PFAS, the Clean Water Sector and Advocacy Asks – Spring 2023 Update

Per- and polyfluoroalkyl substances, or PFAS, are perhaps one of the most perplexing pollutants federal and state legislators and regulatory agencies have had to grapple with in decades. PFAS are synthetic substances with thousands of known chemical varieties. While commercial uses of PFAS have persisted for decades and continue today, the scientific understanding of the potential public health and environmental impacts lags behind. In recent years, analytical capabilities have also advanced significantly to support PFAS detection at extremely low levels—in the parts per trillion (ppt) concentrations—across all environmental media from air to soil to water—adding to mounting public concern while regulatory agencies struggle to understand the risks and propose measures to protect public health and the environment.

PFAS and Clean Water Agencies

Publicly owned clean water utilities are "passive receivers" of PFAS, since they do not produce, manufacture, or profit from PFAS but de facto "receive" these chemicals through the raw influent that arrives at the treatment plant from domestic, industrial, and commercial sources. Influent may contain PFAS constituents from trace to higher concentrations, depending on the nature of the dischargers to the sewer system. Although the influent is not generated by the utility, the utility is responsible for treating it under the Clean Water Act (CWA).

Municipal clean water utilities were not traditionally designed or intended with PFAS treatment capabilities in mind. Advanced treatment techniques such as granular activated carbon, ion exchange, or reverse osmosis are currently the only available methods for removing PFAS chemicals. Unfortunately, they are prohibitively expensive for many communities. Possibilities to scale these treatment techniques up to treat the significant volumes of wastewater that publicly-owned treatment works (POTWs) manage on a daily basis is questionable, especially when coupled with the known-supply shortages of many of the materials these treatment capabilities use (e.g., carbon). It also remains unanswered how and where to dispose of the PFAS-containing residuals which are generated from these treatment processes, which can remove – but not destroy - PFAS.

Because public wastewater flow and biosolids generation occurs 24/7/365 at massive volumes and cannot be halted, there needs to be a focus on PFAS source reduction and realistic and affordable treatment and destruction mechanisms *before* major PFAS policy or regulatory changes go into effect.

Understanding the Potential Unintended Consequences of a CERCLA Hazardous Substance Designation

The clean water community and other passive receivers are not responsible for creating or profiting from PFAS. Yet, they could face severe unintended consequences of potential liability and clean-up costs if regulators move forward with a proposed U.S. Environmental Protection Act (EPA) Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) hazardous substance designation for polyfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS) *without* a Congressional exemption for water and waterwater utilities.

In September 2022, EPA proposed to list two of the more prominently found PFAS constituents—PFOA and PFOS—as hazardous substances under CERCLA. Further, since then, EPA also published an Advanced Notice of Proposed

Rulemaking seeking information as to whether the Agency should also consider designating other PFAS chemicals in addition to PFOA and PFOS as CERCLA hazardous substances.

Given these EPA proposals, the case for a narrow CERCLA exemption for public wastewater and drinking water utilities is extremely timely. CERCLA's core "polluter pays" model must hold PFAS producers and manufacturers financially responsible for clean up and liability—and not create a "community pays" outcome that leaves the public footing the bill for litigation and remediation efforts they did not create.

Updates on EPA's PFAS Strategic Roadmap and Other Agency Actions

EPA's PFAS Council published the Biden Administration's *PFAS Strategic Roadmap: EPA's Commitments to Action 2021-2024* in October 2021, and published a *Year of Progress* in November 2022. These documents update the prior Administration's PFAS Action Plans. EPA also issued a memorandum, *Addressing PFAS Discharges in NPDES Permits and Through the Pretreatment Program and Monitoring Programs* in December 2022 to its 10 regional offices and to state permit authorities.

Below are key updates from EPA's efforts that are relevant to the public clean water sector's advocacy:

Biosolids Problem Formulation and Screening Tool —

EPA's Biosolids Program does not currently regulate PFAS. The Agency is working now to determine whether and what standard should be in place for PFAS and, potentially, additional pollutants. EPA recently completed developing its pollutant screening tool and Standardized Framework for Sewage Sludge Chemical Risk Assessment—the first step in a risk assessment—for determining potential public health and ecological risks associated with chemicals, including PFOA and PFOS, in land applied biosolids. The problem formulation and pollutant screening tool are currently under review by the Scientific Advisory Board (SAB). Once the SAB completes its review and recommendations, EPA will begin screening pollutants through the Public Information Curation and Synthesis (PICS) tool which was developed to screen and priorize chemicals following the Lautenberg Amendments to the Toxic Substances Control Act (TSCA). EPA will identify priority chemicals that also meet other certain criteria to move forward with a full risk assessment and rulemaking, which could result in additional pollutant limits for specific chemicals found in biosolids. EPA's risk assessment framework is not anticipated to be finalized and ready for screening until early 2024 or later.

NPDES Monitoring and Sampling Requirements —

EPA Assistant Administrator for the Office of Water, Radhika Fox, issued a Memorandum on December 5, 2022 recommending state-authorized permitting authorities begin incorporating monitoring and best management practices (BMPs) in CWA National Pollutant Discharge Elimination System (NPDES) permits. This Memo largely mirrors a prior EPA-issued memorandum that applied only to EPA-issued CWA permits.

The Memo recommends quarterly effluent, influent, and biosolids monitoring using draft Method 1633 for the full suite of 40 PFAS analytes, with the option to also analyze samples using the draft adsorbable organic fluorine (AOF) method to capture other fluorine chemicals. Clean water utilities are required to report results on their discharge monitoring reports (DMRs.) While the monitoring data cannot be used for compliance or enforcement without a validated CWA analytical methodology, it can be used to help identify upstream source contributions and inform future regulatory decisions.

The Memo also recommends that POTWs update their industrial users (IUs). It recommends that permits contain requirements to identify and locate all possible IUs that might be subject to the pretreatment program and identify the character and volume of pollutants contributed to the POTW. EPA recommends BMPs for the industrial users contributing PFAS to the treatment facility, including quarterly monitoring of IUs, development of BMPs or local limits, and other pollution prevention such as product substitution and good housekeeping.

CWA Industrial Pretreatment Program —

EPA plans to make significant progress by the end of 2024 to restrict industrial sources through its Effluent Limitations Guidelines (ELG) program. The Agency finalized its Preliminary ELG Plan 15 in January 2023 that included expanding the textile mills category to gather information on the use and treatment of PFAS and proposed a POTW influent study that would collect nationwide data on industrial discharges of PFAS to POTWs. EPA's ELG Plan 15 also mentions it will continue monitoring Electrical and Electronic Components and Pulp, Paper, and Paperboard Categories and airports for PFAS uses and discharges.

EPA continues to prepare rulemakings to restrict PFAS discharges where it has the data to do so, which will likely include guidelines for Organic Chemicals, Plastics and Synthetic Fibers (OCPSF), metal finishing, and electroplating categories. EPA is also continuing its Multi-Industry PFAS Study to support potential future rulemakings for other industries including electrical and electronic components, textiles, and landfills and will initiate date reviews for PFAS used in leather tanning, plastics, and paint formulating.

Toxic Release Inventory; Emergency Planning and Community-Right-to-Know Disclosures —

Under the Emergency Planning and Community Right-to-Know Act (EPCRA), EPA is proposing to change the reporting requirements for manufacturers and producers of PFAS. The proposed change would eliminate the use of the *de minimus* exemption, a caveat that manufacturers and producers have relied on and to essentially escape reporting PFAS volumes to EPA under the Toxic Release Inventory (TRI).

As part of the 2020 National Defense Authorization Act (NDAA), 172 PFAS chemicals were added to the TRI which requires certain facilities to report annual management activities involving these chemicals and releases. EPA's recent efforts and proposed rule come after a 2020 National Analysis revealed potentially severe underreporting of PFAS, likely due to the current *de minimis* exemption. The clean water community supported the addition of 172 PFAS chemicals to the TRI program and the removal of the *de minimis* exemption, noting greater transparency would help POTWs better understand upstream sources and quantities of PFAS entering treatment systems.

Analytical Method Development for Non-Drinking Water Media —

PFAS regulation requires having federally-promulgated, reliable, multi-labroatory validated analytical methods. Established methodologies are critical to monitoring and assessing PFAS and tracking regulatory compliance – particularly considering how challenging it is to credibly monitor PFAS given its ubiquitous presence in the environment including in common lab equipment and clothing.

EPA, in partnership with the Department of Defense (DoD), published Method 1633, a draft single-laboratory validated method for sampling 40 different PFAS compounds across a range of environmental media, including wastewater, surface water, biosolids, and others in 2021. In January 2022, EPA and DoD published the

corresponding Single Lab Validation Study verifying the method's accuracy and precision for the 40 PFAS analytes across environmental matrices.

In December 2022, EPA revealed a third draft of Method 1633 that includes some initial multi-laboratory data and quality control information for wastewater specifically. EPA continues to work toward incorporating the multi-laboratory validation process for the remaining environmental media. It is anticipated that EPA will complete the multi-laboratory validation sometime in 2023.

Even though Method 1633 cannot be used for compliance or enforcement purposes until it is promulgated through rulemaking, EPA has approved it for use in individual NPDES permits for monitoring purposes only. Once the multi-laboratory validation study is complete, EPA will begin the process to promulgate this methodology under the CWA's Part 136 approved analytical methods.

Water Quality Criteria —

EPA's PFAS Strategic Roadmap declares the Agency will publish national recommended ambient water quality criteria under the CWA for PFOS and PFOA, and benchmarks for other PFAS that may not have sufficient data. EPA proposed its draft recommended aquatic life ambient water quality criteria for PFOA and PFOS in April 2022.

The reference doses used in EPA's proposed National Primary Drinking Water Regulations for PFOA, PFOS, GenX, and PFBS will inform how EPA develops human health criteria on the CWA side. These new values will be used as EPA moves ahead with proposing draft ambient water quality criteria for the protection of human health for PFOA and PFOS which is expected as early as Fall 2024.

Human Health Toxicity Assessments —

EPA continues to assess human health toxicity for several PFAS chemicals. Originally, based on the science, EPA understood negative health effects could occur for PFOA and PFOS at 70 parts per trillion (ppt), combined. Now, EPA believes human health impacts can occur at much lower concentrations. In June 2022, EPA released new interim health advisories for PFOA and PFOS at 0.004 ppt and 0.02 ppt, respectively. EPA also established final health advisories for GenX and PFBS and set those values at 10 ppt and 2,000 ppt, respectively.

Other PFAS chemicals are currently undergoing toxicity assessment evaluations, including PFNA, PFHxS, and PFDA. Once these draft toxicity assessments are finalized, EPA will release final human health toxicity values that can be used in future regulatory efforts, like National Primary Drinking Water Regulations and human health water quality criteria.

National Primary Drinking Water Regulations —

Building off it's fifth Contaminant Candidate List (CCL5) and Scientific Advisory Board (SAB) review, on March 29, 2023 EPA proposed to regulate PFOA and PFOS under the Safe Drinking Water Act's National Primary Drinking Water Regulations. EPA is proposing to set non-enforceable Maximum Contaminant Level Goals (MCLGs) at zero for PFOA and PFOS because they are considered carcinogenic, and is proposing a legally enforceable Maximum Contaminant Level (MCL) at 4 ppt for PFOA and PFOS, individually. The MCL of 4 ppt reflects the lowest level reliably detected by advanced analytical techniques.

EPA is also proposing to regulate mixtures of PFAS in drinking water by establishing a unitless Hazard Index of 1.0 for any one of the following PFAS or mixtures of PFAS: PFHxS, GenX, PFNA and PFBS. The Hazard Index uses a calculation that divides the concentration found in a drinking water sample by the Health Based Water Concentration (*e.g.,* the toxicity value) of each chemical, then adds the values for each PFAS detected together. If the total value exceeds 1.0, the sample would exceed the proposed MCL regardless if it is just one of the four PFAS chemicals or a mixture of the four.

If the proposed MCLGs and MCLs are finalized, drinking water utilities are required to monitor and notify the public if they exceed the MCL or Hazard Index. Utilities must reduce concentrations via a treatment method such as granular activated carbon, ion exchange, or reverse osmosis or they will be in violation of the federal standard. EPA believes the economic impact on public water systems will cost upwards of $772 million to implement, which the drinking water community considers is likely a significant underestimation of the true costs to comply.

While EPA Actions Are Pending; States Plow Forward with PFAS Efforts

Some states, concerned over the absence of federal regulatory action, are moving forward with establishing state-specific regulations and/or guidance documents. These actions vary widely by state. Some have established or are in the process of establishing one or more of the following: MCLs for drinking water, narrative and numeric surface water quality standards, industrial pretreatment standards, influent, effluent and biosolids sampling and monitoring requirements, and groundwater protection standards.

Michigan, as it relates to biosolids, is taking practical steps with its PFAS interim strategy. Faced with concerns over PFAS in residual land application, Michigan initiated a focused interim strategy that bifurcates “industrially-impacted” sludges from other “non-industrially impacted” biosolids and establishes a required PFAS sampling program. Based on a tiered system, if concentrations of PFOS exceed 125 parts per billion (ppb), which the data collected indicates are more commonly found in industrial sludges than municipal biosolids, land application cannot proceed and other notification/source reduction requirements are triggered. If concentrations are below 125 ppb but above 50 ppb, land application can move forward with some additional mitigatory steps and reduced site loadings. When sampling detects concentrations below 50 ppb, the state is allowing land application to move forward uninhibited but recommends POTWs consider investigating upstream industrial sources and conducting effluent sampling. Michigan can revise the concentrations if it sees fit as new information and data come out, which it did between 2021 and 2022. Originally, the interim threshold was 150 ppb, but with new information, the “industrially-impacted” biosolids concentration threshold is currently set at 125 ppb.

Meanwhile Maine took perhaps the most aggressive action to date by recently enacting a state law which banned land application of biosolids *regardless* of PFAS concentration, and required all biosolids generated in the Maine to be landfilled. Earlier this year, Maine’s landfill community began turning away biosolids due to stability concerns. This triggered an excestential crisis leaving POTWs nowhere in the state to dispose their biosolids. An emergency order was issued allowing biosolids to be landfilled at a particular site, but the state of Maine is currently assessing how it will navigate this capacity issue in the future and scoping the possibility of constructing more landfills.

Another example of state action comes from Massachusetts, which has pending legislation that would place moratoriums on any air emissions of PFAS until both EPA and the Massachusetts Department of Environmental Protection promulgate air quality standards, which could take many years, impacting sewage sludge incineration.

Clean Water Advocacy Asks

Empower the CWA pretreatment program.

EPA should continue to identify and address high-priority PFAS discharges to municipal wastewater facilities. The pretreatment program can have a significant impact on reducing PFAS loading into municipal wastewater streams by targeting upstream industries that indirectly discharge PFAS to POTWs.

A key component recognized by Michigan's interim PFAS strategy, but often missing from the broader PFAS conversation is the acknowledgement that clean water utilities can implement rigorous industrial pretreatment programs that investigate, identify, mitigate, and can enforce against industrial pollutants, like PFAS, from entering the wastewater treatment system in the first place.While greater source control will be required to address household contributions, utilities can be partners in making significant reductions in industrial PFAS loading.

EPA should provide utilities with any additional authorities and Congress should provide the funding necessary to help clean water utilities prevent the pass-through of these constituents and interference with the treatment process. The $1 billion provided in the *Bipartisan Infrastructure Law* for POTWs to address PFAS is an important start, but will need to be built upon looking forward.

Consider unintended consequences and support a Polluter Pays approach.

Clean water agencies must be exempt from CERCLA liability, which requires Congressional ation. Clean water agencies did not cause of profit from PFAS use, but without an exemption, the CERCLA designation which is working its way through EPA's regulatory process will leave the public paying for the costs of remediating pollution through their water bills. This is in direct contrast to the "polluter pays" approach. Utilities cannot protect themselves by reducing PFAS input to their system; domestic source contributions alone (generated through laundry, dishes, bathing, etc.) could be enough to trigger potential CERCLA liability and clean-up costs.

Close the scientific gaps.

Congress must provide U.S. EPA the resources it needs to address PFAS chemicals. Closing scientific gaps in risk assessment is imperative to gain a better understanding of the concentrations of these chemicals, individually or aggregated, that pose an actual risk to public health and the environment, as well as the fate and transport pathways by which these chemicals move in the environment. A greater focus on understanding exposure routes from various media (consumer goods, food, water, air, etc.) will also help guide appropriate responses to reducing PFAS risks and understanding the best opportunities for source control and reducing unnecessary exposures.

Support continued protections against PFAS contamination through TSCA requirements.

EPA proposed to use its authority under TSCA Section 8(a)(7) to require industries and producers of PFAS since January 1, 2011 to report information to the Agency including use, production volume, disposal practices and other detailed data. Given the near indestructibility of PFAS by their very design, increased source identification and source control is imperative to truly reduce PFAS prevalence. Clean water utilities are passive receivers of PFAS and will benefit greatly from increased transparency on upstream sources of PFAS.

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