



LOCATION

Northern California

APPLICATION

Well Controller System

INSTALLATION

July 2016

PRODUCT

WCS-100



XIO CLOUD SCADA® CONTROL SYSTEM SIMPLIFIES REGULATORY REPORTING FOR SMALL COMMUNITY WATER SYSTEM

The City of Tehama, like thousands of other small cities and towns, provides drinking water to roughly 400 people through 195 service connections. According to the US EPA, over 65% of the nation's nearly 60,000 Community Water Systems deliver potable water to 500 people or fewer. In California, over 3,000 of the state's 8,500 Community Water Systems serve populations under 500. As regulations increase, small communities face a disproportionate burden related to data collection and reporting. At the same time, rural water and wastewater systems with smaller budgets find it difficult to attract and retain the technical labor required to operate water systems. New IIOT (Industrial Internet of Things) technologies in the form of sensors, cellular communication, and cloud internet storage are changing the way critical systems are monitored and controlled, enabling communities to operate more efficiently while maintaining regulatory compliance.

In Northern California, Carolyn Steffan serves as both the City Administrator and licensed Water Operator for the City of Tehama. She has worked for the city for 55 years and is a retired school superintendent. The City obtains drinking water from two groundwater wells that feed into the distribution system via a pair of hydro-pneumatic pressure tanks. Since 2014, the City has been required to report the total volume of water pumped from each well and the highest daily pumping totals under the Sustainable Groundwater Management Act (SGMA). Despite the small size of the water system, the new reporting requirements meant that Carolyn or another city staff member (the City only employs three part-time staff) must physically read the water meters on both pumps daily in order to provide accurate reporting to the State.



In response to the reporting requirement, the City began to look for technology to help with data collection and compliance. Carolyn learned about XiO's Cloud SCADA® Control Systems through the statewide rural water association. Following a detailed scoping meeting by phone, the City purchased two WCS-100 Well Controller Systems in July of 2016. Each system includes a Field-Installable Unit (FIU), Soft I/O® controller, uninterruptible power supply (UPS), and cellular modem. The systems were preconfigured and shipped ready for installation by a licensed electrician. Installation at the well site took under one day to mount the NEMA 4X enclosures, connect the wires and calibrate the equipment. The pump and well data were available online immediately via the XiO User Portal. The City worked with XiO to develop easily-accessible custom reports to satisfy the new reporting requirements.

The Well Controller System package combines monitoring with remote control and actionable data through powerful analytics. Sensors monitor flow rate, pump status, and pump cycles, issuing alarms via SMS text message for pump failure and power loss. Remote-control capabilities allow users to easily operate the pumps from anywhere. All collected data is available via the XiO User Portal which details historical events, alarms, and user actions. Users can view real-time charts and trendlines showing up-to-the-minute metrics such as total gallons pumped, flow rates, runtimes,

and energy usage. Pump monitoring allows managers to schedule preventative maintenance and optimize energy use.

The City of Tehama saves roughly 10 hours of staff time each month with the custom reports from the XiO system. In addition, the city has increased its drinking water system's resilience and risk preparedness by moving data acquisition and historical records to the cloud. The City's system may be operated remotely in the event of a natural disaster or other disruption. All historical data, alarms, and analytics continue to be available even if the conditions on the ground prevent physical access. In the event of a loss of connection with the cloud, the system operates based on preprogrammed default settings. The XiO Cloud SCADA® Control System has helped level the playing field for small community water systems when it comes to regulatory compliance and system resilience.

“The XiO system has made reporting to the state agencies much easier and has saved us a great deal of time. I like being able to see what my system is doing at a glance.”

—Carolyn Steffan, City Administrator and Water Operator, City of Tehama