



TONKA EQUIPMENT COMPANY

Project Profile

KELLEYS ISLAND WATER TREATMENT PLANT Kelleys Island, OH

VILLAGE OF KELLEYS ISLAND, OH

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DESIGN ENGINEER

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TONKA REPRESENTATIVE

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APPLICATION:

Turbidity Removal

TONKA PROCESS EQUIPMENT:

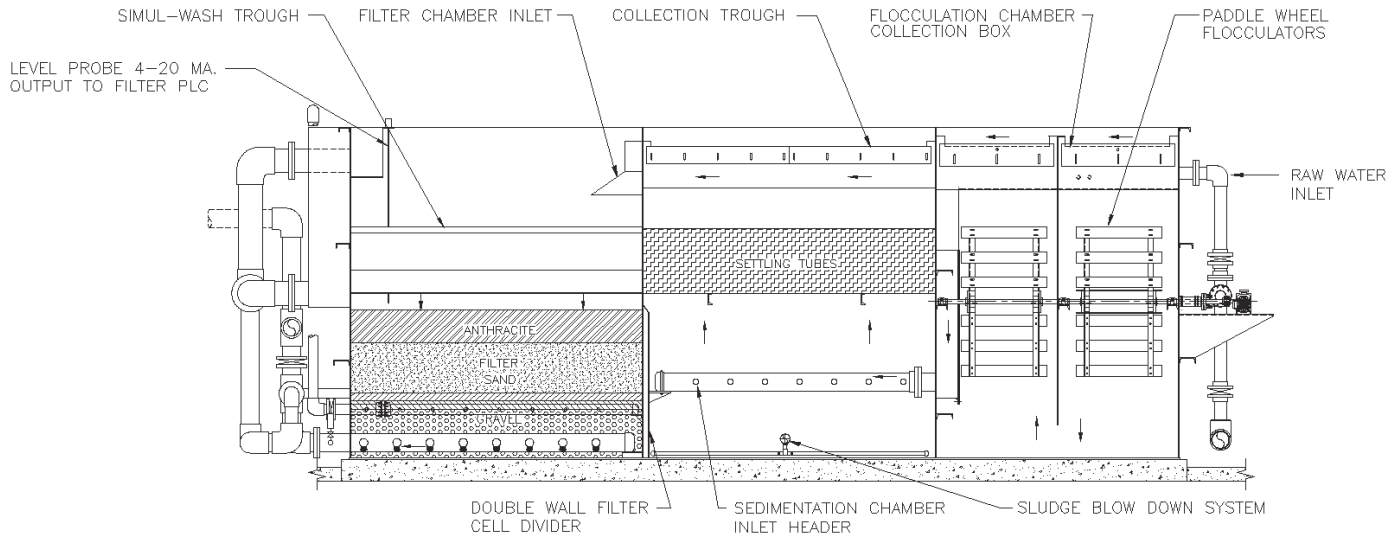
Three Tonka UTS™ modular surface water treatment units

PROJECT

The existing water treatment facility at Kelleys Island, built in 1973, consisted of slow sand filters for the removal of turbidity from Lake Erie water. The plant effluent turbidity levels routinely exceeded 1.0 NTU, with recorded spikes of 5.0 NTU. As a result, the Ohio EPA issued a consent decree to the Village, forcing it to improve its process. Because the water quality was not meeting standards, the project had an aggressive schedule – bidding in late June 2001 with final completion required by December 31, 2001.

PROCESS

By November 2001 Tonka furnished three (3) UTS™ modular surface water treatment units. Each unit is rated for 104 GPM and consists of an integral two-stage flocculation compartment, tube settling compartment, and filter compartment. An alum/polymer blend is added prior to the flocculation zone to assist in turbidity removal. The filters contain a tri-media blend of garnet sand, silica sand, and an anthracite cap, and are supplied with Tonka's Simul-Wash™ backwash system. This unique backwash system uses air and water simultaneously, at sub-fluidization rates, to provide the most effective means of backwashing granular filter media.¹ The Simul-Wash™ backwash troughs enable the air and water backwash cycle to continue indefinitely without media loss. This results in optimal filter cleaning efficiency and prolonged filter runs, while saving approximately 50% of backwash wastewater compared to conventional backwash methods.



PERFORMANCE

The Village of Kelleys Island commissioned the plant in April of 2002, and has been meeting effluent turbidity limits ever since.

	Raw Water	Finished Water
Turbidity	30 NTU	<0.1 NTU

FOR ADDITIONAL DETAILS, 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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