

Case Profile: Nitrification upgrade



Client: Nursing home

Project Background

Our client is the owner of a care home based in Nottingham accommodating 120 people. As with many isolated works, they have their own effluent treatment plant in private grounds.

Whilst the existing plant seemed to be coping adequately with reducing BOD & SS loads it was discovered that the ammonia load was often "off the scale" when tested. Another problem associated with high ammonia being odours, which were emitted in the area.

Project Scope

Provide a solution to effectively treat a high load of ammonia supplementing the existing works and creating a sustainable treatment process & also to rectify the unpleasant odour emissions.

Scope of Work

Pollution Control supplied a submerged media biological treatment plant dedicated to the nitrification process. The design in principle was similar to a standard SAF plant, but as nitrifying bacteria works better at higher temperatures a method was required to design a cost effective warming solution to the treated effluent. This modification was easily designed and no additional energy other than that for the onboard blowers was required.

The completed nitrification plant was delivered within six weeks to a prepared excavation where the plant was buried at 2/3rds of its constructed height. The system is fitted with facilities for periodic desludging, Duty standby air supply with variable adjustment, also easy access and maintenance. We have dealt with the odour problem by scrubbing air through a filter direct from the original plant and through the nitrifying process completely eliminating any smells..

Equipment Supplied

- 120pe(N) SAF nitrification tank
- Centrifugal air blowers with acoustic enclosure
- Control Panel with duty select/auto change facility
- De-sludge pipe work and Bauer couplings
- Foul air scrubbing modifications

Installation

Complete mechanical installation was undertaken by Pollution Control (UK) Ltd engineers including electrics, alarm systems and part of the civils. The system was fully functional within two weeks.

Results

Within three weeks of commissioning the "off the scale" ammonia reading was in single figures and daily improvements have been recorded.



Pollution Control's Nitrification unit (shown on left) greatly enhances the nitrification process which the original RBC (shown on right) was failing on. The plant is now screened from view by conifers and bushes.