CASE STUDY

MUNICIPAL SCADA TELEMETRY UPGRADE

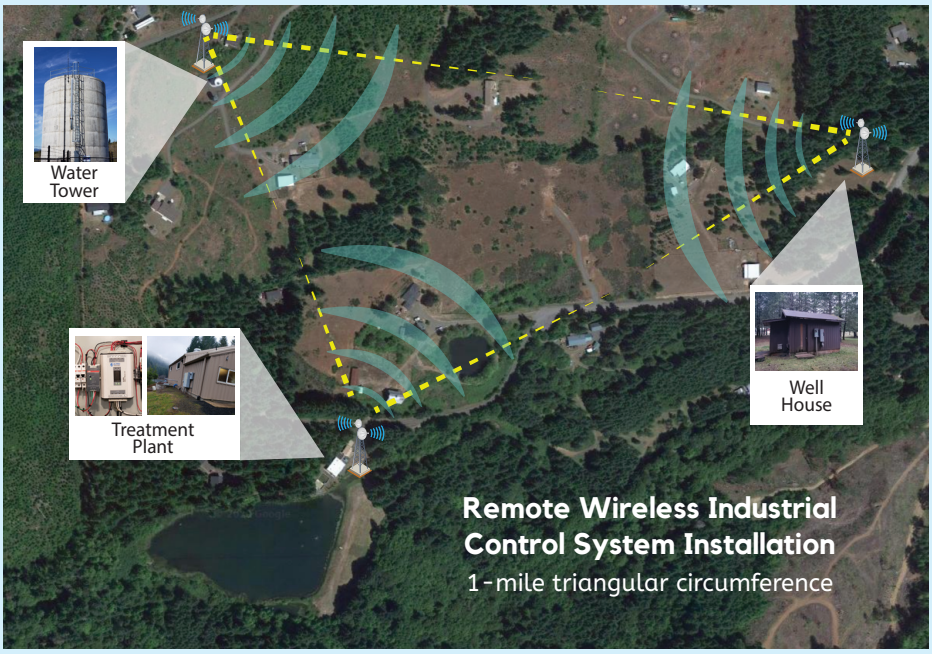
Miller Technologies, in partnership with Cygnus Control Systems, was called upon to establish a new, viable connection method that replaced a current failed system that previously allowed for remote industrial controls at a well to pump water up to one of their tanks, at a separate location.

The local small water district experienced a cable failure that connected their water treatment plant to a storage well located a mile away from the plant. The serial cable had been in place for around 30 years and was suffering from corrosion and multiple instances of damage and repair over the years. It was no longer deemed a viable connection method from the plant to the well. The water district wanted to evaluate a wireless connection to the well instead of the serial cable.

Several issues to be evaluated included:

- Physical obstructions such as mature forest trees
- Elevation and geographical factors
  - A 1 mile triangulated distance from well, water storage tank up on a ridge, to water treatment plant
- Low signal strengths already impeding communications
- Challenges due to no available power at water storage tank
  - The previously installed wireless system utilized a solar system to power the wireless radio at the tank.
- It was unknown if the existing wireless radio system was still available from manufacturer
  - How to use existing equipment instead of requiring a complete second set of radios and solar power equipment.
  - Miller Tech was able to offer the water district a 40% cost savings by being able to utilize their existing system to extend the wireless connection to the well.

Miller Tech was in charge of project management, design assistance, and establishing wireless communications between the locations. Cygnus was responsible for control system design, setup, and PLC/HMI programming.



MILLERTECH
In Partnership with Cygnus Control Systems
1300 NE HWY 99W
McMinnville, OR 97128
503.474.4724
971.237.1817
info@millertech.biz
www.millertech.biz

CASE STUDY

Installation included:

- New antenna pole and enclosure for the wireless radio.
- New control systems included:
- New DIN equipment, relays and breakers at both the well and water treatment plant to establish the new connections between the PLC equipment at both locations.

Additionally, a feature the water district wanted was to also control the recharging of the well from the tank when there was excess water in the tank, which was not previously set up. Prior controls were originally had to be manually enabled, disabled, and monitored at the well by a staff employee.

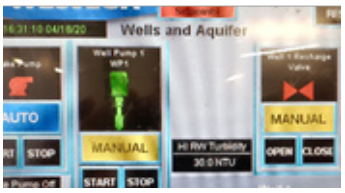
Additional System Improvements:

1. Miller Tech implemented communication security using encryption as well as password protection of the radio programming.
2. The team was able to implement true status indicators from the well pump and control valves.
3. Additional functionality to start and stop the well recharge. Previously only tank refresh was possible.
4. Remote and mobile control of the well recharge and tank refresh operations.

Conclusion:

After the installation of the third Elpro radio and the new control systems, the water district staff was able to perform the well re-charge and tank refresh operations remotely from the main office or by smartphone from anywhere.

> "Our experienced team leverages a uniquely developed method for managing IT systems that require maximum performance and minimal downtime." *- Stuart Miller, MillerTech*



Where are Data Radio Systems Used?

- Wide area networks for machine to machine data communications
- Remote monitoring and control of industrial systems
- Remote logging and reporting to SCADA and MES systems
- Security and remote access systems