



Copper-silver ionization helps hospital reduce Legionella positivity from 100% to 0% after 14-year struggle using chlorine dioxide

Challenge

In 2009, a hospital's main building was linked to an outbreak of Legionnaire's Disease. Lab tests showed that Legionella was present in water from six wards, resulting in partial facility shutdowns and the closure of 10% of their patient beds.

Further investigations revealed that recent plumbing infrastructure changes likely contributed to the widespread Legionella contamination by disturbing hot water circulation and creating cross-connections between old and new pipes.

In an attempt to resolve the contamination, the hospital implemented the following measures:

- » Temporary installation of point-of-use filters on all faucets and showerheads to ensure safe water during remediation.
- » Installation of chlorine dioxide systems to control Legionella.
- » Plumbing system upgrades, including the installation of tankless water heaters, removal of cross-connections, and rebalancing the hot water system.

The total cost of these efforts exceeded three-quarters of a million dollars, with nearly \$100K in recurring expenses for the chlorine dioxide systems. From 2009 to 2021, the hospital continued to test positive for Legionella despite continued use of chlorine dioxide.

Highlights

- ▶ **14-year effort using chlorine dioxide and more than \$2M in remediation costs failed** to resolve Legionella contamination.
- ▶ **100% to 0% reduction in Legionella positivity** after installation of copper-silver ionization.
- ▶ **Non-detect for Legionella since 2023.**

Solution

After a long unsuccessful effort to control Legionella using chlorine dioxide, the hospital partnered with LiquiTech to develop a remediation solution for their main building and a preventative solution for their rehabilitation center, including:

- » Installation of LiquiTech® Copper-Silver Ionization Systems at both facilities to control Legionella and reduce the risk of future disease outbreaks.
- » Installation of a LiquiTech® Sediment Filtration System on the incoming water supply at the rehabilitation center to prevent sediment from damaging plumbing and encouraging Legionella growth.
- » Ongoing services at both facilities to maintain and monitor equipment, provide predictive services, and collaborate on interventions.

Results

Two months after installing copper-silver ionization at the main building, the Legionella positivity dropped from 100% to 11%. The next round of testing showed 0% positivity, marking the end of their 14-year battle. Sediment filtration has prevented Legionella growth at the rehabilitation center, with both facilities continuing to test negative for Legionella.

“Service is huge for us. Any partnership we have needs to provide the level of service we expect, and LiquiTech does that. They’ve been great to work with and haven’t let us down yet.”

- VP Facilities Operations

Legionella positivity (main building)

