

Chapter 109 Pre-Draft Rulemaking: Revised PFAS MCL Rule

Public Water System TAC Board Meeting
February 20, 2025





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Pennsylvania PFAS MCL Rule

- DEP moved ahead of EPA to develop standards for PFAS in drinking water.
- PFAS MCL Rule:
 - Published in PA Bulletin January 14, 2023.
 - Set standards in drinking water for two PFAS – PFOA and PFOS.



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PFAS

NPDWR

- National Primary Drinking Water Regulation (NPDWR) for PFAS:
 - Published in Federal Register on April 26, 2024.
 - Set standards for a total of 6 PFAS.
- DEP must adopt standards that are at least as stringent as EPA's to maintain primacy.



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PFAS NPDWR

Effective Dates

June 25, 2024

Subpart Z (PFAS)

Analytical
requirements in
§ 141.901

April 26, 2027

Initial monitoring in
§ 141.902(b)(1)
must be completed

Compliance
monitoring in
§ 141.902(b)(2)
begins

Reporting & recordkeeping
in § 141.904, in accordance
with subparts O (CCR) and
Q (PN)

April 26, 2029

Compliance with
MCLs in
§ 141.61

PN for MCL
violations in
§ 141.203



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Comparing state and federal rules

PFAS Contaminants

PA's PFAS MCL Rule	EPA's PFAS NPDWR
PFOA - perfluorooctanic acid	PFOA
PFOS – perfluorooctane sulfonic acid	PFOS
	PFNA – perfluorononanoic acid
	PFHxS – perfluorohexane sulfonic acid
	HFPO-DA – hexafluoropropylene oxide dimer acid (aka GenX Chemicals)
	PFBS – perfluorobutane sulfonic acid
	Hazard Index (HI) – a mixture of two or more of PFNA, PFHxS, HFPO-DA, PFBS

Comparing state and federal rules

MCLGs and MCLs

	PA's PFAS MCL Rule		EPA's PFAS NPDWR	
	MCLG (ppt)	MCL (ppt)	MCLG (ppt)	MCL (ppt)
PFOA	8	14	0	4.0
PFOS	14	18	0	4.0
PFNA	----	----	10	10
PFHxS	----	----	10	10
HFPO-DA	----	----	10	10
PFBS	----	----	N/A*	N/A*
HI	----	----	1 (unitless)	1 (unitless)

*PFBS included in HI combined MCL



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Hazard Index (HI)

- Contaminant used to evaluate health risks from exposure to a mixture of chemicals.
- PFAS HI includes four PFAS: PFNA, PFHxS, HFPO-DA, and PFBS.
- Sum of component hazard quotients (HQ), which is a ratio of measured concentration to health-based water concentration (HBWC).

HBWC

The level below which there are no known or anticipated adverse health effects over a lifetime of exposure; includes sensitive populations and life stages, allowing for an adequate margin of safety.

PFAS	HBWC (ppt)
PFNA	10
PFHxS	10
HFPO-DA	10
PFBS	2000



HI Calculation

- MCLG and MCL are both 1 (unitless).
- MCL exceedance if two or more component PFAS detected and $HI > 1$.
- Rounded to one significant figure.

$$HI = \left(\frac{\left[HFPO - DA_{water} \frac{ng}{L} \right]}{\left[HFPO - DA_{HBWC} \frac{ng}{L} \right]} \right) + \left(\frac{\left[PFBS_{water} \frac{ng}{L} \right]}{\left[PFBS_{HBWC} \frac{ng}{L} \right]} \right) + \left(\frac{\left[PFNA_{water} \frac{ng}{L} \right]}{\left[PFNA_{HBWC} \frac{ng}{L} \right]} \right) + \left(\frac{\left[PFHxS_{water} \frac{ng}{L} \right]}{\left[PFHxS_{HBWC} \frac{ng}{L} \right]} \right)$$

Comparing state and federal rules

Trigger levels*

	PA's PFAS MCL Rule	EPA's PFAS NPDWR
PFOA	N/A	2.0 ppt
PFOS	N/A	2.0 ppt
PFNA	----	5 ppt
PFHxS	----	5 ppt
HFPO-DA	----	5 ppt
PFBS	----	N/A
HI	----	0.5 (unitless)

*Trigger levels are set at ½ the MCLs and are used to determine monitoring frequencies.

Comparing state and federal rules

Approved analytical
methods

PA's PFAS MCL Rule	EPA's PFAS NPDWR
EPA Method 533	EPA Method 533
EPA Method 537.1 (version not specified)	EPA Method 537.1, version 2.0
EPA Method 537, version 1.1	

Comparing state and federal rules

Reporting limits

	PA's PFAS MCL Rule	EPA's PFAS NPDWR
	Minimum Reporting Limit (MRL)	Practical Quantitation Limit (PQL)
PFOA	5 ppt	4.0 ppt
PFOS	5 ppt	4.0 ppt
PFNA	Not regulated	4.0 ppt
PFHxS	Not regulated	3.0 ppt
HFPO-DA	Not regulated	5.0 ppt
PFBS	Not regulated	3.0 ppt

Comparing state and federal rules

Monitoring requirements:

- Both rules utilize the standard monitoring framework.
- Initial, routine, reduced, and increased monitoring requirements differ slightly.



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Comparing state and federal rules

Initial monitoring
requirements

PA's PFAS MCL Rule	EPA's PFAS NPDWR
<p>4 consecutive quarters at each Entry Point, to be collected under normal operating conditions in accordance with the system's comprehensive monitoring plan.</p> <p>Begins:</p> <ul style="list-style-type: none">○ January 1, 2024, for populations > 350○ January 1, 2025, for populations ≤ 350	<p>All systems utilizing surface water and/or GUDI sources; systems utilizing groundwater sources with a population > 10,000:</p> <ul style="list-style-type: none">○ 4 consecutive quarterly samples within a 12-month period, collected two to four months apart under normal operating conditions.○ Must be completed by April 26, 2027. <p>Systems utilizing groundwater sources with a population ≤ 10,000:</p> <ul style="list-style-type: none">○ 2 samples within a 12-month period, collected five to seven months apart under normal operating conditions.○ Must be completed by April 26, 2027.



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Comparing state and federal rules

Repeat monitoring
requirements

PA's PFAS MCL Rule	EPA's PFAS NPDWR
<p><u>No Detections</u></p> <p>If all results for a PFAS are less than the minimum reporting level (MRL) of 5 ng/L, repeat monitoring for that PFAS is conducted on a triennial basis in the same year as the system's SOC or VOC monitoring.</p>	<p><u>Results < Trigger Levels</u></p> <p>If all results of all regulated PFAS are less than their respective trigger levels, monitoring can be conducted on a triennial frequency at that EP. This sample must be collected at a time within the 3-year period designated by the state and in the quarter with the highest previous result.</p>
<p>NOTE: PA's repeat monitoring is based on an individual PFAS, not the entire group (similar to IOCs); the monitoring frequency can be different for individual PFAS.</p>	<p>NOTE: EPA's repeat monitoring is based on the group of regulated PFAS (similar to VOCs); the monitoring frequency must be the same for all regulated PFAS.</p>



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Comparing state and federal rules

Repeat monitoring
requirements

PA's PFAS MCL Rule	EPA's PFAS NPDWR
<p><u>Detection \leq MCL</u></p> <p>If any result is less than or equal to the MCL for that PFAS but is greater than or equal to the MRL, the EP remains on quarterly monitoring for the detected PFAS.</p>	<p><u>Results $<$ MCL</u></p> <p>If any result is less than the MCL for that PFAS but is greater than or equal to the trigger level, the EP remains on quarterly monitoring for all regulated PFAS.</p>
<p><i>Reduced Monitoring:</i> If/when there are 4 consecutive quarterly results for that PFAS that are reliably and consistently below the MCL ($<80\%$ of MCL), monitoring can be reduced to an annual frequency for the detected PFAS. This monitoring is to be conducted during the quarter with the highest previous result.</p>	<p><i>Reduced Monitoring:</i> If/when the State determines that there are at least 4 consecutive quarterly results for all regulated PFAS that are reliably and consistently below the MCL, monitoring can be reduced to an annual frequency. This monitoring is to be conducted during the quarter with the highest previous result.</p>

Comparing state and federal rules

Repeat monitoring
requirements

PA's PFAS MCL Rule	EPA's PFAS NPDWR
<p><u>Detection > MCL</u></p> <p>If any result is greater than the respective MCL for that PFAS, the EP will remain on quarterly monitoring for that detected PFAS.</p>	<p><u>Results \geq MCL</u></p> <p>If any result during quarterly monitoring is greater than or equal to the MCL for that PFAS, all regulated PFAS remain on quarterly monitoring.</p>



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Comparing state and federal rules

Increased monitoring

PA's PFAS MCL Rule	EPA's PFAS NPDWR
<p><u>EP on Triennial Monitoring</u></p> <p>If any PFAS is detected during triennial monitoring, monitoring will increase to a quarterly frequency at that EP for that detected PFAS.</p>	<p><u>EP on Triennial Monitoring</u></p> <p>If any regulated PFAS are detected at or greater than their respective trigger level, monitoring will increase to a quarterly frequency at that EP for all regulated PFAS.</p>
<p><u>EP on Annual Monitoring</u></p> <p>If any PFAS result exceeds the respective MCL during annual monitoring, monitoring will increase to a quarterly frequency at that EP for that detected PFAS.</p>	<p><u>EP on Annual Monitoring</u></p> <p>If any regulated PFAS are detected at or greater than their respective MCL, monitoring will increase to a quarterly frequency at that EP for all regulated PFAS.</p>

Comparing state and federal rules

Confirmation samples

PA's PFAS MCL Rule	EPA's PFAS NPDWR
A confirmation sample is required if a sample collected during annual or triennial monitoring exceeds an MCL. The confirmation sample is to be collected within 2 weeks of notification by the lab of the MCL exceedance.	Not automatically required under this regulation, but states have the option to require a confirmation sample.

Comparing state and federal rules

Compliance determination:

- Both rules use a **running annual average (RAA)** for compliance when the monitoring frequency is **quarterly**.
- Details of compliance determinations differ for annual or triennial monitoring.



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Comparing state and federal rules

Compliance
determination

PA's PFAS MCL Rule

Annual & Triennial Monitoring

If the EP is on an annual or triennial monitoring frequency and a sample exceeds the MCL, a confirmation sample is required.

- Compliance is based on the average of the original and confirmation sample results. If the average exceeds the MCL, there is an MCL violation for that PFAS.
- If no confirmation sample is collected, compliance is based on just the original result.

EPA's PFAS NPDWR

Annual & Triennial Monitoring

If an individual sample result exceeds an MCL, a violation of the MCL has not occurred. Compliance is based on the RAA and cannot be determined until one year of quarterly sampling has been completed at that EP.

- Exception: If a sample result causes the RAA to exceed an MCL at the EP, regardless of any subsequent quarterly monitoring results, the system is out of compliance with the MCL immediately.
- The result that exceeds the MCL is the first quarterly sample in the RAA calculation.

Comparing state and federal rules

Acceptable treatment
technologies

PA's PFAS MCL Rule	EPA's PFAS NPDWR
<ul style="list-style-type: none">✓ GAC✓ Ion Exchange✓ Reverse Osmosis✓ Other treatment technologies may be approved if it is demonstrated that it is capable of providing an adequate and reliable quantity and quality of water.	<ul style="list-style-type: none">✓ Best Available Technologies (BAT):<ul style="list-style-type: none">✓ GAC✓ Anion Exchange✓ Nanofiltration✓ Reverse Osmosis

Comparing state and federal rules

Monitoring when PFAS
treatment installed

PA's PFAS MCL Rule	EPA's PFAS NPDWR
Compliance monitoring is conducted annually at EPs with PFAS treatment.	Performance monitoring or additional monitoring of PFAS is not required when treatment has been installed.
Performance monitoring shall be conducted at least quarterly for the specific PFAS for which treatment is installed.	Primacy agencies may increase the required monitoring frequency, where necessary to detect variations within the system; this could be applied to systems that have installed treatment.

Comparing state and federal rules

Public notice (PN)

PA's PFAS MCL Rule	EPA's PFAS NPDWR
<ul style="list-style-type: none">• Tier 2 PN required for PFOA or PFOS MCL violations.• Tier 3 PN required for PFAS monitoring and reporting violations.	<ul style="list-style-type: none">• Tier 2 PN required for PFOA, PFOS, PFNA, PFHxS, HFPO-DA, and HI MCL violations.<ul style="list-style-type: none">○ A system that has a HI MCL violation and one or more individual PFAS MCL violations based on the <i>same</i> contaminants may issue one notification to satisfy the PN requirements for multiple violations.• Tier 3 PN required for PFAS monitoring and reporting violations.

Comparing state and federal rules

Health effects
language

PA's PFAS MCL Rule	EPA's PFAS NPDWR
<p>Establishes standard health effects language for PFOA and PFOS.</p> <ul style="list-style-type: none">Used in Tier 2 Public Notice (PN) and Consumer Confidence Reports (CCRs) when there is an MCL violation.	<p>Establishes standard health effects language for PFOA, PFOS, PFNA, PFHxS, HFPO-DA, and HI.</p> <ul style="list-style-type: none">Used in Tier 2 PN and Consumer Confidence Reports (CCRs) when there is an MCL violation.

PFAS Rule Revisions

Proposed revisions include:

- Regulated PFAS to include additional contaminants, with MCLGs, MCLs, HBWCs, trigger levels, and HI calculation incorporated by reference.
- Analytical requirements including PQLs incorporated by reference.
- Health effects language and CCR requirements incorporated by reference.
- PFAS considered as a group for monitoring frequencies (instead of individually).

PFAS Rule Revisions

Proposed revisions include:

- Compliance monitoring requirements to match NPDWR.
 - Maintaining existing monitoring requirements for EPs with PFAS treatment.
- Compliance determinations to match NPDWR.
- Clarification on how compliance is determined when multiple samples are reported, consistent with NPDWR.
- Confirmation samples not routinely required; may be required to verify PFAS levels.

PFAS Rule Revisions

Proposed revisions include:

- Revised initial monitoring requirements for new EPs (permitted on or after April 26, 2027).
- PFAS monitoring requirements for BVRBs to include all regulated PFAS.

2025* CCR Revisions

*The 2025 CCR is delivered in 2025 for CY 2024 data.

- Beginning in 2025, the CCR must contain the **range of tap sampling results** in addition to the 90th percentile concentration of the most recent round(s) of sampling and the number of samples exceeding the action level.
- The CCR must also include a statement that a service line inventory (including inventories consisting only of a statement that there are no lead service lines) has been prepared and include instructions to access the service line inventory.

2025 CCR Revisions

Revised mandatory educational statement for lead that includes:

- How lead can cause serious health problems for pregnant women and young children.
- That lead comes primarily from materials and components associated with service lines and plumbing.
- Utilities are replacing lead pipes, but customers have to share in the responsibility.
- Customers can reduce risk by flushing the tap before use.
- Also includes information about using an ANSI certified filter to reduce lead levels at the tap.
- www.epa.gov/safewater/lead

2025 CCR Revisions

New health effects
language for lead:

“Exposure to lead in drinking water can cause serious health effects in all age groups. Infants and children can have decreases in IQ and attention span. Lead exposure can lead to new learning and behavior problems or exacerbate existing learning and behavior problems. The children of women who are exposed to lead before or during pregnancy have an increased risk of these adverse health effects. Adults can have increased risks of heart disease, high blood pressure, kidney or nervous system problems.”

2027* CCR Revisions

*The 2027 CCR is delivered in 2027 for CY 2026 data.

- Compliance begins on January 1, 2027, which is the report that includes the 2026 data.
- Each CCR must contain a summary paragraph at the beginning of each report that includes specific content requirements.
- Summary paragraph must include:
 - Summary of the violations and compliance information that is contained in the report.
 - Contact information for the owner, operator, or designee of the water system as a source of additional information concerning the report.

2027 CCR Revisions

Summary paragraph must also include, if applicable:

- Instructions for obtaining a paper copy of the report.
- Information on obtaining a translated copy of the report for systems with a large portion of limited English proficiency.
- If PN is included in the report, the summary must specify that the PN is included and contain a brief statement about the nature of the notice.

2027 CCR Revisions

Lead and Copper information, in addition to the language added to the 2024 CCR:

- The CCR must notify customers that complete lead and copper data are available to review.
- The CCR must include a statement regarding the corrosion control efforts that the system is taking. There are templates for language to use based on whether the system has Optimized Corrosion Control treatment or not.



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2027 CCR Delivery Requirements

Direct delivery options include:

- Mail or hand delivery.
- Mail a notification that the report is available on a website via a direct link.
- Email a direct link or electronic version of the report.
- Another direct delivery option approved by the state.



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2027 CCR Delivery Requirements

- Systems using electronic delivery must provide a paper copy upon request.
- If a system chooses electronic delivery via posting on a website:
 - The report must be on the website before the notification is made.
 - Notification must prominently display the link.
 - Access to the reports must be available for no less than three years.

New CCR Requirements

- Systems serving more than 100,000 persons are required to develop, and update annually, a plan for providing assistance to consumers with limited English proficiency.
- Systems must evaluate the languages spoken by persons with limited English proficiency and develop an approach to address translation needs.
- The first plan must be submitted with the first CCR submitted in 2027.
- These plans are to be evaluated annually and updated as necessary. Certification that this is being done is to be documented on the CCR certification form.



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New CCR Requirements

Each system serving 10,000 or more persons must deliver the CCR report twice each year (biannually).

- The 1st report is still due by July 1st each year.
- The 2nd report is due to customers by December 31st.
- If there are no changes, the first report can be re-issued.
- If there was a violation or action level exceedance between January 1 and June 30, the “6-month update” must include information about those results.



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Other CCR Changes

- The certification form will now be due with a copy of the report, no later than 10 days after the report is delivered to customers (July 10th and January 10th, for those systems required to issue the CCR biannually).
- Systems serving 50,000 or more customers must post the CCR on a publicly-accessible website.

This is a change from 100,000 customers.

This is a change from the October deadline.

PN Revisions

Tier 1 PN

- Under the LCRR, a Tier 1 PN must be issued whenever the 90th percentile compliance value exceeds the lead action level.
- A copy of the PN must be submitted to EPA at LeadALE@epa.gov.
- PN certification (with a copy of the notice) must be submitted to DEP within 10 days. -- *this is not new for PA*

Tier 3 PN

- Under the LCRR, lead and copper reporting violations require Tier 3 PN.
- Failure to report coliform results requires Tier 3 PN.

These Tier 3 PN requirements are in addition to PN required for failure to monitor.



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BVRB Revisions

- Updates to the PFAS monitoring and compliance language to incorporate the NPDWR.
- Clarifying the monitoring requirements for BVRBs using purchased water from a permitted PWS.
- Modifying the definition of entry point for a bulk water hauler.
- Updating the disinfection language for a bulk hauler to retain the requirement to maintain a residual in each truck.



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The Department of Environmental Protection's mission is to protect Pennsylvania's air, land and water resources and to provide for the health and safety of its residents and visitors, consistent with the rights and duties established under the Environmental Rights Amendment (Article 1, Section 27 of the Pennsylvania Constitution).