



PSI Water Technologies
A UGSI SOLUTIONS COMPANY

ENGINEERED THM REMOVAL SOLUTIONS

PAX TRS™

Trihalomethane Removal Systems

PAX TRS™ Trihalomethane Removal System

THMs - A Growing Challenge for Municipal Water Systems

Trihalomethanes (THMs) are chemical compounds that form when natural organic matter in water reacts with chlorine during the disinfection process. THMs are a suspected carcinogen and regulated in many countries. Exceedance of the Maximum Contaminant Level (MCL) for THMs is among the most common violations of the EPA Stage II DBP Rule in the United States.

While most THM removal technologies involve large-scale changes to the water treatment plant, the PAX TRS™ Trihalomethane Removal System is a custom-designed, energy-optimized system of mixers, aerators and ventilators that converts ordinary water storage tanks into water treatment systems.

This targeted approach allows for quick and cost-effective installation that achieves compliance goals.



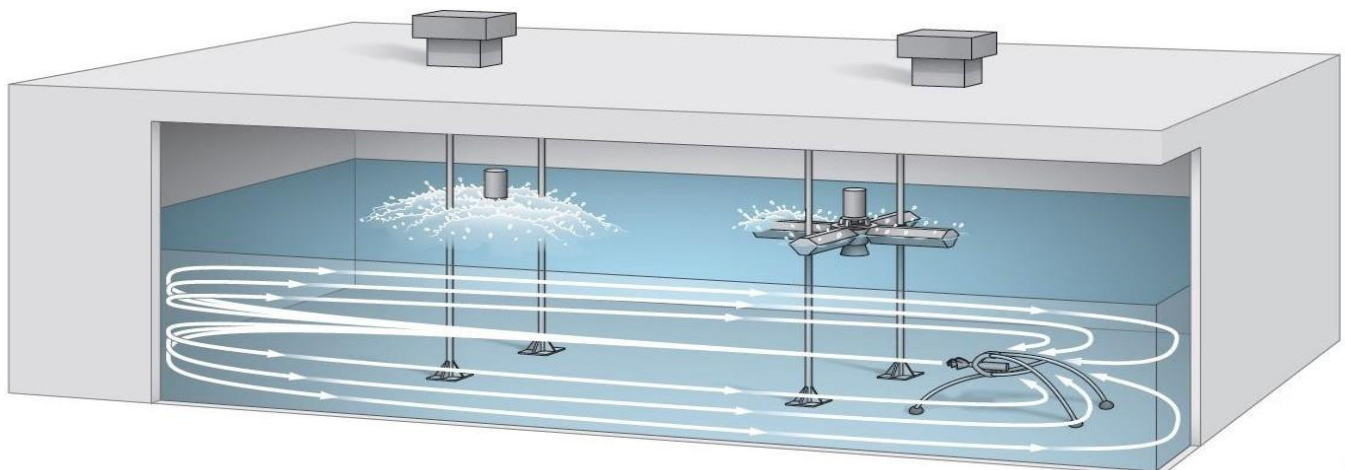
Active mixing and ventilation are the first steps in THM removal. The PAX Mixer continually introduces THM-concentrated water to the surface where THMs are volatilized and evacuated by the PAX Coaxial Powervent®.

Benefits of PAX TRS™:

- Custom-designed system for precise THM removal rates
- Energy-optimized for low operating costs
- Scalable designs for tanks 50,000 gallons to 50 million gallons
- Powerful active mixing for better water quality

Features:

- NSF61 approved materials
- Active headspace ventilation creates ideal conditions to volatilize THMs
- Robust equipment including non-clogging aeration nozzles and reliable surface aerators



Customized aeration systems provide high rates of mass transfer to volatilize THMs out of any size or shape tank.

Optimize THM Removal

“ We are seeing THM levels 40-70% lower leaving our More Avenue tank than those coming in. ”

*Adam Feffer, Water Quality Engineer
San Jose Water Company, California*

CUSTOM INTEGRATED CONTROL PANELS - HAVE IT YOUR WAY



The integrated control panel brings the controls for aeration, air handling, and mixing systems into a single, high quality control panel that meets the specific and unique standards of each customer. From a basic set of motor starters to custom programmed PLC-based panels, we have the experience and expertise to understand your control requirements and deliver plug-and-play panels that minimize field wiring. With our standard offering featuring Allen-Bradley components we can provide the right level of customization. Options Include:

PLC Manufacturer: Allen-Bradley, Siemens, GE, IDEC

Enclosure Type: NEMA 3R, NEMA 4X, deadpanels, sunshades, etc.

Active Feedback Control: Integrate an on-line THM sensor to continually monitor THM concentration in the tank effluent to save energy and run-time by turning off equipment when reduction targets are achieved.

COAXIAL POWERVENT® - DESIGNED FOR WATER TANKS



The PAX Coaxial Powervent® is the first air handling unit designed specifically for water storage tanks.

Replacing an existing passive tank vent with an active Powervent® capable of air flow rates in the range of 2,000 to 12,000 cfm creates conditions favorable for efficient mass transfer of THMs. At the same time, the exchange of air in the headspace reduces temperature, humidity and chlorine vapor levels, reducing the corrosivity of the atmosphere inside the tank, and prolonging the life of the tank coatings.

Vacuum Break Panels: Spring loaded sub-panels open for additional air inlet during rapid tank drawdown.

Local Disconnect Switch: Safety disconnect within reach of motor and pulleys for easy access.

Vibration Isolation: Designed to run quiet, with double studded vibration isolators to keep the neighbors happy.

Patented: www.ugsisolutionspatents.com

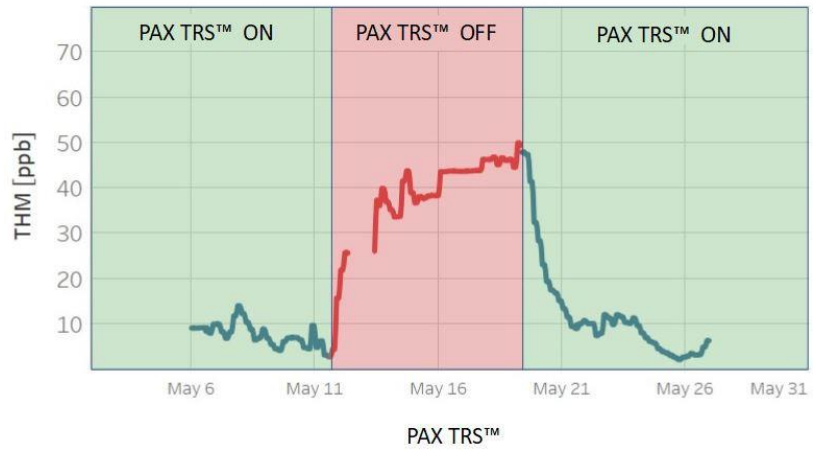
"The PAX TRS™ system was easy to install and performed well by delivering a level of THM removal that helps ensure our system compliance."

*Tyler Foxtton, Project Engineer
Manitoba Water Services Board, Canada*

Success Story: San Jose, California

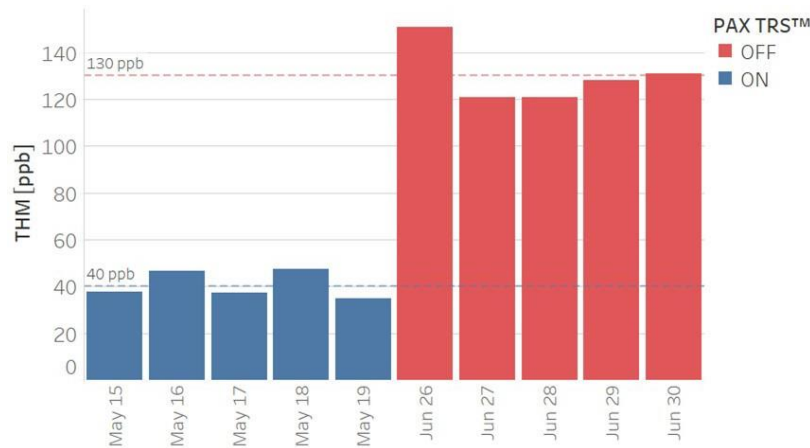
Tank Size: 12 MG
 Tank Type: Underground
 THM Removal Achieved: 40-70%

During the multi-year drought in California, San Jose Water Company's sophisticated monitoring program anticipated an increase in THM precursors developing in its system due to deteriorating water quality. To prepare, it installed a system of PAX Mixers, Powervents® and a custom air-handling unit to maximize THM removal inside the tank. Staff were impressed by the speed of project completion and "excellent results from the system."



Optimized Performance & Energy Efficiency

When it comes to selecting the right THM removal system for your tank, custom design is key. Optimizing system design is critical for predicting and achieving THM removal rates, minimizing energy requirements and managing long-term operating costs. PSI Water Technologies partners directly with municipalities and engineers to diagnose THM formation and perform a system-wide treatment analysis. This data, together with our proprietary design and performance modeling software, enables PSI Water Technologies to create in-tank aeration systems that are cost-effective and energy-optimized. The result is right-sized THM removal technology for your specific tank's needs.



Success Story: Manitoba, Canada

Tank Size: 0.1 MG
 Tank Type: Underground
 THM Removal Achieved: 70%

In 2016, the Manitoba Water Services Board issued a request for a pilot study to assess whether aeration could achieve high removal rates of THMs in a cold weather environment. PSI Water Technologies was selected to perform a multi-year pilot test of surface aeration, with heated forced headspace ventilation to allow operation during extreme cold temperatures. After 18 months of continuous operation, the PAX TRS™ system achieved an average 70% reduction of THMs in the reservoir, and kept THM levels low throughout the distribution system downstream of the treatment tank.



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