

PFAS Updates

**Alabama Chemistry Council
September 15, 2022**

Jeffery W. Kitchens, Chief
Water Division
ADEM



adem.alabama.gov

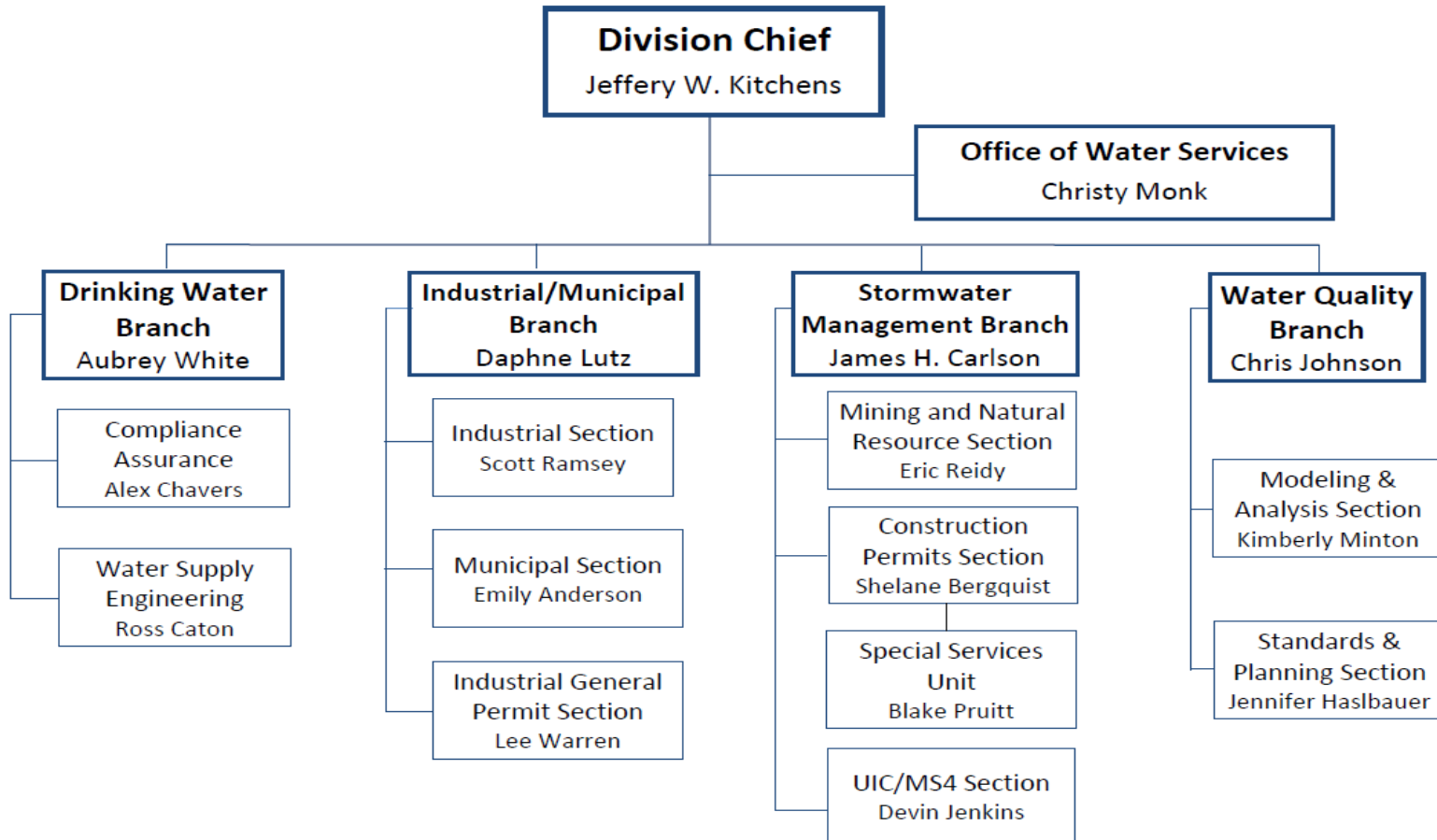
Overview



- Water Division Organization
- PFAS
 - What Is It/Sources
 - State Actions
 - Federal Actions
- Contacts



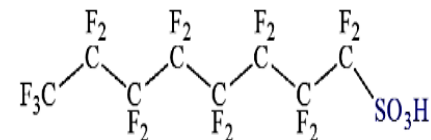
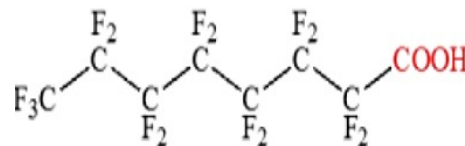
Water Division Organizational Chart



Per- and Polyfluoroalkyl Substances - PFAS

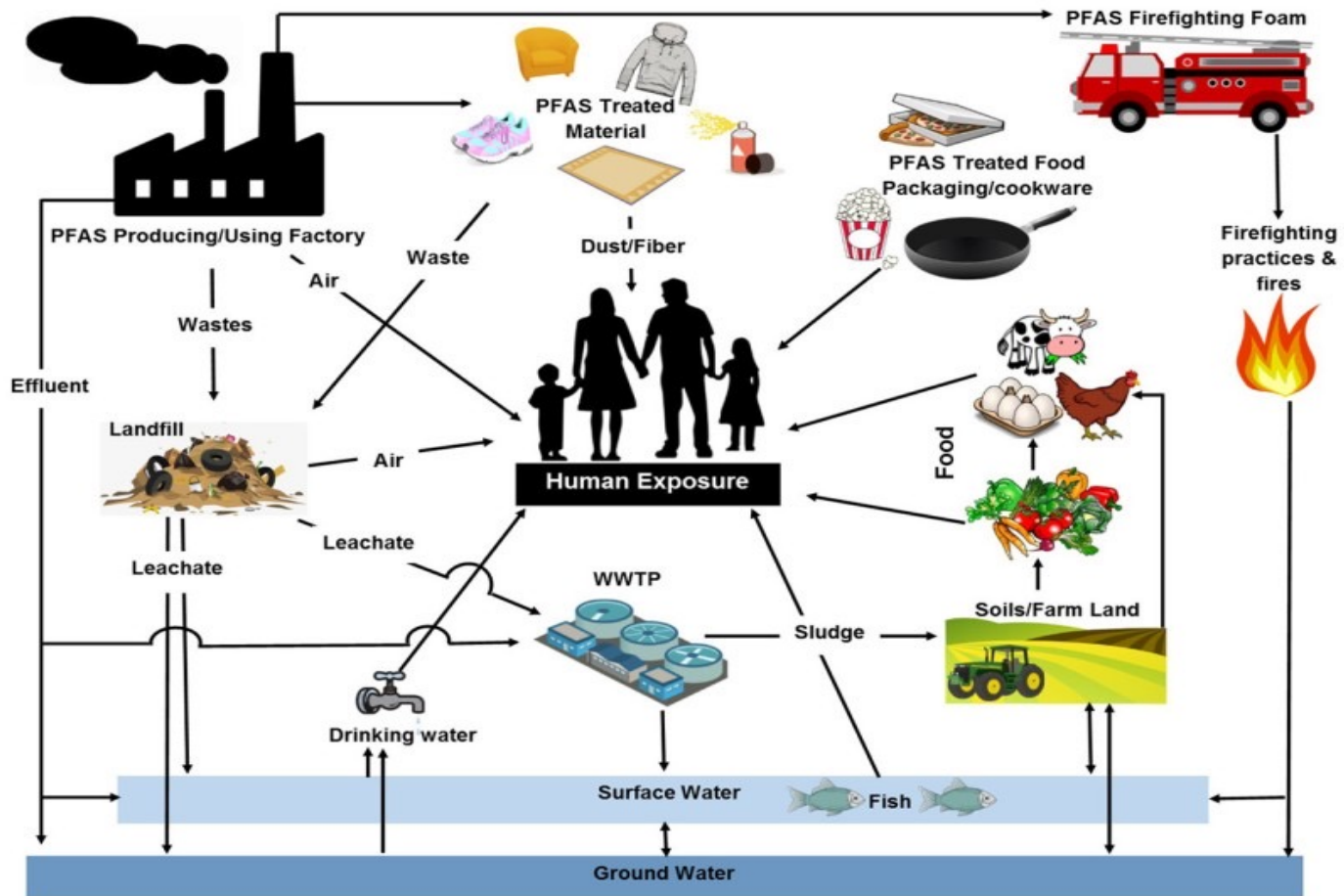
- Man-made group of chemicals including PFOA, PFOS, GenX, and up to 12,000 other chemicals
- Perfluorinated – Carbon chain atoms completely fluorinated
- Polyfluorinated – At least one carbon chain atom not fully fluorinated
- Manufactured in U.S. since 1940s
- PFOA and PFOS most extensively studied (no longer produced in the U.S.) and persistent in the environment and

human body



Common Materials/Sources with Potential PFAS

- Fire-fighting foams (AFFF – Aqueous Film Forming Foams)
- Stain and water repellent treated products/materials
- Polishes, waxes, paints, cleaning products
- Metal plating facilities
- Electronics manufacturing facilities
- Oil recovery facilities
- Landfills
- Wastewater treatment plants
- Biosolids
- Food Packaging
- Newly identified sources



Human Exposure and sources of PFAS
Image: DWP, adapted from Oliaei et al. 2013.

A large number of studies have examined possible relationships between levels of per- and polyfluoroalkyl substances (PFAS) in blood and harmful health effects in people. However, not all of these studies involved the same groups of people, the same type of exposure, or the same PFAS. These different studies therefore reported a variety of health outcomes. Research involving humans suggests that high levels of certain PFAS **may** lead to the following:



Increased cholesterol levels



Changes in liver enzymes



Small decreases in infant birth weights



Decreased vaccine response in children



Increased risk of high blood pressure or pre-eclampsia in pregnant women



Increased risk of kidney or testicular cancer

At this time, scientists are still learning about the health effects of exposures to mixtures of different PFAS.

- In-Stream Monitoring
- NPDES Permit Requirements
- Public Drinking Water Testing
- 3M ICO

- Tennessee River
 - ADEM and 3M Activities
 - Fish Consumption Advisory for PFAS
- Coosa River
 - ADEM and EPA Activities
 - No Fish Consumption Advisory for PFAS
- Alabama River
 - Samples Collected June 2021

- Facilities with elevated levels of PFAS in their effluent discharges have been required to monitor/report PFAS concentrations.
 - Chemical Plants
 - Landfills
 - Municipal WWTP
 - DOD
 - Quarry
- Based on results, some facilities required to develop and implement a PFAS Minimization Plan to reduce the levels of PFAS in the discharge.

Public drinking water treatment sources tested during 2020 and 2022

- 89 systems with reportable detections of PFOA/PFOS
- Results can be found at <http://adem.alabama.gov/newsEvents/reports/PFASDrinkingWaterSystemReport.pdf>
- Many systems have notified customers of the presence of PFOA/PFOS in their drinking water



Interim Consent Order

- Wastewater Requirements
- Land/Groundwater Requirements
- Air Requirements
- Other Requirements

Bipartisan Infrastructure Law (BIL)

- 5-Year Program
- Year One(1) is 2022
- Alabama will receive \$137MM in Year 1
- Alabama expects to receive \$697MM Total
- Three tranches of funds:
 - SRF Capital Grant
 - **Contaminants of Emerging Concern(CEC)**
 - Lead Service Line Replacement

Program	2022 Funding Amount (\$MM)	Principal Forgiveness (%)
CW SRF	20	49
DW SRF	39	49
CW CEC	1	100
DW CEC	16	100
DW LSL	61	49

Applicable Websites

- <https://alabamawaterprojects.com>
- <http://adem.alabama.gov/programs/water/srfupdates.cnt>

SRF Contact

Brian Espy

Bespy@adem.Alabama.gov

334-271-7711

eFile

Media Area: Air Land Water

Facility:

Name Master ID
[Find a Master ID](#)

Permit Number:

County:

File Name:

Document Date:

Date Range

Document Category/Type:

Custom Query

3233 Documents Found

1 2 3 4 5 6 7 8 9 10 ...

<u>Master ID</u>	Name	Permit Number	County	Date	Type	File Name
						14 AL0000205 103 09-08-

- PFAS Action Plan – February 2019
- PFAS Action Act
 - Introduced April 2021 (Upton and Dingell - MI)
 - H.R. 2467 passed July 2021
 - Senate Action?
- EPA Council on PFAS – April 2021



EPA Council on PFAS

- Headed by AA for Water Radhika Fox and Acting Region 1 RA Deb Szaro
- **PFAS Strategic Roadmap – October 2021**
 - Whole-of-Agency Approach
 - Research, Restrict, Remediate
 - 2021 – 2024 Actions
 - <https://www.epa.gov/pfas/>



PFAS Strategic Roadmap

Office of Water Actions

➤ Nationwide Monitoring for PFAS in Drinking Water

- UCMR 5 - December 2021
- 29 PFAS + Lithium
- Testing 2023-2025

➤ PFOA and PFOS Drinking Water MCL

- Proposed rule expected Fall 2022
- Final rule Fall 2023

➤ Publish Toxicity Assessments for GenX and 5 additional PFAS (PFBA, PFHxA, PFHxS, PFNA, PFDA)

- PFBS – April 2021
- GenX October 2021
- Ongoing

➤ Publish Health Advisories for GenX and PFBS

- June 15, 2022

Chemical	Lifetime Health Advisory Level parts per trillion or ppt
PFOA	0.004 (interim)
PFOS	0.02 (interim)
GenX Chemicals	10 (final)
PFBS	2,000 (final)



PFAS Strategic Roadmap

Office of Water Actions

- **Restrict PFAS discharges from industrial sources through ELG program**
 - OCPSF ELG Revision – Summer 2023
 - Metal Finishing (Chromium electroplating) ELG Revision - Summer 2024
 - Continued studies for [Textiles/Carpets](#), [Electrical/Electronic Components](#), [Landfills](#), [Leather Tanning](#), [Plastics Molding/Forming](#), [Paint Formulating](#) – [Fall 2022](#) to [Winter 2023](#)

- **Leverage NPDES permitting to reduce PFAS discharges to waterways**
 - [Memo April 28, 2022](#)
 - [Effluent Monitoring at least quarterly](#)
 - [BMPs for PFAS including product substitution](#)
 - [Notification of draft permits to downstream DW systems](#)

- **Publish improved analytical methods**
 - [EPA Methods 537.1 \(14\) and 533 for Drinking Water \(25\)](#)
 - [Draft Method 1633 \(40\) for Non-Potable Water and other Environmental Media](#)
 - [SW-846 Method 8327 \(24\) for Non-Drinking Water Aqueous Samples](#)
 - [Draft Method 1621 for AOF in Aqueous Matrices](#)



PFAS Strategic Roadmap

Office of Water Actions

➤ Publish recommended ambient water quality criteria for PFAS

➤ Aquatic life PCP ended July 5, 2022

Table 1. Draft Recommended Freshwater Aquatic Life Water Quality Criteria for PFOA and PFOS

Criteria Component	Acute Water Column (CMC) ¹	Chronic Water Column (CCC) ²	Invertebrate Whole-Body	Fish Whole-Body	Fish Muscle
PFOA Magnitude	49 mg/L	0.094 mg/L	1.11 mg/kg ww	6.10 mg/kg ww	0.125 mg/kg ww
PFOS Magnitude	3.0 mg/L	0.0084 mg/L	0.937 mg/kg ww	6.75 mg/kg ww	2.91 mg/kg ww
Duration	1-hour average	4-day average	Instantaneous ³		
Frequency	Not to be exceeded more than once in three years, on average	Not to be exceeded more than once in three years, on average	Not to be exceeded more than once in ten years, on average		

¹ Criterion Maximum Concentration.

² Criterion Continuous Concentration.

³ Tissue data provide instantaneous point measurements that reflect integrative accumulation of PFOA or PFOS over time and space in aquatic life population(s) at a given site.

➤ Human Health Criteria - Fall 2024



PFAS Strategic Roadmap

Office of Water Actions

- **Enhance data availability on PFAS in fish tissue**
 - National Lakes Assessment Program
 - Summer 2022 and Spring 2023
- **Finalize risk assessment for PFOA and PFOS in Biosolids**
 - Expected Winter 2024

- Federal Register notice proposing designation of PFOA and PFOS as hazardous substances published 9/6/2022
 - CERCLA Section 102
 - 60 day comment period
 - Plan to finalize by 8/2023
- What does it require?
 - Reporting of releases > RQ (1 pound in 24 hour period)
 - Allow EPA and other agencies to respond to release or threats of releases of PFOA and PFOS as hazardous substances (CERCLA 104(a)(1)(A)) without making a determination of imminent and substantial danger (CERCLA 104(a)(1)(B)).
 - PRP cleanup of releases, cost recovery

- August 18, 2022
- <https://www.energy.gov/pfas/pfas-and-polyfluoroalkyl-substances>
- Commitments to Action 2022-2025
 - Research current and past uses and known or potential releases of PFAS.
 - Investigate PFAS concentrations in DOE-supplied drinking water and in the environment at DOE sites.
 - Proactively prevent PFAS from entering air, land, and water at levels that can adversely impact human health and the environment.
 - Clean up PFAS identified contamination to protect human health and ecological systems.
 - Leverage the expertise at DOE National Laboratories to enhance PFAS research.
 - Support inter-agency and cross-sector collaboration to identify and employ promising technologies.
 - Provide clear and credible information to DOE employees, local communities, and regulators.
 - Engage with stakeholders to help inform an effective Departmental PFAS strategy.



Contacts

Jeff Kitchens
Chief, Water Division

jwk@adem.alabama.gov

334-271-7823

Chris Johnson

Chief, Water Quality Branch

cljohnson@adem.alabama.gov

334-271-7827

Daphne Lutz

Chief, Industrial/Municipal Branch

dlutz@adem.alabama.gov

334-270-5602

Aubrey White

Chief, Drinking Water Branch

ahw@adem.alabama.gov

334-271-7774