

Dover Board of Selectmen
January 27, 2022 Meeting
Aquarion Update

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Agenda

Slide 2

- System overview
- Review of water quality
- Action Plan
 - Operations Activities
 - System Improvements / Upgrades



System Overview

Aquarion's Water Systems in Dover

- Dover-Main
- Springdale
- Chickering

Dover-Main Wellfields

(2020 % of total production)

- Francis (70%)
- Draper (8%)
- Knollwood (22%)

Cause of discolored water

Slide 4

Naturally occurring manganese (Mn) and iron (Fe) in some of the well waters are the cause of discolored water.

Trace levels of these minerals in particulate form accumulate in water mains/pipes.

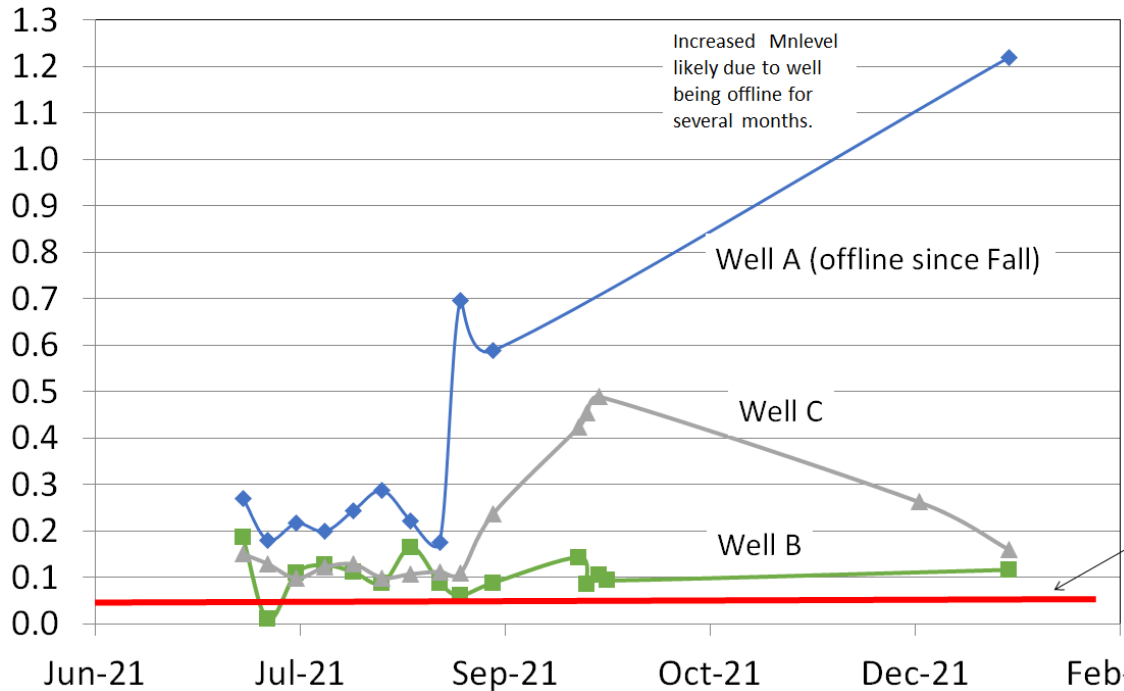
When flow through pipes increases or changes direction, these accumulated minerals can be stirred up and discolor the water.

Note: Chlorination of water at Francis Street Wells starting in 2020 exacerbated issue because chlorine oxidizes dissolved Mn and Fe, creating particles that discolor the water.



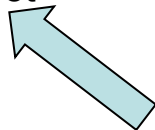
Manganese levels in Francis wells have been variable & seasonally high

Francis Street Wellfield
Manganese Concentrations (milligram/liter)



Draper Well #2
Mn averages 0.15 mg/L

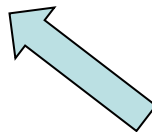
Knollwood Wells
Mn non-detect



0.05 mg/L
Secondary (aesthetic-based) Max.
Contaminant Level



- Secondary Maximum Contaminant Level (SMCL) = 0.3 mg/L
- Wells with iron levels variable and above SMCL:
 - Francis Well A
 - Francis Well B
 - Draper Well 2
- Wells with no iron detected:
 - Francis Well C
 - Knollwood Wells



Action Plan

Operations Activities

Slide 7

- Using wells with best water quality:
 - Using Francis well C as primary well for high pressure zone
 - Re-started Knollwood wells in January for low pressure zone
- Opened five water quality bleeders; water running clear.
- Planning for water main flushing. Need temporary water storage tank and warmer weather. Expect to start mid-March.



Action Plan

System Improvements/Upgrades

Slide 8

- Knollwood Wellfield (best water quality of all wells) - Increase production capacity, add chlorination, and expand area of distribution system served (new pump system, distribution piping, valve). Expected to be online July 2022.
- Francis Wellfield – Add treatment for removal of iron and manganese. Expected to be online by late 2024.
- Water Storage – Construct storage tank to provide water for water main flushing, and every-day operations. Evaluating siting options.
- Interconnections - Pursuing interconnections with Walpole and Medfield.

Questions

