

Updated April 2023

# YWD INFORMATION ON TAP

## PFAS FAQ:

### Putting the Pieces Together

What Does PFAS Stand For?, How Many Are There?, and In What Products Are They Found?

According to the CDC<sup>1</sup>, **Perfluoroalkyl and Polyfluoroalkyl substances (PFAS)** are a very large and diverse group consisting of thousands of chemicals, used in an extensive variety of product coatings because they resist breakdown and are highly stable in the presence of heat, oils, stains, grease, and water. Due to this, they were and continue to be extensively found in stain resistant clothing, furniture, adhesives, food packaging (microwave popcorn, pizza boxes, sandwich wrappings), heat-resistant non-stick cookware, fire-fighting foam, biosolids, and even personal care products. For the majority of these chemicals, human health effects are still unknown. Increasingly, scientific study evidence exists on specific chemicals ability to cause disease/cancer.

Why are some PFAS a Problem?

The same characteristics that make PFAS widely beneficial in consumer, commercial, and industrial products, also make them persistent in, and very hard to remove from our environment. Many of these chemicals can easily move through soils, be dissolved in groundwater and drinking water, and bioaccumulate or build up in most living things.<sup>2</sup> In general, newer PFAS alternatives are less complex types which are thought to be

less likely to cause health effects as they can be more quickly eliminated from the human body.

### Is There PFAS Exposure in People?

According to the EPA<sup>2</sup>, many PFAS are found in the blood of people and animals all over the globe and are still present at low levels in a variety of food products and the environment. People gain exposure by consuming PFAS contaminated water or food, other products containing them or coming in contact with these chemicals which were used widely in product manufacturing.

### What Are the Most Prevalent PFAS?

According to CDC<sup>1</sup>, numerous PFAS have been used in manufacturing since the 1940s. It was only in the early 2000s, with the discovery of several PFAS in human blood and the concern of potential harmful effects, led to the majority (but not all) uses of the two most widely used and studied chemicals in the PFAS group: **(PFOA)-Perfluorooctanoic Acid** and **(PFOS)-Perfluorooctane Sulfonate** to be phased out by US manufacturers. In recent years, PFOA and PFOS have been replaced with less complex alternatives, developed to retain the desired characteristics but also be more quickly eliminated from the human body.<sup>1</sup> In general, these newer chemical formulations are thought to be less likely to cause health effects. The majority of alternatives produced are called GenX chemicals. These include the two major chemicals of **HFPO-DA-Hexafluoropropylene oxide dimer acid** and its ammonium salt, which is extracted and measured as dimer acid and **(PFBS)-Perfluorobutanesulfonic acid**.

The four species with EPA health advisories include:

- **(PFOA) Perfluorooctanoic Acid**,
- **(PFOS) Perfluorooctane Sulfonate**,
- **(HFPO-DA) Hexafluoropropylene oxide dimer acid** and its ammonium salt, measured as one, and
- **(PFBS) Perfluorobutanesulfonic acid**.

## What evidence is there that PFAS is a Concern?

The EPA is very concerned about the public health implications based on their findings for some PFAS chemicals. For that reason, it has issued updated interim health advisories for PFOA and PFOS and health advisories for GenX and PFBS. ***Drinking water health advisory levels are used to protect people over a lifetime of exposure and are even lowered below the calculated concentration of concern, to offer a higher margin of safety against adverse health effects. For more information, please visit the link: <https://www.epa.gov/system/files/documents/2022-06/drinking-water-ha-pfas-factsheet-communities.pdf>***

## What PFAS Chemicals are Being Regulated by the State of Maine?

There are currently no enforceable EPA/federal standards for PFAS in drinking water but there are recently established and enforceable State of Maine standards for six PFAS species. The State of Maine has the legal right to set State enforceable drinking water standards ahead of EPA, and has, proactively established legislation to require Maine public water suppliers to test for six PFAS and report results for treated water to the State by the end of 2022.<sup>3</sup> Maine has established an interim enforceable State Standard for drinking water at 20 parts per trillion (ppt) for six PFAS, alone or in combination. The State list currently does not include 2 PFAS in the health advisory but does include 4 additional PFAS species which may prove to be a concern. Depending on what regulation and PFAS species are brought forward by EPA for required testing, public water suppliers will need to be sure they are testing for the required species.

The six State of Maine regulated PFAS are as follows:

- **PFOA**, Perfluorooctanoic Acid
- **PFOS**, Perfluorooctane Sulfonate
- **PFHxS** - Perfluorohexane Sulfonic Acid,
- **PFNA** - Perfluorononanoic Acid,
- **PFHpA** - Perfluoroheptanoic Acid, and
- **PFDA** - Perfluorodecanoic Acid.

# What Testing Has been Performed at York Water District?

In 2003, YWD performed several rounds of quarterly PFAS sampling for 6 PFAS species as required by the EPA under the Unregulated Contaminant Monitoring Rule (UCMR). Five of the six PFAS were those that are now required by the State of Maine. The lower limit of detection for the six PFAS species tested in 2003 ranged from 10 parts per trillion (ppt) to 90 ppt. All four quarters of sampling were undetectable.

To be proactive, from 2020 into 2021 and continuing, YWD restarted quarterly sampling of YWD treated water. All results were undetectable down to 2 parts per trillion (ppt). YWD is now monitoring for 18 different PFAS including those required by the State of Maine and all those listed in the recent EPA Health Advisory. All sample results have been undetectable. ***For more information on YWD testing, please visit Page 6.***

## How does this Translate into Enforceable Drinking Water Standards for water supplied to YWD customers?

The State of Maine interim enforceable drinking water standards continue to apply to YWD which are any of the six PFAS species at 20 ppt alone or in combination. District treated water continues to easily meet these standards, but it is impossible to know with regards to the health advisory standards for PFOS and PFOA into the future.

## **What's new?**

New federal maximum contaminant levels (MCL) for six PFAS in drinking water were proposed by the EPA in March of 2023. If the EPA's proposal becomes a final Rule by the end of 2023 after a public comment period, it would regulate PFOA and PFOS as individual contaminants, and regulate four other PFAS (PFNA, PFHxS, PFBS, and GenX Chemicals), together as a mixture.

If these Federal/EPA drinking water maximum contamination levels (MCL) are adopted, they would be the legally enforceable highest level of contaminant allowed. If levels in drinking water exceeded the proposed regulatory standards, a public drinking water supplier would be required to notify the public and reduce PFAS levels below the standards. Upon this MCL adoption, the regulation is expected to prevent thousands of deaths and reduce tens of thousands of serious PFAS illnesses.<sup>4</sup>

## References and Locations of Additional Information:

1. Per- and Polyfluorinated Substances (PFAS) Factsheet | National Biomonitoring Program | CDC  
[https://www.cdc.gov/biomonitoring/PFAS\\_FactSheet.html](https://www.cdc.gov/biomonitoring/PFAS_FactSheet.html)
2. Per- and Polyfluoroalkyl Substances (PFAS)- US EPA:  
<https://www.epa.gov/pfas>
  - o PFAS Explained- US EPA: <https://www.epa.gov/pfas/pfas-explained>.
3. PFAS Testing in Public Water Systems in Maine,  
<https://www.maine.gov/dhhs/mecdc/environmental-health/dwp/pws/pfas.shtml>
4. Biden-Harris Administration/EPA Proposes First-Ever National Standard to Protect Communities from PFAS in Drinking Water: [Biden-Harris Administration Proposes First-Ever National Standard to Protect Communities from PFAS in Drinking Water | US EPA](#)

PER/POLY FLUOROALKYL SUBSTANCES (PFAS)		PFAS ABBREVIATION→	1	2	3	4	5	6	7	8
		Results in Parts Per Trillion:	PFOA	PFOS	PFNA	PFHxS	PFBS	HFPO-DA	PFHpA	PFDA
COLLECT DATE	LOCATION/DESCRIPTION	Number of PFAS Tested↓	LAB RESULTS↓	LAB RESULTS↓	LAB RESULTS↓	LAB RESULTS↓	LAB RESULTS↓	LAB RESULTS↓	LAB RESULTS↓	LAB RESULTS↓
<b>TESTING FOR THE UNREGULATED CONTAMINANT MONITORING RULE (UCMR3)</b>										
9/18/2013	Treatment Plant Treated Water	6 Required	<20	<40	<20	<30	<90		<10	
12/17/2013	Treatment Plant Treated Water	6 Required	<20	<40	<20	<30	<90		<10	
3/26/2014	Treatment Plant Treated Water	6 Required	<20	<40	<20	<30	<90		<10	
6/30/2014	Treatment Plant Treated Water	6 Required	<20	<40	<20	<30	<90		<10	
<b>VOLUNTARY DISTRICT TESTING</b>										
2/20/2020	Treatment Plant Treated Water	6 Tested	<2	<2	<2	<2	<2		<2	
5/14/2020	Treatment Plant Treated Water	6 Tested	<2	<2	<2	<2	<2		<2	
8/26/2020	Treatment Plant Treated Water	6 Tested	<2	<2	<2	<2	<2		<2	
11/16/2020	Treatment Plant Treated Water	6 Tested	<2	<2	<2	<2	<2		<2	
2/24/2021	Treatment Plant Treated Water	6 Tested	<2	<2	<2	<2	<2		<2	
5/10/2021	Treatment Plant Treated Water	6 Tested	<2	<2	<2	<2	<2		<2	
8/10/2021	Treatment Plant Treated Water	6 Tested	<2	<2	<2	<2	<2		<2	
<b>SAMPLED UNDER STATE OF MAINE SAMPLING REQUIREMENTS</b>										
3/9/2022	Treatment Plant Treated Water	6 Required in Green-18 Tested	<2	<2	<2	<2	<2	<2	<2	<2
5/16/2022	Treatment Plant Treated Water	6 Required in Green-18 Tested	<2	<2	<2	<2	<2	<2	<2	<2
8/10/2022	Treatment Plant Treated Water	6 Required in Green-18 Tested	<2	<2	<2	<2	<2	<2	<2	<2
11/22/2022	Treatment Plant Treated Water	6 Required in Green-18 Tested	<2	<2	<2	<2	<2	<2	<2	<2
2/14/2023	Treatment Plant Treated Water	6 Required in Green-18 Tested	<2	<2	<2	<2	<2	<2	<2	<2
<b>6 PFAS Species Proposed Under 2023 Federal/EPA Monitoring Regulation:</b>			<b>EPA Proposed ↑</b>	<b>EPA Proposed ↑</b>	<b>EPA Proposed ↑</b>	<b>EPA Proposed ↑</b>	<b>EPA Proposed ↑</b>	<b>EPA Proposed ↑</b>	<b>EPA Proposed ↑</b>	

RESULTS LISTED AS <X NUMBER ARE UNDETECTABLE DOWN TO THAT PARTICULAR NUMBER IN PARTS PER TRILLION. 18 SPECIES MONITORED SINCE 2022, ALL UNDETECTED.

PFAS NAME KEY:	
PFOA: PERFLUOROOCANOIC ACID	PFBS: PERFLUOROBUTANE SULFONIC ACID
PFOS: PERFLUOROOCANE SULFONIC ACID	PFHpA: PERFLUOROHEPTANOIC ACID
PFNA: PERFLUORONONANOIC ACID	PFDA: PERFLUORODECANOIC ACID
PFHxS: PERFLUOROHXANE SULFONIC ACID	HFPO-DA: HEXAFLUOROPROPYLENE OXIDE DIMER ACID (GenX)