

# BROWARD ENVIRONMENTAL REMEDIATION TIMES

## PFAS ISSUE



WINTER 2020/2021

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Brought to you by the Environmental Engineering and Permitting Division

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### PFAS – Emerging Contaminants of Concern: A New Update

Readers new to this newsletter and those that want to get a refresher on previous regulating, assessing, and remediating efforts of per- and polyfluoroalkyl substances (PFAS), refer to the [Winter 2018](#) and [Winter 2019](#) editions of the Broward County Environmental Remediation Times. This article will serve as an update on new developments in regulations, legislation, legal cases dealing with PFAS, and influence noted from the entertainment industry.

### PFAS- The Forever Chemicals

The media has nicknamed PFAS the “forever chemicals”, for their ability to persist over time with little to no breakdown. PFAS are a group of synthetic chemicals that have been in use in the United States for nearly 80 years. They are found in a variety of products such as waterproof coatings for food products and textiles, consumer products such as hair conditioners, non-stick cookware coatings, and in aqueous film-forming foams (AFFFs) used for firefighting at military installations, airports, and large industrial facilities. PFAS are of concern because studies have shown that they can cause health problems for humans including reproductive and developmental issues, immune system, and thyroid hormone disruption, and can lead to cancer. Their chemical properties make them ideal for applications that require durable, non-reactive coatings and also makes them difficult to clean up. Unlike the more volatile components in fuels, PFAS are not amenable to remediation techniques, such as air sparging and biosparging, that can volatilize impacts for treatment or that enhance biological degradation.

### PFAS in the News

One of the most significant events took place in the courts, where the first-class action lawsuit over human health effects of PFAS contamination was settled for \$17.5 million on January 7, 2021. [Continued on page 2.](#)

The State of Florida has established Provisional Groundwater Cleanup Target Levels (PGCTLs) for the two most common PFAS: perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS) at **70 parts per trillion. (ppt).**

### PFAS in Consumer Products

-  Non-stick cookware coatings and shampoos
-  Food wrappers and Packaging
-  Waterproof coatings for textiles and furniture
-  Chemical Manufacturing
-  Fire Fighting at Airports and Military Bases (Aqueous Film-Forming Foams-AFFF)
-  Wastewater Treatment
-  Waste Disposal Facilities

## PFAS – Emerging Contaminants of Concern: A New Update CONT'D

The lawsuit was filed in 2018 on behalf of residents of Peshtigo, WI against Johnson Controls, the owner of Tyco Fire Products (Tyco), who operate an AFFF fire-fighting foam manufacturing plant (which includes an onsite testing/training facility). The suit alleged that releases of AFFF foams to the environment by Tyco led to PFAS impacts to groundwater which found its way into private drinking water wells in nearby neighborhoods. The suit sought to recover costs for property damage to 270 homes, personal injury for health conditions (testicular cancer, kidney cancer, thyroid disease, uncreative colitis, and preeclampsia), and for Tyco to pay to have the residences connected to the municipal water system.

And in a twist worthy of Hollywood, the legal team for the plaintiffs in the Peshtigo case included attorney Rob Bilott (of Taft, Stettinius & Hollister) who was portrayed by actor Mark Ruffalo in the December 2019 film “Dark Waters”, which detailed Bilott's legal fight against DuPont over PFAS contamination near DuPont's Parkersburg, WV manufacturing facility. The Peshtigo case, and the film have increased public awareness of PFAS contamination, in much the same way that the film “Erin Brockovich” called attention to hexavalent chromium contamination.

## Federal Regulation of PFAS

The US Environmental Protection Agency (EPA) regulation “[Long-Chain Perfluoroalkyl Carboxylate and Perfluoroalkyl Sulfonate Chemical Substances Significant New Use Rule](#)” was published in the Federal Register on July 27, 2020, and more recently, the Guidance Document “[Compliance Guide for Imported Articles Containing Surface Coatings Subject to the Long-Chain Perfluoroalkyl Carboxylate and Perfluoroalkyl Sulfonate Chemical Substances Significant New Use Rule](#)” was released on January 19, 2021.

The Rule requires manufacturers of products with coatings containing certain PFAS to notify EPA, who will then conduct a review prior to any manufacturing or processing taking place. The Rule also requires a Significant New Use Notice be filed for any product containing one of the listed PFAS in a coating for any product imported into the United States. This will give EPA the authority to restrict the manufacture or import of products deemed unsuitable

for use in the United States.

## State of Florida Regulation of PFAS

- ⇒ The State of Florida has established Provisional Groundwater Cleanup Target Levels (PGCTLs) for the two most common PFAS: perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS) at 70 parts per trillion (ppt).
- ⇒ The Florida Department of Environmental Protection's (FDEP) Division of Waste Management (DWM) issued the [DWM PFAS Dynamic Plan](#) on July 1, 2020. The Dynamic Plan details the approach FDEP plans to take in developing a comprehensive path forward to identifying PFAS impacts, setting standards, and how to remediate those impacts. FDEP recently announced the results of the 2017-2019 study on PFAS in Landfill Leachate, which found that PFAS compounds were typically present at concentrations lower than other species typically found in leachate, but some at levels that exceed the PGCTLs. In 2020, FDEP also funded a second study on PFAS in landfill leachate to include stormwater and groundwater sampling to perform a PFAS mass balance analysis to determine how PFAS in landfills are impacting other water sources. The results of the study are expected to be available in 2021.
- ⇒ The Florida Safe Drinking Water Act (SB 1720) was introduced as part of the 2020 legislative session. SB 1720 was to require FDEP to establish maximum contaminant levels (MCLs) for PFOS, PFOA, and PFAS. The bill did not advance out of the Appropriations Committee. The only action the Florida Legislature took on PFAS in 2020, was to include a line item in the omnibus appropriations bill (HB 5001) that set aside \$1 million to assist Florida homeowners who have private wells that have been impacted by PFOA or PFOS.
- ⇒ The results for site investigations at fire training facilities across Florida led by FDEP can be found [here](#).

### Questions about this article?

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## PFAS in Air Emissions

Research from the US EPA Office of Research and Development (ORD) and Ohio State university (OSU) concluded that PFAS released from industrial source stack emissions significantly impact nearby soil and surface water. In addition to stack emission sources, there are also potential fugitive emissions of PFAS to the atmosphere during the chemical production and manufacturing of products containing PFAS.

OSU found significant levels of PFAS in surface water more than 15 miles upstream from the source stack emissions. PFAS was detected in the source stack test data using a modified version of an existing EPA test method. There were no studies on the levels of PFAS emissions from the source that would impact nearby soil and surface water due to the absence of approved EPA test methods for PFAS in air.

According to ORD, current emissions tests often target only a small number of PFAS compounds for analysis while significantly more may be present. PFAS have unique chemical and physical properties, requiring special consideration when designing a sampling and analytical process for evaluating these chemicals in ambient air or source air emissions.

**OSU found significant levels of PFAS in surface water more than 15 miles upstream from the source stack emissions.**

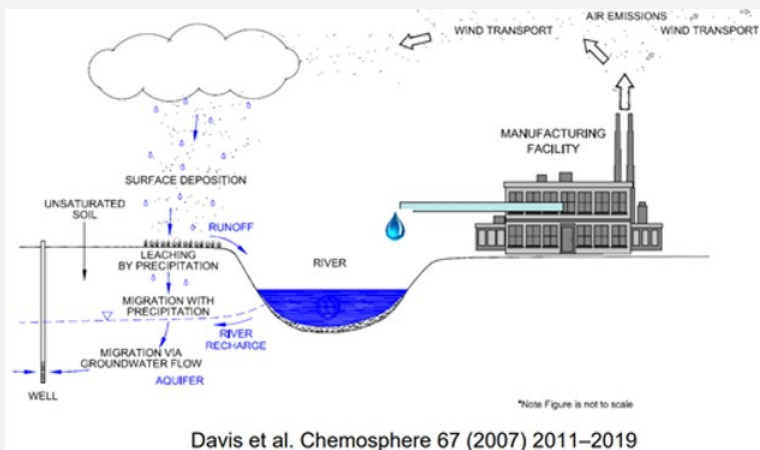


Figure 1. Pathway of PFAS from the source to ambient air, and then to the soil and surface water.

A potential emission source of PFAS are waste-to-energy facilities that use everyday household and business waste as fuel for municipal waste combustor units. Waste material containing PFAS could easily be included as fuel. According to ORD, PFAS compounds are difficult to break down due to fluorine's electronegativity and the chemical stability of fluorinated compounds. Incomplete destruction of PFAS compounds can result in the formation of smaller PFAS products, or products of incomplete combustion, which may not have been researched and thus could be a potential chemical of concern (Yamada et al., 2005; Taylor et al., 2014). However, a combustion process that achieves temperatures exceeding 2000°F would most likely incinerate all PFAS present. Unless the thermal destruction efficiency is 100

percent efficient, there will be some PFAS in stack emissions. PFAS compounds are not listed as hazardous wastes under the Resource Conservation and Recovery Act nor as hazardous air pollutants under the Clean Air Act, so they are not subject to the tracking systems associated with these regulations. Therefore, PFAS is not required to be included in Phase I site characterization and may be present in soil and surface waters near sources of PFAS emissions.

# ANNOUNCEMENTS



## Petroleum Restoration Program Update

The Florida Department of Environmental Protection (FDEP) is opening additional categories for encumbering new work in the Petroleum Restoration Program.

This includes:

- Continued Remediation Operation & Maintenance (O&M)
- Well Abandonment for Site Closure (WASC)
- Safety Issues and Verification Sampling - for Milestone Payment (VS)
- Remedial Action Plan or Pilot Test
- Post Active Remediation Monitoring (PARM)
- Natural Attenuation Monitoring (NAM)

FDEP is continuing to work with the Governor's office and legislative budget offices to evaluate revenues, encumbrances, and expenditures. The Broward County Environmental Assessment and Remediation Team will update all new information as it becomes available.

## Chapter 62-769, F.A.C – Rulemaking Change

Effective November 1, 2020, the Abandoned Tank Restoration Program (ATRP) rule has been updated to reduce the deductible to \$0.00 and establish forms to apply. Please see [Rule 62-769, Florida Administrative Code \(F.A.C.\)](#) for more information.

Interested parties should consult the revised Rule, but some of the important changes are noted below:

- Rule name changed "Abandoned Tank Restoration Program"
- It updates the ATRP deductible to \$0.00
- Adopts the ATRP Application Form by rule
- Adopts the ATRP Certification Form by rule
- Commits the Department to reevaluate the rule in four years