



# TONKA EQUIPMENT COMPANY

## Project Profile

### LNVA WEST REGIONAL WATER TREATMENT PLANT WINNIE, TX

#### WATER TREATMENT PLANT

Contact: Scott Hall  
Chief of Operations  
(409) 892-4011

#### DESIGN ENGINEER

*Schaumberg & Polk, Inc.*  
Contact: Rick Bourque, P.E.  
(409) 866-0341

#### CONTRACTOR

*ALLCO*  
Contact: Keith Burrell  
(409) 860-4459

#### LOCAL TONKA REPRESENTATIVE

*Environmental Improvements, Inc.*  
Contact: Bucky Richardson  
(713) 461-1111



#### APPLICATION:

Surface Water Treatment  
Turbidity Removal  
Flow: 5 MGD

#### TONKA PROCESS EQUIPMENT:

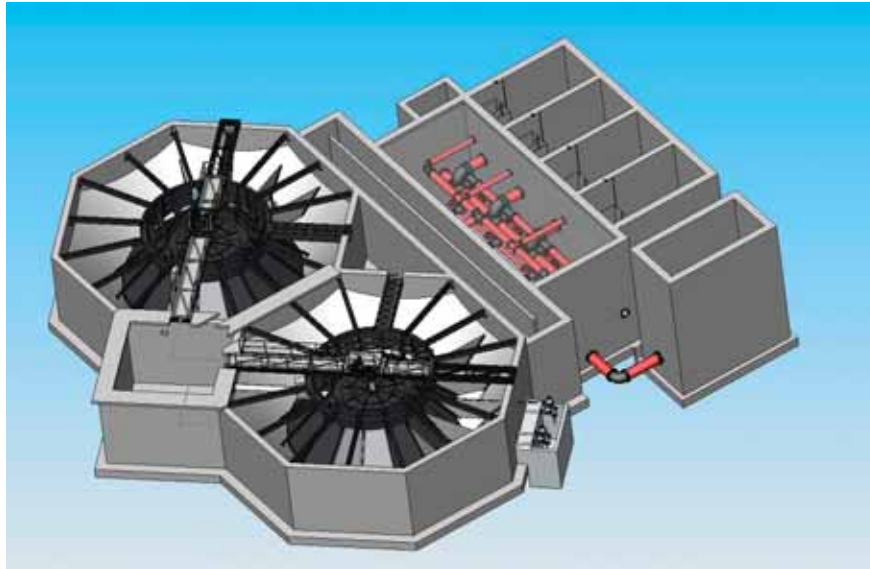
- Two RotaClear™ Clarifiers
- 4-cell Concrete Gravity Filters with Simul-Wash™

#### PROJECT

The Lower Neches Valley Authority (LNVA) and its engineering firm, Schaumberg & Polk, Inc., designed and built a new state-of-the-art 5 MGD regional water treatment plant. This plant was built to replace an aging groundwater system and supplies high quality potable water to the communities along the Bolivar Peninsula in Galveston County, TX. In addition to the water treatment plant, the project also entailed 33 miles of transmission line, storage facilities and pumping stations.

#### PROCESS

Raw water is provided by a lateral of the Neches River main canal. Upon entering the plant, the water is sent into an aeration basin prior to clarification. Sodium hydroxide, a coagulant and a polymer are added to aid in flocculation and settling. The Tonka RotaClear™ clarifiers are custom fabricated from stainless steel to eliminate long-term maintenance costs. The RotaClear™ clarifiers use a single drive rotor mechanism that provides for primary and secondary mixing zones as well as solids recirculation. A polymer is added between the mixing and settling zones of the clarifiers to promote coagulation. Clarifier effluent then passes through a chlorine contact basin and into the Tonka filters.



The four gravity filters are designed with additional expansion space should GAC be required in the future. The clarified water is flow-controlled by valves and split equally into the dual media filters. The underdrains are a monolithically poured 6" thick false floor, utilizing Tonka's media-retaining nozzles.

Each filter cell includes the value-added "Simul-Wash™" backwash process. This unique process uses air and water simultaneously at sub fluidization water rates, providing the most effective means of backwashing granular media filters! Tonka's Simul-Wash™ media rejection backwash trough was integrated into the filter design, which enables the air and water backwash cycle to continue for an unlimited time without media loss. These process features maximize filter-cleaning efficiency and reduce backwash wastewater by approximately 50% as compared to conventional methods.

## PERFORMANCE

The water treatment plant as designed applies current state-of-the-art technology to maximize treatment plant production at optimal efficiency. The Tonka treatment equipment supplied on this project has been extremely efficient in delivering high quality drinking water as indicated below.

Constituent	Raw Water	Post Clarifier Water	Finished Water
Turbidity	40-50 NTU	<1 NTU	0.05 NTU

### FOR ADDITIONAL DETAILS, CONTACT:

Tonka Equipment Company

<sup>1</sup>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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763-55-WATER • 763-559-2837 • FAX: 763-559-1979 • [www.tonkaWATER.com](http://www.tonkaWATER.com)  
 P.O. Box 41126 • Plymouth, MN 55441-0126 • 13305 Watertower Circle • Plymouth, MN 55441