

QCBFD Water Status

Fire District Annual Meeting
September 19, 2020
Virtually via Zoom

RIDOH Boil Water Advisory Lifted

➤ August 2019 - July 2020

So What is Our Goal?

Design Water Treatment Facility

1. Fully RIDOH Compliant
2. Comprehensive and Permanent
 - Not a temporary “band-aid”
3. Flexible and Efficient
 - Present and Future Regulatory requirements
4. Safe
 - Highest water quality
 - Minimizes disinfection by-products
5. Incorporates Latest Technology Available

What Happened


- ❖ August 2019 + Total Coliform samples in both wells and E Coli in Well #2
 - E coli never isolated in the distribution system
- ❖ RIDOH issues a Boil Water Advisory for QCBFD
- ❖ RIDOH Performs an assessment and issues corrective actions
 - Signage to minimize public trespassing and pet access
 - Video exploration to examine and possibly redevelop the wells
 - Maintain and clear vegetation around wellhead
 - Raise wellheads to improve drainage
- ❖ Probable cause was an elevated water table of our shallow groundwater wells
 - Allows for plant decay and surface animal fecal material to enter our wells
 - Occurs regularly/seasonally

What Has QCBFD Done?

- ❖ Engaged three engineering consulting firms
 - Cost to date \$32,587
- ❖ Fully complied with corrective actions and RIDOH recommendations
 - Cost for compliance
 - Well field regrading and fill \$41,237
 - Well redevelopment \$28,030
 - Signage, sampling, and retesting requirements \$19,500



RIDOH 4-Log Chemical Treatment Mandate

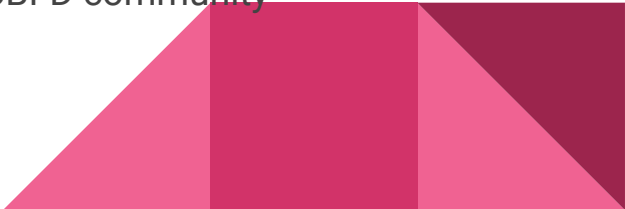
- ❖ Well #1 consistently returns + for Total Coliform through June 2020
 - Well #2 cleared of Coliform and E Coli as of October 2019
 - ❖ Spring 2020 Rhode Island Department of Health (RIDOH) mandates that QCBFD install a 4-log chemical disinfection system
 - 4-log means 99.99% removal of bacteria and viruses
 - Chemical Disinfection = Chlorine
 - ❖ Various issues prevent full compliance
 - Pumphouse expansion to house treatment equipment
 - Iron and Total Organic Compounds removal
 - DEM and CRMC regulatory issues
 - ❖ Negotiations started for a Consent Agreement
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RIDOH Lifts Boil Water Advisory


- ❖ Well #1 finally cleared Total Coliform in June of 2020
 - We believe this was due to the well field regrading which created a temporary disruption of effective surface water filtration of contaminants
- ❖ July 28, 2020 RIDOH lifts our Boil Water Advisory
- ❖ Ongoing active negotiations
- ❖ RIDOH insistence of 4-log chemical disinfection is expected
 - Pending a comprehensive water treatment solution
 - Chlorinate ONLY well #1
 - Keep well #2 offline (high iron)



Public Works Committee

- ❖ Water quality has not changed over the past 50 years
 - Shallow Groundwater wells are susceptible to seasonal water table fluctuations
 - Potable Water Quantity is NOT an issue
 - ❖ Regulatory oversight and testing requirements have tightened
 - Lower threshold for “non compliance”
 - ❖ PW recommends a comprehensive water treatment upgrade be developed
 - Compliant with RIDOH 4-log chemical disinfection
 - Utilizes latest technology to address water quality issues
 - Flexible for future regulatory changes
 - Safely provides long term potable, high quality water to the QCBFD community
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Comprehensive Water Treatment Upgrade

- ❖ Technical and regulatory constraints require a custom treatment design
 - Elevated Iron levels in Well #2
 - Elevated Total Organic Compounds in both wells
 - Minimize Chlorine generated byproducts, i.e. MIOX
 - Limited area for treatment byproduct drainage and disposal
 - ❖ Pilot testing will be required to assure treatment adequacy and compatibility
 - ❖ Full installation of a functional treatment system upgrade, barring regulatory changes, may take up to 24 months
 - ❖ Expected upper level of cost will be \$900,000
 - Dependent upon which technology works best
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Motion

Resolved, that a 4-log disinfection system RIDOH compliant upgrade to the District water system, as mandated by the RIDOH, utilizing project modifications as deemed necessary by the DOH and other technical factors no greater than \$900,000 be approved by the District with the Board of Governors having authority to modify the plans as necessary.

Final financing terms and lender(s) shall be subject to the approval of the majority of the Board of Governors. In addition, as part of the financing for the Water Project, the Board of Governors may decide to refinance and consolidate the existing water loan on the balance sheet of the District in an amount of no greater than \$75,000.

The Board of Governors may delegate the authority to negotiate and execute such loans to the person or person(s) approved by the majority of the Board of Governors.

