

Federal Regulatory Status and Outlook for Per- and Polyfluoroalkyl Substances (PFAS)

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Prepared for the Texas Superconference

August 5-6, 2021

Per- and polyfluoroalkyl substances are a large group of man-made chemicals first discovered by accident in 1938.¹ The Environmental Protection Agency (EPA) CompTox database has identified 9,252 PFAS substances² and the EPA estimates that there are more than 1,000 PFAS used in commerce.³ Although some manufacturers were aware of toxicity concerns as early as 1950,⁴ and the EPA has known about the risks of some PFAS at least as early as 1998,⁵ PFAS remain largely unregulated.

A defining characteristic of PFAS is the carbon-fluorine bond, which is the strongest in organic chemistry.⁶ The strength of this bond makes PFAS heat-resistant, water-resistant, and grease-resistant, and therefore popular for a wide array of consumer and industrial applications. Experts have identified more than 200 use categories and subcategories for more than 1,400 PFAS, including personal care products, food packaging, carpets and upholstered furniture, electroplating, ammunition, and piano keys.⁷

Unfortunately, the same characteristics that make PFAS versatile and popular chemicals make them incredibly persistent in the environment. The carbon-fluorine bond is difficult to destroy, and PFAS do not break down in the environment, which is why they are often called “forever

¹ Chemours, The History of Teflon Fluoropolymers, <https://www.teflon.com/en/news-events/history> (last visited July 19, 2021).

² This list encompasses “PFAS of potential interest based on environmental occurrence (through literature reports and analytical detection) and manufacturing process data, as well as lists of PFAS procured for testing within EPA research programs. The consolidated list contains 6330 PFAS CAS-name substances, with 5264 represented with a defined chemical structure. There is no precisely clear definition of what constitutes a PFAS substance given the inclusion of partially fluorinated substances, polymers, and ill-defined reaction products on these various lists.”

³ The EPA has reported that there are 602 PFAS on the active portion of the Toxic Substances Control Act Inventory and recently disclosed that there are over 600 PFAS that were authorized under low volume exemptions and are not on the TSCA inventory. Compare ENV’T PROT. AGENCY, EPA’S PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS) ACTION PLAN (2019), https://www.epa.gov/sites/production/files/2019-02/documents/pfas_action_plan_021319_508compliant_1.pdf; with ENV’T PROT. AGENCY, PFAS LOW VOLUME EXEMPTION STEWARDSHIP PROGRAM, <https://www.epa.gov/reviewing-new-chemicals-under-toxic-substances-control-act-tsca/pfas-low-volume-exemption> (last updated July 16, 2021).

⁴ ENV’T. WORKING GRP., FOR DECADES, POLLUTERS KNEW PFAS CHEMICALS WERE DANGEROUS BUT HID RISKS FROM PUBLIC, <https://www.ewg.org/pfastimeline/>.

⁵ ENV’T. WORKING GRP., FOR 20-PLUS YEARS, EPA HAS FAILED TO REGULATE ‘FOREVER CHEMICALS,’ <https://www.ewg.org/epa-pfas-timeline/>.

⁶ Teresa A. Unzner & Thomas Magauer, *Carbon-Fluorine Bond Activation for the Synthesis of Functionalized Molecules*, 56 TETRAHEDRON LETTERS 877 (2015), <https://www.sciencedirect.com/science/article/pii/S0040403915000489>.

⁷ Juliane Glüge et al., *An Overview of the Uses of Per- and Polyfluoroalkyl Substances (PFAS)*, 22 ENV’T SCI. PROCESSES & IMPACT 2345 (2020), <https://pubs.rsc.org/en/content/articlelanding/2020/em/d0em00291g>.

chemicals.”⁸ PFAS also have long half-lives, and many can stay in the human body for decades.⁹ PFAS contaminate the blood and organs of nearly every living being, and experts estimate that 25 percent of Americans have elevated levels of PFAS in their blood serum.¹⁰ PFAS are associated with serious health effects, even at very low doses.¹¹ PFAS exposure has been linked to kidney and testicular cancer, preeclampsia, ulcerative colitis, thyroid disease, high cholesterol,¹² reproductive and developmental harm,¹³ and damage to the immune system.¹⁴

The scale of PFAS contamination in the United States is staggering. The Environmental Working Group (EWG) has identified 2,790 contaminated sites¹⁵ and identified tens of thousands more that may be contaminated with some level of PFAS.¹⁶ PFAS are likely present in every major public drinking water system¹⁷ and affect the drinking water of 200 million Americans.¹⁸ For most Americans, however, food is the primary source of exposure to food.¹⁹ PFAS infiltrate the

⁸ Joseph G. Allen, *These Toxic Chemicals are Everywhere – Even in Your Body. And They Won’t Ever Go Away*, WASH. POST (Jan. 2, 2018), https://www.washingtonpost.com/opinions/these-toxic-chemicals-are-everywhere-and-they-wont-ever-go-away/2018/01/02/82e7e48a-e4ee-11e7-a65d-1ac0fd7f097e_story.html

⁹ Half-life estimates range from over two years for PFOA and PFNA to 5.4 years for PFOS to 8.5 years for PFHxS. See ANNA READE, TRACY QUINN, & JUDITH S. SCHREIBER, NAT. RES. DEF. COUNCIL, SCIENTIFIC & POLICY ASSESSMENT FOR PER- AND POLYFLUOROALKYL SUBSTANCES IN DRINKING WATER 12 (April 12, 2019), https://www.nrdc.org/sites/default/files/media-uploads/nrdc_pfas_report.pdf.

¹⁰ CTRS. FOR DISEASE CONTROL AND PREVENTION, NAT’L BIOMONITORING PROGRAM, PER- AND POLYFLUORINATED SUBSTANCES (PFAS) FACTSHEET, https://www.cdc.gov/biomonitoring/PFAS_FactSheet.html. (last updated April 7, 2017). See also David Andrews, *Insight: The Case for Regulating All PFAS Chemicals as a Class*, BLOOMBERG ENV’T (May 20, 2019, 6:00 AM), <https://news.bloombergenvironment.com/environment-and-energy/insight-the-case-for-regulating-all-pfas-chemicals-as-a-class/>.

¹¹ Impacts to mammary gland development have been associated with low-level doses of PFOA. See, e.g., Dierdre K. Tucker et al., *The Mammary Gland is a Sensitive Pubertal Target in CD-1 and C57Bl/6 Mice Following Perinatal Perfluorooctanoic Acid (PFOA) Exposure*, 54 REPROD. TOXICOLOGY 26 (2015), <https://www.ncbi.nlm.nih.gov/pubmed/25499722>; Madisa B. Macon et al., *Prenatal Perfluorooctanoic Acid Exposure in CD-1 Mice: Low Dose Developmental Effects and Internal Dosimetry*, 122 TOXICOLOGICAL SCI. 131 (2011), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3143465/>. PFOA, PFOS, PFHxS and PFDeA are also associated with reduced effectiveness of vaccines, even at low doses. See ANNA READE, *supra* note 9.

¹² C8 SCI. PANEL, C8 PROBABLE LINK REPORTS, http://www.c8sciencepanel.org/prob_link.html (last visited Sept. 26, 2020).

¹³ Alexis Temkin, *PFAS and Developmental and Reproductive Toxicity: An EWG Fact Sheet*, ENV’T. WORKING GRP. (Sept. 19, 2019), <https://www.ewg.org/news-and-analysis/2019/09/pfas-and-developmental-and-reproductive-toxicity-ewg-fact-sheet>.

¹⁴ Tasha Stoiber, *PFAS Chemicals Harm the Immune System, Decrease Response to Vaccines, New EWG Review Finds*, ENV’T. WORKING GRP. (June 21, 2019), <https://www.ewg.org/news-and-analysis/2019/06/pfas-chemicals-harm-immune-system-decrease-response-vaccines-new-ewg>.

¹⁵ Press release, Env’t Working Grp., Update: Detection of Toxic PFAS Chemicals Increases to 2,790 Communities (July 20, 2021); See also ENV’T. WORKING GRP., PFAS CONTAMINATION IN THE U.S., https://www.ewg.org/interactive-maps/pfas_contamination/map/ (last visited July 22, 2021).

¹⁶ See ENV’T. WORKING GRP., SUSPECTED INDUSTRIAL DISCHARGES OF PFAS, https://www.ewg.org/interactive-maps/2021_suspected_industrial_discharges_of_pfas/map/ (last visited July 19, 2021).

¹⁷ Sydney Evans et al., *PFAS Contamination of Drinking Water Far More Prevalent Than Previously Reported*, ENV’T. WORKING GRP. (Jan. 22, 2020), <https://www.ewg.org/research/national-pfas-testing/>.

¹⁸ David Q. Andrews & Olga Naidenko, *Population-Wide Exposure to Per- and Polyfluoroalkyl Substances from Drinking Water in the United States*, 7 ENV’T SCI. & TECH. LETTERS 931 (2020), <https://pubs.acs.org/doi/10.1021/acs.estlett.0c00713>.

¹⁹ See ENV’T PROT. AGENCY, DRINKING WATER HEALTH ADVISORY FOR PERFLUOROCTANOIC ACID (PFOA) at 18 (May 2016), https://www.epa.gov/sites/production/files/2016-05/documents/pfoa_health_advisory_final_508.pdf; ENV’T PROT. AGENCY, DRINKING WATER HEALTH ADVISORY FOR PERFLUOROCTANE SULFONATE (PFOS) at 19

food supply through contaminated irrigation water and soil²⁰ and sewage sludge spread as fertilizer on agricultural croplands.²¹ PFAS can also migrate into food from food packaging.²² In 2018, the European Food Safety Authority, or EFSA, recommended a dramatic reduction in daily intake levels of PFAS from food after finding that the intake of a considerable portion of the population exceed recommended levels.²³

Litigation over PFAS contamination in Parkersburg, WV two decades ago first brought PFAS into the public eye. However, over the last ten years, significantly more contamination has been uncovered as testing has become more widespread and detection methods have improved. The EPA monitored water systems for six different kinds of PFAS between 2013 and 2015 through the unregulated contamination monitoring rule 3 (UCMR 3) under the Safe Drinking Water Act.²⁴ Several states and the military have also tested water systems and groundwater for PFAS in recent years. As more contaminated sites have been identified, the public has become more aware of the problem and more state governments have acted.

Congress has also taken a significant interest in this problem.²⁵ A bipartisan PFAS task force was formed in the 116th Congress, led by Representatives Dan Kildee (D-Mich.) and Brian Fitzpatrick (R- Penn.)²⁶ and continues to be active on PFAS issues.

(May 2016); https://www.epa.gov/sites/production/files/2016-05/documents/pfos_health_advisory_final_508.pdf (“the dominant source of human exposure to PFOA [and PFOS] is expected to be from the diet”).

²⁰ See, e.g., Rosella Ghisi et al., *Accumulation of Perfluorinated Alkyl Substances (PFAS) in Agricultural Plants: A Review*, 160 ENV'T'L RESEARCH 326 (2019), <https://www.ncbi.nlm.nih.gov/pubmed/30502744>. In 2018, FDA sampling of produce taken from a farmers' market 10 miles downstream from a Chemours facility in North Carolina found most of the PFAS tested for, including one sample with 1,200 ppt of GenX. A copy of the FDA poster can be found here: <http://blogs.edf.org/health/files/2019/06/FDA-PFAS-in-food-poster-presentation-2-5-30-19.pdf>.

²¹ In 2018, a Maine dairy farmer who had applied sewage to his land found high levels of PFAS in milk produced by his cows. He had to destroy that milk and is now facing bankruptcy. Pat Rizzuto, *Denied Both Sales and Aid, Face of PFAS Wonders How to Survive*, BLOOMBERG (Jan. 10, 2020), <https://news.bloombergenvironment.com/environment-and-energy/denied-both-sales-and-aid-face-of-pfas-wonders-how-to-survive>. Subsequent testing by the Maine Department of Environment found that every single sample of sludge tested was contaminated with at least one kind of PFAS. Sharon Lerner, *Toxic PFAS Chemicals Found in Maine Farms Fertilized with Sewage Sludge*, THE INTERCEPT (June 7, 2019), <https://theintercept.com/2019/06/07/pfas-chemicals-maine-sludge/>.

²² See, e.g., Timothy H. Begley et al., *Migration of Fluorochemical Paper Additives From Food-Contact Paper into Foods and Food Simulants*, 25 FOOD ADDITIVES & CONTAMINANTS 384 (2008), <https://www.tandfonline.com/doi/abs/10.1080/02652030701513784>; Timothy H. Begley et al., *Perfluorochemicals: Potential Sources of and Migration from Food Packaging* 22 FOOD ADDITIVES & CONTAMINANTS 1023 (2005), <https://www.ncbi.nlm.nih.gov/pubmed/16227186>.

²³ European Food Safety Authority, Panel on Contaminants in the Food Chain, *Risk to Human Health Related to the Presence of Perfluorooctane Sulfonic Acid and Perfluorooctanoic Acid in Food*, 16 EFSA JOURNAL 5194 (2018), <https://efsa.onlinelibrary.wiley.com/doi/epdf/10.2903/j.efsa.2018.5194>; see also Int'l Chemical Secretariat, *Scientists Just Cut the Tolerable Intake of PFAS by 99.9%* (Jan. 30, 2019), <https://chemsec.org/scientists-just-cut-the-tolerable-intake-of-pfas-by-999/>.

²⁴ ENV'T. PROT. AGENCY, THIRD UNREGULATED CONTAMINANT MONITORING RULE, <https://www.epa.gov/dwucmr/third-unregulated-contaminant-monitoring-rule> (last updated Nov. 27, 2020).

²⁵ See Melanie Benesh, *Legislative Approaches to PFAS Chemicals in the 116th Congress* (Oct. 2020), https://www.americanbar.org/content/dam/aba/administrative/environment_energy_resources/Events/2020/28thFallConference/bestpaper/best-paper-2020-28fallconf.pdf.

²⁶ Congressman Dan Kildee, Congressional PFAS Task Force, <https://dankildee.house.gov/congressional-pfas-task-force> (last visited July 19, 2021).

The issue has also been identified as a priority for the Biden Administration. President Biden was the first Presidential candidate to campaign on PFAS by including it as part of his environmental justice plan.²⁷ The Biden Administration included \$75 million in its Fiscal Year 2022 budget to accelerate PFAS toxicity studies and designate some PFAS as hazardous substances under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).²⁸ On April 27, EPA Administrator Michael Regan issued a memorandum to EPA senior leadership calling for the creation of a new “EPA Council on PFAS” charged with building on the agency’s ongoing work to better understand and ultimately prevent or reduce the potential risks caused by these chemicals.²⁹ The council is in the process of developing a multi-year strategy to deliver critical health protections to the American public, called “PFAS 2021-2025 – Safeguarding America’s Waters, Air and Land” and must make initial recommendations within 100 days.³⁰

This paper briefly summarizes completed and forthcoming regulatory actions on PFAS as well as pending legislation that could create additional regulatory obligations. This information is current as of July 26, 2021.

Safe Drinking Water Act

Completed actions

PFAS are currently unregulated contaminants under the Safe Drinking Water Act. In March 2020, the EPA issued a preliminary regulatory determination to develop national primary drinking water standards (NPDWS) for perfluorooctanoic acid (PFOA) and perfluorooctane sulfonic acid (PFOS),³¹ which was finalized a year later in March 2021.³² NPDWS may take the form of a numeric limit, called a maximum contaminant level (MCL), or a treatment technique.

The EPA makes regulatory determinations every five years. Under this process, the EPA must determine whether to regulate at least five chemicals on the candidate contaminant list, or CCL.³³ The CCL is a list of contaminants that are currently not subject to any proposed or promulgated national primary drinking water regulations but are known or anticipated to occur in public water systems. PFOA and PFOS were added to CCL 3 on October 08, 2009³⁴ and to CCL4 on November 17, 2016.³⁵ The EPA published a preliminary CCL 5 on July 19, 2021, that included

²⁷ Joe Biden, The Biden Plan to Secure Environmental Justice and Equitable Economic Opportunity, <https://joebiden.com/environmental-justice-plan/> (last visited July 19, 2021).

²⁸ President’s Discretionary Funding Request for FY 2022 (April 09, 2021), <https://www.whitehouse.gov/wp-content/uploads/2021/04/FY2022-Discretionary-Request.pdf>.

²⁹ Press Release, EPA Administrator Regan Establishes New Council on PFAS (April 27, 2021), <https://www.epa.gov/newsreleases/epa-administrator-regan-establishes-new-council-pfas>

³⁰ *Id.*

³¹ Announcement of Preliminary Regulatory Determinations for Contaminants on the Fourth Drinking Water Contaminant Candidate List, 85 Fed. Reg. 14098 (March 10, 2020).

³² Announcement of Final Regulatory Determinations for Contaminants on the Fourth Drinking Water Contaminant Candidate List, 86 Fed. Reg. 12272 (March 03, 2021).

³³ 42 U.S.C. § 300g-1

³⁴ Drinking Water Contaminant Candidate List 3- Final, 74 Fed. Reg. 51850 (Oct. 08, 2009).

³⁵ Drinking Water Contaminant Candidate List 4- Final, 81 Fed. Reg. 81099 (Nov. 17, 2016).

PFAS as a class, except for PFOA and PFOS, since the EPA has already made a regulatory determination for those PFAS.³⁶

Six PFAS³⁷ were selected for inclusion for monitoring under the Unregulated Contaminant Monitoring Rule 3 (UCMR 3) in May 2012.³⁸ The EPA uses the UCMR to collect data for unregulated contaminants suspected to be present in drinking water. UCMR 3 monitoring took place between 2013 and 2015.³⁹ PFAS sampling in public water systems will take place again under the UCMR 5. Section 7311 of the National Defense Authorization Act for Fiscal Year 2020 (FY 2020 NDAA) required EPA to include all PFAS with a validated drinking water method in monitoring under the UCMR 5.⁴⁰ Although typically the EPA can monitor for “no more than 30 contaminants” under the UCMR,⁴¹ Congress waived this requirement in the FY 2020 NDAA. Nonetheless, when the EPA proposed the UCMR 5 in 2021,⁴² it included only the 29 PFAS measurable with a validated drinking water method⁴³ and lithium.

In 2009, the EPA issued a provisional health advisory of 400 parts per trillion (ppt) for PFOA and 200 ppt for PFOS.⁴⁴ The EPA issued lifetime health advisories (LHA) for PFOA and PFOS in 2016 that lowered these levels to 70 ppt, individual or combined.⁴⁵

Forthcoming actions

The EPA will likely finalize the UCMR 5 this year and drinking water systems will sample for the covered PFAS from 2023-2025.⁴⁶ The EPA will also likely finalize the CCL 5 later this year or in early 2022.

Now that the EPA has finalized the regulatory determination for PFOA and PFOS, under SDWA it must propose a maximum contaminant level goal (MCLG) and NPDWS within 24 months, or by March 2023. After the EPA proposed the MCLG and NPDWS, it must finalize them within 18 months with a possible nine-month extension.⁴⁷

³⁶ Drinking Water Contaminant Candidate List 5- Draft, 86 Fed. Reg. 37948 (July 19, 2021).

³⁷ PFOA, PFOS, perfluorononanoic acid (PFNA), perfluorohexanesulfonic acid (PFHxS), perfluoroheptanoic acid (PFHpA), perfluorobutanesulfonic acid (PFBS)

³⁸ Revisions to the Unregulated Contaminant Monitoring Regulation (UCMR 3) for Public Water Systems, 77 Fed. Reg. 26072 (May 02, 2012).

³⁹ ENV'T. PROT. AGENCY, THIRD UNREGULATED CONTAMINANT MONITORING RULE, <https://www.epa.gov/dwucmr/third-unregulated-contaminant-monitoring-rule> (last updated Nov. 27, 2020).

⁴⁰ National Defense Authorization Act for Fiscal Year 2020, S. 1790, 116th Cong. §§ 7331-7335 (1st Sess. 2019).

⁴¹ 42 U.S.C. 300j-4(a)(2).

⁴² Revisions to the Unregulated Contaminant Monitoring Regulation (UCMR 5) for Public Water Systems and Announcement of Public Meeting, 86 Fed. Reg. 13846 (March 11, 2021).

⁴³ ENV'T. PROT. AGENCY, EPA PFAS DRINKING WATER LABORATORY METHODS, <https://www.epa.gov/pfas/epa-pfas-drinking-water-laboratory-methods> (last updated April 6, 2021).

⁴⁴ ENV'T. PROT. AGENCY, PROVISIONAL HEALTH ADVISORIES FOR PERFLUOROCTANOIC ACID AND PERFLUOROCTANE SULFONATE (PFOS) (January 8, 2009), <https://www.epa.gov/sites/default/files/2015-09/documents/pfoa-pfos-provisional.pdf>.

⁴⁵ See ENV'T. PROT. AGENCY, *supra* note 19.

⁴⁶ ENV'T. PROT. AGENCY, FIFTH UNREGULATED CONTAMINANT MONITORING RULE, <https://www.epa.gov/dwucmr/fifth-unregulated-contaminant-monitoring-rule> (last updated March 11, 2021).

⁴⁷ 42 U.S.C. § 300g-1(b)(1)(E) (“The Administrator shall propose the maximum contaminant level goal and national primary drinking water regulation for a contaminant not later than 24 months after the determination to

Proposed legislation

Several bills have been introduced in 2021 that would set deadlines for the EPA to quickly finalize a NPDWS or expand it to include additional PFAS. The PFAS Action Act, which passed the House of Representatives on July 21, 2021 would require the EPA to promulgate a NPDWS for PFOA and PFOS within 2 years, which must be protective of vulnerable populations.⁴⁸ The EPA would then have to decide whether to include additional PFAS or classes of PFAS in the NPDWS not later than 18 months after a PFAS is added to the CCL, or EPA receives UCMR monitoring data or other reliable water data. If EPA decides to add additional PFAS, it will have to propose a NPDWS within 18 months and finalize it within one year to 18 months. The bill would also require EPA to publish a health advisory for a PFAS or class of PFAS not subject to the NPDWS not later than one year after the later of: (1) The date on which EPA finalizes a toxicity value for PFAS or a class of PFAS; or (2) The date on which EPA validates a test method for detecting the PFAS in drinking water. This provision was also included in H.R. 3684, the INVEST in America Act, the infrastructure package passed by the House in June 2021⁴⁹ and H.R. 3291 the Assistance, Quality, and Affordability Act, which passed out of the Energy and Commerce Committee in June 2021.⁵⁰

H.R. 3267, the Protect Drinking Water from PFAS Act of 2021, would require the EPA to publish a NPDWS for total PFAS that is protective of vulnerable subpopulations within two years.⁵¹

Section 18 of the PFAS Action Act would establish a new grant program for testing for PFAS at schools as well as installation, maintenance, and repair of water filtration systems. Section 14 of the PFAS Action Act would require the EPA to establish a website containing information relating to testing household well water, including information about PFAS testing. A similar bill, the Test Your Well Water Act, was introduced by Representatives Dan Kildee (D-Mich.), Mike Gallagher (R-Wis.), Ron Kind (D-Wis.), Elissa Slotkin (D-Mich.), and Antonio Delgado (D-N.Y.) on July 20, 2021.⁵²

regulate under subparagraph (B), and may publish such proposed regulation concurrent with the determination to regulate. The Administrator shall publish a maximum contaminant level goal and promulgate a national primary drinking water regulation within 18 months after the proposal thereof. The Administrator, by notice in the Federal Register, may extend the deadline for such promulgation for up to 9 months.”)

⁴⁸ The PFAS Action Act, H.R. 2467, 117th Cong. § 5 (1st Sess. 2021).

⁴⁹ Investing in a New Vision for the Environment and Surface Transportation in America Act, H.R. 3684, 117th Cong. § 13202 (1st Sess. 2021).

⁵⁰ The Assistance, Quality, and Affordability Act, H.R. 3291, 117th Cong. § 202 (1st Sess. 2021).

⁵¹ The Protect Drinking Water from PFAS Act of 2021, H.R. 3267, 117th Cong. (1st Sess. 2021).

⁵² Press Release, Representative Dan Kildee, Reps. Kildee, Gallagher, Kind, Delgado, and Slotkin Introduce Bipartisan Legislation to Promote Clean Drinking Water (July 202, 2021), <https://dankildee.house.gov/media/press-releases/rebs-kildee-gallagher-kind-delgado-and-slotkin-introduce-bipartisan-0>.

Other introduced bills would provide grants to water systems and well owners under the SDWA state revolving fund⁵³ or establish new SDWA grants to support community water systems.⁵⁴ The Green New Deal for Public Housing Act would create a new grant program whose funds could be used for water quality upgrades in public housing if combined measurements of PFOA, PFOS, PFHxS, PFHpA, and PFNA exceed 20 ppt.⁵⁵

Clean Water Act

Completed actions

PFAS are nonconventional pollutants under the Clean Water Act, meaning that they are not regulated as toxic pollutants or conventional pollutants. Under section 304(m) of the Clean Water Act, the EPA must release a biennial plan, called a “Effluent Guidelines Program Plan” that establishes a schedule for reviewing and revising existing effluent limitation guidelines (ELGs); identifies categories or sources discharging toxic or nonconventional pollutants for which ELGs have not been published; and establishes a schedule for promulgating ELGs for new categories.⁵⁶ The EPA began reviewing information about PFAS in industrial wastewater discharges in the 2012 plan.⁵⁷ The EPA published a preliminary 304(m) plan in October 2019,⁵⁸ which it finalized on January 11, 2021,⁵⁹ which discuss plans to continue investigating and potentially regulate industrial discharges of PFAS. The EPA also published an advanced notice of proposed rulemaking (ANPRM) in March 2021 seeking information about discharges from PFAS manufacturers and formulators.⁶⁰

The EPA also published a strategy memorandum on November 20, 2020, with recommendations for an interim National Pollutant Discharge Elimination System (NPDES) permitting strategy for addressing PFAS in EPA-issued wastewater permits.⁶¹ In the memo, the EPA committed to

⁵³ Water Affordability, Transparency, Equity, and Reliability Act of 2021, S. 916/H.R. 1352, 117th Cong. § 8 (1st Sess. 2021).

⁵⁴ H.R. 3684 § 13109; The Leading Infrastructure for Tomorrow’s America Act, H.R. 1848, 117th Cong. § 20003 (1st Sess. 2021); The Climate Leadership and Environmental Action for our Nation’s Future Act, H.R. 1512, 117th Cong. § 635 (1st Sess. 2021); Assistance, Quality, and Affordability Act of 2021, H.R. 329, 117th Cong. § 109 (1st Sess. 2021).

⁵⁵ Green New Deal for Public Housing Act, S. 1218 / H.R.2664, 117th Cong. § 6 (1st Sess. 2021).

⁵⁶ 33 U.S.C. § 1314(m).

⁵⁷ ENV’T PROT. AGENCY, FINAL 2012 AND PRELIMINARY 2014 EFFLUENT GUIDELINES PROGRAM PLANS (Sept. 2014), https://www.epa.gov/sites/default/files/2016-10/documents/final-2012-and-preliminary-2014-effluent-guidelines-program-plans_sept-2014_508.pdf.

⁵⁸ ENV’T PROT. AGENCY, PRELIMINARY EFFLUENT GUIDELINES PROGRAM PLAN 14 (Oct. 2019), https://www.epa.gov/sites/default/files/2019-10/documents/prelim-eg-plan-14_oct-2019.pdf.

⁵⁹ ENV’T PROT. AGENCY, EFFLUENT GUIDELINES PROGRAM PLAN 14 (Jan. 2021), https://www.epa.gov/sites/default/files/2021-01/documents/eg-plan-14_jan-2021.pdf.

⁶⁰ Clean Water Act Effluent Limitation Guidelines and Standards for the Organic Chemicals, Plastics, and Synthetic Fibers Point Source Category, 86 Fed. Reg. 14560 (March 17, 2021).

⁶¹ Memorandum from David P. Ross, Assistant Adm’r for the Env’t Prot. Agency Office of Water, to Regional Administrators, Recommendations from the PFAS NPDES Regional Coordinators Committee, *Interim Strategy for Per- and Polyfluoroalkyl Substances in Federal Issued National Pollutant Discharge Elimination System Permits* (Nov. 22, 2020), https://www.epa.gov/sites/default/files/2020-11/documents/pfas_npdes_interim_strategy_november_2020_signed.pdf.

building out relevant NPDES permitting information on the EPA PFAS website and NPDES Permit Writers' Clearinghouse.

Forthcoming actions

The EPA's February 2019 *PFAS Action Plan* announced plans to conduct a multi-industry study to determine whether it should update ELGs for four industrial point source categories: organic chemicals, synthetic fibers, and plastics (OCSFP); airports; textile manufacturers; and paper and paperboard manufacturers.⁶² In the final Effluent Guidelines Program Plan 14 the EPA announced that it had added metal finishers to this PFAS multi-industry study.⁶³ The study is ongoing.

Comments closed on the OCSFP ANPRM in June 2021, but it is unclear when the EPA will issue any proposed ELGs for this point source category. The EPA has not issued ANPRMs or proposed rules for any other point source categories but may do so as the PFAS multi-industry study progresses.

The EPA is developing validated methods to detect PFAS in wastewater. The agency has drafted, but not finalized, method 8327, to measure 24 PFAS in groundwater, surface water, and wastewater samples. The EPA and the Department of Defense (DOD) are developing a test method for 40 PFAS in non-drinking water matrices, including wastewater influent and effluent.⁶⁴ The EPA is also in the process of validating two methods to measure total PFAS—total organic fluorine (TOF) and total organic precursors (TOP).⁶⁵

Legislation

The most comprehensive piece of legislation addressing industrial discharges of PFAS is the Clean Water Standards for PFAS Act.⁶⁶ This bill would require that the EPA set water quality criteria for measurable PFAS within two to three years⁶⁷ and place effluent limits on discharges to surface waters and publicly owned treatment works (POTWs) within four years. The EPA would have to develop these limits for nine point source categories: (1) organic chemicals, plastics, and synthetic fibers; (2) pulp, paper, and paperboard; (3) textile mills; (4) electroplating; (5) metal finishing; (6) leather tanning and finishing; (7) paint formulating; (8) electrical and electronic components; (9) plastics molding and forming. The Clean Water Standards for PFAS Act would also provide \$200 million a year in grants to POTWs for infrastructure upgrades.

⁶² See ENV'T PROT. AGENCY, PFAS ACTION PLAN p. 30 (Feb. 2019), https://www.epa.gov/sites/default/files/2019-02/documents/pfas_action_plan_021319_508compliant_1.pdf.

⁶³ ENV'T PROT. AGENCY, *supra* note 59, at 6-2.

⁶⁴ ENV'T PROT. AGENCY, STATUS OF EPA RESEARCH AND DEVELOPMENT ON PFAS, <https://www.epa.gov/chemical-research/status-epa-research-and-development-pfas> (last updated April 20, 2021).

⁶⁵ ENV'T PROT. AGENCY, PFAS ANALYTICAL METHODS DEVELOPMENT AND SAMPLING RESEARCH, <https://www.epa.gov/water-research/pfas-analytical-methods-development-and-sampling-research> (last updated May 11, 2021).

⁶⁶ Clean Water Standards for PFAS Act, S. 1907/ H.R. 3622, 117th Cong. (1st Sess. 2021).

⁶⁷ The timeframe differs slightly from the standalone (two years) to the version included as an amendment in the PFAS Action Act and INVEST Act (three years).

In addition to introduction as a standalone bill, the Clean Water Standards for PFAS Act was also included as section 17 of H.R. 2467, the PFAS Action Act, and section 12023 of H.R. 3684, The INVEST Act. Both the PFAS Action Act and INVEST Act have passed the House of Representatives.

Another provision included as section 13 in the PFAS Action Act and section 12022 of the INVEST Act would require industrial sources to notify POTWs about the identity and quantity of their PFAS discharges, whether the PFAS can be treated, and whether the PFAS would interfere with operation of the POTW. That provision has also been introduced as a standalone bill.⁶⁸

Section 12 of the PFAS Action Act would also require the EPA to investigate ways to prevent GenX contamination of surface waters. Like the Clean Water Standards for PFAS Act, the Water Quality Protection and Job Creation Act of 2021 would provide authorize \$200 million for treatment grants for POTWs.⁶⁹ The PIPE Act would also create a new discretionary grant program for wastewater infrastructure.⁷⁰

The Toxic Substances Control Act

Completed actions

The Toxic Substances Control Act is a cradle-to-grave statute designed to manage risks from the production, import, use, and disposal of chemicals. When Congress passed TSCA in 1976, it created a process for approving new chemicals but grandfathered in 62,000 chemicals on the market prior to 1979.⁷¹ PFAS developed after 1979 have gone through the new premanufacture notice (PMN) process or were commercialized through an exemption to the PMN process, such as the low volume exemption (LVE). The EPA estimates that there 602 PFAS on the non-confidential TSCA inventory and more than 600 PFAS that have been authorized to enter the market through LVEs.⁷²

The EPA has issued at least five TSCA significant new use rules (SNUR) covering PFAS, which require companies to provide notice and get EPA approval before manufacturing or importing certain PFAS for certain uses. Two SNURs were issued in 2002 that covered the manufacture or import of 88 different PFAS included in a voluntary phase-out of PFOS by 3M between 2000 and 2002.⁷³ Another SNUR was issued in 2007 covering 183 PFAS the EPA believed to no longer be manufactured.⁷⁴ The EPA also issued a 2013 rule requiring reporting of all new uses of

⁶⁸ PFAS Transparency Act, H.R. 4224, 117th Cong. (1st Sess. 2021).

⁶⁹ Water Quality Protection and Job Creation Act of 2021, H.R. 1915, 117th Cong. § 222 (1st Sess. 2021).

⁷⁰ PIPE Act, H.R. 3701, 117th Cong. (1st Sess. 2021).

⁷¹ ENV'T PROT. AGENCY, TOXIC SUBSTANCES CONTROL ACT CHEMICAL SUBSTANCES INVENTORY: THE INITIAL CHEMICAL SUBSTANCES INVENTORY AND REPORTING FOR ITS REVISED EDITION (Sept. 1979), nepis.epa.gov/Exec/ZyPURL.cgi?Dockey=9101CEFD.TXT.

⁷² See ENV'T PROT. AGENCY, *supra* note 3.

⁷³ Significant New Use Rule; Final Rule and Supplemental Proposed Rule, 67 Fed. Reg. 11008 (March 11, 2002); Perfluoroalkyl Sulfonates; Significant New Use Rule, 67 Fed. Reg. 72854 (Dec. 9, 2002); Perfluoroalkyl Sulfonates.

⁷⁴ Perfluoroalkyl Sulfonates; Significant New Use Rule, 72 Fed. Reg. 57222 (Oct. 9, 2007).

PFOA-related chemicals in carpets.⁷⁵ In 2015, the EPA proposed another SNUR covering any new uses of PFOA and PFOA-related chemicals, including in articles.⁷⁶ The EPA re-proposed and narrowed the 2015 SNUR in February 2020 so it would apply to articles only if PFAS had been used as a surface coating.⁷⁷ The SNUR was finalized in July 2020⁷⁸ in response to a deadline included in the FY 2020 NDAA.⁷⁹ The EPA issued guidance narrowing the scope of this SNUR even further in January 2021, but then rescinded that guidance in June 2021.⁸⁰

In 2006, the EPA negotiated an agreement with the eight largest producers of PFOA to phase out PFOA and some similar long-chain PFAS between 2006 and 2015 under a voluntary stewardship program.⁸¹ Although these long-chain PFAS have largely been phased out of commerce, comments on the most recent SNUR revealed that some manufacturers not subject to the EPA agreement are still using or importing them.⁸² The EPA has also reported that some manufacturers may still be using up existing stocks.⁸³

In 2016, the EPA conducted outreach that resulted in companies withdrawing more than half of 82 LVEs for long-chain PFAS that the EPA had targeted for withdrawal at the time.⁸⁴ In April 2021, the EPA announced a new strategy for reviewing and managing LVE requests for PFAS.⁸⁵ EPA announced that in the future it will generally deny new LVE submissions for PFAS, because it would not be able to conduct a sufficiently robust safety review in the 30 days the law allows. To adequately consider the potential hazards associated with various subclasses of PFAS, those requestors will instead have to submit PMNs, which require a more thorough review and provide 90 days for the EPA to conduct an initial safety review.

Like other TSCA-regulated chemicals, PFAS manufacturers are subject to reporting requirements under section 8. Manufacturers with production volumes greater than 25,000 pounds per year are subject to reporting requirements on exposure-related information under

⁷⁵ Significant New Uses: Perfluoroalkyl Sulfonates and Long-Chain Perfluoroalkyl Carboxylate Chemical Substances, 78 Fed. Reg. 62443 (Oct. 22, 2013).

⁷⁶ Significant New Uses: Long-Chain Perfluoroalkyl Carboxylate and Perfluoroalkyl Sulfonate Chemical Substances, 80 Fed. Reg. 2885 (Jan. 21, 2015).

⁷⁷ Significant New Uses: Long-Chain Perfluoroalkyl Carboxylate and Perfluoroalkyl Sulfonate Chemical Substances, 85 Fed. Reg. 12479 (March 3, 2020).

⁷⁸ Significant New Uses: Long-Chain Perfluoroalkyl Carboxylate and Perfluoroalkyl Sulfonate Chemical Substances, 85 Fed. Reg. 45109 (July 27, 2020).

⁷⁹ National Defense Authorization Act for Fiscal Year 2020, S. 1790, 116th Cong. § 7352 (1st Sess. 2019).

⁸⁰ Env't Prot. Agency, *EPA Continues to Take Action on PFAS to Protect the Public* (June 10, 2021), <https://www.epa.gov/chemicals-under-tsca/epa-continues-take-action-pfas-protect-public>.

⁸¹ ENV'T PROT. AGENCY, FACT SHEET: 2010/2015 PFOA STEWARDSHIP PROGRAM, <https://www.epa.gov/assessing-and-managing-chemicals-under-tsca/fact-sheet-20102015-pfoa-stewardship-program> (last updated March 4, 2021),

⁸² Pat Rizzuto, *Older PFAS That EPA Thought Obsolete Still Used, Agency Told*, BLOOMBERG (April 30, 2020), <https://news.bloomberglaw.com/environment-and-energy/older-pfas-that-epa-thought-obsolete-still-used-agency-told>.

⁸³ ENV'T PROT. AGENCY, PRELIMINARY EFFLUENT GUIDELINES PROGRAM PLAN 14, *supra* note 58, at 3-18

⁸⁴ ENV'T PROT. AGENCY, PFAS LOW VOLUME EXEMPTION STEWARDSHIP PROGRAM, <https://www.epa.gov/reviewing-new-chemicals-under-toxic-substances-control-act-tsca/pfas-low-volume-exemption> (last updated July 16, 2021).

⁸⁵ Env't Prot. Agency, *EPA Announces Changes to Prevent Unsafe New PFAS from Entering the Market* (April 27, 2021), <https://www.epa.gov/chemicals-under-tsca/epa-announces-changes-prevent-unsafe-new-pfas-entering-market>.

section 8(a).⁸⁶ Manufacturers must also immediately notify EPA upon discovery that a PFAS presents a “substantial risk” of injury to health or the environment under section 8(e).⁸⁷ Failure to provide these 8(e) reports was the basis of the EPA’s 2004 lawsuit against DuPont which resulted in a \$16 million settlement.⁸⁸ A search of ChemView finds 97 8(e) reports that have been filed on PFAS.⁸⁹ In June 2021, as required by the FY 2020 NDAA, the EPA proposed a new section 8 rule that would require manufacturers and importers of any PFAS in any year since 2011 to report information related to chemical identity, categories of use, volumes manufactured and processed, byproducts, environmental and health effects, worker exposure, and disposal.⁹⁰

Forthcoming actions

The EPA is still receiving comment on the proposed data call-in issued in June 2021. However, section 7351 of the FY 2020 NDAA requires that EPA complete the data call-in no later than January 01, 2023.

The EPA announced on July 14, 2021, that it was renewing the PFAS LVE stewardship program to expand upon the 2016 efforts.⁹¹ Eligible companies will be able to participate in the program by (1) voluntarily withdrawing their LVE and certifying that they will no longer manufacture or import that PFAS, or (2) by voluntarily withdrawing their LVE following submission and review of a PMN, which would provide for a more robust safety review and allow the EPA to impose conditions to protect human health and the environment.

At a July 14, 2021, conference Michal Freedhoff, Ph.D., assistant administrator for the Office of Chemical Safety and Pollution Prevention, announced that the EPA would also develop a new PFAS testing strategy.⁹² This national testing strategy will centralize existing PFAS data to identify data gaps, group PFAS into categories or sub-classes based on similarities in toxicity or chemical structure, and require testing on representative PFAS to help fill those gaps.

There are pending TSCA citizen petitions related to PFAS that EPA must also respond to. In October 2020, several North Carolina groups petitioned the EPA to issue a section 4 test rule or

⁸⁶ 15 U.S.C. § 2607(a). *See also* ENV’T PROT. AGENCY, CHEMICAL DATA REPORTING UNDER THE TOXIC SUBSTANCES CONTROL ACT, <https://www.epa.gov/chemical-data-reporting> (last updated July 14, 2021).

⁸⁷ 15 U.S.C. § 2607(e).

⁸⁸ ENV’T. PROT. AGENCY, E.I. DUPONT DE NEMOURS AND COMPANY PFOA SETTLEMENTS, <https://www.epa.gov/enforcement/ei-dupont-de-nemours-and-company-pfoa-settlements> (last updated April 30, 2021).

⁸⁹ EPA, ChemView, <https://chemview.epa.gov/chemview> (searched July 18, 2021).

⁹⁰ TSCA Section 8(a)(7) Reporting and Recordkeeping for Perfluoroalkyl and Polyfluoroalkyl Substances, 86 Fed. Reg. 33926 (June 28, 2021).

⁹¹ ENV’T PROT. AGENCY, *supra* note 84.

⁹² Michal Ilana Freedhoff, Testimony at Environmental Working Group Inaugural PFAS Conference (July 14, 2021), <https://www.pfasconf.org/agenda/session/590183>; *see also* Press Release, Env’t Working Grp., EWG Applauds New EPA Programs Addressing Pollution from ‘Forever Chemicals’ (July 15, 2021), <https://www.ewg.org/news-insights/statement/2021/07/ewg-applauds-new-epa-programs-addressing-pollution-forever>.

order on the environmental and health effects of 54 PFAS.⁹³ The EPA denied the petition on January 07, 2021,⁹⁴ but in June 2021 several North Carolina members of Congress requested that the EPA reconsider.⁹⁵ A group of 16 organizations petitioned the EPA in April 2021 to amend EPA's new chemicals regulations to prohibit the use application of four exemptions to PFAS: the low volume exemption, the low release and exposure exemption, the byproducts exemption, and the polymer exemption.⁹⁶

Legislation

Three sections of H.R. 2467, the PFAS Action Act, address PFAS regulation under TSCA. Section 3 would require the EPA to issue a proposed section 4(a) TSCA test rule for comprehensive toxicity testing by PFAS manufacturers and processors for PFAS within 6 months of enactment and a final rule not later than 2 years after enactment. Section 4 would create a five-year moratorium on approvals of new PFAS. It would also prohibit the future approval of new PFAS under exemptions, except for new PFAS developed solely for scientific experimentation or chemical research for drugs, devices, or personal protective equipment. Section 19 would require all PFAS manufacturers to provide the EPA with an analytical reference standard for each PFAS manufactured by the entity within the last ten years.

The PFAS Accountability Act⁹⁷ would amend TSCA to create a federal cause of action for significant exposures to PFAS with medical monitoring available as a remedy. The bill would also lower some legal standards of proof for medical monitoring and allow courts to order the development of new health and safety data.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

Completed actions

PFAS has been detected at 238 Superfund sites, including 98 federal facilities, in concentrations ranging from just over the detection limit to highly concentrated.⁹⁸ PFAS are not currently listed as hazardous substances under section 102 of CERCLA, but the EPA may take some section 104 response actions to address PFAS as pollutants and contaminants if they present an imminent and substantial danger to the public health or welfare.

⁹³ Petition to Require Health and Environmental Testing Under the Toxic Substances Control Act on Certain PFAS Manufactured by Chemours in Fayetteville, North Carolina (Oct. 13, 2020), https://www.epa.gov/sites/default/files/2020-10/documents/chemours_pfas_testing_petition_final.pdf.

⁹⁴ TSCA Section 21 Petition for Rulemaking; Reasons for Agency Response; Denial of Requested Rulemaking, 86 Fed. Reg., 6602 (Jan. 22, 2021).

⁹⁵ Letter from Rep. Deborah K. Ross et al., Members of Congress from North Carolina, to the Honorable Michael Regan, Adm'r, Env't Prot. Agency (June 16, 2021), <https://ross.house.gov/sites/evo-subsites/ross.house.gov/files/evo-media-document/6.16.21%20PFAS%20NC%20EPA%20Letter%206.16.21%20FINAL.pdf>.

⁹⁶ Petition to the United States Environmental Protection Agency to prohibit the use of certain exemptions to the premanufacture notice requirements of the Toxic Substances Control Act for per- and polyfluoroalkyl substances (PFAS) (April 27, 2021), https://earthjustice.org/sites/default/files/files/pfas_pmn_exemptions_petition_04-27-2021.pdf.

⁹⁷ The PFAS Accountability Act, S. 1334/ H.R. 2751, 117th Cong. (1st Sess. 2021).

⁹⁸ Michal Ilana Freedhoff, *supra* note 92.

The EPA has announced on several occasions that CERCLA hazardous substance designation is a priority for the agency.⁹⁹ In January 2021, the EPA released a pre-publication ANPRM asking whether the EPA should take steps to regulate PFAS under CERCLA or RCRA.¹⁰⁰ However, the ANPRM was subject to a regulatory freeze imposed by the incoming Biden administration¹⁰¹ and ultimately never published in the federal register. Jim Woolford, who was director of the EPA's Superfund remediation program from 2006 to 2020 told *the Intercept* that his team completed a draft rule to designate PFOA and PFOS as CERCLA hazardous substances in September 2019¹⁰² but that rule has never been released for public comment.

In December 2019, the EPA finalized guidance on groundwater cleanup standards for PFOA and PFOS at contaminated sites.¹⁰³ The Office of Research Development also published a final toxicity value for PFBS in April,¹⁰⁴ which will help determine clean-up levels for some response actions, in addition to the LHAs for PFOA and PFOS developed in 2016.

The FY 2020 NDAA¹⁰⁵ extended some clean-up obligations to the DOD. Section 316 mandated the cleanup of “pollutants and contaminants” like PFAS in addition to “hazardous substances” at DOD facilities and National Guard installations. Section 332 required the DOD to enter into cooperative agreements upon request with states. DOD must also follow any properly promulgated state standards for clean-up at contaminated sites governed by that cooperative agreement.

⁹⁹ In May 2018, former EPA Administrator Scott Pruitt organized a PFAS summit and announced that EPA was “beginning the necessary steps to propose designating PFOA and PFOS as ‘hazardous substances.’” Env't Prot. Agency, PFAS National Leadership Summit, https://www.epa.gov/sites/production/files/2018-08/documents/pfas-meeting-summary_final_508.pdf. The February 2019 PFAS Action Plan stated that “The EPA has initiated the regulatory development process for listing PFOA and PFOS as CERCLA hazardous substances” *see* ENV'T PROT. AGENCY, *supra* note 62, at 3. At an August 2020 press event with Congressman Richard Hudson, former Administrator Andrew Wheeler shared that EPA was working on a rule to designate PFOA and PFOS as hazardous substances. Press Release, Env't Prot. Agency, Administrator Andrew Wheeler, Congressman Hudson Highlight Trump Administration Action on PFAS at Roundtable in Fayetteville, N.C. (Aug. 25, 2020) <https://www.epa.gov/newsreleases/administrator-wheeler-congressman-hudson-highlight-trump-administration-action-pfas>.

¹⁰⁰ Env't Prot. Agency, Advanced Notice of Proposed Rulemaking: Addressing PFOA and PFOS in the Environment: Potential Future Regulation Pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act and the Resource Conservation and Recovery Act (Jan. 14, 2021), https://www.epa.gov/sites/production/files/2021-01/documents/fri-10019-13-olem_addressing_pfoa_pfosa_anprm_20210113_admin-508.pdf.

¹⁰¹ Memorandum from Ronald A. Klain, Assistant to the President and Chief of Staff, to the Heads of Executive Departments and Agencies, Regulatory Freeze Pending Review (Jan. 20, 2021), <https://www.whitehouse.gov/briefing-room/presidential-actions/2021/01/20/regulatory-freeze-pending-review/>.

¹⁰² Sharon Lerner, *Did the White House Stop the EPA From Regulating PFAS?*, THE INTERCEPT (Sept. 29, 2020), <https://theintercept.com/2020/09/29/epa-white-house-pfas-pfoa-pfos/>.

¹⁰³ Memorandum from Peter C. Wright, Assistant Adm'r, Office of Land and Emergency Management to Regional Administrators, Interim Recommendations to Address Groundwater Contaminated with Perfluorooctanoic Acid and Perfluorooctanesulfonate (Dec. 19, 2019), <https://www.epa.gov/pfas/interim-recommendations-addressing-groundwater-contaminated-pfoa-and-pfos>.

¹⁰⁴ ENV'T PROT. AGENCY, HUMAN HEALTH TOXICITY VALUES FOR PERFLUOROBUTANE SULFONIC ACID (CASRN 375-73-5) AND RELATED COMPOUND POTASSIUM PERFLUOROBUTANE SULFONATE (CASRN 29420-49-3) (April 2021), <https://cfpub.epa.gov/ncea/risk/recordisplay.cfm?deid=350888>.

¹⁰⁵ National Defense Authorization Act for Fiscal Year 2020, S. 1790, 116th Cong. (1st Sess. 2019).

Forthcoming actions

The Biden Administration has committed to addressing PFAS under CERCLA and is expected to follow through on rulemaking.¹⁰⁶ A proposed rule to designate PFOA and PFOS as CERCLA hazardous substances is listed under long-term actions on the Spring 2021 Regulatory Agenda.¹⁰⁷ The EPA is also reportedly considering expanding the proposed rule to cover additional PFAS.¹⁰⁸

Several pending toxicity assessments will also influence CERCLA response actions. The Integrated Risk Information System (IRIS) program has initiated risk assessments for five PFAS: PFDA, PFNA, PFHxA, PFHxS, and PFBA.¹⁰⁹ The EPA Office of Water has issued a draft toxicity value for GenX, which has yet to be finalized.¹¹⁰ Once there are final toxicity values for these PFAS, those values will inform clean-up plans and remediation goals at some contaminated sites.

Legislation

Section 2 of H.R. 2467, the PFAS Action Act, would require the EPA to designate PFOA and PFOS as hazardous substances within a year and within five years determine if additional PFAS should be designated as hazardous substances. The bill would exempt airports from CERCLA liability because of longtime Federal Aviation Administration requirements to use firefighting foam containing PFAS at airports.

The Green New Deals for Cities Act would allocate funds to state and local governments and Native America Nations for green projects, “including testing soils and waters in parks, playgrounds, and other sites for hazardous and radioactive wastes as well as dangerous chemicals, including PFAS.”¹¹¹

Resource Conservation and Recovery Act

Completed actions

PFAS is not currently regulated as a hazardous waste under RCRA.

¹⁰⁶ See Joe Biden, *supra* note 27 (“Biden will tackle PFAS pollution by designating PFAS as a hazardous substance”).

¹⁰⁷ Designating PFOA and PFOS as CERCLA Hazardous Substances, RIN 2050-AH09, <https://www.reginfo.gov/public/do/eAgendaViewRule?pubId=202104&RIN=2050-AH09>.

¹⁰⁸ Suzanne Yohannan, *EPA Eyes Expanded CERCLA PFAS Designation to Include More Chemicals*, INSIDE EPA (June 23, 2021), <https://insideepa.com/daily-news/epa-eyes-expanded-cercla-pfas-designation-include-more-chemicals?s=na>.

¹⁰⁹ Env’t Prot. Agency, Systematic Review Protocol for the PFAS IRIS Assessments, https://cfpub.epa.gov/ncea/iris_drafts/recordisplay.cfm?deid=345065 (last updated Nov. 10, 2020).

¹¹⁰ Env’t. Prot. Agency, Human Health Toxicity Values for Hexafluoropropylene Oxide (HFPO) Dimer Acid and Its Ammonium Salt (CASRN 13252-13-6 and CASRN 62037-80-3)(Nov. 2018) https://www.epa.gov/sites/production/files/2018-11/documents/genx_public_comment_draft_toxicity_assessment_nov2018-508.pdf.

¹¹¹ Green New Deal for Cities Act, H.R. 2644, 117th Cong. § 102 (1st Sess. 2021).

However, as required by section 7361 of FY 2020 NDAA, the EPA published interim guidance on the destruction and disposal of PFAS and PFAS-containing materials in December 2020.¹¹²

Section 330 of the FY 2020 NDAA also addressed destruction and disposal of DOD PFAS waste by requiring that: 1) incineration be conducted at a hot enough temperature to break down PFAS while also ensuring the maximum degree of reduction in emissions; 2) all incineration be conducted in compliance with the Clean Air Act; 3) any materials containing PFAS designated for disposal are stored in accordance with regs at 40 C.F.R. § 264; and 4) all incineration is conducted at facilities permitted to receive waste under subtitle C of RCRA.

Forthcoming actions

The EPA is still reviewing comments on the destruction and disposal guidance and may update it in accordance with those comments.

Two citizen petitions have been filed organizations asking the EPA to list PFAS as hazardous waste under RCRA subtitle C by Public Employees for Environmental Responsibility in September 2019¹¹³ and Green Science Policy Institute, Alaska Community Action on Toxics, Clean Cape Fear, the PFAS Alliance, and Fountain Valley Clean Water Coalition in January 2020.¹¹⁴ The Governor of New Mexico, Michelle Lujan Grisham, also filed a state governor petition to list PFAS as a class as hazardous wastes under RCRA on June 23, 2021.¹¹⁵ The EPA must respond to state governor petitions within 90 days.¹¹⁶

Legislation

Section 9 of H.R. 2467, the PFAS Action Act would prohibit unsafe incineration of PFAS waste by requiring that incineration eliminate all PFAS and is done in accordance with the Clean Air Act, and that materials designated for disposal are stored in accordance with RCRA hazardous waste requirements. The provision has also been introduced as a standalone bill.¹¹⁷ A bill targeting plastics also amends RCRA to restrict some use, recycling, and disposal of PFAS.¹¹⁸

Clean Air Act

Completed actions

¹¹² ENV'T PROT. AGENCY, INTERIM PFAS DESTRUCTION AND DISPOSAL GUIDANCE (Dec. 22, 2020), <https://www.regulations.gov/document/EPA-HQ-OLEM-2020-0527-0003>.

¹¹³ Public Employees for Environmental Responsibility, Petition for Rulemaking Pursuant to Section 6974(a) of the Resource Conservation and Recovery Act Concerning the Regulation of a Class of Wastes Containing Per- and Polyfluoroalkyl Substances (Sept. 19, 2019), https://www.epa.gov/sites/default/files/2020-04/documents/peer_pfas_rulemaking_petition_metadata_added.pdf.

¹¹⁴ Berkeley Law Environmental Law Clinic, Petition for Rulemaking: RCRA Regulation of Wastes Containing Long-Chain PFAAs and GenX Chemicals (Jan. 15, 2020), https://www.epa.gov/sites/default/files/2020-04/documents/pfas_petition_for_haz_waste_jan_2020_metadata_added.pdf.

¹¹⁵ State of New Mexico, State Governor Petition for Rulemaking Pursuant to 42 U.S.C. § 6921(c) (June 23, 2021), <https://www.env.nm.gov/wp-content/uploads/2021/06/2021-06-23-Governor-letter-to-EPA-for-PFAS-petition.pdf>.

¹¹⁶ 41 U.S.C. § 6921(c).

¹¹⁷ H.R. 4463, 117th Cong. (1st Sess. 2021).

¹¹⁸ Break Free From Plastic Pollution Act of 2021, S. 984 / H.R. 2238, 117th Cong. (1st Sess. 2021).

PFAS are largely unregulated under the Clean Air Act.¹¹⁹ One exception is the use of PFOS as a fume suppressant in chrome plating operations. In September 2012, the EPA amended the National Emission Standards for Hazardous Air Pollutants: Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks regulation by requiring chrome platers to phase out the use of PFOS by September 21, 2015.¹²⁰ Prior to the ban, using PFOS was the industry standard for reducing hexavalent chromium emissions.¹²¹

The EPA has acknowledged that air emissions of PFAS from industrial sources are “a significant route for PFAS releases to the environment and is evidenced by deposition as well as their presence in rainwater.”¹²² EPA has released a draft method for measuring 50 PFAS in source air emissions in January 2021 (“OTM 45”).¹²³

Forthcoming actions

The EPA has invited the scientific community to provide comment on OTM 45 and will continue to consider and incorporate feedback on the method. The EPA is working on developing several additional test methods to measure semi and non-volatile PFAS in source emissions and to measure PFAS in ambient air.¹²⁴

Legislation

Section 8 of H.R. 2467, the PFAS Action Act, would require the EPA to issue a final rule listing PFOA and PFOS and their salts as hazardous air pollutants under section 112(b) of the Clean Air Act within 180 days of enactment. Not later than five years after enactment, the EPA would also have to determine whether other PFAS should be listed as hazardous air pollutants. Finally, the provision would require the EPA to update the list of source categories to reflect major PFAS sources and area sources of PFAS within one year of the final rule. Section 9 also places restrictions on incineration of PFAS wastes.

Emergency Planning and Community Right-to-Know Act

¹¹⁹ For the purposes of this paper, I am treating PFAS differently from perfluorocarbons (PFCs) which are also made up of carbon and fluorine atoms and are regulated under the Clean Air Act as greenhouse gases. See ENV’T PROT. AGENCY, WHAT ARE PFCs AND HOW DO THEY RELATE TO PER- AND POLYFLUOROALKYL SUBSTANCES (PFASs)?, <https://www.epa.gov/pfas/what-are-pfcs-and-how-do-they-relate-and-polyfluoroalkyl-substances-pfass> (last updated Sept. 25, 2020).

¹²⁰ National Emission Standards for Hazardous Air Pollutant Emissions: Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks; and Steel Pickling— HCl Process Facilities and Hydrochloric Acid Regeneration Plants, 77 Fed. Reg. 58220 (Sept. 19, 2012).

¹²¹ Haley & Aldrich, PFAS Technical Update: the Chrome Plating Industry, <https://www.haleyaldrich.com/wp-content/uploads/2020/08/HA-Technical-Update-PFAS-in-the-plating-industry.pdf>.

¹²² Jeff Ryan, EPA PFAS Air Emission Measurements: Activities and Research, presented at Env’t Prot. Agency Region 9 Laboratory Tech. Info. Group Meeting, San Francisco, CA, June 04 - 06, 2019, https://cfpub.epa.gov/si/si_public_record_report.cfm?Lab=NRMRL&dirEntryId=345762.

¹²³ Other Test Method 45 (OTM-45) Measurement of Selected Per- and Polyfluorinated Alkyl Substances from Stationary Sources (Jan. 13, 2021), https://www.epa.gov/sites/production/files/2021-01/documents/otm_45_semivolatile_pfas_1-13-21.pdf.

¹²⁴ ENV’T PROT. AGENCY, *supra* note 65.

Completed actions

Section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA) created the toxics release inventory (TRI). The TRI requires facilities to track and report releases of listed chemicals that are emitted into the air, water, or disposed of on land. Information is submitted to the EPA annually and released to the public.

Section 7321 of the FY 2020 NDAA required the EPA to immediately add the following PFAS to the TRI: PFOA and its salts; PFOS and its salts; GenX and associated compounds; PFNA; PFHxS; and any PFAS that are (1) on the TSCA active inventory and (2) subject to the PFAS SNURs codified at 40 C.F.R. § 721.9582 or 40 C.F.R. § 721.10536. The EPA identified 172¹²⁵ PFAS that met these criteria and added them to the TRI in June 2020.¹²⁶ Section 7321 also created an ongoing obligation for the EPA to add additional PFAS to the TRI when those PFAS have a final toxicity value, are covered by a new SNUR, or are added to an existing SNUR. The EPA added three PFAS covered by the June 2020 SNUR to the TRI in June 2021 under this provision.¹²⁷ As required by section 7321, the initial reporting threshold for all these PFAS is 100 lbs.¹²⁸

Forthcoming actions

Facilities using any of 172 PFAS that were added to the TRI for reporting year 2020 had to submit their reporting forms to the EPA by July 01, 2021. A preliminary dataset will be available in mid-July and the complete dataset will become available in October.¹²⁹

Section 7321 requires the EPA to determine by December 2021 if the following PFAS meet the EPCRA section 313 criteria for being added to the TRI:

- perfluoro[(2-pentafluoroethoxy ethoxy)acetic acid] ammonium salt;
- 2,3,3,3-tetrafluoro 2-(1,1,2,3,3,3-hexafluoro)-2-(trifluoromethoxy) propanoyl fluoride
- 2,3,3,3-tetrafluoro 2-(1,1,2,3,3,3-hexafluoro)-2-(trifluoromethoxy) propionic acid
- 3H-perfluoro-3-[(3-methoxy-propoxy) propanoic acid] and salts
- 1-octanesulfonic acid 3,3,4,4,5,5,6,6,7,7,8,8-tridecafluoro-potassium salt
- perfluorobutanesulfonic acid (PFBS)
- 1-Butanesulfonic acid,1,1,2,2,3,3,4,4,4-nonafluoro-potassium salt and associated component
- heptafluorobutyric acid
- perfluorohexanoic acid (PFHxA) and associated compound

¹²⁵ Env't Prot. Agency, Chemicals Added to the Toxics Release Inventory Pursuant to Section 7321 of the National Defense Authorization Act, https://www.epa.gov/sites/default/files/2021-01/documents/tri_non-cbi_pfas_list_1_8_2021_final.pdf (last updated Jan. 12, 2021).

¹²⁶ Implementing Statutory Addition of Certain Per- and Polyfluoroalkyl Substances; Toxic Chemical Release Reporting, 85 Fed. Reg. 37354 (June 22, 2020). These PFAS are listed at 40 C.F.R. § 372.65.

¹²⁷ Implementing Statutory Addition of Certain Per- and Polyfluoroalkyl Substances (PFAS) to the Toxic Release Inventory, 86 Fed. Reg. 29698 (June 3, 2021).

¹²⁸ 40 C.F.R. § 372.29.

¹²⁹ ENV'T PROT. AGENCY, BASICS OF TRI REPORTING, <https://www.epa.gov/toxics-release-inventory-tri-program/basics-tri-reporting> (last updated Dec. 22, 2020).

- perfluoroheptanoic acid (PFHpA)
- All PFAS for which there is a validated method to measure PFAS in drinking water; and
- All PFAS used to manufacture fluorinated polymers.

Section 7321 also requires EPA to reevaluate the 100 lb. reporting threshold within five years to determine whether it should be adjusted.

Food Drug and Cosmetics Act

Completed actions

The Food and Drug Administration regulates food contact uses of PFAS including non-stick cookware coatings; paper/paperboard food packaging coatings; processing aids for the manufacture of other food contact substances; and resin for parts used in food processing equipment like gaskets and O-rings.¹³⁰ The FDA began authorizing these uses in the 1960s. PFAS approved for food contact uses after 2000 were authorized through a food contact notification (FCN) process¹³¹ and can be found on FDA’s Inventory of Effective Food Contact Substance Notifications.¹³² PFAS used before 2000 were approved through an indirect food additive petition process and can be found in the code of federal regulations.¹³³

In 2010, following an agency review of the scientific literature, FDA toxicologists raised safety concerns about certain long-chain PFAS used in food packaging.¹³⁴ The FDA worked with several companies on voluntary commitments to phase out those PFAS.¹³⁵ However, the voluntary commitments were legally unenforceable and did not ban the use of those PFAS. In 2015, several NGOs petitioned the FDA to revoke approval for three of those long-chain PFAS approved for use in food packaging between 1967 and 1997 on the basis that those long-chain PFAS were no longer “reasonably certain to cause no harm.”¹³⁶ After a lengthy toxicological assessment, the FDA revoked approval of those uses in response to the petition in 2016.¹³⁷ In particular, the FDA found that those substances were no longer reasonably certain to cause no harm because of concerns about pre- and post-natal developmental toxicity, reproductive

¹³⁰ FOOD & DRUG ADM’N, AUTHORIZED USES OF PFAS IN FOOD CONTACT APPLICATIONS, <https://www.fda.gov/food/chemical-contaminants-food/authorized-uses-pfas-food-contact-applications> (last updated Oct. 20, 2020).

¹³¹ 21 U.S.C. § 348(h).

¹³² FOOD & DRUG ADM’N, INVENTORY OF EFFECTIVE FOOD CONTACT SUBSTANCE NOTIFICATIONS <https://www.fda.gov/food/packaging-food-contact-substances-fcs/inventory-effective-food-contact-substance-fcs-notifications> (last updated Dec. 14, 2017).

¹³³ See 21 C.F.R. §§ 175.105-178.3950.

¹³⁴ See Memorandum from Penelope A. Rice, Ph.D., FDA Division of Food Contact Notifications, to Paul Honigfort, Ph.D., FDA, Re: Critical Review of Studies Conducted With ≥ C8 Perfluorinated Compounds Concerning Selected Endpoints (Sept. 30, 2010), <https://www.regulations.gov/document?D=FDA-2015-F-0714-0015>.

¹³⁵ See FOOD & DRUG ADM’N, *supra* note 130, under “Market Phase-Out and Revocation of Authorization of Long-Chain PFAS.”

¹³⁶ Natural Resources Defense Council et al., Filing of Food Additive Petition, 80 Fed. Reg. 13508 (March 9, 2015).

¹³⁷ Indirect Food Additives: Paper and Paperboard Components, 81 Fed. Reg. 5 (Jan. 4, 2016).

toxicity, and bio-persistence.¹³⁸ The FDA revoked approval for an additional two long-chain PFAS in 2016 in response to an abandonment petition from 3M.¹³⁹

FDA has also conducted its own studies on migration into food¹⁴⁰ and on the toxicity of the PFAS still authorized for use with a focus on fluorotelomer alcohols.¹⁴¹ In 2019, Chemours told the FDA that it had abandoned all food contact uses of PFAS and asked the FDA to revoke authorization for those FCNs.¹⁴² In July 2020, additional manufacturers agreed to a voluntary three-year phase-out of some fluorotelomer alcohols beginning in January 2021, with an additional 18 months to sell off existing stocks.¹⁴³

FDA created its first analytical method for PFAS in October 2019. The validated method covers 16 kinds of PFAS in four products: bread, fish, lettuce, and milk.¹⁴⁴ The FDA has also conducted targeted geographic sampling for PFAS in food and included PFAS in the total diet study.¹⁴⁵

PFAS are also used in cosmetics. The FDA has said that it is monitoring for PFAS included in a report submitted through the voluntary cosmetic registration program.¹⁴⁶

Forthcoming actions

¹³⁸ See Memorandum from Penelope A. Rice, Ph.D, FDA Division of Food Contact Notifications, to Paul Honigfort, Ph.D., , Re: FAP 4B4809 (July 27, 2015), <http://www.regulations.gov/#!documentDetail;D=FDA-2015-F-0714-0016>.

¹³⁹ Indirect Food Additives: Paper and Paperboard Components, 81 Fed. Reg. 83672, (Nov. 22, 2016).

¹⁴⁰ See Begley et al., *supra* note 22.

¹⁴¹ See Penelope A. Rice et al., *Comparative Analysis of the Toxicological Databases for 6:2 Fluorotelomer Alcohol (6:2 FTOH) and Perfluorohexanoic Acid (PFHxA)*, 138 FOOD & CHEM. TOXICOLOGY 111210 (2020), <https://www.sciencedirect.com/science/article/abs/pii/S0278691520300983?dgcid=coauthor>; Shruti V. Kabadi et al., *Characterizing Biopersistence Potential of the Metabolite 5:3 Fluorotelomer Carboxylic Acid After Repeated Oral Exposure to the 6:2 Fluorotelomer Alcohol*, 388 TOXICOLOGY & APPLIED PHARMACOLOGY 114878 (2020), <https://www.sciencedirect.com/science/article/abs/pii/S0041008X20300028>; Shruti V. Kabadi et al., *Internal Exposure-Based Pharmacokinetic Evaluation of Potential for Biopersistence of 6:2 Fluorotelomer Alcohol (FTOH) and its Metabolites*, 112 FOOD & CHEM. TOXICOLOGY 375 (2018), <https://www.sciencedirect.com/science/article/abs/pii/S0278691518300127?via%3Dihub>; Penelope A. Rice, *C6-Perfluorinated Compounds: The New Greaseproofing Agents in Food Packaging*, 2 CURRENT ENV'T HEALTH REPORTS 33 (2015), <https://link.springer.com/article/10.1007/s40572-014-0039-3>.

¹⁴² Catherine Boudreau, *Exclusive: Maker of 'Forever Chemicals' Cuts Food Packaging Products*, POLITICO (Aug. 9, 2019), <https://www.politico.com/story/2019/08/09/exclusive-maker-of-forever-chemicals-cuts-food-packaging-products-1648303>.

¹⁴³ Press Release, Food & Drug Adm'n, FDA Announces Voluntary Agreement with Manufacturers to Phase Out Certain Short-Chain PFAS Used in Food Packaging (July 31, 2020), <https://www.fda.gov/news-events/press-announcements/fda-announces-voluntary-agreement-manufacturers-phase-out-certain-short-chain-pfas-used-food>.

¹⁴⁴ FOOD & DRUG ADM'N, DETERMINATION OF 16 PERFLUOROALKYL AND POLYFLUOROALKYL SUBSTANCES (PFAS) IN FOOD USING LIQUID CHROMATOGRAPHY-TANDEM MASS SPECTROMETRY (Nov. 01, 2019), <https://www.fda.gov/media/131510/download>.

¹⁴⁵ FOOD & DRUG ADM'N, ANALYTICAL RESULTS OF TESTING FOOD FOR PFAS FROM ENVIRONMENTAL CONTAMINATION, <https://www.fda.gov/food/chemical-contaminants-food/analytical-results-testing-food-pfas-environmental-contamination> (last updated June 30, 2021).

¹⁴⁶ FOOD & DRUG ADM'N, PER AND POLYFLUOROALKYL SUBSTANCES (PFAS) IN COSMETICS, <https://www.fda.gov/cosmetics/cosmetic-ingredients/and-polyfluoroalkyl-substances-pfas-cosmetics> (last updated Feb. 19, 2021).

A citizen petition has been filed by a coalition of 11 NGOs asking the FDA to ban all long- and short-chain PFAS as food contact substances and systematically reassess all past approvals with the presumption that all PFAS biopersist in the human body unless there is affirmative evidence to the contrary.¹⁴⁷

Legislation

Bipartisan legislation has been introduced to direct FDA to propose a rule banning intentionally added PFAS in cosmetics within 270 days of enactment and then finalizing that rule within 90 days.¹⁴⁸ A provision in the Personal Care Products Safety Act would also require FDA to propose a rule banning PFAS within six months.¹⁴⁹

Department of Defense

Completed actions

The Navy developed a specialized PFAS-based firefighting foam known as aqueous film forming foam (AFFF) in the early 1960s and received a patent in 1966.¹⁵⁰ By 1967, military specifications were updated to require PFAS in class B firefighting foams.¹⁵¹ More than 50 years of use of this foam has resulted in widespread contamination at military sites and in surrounding communities.¹⁵² In 2011, the DOD released a Chemical and Material Emerging Risk Alert for AFFF, citing “human health and environmental risks” but took no action to address PFAS in drinking or groundwater or reduce use of AFFF.¹⁵³ In 2016, the DOD stopped the use of uncontrolled, land-based use of AFFF for maintenance, testing, or training unless the foam can be maintained.¹⁵⁴ DOD has also tested DOD-operated drinking water systems and provided alternative drinking water at systems that tested above the EPA’s LHA of 70 ppt.¹⁵⁵

The DOD formed a PFAS Task Force in July 2019.¹⁵⁶

¹⁴⁷ Env’t Defense Fund et al., citizens petition requesting that the agency take more aggressive action to protect consumers from per- and poly-fluoroalkyl substances (PFAS) by banning all forms that biopersist in the human body (June 3, 2021), <http://blogs.edf.org/health/files/2021/06/PFAS-Petition-to-FDA-FINAL-6-1-21.pdf>.

¹⁴⁸ No PFAS in Cosmetics Act, S. 2047/ H.R. 3990, 117th Cong. (1st Sess. 2021).

¹⁴⁹ The Personal Care Products Safety Act, S. 2100, 117th Cong. § 116 (1st Sess. 2021).

¹⁵⁰ ENV’T. WORKING GRP. & FOUNTAIN VALLEY CLEAN WATER COALITION, FOR DECADES, THE DEPARTMENT OF DEFENSE KNEW FIRE FIGHTING FOAMS WITH PFAS CHEMICALS WERE DANGEROUS BUT CONTINUED THEIR USE, <https://www.ewg.org/dodpfastimeline/>.

¹⁵¹ *Id.*

¹⁵² ENV’T WORKING GRP., 703 MILITARY SITES WITH KNOWN AND SUSPECTED DISCHARGES OF PFAS., <https://www.ewg.org/interactive-maps/2020-military-pfas-sites/map/> (last visited July 19, 2021).

¹⁵³ ENV’T. WORKING GRP. & FOUNTAIN VALLEY CLEAN WATER COALITION, *supra* note 150.

¹⁵⁴ Dep’t of Defense, Transcript: Deputy Assistant Secretary of Defense for Environment and Energy Resilience Richard Kidd Public Remarks on PFAS (July 14, 2021), <https://www.defense.gov/Newsroom/Transcripts/Transcript/Article/2699010/deputy-assistant-secretary-of-defense-for-environment-and-energy-resilience-ric/>.

¹⁵⁵ *Id.*

¹⁵⁶ Memorandum from Mark T. Esper, Secretary of Defense, to Secretaries of the Military Departments, Per- and Polyfluoroalkyl Substances Task Force (July 23, 2019), <https://media.defense.gov/2019/Aug/09/2002169524/-1/-1/1/PER-AND-POLYFLUOROALKYL-SUBSTANCES-TASK-FORCE.PDF>.

The FY 2020 NDAA¹⁵⁷ included several PFAS restrictions applicable to DOD that took effect immediately. Section 323 prohibited uncontrolled releases of AFFF unless (1) in response to a fire emergency or (2) to test equipment if that testing includes complete containment and proper disposal. Section 324 banned the use of AFFF in training exercises and section 329 banned the use of PFAS in meals-ready-to-eat (MREs). Section 331 allows DOD to enter into cooperative agreement with municipalities and utilities to share monitoring data. Section 332 requires DOD to enter into cooperative agreements with states when requested and to respect any promulgated state clean-up standards when remediating sites covered by those agreements. Sections 343 and 344 allow the DOD to provide clean water for agriculture or to acquire contaminated properties and relocate members of affected communities. Section 707 requires DOD to offer blood tests to military firefighters for PFAS during their annual exam beginning on October 1st, 2020.

Section 335 of the FY 2021 NDAA¹⁵⁸ required the DOD to notify agricultural operations located within one mile of any DOD installation where PFOA, PFOS, or PFBS have been detected in groundwater, have been hydrologically linked to a local agricultural or drinking water source, and are suspected to be the result of PFAS use by the DOD. The DOD reported in March 2021 that 400 letters had been sent¹⁵⁹ and that the remainder would be sent out in the Spring.¹⁶⁰

Forthcoming actions

DOD is continuing to sample for PFAS in groundwater and drinking water. DOD has identified 698 installations where the DOD used or potentially releases PFAS.¹⁶¹ But the DOD has been slow to confirm the presence of PFAS and slow to clean up legacy pollution. DOD has testified that cleaning up contaminated sites could take 30 years.¹⁶² The DOD reported on July 14, 2021, that 129 sites had completed the preliminary assessment/site inspection phase of the CERCLA clean-up process, and 66 of those sites have moved onto the next phase of CERCLA process, the remedial investigation and feasibility study phase.¹⁶³ After completing the remedial investigation and feasibility studies, DOD must select remedies for these sites. This process will likely to be ongoing for several years, if not decades.

Section 322 of the FY 2020 NDAA requires the DOD to create a new mil spec for a fluorine-free firefighting agent at all military installations not later than January 31, 2023; prohibits the procurement of AFFF containing more than 1 ppb PFAS after Oct. 1, 2023; and prohibits the use of AFFF after October 1, 2024, or the date on which DOD determines compliance with a

¹⁵⁷ National Defense Authorization Act for Fiscal Year 2020, S. 1790, 116th Cong. (1st Sess. 2019).

¹⁵⁸ William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021, H.R. 6395, 116th Cong. § 335 (2d Sess. 2020).

¹⁵⁹ *Remediation and Impact of PFAS: Hearing Before the H. Subcomm. on Mil. Constr., Veterans Aff., & Related Agencies of the H. Comm. on Appropriations*, 117th Cong. (2021) (Oral testimony of Mark Correll), <https://appropriations.house.gov/events/hearings/remediation-and-impact-of-pfas>.

¹⁶⁰ *See., e.g.,* Jessie Stensland, *Navy to Send Letters to Farms Warning of Chemicals in Groundwater*, WHIDBEY NEWS-TIMES (March 12, 2021), <https://www.whidbeynewstimes.com/news/navy-to-send-letters-to-farms-warning-of-chemicals-in-groundwater/>.

¹⁶¹ Kidd, *supra* note 154.

¹⁶² Rebecca Beitsch, *Pentagon Cleanup of Toxic 'Forever Chemicals' Likely to Last Decades*, THE HILL (March 22, 2020), <https://thehill.com/policy/energy-environment/488723-pentagon-cleanup-of-toxic-forever-chemicals-likely-to-last-decades>.

¹⁶³ Kidd, *supra* note 154.

fluorine-free foam is possible, whichever is earlier. DOD may get a waiver for up to two years and the ban on use does not apply to shipboard use. The search for a replacement foam is ongoing and the DOD had identified six candidates as of March 2021.¹⁶⁴ The FY 2021 NDAA included some provisions to help support and accelerate this research effort including technology surveys and prize programs.¹⁶⁵

Section 333 of the FY 2021 NDAA also requires that the DOD prohibit procurement of any nonstick cookware, cooking utensils, upholstered furniture, carpets, and rugs that contain PFOA or PFOS by April 01, 2023.

Legislation

Several bills have already been introduced addressing DOD's response to PFAS. These bills would direct DOD to publicly disclose the results of groundwater and drinking water testing;¹⁶⁶ expand blood testing to active members of the armed services;¹⁶⁷ and prohibit the procurement, purchasing, and sale by the DOD of certain items containing PFAS.¹⁶⁸ The Filthy Fifty Act would set a five-year deadline for the DOD to complete physical construction required for remediation at 50 priority contaminated sites and require physical construction be completed for remediation at all remaining DOD sites within ten years.¹⁶⁹ The Filthy Fifty Act would also require DOD to provide safe drinking water to nearby impacted communities and to honor state cleanup standards. The Clean Water for Military Families Act authorizes \$10 billion for PFAS testing and remediation.¹⁷⁰ A House bill combines the Filthy Fifty Act and the Clean Water for Military Families Act.¹⁷¹

Neither the House nor Senate has introduced their version of the FY 22 National Defense Authorization Act, but work on both bills is ongoing and a final bill must pass by the end of the year. The final NDAA will likely contain some PFAS provisions, including some components of the introduced standalone bills. Although language has not been released to the public, the Senate NDAA reportedly would establish a two-year deadline for the DOD to complete testing for PFAS, require DOD to report on the status of efforts to remediate PFAS at 50 priority

¹⁶⁴ GOV'T ACCOUNTABILITY OFFICE, FIREFIGHTING FOAM CHEMICALS: DOD IS INVESTIGATING PFAS AND RESPONDING TO CONTAMINATION, BUT SHOULD REPORT MORE COST INFORMATION (June 2021), <https://www.gao.gov/assets/gao-21-421.pdf>.

¹⁶⁵ William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021, H.R. 6395, 116th Cong. §§ 330-331; 334 (2d Sess. 2020).

¹⁶⁶ Military PFAS Testing Disclosure Act, H.R. 4339, 117th Cong. (1st Sess. 2021).

¹⁶⁷ PFAS Exposure Assessment and Documentation Act, H.R. 4340, 117th Cong. (1st Sess. 2021).

¹⁶⁸ PFAS Free Military Purchasing Act, S. 1796, 117th Cong. (1st Sess. 2021). The covered items are: non-stick cookware or food service ware for use in galleys or dining facilities; food packaging materials; floor waxes; carpeting, rugs, curtains, or upholstered furniture; personal care items; dental floss or toothpaste; sunscreen; umbrellas, luggage, or bags; ski wax; car wax and car window treatments; cleaning products; and shoes and clothing for which treatment with a perfluoroalkyl substance or polyfluoroalkyl substance is not currently necessary for an essential function.

¹⁶⁹ The Filthy Fifty Act, S. 1973, 117th Cong. (1st Sess. 2021).

¹⁷⁰ The Clean Water for Military Families Act, S. 1970, 117th Cong. (1st Sess. 2021).

¹⁷¹ PFAS Filthy Fifty Act, H.R. 4241, 117th Cong. (1st Sess. 2021).

installations, and direct the DOD to quickly develop a remediation schedule with proposed deadlines for all military bases contaminated with PFAS.¹⁷²

U.S. Department of Veterans Affairs

Legislation

The U.S. Department of Veterans Affairs processes disability claims and provides medical services to veterans who experience health problems related to their military service. For some chemical exposures and related diseases, the VA has established a “presumption of service connection” which simplifies the claims process for veterans with those health issues.¹⁷³ The VA has not established such a presumption for PFAS but is deciding claims for veterans with diseases that may be related to PFAS on a case-by-case basis.¹⁷⁴ These claims are often denied.¹⁷⁵

The bipartisan PFAS Registry Act¹⁷⁶ would require the VA to establish and maintain a registry for individuals who may have been exposed to PFAS due to the release of AFFF. The registry must include any information that the VA determines is necessary to ascertain and monitor health effects. Additionally, the VA must develop a public information campaign to notify eligible individuals and periodically notify them of significant developments in the study and treatment of conditions associated with PFAS exposure. The PFAS Registry Act was also included in a comprehensive bill addressing exposure to toxic chemicals in the military, H.R. 3967, the Honoring our Promise to Address Comprehensive Toxics (PACT) Act of 2021.¹⁷⁷

Federal Aviation Administration

Completed actions

Airports are another significant source of PFAS contamination. That’s because FAA regulations require most airports to have, and regularly test, aircraft rescue and firefighting (ARFF) vehicles equipped with AFFF that contains PFAS and meets the military’s performance requirements.¹⁷⁸ In the FAA Reauthorization Act of 2018, Congress ordered the FAA to amend its regulations within three years to no longer require the use of PFAS in firefighting foams used at airports.¹⁷⁹

¹⁷² Press Release, Sen. Kirsten Gillibrand, Gillibrand Secures Key PFAS Provisions in NDAA to Address Testing and Remediation of Toxic PFAS Chemicals at Military Installations and National Guard Facilities Across New York State (July 22, 2021), <https://www.gillibrand.senate.gov/news/press/release/gillibrand-secures-key-pfas-provisions-in-ndaa-to-address-testing-and-remediation-of-toxic-pfas-chemicals-at-military-installations-and-national-guard-facilities-across-new-york-state>.

¹⁷³ U.S. DEP’T OF VETERANS AFF., PRESUMPTIVE DISABILITY BENEFITS (Nov. 2018), <https://www.benefits.va.gov/BENEFITS/factsheets/serviceconnected/presumption.pdf>.

¹⁷⁴ U.S. DEP’T OF VETERANS AFF., PFAS- PERFLUOROALKYL AND POLYFLUOROALKYL SUBSTANCES, <https://www.publichealth.va.gov/exposures/pfas.asp> (last updated April 17, 2020).

¹⁷⁵ Sharon Lerner, *Firefighters Denied Coverage by Veterans Affairs After Exposure to PFAS Firefighting Foam*, THE INTERCEPT (June 5, 2021), <https://theintercept.com/2021/06/05/pfas-firefighting-foam-veterans-aff/>.

¹⁷⁶ The PFAS Registry Act, S. 1121/ H.R. 2742, 117th Cong. (1st Sess. 2021).

¹⁷⁷ Honoring our PACT Act, H.R. 3967, 117th Cong. § 701 (1st Sess. 2021).

¹⁷⁸ 14 C.F.R. § 139.315-319.

¹⁷⁹ FAA Reauthorization Act of 2018, H.R. 302, 115th Cong. § 332 (2d Sess. 2018).

In response to this mandate, the FAA has built a research facility to research PFAS-free firefighting foam alternatives,¹⁸⁰ but has not proposed any additional rules. The FAA did put out updated circulars in June 2021¹⁸¹ and October 2019¹⁸² providing non-binding guidance on how to test equipment without using AFFF.

Forthcoming actions

The FAA reauthorization Act of 2018 requires the FAA to update its regulations on PFAS in firefighting foam by October 05, 2021.

U.S. Geological Survey

Forthcoming actions

The FY 2020 NDAA created groundwater monitoring requirements for PFAS through the U.S. Geological Survey (USGS).¹⁸³ The NDAA requires USGS to develop performance standards for PFAS testing, to conduct nationwide sampling, conduct a survey for ecological exposure, and provide testing before and after treatment of water if requested by the EPA. These performance standards and test results are forthcoming.

National Institute of Standards and Technology

Forthcoming actions

The FY 2021 NDAA required the National Institute of Standards and Technology (NIST) to complete a study on the contents and composition of new and unused PPE worn by firefighters within one year of enactment.¹⁸⁴ The report must include findings and recommendations for additional research. The FY 2021 NDAA also required NIST to solicit research proposals within 540 days of enactment to carry out the additional research recommendations and award grants for proposals on safe alternatives. These studies are forthcoming.

Federal Emergency Management Agency

Legislation

¹⁸⁰ Federal Aviation Adm'n, FAA Opens One-of-a-Kind Fire Research Facility in Atlantic City, <https://www.faa.gov/news/updates/?newsId=94946> (last updated Jan. 14, 2020).

¹⁸¹ Memorandum from Marc Tonnacliff, Senior Aircraft Fire Fighting Specialist, to All Certified Part 139 Airports and Aircraft Rescue and Firefighting (ARFF) Departments, Aqueous Film Forming Foam (AFFF) Testing at Certificated Part 139 Airports (June 01, 2021), https://www.faa.gov/airports/airport_safety/certalerts/media/part-139-cert-alert-21-01-AFFF.pdf.

¹⁸² Memorandum from Marc Tonnacliff, Senior Aircraft Fire Fighting Specialist, to All Certified Part 139 Airports and Aircraft Rescue and Firefighting (ARFF) Departments, Aqueous Film Forming Foam (AFFF) Testing at Certificated Part 139 Airports (Oct. 29, 2019), https://www.faa.gov/airports/airport_safety/certalerts/media/part-139-cert-alert-19-02-AFFF.pdf.

¹⁸³ National Defense Authorization Act for Fiscal Year 2020, S. 1790, 116th Cong. §§ 7331-7335 (1st Sess. 2019).

¹⁸⁴ William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021, H.R. 6395, 116th Cong. § 334 (2d Sess. 2020).

The PFAS Act would require FEMA to develop guidance for firefighters and other emergency response personnel on training, education programs, and best practices to reduce PFAS exposure and environmental releases. This would include protection from firefighting foam, personal protective equipment, and other firefighting tools. It would also create an online repository of tools and best practices.¹⁸⁵

Conclusion

Addressing the significant and ongoing contamination from more than seventy years of largely unregulated and ubiquitous use of PFAS is one of the most urgent environmental law issues we face today. Although some important steps have been taken by Congress and federal agencies, immense regulatory gaps still exist. As public awareness grows, so too will pressure for more aggressive and accelerated action. Both Congress and the Biden Administration have prioritized addressing PFAS and that's unlikely to change in the near term. Stakeholders should keep a close watch for new regulatory and legislative developments over the coming months and years. Just like the substances themselves, it's likely that legislative and regulatory interest in PFAS will stick around for a long time.

¹⁸⁵ PFAS Act, S. 231, 117th Cong. (1st Sess. 2021).