

Municipal



SAMCO

Separation from the ordinary

PROJECT BRIEF

Drinking Water Operator Develops Innovative Nitrate Destruction Technology with Support from SAMCO Containerized Pilot Plant

PROJECT OVERVIEW

At a Southwest municipal drinking water operator facility, development of proprietary nitrate destruction technology demanded a means of extracting and oxidizing trace contaminants. SAMCO answered the need with a containerized pilot plant capable of converting 11 pounds of nitrate per day.

OBJECTIVE

Treat wastewater and brine waste streams, extracting nitrates for electrochemical conversion to nitrogen. Project specifications:

- 30 GPM wastewater treatment rate
- 20 GPM brine treatment rate
- 11 pounds/day nitrate conversion rate

SCOPE OF SERVICE

SAMCO delivered a containerized pilot plant, with services entailing design and engineering services, system fabrication, controls integration, and commissioning.

CHALLENGES

- High rate of nitrate conversion
- Limited operator availability

SOLUTION

SAMCO delivered a pilot oxidation plant to support the client's proprietary nitrate destruction process. Packaged within two Conex freight containers, the plant consisted of an ion exchange (IX) system for extraction of nitrate from wastewater, and an electrochemical cell for treatment of brine resulting from media regeneration. The efficient system supported recycling of waste brine, while its containerized design was optimized for the client's environment. To mitigate operational demands, the solution included integrated programmable logic controllers (PLC) for remote process monitoring.

TECHNOLOGY

SAMCO delivered a custom pilot plant, including:

- Conex containers
- IX pressure vessels and internals
- Auxiliary tanks
- Electrochemical cell and rectifier
- PLC controls
- PC-based operator interface

OVERVIEW

Industry

Municipal

Location

Southwestern, US

Objective

Treat wastewater and waste brine resulting from nitrate extraction & conversion processes

Solution

Containerized Wastewater and Brine Treatment System

Looking to reuse brine or wastewater streams? Are trace contaminants an issue?
Contact us today at www.SamcoTech.com • askengineers@samcotech.com • (716) 743 9000