

Proposed PFAS National Primary Drinking Water Regulation FAQs for Drinking Water Primacy Agencies

Overview: What action is EPA taking to address PFAS in drinking water?

The U.S. Environmental Protection Agency (EPA) is taking a key step to protect public health by proposing to establish legally enforceable levels for six per- and polyfluoroalkyl substances (PFAS) known to occur in drinking water, fulfilling a foundational commitment in the Agency's PFAS Strategic Roadmap. Through this proposed rule, EPA is leveraging the most recent science and building on existing state efforts to limit PFAS and provide a nationwide, health-protective standard for these specific PFAS in drinking water.

Some states have established drinking water regulations or guidance values for some PFAS, leading the way in monitoring for and limiting PFAS. The National Primary Drinking Water Regulation (NPDWR) proposed by EPA, if finalized, will provide a nationwide, health-protective level for six PFAS in drinking water: PFOA, PFOS, PFHxS, GenX Chemicals, PFNA, and PFBS. EPA's proposed rule is informed by regulatory development requirements under the Safe Drinking Water Act (SDWA), including EPA's analysis of the best available and most recent peer-reviewed science. The proposal also takes into account the feasibility of analysis and treatment, as well as consideration of costs and benefits.

At this time, communities and water systems should follow applicable state requirements, recognizing that EPA's proposed rule does not currently require water systems to take any action. When the final NPDWR goes into effect, states will be required to have a standard that is no less strict than the NPDWR – as SDWA requires.

Question 1: What is the difference between this proposed drinking water regulation for PFOA, PFOS, PFHxS, GenX Chemicals, PFNA, and PFBS and the 2022 EPA Health Advisories for PFOA, PFOS, PFBS, and GenX Chemicals?

This is a proposed rule for public comment. It does not require any actions for drinking water systems until the rule is finalized. Once the rule is finalized, water systems would have three years to be in compliance with the MCLs.

The proposed regulation includes Maximum Contaminant Levels (MCLs) which, if finalized, are legally enforceable regulatory drinking water standards. EPA establishes MCLs as close as feasible to the health based, non-enforceable, Maximum Contaminant Level Goal (MCLG), taking into consideration the ability to measure and treat to remove a contaminant, as well as the costs and benefits.

Drinking water health advisories are different from MCLs and MCLGs. Each serves a different purpose. Health advisories are not regulatory and are not legally enforceable. Health advisories reflect EPA's assessment of health risks of a contaminant based on the best available science and provide advice and information on actions that water systems may take to address contamination for these and other PFAS. After EPA has considered public comments and issues a final NPDWR, EPA will decide whether to update or remove the interim health advisories for PFOA and PFOS and the final health advisories for PFBS and GenX Chemicals. For more information on the health advisories, please visit <https://www.epa.gov/sdwa/drinking-water-health-advisories-pfoa-and-pfos>.

Question 2: Why did EPA propose a Hazard Index for PFHxS, GenX Chemicals, PFNA, and PFBS?

EPA is following recent peer-reviewed science that indicates that mixtures of PFAS can pose a health risk greater than each chemical on its own. A Hazard Index helps to account for the increased risk from mixtures of PFAS that may be found in contaminated drinking water. The Hazard Index is a long-established tool that EPA regularly uses, for example, to inform risks of chemical mixtures. It is, for example used at contaminated Superfund sites (under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and Superfund Amendments and Reauthorization Act (SARA)). A Hazard Index considers how toxic each of the four PFAS are and allows a site-specific determination based on the specific drinking water concentrations.

Question 3: How is the Hazard Index for PFHxS, GenX Chemicals, PFNA, and PFBS calculated?

To determine the Hazard Index for these four PFAS, water systems would monitor and use those sampling results as inputs into a formula with their Health-Based Water Concentration (HBWC) (i.e., the level at which no health effects are expected for that PFAS). The proposed HBWCs for each of the four PFAS are below.

Compound	Health-Based Water Concentration (ppt)
PFHxS	9.0
GenX Chemicals	10
PFNA	10
PFBS	2000

Water systems would use a calculator tool provided by EPA to easily determine their Hazard Index result. The tool performs the calculation explained below.

For each of the four PFAS, the calculation first divides the results of the drinking water sample by the HBWC and then adds all the values for each PFAS. If the total value is greater than 1.0, it would be an exceedance of the proposed Hazard Index MCL as follows:

$$\text{Hazard Index} = \left(\frac{[\text{GenX}_{\text{water}}]}{[10 \text{ ppt}]} \right) + \left(\frac{[\text{PFBS}_{\text{water}}]}{[2000 \text{ ppt}]} \right) + \left(\frac{[\text{PFNA}_{\text{water}}]}{[10 \text{ ppt}]} \right) + \left(\frac{[\text{PFHxS}_{\text{water}}]}{[9.0 \text{ ppt}]} \right)$$

Where $\text{GenX}_{\text{water}}$ = monitored concentration of GenX

$\text{PFBS}_{\text{water}}$ = monitored concentration of PFBS

$\text{PFNA}_{\text{water}}$ = monitored concentration of PFNA

$\text{PFHxS}_{\text{water}}$ = monitored concentration of PFHxS

For example, if the mixture contains the following levels of these four PFAS, the Hazard Index for that mixture would exceed the proposed MCL.

$$2.1 = \left(\frac{[5 \text{ ppt}]}{[10 \text{ ppt}]} \right) + \left(\frac{[200 \text{ ppt}]}{[2000 \text{ ppt}]} \right) + \left(\frac{[5 \text{ ppt}]}{[10 \text{ ppt}]} \right) + \left(\frac{[9 \text{ ppt}]}{[9.0 \text{ ppt}]} \right)$$

Question 4: Under the proposed rule, do all four PFAS under the Hazard Index need to be present for a water system to exceed the proposed PFAS NPDWR?

No. The Hazard Index works at the local level and applies to any combination of the four PFAS. In some cases, a water system could exceed the proposed Hazard Index MCL when only one, two, or three PFAS are present.

Moreover, a high concentration of one Hazard Index PFAS could drive an MCL exceedance.

Question 5: Why didn't EPA include PFOA and PFOS in the proposed Hazard Index MCL?

EPA determined that PFOA and PFOS are likely carcinogens (i.e., cancer causing) and that there is no level of these contaminants that is without a risk of adverse health effects. Therefore, EPA is proposing to set the MCL for these two contaminants at 4 parts per trillion, the lowest feasible level based on the ability to reliably measure and remove these contaminants from drinking water.

Question 6: What is the Practical Quantitation Level (PQL)?

The PQL is defined as the lowest concentration of a contaminant that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions. This level provides the precision and accuracy that EPA estimates can be achieved across laboratories nationwide. EPA has used the PQLs for the six PFAS proposed for regulation in determining the proposed MCLs. EPA has identified the following PQLs for the six PFAS proposed for regulation.

Compound	Practical Quantitation Level (ppt)
PFOS	4.0
PFOA	4.0
PFHxS	3.0
GenX Chemicals	5.0
PFNA	4.0
PFBS	3.0

Question 7: What are the proposed rule's monitoring requirements?

The proposed rule would require that all community water systems and non-transient, non-community water systems conduct initial monitoring within three years after the rule's promulgation. The monitoring must be conducted at the entry point to the distribution system. Based on their size and source water, systems must conduct initial monitoring either twice or quarterly during a 12-month period as follows:

- **Groundwater systems serving greater than 10,000 customers.** Initially, these systems would be required to monitor quarterly within a 12-month period.
- **Groundwater systems serving under 10,000 customers.** EPA is proposing that these systems would initially be required to only monitor twice within a 12-month period, with each sample 90 days apart.
- **Surface water systems.** All surface water systems would initially be required to monitor quarterly within a 12-month period.

In order to reduce costs for systems, systems would be allowed to use previously collected monitoring data to satisfy the initial monitoring requirements, if the sampling was conducted using EPA Methods 533 or 537.1 as part of UCMR 5 or other state-level or other appropriate monitoring campaigns. EPA is aware of many state and federal monitoring programs whose data would potentially satisfy the initial monitoring requirements. If finalized, after rule promulgation, community water systems and non-transient, non-community water systems would conduct quarterly compliance monitoring. Based on initial monitoring or later compliance results, primacy agencies would have the authority to reduce compliance monitoring frequency for a system to once (for systems serving fewer than 3,300 persons) or twice (for systems serving 3,300 or more persons) every

three years if monitoring results are below the trigger level. The trigger level is set at one-third of the MCLs for PFOA and PFOS (1.3 ppt) and one-third of the Hazard Index MCL (0.33) for mixtures of PFHxS, GenX Chemicals, PFNA, and PFBS. Any system that monitors less frequently and finds sample results at or above the rule trigger level would need to revert to quarterly monitoring.

Reduced monitoring would reduce burden on water systems that demonstrate through sampling that they are at lower risk of PFAS contamination.

Question 8: Why is EPA setting a reduced-monitoring trigger level below the PQL for certain PFAS?

The proposed reduced-monitoring trigger level is set at a level that is useful in determining whether the contaminant is present in a sample rather than to determine its specific concentration. While measurements below the PQLs may be less definitive, they are appropriate for determining if PFAS are present and establishing monitoring frequency.

Question 9: Can systems utilize composite samples?

EPA is proposing not to allow composite samples. Composite sampling is an approach in which equal volumes of water from multiple entry points are combined into a single container and analyzed as a mixture. The reported concentration from the analysis of the composite samples therefore reflects the average of the concentrations from the entry points. This can potentially reduce analytical costs because the required analysis is reduced by combining samples into one. However, because PFAS are in the environment at low concentrations and precision is critical, incidental contamination could result in false positives.

Question 10: Will EPA consider granting monitoring waivers?

Based on consultation with state regulators and small public water systems, EPA believes that the ubiquity and environmental persistence of PFAS would make granting waivers challenging and is therefore not proposing to grant them. EPA is taking comment on whether water systems should be allowed to apply for a monitoring waiver of up to 9 years (one full compliance cycle) for proposed PFAS if after one year of quarterly sampling the results are below the trigger level of 1/3 of the MCL (1.3 ppt).

Question 11: How can a system comply with an MCL when it is set at the Practical Quantitation Level? Would any monitoring result above the PQL result in non-compliance?

Not necessarily. Compliance will be determined based on analytical results at each sampling point. For systems monitoring quarterly, compliance will be determined by running annual averages at the sampling point. If a system takes more than one compliance sample during each quarter at a particular location, the system must average all samples taken at that location during that quarter. A system would not be considered in violation of an MCL unless or until it has completed one year of quarterly sampling (except where a sample would be high enough to cause the annual average to exceed an MCL).

For example, if the results of sampling for PFOA at a compliance location for the most recent four quarters are 2.0, 1.5, 5.0, and 1.5 ppt, the values used to calculate the running annual average would be 0.0, 0.0, 5.0, and 0.0. In this case the PFOA running annual average would be 1.3 ppt and in compliance.

Question 12: Does EPA have PFAS treatment disposal guidance, especially regarding higher volumes of PFAS laden materials such as used carbon and anion exchange media?

A facility that has spent carbon or other media from treating PFAS and/or other contaminants must determine whether the material is a regulated waste. If the material was only used to treat PFAS, it is likely not considered hazardous waste (under federal statutes). EPA published "[Interim Guidance on the Destruction and Disposal of Perfluoroalkyl and Polyfluoroalkyl Substances and Materials Containing Perfluoroalkyl and Polyfluoroalkyl Substances](#)" that describes the options of landfilling, injection and thermal treatment for disposing PFAS laden materials. The guidance notes that thermal treatment techniques, including carbon reactivation, may allow PFAS to migrate to the environment. EPA and partners are undertaking research to further address the subject. EPA is also working to update this guidance in 2023. Materials used to treat PFAS may become hazardous if there are additional contaminants that are hazardous removed along with PFAS.

Question 13: What are Consumer Confidence Reports (CCR) requirements of the proposed rule?

A community water system (CWS) must prepare and deliver to its customers a CCR, also known as an Annual Water Quality Report, which provides information about their local drinking water quality as well as information regarding the water system compliance with drinking water regulations. If this rule is finalized as proposed, CWSs would be required to report measured levels of PFOA, PFOS, PFHxS, GenX Chemicals, PFNA, and PFBS, and the Hazard Index for the mixtures of PFHxS, GenX Chemicals, PFNA, and PFBS.

Question 14: What are the public notification requirements for PFAS under this proposed rule?

The proposed rule would require water systems to provide notification of an MCL violation as soon as practicable but no later than 30 days after the system learns of the violation. The notices would alert consumers of the violation and if there is a risk to public health.

Question 15: What is the timeline and process for state primacy?

Primacy agencies must have regulations for contaminants regulated under National Primary Drinking Water Regulations (NPDWRs) that are no less stringent than the regulations promulgated by EPA. States will have up to two years to develop regulations after the rule is final. EPA will provide guidance to support states, territories, and Tribes in obtaining primacy for the PFAS NPDWR. More information on primacy responsibilities under the Safe Drinking Water Act can be found at: <https://www.epa.gov/dwreginfo/primacy-enforcement-responsibility-public-water-systems>