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***Via Email and www.regulations.gov***

Dr. Philip Flanders

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Mail Code 4303T

United States Environmental Protection Agency

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Re: **Comments on Preliminary Effluent Guidelines Program Plan 15,   
Docket EPA-HQ-OW-2021-0547**

Dear Dr. Flanders:

The Southern Environmental Law Center offers the following comments on the United States Environmental Protection Agency’s Preliminary Effluent Guidelines Program Plan 15. These comments are submitted on behalf of:

[Insert sign-ons]

Although we commend EPA for taking a positive first step in releasing its Preliminary Effluent Guidelines Program Plan 15, the plan falls short in protecting families and communities, including our most vulnerable populations, from the harms of ongoing widespread PFAS contamination. EPA must do more.

1. **Introduction**

Nearly 30,000 industrial facilities may be discharging PFAS into the nation’s air and water. Industrial discharges of PFAS threaten the drinking water for millions of Americans, including vulnerable communities in Latino, African American, low-income, rural and other environmental justice communities who are already overburdened by pollution. While some states like Michigan have taken steps to curb some industrial discharges, most have not. Unfortunately, the actions set forth in EPA’s Preliminary Plan 15 fall short of what is needed to sufficiently address industrial discharges of PFAS both in terms of scope and urgency.

First, the planned effluent limitation guidelines fail to address most of the industrial categories that are causing our country’s widespread PFAS contamination. Second, the plan fails to set forth any planned pretreatment standards. Third, the plan fails to set deadlines for new guidelines.

We therefore urge EPA to act quickly and beyond this rulemaking to address other industrial sources of PFAS chemicals. EPA should promptly initiate rulemaking(s) to adopt effluent limitations guidelines and pretreatment standards for other industrial categories that are responsible for contaminating our communities with PFAS—incorporating aggressive deadlines and proven technologies to remove PFAS, including granulated activated carbon and reverse osmosis.[[1]](#footnote-1)

Because the development of effluent limitations guidelines and pretreatment standards takes time, EPA must also push state agencies to incorporate technology-based limits into state-issued permits through case-by-case analyses, as required by the Clean Water Act, and provide guidance to states for conducting these analyses.[[2]](#footnote-2) EPA must clarify that PFAS dischargers are required to disclose their PFAS pollution to permitting agencies before they can be allowed to contaminate our streams and rivers. If EPA made clear that this existing legal requirement applies to PFAS, dischargers across the country would be forced to take responsibility for their pollution, rather than leaving already at-risk communities to shoulder that unfair burden.

1. **PFAS are a serious threat to the health and safety of our communities and environment.**

PFAS are a serious threat to human health and the environment.[[3]](#footnote-3) Often referred to as “forever chemicals,” PFAS chemicals are extremely persistent in the human body, and they slowly accumulate over time.[[4]](#footnote-4) Very low doses of these chemicals have been linked to serious health harms, including cancer, damage to the reproductive and immune system, developmental defects in fetuses, low birth weight and size, obesity, delayed puberty, reduced efficacy of vaccines, and thyroid and kidney disease.[[5]](#footnote-5)

Once released into the environment, PFAS are extremely resistant to breaking down, or they transform into even more persistent PFAS.[[6]](#footnote-6) PFAS will unfortunately remain in the environment “for centuries or longer, even if environmental releases cease immediately.”[[7]](#footnote-7) They have been shown to cause damaging effects in fish,[[8]](#footnote-8) amphibians,[[9]](#footnote-9) mollusks,[[10]](#footnote-10) and other aquatic invertebrates[[11]](#footnote-11)—resulting in developmental and reproductive impacts, behavioral changes, adverse effects to livers, disruption to endocrine systems, and weakened immune systems.[[12]](#footnote-12) Despite these harms, companies have, and continue to, freely polluted our bodies and environment with PFAS.

These basic scientific realities regarding PFAS make clear that we have no time to waste. ELG development takes years and, therefore, must be initiated as promptly and broadly as possible.

1. **For decades, industrial facilities have been allowed to contaminate our waters with PFAS.**

Chemical companies have knowingly discharged PFAS into our waters for decades. One of the more prominent examples of the last decade is in southeastern North Carolina. For nearly forty years, E.I. du Pont de Nemours and Company (“DuPont”) and the Chemours Company FC, LLC (“Chemours”) knowingly contaminated the air, water, and soil in southeastern North Carolina, including the drinking water supply for downstream communities.

DuPont and Chemours dumped their PFAS-laden wastewater directly into the Cape Fear River.[[13]](#footnote-13) The companies also allowed their wastewater to leak from the facility’s ditches, storage pits, and pipes.[[14]](#footnote-14) Every time it rained, stormwater picked up PFAS from the facility’s contaminated soil and equipment, and flushed the chemicals into the River,[[15]](#footnote-15) tainting the drinking water for more than 300,000 North Carolinians.[[16]](#footnote-16)

Chemours and DuPont are not the only companies dumping PFAS into our waterways. Residents in the southeast and across the country continue to be exposed to PFAS from numerous other sources. The chemical maker Solvay Specialty Polymers USA, LLC released PFAS into the air, soil, sediment, groundwater, and surface water near the company’s PFAS manufacturing facility in Delaware.[[17]](#footnote-17) Solvay’s New Jersey PFAS manufacturing facility caused PFAS pollution that reached “the highest reported concentration in surface water in the world at that time.”[[18]](#footnote-18) The company 3M similarly discharged PFAS from its manufacture of Scotchgard into the drinking water sources relied on by Minnesotans.[[19]](#footnote-19) In Alabama, 3M contaminated the drinking water supply for about 100,000 people with PFAS manufactured at its Decatur plant.[[20]](#footnote-20) Michigan is similarly facing widespread PFAS contamination from facilities operated by 3M, DuPont, Chemours, Arkema Inc., Daikin Industries, Solvay, and other companies.[[21]](#footnote-21) Indeed, according to recent analysis by The Environmental Working Group, nearly 30,000 industrial facilities could be discharging PFAS into the country’s air and water, including:

* More than 4,700 electroplating and polishing facilities;
* More than 3,000 petroleum stations and terminals;
* More than 2,300 chemical manufacturers;
* More than 2,200 metal product manufacturers;
* More than 2,100 commercial printing facilities;
* More than 1,800 plastics and resin manufacturing sites;
* More than 1,500 paint and coating manufacturers;
* More than 1,200 semiconductor manufacturers; and
* More than 1,000 electric component manufacturers.[[22]](#footnote-22)

With the alarming number of industries discharging PFAS into rivers and streams, more than 200 million Americans may be drinking water contaminated with PFAS.[[23]](#footnote-23) So far, according to The Environmental Working Group, PFAS has been confirmed in the drinking water of more than 2,800 communities.[[24]](#footnote-24) Until PFAS are strictly controlled through existing law or new standards, industrial facilities throughout the country will continue to dump toxic PFAS into our waterways, and millions more people throughout the country will be harmed.

1. **EPA’s Preliminary Plan 15 fails to address known PFAS sources or prevent known harms.**

Preliminary Plan 15 fails to fully protect the public from the dangers associated with PFAS. EPA must do more.

Under the Clean Water Act, EPA has a duty to annually review effluent limitation guidelines and pretreatment standards, identify any new or existing industrial categories appropriate for effluent guidelines and pretreatment standards rulemaking, and provide a schedule for such rulemakings.[[25]](#footnote-25) In its Preliminary Plan 15, EPA fails in these tasks.

In its Preliminary Plan 15, EPA identifies six point source categories known to discharge PFAS: landfills; organic chemicals, plastics and synthetic fibers, metal finishing; pulp, paper, and paperboard; textile mills; and commercial airports.[[26]](#footnote-26) Yet, despite the well documented risks posed by PFAS exposure in humans and our environment, EPA has no plans to draft effluent limitations guidelines for PFAS discharges from facilities within any source category aside from the organic chemicals, plastics and synthetic fibers *manufacturers* (but not formulators) category and *chrome* metal finishing (but not other metals) category. EPA’s Preliminary Plan 15 therefore excludes most of the industrial categories known to be causing widespread PFAS pollution. The Plan also fails to set deadlines for new standards. EPA’s plan falls far short of what is needed to prevent PFAS water pollution.

Industrial facilities responsible for releasing PFAS extend far beyond the organic chemicals, plastics and synthetic fibers manufacturing and chrome metal finishing point source categories. EPA should move forward in promulgating effluent limitations guidelines for all industrial categories known to discharge PFAS, including but not limited to the several categories identified by the Environmental Working Group, outlined above, as well as landfills; organic chemicals, plastics and synthetic fibers formulators; metal finishing facilities outside the chrome finishing context; pulp, paper, and paperboard facilities; textile and carpet manufacturers; and commercial airports.

Indeed, EPA has identified several sources of PFAS in landfills including PFAS-treated textiles, paper, and packaging materials, construction and demolition waste, and industrial waste from PFAS-related manufacturing processes.[[27]](#footnote-27) The agency also acknowledges that PFAS are detected in landfill leachate regardless of waste type or age and have been quantified in concentrations over 8,000 part per trillion (“ppt”).[[28]](#footnote-28)

There is no doubt that organic chemicals, plastics and synthetic fibers facilities that *formulate* PFAS use and discharge PFAS. “EPA [has] verified that PFAS, including legacy long-chain PFAS and replacement PFAS, are present in wastewater discharges from PFAS manufacturers *and PFAS formulators* to surface waters and [publicly owned treatment works].”[[29]](#footnote-29) The agency further acknowledges that “PFAS manufacturers *and formulators* have few monitoring requirements, effluent limitations, or pretreatment standards for PFAS in their wastewater discharge permits and may continue to discharge PFAS to [publicly owned treatment works] or surface waters unless effective controls are in place.”[[30]](#footnote-30)

PFAS are also widely used in the metal finishing and plating industry, and many plating facilities other than those working with chrome have been found to be sources of PFAS contamination into groundwater and surface waters. The plating industry uses PFAS for “corrosion prevention, mechanical wear reduction, aesthetic enhancement,” and as a “surfactant, wetting agent/fume suppressant for chrome, *copper, nickel and tin* electroplating, and post- plating cleaner.”[[31]](#footnote-31) Because PFAS is known to be widely used outside the chrome plating context, EPA should extend its metal finishing effluent limitations guidelines to cover *all* forms of metal finishing.

EPA itself recognizes that PFAS, including legacy and newer PFAS, are present in wastewater discharges from pulp, paper, and paperboard facilities;[[32]](#footnote-32) are widely used in the textile and carpet industry, and are present in the associated wastewater;[[33]](#footnote-33) and are regularly discharged in the wastewater from commercial airports.[[34]](#footnote-34) That industry has declined to cooperate in providing information on their PFAS discharges[[35]](#footnote-35) cannot excuse EPA’s failure to prevent pollution from these and other known sources.[[36]](#footnote-36)

EPA has ample information to promulgate effluent limitations guidelines and pretreatment standards for the industrial point source categories that discharge PFAS. North Carolina’s Chemours’ experience[[37]](#footnote-37) demonstrates that there are available and economically achievable technologies that can remove PFAS so that it is not discharged into our rivers and streams. Critically, these technologies are neither complex nor industry-specific. As part of the cleanup at Chemours’ Fayetteville Works facility, a granular activated carbon treatment system has been used to reduce PFAS as high as 345,000 ppt from a creek contaminated by groundwater beneath the facility to nearly nondetectable concentrations.[[38]](#footnote-38) Separately, a reverse osmosis treatment unit, coupled with granulated activated carbon and ion exchange, was also shown in pilot testing to reduce individual PFAS concentrations as high as 10,510,000 ppt and 5,886,000 ppt to at most 35 ppt, and mostly nondetectable levels.[[39]](#footnote-39)

EPA should promptly initiate rulemaking(s) to adopt effluent limitations guidelines and pretreatment standards for industrial categories that are responsible for contaminating our communities and environment with PFAS—incorporating technologies such as granulated activated carbon and reverse osmosis that have been proven at Chemours’ Fayetteville Works Facility and elsewhere[[40]](#footnote-40) to nearly eliminate PFAS discharges.

1. **EPA must also push state agencies to incorporate control technology-based limits into state-issued permits.**

While EPA prepares nationwide effluent limitations guidelines, EPA should require state agencies to incorporate control technology-based limits into state-issued permits through case-by-case analyses, as required by the Clean Water Act,[[41]](#footnote-41) and EPA should provide guidance to states for conducting these analyses.

Technology-based effluent limits are “the minimum level of control that *must be imposed* in a permit.”[[42]](#footnote-42) These limits “are developed independently of the potential impact of a discharge on the receiving water, which is addressed through water quality standards and water quality-based effluent limitations.”[[43]](#footnote-43) As EPA has recognized, “technology-based limits aim to prevent pollution by requiring polluters to install and implement various forms of technology designed to reduce the pollution discharged into the nation’s waters.”[[44]](#footnote-44) When EPA has not issued a national effluent limitation guideline for a particular industry,[[45]](#footnote-45) permitting agencies must implement technology-based effluent limits on a case-by-case basis using their “best professional judgment.”[[46]](#footnote-46)

In the absence of applicable effluent limitations guidelines, technology-based effluent limitations are the only way to protect the public from PFAS; they are also what the Clean Water Act requires. The technology that Chemours has applied to nearly eliminate PFAS discharges can be used in case-by-case technology-based effluent limit determinations to keep more PFAS from entering rivers and drinking water sources across the country while EPA prepares nationwide effluent limitation guidelines. EPA should confirm that technology-based effluent limitations must be used to control PFAS in permits issued across the country.

1. **To track PFAS discharges and protect the public from the associated harms, EPA must require disclosure.**

Throughout Preliminary Plan 15, EPA relies on a supposed lack of information for failing

to create effluent limitations guidelines for broader categories of PFAS dischargers.[[47]](#footnote-47) For example, EPA laments that “there is limited information about PFAS discharges, including the types of PFAS compounds discharged, concentrations of PFAS discharged, and the significant sources of PFAS discharges.”[[48]](#footnote-48) Yet it is EPA’s own failure to meaningfully and comprehensively require disclosure of PFAS discharges that has resulted in limited data.

The Clean Water Act generally prohibits discharges to streams and rivers.[[49]](#footnote-49) The National Pollutant Discharge Elimination System permitting program is a limited exception to that prohibition,[[50]](#footnote-50) and discharges under the program cannot be approved unless they are adequately disclosed.[[51]](#footnote-51) EPA must therefore take immediate action to clarify that disclosure of PFAS discharges is required in the permitting application.

EPA has itself previously stressed the need for disclosure of pollutants during the permitting process:

[D]ischargers have a duty to be aware of any significant pollutant levels in their discharge. […] Most important, [the disclosure requirements] provide the information which the permit writers need to determine what pollutants are likely to be discharged in significant amounts and to set appropriate permit limits. […] [P]ermit writers need to know what pollutants are present in an effluent to determine approval permit limits in the absence of applicable effluent guidelines.[[52]](#footnote-52)

The EPA Environmental Appeals Board’s decision in *In re: Ketchikan Pulp Company* further emphasized the importance of disclosure.[[53]](#footnote-53) As described by the Fourth Circuit Court of Appeals in *Piney Run Pres. Ass’n v. Cty. Comm’rs of Carroll Cty., Maryland*,a seminal case defining the scope of the Clean Water Act’s permit shield:

The *Ketchikan* decision therefore made clear that a permit holder is in compliance with the [Clean Water Act] even if it discharges pollutants that are not listed in its permit, as long as it only discharges pollutants that have been adequately disclosed to the permitting authority. […] To the extent that a permit holder discharges a pollutant that it did not disclose, it violates the NPDES permit and the [Clean Water Act].[[54]](#footnote-54)

To gather and compile information on PFAS discharges for rulemaking purposes, comply with the Clean Water Act, and adequately protect the public, EPA must clarify that facilities must disclose any discharges of PFAS in the their NPDES permit application(s).

1. **Unless EPA acts expeditiously, PFAS exposure will continue to disproportionately harm environmental justice communities.**

As demonstrated above and as publicly acknowledged by the EPA,[[55]](#footnote-55) PFAS is harmful to families and communities. This harm however does not fall equally on all populations.

The effects of PFAS pollution are disproportionately felt by low-wealth communities, communities of color, and Indigenous communities—in many cases, the communities that are least equipped to address that pollution or protect themselves from its harms. Unless EPA promptly takes the actions set forth in this letter, vulnerable communities will continue to suffer and the Biden administration simply will not meet fulfill its commitment to eliminate “disproportionate impact[s] on underserved communities.”[[56]](#footnote-56)

Executive Order 12898 directs each federal agency “[t]o the greatest extent practicable and permitted by law” to “make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations . . . .”[[57]](#footnote-57) EPA defines environmental justice as “the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.”[[58]](#footnote-58) In his recent Executive Order 14008, President Biden called on his administration to “develop a strategy to address current and historic environmental injustice” and to “strengthen enforcement of environmental violations with disproportionate impact on underserved communities.”[[59]](#footnote-59)

It is well-established that the burdens of environmental contamination and industrial pollution fall disproportionately on low-income communities, communities of color, and Indigenous communities.[[60]](#footnote-60) PFAS pollution is no exception.

PFAS contamination is present in ground and surface water near industrial sites that used or released the compounds, and as a result, has been detected in the drinking water of the residents that live nearby. A recent study evaluating the locations of known PFAS-contaminated sites found that at least 39,000 more low-income[[61]](#footnote-61) households and approximately 295,000 more people of color than expected based on United States Census Data live within five miles of a site contaminated with PFAS.[[62]](#footnote-62) In Michigan, the only state that has conducted systematic testing of water sources, the racial and other social inequities are equally striking, with 36,170 more low-income households and 134,488 more people of color than expected based on United States Census Data living within five miles of a PFAS-contaminated site.[[63]](#footnote-63) These statistics hardly reflect the true risk to vulnerable communities because the analysis fails to account for active facilities and wastewater treatment plants that discharge PFAS into the nation’s waterways. Moreover, PFAS contamination often extends far beyond any five-mile radius,[[64]](#footnote-64) putting environmental justice communities farther away at risk.

EPA’s EJSCREEN tool demonstrates this inequity at a facility level.[[65]](#footnote-65) For example, EPA’s EJSCREEN data shows that Chemours’ Fayetteville Works facility is located in an area where 65 percent of the population are people of color and 61 percent low income. The area also has a Wastewater Discharge Indicator in the 80 to 95 percentile, indicating that the area’s population is already overburdened with industrial water pollution. The five-mile area surrounding the Daikin America facility in Decatur, Alabama is even more vulnerable. The area surrounding that facility is home to a population made up of 75 percent low-income and 65 percent people of color. The area also has an 84 percent Wastewater Discharge Indicator, again demonstrating the disproportionate burden that the community bears related to pollution.

In addition, low-income communities and many communities of color—ranging from Native American and Alaskan Natives to African Americans, Latinos, and Asian Americans—have some of the highest rates of fish consumption.[[66]](#footnote-66) They also disproportionately bear the cost of fish contamination from polluted water. Indeed, for communities that rely on subsistence fishing for their way of life, increased pollution and the loss of fish habitat threaten a food source and a means of family bonding.[[67]](#footnote-67)

Moreover, once PFAS chemicals have been released into drinking water supplies, treatment at drinking water treatment plants is extremely costly and difficult. For instance, in North Carolina, public drinking water utilities are spending hundreds of millions of dollars to clean up the water that Chemours has polluted. Brunswick County is planning to spend over $156 million for a reverse osmosis treatment system.[[68]](#footnote-68) Cape Fear Public Utility Authority in Wilmington, North Carolina is spending $43 million on a granular activated carbon treatment system.[[69]](#footnote-69) In January 2020, the Cumberland County Board of Commissioners allocated $10.5 million to pipe clean water to schools and residences whose wells were contaminated.[[70]](#footnote-70) Unfairly, these costs will be borne by communities that bear no responsibility for creating the problem, cannot afford to protect themselves, and are already at risk from decades of drinking the polluted water. Polluters, not vulnerable populations, should bear the cost of protecting communities against the harms from their toxic chemicals. By declining to enforce existing law with respect to disclosure and case-by-case technology analyses and excluding most PFAS sources from Preliminary Plan 15, EPA continues to put the burden of cleaning up PFAS on downstream communities rather than on the industries responsible for the pollution.

Because PFAS pollution disproportionately affects environmental justice communities, EPA’s failure to adequately address the known sources of PFAS places a particularly heavy burden on the health and safety of such communities. It is unacceptable, inequitable, and contrary to this administration’s commitment to environmental justice that safe, accessible, affordable water is not a certainty in low-income communities, communities of color, and Indigenous communities. EPA must do better.

1. **Conclusion**

As EPA acknowledges, “[n]ational [effluent limitations guidelines] and pretreatment standards can help ensure . . . people in all areas in the vicinity of industrial direct and indirect discharges receive the same degree of protection from environmental and health hazards, and equal access to the decision-making process to have a healthy environment in which to live, learn, and work.”[[71]](#footnote-71) To promote the equitable, protective, and lawful application of the Clean Water Act, EPA must take further action consistent with these comments towards limiting or prohibiting the discharge of PFAS.

Thank you for considering these comments. Please contact us at 919-967-1450 if you have any questions regarding this letter.

Sincerely,

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|  | H:\Moser_Kelly_Signature.png  Kelly Moser  **C:\NRPortbl\SEWS\RDUNN\1547954_1.jpeg**  Geoff Gisler  H:\Documents\Jean's e-signature.jpg  Jean Zhuang |

1. These technologies are discussed in more detail in the comments submitted by the Southern Environmental Law Center (“SELC”) on EPA’s advance notice of proposed rulemaking (ANPRM): “Clean Water Act Effluent Limitations Guidelines and Standards for the Organic Chemicals, Plastics and Synthetic Fibers Point Source Category” (“SELC OCPSF ELG Comments”). Those comments, along with their appendices, appear in docket number EPA–HQ–OW–2020–0582, and we are again submitting them here. *See* Letter from Jean Zhuang, SELC, to Samantha Lewis, EPA (May 14, 2021) (Attachment !!). As EPA has made clear, “[t]hese comments, along with data and information received in response to the ANPRM, will inform the development of wastewater discharge requirements for [PFAS manufacturing] facilities.” Preliminary Plan 15 at 6-4. SELC’s OCPSF ELG Comments should inform the development of wastewater discharge requirements—including effluent limitation guidelines and pretreatment standards—for *all* industrial categories that discharge PFAS. SELC’s OCPSF ELG Comments, along with their appendices and attachments, are incorporated by reference here. [↑](#footnote-ref-1)
2. SELC OCPSF ELG Comments at !!. [↑](#footnote-ref-2)
3. SELC OCPSF ELG Comments at !!. [↑](#footnote-ref-3)
4. Carol F. Kwiatkowski, et al., *Scientific Basis for Managing PFAS as a Chemical Class*, Environ. Sci. & Tech. Letters 2020, 7(8), 534 (hereinafter “Kwiatkowski Article”) (Attachment 22). [↑](#footnote-ref-4)
5. Arlene Blum, et al., *The Madrid Statement on Poly- and Perfluoroalkyl Substances (PFASs)*, Envtl. Health Perspectives,Vol. 123, No. 5, A 107 (2015) (hereinafter “Madrid Statement”) (Attachment 10); EPA, *Fact Sheet: PFOA & PFOS Drinking Water Health Advisories*, 2 (Nov. 2016) (hereinafter “EPA Health Advisories Fact Sheet”) (Attachment 11); ATSDR, *Toxicological Profile for Perfluoroalkyls* (May 2021) (hereinafter “2021 Toxicological Profile for Perfluoroalkyls”) (Attachment 12). [↑](#footnote-ref-5)
6. Kwiatkowski Article. [↑](#footnote-ref-6)
7. *Id*. at 535. [↑](#footnote-ref-7)
8. *See, e.g.*, Huang, et al., Toxicity, Uptake Kinetics and Behavior Assessment in Zebrafish Embryos Following Exposure to Perfluorooctanesulphonicacid (PFOS), 98 Aquatic Toxicology 139–147 (2010) (Attachment 24). [↑](#footnote-ref-8)
9. *See, e.g.*, Ankley, et al., Partial Life-Cycle Toxicity and Bioconcentration Modeling of Perfluorooctanesulfonate in the Northern Leopard Frog (Rana Pipiens), 23 Environ. Toxicology & Chem. 2745–2755 (2004) (Attachment 33). [↑](#footnote-ref-9)
10. *See, e.g.*, Liu, et al., Oxidative Toxicity of Perfluorinated Chemicals in Green Mussel and Bioaccumulation Factor Dependent Quantitative Structure-Activity Relationship, 33 Environ. Toxicology & Chem. 2323–2332 (2014) (Attachment 36). [↑](#footnote-ref-10)
11. *See, e.g.*, Ji, et al., Toxicity of Perfluorooctane Sulfonic Acid and Perfluorooctanoic Acid on Freshwater Macroinvertebrates (Daphnia Magna and Moina Macrocopa) and Fish (Oryzias Latipes), 27 Environ. Toxicology & Chem. 2159 (2008) (Attachment 38). [↑](#footnote-ref-11)
12. *See supra* notes 7-11. [↑](#footnote-ref-12)
13. *Notes from Chemours Meeting with Local, State Officials*, StarNews (June 15, 2017) (hereinafter “StarNews Notes”) (Attachment 46); Mei Sun et al., Legacy and Emerging Perfluoroalkyl Substances Are Important Drinking Water Contaminants in the Cape Fear River Watershed of North Carolina, 3 Environ. Sci. & Tech. Letters 415 (2016) (Attachment 47); EPA, Laboratory PFAS Results for NC DEQ Cape Fear Watershed Sampling (Aug. 21, 2017) (Attachment 48); Mark Strynar, et al., Identification of Novel Perfluoroalkyl Ether Carboxylic Acids (PFECAs) and Sulfonic Acids (PFESAs) in Natural Waters Using Accurate Mass Time-of-Flight Mass Spectrometry (TOFMS), 49 Environ. Sci. & Tech. Letters 11622 (2015) (Attachment 49). [↑](#footnote-ref-13)
14. GeoSyntec Consultants, Characterization of PFAS in Process and Non-Process Wastewater and Stormwater: Initial Characterization – Final Quarterly Report at Figure 3B (Dec. 18, 2020) (hereinafter “Characterization of PFAS Report”) (Attachment 52). [↑](#footnote-ref-14)
15. Characterization of PFAS Report at 18-19, Figure 3B. [↑](#footnote-ref-15)
16. Cite Wilmington Star News [↑](#footnote-ref-16)
17. Julia Rentsch, Delaware Settles with Solvay Specialty Polymers Over PFAS Contamination Claims in Prices Corner, Salisbury Daily Times (Feb. 17, 2021) (Attachment 57). [↑](#footnote-ref-17)
18. Jacob Adelman, N.J. Sues Chemical Maker Solvay for Evading Responsibility for Toxic Pollution from West Deptford Plant, Philadelphia Inquirer (Nov. 10, 2020) (Attachment 58). [↑](#footnote-ref-18)
19. John Gardella, *PFAS Water Utility Lawsuit Shows an Increasing Trend*, National Law Review (Feb. 17, 2021) (Attachment 59). [↑](#footnote-ref-19)
20. 3M pays $35 Million to North Alabama Water Authority Ink Drinking Water Contamination Settlement, WHNT News 19 (Apr. 28, 2019) (Attachment 60). [↑](#footnote-ref-20)
21. Press Release, Mich. Dep’t of Env’t, Great Lakes, and Energy, Mich. PFAS Action Response Team, *Michigan Files Lawsuit Against 3M, DuPont and Others for PFAS Contamination* (Jan. 14, 2020) (Attachment 61). [↑](#footnote-ref-21)
22. The Environmental Working Group (“EWG”), Twelvefold increase in suspected industrial dischargers of ‘forever chemicals’ (July 14, 2021), https://www.ewg.org/news-insights/news-release/2021/07/twelvefold-increase-suspected-industrial-dischargers-forever. [↑](#footnote-ref-22)
23. EWG, Study: More than 200 Million Americans Could Have Toxic PFAS in Their Drinking Water (Oct. 14, 2020), https://www.ewg.org/news-insights/news-release/study-more-200-million-americans-could-have-toxic-pfas-their-drinking. [↑](#footnote-ref-23)
24. EWG, Mapping the PFAS contamination crisis: New data show 2,854 sites in 50 states and two territories (Oct. 4, 2021), https://www.ewg.org/interactive-maps/pfas\_contamination/. [↑](#footnote-ref-24)
25. 33 U.S.C. §§ 1314 (b), (g), (m). [↑](#footnote-ref-25)
26. Preliminary Plan 15 at 5-6-3 to 6-6. [↑](#footnote-ref-26)
27. Preliminary Plan 15 at 5-16. [↑](#footnote-ref-27)
28. *Id*. [↑](#footnote-ref-28)
29. EPA, Multi-Industry Per- and Polyfluoroalkyl Substances(PFAS) Study – 2021 Preliminary Report, 5-10 (Sept. 2021) (emphasis added). [↑](#footnote-ref-29)
30. *Id*. (emphasis added). [↑](#footnote-ref-30)
31. Interstate Technology Regulatory Council, History and Use of Per- and Polyfluoroalkyl Substances (PFAS) (“ITRC Fact Sheet”), 5 (2020), https://pfas-1.itrcweb.org/fact\_sheets\_page/PFAS\_Fact\_Sheet\_History\_and\_Use\_April2020.pdf (last visited May 20, 2020) (emphasis added); *see also* National Association for Surface Finishing, Per- and Polyfluoroalkyl Substances, PFAS – Background Information, https://nasf.org/wp-content/uploads/2019/04/Background-Information-on-PFAS.pdf (last visited May 20, 2020); Fath, et al., *Electrochemical decomposition of fluorinated wetting agents in plating industry waste water*, 73 Water Sci Technol 7, 1659–66 (2016), https://iwaponline.com/wst/article-lookup/doi/10.2166/wst.2015.650 (last visited May 20, 2020). [↑](#footnote-ref-31)
32. Preliminary Plan 15 at 6-5. [↑](#footnote-ref-32)
33. Preliminary Plan at 6-5 – 6-6; Danish Ministry of the Environment, Environmental Protection Agency, Alternatives to Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS) in Textiles, 7 (2015), https://legislature.vermont.gov/Documents/2020/WorkGroups/Senate%20Health%20and%20Welfare/Bills/S.295/Written%20Testimony/S.295~Martin%20Wolf~DK-PFAS-AlternativesTextiles15~2-28-2020.pdf (last visited May 4, 2020); *see also* Ministry of Environment and Food, The Danish Environmental Protection Agency Polyfluoroalkyl Substances (PFASs) in Textiles for Children (2015), https://www2.mst.dk/Udgiv/publications/2015/04/978-87-93352-12-4.pdf (last visited May 4, 2020); Interstate Technology Regulatory Council, History and Use of Per- and Polyfluoroalkyl Substances (PFAS) (“ITRC Fact Sheet”), 5 (2020), https://pfas-1.itrcweb.org/fact\_sheets\_page/PFAS\_Fact\_Sheet\_History\_and\_Use\_April2020.pdf (last visited May 4, 2020). [↑](#footnote-ref-33)
34. Preliminary Plan 15 at 6-6. [↑](#footnote-ref-34)
35. Preliminary Plan 15 at 6-6. [↑](#footnote-ref-35)
36. *See United Steelworkers of Am. v. Marshall*, 647 F.2d 1189, 1266 (D.C. Cir. 1980) (An agency should not allow harm “while it awaits the Godot of scientific certainty.”). [↑](#footnote-ref-36)
37. For more information on North Carolina’s Chemours’ experience and the associated cleanup, see SELC OCPSF ELG Comments at 12-20. [↑](#footnote-ref-37)
38. Ted Schoenberg, Parsons, Old Outfall 002 GAC Pilot Study Interim Results Report, Chemours Fayetteville, North Carolina Facility, 4-5 (Aug. 5, 2019) (hereinafter “GAC Pilot Study”) (Attachment 6); see also Parsons, Engineering Report – Old Outfall 002 GAC Pilot Study Results (Sept. 2019) (hereinafter “GAC Pilot Study Results”) (Attachment 7). [↑](#footnote-ref-38)
39. Chemours Company, *Attachment J.2 to NPDES Permit No. NC0003573, Reverse Osmosis Engineering Report and Data Analysis*, 4-8 (Nov. 2020) (hereinafter “Chemours Reverse Osmosis Report”) (Attachment 8). [↑](#footnote-ref-39)
40. *See* SELC OCPSF ELG Comments at 17-18. [↑](#footnote-ref-40)
41. In the absence of water quality standards or effluent limit guidelines, states are still required to use their best professional judgment to implement limits based on the available technologies. 40 C.F.R. § 125.3; *see also* 33 U.S.C. § 1342(a)(1)(B). [↑](#footnote-ref-41)
42. 40 C.F.R. § 125.3(a) (emphasis added). [↑](#footnote-ref-42)
43. U.S. EPA, NPDES Permit Writers’ Manual, 5-1 (2010), https://www.epa.gov/sites/production/files/2015-09/documents/pwm\_2010.pdf (last visited May 20, 2020). [↑](#footnote-ref-43)
44. U.S. EPA, Technical Analysis for Determination of Technology-Based Permit Limits for the Guaynabo Drinking Water Treatment Facility NPDES Number PR0022438, 2-1 (Mar. 2009), https://19january2017snapshot.epa.gov/sites/production/files/2015-11/documents/guaynabo-pr\_drinking-water-treatment-facility\_bpj-analysis\_2009.pdf (last visited May 20, 2020). [↑](#footnote-ref-44)
45. 33 U.S.C. § 1314(b). [↑](#footnote-ref-45)
46. 40 C.F.R. § 125.3; *see also* 33 U.S.C. § 1342(a)(1)(B). [↑](#footnote-ref-46)
47. *See* Preliminary Plan 15 at 6-4 (noting that “EPA has not developed a comprehensive list of all PFAS manufacturers and formulators in the U.S. and considers it probable that there are many more OCPSF facilities using PFAS that EPA has not yet identified.”); *id.* at 6-4 (noting that “EPA has not developed a comprehensive list of all PFAS manufacturers and formulators in the U.S. and considers it probable that there are many more OCPSF facilities using PFAS that EPA has not yet identified.”); *id.* at 6-6 (noting that “Most textile mills are not monitoring for PFAS and may be discharging PFAS to POTWs or surface waters.”). [↑](#footnote-ref-47)
48. Preliminary Plan 15 at 6-3. [↑](#footnote-ref-48)
49. 33 U.S.C. § 1311(a). [↑](#footnote-ref-49)
50. *Nat’l Ass’n of Home Builders v. Def. of Wildlife*, 551 U.S. 644, 650 (2007). [↑](#footnote-ref-50)
51. *See In re Ketchikan Pulp Co.*, 7 E.A.D. 605 (EPA) (1998); *Piney Run Pres. Ass’n v. Cty. Comm’rs of Carroll Cty., Maryland*, 268 F.3d. 255 (4th Cir. 2001); *Southern Appalachian Mountain Stewards v. A & G Coal Corp.*, 758 F.3d 560 (4th Cir. 2014). [↑](#footnote-ref-51)
52. Consolidated Permit Application Forms for EPA Programs, 45 Fed. Reg. 33,526-31 (May 19, 1980). [↑](#footnote-ref-52)
53. *See In re Ketchikan Pulp Co.*, 7 E.A.D. 605 (EPA) (1998). [↑](#footnote-ref-53)
54. *Piney Run*, 268 F.3d. at 268 (emphasis added). [↑](#footnote-ref-54)
55. EPA, Multi-Industry Per- and Polyfluoroalkyl Substances(PFAS) Study – 2021 Preliminary Report, 3-9 to 3-11 (Sept. 2021). [↑](#footnote-ref-55)
56. Tackling the Climate Crisis at Home and Abroad, Exec. Order No. 14,008, §§ 222(b)(i), 220(d), 86 Fed. Reg. 7619, 7630, 7631 (Feb. 1, 2021). [↑](#footnote-ref-56)
57. Presidential Documents, Exec. Order No. 12,898, § 1-101, 59 Fed. Reg. 7629, 7629 (Feb. 16, 1994). [↑](#footnote-ref-57)
58. EPA, *Environmental Justice*, **https://perma.cc/L6FK-9W3A**. [↑](#footnote-ref-58)
59. Tackling the Climate Crisis at Home and Abroad, Exec. Order No. 14,008, §§ 222(b)(i), 220(d), 86 Fed. Reg. 7619, 7630, 7631 (Feb. 1, 2021). [↑](#footnote-ref-59)
60. *See, e.g.*, Robert D. Bullard et al., Toxic Wastes and Race at Twenty, 1987-2007: A Report Prepared for the United Church of Christ Justice and Witness Ministries (2007), **https://perma.cc/7JKF-QS9K**; Paul Mohai & Robin Saha, *Which Came First, People or Pollution? A Review of Theory and Evidence from Longitudinal Environmental Justice Studies*, 10 Envtl. Research Letters125011 (2015), **https://perma.cc/S49L-8EG9**; Paul Mohai & Bunyan Bryant, *Environmental Injustice: Weighing Race and Class as Factors in the Distribution of Environmental Hazards*, 63 U. Colo. L. Rev. 921 (1992). [↑](#footnote-ref-60)
61. Low-income households were defined in this analysis as households with income below the poverty line in the last twelve months. Center for Science and Democracy at the Union of Concerned Scientists, Abandoned Science, Broken Promises, Appendix 3 (Oct. 2019), <https://www.ucsusa.org/sites/default/files/2019-10/Appendix-Equity-Report-10-2019.pdf>. [↑](#footnote-ref-61)
62. Center for Science and Democracy at the Union of Concerned Scientists, Abandoned Science, Broken Promises 13–14 (Oct. 2019), <https://www.ucsusa.org/sites/default/files/2019-10/abandoned-science-broken-promises-web-final.pdf>; Center for Science and Democracy at the Union of Concerned Scientists, Abandoned Science, Broken Promises, Appendix 2–5 (Oct. 2019), <https://www.ucsusa.org/sites/default/files/2019-10/Appendix-Equity-Report-10-2019.pdf>. [↑](#footnote-ref-62)
63. *Id.* at !!. [↑](#footnote-ref-63)
64. Kwiatkowski Article, supra note !!, at 535 (noting that PFAS can travel long distances and have even been found in the Arctic and in the open ocean). [↑](#footnote-ref-64)
65. EJSCREEN’s Wastewater Discharge Indicator reflects a given location’s proximity to streams and the toxicity-weighted pollutant load in those streams, offering a measure of the level of water pollution already burdening a community. EPA, *Frequent Questions About EJSCREEN*, **https://perma.cc/98YD-DNMK**. [↑](#footnote-ref-65)
66. Nat’l Envtl. Justice Advisory Council, *Fish Consumption and Environmental Justice* 2 (2002), **https://perma.cc/VF2M-UL7B**; Office of Environmental Health Hazard Assessment. Cal. EPA, *Chemicals in Fish: Consumption of Fish and Shellfish in California and the United States* (2001); Jason Corburn, *Combining Community-Based Research and Local Knowledge to Confront Asthma and Subsistence-Fishing Hazards in Greenpoint/Williamsburg, Brooklyn, New York*, 110 Envtl. Health Perspectives 241–48 (2002); Laura Hunter et al., Envtl. Health Coal., *Survey of Fishers on Piers in San Diego Bay: Results and Conclusions* (2005), **https://perma.cc/FLG2-DQ7B**; Fraser M. Shilling, *Fishing for Justice or Just Fishing?*, 36 Ecology Law Currents205–11 (2009), **https://perma.cc/3563-NBHZ**; Linda Silka, *The Southeast Asian Environmental Justice Partnership: Citizens Revive a New England Mill Town River*, New Village Journal, **https://perma.cc/DT2Y-ABCY**; Rebecca L. Williams et al., *An Examination of Fish Consumption by Indiana Recreational Anglers: An On-Site Survey*, Technical Report 99-D-HDFW-2 (June 30, 2000), **https://perma.cc/D5FA-P7WU**; AMAP Working Group, *AMAP Assessment 2009: Human Health in the Arctic* (2009),**https://perma.cc/43S9-7KFD**. [↑](#footnote-ref-66)
67. Ralph B. Brown & John F. Toth Jr., *Natural Resource Access and Interracial Associations: Black and White Subsistence Fishing in the Mississippi Delta*, 17 S. Rural Sociology 81, 104 (2001), **https://perma.cc/EJ5Z-JXPP**; Colvin et al., *supra* note!!, at 85. [↑](#footnote-ref-67)
68. Randell Woodruff, Brunswick County Manager, *Recommended Budget to Brunswick County Board of Commissioners*, 13 (May 18, 2020) (hereinafter “Recommended Budget”) (Attachment 68). [↑](#footnote-ref-68)
69. *CFPUA Files Motion to Intervene in North Carolina’s Complaint Against Chemours*, WECT News 6 (Sept. 10, 2020) (Attachment 69). [↑](#footnote-ref-69)
70. Paul Woolverton, *Cumberland County to Spend $10.5M to Send Water to GenX Contaminated Gray’s Creek*, The Fayetteville Observer (Jan. 6, 2020) (Attachment 70). [↑](#footnote-ref-70)
71. Preliminary Plan 15 at 6-2. [↑](#footnote-ref-71)