

## CASE STUDY

### Wastewater treatment for a scenic village

# REWATEC<sup>®</sup>

Submerged Aerated Filter (SAF)



## QUICK FACTS

### Application

Small rural village, North East England, UK

### Requirements

- A reliable wastewater treatment plant
- A system that could cope with the presence of stormwater and ground water infiltration (x12 DWF)
- The consent for this plant was:  
BOD - 20mg/L, TSS - 30mg/L, NH4-N, 15mg/L

### Solution

Rewatec Submerged Aerated Filter (SAF)

## SITUATION

A regional water utility company contacted Premier Tech with a request for a wastewater treatment plant in a small rural village in Northern England. The site was close to a major National Park and in an area of outstanding natural beauty.

Their existing wastewater treatment plant was installed in 1972 and was failing frequently. Due to its historical design, the utility company also had safety concerns around access to the plant for maintenance purposes.

The frequent plant failures were beginning to result in final wastewater effluent compliance issues. Costs were also rising due to the implementation of temporary treatment arrangements whilst the plant was under repair. Another key challenge presented to Premier Tech was the unpredictability and often excessive presence of stormwater entering the plant (x12 DWF).

# SOLUTION

The regional water utility company, alongside their contractor partners, evaluated a number of solutions for the installation of a new wastewater treatment plant. Based on the recommendation from the experts at Premier Tech, they decided to proceed with the Rewatec Submerged Aeration Filter (SAF).

The Rewatec SAF plant is a single vessel, constructed from Glass Reinforced Plastic (GRP) and contains the components and associated equipment outlined below:

## EXCELLENT PERFORMANCE TO COST RATIO

### Primary settlement tank

to accommodate flows and load fluctuations.

### Sludge sensor

to monitor sludge build up over time.

### Overflow

to allow flows >12DWF to bypass the plant, as they meet consent by dilution.

### Biological & aeration zone

to promote bacterial growth and treatment using plastic media (bio-carriers), so pollutants like organic matter and ammonia can be reduced.

### Final settlement tank

which accumulate solids at the bottom of the tank. A recirculation pump is also present to redirect solids to the primary settling area (enabling partial nutrients removal).

### Water level measurement

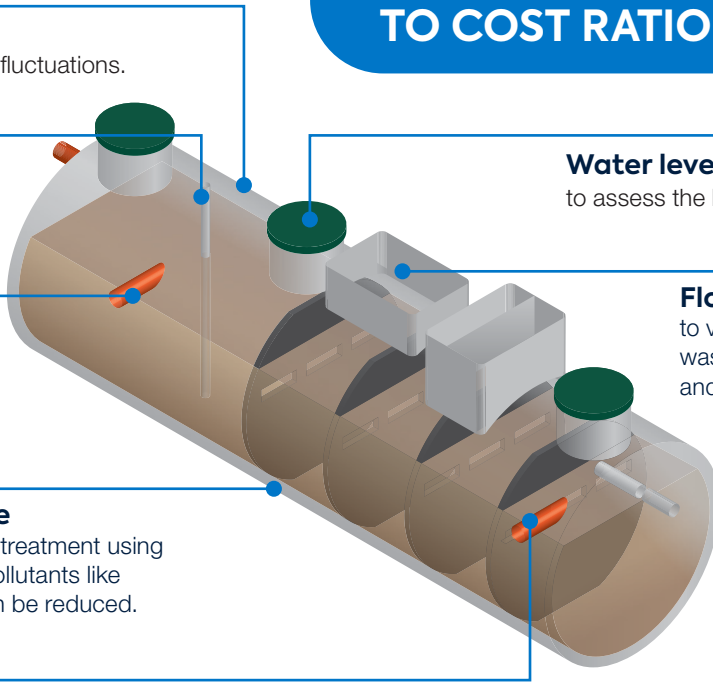
to assess the build up of water.

### Flow monitoring

to verify the volumes of wastewater entering the plant and confirm hydraulic consent.



**Kiosk and control panel**



Operational optimisation of the plant took place on site. After acclimation - lasting 25 days, the plant was able to consistently nitrify the influent to levels of <math><15\text{mgNH}\_4\text{-N/L}</math>. Consistent effluent was a pre-requisite for the commissioning of the plant.

This was an extraordinary performance considering the challenging acclimation during the winter (water temperature 7-12°C), especially for a plant that was subjected to heavily inconsistent loading (stormwater). This highlights Premier Tech's ability to provide solutions even in the most challenging conditions.



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