



**ENTERPRISE
AUTOMATION**
A TETRA TECH COMPANY

PROJECT PROFILE

Dissolved air flotation system *Sweetwater Authority*

Client background

Sweetwater Authority provides water treatment and distribution to 200,000 people in a service area that covers 32 square miles near San Diego, California. Since 1977 Sweetwater Authority has provided water services from three primary sources: freshwater ground wells, Sweetwater reservoir, and San Diego Formation wells which provide brackish groundwater. Enterprise Automation has provided automation and integration services for Sweetwater Authority since 2005.

Project background

As part of their 5-year capital improvement program, Sweetwater Authority upgraded all the major processes of their conventional water treatment plant. In 2010, the Authority replaced their existing flocculation and sedimentation process with a dissolved air flotation (DAF) system. The original process constrained the plant's ability to produce its theoretical maximum of 30 MGD. The new DAF system expanded capacity up to 40 MGD, with four 10 MGD trains, offering process redundancy and improved solids removal. Enterprise Automation was awarded the automation implementation due to familiarity with the Authority's processes and automation standards.

EA solution

EA engaged with this project at the design phase, attending design workshops and performing reviews of consultant design deliverables. This collaboration yielded construction plans and specs with superior accuracy for the Authority's equipment, electrical, and automation standards. EA documented the resulting control strategy in terms coherent to plant operations. Integration included flow control valves, fixed speed motors, VFDs, power meters, and instrumentation. EA delivered 2 large I/O cabinets 100% pretested to requirements. EA updated the Authority's plant master PLC program using Unity Pro programming. The Modicon PLC communicated with all the distributed processes through a fiber network. Updates also included operations graphics (CitectSCADA), Historian, and water operations reports. EA's standard turnover package included operator training manual, O&M manuals, and a complete suite of as-built documentation for all automation components.

Project Manager



**Matt
Avila**

Project Technical Lead



**Ben
Seidl**

Key Insights:

- Design consultant collaboration

Key Technologies:

- CitectSCADA
- Modicon Quantum