

Chertsey Water Treatment Works, United Kingdom

Challenge

Chertsey WTW Surrey, United Kingdom Memcor® CS Chertsey Water Treatment Works has supplied the local population with good quality water for decades. However, due to the increased demands on the water company as a result of deterioration in source water quality and the need to alternate sources because of dwindling river flows, greater demand is being put upon the treatment works.

These extra demands and in particular the strategy for *CRYPTOSPORIDIUM* can be handled in a number of ways that will satisfy the Regulator. However, the Water Company needed to implement a cost effective and robust solution that satisfied their specific situation.

Solution

Three Valleys Water Company Limited embarked upon a series of tests to select their preferred membrane suppliers on a framework basis. These tests revealed that the Memcor® CS membrane system provided excellent water quality in a very compact footprint, whilst offering cost competitiveness compared to more traditional methods of treatment. The Memcor® CS is able to produce consistent treated water quality irrespective of the feed water quality whilst enabling the operators to monitor integrity assuring the complete removal of all bacteria, algae, turbidity and pathogens such as *CRYPTOSPORIDIUM*.

This fully automated plant has a high degree of flexibility built in to it enabling it to handle a range of flow rates. The submerged configuration of membranes substantially reduces the number of

Snapshot - Chertsey	
Location	UK
Source	Surface Water
Application	Potable Water
Technology	Memcor® CS
Capacity	41 MLD (10.8 MGD)
Commissioned	2002

automatic valves required when compared to a pressurized membrane system making the plant simple in operation and maintenance.

Black and Veatch Limited (Contracting) were selected by Three Valleys to act as main contractors for this contract.



6 cells each contain 192 filtration modules

Memcor® Membrane Systems

Water Technologies

SIEMENS

Operational Data	Chertsey
Number of cells	6
Modules per cells	192
Total capacity	41 MLD (10.8 MGD)

Results

Raw Water passes through coarse strainers and into the membrane "cell" by means of a filtrate suction pump. Six cells each containing 192 membrane modules are able to produce an output of 41 MLD. Each module consists of Polyvinylidene Difluoride membrane fibre having a nominal pore size of 0.1 micron. The filtrate suction pump delivers the water to downstream ozonation and GAC. Backwashes are carried out periodically using either sodium hypochlorite or sulphuric acid. The membranes are cleaned in-situ without the need to withdraw them to a separate tank.

The plant design is such that maintenance can be carried out on a rack of membranes whilst the remainder of the plant continues to operate in service. Three Valleys WTW big challenge to provide membrane treatment at a number of its works throughout West London and the home Counties to ensure high quality potable water.



Memcor® Submerged continuous microfiltration plant provides a barrier to CRYPTOSPORIDIUM, irrespective of the feed water quality.

Membrane Solutions

Memcor® membranes from Siemens Water Technologies represent the broadest range of low-pressure membrane filtration products -- submerged, pressurized, large capacity or small systems. They continue to be successfully employed in applications as diverse as wastewater reuse, potable water, RO pretreatment, high solids and sand filter retrofits.

Memcor® Products								
Product	Pres-surized	Sub-merged	Water Reuse	Potable Water	High Solids	Sand Filter Retrofits	Large Capacity	Small Systems
CP	■		■	■	■		■	
CS		■	■	■	■	■	■	
XP	■		■	■	■			■
XS		■	■	■	■			■

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