

A background image showing a view of Earth from space, with the sun rising over the horizon on the right side, creating a bright glow and lens flare. The Earth's surface shows continents and oceans, and the sky is filled with stars.

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PFAS UPDATE 2019: EMERGING CONTAMINANTS – WHAT'S NEW, AND WHAT'S NEXT?

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Introduction

- In the last year, there has been increased activity in regulation and litigation involving emerging contaminants
 - PFAS (per- and polyfluoroalkyl substances)
 - (PFOA, PFOS, PFNA, and related compounds)
 - 1,4-dioxane
- We will provide an overview of developments in the past year concerning these emerging contaminants, including:
 - Steps taken by EPA and certain states to regulate these chemicals
 - Litigation associated with their presence in the environment



PFAS

- PFAS (per- and polyfluoroalkyl substances): group of man-made chemicals that includes PFOA, PFOS, GenX, among others.
- PFAS have been manufactured and used in the United States since the 1940s.
- PFAS can be found in:
 - **Food** packaged in PFAS-containing materials (e.g., some microwave popcorn bags).
 - **Commercial household products**, including stain- and water-repellent fabrics, nonstick products, polishes, waxes, paints, cleaning products, and fire-fighting foams.
 - **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.
 - **Living organisms**, including fish, animals and humans, where PFAS have the ability to build up and persist over time.
- PFOA and PFOS are 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.

1,4-Dioxane

- Produced as a by-product from ethoxylation of other chemicals.
 - May be present as a by-product in goods such as paint strippers, dyes, greases, antifreezes, and aircraft deicing fluids, and some consumer products.
- Historically, widely used as a stabilizer in chlorinated solvents such as 1, 1, 1-trichloroethane (“TCA”).
- Since TCA was phased out under the Montreal Protocol in 1996, 1,4-dioxane production has decreased.
 - In 2016, approximately 1 million pounds per year was reported to be manufactured in the U.S. (U.S. EPA, 2016c).
- Highly mobile, completely miscible in water, and does not readily biodegrade.
- EPA has classified it as “likely to be carcinogenic to humans.” (EPA IRIS 2013)
- The International Agency for Research on Cancer has classified it as “possibly carcinogenic to humans.”
- Has been a reportable Toxics Release Inventory (TRI) chemical under Section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA) since 1987.
- Designated a Hazardous Air Pollutant (HAP) under the Clean Air Act (CAA), and listed as a waste under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA).
- Listed on the Safe Drinking Water (SDWA) Candidate Contaminant List (CCL) and identified in the third Unregulated Contaminant Monitoring Rule (UCMR3).

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FEDERAL REGULATION

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Avenues for Regulation by EPA

- Toxic Substances Control Act (TSCA)
 - TSCA governs use of the chemicals.
- Safe Drinking Water Act (SDWA)
 - SDWA governs permissible levels in drinking water
- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)
 - Governs remediation of emerging contaminants in soil, groundwater
 - Has emerged in past year as another avenue for regulation in the near-term
- EPA has been charged with implementing these statutes and promulgating rules to manage the risks of certain chemicals.
- Unless federal preemption applies, states may also regulate chemicals.

Toxic Substances Control Act (“TSCA”) – 15 U.S.C. §§ 2601-2692

- June 2016: Frank R. Lautenberg Chemical Safety for the 21st Century Act (amends TSCA)
 - Governs reporting, recordkeeping, and testing requirements
 - Also allows EPA to enact regulations on a chemical’s use
- In July 2017 (effective September 2017), EPA issued final rules re: Prioritization of Chemicals (“Prioritization Rule”) and the Risk Evaluation Process.
 - Requires EPA to conduct a prioritization process to determine if chemical substances are a high or low priority for risk evaluation.
 - Risk Evaluation includes issuing of a scoping document, then conducting a hazard assessment, exposure assessment, and risk characterization.

TSCA & 1,4-Dioxane

- On November 29, 2016, shortly after the newly amended TSCA was passed, EPA identified the first ten high priority chemicals for risk evaluations. This list, which was picked from the 90 chemicals listed in EPA's October 2014 TSCA Work Plan, included 1,4-dioxane.
- On December 29, 2016, EPA initiated its risk evaluation by beginning work on the scoping document, which was finalized in June 2017.
 - This scoping document identified the hazards, exposures, conditions of use, and potentially exposed/susceptible subpopulations EPA expected to consider in its risk evaluation.
 - Because there was insufficient time for EPA to provide an opportunity for comment on a draft of the scope, EPA is publishing and taking public comment on a problem formulation document to refine the current scope, as an additional interim step prior to publication of the draft risk evaluation for 1,4-dioxane.
- In May 2018, EPA issued its problem formulation of the Risk Evaluation of 1,4-dioxane
 - Refines the conditions of use, exposures and hazards presented in the scope of the risk evaluation for 1,4-dioxane and presents refined conceptual models and analysis plans that describe how EPA expects to evaluate the risk for 1,4-dioxane.

Current Steps by EPA to Regulate PFAS Under TSCA

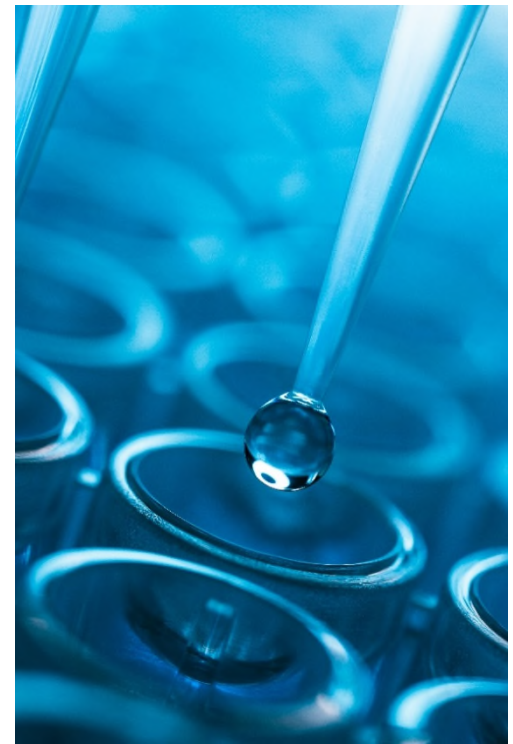
- EPA evaluates substitutes for PFOA, PFOS, and other long-chain PFAS as part of its review process for new chemicals under TSCA's New Chemicals Program.
 - "New chemical" = not already on the TSCA inventory
 - Section 5 of TSCA requires anyone who plans to manufacture or input a new chemical to provide EPA with notice before initiating the activity (a premanufacture notice, or "PMN").
 - Over 300 alternatives of various types have been received and reviewed by EPA to date.
- SNUR proposed by EPA in 2015 requires companies to report new uses of PFOA and PFOA-related compounds, 90 days prior to starting or resuming a new use.
 - Under section 5(a), EPA can determine that a use of a chemical substance is a "significant new use."
 - Notifications would initiate EPA's evaluation of the intended use within the applicable review period.
 - Manufacture and processing for the SNU would be unable to commence until EPA has conducted a review of the notice, made an appropriate determination on the notice, and taken such actions as are required in association with that determination.
 - Final rule expected July 2019 (maybe) (see RIN 2070-AJ99)
- According to EPA, 330 non-Confidential Business Information (CBI) PFAS chemicals have been reported to EPA, and 148 CBI PFAS substances have been reported. See <https://www.epa.gov/pfas/pfas-laws-and-regulations>

EPA PFOA Stewardship Program and Beyond

- In 2006, EPA and eight manufacturers who used and manufactured / imported PFOA agreed to a “stewardship program,” which aimed to reduce factory emissions and product content levels of PFOA by 95% by 2010 and to eliminate PFOA from emissions and product contents by the end of 2015. This program has led to a large decrease in PFOA use.
- Since the commencement of this stewardship program, short-chain chemicals have been introduced to replace PFOA and other PFAS.
 - EPA issued Draft Human Health Toxicity Assessments for Hexafluoropropylene Oxide Dimer Acid and its Ammonium Salt (GenX Chemicals) and for Perfluorobutane Sulfonic Acid (PFBS) and Related Compound Potassium Perfluorobutane Sulfonate in late 2018
 - Public comment period closed January 22, 2019.

Safe Drinking Water Act ("SDWA") – 42 U.S.C. § 300 *et seq.*

- First passed in 1974, and reauthorized in 1986 and 1996, the SDWA requires public drinking water systems to test water provided to customers for certain contaminants and report results to customers, state regulatory agencies, and EPA.
- EPA identifies potential contaminants of drinking water, evaluates them, and, depending on the results, develops regulatory standards for them.
- These standards are maximum contaminant levels ("MCLs")



Safe Drinking Water Act, cont'd

- Every five years, EPA must publish a list of no more than 30 unregulated contaminants for monitoring (unregulated contaminant monitoring rule, or UCMR).
 - 2012 (3d UCMR): certain PFAS (PFOA, PFOS, PFBS, PFNA, PFHxS, and PFHpA) and 1,4-dioxane were included
 - 2018 (4th Contaminant Candidate List): PFOA and PFOS included
- Since 1996, EPA has not added any new contaminants to its regulated list under the SWDA.
- On May 19, 2016, EPA issued a health advisory for PFOA to provide drinking water system operators with information on the health risks of PFOA so they can take appropriate actions to protect residents.
 - 70 parts per trillion.
- Despite EPA's actions, a large increase of PFAs-related litigation has led citizens, legislators, and interest groups to call for binding MCLs.

Comprehensive Environmental Response, Compensation, and Liability Act (“CERCLA”), 42 U.S.C. § 9601 *et seq.*

- PFOA and PFOS (and other PFAs) are not currently defined as hazardous substances under CERCLA
- Federal authority to require cleanup only where “imminent and substantial” danger to public health and welfare” is found by the applicable federal authority
- Designating PFAS as hazardous substances would eliminate the need for such a finding

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Federal Action – 2018-2019

- New legislative / regulatory developments by EPA in last 12 months re PFAS
 - May 2018: National Leadership Summit on PFAs (and associated Community Engagement Events in June 2018)
 - June 2018: ATSDR Report Released
 - 2018 & 2019: Legislation introduced to list PFAS as hazardous substance under CERCLA
 - February 2019: EPA PFAs Action Plan



National Leadership Summit – May 2018

- Washington, D.C., May 22-23, 2018
- EPA announced four actions:
 - Initiating steps to evaluate the need for a maximum contaminant level (MCL) for perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS);
 - Beginning the necessary steps to propose designating PFOA and PFOS as “hazardous substances” through one of the available federal statutory mechanisms ;
 - Developing groundwater cleanup recommendations for PFOA and PFOS at contaminated sites;
 - Developing toxicity values or oral reference doses (RfDs) for GenX chemicals and perfluorobutane sulfonic acid (PFBS).
 - *see <https://www.epa.gov/pfas/pfas-national-leadership-summit-and-engagement>*

ATSDR Report – June 2018

- The Agency for Toxic Substances and Disease Registry (ATSDR) issued an 852-page draft report on perfluoroalkyl compounds on June 20, 2018 (published in the *Federal Register* on June 21)
 - Available at <https://www.atsdr.cdc.gov/toxprofiles/tp200.pdf>
- Issued one month after the PFAs National Leadership Summit in Washington, D.C.
- Released following mounting congressional pressure from both sides of the aisle after news surfaced in May that a White House official in January had warned that releasing the report would be a "potential public relations nightmare."
 - House of Representatives lawmakers in May sent a letter to EPA and the White House demanding the report's release, and senators offered an amendment to a Pentagon spending bill that would require the Trump administration to publish the toxicology report within seven days of the bill's passage.
- Report suggests that stricter guidelines for human exposure to the PFAs studied should be considered, dropping some recommended levels into the single-digit parts per trillion (ppt).
- The report's findings contrast to those of the 2016 EPA health advisory for PFOA and PFOS of 70 ppt.
- ATSDR also proposes two other MRLs for perfluorononanoic acid (PFNA) and perfluorohexane sulfonic acid (PFHxS), neither of which EPA has health advisories for.

ATSDR Report, cont'd

- Uses MRLs (Minimal Risk Levels)
 - Screening levels used to identify environmental exposures that might harm people's health.
 - Expressed in dosage amounts [usually in milligrams/kilogram/day (mg/kg/day)], not concentration [parts per million (ppm), parts per billion (ppb) or parts per trillion (ppt)].
- ATSDR has developed MRL screening values for perfluorooctanoic acid (PFOA), perfluorooctane sulfonic acid (PFOS), perfluorohexane sulfonic acid (PFHxS) and perfluorononanoic acid (PFNA) that can be converted into drinking water concentrations for adults and children, using average weight and water intake:
 - PFOA: 78 ppt (adult) and 21 ppt (child)
 - PFOS: 52 ppt (adult) and 14 ppt (child)
 - PFHxS: 517 ppt (adult) and 140 ppt (child)
 - PFNA: 78 ppt (adult) and 21 ppt (child)
- *Source:* https://www.atsdr.cdc.gov/pfas/mrl_pfas.html (published Nov 2018)


CERCLA, redux

- New legislation proposed re: designating PFAS as hazardous substances 2018 - 2019:
 - 2018 - H.R. 6835 - PFAS Federal Facility Accountability Act – introduced Sept. 17, 2018
 - Would have required EPA to “make a determination” as to whether to designate PFAS as CERCLA hazardous substances
 - 2019 - H.R. 535 - PFAS Action Act – introduced Jan. 14, 2019
 - would designate all PFAS as hazardous substances under the CERCLA
 - would trigger PFAS cleanup liability for DOD and private parties
 - has been referred to both the House Energy & Commerce and Transportation & Infrastructure committees, which share jurisdiction over CERCLA

EPA PFAS ACTION PLAN

- On February 14, 2019, in responsive to growing concerns over PFAS litigation and the proliferating patchwork of state standards, EPA announced its “Action Plan for Per- and Polyfluoroalkyl Substances”
- Follows May 2018 National Leadership Summit
- With this plan, EPA aims to address current PFAS contamination, prevent future contamination, and effectively communicate with the public about these chemicals.
- Consists of 23 priority action items with the majority identified as short-term or generally taking place or expected to be completed in the next two years, as well as longer-term items (more than two years).

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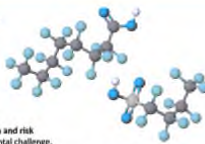
EPA's PFAS Action Plan: A Summary of Key Actions 

EPA's PFAS Action Plan outlines concrete steps the agency is taking to address PFAS and to protect public health.

PFAS Per- and Polyfluoroalkyl Substances (PFAS) Action Plan:

- Demonstrates the agency's critical national leadership by providing both short-term solutions and long-term strategies to address this important issue.
- Provides a multi-media, multi-program, national research and risk communication plan to address this emerging environmental challenge.
- Responds to the extensive public input the agency has received over the past year during the PFAS National Leadership Summit, multiple community engagements, and through the public docket.

EPA is taking a proactive, cross-agency approach to addressing PFAS. The key actions EPA is taking to help provide the necessary tools to assist states, tribes, and communities in addressing PFAS are summarized below.



DRINKING WATER

EPA is moving forward with the Maximum Contaminant Level (MCL) process for PFOA and PFOS—two of the most well-known and prevalent PFAS chemicals. The Agency is also gathering and evaluating information to determine if regulation is appropriate for a broader class of PFAS.

The next step in the Safe Drinking Water Act process for issuing drinking water standards is to propose a regulatory determination. This provides the opportunity for the public to contribute to the information the EPA will consider related to the regulation of PFAS in drinking water.

CLEANUP

EPA continues strengthening enforcement authorities and clarifying cleanup strategies through actions such as designating PFOA and PFOS as hazardous substances and developing interim groundwater cleanup recommendations.

This important work will provide additional tools to help states and communities address existing contamination and enhance the ability to hold responsible parties accountable.

TOXICS

EPA is considering the addition of PFAS chemicals to the Toxics Release Inventory and rules to prohibit the uses of certain PFAS chemicals.

The Toxics Release Inventory would make information about certain PFAS releases reported by certain industrial sectors and federal facilities available. Additionally, the TSCA new chemicals program will help manage and, as necessary, reduce risk to human health and the environment from new PFAS.

MONITORING

EPA will propose nationwide drinking water monitoring for PFAS under the next LCMR monitoring cycle. Monitoring results will improve understanding of the frequency and concentration of PFAS occurrence in drinking water, which can be used to inform regulatory action.

RESEARCH

EPA is rapidly expanding the scientific foundation for understanding and managing risk from PFAS.

Improved detection and measurement methods, additional information about PFAS presence in the environment and drinking water, better understanding of effective treatment and remediation methods, and more information about the potential toxicity of a broader set of PFAS will help EPA, states, and others better manage PFAS risks.

ENFORCEMENT

EPA uses enforcement tools, when appropriate, to address PFAS exposure in the environment and assist states in enforcement activities.

EPA seeks to support communities that have PFAS releases by using federal enforcement authorities, where appropriate.

RISK COMMUNICATIONS

EPA will work collaboratively to develop a risk communication toolbox that includes multi-media materials and messaging for federal, state, tribal, and local partners to use with the public.

This will help ensure clear and consistent messages to the public and will help address concerns related to PFAS.

PFAS Action Plan: Plan for Current PFAS Contamination

- One of EPA's first actions will be to begin the steps necessary to designate PFOA and PFOS as "hazardous substances" under the CERCLA
 - Will enable government to require clean up of PFOA / PFOS contamination without need for imminent and substantial endangerment findings.
 - May also increase litigation by private actors seeking funding via CERCLA for such cleanups
- As part of CERCLA and Resource Conservation and Recovery Act (RCRA) corrective action programs, EPA plans to develop interim cleanup recommendations to address groundwater contaminated with PFOA/PFOS.
 - Such recommendations will provide a starting point for federal, state, and private-party actors who are engaged in cleanups before they make more site-specific determinations

PFAS Action Plan: Actions to Prevent Future PFAS Contamination Under the SDWA

- EPA intends to establish MCLs for PFOA and PFOS pursuant to the SDWA.
- Once established, public drinking water systems will be required to test water and report these results to consumers, state agencies, and EPA.
- If the level of PFOA/PFOS exceeds the MCL, the water systems will be required to take steps to reduce the amount of PFOA/PFOS back to levels below the MCL.
- While EPA is establishing MCLs for these two contaminants, it will also gather and evaluate additional information to enable it to develop MCLs for broader classes of PFAS during the next Unregulated Contaminant Monitoring Rule monitoring cycle.
- Just weeks before the Plan was announced, certain news outlets were reporting that EPA would not issue MCLs (and they didn't – but they identified intent to do so)

PFAS Action Plan: Actions to Prevent Future PFAS Contamination Under TSCA

- EPA also plans to promulgate a number of Significant New Use Rules (SNURs).
- Once promulgated, these SNURs will require manufacturers and processors to notify EPA before PFAS are used in new ways that may create human health and ecological concerns.
- Once EPA is notified, it will then determine whether the new use presents an unreasonable risk and, if so, take appropriate actions to address the risk.



EPA Action Plan: Improvements in Communications with the Public

- EPA plans to conduct research into the
 - human health and ecological effects of PFAS exposure;
 - sources, fate and transport pathways, and exposures to humans and the ecosystem;
 - costs and effectiveness of different removal/remediation methods;
 - ways that EPA can support stakeholders using science to protect public health and the environment.
- These research activities will be conducted on a longer-term time horizon—more than two years—and will involve EPA coordination and cooperation with federal and state agencies, academia, industry, and nongovernmental organizations.
- In order to allow concerned citizens and other stakeholders to quickly access information on PFAS, EPA has updated its CompTox Chemistry Dashboard to create a clearinghouse of chemical information
- Objective: Ensure collaboration and consistent messaging on PFAS toxicity, informed by best available science.

EPA PFAS Action Plan: Critiques

- Some criticism for not taking immediate action – plan to start taking steps, but not moving fast enough for some.
- Also criticism for addressing individual PFAS individually, rather than as a class.
- Many states are not satisfied and have indicated that they will push forward with their own policies.



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STATE REGULATION

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Steps Taken by States to Regulate PFOAs and 1,4-Dioxane

- Due to the fact that EPA has not issued any binding MCLs for PFOAs or 1,4-dioxane, states have both pressed EPA to take more rigorous actions and moved to develop their own protective standards.
- To date, seventeen states have formal policies addressing PFAS.
- Various states have established drinking water and groundwater guidelines for 1,4-Dioxane, including:
 - Colorado: groundwater quality cleanup standard of 0.35 µg/L
 - California: notification level of 1 µg/L for drinking water
 - New Hampshire: reporting limit of 0.25 µg/L for all public water supplies
 - Massachusetts: drinking water guideline level of 0.3 µg/L
 - Maine: drinking water guideline of 4 ppb;
 - North Carolina: groundwater and surface water supply standards of 3 ppb and 0.35 ppb, respectively
 - New York: proposed MCL of 1 µg/L (one microgram per liter, or roughly 1 ppb) (pending action by NYSDOH)

State PFOA/PFOS Standards

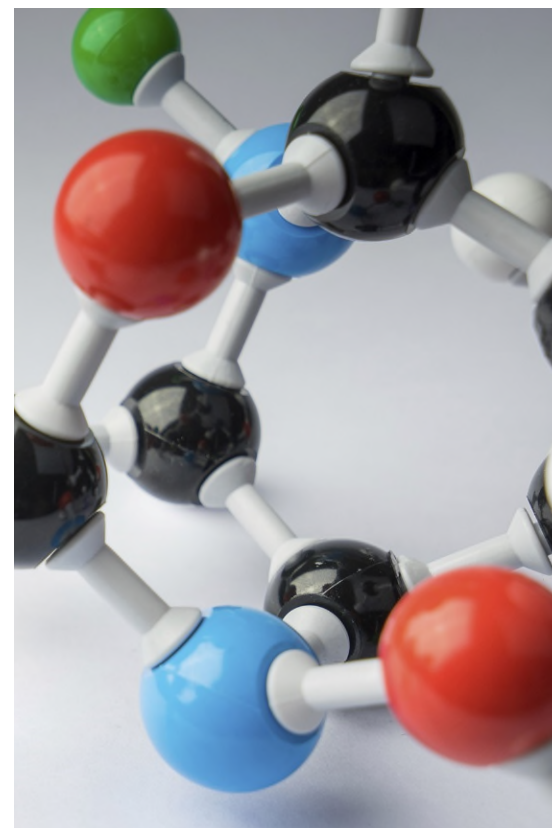
- Many states – including Minnesota, New Jersey, and Vermont – have established, or are seeking to establish, standards that are more protective than EPA’s non-binding PFOA/PFOS advisory level of 70 ppt.
 - Minnesota – 35 ppt
 - Vermont – 20 ppt health advisory for five PFAS compounds (new bill proposed April 16, 2019, would make this standard even more protective, extending these limits to ground water and surface water in an MCL at the same level)
 - California – established nonbinding drinking water notification levels for PFOA at 14 ppt and PFOS at 13 ppt and a combined PFOA/PFOS combined response level at 70 ppt.
- At 14 ppt, New Jersey’s proposed PFOA standard is the most protective in the country.
 - New Jersey also regulates/is seeking to regulate PFNA, PFOS, at similarly low levels (13 ppt). The binding MCL for PFNA was set in November 2017 (adopted 2018) and lowered the previously recommended advisory/guidance level of 40 ppt from 2007.
 - MCLs for PFOS and PFOA are currently undergoing public comment (51 N.J.R. 437(a)); public hearing taking place May 15, 2019 at NJDEP

Other States Taking Action

- In mid-December 2018, the New York State Drinking Water Quality Counsel proposed drinking water standards of 10 ppt each for PFOA and PFOS – the lowest to date in the country – which it urges the New York State Department of Health to adopt.
- Michigan – 70 ppt combined PFOA/PFOS drinking water and groundwater standard of 70 ppt combined PFOA and PFOS. This standard is used in site remediation and enforcement.
 - On March 26, 2019, the Michigan Governor directed MDEQ to propose new drinking water standards for PFAS by October 1, 2019
 - Which specific PFAs will be subject to MCLs will be determined by the agency
- On December 31, 2018, the New Hampshire Department of Environmental Services (NHDES) initiated rulemaking to establish MCLs and Ambient Groundwater Quality Standards for four per- and polyfluoroalkyl substances (PFAS) – PFOA, PFOS, PFNA, and PFHxS.
 - Proposed levels are 38 ppt (PFOA), 70 ppt (PFOS), 85 ppt (PFHxS), and 23 ppt (PFNA).

Other State Actions to Regulate PFAS

- Other Notable State Actions
 - Firefighting Foam: Seven states, including Washington, Minnesota, Michigan, Kentucky, Virginia, New York and Connecticut, have taken steps to prohibit PFAS in firefighting foam.
 - Food Packaging: Washington, Kentucky, New York, Connecticut, Rhode Island, Massachusetts and Vermont have taken steps to prohibit PFAS in food packaging.



NJ Taking Additional Steps

- New requirements for testing at contaminated sites
 - March 13, 2019: NJDEP established new interim specific ground water quality standards for PFOA and PFOS of 10 ppt (0.01µg/L).
 - Same level as the state's health-based groundwater quality criteria for the chemicals
 - Person responsible for conducting remediation is required to evaluate whether there is the potential that PFOA and/or PFOS may have been manufactured, used, handled, stored, disposed or discharged at the site or area of concern.
 - Per NJDEP's March 13 notice, "If either or both PFOA or PFOS are detected in ground water at concentrations exceeding their respective interim specific ground water standard, then a remedial investigation and, if necessary, a remedial action of ground water shall be conducted pursuant to" New Jersey site remediation rules.
 - April 8, 2019: letter from NJ to EPA Region 2 requesting sampling for emerging contaminants at NPL sites in NJ, including as part of five-year reviews. NJDEP has requested EPA conduct a review of federal-lead NJ NPL sites to determine sampling requirements for the identified contaminants.

NJ Taking Additional Steps, cont'd

- NJDEP Statewide PFAS Directive
 - Issued March 25, 2019 to five companies
 - Directs them to fund millions of dollars in assessment and cleanup efforts, and provide a detailed accounting of their use and discharge of PFAS in New Jersey
 - Requires information ranging from use and discharge of the chemicals through wastewater treatment plants, air emissions, and sales of products containing the chemicals to current development, manufacture, use and release of newer chemicals in the state.
 - Some have questioned that NJDEP's authority to issue Directives extends this far
 - Issued under the authorities granted by New Jersey's Spill Compensation and Control Act, Water Pollution Control Act and Air Pollution Control Act, which give NJDEP power to act to prevent environmental pollution, enforce environmental laws, and obtain documentation about the discharge of pollutants.
 - <https://www.nj.gov/dep/docs/statewide-pfas-directive-20190325.pdf>

State 1,4-dioxane standards

- The New York State Department of Health (NYSDOH) is currently weighing a December recommendation from its water quality council to set an MCL of 1 ppb for 1,4-dioxane.
- New York's Drinking Water Quality Council -- formed to address emerging drinking water contaminants -- was initially tasked with developing MCLs for 1,4-dioxane and two per- and polyfluoroalkyl substances (PFAS).
- The recommended 1 ppb MCL for 1,4-dioxane, if codified, would require water system monitoring, reporting and mitigation for exceedances, it says.
- Any rule would then be published in the state register and undergo a 60-day public comment period, the spokesman says.
- While EPA and numerous states have guideline levels for 1,4-dioxane in drinking water and groundwater, New York's measure, if codified, would be the first such MCL -- an enforceable standard -- for the chemical.

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CASE STUDIES & TRENDS

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Theories of Liability Being Pursued

- Public Nuisance and Private Nuisance
- Trespass
- Negligence
- Abnormally Dangerous/Ultra Hazardous Activities
- Failure to Warn
- Design Defect
- Declaratory Judgment Actions (for, e.g., indemnity, remediation, studies)
- On the horizon?
 - Fraud
 - State Statutory Consumer Protection Statutes & Other State Codified Analogs of Common Law Claims
 - Conspiracy
 - Infliction of Emotional Distress
- Claims for both Property Damage and Personal Injury/Medical Monitoring

Who Is Bringing These Suits, and How?

- Private Party Actions
 - Individual Plaintiffs/MDLs
 - Class Actions
- Municipal Water Authority/Water District Actions
- Federal and State Agency Enforcement



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Cases

- Early high-profile examples include PFOA contamination in Hoosick Falls, NY, and Parkersburg, WV.
 - *In re: E.I. du Pont de Nemours & Co., C-8 Personal Injury Litigation*, Case No. 2:13-cv-00136 (S.D. Ohio)
 - Hoosick Falls, New York – *Baker v. Saint-Gobain* and related cases, 1:16-CV-0917 (LEK/DJS) (N.D.N.Y)

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In re Aqueous Film-Forming Foams Products Liability Litigation, MDL No. 2873 (D.S.C.)

- *In re Aqueous Film-Forming Foams Products Liability Litigation, MDL No. 2873 (D.S.C.)*
- Newly formed MDL (initiated in late 2018).
- The cases all involve allegations that aqueous film-forming foams (AFFFs), which are used to extinguish liquid fuel fires, contaminated groundwater near certain airports, military bases, and other industrial locations
- AFFFs, widely used in airports and military bases (as well as other applications), allegedly contain PFOS and/or PFOA
- The cases contain the following common questions of fact:
 - Toxicity of PFOA/PFOS and their effects on human health
 - Chemical properties of the substances and their propensity to migrate in groundwater
 - Knowledge of the AFFF manufacturers re: the dangers of PFAs
 - AFFF manufacturers' warnings (if any) re: proper use and storage
 - Whether defendants conspired to conceal the dangers
- Motions to include other PFAS cases that did not involve AFFF deemed outside the realm of the current MDL; "unwieldy"

Hardwick v. 3M Company et al, 2:18-cv-01185 (S.D. Ohio)

- Filed in October 2018; defendants are all members of the FluoroCouncil (<https://fluorocouncil.com/>).
- Putative class action complaint; purported class is anyone in the US with detectable PFAs in their blood serum.
- Allegations include negligence, battery, declaratory judgment under the Declaratory Judgments Act, conspiracy.
- Relief sought: establishment of an independent scientific panel (the “PFAS Science Panel”), funded by Defendants, and whose evaluations shall be deemed definitive and binding on all the parties.
 - Similar to what was done in the *DuPont C-8* case; not surprisingly, lead Plaintiffs’ counsel in Hardwick was lead counsel in the *DuPont C-8*.
- Motions to Dismiss Pending (briefing completed April 2019)
 - Defendants filed individual motions arguing lack of personal jurisdiction, and joint motion to dismiss (lack of SMJ, failure to allege injury under Ohio law, court lacks authority to grant requested relief, failure to state a claim, abrogation by the Ohio products liability act)
- Plaintiffs sought to join with AFFF MDL, but motion was denied; deemed not appropriate for the MDL – different claims, and different relief sought

Michigan Dep't of Env'tl. Quality v. Wolverine World Wide, Inc., No. 1:18-cv-00039 (W.D. Mich.)

- On 1/10/18, Michigan sued Wolverine World Wide (“WWW”) to recover cleanup costs associated with a drinking water contamination probe.
 - Seeks injunctive and declaratory relief under RCRA and Michigan Environmental laws.
- Numerous townships have intervened to recoup costs as well.
 - Suit was filed one day after MDEQ issued new drinking water cleanup criteria for PFOA/PFOS of 70 ppt
- On 12/18/18, WWW brought a third-party complaint against 3M, alleging that 3M suppressed information regarding the risks of PFOA from regulators and customers like WWW.
 - Action is brought for indemnity, fraud, nuisance, products liability, breach of warranty, and negligence.
- U.S. EPA issued a unilateral administrative order against WWW seeking investigation and remediation.
- Shows the potential overlap between state and federal actions and state/EPA-led cleanups

Suffolk County Water Authority v. Dow Chemical Company, et al., No. 2:17-cv-6980 (E.D.N.Y)

- On November 30, 2017, the Suffolk County Water Authority (the "Authority"), which services 1.2 million residents in eastern Long Island, filed suit against five companies, alleging 1,4-dioxane contamination to its drinking water wells.
- The complaint alleged that 1,4-dioxane was used and discharged in the vicinity of the Authority's drinking water wells and migrated from multiple sources through the subsurface and into groundwater.
- The complaint is noteworthy because rather than suing entities that may have actually discharged 1,4-dioxane into the Long Island environment, the water authority sued entities that manufactured, distributed, retailed, and advertised industrial/commercial products that contain 1,4-dioxane.
- The suit alleges that the defendants manufactured/sold/advertised products containing 1,4-dioxane with the knowledge that it would inevitably reach groundwater and then pollute drinking water wells.
- Six causes of action alleged:
 - Strict products liability for defective design & failure to warn
 - Negligence
 - Public and private nuisance
 - Trespass
- Motion to dismiss under Fed. R. Civ. P. 12(b)(6) filed March 23, 2018 on numerous grounds, including statute of limitations, lack of duty, and failure to adequately plead causation; denied except as to trespass claim, [12/13/2018]

New 1,4-Dioxane Litigation

- Long Island, NY – new 1,4-dioxane cases (recently consolidated/identified as related cases, still in pleading stage) – March 2019
 - *Bethpage Water District v. The Dow Chemical Company, et al.*, 19-cv-1348 (E.D.N.Y.): On March 7, Bethpage Water District in Nassau County, NY, filed an action in the U.S. District Court for the Eastern District of New York against manufacturers, distributors, retailers and promoters of dioxane and dioxane-containing products as well as entities associated with Northrop Grumman Corporation that disposed of and released substances containing dioxane near the water district's service area.
 - Bethpage alleges numerous torts, including strict products liability (defective design and failure to warn), negligence, trespass, and public nuisance, but also contends that the Northrup Grumman defendants' waste handling "may present an imminent and substantial endangerment to health and the environment" under of Resource Conservation and Recovery Act (RCRA).
 - Costs for mitigation measures to respond to the presence of 1,4-dioxane in the water district's production wells such as wellhead treatment, allegedly due to defendants' "tortious conduct."
 - Related cases ("relatedness" granted under E.D.N.Y. Local Rule 50.3.1(e); similar to consolidation):
 - *Plainview Water District v. The Dow Chemical Company et al*, 2:19-cv-01351 (E.D.N.Y) (filed 3/7/2019) - same causes of action as *Bethpage*, but no RCRA claim because Northrup Grumman is not named as a defendant.
 - *South Farmingdale Water District v. The Dow Chemical Company et al*; 2:19-cv-1404 (E.D.N.Y.) (filed 3/11/2019) – same causes of action as *Bethpage*
 - *Suffolk County Water Authority v. The Dow Chemical Company et al*, 2:17-cv-06980 (E.D.N.Y.) – filed in 2017, this was the first major lawsuit filed by a public water facility for contamination arising from the release of 1,4-Dioxane into water supplies. In January 2019, a relatedness finding was sought for ten cases and *SCWA v Dow*.
 - *Bethpage*, *South Farmingdale* and *Plainview* acknowledge absence of enforceable federal or New York State drinking water standard for 1,4-dioxane, but point to the mid-December 2018 NYS Drinking Water Quality Council recommendation of an MCL of 1 ppb for 1,4-dioxane, "rendering enforcement imminent."

Other Recent Cases and Enforcement

- Other recent and upcoming areas for litigation and enforcement:
 - Contamination from PFAS in municipal solid waste landfills impacting groundwater and drinking water
 - Litigation concerning 1,4-dioxane in groundwater and drinking water as state and federal regulations begin to require testing/screening and treatment
 - More suits by water districts to recoup cost to treat for 1,4-dioxane, which is comparatively higher than treatment for PFAS due to the nature of the technology involved (AOP, or advanced oxidation process); GAC and air stripping not effective
 - NRD Actions
 - *Michigan v WWW*
 - NJDEP Directives, Newly Filed Cases against DuPont/Chemours and 3M
 - On March 25, 2019, the New Jersey Department of Environmental Protection (“NJDEP”) issued a Statewide PFAS Directive to DuPont, Chemours, Solvay, and 3M.
 - Two days later, DEP initiated four lawsuits against DuPont/Chemours and 3M, *New Jersey Department of Environmental Protection et al. v. E.I. DuPont De Nemours & Co. et al.*, case nos. SLM-L-000057-19, PAS-L-000936-19, MID-L-002448-19 and GLO-L-00388-19 (the “Litigations”), two of which contained NRD claims for PFA contamination.
- Most of the emerging contaminant cases are still in the early stages (pleading/early discovery)
- Of the cases that have been resolved, most ended in settlement
 - Some cases being settled for hundreds of millions of dollars.

What's Next?

- Continued movement by states to regulate
- More suits by water districts as standards are set/lowered and new treatments are mandated
- Increase in litigation as testing because more prevalent and standards become set and/or lowered
- Possible increase in state and federal agency enforcement at CERCLA cleanups for PFAS and 1,4-dioxane contamination, including possible reopeners on 5-year reviews
- Expansion of existing tort suits upstream to manufacturers
- Federal MCLs?
- Science catching up with regulation – could result in *higher* limits

Questions?



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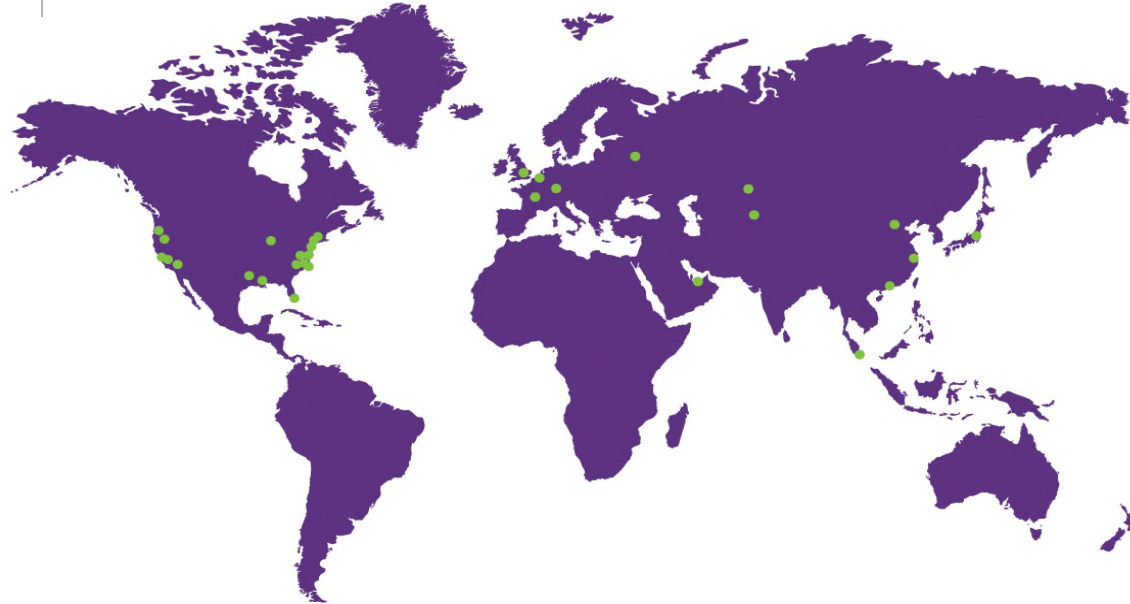
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