

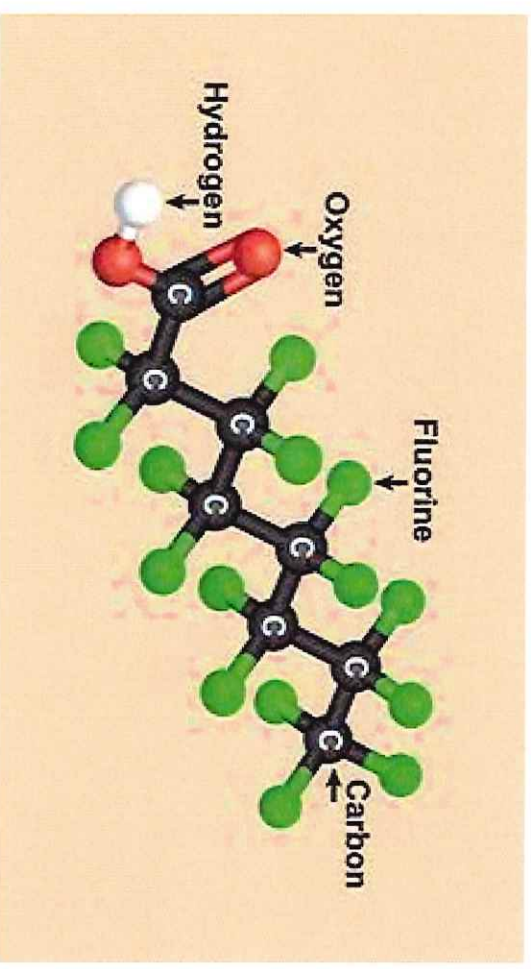
PFAS and Your Drinking Water

Prepared for
Tri-Town Water District

ENVIRONMENTAL
 PARTNERS

PFAS - Per- and PolyfluoroAlkyl Substances

- What are they?
 - A class of chemicals engineered for use in commercial and industrial applications since the late 1940s.
 - Chemical properties make it an effective surfactant for stain-resistant, water repellent, and non-stick coatings.
 - “Forever Chemical” – water soluble and non-reactive
 - PFOA, PFOS and GEN-X



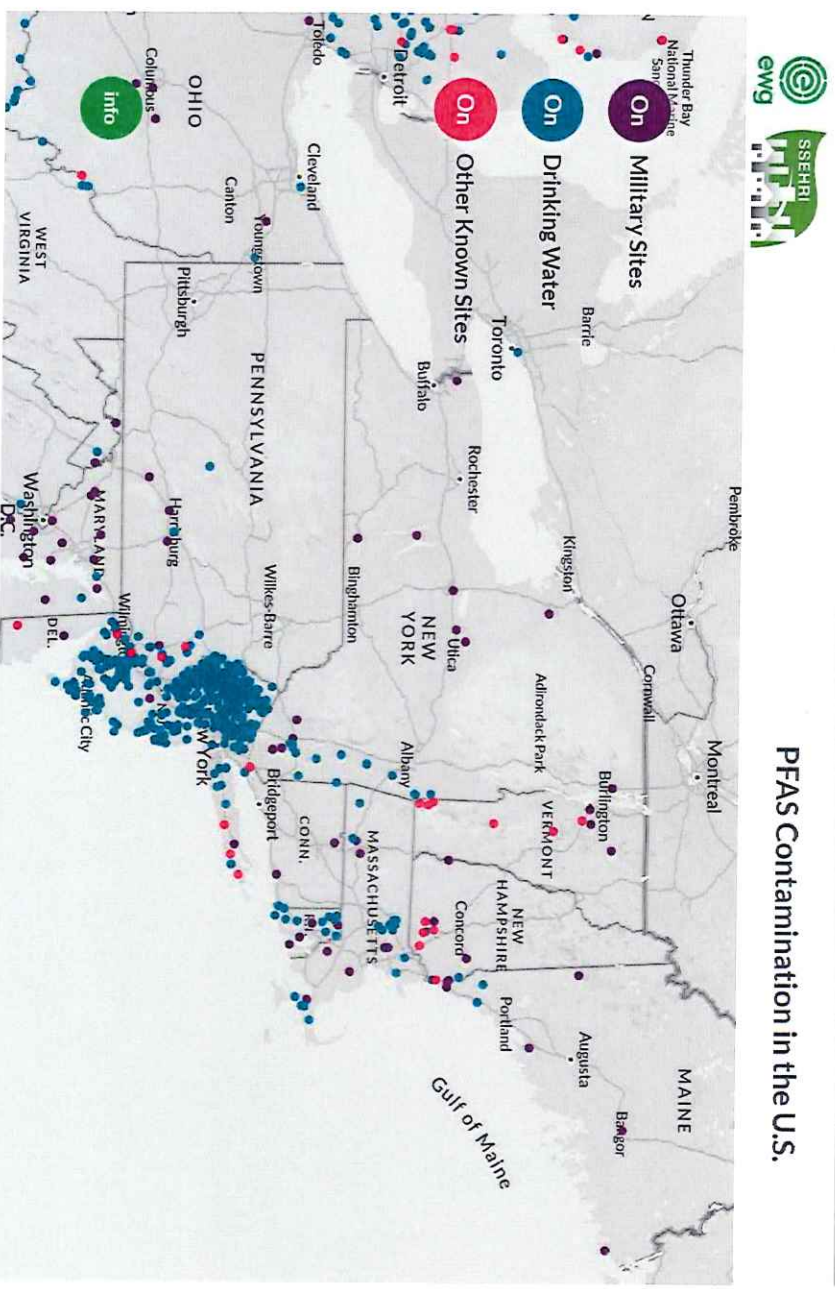
PFOA Chemical Structure

Source: National Institute of Environmental Health Sciences



PFAS - Common Sources in the Environment

- Releases to Air, Groundwater, and Surface Water
- Industrial/Manufacturing Sites
- Fire Fighting Training Sites
- Airports
- Dept. of Defense Sites
- Landfills
- Biosolids/Residuals Land Application Sites



Source: https://www.ewg.org/interactive-maps/2019_pfas_contamination/map/, December 3, 2019.



PFAS - What are they used in?

- Aqueous Film-Forming Foam (AFFF)
- Non-stick cookware (Teflon)
- Textiles (Gore-Tex and Tyvek®)
- Furniture and Carpets/Rugs (Stainmaster® and Scotchguard™)
- Food packaging (popcorn bags)
- Consumer care products (cosmetics, dental floss)
- Plumbing products (Teflon tubing and tape)
- Bio-solids – Land Applications – Fertilizers -Compost



PFAS - Public Health Concerns

- Exposure pathways
 - Industrial - Workplace
 - Air Emissions
 - Drinking Water
 - Household
 - Food
- Human Health Effects
 - Affect infant and child development
 - Lower chance of pregnancy
 - Interfere with hormones
 - Increase cholesterol levels
 - Affect immune system
 - Increase risk of cancer
- Sensitive Populations
 - Pregnant mothers
 - Nursing mothers and infants

PFAS Exposure Assessments Provide Information to Protect Our Community



Source: ATSDR



PFAS – Tri-Town Water Supply – Identification

- Voluntary sampling of Great Pond Reservoir were conducted as part of conceptual design for new Tri-Town Regional Water Treatment Plant
- We are sampling for PFAS monthly as required by MassDEP



PFAS – Tri-Town Water Supply – Intermediate and Long Term Solution

- Intermediate Options:
 - Each Community has assessed matrix of intermediate options for each of the communities. The communities are implementing best option based on existing Water Treatment Plant Operations.
 - Intermediate options being finalized: Retrofit existing filters with GAC media and installation of reverse osmosis vending units for water distribution
- Long Term Option
 - PFAS treatment included in the design of the New Tri-Town Regional Water Treatment Plant

