



# 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 the Aria FLEX™ membrane filtration system from Aria Filtra® to replace the existing system. The reputation of Aria Filtra's performance led the Veerapandi team to begin discussions with Aria Filtra. Another driving factor was the strength of Aria Filtra's membranes, which are capable of reliably treating feedwater with high total suspended solids (TSS) from various garment and textile factories and are able to produce high-quality filtrate for reuse.

## The results

As a part of Veerapandi CETP's pretreatment system, the Aria FLEX unit enables the plant to successfully meet its requirements. Beyond providing quality pretreatment, Aria Filtra's membrane system helps Veerapandi CETP 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. Aria Filtra's system is also performing well in the seasonal turbidity spikes coming from effluent treatment plant 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, the Aria FLEX system has increased the plant's capacity to 8 million liters per day (mld), increasing productivity and profitability. The robust nature of Aria Filtra's membranes has also enabled Veerapandi CETP to reduce the amount of chemicals used in its cleaning regimen, resulting in additional savings.

To ensure that Veerapandi CETP was able to meet its requirements, quick delivery and commissioning was necessary. Within 5 months, the first rack of the 4-mld membrane system was up and running, and because of its superior performance, Veerapandi CETP invested in a second rack. Aria Filtra technicians and the Aria CARE™ service team have remained involved to help optimize performance across CETP's membrane units and conduct preventive maintenance.

## The benefits

The 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 Aria Filtra 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, achieving more than 90% recovery**
- **Significant energy and monetary savings by protecting reverse osmosis membranes and reducing chemical cleaning frequency**

**Available as a full water treatment solution or a skid, Aria FLEX custom water treatment systems can adapt to any water treatment need.**

- Scalable to accommodate any capacity
- Easy to operate
- Reliable performance



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