



pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION



Bureau of Safe Drinking Water

Final Rulemaking: Safe Drinking Water PFAS MCL

Environmental Quality Board Meeting

October 12, 2022

Tom Wolf, Governor

Ramez Ziadeh, P.E., Acting Secretary

Agenda

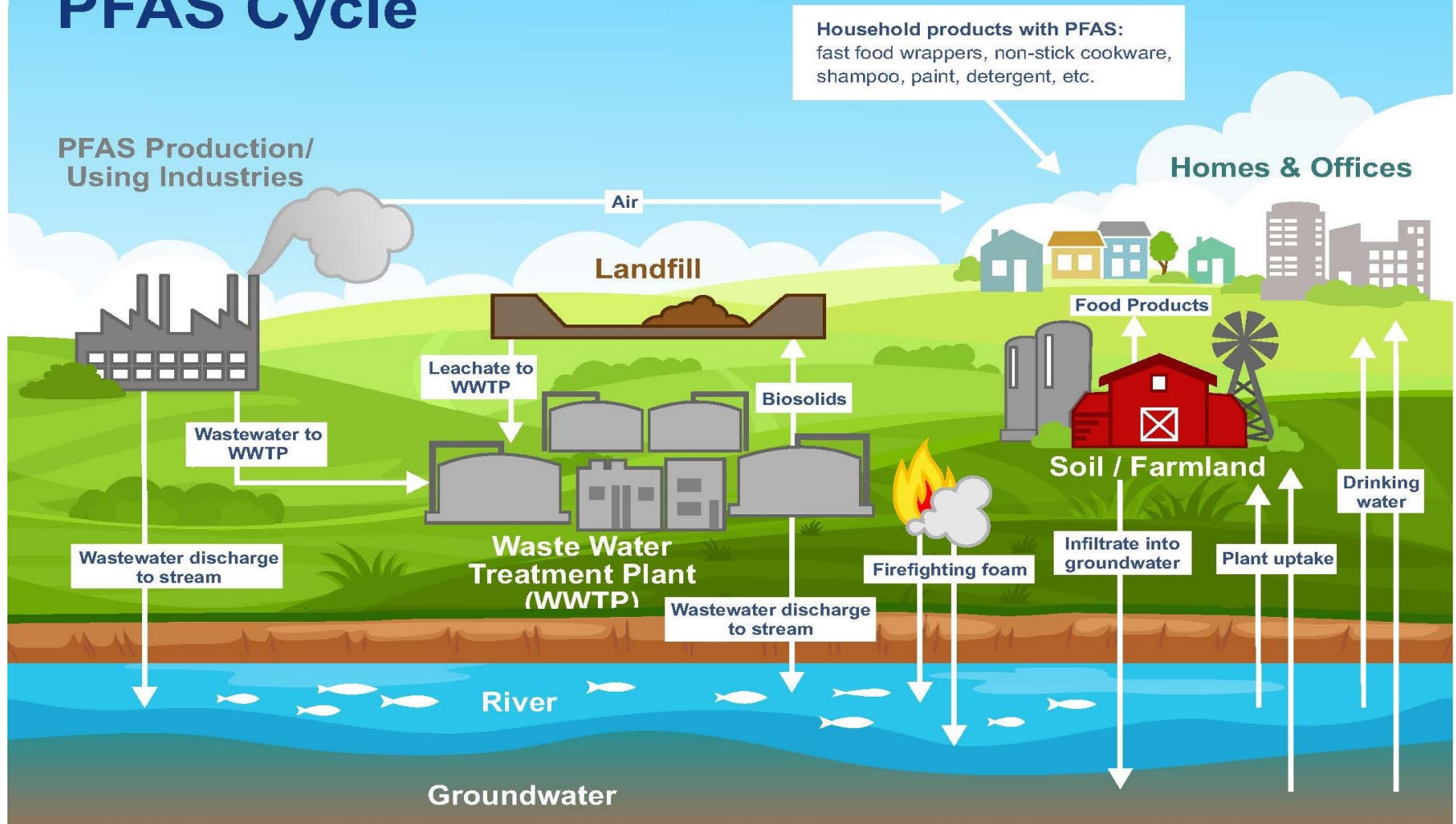
- Discuss the background and purpose
- Describe the key provisions of the final rule
- Examine a summary of public comments
- Review the changes from proposed rule

Background

- Per- and polyfluoroalkyl substances (PFAS) are a class of synthetic chemicals that have been manufactured and in use since the 1940s.
- PFAS are used to make products resistant to water, heat and stains and are found in industrial and consumer products such as clothing, carpeting, food packaging, non-stick cookware, firefighting foam, personal care products, adhesives, metal plating, wire manufacturing and many other uses.
- PFAS have unique chemical properties because they readily dissolve in water and are mobile, are highly persistent in the environment, and bioaccumulate.

PFAS Background

PFAS Cycle



Rulemaking Background

- **Pennsylvania's PFAS Action Team** was formed in 2018 and has worked to: develop a comprehensive response to identify and eliminate sources of PFAS contamination; ensure drinking water is safe; manage environmental contamination; review gaps in data and oversight authority; and recommend actions to address those gaps.
 - One of the Action Team's recommendations is for DEP to establish drinking water standards for PFAS.
- **Public Water System Technical Assistance Center (TAC) Board** – Reviewed draft proposed rule on July 29, 2021; unanimously recommended that DEP move forward with the rule as a proposed rulemaking.
- **Environmental Quality Board (EQB)** – Reviewed and approved the proposed rulemaking at its November 16, 2021 meeting.
- **Proposed PFAS MCL Rule** – Published in the *Pennsylvania Bulletin* on February 26, 2022 for 60-day public comment period.

MCL Rulemaking Process

The PFAS MCL rule is based on available data, studies, and science, and considers all factors as required by the Federal Safe Drinking Water Act (SDWA) and Pennsylvania's Regulatory Review Act, including:

- Health effects (as determined by Drexel University)
- Occurrence data (from third Unregulated Contaminant Monitoring Rule and PFAS Sampling Plan)
- Technical limitations such as available analytical methods and detection and reporting limits
- Treatability of the contaminant and available treatment technologies
- Costs and benefits

Purpose of Rule

- Improve public health protection by establishing Maximum Contaminant Levels Goals (MCLGs) and Maximum Contaminant Levels (MCLs) for perfluorooctanoic acid (PFOA) and perfluorooctane-sulfonic acid (PFOS) to be protective of adverse developmental and immune system effects, respectively.
- Set MCL compliance provisions for monitoring, reporting and public notification.
- Specify analytical methods, reporting limits and acceptable treatment technologies.

Key Provisions of PFAS MCL Rule

PFAS	MCLG (ng/L)	MCL (ng/L)	MCLs Protective Of
PFOA	8	14	Adverse developmental effects (including neurobehavioral and skeletal effects)
PFOS	14	18	Adverse immune system effects (including immune suppression)

MCLG = maximum contaminant level goal

MCL = maximum contaminant level

ng/L = nanograms per liter = parts per trillion (ppt)

Comparison to Other States

Pennsylvania's final MCLs are within the range and same magnitude as other states that have set standards.

	NY	MI	NJ	NH	PA	MA	VT	WA
PFOA	10	8	14	12	14	20*	20*	10
PFOS	10	16	13	15	18	20*	20*	15

*The MCL for MA & VT is for a group of five (VT) or six (MA) PFAS, including PFOA and PFOS (not individual contaminants).

Key Provisions of PFAS MCL Rule

- MCL Compliance:
 - Based on running annual average (RAA).
 - If any quarterly result causes RAA to exceed MCL, a violation is incurred for that quarter.
- Monitoring Requirements
 - Apply to all 3,117 community, nontransient noncommunity, bottled, vended, retail and bulk hauling water systems.
 - Initial monitoring is quarterly at each Entry Point (EP).
 - Repeat monitoring is quarterly, annual or triennial based on sampling results (i.e., non-detected, detected, reliably/consistently less than MCL).

Key Provisions of PFAS MCL Rule

- Tier 2 public notice (PN) is required for MCL violations.
- Results must be reported in the Consumer Confidence Report.
- Analysis:
 - Samples must be analyzed by a PA-accredited lab using an approved method.
 - Labs must achieve reporting limit of 5 ng/L.
- Treatment:
 - Approved technologies are Granular Activated Carbon (GAC), Ion Exchange or Reverse Osmosis.
 - Other technologies approved by DEP.

Costs vs. Benefits

Value (ng/L)	Estimated # of EPs (of 3785) > Value	Monitoring Costs (Millions)	Treatment Costs (Millions)	Total Costs (Millions)	% Increase in Cost Compared to HAL	% Improvement in Health Protection Compared to HAL
PFOA						
HAL = 70	58	\$2.46	\$25.16	\$27.63	----	----
35	78	\$2.56	\$33.85	\$36.41	32%	56%
MCL = 14	218	\$2.89	\$94.62	\$97.51	253%	90%
10	313	\$3.07	\$135.85	\$138.92	403%	96%
MCLG = 8	400	\$3.39	\$173.61	\$177.00	541%	100%
PFOS						
HAL = 70	96	\$2.57	\$41.67	\$44.24	----	----
35	148	\$2.64	\$64.23	\$66.87	51%	63%
MCL = 18	191	\$2.70	\$82.90	\$85.60	94%	93%
16	200	\$2.73	\$86.80	\$89.53	102%	96%
MCLG = 14	200	\$2.88	\$86.80	\$89.68	103%	100%

Benefits of the PFAS MCL Rule

- The MCLs represent a 90% and 93% improvement in health protection for PFOA and PFOS, respectively. These benefits arise from a reduction in adverse human health effects from exposure to PFOA or PFOS:
 - PFOA is associated with adverse developmental effects (including neurobehavioral and skeletal effects).
 - PFOS is associated with adverse immune system impacts (including immune suppression).
- Monetized Benefits:
 - PFAS contamination in drinking water may account for 2-3% of the total annual health care costs in Pennsylvania, which are estimated at \$120 billion annually.
 - The PFOA MCL is estimated to result in health care cost savings of \$53 million annually.

Funding for PFAS Projects

- Infrastructure Investment And Jobs Act (IIJA)
 - Provides Supplemental Emerging Contaminants funding (focus on PFAS) for next 5 years as PENNVEST Drinking Water State Revolving Fund (DWSRF) principal forgiveness (~\$23.3 million for FY22/23).
 - Provides General Supplemental funding for next 5 years as PENNVEST DWSRF low-interest loans or principal forgiveness that can be used to address PFAS (~\$60.9 million for FY22/23).
- Additional funding options
 - Water Infrastructure Improvements for the Nation (WIIN) Act grants for Emerging Contaminants at small/disadvantaged water systems (~\$28.1 million for FY22/23, awaiting EPA guidance to apply).
 - PENNVEST PFAS Remediation Program may provide additional funding using state funds.
 - Base DWSRF funding continues to be available as PENNVEST low-interest loans or principal forgiveness (~\$25.9 million for FY22/23).

Public Comments

- The proposed PFAS Rule was published in the *Pennsylvania Bulletin* on February 26, 2022, with a 60-day public comment period that included 5 public hearings.
- The public comment period ended on April 27, 2022.
- DEP received comments from 3,555 commentators, the House Environmental Resources and Energy Committee and Independent Regulatory Review Commission (IRRC).
- The majority of comments are based on a few form letters.

Public Comments

- The majority of comments were supportive of DEP's efforts to set MCLs.
- However, many commentators felt that the rule did not go far enough and recommended several changes to be even more protective of public health.
- **Comment:** MCLs for PFOA and PFOS should be lower.
 - **Response:** We must follow a rigorous process when setting an MCL and consider all factors required by the federal SDWA and the Commonwealth's Regulatory Review Act. We must consider health effects, occurrence data, technical limitations, treatability, and costs and benefits.

Public Comments

- **Comment:** MCLs should be set for more PFAS either individually or as a group.
 - **Response:** At this time, we do not have sufficient data, studies, and science to justify regulating additional PFAS or regulating PFAS as a group.
- **Comment:** Monitoring should be more stringent, including increased monitoring (monthly), more immediate monitoring, and no allowance for waivers.
 - **Response:** Available science indicates health effects from PFAS result from chronic exposure. Therefore, we are aligning the monitoring and compliance provisions with existing requirements for other chronic contaminants such as synthetic organic chemicals (SOC).

Public Comments

- **Comment:** Laboratory capacity for PFAS analysis is a concern and may be insufficient.
 - **Response:** Based on a survey of PA-accredited laboratories, there is sufficient lab capacity for the anticipated workload.
- **Comment:** Monitoring overlaps with EPA's Fifth Unregulated Contaminant Monitoring Rule (UCMR5).
 - **Response:** DEP agrees with water systems that we can accept UCMR5 monitoring data for initial compliance monitoring if it meets all requirements of both rules, so language was added to allow PWSs to request to modify their initial compliance monitoring schedule to align with their UCMR5 schedule.

Public Comments

- **Comment:** Supply chain issues and potential delays may impact treatment installation.
 - **Response:** Unexpected delays in construction of treatment are not new. DEP has the flexibility to amend a correction schedule if it becomes necessary.
- **Comment:** Disposal of used media/resins from PFAS removal treatment is a concern.
 - **Response:** Based on a survey of water treatment manufacturers, other states, and PWSs with treatment, it is DEP's understanding that GAC manufacturers are accepting used media from PWSs to either regenerate, incinerate, or dispose of the media properly.

Public Comments

- **Comment:** Cost to benefit analysis was not adequate; costs for small systems are underestimated; costs for large systems are not accurate.
 - **Response:** DEP believes that the cost-benefit data in the proposed rule was robust; however, to augment the data for the final rule, Drexel completed additional work.
 - A review of blood serum levels at various PFAS concentrations in drinking water correlate with DEP's assessment of at least 90% protection of public health.
 - Health care costs and savings were calculated and monetized.
 - Additional examples have been provided for systems treating more than 1 MGD and those treating lower volumes.

Public Comments

- **Comment:** The science and data upon which the regulation is based is questionable; the sampling plan is insufficient and occurrence data do not support conclusions; the use of targeted sampling is biased.
 - **Response:** DEP took numerous steps to ensure the required process was followed, using science and data to make decisions. Two key projects informed the rulemaking: the PFAS Sampling Plan and the Toxicology Services Contract.
 - The Drexel PFAS Advisory Group (DPAG) conducted an independent review of the data, studies, and science to recommend MCLGs.
 - DPAG is a multidisciplinary team with a wide array of expertise.

Public Comments

- **Comment:** Pennsylvania should wait for EPA to set PFAS standards.
 - **Response:** A final federal rule may not be published until the end of 2023, possibly later.
 - If published on schedule, the federal regulations would not be effective for another 3 years (until late 2026) according to the federal Safe Drinking Water Act.
 - Pennsylvania's MCLs could be published as final in early 2023 and would be effective immediately upon publication.

Public Comments

Comments outside the scope of the rulemaking and DEP's statutory authority under the Safe Drinking Water Act:

- There should be blood testing/health monitoring.
- There are other sources of PFAS; reducing PFAS in drinking water will not eliminate exposure.
- Polluters should be held responsible for cleaning up contamination.
- PFAS are in gas well fracking wastewater; fracking should be banned.
- PFAS are in biosolids; land application should be banned.
- Private wells should be included in the rule.

Changes from Proposed Rule

- Edits made to § 109.301(16) and § 109.1003(xv) to eliminate redundant or unnecessary language and improve readability.
- A provision is being added to allow a PWS to request a modification of their initial monitoring period to coincide with their UCMR5 schedule in order to use the same data for both purposes.
- Deleted the requirement for sample collectors to be trained by an accredited lab.

Changes from Proposed Rule

- Clarified that entry points with PFAS treatment are not eligible for monitoring waivers.
- Clarified that performance monitoring may be required at least quarterly because some permits require monthly monitoring at initial start-up.
- Clarification was added to the Preamble that the field blank need not be analyzed unless PFOS or PFOA is detected in the sample.

Advisory Committee Review

- The draft proposed rulemaking was presented to TAC on July 29, 2021. TAC had no specific comments and voted unanimously to support the draft proposed rulemaking.
- The draft final rulemaking was presented to TAC on July 14, 2022. TAC again had no specific comments and voted unanimously to support the draft final rulemaking.

Recommendation

DEP recommends that the Board adopt this final-form rulemaking.



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