

BRAZOS RIVER AUTHORITY, WACO, TEXAS

Lake Granbury Surface Water Advanced Treatment System Plant

HIGHLIGHTS

State-of-the-art solution to electro dialysis reversal challenges.

Pilot testing of softening/ultrafiltration/reverse osmosis.

Design of 12-mgd ultrafiltration facilities.

Design of 10-mgd reverse osmosis facilities.

Instrumentation/control system design.

The Brazos River Authority (BRA) owns and operates a water treatment plant near the City of Granbury, Texas. This plant currently has a finished water treatment capacity of 5 mgd, but because of rapid development in the Dallas-Fort Worth area, an expansion to 15 mgd is underway. The current treatment train includes electro dialysis reversal (EDR) advanced treatment process for desalting to meet EPA and Texas standards. Because of operation constraints with the existing EDR process, BRA decided to pursue the RO advanced treatment process for the expansion.

Carollo Engineers conducted a pilot study in the fall of 2000 to resolve the EDR process problems. The study determined that the expansion flow scheme should involve lime softening to reduce barium ions along with recarbonation, and a microfiltration (MF) or ultrafiltration (UF) membrane system to reduce turbidity prior to RO treatment.

Carollo, in association with a local consultant, provided the detailed design of the 7.3-mgd UF and the 6.0-mgd RO facilities along with design of the instrumentation and control for the entire facility. The UF treatment process has been producing water since December 2002. The RO treatment process has been producing water since May 2003.



The existing plant will be upgraded with new low-pressure membranes and reverse osmosis.

