ATLANTIUM

Chennai, India



Disinfection

Municipal

Disinfection for Drinking Water Plant in Chennai, India

The Challenge

A 1.5-million-liters-per-day (MLD) drinking water plant in Chennai, India, operated by Chennai Metropolitan Water Supply and Sewerage Board (CMWSSB) needed to effectively treat high algae loads in its lake water source. The lake source water in Chennai, Tamil Nadu, has a high organic load. Treatment with traditional chlorine disinfectants, coupled with the naturally high organic load of the lake water, can contribute to the formation of harmful DBPs. As a result, a new disinfection solution was needed, one that would improve water quality while being reliable, maintainable, and sustainable regardless of seasonal fluctuations in water temperature and quality.

The Solution

In 2018, with the support of the local Indian integrator and channel partner, Yaha Water Systems, CMWSSB selected and installed Atlantium's HOD™ (Hydro-Optic Disinfection) UV technology as part of its multi-barrier treatment process.

Atlantium HOD UV systems effectively inactivate pathogens and bacteria. This is achieved by combining ultraviolet water disinfection technology with hydraulic and optic principles. The HOD UV system features unique Total Internal Reflection (TIR) technology that recycles UV light energy, ensures homogenous UV dose distribution, provides superior power (kW) efficiency compared to traditional UV, and achieves unprecedented micro-organism inactivation. The technology provides a chemical-free disinfection approach that minimizes the formation of carcinogenic disinfection byproducts (DBPs) and helps to ensure drinking water quality standards and compliance without imparting any negative effects on the treated water.

As a physical disinfection process, HOD UV provides an environmentally friendly solution that eliminates the reliance on chemical disinfectants and their associated risks (e.g., safety, storage, chain of supply, handling, and formation of carcinogenic DBPs).

The HOD UV technology easily inactivates the microorganisms that threaten public health including chlorine-resistant pseudomonas, cryptosporidium, and giardia. The technology has third-party validation for full 4-log virus U.S. EPA compliance using a live Adenovirus, not a surrogate. This is one of many unique attributes of the HOD UV technology compared to traditional UV systems.



Results

Since the installation of Atlantium's RZ104 Series, it has proven to be an effective solution for the multibarrier non-chemical treatment approach being implemented at the Chennai drinking water plant.

In the treatment process, lake water is drawn by pumps that are installed on a specially designed floating pontoon in the lake and then transferred to tanks at the water treatment plant. From there, the algae-laden source water is treated through a lamella clarifier, followed by active media filters, and finally, the HOD UV system. The complete multi-barrier system features a combined, automatic control panel for online monitoring and system operation.





The floating pontoon in the lake used for source water for the Chennai drinking water plant

HOD UV

- Helps eliminate unpleasant taste and odor & reduces DBPs
- Third-party validated to U.S. EPA criteria for 5-log microbial and 4-log virus
- Features integrated system controls and software for operational ease
- Automatically generates compliance reports
- Features a small footprint modular design
- Easy to maintain and comes with 24/7 technical support
- Proven track record of disinfection efficacy

The environmentally friendly treatment scheme at the Chennai drinking water plant has less than 2% water waste and provides results that comply with the IS 10500 Drinking Water Standard.

Description	Inlet	Outlet	
TSS (ppm)	20-25	< 3	
Turbidity (NTU)	30-40	< 2	

Results comply with IS 10500 Drinking Water Standard



About us

For more than two decades, Atlantium Technologies has helped to ensure water safety with its innovative HOD[™] (Hydro-Optic Disinfection) UV technology and novel approach to performance, monitoring, and control. Atlantium's superior, environmentally friendly water treatment solutions ensure stable, efficient, and dependable production.

With thousands of full-scale installations for leading brands in various industries globally, we're committed to consistently meeting our customers' water quality needs, ensuring pure results.

Pure Performance

ATLANTIUM