FAST NEWS ON PFAS

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WELCOME TO THE INAUGURAL EDITION OF THE *"FAST NEWS ON PFAS"* NEWSLETTER

In the fast-paced news cycle of PFAS, discerning what is important can be a challenge. Weston has developed a newsletter to take you out of the minutia and into the big picture. We have assembled key regulatory highlights, expert input, and the state of the science and distilled them down to the essentials of what you need to know, why it matters, and how it could impact you. Make this quick read your quarterly jumping point to the latest on PFAS.

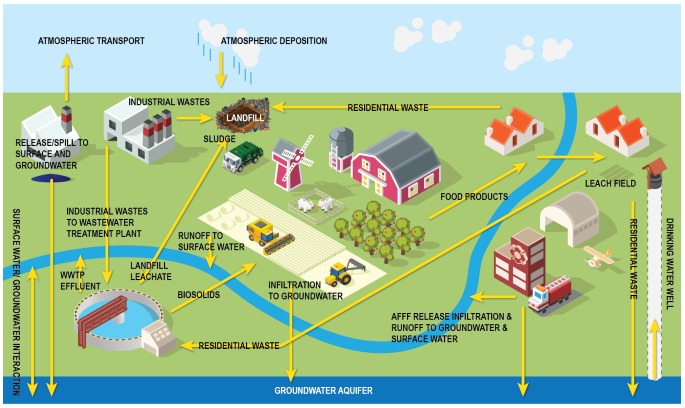
In this issue:

EPA'S PROPOSAL TO ADD PFAS TO THE LIST OF "CHEMICALS OF SPECIAL CONCERN" AND ELIMINATE DE MINIMIS EXEMPTIONS FOR REPORTING

Although certain PFAS have been added to the list of chemicals covered by Toxics Release Inventory (TRI), many facilities are able to avoid reporting by relying on the "*de minimis*" exemption. The *de minimis* exemption for reporting is defined as below 1% concentration for each of the TRI-listed PFAS, except for PFOA for which the concentration is set at 0.1%. The new rule proposed by EPA would list PFAS as "chemicals of special concern," which would make them ineligible for the *de minimis* reporting exemption and supplier notifications for downstream users.

▶ **What you need to know:** When this rule is finalized, it will have direct implications on specific industries and federal facilities that manufacture or use PFAS. Suppliers will be required to notify downstream facilities, such as wastewater treatment plants, of the existence of all the chemicals on the list of chemicals of concerns (COC), which includes PFAS and other bioaccumulative and toxic chemicals, in their products that would otherwise would not have been reported under the *de minimis* exemption.

While this rule does not stop the use of PFAS, it will help break the PFAS cycle. And although the rule does not extend to consumer goods, manufacturers can expect that these changes will lead to increased public awareness—and criticism—about the use of PFAS.



The elimination of the de minimis exemption is an important step in breaking the PFAS water cycle.

ChemSec, an independent non-profit organization committed to the development of sustainable chemicals, has published a PFAS Guide of products that may contain these chemicals. The Guide also provides companies with helpful resources pertaining to investigating your products and replacement products.

▶ **Impact:** Companies exercising the *de minimis* reporting exemption will want to understand the implications to their operations and take steps to become compliant for reporting or determine how the cessation of the use of PFAS could be completed. Those downstream receptors like wastewater treatment facilities will be well served to know when the rule is passed and takes effect.

PROPOSED FEDERAL PFAS REGULATIONS

As part of their Strategic Roadmap, EPA committed to developing national drinking water standards for PFOA and PFOS under the Safe Drinking Water Act (SDWA). Although the proposed values were expected by the end of 2022, they are now anticipated for publication by March 2023. Although the rollout has been delayed, EPA indicates finalization will still be completed by the end of 2023.

Under the SDWA, EPA can regulate individual PFAS, PFAS as a class, or by Treatment Technique (TT). TTs are enforceable procedures that drinking water systems must follow in treating their water for a contaminant. EPA's current plan includes only two PFAS (PFOA and PFOS), but we know that EPA has already set in motion the process for regulating additional PFAS. EPA provided an indication that the proposed drinking water values for PFOA and PFOS will be set at single digit parts per trillion (ppt) when they issued updated interim health advisories (HAs) for PFOA at 0.004 ppt and PFOS at 0.02 ppt. These values are 200 and 1,000 times, respectively, below the concentrations that can be quantified using EPA-approved analytical methods. While the interim HAs were established based on potential health impacts, they do not consider the practicality of current treatment technologies or analytical methods to meet these levels.

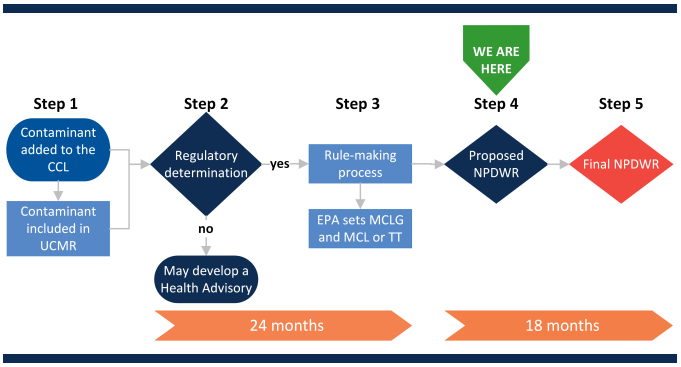
Other than the 2001 adoption of a lower standard for the already regulated metalloid, arsenic, EPA hasn't promulgated new maximum contaminant levels (MLC) for organic contaminants since the 1990s. Given that, a refresher on this process may be helpful.

1. **A contaminant must be added to the contaminant candidate list (CCL).**
2. **EPA must determine the safest concentration in drinking water of a contaminant with no known risk to human health. This value is called the maximum contaminant level goal (MCLG) and is non-enforceable.**
3. **EPA will then set a legally enforceable value called the MCL that is set as close as possible to, but are usually higher than, the MCLG due to three reasons: a) lack of analytical methods and difficulties in measuring such low quantities; b) lack of commercially available treatment technologies to effectively meet very-low-level MCLGs; and c) the costs of treating to a lower MCL would outweigh the benefits to public health.**

Under the last condition (3c), EPA is permitted to choose an MCL that balances the cost of treatment with the public health benefits. Once MCLs are established, drinking water utilities are required to monitor, remediate, and issue public notice when MCLs are exceeded.

Weston implemented a mobile PFAS treatment system used to treat water pumped from the fuel farm containment system prior to discharge at a municipal airport in Massachusetts.

For some contaminants (like lead), EPA establishes a TT instead of an MCL. MCLs and TTs are known jointly as "National Primary Drinking Water Regulations" (NPDWRs), or primary standards. Primary standards go into effect 3 years after they are finalized, giving time to plan, design, and implement changes necessary to be in compliance. A simplified process for the development and finalization of NPDWRs is presented below.



What you need to know: Development of MCLs is a slow process by design, with the intent of giving EPA the time needed to do the proper evaluations, cost analyses, and consider public input along the way. While this is likely to be frustrating for those who are directly impacted by PFAS in their drinking water, the EPA has stated their commitment to moving as quickly as allowable under the law. Additionally, the promulgation of NPDWR will have implications for industrial and commercial facilities that discharge process water that may contain PFAS. This occurs under the Clean Water Act through the National Pollutant Discharge Elimination System (NPDES), which sets effluent limits on discharges of pollutants that are regulated as drinking water contaminants. In these instances, consider the following questions:

- **Following treatment by the receiving publicly owned treatment works (POTW) or other treatment facilities, does your wastewater discharge to known or potential drinking water sources?**
- **Does your wastewater discharge contain any PFAS that are regulated or proposed for regulation by EPA or your State?**
- **Are you subject to permit conditions that limit the allowable concentrations of PFAS in your wastewater discharges?**

Acquiring this information will allow you to determine whether you need to modify your operations to reduce or eliminate PFAS from your waste stream to achieve compliance with existing standards, or in anticipation of likely future permit conditions. Accessing professional environmental consultants and technical resources, like the ChemSec PFAS Guide, are positive steps to maintain regulatory compliance.

Impact: MCLs set the maximum concentration of a contaminant that can be present in drinking water. Operators of POTW and drinking water systems are responsible for meeting the MCLs or TT and are required to ensure that drinking water distributed to the public meets these standards. This will take time and money that most POTW and drinking water systems do not have available. Bipartisan infrastructure bills have been passed to provide funding to operators of POTWs and drinking water systems with a focus on underserved, disadvantage communities.

WESTON PRACTITIONER SPOTLIGHT

CHARLIE YOUNG
TECHNICAL DIRECTOR
34 YEARS WITH WESTON

Charlie has 18 years of experience with PFAS in soil, groundwater, sediment, pore water, surface water, fish, macrobenthic invertebrate, native plants, food crop, small mammal livers, and serum tissue samples. Charlie's impressive career has covered water quality modeling, aquatic community assessment, statistics, toxicology, ecological and human health risk assessments, wastewater characterization, source identification, and treatment technology evaluation. We are thankful for Charlie's contributions to the State of the Science of PFAS!

> ***My time at Weston has provided me with opportunities to deepen my knowledge, share what I have learned with others, and work with interdisciplinary teams to tackle challenging environmental problems for a wide range of clients. Most important has been the number of mitigation, remediation, and restoration projects that have come to fruition during my tenure.***

STATE OF THE SCIENCE: DESTROYING SOME PFAS – SIMPLY

Currently, filtering PFAS out of water is the most common treatment technology. But the spent adsorbing media need to be carefully managed to eliminate any potential future re-release into the environment. Scientists and engineers are working to develop treatment technologies that can break down the strong carbon-fluorine backbone of PFAS. Although multiple destructive technologies have demonstrated the ability to break down PFAS at bench top and pilot-scales, high capital and maintenance cost associated with these technologies have hindered their full-scale application.

In August 2022, researchers at Northwestern University published a study showing that some PFCAs, a class of PFAS, can be destroyed using two relatively harmless chemicals: sodium hydroxide or lye, a chemical used to make soap; and dimethyl sulfoxide, a chemical approved as a medication for bladder pain syndrome. Although this method is relatively simple and less energy intensive, it can only work on about 10 out of +5,000 individual PFAS.

Subcritical and supercritical water oxidation are the only technologies that have been fully demonstrated to destroy PFAS in bench and pilot-scale levels. Full scale systems are currently under development to destroy both liquid and solid media. These treatment technologies fully mineralized PFAS in both aqueous and solid streams, such as used adsorbing media, thus eliminating potential challenges handling these PFAS laden material. Learn how Weston is using these technologies in the US to create a complete PFAS treatment train!

THE BIG PICTURE

At a high level, we see a lot of promise in the collaborative work being conducted by industry and government entities to further understand the potential effects of PFAS to human health and the environment as well as in the work that private citizens are doing to raise awareness to protect their communities and the efforts industries are taking to respond. We expect to see significant progress toward development of demonstrated remedies, field screening methods, and other similar activities, which we will share in our next quarterly newsletter.

UPCOMING CONFERENCE ATTENDANCE

Battelle Bioremediation Symposium

JETC

4C Conference

Chemistry Council of NJ

DCHWS East Symposium

Clemson Hydrogeology Symposium

About
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