



TONKA EQUIPMENT COMPANY

Project Profile

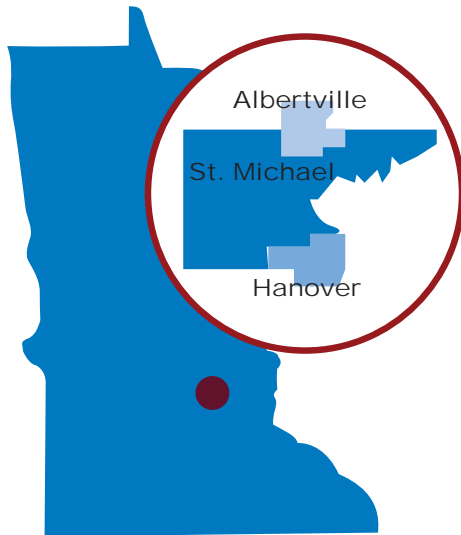
JOINT POWERS WATER TREATMENT PLANT Albertville • Hanover • St. Michael – Minnesota

JOINT POWERS WTP

Superintendent

Contact: Andy Ahles

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APPLICATION:

Iron & Manganese Removal

TONKA PROCESS EQUIPMENT:

Five (5) horizontal pressure filters
Simul-Wash™ backwash system

PROJECT HISTORY:

The communities of Hanover (pop. 2,550), Albertville (pop. 6,000) and St. Michael (pop. 15,000) realized their common interest of providing quality water to their respective communities. To take advantage of economies of scale, they joined together to form the Joint Powers Water Board. In 1999, the Board constructed the original water treatment plant, which provided the communities with 6 MGD of capacity. Being located within the Metro area of Minneapolis, the communities experienced rapid growth over the next several years, requiring an expansion of the plant in 2004 to provide an additional 4 MGD of capacity. Tonka supplied the original system with three filters in 1999, as well as the system expansion of two additional filters in 2004.

TREATMENT PROCESS:

The treatment process consists of pressure aeration and chemical feed for oxidation and disinfection, followed by pressure filtration. Each of the horizontal pressure filters is designed with arched plate underdrains and dual media filter bed consisting of 18" of manganese greensand and 12" of anthracite.

The filters include the value-added Simul-Wash™ backwash process. This unique process uses air and water in combination at sub-fluidized water rates to provide the most effective means of backwashing

granular media filters¹. Tonka's Simul-Wash™ media rejection backwash troughs were integrated into the filter design to allow the combined air and water backwash cycle to continue for an unlimited time without media loss. This feature maximizes filter cleaning efficiency and reduces backwash wastewater by approximately 50% compared to conventional methods.



PERFORMANCE:

The raw water analysis summarized below reflects moderate concentrations of iron and manganese existing in the water. The treatment process has been highly efficient in delivering high quality water as indicated below.

	Raw Water	Finished Water
Iron (Fe)	0.49 mg/L	0.01 mg/L
Manganese (Mn)	0.88 mg/L	0.02 mg/L

FOR ADDITIONAL DETAILS, PLEASE CONTACT:

Tonka Equipment Company

¹ Amirtharajah, Appiah, et al. *Optimum Backwash of Dual Media Filters and GAC Filter-Adsorbers With Air Scour*, AWWA Research Foundation and American Water Works Association, 1991.



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