

ENHANCING ON-SITE WASTEWATER NEUTRALISATION & SEDIMENTATION CAPACITY

CASE STUDY | Healthcare - Medtech Manufacturing



| The client's needs

A leading global medical technology manufacturer required a major upgrade to its onsite wastewater treatment system to accommodate increased flows from new production equipment. The existing system, designed for lower volumes, faced constraints in pH correction, solids removal, and safe chemical management.

The client sought a solution that would:

- Safely neutralise electropolishing and wash-water wastewater
- Double hydraulic capacity without extensive civil works
- Integrate new treatment steps with existing tanks and pumps
- Improve sludge handling and sedimentation efficiency
- Enhance bunding, level control, alarms and chemical storage safety
- Fit within limited outdoor space and remain easy to operate
- Maintain compliance with regulated discharge limits for pH and solids

| The solution

Veolia proposed a containerised pH correction system paired with a new external sedimentation tank engineered to seamlessly integrate with the client's existing infrastructure.

The solution included:

- A modular treatment container with pH adjustment, mixing, and automated controls
- A 3.0m diameter sedimentation tank for improved solids settling and sludge removal
- Upgraded chemical dosing using double-walled chemical storage tanks
- Weather shrouds and systems to prevent rainwater ingress
- Integration with legacy tank systems and onsite pumping assets
- Automated safety features, including level alarms, bunding, eye wash, ventilation and lighting

The upgraded system doubled treatment capacity from approx. 50 m³/day to 100 m³/day, enabling the site to manage increased volumes from expansion activities without disruption.



Ireland

| The client

Ireland -- A global manufacturer of advanced medical technology products operating several large production facilities in Ireland. The site requires stringent environmental management to support high-precision manufacturing while meeting regulatory compliance obligations.

Key Facts & Figures

Technologies: Containerised pH Control, Sedimentation Tank, Chemical Dosing Systems

Project Type: Wastewater pH Correction & Sedimentation Upgrade

100 m³/day
Flow capacity increased

Stable pH neutralisation

Safe chemical handling and bunding

| Process description

At the core of the upgrade is a compact containerised pH correction system designed to safely neutralise wastewater from electropolishing and wash processes. Wastewater is automatically controlled through level, dosing and pH monitoring equipment, ensuring consistent and compliant discharge quality.

The external sedimentation tank provides stable solids separation, while sludge can be removed easily for offsite disposal. The design maximises re-use of the client's existing tanks and pumps, reducing installation time and cost.

The solution operates with minimal intervention, supported by automated controls, safe bunded chemical storage, and a weather-protected shroud that ensures uninterrupted operation throughout the year.



| Results

The upgraded system delivers:

- 2× increase in treatment capacity
- More resilient and stable pH correction in an easy to maintain work space
- Improved solids removal performance
- Removed the risk of chemical exposure to personnel by removing it from their work area
- Better integration with existing site utilities
- Enhanced operational safety and reliability

With modernised infrastructure and a scalable footprint, the client is now positioned to accommodate future production growth.

| Latest Developments

The project was executed over eight months and included:

- System design and engineering
- Equipment supply and mechanical installation
- Commissioning, training, and handover
- Supply of spare parts and operational documentation

A service contract was included to support ongoing optimisation and preventative maintenance.



This project was a perfect example of how smart engineering can unlock capacity without rebuilding an entire treatment plant. By integrating new pH correction and sedimentation systems with the client's existing infrastructure, we doubled their throughput while strengthening safety and compliance. It's a compact solution with a big impact.

Andries Loubser, Senior Project Engineer



Veolia

Water Tech

Dublin Road • Celbridge • Co. Kildare • Ireland

tel. +353 (0)1 630 3333

www.veoliawatertechnologies.ie