

RELATED EXPERIENCE

VILLAGE OF SPARTA WATER TREATMENT PLANT UPGRADES

The Village of Sparta commissioned an independent pilot study to analyze the effectiveness of removing iron and manganese from its raw water supply using Greensand Plus/Anthracite Coal or LayneOx™, a proprietary filter media

Location:	Sparta, Michigan
Construction Date:	2011
Construction Cost:	\$862,000
Change Orders:	
Client:	Village of Sparta
Contact:	Mr. Randy Carter, Water Superintendent (616) 887-0854

using the LayneOx™ filter media because of its higher loading rate capabilities and suggested converting the existing ion-exchange softening cells into iron/manganese treatment filters. Following the pilot study, the Village consulted with Johnson & Anderson about the possibility of adding iron and manganese filtration capabilities without abandoning the existing ion-exchange softening system.

J&A was contracted by the Village of Sparta to evaluate the existing WTP, and design and implement water treatment plant improvements. Johnson & Anderson completed the design and provided Contract Administration/Inspection for the addition of a LayneOx™ iron removal filter ahead of an existing softening system for the Village of Sparta. The design provided for the installation of automated valves for changing the process flow pattern to iron removal and softening, or iron removal only, or softening only, or bypassing of both iron removal and softening. Chlorine feed rate for oxidation of iron is controlled by the metered influent flow rate and modified by the chlorine residual, post iron removal filtration, to maintain less than a 0.5 ppm chlorine residual in the feed to the softeners. A modulating valve with meter provides for blending iron filtered water with softened water to bring the hardness up to a normal level. The system is unique, as it is the first water treatment facility to provide iron removal ahead of softening in the State of Michigan. The project won an American Council of Engineering Companies of Michigan Award of Merit in 2012.

