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Better Visibility and Operator Effectiveness



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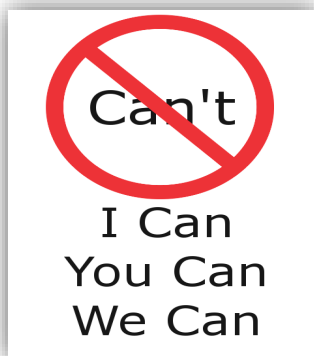
Clinton Reservoir Treatment Plant

“Wonderware’s robust graphics helped us build from the ground up and the templates sped up development”.

*Chris Jeffress, Control System Technician
City of Lawrence*

Helping the City of Lawrence’s Utilities Department Improve Operations with Better Visibility and Operator Effectiveness

Lawrence, Kansas - Walking up to the Wastewater Treatment Plant in East Lawrence, KS, you can hear the construction from the parking lot. A crew busily hammers and bangs on the downstairs infrastructure of the building. Don VanLandingham, CEO and Sales Engineer at Logic/Wonderware Great Plains (WWGP), and I are led through a newly renovated lab, pristine and insulated from the noise. The City of Lawrence’s Utilities Department is no stranger to improvement; a consensus perspective is displayed throughout the water/wastewater facility. The signage exhibits a red strike through the word “Can’t” and the mantra: “I can. You can. We can.” It is a reoccurring theme we hear from each city employee we talk to; strive to meet demand and improve operations.



Lawrence has two major surface water sources; the Kansas River and Clinton Lake. Water is pumped to either the Kaw River Water Treatment Plant or the Clinton Reservoir Water Treatment Plant and stored in 6 water towers. Wastewater is collected through a system infrastructure that includes 400 miles of gravity and forced sewer mains, 15,000 manholes and 33 lift stations. Three state-accredited water quality laboratories are located at the Water Treatment Plants and Wastewater Treatment Plant.

On the day that Don and I visited the Lawrence Wastewater Treatment Plant, the temperature climbed to 93 degrees Fahrenheit and walking into the air-conditioned facility felt like an escape from Mars. Logic/WWGP’s relationship with Lawrence has spanned over 25 years and has included sales and service in drives, motors, enclosures, and controls. Familiar with operations and maintenance, Don provided me with a historical and present background of Lawrence’s Utilities Department initiatives. The most important initiative: strive for green and progressive operations while keeping costs low.

The City of Lawrence needed a better SCADA software solution,” Don explained, “software that maximizes the efficiency of operations and is scalable for their development of the new Wakarusa Wastewater Treatment Plant.”

There had been growing discontent with the old SCADA software's functionality, security, and lack of support. It could not sustain the new operating system (OS), felt bulky and ran slow. Paul Youk, Utilities Operator, clarified, "With as much data as we have, the queries would take a long time and error out without notification. I would be exporting bad data and not know it." The old software was extremely limiting in the search feature and operators had minimal visibility of operations at each plant. Users would have to log in to each plant server to access that specific data – keeping critical information as separate depositories.

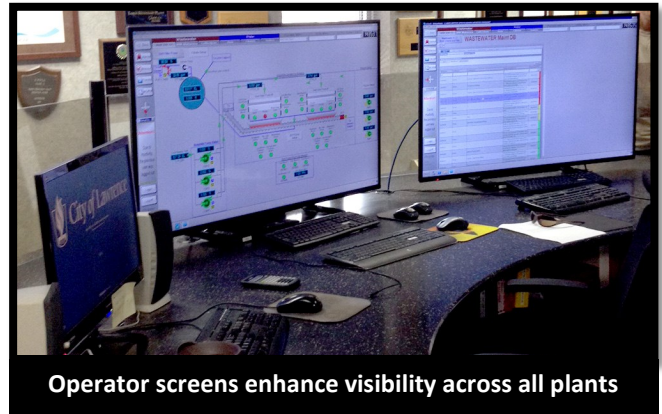
This contradicted the water department's goal to work as an integrated team. All operators are cross-trained in water and wastewater processes to advance operations through an increase in continuity and a better understanding of all water treatments. Along with limited visibility, the old SCADA software had minimal security features that prevented supervisors from distinguishing which user was logging in and making changes.

The ultimate challenge that prompted Lawrence to upgrade their SCADA software was the abysmal support. Dave King, Utilities Maintenance Superintendent, described their challenge. "There was no local or regional support. If there was a problem, we were on our own." Perhaps that is why several generations of developers had created "band-aids" to resolve issues. Lance Baumann, Control System Technician, felt it would take more work to retro fit the old system and work through the issues than to start with new SCADA software.

Don VanLandingham recommended Wonderware's System Platform. "The water/ wastewater division needed a central management suite that could give them access to all their operations and the flexibility to interface with hardware control and devices. I knew the comprehensive graphics library, security, and high speed data acquisition of the Wonderware System Platform and Historian would enable the department to establish better continuity across the plants, as well as improve operator effectiveness." In 2014, Lawrence purchased Wonderware's System Platform and ran it parallel to the old SCADA software until March 2016. The department had several goals when implementing Wonderware: better insight,

maximum operability, enhanced security, and more proactive behavior from operators. They wanted to increase visibility across the four divisions and to soon be able to scale the software to include the new Wakarusa Wastewater Treatment Plant, scheduled to open at the end of 2017. Their in-house developers created next-generation, extensible architecture.

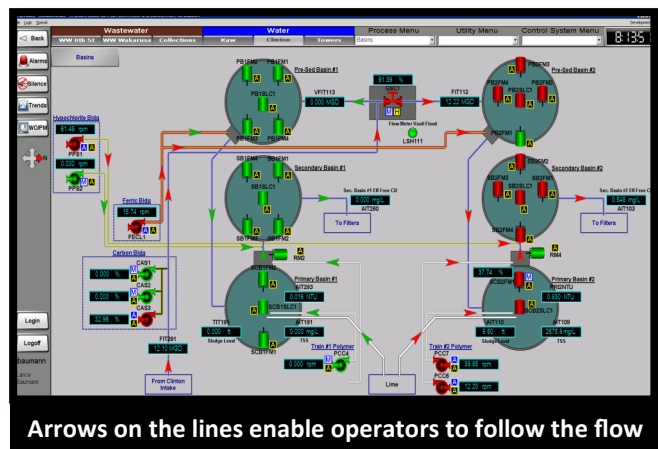
Chris Jeffress, Control System Technician, explained, "As a previous operator, we [developers] knew what we liked and what we wanted to change.



Operator screens enhance visibility across all plants

Wonderware's robust graphics helped us build from the ground up and the templates sped up development." With Wonderware, Lance Baumann and Chris Jeffress had more design screen options and could provide a real representation of the plants.

This standardization and visibility across plants improved operations with real-time monitoring and enabled operators to make changes immediately.



Arrows on the lines enable operators to follow the flow

Now, they have a comprehensive audit trail of user actions and system configuration changes. The integration with the new terminal servers also ensured higher availability in the case of a city-wide network failure.

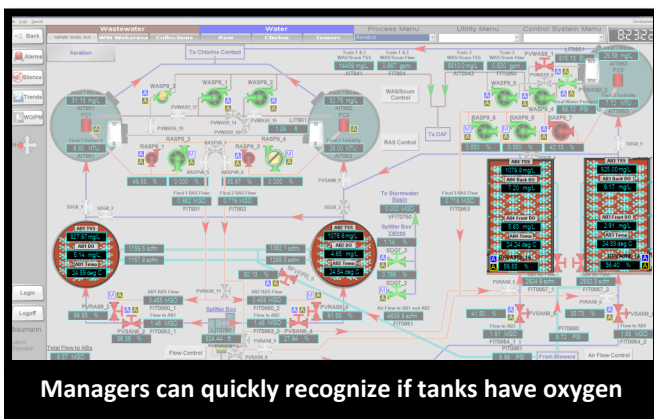
Not only were the Control Systems Technicians cognizant that Wonderware tools enhanced development, but the operators and supervisors also credited the tools as easy to use and more interactive. Carolyn Woodhead, Utilities Operations Manager, appreciated how the animation points out the obvious and how the tools help with data interpretation. She asserted, “When I walk by a screen, I immediately notice if there is oxygen – no images of bubbles, no oxygen. Also, it is easier to build a trend. Now I can more easily compare two things side by side.” With more intuitive, actionable visualizations, transferring knowledge to new operators has increased effectiveness at handling abnormalities.

product experts. “We belong to a global Wonderware community and participate in the development and implementation of applications. Our organization commits to continuous Wonderware learning endeavors as well as dispersing that information to our customers through training, tips, troubleshooting, and documentation.”

Along with available local support and software that enables operational excellence, Mark Hegeman, Utilities Operations Superintendent, feels optimistic that with Wonderware software, they have the ability to “take the next steps,” which includes the opening



Wakarusa Wastewater Treatment Plant



Managers can quickly recognize if tanks have oxygen

Tom Wilson, Operations Supervisor at the Wastewater Plant, affirmed, “You can’t teach operator intuition, but what you can do is show the data when everything is done right. Now, we can monitor equipment and be proactive before the issue occurs.” The extensive design tools of System Platform deliver Situational Awareness, which is the ability to quickly discover irregularities in an environment, and enables operators to easily recognize a potential issue.

of the Wakarusa Wastewater Treatment Plant and the potential of future projects, such as gathering additional data from the field and tying it to an event, integrating with more instrumentations, and better reporting.

To ensure a smooth transition in upgrading to a better SCADA software, Logic /WWGP supported the water department through training, onsite help, and tech calls. Great customer service is good business, and Logic/WWGP can appreciate the quandaries of changing software. With a dedicated support line and combined experience of 50-plus years in the Water Wastewater industry, help is readily available at a local level for the water wastewater department.

As we finished our visit at the Lawrence Wastewater Treatment plant, I consider their mantra of ownership and teamwork and reflect on how similar it is to ours: promoting technical solutions to ensure your success with automation. We take ownership of our solutions by being the product experts and collaborate as a team to support our customers. Just as the City of Lawrence’s Utilities Department strives to improve operations, Logic/WWGP strives to find viable solutions in making that happen.

Lee Seneker, Technical Director at Logic/WWGP, accredited the support team’s commitment to being

Jane Mohr is the Marketing Director at Logic/WWGP. She coordinates and organizes material to provide customers with worthwhile information about industrial automation products and solutions.