



# TONKA EQUIPMENT COMPANY

## Project Profile

### HASTINGS, MINNESOTA WATER TREATMENT PLANT



#### **APPLICATION:**

Nitrate Removal

#### **TONKA PROCESS EQUIPMENT:**

Four (4) Tonka Anion Exchange Units  
Counter-current regeneration

#### **PROJECT HISTORY:**

Set along the rugged and colorful panorama of the Mississippi, St. Croix and Vermillion Rivers, Hastings, MN is a scenic river town steeped in tradition. With a rich heritage of progress, Hastings has grown and changed to meet the needs of its population without forgetting its past. This certainly rings true for how the community has handled its water treatment system.

Hastings has a plentiful groundwater source capable of supplying the community of over 22,000 residents with adequate water capacity. The groundwater quality is pristine with very little iron and manganese – below secondary standard levels. However, Hastings is located in a highly agricultural area, and over time, the nitrate concentration in several of their wells has increased to levels now hovering near the EPA mandated MCL of 10 mg/l (as N). To remain in compliance for years to come, the city made the decision to construct a new water treatment plant for nitrate reduction.

#### **TREATMENT PROCESS:**

The plant features four anion exchange vessels, each rated to treat up to 400 gpm. A portion of the total plant flow of 2400 gpm is treated through ion exchange while the balance is bypassed around the vessels and blended with the treated water to produce a finished water with a nitrate concentration below the standard USEPA limit. The bypass/blend allows the operator to remain in compliance today, as well as having the flexibility to adjust the treated/bypassed proportion to remain in compliance in the future, should the nitrate level continue to increase.

Tonka assumed system responsibility for this project and supplied a complete anion exchange treatment system including: the anion exchange vessels, resin, valves, facepiping, instrumentation, brinemaker, brine delivery components, control descriptions, and softener system for brine make-up water.

The anion exchange vessels incorporate state-of-the-art counter-current regeneration to maximize resin performance and manage brine waste.



Four Tonka Anion Exchange units each treating up to 400 gpm



Tonka's system responsibility includes anion exchange vessels, resin, valves, facepiping, instrumentation, brinemaker, control descriptions, and softener system

**PERFORMANCE:**

Hastings now boasts of water that meets the EPA guidelines for nitrate.

Contaminant	Raw Water	Blended Finished Water
Nitrate	8.8 mg/l as N	4.4 mg/l as N

**FOR ADDITIONAL DETAILS, PLEASE CONTACT:**

Tonka Equipment Company



**TONKA EQUIPMENT COMPANY**

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