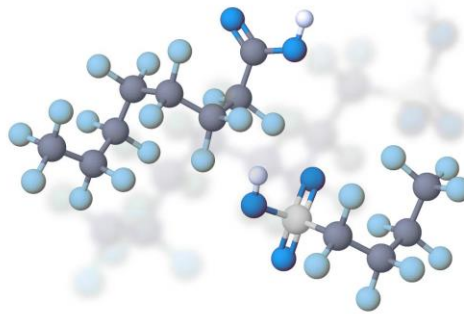
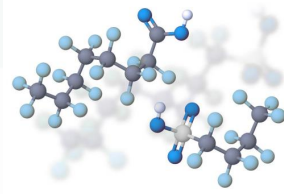

PFAS Drinking Water Rule Overview & Adding *Legionella* Treatment

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Per- and polyfluoroalkyl substances (PFAS)



- PFAS chemicals are used in industry and consumer products such as nonstick cookware, waterproof clothing, and firefighting foam, as well as in certain manufacturing processes
- Exposure to PFAS chemicals may have adverse health effects such as increased risk of certain cancers, liver damage, compromised immunity, as well as developmental and reproductive effects.
- Drinking water contaminated with PFAS chemicals is one of several ways people may be exposed to PFAS.



Rule Overview

- EPA released the final drinking water regulation on **April 10, 2024** for 6 PFAS chemicals
- The rule establishes individual maximum contaminant levels (MCLs) for 5 PFAS and a hazard index MCL for a mixture of 4 PFAS, which must be met by 2029
- Oregon has **2 years** to adopt the regulations and apply for primacy
- PWSs have **3 years** to complete initial monitoring for PFAS
- PWSs have **5 years** to comply with the PFAS MCLs

Regulatory Levels: Summary

Chemical	Maximum Contaminant Level Goal (MCLG)	Maximum Contaminant Level (MCL)
PFOA	0	4.0 ppt
PFOS	0	4.0 ppt
PFHxS	10 ppt	10 ppt
HFPO-DA (GenX chemicals)	10 ppt	10 ppt
PFNA	10 ppt	10 ppt
Mixture of two or more: PFHxS, PFNA, HFPO-DA, and PFBS	Hazard Index of 1	Hazard Index of 1

*Compliance is determined by running annual averages at the sampling point

Hazard Index (HI)

- A tool to evaluate health risks of simultaneous exposure to mixtures of related chemicals.
- Divide detected HI PFAS by its associated Health-Based Water Concentration (HBWC)
 - HBWC = level at which no health effects are expected for that PFAS.
- Add ratios together
- $HI > 1$ = HI MCL exceedance
- 2 or more HI PFAS must be present. If only 1 HI PFAS present (regardless of concentration), not a HI MCL exceedance.

$$HI\ MCL = \left(\frac{[HFPO-DA_{water}]}{[10\ ppt]} \right) + \left(\frac{[PFBS_{water}]}{[2000\ ppt]} \right) + \left(\frac{[PFNA_{water}]}{[10\ ppt]} \right) + \left(\frac{[PFHxS_{water}]}{[10\ ppt]} \right) = 1$$

Monitoring Requirements

- Routine monitoring for 6 PFAS at all entry points (EPs) w/in 3 years (2027):
 - Community (CWS) water systems
 - Non-transient non-community (NTNC) water systems
 - 1190 PWSs subject to the rule in Oregon rule (845 CWS & 345 NTNC)**
 - *Purchasing PWS w/ out their own source not required to monitor*
 - *PWS not required to sample at purchased water EPs*
- Initial monitoring
 - All SW and GW >10,000 = **quarterly**
 - GW <10,000 pop = **twice within a 12-month period** (samples 5 to 7 mos. apart)
 - May use previously collected data to satisfy initial mon. reqs (ex. UCMR5)
- After initial monitoring, can reduce monitoring to **once every 3 years** if below the following trigger levels:
 - ½ PFOS and PFOA MCLs (2.0 ppt)
 - ½ PFHxS, GenX, and PFNA MCLs (5 ppt)
 - ½ HI MCL (0.5):

Monitoring Requirements (continued)

- Routine monitoring is quarterly if not eligible for reduction to every-3-years
- If 4 consecutive quarters below MCLs, may reduce to annual (R&C below)
- If 3 annual samples below trigger levels, can reduce to every 3 years
- May have different monitoring schedules at each EP depending on results
- No monitoring waivers allowed (reduction to every 9 years)

Compliance determinations

- Compliance is based on running annual average (RAA) at each entry point (EP)
- MCL RAA exceedance: public notice required within 30 days (tier 2 PN)
- For MCL compliance determinations, if a laboratory provides a sample result less than the Practical Quantitation Limit (PQL), use zero for that sample result to calculate the RAA used to determine compliance
 - Note: Lab minimum reporting levels (MRLs) may be lower than PQL

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

Treatment

- PWS would be required take actions to reduce the levels of regulated PFAS if they exceed the MCLs
- Example actions: installing treatment, develop new source, switch to alternative water supply
- Best Available Technologies (BATs) for reducing PFAS in DW:
 - Granular activated carbon (GAC)
 - Anion Exchange resins (AIX)
 - High-pressure membrane (Nanofiltration or Reverse Osmosis)

Implementation: Timeframes for PWSs

Within **three years** of rule promulgation (2024 – 2027):

- Must complete initial monitoring

Starting **three years** following rule promulgation (2027 – 2029):

- CWS: results of initial monitoring must be included in Consumer Confidence Reports (CCR)
- Regular monitoring for compliance must begin, and results of compliance monitoring must be included in CCR
- Public notification for monitoring and testing violations

Starting **five years** following rule promulgation (starting 2029)

- Comply with all MCLs
- Public notification for MCL violations

Emerging Contaminants Funding

- Two funding sources available to address emerging contaminants:
 - Bipartisan Infrastructure Law Emerging Contaminant Funding (**BIL-EC**)
 - Emerging Contaminants in Small or Disadvantaged Communities (**EC-SDC**)
- Provides **100% loans/grants** for reducing exposure to PFAS or other emerging contaminants (EC) in drinking water (cyanotoxins, manganese)
- **BIL-EC** (~\$55.9M for OR over 5 years): 25% of funds must go to disadvantaged communities (DAC) or PWS <25,000
 - DAC defined as having a median household income below the state MHI
- **EC-SDC** (~\$47.3M for OR over 5 years): funds must go to PWS <10,000 that lack capacity to incur debt or disadvantaged communities
- Funding allotments over 5 years (2022 to 2026)

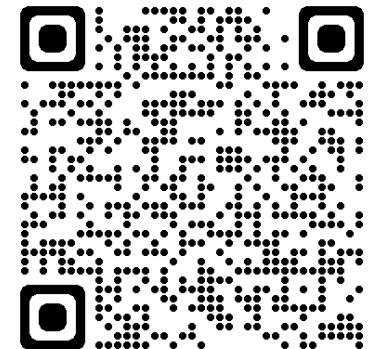
Emerging Contaminants Funding (continued)

- Primary purpose project/activity must be to address ECs in drinking water
- Can be used by water systems with EC detections to provide treatment, develop a new source, or connect to another public water system
- Covers planning, design, and construction costs
- **19 of 29 SRF-eligible PWSs with PFAS detections are currently engaged with the EC funding process**

EPA's PFAS rule website:

<https://www.epa.gov/sdwa/and-polyfluoroalkyl-substances-pfas>

- Presentation on new rule
- General Q&A
- Detailed Q&A's for states and systems
- Fact Sheets (Public, water filters, benefits/costs of rule, hazard index, small systems, treatment technologies, monitoring requirements)
- **Webinar recordings & slides :**
 - General Overview: April 16
 - Water Sector Professionals Technical Overview: April 23
 - Small Systems Webinar: April 30



Rule impact in Oregon

Considering all data sources (PFAS sampling project, UCMR, voluntary monitoring), as of 9/23/24:

- 32 PWS with measurable PFAS detections in OR (representing roughly 52 groundwater wells & 1 surface water source)
 - **23 of 30 PWSs subject to new rule have levels above EPA's MCLs** and will likely need to take corrective action by 2029
 - *Only 218 PWS out of 1190 PWS subject to new rule have monitored for PFAS (18%)*
 - *15% of PWS that have monitored have had detections – could have 145 more PWSs with PFAS detections if that rate holds*
- 11 different PFAS chemicals have been detected at PWSs in Oregon (mostly PFOS):
 - PFOS (23 PWSs), PFHxS (10), PFOA (9), PFBS (8), PFHxA (8), PFHpA (6), PFPeA (5), PFPeS (2), PFBA (2), 6:2 FTS (1), & GenX (1)

EC-SDC Sampling Project

- OHA-DWS planning to use some of the EC-SDC funding to sample for PFAS at all CWS and non-profit NTNC PWSs serving <3,300 population that have not already sampled:
 - Would more quickly identify PWSs with PFAS contamination and get them in line for EC funding to address the issue
 - Would help small or disadvantaged communities meet part of the initial monitoring requirements under the new rule
- **1040 EP samples at 895 PWSs**
- DEQ lab will collect & analyze these samples at no cost to the PWSs
- Sample collection: late-summer 2025 through spring 2026

Legionella Treatment: What are we doing?

- Clarify the scope and intent of the rules to specify facilities using treatment for *Legionella* (or other “treatment techniques”), hospitals for example, **will be considered public water systems**.
 - The rule is clear about systems that add treatment for an MCL and was intended for *Legionella*, but technically that is a treatment technique
- Current Proposed Rule Text: OAR 333-061-0010(3) – “These rules do not apply to a public water system that consists only of distribution and storage facilities, and does not include any source facilities or treatment facilities installed to comply with the MCLs or treatment techniques set forth in these rules; and obtains all of its water from, but is not owned or operated by, a public water system to which these rules apply; and does not sell water directly to any person.”

Who might the rule change impact?

- Building owners that install treatment for *Legionella* or other regulated contaminants
- Buildings will be classified as a regulated public water system if they purchase water from a public water supplier and then add additional treatment for *Legionella*
- Intermittent treatment or emergency/back-up treatment not in use is not included

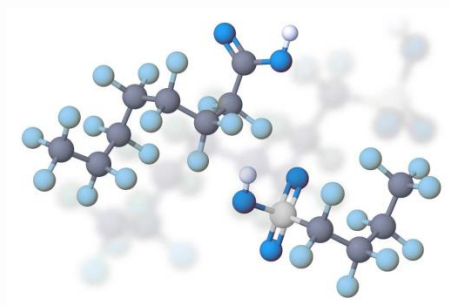
Why are we doing this?

- EPA's intent is that premise plumbing systems (buildings) become regulated under SDWA when treatment is added
- Large buildings may install treatment to control *Legionella* (e.g. chlorination, chlorine dioxide, or silver-copper ionization).
- Some treatments may change the water chemistry resulting in the formation or addition of regulated contaminants, for example:
 - **TTHMs & HAA5s** (Disinfection byproducts from chlorination)
 - **Chlorite** (Disinfection byproduct from chlorine dioxide)
 - **Copper** (released by copper-silver ionization treatment)
 - **Maximum residual disinfectant levels (MRDLs)** for chlorine, chloramines, and chlorine dioxide.
- Regulatory oversight ensures proper monitoring is occurring for regulated contaminants and that MCLs are not being exceeded.

In closing

- Legionellosis is the most commonly reported cause of drinking waterborne outbreaks, with most outbreaks associated with building water systems.
- Regulation of these water systems ensures:
 - Secondary disinfection systems are operated properly, *and*
 - Public health is protected from other regulated contaminants that may be produced by these treatment systems.
- **Partners:** If you know of a facility that has or is considering installing treatment for *Legionella*, contact us so we can review it and see if it meets this rule

Questions / Discussion



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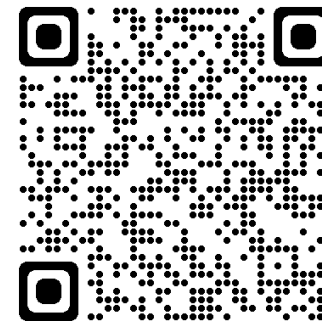


Photo credit (PFAS, title/closing slides): US Environmental Protection Agency. SDWA Regulatory Process and PFAS Presentation. 6/29/20.