

Copper-silver ionization resolves high bacteria levels after failed remediation attempts with hyperchlorination

Challenge

In 2016, a California hospital began the process of opening a newly-constructed patient tower, including conducting state-required testing of the building water system. Bacteria levels exceeding state and federal EPA limits were found, preventing the new patient tower from opening.

Facility staff deployed three rounds of hyperchlorination over a two-month period, but bacteria counts remained above state and federal EPA limits. The hospital contacted LiquiTech to resolve the issue. After completing a plumbing infrastructure assessment to identify the root cause of the contamination, LiquiTech uncovered the following issues.

- » The new piping system was left to stagnate for more than 24 months as construction was completed.
- » Stagnation coupled with inadequate plumbing infrastructure created ideal conditions for the bacteria to proliferate and biofilm to grow.
- » Biofilm, highly resistant to hyperchlorination, continued to release bacteria into the water system after failed remediation attempts with hyperchlorination.

Highlights

- ▶ **3 rounds of hyperchlorination failed to resolve high bacteria levels**, preventing a hospital from opening its new patient tower.
- ▶ **Within 2 months, copper-silver ionization reduced bacteria levels within state and EPA limits**, allowing the new tower to open.
- ▶ **Bacterial control sustained since 2016** with copper-silver ionization, sediment filtration, and ongoing LiquiTech partnership.

Solution

After conducting a plumbing infrastructure assessment, LiquiTech developed a remediation solution to resolve the widespread contamination and a preventative solution to reduce the risk of future recolonization. This included:

- » Installation of a LiquiTech® Copper-Silver Ionization System to control bacterial levels throughout the water system, including in biofilms.
- » Installation of a LiquiTech® Sediment Filtration System to prevent sediment from entering the building, reducing bacteria's source of food and protection, limiting biofilm growth, and reducing corrosion damage to plumbing.
- » Hot water system improvements, including pump and expansion tank replacement and system balancing.
- » Ongoing LiquiTech services, including proactive maintenance, monitoring, and water quality testing.

Results

Within two months of installing the Copper-Silver Ionization System, test results showed bacteria levels within state and federal EPA limits, allowing the new patient tower to open. The combination of copper-silver ionization, sediment filtration, and LiquiTech's ongoing service partnership has helped the hospital maintain bacteria levels within state and EPA limits since 2016.

“LiquiTech has helped us reduce the threat of waterborne pathogens and prevent future recolonization so we can focus on providing the best in patient care at our hospital.”

- **Engineering Manager**

Remediation timeline

