CASE STUDY

PermaFlux™ V10XL

NLB H2O- Containerized Unit

High Salinity with Lime Softening

Application: O&G Wastewater with Lime Softening Pre-treatment
Capacity: 250,000 gpd
Location: Various (containerized System)
Commissioned: 2022

Introduction and Challenge:

The customer was looking to standardize their proprietary pre-treatment for high salinity wastewater (120,000-130,000 ppm NaCl) and pair it with and liquid-solid separation step . The final goal was to create a containerized system that could be moved from site to site with minimal effort.
After testing multiple ultrafiltration and microfiltration membranes no option was able to meet the requirements in terms of retentate solids concentration, space, sustainable flux, and energy use.

Solution:

Thetis was awarded the contract after a successful pilot test where PermaFlux modules were retrofitted into module slots of an existing UF unit who's original modules had never been able to meet performance requirements. The raw water is first treated with a proprietary lime softening pre-treatment process to precipitate the dissolved solids so that the PermaFlux UF membrane can separate them. The UF permeate was free of suspended solids (turbidity of 0) and met the requirements to be discharged to drain. As a next step potential re-use of the permeate is being investigated.

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