xylem

Case study

Sazerac Northwest Ordinance Distilling (NOD) plant upgrades to sustainable anaerobic membrane bioreactor (AnMBR) system

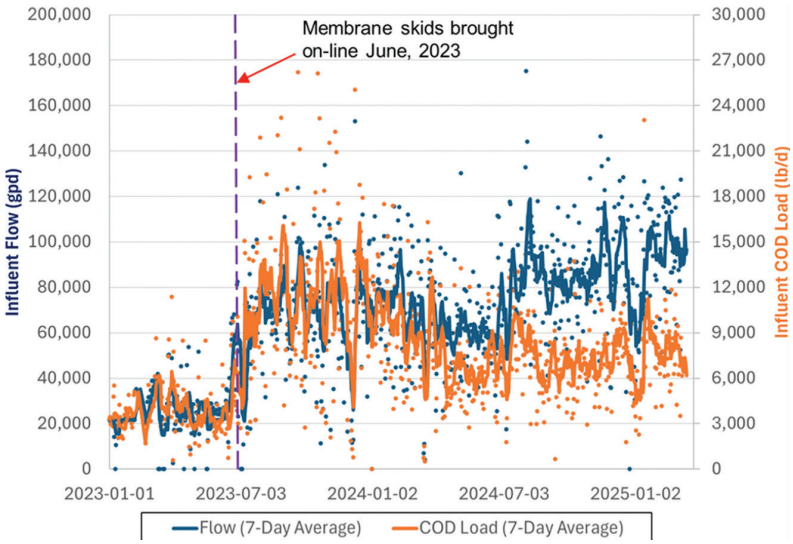
Sazerac Northwest Ordinance Distilling (NOD) plant upgrades to sustainable anaerobic membrane bioreactor (AnMBR) system

The challenge

Reusing the existing wastewater treatment system posed many challenges for Sazerac. Poor settleability of the anaerobic solids significantly limited the solids loading rate on the clarifier, which subsequently limited the mixed liquor suspended solids concentration in the complete-mix anaerobic reactor. With a limited solids inventory in the anaerobic reactor and persistent operator attention required to maintain adequate effluent quality, wastewater flows to the treatment plant were significantly restricted.

The vast majority of wastewater generated from NOD needed to be hauled away at a significant expense to the plant. This approach to wastewater treatment was deemed unsustainable, so Sazerac invested in upgrading the wastewater treatment plant.

Wastewater Flow & COD Load

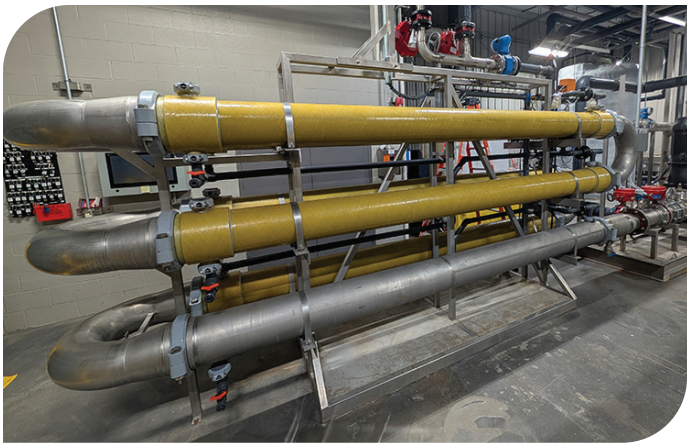


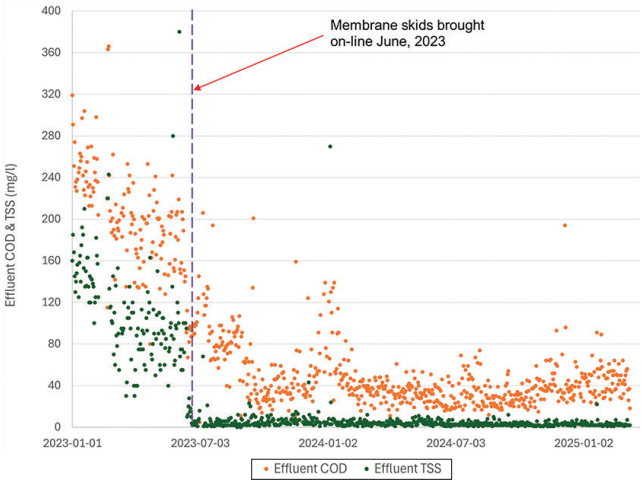
Customer
Sazerac

Challenge
Significant expanse to haul away wastewater generated fron NOD

Keys To Success
Working with single partner to upgrade treatment plant

Solution
Converting the existing anaerobic reactor to an anaerobic membrane bioreactor (AnMBR) system by pairing the complete-mix reactor with skids of external cross-flow ultrafiltration membranes.





Solution

Converting the existing anaerobic reactor to an anaerobic membrane bioreactor (AnMBR) system
by pairing the complete-mix reactor with skids of external cross-flow ultrafiltration membranes.

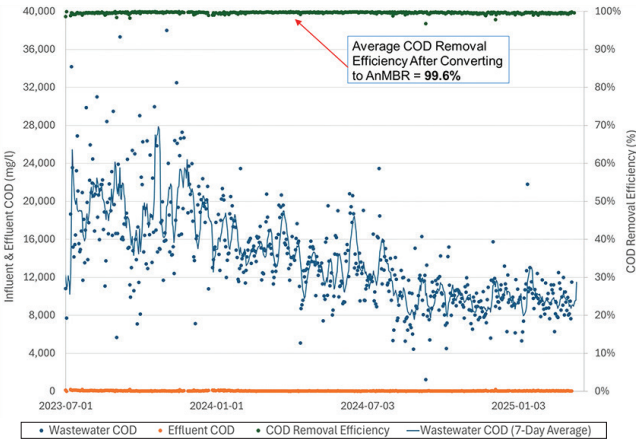
Results

By consistently generating final effluent with very low BOD and negligible TSS concentrations, the membranes improved final effluent quality being discharged to the municipal treatment plant. The conversion to an AnMBR system effectively increased the treatment capacity of the system, which helped to minimize capital expenditures associated with the plant upgrade.

Conclusion

The upgrade to AnMBR solved all previous challenges with previous wastewater treatment plant.

COD Removals



- Membranes provide complete solids-liquid separation and biomass retention, and elimate the need for the clarifier.
- Consistently generates final effluent with very low COD, BOD and negligible TSS concentrations.
- Membranes eliminate the restriction on anaerobic reactor solids inventory - previously in place due to the clarifier.
- Conversion to an AnMBR system effectively increases the hydraulic and organic loading capacity of the system, without having to add any additional anaerobic reactor tanks.

FB-SAZDISTIL-CS-0925

xylem
Let's Solve Water