

Municipal Water

Case Study: Lunenburg, Massachusetts, USA
Local Community Water Disinfection



The Lunenburg Water District is a municipal water supplier that produces municipal drinking water for a community of almost 6,000 people. In 2010 they acquired an additional well field, in close proximity to their existing wells, to meet the community's growing water requirements of 1,000 GPM. The new well triggered their interest in re-evaluating and improving their water disinfection solutions.

Customer Objectives

A key objective was to install a system with the capacity to meet future demands too (up to 1,500 GPM).

Another key objective was to improve the water quality. The wells are located in an aquifer with a high vulnerability to contamination due to the absence of hydrogeological barriers such as clay that can prevent contaminant migration. This obliged them to use a higher than usual dose of chlorine for disinfection, and the town's water authorities were receiving complaints from residents regarding the unpleasant taste/ odor of their drinking water.

Other considerations for the right water treatment system included economy of operation, reliability, ease of maintenance and green sustainability.

The solution that met all their objectives was an Atlantium RZ300-11 Hydro-Optic UV Disinfection system, which was installed and ready for operation in January 2011.

Atlantium Meets All Objectives

The Atlantium RZ300-11 system is an in-line, single-lamp unit, 12" in diameter. Despite the small footprint, it is designed for maximum flow of 1,500 GPM, and configured for variable outputs depending on flow and water quality.

The Atlantium unit met all of the Lunenburg Water District objectives, and more...

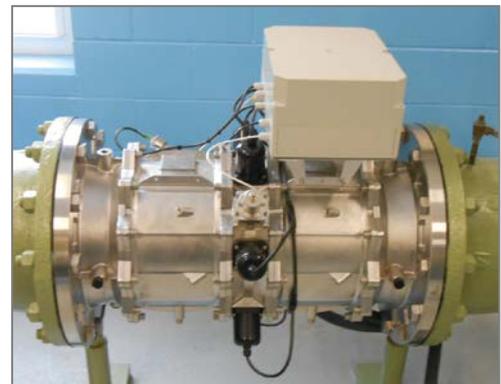


Figure 1: Atlantium RZ300-11 unit equipped with automatic ultrasonic cleaners



Figure 2: Small-footprint, large capacity solution

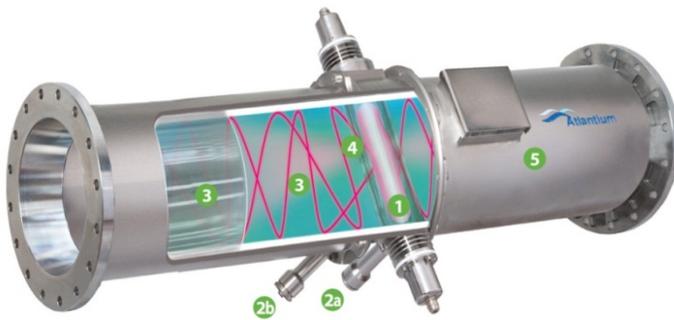
- Protects against DBP and TCR violations
- Modular system with capacity to meet future demands, even exceeding 1,500 GPM
- Fully third party validated to EPA criteria
- ON-SPEC performance
- Eliminated the cause for complaints of chlorine taste & odor
- The unit recycles UV photons to maximize efficiency and reduce power consumption
- Integrated software: sensors measure conditions in real time, enabling varying lamp output for cost-effective operation
- Robust hardware and controls with proven track record
- Push-of-a-button regulatory reports
- Only one lamp: easy to maintain, 4-minute lamp replacement
- Automatic ultrasonic cleaning

Why Atlantium?

Atlantium UV easily inactivates the microorganisms that threaten public health safety including chlorine-resistant pseudomonas, cryptosporidium and gardia. It inactivates viruses and heat resistant spores too.

Atlantium is the only UV company in the market today that provides UV water treatment that was previously thought to be unattainable without chemicals; the only UV company with third-party validation for full 4 log virus EPA compliance using a live Adenovirus challenge in full scale.

Atlantium has been able to change the UV paradigm thanks to patented hydro-optic principles, medium pressure high-intensity UV lamps and integrated software .



1. **Medium Pressure broad spectrum UV** easily inactivates even highly-resistant microorganisms and disables their repair mechanisms. Medium Pressure UV is efficient in cold water too (0-60 C / 32-140 F)!
2. **Integrated software automatically adjusts UV power to continuously maintain the required UV dose.**
 - a. One sensor monitors UV lamp intensity.
 - b. Another sensor monitors and controls the UV lamp to assure that it maintains the required dose.
3. **Patented Atlantium technology recycles UV photons,** optimizing energy efficiency. Fiber optic effects of Total Internal Reflection enable a uniform dose distribution, ensuring that the entire water volume is treated completely and uniformly.
4. **Thick quartz tube separates UV lamp from water chamber** for quick & easy lamp replacement; avoids risk of broken glass and mercury in water.
5. **Stainless steel housing** meets industrial standards.

“The Atlantium system has been operating 24/7 since January 2011. Every time we speak to Atlantium they emphasize that we need to keep the unit clean. The automatic cleaning system is doing a great job. I’d have to give the operation and maintenance of the Atlantium system high marks”

Lunenberg Water District



Figure 3: Monitor shows status of critical parameters in real-time, including actual dose being delivered.

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