

# Control of Per- and Polyfluoroalkyl Substances Overview: A Quick Reference Guide

## Overview

Rule Title	Per- and Polyfluoroalkyl Substances (PFAS) National Primary Drinking Water Regulation (NPDWR), 89 FR 32532, April 26, 2024, Vol. 89, No. 82
Rule Purpose	The PFAS Rule aims to improve public health protection by managing the health risks from PFAS in drinking water.
Regulated PFAS	The PFAS Rule regulates levels of perfluorooctanoic acid (PFOA), perfluorooctane sulfonic acid (PFOS), perfluorohexane sulfonic acid (PFHxS), perfluorononanoic acid (PFNA), hexafluoropropylene oxide dimer acid (HFPO-DA or GenX Chemicals), as well as mixtures of two or more of PFNA, PFHxS, HFPO-DA and perfluorobutane sulfonic acid (PFBS) in drinking water.
Utilities Covered	The PFAS Rule applies to all community water systems (CWSs) and non-transient non-community water systems (NTNCWSs), hereafter referred to collectively as water systems.
Code of Federal Regulations (CFR) Citations	See the following sections in Title 40, Part 141 of the CFR: <ul style="list-style-type: none"><li>► For PFAS regulations, see Subpart Z.</li><li>► For Maximum Contaminant Levels (MCLs), see 40 CFR 141.61(c)(2).</li><li>► For Maximum Contaminant Level Goals, see 40 CFR 141.50.</li><li>► For compliance dates, see 40 CFR 141.6(l) and 40 CFR 141.900(b).</li><li>► For Consumer Confidence Report (CCR) requirements, see Subpart O.</li><li>► For Public Notification (PN) requirements, see Subpart Q.</li></ul>

## Key Terms

Hazard Index (HI)	The Hazard Index is an approach that determines the health concerns associated with mixtures of certain PFAS in finished drinking water. Low levels of multiple PFAS that individually would not likely result in adverse health effects may pose health concerns when combined in a mixture. The HI maximum contaminant level (MCL) represents the maximum level for mixtures of PFHxS, PFNA, HFPO-DA, and PFBS allowed in water delivered by a public water system. A HI MCL greater than 1 requires a system to take action (40 CFR 141.153(c)(3)(v)). (For a more technical definition of the Hazard Index, please see 40 CFR 141.2.)
Practical Quantitation Level (PQL)	The lowest level at which a contaminant can be reliably quantified within specific limits of precision and accuracy during routine laboratory operating conditions using the approved methods (89 FR 32573). The PQLs are used as part of determining compliance with the PFAS MCLs. (This is different from a Practical Quantitation Limit, as defined at 40 CFR 141.2.)
Reliably and Consistently (R&C)	Reliably and consistently below the MCL means that each of the samples contains regulated PFAS concentrations below the applicable MCLs. For the PFAS Rule, this demonstration of R&C below the MCL would include consideration of at least four quarterly samples at an entry point below the MCL, but primacy agencies will make their own determination as to whether the detected concentrations are R&C below the MCL (89 FR 32660-32661, footnotes 21 and 23).
Trigger Levels	The trigger levels are used to determine an appropriate monitoring frequency and are set at one-half of the MCLs for regulated PFAS, including the Hazard Index MCL for mixtures of PFHxS, HFPO-DA, PFNA, and PFBS (see 141.902(a)(5)).

## Public Health Benefits (89 FR 32533-32534)

Quantified Benefits	Approximately \$1.5 billion in quantifiable benefits per year, based on estimates of 9,614 fewer deaths and 29,858 fewer illnesses in the decades following actions to reduce PFAS levels, including fewer cancers, lower incidence of heart attacks and strokes, and reduced birth complications.
Nonquantifiable Benefits	Reductions in adverse impacts to immune systems, thyroid disease, impacts to human endocrine systems, liver disease, and negative reproductive effects such as decreased fertility.

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## Key Milestones

### Timeframes For Water Systems (see 40 CFR 141.6(l) and 40 CFR 141.900(b)):

June 25, 2024	Beginning on this date, analyses for regulated PFAS must only be conducted by laboratories that have been certified by the EPA or the primacy agency. Also, by this date, water systems must report data for concentrations as low as the trigger levels.
April 26, 2027	Initial monitoring results are due to primacy agencies, and compliance monitoring begins. CCR requirements, PN requirements associated with monitoring violations, and Reporting and Recordkeeping requirements take effect.
April 26, 2029	All regulated water systems must comply with the PFAS MCLs and begin to issue PN for MCL violations.

### Timeframes for Primacy Agencies (see 40 CFR 142.12(b)):

By April 27, 2026	Agencies seeking primacy must submit a final primacy application to the EPA or submit a request for an extension.
By April 26, 2027	Primacy agencies must determine the compliance monitoring schedule for regulated water systems. Primacy agencies also begin to issue monitoring and reporting violations.
By April 26, 2028	Agencies with an approved primacy application extension must submit a final program revision package to the EPA.
April 26, 2029	Primacy agencies begin to issue MCL violations.

#### June 25, 2024

Analyses for regulated PFAS must only be conducted by laboratories that have been certified by the EPA or the primacy agency. Also, water systems must report data for concentrations as low as the trigger levels.

#### For Drinking Water Systems

#### April 26, 2027

- ▶ Initial monitoring requirements provided to primacy agencies.
- ▶ Compliance monitoring begins.
- ▶ CCR requirements, PN requirements associated with monitoring violations, and Reporting and Recordkeeping requirements take effect.

#### April 26, 2029

All regulated water systems must comply with the PFAS MCLs and begin to issue PN for MCL violations.

#### For Primacy Agencies



## Regulatory Thresholds

The following are the PFAS MCLs, MCLGs, Trigger Levels, PQLs, and the number of significant figures to which sampling results are rounded:

Compound	MCL	MCLG	Trigger Level	PQL <sup>1</sup>	Significant Figures (in Trigger Levels and MCLs)
	Level (in parts per trillion, unless otherwise noted)				
PFOA	4.0	Zero	2.0	4.0	Two
PFOS	4.0	Zero	2.0	4.0	Two
PFHxS	10	10	5	3.0	One
PFNA	10	10	5	4.0	One
HFPO-DA	10	10	5	5.0	One
PFBS	N/A	N/A	N/A	3.0	N/A
Hazard Index <sup>2</sup> (mixtures containing two or more of PFHxS, PFNA, HFPO-DA, and PFBS)	1 (unitless)	1 (unitless)	0.5 (unitless)	N/A	One

<sup>1</sup> All PQLs have two significant figures.

<sup>2</sup> Rounding of the HI only occurs at the end of the overall calculation. See the *Per- and Polyfluoroalkyl Substances Hazard Index: A Quick Reference Guide* for more details.

Sources: MCLs are listed in 40 CFR 141.61(c). MCLGs are listed in 40 CFR 141.50. Trigger levels are listed in 40 CFR 141.902(a)(5). PQLs are listed in 40 CFR 141.903(f)(1)(iv).



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## Laboratory Information and Analytical Methods for Regulated PFAS (40 CFR 141.900(b)(1) and 40 CFR 141.901)

- ▶ For all samples used to satisfy initial monitoring and compliance monitoring requirements, laboratories must use either EPA method 533 or EPA method 537.1, version 2.0.
- ▶ On June 25, 2024, a requirement to use laboratories certified by the EPA or the primacy agency went into effect. In addition, all samples analyzed beginning on that date must have regulated PFAS data reported to concentrations as low as the trigger levels.

## Best Available Technologies (BATs) and Small System Compliance Technologies (SSCTs) (40 CFR 141.61(d) and 40 CFR 141.61(e))

- ▶ The BATs identified for regulated PFAS are anion exchange, granular activated carbon (GAC), reverse osmosis (RO), and nanofiltration (NF).
- ▶ The EPA identifies feasible BATs based on factors such as high removal efficiency, reasonable cost, service life and ability to achieve compliance.
- ▶ The SSCTs are RO/NF for water systems that serve more than 3,300 persons, as well as anion exchange and GAC for all size categories.
- ▶ There is no federal requirement for a system to use the EPA-identified BATs or SSCTs; however, individual primacy agency requirements may vary.

## Monitoring Schedules and Requirements (40 CFR 141.902)

Sampling is required at each entry point to the distribution system (entry point) during normal operating conditions. An interconnection between two systems that transmits finished water is not considered an entry point.

Sampling Frequency	Eligibility Requirements	Sample Timing Requirements
Initial Monitoring <sup>1</sup> (40 CFR 141.902(b)(1))		
Semiannual	Groundwater CWSs and NTNCWSs serving 10,000 or fewer persons	Two consecutive samples per entry point within a 12-month period, unless the exception below applies. <sup>2,3</sup> Samples must be taken five to seven calendar months apart.
Quarterly	All other CWSs and NTNCWSs, including: <ul style="list-style-type: none"><li>▶ All surface water systems</li><li>▶ All groundwater under direct influence (GWUDI) systems</li><li>▶ Groundwater systems serving more than 10,000 persons</li><li>▶ Any entry point that blends surface water and groundwater</li><li>▶ Water systems that change the source water type seasonally</li></ul>	Four consecutive quarters of samples per entry point within a 12-month period, unless the exception below applies. <sup>2,3</sup> Samples must be taken two to four calendar months apart.

<sup>1</sup> Previously acquired data collected on or after January 1, 2019, can be used to meet some or all of the initial monitoring requirements if PFAS Rule requirements are met (for example, samples must be analyzed using approved methods).

<sup>2</sup> If a system has some previously collected results meeting PFAS Rule requirements, but less than necessary to meet the initial monitoring requirements, the system can supplement with additional monitoring events such that all required calendar periods are represented, regardless of the year. See 40 CFR 141.902(b)(1)(viii).

<sup>3</sup> If a system has multiple years of data, the most recent data must be used.

## Compliance Monitoring (40 CFR 141.902(b)(2))

Quarterly	Required at an entry point for all regulated PFAS if any of the following apply: <ul style="list-style-type: none"><li>▶ Any regulated PFAS concentration met or exceeded a trigger level during initial monitoring at that location.</li><li>▶ An individual sampling point has been monitored quarterly during compliance monitoring and a primacy agency has not made a determination that all levels of regulated PFAS at the entry point are R&amp;C below the regulated PFAS MCLs.</li><li>▶ An individual sampling point on triennial monitoring detects regulated PFAS at concentrations that meet or exceed a trigger level. The sample that met or exceeded a trigger level is considered the first quarterly sample.</li><li>▶ An individual sampling point on annual monitoring has sampling results with any regulated PFAS concentrations that meet or exceed an MCL or that the primacy agency determines make it ineligible for an R&amp;C determination. The sample that triggers the requirement for quarterly monitoring is considered the first quarterly sample.</li></ul>	Samples must be collected on dates designated by the primacy agency, in four consecutive calendar quarters.
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## Monitoring Schedules and Requirements (40 CFR 141.902) Cont.

### Compliance Monitoring (40 CFR 141.902(b)(2))

Annual	A primacy agency may allow annual sampling at an entry point if: <ul style="list-style-type: none"> <li>▶ The primacy agency determines that all regulated PFAS concentrations at the entry point are R&amp;C below PFAS MCLs, after considering, at a minimum, four consecutive quarterly compliance monitoring samples.</li> </ul>	Samples must be collected at a time designated by the primacy agency, in the quarter in which detected concentrations were highest during the most recent round of quarterly monitoring.
Triennial	A primacy agency may allow triennial monitoring at an individual entry point if any of the following apply: <ul style="list-style-type: none"> <li>▶ At the start of the compliance monitoring period, if all initial monitoring results contain concentrations of all regulated PFAS below trigger levels.</li> <li>▶ The most recent three consecutive annual monitoring results each demonstrate concentrations of all regulated PFAS below trigger levels.</li> <li>▶ The previous sample collected triennially demonstrates all regulated PFAS concentrations are below trigger levels.</li> </ul> <p>Note: After beginning compliance monitoring, a system may not transition directly from quarterly monitoring to triennial monitoring.</p>	Samples must be collected at a time designated by the primacy agency, in the quarter in which detected concentrations were highest during the most recent round of quarterly monitoring (or semiannual sampling, if no quarterly sampling has occurred).

Compliance monitoring frequency for the next monitoring period changes for:

- ▶ Entry points being sampled triennially:
  - ▶ If a concentration of any regulated PFAS is greater than or equal to the trigger level, the system is required to begin quarterly monitoring.
- ▶ Entry points being sampled annually:
  - ▶ If the system has three consecutive samples with all regulated PFAS at levels below the trigger levels, the primacy agency may allow the system to begin triennial monitoring.
  - ▶ If a sample result meets or exceeds a PFAS MCL or the primacy agency determines the entry point is no longer R&C below the MCLs for PFAS, the system must begin quarterly monitoring.
- ▶ Entry points being sampled quarterly:
  - ▶ Sampling frequency may change to annually when all regulated PFAS are deemed R&C below the MCLs by the primacy agency.

## Violations (40 CFR 141.905 and Appendix A to Subpart Q of Part 141)

### Monitoring and Testing Violations

- ▶ Beginning April 26, 2027, each failure to monitor in accordance with applicable requirements is a monitoring violation.

### MCL Violations

- ▶ Compliance with the MCLs must be determined, beginning April 26, 2029, based on the analytical results obtained at each entry point. If one entry point is in violation of an MCL, the system is in violation of the MCL.

### Reporting Violations

- ▶ Failure to submit monitoring data in accordance with applicable requirements, beginning April 26, 2027, and failure to notify the primacy agency following a MCL violation, beginning April 26, 2029, are reporting violations.

## PN and CCR Rule Requirements Applicable to Regulated PFAS (Subparts O & Q of Part 141)

- ▶ The final rule established PN tiering for systems in violation of the requirements in Subpart Z and established mandatory health effects statements to communicate potential health concerns to drinking water consumers in the PN and CCRs.
- ▶ Beginning April 26, 2027, systems with a PFAS monitoring and testing violation in 40 CFR 141.905(c) must provide notice to consumers no later than one year after the system learns of the violation. Beginning April 26, 2029, systems that have a PFAS MCL violation must provide PN as soon as practical, but no later than 30 days after a system learns of the violation.
- ▶ Beginning with CCRs delivered by July 1, 2027, all CWSs must include information in the reports on detected PFAS contaminants and compliance information related to requirements in Subpart Z, according to 40 CFR 141.153.

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## Reporting and Recordkeeping Requirements (40 CFR 141.904)

- ▶ Water systems required to sample must report to the primacy agency according to the timeframes and provisions in 40 CFR 141.31 and retain records according to the provisions in 40 CFR 141.33.
- ▶ Additional reporting requirements for water systems specific to PFAS initial and compliance monitoring data are found in 40 CFR 141.904.
- ▶ For primacy agency reporting and recordkeeping requirements, see also 40 CFR 142.14 and 142.15 (including the 2024 amendments that take effect in 2027).

### For additional information on the PFAS Rule

Please visit the EPA PFAS NPDWR Implementation Web site at <https://www.epa.gov/dwreginfo/pfas-rule-implementation> or contact your drinking water primacy agency.

**Note:** The statutory provisions and the EPA regulations described in this document contain legally binding requirements. This document is not a regulation itself, nor does it change or substitute for those provisions and regulations.