PFAS
Developments in Liability and Enforcement

2020 Environmental Federation of Oklahoma

Annual Meeting and Tradeshow

"EFO-Looking Ahead with 2020 Vision"

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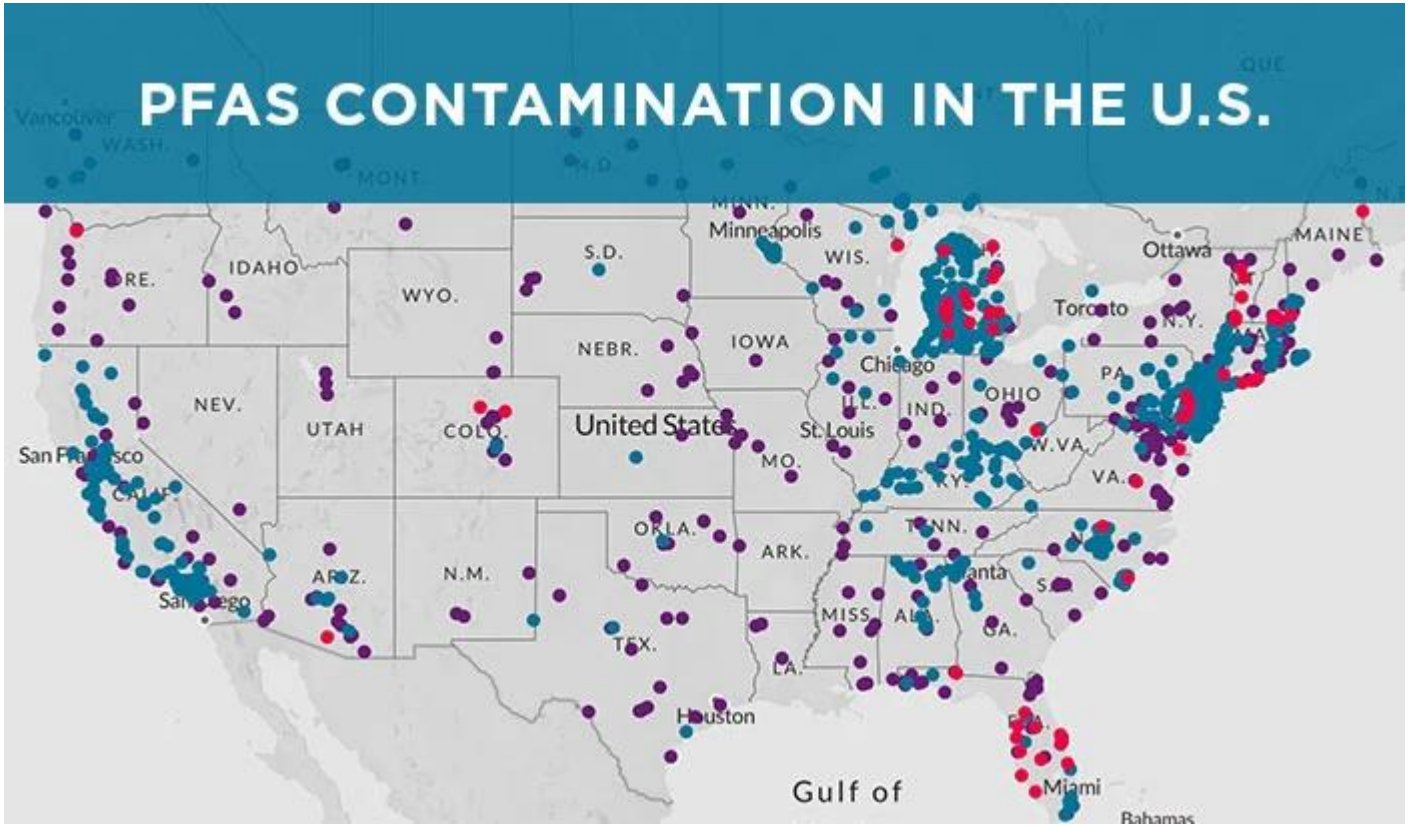
What Makes PFAS Contentious

- Latent – Unlikely to be discovered because historically not considered hazardous
- Pervasive – Seem to be in just about everything
- Persistent – Very stable and resistant to degradation
- Highly mobile – Water soluble, can migrate far from source
- Limited remedial options – Are costly to remove and limited options to destroy or dispose
- Difficult to sample and chemically analyze
- Bioaccumulative
- Uncertain health effects

PFAS CONTAMINATION



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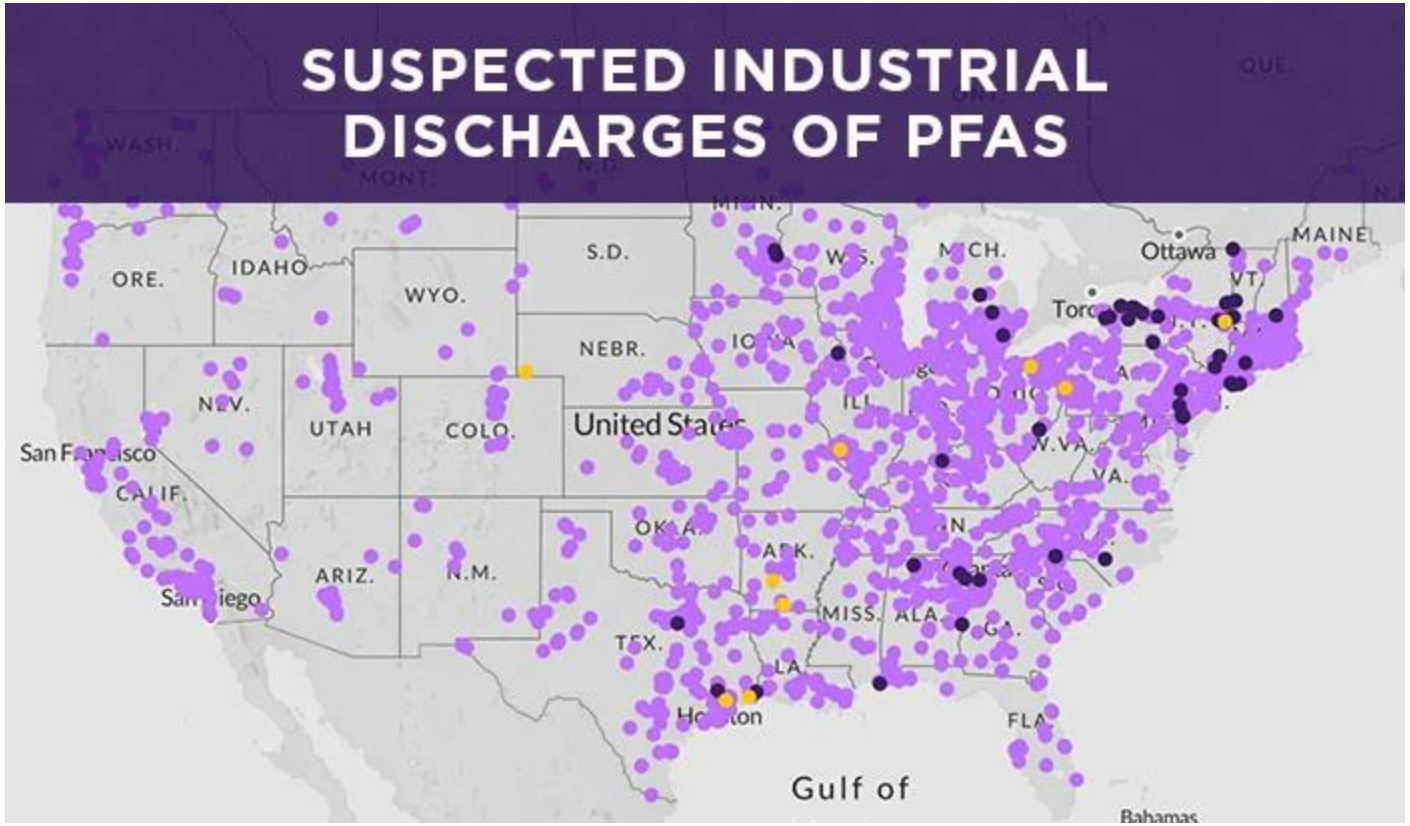
PFAS INDUSTRIAL SITES



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PFAS HEALTH EFFECTS

- According to ATSDR:
  - Increased cholesterol levels
  - Changes in liver enzymes
  - Decreased infant birth weight
  - Increased risk of kidney or testicular cancer
  - Increased risk of high blood pressure or pre-eclampsia
  - Decreased vaccine response in children
  - Impaired immune response
- Research on health effects is in its beginning stages; thousands of substances to evaluate
- 2015 Harvard study found “safe” level of PFAS in drinking water is as low as 1 ppt. EPA Health Advisory level is 70 ppt.
- New Minnesota study purports to establish “cause-and-effect” link between PFAS in drinking water and higher rates of infertility, low birth weight and premature birth.
- Association versus Causation

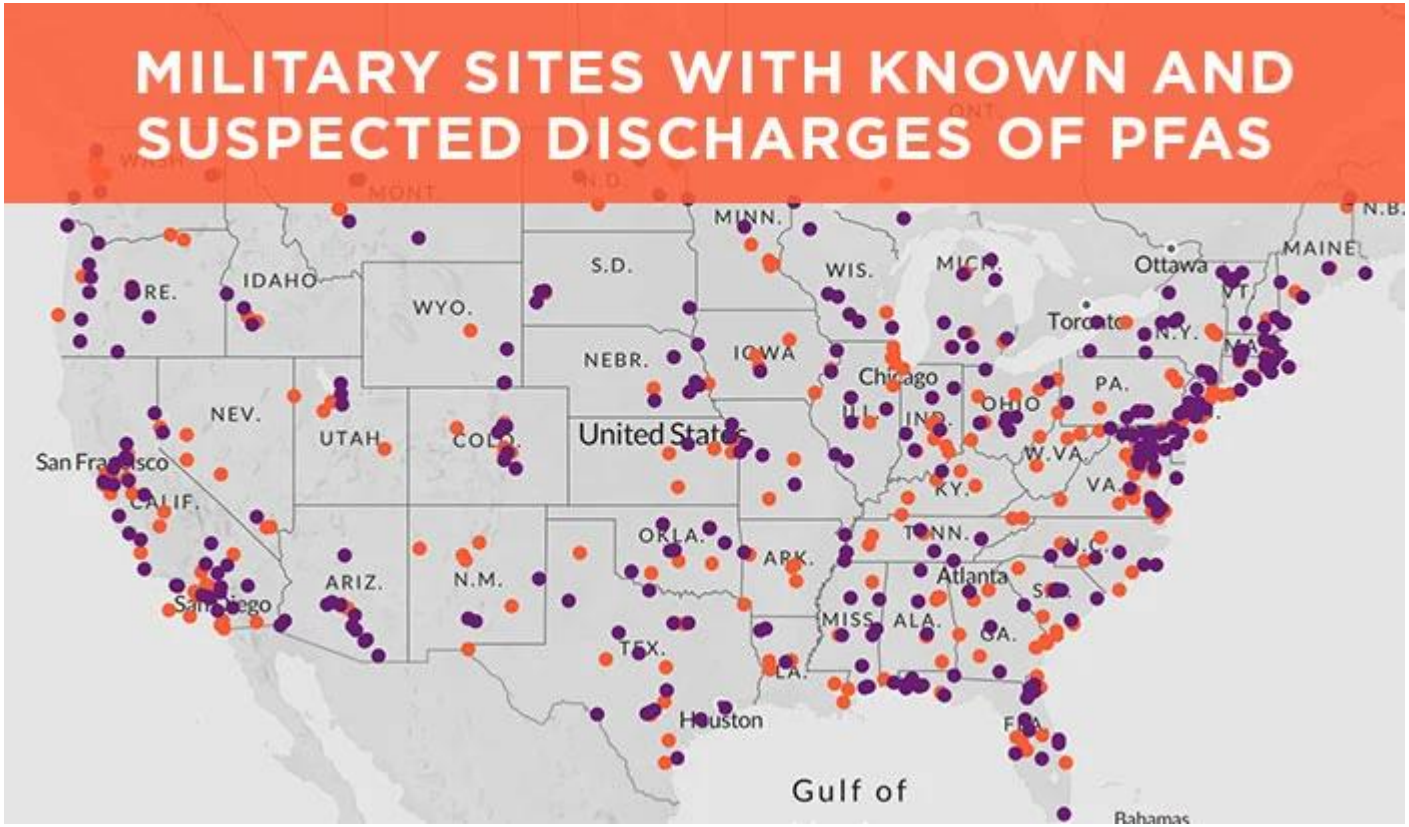
PFAS CLAIMS – LEGAL THEORIES

- Common Law Torts:
  - **Negligence**
  - **Public Nuisance**
  - **Private Nuisance**
  - **Trespass**
  - **Battery**
  - **Unjust Enrichment**
  - **Fraudulent concealment**
  - **Fraud / Misrepresentation**
  - **Strict Liability (unreasonably dangerous activity)**
- Federal Statutes – CERCLA, RCRA, SDWA, CWA, TSCA
- State Statutes – e.g. 27A O.S. 2-6-105(A)
  - It shall be unlawful for any person to cause pollution of any waters of the state or to place or cause to be placed any wastes in a location where they are likely to cause pollution of any air, land or waters of the state. Any such action is hereby declared to be a public nuisance.
- Products Liability – Failure to Warn; Design Defect
- Medical Monitoring

Defendants

- Primary Manufacturers
  - 3M
  - E.I. DuPont De Nemours & Co.
  - Chemours
  - Daikin America Inc.,
  - Arkema Inc.,
  - Solvey Specialty Polymers USA LLC,
  - Archroma Management LLC
  - AGC
- Users
  - Airports / Airlines / Aerospace
  - Military Installations
  - Oil & Gas /Refining/Petrochemical Facility
  - Chrome Plating Facilities
  - Downstream Manufacturers (incorporators)
    - Food Packagers
    - Paper Mills
    - Clothing/Textile Manufacturers
    - Furniture / Carpet Manufacturers
    - Personal Care Product Manufacturers
    - Chemical Products Manufacturers
- Landfills / Incinerators
- Utilities (Drinking Water and POTWs)

PFAS MILITARY SITES



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Initial PFAS Litigation

- *Leach, et al v Dupont*
- In 2001, individuals brought state common-law tort claims against DuPont and Lubeck Public Service District of West Virginia
  - Alleged personal injuries from PFOA contaminated drinking water from the DuPont Parkersburg West Virginia Plant.
    - Sought Medical Monitoring, Diminution in Property Value, Injunction to stop discharges, punitive damages
  - Certified as a class action and settled in 2004
    - Established scientific panel to evaluate health effects
    - panel found a “probable link” to kidney cancer, testicular cancer, thyroid disease, ulcerative colitis, diagnosed high cholesterol, and pregnancy-induced hypertension and preeclampsia

Federal Multidistrict Litigation

- Ohio – *In re E.I. du Pont de Nemours & Co. C-8 Pers. Injury Litig.*, S.D. Ohio, No. 2:13-md-02433
  - Involved subsequent claims from DuPont Discharge of PFOA to Ohio River
    - Settled > 3000 cases in 2017 for $618 Million
    - Established fund for future claims

Federal Multidistrict Litigation

- South Carolina – *In re: Aqueous Film Forming Foams Products Liability Litigation*, MDL No. 2:18-mn-2837
  - Hundreds of individual lawsuits and class actions from across the country
  - The cases are generally brought against manufacturers of aqueous film forming foam (AFFF) containing PFAS, who designed, manufactured, marketed, and sold AFFF
  - Plaintiffs generally include
    - individuals who allege personal injury/property damage
    - municipalities and water districts for costs associated with well head treatment.

Class Actions

- **National Class Action -** *Hardwick v. 3M*, Case No. 2:18-cv-01185, S.D. Ohio
  - Class of all individuals in US that have detectable PFAS in their blood
  - Targets short- and long-chain PFAS including "next generation" PFAS such as GenX
  - Seeks to establish "PFAS Science Panel" to study PFAS and issue binding findings
  - Defendants are PFAS manufacturers/users including 3M, E.I. DuPont de Nemours, Chemours Co. LLC,, Arkema Inc., AGC, Daikin America Inc., Solvey Specialty Polymers USA LLC, Archroma Management LLC.

CLASS ACTIONS

- Vermont – *Sullivan v. Saint-Gobain Performance Plastics*
  - Claims for personal injury, property damages and medical monitoring stemming from groundwater allegedly contaminated with PFOA from air emissions from a ChemFab fiberglass coating plant
- North Carolina – *Carey v. E.I. DuPont De Nemours & Co.*
  - Claims for personal injury, property damage and medical monitoring by residents along Cape Fear River
  - Alleged discharge of GenX into water supply
- Michigan – *Zimmerman v. 3M, et al.*
  - Claims against Wolverine for discharging PFOA to groundwater
- New York:
  - Taconic Plastics (Tonga) – Coated fabric with PFOA based Teflon
  - Saint-Gobain Performance Plastics – PFOA in coatings
  - Hoosick Falls – PFOA in coatings

State Cases – Manufacturers/Users

- Numerous states and municipalities have sued manufacturers and users of PFAS chemicals for contaminating water supplies and other natural resources.
  - These include MI, MN, NH, NJ, NM, NY, OH, NV and VT
- **Minnesota – *Minnesota v 3M Company***
  - Attorney general sued 3M in 2010 alleging that wastes from the company's production of PFAS damaged drinking water and natural resources in the Twin Cities Area.
  - Settled in 2018 for $850 million; $720 million to be invested in drinking water and natural resource projects in the Twin Cities east metropolitan region.
- **Michigan – *Michigan DEQ v. Wolverine World Wide Inc.***
  - Alleged releases of PFOA from a former tannery contaminated groundwater
  - Asserted Claims for declaratory and injunctive relief under RCRA (imminent and substantial endangerment) and the Michigan Natural Resources and Environmental Protection Act, based on exceedances of the MDEQ cleanup criterion
- **New Jersey – *Borough of Hopatcong v 3M Company***
  - City brought action for damages from alleged contamination of public drinking water supply (groundwater) with PFOS and PFOA. The City operates a public water system serving 7000 people.
  - Claims the manufacture, distribution and/or sale of PFOA and PFOS resulted in the release, that the products were unreasonably dangerous, and that 3M failed to warn of the danger
  - Asserts causes of action for negligence, negligent failure to warn, strict liability failure to warn. Public and private nuisance, trespass and seeks cleanup costs and costs to "comply with the EPA's public health advisories and state's soil and groundwater cleanup standards and drinking water standards and criteria.

State Cases – Military

- Over 600 Military Sites are contaminated due primarily to AFFF
- Tucson, AZ
  - Suing five chemical companies for damages related to firefighting foam used at Davis-Monthan Air Force Base until 2017
  - Representative of a wave of suits by utilities and communities facing increased cost from new regulatory requirements.
- Pennsylvania – Navy – PFAS in groundwater at 2 sites
- Colorado – Air Force
- New Mexico – Air Force

Water Utilities

- Numerous water utilities have sued PFAS manufacturers and users for the increased cost and liabilities associated with their facilities
  - Due to increasing state regulation of drinking water, must install filtration, reverse osmosis or other facilities to remove PFAS
  - May face liability associated with the disposal of waste generated from such processes
  - Cases have been filed in:
    - New York
    - California
    - New Jersey
    - Alabama
    - New Hampshire
    - Nevada

Corporate/Securities/Insurance

- **Corporate Actions**
  - Chemours sued DuPont alleging it deliberately lowballed the cost of environmental liabilities Chemours would face in reimbursing DuPont for PFAS pollution after spin-off.
- **Shareholder Class Actions**
  - 3M defrauded investors and issued false and misleading statements to conceal exposure to legal liability associated with PFAS.
  - The Chemours Co. - class action filed by a pension fund claiming company concealed the extent of its PFAS liabilities.
- **Insurance Actions**
  - AIG filed for declaratory judgement regarding Thermo-Fisher demand for coverage for cost of addressing contamination at Westmoreland Well Field in New Jersey because Thermo-Fisher allegedly:
    - failed to disclose in its application “decades of prior regulatory action with known pollution conditions”
    - Violated conditions precedent to coverage including cooperating with investigation and defense and refrain from voluntarily making payments or assuming obligations without AIG’s Consent

NIMBY

- There have been a number actions aimed at blocking the incineration of PFAS.
  - 25 States sent > 2 MM tons to Norlite Incinerator in New York
  - New York considering a ban on incineration
  - DOD is in litigation with Environmental Groups over its contracts for incineration
- PFAS are not regulated under RCRA and are not subject to RCRA land disposal restrictions
  - This poses issues not only for incinerators, but also for landfills.

Department of Defense Activities

- DOD has developed a Task Force to evaluate issues associated with the use of PFAS at its facilities. According to the March 2020 Progress Report.
  - DOD began using aqueous film forming foam containing PFAS for fuel firefighting in the 1970s
  - As of the end of FY 2019, DOD has identified and begun assessment of 651 military facilities for PFAS.
    - Where drinking water exposure to PFOS/PFOA on or off base is above 70 ppt, DOD is providing alternatives
  - Using a risk-based approach to prioritize sites and is following the DERP/CERCLA process at locations with known/suspected releases.
  - Working on evaluating cleanup levels, disposal methods, surface water discharges and disposal of biosolids/sludges.
  - DOD is required to phase out use of AFFF for firefighting by 2024
- DOD has been sued at numerous sites for personal injury, property damage and natural resource damage. Most cases are in the MDL.

EPA Action Plan

- EPA issued its PFAS Action Plan in February 2019, and updated it February 20, 2020
- The Plan is a multi-media, multi-program, research, management, and risk communication plan
- Provides both short-term solutions and long-term strategies to address PFAS
  - Cleanup
  - Drinking Water
  - Toxics
  - Enforcement
  - Monitoring
  - Research
  - Risk Communication

TSCA

- Regulates the production, importation, use and disposal of specific chemicals
  - Allows EPA to implement reporting, record-keeping, and testing requirements and implement restrictions on chemical substances.
- Significant New Use Rules
  - Manufacturers and importers must identify any "significant new use" that could result in exposures to, or releases of, substances of concern
  - Effectively, makes it illegal to engage in a significant new use without EPA's authorization,
- PFAS SNURS
  - 2002 SNUR required notification of any future use of 75 PFAS chemicals
  - 2013 SNUR required notification of PFOA use in carpeting
  - 2015 EPA proposed SNUR required reporting of any new uses of PFOA and PFOA-related chemicals at least 90 days before use/import. EPA supplemented proposed rule on March 3, 2020.
  - June, 2020 SNUR EPA issued final amendments based on the amended 2015 proposal. These rule amends two SNURs: one for certain perfluoroalkyl sulfonates, and one for long-chain perfluroalkyl carboxylate chemical substances (LCPFACs)
    - Results in requirements for over 500 PFAS.
    - All listed PFOS and LCPFACs have "any use" as a significant new use. Thus, no one may manufacture or process those substances as chemicals (subject to some exceptions) without first submitting a Significant New Use Notice (SNUN) to EPA and receiving approval
- EPA must take action by 2023 to require reporting of all PFAS manufacturing as far back as 2011.

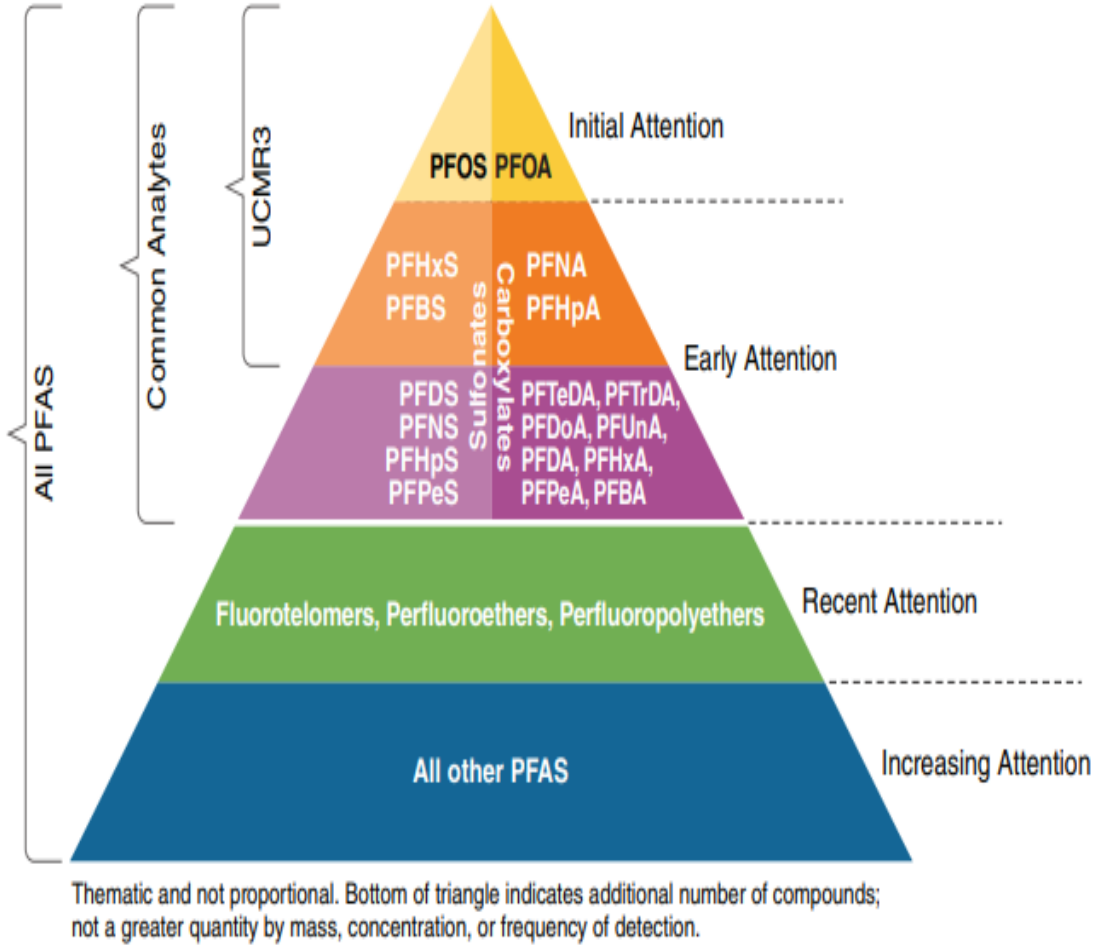
Safe Drinking Water Act

- SDWA requires EPA to set enforceable standards (Maximum Contaminant Levels (MCLs))and monitoring requirements for public water systems.
  - There are currently no MCLs for any PFAS
- For contaminants not regulated under the SDWA, EPA can issue Health Advisories (HAs)
  - In 2016 EPA issued Lifetime HAs for PFOS and PFOA at 70 ppt.
    - HAs are unenforceable, but are serving as a guideline for some federal and state enforcement efforts
  - In 2018 EPA added PFOS and PFOA to 4th Contaminant Candidate List (CCL).
- In November, 2018 ATSDR reported that the "minimal risk" levels for PFOS and PFOA should be as follows:
  - PFOA: 78 ppt (adult) and 21 ppt (child)
  - PFOS: 53 ppt (adult) and 24 ppt (child)
- EPA does not regulate private domestic water wells
  - USGS estimates that 42.5 million people in the US get their water from domestic water wells

Safe Drinking Water Act

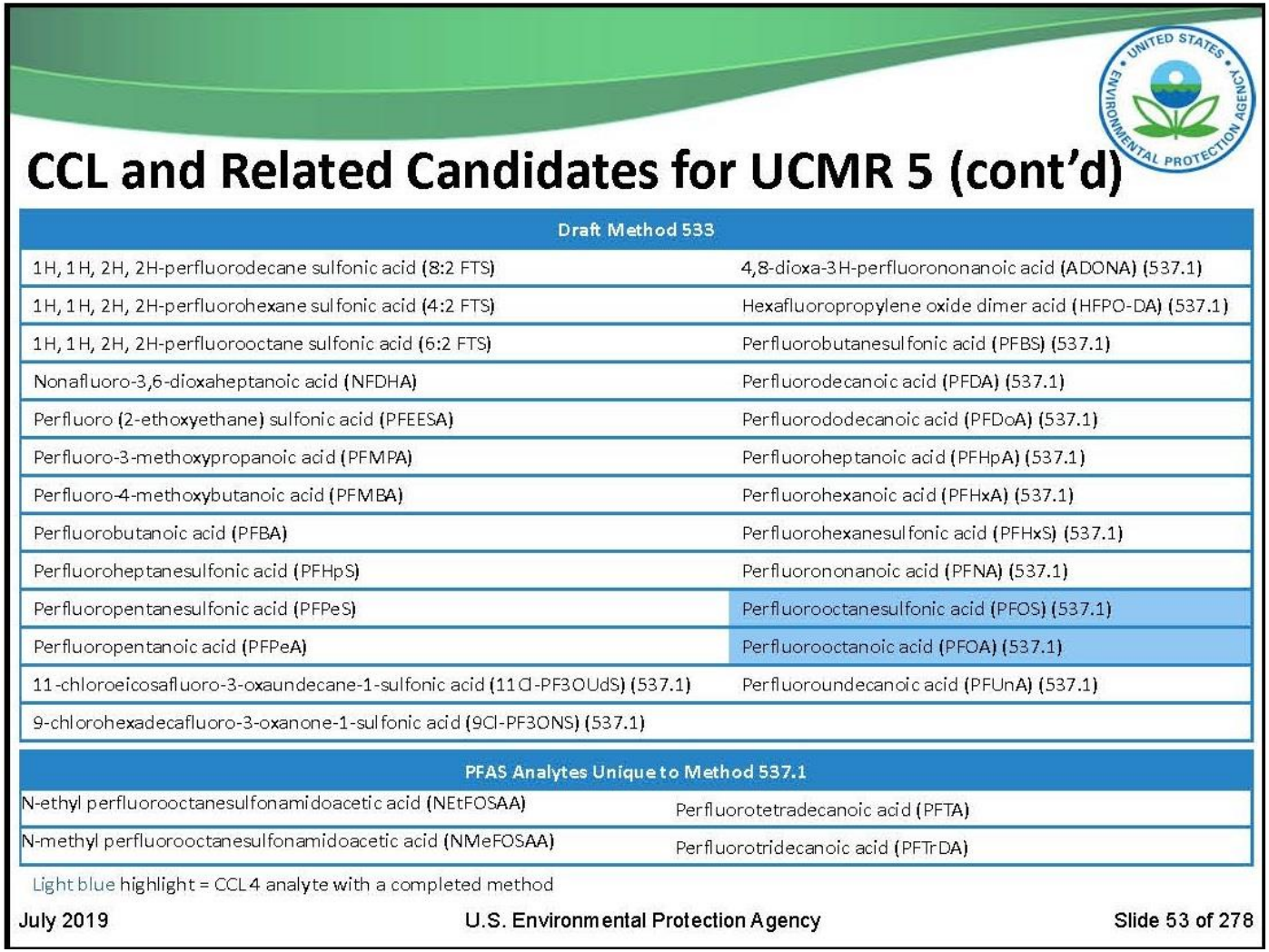
EPA has been collecting data on PFOS, PFOA, PFNA, PFHxS PFHpA and PFBS from over 5000 Public Water Systems

This list will be expanded by UCMR 5 which includes 29 PFAS Compounds



https://pfas-1.itrcweb.org/fact_sheets_page/PFAS_Fact_Sheet_History_and_Use_April2020.pdf

PFAS UCMR5 Candidates



CCL and Related Candidates for UCMR 5 (cont'd)

Draft Method 533	
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	4,8-dioxa-3H-perfluorononanoic acid (ADONA) (537.1)
1H, 1H, 2H, 2H-perfluorohexane sulfonic acid (4:2 FTS)	Hexafluoropropylene oxide dimer acid (HFPO-DA) (537.1)
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	Perfluorobutanesulfonic acid (PFBS) (537.1)
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	Perfluorodecanoic acid (PFDA) (537.1)
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	Perfluorododecanoic acid (PFDoA) (537.1)
Perfluoro-3-methoxypropanoic acid (PFMPA)	Perfluoroheptanoic acid (PFHpA) (537.1)
Perfluoro-4-methoxybutanoic acid (PFMBA)	Perfluorohexanoic acid (PFHxA) (537.1)
Perfluorobutanoic acid (PFBA)	Perfluorohexanesulfonic acid (PFHxS) (537.1)
Perfluoroheptanesulfonic acid (PFHpS)	Perfluorononanoic acid (PFNA) (537.1)
Perfluoropentanesulfonic acid (PFPeS)	Perfluorooctanesulfonic acid (PFOS) (537.1)
Perfluoropentanoic acid (PFPeA)	Perfluorooctanoic acid (PFOA) (537.1)
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS) (537.1)	Perfluoroundecanoic acid (PFUnA) (537.1)
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9Cl-PF3ONS) (537.1)	

PFAS Analytes Unique to Method 537.1	
N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	Perfluorotetradecanoic acid (PFTA)
N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	Perfluorotridecanoic acid (PFTrDA)

Light blue highlight = CCL 4 analyte with a completed method

https://www.epa.gov/sites/production/files/2019-10/documents/ucmr5-stakeholdermeeting-190830.pdf

State Drinking Water Regulation

- At least 10 States have established MCLs or Similar Action Level for various PFAS:

	PFOS	PFOA	PFNA	PFHxS	PFBS	PFHxA	GenX	Type
Michigan	16	8	6	51	420	400,000	370	MCL
New Hamp.	15	12	11	18				
New Jersey	13	14	13					MCL
New York	10	10						MCL
Vermont	20	20	20	20				HA
California	40	10						Resp. Lvl
Connecticut	70	70	70	70				Action Lvl
Mass.	20	20	20	201	20			MCL
Minnesota	27	35	37					HA
N. Carolina							30	HA

EPCRA / TRI

- Section 7321 of the National Defense Authorization Act for Fiscal Year 2020 (P.L. 116-92) (NDAA) added 172 PFAS to the Toxics Release Inventory (TRI) list.
  - Requires EPA to assess remaining PFAS for listing pursuant to EPCRA 313(d)(2) listing criteria
  - Certain EPA activities involving PFAS will trigger automatic additions to the TRI list in the future – e.g., finalizing a "toxicity value" for a PFAS will add it to the TRI list
- Reporting requirements were effective on 1/1/2020
- A 100-pound reporting threshold
- First reports due July 2021

EPCRA / TRI

- Covered Activities
  - Manufacturing.
    - Includes generating a listed chemical whether intentionally or coincidentally as an impurity or byproduct, as well as importing
  - Processing.
    - Preparation of a Section 313 chemical, after its manufacture, for distribution in commerce
      - Use as a reactant to manufacture another substance/product
      - Add as a formulation component
      - Incorporate as an article component
      - Repackaged for distribution
  - Otherwise Use.
    - Includes most activities that are not manufacturing or processing

EPCRA / TRI

- What information must be reported
  - Facility & parent company identification
  - Maximum amount on-site
  - On-site releases of TRI chemicals to:
    - Air
    - Water
    - Land (including land disposal)
  - Transfer of chemical waste to off-site locations
  - Other waste management:
    - Recycling
    - Treatment
    - Energy Recovery
  - Pollution prevention activities

RCRA

- PFAS - currently **not** a RCRA Hazardous Waste
  - On 9/1/2019 Public Employees for Environmental Responsibility Petitioned EPA to List Waste with PFAS as a RCRA Hazardous Waste.
  - On 1/15/2020, UC Berkley Environmental Law Clinic petitioned EPA to list wastes containing PFOA, PFOS, GenX chemicals, and any combination of them, as hazardous wastes
  - Would allow EPA to regulate the generation treatment, storage, transportation and disposal of PFAS containing wastes as hazardous waste.
  - Would cause waste containing PFOA/PFOS/GenX to become a CERCLA hazardous substance and trigger CERCLA liability at contaminated sites.

RCRA

- 2004 – EPA pursued RCRA violations against DuPont at its facility in West Virginia based on a release of PFOA
- Texas is regulating certain PFAS under their RCRA permits and requiring investigation and cleanup
- *Tennessee Riverkeeper, Inc. v. 3M Co*., Case No.5:16-cv-01029.
  - The Court denied motions to dismiss RCRA "imminent and substantial endangerment" claims. T
  - Case involves releases from a manufacturing facility and two landfills allegedly contaminating the river and drinking water supplies. Court noted that there is a dispute whether PFAS-containing material is a hazardous waste.
- A number of Citizens Suit cases have also been filed.

CERCLA

- PFAS are not “hazardous substances” under CERCLA
- PFAS may be addressed as pollutants or contaminants in certain instances.
- EPA action plan calls for EPA to evaluate listing PFOS and PFOA as a hazardous substances and develop interim cleanup recommendations for groundwater contaminated with PFOS and PFOA
  - A decision on the PFOS/PFOA listing is still pending
  - Spring 2019 draft cleanup recommendation set screening level at 40 ppt and preliminary remediation goal at 70 ppt combined.

CERCLA ARARs

- § 121(d) requires that CERCLA response actions must attain ARARs of other federal laws and more stringent state laws
  - Any standard, requirement, criterion or limitation of any Federal environmental law
  - Any promulgated standard, requirement, criterion or limitation under State environmental or facility siting law identified by the State in a timely manner

State Soil and Groundwater Levels

Location	Agency / Dept	Standard / Guidance	Type	Promulgated Rule (Y/N/O)	PFOA	PFOS	PFNA	PFBA	PFBS	PFHxS	PFHxA	PFPeA	PFHpA	PFOSA	PFDA	Gen-X
USEPA	Water	HA	DW	N	0.070	0.070										
	Regions	RSL	GW	N					400							
	Regions	RSL Calculation	GW	N	0.400	0.400										
	OLEM	Interim Recommendation	GW	N	0.040	0.040										
Alaska (AK)	DEC	CL	GW	Y	0.400	0.400										
	DEC	Action Level	DW/GW/SW	N	0.070	0.070										
California (CA)	SWRCB	NL	DW	N	0.0051	0.0065										
	SWRCB	RL (CA)	DW	Y	0.0100	0.0400										
Colorado (CO)	DPHE	GQS	GW	Y	0.070	0.070										
Connecticut (CT)	DPH	AL	DW/GW	N	0.070	0.070	0.070			0.070			0.070			
Delaware (DE)	DNREC	RL	GW	N	0.070	0.070										
	DNREC	SL	GW	N	0.070	0.070										
Florida (FL)	FDEP	PGCTL	GW	O	0.070											
	FDEP	SL	SW	O	0.150	0.004										
Indiana (IN)	DEM	SL (tap)	Protected GW	Y					400							
Iowa (IA)	DNR	Statewide Standards	Protected GW	Y	0.070	0.070										
	DNR		Non-protected GW	Y		1										
Maine (ME)	DEP	RAG	GW	N	0.400	0.400			400							
Massachusetts (MA)	DEP	Drinking Water Values	DW	O	0.020	0.020	0.020			0.020			0.020		0.02	
	DEP	GW-1	GW	Y	0.02	0.02	0.02			0.02			0.02		0.02	
	DEP	GW-3	GW	Y	40,000	500	40,000			500			40,000		40,000	
Michigan (MI)	DEQ	HNV	SW	Y	0.420	0.011										
	DEQ	GCC	DW/GW	Y	0.070	0.070										
	DHHS	Screening Levels	DW	N	0.009	0.008	0.009		1	0.084						
Minnesota (MN)	MDH	HRL- subchronic	DW/GW	Y	0.035			7	9							
	MDH	HRL - chronic	DW/GW	Y	0.035	0.300		7	7							
	MDH	HBV - subchronic	DW/GW	N		0.015			3	0.047						
	MDH	HBV - chronic	DW/GW	N		0.015			2	0.047						
Montana (MT)	DEQ	Water Quality Standard	GW	Y	0.070	0.070										

https://pfas-1.itrcweb.org/wp-content/uploads/2020/05/ITRCPFASWaterandSoilValuesTables_April2020.xlsx