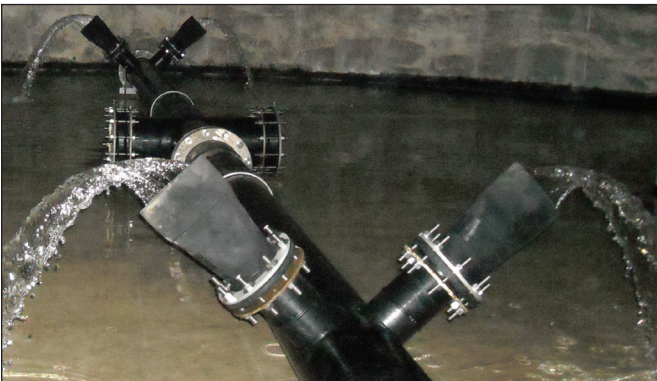


Tideflex[®] Mixing System (TMS) for Potable Water Storage Tanks Improves Water Quality by Complete Mixing



The Tideflex[®] Mixing System (TMS) is installed in over 3,000 tanks and reservoirs as small as 2,000 gallons to over 20 million gallons. The TMS improves storage tank water quality and is effective in every tank style, including circular, rectangular and irregular-shaped reservoirs, standpipes, dry riser and wet riser elevated tanks.

A survey of consulting engineers, water utilities and state regulatory agencies revealed the primary reason for the extensive utilization and approval of the TMS is because the system is passive (no additional energy source), proven (field tested), and supported by engineering expertise.

Passive: Given the maintenance burden of distribution systems already placed on water utilities, very few are interested in installing mechanical equipment in storage tanks due to maintenance and inspection requirements. The TMS requires virtually no maintenance and uses the energy of the fill and draw cycles to eliminate short-circuiting and to achieve complete and passive mixing without the need for an outside energy source.

Proven: Extensive CFD and Scale Modeling have been generated for the TMS in almost every tank style imaginable. TMS has been validated to improve water quality by owner-conducted field sampling and monitoring of parameters such as temperature, residual, pH, Dissolved Oxygen (DO), nitrites, nitrates and Heterotrophic Plate Count (HPC).

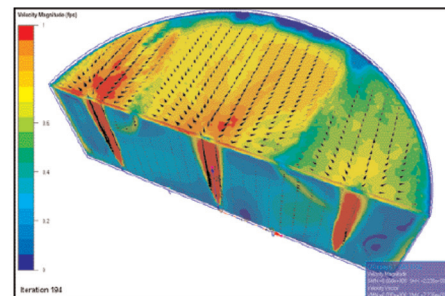
Engineering Support: For every tank, Red Valve Engineers select the optimum TMS configuration based on CFD and Scale Modeling, and run Manifold Hydraulics Mixing Analysis Models. This Mixing Analysis shows the owner exactly how much tank turnover is required to achieve complete mixing. For existing tanks, Red Valve reverse engineers the TMS to ensure complete mixing based on how the tank is actually being fluctuated.

TMS Features:

- Tideflex[®] Inlet Nozzles and Waterflex[®] Outlet Valves are NSF 61 Certified
- Separates inlet and outlet with one manifold pipe
- Achieves complete mixing with optimized jet velocity of Tideflex[®] Inlet Nozzles
- Eliminates short-circuiting, dead zones and thermal stratification
- Completely passive, no outside energy source needed
- Extensively CFD and Scale Modeled in all tank styles
- Field validated in all tank styles by owner-conducted sampling of temperatures and residuals
- 30-year expected life with virtually no maintenance
- Installed in any size and style of tank

What Problems Does the TMS Solve?

- Disinfection By Product (DBP) formation
- Loss of disinfectant residual
- Nitrification in chloraminated systems
- Bacteria regrowth
- Variation in pH and dissolved oxygen
- Thermal stratification
- Excessive water age
- Ice formation



CFD Model

The increase in distribution system regulations, such as the Stage 2 Disinfectants and Disinfection By Product Rule (Stage 2 DBP Rule), and the increased use of chloramination have put more emphasis on the water quality impact of distribution systems, including storage tanks. The TMS is an extensively modeled and validated multi-port mixing system that has proven to eliminate water quality problems such as loss of residual, bacteria regrowth, nitrification, DBP formation, taste and odor problems, increased HPC and pH, and DO variation.

The TMS is easily installed in new tanks and retrofitted to existing tanks. TMS has even been installed in water, while the tank is still in service. All TMS configurations have been CFD and/or Scale Modeled and field validated.