

# Addressing Ground Water Quality Filtration Needs in Pennsylvania Watrous Water Association and Galton Borough Authority Regional Project

Watrous Water Association is a very small community water system that serves approximately 40 people through 29 service connections. Based on a recent income survey, >51% of the Watrous community is low to moderate mean household income.

Galeton Borough Authority is a small community water system that serves 1270 consumers through 523 service connections. Their primary water supply is surface water with slow sand filtration and chlorine disinfection. Galeton is the more capable system.

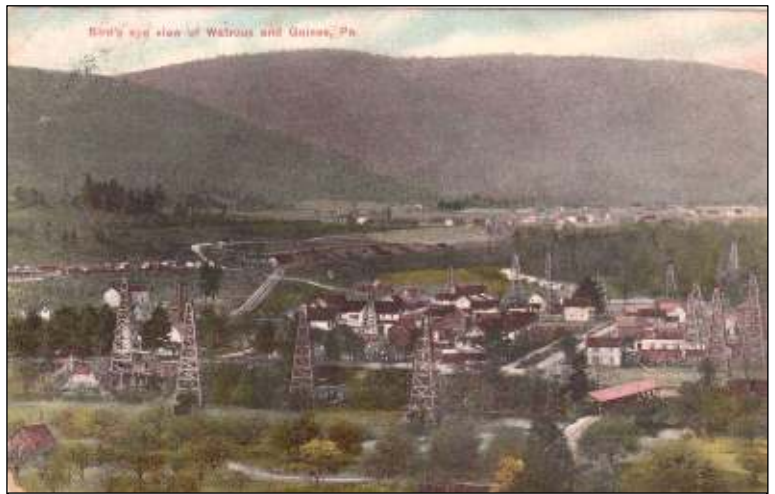


Photo provided by Pennsylvania DEP

## Issues Facing the Water Systems

**Watrous:** Watrous has spring sources which are Groundwater Under the Direct Influence of surface water (GUDI) and does not have the required filtration treatment for pathogen removal. Watrous needs a new supply of water that meets safe drinking water standards. Watrous' distribution system is deteriorated and is the cause of numerous water outages. In addition, Watrous is currently unmetered and users are billed a flat rate. Drilling wells around Watrous is not an option due to aquifer contamination from abandoned oil wells.

In 2007, the Pennsylvania Department of Environmental Protection (PA DEP) determined that the Springs were GUDI (under the influence of surface water) and posed a health risk to the community members. A Boil Water notice was issued along with directives to construct a filtration plant or locate a new water source. In 2010, PA DEP issued a Consent Order demanding corrective actions for the before mentioned deficiencies and placed the community on a permanent Boil Water Notice. Since that time, three engineering firms were hired and feasibility studies completed. The solution was to find a suitable groundwater source or to pursue an interconnection with the Galeton Water Authority that is three miles away.

In 2014, Watrous partnered with PA DEP Capability Enhancement Program which then led them to the state Professional Engineering Service (PES Program) for assistance. Nittany Engineering began the task of locating a new ground water source. Through cooperation of PA State Game Commission and a local landowner, a test well was constructed southeast of the village where it was believed to be far enough removed from the contaminated water aquifer. However, this project was abandoned because the wells proved to be riddled with high Total Dissolved Solids (TDS), indicative of the oil field contamination.

**Galeton:** Galeton struggles with water quantity and is unable to meet pass-by requirements on Wetmore Run during drought conditions. Galeton needs additional groundwater source(s) and associated treatment to be constructed to reduce the withdraw burden on Wetmore Run and to have enough water to supply the needs of Watrous.



Photo showing the poor condition of the Watrous clearwell.

### What approach was ultimately selected to solve the problem(s)?

The planned project for Watrous and Galeton is a joint regional project to aid both systems' public drinking water issues. The systems are approximately three miles apart in two different counties. The Watrous system is classified as a surface water system since it is fed by a spring that is GUDI. The spring water is chlorinated and sent to the distribution system. The system is not in compliance with the Safe Drinking Water Act, because there is no filtration of the surface water source prior to disinfection. Watrous has attempted to find a well to replace the spring, but test drilling has not been successful for finding good quality water at the required quantity.

Galeton is a surface water system that has two surface water intakes from Wetmore Run. The surface water is filtered by a slow sand filter, chlorinated, and sent to the distribution system. A preliminary hydrogeologic study identified three potential well sites that would provide for the additional quantity of water it needs to meet the pass-by requirements for its intakes and supply the Watrous system. The proposed well sites are on two private properties and one property already owned by Galeton with an existing well that needs some rehabilitation.

Once the decision is made for the additional well(s), the final phase of the project will be to add the new well(s) and connect the water systems. The well water will be treated using disinfection and three miles of new transmission main will be installed and include all the required appurtenances, such as a master-meter, shut-off and air-release valves, blow-offs, and possible connections for additional homes. This project would also replace the existing distribution piping in Watrous, replace service lines and install meters located in meter pits.

### What funding and/or technical assistance was provided?

The construction phase of the project has not yet started but is currently in the process of obtaining funding from multiple grants: a Community Development Block Grant, a Hazard Mitigation Grant, Act 13 funding, and a WIIN Small and Disadvantaged Communities Water System Grant. The PES Program (funded using the 2 percent Small System Technical Assistance DWRSF Set-aside funds) is providing free engineering and hydrogeologic services.

### Lessons Learned:

- Water systems are only willing to help other water systems if the projects are funded by grants.
- It is more efficient to have all grants and funding come from one funding agency.
- Funding the costs of test well drilling and finding a good well with adequate water quality and quantity have been difficult. These are the at-risk costs of preparing a shovel ready project.