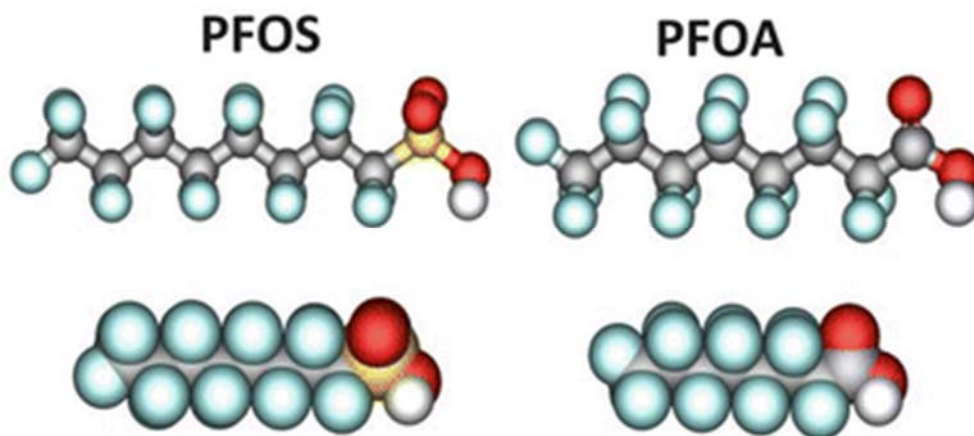


# PFAS MCL Rule

## DEP Operator Training



Bureau of Safe Drinking Water

2023 v2



**PFAS MCL Rule**  
**DEP Operator Training**  
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## Lesson 1: Background and Overview

### Objectives:

At the end of this lesson, you will be able to:

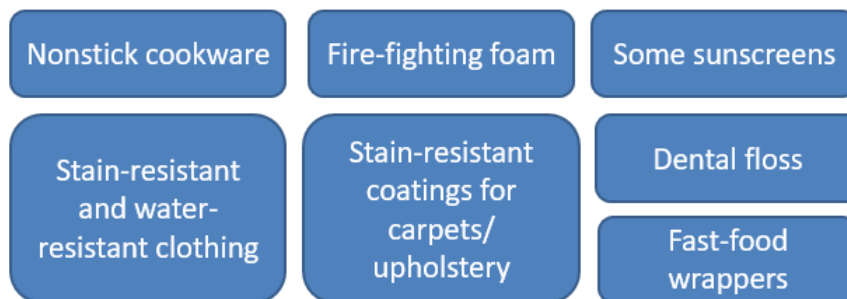
- Describe background information on PFAS chemicals, including what PFAS are, their use and characteristics, chemical structure, and health effects
- Explain the basis for the new requirements for PFAS
- Identify the purpose and applicability of the PFAS MCL Rule
- Describe basic provisions of the rule
- Describe EPA actions to address PFAS in drinking water

### PFAS Background

#### What are PFAS?

- Per- and polyfluoroalkyl substances (or PFAS) are a large class of synthetic chemicals that have been manufactured and in use since the 1940s. It is estimated that the PFAS family includes more than 6,000 chemical compounds, with some sources estimating up to 10-12,000.
- PFAS are known for their unique properties that make products resistant to water, grease, and stains; reduce friction; and resist heat.
- PFAS are found in industrial and consumer products such as clothing, carpeting, food packaging, non-stick cookware, firefighting foam, personal care products, adhesives, metal plating, wire manufacturing, and many other uses. For example, PFAS have been used to keep food from sticking to cookware and packaging and make clothes and carpets resistant to stains.

Products that may contain PFAS include:



PFAS have unique chemical properties because they readily dissolve in water and are mobile, are highly persistent in the environment, and bioaccumulate. They are often referred to as “forever chemicals” because they do not readily break down.

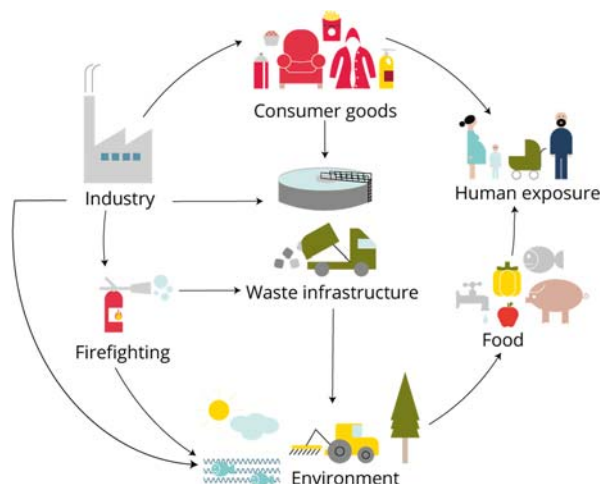
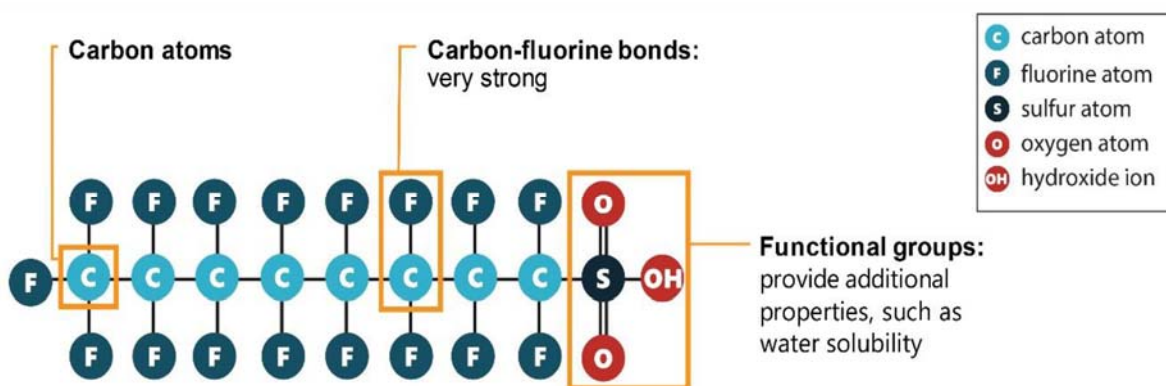


Image source: <https://www.eea.europa.eu> (Creative Commons)

PFAS are a type of synthetic organic chemicals. PFAS substances typically have several carbon atoms arranged in a chain. Each of those carbon atoms are typically bonded with one or two fluorine atoms.

The diagram below shows the chemical structure of a common PFAS compound, **perfluorooctane sulfonic acid** or **PFOS**.



Source: American Association for the Advancement of Science Center for Scientific Evidence in Public Issues 2021. Addressing Per- and Polyfluoroalkyl Substances (PFAS) in Drinking Water: Guides for Local and State Leaders. Washington, D.C.: AAAS Center for Scientific Evidence in Public Issues.

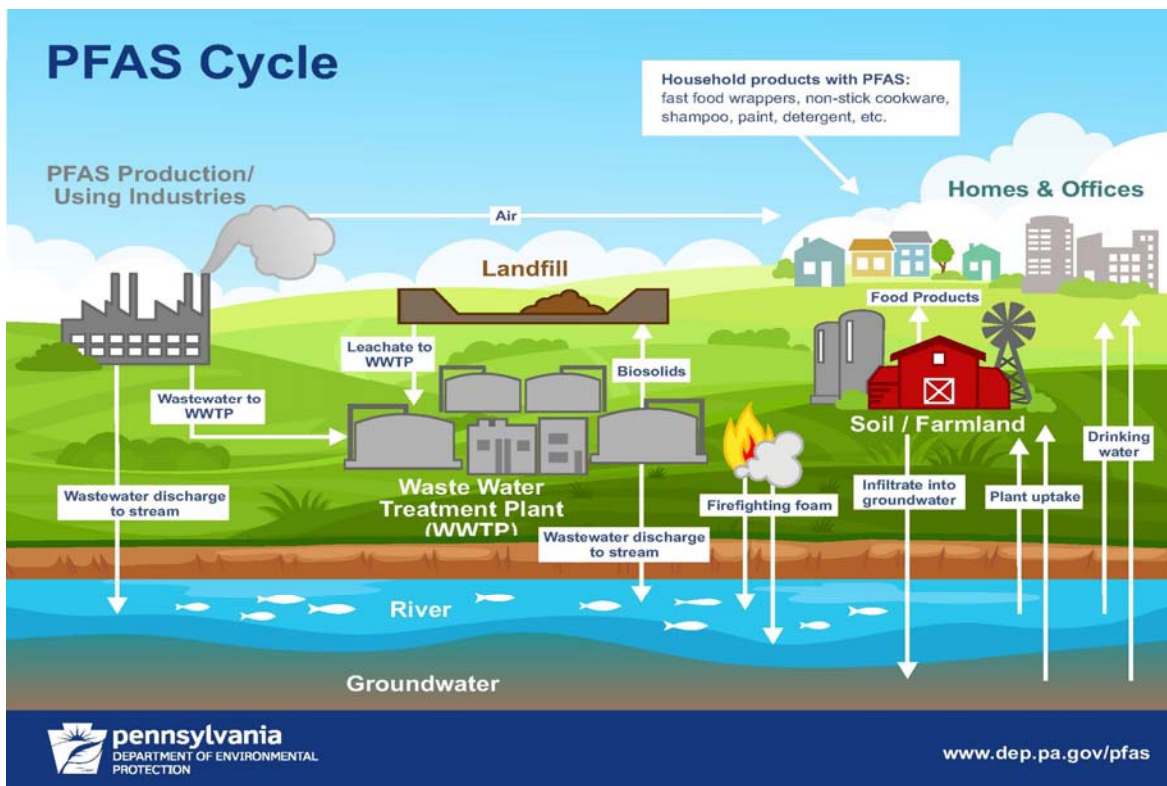
PFAS compounds vary in the length of the carbon chain. PFOS is an example of an 8-carbon chain molecule. PFOA is another 8-carbon chain compound. The carbon to fluorine bonds are very strong and are what make these compounds very difficult to break down.

Different PFAS compounds also have different functional groups. The specific types of additional atoms and ions attached to the basic carbon/fluorine chains are what gives each different PFAS compound its unique physical characteristics (e.g. heat resistance, water resistance, oil resistance, etc).

## PFAS Cycle

Decades of widespread use of products containing PFAS has resulted in elevated levels of environmental pollution and exposure in some areas of Pennsylvania. As illustrated below, PFAS remain in the environment and cycle through air, water, and soil depending on how and where the substances were released. The primary means of distribution of PFAS throughout the environment has been through the air, water, biosolids, food, landfill leachate, and fire-fighting activities.

Human exposure most likely occurs by consuming contaminated water or food, using products made with PFAS, or breathing air containing PFAS.

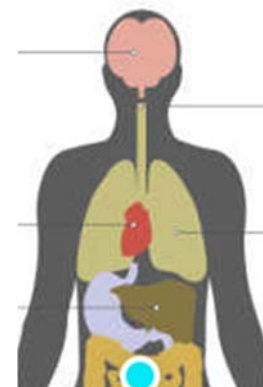


## Human Health Impacts

PFAS are considered emerging contaminants because research is ongoing to better understand the potential impacts PFAS pose to human health.

PFAS are potentially linked to a number of adverse health effects. Specifically, the two PFAS targeted by this proposed rulemaking are linked to the following health effects:

- Perfluorooctanoic acid (PFOA) is linked to adverse developmental effects (including neurobehavioral effects and skeletal effects).
- Perfluorooctanesulfonic acid (PFOS) is linked to adverse immune system effects (including immune suppression).



**Rulemaking Background**

In Pennsylvania, The Wolf Administration made it top priority to address PFAS contamination. By signing Executive Order number 2018-08 on September 19, 2018, Governor Wolf established the Pennsylvania PFAS Action Team.

- **The PFAS Action Team** consists of leaders of ten state agencies and commissions (see list below). The PFAS Action Team was tasked with addressing the growing concern surrounding PFAS. The team was directed to develop a comprehensive response to identify and eliminate sources of PFAS contamination; ensure drinking water is safe; manage environmental contamination; review gaps in data and oversight authority; and recommend actions to address those gaps.
- The Action Team released its Initial Report in December 2019. The report included information about PFAS, challenges associated with managing contamination, actions taken to date and recommendations for future actions.
- **One of the Action Team’s recommendations was for DEP to establish drinking water standards for PFAS – such as a maximum contaminant level (MCL) – so public water suppliers can determine appropriate treatment options.**

Pennsylvania has been at the forefront of states taking proactive steps to address PFAS.

<i>Pennsylvania PFAS Action Team:</i>	
<ul style="list-style-type: none"> <li>• <i>Department of Environmental Protection</i></li> <li>• <i>Department of Health</i></li> <li>• <i>Department of Military and Veterans Affairs</i></li> <li>• <i>Department of Transportation</i></li> <li>• <i>Department of Agriculture</i></li> </ul>	<ul style="list-style-type: none"> <li>• <i>Department of Labor and Industry</i></li> <li>• <i>Office of the State Fire Commissioner</i></li> <li>• <i>Department of Community and Economic Development</i></li> <li>• <i>Pennsylvania Fish and Boat Commission</i></li> <li>• <i>Pennsylvania Public Utility Commission</i></li> </ul>

**MCL Rulemaking Process**

In order to proceed with development of a PFAS rulemaking to establish standards as recommended by the Action Team, the Bureau of Safe Drinking Water (BSDW) was required to follow a stringent regulatory process.

An MCL rulemaking should be based on available data, studies, and science, and must consider all factors as required by the Federal Safe Drinking Water Act (SDWA) and Pennsylvania’s Regulatory Review Act (RRA), including:

- Health effects
- Occurrence data
- Technical limitations such as available analytical methods and detection and reporting limits

- Treatability of the contaminant and available treatment technologies
- Costs and benefits

As part of this process, two key projects were necessary to advance DEP's knowledge of PFAS – the PFAS Toxicology Services Contract and the PFAS Sampling Plan.

### **PFAS Toxicology Services Contract**

In December 2019, DEP's Safe Drinking Water program executed a toxicology services contract with Drexel University. Toxicologists at Drexel were asked to:

- review other states' and federal agencies' work on MCLs;
- independently review the available data, science and studies on the toxicology of PFAS;
- and develop recommended maximum contaminant levels goals (MCLGs) for select PFAS.

MCLGs are non-enforceable, developed solely based on health effects. They do not take into consideration other factors, such as technical limitations and cost. MCLGs were an important step in the rulemaking process because they are the starting point for determining a regulatory limit like an MCL.

In addition, the contract was later extended, and Drexel was asked to provide additional information supporting the benefits analysis.

Deliverables from the toxicology contract include:

- "Drexel PFAS Workbook", which summarized the toxicological work and health recommendations completed in each state or agency;
- "MCLG Drinking Water Recommendations for PFAS in the Commonwealth of PA" - This is a comprehensive report of the work completed by Drexel to recommend MCLGs, including their approach, reviews of critical studies, and the development of the MCLGs for each of the PFAS considered;
- "Review of Proposed Maximum Contaminant Levels for PFOA and PFOS in Drinking Water for the Commonwealth of Pennsylvania" – This report contains additional benefits information in support of the benefits analysis previously conducted, plus monetized benefits from the perspective of cost savings expected from avoidance of negative health effects as a result of lower PFAS levels in drinking water.

These documents are publicly available on DEP's website at this link:

<https://www.dep.pa.gov/Business/Water/BureauSafeDrinkingWater/DrinkingWaterMgmt/Regulations/Pages/PFAS-MCL-Rule.aspx>.

The following table summarizes the reference doses and MCLG recommendations from Drexel, as listed in the report "MCLG Drinking Water Recommendations for PFAS in the Commonwealth of PA." The full report details all of the supporting documentation, scientific studies, and calculations used to arrive at these recommendations.

Reference Dose and Recommended Chronic Non-Cancer MCLGs		
PFAS	Reference Dose (ng/kg/day)	MCLG (ng/L or ppt)
PFOA	3.9	8
PFOS	3.1	14
PFNA	2.2	6
PFHxS	4.0	20
PFHpA	None derived*	8
PFBS	39	55
GenX (HFPO-DA)	75	108

\*Reference dose was not derived due to a lack of evidence on its toxicity. Recommended MCLG is based on its chemical structure.

### DEP PFAS Sampling Plan

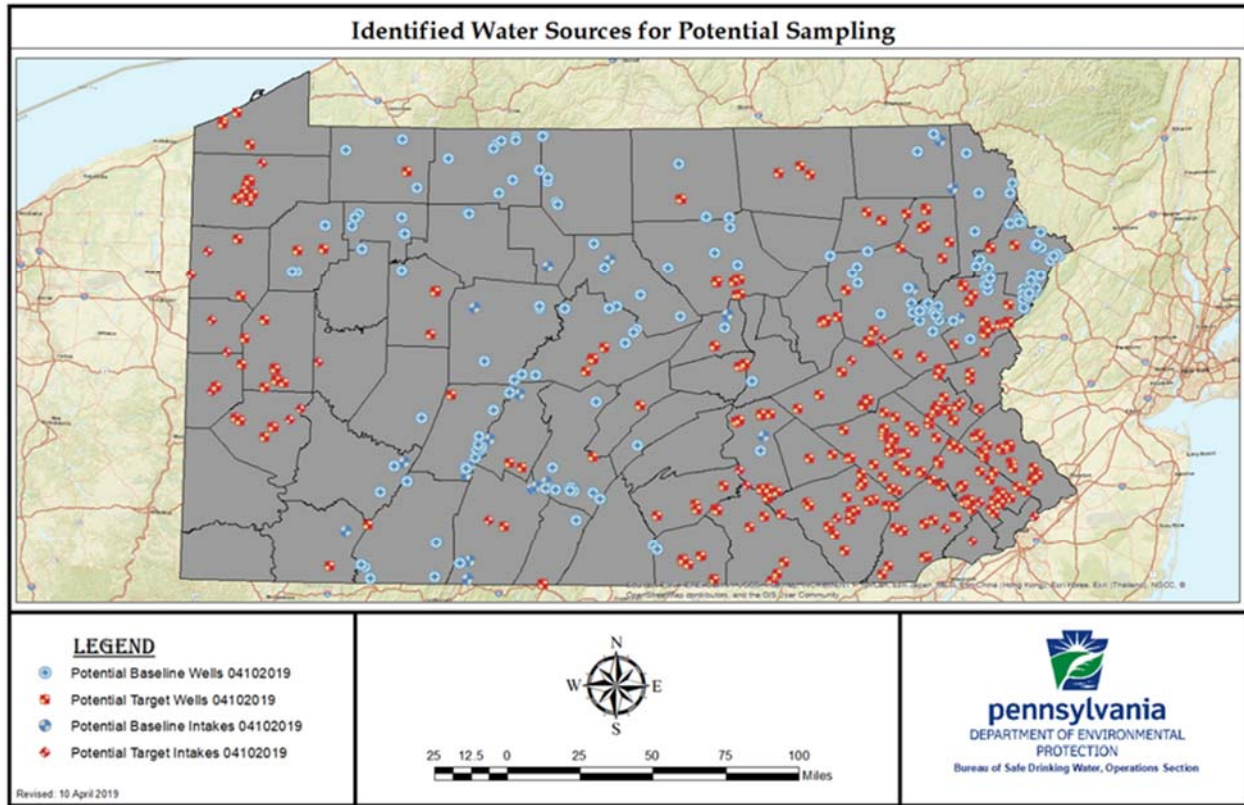
The other key project was the DEP PFAS Sampling Plan. The purpose of the PFAS Sampling Plan was to prioritize sites for PFAS sampling and generate statewide occurrence data on PFAS.



- DEP developed a GIS data layer of potential sources of PFAS contamination, based on a literature review. Potential sources of contamination included military bases, fire training schools/sites, airports, landfills, manufacturing facilities, and state/federal cleanup sites
- We identified public water system (PWS) sources located within  $\frac{1}{2}$  to  $\frac{3}{4}$  of mile of potential sources of contamination. For this, we considered relative risk to consumers, focusing on CWS and NTNCWS. TNCWSs were not included in the sampling plan.
- Finally, we identified PWS sources located within forested watersheds and > 5 miles from potential sources of contamination to serve as baseline/control sites

Based on available funding, the Department planned to sample at **360** targeted sites near a potential source of contamination and 40 baseline sites from the control group. Samples were collected at **entry point** sample taps.

The following map from the sampling plan shows the location and distribution of identified water sources for potential sampling.





-  These icons indicate potential targeted sources (wells and intakes)
-  These icons indicate potential control or baseline sources (wells and intakes)
- DEP ultimately collected a total of 412 entry point (EP) samples (including 372 targeted sites and 40 baseline sites) for analysis using EPA Method 537.1, which produces results for 18 PFAS.
- The sampling included a good mix of water system types and sizes and good distribution of sites across the state. Target sites included both ground water and surface water sources, at both community and nontransient noncommunity water systems, at a variety of system sizes ranging in population from 25 to over 1 million, spread out all across the Commonwealth.

Sampling Plan Results:

The below table summarizes the PFAS sampling results for PFOA and PFOS, which were the 2 PFAS that were detected most frequently in the sampling plan.

PFOA	PFOS
Detected: 112/412 sites (27%)	Detected: 103/412 sites (25%)
1.7 – 59.6 ppt (average 7.5)	1.8 – 187.1 ppt (average 9.9)

In addition:

- PFBS occurred at 16% of all sites, PFHxS at 13%, PFHpA at 12%, and finally PFNA at 6% of sites. These 6 PFAS are the same 6 for which DEP requested MCLG recommendations as part of the toxicology contract.
- Samples were analyzed by EPA Method 537.1, which yields results for a total of 18 PFAS.
- Of the remaining 12 PFAS, PFHxA was detected in 80 samples and PFUnA was detected in 2; the other 10 PFAS were not detected at any sample locations.

Below is a full summary of results. This summary is provided along with the full list of results on DEP's PFAS webpage at [www.dep.pa.gov/pfas](http://www.dep.pa.gov/pfas)

	PFOA	PFOS	PFNA	PFHxS	PFHpA	PFBS	Units
<b>Total # Samples</b>	412	412	412	412	412	412	--
<b>Average</b>	2.0	2.5	0.4	1.4	0.7	1.1	ng/l
<b>Median</b>	0 (ND)	0 (ND)	0 (ND)	0 (ND)	0 (ND)	0 (ND)	ng/l
<b>Minimum</b>	0 (ND)	0 (ND)	0 (ND)	0 (ND)	0 (ND)	0 (ND)	ng/l
<b>Maximum</b>	59.6	187.1	18.1	140.0	32.6	64.0	ng/l
<b># and % of Detects</b>	112 (27%)	103 (25%)	23 (6%)	52 (13%)	49 (12%)	66 (16%)	--
<b>Avg Detect Value</b>	7.5	9.9	7.2	10.9	6.1	7.0	ng/l
<b>Med Detect Value</b>	5.3	6.5	5.6	4.5	4.5	4.2	ng/l
<b>Min Detect Value</b>	1.7	1.8	1.8	1.9	1.8	1.7	ng/l
<b>Max Detect Value</b>	59.6	187.1	18.1	140.0	32.6	64.0	ng/l

### UCMR3 Monitoring Results

In addition to the 412 sites from the sampling plan, PFAS detections from the third Unregulated Contaminant Monitoring Rule (UCMR3) were also considered for this rulemaking.

- UCMR3 monitoring included monitoring for PFOA, PFOS, PFBS, PFHxS, PFHpA, and PFNA, which are the same six PFAS that were reviewed by Drexel.
- There were PFAS detections at 23 sites from UCMR3, for a total of 435 sampling sites considered.

UCMR3 monitoring occurred between 2013 and 2015. Detections were included for consideration for this rulemaking because those sites were not included in the sampling plan.

### Technical Considerations

In addition to the occurrence data and toxicological information, DEP had to consider technical considerations such as availability of treatment technologies, availability of analytical methods, laboratory capacity and capabilities, and the costs and benefits of any proposed regulations.

To further our knowledge in these areas, the DEP Bureau of Safe Drinking Water conducted several surveys to gather information.

- To assess analytical capabilities, capacity, and costs, DEP surveyed labs accredited by PA DEP Bureau of Labs for PFAS analysis by approved methods.
- To assess treatment options and costs of installation and operation and maintenance, DEP surveyed systems in PA with treatment already installed, treatment technology vendors, and other states through the Association of State Drinking Water Administrators (ASDWA).

The information gathered was used to inform the rulemaking process relative to analytical requirements and treatment options. It was also used in conjunction with the occurrence data to estimate overall costs.

### PFAS MCLs

Based on all available information from the toxicology report, the sampling plan, and other sources to inform the rulemaking process, DEP determined that it was appropriate and necessary to set standards for 2 PFAS: **PFOA and PFOS**.

DEP determined that it was not appropriate to move forward with standards for other PFAS at this time for various reasons, including a lack of occurrence data over the recommended MCLG, incomplete cost and benefit data, and a lack of treatability information, as noted here:

	PFNA	PFHxS	PFHpA	PFBS	HFPO-DA
<b>Lack of occurrence data* &gt; MCLG</b>	X	X		X	X
<b>Incomplete cost/benefit data and analysis</b>	X	X	X	X	X
<b>Reference dose was not derived due to lack of evidence on its toxicity</b>			X		
<b>Lack of treatability data</b>					X

## DEP's PFAS MCL Rule

The purpose of the PFAS MCL Rule is to improve public health protection by establishing MCLGs and MCLs for two forms of PFAS – PFOA and PFOS – to be protective of adverse developmental and immune system effects, respectively.

The rulemaking also sets MCL compliance provisions, including monitoring and reporting requirements, analytical methods, acceptable treatment technologies, and public notification.

### Applicability

The monitoring and compliance provisions of this rulemaking apply to all of the following types of systems in PA:

- Community water systems
- Nontransient noncommunity
- Bottled, vended, retail and bulk (BVRB) water systems

**It is important to note that the MCLs apply to ALL PWSs**, although transient noncommunity water systems are not required to routinely monitor.

### Key Provisions

MCLs and MCLGs:

	MCLG (ng/L)	MCL (ng/L)
<b>PFOA</b>	8	<b>14</b>
<b>PFOS</b>	14	<b>18</b>

Monitoring:

- Initial monitoring is quarterly at each EP. Initial monitoring is split into 2 years and begins in 2024 for systems over 350 and 2025 for systems less than or equal to 350.
- Follow up monitoring frequency will depend on measured concentrations, and may be quarterly, annual, or triennial, depending on PFOA and PFOS results.

It is also important to note that the number of samples each quarter is based on the Comprehensive Monitoring Plan (CMP), so PFOS & PFOA need to be added to and included in the CMP.

Analysis:

- Samples must be analyzed by a laboratory accredited in Pennsylvania using an approved method. Approved methods are defined in the rule.
- Labs must achieve reporting limit of 5 ng/L.

Other provisions:

- Tier 2 public notice (PN) is required for MCL violations.
- Detected results must be reported in the annual Consumer Confidence Report (CCR).

Much more detail will be provided on these rule provisions in the lessons to come.

**EPA Actions**

EPA’s actions to address PFAS in drinking water include:

- Issuing Lifetime Health Advisories (HALs) for select PFAS, including PFOA and PFOS;
- Requiring monitoring for PFAS, including PFOA and PFOS, under the Third and Fifth Unregulated Contaminant Monitoring Rule (UCMR);
- Development of a proposed National Primary Drinking Water Regulation (NPDWR) for select PFAS, including PFOA and PFOS.

**Health Advisory Levels (HALs):**

HALs are developed by EPA under authority of the Safe Drinking Water Act, generally for contaminants not subject to an NPDWR. HALs are not regulatory levels, but they provide technical information on contaminants that can cause human health effects and are known or anticipated to occur in drinking water. They are set at levels that only take health effects into consideration, at a concentration at which adverse health effects are not anticipated to occur over specific exposure durations. For example, lifetime HALs are set at or below the level at which adverse health effects are not expected to occur over a lifetime of exposure.

For PFOA and PFOS, there have been several updates over the last few years in the HALs:

- EPA first issued provisional HALs in 2009 for PFOA at 400 ppt and PFOS at 200 ppt.
- In 2016, the 2009 provisional HALs were replaced with final lifetime HALs for both PFOA and PFOS, set at 70 ppt combined.
- Then in 2022, EPA released interim HALs for PFOA and PFOS at significantly lower levels. They were considered interim because they were subject to change upon review by the EPA’s Science Advisory Board (SAB), and because EPA was already in the process of developing a National Primary Drinking Water Regulation (NPDWR) for PFOA and PFOS.

It is important to note that the 2022 interim HALs of 0.004 for PFOA and 0.02 for PFOS are *below* EPA’s minimum reporting level of 4 ppt for both contaminants.

	2009 Provisional	2016 Final	2022 Interim
PFOA	400 ppt	70 ppt (combined)	0.004 ppt
PFOS	200 ppt	70 ppt (combined)	0.02 ppt

EPA also issued final lifetime HALs in 2022 for two additional PFAS:

- PFBS at 2000 ppt
- GenX at 10 ppt

Note: GenX is the trade name for HFPO-DA, a short chain PFAS produced as a replacement for PFOA.

### Unregulated Contaminant Monitoring Rule (UCMR)

UCMR is a monitoring program implemented by EPA under the 1996 amendments to the Safe Drinking Water Act (SDWA) to collect nationwide occurrence data on contaminants that are not regulated but are suspected to be present in drinking water. It was developed in conjunction with the Contaminant Candidate List (CCL), which is a list of contaminants that may warrant regulation under the SDWA.

- The **Third Unregulated Contaminant Monitoring Rule (UCMR 3)**, included monitoring for 6 PFAS: PFOA, PFOS, PFNA, PFHxS, PFHpA, and PFBS. Monitoring for these contaminants took place in 2013 through 2015.
- The **Fifth Unregulated Contaminant Monitoring Rule (UCMR 5)**, was published on December 27, 2021, and includes monitoring for 29 PFAS, including PFOA and PFOS. Monitoring under UCMR 5 is schedule to occur between 2023 and 2025. The reporting limits for PFAS are lower than those available under UCMR 3 monitoring. This monitoring will provide data that is needed to improve EPA's understanding on the national occurrence of these contaminants.

More information is available on UCMR at EPA's website: <https://www.epa.gov/dwucmr/fifth-unregulated-contaminant-monitoring-rule>

### National Primary Drinking Water Regulation (NPDWR)

EPA has also been in the process of developing an NPDWR for PFAS, including PFOA and PFOS.

- On March 3, 2021, EPA published the Fourth Regulatory Determination in the Federal Register, which included a final determination to regulate PFOA and PFOS under the SDWA. A regulatory determination is part of the rule-making process under the SDWA and is a decision on whether EPA should initiate a rulemaking to develop an NPDWR for a specific contaminant.
- On October 18, 2021, EPA announced its PFAS Strategic Roadmap, which is a whole-of-agency approach to addressing PFAS contamination. Consistent with the 4<sup>th</sup> regulatory determination, one of the agency's goals documented in the roadmap is to establish an NPDWR for PFOA and PFOS.
- The *proposed* Federal PFAS Rule was published in the Federal Register on March 29, 2023. You can learn more about the proposed Federal rule at this link: <https://www.regulations.gov/docket/EPA-HQ-OW-2022-0114/document>

**It is important to note** that once a final federal rule is published, there is a three-year lag period before the regulations go into effect, which allows time for states to adopt and incorporate the rule and time for PWSs to comply. In the meantime, **the PA PFAS MCL Rule remains in effect**, including the MCLs, monitoring requirements, and all other provisions.

Key EPA Actions to Address PFAS: <https://www.epa.gov/pfas/key-epa-actions-address-pfas>

**Key Points**

- PFAS are synthetic chemicals – PFOA and PFOS have known health effects
- The purpose of the PFAS MCL Rule is to improve public health protection by establishing MCLGs and MCLs for PFOA and PFOS
- The rule is applicable to community, nontransient noncommunity, bottled, vended, retail, and bulk water systems
- The MCLs established by the rule are:
  - PFOA: 14 ng/L (ppt)
  - PFOS: 18 ng/L (ppt)
- The new rule also sets monitoring and reporting requirements, analytical requirements, compliance determinations, acceptable treatment technologies, and other requirements
- EPA's past actions include establishment of HALs and requiring monitoring under UCMR
- EPA has published a proposed NPDWR for PFOA and PFOS, with a final rulemaking expected by the end of 2023





## Lesson 2: Monitoring and Reporting

### Objectives

At the end of this lesson, you will be able to:

- Explain the monitoring requirements for PFAS, including
  - Initial compliance monitoring
  - Repeat compliance monitoring
  - Performance monitoring
  - Monitoring waivers
- Describe analytical requirements associated with the rule
- Identify reporting requirements
- Explain the Fifth Unregulated Contaminant Monitoring Rule (UCMR 5) monitoring overlap with the PFAS MCL Rule and the associated implications

### Terms and Acronyms

This lesson will begin with a review of some terms and acronyms that will be used throughout this course.

#### Maximum Contaminant Level (MCL)

MCL is defined in 25 Pa. Code § 109.1 as: “The maximum permissible level of a contaminant in water which is delivered to a user of a public water system, and includes the primary and secondary MCLs established under the Federal act, and MCLs adopted under the act.”

The MCLs that have been established by the PFAS MCL Rule at § 109.202(a)(4)(ii) are:

- PFOA = 14 ng/L
- PFOS = 18 ng/L

It is important to note that ng/L (nanograms per liter) and ppt (parts per trillion) are equivalent and are often used interchangeably.

#### Minimum Reporting Level (MRL)

MRL is defined in 25 Pa. Code § 109.1 as: “The minimum quantitation limit that can practically and consistently be achieved, with 95% confidence, by capable analysts at 75% or more of laboratories using a specified analytical method.”

Since PFAS can be detected at very low concentrations in the parts per trillion range, the MRL is critical. Essentially, the MRL is the lowest level that labs are able to accurately and precisely quantify.

The regulatory MRL is 5 ng/L or ppt for both PFOA and PFOS, as defined in § 109.304(f)(1).

Note that MRL is similar to, but distinct from, a detection limit. Labs may be able to *detect* these contaminants at lower levels, but the measured concentrations at those lower levels are not as accurate. For example, a lab may use a detection limit of 3 ppt, which would mean that they would be able to detect PFOA at a concentration of 4 ppt. But that detected concentration of 4 ppt may not be accurate for compliance determinations and would be considered a non-detect for compliance purposes.

### **Reliably and Consistently below the MCL (R&C<MCL or R&C)**

R&C is defined in 25 Pa. Code § 109.1. For PFAS, R&C “means that each sample result is less than 80% of the MCL.” To be R&C<MCL:

- Each PFOA result is less than 11.2 ng/L, which is 80% of the MCL of 14 ng/L
- Each PFOS result is less than 14.4 ng/L, which is 80% of the MCL of 18 ng/L

This will be important in determining monitoring frequencies, as we will see later in this lesson.

## **Compliance Monitoring for CWS and NTNCWS**

Community water systems (CWS) and nontransient noncommunity water systems (NTNCWS) are required to conduct compliance monitoring for PFAS. Those monitoring requirements are outlined in 25 Pa. Code § 109.301(16) and will be the focus of this portion of this lesson.

### **Initial Compliance Monitoring**

Initial compliance monitoring is required at each entry point (EP). Initial monitoring will consist of four consecutive quarters of monitoring. The begin date will be dependent on the system population as follows:

- Systems serving a population of more than 350 will start monitoring January 1, 2024. (§ 109.301(16)(i)(A))
- Systems serving a population of 350 or fewer will start monitoring January 1, 2025. (§ 109.301(16)(i)(B))

Initial compliance monitoring is also required if a new source is added to a new or existing EP, beginning the first full quarter the source is in operation. (§ 109.301(16)(i)(D))

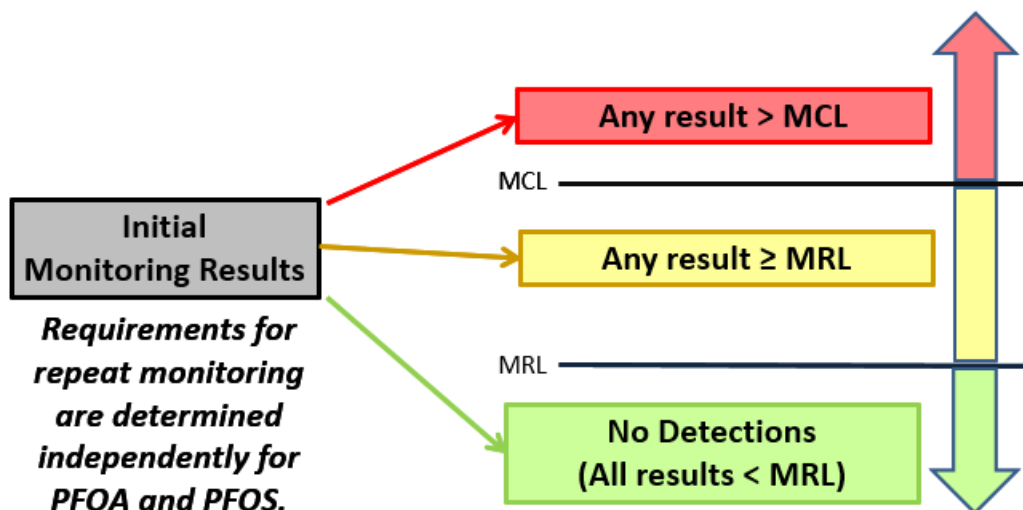
**Important Note:** Systems can submit a request to the Department to edit their initial monitoring start date from the default dates listed above to align with their monitoring schedule for the Fifth Unregulated Contaminant Monitoring Rule (UCMR 5). This could result in a different year for initial monitoring. This is described in more detail later in this lesson. (§ 109.301(16)(i)(C))

Note: Bottled, vended, retail, and bulk water systems (BVRBs) are also required to conduct monitoring; those monitoring requirements will be discussed later in this lesson.

### Repeat monitoring

Repeat monitoring frequency is determined based on the initial compliance monitoring results.

Requirements for repeat monitoring are determined independently for PFOA and PFOS, meaning that a PWS could be on a different monitoring schedule for each. There are three possible paths for repeat compliance monitoring:



- No Detections: The lower path is followed when the concentrations for all four quarters of initial monitoring results are below the MRL (i.e. not detected).
- Any result ≥ MRL: The middle path is followed when any concentration(s) is/are greater than or equal to the MRL, but less than the corresponding MCL.
- Any result > MCL: The upper path is followed when any one or more of the four quarters has a concentration greater than the corresponding MCL.

### No Detections

If a PFAS is never detected during quarterly initial compliance monitoring, then the required monitoring for that PFAS reduces to one sample in each subsequent 3-year compliance period. ((§ 109.301(16)(iii))



Let's look at an example: The below table contains the initial compliance monitoring results for PFOA at EP 101 at River Birch Borough, a CWS serving more than 350 customers. Each quarterly result was not detected for PFOA.

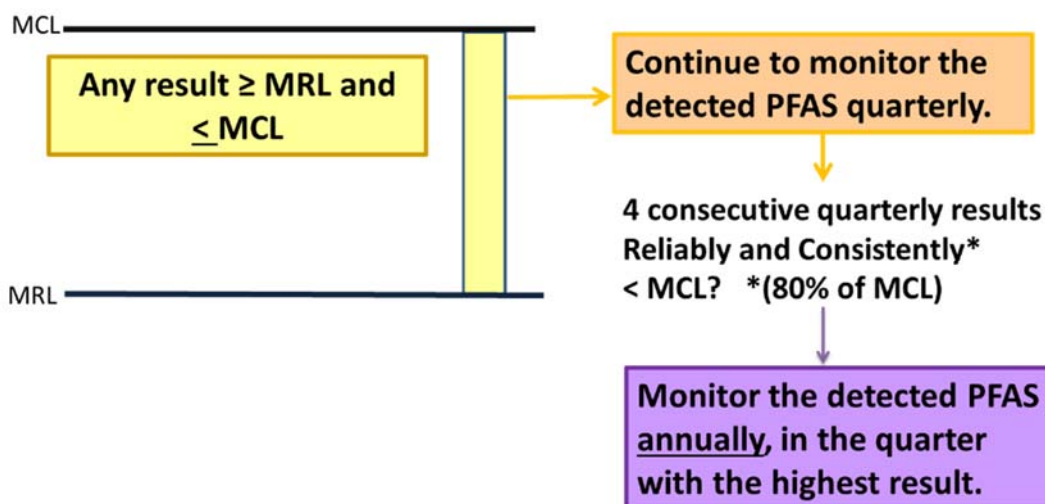
River Birch Borough				
EP	Q1	Q2	Q3	Q4
101	2024	2024	2024	2024
	(ppt)	(ppt)	(ppt)	(ppt)
PFOA	N.D.	N.D.	N.D.	N.D.

Monitor PFOA every 3 years at EP 101

Since all results for PFOA were not detected, River Birch Borough will monitor for PFOA every 3 years at EP 101. The specific monitoring year will match the year used for reduced monitoring already granted for SOCs or VOCs. This will be reflected in the monitoring calendar in the Drinking Water Reporting System (DWRS).

Any result ≥ MRL

If any PFAS concentration during initial monitoring is greater than or equal to the MRL, but all concentrations are less than or equal to the corresponding MCL, then quarterly monitoring must continue. (§ 109.301(16)(ii)(A))



Once results are in for four consecutive quarterly concentrations (including the initial detection) that are all “reliably and consistently below the MCL” (i.e. less than 80% of the corresponding MCL), then “the Department may allow” the repeat monitoring to be reduced to annually. ((§ 109.301(16)(ii)(B) and (C)) Remember, this is determined based on *each individual result* less than the 80% level. Annual monitoring should be done in the calendar quarter that previously had the largest ever concentration.

Let’s look at an example: Here is River Birch Borough again, but now let’s look at their quarterly initial compliance monitoring data for PFOS at EP 101. They had two detections of PFOS, in quarters 3 and 4.

River Birch Borough				
EP	Q1	Q2	Q3	Q4
101	2024	2024	2024	2024
	(ppt)	(ppt)	(ppt)	(ppt)
PFOS	N.D.	N.D.	5.8	6.5

Continue monitoring quarterly for at least 2 additional quarters, and until all detections are R&C < MCL

Since they had detections, they still need to monitor quarterly, at least until they have a total of four consecutive quarters following the detection that show results are reliable and consistently below the MCL. Since the detection first occurred in the third quarter, they have 2 quarterly results that are R&C<MCL (in Q3 2024 and Q4 2024) and they need at least 2 additional quarters.

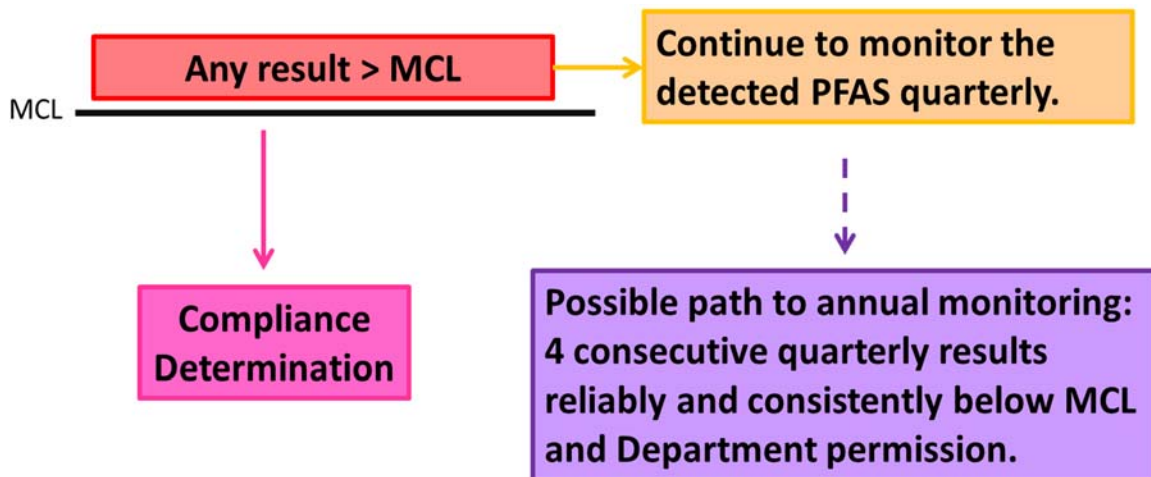
Here are their results for the next 2 quarters.

River Birch Borough						
EP	Q1	Q2	Q3	Q4	Q1	Q2
101	2024	2024	2024	2024	2025	2025
	(ppt)	(ppt)	(ppt)	(ppt)	(ppt)	(ppt)
PFOS	N.D.	N.D.	5.8	6.5	6.2	N.D.

They now have 4 consecutive quarters that are all individually R&C<MCL (Q3 2024, Q4 2024, Q1 2025, Q2 3035). They can now reduce to annual monitoring. Remember that annual monitoring should be done in the calendar quarter that previously had the largest ever concentration. In this case, that would be in the *fourth* calendar quarter.

Any result > MCL

If any quarterly PFAS result is greater than the corresponding MCL during initial monitoring, quarterly monitoring continues.



After any MCL exceedance, repeat monitoring is conducted quarterly, beginning the quarter following the exceedance. (§ 109.301(16)(iv)) However, there is still a possible path to annual monitoring, if there are four consecutive quarterly results that are reliably and consistently below the MCL and the Department grants permission to reduce to annual monitoring.

It is important to note that a compliance determination will also happen simultaneously; that compliance determination will be covered in a later lesson.

**Increased monitoring**

There are some scenarios that will require a system to increase their monitoring frequency.

One such scenario is that if a system is on *triennial* monitoring, which would occur if they did not have any previous detections, any detection will increase their monitoring frequency to quarterly. (§ 109.301(16)(ii)(A))

**Example:** A system had all non-detects at EP 101 during initial quarterly compliance monitoring for both PFOA and PFOS, so their repeat monitoring frequency was triennial for both. Then, they had a detect of PFOA during triennial monitoring as show here.

EP 101	June 2026 (ppt)	MCL (ppt)
PFOA	6.1	14
PFOS	N.D.	18

Since there was a detection of PFOA at EP 101, that EP is now on a quarterly monitoring frequency for PFOA, beginning with the quarter following the detection. Note that PFOS may remain on a triennial monitoring frequency since there was again no detection of PFOS.

If the PWS subsequently has results from four consecutive quarter that are all R&C<MCL, they may then be able to reduce monitoring for PFOA at EP 101 to annually. (§ 109.301(16)(ii)(B) and (C))

Another scenario that would require a system to increase their monitoring frequency is if they are on annual monitoring and an annual result exceeds an MCL. (§ 109.301(16)(iv))

Remember that a system would be on annual monitoring if they had a previous detection, and then had four consecutive quarterly results that are R&C<MCL so that they can reduce monitoring from quarterly to annually.

**Example:** This system was on annual monitoring for both PFOA and PFOS at EP 101, due to previous detection. Their annual results at EP 101 show a non-detect for PFOA, but 21 ppt for PFOS, which is over the MCL of 18 ppt. This system would need to go back to quarterly monitoring for PFOS.

EP 101	8/16 2026 (ppt)	MCL (ppt)
PFOA	N.D.	14
PFOS	21	18

**Confirmation samples (§ 109.301(16)(v))**

A confirmation sample is required if a PWS is on annual or triennial monitoring and results exceed an MCL. The confirmation sample must be collected “within 2 weeks of notification from the accredited laboratory performing the analysis that an MCL has been exceeded.”

Looking back at the last example, since the PFOS result exceeded the MCL while the system was on an annual monitoring frequency, a confirmation sample must be collected.

EP 101	8/16 2026 (ppt)	Confirmation Sample (ppt)	MCL (ppt)
PFOA	N.D.	--	14
PFOS	21	19	18

For compliance, the routine sample and confirmation sample results will be averaged for comparison to the MCL; more detail will be provided on the compliance determination in Lesson 4.

**Monitoring waivers**

Before describing when monitoring waivers for PFAS in detail, here is a quick review of a few key points about monitoring frequencies:

- PFAS monitoring is automatically reduced to triennial if not detected during initial quarterly compliance monitoring (no waiver is required for this reduction in monitoring frequency).
- If a PFAS is detected, monitoring is required quarterly for at least four consecutive quarters. If results are R&C<MCL, monitoring is reduced to annually (again, no waiver is required for this reduction).

**Waivers are an option for systems that had a previous detect:**

After three years of non-detects during annual (or quarterly) monitoring following a previous detection, a PWS may apply for a use waiver.

- **If granted, the PFAS monitoring waiver reduces the monitoring frequency from annual to triennial – it is NOT a complete waiver from conducting any monitoring, but a waiver to monitor triennially instead of annually.**

- No susceptibility waivers for PFAS will be granted by the Department. Susceptibility waivers are used for SOCs when a system can show that the groundwater is not susceptible to contamination.

Considerations for applying for and obtaining a use waiver for PFAS compliance monitoring include:

- Only systems using groundwater and groundwater under the direct influence of surface water (GUDI) sources are eligible.
- Systems are only eligible to apply for a PFAS use waiver if there is no treatment for PFAS removal present at the system.
- PFOA and PFOS waivers are determined independently.

A monitoring waiver is effective for one compliance period and may be renewed in each subsequent compliance period. The waiver application fee is \$100. (§ 109.301(16)(vii) and § 109.1403(a))

### **Monitoring for systems with PFAS treatment (§ 109.301(16)(vi))**

For systems that have PFAS removal treatment:

- Compliance monitoring for the specific PFAS for which treatment has been installed must be done at least annually. Whether the monitoring frequency is annually or quarterly will depend on the Department's evaluation of whether the target PFAS is R&C<MCL.
- Performance monitoring for the specific PFAS for which treatment has been installed must be done at least quarterly. Performance monitoring requirements will be specified in the operating permit special conditions.

### **Monitoring exemptions (§ 109.301(8)(iii))**

PFAS compliance monitoring exemptions shall be granted to PWSs that obtain all of their finished water from another permitted water system (i.e. consecutive systems) if all of the following conditions are met:

- The purchased water is their only source of water.
- The PWS supplying the finished water performs the required monitoring and is in compliance with the MCLs.
- A copy of the analytical reports documenting monitoring conducted by the PWS supplying the water are received by the Department.

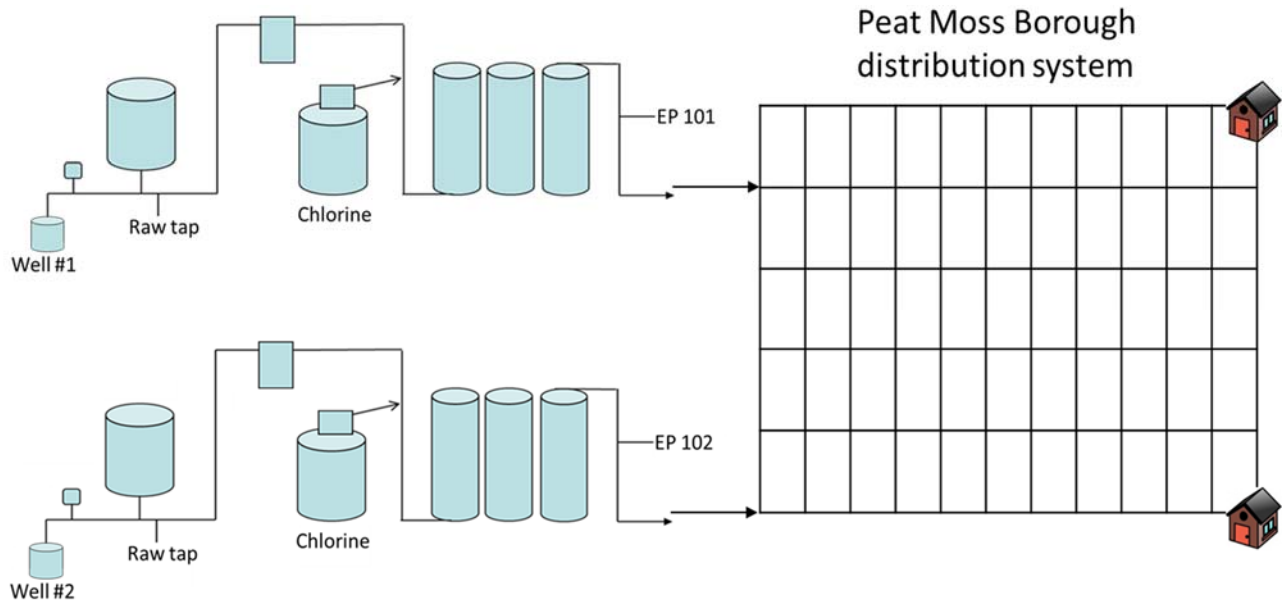
### **Compliance Monitoring for BVRBs (§ 109.1003(a)(1)(xv))**

Bottled, vended, retail and bulk (BVRB) water systems also must comply with PFAS monitoring requirements. Initial quarterly compliance monitoring begins January 1, 2024 for BVRBs. Systems that have treatment installed to comply with a primary MCL, including PFAS, must conduct quarterly operational monitoring for the contaminant which the treatment is designed to remove.



**Activity #1 – Monitoring**

Peat Moss Borough is a small CWS that serves 450 people and consists of two groundwater sources (Well 1 and Well 2) and two Entry Points (101 and 102).



Using the information provided, please answer the following questions:

1. Is Peat Moss required to monitor for PFAS under the new rule? Why or why not?
  
2. If so, when is their initial compliance monitoring start date? Why?
  
3. What will be their initial compliance monitoring frequency and number of samples required? Why?

Here are their initial compliance monitoring results at the end of 2024:

<i>Peat Moss Borough Initial Compliance Monitoring</i>						
Entry Point	Analyte	1st Q 2024 (ppt)	2nd Q 2024 (ppt)	3rd Q 2024 (ppt)	4th Q 2024 (ppt)	
EP 101	PFOA	ND	ND	ND	ND	
	PFOS	ND	ND	ND	ND	
EP 102	PFOA	ND	ND	ND	ND	
	PFOS	ND	ND	ND	6.4	

4. What will their repeat monitoring schedule be for EP 101? EP 102? Why?

Here are their repeat monitoring results for EP 102:

<i>Peat Moss Borough Repeat Monitoring</i>						
Entry Point	Analyte	4th Q 2024 (ppt)	1st Q 2025 (ppt)	2nd Q 2025 (ppt)	3rd Q 2025 (ppt)	4th Q 2025 (ppt)
EP 102	PFOS	6.4	ND	5.1	4.2	

5. What will their monitoring frequency be for PFOS at EP 102 after the 2025 sample results?

**Analytical and Reporting Requirements**

Next, we will cover the analytical and reporting requirements for the PFAS MCL Rule.

**Analytical requirements**

Sampling and analysis must be performed in accordance with analytical techniques adopted by the EPA under the Federal act or methods approved by the Department. Laboratories conducting the analysis must be accredited in Pennsylvania to analyze samples using specific methods. (§ 109.304(a) and § 109.304(f)(2))

Currently, there are three approved methods for PFOA and PFOS analysis (§ 109.304(f)(1)):

- EPA Method 533
- EPA Method 537.1
- EPA Method 537 version 1.1

To find laboratories accredited in PA in these methods for PFAS analysis, you can search the database on the PA DEP website by entering your search criteria (analyte, analysis method, etc.). The search is located at this link:

[http://cedatareporting.pa.gov/Reportserver/Pages/ReportViewer.aspx?/Public/DEP/Labs/SSRS/Lab\\_Certification](http://cedatareporting.pa.gov/Reportserver/Pages/ReportViewer.aspx?/Public/DEP/Labs/SSRS/Lab_Certification)

**Reporting requirements and instructions**

All sample results must be reported appropriately and on time. Specifically, reporting requirements include the following:

- As with all compliance monitoring data, monitoring results for PFOA and PFOS must be reported via the Drinking Water Electronic Laboratory Reporting System (DWELR) by the 10<sup>th</sup> of the month.
- Results must be reported using the correct contaminant and method codes, sample type, and location ID.
- PFAS results must be reported in ng/L (ppt).

Method Codes		Contaminant Codes	
<b>239</b>	<b>EPA Methods 537 v1.1 and 537.1</b>	<b>2805</b>	<b>PFOS</b>
<b>241</b>	<b>EPA Method 533</b>	<b>2806</b>	<b>PFOA</b>

Sample Type			
<b>Entry Point (E)</b>	<b>Raw (R)</b>	<b>Plant (P)</b>	<b>Special (S)</b>

Sample type depends on the reason for the sample collection. Compliance samples are collected at the Entry Point and reported as sample type E. For performance monitoring, special permit conditions will specify not only what samples to collect and on what frequency, but also how to report them.

Reporting instructions are available in eLibrary. Search for Document ID 3930-FM-BSDW0052, “SDWA Instructions for Reporting Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS) to DEP Using the Drinking Water Electronic Laboratory Reporting (DWELR) System” in PA DEP eLibrary, or use this link: <http://www.depgreenport.state.pa.us/elibrary/?aspxerrorpath=/elibraryredirect/dsweb/View/Collection-10593>

## UCMR 5 Monitoring Overlap

In this portion of the lesson, we will cover EPA’s Fifth Unregulated Contaminant Monitoring Rule (UCMR 5) and the overlap it shares with the PFAS MCL Rule initial compliance monitoring.

### UCMR 5 overview

UCMR 5 is a federally implemented rule which is applicable to all CWSs and NTNCWSs serving 3,300 or more, plus a random subset of 800 smaller PWSs. Under UCMR 5, systems are required to monitor for 29 PFAS, including PFOA and PFOS, and lithium, using a method specified by the rule and an EPA approved laboratory. Sample collection is at the EP and takes place between 2023 and 2025.

- For systems serving over 10,000, the PWS will select an approved laboratory of their choice, and they will be required to pay for their own sample shipment and analysis.
- For systems serving 10,000 or fewer, EPA will select a UCMR 5 approved laboratory, send a sample kit to the PWS, and pay for sample shipment and analysis.

### Rule overlap

There is some overlap between the monitoring requirements of UCMR 5 and the PFAS MCL Rule for PFOA and PFOS monitoring for systems in Pennsylvania.

- Contaminants: The PFAS MCL Rule sets MCLs for PFOA and PFOS, which are 2 of the 29 PFAS included in UCMR 5.
- Monitoring period: Initial compliance monitoring under the PFAS MCL Rule is in either 2024 or 2025. Monitoring under UCMR 5 is required during a consecutive 12-month period that occurs between 2023 and 2025, as agreed upon by EPA and the water system, so the monitoring periods may or may not overlap.
- Analytical methods: The PFAS MCL Rule includes 3 approved methods for analysis (EPA Methods 533, 537 version 1,1, and 537.1). Under UCMR 5, analysis of PFOA and PFOS is required to be conducted following EPA Method 533.
- Monitoring frequency: For the PFAS MCL Rule, initial monitoring is required quarterly. Under UCMR 5, surface water systems are required to conduct quarterly monitoring, but groundwater systems only need to monitor twice in 12 months.

- Location and number of samples: Under the PFAS MCL Rule, monitoring is required at each EP, and the number of samples required is dependent on the PWSs Comprehensive Monitoring Plan – if there are multiple sources that are operated in several different configurations, more than one sample per EP may be necessary in order to ensure representative monitoring. Under UCMR 5, monitoring is also at the EP, but only one sample is required.

The following table summarizes these overlapping requirements and the similarities and differences:

	PA PFAS MCL Rule	EPA UCMR 5
Contaminants:	<b>PFOA and PFOS</b>	29 PFAS, <i>including</i> <b>PFOA and PFOS</b>
Monitoring period:	Initial compliance monitoring in <b>2024 or 2025</b>	<b>2023-2025</b>
Analytical methods:	<b>EPA Method 533</b> , EPA Method 537 version 1.1, and EPA Method 537.1	<b>EPA Method 533</b> for PFOA and PFOS
Monitoring frequency:	<b>Quarterly</b> initial compliance monitoring	SW: 4x in 12 months GW: 2x in 12 months
Location and number of samples:	Monitoring required at each <b>EP</b> : # of samples required according to CMP	Monitoring at the <b>EP</b> , one sample per EP

In order to create a potential cost savings option for water systems, DEP can potentially accept “dual purpose” data – the same set of data which is used for both UCMR 5 and PA initial compliance monitoring – but only IF ALL REQUIREMENTS ARE MET. Those requirements that must be considered include:

- Samples must be collected within the required time frame and with the required number of samples.
- Samples must be analyzed using an approved method.
- Samples must be analyzed by a laboratory accredited in PA for analysis.
- Samples must be reported appropriately and on time.

The data must also meet all UCMR 5 requirements in order to be used for both purposes. It is important to note that **it is the responsibility of the water system to ensure that all requirements for both rules are met.**

It is also important to note that for systems serving less than 10,000, EPA is selecting the UCMR 5 lab and paying for analysis. Some laboratories have also noted that the quality control requirements may be different for the two reporting purposes. **These factors may complicate the PWSs ability to use the data for both purposes.**

In order for dual purpose monitoring to be a possibility, the monitoring schedules for the two rules must align. However, remember that this is only one consideration for dual purpose monitoring. Even if the schedules align, it does not automatically mean that all the other requirements can be achieved. Remember, it is the responsibility of the water system to ensure that all requirements are met.

If the initial compliance monitoring schedule for PA is different than the schedule for UCMR 5, monitoring options include:

1. Monitor twice / separately for each rule
2. Modify the UCMR 5 schedule to align with PA initial compliance monitoring
3. Modify the PA initial compliance monitoring schedule to align with the UCMR 5 schedule.

If a PWS wishes to utilize options 2 or 3 above, it is the responsibility of the water system to ensure that the schedules align.

For more information and details, please refer to the recorded webinar on the PFAS MCL Rule website: <https://www.dep.pa.gov/Business/Water/BureauSafeDrinkingWater/DrinkingWaterMgmt/Regulations/Pages/PFAS-MCL-Rule.aspx>

### **PFAS Initial Compliance Monitoring Schedule Change Request Form**

This form was created by DEP in order to give water systems the option to modify their initial compliance monitoring start date to align with UCMR 5 monitoring, for systems that choose to utilize option 3 above.

It is important to note that approval must be granted to a PWS in writing to modify the PFAS initial compliance monitoring start date.

PWSs must submit a signed hardcopy of the schedule change request form to the Department for review. Submit the form to the PO Box address provided on the form at least 30 days prior to the requested start date. Once the request form is received, it will be reviewed to make sure all information is correct. If approved, the PWS will receive a written notice that your schedule has been modified. If the notification is not approved in writing, your system must follow the default schedule.

This form is available in eLibrary. Search for Document ID 3930-FM-BSDW0051, "PFAS Initial Compliance Monitoring Schedule Change Request Form" in PA DEP eLibrary, or use this link: <http://www.depgreenport.state.pa.us/elibrary/?aspxerrorpath=/elibraryredirect/dsweb/View/Collection-10593>

**Key Points**

- Initial compliance monitoring for PFAS consists of four consecutive quarterly samples at each EP
- Initial compliance monitoring begins:
  - January 1, 2024 for CWS / NTNCWS serving > 350 and all BVRBs
  - January 1, 2025 for CWS/NTNCWS serving ≤ 350
- Repeat monitoring is detent on initial monitoring results
  - Triennial if all results are non-detect
  - Quarterly if results are detected
  - Quarterly if an MCL is exceeded
- Performance monitoring when removal treatment is installed is per the operating permit special conditions
- Samples must be analyzed by an accredited lab using an approved method, and be reported appropriately and on time
- There is some overlap between initial monitoring and UCMR 5 monitoring
- Systems *may* be able to use the same data for both rules IF the monitoring timeframes align and IF all other requirements are met





## Lesson 3: PFAS Sampling Considerations

### Objectives

At the end of this lesson, you will be able to:

- Identify approved analytical methods for PFAS
- Identify tips for avoiding cross contamination
- Describe sample collection best practices for collecting PFAS samples from drinking water
- Describe sampling QA/QC
- Identify tips for labeling samples



**Important Note: The accredited laboratory should provide sample collection instructions. This lesson includes tips for avoiding incidental cross contamination of PFAS in your samples. Ultimately, samplers should follow any instructions provided by the lab.**

### PFAS Physical Properties

As a review, PFAS physical properties include:

- Highly soluble in water
- Can be used to make products resistant to water, grease and oil, stains, and heat.

Because of these properties, PFAS have applications in many consumer and industrial products. Knowing this, it is critical to take precautions to avoid using products that may contain PFAS in and around any sampling events. These precautions can help to avoid inadvertent cross contamination of samples during collection.

### Analytical Methods for PFAS

There are currently 3 approved methods for analysis of PFAS.

- EPA Method 537, version 1.1
- EPA Method 537.1
- EPA Method 533

These three methods are identified as approved methods in the PFAS MCL Rule regulatory language at 25 Pa. Code § 109.304(f)(1).

Water systems should ensure that the laboratory selected for analysis is accredited for one of these methods for PFAS analysis. The laboratory should provide their clients with the required pre-preserved bottles prior to sampling. Sample collectors should take an inventory of all bottles as soon as they are received from the lab and immediately contact the lab to address any discrepancies so that the lab has time to send the correct or missing bottles prior to the sampling event.

### PFAS Sample Collection

Here is a very important consideration to begin the discussion on sample collection:

*Sample collection is the first point at which error can be introduced into samples results.*

#### Avoiding Cross Contamination

Many common items contain PFAS, including:

- Stain-resistant clothing and fabrics
- Water-resistant clothing and fabrics
- New or unwashed clothing
- Fabric softeners
- Fast-food wrappers and food containers
- Many sunscreens and bug sprays
- Many cosmetics
- Waterproof or treated paper in field notebooks
- Waterproof markers
- Plumbers' tape



The best way to avoid errant detections of PFAS due to cross contamination in drinking water entry point samples is to avoid these materials and other materials that may contain PFAS on the day of the sampling event.

Materials that are not expected to cause cross contamination concerns for PFAS include the following:

- Synthetic or cotton materials
- Polyurethane
- Polyvinyl chloride (PVC)
- Rubber
- Neoprene
- Powderless nitrile gloves
- Clothing previously laundered (preferable more than six times) without fabric softeners
- Wet weather gear and boots made of polyurethane and PVC

### **Handwashing**

Handwashing is a critical step in avoiding cross contamination when sampling for PFAS.

- Samplers should wash their hands before collecting each sample and wear nitrile gloves.
- Handwashing should be done with a dilute solution of a phosphate-free laboratory detergent such as Liquinox, or a plain bar soap.
- Rinse with PFAS-free water, such as lab grade reagent water.

### **Nitrile Gloves**

In addition to handwashing, frequent changing of disposable nitrile gloves while collecting and handling PFAS samples is crucial in avoiding cross contamination.

- Use a new pair of gloves for collection of each sample.
- If in doubt, it is always better to change gloves frequently than to be faced with resampling because of an unexpected detection of PFAS.

### **Sample Cooler**

Make sure that the interior of your sample cooler is clean.

- Use the same phosphate-free laboratory detergent solution (i.e. Liquinox) for cleaning the inside of your sample cooler.

### **Entry Point Sample Locations**

The sampling environment is a key factor for avoiding cross contamination. Compliance samples for PFAS are collected at the Entry Point (EP) tap.

- EP taps are the first tap of finished water in a water system, immediately following all treatment processes.
- EP taps vary in character and location. They may be located in a well house or treatment building, but they may also be found as sink faucets in kitchens, bathrooms, breakrooms, utility closets, or even fire hydrants.

It is important to record all observations at the sample tap location in a field notebook, including the types of pipes and fittings, sample collection time, site characteristics, atmospheric conditions, and personal notes such as whether a break was taken for food.

- For example, if there is plumbers' tape visible on a pipe joint upstream of the EP tap, it is important to note that since plumbers' tape contains Teflon. Taking photos is a great way to document specific conditions and how the sample was collected. Record this information at the time of sample collection, not later.

Sample taps and plumbing should be free of materials containing Teflon and other PFAS containing materials. As noted above, if Teflon plumbers' tape is present at pipe joints and cannot be avoided, make sure that tap has been flushed for at least five minutes and note the presence of the Teflon containing materials in the field notebook.

Be sure to remove aerators, screens, washers, noses, and water filters, in any, from the tap prior to flushing. The aerator may be holding debris or other materials that may introduce cross contamination. Also, it is possible that the aerator could potentially volatilize some PFAS.

### Collection Tips

Treat every Entry Point tap as potentially having PFAS contamination at or surrounding the tap. Remember, your laboratory should provide you with specific sampling instructions, but there are some sampling tips to consider.

- Keep sample containers closed until you are ready to fill each individual bottle at the EP tap.
- Use caution when removing sample bottle lids. Protect sample bottle integrity by not touching the inside of the bottle or cap once they are opened and by not allowing the bottle caps to come into contact with surfaces that may be contaminated with PFAS.
- While filling sample bottles, if you think you may have inadvertently touched something at or near the sample tap that could potentially have been contaminated with PFAS, replace your gloves with a clean pair of nitrile gloves.
- Use only laboratory provided and preserved bottles for PFAS sample collection. This is critical because the bottles should be polypropylene and the caps unlined (i.e. no Teflon-lined caps).
  - Sample bottles are generally 250-mL polypropylene bottles.
  - Sample bottles contain a pre-preserved and should be filled very carefully, since overfilling would cause some of the preservative to be flushed out of the bottle. If preservative is lost, the sample would not be properly preserved.
  - It is advisable to have extra sample bottles available in the case of an overfill or other sampling error.

Any questions about sample analysis, field reagent blanks, sample preservatives, bottles, or completing the COC should be promptly directed to the Project Manager at the accredited laboratory selected for analysis of the samples.

### Bottle Labels

Another critical step in sample collection is completely and accurately filling out sample bottle labels.

- Accurate labeling of sampling bottles includes carefully cross-checking all filled sample bottles with the entries on the Chain-of-Custody (COC).
- All sample bottle labels should be completed and affixed to the bottles prior to sampling.
- Triple check that the correct Entry Point identification is on all sample bottles as soon as they are filled.

### Sample Shipment

- Once filled with sample, bottles should be placed in a self-sealing plastic bag.

- A custody seal or legal seal should be placed on the bag such that the seal prevents access to the filled sample bottles. Use custody seals provided by the laboratory.
- Double bagging is generally recommended, with the second bag placed over the custody sealed bottles/bag. Double bagging protects the custody seal and ensures that the filled sample bottles will not come in contact with ice or ice water in the cooler.
- All samples should be iced immediately after collection. Fill the cooler with wet ice, preferably in resealable storage bags, before departure for the sample collection event. It is recommended that double bagging is used for ice as well. Samples must be chilled during shipment and must not exceed 10°C during the first 48 hours after collection.
  - Keep any melt water drained from the cooler to avoid soaking the sample containers.
  - Blue ice or reusable chemical ice should *only* be used if provided by the approved laboratory and the laboratory certifies that that chemical ice is free of PFAS compounds.
  - Dry ice should never be used because its temperature can be several degrees less than 32°F and thus could damage the sample bottles.

### Quality Assurance/Quality Control (QA/QC) Samples

The purpose of QA/QC process is to ensure a high level of confidence in the sample results. QA/QC is required for all sampling events. The laboratory should provide instructions for any required QA/QC. Each approved method for PFAS analysis defines the QA/QC for sample collection, preservation, shipment, and storage.

**Field Duplicate:** A field duplicate is two separate samples collected at the same time and location and submitted to the lab for analysis. The results of the two samples are compared and should match within method defined acceptance criteria.

**Field reagent blank (FRB):** FRBs consist of laboratory reagent water brought to the site and poured into a separate sample bottle. The FRB is then shipped to the lab with the sample for analysis. The lab should provide instructions for FRB collection. The FRB is labeled and logged on the Chain of Custody as a separate sample. Note that FRB collection is required by all three approved analytical methods; however, FRBs do not need to be analyzed if PFAS were not detected in the corresponding EP sample.

A few additional notes on the FRB:

- FRB is defined by EPA as an aliquot of reagent water or another blank matrix that is shipped to the field sampling site.
- The FRB is treated as a sample in all respects, including shipment to/from the sampling site, exposure to the sampling site conditions, storage, preservation, and all analytical procedures. The purpose of the FRB is to determine if method analytes or other interferences are present in the field environment.
- FRBs must be prepared with the same batch of preservative as the corresponding EP sample and must also be prepared/collected at each EP sample site.

**Activity #2 – Sampling**

Use the information provided in this lesson to answer the following questions:

1. Which of the following may contain PFAS? (circle all that apply)
  - a. Teflon tape
  - b. Stain resistant clothing
  - c. Sunscreen
  - d. Food packaging
  - e. Waterproof markers
  
2. Which of the following is an approved method for PFAS analysis under the PA PFAS MCL Rule? (circle all that apply)
  - a. EPA Method 537 version 1.1
  - b. EPA Method 537.1
  - c. EPA Method 533
  - d. EPA Method 334.0
  
3. What is the compliance sampling location for PFAS samples?
  - a. Raw source water tap
  - b. Entry point tap
  - c. Representative distribution location
  - d. Maximum residence time distribution location
  
4. True or False: Latex gloves should be changed after collecting a PFAS sample at each entry point.
  - a. True
  - b. False
  
5. Which of the follow are true? (circle all that apply)  
During sample collection for PFAS, you should:
  - a. Keep sample bottles closed until ready to sample
  - b. Place sample container caps with threads down on nearby surface
  - c. Fill sample cooler with non-bagged ice
  - d. Carefully fill bottles to avoid losing preservative
  - e. Place sample bottles in self-sealing plastic bag

**Additional Resources**

- PADEP PFAS Sampling Fact Sheet (coming soon):  
<https://www.dep.pa.gov/Business/Water/BureauSafeDrinkingWater/DrinkingWaterMgmt/Regulations/Pages/PFAS-MCL-Rule.aspx>
- List of Laboratories (January 2023) accredited for analysis of PFOA/PFOS by one or more of the approved methods:  
[https://files.dep.state.pa.us/Water/BSDW/DrinkingWaterManagement/Regulations/Labs\\_Accredited\\_for\\_PFOA\\_and\\_PFOS.pdf](https://files.dep.state.pa.us/Water/BSDW/DrinkingWaterManagement/Regulations/Labs_Accredited_for_PFOA_and_PFOS.pdf)

**Key Points**

- The accredited laboratory should provide sample collection instructions for PFAS samples. It is important to follow those instructions provided by the lab, along with additional tips for avoiding inadvertent cross contamination.
- Sample collection is the first point at which error can be introduced into sample results, so it is critical to use care when collecting any compliance samples.
- Avoiding materials that may contain PFAS on the day of sample collection may help prevent cross contamination.
- Collect all QA/QC samples required by the laboratory following their instructions.





## Lesson 4: Compliance

### Objectives:

At the end of this lesson, you will be able to:

- Determine compliance with the PFAS MCL
- Explain how monitoring and reporting violations are determined
- Describe appropriate violation response and return to compliance

### Maximum Contaminant Level (MCL) Compliance (§ 109.301(16)(ix))

#### Entry Point Monitoring for Compliance

As a refresher, compliance monitoring for PFAS occurs at the Entry Point to the distribution system. The **Entry Point** is a sampling point that collects finished water representative of each source and prior to the first customer.

Compliance is system wide for PFAS: If one EP is in violation of an MCL, the system is in violation of the MCL.

#### MCLs

Under the PFAS MCL rule, monitoring is required for two PFAS – PFOA and PFOS. The maximum contaminant levels (MCLs) are 14 parts per trillion for PFOA and 18 parts per trillion for PFOS.

PFAS	MCL (ng/L) (ppt)
PFOA	14
PFOS	18

### Initial monitoring MCL Compliance (§ 109.301(16)(ix)(A))

For systems on quarterly monitoring, such as during Initial Monitoring, MCL compliance is based on the running annual average. The **running annual average (RAA)** is the average of the results for the most recent 4 calendar quarters.

**How is the running annual average calculated?** Each quarter, the RAA is calculated by adding the 4 most recent quarterly results and dividing the sum by 4:

$$\frac{Q1 + Q2 + Q3 + Q4}{4}$$

↓

$$\frac{Q2 + Q3 + Q4 + Q5}{4}$$

You can see how the first quarter drops off and the latest quarter, quarter 5 in this case, is added to the calculation.

- Since **initial monitoring is quarterly**, compliance with each MCL is determined by a **running annual average** of the first four quarters of data for both PFOA and PFOS at each entry point.

For example, here are the results for a system’s first 4 quarters of PFOA data at EP 101. The second quarter was non-detect, but there are detections in the other 3 quarters.

EP 101	1 <sup>st</sup> Q 2024 (ppt)	2 <sup>nd</sup> Q 2024 (ppt)	3 <sup>rd</sup> Q 2024 (ppt)	4 <sup>th</sup> Q 2024 (ppt)	RAA (ppt)	MCL (ppt)
PFOA	5.1	N.D.	6.0	5.9	4	14

The running annual average is calculated by adding the 4 quarters together and dividing by 4. Note that the non-detect is considered zero (0) in the RAA calculation.

$$\frac{5.1 + 0 + 6.0 + 5.9}{4} = 4.25$$

**Rounding:** The calculated result is 4.25. The MCLs are whole numbers; no decimal places. So, the running annual average is rounded to a whole number. To do this, we look at the digit after the decimal place and round. You must not “double round”, meaning you don’t consider the 5, which we faded out above. In other words, don’t round to 4.3, then to 4.

For our example, 4.2 rounds to 4. If it was 4.5, it would round to 5. Since the running annual average is less than the MCL, the system is in compliance for PFOA at EP 101.

Remember, compliance is determined for each entry point for both PFOA and PFOS. For the same example system, here is the data for PFOA again from Entry Point 101, but we’ve also added the *PFOS* initial monitoring results at EP 101 and EP 102 initial monitoring results for both PFOA and PFOS:

Friendly Waters Borough – Initial Mon							
		1 <sup>st</sup> Q 2024 (ppt)	2 <sup>nd</sup> Q 2024 (ppt)	3 <sup>rd</sup> Q 2024 (ppt)	4 <sup>th</sup> Q 2024 (ppt)	RAA (ppt)	MCL (ppt)
EP 101	PFOA	5.1	N.D.	6.0	5.9	4	14
	PFOS	7.1	5.8	5.9	5.1	6	18
EP 102	PFOA	N.D.	N.D.	5.8	N.D.	1.5	14
	PFOS	N.D.	N.D.	N.D.	N.D.	-	18

With all the quarterly results in, each RAA is compared to the appropriate MCL. You can see that Friendly Waters is in compliance with both MCLs based on Initial monitoring.

**Note:** If one quarterly sample is missed, the RAA will be based on 3 quarters of monitoring results. In this situation, the average is determined by dividing the sum of the 3 quarterly results by 3, since dividing by 4 would “dilute” the RAA. (§ 109.301(16)(ix)(D))

**MCL Violation before 4 quarters are analyzed:** You can have an MCL violation before the end of 4 quarters. During initial monitoring, compliance with the MCL is determined after each quarterly result by dividing the sum of the completed quarters by 4.

**Example:** In Quarter 1, the PFOA result of 31 is divided by 4, which results in a running annual average less than the MCL of 14. In quarter 2, the result of 29 is added to 31, divided by 4, and this results in a running annual average of 15, which is greater than the MCL of 14.

Friendly Waters Borough						
Location	1 <sup>st</sup> Q 2024 (ppt)	2 <sup>nd</sup> Q 2024 (ppt)	3 <sup>rd</sup> Q 2024 (ppt)	4 <sup>th</sup> Q 2024 (ppt)	RAA (ppt)	MCL (ppt)
101						
PFOA	31	29			15	14

$$Q1 \quad \frac{31}{4} = 7.75$$

$$Q2 \quad \frac{31 + 29}{4} = 15$$

If you have levels that cause the running annual average to exceed the MCL *before* 4 quarters are completed, it means even if the remaining quarters are non-detect, you’ll have an MCL violation. (§ 109.301(16)(ix)(C))

**Repeat Monitoring MCL Compliance**

**Quarterly Monitoring**

After initial monitoring, for any PFAS contaminant on **quarterly monitoring**, compliance is based on the Running Annual Average. (§ 109.301(16)(ix)(A))

This means that each quarter, the most recent 4 quarters of data are summed and divided by 4.

**Annual or Triennial Monitoring**

- If a system is on annual or triennial monitoring for a PFAS contaminant and the result exceeds the MCL, a confirmation sample is required, as you learned in lesson 2.
- If the **average of the routine sample and the confirmation sample** exceeds the MCL, it is an MCL violation. (§ 109.301(16)(ix)(B))

**Example:** A system is on annual monitoring and the result collected in August (21 ppt) exceeded the MCL. They collect a confirmation sample which is 23 ppt. The two sample results are averaged and compared to the MCL. In this case it is 22 ppt, which is an MCL violation.

Location	8/16	8/24	MCL
101	2025	2025	(ppt)
	(ppt)	(ppt)	
PFOA	21	23	14
PFOS	N.D.		18

This is where annual or triennial monitoring is different: **There is an MCL violation immediately rather than waiting until the Running Annual Average is calculated.**

- This system would have to issue public notification, which is covered in the next lesson, and begin quarterly monitoring, as discussed in Lesson 2.

**Note:** If a system does not collect a confirmation sample, compliance is based on the single annual result. However, you’ll learn later in this lesson that this results in a monitoring violation.

**MCL Exceedances:**



**Remember to contact DEP within 1 hour of any exceedance!**



This is a regulatory requirement 109.701(a)(3)



It is important to remember that DEP must be contacted within 1 hour of becoming aware of ANY MCL exceedance. (§ 109.701(a)(3))

Even though the analytical result may not be a violation, one-hour reporting is still required for any exceedance.

**Increased Monitoring - Quarterly Monitoring after MCL Violation**

Continuing with the last example of a system that incurred an MCL violation on annual monitoring, the system begins quarterly monitoring. Remember that compliance for quarterly monitoring is based on a running annual average calculation.

- For compliance, the August 2025 MCL violation remains open until the end of 4 quarters.
- This means they'll do public notification every 3 months, which is discussed in the next lesson.
- For the running annual average calculation, now that they are on quarterly monitoring, the August result is used as quarter 1 of the 4 quarters for the running annual average.
- Each quarterly result is added to the routine result and divided by 4. This is shown below as the Q2 calculation.
- After 4 quarters, the RAA is 16 in this example, which exceeds the MCL and is a new violation.

Location	August	4 <sup>th</sup> Q	1 <sup>st</sup> Q	2 <sup>nd</sup> Q	RAA	MCL
101	2025	2025	2026	2026	(ppt)	(ppt)
	(ppt)	(ppt)	(ppt)	(ppt)		
PFOA	22	14	18	10	16	14
PFOS	N.D.	Not on quarterly				

$$\begin{array}{l}
 \boxed{\text{Q2}} \quad \frac{22 + 14}{4} = 9 \\
 \boxed{\text{Q4}} \quad \frac{22 + 14 + 18 + 10}{4} = 16
 \end{array}$$

**Water Supplier Response to an MCL Violation:**

- Report to DEP within 1 hour.
- Provide Tier 2 Public notification, which is covered in the next lesson.
- Increase monitoring to quarterly if the system is not on a quarterly frequency already.
- Take investigative/corrective actions – Can the system determine the source of contamination?
  - Can anything be done to remove it? Can a point of contamination be found and removed?
  - Corrective actions may also include operational changes, such as taking a source off-line or blending sources to reduce the entry point contaminant level. Blending requires a

DEP permit and it's probably not the most forward-thinking option when EPA is proposing MCLs at the detection limit. So, long term, it may be very difficult to blend and achieve the low MCLs. (i.e. only using 10 or 20% of allowable pumping rate)

- Repair/Install PFAS treatment, if applicable.

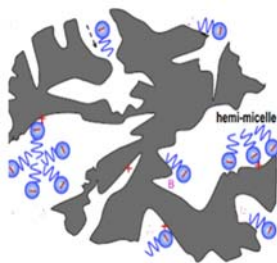
**Treatment**

The necessity for treatment will be evaluated on a case-by-case basis. DEP staff will take into consideration the historical data and the source or sources of contamination.

- **It's very important to remember that all treatment requires a DEP permit. (§ 109.503)**

**PFAS Treatment Options**

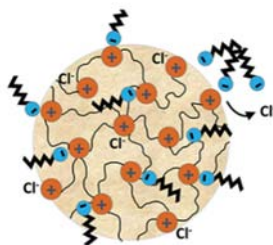
The most commonly considered treatment options and those listed as approved treatment technologies or Best Available Technology (BAT) in the PFAS MCL rule are granular activated carbon (GAC), ion exchange and reverse osmosis (RO). Here is a brief overview of each of these treatment technology options.



**Granular Activated Carbon**

The carbon surface of GAC has a strong affinity for many synthetic organic contaminants, including PFAS compounds, as well as natural organic compounds that may cause taste and odor complaints.

- Operator subclass 10 (Aeration and Activated Carbon Absorption) required



**Ion Exchange**

Ion exchange involves the exchange of ions into the water. Resins are conditioned with chloride ions which are released into the water and other ions like PFAS ions take their place.

- Operator subclass 9 (ion exchange and greensand) required



**Reverse Osmosis**

Reverse osmosis is a means of membrane filtration that simply blocks large molecules like PFAS while allowing small molecules like water to go through.

- Operator subclass 6 (membrane filtration) required.

## Monitoring and Reporting Violations

Monitoring and reporting violations under the PFAS MCL rule include:

- Failure to monitor according to required schedule for PFOA or PFOS at any entry point
- Failure to collect confirmation sample after PFAS exceedance
- Failure to report any PFAS compliance sample

Water systems should use the DEP Drinking Water Electronic Lab Reporting (DWELR) system to view data that the lab is reporting for them. Check it for any errors and make sure the sample data is loaded on time. For more information on DWELR, type “PA DEP DWELR” into your favorite Internet search engine, or use this link:

<https://www.dep.pa.gov/Citizens/My-Water/PublicDrinkingWater/Pages/Electronic-Reporting-System.aspx>

### Water System Response to M&R Violations:

- Report to DEP within 48 hours of when you become aware of the missed monitoring. This is a requirement in regulation (Chapter 109.701(a)(11)).
- Collect a replacement sample OR monitor as soon as possible during the next monitoring period.
  - This depends on the timing of when you realize the missed monitoring and what your monitoring frequency is. If you are on quarterly and miss a sample, you’ll be collecting a sample in the next monitoring period so there isn’t a “replacement sample”. You should collect this sample as soon as possible in the new period.
  - However, if you are on annual or triennial monitoring, you’ll be asked to collect a replacement sample.
- Monitoring and reporting violations require Tier 3 Public Notification, which we’ll discuss in the next lesson.

**Activity #3 – Compliance**

**Part I.** The Rolling Embers water system is a groundwater system that serves approximately 1,500 people. They have one Entry Point – EP 101. The system completed initial monitoring in 2024.

1. The table below shows the initial monitoring results. Please complete the following:
  - Calculate and fill in the running annual average (RAA) for PFOA and PFOS.
  - Fill in the MCL for both PFOA and PFOS.

EP 101	Q1 2024 (ppt)	Q2 2024 (ppt)	Q3 2024 (ppt)	Q4 2024 (ppt)	RAA (ppt)	MCL (ppt)	80% of MCL
PFOA	6.1	14.9	7.1	N.D.			11.2
PFOS	N.D.	N.D.	N.D.	N.D.			14.4

2. Are there any MCL Violations?

3. Should the system have contacted DEP after receiving the results of Quarter 2?

4. What is the repeat monitoring frequency for PFOA at EP101?

- a) Quarterly
- b) Annual
- c) Triennial

5. What is the repeat monitoring frequency for PFOS at EP101?

- a) Quarterly
- b) Annual
- c) Triennial



**Part II.** Rolling Embers eventually attained annual monitoring for PFOA at EP 101. Here is the May 15, 2026 result:

EP101	May 15, 2026 Annual Monitoring Result (ppt)
PFOA	24

1. Should the system call DEP after learning of the result?

2. Is this result an immediate MCL violation?

Rolling Embers collects a confirmation sample, which is analyzed on May 24, shown here.

3. Calculate the average result and fill in the table:

EP101	May 15, 2026 Annual Monitoring Result (ppt)	May 24, 2026 Confirmation sample (ppt)	Average of Annual and confirmation	MCL (ppt)
PFOA	24	22		14

4. Does the system incur an MCL violation? Why or Why not?

5. If Rolling Embers had not collected a confirmation sample, would they incur a *monitoring* violation?

6. What is the new monitoring frequency for PFOA at EP101?

7. How long does the violation remain “open” from the May sampling?

- a. Until the end of quarter in which the sample was collected
- b. For 30 days from when the sample was collected
- c. Until compliance is determined based on the Running Annual Average of quarterly monitoring
- d. Forever because PFAS are forever chemicals

<b>Key Points</b>
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- If on quarterly monitoring (initial), MCL compliance based on Running Annual Average (RAA)
- If on annual/triennial monitoring and exceed MCL – Collect confirmation sample
  - MCL compliance based on average of both results
- Contact DEP within 1 hour of learning of MCL exceedance

## Lesson 5: Public Notification (PN) and Consumer Confidence Reports (CCR)

### Objectives:

At the end of this lesson, you will be able to:

- Explain the basics of public notification (PN)
- Explain PFAS-specific public notification requirements
- Locate and use the correct templates and instructions
- Identify the Consumer Confidence Reports (CCR) requirements

### Public Notification Basics

The Public Notification (PN) Rule became effective in May 2002 and was published in Chapter 109 in August 2002.

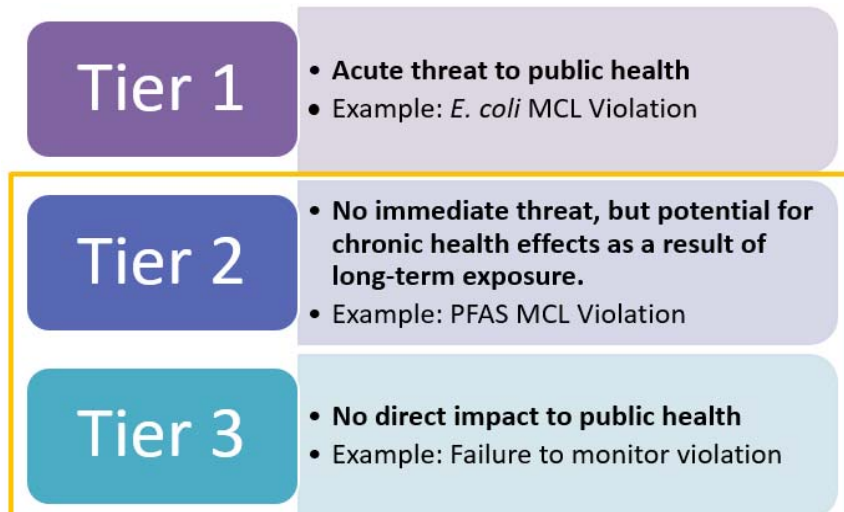
- DEP revised the PN Rule in May 2009.
- You can find the PN requirements in Subchapter D of Chapter 109.

The purpose of public notices is to provide notice to consumers when:

- There is an immediate public health risk
- The public water system has failed to meet drinking water standards
- The public water system has failed to conduct monitoring or report results as required

### Public Notification Tiers

PN requirements are divided into three tiers based on severity:



\* The PFAS MCL Rule focuses on Tier 2 and 3.

### PN Deadlines

We are focused on Tier 2 and 3 for the PFAS MCL rule.

**For Tier 2 situations**, systems are required to contact DEP within one hour of learning of the situation. Remember all MCL exceedances require notification to DEP within one hour of learning of the result.

- Public notification should be issued as soon as possible, **but no later than 30 days** of learning of the violation.

**For Tier 3 situations**, systems are required to contact DEP within 48 hours of learning of the violation. The system has up to 1 year to issue Tier 3 PN.

### PN Delivery Options

#### Tier 2:

- Community water systems must deliver public notices directly to each service connection, which could be email or snail mail as options.
- Noncommunity Water Systems must post public notices in a conspicuous location for at least 7 days.

#### Tier 3 Violations

- Community water systems must once again deliver public notices directly to each service connection; This notice can be delivered as part of the annual consumer confidence report, if the timing is appropriate since the system has up to a year to deliver the notice.
- Noncommunity Water Systems must post public notices in a conspicuous location for at least 7 days.

**Note: Failing to provide notice to consumers is a violation.**

Tier	Deadline to Contact DEP	Deadline for Notice to Customers	Delivery
1	1 hour	24 hours	CWS – <b>direct</b> delivery to each service connection NCWS – <b>conspicuous location</b> for at least 7 days
2	1 hour	30 days	CWS – <b>mail or direct</b> delivery to each service connection NCWS – <b>conspicuous location</b> for at least 7 days
3	48 hours	1 year	CWS – <b>mail or direct</b> delivery to each service connection NCWS – <b>conspicuous location</b> for at least 7 days

## Content Requirements

There are 10 required elements for all public notices:

1. Description of the violation or situation, along with relevant contaminants and sample results if applicable.
2. Date the violation or situation occurred.
3. The potential health effects associated with the contaminants
4. Identification of the population that is at risk, as well as identifying any vulnerable subpopulations such as immunocompromised persons.
5. Inform consumers if they need to use an alternate source of water.
6. Inform consumers what the PWS is doing to address the violation or issue, and/or what has already been done.
7. Direct the consumers to take specific actions, if necessary, such as boiling the water.
8. Inform customers when the system expects to have the issue resolved, or when it was resolved.
9. Contact information for someone at the water system that consumers can contact, with any questions regarding the notice.
10. Statement that encourages consumers to distribute the notice further to others that may not have received it, such as people residing in apartments or nursing homes.

## Presentation Requirements

There are also formatting requirements for public notices. The DEP PN Handbook, which is a guidance document, outlines that:

- The notice must use a font that is sized 10 points or larger. We do not want the text to be so small that it is overlooked or illegible.
- The notice must be written in basic, easy to understand language that is not overly technical. It should be able to be understood by the average customer.
- It must also be formatted in a manner that makes it effective as a notice. The water system shouldn't get too creative with their layout so that it becomes impossible to read.
- The notice cannot include language that nullifies or contradicts the required language within the public notice. For example, the water system should not include statements that indicate that they do not agree that the water should be boiled, or that they do not think there was an issue with the water.

PN Handbook:

[https://files.dep.state.pa.us/Water/BSDW/DrinkingWaterManagement/PublicDrinkingWater/PN-Handbook\\_for\\_Community-Systems.pdf](https://files.dep.state.pa.us/Water/BSDW/DrinkingWaterManagement/PublicDrinkingWater/PN-Handbook_for_Community-Systems.pdf)

## Multilingual Requirements

All notices must include a required Spanish statement that informs the reader that the information is important or contain contact information for customers to obtain a translated copy of the public notice, or further assistance.

Additionally, if a *large proportion* of the non-English-speaking population the system serves speaks a language *other* than Spanish, you must provide information in that language as well.

What does “**Large Proportion**” mean?

- For systems serving 1,000 or more people, if more than 10% of the population speaks the same language other than English a statement in that language should be included on the notice.
- For systems serving fewer than 1000 people, if 100 or more consumers speak the same language other than English a statement in that language should be included on the notice.

## PN Certification

After public notification is issued, systems are required to send to DEP **within 10 days**, a copy of each PN notice issued and a Certification that all PN requirements have been met (Chapter 109.701(a)(4)).

DEP has a certification form template on the PN website, which links to the eLibrary:

<http://www.depgreenport.state.pa.us/elibrary/GetFolder?FolderID=3290>

- Or, to access the PN Website, go to: [www.dep.pa.gov](http://www.dep.pa.gov)
  - Hover over the **Residents** menu in the top right
  - Click on **My Water**
  - Click on **Drinking Water**, then **Public Drinking Water**
  - Click on **Public Notification**

## PFAS Public Notification

### Tier 2 MCL Violations

- PFOS and PFOA MCL violations require Tier 2 PN.
- As we just reviewed, systems should deliver Tier 2 PN as soon as possible, but no later than 30 days from becoming aware of the situation.
- The notice as to be repeated every 3 months as long as the violation persists.

### PFAS PN Templates

DEP created a Tier 2 PN template for PFOS or PFOA MCL violations:

- The template can be found on the DEP PN website and eLibrary as Form #:
- [3930-FM-BSDW0006](http://www.depgreenport.state.pa.us/elibrary/GetFolder?FolderID=3930-FM-BSDW0006)
- <http://www.depgreenport.state.pa.us/elibrary/GetFolder?FolderID=757372>

### Tier 3 Monitoring & Reporting Violations

A failure to conduct required monitoring for PFAS requires Tier 3 public notification. This includes:

- Failure to collect PFOA or PFOS sample during compliance period
- Failure to collect a confirmation sample after an MCL exceedance

**Note:** Failure to report or late reporting is a reporting violation, but it does not require PN.

A PN Tier 3 Template is available for Failure to Monitor violations:

<http://www.depgreenport.state.pa.us/elibrary/GetFolder?FolderID=3351>

<h3>Consumer Confidence Reports</h3>
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- All community water systems are required to deliver a Consumer Confidence report to their customers every year by July 1<sup>st</sup>.
- CWSs must mail a paper copy of the CCR to DEP unless the local DEP office is able to receive an electronic copy (in pdf format.) An electronic pdf CCR can be submitted to the local DEP office in lieu of a paper copy.

### General CCR Content Requirements

The CCR must include:

- Water System Info
- Source(s) of water
- Definitions
- Detected Sample Results Table
- Other Violations
- Educational Information

For PFAS, after your initial monitoring year, which is 2024 or 2025 depending on your system size, you will be summarizing the results of any detections in the Detected Sample Results table.

Chemical Contaminants								
Contaminant	MCL in CCR Units	MCLG	Level Detected	Range of Detections	Units	Sample Date	Violation Y/N	Sources of Contamination

## CCR Templates

### CCR Certification Form

- Form #: [3930-FM-BSDW0084](#)

### CCR Completeness Checklist for Water Suppliers

- Form #: [3930-FM-BSDW0085](#)

### CCR Template and Instructions for systems ONLY using Groundwater Sources

- Form #: [3930-FM-BSDW0113](#)

### CCR Template and Instructions for systems using Surface Water Sources

- Form #: [3930-FM-BSDW0114](#)

## Resources

Here are some resources to use for operators to use for PN and CCRs:

- Refer to the Department's public notice webpage for more general PN information and links to the PN templates:

<https://www.dep.pa.gov/Citizens/My-Water/PublicDrinkingWater/Pages/Public-Notification.aspx>

- Reach out to your local DEP staff – in fact, remember that there are requirements for contacting DEP with 1 hour after an MCL exceedance.
- Subchapter D in Chapter 109 for the public notification regulations



**Activity #4 – Public Notification**

In the compliance activity in Lesson 4, Rolling Embers water system incurred an MCL violation in May 2025.

Location: EP101	May 15, 2025 Annual Monitoring Result (ppt)	May 24, 2025 Confirmation Sample Result (ppt)	Average of Annual and Confirmation (ppt)	MCL (ppt)
PFOA	24	22	<b>23</b>	14

1. What tier of PN is required?
  
2. The system learned of the violation on June 2 when the lab called with the results. Rolling Embers called their DEP Sanitarian after speaking with the lab. **Public notification must be issued no later than what date?**
  
3. What are the possible methods of delivery for this notice?
  
4. They issued the public notice to their customers by June 7<sup>th</sup>. In terms of PN requirements, what else do they need to do and how long do they have?

**Key Points**

- PFAS MCL violations require Tier 2 Public Notification, which must be delivered within 30 days to customers
- PFAS monitoring violations require Tier 3 Public Notification
- Templates and instructions are available on the DEP PN website. To access the PN Website, go to: [www.dep.pa.gov](http://www.dep.pa.gov)
  - Hover over the **Residents** menu in the top right
  - Click on **My Water**
  - Click on **Drinking Water**, then **Public Drinking Water**
  - Click on **Public Notification**