



TONKA EQUIPMENT COMPANY

Project Profile

LANTANA, FL WATER TREATMENT PLANT

TOWN OF LANTANA

Operations Manager

Contact: Jerry Darr
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DESIGN ENGINEER

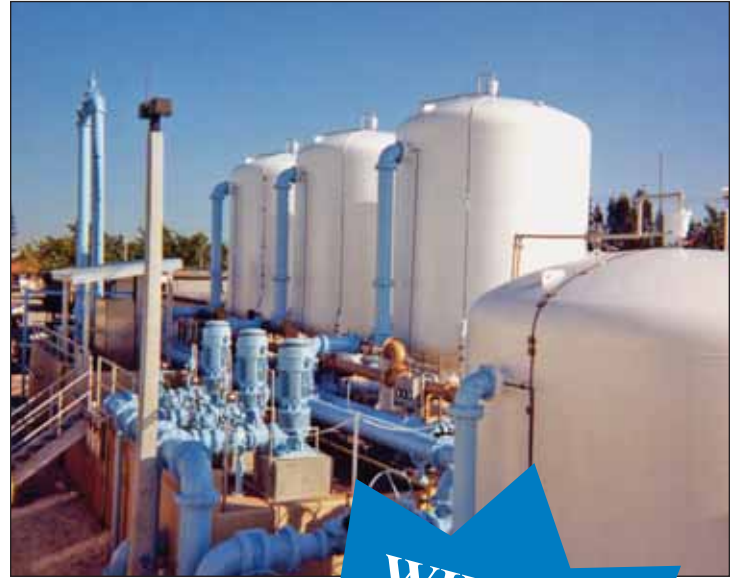
Mathews Consulting, Inc.

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TONKA REPRESENTATIVE

Envirosales of Florida, Inc.

Contact: Chuck Hlavach
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WINNER
of the
Florida Institute of
Consulting Engineers
2005 Grand Award
For Engineering Excellence

APPLICATION:

- TOC reduction, color removal and softening
- Design flow is 4-mgd

TONKA PROCESS EQUIPMENT:

- Tonka anion exchange system for TOC reduction and color removal
- Tonka cation exchange system for softening

SOUTH FLORIDA WATER CHALLENGES

Groundwater under the hydrologic influence of the Florida Everglades quite often contains high levels of hardness, total organic carbon (TOC), and color. Historically, municipalities in south Florida have used lime softening followed by chlorination to produce a color-free, soft water for their consumers. Unfortunately, this method is no longer viable since aggressive chlorination of color-causing organic compounds results in the formation of disinfection by-products (DBP's) such as trihalomethanes and haloacetic acids.

To comply with more stringent DBP regulations, many communities in South Florida have investigated installing membranes as a treatment alternative for their hardness/TOC/color issues. However, with reject rates as high as 20%, membranes are difficult to justify against the withdrawal limitations imposed by the South Florida Water Management District. Furthermore, the high capital and operating costs of membranes makes replacing an existing treatment plant with a new membrane plant difficult to justify.

PROJECT

Mathews Consulting, Inc. and the Town of Lantana chose to work with Tonka Equipment Company to design an economical and efficient ion exchange treatment system, which meets all current and anticipated regulations, while accommodating future expansion. The Tonka solution was found to be the most cost-effective alternative when compared to membrane treatment or any other organic/color removal process.

PROCESS

The treatment process consists of three (3) 12'-0" diameter strong-base anion exchange vessels for TOC reduction and color removal, plus two (2) 12'-0" diameter cation exchange vessels for softening. All the flow passes through the anion exchange vessels, while just a portion of the flow passes through the cation exchange vessels. Each anion exchange vessel treats 8 million gallons between regenerations, a process which requires approximately 40,000 gallons. The net result is an overall throughput efficiency of 99.5%. The Tonka-supplied system includes the brine maker and delivery system process, valves, instrumentation, NSF-approved ion exchange resins, and PLC controls.



Tonka brought to the project unparalleled experience in anion exchange systems for TOC and color removal in south Florida waters. We have several full scale anion exchange plants in south Florida as well as other ongoing pilot studies using the anion and cation exchange processes. Our experience in this technology allowed Mathews Consulting and the City of Lantana to specify Tonka for overall process and system responsibility, with guaranteed results.

PERFORMANCE

The Tonka treatment process designed with Mathews Consulting, Inc. has been effective in delivering high quality water, as indicated below.

Constituent	Raw Water	Finished Water	Removal
Color (Color Units)	50	2	96%
THM Formation Potential (µg/l)	453	33	93%
HAA5 Formation Potential (µg/l)	80	21	74%
Overall Throughput Efficiency	99.5%		

FOR ADDITIONAL DETAILS, CONTACT:

Tonka Equipment Company

www.tonkawater.com



TONKA EQUIPMENT COMPANY

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