

WESTECH RETROFIT BOOSTS PLANT PERFORMANCE WITH UPDATED MEMBRANES IN A LIME-SOFTENING APPLICATION



Overview

The Brazos Regional Public Utility Agency (BRPUA) Surface Water Treatment System consists of lime softening contact clarifiers as pretreatment to ultrafiltration and reverse osmosis membranes. To improve plant performance, WesTech worked with BRPUA to develop a comprehensive and efficient retrofit strategy to expand the UF system capacity to 10 MGD using a PVDF outside-in membrane module. This project also accounted for future expansion of up to 15 MGD through use of a sustainable higher flux rate and improved recovery.

WesTech has designed a system that will achieve the goals of increased flow rate and reduced chemical cleaning within the constraints of a retrofit and upgrade. In addition to increasing capacity, WesTech has used value engineering to reuse major components and reduce cost, including the supply of a comprehensive controls package system to update the UF system. ■

RESULTS

87.5%

Overall Capacity Increase Within Existing Footprint

97.3%

UF System Recovery

0.016 NTU

Average Filtrate Turbidity

Project Summary

BRPUA Surface Water Treatment System

Location:

Granbury, Texas, USA

Application:

Potable Water

Process:

Lime Softening Contact Clarifiers
► Ultrafiltration ► Reverse Osmosis

Size:

7,000 gpm/10 MGD

Design Flux:

60.2 gfd

Highlights

- Lime softening process and polymer dosing compatibility
- Flow rate expansion of 10 MGD with future capacity up to 15 MGD
- Membrane technology upgrade: PVDF, outside-in, 0.01 µm
- Performance improvements: recovery, flux, chemical cleaning
- Retrofit execution: <1 week system downtime during transition