FAST NEWS ON PFAS

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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:

A NATIONAL VIEW: UCMR 5 & USGS DATA

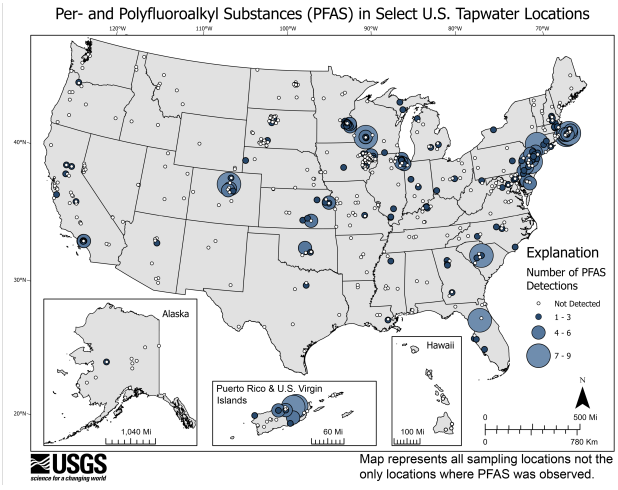
Under the Safe Drinking Water Act (SDWA), the U.S. Environmental Protection Agency (EPA) is required to implement a monitoring program known as the Unregulated Contaminant Monitoring Rule (UCMR) for unregulated contaminants in public water systems (PWS) every 5 years *(US EPA, 1996)*. EPA is currently conducting the fifth UCMR (UCMR5) that includes 30 priority unregulated contaminants including 29 PFAS and lithium. For more details on the SDWA and UCMR, refer to Volume 1, Issue 1 *(Kammer & Pica, 2023)*.

In July 2023, EPA released a summary of occurrence data collected to-date as part of UCMR5 that represents only 7% of all data EPA expects to generate *(EPA, 2023)*. Of the 29 PFAS included in the analysis, 10 were detected in PWS samples including PFOA, PFOS, HFPO-DA, and PFBS. PFOA and PFOS, the most widely used compounds in industry and commerce, were measured at or above the EPA's Health Advisory level (HAL) in 7.8-8.5% of PWS whose data are included in this summary. Two additional PFAS with HALs are HFPO-DA and PFBS, and only the former was detected above its HAL in 0.05% of PWS samples.

A month prior to EPA's occurrence data release, the United States Geological Survey (USGS) released a separate and unrelated report from the EPA study. The USCG report detailed the results of 5 years of sampling tap water from more than 700 private wells and public water supplies *(Smalling, 2023)*. Like the preliminary EPA UCMR5 results, the USGS study also showed that PFOA and PFOS were more likely to have higher concentrations and exceed EPA HALs than PFBS and HFPO-DA in the potable water tested. Further, the USGS suggested that "potential human exposure risk was dominated by PFOA and PFOS, when detected."

▶ **What you need to know:** Both the EPA and USGS studies present data confirming the prevalence of PFAS in drinking water consumed by millions of people in the US. While EPA found PFAS above HALs in 7.8-8.5% of the PWS results reported, the USGS detected at least one PFAS in 30% of the samples analyzed and used statistical analyses to estimate that 45% of drinking water supplies could have detectable levels of PFAS.

Although EPA's preliminary evaluation is focused on the PFAS with HALs, the data suggest that there are additional PFAS (e.g., PFBA, PFHxA, PFHxS) that may be more frequently detected or detected at higher concentrations than those with HALs and, therefore, warrant additional study. EPA notes that while HALs have not been established for the other 25 PFAS included in the study, 9 were detected above the minimum reporting levels they established for UCMR5, while 13 additional PFAS were detected in the USGS study.



USGS map showing the number of PFAS detected in tap water samples from select sites across the nation. The findings are based on a USGS study of samples taken between 2016 and 2021 from private and public supplies at 716 locations. The map does not represent the only locations in the U.S. with PFAS. *(USGS, 2023)* (Public domain)

It is important to remember that the USGS study analyzed point-of-use tap water. This means that the water sampled may have come from a tap that has an existing treatment system deprived from PWS or a private drinking water well. The USGS data also present an interesting picture of the result of water treatment technologies not intended for removal of PFAS.

- **Impact:** The results of these studies are valuable in understanding the scope and breadth of the occurrence of PFAS in drinking water supplies. And because EPA included 23 additional PFAS beyond the 6 included in the proposed National Drinking Water Regulations, EPA and state agencies will have a better understanding of additional regulatory actions that may need to be implemented to protect public health. Further, the data also present a picture for the scientific community of where future research and studies should focus.

Summary table comparing EPA UCMR5 PFAS data and USGS PFAS data evaluating underserved private well and public supply exposures. USGS results were compared against EPA MRL and HAL for comparison purposes for this newsletter.

	Regulatory Values (ng/L)		EPA Results			USGS Results		
Compound	EPA HAL	UCMR5 MRL	No. of PWS Results >MRL	No. of PWS Results >HAL	% of PWS Results >HAL	No. of POU Results >MRL	No. of POU Results >HAL	% of POU Results >HAL
PFOA	0.004	4.0	156	156	7.8%	50	50	7.0%
PFOS	0.02	4.0	170	170	8.5%	31	31	4.3%
PFBS	2,000	3.0	192	0	0.0%	43	0	0.0%
HFPO-DA	10	5.0	6	1	0.05%	2	0	0.0%
PFHxS	-	3.0	123	-	-	17	-	-
PFNA	-	4.0	9	-	-	3	-	-

ng/L = nanograms per liter (equivalent to parts per trillion)

HAL = Health Advisory Level. Except for PFOA and PFOS, EPA Health Advisory levels are equivalent to the Reference Concentration reported in the UCMR5 July 2023 data summary. The HALs for PFOA and PFOS are below the levels that can be reliably measured. Therefore, the MRLs for PFOA and PFOS are greater than the HALs and any detection that exceeds the MRL also exceeds the HALs.

PWS = public water systems

POU = USGS collected tap water samples at the point-of-use.

EPA'S HFPO-DAF TOXICITY TESTING ORDER

In August 2023, EPA took additional action under the National PFAS Testing Strategy that was developed to require PFAS manufacturers to provide EPA with toxicity data and information pertaining to various PFAS. An order was issued to PFAS manufacturers to conduct and submit results on a compound known as HFPO-DAF, a compound used to make HFPO-DA, also known as "C3 Dimer Acid" or by the trade name Gen-X *(EPA, 2023)*. HFPO-DA was used as a replacement compound for PFOA in the production of non-stick coatings, stain repellents, etc.

The companies will need to either complete the required testing or submit the results of any previously completed testing not provided to EPA. Both options satisfy the order. Some of the required testing is related to health effects through dermal exposure or through the eyes and mechanistic health effects such as chromosomal aberrations. All testing results are required to be submitted to EPA on or around November 8, 2023, although some data may be required sooner, and the companies may request extensions.

- **What you need to know:** According to Toxic Substances Control Act (TSCA) Chemical Data Reporting, EPA believes that more than 1 million pounds of HFPO-DAF are manufactured annually and this chemical has possibly been in production for more than 30 years. After reviewing existing hazard and exposure data, EPA believes that HFPO-DAF may present unreasonable risk to human health and the environment. Studies by EPA and others have suggested that HFPO-DA may be more toxic and bioaccumulative than PFOA, which it was formulated to replace *(Gebreab, 2020; EPA, 2021)*.

  EPA notes in the August 15, 2023 press release issuing the toxicity test order on HFPO-DAF, that their proposal to regulate six PFAS in drinking water includes HFPO-DA and "its salts, isomers, and derivatives, which includes HFPO-DAF" *(EPA, 2023)*.

- **Impact:** The data collected and reported to EPA will illuminate the effects of HFPO-DAF and similarly structured PFAS. Because there are thousands of PFAS, requiring testing to understand groups of similarly structured PFAS is critical to understanding the impacts of these chemicals within our lifetimes.

EUROPEAN UNION'S PROPOSED TOTAL BAN ON PFAS

In early 2023, five members of the European Union (EU) submitted a proposal to ban more than 10,000 PFAS to reduce their impact to human health and the environment (European Chemicals Agency, 2023). After submittal, the proposal goes through review by the Risk Assessment Committee and Socio-Economic Analysis Committee. These committees have 6 months to complete their review with the final report due at the end of September 2023. Their findings will inform the EU Commission and EU member states' decisions on legally binding usage and production restrictions. The restrictions would not take effect unilaterally. Rather, the phase out periods would vary from 18 months to 12 years and depend on whether alternatives are available and suitable for their intended uses.

- **What you need to know:** In our second newsletter, we discussed the importance of the definition of PFAS and here, the proposal defines PFAS as "any substance that contains at least one fully fluorinated methyl (CF3-) or methylene (-CF2-) carbon atom (without any H/Cl/Br/I attached to it)". This definition results in a broad restriction of nearly all PFAS. Because industry advocates believe that not all PFAS are the same and should not be regulated as a class, they have provided highly organized pushback against the regulations *(Erickson, Britt E., 2023; European Chemical Agency, 2023)*. The EU is considering banning all PFAS, while the US EPA is considering regulating PFAS on a chemical-specific basis.

- **Impact:** The European Chemicals Agency, an agency of the EU, indicates that over the next 30 years, an estimated 4.4 million metric tons of PFAS will be introduced to the environment, unless reduction efforts are made *(European Chemicals Agency, 2023)*. The passage of restrictions on usage and production is likely to have a myriad of known and unknown results. One anticipated result is the development of alternative chemicals. Unlike the alternatives that we have seen to-date (e.g., HFPO-DA), the new alternatives would have to be something wholly different because of the restrictive definition of "PFAS" used in the EU proposal. The important question is whether the alternatives will be better than PFAS for human health and the environment.

WESTON PRACTITIONER SPOTLIGHT

CHRIS SOLLENBERGER

PRINCIPAL PROJECT GEOSCIENTIST

2.5 YEARS WITH WESTON

Chris has 24 years of experience as a geologist and 5 years' experience working with PFAS investigation and remediation, including RIs and EECAs for the EPA and DoD, and supporting PFAS investigations for commercial projects. His experience on hydrogeologic work includes fate and transport modeling, site characterization, geophysical investigations for pipeline construction, Triad approach work plan development and performance, and site stratigraphy.

> ***Hydrogeologic fate and transport of PFAS is an interesting area of investigation that is rapidly becoming one of the leading drivers for work in the industry. PFAS chemical properties result in characteristics that can't be easily compared to other chemicals of concern. They pose unique and exciting challenges when determining the impacts to receptors. Weston has a great PFAS team to handle the issues and I look forward to continuing to develop innovative methods to investigate and remediate this complex family of chemicals.***

LET'S MEET UP!

WEFTEC

RemTEC/Emerging Contaminant Summit

Advancements in Vapor Intrusion

SAME Philadelphia Small Business Conference

AEHS East Coast Conference

ITRC PFAS Fall Meeting

DCHWS-West

SAME Small Business Conference

About:
Subscriptions and topic ideas may be submitted to: **pfas@westonsolutions.com**

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