PINE GROVE BOROUGH

SCHUYLKILL COUNTY, PENNSYLVANIA

WATER SYSTEM UPDATE

AUGUST 27, 2020

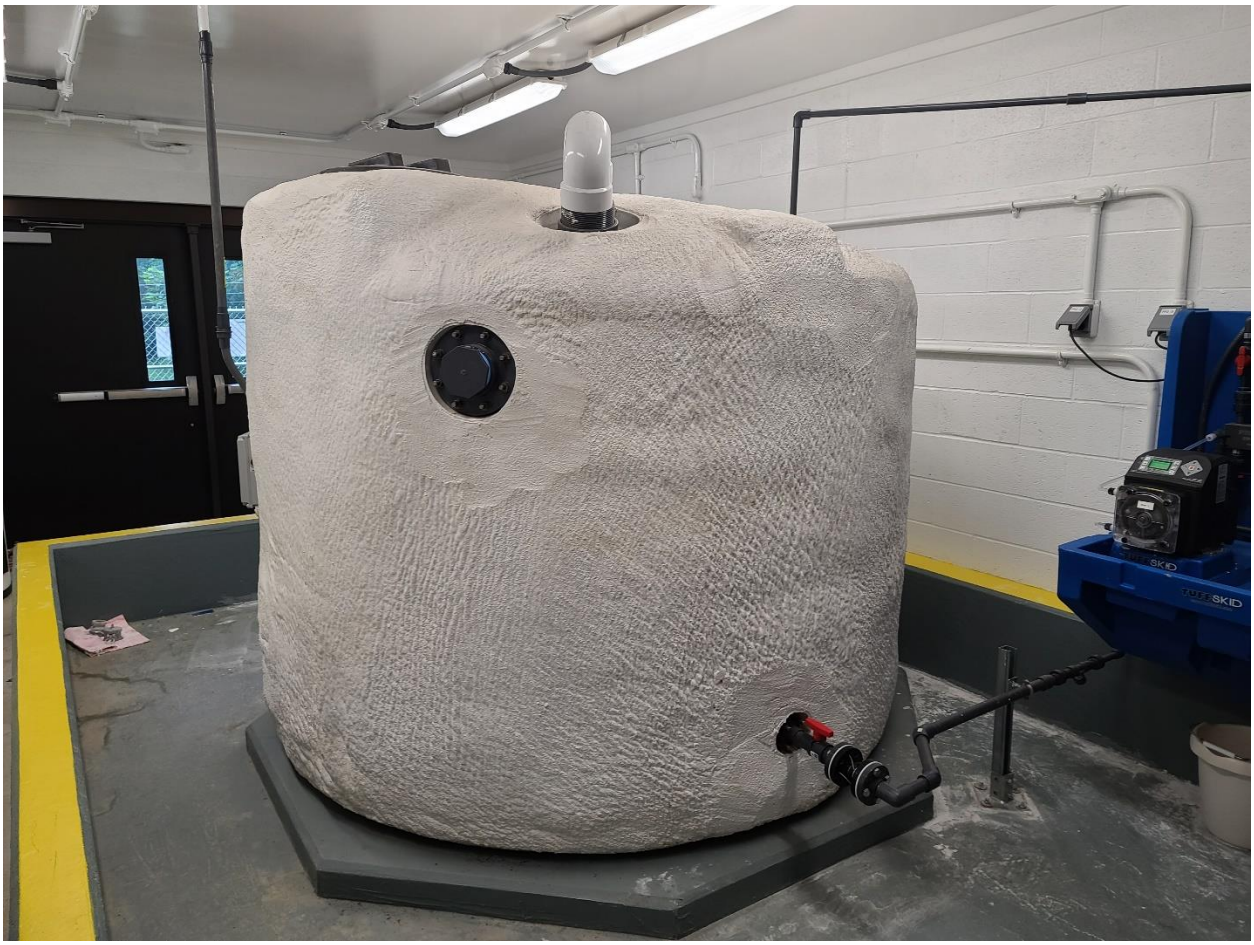
BCM ENGINEERS

ATC GROUP SERVICES LLC

PINE GROVE BOROUGH 2018 WATER SYSTEM PROJECT

An addition was added to the existing chemical building to house the new bulk caustic storage tank and metering pumps along with tanker truck delivery and unloading area effectively doubling the building size.

PINE GROVE BOROUGH 2018 WATER SYSTEM PROJECT



New Caustic (Sodium Hydroxide) Tank

Nominal 1,100 gallons, insulated and heat traced tank

Tank sized for 3-month supply to avoid peak winter deliveries

Caustic is used to bring the acidic well water closer to neutral pH of around 7.10

The caustic is 50% and must be maintained above 54 degrees Fahrenheit to prevent freezing.

A safety shower and eye wash along with rubber gloves, face shield, apron and rubber overshoes are provided for the operator's safety.

The tank is registered with DEP.

PINE GROVE BOROUGH 2018 WATER SYSTEM PROJECT

Caustic peristaltic metering pumps. These pumps are automatically flow paced controlled and will shut down if an alarm occurs for a broken tube or high pH.

One pump is used at a time while the other is on standby as an online backup.

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This is the line feeding the existing concrete tank from the eleven wells. There are injection points for the chlorine gas, the ortho phosphate used to inhibit corrosion and the caustic addition to raise the pH.

PINE GROVE BOROUGH 2018 WATER SYSTEM PROJECT

This is the new automatic flow-paced chlorination system. The roto-meter can run manually should there be a problem with the automatic system or during maintenance.

These are the new Hydro chlorine gas regulators. One tank is online and the other is a backup. If the online tank empties the other tank will automatically switch over.

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This is the original concrete 1.5 million gallon tank that was constructed in 1991. The tank started to leak at the base after 29 years of service. Once the new tank was brought online this tank was drained, cleaned, inspected and repaired.

This is the inside of the tank. It is in very good condition. You can see where the black band around the bottom perimeter of the tank was sealed.

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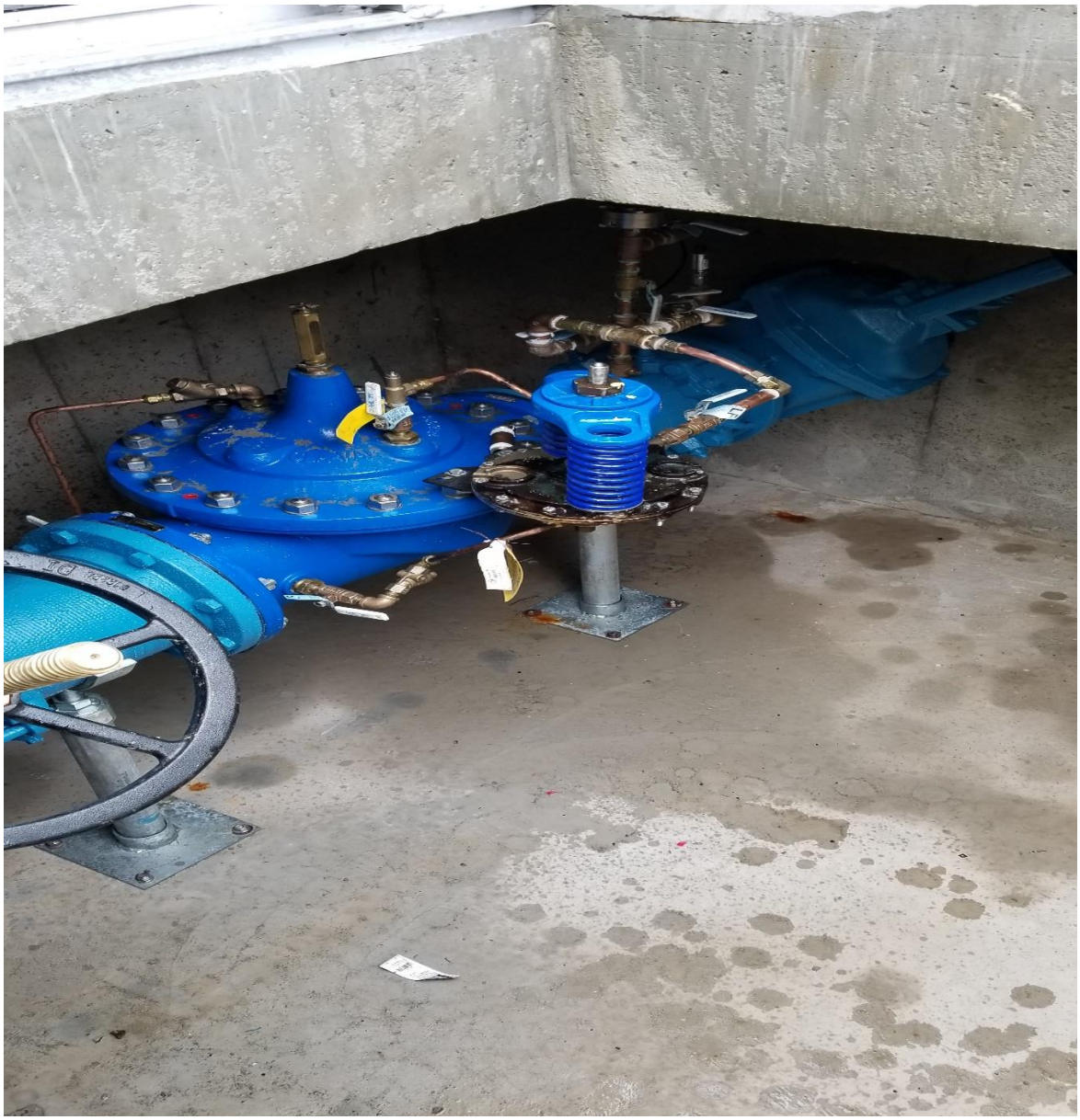
This is the new one million gallon water storage tank. This tank is balanced with the existing concrete tank and both float on the system supplying water as needed and filling when the demand is down.



This is the altitude valve in a vault at the new tank used to control the level in the tank. The tanks can either operate one at a time or both at once. This allows for maintenance or cleaning of either tank.

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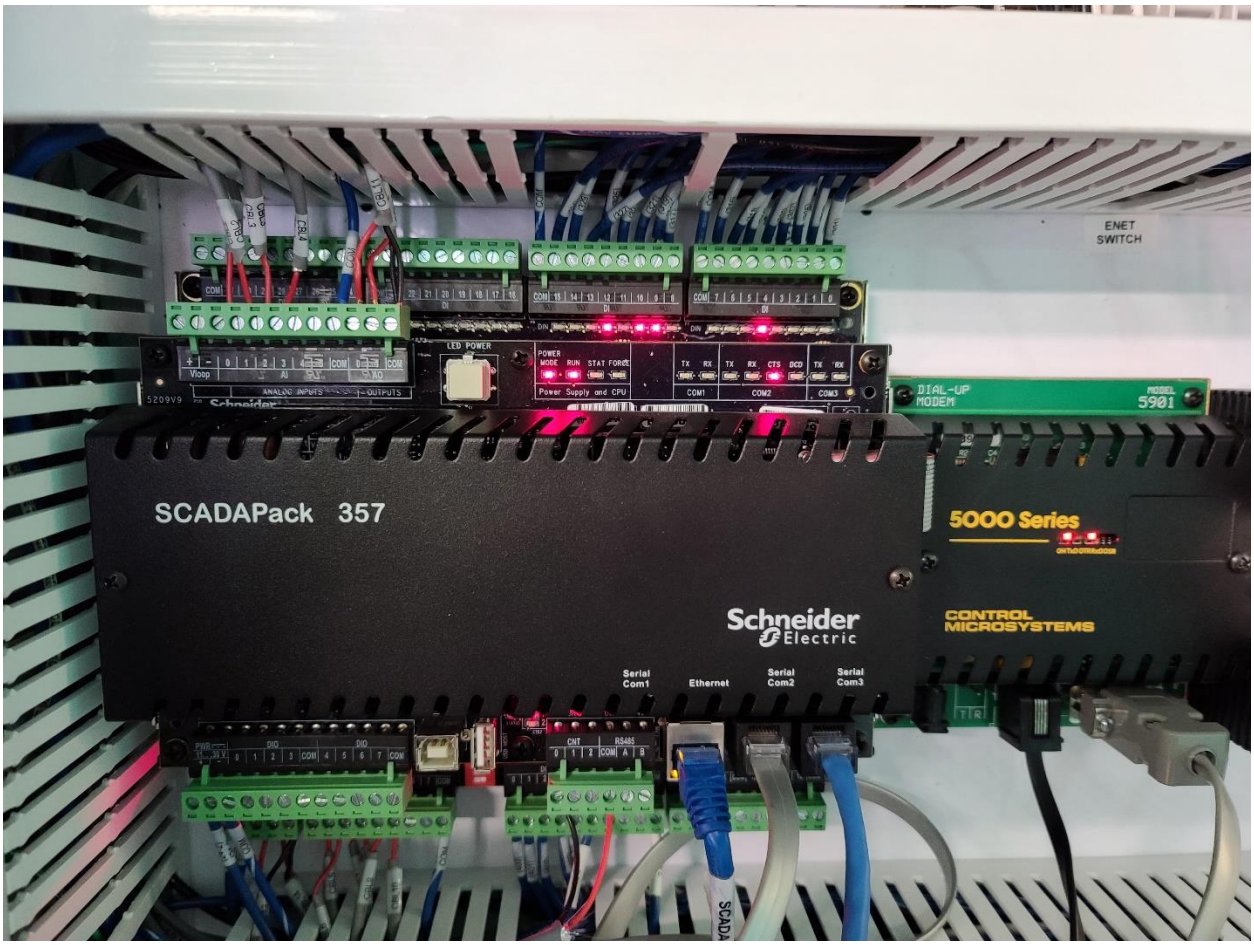

This is a picture of the MTU (Master Telemetry Unit). It controls all of the automatic functions of the system including turning wells on and off by tank level, the caustic and phosphate metering pumps and the chlorine gas injection.

It also trends these functions and has an alarm system for each of the parameters.

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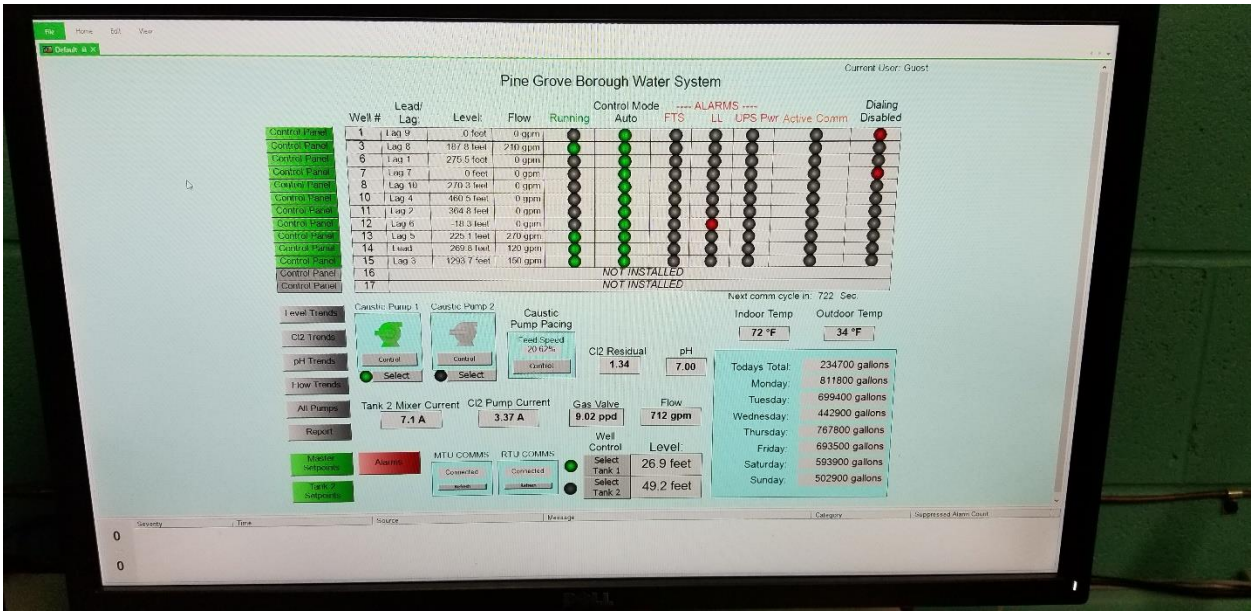

The system can be monitored at the site or remotely from anywhere in the world thru remote software that can be installed on a laptop, tablet or phone.

The software was designed with place holders for the two new wells under development.