

Major UK Airport Case Study – July/August 2025

Summary

A major UK international airport reported ongoing water quality issues in the mains cold water tank and associated outlets within its Air Traffic Control (ATC) tower. Supplied by the municipal system, the tower uses water for WCs, washrooms, showers, staff kitchens, and utilities. Although potable water is essential, the tower's water demand is low compared to airport terminals. Its self-contained setup made it an ideal site for targeted water treatment trials.

Background

ATC's existing water treatment involved dosing the mains tank with chlorine dioxide and routine outlet testing. Sampling for *Pseudomonas aeruginosa* and *Legionella* was carried out by an accredited third-party lab. *P. aeruginosa*, an opportunistic pathogen, poses a risk primarily to immunocompromised individuals. Total Viable Count (TVC) analysis was used to assess overall microbial levels. Following a positive TVC result, the water system was shut down for two days to shock dose the tank and clean affected areas. Bioload testing in the ATC Tower measured 600 colony-forming units per gramme (cfu/g) despite its regular use of chlorine dioxide. Some zones required repeated treatments (up to 25 times) at an estimated £1,950 per event.

Abulox Hypochlorous acid (HOCl)

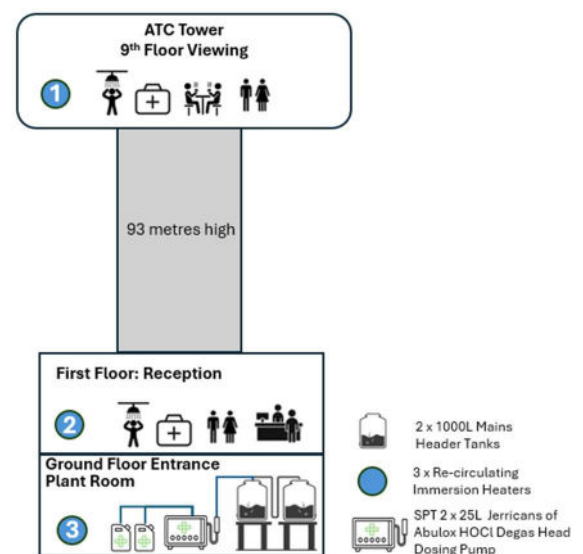
Supra Perfecta Technologies (SPT) proposed a fully documented technical trial using its Abulox Hypochlorous Acid (HOCl) as an alternative water treatment technology to replace the chlorine dioxide. SPT is the only company with a scalable, proprietary process for producing high-purity, stable HOCl at commercial volumes. Unlike traditional chemicals like chlorine dioxide, which pose health risks and may contribute to microbial resistance, SPT's Abulox HOCl is a non-toxic, effective, and environmentally safe alternative. Its broad-spectrum antimicrobial action makes it ideal for water treatment across human, animal, agricultural, and industrial applications.

SPT Trial – Abulox + Dosing Pump

SPT's technical trial integrated Abulox HOCl into the ATC tower's water system via a dosing pump. The trial included an initial shock dose to remove pathogens and biofilm, followed by a controlled maintenance dose to prevent recurrence. The dosing pump ensured accurate, consistent chemical delivery. Chemical concentration, flow rate, and water quality were closely monitored. Results showed that Abulox HOCl, combined with automated dosing, significantly improved treatment efficiency and water quality, while simplifying ongoing maintenance.

SPT Trial

1. SPT evaluated the existing ATC water treatment system and determined with maintenance staff the optimal dosing point and rate. The two mains water tanks were 1 metric tonne each (2000L) and usage was 1 tank per week (1000L). Mains water pressure is between 6-8 bar pressure. Water consumption was calculated at 150L per hour.
2. SPT shock dosed the cold water (CW) mains water tank with Abulox at 4.76ppm (156ml/hour dosage) for four days, which would allow the removal of biofilm within the mains water supply. CW and HW tap usage by staff facilitated the circulation of the HOCl within the system.
3. Retested all six areas. 6 out of 6 sites passed.
4. All areas were retested for *Legionella* and other broad spectrum micro-biological organisms including coliforms, E-Coli and TVC.
5. Maintenance dosing 1ppm has been in place since the trial and no positive TVCs detected.
6. 100% trial success rate in treating water quality issues at the UK international airport. Within four days, SPT reduced the ATC Tower's bioload from 600 cfu/g to 0 cfu/g.
7. As a result of the successful trial outcome this client is extending the use of SPT Abulox HOCl across its entire airport water network.



Third Party Test Results - UKAS Accredited Laboratory

	1	2	3	4	5	6
Sample Areas: Legionella pneumophilla Sg 1 Legionella pneumophilla Sg 2-15 Legionella Sp (non-pneumophilla)	ATC Staff Kitchen Taps	Cleaners Cupboard Taps	ATC Showers Female	ATC Showers Male	ATC Showers Disabled	ATC First Aid Room Taps
Pre-SPT Trial Tests Chlorine Dioxide	FAIL	FAIL	FAIL	FAIL	FAIL	FAIL
SPT Abulox Trial Shock Dosing Results July 2025	PASS	PASS	PASS	PASS	PASS	PASS
SPT Abulox Trial Maintenance Results August 2025	PASS	PASS	PASS	PASS	PASS	PASS

Conclusion

The water treatment trial conducted by SPT at the ATC tower resulted in a 100% success rate in eliminating all traces of *Legionella* from the system. The client now plans to use SPT Abulox across the entire airport water network. This exceptional outcome reflects not only the effectiveness of SPT's Abulox HOCl technology, but also the strength of the collaborative, solutions-focused relationship established between SPT and the client's engineering team.

From the outset, SPT worked closely with the client's onsite engineers to understand the specific demands of the ATC tower's water infrastructure and biofilm treatment system. The team conducted a detailed assessment of flow rates, system configuration, and usage patterns to tailor a precise dosing strategy.

By applying deep technical knowledge of shock and maintenance dosing, SPT was able to configure the dosing pump and chemical concentrations to match the exact operational needs of the ATC tower site.

Throughout the trial, SPT demonstrated agility and responsiveness rapidly adjusting the dosing strategy in response to fluctuations in flow and usage and ensuring uninterrupted treatment performance. The team also handled unexpected challenges with professionalism and confidence, including instances where dosing equipment became accidentally damaged on site. SPT responded swiftly with on-site support, equipment replacement, and real-time reconfiguration of the system to maintain treatment continuity.

This trial not only demonstrated the robustness and reliability of Abulox HOCl in a live operational environment but also reinforced SPT's ability to deliver customised, high-performance water treatment solutions in close partnership with its clients. The successful eradication of *Legionella*, combined with operational resilience and strong teamwork, positions SPT as a trusted, capable provider for mission-critical water treatment challenges in sensitive and high-stakes environments.

SPT is confident that its hypochlorous acid product is highly effective in managing and reducing facility bioloads exceeding 75,000 colony-forming units per gram (cfu/g). This confidence is based on extensive internal testing, industry-standard validation protocols, and the well-documented antimicrobial efficacy of HOCl.

SPT HOCl manufactured solutions are high purity and stable with the following benefits:

- kills all known pathogens such as bacteria, viruses, spores and fungi
- is non-hazardous for use on humans and animals and safe for the environment
- SPT HOCl is accredited to the following standards: EN1276, EN17387, EN17126, EN13727, EN13624