



TOWN OF ULYSSES

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Town of Ulysses Water District 3 Issue Statement May 29, 2015

Introduction

The Town of Ulysses Water District 3 was built in response to a leaking gas station tank that contaminated drinking water wells in 1979 in the hamlet of Jacksonville.

The district receives its water from Cayuga Lake via Bolton Point. This type of water is also referred to as “surface water” and typically has a higher content of organic matter and requires more chlorination than ground (or well) water.

The system has a fairly low demand, servicing about 390 users. As such, water sometimes stays in the system for months. The combination of organic matter, low demand and water age contribute to the formation of chlorination by-products, also known as trihalomethanes or TTHMs. Occasionally, TTHM levels have exceeded federal limits.

The Town of Ulysses not only wants to correct the TTHM problem but is required to do so by the Tompkins County Department of Health based on federal EPA requirements. On July 1, 2014, the Town of Ulysses was issued orders by the Tompkins County Department of Health to reduce the TTHMs in the system by September 15, 2015.

Health Effects of TTHMs

Some studies suggest that people who drink water containing elevated levels of trihalomethanes for long periods of time may have an increased risk for certain health effects. For example, some studies of people who drank chlorinated drinking water for 20 to 30 years show that long term exposure to disinfection by-products (including trihalomethanes) is associated with an increased risk for certain types of cancer. A few studies of women who drank water containing trihalomethanes during pregnancy show an association between exposure to elevated levels of trihalomethanes and small increased risks for low birth weights, miscarriages and birth defects. However, in each of the studies, how long and how frequently people actually drank the water, as well as how much trihalomethanes the water contained is not known for certain. Therefore, it is not known for sure if the observed increases in risk for cancer and other health effects are due to trihalomethanes or some other factor. The individual trihalomethanes have caused cancer in laboratory animals exposed to high levels over their lifetimes. Chloroform, bromodichloromethane and dibromochloromethane are also known to cause effects in laboratory animals after high levels of exposure, primarily on the liver, kidney, nervous system and on their ability to bear healthy offspring.

Addressing the Problem

Throughout 2014, Tim Steed, from Hunt Engineers took a thorough look at the options to reduce TTHM levels:

1. Operational changes such as flushing water pipes, varying the water tank levels, and reducing the chlorine levels.
2. Installation of a water tank mixer
3. Installation of a mixer/aerator for the water tank - TTHMs are volatile compounds, therefore they dissipate into the air, especially when aerated.
4. Reducing the diameter of water mains to decrease the amount of time the water and chlorine are in the pipes.
5. Adding charcoal filters either at each household connection, or where the water enters from Ithaca. Activated charcoal filters, similar to a Brita filter, have been shown to reduce TTHMs.
6. Connecting to the Village of Trumansburg well water supply. Well water requires less chlorination therefore TTHMs are rarely a problem.
7. Modifying the tank inlet to increase the flow through the water tank including a new inlet pipe on Iradell Road or a separate inlet pipe on Van Dorn Road
8. Closing the loops in the system to reduce dead end pipes.

Out of all the options, Mr. Steed recommended a short-term solution of adding an aerator to the town of Ulysses water tank (a cost of ~\$100,000) and then pursuing a connection to the Trumansburg water supply (see [Hunt Engineering conclusions](#)) at a cost of ~\$1,000,000 because the models are not clear that an aerator in the Ulysses tank will be sufficient.

To meet the January 15, 2014 deadline of providing an engineering report and plans for remediation, the Town Board passed a resolution on November 25, 2014 to “move forward on bids to find the most appropriate mixer/aerator system to install in the water tank on Van Dorn Road”. On December 24, 2014, the Tompkins County Department of Health (DoH) issued [a letter](#) to the town of Ulysses expressing concern based on the engineering report, that too much of the district’s water would by-pass the water tank and aerator. Any water by-passing the tank would not have reduced TTHM levels. The DoH letter encouraged the town to further investigate an interconnection with the village of Trumansburg.

Along with the 12/24/14 letter from the DoH, additional information came to the town.

1. In their budget that passed in March 2015, the New York State Legislature added \$200 million in funding for infrastructure. For the first time in years, grant funding for water systems will be available from the state. In order to qualify, WD3 would need to be surveyed to determine their income eligibility. The survey would be anonymous and done by a 3rd party.
2. The Town of Ithaca tentatively agreed to split the cost of an aerator in their water tank that feeds into WD3. Often the water coming in to WD3 is quite high in TTHMs. Reducing the TTHM load before it passes into the WD3 system might be a partial solution, especially if combined with an aerator in the Ulysses water tank. Tim Steed from Hunt Engineers is modeling this option now.

Between the new state funding, the willingness for the Town of Ithaca to consider an aerator, and the letter of concern from the Department of Health, the Town has asked the DoH for an extension to their notice of violation to evaluate the four options below. In order to compare the costs and benefits of the options, the town still needs information extrapolated over a 30 year period, which is likely the time period the town would request for financing should they choose to connect to Trumansburg.

In early 2015 the town contracted with the engineering firm MRB Group to provide general engineering services. Bill Davis is the water system expert from MRB and is assisting in these decisions along with Tim Steed from Hunt Engineers and engineers and experts from the Tompkins County Department of Health.

Current options and items still needed to evaluate cost and effectiveness of each remaining option:

1. An aerator in the Ulysses tank
Needed:
 - a. A completed set of modeling from Hunt Engineers showing this option would reduce the TTHM levels below the current regulated thresholds.
 - b. An estimate for an aerator and its operation and maintenance costs over a 30 year period.
2. An aerator in the Ithaca tank
Needed:
 - a. all of the above PLUS
 - b. An agreement with the Town of Ithaca on splitting the cost of the aerator and any operation and maintenance costs.
3. Aerators in both tanks
Needed:
 - a. all of the above
4. A connection to Trumansburg.
Needed:
 - a. an engineering report from MRB showing an outline of the proposed project.
 - b. an application to the NYS Environmental Facilities Corporation (EFC) to determine the amount of financing WD3 would be eligible for.
 - c. An income survey to determine the funding package. The town believes that the household income census data for the Town of Ulysses as a whole is not an accurate picture of the Median Household Income (MHI) for Water District 3 residents. If income qualified, a rough guess of the annual cost for an intermunicipal connection would be ~\$50/year over 30 years. In 9 years, the current debt incurred to build WD3 will be paid off, which will reduce the cost/household by ~\$380/year.
 - d. An Intermunicipal agreement with the Village of Trumansburg on the cost of water.
 - e. Applications to additional funding agencies (eg. USDA Rural Development) to further reduce costs.

All this will take some time. Until a final solution is found, residents in WD3 are highly encouraged to use a charcoal filter system, such as a Brita filter, for drinking water. The Town Supervisor will continue to send out quarterly letters with updates to all WD3 residents until the TTHM situation is resolved. If you have questions, please contact Town Supervisor, Elizabeth Thomas at supervisor@ulysses.ny.us or 387-5767 ext 232.