



TONKA EQUIPMENT COMPANY

Project Profile

JACKFISH LAKE, SASKATCHEWAN MEOTA WATER TREATMENT PLANT

PLANT OPERATIONS

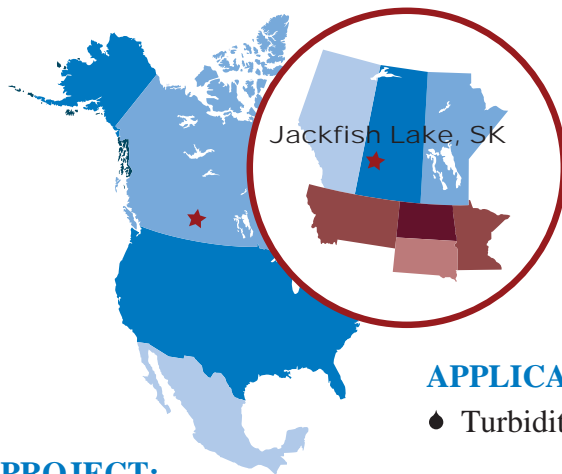
SaskWater

DESIGN ENGINEER

Associated Engineering - Saskatoon, SK

TONKA REPRESENTATIVE

Century Environmental Services



APPLICATION:

- ◆ Turbidity Removal

TONKA PROCESS EQUIPMENT:

- ◆ Tonka UTS™ surface water treatment unit

PROJECT:

Meota, Saskatchewan, located on the Southwest shore of Jackfish Lake, is surrounded by recreational communities that boast of sandy swimming beaches, great boating, and breathtaking sunsets. The residents around Jackfish Lake realized these attributes, along with a good drinking water supply for the communities around the lake, could help draw residents from larger communities to relocate in the pristine lake area. While the lake is a beautiful place, its water poses challenges to nearby communities who would like to use it for drinking water. Under normal conditions the water is quite turbid due to organic and inorganic contaminants. Furthermore, Jackfish Lake is a large warm-water lake, which leads to even higher turbidities when the wind picks up.

After investigating using the high turbidity lake water as a source-water, the idea was abandoned and the decision was made to drill three new shallow infiltration wells near Meota, SK, and take advantage of the soil's natural filtration. The new water source contains very high amounts of iron, manganese and TOC, requiring treatment to meet the Saskatchewan Environment Guidelines. Tonka's UTS-P, a unitized treatment system incorporating three treatment processes, was chosen to treat the water to meet drinking water regulations.

PROCESS:

At the Meota WTP, the raw water is pre-treated with coagulant prior to entering the Tonka UTS-P unit. As the water flows through the UTS-P, it undergoes three treatment processes: flocculation, sedimentation and gravity filtration. The flocculation step provides gentle mixing, which assists in forming larger floc particles. Following flocculation, the water travels into the sedimentation compartment where it flows upward through stainless steel inclined plate settlers. The plate settlers offer superior separation efficiency of solids over other

technologies, (namely tube settlers) and deliver clarified water to the Tonka Simul-Wash™ filtration component. The superior efficiency of plates allows for a smaller sedimentation compartment and a lower overall project footprint and cost. The solids that collect in the sedimentation compartment are periodically removed through a sludge removal system.

In addition to the UTS-P water treatment unit, Tonka also supplied the controls to automate the water treatment plant and took full process responsibility for effluent water quality.



Sedimentation compartment with plate settlers



Filter section with Simul-Wash™ trough for sustained combined air/water backwash.

PERFORMANCE:

Meota now boasts of a modern, highly efficient plant producing high quality water with minimal operator involvement required. Tonka is proud to have the opportunity to provide high quality drinking water to the residents and visitors around Jackfish Lake.

	Raw Water	Finished Water
Iron	2.2 mg/L	0.011 mg/l
Manganese	0.133 mg/l	0.024 mg/l
Colour	116 Pt-Co	0 Pt-Co
Turbidity	23 NTU	.063 NTU

FOR ADDITIONAL DETAILS, PLEASE CONTACT:

Tonka Equipment Company



TONKA EQUIPMENT COMPANY

763-55-WATER • 763-559-2837 • FAX: 763-559-1979 • www.tonkaWATER.com

P.O. Box 41126 • Plymouth, MN 55441-0126 • 13305 Watertower Circle • Plymouth, MN 55441