

CASE STUDY

Market Drayton



The issue

Close to the limit

Suprafilt Aeration Experts were asked to provide a solution to save energy, improve treatments and the reliability of treatments, as well as improving the phosphorous removal at the facility in Shropshire, owned by Severn Trent Water.

The treatment works serves a population of 18,400 and discharges into the river Tern, a breeding ground for Brown Trout.

Market Drayton STW was failing on its consents and eight action limit breaches for ammonia and BOD in 2010.

It was the tenth most vulnerable treatment works in Severn Trent's West region – they were very close to the limit with the power available to the site.

Local neighbours had complained due to the noise from the constant running of the generator. The power required by the existing mixers and blower was also very close to exceeding the available power to the works, creating further risks.

Upon evaluation, it was clear that the existing mixers and aeration system were not designed to work together, resulting in poor treatment and power wastage.

The Solution

The right solution

Working in close partnership with Wilo, one of the world's leading manufacturers of pump systems, Suprafilt installed the very latest flow inducers.

Contractor JN Bentley asked Suprafilt, specialists in the design, installation and commissioning of both fixed and lift-out fine-bubble diffused aeration systems for municipal and industrial sewage treatment plants, to come up with a solution.



The result

Optimised treatment works

Suprafilt took a holistic approach and selected appropriate mixers and 9" diameter membrane disc aeration diffusers. This resulted in huge savings in power, optimised treatment and elimination of the power and consent risks whilst improving operability, treatment and Phosphorous removal.

The client has seen a 45% reduction in energy usage at Market Drayton Treatment Works after installing the very latest flow inducers, mixers and aeration diffusers.

At a cost of 10 pence for every kilowatt of energy saved, the reduction in energy represents an annual saving of £68,975 per annum for Severn Trent.

This equates to a return on the water company's investment within 2.4 years.

The estimated improvement in effluent quality and energy efficiency was expected to make Market Drayton the new standard for oxidation ditches with Severn Trent indicating that they would need it on all their oxidation ditches.