



QUONONCHONTAUG CENTRAL BEACH FIRE DISTRICT

September 13, 2019

Dear Greetings!

We continue to be on Boil Water Advisory (BWA) and I do not foresee this being lifted for a while - certainly not by this weekend. There is very little concrete information to report at this time and I do not expect there will be anything more definitive to report at the Annual Meeting tomorrow beyond what is in this eblast.

Here is where we stand today:

Level 2 assessment performed 8/20/2019 ([see here](#)) by RIDOH identified several issues which have been addressed in our response dated 8/28/2019.

- 1. Dog waste and trash in the well field area**
- 2. Animal remains near the well**
- 3. Silicone caulking on wiring of wells**

Additionally RIDOH has recategorized our wells as being Ground Water Under the Direct Influence of Surface Water (GUDI) and has also mandated we develop and maintain a Cross Connection Control Program (CCCP) under item #7.

The CCCP requires us, as operators of a Public Water System, to assure that there is no connection between a private well and the public water system. Since by our QCBFD rules, irrigation systems and pool maintenance water supplies must come from a separate water source, (a private well), we will be developing a program to physically confirm there are no cross connections between these private wells and the public water supply. Accordingly, we will be sending out a survey to the community to help us prioritize our inspections. We look forward to your cooperation and prompt response. As part of this CCCP, RIDOH requires we educate the end user about cross connection issues. Material from RIDOH will be posted on the web site and you will be alerted when we do so.

Previously, I have discussed the impact of GUDI and the potential mandate of a 4-log disinfection system should our wells return TC+ (total coliform) samples within 12 months triggering a second Level 2 assessment. A 4-log system is one which is 99.99% effective in killing all pathogens, bacteria and viruses, which may be in the

water. (A 3-log system would only be 99.9% effective). Since we have not been able to clear the TC+ samples within our wells, we cannot proceed with lifting the BWA. Here is the catch. If we continue to test our wells, which we must do to consider lifting the BWA, and they continue to come back TC+ we will then be mandated into a 4-log disinfection system which must be installed and functional before the BWA can be lifted. We must retest by the end of this month.

The PW Committee believes it is probable that we will be required to install a 4-log disinfection system and, even if we somehow get through the next year without another coliform hit and clear the GUDI designation, it would be prudent for QCBFD to install a 4-log system regardless to prevent these conditions from occurring again in the future.

There are significant issues for our water system going 4-log which are addressable but require we consider several design, engineering, regulatory, and distribution (end user) issues:

- 1. RIDOH presently ONLY considers and approves chlorine and MIOX (Mixed Oxidant Solution) CHEMICAL disinfection systems. They do not consider UV systems as acceptable because they will not leave a "residual" within the water to sterilize the distribution system and RIDOH has no way, short of a sample, to regularly monitor its effectiveness.**
- 2. We have iron in Well #2 and if we draw from that well, which we do at variable rates, the iron, when exposed to the chemical disinfection system, will precipitate out and discolor the water. This will require specialized filtration treatment of the water.**
- 3. To maintain RIDOH acceptable standards the residual chemical within the system must be measured regularly, weekly or monthly not sure, for several months to assure adequate residual effect. This is set at 2PPM and most likely will be measured at our most distant spot.**
- 4. Our seasonal water flow requirements change from under 4000 gal per day in the winter to 50K gal per day in the summer. This requires design considerations to treat our high flow days, and if using chemical, affects the residual levels during low flow periods.**
- 5. It is conceivable, and likely, that to maintain the 2ppm residual at our far end, the water coming from the tank may need to be at 5ppm or higher in the winter, to allow for the chlorine decay which occurs with time. The effect of this higher ppm may impact the taste of the water.**
- 6. Any modification to our pump house will be**

constrained by space considerations. Depending on what is required and how it is designed, any modification will also require CRMC and DEM permitting and approval before we can start, significantly increasing cost.

7. The MIOX system, used in Westerly, introduces chemical chloride, sodium hypochlorite and hydrogen peroxide, but does not introduce the chloramines or the potential for gas formation found in chlorine disinfection. MIOX may allow for better taste yet filtration of iron and concentration of 2ppm residual at far end are still in the equation.
8. The combination of UV and Chlorine (used in NYC tap water) is also an option. How this might allow for a lower residual is to be determined by RIDOH. This hybrid option seems to be most attractive but requires more data including design, regulation approvability, and cost feasibility.

To recap, the solution to our water system issues is not an off the shelf, easy 4-log disinfection fix. The more time we have to investigate and design an appropriate system, the better off we will be in the long run - if we can get off the BWA. I think if we have 6 months or so we can come up with a workable plan.

To this end I believe it CRITICAL we not trigger a second Level 2 assessment which would force us into the following:

1. Immediate design and installation of a 4-log system (which we are already doing with Northeast and C&E engineering)
2. Continue on the BWA boil water until the requisite 4-log system is in place.

Today (Friday) our wells will be examined by a camera, per RIDOH, to see if there are any physical defects. Assuming there are no defects found, we expect to surge chlorinate the wells. This process introduces chlorine into the well and then pressure forces it into the well field, in an attempt to sterilize the wells which could allow us to get off the BWA. More importantly, if the wells are TC- we can delay RIDOH mandate of 4-log disinfection and allow us more time to design an appropriate system for QCBFD.

I will not be at tomorrow's Annual Meeting. I hope this extensive eblast will help many of you understand the current status. Many questions remain and our proposed solution will be data driven. As we gather information, and more importantly, directives from RIDOH, our path forward will become clearer.

George Prior and Tom Frost, PW Committee members,

will be available to answer your questions at tomorrow's meeting. But just to summarize where we are.

- 1. We do not know when we will be off BWA as our wells have not yet tested negative. If our wells test positive again this month we will be required to remain on a BWA until a 4-log chemical disinfection system is installed.**
- 2. We cannot yet estimate which system we will choose or at what cost. Northeast water and C&E Engineering are each independently developing proposals for a 4-log disinfection systems along with cost estimates.**
- 3. We believe the cause of this is the unusually heavy rains in July and August, along with the heavy seasonal water usage, which has pulled standing surface water from around the well rapidly down into the well field ground water. Heavy rains in the offseason, without the heavy water draw, allows for the surface water to percolate more slowly into our ground water.**
- 4. To address #3 above we will be aggressively trimming vegetation around the wells and regrading the clay soil around the two wells.**
- 5. We will be sending out a survey for the Cross Connection Control Program and subsequently physically inspect most homes and certainly all those with irrigation systems and pools for compliance.**
- 6. More information on the BWA, water disinfection systems, and the CCCP will come out later this fall.**

Again I thank the community for its patience. Obviously I wish we could be more definitive at this time but I assure you we will get through this.

**Vincent Reppucci
PW Chairperson**

quonniecentral.org