CASE STUDY

Central Texas Water Supply

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RICHARD COLEMAN

Superintendant

at Central Texas Water Supply

samsara

Central Texas Water Supply, a wholesale water provider, replaced their legacy SCADA system with Samsara to monitor and control their operations in real-time, prevent service interruptions, and improve operator efficiency.

As a wholesale water provider, Central Texas Water Supply delivers over 20 million gallons of water per day to 18 entities across four counties. Because of their breadth, Richard Coleman, the Superintendant at Central Texas, relied heavily on their legacy supervisory control and data acquisition (SCADA) system for mission-critical monitoring. But, after dealing with frequent connectivity issues and learning that their SCADA provider was closing its doors, he turned to Samsara. Using's Samsara's software for cloud-based SCADA and Industrial Controllers (IG) across 23 sites, the organization has been able to maintain continuous and high-quality service while noticeably improving their efficiency and productivity.

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Preventing service outages with monitoring and control

With an estimated 240,000 incidents per year[1], water main breaks are an accepted reality for utilities across the U.S. So for proactive organizations like Central Texas, taking the necessary steps to minimize the service impact of these breaks is a top priority. Using Samsara to monitor pressures and pump status across their water lines, Central Texas is able to do just that. "If we turn on a pump but see that low pressures are persisting in a line, we immediately know we have an issue to go investigate. This really improves our recovery time." said Coleman.

And with every minute counting, it's important for Central Texas to get these readings as fast as possible. "Our previous system used two-way radios to communicate. Typically we were getting an update every 15 minutes if the frequencies weren't overloaded, but any time we had bad weather, the signals were just awful. We couldn't communicate with some sites for hours at a time" Coleman said.

Today, with cellular built into the Samsara IGs, Central Texas can count on reliable connectivity, enabling operators to check-in on any site in real-time. "The communication is 100% better. Being able to get information in a matter of seconds reduces our risk and makes things much more efficient for us" said Coleman.

Ensuring continuous pressure and flows using automation

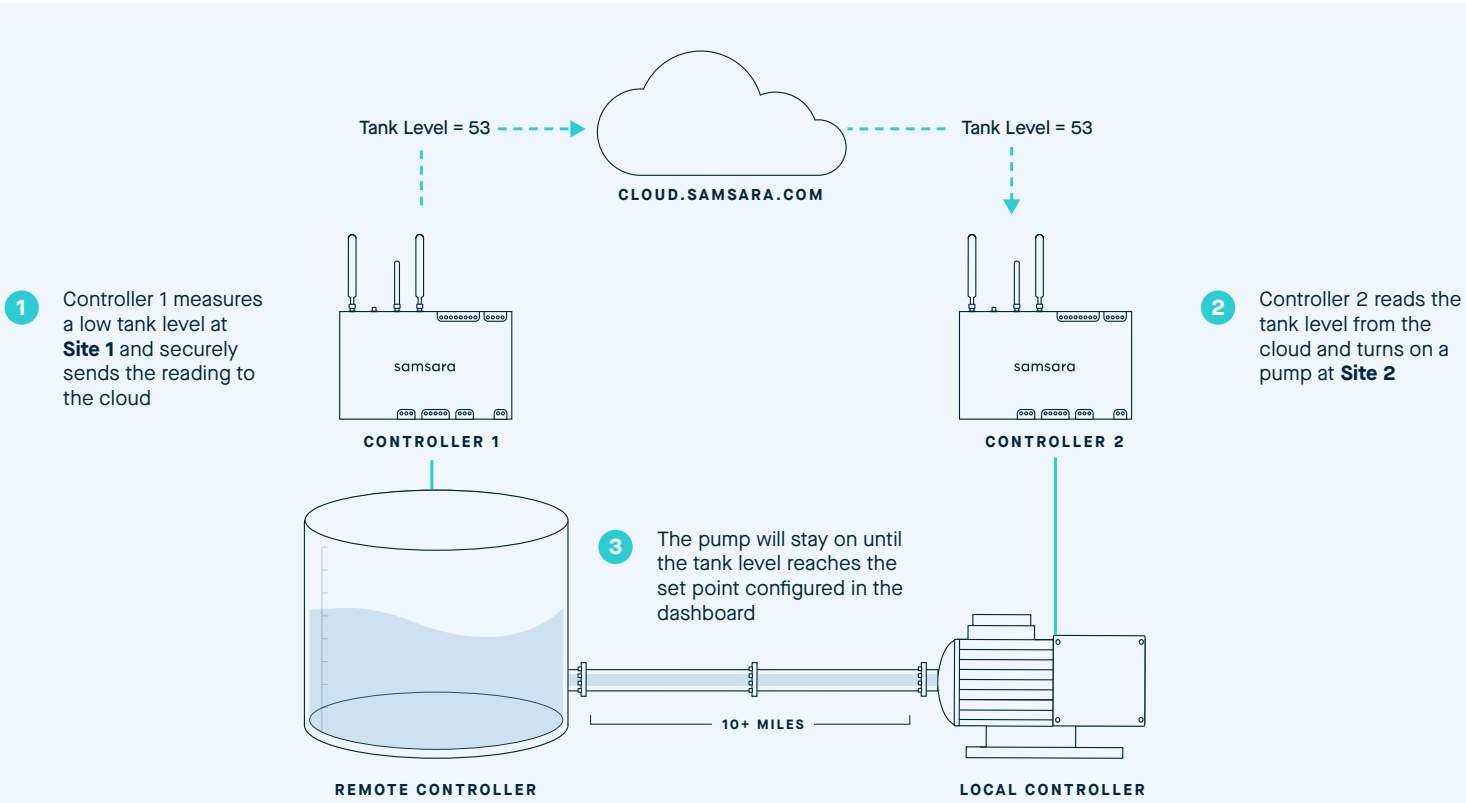
In addition to serving as an early leak detection system, Central Texas uses Samsara to automate control of the solenoid valves on their main water lines. This helps them maintain consistent pressure

across uneven terrain. "Texas isn't flat; we have valves that are inlets to tanks that will drain pressure right out of our main line if they're opened too far. If the pressure drops too low, someone in the community could be starved of water. We need to regulate our valves precisely to prevent this" said Coleman.

Samsara's software allows for standard IEC 61131-3 control programs to be created centrally and pushed out to the IGs where they run locally. And with analog outputs built into the IGs, Central Texas can maintain setpoints between zero and one-hundred percent, holding flows at the right level for each valve. Through the Samsara dashboard, values can also be adjusted remotely from mobile devices and any web browser making it easy for Coleman and his team of operators to respond to changing conditions quickly.

Aside from valve control, Central Texas has also used Samsara to automate pump control. "We needed an effective way for our pumps to communicate with tanks that are sometimes five to ten miles away" Coleman said. Taking advantage of cellular and cloud connectivity, one Samsara IG measures and sends tank levels directly to another IG located several miles away in real-time. The pump will turn on when tank levels fall below a set threshold, and then turn off once they refill.

1. Infrastructure Report Card. (2017). Drinking Water Report. https://www.infrastructurereportcard.org/cat-item/drinking_water/



Remote Variables: Using remote variables, Central Texas can collect data points at one location and use them to control outputs at a second location.

Ease of use and setup keeps operating costs down

One of the most common challenges in maintaining traditional SCADA systems is their complexity. If changes to the system are time-consuming or overly complex, it can increase operating costs and delay critical updates that impact productivity. Well aware of this fact, Coleman wanted to ensure that he would be able to easily make changes in the Samsara system. "A lot of other companies require a service call to make configuration changes to inputs and dashboards. With our old system, we were able to make quick changes ourselves keeping costs down, and we wanted to maintain that capability."

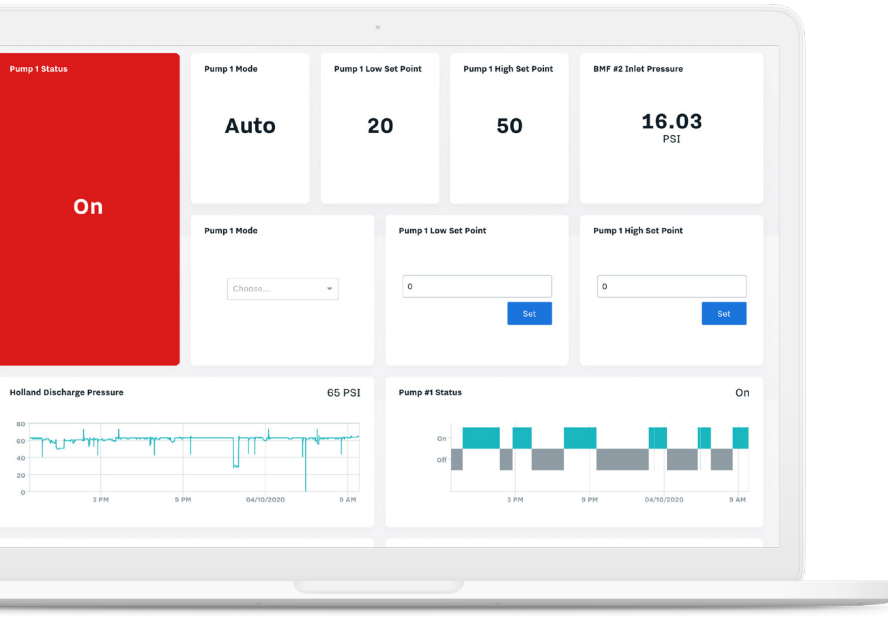
With an interface designed for ease of use, Coleman was able to quickly learn how to configure new sensor inputs and Samsara dashboards on his own. "Recently, one of my operators let me know that a flow reading was missing from a dashboard. Within ten minutes I was able to set it up right where I needed it; I didn't have to call somebody to get it done. This saves us a lot of time and helps keep labor costs down."

When it comes to being self-sufficient, there are some new benefits for Coleman and his team as well. Prior to Samsara, monitoring and control was restricted to a single operations center. Today, using the mobile-friendly interface, Central Texas can access data anywhere saving Coleman time and effort.

A consolidated platform to reduce capital costs

High upfront capital costs can be a big barrier for many water utilities looking to adopt SCADA systems. Most systems require separate components and integration for controllers, software, connectivity, and servers. "If we had gone with a traditional SCADA system, buying separate computers and software and paying for updates, it would cost me a whole lot more." said Coleman.

By combining cellular-enabled hardware, web-based software, and cloud connectivity into a single platform, Samsara has made it much easier for utilities of any size to deploy SCADA and remote monitoring. Coleman said it best: "Cloud-based just made more sense. It should become the new industry standard for SCADA systems because you don't have to worry about additional software or other big costs. It's much more efficient."



"Instead of having to call an operator, I did everything I needed to do from my cell phone–controlling the pumps, turning them on and off, and looking at the pressures. Our old system couldn't do that."

RICHARD COLEMAN
Superintendant at Central Texas

Find out how the Samsara platform can help your organization. Visit samsara.com/industrial-trial

REAL-TIME MONITORING to keep a close eye on pressures and flows, catching leaks and line breaks before they lead to service interruptions

AUTOMATED CONTROL to maintain pressures across uneven terrains

FLEXIBLE, EASY TO USE DASHBOARDS to make changes on the fly–adding new sensor readings to dashboards in just a few clicks

MOBILE ACCESS to view sensor readings and operate pumps from anywhere