

# **Dover Board of Selectmen**

**August 18, 2022**

## **Aquarion Update**

**John Walsh, Vice President - Operations and Utility Innovation**

**Paul Lawson, Manager – Operations**



# Agenda

Slide 2

- System Overview
- Water Quality – Manganese and Iron
- Water Supply and Demand
- Water Quality - PFAS
- Conservation
- System Improvements / Upgrades

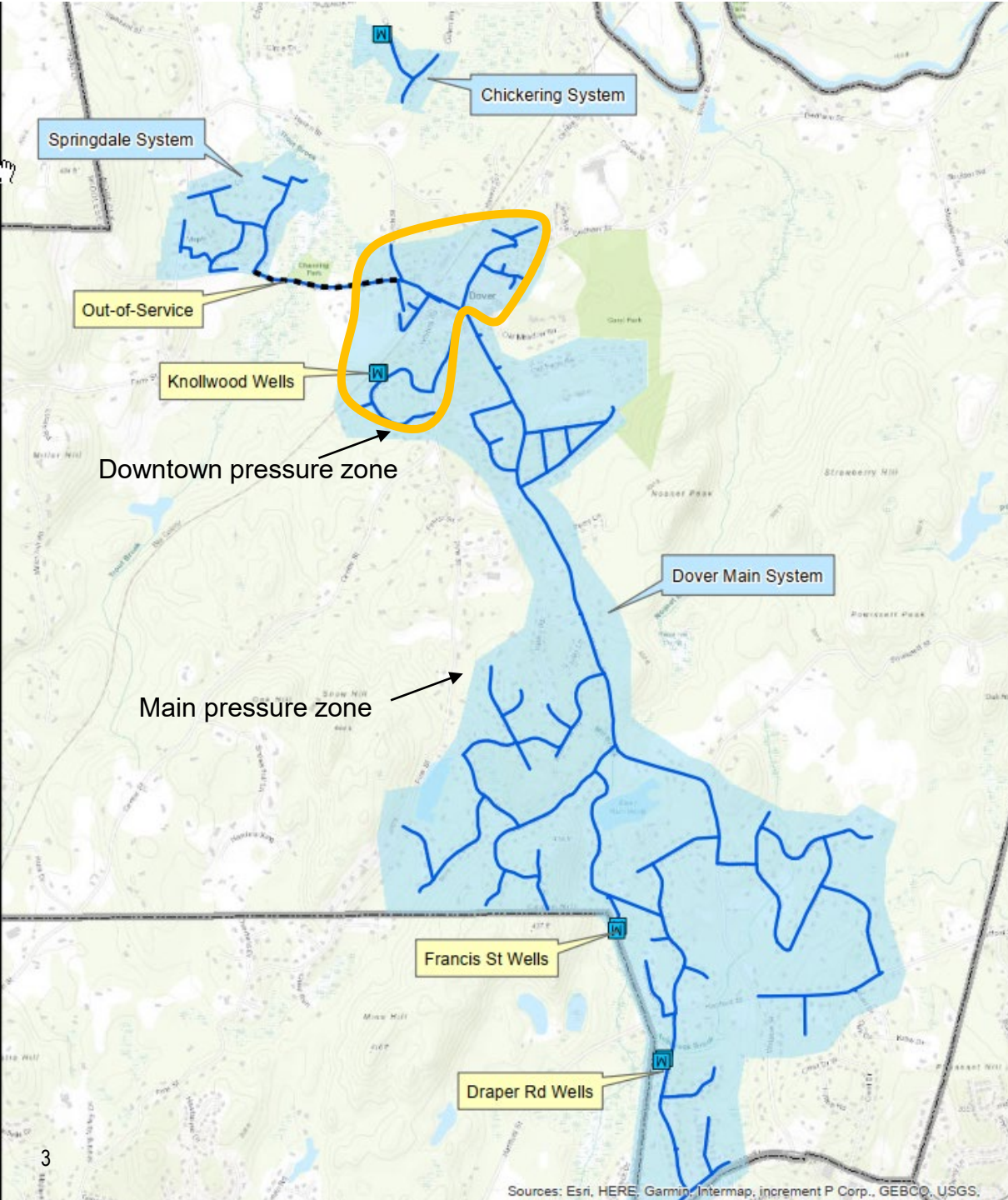


# System Overview

Chickering System

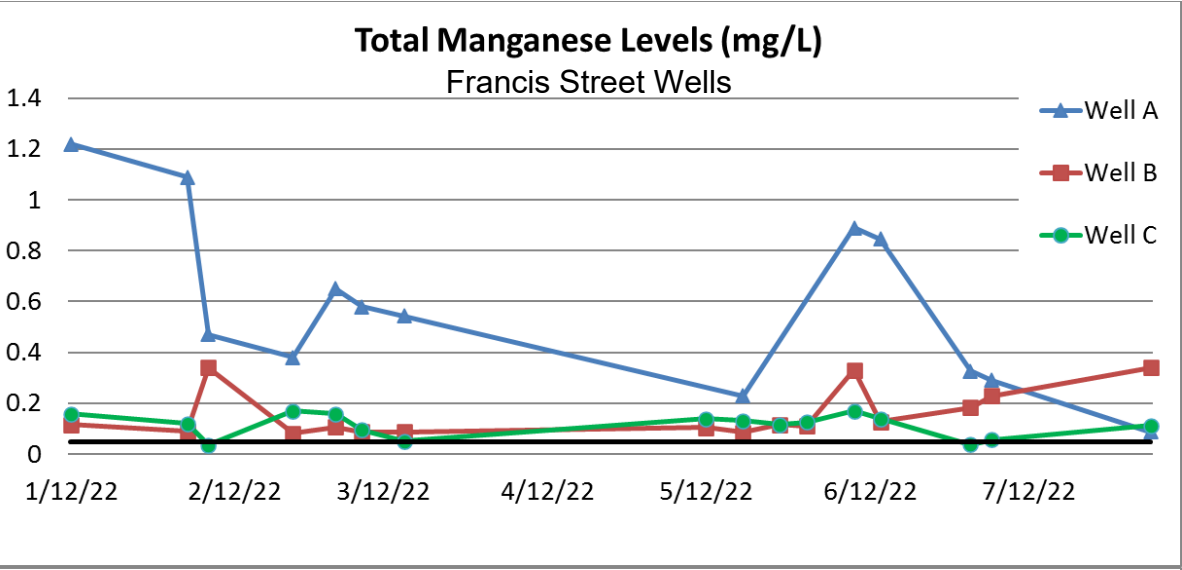
Springdale System

Main System (2 pressure zones)  
- Main zone  
- Downtown zone  
(lower hydraulic gradient)



# Water Quality

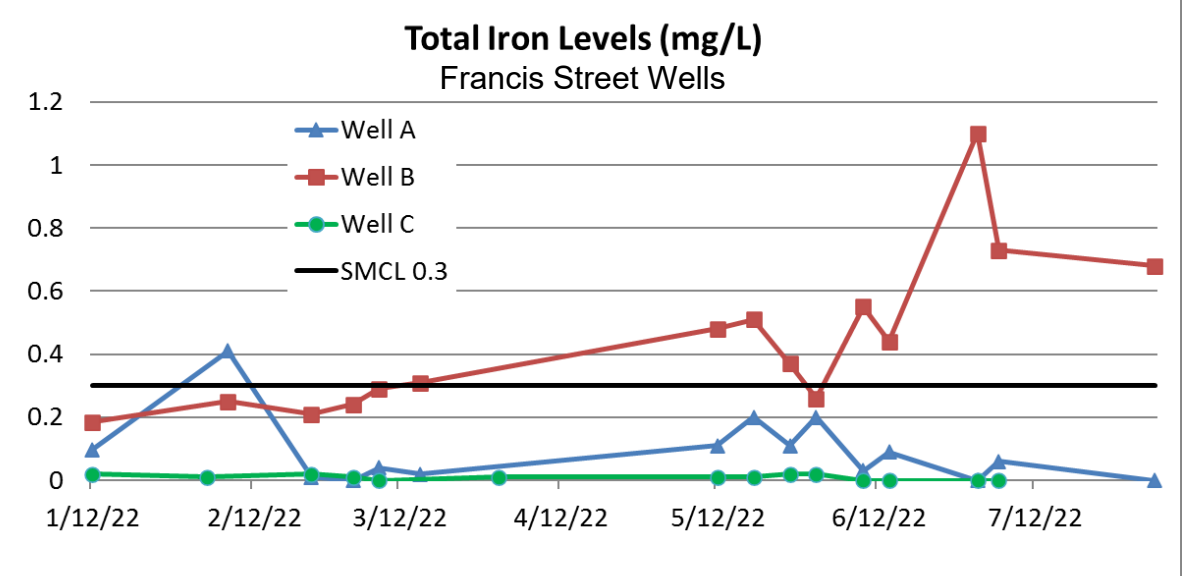
## Aquarion has addressed discolored water issue



Discolored water last year caused in part by use of wells that have high manganese (Mn) and iron (Fe).

Aquarion monitors Mn and Fe, and uses wells with best water quality.

Order of Well Operation (% of July production):  
Well C (75%)  
Well A (23%)  
Well B (2%)



# Actions taken to address discolored water Slide 5

- Aquarion uses wells with best water quality:
  - Francis Well C is primary source for Main Pressure Zone
  - Knollwood Wells serve Downtown Pressure Zone
- Water main flushing completed in March.
- Operated five water quality bleeders for several months in winter.
- **Next Step** – Increase capacity and service area of Knollwood Wellfield because it has best water quality. Project completion will be early 2023.

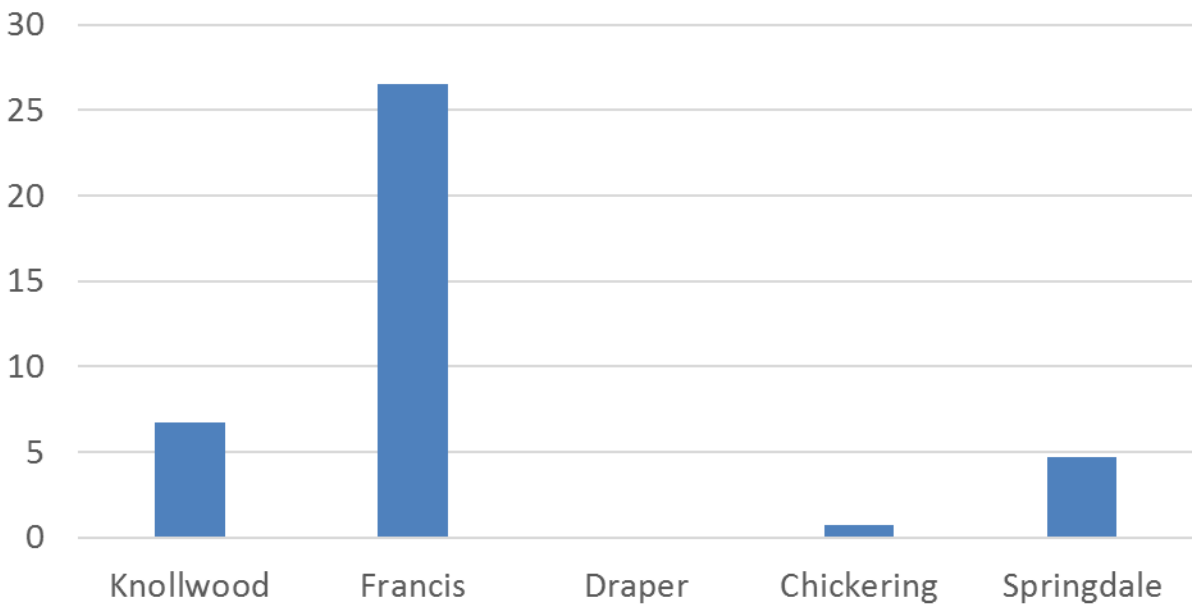
Only 11 customer calls regarding discolored water April through July





# Water Supply and Demand

Jan-July 2022 Total Production (million gallons)



Knollwood Wellfield serves Downtown Zone

Francis Street Wellfield serves Main Zone (and can serve Downtown Zone through a valve)

Draper Wellfield – not-in-use

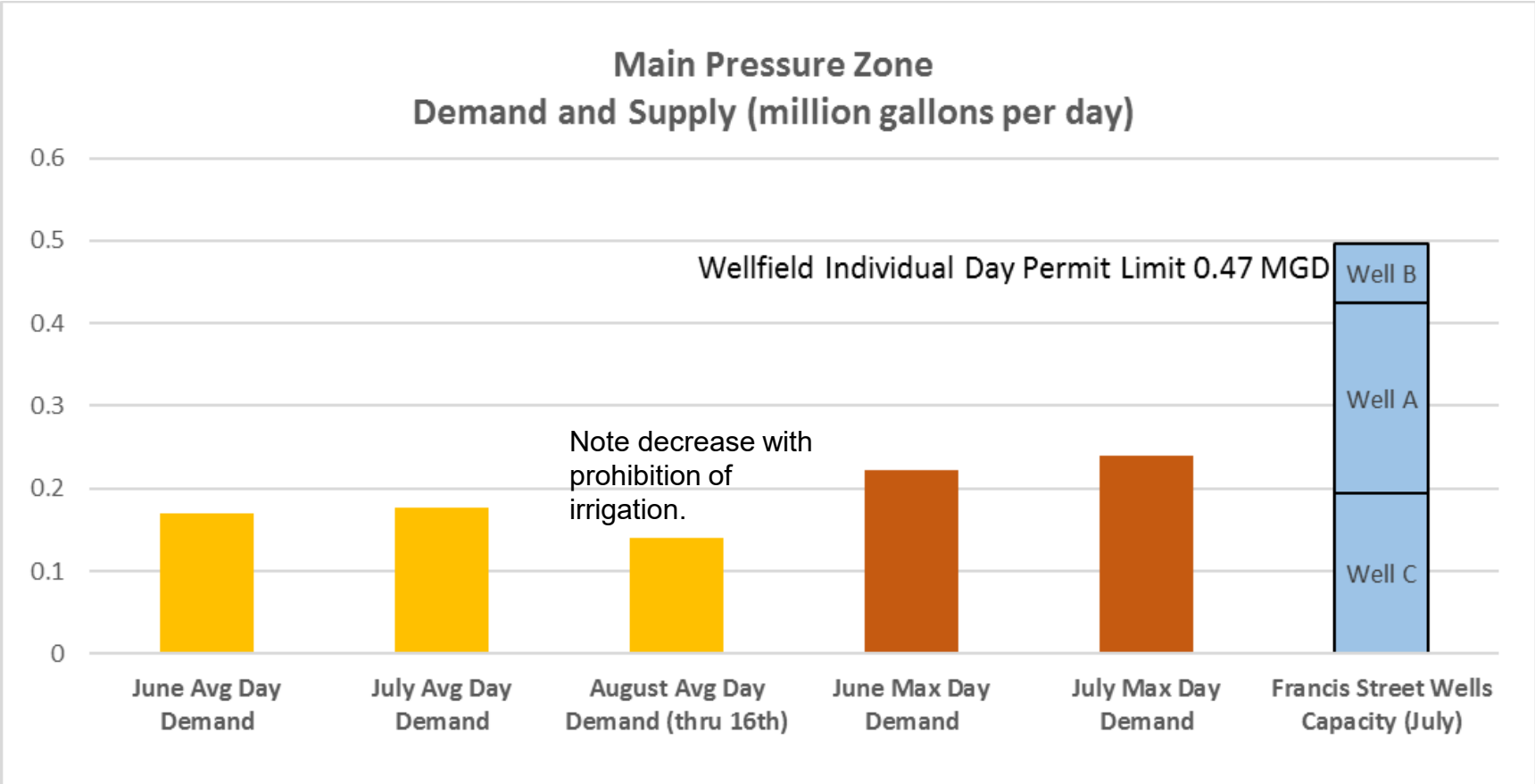
## Wellfields



# Water Supply and Demand

## Wells have adequate capacity

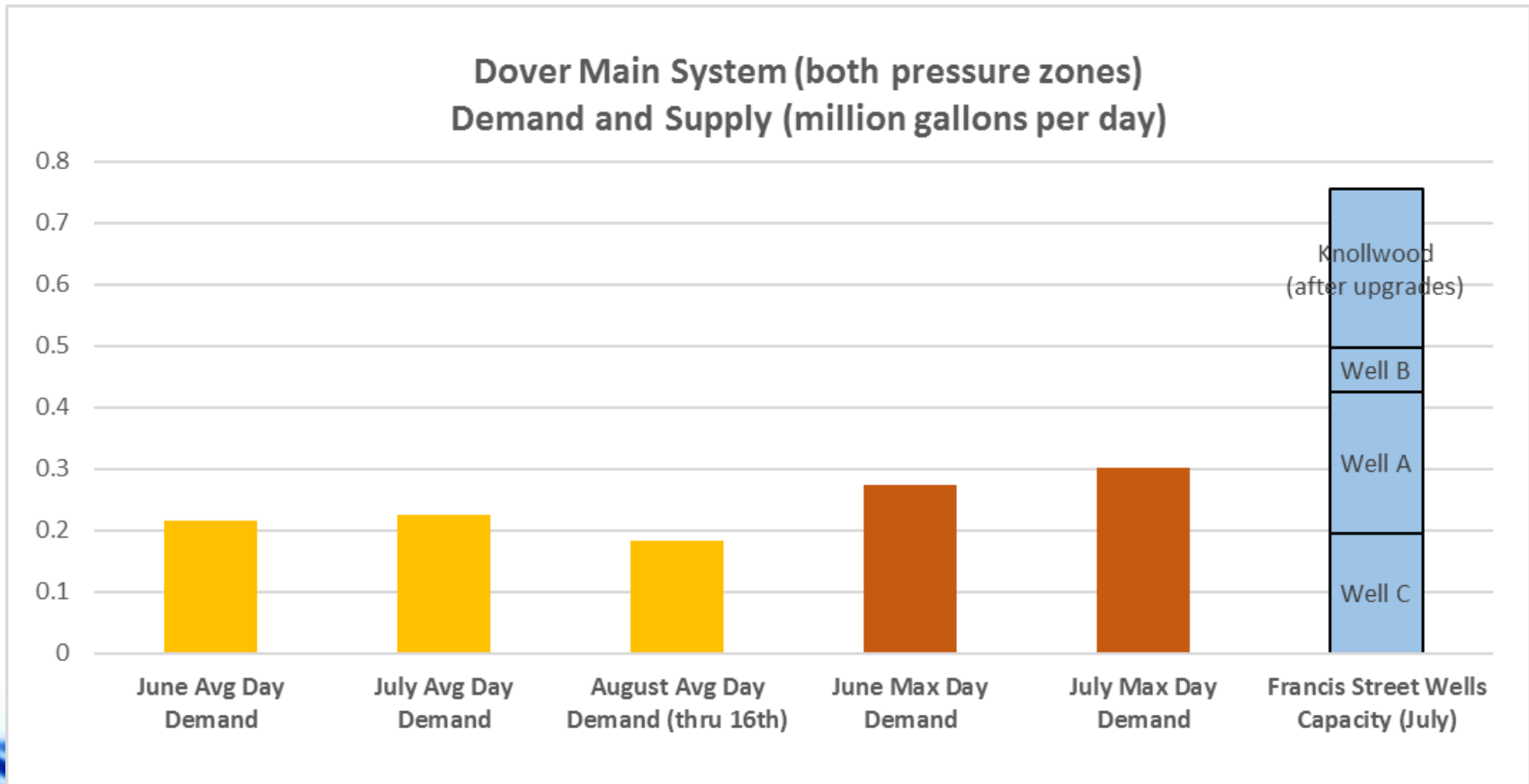
Francis Street Wellfield capacity exceeds demands in the Main Pressure Zone. Well C alone can satisfy most of the demand.



# Water Supply and Demand

## Wells have adequate capacity

Supply Margin-of-Safety will further improve with the upgrades that will increase Knollwood wellfield pumping capacity and expand area of distribution system it can serve.

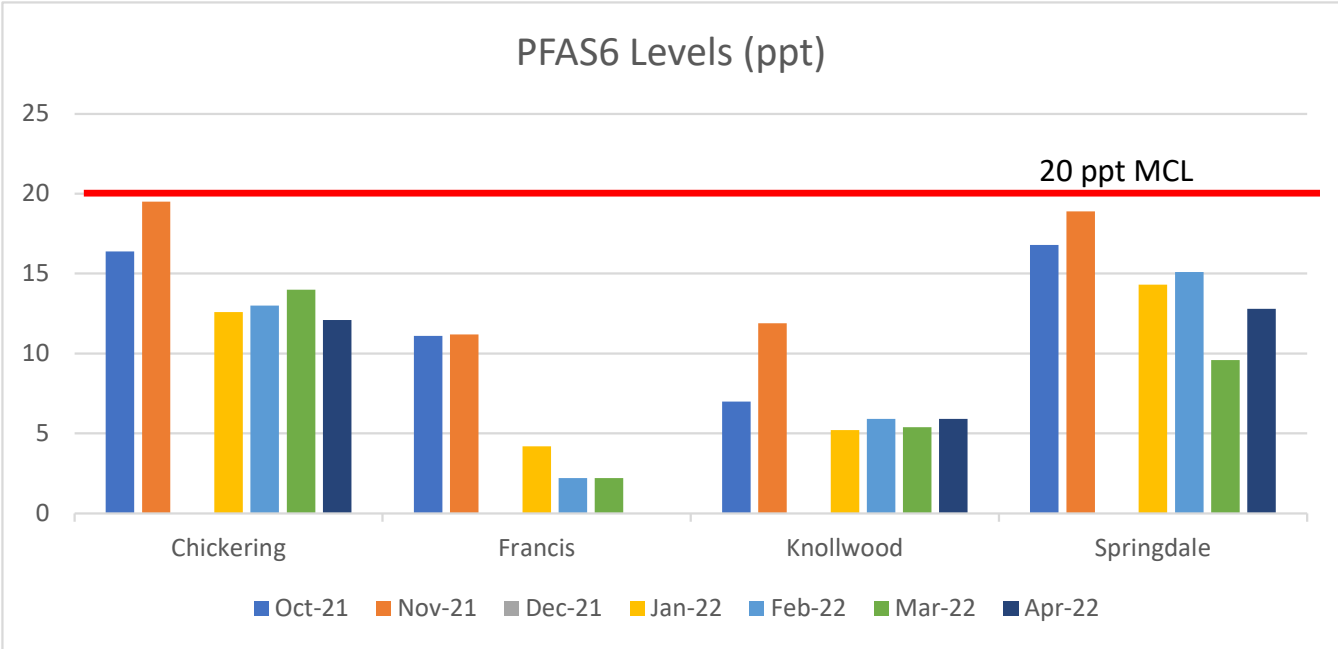




# Water Quality

## Aquarion has started projects to address PFAS

- Dover PFAS6 Results (<https://www.aquarionwater.com/water-quality/learn-about-pfas/ma-pfas-faqs>)
- Draper wellfield is off because PFAS6 levels exceed regulatory limit.
- PFAS6 levels are between 10 and 20 ppt at Chickering and Springdale. Aquarion has started projects to construct treatment at both wellfields.



# Water Conservation

## Aquarion has increased conservation as drought has worsened

- WMA permit restricts nonessential outdoor water use (5/1 – 9/30):
  - Non-drought conditions → irrigation allowed 2 days per week
  - Drought conditions → irrigation allowed 1 day per week
- Drought Status – Southeast Region
  - May 11 - Level 1 Mild Drought declared
  - June 15 - Level 2 Significant Drought declared
  - August 9 – Level 3 Significant Drought declared
- Aquarion Actions / Communications
  - Early April – sent postcards to all customers, added Dover to website ([Aquarionwater.com/watering](https://aquarionwater.com/watering))
  - May 18 – email to Dover customers informing them of drought and thus 1 day per week, updated website (<https://conta.cc/3LkZpne>)
  - July 1, 2022: email to Dover customers reminding of 1 day per week (<https://conta.cc/3LkZpne>)
  - July 5 – Reverse911 to Dover customers reminding of 1 day per week, updated website re drought status
  - July 18 – Reverse911 to Dover customers reminding of 1 day per week
  - July 19 –24, 2022: Boosted Facebook Post on 1X weekly watering ([see post](#))
  - July 14 –October 1, 2022: Facebook Carousel ad (ongoing) with info on 1X watering schedule, tips for saving water, lawn & garden irrigation tips, leak-fixing tips, and report a watering violation ([see ad](#))
  - August 1 – email and Reverse911 to Dover customers informing them of worsening drought and thus now prohibiting all non-essential outdoor water use (except hand-held watering).

First violation letters have been sent.

High-user letters sent in late June and planned for next week.



# Summary of System Improvements/Upgrades

Slide 11

- Instrumentation and SCADA upgrades have improved monitoring and control of facilities.
- Chemical and pump systems upgrades have improved reliability and performance.
- Knollwood Wellfield Project – Increase production capacity, add chlorination (4 log), and expand area of distribution system served. Expected to be online early 2023.
- Francis Wellfield – Possibly add treatment for removal of iron and manganese. Monitoring Fe and Mn, and production this summer.
- Water Storage – Construct storage tank to provide water for water main flushing, and everyday operations. In planning.
- Chickering Wellfield - PFAS Treatment. In planning.
- Springdale Wellfield - PFAS Treatment and other upgrades. In planning.

