

FilterClear™

Case Study: Tertiary Solids & BOD Removal: Alford WRC, Anglian Water

Background

Alford Water Recycling Centre (WRC) is a municipal sewage treatment works in Lincolnshire. It serves a population equivalent (PE) of 4,000, with a flow to full treatment (FFT) of 26 L/s. The original treatment plant consisted of inlet works, primary settlement tanks, trickling filters and humus tanks. In AMP5, the Environment Agency issued a more stringent BOD consent (see table below).

	TSS (mg/L)	BOD (mg/L)	Amm-N (mg/L)
Previous Consent	46	23	-
Current Consent	46	13	20

Having evaluated several options, Anglian Water and @one Alliance decided that the most cost-effective and robust way to meet the new BOD consent is to remove particulate BOD by tertiary filtration.

FilterClear™, one of Anglian Water's framework technologies, was selected as the preferred solution, based on its low whole life cost (WLC), ease of installation and low carbon footprint. The good operability and reliability of FilterClear™ have also been demonstrated by an earlier pilot plant at Cambridge Water Recycling Centre (WRC).



Solution

The FilterClear™ plant at Alford WRC comprises three filters, sized to treat the full 26 L/s through two filters when one is backwashing. Variable speed submersible feed pumps have been installed downstream of the existing humus tanks, and filtered water passes through a clean backwash tank to the original final effluent sampling chamber.

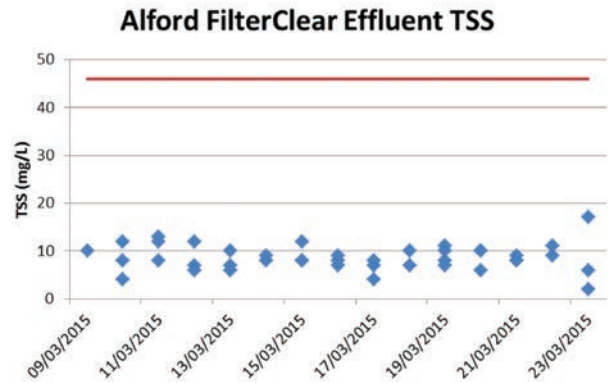
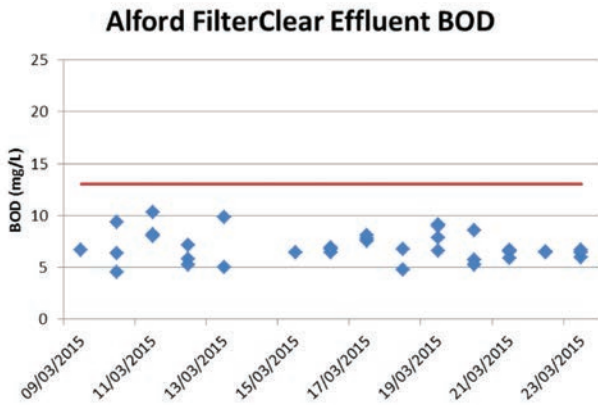
The FilterClear™ plant was manufactured offsite and delivered to the site as a package comprising three filters, associated pipework and control valves, two backwash pumps, one air scour blower and a control panel, all mounted on a single skid. The skid was assembled and tested offsite, reducing the duration and complexity of the site work, and the H&S risks. A kiosk was built around the FilterClear™ plant, providing security and weather protection; this option would not have been available with some of the alternative filtration technologies considered.

FilterClear™

 A BLUEWATER BIO TECHNOLOGY

Performance

The performance test started in March 2015, shortly after the commissioning. The results demonstrated excellent performance, with TSS and BOD concentration in the FilterClear™ effluent well below the consent requirements.



Main Benefits:

- Excellent effluent quality
- High filtration rate, therefore small footprint, less material used, low embodied carbon
- Standardised design, offsite manufacturing and package plant delivery, plug & play
- Minimum civil works, reduced onsite time and H&S risks
- Low energy consumption, low operational carbon
- Fully automated system, minimum operational intervention
- Low whole life cost solution



love every drop
anglianwater

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