

Chapel-en-le-Frith

United Kingdom

Waste
Water
Treatment

THE CLIENT

United Utilities are the 2nd largest water company in England / Wales. They are responsible for an area in the north west of the UK, which includes major Cities such as Manchester and Liverpool.

Area served: 15,378km²

Population served: 6.6m

THE WORKS

Chapel-en-le-Frith is the smallest Biostyr plant treatment works constructed by VWS handling a flow rate of 5.1MLD from a population equivalent of 15,000

THE CONTRACT

Design and construct contract, under IChemE Red Book conditions. VWS were Principal Contractor and were responsible for all aspects of the process and M&E elements of the project.

Value: £2.0m

Programme: 45 weeks

Completion: June 2003

PROJECT OVERVIEW

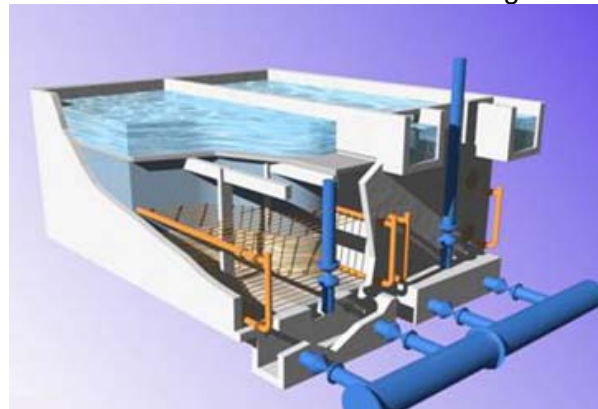
The VWS Norwest Holst JV was awarded the design and build contract to upgrade the wastewater treatment works at Chapel-en-le-Frith, adding a tertiary BAFF using the Biostyr[®] process. The contract included for the provision of a Kalic storage and dosing plant upstream of the Biostyr plant to be used at times of low inlet alkalinity to allow efficient nitrification to take place. The Biostyr plant also incorporates a post wash maturation system, which bypasses the treated water into the dirty washwater tank for a pre-set period of time allowing the filter bed to re-compact and post wash BOD and TSS spike to be eliminated.

Chapel-en-le-Frith Wastewater Treatment Works is situated in the peak district, in the South West of Manchester. The final effluent discharges to the Black Brook adjacent to the site.

The works was built 1950's, and the first design has been improved in 1992 in order to comply with the new Environmental Agency's consent in Ammonia

THE BIOSTYR[®] PROCESS

The Biostyr[®] is a highly compact process, which in a single structure allows for the biodegradation of all carbonaceous and nitrogenous pollution together with clarification of the effluent by filtration through the compact buoyant Biostyrene[®] media bed. Process air is introduced at the base of each unit when required, which enables the media bed to sustain the ideal environment for biological activity.





Biostyr Plant frontal pipework including dirty washwater storage tank



Biostyr Plant side elevation



View of MCC room and Kalic storage and dosing plant

DESCRIPTION OF BIOSTYR PROCESS PLANT

Biostyr® Filter Characteristics :

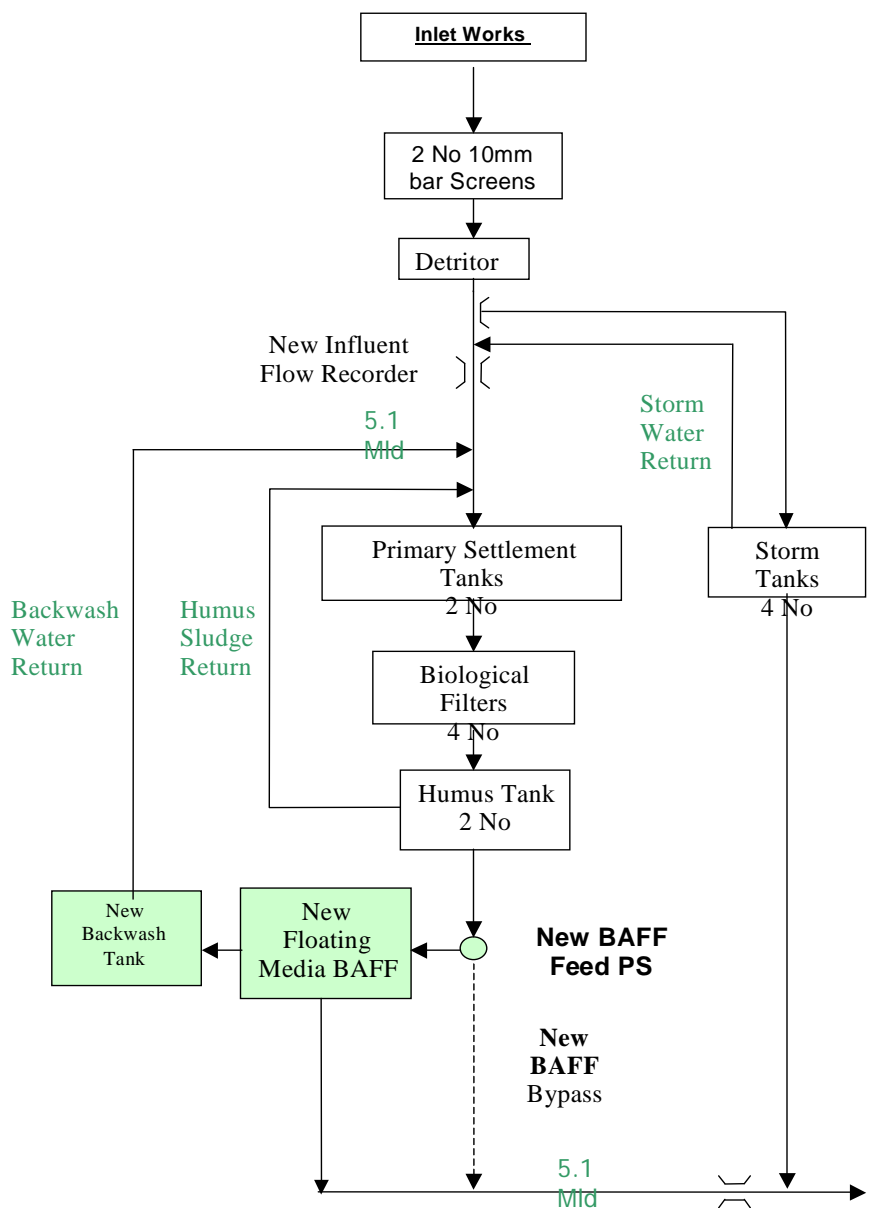
Number filters	3
Filter surface area	13m ²

Flow Data :

Minimum flow	42 l/sec
Average flow	49 l/sec
Maximum flow	70 l/sec

Treated Effluent Consents (95%ile spot samples)

	<u>Spot</u>	<u>Composite</u>
BOD _{total}	15 mg/l	11.9mg/l
TSS	25 mg/l	19mg/l
AmmN	2 mg/l	1.7mg/l



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