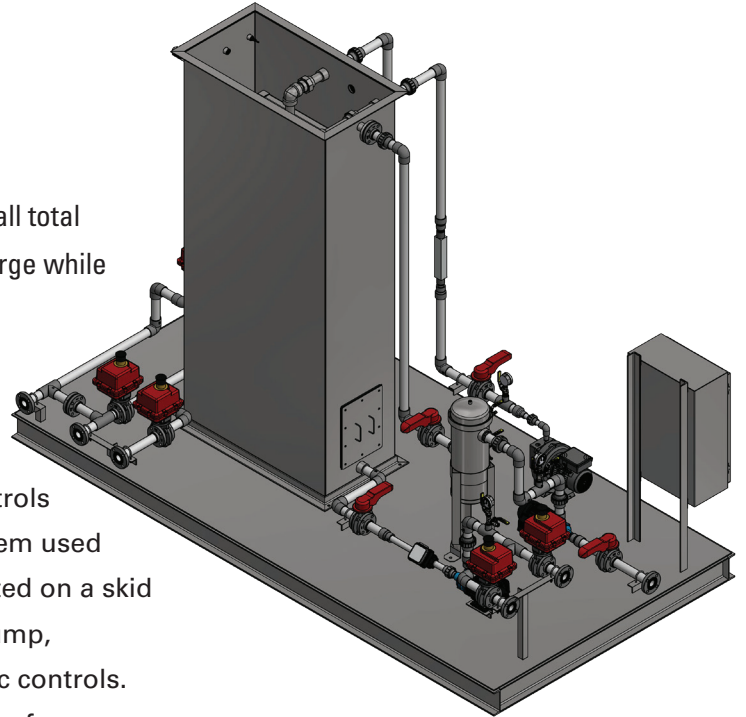


INDUSTRY: Dairy

CLIENT: Humbolt Creamery

APPLICATION: Treatment of CIP to reduce the overall total dissolved solids (TDS) waste discharge while reducing the cost of chemicals.

EQUIPMENT SUPPLIED: Membrane Operating Systems (MOS) complete with Poreflon™ PTFE membranes, automatic controls and system monitoring. The system used a 10-inch diameter column mounted on a skid with a filtrate pump, backwash pump, air scour blower, valves, and basic controls. The membrane module consisted of a submerged module with 6 m² area (64.58 ft²).



TYPICAL PROCESS DATA

PERMEATE FLOW: 1 gpm

TRANS-MEMBRANE PRESSURE: less than 2 psi

FILTRATION CYCLE: 30 minutes

RELAX CYCLES: 15 seconds

BACKWASH CYCLE AIR + WATER: 45 seconds

BACKWASH CYCLE AIR: 30 seconds

The concentration of total suspended solid (TSS) in the solutions was monitored using an Insite IG portable suspended solid meter.

CIP ChemXtend™

Membrane Operating System

Technical Summary



Influent Range Design

Caustic (%): 4.9

TDS (mg/l): N/A

Average Permeate

Caustic (%): 4.7 - 4.8

TDS (mg/l): N/A

Start Up Date: September 2017

Discharge Source: Settling Pond

Comments: Batch operation of the production unit to polish both caustic and acid solutions in a timely manner so that the CIP operation will not be delayed. The production unit is designed to recover 750 gallons each CIP solution in 3 hours, with approximately 6 hours to polish both solutions.

System Advantages:

1. Polishing of CIP solutions will extend the life cycle of chemical solutions 8-10 times before discharging. Typical cycles are 4 times.
2. Greatly reduced discharge levels of TDS and TSS.