

# Where are PFAS found?

PFAS is present in numerous everyday products

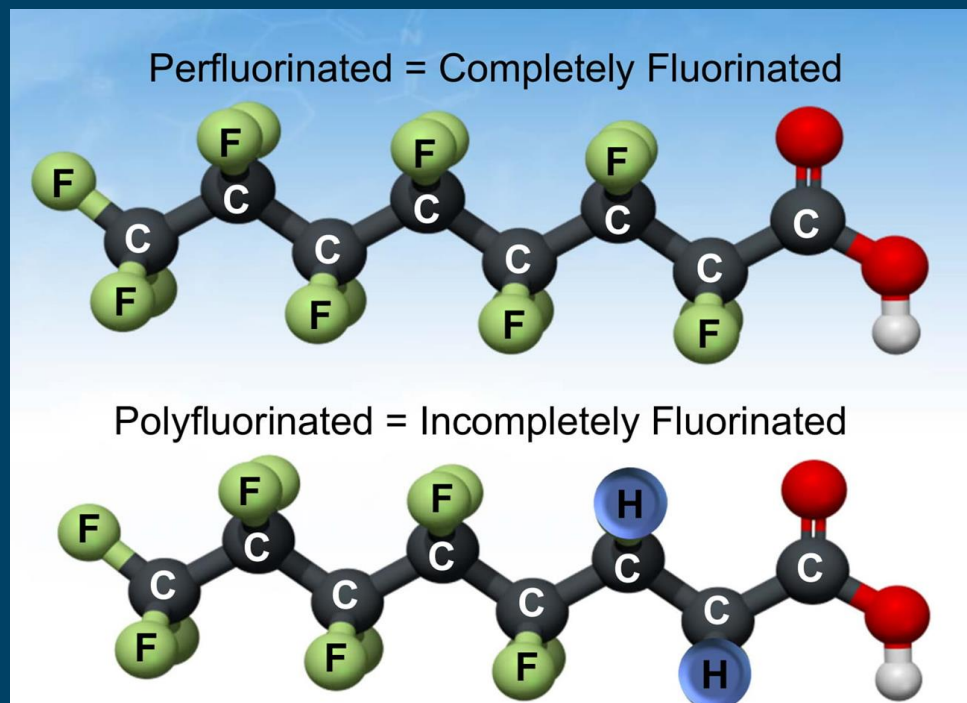


- Teflon (e.g., Dupont non-stick cookware)
- Tyvek, Gore-Tex
- Scotch Guard and other stain/water proofing products (3M products)
- Carpet/Fabric protector (e.g., stain guard on vehicle upholstery)
- Blue ice
- Ski wax
- Food wrappers (e.g., fast food containers, pizza boxes)
- Post-it Notes and specialty papers
- Shampoos/sunscreens/moisturizers/insect repellents
- Firefighting Foam and Class B Fire Extinguishers

**Summary: PFAS is everywhere !!**



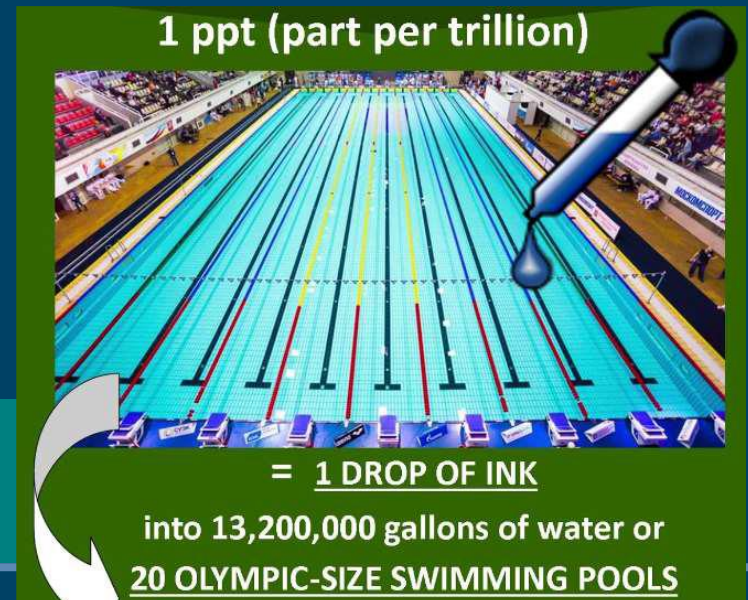
Per- and poly-fluoroalkyl substances (PFAS) are a class of approximately 3000 synthetic fluorinated chemicals that have been used world-wide since due to their unique properties chemically inert, heat resistant, weather resistant, and ability to repel oil, grease, and water (hydrophobic).



# MADEP Standard of 20 parts per trillion (ppt)

- Laboratory Methods to detect ppt only recently developed
- New MADEP standard for six of the most common PFAS compounds (PFAS6)
- 1 ppt is 1 drop in 20 Olympic size pools
- 20 ppt is 1 drop in 1 Olympic size pool

Norwell Well #1 raw water is 27 ppt



# New EPA Health Advisory below what can be detected for PFOA and PFOS

On June 15, 2022 EPA released new Health Advisories for four PFAS compounds

- Interim updated Health Advisory for PFOA = 0.004 parts per trillion (ppt) (4 ppq)
- Interim updated Health Advisory for PFOS = 0.02 ppt (20 ppq)
- Final Health Advisory for GenX chemicals = 10 ppt
- Final Health Advisory for PFBS = 2,000 ppt

*"Based on current methods, the health advisory levels for PFOA and PFOS are below the level of both detection (determining whether or not a substance is present) and quantitation (the ability to reliably determine how much of a substance is present).*

We are awaiting guidance from MassDEP as to whether further action is necessary for your water system.

**one part per quadrillion corresponds to one minute in 2,000,000,000 years**

## Summary of Four PFAS Health Advisories

- EPA is releasing health advisories for four PFAS:
  - **Interim HAs:** PFOA and PFOS
  - **Final HAs:** GenX chemicals (PFOA replacement) and PFBS (PFOS replacement)
- Analytical methods can detect GenX chemicals and PFBS at the HA values but cannot detect PFOA and PFOS at the level of the interim HAs.
- Because of this, EPA recommends that if water systems detect PFOA and PFOS, they take steps such as informing residents, undertaking monitoring, and examining steps to limit exposure.

Chemical	Health Advisory (ppt)	Minimum Reporting Level (MRL) <sup>a</sup> (ppt)
PFOA	0.004 (Interim)	4
PFOS	0.02 (Interim)	4
GenX Chemicals	10 (Final)	5
PFBS	2,000 (Final)	3

# What is Norwell Water Doing

- **Blending sources to reduce concentrations at South St and Washington St. (Grove is under)**
- **Public Notice will be Issued if Standard Exceeded**
- **PFAS sampling is now conducted monthly and**
- **PFAS removal treatment has been designed .**



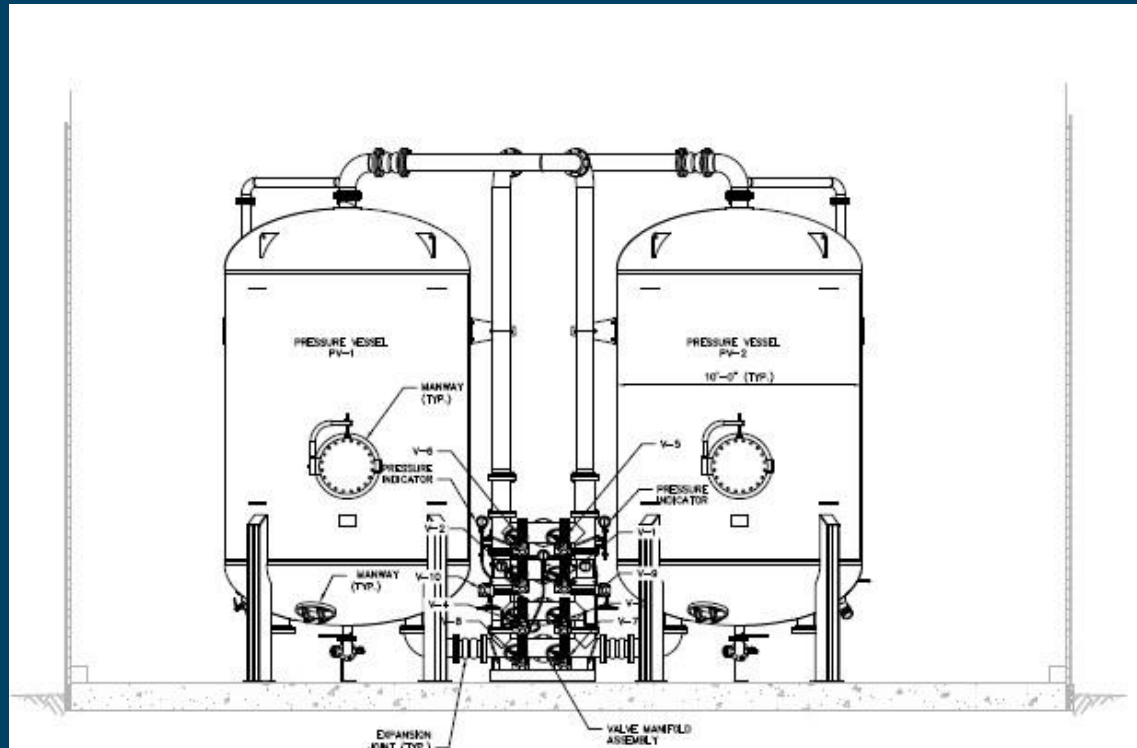
## GRANULAR ACTIVATED CARBON (GAC)

- **Highly Effective in Removing most PFAS compounds**
- **Bench, Pilot and Field Implemented**
- **Cost-effective**



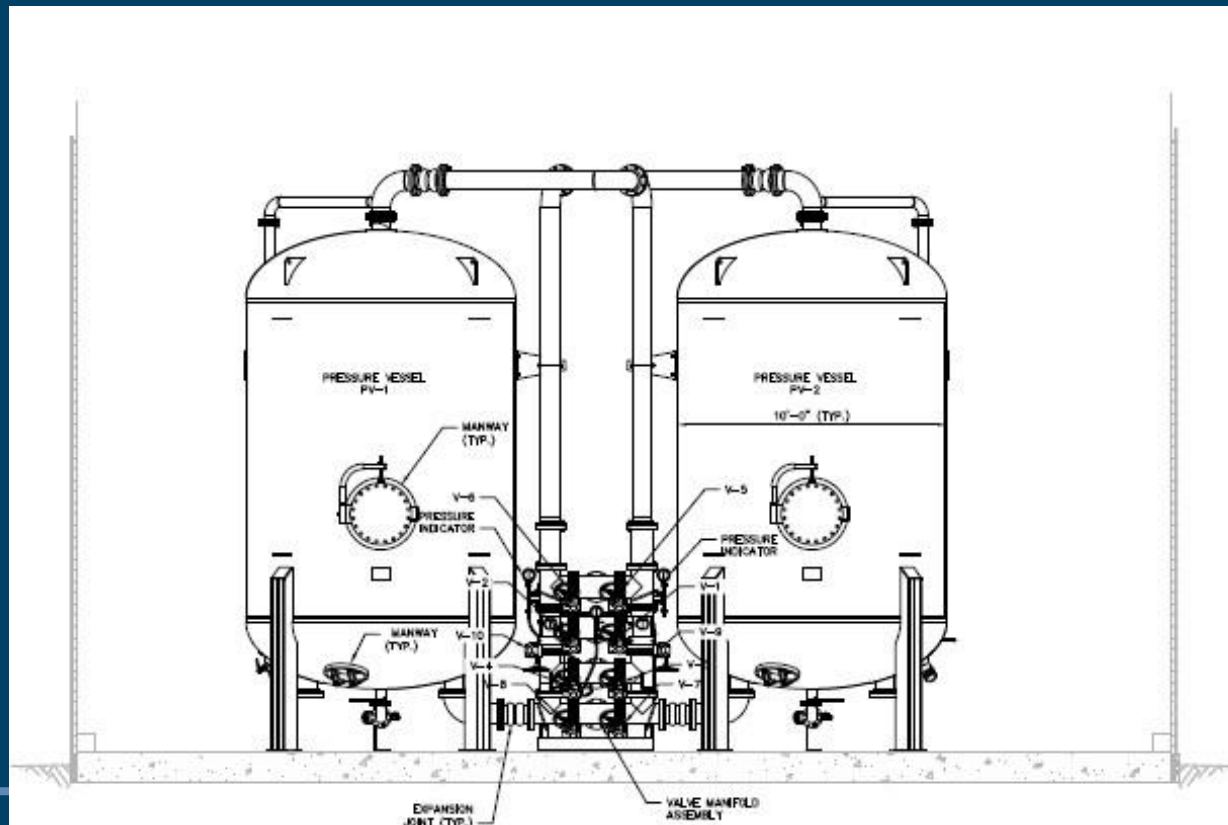
# Initial Design

- Four Vessels
- Housed Outside Treatment Plant (Seasonal)
- 9-month Lead Time



# Updated Design

- Two Low profile Vessels
- Housed inside Treatment Plant-year round
- 2-month Lead Time
- Ability to expand for additional vessels outside plant if needed





# Alternative Funding Sources DEP SRF

- Typical Timeline
  - Apply to DEP for project Approval August 31, 2022
  - Final Intended Use Plan Publication May 2023
  - Project Bidding General Timeframe BETWEEN January 1 AND June 30, 2024
- Emergency Application
  - Apply at anytime
  - Subject to availability of funds at DEP

## Bipartisan Infrastructure Law and PFAS

*The Bipartisan Infrastructure Law provides \$10 billion to invest in communities impacted by PFAS and other emerging contaminants:*



**\$4 billion**

**Drinking Water State Revolving Fund**

**\$1 billion**

**Clean Water State Revolving Fund**

**\$5 billion**

**Small or Disadvantaged Communities Drinking-Water Grants**

### Last Week

- EPA announced the first \$1 billion (of \$5 billion) in grants to help small or disadvantaged communities on the front lines of PFAS contamination.
- EPA is reaching out to states and territories with information about how to submit a letter of interest to participate

## Responding to Questions on Health Advisories (2)

- My water has measurable levels of PFOA/PFOS or GenX chemicals/PFBS above the health advisory:
  - Should I be concerned about my health?
    - *EPA's lifetime health advisory levels offer information that indicates the safe levels of exposure through drinking water over the course of a person's lifetime to avoid adverse health effects.*
    - *These levels are calculated to offer a margin of protection that also takes into account exposure through other sources beyond drinking water.*
    - *If you are concerned about potential health effects from exposure to these PFAS above the health advisory level, EPA encourages you to contact your doctor or health care professional.*