

Meeting Drinking Water Inspectorate Compliance on a Tight Deadline



The challenge

Originally constructed in the 1850s, the Waterworks Road Water Treatment Works (WTW), which provides water for 30,000 residents of the Town of Eastbourne, England, and surrounding districts, was tasked with building a new water treatment plant. Conventional treatment methods in use at the existing plant were unable to maintain drinking water specifications following microbial and turbidity spikes caused by heavy rainfall containing fine chalk particulates. To maintain compliance with the Drinking Water Inspectorate (DWI), the Town of Eastbourne needed to build a new, more robust filtration system within 12 months to avoid strict penalties from regulators.

The solution

South East Water and Bam Nomenca, the contractors hired to manage the project, collaborated with the plant operators to qualify a variety of technologies and systems. Having worked with Aria Filtra™ previously on three other WTW plants in the region, the Bam Nomenca team turned to Aria Filtra early in the project, relying on the company's expertise throughout the design and procurement process.

Ultimately, the Aria FIT™ membrane system from Aria Filtra was selected out of the four suppliers qualified to treat the high-turbidity water and provide clean, reliable drinking water to residents of Eastbourne and the town's commercial organizations. The lifecycle and robustness of Aria Filtra's membranes were a leading factor in the decision.



"With the Aria FIT skids, we are now able to achieve maximum capacity of 7.5 megaliters per day (mld), which was previously a big challenge as our old system typically operated around 4.5 mld due to issues handling turbidity and removing fine chalk. This additional capacity allows Waterworks Road Water Treatment Works to be more resilient because if the plant experiences any issues, we now can pull from our own excess supply rather than having to rely on other nearby plants. The skids have allowed the overall operation to become more robust."

Brian Steventon, project manager at South East Water

The quality of Aria Filtra's membrane filtration system was evident. The unit was not only capable of easily meeting required standards of treatment by reducing the microbial contaminants caused by heavy rainfall, but it could also run at full capacity during such turbidity spikes. This alone was a big improvement considering the plant's previous system, which utilized carbon-based technology, was forced to halt operations during turbidity spikes. The system could not reliably remove contaminants, and its water was therefore unsafe to distribute.

With three Aria Filtra installations successfully operating in close proximity to Eastbourne, the Waterworks Road WTW team was well aware of the capabilities of Aria Filtra's reliable membrane technology and promptly moved forward with the installation process of 4 Aria FIT racks capable of treating 7.5 mld (2 million gallons per day).

The result

Key to the success of this project was the speed of deployment, as the plant needed to have a new filtration system operational and be able to meet water quality standards in 12 months. To meet this tight deadline, the Aria Filtra team pre-engineered a majority of the system to avoid potential delays and worked closely with contractors and other suppliers to ensure seamless integration. During the installation process, a one-month winter shutdown occurred to help the operations team sync existing electrical control and distribution systems to the new filtration unit. Due to widespread collaboration among Aria Filtra, Bam Nomenca, and South East Water, Waterworks Road WTW was fully operational two days ahead of the DWI compliance date.

As Eastbourne District Hospital is located in Waterworks Road WTW's territory, it was critical that water produced from the Aria FIT system met DWI standards and was safe for hospital staff, patients, and guests. Aria Filtra's system was successfully able to remove turbidity and reduce fine chalk particulates, *E. coli*, and other coliforms within the water supply, which was a challenge with the previous filtration method.

The benefits

The robust membranes were able to easily meet the quality needs and drinking water requirements of the Town of Eastbourne, and implementation was completed in 12 months, saving the plant from costly fines. Overall, the Aria FIT system provided the following benefits:

- **Reliable, robust, and high-performing membranes that met drinking water standards**
- **Capability to operate at full capacity during high-turbidity events**
- **Speed of deployment resulted in zero regulatory fines**
- **Ability to remove turbidity and reduce fine chalk, *E. coli*, and other coliforms**



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