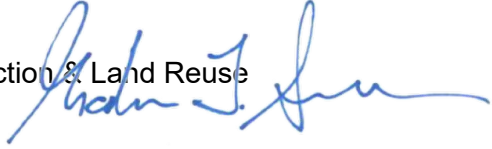




## Memorandum

TO: WPCF Superintendents

FROM: Graham J. Stevens, Bureau Chief, Water Protection & Land Reuse 

DATE: June 15, 2023

SUBJECT: Final Weston & Sampson Report of Per- and Polyfluoroalkyl substances (PFAS) Sampling Study at WPCFs

[Per- and polyfluoroalkyl substances \(PFAS\)](#) are a group of several thousand human-made substances that are not naturally occurring and are resistant to heat, water, and oil. These chemicals have been used and produced extensively in the United States for both commercial and industrial purposes, as well as for emergency fire response. Due to their unique chemistry, PFAS have been widely used as surface coatings and protectant formulations in consumer goods such as carpet and home textiles; clothing; food packaging; and non-stick cookware. PFAS have also been used as a surfactant in chrome plating, firefighting foam, and other industrial applications.

The Connecticut Department of Energy and Environmental Protection (DEEP) contracted Weston & Sampson Engineers, Inc. to perform a study assessing the potential presence of PFAS in various environmental media at select water pollution control facilities (WPCFs) within Connecticut, as well as in their receiving waters and in aquatic species in such waters. Thirty-five (35) WPCFs were selected for participation by DEEP to provide geographic coverage of the State and cover a range of differing community sizes, inputs, and treatment processes.

Environmental media tested for PFAS included:

- Influent, effluent, and sewage sludge from 35 WPCFs, sampled in summer 2021 and winter 2022
- Composite sewage sludge and incinerator scrubber water from 4 WPCFs that incinerate sewage sludge, sampled in summer 2021 and winter 2022
- Fish tissue collected downstream of 10 WPCF outfalls, as well as surface water both upstream and downstream of those outfalls, sampled in Fall 2021 only

The [final report dated June 2023](#) is now available on DEEP's website, and the key findings of the report are discussed below. Additional findings and details are also available [on the Municipal PFAS website](#). Any questions regarding this report should be directed to Christopher Falk at [Christopher.Falk@ct.gov](mailto:Christopher.Falk@ct.gov) and Jueda Shytko at [Jueda.Shytko@ct.gov](mailto:Jueda.Shytko@ct.gov).

### PFAS Report Summary of Key Findings

- 1) The following eight (8) PFAS compounds were most prevalent and were detected in greater than 50% of all samples analyzed across all media:

Compound Name	Compound Acronym
Perfluorobutanesulfonic acid	PFBS
Perfluorobutanoic acid	PFBA
Perfluoropentanoic acid	PFPeA
Perfluorohexanesulfonic acid	PFHxS
Perfluorohexanoic acid	PFHxA
Perfluoroheptanoic acid	PFHpA
Perfluorooctanesulfonic acid	PFOS*
Perfluorooctanoic acid	PFOA*

\* PFOA and PFOS, the two most widely studied PFAS, are no longer manufactured or imported into the US, though there could be some imported goods that contain these substances.

- 1) Influent (n=68):** PFPeA (5-carbon version of PFOA) was the dominant PFAS compound found in WPCF influent, with an average concentration of 111 parts per trillion (ppt). PFPeA and PFHxA were both detected in >90% of influent samples.
- 2) Effluent (n=69):** PFPeA and PFHxA (5- and 6-carbon versions of PFOA) had the highest average concentrations in WPCF effluent. Average effluent concentrations were higher than average influent concentrations for 7 out of the 8 most prevalent PFAS compounds listed in the table above (all except PFPeA). Conversely, average concentrations of PFPeA decreased severalfold from influent to effluent. PFPeA, PFHxA, and PFOA were detected in >90% of effluent samples.
- 3) Sludge:** PFPeA, 6:2 fluorotelomersulfonic acid (6:2 FTSA), and PFHxA were the dominant PFAS compounds found in **liquid** sewage sludge (n=10). PFOS was the dominant PFAS compounds found in **solid** sewage sludge/sludge cake (n=62).

**Additional findings and details from the PFAS report are discussed in the [Summary of Findings](#),**

While this initial sampling effort provides some insight into the nature and extent of PFAS at WPCFs in the State, it is important to note that the samples collected represent only small snapshots in time and may not be representative of the range and extent of PFAS loads at the studied WPCFs. Also, based on the science and analytical methods available at the time the study was initiated, samples were analyzed for 34 out of several thousand known PFAS chemicals. More robust data is needed to better understand PFAS loads at WPCFs in the state, both through additional sampling at WPCFs in the state and evaluation of industrial and other potential PFAS sources.

### What's next?

DEEP's Municipal Wastewater program is planning to implement PFAS monitoring requirements in all municipal NPDES permits based on [EPA's December 2022 guidance](#) **after** EPA has approved draft analytical method 1633 (expected to occur toward the end of CY2023) and within a timeframe which allows WPCFs adequate time to plan and budget for PFAS sampling. DEEP will be discussing this topic during its and stakeholder organizations' meetings in the coming weeks and months.