



ENERGY, INSTALLATIONS,
AND ENVIRONMENT

ASSISTANT SECRETARY OF DEFENSE

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MEMORANDUM FOR ASSISTANT SECRETARY OF THE ARMY (INSTALLATIONS,
ENERGY AND ENVIRONMENT)
ASSISTANT SECRETARY OF THE NAVY (ENERGY,
INSTALLATIONS AND ENVIRONMENT)
ASSISTANT SECRETARY OF THE AIR FORCE (ENERGY,
INSTALLATIONS, AND ENVIRONMENT)
DIRECTOR, NATIONAL GUARD BUREAU (JOINT STAFF, J8)
DIRECTOR, DEFENSE LOGISTICS AGENCY (INSTALLATION
MANAGEMENT)

SUBJECT: Policy for Per- and Polyfluoroalkyl Substances Monitoring and Treatment in DoD-
Owned Drinking Water Systems in the United States

In order to meet the requirements of *DoD Instruction 4715.06, Environmental Compliance in the United States* and to ensure consistency across the Department of Defense, this memorandum provides a policy for monitoring and treatment of per- and polyfluoroalkyl substances (PFAS) in DoD-owned drinking water systems, to include non-regulated potable water systems, in the United States (U.S.) and cancels the Assistant Secretary of Defense for Energy, Installations, and Environment memorandum, *Memorandum for Sampling of Per- and Polyfluoroalkyl Substances in DoD-Owned Drinking Water Systems*, July 11, 2023.

On April 26, 2024, the Environmental Protection Agency (EPA) published a National Primary Drinking Water Regulation (NPDWR) final rule¹ on drinking water standards for six PFAS² under the Safe Drinking Water Act (SDWA). Under the NPDWR, regulated public water systems (PWS) are required to complete initial monitoring by April 26, 2027. Beginning April 26, 2027, regulated PWSs will conduct ongoing compliance monitoring in accordance with the frequency dictated by the rule and as determined by the initial compliance monitoring results. Regulated PWSs must demonstrate compliance with the Maximum Contaminant Levels (MCL) by April 26, 2029.

Both DoD-owned water systems in the U.S. regulated under the NPDWR, and those not regulated under the NPDWR, but which provide drinking water for potential consumption, will

¹ "PFAS National Primary Drinking Water Regulation (Final Rule)." Federal Register 89:82 (April 26, 2024) p. 32532-32757. Available from: https://www.federalregister.gov/documents/2024/04/26/2024-07773/pfas-national-primary-drinking-water-regulation?utm_campaign=subscription+mailing+list&utm_medium=email&utm_source=federalregister.gov

² The six PFAS regulated under the EPA NPDWR include Perfluorooctanoic acid (PFOA), Perfluorooctane sulfonic acid (PFOS), Perfluorohexane sulfonate (PFHxS), Hexafluoropropylene Oxide Dimer Acid (HFPO-DA also known as GenX chemicals), Perfluorononanoic acid (PFNA), and Perfluorobutane sulfonate (PFBS). The rule includes individual MCLs for five PFAS (PFOA, PFOS, PFNA, PFHxS, and HFPO-DA). The rule includes a limit for mixture of two or more of the following: PFHxS, PFNA, HFPO-DA, and PFBS, as determined by calculating a Hazard Index (HI).

comply with the requirements as described in Attachment 1 of this memorandum. In addition to monitoring for the six PFAS regulated by the NPDWR, DoD-owned systems covered by this policy shall monitor for all analytes detected using EPA Method 533 at the frequency prescribed by Attachment 1 of this memorandum. DoD-owned systems providing only non-potable water and consecutive systems that receive finished water from a permitted source are not subject to the requirements detailed in this policy. Where state or local drinking water regulations for PFAS have been fully promulgated and are more protective than the NPDWR or the policy provided in this memorandum, the more protective requirements will apply.

Protecting the health of our personnel, their families, and the communities in which we serve is a priority for the Department. DoD is committed to complying with requirements of the NPDWR and the continued provision of quality drinking water to those that work and live on DoD installations.

The point of contact for this matter is Mr. Brent Williams, at 703-571-2434 or brent.d.williams.civ@mail.mil.

Sincerely,

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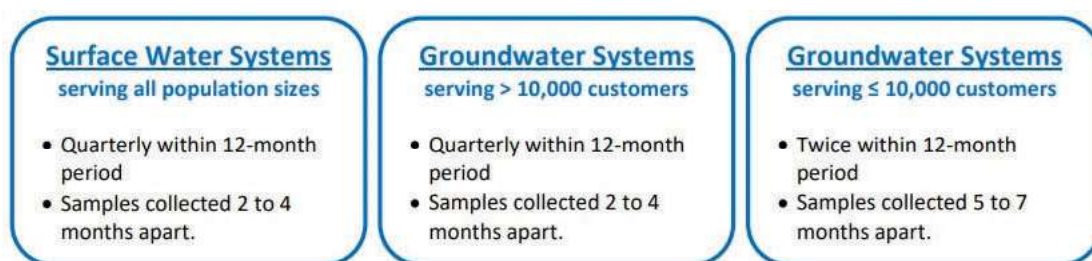
Brendan M. Owens

Attachments:
As stated

Initial Monitoring:

No later than April 26, 2027, DoD Components will review existing data and, as necessary, collect additional samples of finished drinking water from all DoD-owned drinking water systems to complete initial monitoring in accordance with the frequencies specified in the NPDWR. In addition to the monitoring required for the six regulated PFAS by the NPDWR, DoD-owned potable water systems will monitor for all analytes detected using EPA Method 533.

In accordance with the NPDWR, community water systems (CWSs) and non-transient non-community water systems (NTNCWSs) must complete initial monitoring at all entry points to the distribution system (EPTDS) on either a semiannual (two times/year) or quarterly basis during a 12-month period based on system size and source water.



In addition, regardless of water system classification, DoD-owned drinking water systems which are not subject to the NPDWR, but which are subject to this policy, will perform initial monitoring equivalent to the requirements for groundwater systems serving $\leq 10,000$ customers (i.e., twice during a 12-month period)³. DoD-owned systems that provide only non-potable water and consecutive systems that receive finished water from a permitted source are not required to conduct initial monitoring.

An EPTDS is where any source or treated water enters the system of pipes or other fixtures used to provide drinking water after treatment, if any, but prior to delivery to the first person(s) served by the public water system. If more than one water source feeds an EPTDS, all samples obtained from that location must be representative of typical flow. Systems may have multiple EPTDS.

Compliance Monitoring:

Beginning April 26, 2027, regulated PWSs and DoD-owned drinking water systems which are not subject to the NPDWR, but which are subject to this policy, are required to begin ongoing compliance monitoring at all EPTDS. The required frequency of monitoring for each EPTDS is determined by comparing the initial monitoring results and ongoing compliance monitoring results for all regulated PFAS, including the Hazard Index (HI), to NPDWR trigger levels⁴ and

³ This policy's application of elements of the PFAS NPDWR to non-regulated DoD-owned drinking water systems does not constitute or create a regulatory compliance requirement under the NPDWR.

⁴ The trigger levels used for establishing appropriate monitoring frequency are set at half the MCLs for regulated PFAS and half the Hazard Index (HI) MCL for mixtures of PFHxS, HFPO-DA (GenX chemicals), PFNA, and/or PFBS.

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associated MCLs. Monitoring frequency for each EPTDS may vary across a facility. Regulated drinking water systems will conduct compliance monitoring according to the frequency specified by the NPDWR or state primacy agencies based on the results of the completed initial monitoring.

Compliance with the MCLs is determined by calculating the Running Annual Average (RAA) of four quarters of samples. Single results above an MCL are not considered a health-based exceedance for reporting or compliance. Installations must continue with quarterly monitoring for four quarters to calculate the RAA prior to declaring an exceedance, unless a result of zero for the remaining quarters would still result in the RAA exceeding the MCL.

In addition to the monitoring required for the six regulated PFAS by the NPDWR, DoD-owned drinking water systems will monitor for all analytes detected using EPA Method 533 at the same frequency. The frequency of monitoring is the same for all regulated PFAS but may vary across EPTDS within the same drinking water system as described in the NPDWR. DoD-owned systems that provide only non-potable water and consecutive systems that receive finished water from a permitted source are not required to conduct ongoing compliance monitoring.

Calculations:

Running Annual Average (RAA):

For each EPTDS, compliance with the MCLs is determined by comparison of the MCL value to an RAA of four quarterly samples.

- The RAA is calculated by taking the average of the four most recent individual quarterly samples. Systems sampling at a frequency less than quarterly are not required to calculate an RAA value.
- EPA identified Practical Quantitation Limits⁵ (PQL) for each PFAS regulated by the NPDWR as described in Table 1. An individual sample value below the EPA PQL is treated as zero in the calculation.
- The calculation must use all available digits of precision provided in the analytical report, but the final result should be rounded to the number of significant digits corresponding with each MCL to determine compliance as described in Table 1.
- An individual sample result above the MCL does not indicate non-compliance with the MCL if, based on a minimum of four samples, the RAA is below the MCL; however, if fewer than four samples will cause the RAA to exceed the MCL regardless of subsequent sample values (e.g., a PFOA sample of more than 16 ppt), the system is non-compliant with the MCL immediately, even if fewer than four samples have been obtained.

⁵ Laboratories may provide PQL (or Limit of Quantitation (LOQ)) values for individual samples in each analytical report; however, when performing calculations, installations should use the PQL values provided by EPA in the NPDWR, not the PQL (or LOQ) values provided by the laboratory.

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RAA Calculation Example:

If a system has quarterly HFPO-DA monitoring results of 3.2, 6.1, 5.5, and 2.7 ng/L, the RAA calculation is:

$$RAA_{HFPO-DA} = \frac{0 + 6.1 + 5.5 + 0}{4} = 3 \text{ ng/L}$$

PFAS	MCL	Significant Digits	PQL
PFOA	4.0 ppt	2	4.0 ppt
PFOS	4.0 ppt	2	4.0 ppt
PFHxS	10 ppt	1	3.0 ppt
HFPO-DA (GenX)	10 ppt	1	5.0 ppt
PFNA	10 ppt	1	4.0 ppt
PFBS	n/a		3.0 ppt
Mixture of two or more: PFHxS, PFNA, HFPO-DA, and PFBS	HI of 1 (unitless)	1	n/a

Table 1. PFAS NPDWR PQL Values and MCL Significant Digits

Hazard Index (HI):

EPA set an HI MCL to control additive health effects for mixtures of two or more PFAS, including PFHxS, PFNA, HFPO-DA, and PFBS:

- For each EPTDS, the HI is calculated by dividing the detected concentration of each PFAS (in ng/L or ppt) by the Health Based Water Concentration (HBWC)⁶ of the respective PFAS and summing the results.

$$HI = \frac{PFHxS \text{ ng/L}}{10 \text{ ng/L}} + \frac{PFNA \text{ ng/L}}{10 \text{ ng/L}} + \frac{HFPO - DA \text{ ng/L}}{10 \text{ ng/L}} + \frac{PFBS \text{ ng/L}}{2000 \text{ ng/L}}$$

- An individual result less than the EPA PQL for a given PFAS is treated as zero in the calculation.
- HI calculations for each quarter should be completed before calculating the RAA. HI calculations for the individual quarterly samples should not be rounded prior to

⁶ HBWCs for each PFAS are as follows: PFHxS (10 ng/L), HFPO-DA (10 ng/L), PFNA (10 ng/L), and PFBS (2000 ng/L).

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calculating the RAA. After completing the RAA calculation, the final result should be rounded to one significant digit.

- If a PFAS “mixture” was detected (i.e., two or more of PFHxS, PFNA, HFPO-DA, or PFBS are detected in a sample above the PQL) in one or more quarters, HI values should be calculated for each quarterly sampling event, even where one or none of the mixture components were detected. If the resulting RAA is greater than 1, the EPTDS is out of compliance with the HI MCL.
- If a PFAS “mixture” was not detected during any quarterly sampling event (i.e., only one or none of the regulated PFAS were detected above the PQL), calculation of the RAA is not required and the EPTDS is not out of compliance with the HI MCL, even if the result of any quarterly HI calculation is greater than 1.
- EPA recommends quarterly calculation of the HI even when only one component of the mixture is detected so that those values are available should they be required for use in the RAA calculation. Individual quarterly HI values cannot be used to determine compliance with the HI MCL as the compliance determination is relative to the HI RAA.
- When conducting ongoing compliance monitoring, the HI should be calculated for each sampling event. If the monitoring frequency of an EPTDS is less than quarterly, the HI must be compared to the trigger level to determine if increased monitoring is required.

HI Calculation Example:

If the results for a quarterly sampling event of a system are 2.1 ng/L for PFHxS, 4.1 for PFNA, 3.4 for HFPO-DA, and 20.0 for PFBS, the HI calculation is:

$$HI = \frac{0 \text{ ng/L}}{10 \text{ ng/L}} + \frac{4.1 \text{ ng/L}}{10 \text{ ng/L}} + \frac{0 \text{ ng/L}}{10 \text{ ng/L}} + \frac{20.0 \text{ ng/L}}{2000 \text{ ng/L}} = 0.42$$

MCL Compliance:

In accordance with the NPDWR, regulated PWSs must comply with all MCLs no later than April 26, 2029. In addition, DoD-owned drinking water systems which are not subject to the NPDWR, but which are subject to this policy, must establish and maintain levels of PFAS in drinking water that are at or below the associated MCLs no later than April 26, 2029. Actions that an individual installation may take should be dictated by the results of the initial and ongoing compliance monitoring and water system characteristics.

Systems may install treatment or implement a non-treatment option (e.g., an alternative water source) to comply with the MCLs. EPA identified granular activated carbon, anion

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exchange, reverse osmosis, and nanofiltration as Best Available Technologies (BAT); however, systems are not required to use specific technologies for treatment.

Treatment residuals must be managed in accordance with DoD guidance, “Interim Guidance on Destruction or Disposal of Materials Containing Per- and Polyfluoroalkyl Substances in the United States” issued on July 11, 2023, and any subsequent DoD guidance on management and disposal of materials containing PFAS.

Analytical Laboratories:

The DoD Components will analyze PFAS in drinking water using a laboratory that meets, at a minimum, the requirements of the NPDWR; however, a DoD Environmental Laboratory Accreditation Program (ELAP)⁷ accredited laboratory that also meets the requirements of the NPDWR is preferred and should be utilized where available. DoD Components will conduct sampling and analysis of finished drinking water for PFAS using EPA Method 533. This will ensure consistency across DoD in how PFAS samples are collected and analyzed for DoD-owned drinking water systems. While EPA Method 533 is the required analytical method for ongoing data collection, installations may use previously collected data analyzed using EPA Method 537.1 to satisfy the initial monitoring requirements if the sampling frequency complies with the NPDWR requirements.

Notification:

At a minimum, as of the date of this policy, DoD Components will post analytical results of all regulated PFAS detected above the NPDWR trigger levels on the installation’s public webpage within 30 days of receipt of final results.

For drinking water systems regulated under the NPDWR:

In accordance with the NPDWR, beginning April 26, 2027:

- Ongoing compliance monitoring results must be included in Consumer Confidence Reports (CCRs) (i.e., Annual Water Quality Report) when one or more of the regulated PFAS are detected at or above the trigger levels or the HI is calculated at a value above the trigger level. Reports that contain data on the HI must include EPA’s HI definition. Mandatory health effects language identified in the NPDWR is not required to be included in these reports prior to the April 26, 2029, MCL compliance deadline.
- All regulated PWSs must make Tier 3 public notifications (PN) for monitoring and testing violations. In accordance with the Tier 3 PN requirements, PNs will be made no later than one year after the system learns of the violation, and systems are required to repeat the notice annually for as long as the violation persists.

⁷ Laboratories capable of meeting the DoD ELAP requirements applicable to these methods can be found at www.denix.osd.mil/edqw/accreditation/accreditedlabs.

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In accordance with the NPDWR, beginning April 26, 2029:

- Ongoing compliance monitoring results must be included in CCRs when one or more of the regulated PFAS are detected at or above the trigger levels or the HI is calculated at a value above the trigger level. Mandatory health effects language identified in the NPDWR is required if there are MCL violations but is not required if there are no MCL violations.
- All regulated PWSs must make Tier 2 PNs for MCL violations. In accordance with the Tier 2 PN requirements, PNs will be made as soon as practicable, but no later than 30 days after the system learns of the violation. Reports that contain data on the Hazard Index (HI) must include EPA's HI definition. Mandatory health effects language identified in the NPDWR must be included in the PN. The notices will alert consumers of the violation if there is a risk to public health.
- In addition to notifications required by the NPDWR, DoD Components will notify the Office of the Deputy Assistant Secretary of Defense for Environmental Management and Restoration (ODASD(EMR)) environmental compliance program manager of exceedances of the PFAS NPDWR MCL as soon as practicable, but no later than 30 days after the system learns of the exceedance.

For drinking water systems not regulated under the NPDWR, but which are addressed by this policy:

In accordance with the requirements of this policy, beginning April 26, 2029, for DoD-owned drinking water systems which are not subject to the NPDWR, DoD Components will notify the ODASD(EMR) environmental compliance program manager of exceedances of the MCL as applied by virtue of this policy as soon as practicable, but no later than 30 days after the system learns of the exceedance.⁸

Reporting:

Initial and Ongoing Compliance Monitoring:

- To effectively track and report PFAS data, monitoring results for PFAS in finished drinking water collected from DoD-owned drinking water systems will be reported to ODASD(EMR) using the OSD template. Results will be submitted to ODASD(EMR) within 30 days of receipt of final testing results in accordance with the instructions provided in the template. DoD will make results available on defense.gov/pfas.

⁸ DoD-owned systems which are not regulated under the NPDWR are not required to report deviations from the requirements of this policy to the regulatory agency.