

atac



Case Study Advanced Nitrifying Submerged Aerated Filter (NSAF)

 atacsolutions.com

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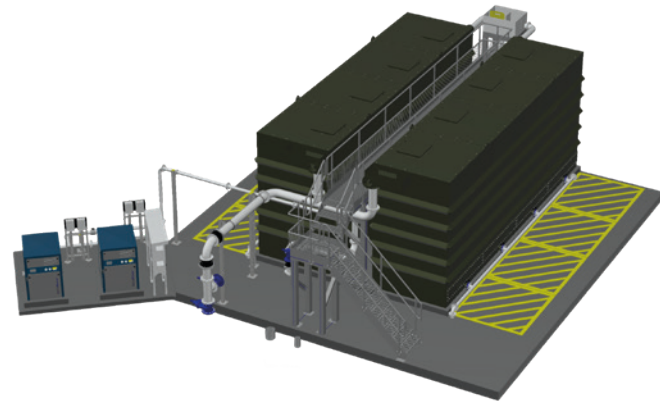
NSAF

CASE STUDY



Project Overview

ATAC successfully commissioned an advanced Nitrifying Submerged Aerated Filter (NSAF) system as part of a major upgrade at a client's wastewater treatment site. This project aimed to increase the Forward Flow to Treatment (FFT) capacity and improve phosphorus removal performance, all while meeting stringent effluent quality requirements.



The Challenge

The project presented several site-specific challenges:

- ⌚ Tight consent standards, particularly for ammonia and BOD levels, requiring a highly reliable treatment process.
- ⌚ Complex site layout, with steeply inclined terrain and uneven ground levels complicating equipment siting.
- ⌚ The need to integrate seamlessly with existing site infrastructure and telemetry systems without disrupting operations.



Our Solution

Working closely with the client, ATAC designed and delivered a bespoke, fully compliant solution:

Custom NSAF System Design

- ⌚ Two ATS44A Submerged Aerated Filter units with integrated blowers, precisely installed across multiple raised slabs to overcome challenging site topography.
- ⌚ The system designed to treat peak flows of 30 l/s (2,592 m³/day).



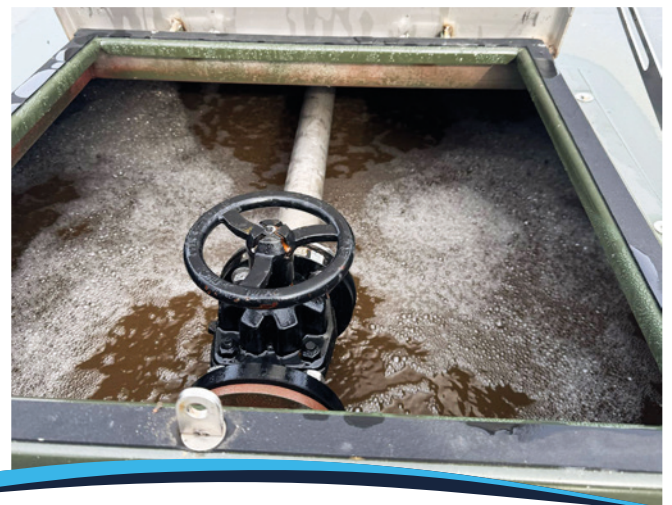


Advanced Control and Automation

- ⤿ Automated scouring controls with real-time monitoring.
- ⤿ Full integration into the site's telemetry network via a managed ethernet switch and fibre node box, allowing remote monitoring and management.

Built to Spec

- ⤿ All equipment and control systems engineered and installed in line with the client's exact specification, ensuring operational reliability and minimal maintenance requirements.



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Results and Achievements

Since commissioning, the NSAF system has consistently delivered outstanding treatment performance:

Influent Quality

- ↪ TSS up to 51.3 mg/l
- ↪ BOD up to 20 mg/l
- ↪ Ammonia (NH₄-N) up to 10 mg/l

Guaranteed Effluent Quality

- ↪ BOD ≤10 mg/l (95%ile)
- ↪ Ammonia ≤3.0 mg/l (95%ile)

Key Outcomes

- ↪ Enhanced ammonia removal meeting all compliance targets.
- ↪ Increased FFT capacity supporting overall site performance improvements.
- ↪ Robust, low-maintenance operation with full telemetry integration.

Once again, the ATAC team has demonstrated its ability to deliver high-performance wastewater treatment solutions that are flexible, reliable, and engineered to meet demanding regulatory and site requirements.

