parameters		
pH **	7.60	estimate only
Total As **	na	mg/L As
As(III)	na	mg/L (if known)
Sulfides**	no data	mg/L
Hardness **	349	mg/L @ CaCO3
Alkalinity **	no data	mg/L @ CaCO3
Silica **	no data	mg/L SiO2
Phosphate **	no data	mg/L P04
Sulfate **	no data	mg/L SO4
Iron **	0.90	mg/L Fe
Manganese **	0.05	mg/L Mn

Performance

Installation was completed and the system was officially started up in 2008. Since operations began, the system has consistently removed iron and manganese to well below EPA MCLs. Iron and Manganese in the treated water has been recorded consistently below detection. Monitoring and periodic sampling of the system is performed by the site's certified operator in accordance with the MDEQ permit.

For More Information Contact

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