

PFAS IN DRINKING WATER



PLAINVILLE PUBLIC WATER SYSTEM

What are PFAS6 and why are they a problem?

Common household products known to contain PFAS



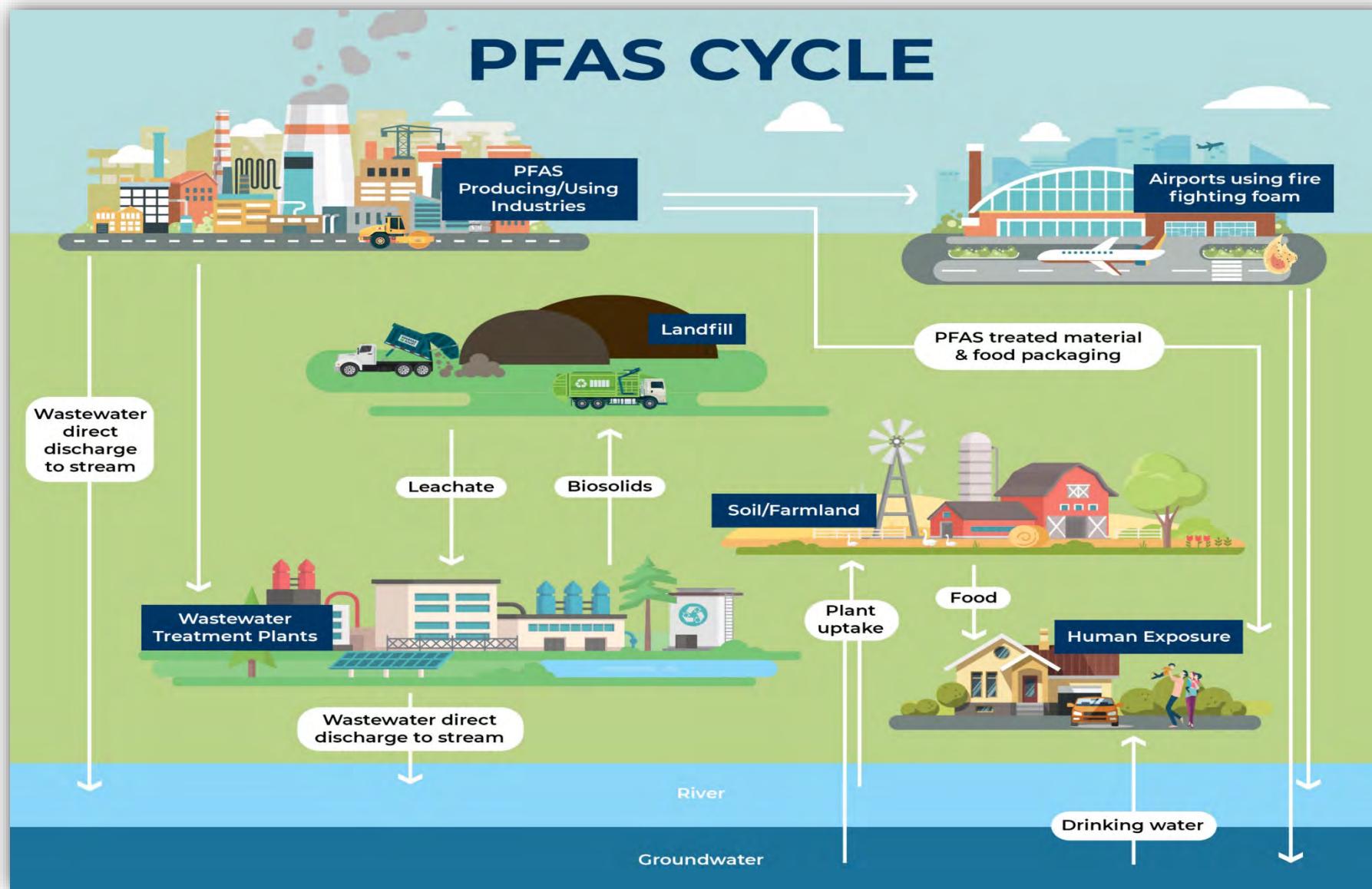
- Non-stick cookware & containers
- Aluminum foil
- Wrinkle-free clothing
- Water-proof jackets
- Water-proof boots
- Stain-resistant carpeting
- Furniture fabric
- Plastic building materials
- Fast-food wrappers
- Pizza boxes



- Prepackaged food
- Insect-repellent chemicals
- Fabric softener
- Nail polish
- Eye makeup
- Moisturizers & hand creams
- Antiperspirant/deodorant
- Body wash/shampoo/conditioner
- Dental floss & plaque removers

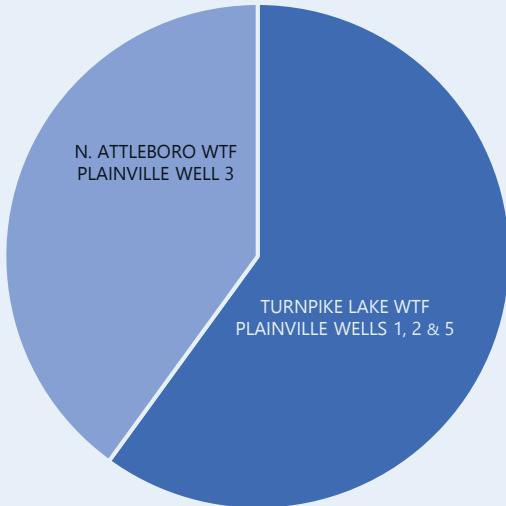


How does PFAS contaminate Drinking Water?



Where does my water come from?

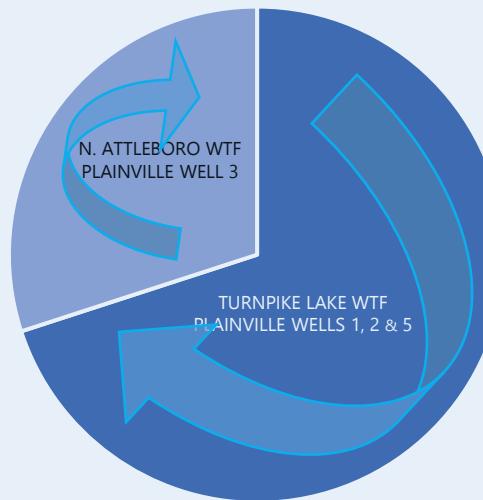
PEAK DAY DEMAND



1,200,000 Gallons Per Day

720,000 GPD Turnpike Lake Water Treatment
480,000 GPD Whiting Street Water Treatment
1.5:1 ratio Turnpike Lake to Whiting St

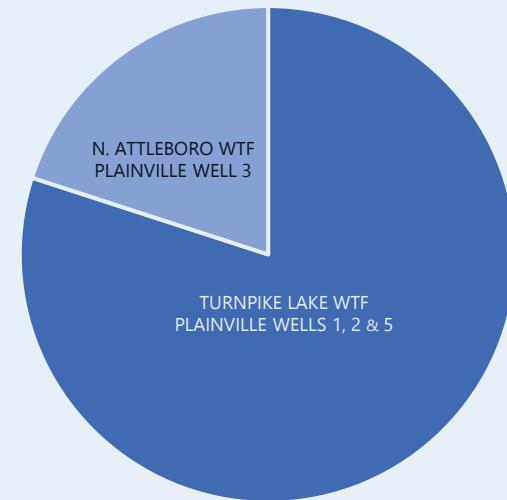
AVERAGE DAY DEMAND



800,000 Gallons Per Day

560,000 GPD Turnpike Lake Water Treatment
240,000 GPD Whiting Street Water Treatment
2.3:1 ratio Turnpike Lake to Whiting St

LOW DAY DEMAND



600,000 Gallons Per Day

480,000 GPD Turnpike Lake Water Treatment
120,000 GPD Whiting Street Water Treatment
4:1 ratio Turnpike Lake to Whiting St

What are we doing about PFAS?



✓ Public Notice & Consumer Education

- Continue testing for PFAS
- Distribute Public Notice & updates
- Continue consumer education

✓ Alternative Water Source for Sensitive Sub Groups

Consider options for an alternative drinking water source

- Water Tap at Treatment Plant
- Water Filter & Dispenser shared or stand alone

✓ Long Term Treatment Plans to Reduce PFAS

Plan for Modifications to the Public Water Systems

- Add Granular Activated Carbon Filtration at North Attleborough's Adamsdale & McKeon Well Sites
- Expand & Modernize Plainville Water Treatment Facility to include PFAS Treatment

PFAS Information <https://www.mass.gov/drinking-water-program>



MassDEP Fact Sheet Per- and Polyfluoroalkyl Substances (PFAS) in Drinking Water: Questions and Answers for Consumers

1. What are PFAS and how are people exposed to them?

Per- and Polyfluoroalkyl Substances are a group of chemical compounds called PFAS. Two PFAS chemicals, perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS), were extensively produced and are the most studied and regulated of these chemicals. Several other PFAS that are similar to PFOS and PFOA exist. These PFAS are contained in some firefighting foams used to extinguish oil and gas fires. They have also been used in a number of industrial processes and to make products, including, fabrics for furniture, paper, packaging for food, and other materials (e.g., cookware) that are resistant to water, grease and stains. Because these chemicals have been used in many consumer products, most people have been exposed to them.

While consumer products and food are the largest sources of exposure to these chemicals for most people, drinking water can be an additional source of exposure in communities where these chemicals have contaminated water supplies. Such contamination is typically localized and associated with a specific facility, for example, an area used at which they were used for firefighting or a facility where these chemicals were produced or used.

2. What is the Massachusetts drinking water standard?

On October 2, 2020, MassDEP published its public drinking water standard or Massachusetts Maximum Contaminant Limit (MMCL) of 20 nanograms per liter (ng/L) or parts per trillion (ppt) – for the sum of the concentrations of six PFAS. The six PFAS are: perfluorooctane sulfonic acid (PFOS); perfluorooctanoic acid (PFOA); perfluorohexane sulfonic acid (PFHxS); perfluoronanoic acid (PFNA); perfluorooctanoic acid (PFHpA); and perfluorodecanoic acid (PFDA). MassDEP abbreviates this set of six PFAS as “PFAS6.” This drinking water standard is set to be protective against adverse health effects for all people consuming the water. For information on the PFAS6 drinking water standard see: 310 CMR 22.00: The Massachusetts Drinking Water Regulations. For more information about the technical details behind the MMCL, see MassDEP’s technical support document at: Per- and Polyfluoroalkyl Substances (PFAS): An Updated Subgroup Approach to Groundwater and Drinking Water Values.

3. What health effects are associated with exposure to PFAS?

The MassDEP drinking water standard is based on studies of the six PFAS substances in laboratory animals. These studies show that exposure to elevated levels of the six PFAS compounds may cause developmental effects in laboratory animals. Effects on the thyroid, liver, kidneys, hormone levels and the immune system have also been reported. Some studies suggest a cancer risk may exist following long-term exposure to elevated levels of some of these compounds. It is important to note that at the current levels of exposure in Massachusetts, the risk of adverse effects will occur. The degree of risk depends on the level of the chemicals and the duration of exposure.

The drinking water standard ~~assumes that individuals drink only contaminated water, which typically overestimates exposure, and that they are also exposed to PFAS6 from sources beyond drinking water, such as food. To enhance safety, several uncertainty factors are additionally applied to account for differences between test animals and humans, and to account for differences between people. Scientists are still working to study and better understand the health risks posed by exposures to PFAS. If your water has been found to have PFAS6 and you have specific health concerns, you may wish to consult with your doctor.~~

4. How can I find out about contaminants in my drinking water?

If you get your water from a public water system, you should contact them for this information. For a contact list for all public water systems in the Commonwealth you may visit: <https://www.mass.gov/lists/drinking-water-health-safety#contacts> then under “Contacts” click on “MA Public Water Supplier contacts sorted By Town.”

For private well owners see the Per- and Polyfluoroalkyl Substances (PFAS) in Private Well Drinking Water Supplies FAQ for more information.

QUESTIONS?

5. What options should be considered when PFAS6 in drinking water is above MassDEP's drinking water standard?

- ✓ Sensitive subgroups, including pregnant or nursing women, infants and people diagnosed by their health care provider to have a compromised immune system, should consider using bottled water that has been tested for PFAS6, for their drinking water, cooking of foods that absorb water (like pasta) and to make infant formula. Bottled water that has been tested for PFAS6, or formula that does not require adding water, are alternatives.
- ✓ For older children and adults, the MMCL is applicable to a lifetime of consuming the water. For these groups, shorter duration exposures present less risk. However, if you are concerned about your exposure while steps are taken to assess and lower the PFAS6 concentration in your drinking water, use of bottled water that has been tested for PFAS6 will reduce your exposure.
- ✓ Water contaminated with PFAS6 can be treated by some home water treatment systems that are certified to remove PFAS6 by an independent testing group such as NSF, UL, or Water Quality Association. These may include point of entry (POE) systems, which treat all the water entering a home, or point of use (POU) devices, which treat water where it is used, such as at a faucet.

✓ In most situations the water can be safely used for washing and rinsing foods and washing dishes.

✓ For washing items that might go directly into your mouth, like dentures and pacifiers, only a small amount of water might be swallowed and the risk of experiencing adverse health effects is very low. You can minimize any risk by not using water with PFAS6 greater than the MMCL to wash such items.

✓ The water can be safely used by adults and older children for brushing teeth. However, use of bottled water should be considered for young children as they may swallow more water than adults when they brush their teeth. If you are concerned about your exposure, even though the risk is very low, you could use bottled water for these activities.

✓ Because PFAS are not well absorbed through the skin, routine showering or bathing are not a significant concern unless PFAS6 levels are very high. Shorter showers or baths, especially for children who may swallow water while playing in the bath

or for people with severe skin conditions (e.g. significant rashes) would limit any absorption from the water. Based on information from the Connecticut Department of Health, which is the only State to have issued guidance on this issue, water should not be used, long-term, for showering and bathing if the PFAS6 level exceeds 210 ppt. ✓ For pets or companion animals, the health effects and levels of concern to mammalian species, like dogs, cats and farm animals, are likely to be similar to those for people. However, because these animals are different sizes, have different lifespans, and drink different amounts of water than people it's not possible to predict what health effects an animal may experience from drinking water.

For more information on the MMCL, see the [MassDEP Drinking Water Standard page](https://www.mass.gov/service-details/ma-public-water-supplier-contacts-sorted-by-town). As a pet owner, if you have elevated levels of PFAS6 in your water, you may wish to consider using alternative water for your pets. If you have concerns, you may also want to consult with your veterinarian.

[MassDEP Drinking Water Standard page](https://www.mass.gov/service-details/ma-public-water-supplier-contacts-sorted-by-town)

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7. Where can I find more information about Treatment Devices for PFAS?

MassDEP information on drinking water treatment devices: <https://www.mass.gov/service-details/home-water-treatment-devices-point-of-entry-and-point-of-use-drinking-water>