

INVESTMENT IN MEMBRANE PROTECTION

at Yorkshire Water Treatment Plant

Bollfilter Automatic filters are helping protect Yorkshire Water's ultra filtration membrane plant at Keldgate, East Yorkshire

Over £18 million pounds has been invested in the site, which has been designed for unmanned operation and supplies three quarters of the drinking water requirements for Hull and the surrounding areas each day (120-130,000 cubic metres).

The site incorporates a massive state-of-the-art membrane filtration plant built to comply with the latest EEC regulations. Four banks of primary membranes provide final filtration with a pore size of 150,000 Daltons (0.05 microns), which can remove even the cryptosporidium oocyst (egg stage), which normal chlorine disinfection alone cannot remove.

Boll & Kirch Automatic Pre screens have been installed to protect the membrane plant. Eleven Boll units (6.19 NB200 Low Pressure Auto Strainers) prevent particles reaching the sensitive membrane filters with risk of blockage and damage.

Each Boll filter has been supplied with DWI-approved linings and stainless steel filter elements, with an external water supply employed to assist back-flushing at low operating pressures.

Yorkshire Water are pleased with the Boll installation. "We have had no problems at all with them" said a Yorkshire Water spokesman. Adding, "After commissioning, when the site becomes unmanned, their reliable, low maintenance performance will be even more important."

Client Yorkshire Water
Contractor Earthtech
System 11 Boll 6.19 NB200 Low Pressure Filters



The Keldgate Site has been constructed in the style of a traditional farmyard to blend in with the local countryside.



The Bollfilter Pre Screening installation.



The Keldgate Ultra Filtration Membrane Plant.

COOLING FILTRATION CUTS DOWNTIME

at ASW Steel Rolling Mill

ASW is a specialist manufacturer of steel products mainly derived from recycled scrap metal, producing some half a million tonnes of steel from its rolling mill in Sheerness.

The mill, which features 16 rolling stands, uses continuous cooling water to keep the bar at the correct temperature and prevent roll breakages.

The original cooling system at ASW relied on gravity to remove contaminants and mill scale. However, this was proving ineffective and regular blockages in the coolant nozzles were causing overheating, roll breakages and interruptions in production - resulting in significant inconvenience and costs. Local filters were installed at each rolling stand, but there were still problems with high maintenance and downtime through blockages.

After looking at a number of filtration options and following the successful installation of a Bollfilter automatic filter in the casting line, ASW decided to fit a similar system to the cooling water at the roll mill.

The system incorporates a pre-screening basket strainer linked to the Bollfilter 6.18 self-cleaning filter, with all functions controlled by a microprocessor control panel. Operating at 1363m³/hr (at a maximum 16 bar) with a filtration level of 500 microns, the unit provides a total filtration area of 57320 cm² by means of 40 high precision slot screen elements.

ASW is pleased with the result. Central Maintenance Manager Tony Phillips explains. "We don't get as many blockages on the line, which reduces roll breakages and downtime. In fact, the complete installation has had a payback of just 6 months"

Client System ASW
6.18 Self-cleaning Filter



Part of the ASW casting line.



Bollfilter Field Engineer, Paul Moore, carrying out routine maintenance.



Bollfilter 6.18 filter installation.

EFFICIENT WASTE WATER FILTRATION

at Wessex Water Effluent Plant

Built to comply with the EU Urban Waste Water Treatment Directive, Wessex Water's £20 million Secondary Treatment Plant at Avonmouth, near Bristol, features eight computer-controlled Sequencing Batch Reactors that treat primary settled sewage by means of an air-enriched activated sludge process.

Following final treatment and settlement, top water effluent is recycled and used to clean the belts on the three sludge belt thickening lines that thicken surplus sludge from the SBRs prior to further processing.

As part of the process, the final effluent is passed through a series of screens to remove grit and particles. Originally the system incorporated a simple strainer upstream to remove any smaller particles and prevent blockages in the belt cleaning nozzles. However, this was constantly blocking, requiring cleaning on a daily basis.

To overcome the problem, Wessex Water installed a Boll 6.18 Automatic Filtration System, comprising 200mm filter unit with 40 elements providing a filtration level of 1mm. Unlike alternative systems, the Boll filter can also perform at pressures as low as 2 metre head. As a result, the Avonmouth system is fitted upstream, protecting the pump from damage as well as preventing nozzle blockages.

Richard Thackeray, Site Project Manager, is pleased with the new filter. "The Boll filter works very well. Maintenance is a big site issue for us. With the enormous amount of plant on-site and a need to strive for efficiencies, we haven't got time to continually unblock strainers."

Client Wessex Water
Contractor MJ Gleeson Group plc
System Boll 6.18 Self-cleaning Filter



The Secondary Treatment Plant at Wessex Water's Avonmouth site.



Sludge thickening belts are cleaned using filtered waste water (guard removed for photograph).



Bollfilter 6.18 filter installed upstream on the waste water supply.