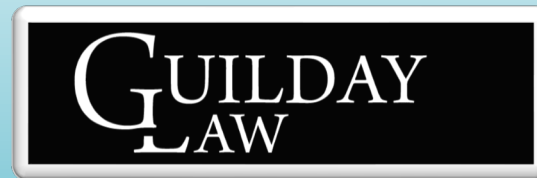


Not Just Another Acronym – What Florida's Municipal Leaders Need To Know About PFAS

August 11, 2023

**Ralph A. DeMeo
Macie J. H. Codina**



What is PFAS?

Per- and polyfluoroalkyl substances (PFAS) are a group of man-made chemicals that includes PFOA, PFOS, GenX, and many other chemicals. PFAS have been manufactured and used in a variety of industries around the globe, including in the United States since the 1940s. PFOA and PFOS have been the most extensively produced and studied of these chemicals. Both chemicals are very persistent in the environment and in the human body – meaning they don't break down and they can accumulate over time. There is evidence that exposure to PFAS can lead to adverse human health effects.

There are over 5,000 variations of this chemical.

PFAS Use

Thousands of man-made compounds that fall under the "PFAS" umbrella (per- and polyfluoroalkyl substances, including PFOA, PFOS, and GenX) have been used over the last several decades as coatings in a variety of everyday household products, such as non-stick cookware, waterproof and stain-resistant fabrics, and food packaging, as well as an ingredient in firefighting foam. While a few of the compounds have been phased out, they do not break down in the environment and have the ability to travel through soil and water.

Because of their widespread use, bio-persistence, and ease of transport, these compounds can now be found almost anywhere one chooses to look. Per the Center for Disease Control, virtually everyone in the U.S. has been exposed, and some level of PFAS can be detected in our blood.

Where is PFAS Found?

Food, packaged in PFAS-containing materials, processed with equipment that used PFAS, or grown in PFAS-contaminated soil or water.

Commercial household products, including stain- and water-repellent fabrics, nonstick products (e.g., Teflon), polishes, waxes, paints, cleaning products, carpets, and fire-fighting foams (a major source of groundwater impacts at airports and military bases where firefighting training occurs).

Workplace, including production facilities or industries (e.g., chrome plating, electronics manufacturing or oil recovery) that use PFAS.

Drinking water, typically localized and associated with a specific facility (e.g., manufacturer, landfill, wastewater treatment plant, firefighter training facility).

Living organisms, including fish, animals and humans, where PFAS have the ability to build up and persist over time.

PFAS Challenges

While the health effects from low level concentrations of PFAS chemicals are not yet fully understood, litigation and public interest continue to increase. State and federal agencies, including the U.S. Environmental Protection Agency (EPA) as well as the Florida Department of Environmental Protection (DEP), and several other states, have taken notice and are beginning to move quickly in a conservative effort to help minimize human exposure despite scientific uncertainties.

Using what it terms "provisional cleanup target" levels and "screening" levels for drinking water, irrigation water, groundwater, and soils, DEP is moving forward with initial investigations of firefighting training facilities, airports, wastewater treatment plants, and military facilities and may adopt new rules.

Given the desire by industry, local governments, and property owners for more certainty regarding potential liability associated with PFAS-related contamination and remediation that could be required, the U.S. Congress, Florida Legislature, and other state legislatures, could weigh in during the upcoming sessions

A comparison 2019 and 2023...

2019, we kinda knew the PFApocalypSe may be coming but were not too sure...

2023, we KNOW the PFApocalypSe is almost certain...

2019, early indications that these substances were present just about everywhere we looked or sampled

2023, confirmed. They are about everywhere you sample

2019, no idea of costs of remediation

2023, have a general idea: not enough \$ to remediate, we need a different paradigm

A comparison 2019 and 2023...

2019, EPA was grappling this issue...

2023, EPA has made HUGE advances in the management of this issue

2019, we were flying by the seat of our pants on screening, analytical methods, and how to evaluate data.

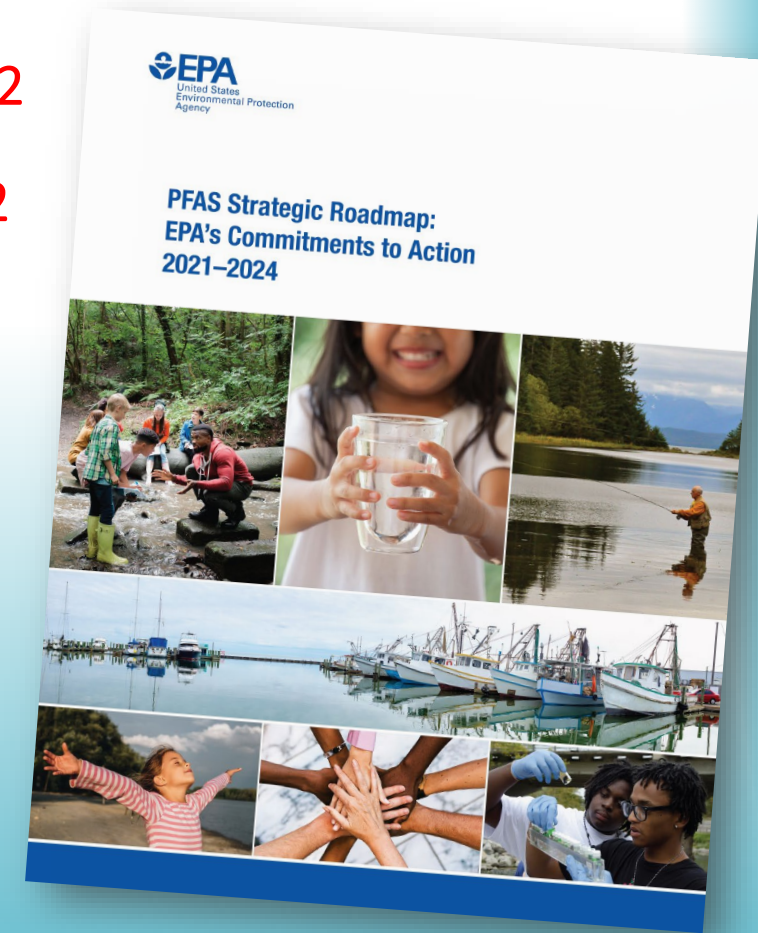
2023, we have a good grasp on screening, analytical methods, and how to evaluate data.

2019, Florida was waking up to this ,

2023, Florida has taken a slow walk approach. More on this later...

EPA 2021 PFAS Strategic Roadmap – Updates

- Designate PFOS/PFOA Hazardous Substance: Spring 2022 **September 2022**
- Identify Other PFAS as Hazardous Substances: Spring 2022 **December 2022**
- National Pollutant Discharge Elimination System (NPDES) Permitting to Reduce PFAS Discharges: Winter 2022 **April 2022**
- EPA Effluent Limitation Guidelines (ELG) Plan: **January 2023**
- National Drinking Water Standard (Maximum Contaminant Levels [MCLs])
 - Proposed: Fall 2022
 - Final: Fall 2023 **March 2023**
- Guidance on PFAS Disposal and Destruction: Fall 2023



EPA 2023 Proposal

January 2023 Proposal:

EPA proposed a rule that would prevent anyone from starting or resuming the manufacture, use, or processing of “inactive PFAS” without first obtaining a complete EPA review and risk determination.

“Inactive PFAS” refers to those that are listed as “inactive” on the Toxic Substances Control Act Inventory. These include an estimated 300 PFAS that have not been used or made for many years.

EPA accepted public comments for 60 days on the proposed rule; this timeframe ended on March 24th, 2023.

Multiple parties have submitted comments

EPA Proposed Action for PFAS NPDWR

EPA's Proposed Action for the PFAS NPDWR

Compound	Proposed MCLG	Proposed MCL (enforceable levels)
PFOA	0 ppt*	4.0 ppt*
PFOS	0 ppt*	4.0 ppt*
PFNA		
PFHxS	1.0 (unitless) Hazard Index	1.0 (unitless) Hazard Index
PFBS		
HFPO-DA (commonly referred to as GenX Chemicals)		

The Hazard Index is a tool used to evaluate potential health risks from exposure to chemical mixtures.

*ppt = parts per trillion (also expressed as ng/L)

Stormwater/Wastewater Permits

- Use NPDES program (federally issued permits) to restrict PFAS discharges to water bodies
 - Requirements to monitor for PFAS
 - Requirements to use best management practices (BMPs)
 - *Product substitution and good housekeeping practices*
 - Establish practices to address PFAS-containing firefighting foams
- EPA to obtain comprehensive information on the sources and quantities of PFAS discharges and will use data to inform EPA's Effluent Limitation Guidelines (ELG) actions
 - ELG Plan 15 published January 2023
 - *Study of publicly owned treatment works influent from industrial dischargers*
- BMPs to address PFAS-containing firefighting foams for stormwater permits
 - Prohibiting the use of aqueous film-forming foams (AFFFs) other than for actual firefighting
 - Eliminating PFOS- and PFOA-containing AFFFs
 - Requiring immediate clean-up in all situations where AFFFs have been used, including diversions and other measures that prevent discharges via storm sewer systems

Source: Jorge Caspary, Cameron-Cole

FAA Concerns

Transition away from PFAS at airports

Congress directed FAA in 2018 to no longer require PFAS firefighting foams in airports; however, a viable alternative is yet to be discovered.

FAA removed the PFAS firefighting foam requirement in October 2021.

January 6, 2023: DOD released a performance specification (MIL-SPEC) of PFAS-free alternatives, available online at

<https://media.defense.gov/2023/Jan/12/2003144157/-1/-1/1/MILITARY-SPECIFICATION-FOR-FIRE-EXTINGUISHING-AGENT-FLUORINE-FREE-FOAM-F3-LIQUID-CONCENTRATE-FOR-LAND-BASED-FRESH-WATER-APPLICATIONS.PDF>

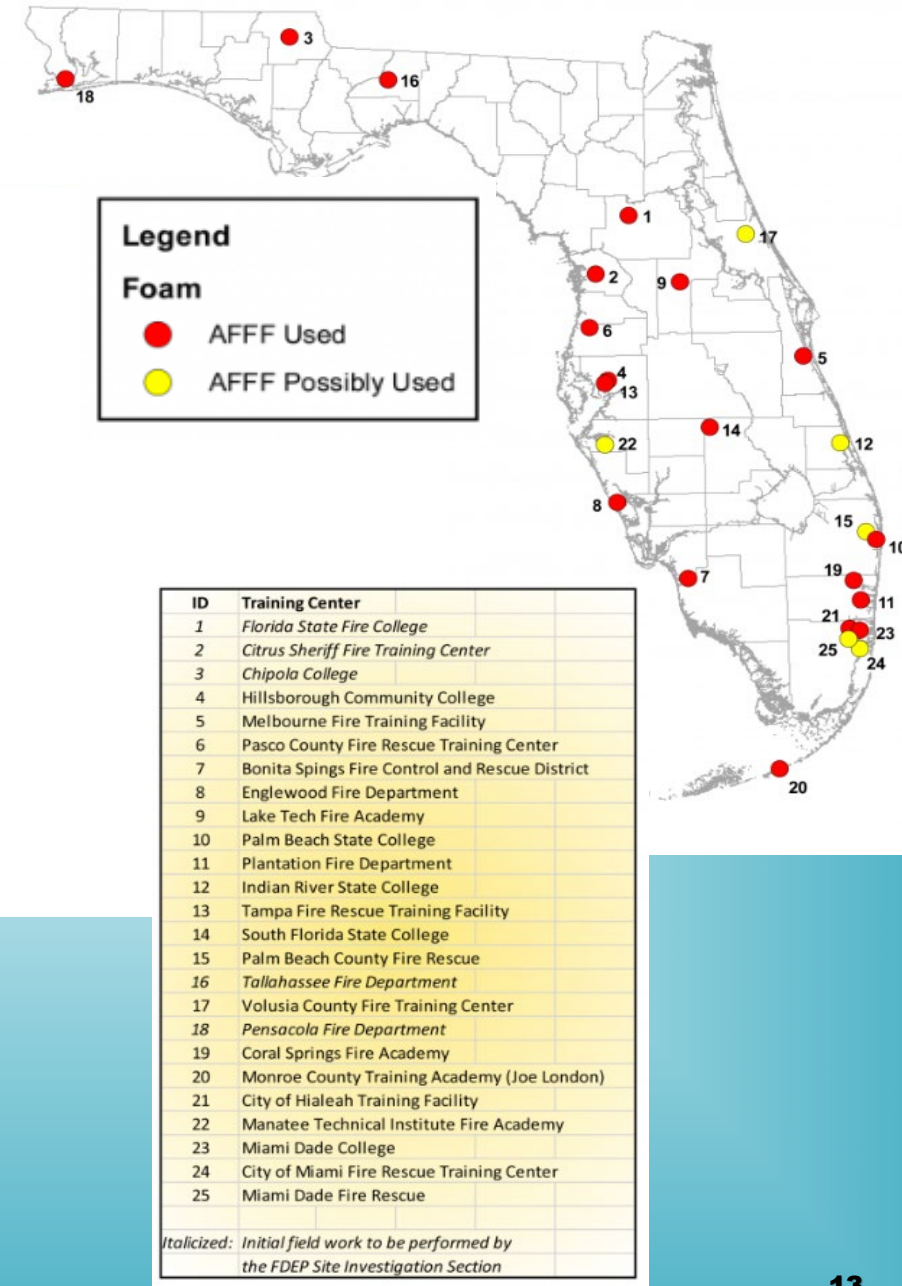
2023: Congress tasked FAA, EPA, and DOD to develop a plan for 139 airports to transition to the alternatives stated in the Jan. 6th MIL-SPEC within 120 of release, which is May 6th, 2023.

Source: FAA

DEP

- DEP started evaluating PFAS in 2018 via assessments directed to firefighting training academies and municipal/county fire departments. Preliminary assessments were funded by DEP
- DEP sites under assessment are firefighting training educational facilities and fire departments
- 18 cities and airports have received a “62-780 letter.”

Source: DEP



DEP PCTLs

- Using what it terms "provisional cleanup target" levels and "screening" levels for drinking water, irrigation water, groundwater, and soils:

Provisional PFOA and PFOS Cleanup Target Levels/Screening Levels							
Media	Groundwater - PGCTL **	Soil - PSCTL			Irrigation - IWSL		
		Residential	Commercial/ Industrial	Leachability	Residential	Commercial/ Industrial	Produce
Perfluorooctanoic acid (PFOA)	70 ng/L (0.07 µg/L)	1.3 mg/kg	25 mg/kg	0.002 mg/kg	6.7 µg/L	750 µg/L	NA
Perfluorooctane sulfonate (PFOS)		1.3 mg/kg	25 mg/kg	0.007 mg/kg	72 µg/L	370 µg/L	0.6 µg/L

PFOA and PFOS Surface Water Screening Levels				
Criteria	Human Health		Ecological	
	Freshwater	Marine	Freshwater	Marine
Perfluorooctanoic acid (PFOA)	0.15 µg/L	0.15 µg/L	1,300 µg/L	ND
Perfluorooctane sulfonate (PFOS)	0.004 µg/L	0.004 µg/L	37 µg/L	13 µg/L

- DEP has produced what it calls a “PFAS Dynamic Plan”

Source: DEP

Florida Legislation: CS/HB 1475, CS/SB 7012 (2022)

This bill provides that if the EPA has not finalized its standards for PFAS in drinking water, groundwater, and soil by January 1, 2025, FDEP must adopt by rule statewide cleanup target levels.

THE FLORIDA SENATE
2022 SUMMARY OF LEGISLATION PASSED
**Committee on Environment and
Natural Resources**

CS/HB 1475 — Cleanup of Perfluoroalkyl and Polyfluoroalkyl Substances

by State Affairs Committee and Reps. McClure, Overdorf, and others (CS/SB 7012 by Appropriations Committee; Environment and Natural Resources Committee; and Senator Broxson)

The bill provides the following definitions:

- “Department” means the Department of Environmental Protection (DEP).
- “PFAS” means perfluoroalkyl and polyfluoroalkyl substances, including perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS).

The bill provides that if the U.S. Environmental Protection Agency (EPA) has not finalized its standards for PFAS in drinking water, groundwater, and soil by January 1, 2025, DEP must adopt by rule statewide cleanup target levels (CTLs) for same using the risk-based corrective action criteria in existing law. The rules for statewide CTLs may not take effect until ratified by the Legislature.

The bill provides that until DEP’s rule for a particular PFAS constituent has been ratified by the Legislature, a governmental entity or private water supplier may not be subject to any administrative or judicial action under ch. 376, F.S., brought by any state or local governmental entity to compel or enjoin site rehabilitation, to require payment for the cost of rehabilitation of environmental contamination, or to require payment of any fines or penalties regarding rehabilitation based on the presence of that particular PFAS constituent.

The bill provides that until site rehabilitation is completed or rules for statewide CTLs are ratified by the Legislature, any statute of limitations that would bar a state or local governmental entity from pursuing relief in accordance with its existing authority is tolled from the effective date of the bill.

The bill provides that it does not affect the ability or authority to seek any recourse or relief from any person who may have liability with respect to a contaminated site and who did not receive protection under the bill.

The bill directs the Division of Law Revision to replace the phrase “the effective date of this act” wherever it occurs in the bill with the date the bill becomes a law.

If approved by the Governor, these provisions take effect upon becoming law.

Vote: Senate 38-0; House 111-0

FL Legislature (2022) required DEP standard setting coupled with enforcement abatement: 376.91, F.S.

- If EPA has not adopted standards for soil, drinking water, and groundwater by January 1, 2025, DEP must adopt CTLs for PFOS/PFOA by rulemaking. But, CTLs will not take effect until ratified by Legislature
- Provides a “time out” for DEP enforcement against local governments and airports
 - Until CTLs are ratified, governmental entities/private water supplier may not be sued under Ch. 376, Fla. Stat. or under administrative action by any state or local government to compel cleanup or require payment for cleanup
 - Private actions
- DEP enforcement and rulemaking will await federal action under CERCLA and EPA rulemaking
- 2023 proposed legislation failed which would have required RBCA and use of delineated areas.

U.S. Congress PFAS Legislation

.....
(Original Signature of Member)

117TH CONGRESS
1ST SESSION

H. R. _____

To require the Administrator of the Environmental Protection Agency to designate per- and polyfluoroalkyl substances as hazardous substances under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980.

IN THE HOUSE OF REPRESENTATIVES

Mrs. DINGELL introduced the following bill; which was referred to the Committee on

A BILL

To require the Administrator of the Environmental Protection Agency to designate per- and polyfluoroalkyl substances as hazardous substances under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980.

1 *Be it enacted by the Senate and House of Representa-*
2 *tives of the United States of America in Congress assembled,*

3 **SECTION 1. SHORT TITLE; TABLE OF CONTENTS.**

4 (a) SHORT TITLE.—This Act may be cited as the
5 “PFAS Action Act of 2021”.

Evolution Of PFAS Litigation

STATE AND MUNICIPAL LITIGATION

OH/WV: 2001 action - DuPont/Chemours Parkersburg, WV manufacturing plant: “Dark Waters” movie

2005 — C8 Scientific Panel: linkage between C8 (PFOA) and various diseases

2005 — \$343 million settlement on behalf of 70,000 residents

2017 — \$267 million settlement to 3,500 residents around site

MN: 2018: \$850 million settlement to address impacts of waste disposal from 3M plant near MPLS/St. Paul

MI: 2019 — Suit against Wolverine Worldwide (shoe manufacturer); PFAS used in manufacturing

NJ: 2019 — 5 suits against manufacturing site to recover costs to investigate/remediate PFAS/AFFF

NM: 2019 — Suit against USAF for GW contamination around 2 Air Force bases

NY: 2018 — Suit against AFFF manufacturers for contamination of water supplies at 5 airports

VT/NH: 2019 — Suits against manufacturers/distributors for costs to restore SW, GW and NRD (one AFFF; one PFAS generally)

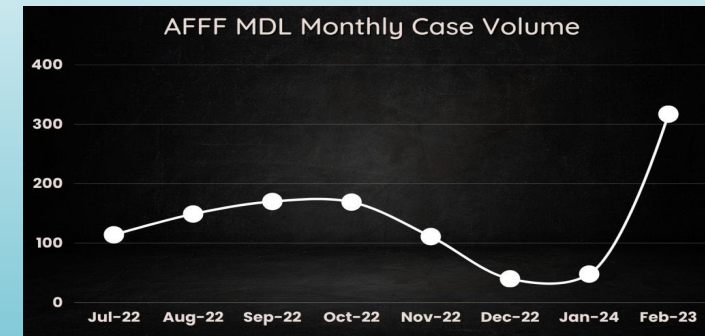
WATER SUPPLY/UTILITY: AL; Tucson; Pensacola; Westfield, Mass.; Middlesex, N.J.; Newburg, N.Y.; Spokane

CLASS ACTIONS: CO, OH, MI, NY, PA, Nationwide

STATES v. MANUFACTURERS: NJ, NH, NY, VT, MI, MA, NC.....

Multi District Litigation

- MDL: By March 2023, more than 2,500 plaintiffs seeking punitive damages, cost of assessment and remediation, costs to treat drinking water
- City of Stuart vs. 3M et al. (2019). PFAS in fire department at airport contaminated public water supply (huge plume). Going to trial on June 5, 2023. First bellwether trial in the nation.
- Multiple other Florida governmental plaintiffs



MDL ACTIONS

- **February 2023:** Defendants ask MDL Court to exclude testimony of certain expert witnesses due to testimony being based on sufficient facts or data or the product of reliable principles and methods, i.e., “good science.” (Daubert Standard). Ruling pending.
- **January 2023:** Defendants ask the MDL court to reconsider previous order compelling DuPont and Nemours to produce detailed exchanges between DuPont and Nemours regarding the manufacture of PFAS. Defendants assert that would violate attorney-client privilege. Denied.
- **January 2023:** Defendants petitions full 6th Circuit to preclude future PFAS-related litigation. Under consideration.
- **September 2022:** Court denied “Government Contractor Defense.” Judge rules defendants, “had significant greater knowledge than government about the risks and withheld this information from the U.S. government.”

Florida MDL

STATE	CASE	COURT	DATE
Florida	Emerald Coast Utilities Authority v. 3M Co 2:18-CV-03488-RMG	United States District Court, South Carolina District Court, Charleston Division	December 18, 2018
	City of Stuart, Florida v. The 3M Company, et al. 2:18-CV-03487-RMG	United States District Court, South Carolina District Court, Charleston Division	December 20, 2018
	Sanford Airport Authority v. 3M Company, et al. 2:20-CV-0213-RMG	United States District Court, South Carolina District Court, Charleston Division	January 22, 2020
	City of Pensacola, v. The 3M Company, et al. 2:20-CV-01478-RMG	United States District Court, South Carolina District Court, Charleston Division	April 20, 2020
	Tampa Bay Water v. The 3M Company, et al. 2:20-CV-01889-RMG	United States District Court, South Carolina District Court, Charleston Division	May 14, 2020
	City of Tampa, Florida v. The 3M Company, et al. 2:20-CV-01867-RMG	United States District Court, South Carolina District Court, Charleston Division	May 15, 2020
	The Hillsborough County Aviation Authority v. The Ansul Company, et al. 2:20-CV-02670-RMG	United States District Court, South Carolina District Court, Charleston Division	July 17, 2020
	City of Melbourne, Florida v. Chemguard, Inc., et al. 2:20-CV-02810-RMG	United States District Court, South Carolina District Court, Charleston Division	July 31, 2020
	District Board of Trustees of Hillsborough Community College v. The 3M Company, et al. 2:20-CV-02934-RMG	United States District Court, South Carolina District Court, Charleston Division	August 13, 2020
	Martin County, Florida v. National Foam Inc., et al. 2:21-CV-01211-RMG	United States District Court, South Carolina District Court, Charleston Division	April 23, 2021

Florida MDL

STATE	CASE	COURT	DATE
Florida	Florida Keys Aqueduct Authority v. 3M Company 2:21-cv-01676-RMG	United States District Court, South Carolina District Court, Charleston Division	June 7, 2021
	City of Tallahassee, Florida v. 3M Company 2:21-cv-01677-RMG	United States District Court, South Carolina District Court, Charleston Division	June 7, 2021
	Pasco County v. 3M Company et al 2:22-cv-00049-RMG	United States District Court, South Carolina District Court, Charleston Division	January 11, 2022
	City of Plantation v. 3M Company et al 2:22-cv-00064-RMG	United States District Court, South Carolina District Court, Charleston Division	January 11, 2022
	Monroe County v. 3M Company et al 2:22-cv-03680-RMG	United States District Court, South Carolina District Court, Charleston Division	October 16, 2022
	Peoples Water Service Company of Florida Inc v. 3M Company 2:22-cv-04113-RMG	United States District Court, South Carolina District Court, Charleston Division	January 9, 2023
	State of Florida v. Tyco Fire Products LP et al 2:23-cv-00229-RMG	United States District Court, South Carolina District Court, Charleston Division	January 18, 2023
	North Collier Fire Control and Rescue District v. 3M Company 2:23-cv-01218-RMG	United States District Court, South Carolina District Court, Charleston Division	March 29, 2023

City of Stuart Bellwether Case

- The City of Stuart is the first case to be tried in the PFAS MDL. The City of Stuart, Florida brought claims against 3M Company, amongst other Defendants, for PFAS contamination of the City's public water supply. The City is asking for \$100 million to remediate the damages cost by AFFF.
- Defendants in the case such as Chemours, DuPont, Corteva agreed to pay \$1.185B for contaminated drinking water.
- The City of Stuart Case was set for trial on June 5, 2023. On June 4th, the City and 3M asked the Court for a continuance to further discuss settlement.
- The Court gave the Parties 21 days to provide the Court with a binding agreement regarding water district cases. If an agreement is not reached by June 26th, the case will be promptly set for trial.

Settlements to Date

3M: On July 3rd, a proposed settlement agreement was filed which stated that:

3M would pay not less than \$10,500,000,000 and not more than \$12,500,000,000

Settlement Agreement is intended to address Public Water Systems' Claims regarding alleged PFAS-related harm to Drinking Water and associated financial burdens, including Public Water Systems' potential costs of monitoring, treating, or remediating PFAS in Drinking Water

3M is continuing to deny liability

Chemours, DuPont, Corteva, originally defendants in CoS, agreed to pay \$1.185B for contaminated drinking water.

Kidde-Fenwal Inc. filed for bankruptcy

Tyco Fire Products LP is currently having settlement discussions with the Plaintiffs' Co-Lead Counsel.

Let's see
some
sobering
data in
liability
settlements

The 1998 tobacco master settlement. \$206B, still paying. Couple of tobacco companies went kaput.

The asbestos settlement trust fund amount was \$30B. Johns Mansville went bankrupt.

Philp Morris tobacco settlement \$28B. It does not operate in the USA.

BP/Deepwater Horizon: \$60B payouts to 2022. BP divested of solar and wind assets to pay.

What is an estimate of the costs to assess and remediate plus personal injury claims for PFAS? Your guess is as good as anybody else's but it will be very, very large. And likely NOT ENOUGH.

Links to Other Resources

- EPA: <https://www.epa.gov/pfas>
- FDEP Contaminated Media Forum: <https://floridadep.gov/waste/district-business-support/content/contaminated-media-forum>
- FDEP Fire Training Facilities Assessment: <https://floridadep.gov/waste/waste-cleanup/content/fire-training-facilities-assessment-pfoa-and-pfos>
- FDEP website on PFOA and PFOS Investigations at Federal Facilities: <https://floridadep.gov/waste/waste-cleanup/content/pfas-investigation-federal-facilities>
- FDEP letter to Department of Defense, January 23, 2019: [https://floridadep.gov/sites/default/files/DoD PFAS Letter Attachments 23Jan19.pdf](https://floridadep.gov/sites/default/files/DoD_PFAS_Letter_Attachments_23Jan19.pdf)
- EPA PFAS Memorandum, April 28, 2022: https://www.epa.gov/system/files/documents/2022-04/npdes_pfas-memo.pdf
- Department of Defense letter to FDEP, June 6, 2019: <https://floridadep.gov/sites/default/files/FL%20DEP%20Response%206%20June%202019.pdf>
- Florida Department of Health: <http://www.floridahealth.gov/environmental-health/drinking-water/documents/pfoa-pfos-fs-20161.pdf> and <http://www.floridahealth.gov/environmental-health/drinking-water/chemicals-hals.html>
- EPA PFAS Dynamic Plan: [https://floridadep.gov/sites/default/files/Dynamic Plan March 2022.pdf](https://floridadep.gov/sites/default/files/Dynamic_Plan_March_2022.pdf)
- EPA's PFAS Strategic Road Map: A Year of Progress [https://www.epa.gov/system/files/documents/2022-11/PFAS%20Roadmap%20Progress%20Report_final Nov%202017.pdf](https://www.epa.gov/system/files/documents/2022-11/PFAS%20Roadmap%20Progress%20Report_final_Nov%202017.pdf)

Links to Other Resources

FDEP's Dynamic Plan for PFAS: <https://floridadep.gov/waste/waste-cleanup/documents/dwm-pfas-dynamic-plan>

FDEP Fire Training Facilities Assessment: <https://floridadep.gov/waste/waste-cleanup/content/fire-training-facilities-assessment-pfoa-and-pfos>

FDEP website on PFOA and PFOS Investigations at Federal Facilities:
<https://floridadep.gov/waste/waste-cleanup/content/pfas-investigation-federal-facilities>

EPA PFAS Action Plan: <https://www.epa.gov/pfas/epas-pfas-action-plan>

EPA PFAS Research: <https://www.epa.gov/chemical-research/research-and-polyfluoroalkyl-substances>

- **EPA PFAS Research:** <https://www.epa.gov/chemical-research/research-and-polyfluoroalkyl-substances-pfas>
- **DOD Performance Specification (MIL-SPEC) Jan. 6th, 2023:**
<https://media.defense.gov/2023/Jan/12/2003144157/-1/-1/1/MILITARY-SPECIFICATION-FOR-FIRE-EXTINGUISHING-AGENT-FLUORINE-FREE-FOAM-F3-LIQUID-CONCENTRATE-FOR-LAND-BASED-FRESH-WATER-APPLICATIONS.PDF>
- **Letter to FAA from Senators Tammy Baldwin, Shelley Moore Capito, Gary C. Peters, and Jerry Morgan, March 14th, 2023:**
[https://www.baldwin.senate.gov/imo/media/doc/senate letter to faa on pfas transition plan.pdf](https://www.baldwin.senate.gov/imo/media/doc/senate%20letter%20to%20faa%20on%20pfas%20transition%20plan.pdf)

THE END



PFAS: what municipal leaders need to know about PFAS



Annual Conference August 10-12, 2023

Jorge Caspary, P.G. Principal

Cameron-Cole

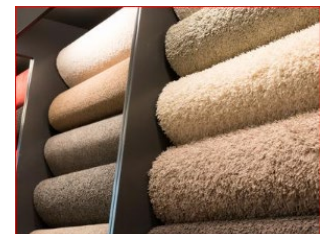
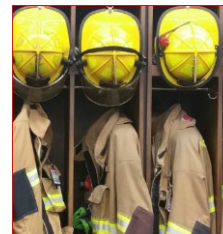
A graphic featuring the letters 'PFAS' in a large, white, bold, sans-serif font. The letters are set against a dark grey background. Behind the letters, there is a swirling, smoke-like effect in a vibrant blue color.

PFAS

PER- AND POLY-FLUOROALKYL SUBSTANCES

PFAS Use - Why Are We Concerned?

- Used since the 40's in a myriad of household and industrial applications:
 - Non-stick packaging and cookware, “Teflon”, Stain resistant carpet and clothing, “Scotchgard”, Medical (catheters, surgical mesh, laparoscopy guides, etc.)
 - Fire-fighting foam - *Aqueous Film Forming Foam (AFFF)*
 - Aerospace, automotive, construction, and electronics industries among others
- Ubiquitous, very persistent in the environment, bioaccumulate over time, and don't breakdown; at this time, incineration is the only known way to destroy them.
- Detected in blood of virtually 100% of the US population

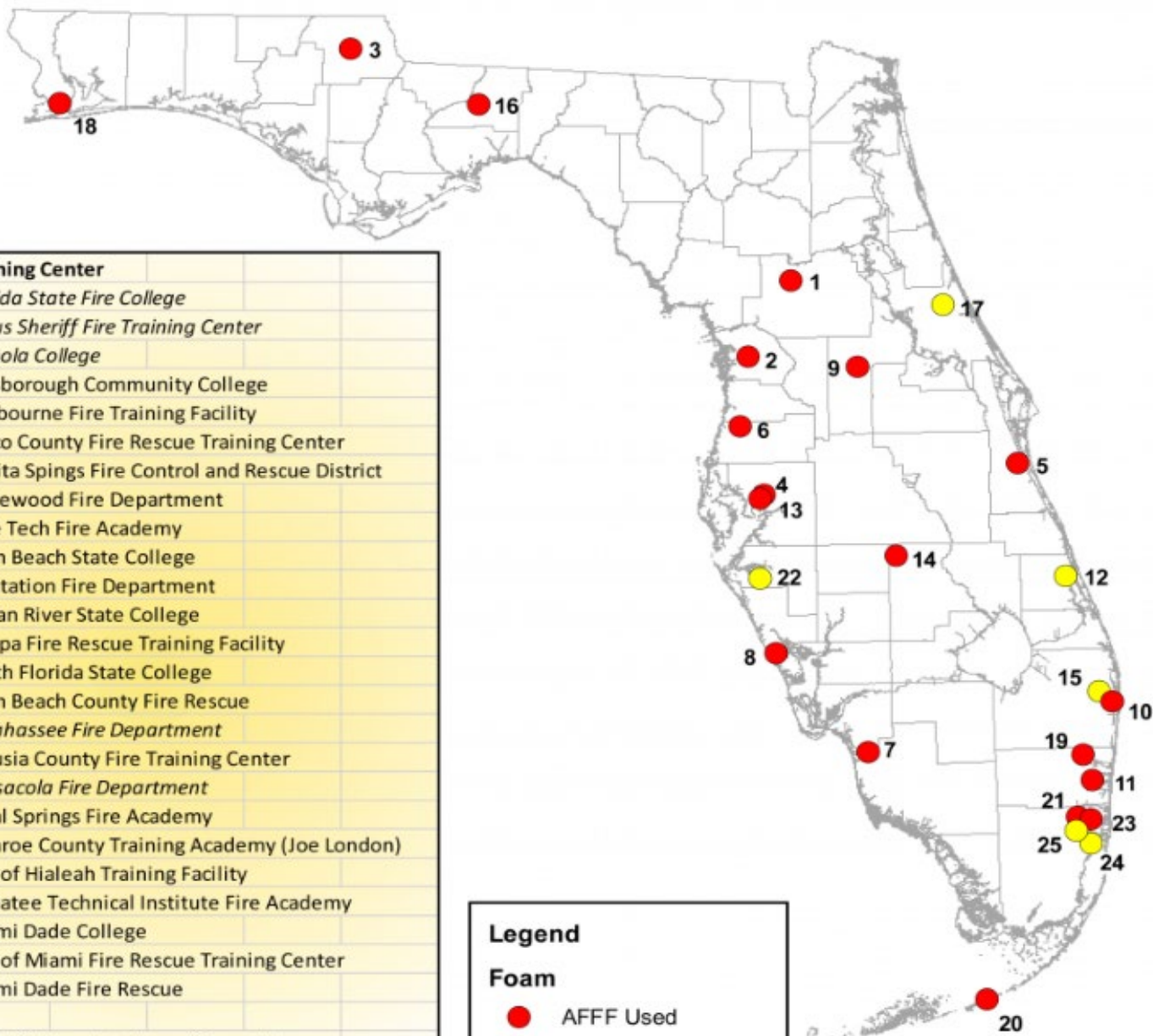


PFAS Technical Challenges

- Ubiquitous and potential multi-source (dry cleaners, fire stations, landfills, leaking wastewater pipe networks, wastewater plants, etc.) so area-wide plumes may be difficult to point to a single source or responsible party.
- Statute calls for “cost-effective source removal” but there are no commercially viable technologies for *in-situ remediation*. Best technology can do now is pump and treat and carbon barriers perpendicular to groundwater flow.
- “Cost-effective” is not defined in Statutes. Depends.
- Right now, 70 ppt is the de facto groundwater standard but EPA has stated that the standard should be practically zero (4 parts per quadrillion) or equivalent to 4 drops of contaminant in a cube of water 1,200 x 1,200 x 1,200 feet. FDEP has not weighed in.
- Assessment is not cheap, and professionals must know when to stop.
- What do to about impacted groundwater/surface water interlink?

Current Status — FDEP

- FDEP initially started evaluating PFAS (PFOA & PFOS) presence in 2018 via assessments directed to fire fighting training academies and municipal/county fire departments. Preliminary Assessments were funded by FDEP
- Currently, initial FDEP sites under assessment are fire fighting training educational facilities such as community colleges and fire departments.
- Cities and airports have received a “62-780 letter”



ID	Training Center		
1	Florida State Fire College		
2	Citrus Sheriff Fire Training Center		
3	Chipola College		
4	Hillsborough Community College		
5	Melbourne Fire Training Facility		
6	Pasco County Fire Rescue Training Center		
7	Bonita Spings Fire Control and Rescue District		
8	Englewood Fire Department		
9	Lake Tech Fire Academy		
10	Palm Beach State College		
11	Plantation Fire Department		
12	Indian River State College		
13	Tampa Fire Rescue Training Facility		
14	South Florida State College		
15	Palm Beach County Fire Rescue		
16	Tallahassee Fire Department		
17	Volusia County Fire Training Center		
18	Pensacola Fire Department		
19	Coral Springs Fire Academy		
20	Monroe County Training Academy (Joe London)		
21	City of Hialeah Training Facility		
22	Manatee Technical Institute Fire Academy		
23	Miami Dade College		
24	City of Miami Fire Rescue Training Center		
25	Miami Dade Fire Rescue		
<i>Italicized: Initial field work to be performed by the FDEP Site Investigation Section</i>			

Legend

Foam

- AFFF Used
- AFFF Possibly Used

Federal Level Action

- **2012-2015:** all PDWS testing for certain Unregulated Contaminants including **PFOS/PFOA**
- **PFOS/PFOA were widely detected** (including in FL), leading to state and federal efforts to minimize exposure despite uncertainties.
- **At Federal Level: EPA's "PFAS Strategic Roadmap"**
 - **CERCLA:**
 - Proposed rule to designate PFOA & PFOS as "Hazardous Substances"
 - Additional of PFAS to Contaminated Site Cleanup Tables (Regional Screening Levels)
 - **RCRA:** Initiated rulemaking efforts to address 4 PFAS under RCRA Corrective Action
 - **Clean Water Act:**
 - Guidance on PFAS in NPDES permitting and
 - Effluent Limitation Guidelines (ELGs) for PFAS
 - **Safe Drinking Water Act:**
 - New round of UCM monitoring for 29 PFAS and Health advisory levels (HALs) issued for 4 PFAS (PFOA, PFOS, GenX, PFBS)
 - Proposed MCL/DWS standards for PFOA/PFOS
 - \$1B in Bipartisan Infrastructure Law Funding to address PFAS/emerging contaminants in small communities
 - **FAA:** mandated to find/use effective PFAS-free fire fighting foams

More Federal Level Action

- Would set PFOA & PFOS enforceable levels @ 4 ppt (measurable)
- Would set enforceable levels of other PFAS
- Would also require PWS to:
 - Monitor for these other PFAS
 - Notify the public of the levels of these PFAS
 - Reduce the levels of these PFAS in DW if > MCL



PFAS. WHAT IS ON THE HORIZON?



Informal “PFAS Coalition”



In 2021, several potentially affected parties formed a coalition



Cities, Seaports, Airports, Independent Airport Authorities, Counties, Litigants, and Solid Waste Industry



Met with FDEP in 2022 to discuss salient issues



FDEP accepted that Cities would lead assessment efforts. Issues of litigation confidentiality, etc.



Coalition produced legislative bill signed by Governor during Summer 2022

FL Legislature (2022) requires FDEP standard setting coupled with enforcement abatement: 376.91, F.S.

- If EPA has not adopted standards for soil, drinking water and groundwater by January 1, 2025, FDEP must adopt CTLs for PFOS/PFOA by rulemaking. But - CTLs will not take effect until ratified by Legislature
- Provides a “time out” for FDEP enforcement against local govs
 - Until CTLs are ratified, governmental entities/private water supplier may not be sued under ch. 376, Fla. Stat. or under administrative action by any state or local government to compel cleanup or require payment for cleanup
 - actions by and against parties not otherwise protected can proceed...
- As a practical matter, FDEP enforcement and rulemaking will await federal action under CERCLA and EPA rulemaking
- Legislative process for addressing funding/program formation not expressly contemplated but....

Where is this issue (anticipated) to go?

A lot of uncertainty right now

- PFAS will be regulated at Federal and State levels - Unavoidable.
- EPA declaring PFOA and PFOS a “hazardous substances” has huge potential consequences for the public and private sector.
- Reopeners in closed cases to CERCLA liability apportionment
- All Appropriate Inquiry on Phase Is and real estate transactions (ASTM1527-21).
- Insurance issues (commercial) are still evolving.
- Surface Water issues unclear
- Costs of “site rehabilitation”. Who will pay for innocent landowners?
- Ultimately, any type of MDL settlement and/or assessment of damages (incalculable right now but asbestos was \$30B) will likely BE NOT ENOUGH.
- This must trigger a new paradigm...

A new paradigm: risk-based approach to managing risk and liabilities

- Met with FDEP in August 2022
- Called for a change in the regulatory paradigm
- Suggested approach based on potential vs. actual risk of exposure

Reducing PFAS contamination sources and then controlling exposure through point-of-use

1. screening level assessment of potential sources.
2. determine who is at imminent risk through an evaluation of permitted private wells and utility connections near source. If area is connected to potable water, then risk is nil to minimal and assessment can be phased in.
3. sample private wells.
4. be prepared to provide alternative water supplies –where necessary.
5. delineate source.
6. plan for “cost-effective source reduction”.

PFAS Coalition

Policy and Regulatory Development Recommendations

- Form a “PFAS Response Action Team”: address this as a team effort (FDEP, FDOH, and Water Management Districts)
- First, protect potable water end users.
- **Employ Risk Mitigation Principles**
 - **Statewide testing of private wells near PFAS suspected sources.**
 - **Expand FDOH testing of private wells**
 - **For private wells with exceedances, FDEP to provide filtration and/or offer connection to the municipal water supply (if acceptable)**
 - **Testing of all public water wells for PFAS at a higher frequency (twice a year)**
 - **FDEP to notify Water Management Districts of areawide groundwater contamination for PFAS. This to PREVENT groundwater access via a permitted private potable well. District would require more robust well construction techniques.**

PFAS Coalition

Policy and Regulatory Development Recommendations

- **DEVELOP an AGGRESSIVE PUBLIC INFORMATION CAMPAIGN**
 - **Create a “PFAS Dashboard”.**
 - **Inform public about steps State is taking to address issue**
 - **Show public water well PFAS test results**
 - **Have a GIS-based portal for cities/counties GIS specialists to have access to information they need.**
 - **What areas of State is FDEP/FDOH testing private wells and coordinate with Cities/Counties.**

PFAS Coalition

Policy and Regulatory Development Recommendations

- **CREATE a State of Florida “PFAS Product Stewardship Program”**
 - **Focused on airports, cities, counties, seaports**
 - **Appropriately dispose of existing stocks of fire fighting foam and manage new stocks of PFAS-free foam**
- **CREATE “Work Groups” to make additional recommendations**
 - **A “Cities Work Group”**
 - **A “Funding Workgroup”**
 - **Etc.**

POTENTIAL LEGISLATION

- Streamline legislation that allows FDEP to declare certain areas of wide groundwater contamination as “Delineated Areas” authorized by Statute. This would allow groundwater access but with better constructed wells.
- Appropriation to Water Management Districts, FDEP, and FDOH to improve GIS systems software and hardware
- Appropriation to Cities/Counties to connect private well owners to the municipal water supply.
- Appropriation to Airports/Seaports/Cities/Counties to establish a PFAS Product Stewardship Program to manage existing stocks of fire fighting foam and to train fire fighters on the new foam. Also equipment replacement.

QUESTIONS?

