

Case Study

Animal By-Products Processing Plant – Wastewater System Upgrade



The Problem

In high-volume processing environments like animal by-product facilities, effective wastewater treatment isn't just a regulatory requirement — it's critical to operational continuity. At one major processing site, rising production volumes led to a surge in wastewater output that pushed the existing treatment system beyond capacity. The result? Inefficiencies, escalating costs, and increasing pressure to meet strict discharge limits.

Key Issues Identified

- Insufficient biological treatment capacity for increased wastewater volumes
- Elevated contaminant loads:
 - Chemical Oxygen Demand (COD): 1,720–2,570 kg/day
 - Total Kjeldahl Nitrogen (TKN): 160–240 kg/day
- Growing regulatory pressure around discharge compliance
- Need for a scalable, future-ready solution without major infrastructure overhauls

The Solution:

Waterform Technologies delivered a tailored upgrade using our UltraBiox + Barrier-FB Purification Treatment System. Designed for efficiency, compliance and scalability, the solution included:

Biological Treatment Expansion

- New 2,000 m³ ring tank to handle increased volume
- Conversion of existing SBR tanks into covered buffer tanks
- New aeration blowers, grids and diffusers for optimal biological processing

Advanced Filtration & Reuse

- Upgraded RO system handling >15 m³/hr with >86.5% recovery
- Membrane Bioreactor (MBR) for advanced solid-liquid separation
- Barrier-FB filtration unit enabling Class A water reuse

Smart Monitoring & Control

- 24/7 remote monitoring via Site Control
- SCADA-integrated PLC with real-time Dissolved Oxygen (DO), Total Suspended Solids (TSS), nitrate and pH sensors
- Fully automated system with built-in fail-safes

The project was delivered in staged phases to avoid production downtime and ensure smooth implementation.

The Outcome:

The upgraded wastewater treatment system has delivered a range of measurable benefits, helping the site confidently meet current demand while preparing for future growth.

— Expanded Capacity

The system now reliably processes between 170–210 m³ of wastewater per day, a significant improvement from the previous setup. This increase has ensured the plant can meet peak demand periods without risk of overloading.

— Regulatory Confidence

With enhanced treatment performance and consistent output quality, the site is now fully compliant with all relevant discharge regulations. This has reduced environmental risk and reinforced the company's commitment to sustainable operations.

— Optimised Operations

Automated controls and improved process design have reduced the need for manual oversight, freeing up staff time and improving day-to-day operational efficiency. The result is greater process stability and lower operational risk.

— Future Ready

The modular and scalable design allows for further system expansion as production increases, giving the site the flexibility to grow without major infrastructure changes.

Waterform's solution has positioned the plant for long-term success—delivering greater operational control, environmental compliance, and a clear path for sustainable production growth.



WATER
KNOW HOW™

Head Office
31 Coonooer Street
Golden Square VIC 3555
Australia
www.waterform.com.au

Waterform Services Ltd
40 Onehunga Mall
Onehunga, Auckland, 1061
New Zealand
www.waterform.co.nz

Phone Number
1800 420 145
(03) 5447 3045