

Achieving Zero Liquid Discharge at a Common Effluent Treatment Plant in India



THE CHALLENGE

Located in the south of India, Veerapandi Common Effluent Treatment Plant (CETP) sought a new filtration system to help it meet a government mandate to achieve zero liquid discharge (ZLD) for industrial wastewater. The plant, which treats wastewater from 72 textile factories in the region, needed to replace an existing two-year-old ultrafiltration system. To ensure more efficiency in cost, along with power and energy savings, Veerapandi CETP had to quickly identify and commission a more reliable filtration system.

THE SOLUTION

After evaluating various solutions, the Veerapandi CETP team selected Pall Water's Aria™ FLEX membrane filtration system to replace the existing system in its water treatment plant. The reputation of Pall Water's performance led the Veerapandi team to begin discussions with Pall Water. Another driving factor was the strength of Pall Water's membranes, which are capable of reliably treating feed water with high total suspended solids (TSS) from various garment and textile factories, and able to produce high-quality filtrate for reuse in the factories.

THE RESULTS

As a part of Veerapandi CETP's pretreatment system, Pall Water's Aria FLEX unit enables the plant to successfully meet its requirements. Beyond providing quality pretreatment, Pall Water's membrane system helps Veerapandi CETP to operate at ZLD requirements, saving energy and money. The Aria FLEX system has been running for more than a year and continues its good performance — achieving more than 90% recovery compared to the recovery that Veerapandi CETP's previous filtration system provided. Pall Water's system is also performing well in the seasonal turbidity spikes coming from ETP upsets, which occur often due to changing dye chemicals. This efficiency has enabled the CETP to provide more process water to the upstream factories.

Additionally, Pall Water's Aria FLEX system has increased the plant's capacity to 8 million liters per day (MLD), increasing productivity and profitability. The robust nature of Pall Water's membranes has also enabled Veerapandi CETP to reduce the amount of chemicals used in its cleaning regimen, resulting in additional savings.

Time was of the essence to ensure that Veerapandi CETP was able to meet its requirements, quick delivery and commissioning was necessary. Within five months, the first rack of 4 MLD membrane system was up and running, and because of its superior performance, Veerapandi CETP invested in a second rack. Pall Water technicians and the Aria™ CARE service team have remained involved to help optimize performance across the CETP's membrane units and conduct preventative maintenance.

THE BENEFITS

Pall Water's Aria FLEX membrane filtration system has become the cornerstone of Veerapandi CETP's pretreatment system, enabling the plant to successfully meet ZLD requirements. Additionally, the strength and reliability of Pall Water membranes have reduced the strain on other equipment in the pretreatment process, thus cutting operating costs. Overall, Aria FLEX has provided the following benefits:

- Ability to meet the ZLD mandate
- Improved performance to achieve more than 90% recovery
- Significant energy and monetary savings by protecting RO membranes and reducing chemical cleaning frequency



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