



flexMBR™ solution selected to solve ageing WWTP and meet effluent discharge limits

APPLICATION: Industrial Wastewater

CAPACITY: 50,000 GPD

LOCATION: New York, USA

COMMISSIONING: August 2019

TECHNOLOGY: flexMBR™



flexMBR™ pilot unit

CHALLENGE

A Diesel Engine Manufacturer had problems with their aging wastewater treatment plant. The facility has a combined flow that includes domestic wastewater as well as an industrial waste flow that comes from their manufacturing facility. The facility has ongoing activities including metal fabrication and painting that results in oily wastewater with high loading. The combined industrial effluent is treated with an existing industrial ultra-filtration system that removes most of the BOD and oil. The upstream of the MBR treatment process. A portion of the effluent from this industrial wastewater system is further treated downstream for industrial reuse.

The average daily flowrate of 50,000 GPD was treated with a conventional activated sludge system but was unable to meet effluent discharge limits. H2O Innovation was selected to provide a flexMBR demonstration pilot where both a ceramic membrane and PTFE membrane were evaluated for a full-scale facility over the course of 8 months.

DESIGN SOLUTION

The ceramic membrane was selected as the technology of choice and a full-scale facility was constructed. In order to expedite the execution of the project and take advantage of off-site manufacturing, a pre-fabricated approach was utilized, including five stainless steel tanks as well as a pre-engineered shippable building that houses the ancillary equipment. The prefabrication approach allowed the on site civil construction to occur in parallel with the tank and building construction, which saved approximately 8-12 months on the overall project schedule.

The process design involves fine screening followed by flow equalization and three trains of Anoxic → Aerobic Membrane → Filtration process flows. The final construction, including site piping and electrical was completed in August 2019 and the plant has been running since October 2019.



Diesel Engine Manufacturer's site under construction