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COMMENTS OF
CONSERVATION LAW FOUNDATION

DRAFT NPDES PERMIT NO. NH0100447
(CITY OF MANCHESTER, NEW HAMPSHIRE,
WASTEWATER TREATMENT FACILITY)

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**COMMENTS ON DRAFT NPDES PERMIT NO. NH0100447
(CITY OF MANCHESTER, NH, WASTEWATER TREATMENT FACILITY)**

Conservation Law Foundation (“CLF”) respectfully submits the following comments on draft National Pollutant Discharge Elimination System (“NPDES”) permit number NH0100447 (“Draft Permit”) for the City of Manchester, New Hampshire’s wastewater treatment facility (“WWTF”). CLF is a member-supported, nonprofit environmental advocacy organization that works throughout New England, including in New Hampshire, to protect the environment for the benefit of all people. CLF has a long history of advocacy to protect water resources in New Hampshire, including the Merrimack River. CLF also has been engaged for several years in advancing environmental justice in Manchester and in advocacy addressing toxic “forever chemicals,” or “PFAS” (per- and polyfluoroalkyl substances).¹

PFAS—also known as “forever chemicals”—refers to a family of synthetic organic chemicals that persist in the environment for up to thousands of years.² PFAS have been linked to cancer and other serious health harms.³ Humans can become exposed to PFAS through contaminated drinking water, food (including fish), or air.⁴ PFAS often disproportionately impact environmental justice (“EJ”) communities.⁵ Manchester’s WWTF and its onsite incinerator both

¹ The following abbreviations for PFAS chemicals are used throughout these comments: perfluorooctanoic acid (PFOA), perfluorooctane sulfonate (PFOS), hexafluoropropylene oxide dimer acid and ammonium salt (GenX), perfluorobutane sulfonate (PFBS), perfluorononanoic acid (PFNA), perfluorohexane sulfonate (PFHxS), perfluorohexanoic acid (PFHxA), perfluoroheptanoic acid (PFHpA), ammonium perfluorooctonate (APFO), perfluorobutanoic acid (PFBA), perfluoropentanoic acid (PFPeA), perfluorodecanoic acid (PFDA), N-methyl perfluorooctanesulfonamidoacetic (NMeFOSAA), N-ethyl perfluorooctane sulfonamido acetic acid (N-EtFOSAA), 6:2 fluorotelomer sulfonate (6:2 FTS), 8:2 Fluorotelomer sulfonic acid (8:2 FTS).

² *Per- and Polyfluoroalkyl Substances (PFASs)*, UN ENV’T PROGRAMME, <https://www.unep.org/topics/chemicals-and-pollution-action/pollution-and-health/persistent-organic-pollutants-pops/and> (last visited Mar. 25, 2024).

³ See 87 Fed. Reg. 36848, 36849 (June 21, 2022); 89 Fed. Reg. 8606, 8613–8615 (Feb. 8, 2024); *Our Current Understanding of the Human Health and Environmental Risks of PFAS*, EPA, <https://www.epa.gov/pfas/our-current-understanding-human-health-and-environmental-risks-pfas> (last updated June 7, 2023).

⁴ *Per- and Polyfluoroalkyl Substances (PFASs)*, UN ENV’T PROGRAMME, <https://www.unep.org/topics/chemicals-and-pollution-action/pollution-and-health/persistent-organic-pollutants-pops/and> (last visited Mar. 25, 2024).

⁵ See *Communities of color disproportionately exposed to PFAS pollution in drinking water*, HARVARD T.H. CHAN SCHOOL OF PUBLIC HEALTH (May 15, 2023), <https://www.hsph.harvard.edu/news/press-releases/communities-of-color-disproportionately-exposed-to-pfas-pollution-in-drinking-water/>; Nadia Barbo et al., *Locally caught freshwater fish across the United States are likely a significant source of exposure to PFOS and other perfluorinated compounds*, 220 ENV’T RSCH. 1, 8 (2023) (attached as Exhibit A); Ralph Jimenez, *‘Forever chemicals’ endanger health of anglers who eat what they catch*, N.H. BULLETIN (April 11, 2023), <https://newhampshirebulletin.com/2023/04/11/forever-chemicals-endanger-health-of-anglers-who-eat-what-they-catch/>.

release PFAS into the environment.⁶ The WWTF’s PFAS discharges and incinerator emissions create health risks for Manchester residents and residents of downstream communities, likely exacerbating the cumulative impacts of pollution for EJ communities.

EPA has recognized that PFAS harm human health and animals,⁷ recommended that wastewater treatment facilities use their authority to reduce industrial sources of PFAS,⁸ and urged permit writers to consider the disproportionate impacts of incinerating PFAS-containing materials on EJ communities.⁹ But the Draft Permit falls far short of implementing EPA’s stated recommendations and goals regarding environmental justice, PFAS control and source reduction, and emissions data-gathering. To properly implement the Clean Water Act (“CWA”), EPA regulations and policies, New Hampshire state law, and Manchester’s local Sewer Use Ordinance—and to protect public health and environmental justice—EPA must conduct an environmental justice analysis and update the Draft Permit with respect to PFAS.

FACTUAL BACKGROUND & OVERVIEW

I. The Manchester WWTF is Northern New England’s largest WWTF and is the only WWTF in New Hampshire that burns sewage sludge.

The City of Manchester’s WWTF is Northern New England’s largest WWTF. The WWTF is designed to treat 34 million gallons of wastewater per day.¹⁰ As detailed in the Fact Sheet of the Draft Permit, the WWTF serves 155,000 users—109,000 in the City of Manchester and 46,000 in the Towns of Londonderry, Bedford, and Goffstown.¹¹

⁶ See generally Brannon A. Seay et al., *Per- and Polyfluoroalkyl Substances Fate and Transport at a Wastewater Treatment Plant with a Collocated Sewage Sludge Incinerator*, 847 SCI. TOTAL ENV’T 1 (2023) (attached as Exhibit B).

⁷ See, e.g., 89 Fed. Reg. 32532, 32537–38 (April 26, 2024); 89 Fed. Reg. 8606, 8613–8615 (Feb. 8, 2024).

⁸ See Memorandum from Radhika Fox, Assistant Administrator, EPA, to Water Division Directors, EPA Regions 1-10, regarding PFAS Discharges in EPA-issued NPDES permits and Expectations Where EPA Is the Pretreatment Control Authority (Apr. 28, 2022), https://www.epa.gov/system/files/documents/2022-04/npdes_pfas-memo.pdf [hereinafter April 2022 EPA PFAS Memorandum] (attached as Exhibit C); Memorandum from Radhika Fox, Assistant Administrator, EPA, to Water Division Directors, EPA Regions 1-10, regarding Addressing PFAS Discharges in NPDES Permits and Through the Pretreatment Program and Monitoring Programs (December 5, 2022), https://www.epa.gov/system/files/documents/2022-12/NPDES_PFAS_State%20Memo_December_2022.pdf [hereinafter December 2022 EPA PFAS Memorandum] (attached as Exhibit D).

⁹ ENV’T PROT. AGENCY, INTERIM GUIDANCE ON THE DESTRUCTION AND DISPOSAL OF PERFLUOROALKYL AND POLYFLUOROALKYL SUBSTANCES AND MATERIALS CONTAINING PERFLUOROALKYL AND POLYFLUOROALKYL SUBSTANCES—VERSION 2 at 54 (2024), <https://www.epa.gov/system/files/documents/2024-04/2024-interim-guidance-on-pfas-destruction-and-disposal.pdf> [hereinafter EPA 2024 PFAS Destruction & Disposal Guidance].

¹⁰ See ENV’T PROT. AGENCY, AUTHORIZATION TO DISCHARGE UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM, NPDES PERMIT NO. NH0100447 2024 DRAFT PERMIT at 3 (2024), <https://www.epa.gov/system/files/documents/2024-04/draftnh0100447permit-2024.pdf> [hereinafter Draft Permit].

¹¹ *Id.* at Fact Sheet 13.

The Manchester WWTF discharges effluent into the Merrimack River, an iconic water resource of critical importance to New Hampshire and Massachusetts. In addition to its importance as a natural resource for aquatic and wildlife species, the river provides drinking water for more than 700,000 people, including communities located downstream from the WWTF such as Nashua, NH, and Lowell, Methuen, Andover, Tewksbury, and Lawrence, MA.¹² Along with discharging effluent into surface waters, the WWTF burns sewage sludge in an onsite incinerator, releasing emissions into the ambient air. The Manchester WWTF is the only WWTF in New Hampshire that incinerates sewage sludge.¹³

II. The Manchester WWTF releases toxic PFAS into the environment through effluent discharges and incinerator emissions.

The Manchester WWTF's discharges into the Merrimack River and emissions into ambient air contain toxic PFAS chemicals. Two sources of information—a peer-reviewed article and Manchester's own PFAS monitoring data—document PFAS in the WWTF's inputs and outputs.

The first PFAS data source, the “Battelle Study,” is a peer-reviewed paper detailing a two-day PFAS sampling program that Battelle Memorial Institute researchers conducted in 2019. The Battelle Study documents PFAS in the WWTF's influent, effluent, sludge, incinerator ash slurry, and incinerator stack gas.¹⁴ PFAS concentrations in treated water effluent reached 167 parts per trillion (“ppt”) for 30 PFAS compounds combined.¹⁵ Total PFAS levels in the water increased after wastewater treatment, from 117 ppt in influent to 167 ppt in effluent discharged to the Merrimack River.¹⁶ The level of GenX—a PFAS compound recently regulated in drinking water and known to cause health harms¹⁷—more than doubled from influent to treated effluent.¹⁸ This increase, of total PFAS and some individual compounds, observed at the Manchester facility corresponds with findings in other studies.¹⁹ This phenomenon highlights that wastewater treatment facilities do not remove PFAS pollutants; rather, they can exacerbate the PFAS problem.

¹² *About the Merrimack*, EPA (April 23, 2024), <https://www.epa.gov/merrimackriver/about-merrimack>.

¹³ NATIONAL BIOSOLIDS DATA PROJECT, STATE BIOSOLIDS SURVEY: 2018 DATA (2021), https://static1.squarespace.com/static/601837d1c67bcc4e1b11862f/t/6203f0b582fcfb750de408e1/1644425397690/NH_BiosolidsDataSummary_NBDP%26NEIWPC_20220209.pdf.

¹⁴ See Seay et al., *supra* note 6, at 4; see also SEAY ET AL., SUPPORTING INFORMATION FOR PER- AND POLYFLUOROALKYL SUBSTANCES FATE AND TRANSPORT AT A WASTEWATER TREATMENT PLANT WITH A COLLOCATED SEWAGE SLUDGE INCINERATOR at S19, S37 (2023), <https://www.sciencedirect.com/science/article/pii/S0048969723009737#s0110> [hereinafter Battelle Study Supporting Information] (attached as Exhibit E).

¹⁵ Battelle Study Supporting Information, at tbl. S12.

¹⁶ *Id.* at Text S5.

¹⁷ See 89 Fed. Reg. 32532, 32532, 32548 (April 26, 2024).

¹⁸ Battelle Study Supporting Information, at tbl. S12.

¹⁹ Seay et al., *supra* note 6, at 4.

The Battelle Study also shows that the WWTF’s onsite incinerator emits PFAS into ambient air.²⁰ The study estimated that the incinerator removed only 51 percent of the PFAS measured and concluded that the incinerator “may inadequately remove PFAS.”²¹ Comparing the 51 percent destruction and removal efficiency (“DRE”) for PFAS to the 99.9 percent DRE required for polychlorinated biphenyls, another organic pollutant,²² shows that the Manchester incinerator subjects neighboring residents to unacceptable PFAS emissions and associated health risks.

Importantly, the Battelle Study did not capture the full scope of PFAS pollution. The researchers only measured 30 PFAS compounds in air emissions and calculated the 51 percent DRE without accounting for products of incomplete combustion (“PICs”).²³ Thus, the incinerator could be emitting unmeasured PFAS or other harmful byproducts not documented in the study. The researchers also observed that the incinerator formed GenX and emitted 44,000 times more inorganic fluoride than expected.²⁴ Recently-issued EPA guidance on PFAS destruction and disposal further highlights the uncertainties associated with PFAS emissions from sewage sludge incineration. The guidance states that “[t]he behavior of PFAS and PFAS-related PICs” in thermal treatment systems like sewage sludge incinerators is “largely unknown,” and that these systems create “secondary waste streams” in which “PFAS and PFAS-related PICs may be present.”²⁵

The second PFAS data source, the “Manchester Monitoring Data,” consists of data that the Manchester WWTF compiled after voluntarily monitoring four PFAS in influent, effluent, sludge, ash, landfill leachate, and septage monthly from 2019 through 2023.²⁶ The PFAS levels in the WWTF’s effluent ranged from 6 to 50.3 ppt when only four compounds were measured.²⁷ Some individual compound concentrations in effluent documented in the WWTF monitoring

²⁰ *Id.* at 1.

²¹ *Id.*

²² 40 C.F.R. § 761.70(a)(2).

²³ See Seay et al., at 2, 9 (“The DREs reported here represent the losses of a given target PFAS or PFAS class, without respect to the potential for species to be partially broken down into unmeasured products of incomplete combustion. Future research measuring full mineralization can provide a more complete understanding of the breakdown of PFAS during incineration.”)

²⁴ *Id.* at 6, 8.

²⁵ EPA 2024 PFAS Destruction & Disposal Guidance, at 54.

²⁶ City of Manchester WWTF PFAS Monitoring Reports (2019–23) (attached as Exhibits F through J). Although the WWTF represented in two annual Industrial Pretreatment Program Reports that it had taken measurements of 16 PFAS compounds, it only monitored for the four PFAS regulated in New Hampshire drinking water and groundwater. See CITY OF MANCHESTER, INDUSTRIAL PRETREATMENT PROGRAM ANNUAL REPORT: JUNE 1, 2022 THROUGH MAY 31, 2023 at 17 (2023), https://www.manchesternh.gov/Portals/2/Departments/environ_protect/-website/City_of_Manchester_IPP_Annual_Report_2022-2023.pdf?ver=2023-08-01-114901-107 [hereinafter 2022–2023 IPP Annual Report]; CITY OF MANCHESTER, INDUSTRIAL PRETREATMENT PROGRAM ANNUAL REPORT: JUNE 1, 2019 THROUGH MAY 31, 2020 at 17 (2020)

https://www.manchesternh.gov/Portals/2/Departments/environ_protect/IDP/2019-2020%20IPP%20Annual%20Report.pdf?ver=2020-12-16-113619-713 [hereinafter 2019–2020 IPP Annual Report].

²⁷ City of Manchester WWTF PFAS Monitoring Reports (2019–23).

data exceed the Battelle Study’s measured concentrations for PFOA, PFOS, and PFHxS, reaching as high as 20.6 ppt,²⁸ 30 ppt,²⁹ and 9.1 ppt³⁰ respectively. The WWTF monitoring data also demonstrates that the WWTF is discharging PFAS into the Merrimack River on an ongoing basis, with no continuous trend of decreasing concentrations over time.

Manchester did not identify PFAS in its application documents submitted in 2019 for this permit renewal,³¹ and the Draft Permit materials do not suggest that EPA considered the Battelle Study and/or the City’s PFAS Monitoring Data in developing the Draft Permit. However, these data sources demonstrate that the WWTF is consistently discharging toxic PFAS into the Merrimack River and its sludge incinerator is releasing PFAS into Manchester’s air. EPA must consider this information in its permit development process, as the NPDES “permitting scheme is dependent on the permitting authority being able to judge whether the discharge of a particular pollutant constitutes a significant threat to the environment[.]”³²

III. The Manchester WWTF receives PFAS-contaminated influent from industrial users and has no processes to control or treat PFAS.

Industrial Users (“IUs”) likely contribute the largest share of PFAS to the WWTF’s influent. These IUs include landfills with documented PFAS contamination and other industrial facilities in PFAS-associated industries. The WWTF receives wastewater from at least 88 IUs,³³ 14 of which are classified as Significant Industrial Users (“SIUs”), according to its most recent annual pretreatment report.³⁴ But the City’s most recent annual pretreatment report does not identify all IUs; for example, the City began accepting PFAS-contaminated influent from the active North County Environmental Services (“NCES”) landfill in Bethlehem, NH in 2024.³⁵ The WWTF is not equipped to remove PFAS from influent, so the PFAS it receives from industrial facilities and landfills passes through the plant to the Merrimack River through treated wastewater or to ambient air through the sludge-burning incinerator.

²⁸ City of Manchester WWTF PFAS Monitoring Report (2021).

²⁹ City of Manchester WWTF PFAS Monitoring Report (2022).

³⁰ City of Manchester WWTF PFAS Monitoring Report (2022).

³¹ See generally MANCHESTER WWTF, PERMIT APPLICATION SECTION 3: INFORMATION ON EFFLUENT DISCHARGES (approved Mar. 5, 2019) (attached as Exhibit K).

³² *Piney Run Pres. Ass’n v. Cnty. Comm’rs of Carroll Cnty.*, 268 F.3d 255, 268 (4th Cir. 2001).

³³ 2022–2023 IPP Annual Report App’x A–D; 2019–2020 IPP Annual Report App’x A–D.

³⁴ 2022–2023 IPP Annual Report App’x A; see also 2019–2020 IPP Annual Report App’x A. But see Draft Permit Fact Sheet at 13 (stating that Manchester’s permit application listed 18 SIUs).

³⁵ CITY OF MANCHESTER, DEP’T OF PUBLIC WORKS, CLASS III WASTEWATER DISCHARGE PERMIT NO. T-3001-2-24 (2024) (attached as Exhibit L); CITY OF MANCHESTER DEP’T OF PUBLIC WORKS, CLASS III WASTEWATER DISCHARGE PERMIT NO. T-3001-4-24 (2024) (attached as Exhibit M).

A. The Manchester WWTF accepts PFAS-contaminated leachate from two landfills.

The City accepts PFAS-contaminated landfill leachate from two landfills—the closed Manchester Municipal Landfill, and the active landfill in Bethlehem owned by NCES, a subsidiary of Casella. Both closed and active landfills generate leachate, a type of wastewater formed from precipitation, groundwater seepage, microbiological organism breakdown, and ground moisture.³⁶ Leachate contains pollutants “at several orders of magnitude higher than typical domestic wastewater” and often contains emerging contaminants like PFAS.³⁷

The closed Manchester Municipal Landfill, an SIU under the City’s pretreatment program, is generating leachate and sending it to the WWTF. The Manchester Municipal Landfill has consistently contributed PFAS to the WWTF since at least 2019, with leachate concentrations ranging from 5.72 ppt³⁸ to 169.6 ppt³⁹ when four PFAS compounds were measured.

Moreover, although it is not classified as an IU or SIU in Manchester’s pretreatment reports, NCES sent landfill leachate to the Manchester WWTF from April to May 2024 (up to 30,000 gallons per day),⁴⁰ in March 2024 (47,703 gallons total),⁴¹ and in February 2024 (454,886 gallons total)⁴² under temporary discharge permits.⁴³ The WWTF sampled NCES’s leachate influent for PFAS in February 2024, measuring 1,870 ppt PFOA, 281 ppt PFOS, 4,240 ppt PFHxS, and 125 ppt PFNA.⁴⁴ The WWTF’s findings noted that each of these samples exceeded the New Hampshire drinking water standards, which are 12 ppt PFOA, 15 ppt PFOS, 18 ppt PFHxS, and 11 ppt PFNA.⁴⁵ The NCES landfill leachate contained 11,186.7 ppt total PFAS when 17 compounds were measured on February 13, 2024 (during NCES’s temporary permit period to

³⁶ ENV’T PROT. AGENCY, OFF. OF RSCH. & DEV., STATE OF THE PRACTICE OF ONSITE LEACHATE TREATMENT AT MUNICIPAL SOLID WASTE LANDFILLS at 1 (EPA/600/R-21/182) (Oct. 2021).

³⁷ *Id.* at 9.

³⁸ City of Manchester WWTF PFAS Monitoring Report (March 2022).

³⁹ City of Manchester WWTF PFAS Monitoring Report (October 2019).

⁴⁰ CITY OF MANCHESTER DEP’T OF PUBLIC WORKS, CLASS III WASTEWATER DISCHARGE PERMIT NO. T-3001-4-24 (2024).

⁴¹ Letter from Lindsey Menard, North Country Environmental Services, Inc., to Jaime Colby, P.E., New Hampshire Department of Environmental Services, regarding North Country Environmental Services, Inc. Landfill Facility - Bethlehem, NH Permit # - NH DES-SW-SP-03-002 First Quarter Facility Report; 2024 at 21 (April 30, 2024) (attached as Exhibit N).

⁴² *Id.* at 17.

⁴³ CITY OF MANCHESTER, DEP’T OF PUBLIC WORKS, CLASS III WASTEWATER DISCHARGE PERMIT NO. T-3001-2-24 (2024); CITY OF MANCHESTER DEP’T OF PUBLIC WORKS, CLASS III WASTEWATER DISCHARGE PERMIT NO. T-3001-4-24 (2024).

⁴⁴ Email from Christopher Crowley, Manchester EPD, to Frederick McNeill, Manchester EPD, regarding Leachate Disposal PFAS sampling results vs. NHDES Drinking water limits (April 18, 2024) (attached as Exhibit O).

⁴⁵ *Id.*

discharge into the Manchester WWTF)⁴⁶ and 12,263 ppt PFAS when 12 compounds were measured for a different WWTF in 2023.⁴⁷

In addition to discharging PFAS at high concentrations, evidence suggests NCES violated the temporary discharge permits that authorized it to send leachate to the City’s WWTF. The landfill sent more leachate to the WWTF than the permit’s daily limit, discharged leachate to the plant on days that were not covered by the temporary permit, and failed to disclose certain pollutant parameters.⁴⁸ Despite these violations, despite the WWTF’s inability to treat PFAS, and despite the known health risks associated with these pollutants, the City has communicated with Casella regarding the potential to accept PFAS from another active Casella landfill, the Coventry landfill in Vermont.⁴⁹

No evidence suggests that EPA considered the above information regarding Manchester accepting PFAS-contaminated influent from landfills when developing the City’s draft permit. EPA must consider this information before finalizing the permit and should respond accordingly, as described below in the “Detailed Comments on the Draft Permit.”

B. Other facilities in PFAS-associated industries send wastewater to the Manchester WWTF.

In addition to landfill leachate contributing PFAS to the WWTF’s effluent, at least 11 other SIUs operate in PFAS-related sectors and send wastewater into the WWTF, as detailed in the chart below:⁵⁰

Significant Industrial User	Type of Business	Average Flow (Gallons Per Day)
Jewell Instrument	Metal Finisher	3,700
NYCOA	Plastic Production	285,000
XMA	Semi-Conductor	560
Velcro USA	Textile Manufacturing	80,100
Prysmian Cables & Systems	Textile Manufacturing	23,700
E&R Cleaners	Cleaning Services	70,600
Sterling Laundry	Cleaning Services	95,000

⁴⁶ NORTH COUNTRY ENV’T SERVS., INC. SUMMARY OF MONITORING DATA – TANK B LEACHATE – PFAS (Tbl. 3) (2024) (attached as Exhibit P).

⁴⁷ Letter from Lindsey Menard, North Country Environmental Services, Inc., to Kristin Noel City of Concord, New Hampshire Wastewater Treatment Facility, regarding North Country Environmental Services, Inc. Landfill Facility – Bethlehem, New Hampshire City of Concord Leachate Discharge Permit (#H34) Annual Leachate Report, 2023 at PDF 30 (March 20, 2023) (attached as Exhibit Q).

⁴⁸ Email from Save Forest Lake to Stergios Spanos, Dep’t Env’t Servs. Regarding Manchester WWTP Permit Violations – NCES Landfill Leachate (May 21, 2024) (attached as Exhibit R).

⁴⁹ See Email from Clark James, Casella, to Frederick McNeill, Manchester EPD, regarding Leachate Disposal (April 17, 2024) (attached as Exhibit S).

⁵⁰ See 2022–2023 IPP Annual Report App’x A; see also 2019–2020 IPP Annual Report App’x A.

Elliot Hospital	Hospital	69,400
Catholic Medical Center	Hospital	68,900
Department of Veterans Affairs	Hospital	45,000
Dartmouth Hitchcock	Hospital	25,000

The additional industry categories in the chart above—metal finishing, plastic production, semi-conductors, textile manufacturing, cleaning services, and hospitals—have been associated with PFAS use or PFAS contamination.⁵¹ Other IUs that are not classified as significant but that potentially discharge PFAS into the Manchester facility include but are not limited to commercial car washes and Textile Coating International, a facility that manufactures polytetrafluoroethylene.⁵²

Despite awareness that it is receiving PFAS in influent and discharging PFAS to the Merrimack River since at least 2019, the Manchester WWTF has no treatment processes to remove PFAS and has not implemented source reduction measures to reduce the PFAS entering the plant. To the contrary, the Manchester WWTF has admittedly failed to initiate any communications with industrial users regarding PFAS.⁵³

IV. PFAS chemicals are harmful to humans and wildlife, persistent, and bioaccumulative.

PFAS pollution from the Manchester WWTF and its onsite incinerator increases health risks for residents in Manchester and communities downstream of the plant. These manufactured and persistent chemicals are detrimental to humans: they are linked to health harms such as cancer (kidney, prostate, and testicular cancer), thyroid disease, developmental impacts to children, reproductive and fertility impacts, obesity, diabetes, high cholesterol, and decreased vaccine response.⁵⁴

EPA has highlighted the negative health impacts of PFAS chemicals, and the need to address them, in its recent regulatory actions. Most recently, on April 17, 2024, EPA designated PFOA and PFOS as “hazardous substances” under the Comprehensive Environmental Response,

⁵¹ See 2022–2023 IPP Annual Report; 2019–2020 IPP Annual Report. See also April 2022 EPA PFAS Memorandum, at 2; *Per- and polyfluoroalkyl substances (PFAS)*, CTRS. FOR DISEASE CONTROL AND PREVENTION (Sept. 15, 2022), <https://www.cdc.gov/niosh/topics/pfas/default.html>; ‘Forever chemicals’ – the part of cleaning you don’t want to last, EWG (Oct. 27, 2023), <https://www.ewg.org/news-insights/news/2023/10/forever-chemicals-part-cleaning-you-dont-want-last>.

⁵² 2022–2023 IPP Annual Report App’x B (Textile Coating International), App’x C (State Motors Car Wash).

⁵³ See Email from Adam Dumville, Director, McLane Middleton to Tom Irwin, Vice President, Conservation Law Foundation (Feb. 15, 2024) (attached as Exhibit T).

⁵⁴ See 87 Fed. Reg. 36848, 36849 (June 21, 2022); 89 Fed. Reg. 8606, 8613–8615 (Feb. 8, 2024); *Our Current Understanding of the Human Health and Environmental Risks of PFAS*, EPA, <https://www.epa.gov/pfas/our-current-understanding-human-health-and-environmental-risks-pfas> (last updated June 7, 2023).

Compensation, and Liability Act (“CERCLA”).⁵⁵ On April 8, 2024, EPA established enforceable drinking water standards that cover six PFAS chemicals (PFOA, PFOS, PFHxS, PFNA, GenX, and PFBS).⁵⁶ In February 2024, EPA issued a proposed rule designating nine PFAS chemicals as “hazardous constituents” under the Resource Conservation and Recovery Act (“RCRA”).⁵⁷ In June 2022, EPA set stringent drinking water health advisories under the Safe Drinking Water Act (“SDWA”) for PFOA and PFOS (interim) and GenX and PFBS (final).⁵⁸ In issuing these rules, proposed rules, and guidance values, EPA has recognized that PFAS cause “toxic and adverse effects in animals, humans, or both”⁵⁹ and has cited evidence regarding the immune, cardiovascular, developmental, carcinogenic, liver, and kidney effects of these chemicals.⁶⁰

The New Hampshire Department of Environmental Services (“DES”) also has highlighted the health harms associated with some PFAS. In 2019, DES established state drinking water maximum contaminant levels and ambient groundwater quality standards for PFOA, PFOS, PFHxS, and PFNA.⁶¹ In proposing those rules, DES highlighted the potential for those chemicals to cause liver damage, lipid metabolism effects, decreased immune response, and negative fertility impacts for women.⁶² DES also recognized that they are linked to cancer and thyroid, developmental, cholesterol, and neurobehavioral impacts.⁶³

In addition to their persistence and toxicity, many PFAS chemicals bioaccumulate in wildlife.⁶⁴ PFAS bioaccumulation harms both animals and humans. Regarding animals, studies have linked

⁵⁵ ENV’T PROT. AGENCY, DESIGNATION OF PERFLUOROOCANOIC ACID (PFOA) AND PERFLUOROOCANESULFONIC ACID (PFOS) AS CERCLA HAZARDOUS SUBSTANCES (PRE-PUBLICATION NOTICE) (April 17, 2024), https://www.epa.gov/system/files/documents/2024-04/pre-publication_final-rule-cercla-pfoa-pfos-haz-sub.pdf; see also 89 Fed. Reg. 39,124, 39139 (May 8, 2024).

⁵⁶ ENV’T PROT. AGENCY, PFAS NATIONAL PRIMARY DRINKING WATER REGULATION RULEMAKING (PRE-PUBLICATION VERSION) (April 8, 2024), https://www.epa.gov/system/files/documents/2024-04/pfas-ncpdwr_prepubfederalregisternotice_4.8.24.pdf; see also 89 Fed. Reg. 32532 (April 26, 2024).

⁵⁷ See generally 89 Fed. Reg. 8606 (Feb. 8, 2024).

⁵⁸ 87 Fed. Reg. 36848, 36849 (June 21, 2022).

⁵⁹ 89 Fed. Reg. 8606, 8609 (Feb. 8, 2024).

⁶⁰ 87 Fed. Reg. 36848, 36849 (June 21, 2022).

⁶¹ These rules were “temporarily stayed by a court injunction,” but the same standards “were established as a matter of law by House Bill 1264, which became effective July 23, 2020.” See N.H. DEP’T ENV’T SERVICES, 2023 STATUS REPORT ON THE OCCURRENCE OF PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS) CONTAMINATION IN NEW HAMPSHIRE at 29 (2023), <https://www.des.nh.gov/sites/g/files/ehbemt341/files/documents/r-wmd-23-01.pdf>.

⁶² N.H. DEP’T ENV’T SERV., TECHNICAL BACKGROUND REPORT FOR THE JUNE 2019 PROPOSED MAXIMUM CONTAMINANT LEVELS (MCLS) AND AMBIENT GROUNDWATER QUALITY STANDARDS (AGQS) FOR PERFLUOROOCANE SULFONIC ACID (PFOS), PERFLUOROOCANOIC ACID (PFOA), PERFLUORONONANOIC ACID (PFNA), AND PERFLUOROHEXANE SULFONIC ACID (PFHXS) (R-WD-19-29) at 1, <https://www.des.nh.gov/sites/g/files/ehbemt341/files/documents/r-wd-19-29.pdf> [hereinafter DES Technical Background].

⁶³ *Id.*

⁶⁴ See *Per- and Polyfluorinated Substances (PFAS) Factsheet*, CTRS. FOR DISEASE CONTROL AND PREVENTION, https://www.cdc.gov/biomonitoring/PFAS_FactSheet.html; Heidi M. Pickard et al., *PFAS and Precursor Bioaccumulation in Freshwater Recreational Fish: Implications for Fish Advisories*, 56 ENV’T SCI. & TECH. 15573,

PFAS to “stress, diminished growth rates and reproductive abilities, and” sometimes even death in aquatic life⁶⁵ such as fish and mussels.⁶⁶ Regarding humans, dietary sources of PFAS—including fish—constitute “at least 61% of PFAS exposure in adults.”⁶⁷ There is a “significant positive correlation” between higher fish consumption and increased PFAS detected in humans.⁶⁸ Of particular note and concern, consuming just one serving of freshwater fish with 8.41 micrograms of PFOS per kilogram of fish—the median level of PFOS found in freshwater fish in one EPA sampling program—*has the same health impacts as drinking water with 48 ppt PFOS (2,400 times higher than EPA’s interim health advisory level for PFOS) for an entire month.*⁶⁹

V. PFAS pollution from the Manchester WWTF disproportionately impacts Environmental Justice communities in Manchester and downstream locations.

The PFAS pollution from the Manchester WWTF and its incinerator threatens to add to cumulative burdens in EJ communities. Sources of PFAS—like wastewater treatment plants, landfills, and manufacturing facilities—often disproportionately impact communities of color due to inequitable siting.⁷⁰ Moreover, many residents of EJ communities eat locally-caught fish at higher rates for cultural and/or subsistence reasons, which increases exposure to PFAS.⁷¹

Many EJ communities are located within the City of Manchester. Two U.S. Census Tracts that are located roughly two miles away from the WWTF and its incinerator are overburdened by environmental pollution. One of these communities has a population that is 56 percent people of color, 62 percent low income, and falls above the 96th state percentile for all but one of EPA’s EJ Indexes.⁷² Another has a population that is 41 percent people of color, 43 percent low income,

15573, 15578 , 15579–80 (2022); N.H. DEP’T ENV’T SERVS., PLAN TO GENERATE PFAS SURFACE WATER QUALITY STANDARDS 11 (2019), <https://www.des.nh.gov/sites/g/files/ehbemt341/files/documents/r-wd-19-30.pdf>.

⁶⁵ Serena E. George et al., *Nonlethal Detection of PFAS Bioaccumulation and Biomagnification Within Fishes in an Urban- and Wastewater-dominant Great Lakes Watershed*, 321 ENV’T POLLUTION 121123, 121123 (2023).

⁶⁶ Changhui Liu et al., *Oxidative Toxicity of Perfluorinated Chemicals in Green Mussel and Bioaccumulation Factor Dependent Quantitative Structure-activity Relationship*, 33 ENV’T TOXICOLOGY & CHEMISTRY 2323, 2332 (2014); See generally Guang-hua Lu et al., *Toxicity of Perfluorononanoic Acid and Perfluorooctane Sulfonate to Daphnia Magna* 8 WATER SCIENCE & ENGINEERING 40 (2015).

⁶⁷ George et al., *supra* note 65, at 121123.

⁶⁸ *Id.*

⁶⁹ Barbo et al., *supra* note 5, at 6 (emphasis added).

⁷⁰ *Communities of color disproportionately exposed to PFAS pollution in drinking water*, HARVARD T.H. CHAN SCHOOL OF PUBLIC HEALTH (May 15, 2023), <https://www.hsph.harvard.edu/news/press-releases/communities-of-color-disproportionately-exposed-to-pfas-pollution-in-drinking-water/>.

⁷¹ Barbo et al., *supra* note 5, at 8. Ralph Jimenez, ‘Forever chemicals’ endanger health of anglers who eat what they catch,” N.H. BULLETIN (April 11, 2023), <https://newhampshirebulletin.com/2023/04/11/forever-chemicals-endanger-health-of-anglers-who-eat-what-they-catch/>.

⁷² *EJScreen Community Report: Manchester, NH Blockgroup 330110025002*, EPA, <https://ejscreen.epa.gov/mapper/> (last visited April 17, 2024). The EJ Index value “combines data on low income and people of color populations with a single environmental indicator” to highlight “potential EJ concerns.” *Id.*

and falls above the 94th state percentile for all thirteen EJ Indexes.⁷³ These two communities are located north and northeast of the facility, exposing them to health risks from breathing contaminated air when wind blows from the south.⁷⁴ Manchester residents that fish near or downstream of the WWTF are also likely disproportionately impacted by the WWTF's PFAS pollution in water and air.

PFAS pollution from the WWTF also threatens the health of residents, including EJ residents, in downstream communities that source their drinking water from the Merrimack River. For example, the WWTF is located within 20 miles upstream of Pennichuck Water Works, which provides drinking water to Nashua, NH and surrounding communities.⁷⁵ Because PFAS do not break down, travel significant distances in water, and are harmful even at low levels, the PFAS in the City's effluent likely impact drinking water in other downstream communities in northern Massachusetts that source their drinking water from the Merrimack River.

LEGAL BACKGROUND & CONTEXT

Congress passed the CWA with a clear goal: “to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.”⁷⁶ Section 1311(a) prohibits the discharge of a pollutant from a point source into waters of the United States unless in accordance with a NPDES permit or another specified provision.⁷⁷

The City's current permit does not address PFAS chemicals or authorize the facility to discharge PFAS.⁷⁸ Neither the City's 2013 permit application documents submitted for the 2015 permit issuance, nor the 2019 permit application documents submitted for this permit reissuance, address PFAS.⁷⁹ Thus, until EPA issues a final permit, the WWTF is discharging PFAS pollutants

⁷³ *EJScreen Community Report: Manchester, NH Blockgroup 330110024004*, EPA, <https://ejscreen.epa.gov/mapper/> (last visited April 17, 2024).

⁷⁴ See *Manchester Airport*, WINDFINDER

https://www.windfinder.com/windstatistics/manchester_airport_new_hampshire. See also BARR ENGINEERING COMPANY, PREPARED FOR SAINT-GOBAIN PERFORMANCE PLASTICS CORP., PRELIMINARY AIR SOIL AND WATER MODELING TECHNICAL MEMORANDUM JUNE 2017 - REVISED SEPTEMBER 2018 SAINT-GOBAIN PERFORMANCE PLASTICS App'x A (2018), <https://www4.des.state.nh.us/OneStopPub/Air/330110016518-0227TypeModeling2.pdf> (analyzing wind rose data from the Manchester airport to determine prevailing wind direction and found in time periods between 1980 and 2012, finding that “the most frequent wind directions [are] from the northwest or south, consistent with both climatology of the Northeast US and the valley topography.”)

⁷⁵ EPA, OFF. OF ECOSYSTEM PROT., AUTHORIZATION TO DISCHARGE UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM NPDES PERMIT NO. NH0100447, RESPONSE TO COMMENTS at 7 (2015), *accessible at* <https://www3.epa.gov/region1/npdes/permits/2015/finalnh0100447permit.pdf> [hereinafter 2015 NPDES Permit].

⁷⁶ 33 U.S.C. § 1251(a).

⁷⁷ *Id.* § 1311(a).

⁷⁸ 2015 NPDES Permit.

⁷⁹ Correspondence from Frederick McNeill, City of Manchester Highway Dep't, Env't Prot. Div., to Shelly Puleo, U.S. Env't Prot. Agency Region 1, Regarding Manchester NPDES Permit NH100447 Renewal Application (May 29,

into the Merrimack River without authorization from a NPDES permit, in violation of the Clean Water Act section 1311(a). EPA may not issue a final permit that fails to “provide for compliance with the applicable requirements of CWA” or its implementing regulations.⁸⁰

In addition to prohibiting discharges without a NPDES permit, the CWA also established the National Pretreatment Program (also referred to as the Industrial Pretreatment Program, or “IPP”) to ensure that industrial discharges to WWTFs do not result in harmful and illegal pollution. Congress established the National Pretreatment Program “to prevent the discharge of any pollutant through” a municipally owned WWTF that “interferes with, passes through, or otherwise is incompatible with such [publicly owned treatment works, or ‘POTW’].”⁸¹ To achieve that goal, EPA developed National Pretreatment Program regulations.⁸² In accordance with EPA’s rules, to codify and implement its authority under the IPP, the City developed a local Sewer Use Ordinance, which EPA approved in 1997.⁸³

DETAILED COMMENTS ON THE DRAFT PERMIT

CLF hereby incorporates by reference, as if fully set forth in this section, the entirety of the foregoing discussion and provides the following comments on the Draft Permit and ways in which EPA should amend it for purposes of issuing a final permit.

I. EPA should conduct an Environmental Justice analysis related to the WWTF, including the WWTF’s Sewage Sludge Incinerator, to fully inform and guide the development of its NPDES permit.

EPA policies and guidance that address NPDES permitting and PFAS disposal emphasize the need to prioritize environmental justice.⁸⁴ However, the Draft Permit fails to address or even mention EJ. Before finalizing Manchester’s permit, EPA should analyze the permit’s potential EJ impacts—especially regarding PFAS in air and water outputs from the facility. EJ considerations underscore the need for the expanded PFAS monitoring and source reduction measures detailed in the following sections.

2013) (attached as Exhibits U–V); MANCHESTER WWTF, PERMIT APPLICATION SECTION 3: INFORMATION ON EFFLUENT DISCHARGES (Approved Mar. 5. 2019)

⁸⁰ 40 C.F.R. § 122.4 (a).

⁸¹ 33 U.S.C. § 1317(b)(1).

⁸² See 40 C.F.R. § 403 *et seq.*

⁸³ See 2022–2023 IPP Annual Report. Manchester adopted minor amendments to the Sewer Use Ordinance in 2014. *Id.*

⁸⁴ See ENV’T PROT. AGENCY, NPDES PROGRAM POLICY ADDRESSING ENVIRONMENTAL JUSTICE AND EQUITY IN NPDES PERMITTING 5 (2024), <https://www.epa.gov/system/files/documents/2024-01/npdes-ej-program-guidance-principles-recommended-practices-january-2024.pdf> [hereinafter 2024 NPDES EJ Policy]; 2024 EPA Destruction & Disposal Guidance, at 58; EPA, PFAS STRATEGIC ROADMAP: EPA’S COMMITMENTS TO ACTION 2021–2024 18 (2021), accessible at https://www.epa.gov/system/files/documents/2021-10/pfas-roadmap_final-508.pdf.

In 2024, EPA published a NPDES Program Policy entitled “Addressing Environmental Justice and Equity in NPDES permitting.”⁸⁵ The NPDES Program Policy outlines seven “Principles for Addressing Environmental Justice and Equity” and five “Recommended Practices for Incorporating Principles into NPDES permits.”⁸⁶ EPA’s EJ principles in NPDES permitting include, among others:

- “Identify[ing] potential environmental justice concerns related to the permit” and
- “Conduct[ing] a ‘fit for purpose’ environmental justice analysis” for permits in “potentially overburdened” communities.⁸⁷

The policy recommends that the administrative record for the permitting action should include the “fit for purpose analysis” results “to transparently show whether and how the permit could adversely and disproportionately affect a community.”⁸⁸ The EJ analysis should include demographic data, environmental data (“including surface water quality monitoring”), public health information, “potential pollutant and non-pollutant stressors,” cumulative impacts, and “potential methods for avoiding, minimizing, or mitigating adverse effects on the community.”⁸⁹ The policy recommends using EPA’s EJScreen tool “to identify potential or existing environmental justice concerns in communities affected by the permit.”⁹⁰

EPA’s PFAS Destruction & Disposal Guidance and PFAS Strategic Roadmap also highlight EJScreen as a useful tool to evaluate EJ concerns in the context of PFAS air emissions.⁹¹ The Destruction & Disposal guidance emphasizes uncertainties associated with incinerating PFAS-contaminated sewage sludge in fluidized bed incinerators like that used at the Manchester WWTF.⁹² It explicitly highlights the need for permit writers to “screen communities located in the vicinity of potential releases from the destruction, disposal, and storage options [of PFAS] (considering fate and transport) in order to consider the potential for adverse and disproportionate impacts . . . and to consider potential measures to prevent, reduce, or address such impacts.”⁹³

⁸⁵ See 2024 NPDES EJ Policy.

⁸⁶ *Id.* at 2–6.

⁸⁷ *Id.* at 2–3.

⁸⁸ *Id.* at 4.

⁸⁹ *Id.*

⁹⁰ *Id.* at 5.

⁹¹ 2024 EPA Destruction & Disposal Guidance, at 58; EPA, PFAS STRATEGIC ROADMAP: EPA’S COMMITMENTS TO ACTION 2021–2024 at 18 (2021), accessible at https://www.epa.gov/system/files/documents/2021-10/pfas-roadmap_final-508.pdf.

⁹² 2024 EPA Destruction & Disposal Guidance, at 58.

⁹³ *Id.*

EJScreen identifies EJ concerns in several Census Tracts in Manchester—including two tracts that are located two miles from the sludge incinerator in an often-downwind location.⁹⁴ The PFAS emissions from the WWTF’s sludge incinerator likely contribute to cumulative impacts of environmental pollution in Manchester EJ communities. In finalizing Manchester’s permit, EPA should implement its NPDES Program Policy principles and recommendations, including by conducting a “fit for purpose” analysis. The analysis should address PFAS pollution from the WWTF and its incinerator and incorporate the EJ recommendations in EPA’s Destruction & Disposal Guidance for PFAS. That analysis will most likely support the monitoring and source reduction measures discussed in Parts II through V below to “prevent, reduce, or address” disproportionate impacts of PFAS pollution on overburdened communities.⁹⁵

In light of the presence of nearby EJ communities and the adverse health and environmental impacts associated with PFAS being discharged into the Merrimack River and emitted into the air, it is essential that EPA conduct an EJ analysis before proceeding to a final permit. Failure to do so would fly in the face of EPA’s NPDES Program Policy Addressing Environmental Justice and Equity in NPDES Permitting, EPA’s 2024 Interim Guidance on the Destruction and Disposal of PFAS and Materials Containing PFAS, and EPA’s PFAS Strategic Roadmap.

II. EPA must strengthen the Draft Permit’s provisions for monitoring PFAS at the WWTF.

CLF appreciates that the Draft Permit requires monitoring for PFAS in the Manchester WWTF’s influent, effluent, and sludge.⁹⁶ However, in finalizing the permit, EPA should require monthly—not quarterly—monitoring for PFAS under methods 1633 and 1621.

Monthly monitoring is feasible, as the City has been collecting samples for PFAS monitoring on a monthly basis since 2019.⁹⁷ More frequent monitoring will also help to achieve EPA’s stated goal of “obtain[ing] more comprehensive information” regarding PFAS sources and concentrations.⁹⁸ Because the sample types are grab samples, and PFAS levels may vary depending on short-term changes in wastewater influent, monthly monitoring is essential to providing a more accurate picture regarding PFAS entering and being discharged from the WWTF.

⁹⁴ See Factual Background & Overview, Part V, above.

⁹⁵ 2024 EPA Destruction & Disposal Guidance, at 58.

⁹⁶ Draft Permit Part I(A)(1), at 4–5.

⁹⁷ See 2022–2023 IPP Annual Report at 17.

⁹⁸ EPA, PFAS STRATEGIC ROADMAP: EPA’S COMMITMENTS TO ACTION 2021–2024 at 18 (2021), *accessible at* https://www.epa.gov/system/files/documents/2021-10/pfas-roadmap_final-508.pdf.

For example, NCES began sending leachate to the Manchester WWTF in February 2024, under temporary permits.⁹⁹ A monthly monitoring requirement would more likely capture the impact of that additional IU and any other PFAS sources that discharge to the WWTF on a temporary basis.

Thus, EPA should retain the analytes monitored and the measurements methods in Draft Permit Part I(A)(1) (40 target PFAS under method 1633 and AOF under method 1621) but should increase the measurement frequency to monthly.

III. EPA must analyze the need for effluent limitations for PFAS and implement necessary effluent limitations.

A NPDES permit may only be issued if the permit “provide[s] for compliance with the applicable requirements of [the] CWA” and its implementing regulations.¹⁰⁰ The CWA establishes that EPA “shall” prescribe “conditions for [NPDES] permits to assure compliance with” specified sections of the CWA, including section 1311.¹⁰¹ Section 1311 provides that effluent limitations “shall be applied to all point sources of discharge of pollutants[.]”¹⁰² The WWTF’s outfall 001 constitutes a point source under the CWA,¹⁰³ and PFAS constitutes a pollutant.¹⁰⁴

NPDES permits “shall include conditions meeting” requirements, such as technology-based effluent limitations and standards, “when applicable.”¹⁰⁵ A facility must disclose pollutants in its permit application for the permit writer to “judge whether the discharge of a particular pollutant constitutes a significant threat to the environment” to inform the permit development process.¹⁰⁶ The permittee “shall promptly submit” any “facts or information” that it failed to disclose in its permit application.¹⁰⁷

⁹⁹ CITY OF MANCHESTER, DEP’T OF PUBLIC WORKS, CLASS III WASTEWATER DISCHARGE PERMIT NO. T-3001-2-24 (2024); CITY OF MANCHESTER DEP’T OF PUBLIC WORKS, CLASS III WASTEWATER DISCHARGE PERMIT NO. T-3001-4-24 (2024); *see also* Letter from Lindsey Menard, North Country Environmental Services, Inc., to Jaime Colby, P.E., New Hampshire Department of Environmental Services, regarding North Country Environmental Services, Inc. Landfill Facility - Bethlehem, NH Permit # - NH DES-SW-SP-03-002 First Quarter Facility Report; 2024 at 21 (April 30, 2024).

¹⁰⁰ 40 C.F.R. § 122.4(a), (d).

¹⁰¹ 33 U.S.C. § 1342(a)(2).

¹⁰² *Id.* § 1311(e).

¹⁰³ *See id.* § 1362(4) (defining “point source” as “any discernible, . . . confined and discrete conveyance, including . . . any pipe[.]”)

¹⁰⁴ *See id.* § 1362(6); *see also* 86 Fed. Reg. 14560 (March 17, 2021) (“PFAS compounds fall into the category of nonconventional pollutant[.]”); N.H. DEP’T ENV’T SERVICES, PLAN TO GENERATE PFAS SURFACE WATER QUALITY STANDARDS 17 (2019), <https://www.des.nh.gov/sites/g/files/ehbemt341/files/documents/r-wd-19-30.pdf> (“PFAS would be considered a pollutant[.]”)

¹⁰⁵ 40 CFR. § 122.44(a)(1), (d).

¹⁰⁶ *Piney Run Pres. Ass’n v. Cnty. Comm’rs of Carroll Cnty.*, 268 F.3d 255, 268 (4th Cir. 2001).

¹⁰⁷ 40 C.F.R. § 122.41(l)(8).

The City submitted its permit application in 2019; the application did not address PFAS in 2019 or in subsequent years.¹⁰⁸ The administrative record for this application, therefore, does not include the Manchester Monitoring Data or the Battelle Study data, and EPA failed to analyze the need for PFAS effluent limitations. EPA must consider the two sources of data documenting PFAS pollution at the WWTF—as well as the attached documents detailing WWTF’s past and future acceptance of NCES leachate, the PFAS levels in NCES leachate, and any other data that may be necessary to collect and assess—and, after analysis, set appropriate effluent limitations to control PFAS in the WWTF’s discharges.

A. EPA must analyze the need for technology-based effluent limitations and should implement technology-based effluent limits in the final permit.

EPA must analyze the need for technology-based effluent limitations (“TBELs”) for PFAS; after consideration, EPA should implement TBELs. TBELs are the “minimum level of control that must be imposed in a” NPDES permit.¹⁰⁹ When “EPA-promulgated effluent limitations are inapplicable,” permit writers may establish effluent limitations on a “case-by-case basis[.]”¹¹⁰ Technology-based standards are “based on how effectively technology can reduce the pollutant being discharged.”¹¹¹ In setting case-by-case technology-based limits, the permit writer considers the “appropriate technology for the category or class of point sources” and any “unique factors” for the prospective permittee.¹¹²

EPA has recently evaluated the effectiveness and commercial availability of PFAS removal technologies in finalizing drinking water standards for six PFAS under the SDWA.¹¹³ Under the SDWA, EPA designated Granular Activated Carbon (“GAC”), Ion Exchange (“IX”), and Reverse Osmosis (“RO”) and Nanofiltration (“NF”) as Best Available Technologies (“BATs”).¹¹⁴ In promulgating final drinking water standards for six PFAS compounds, EPA referenced the reliable and high removal efficiencies (greater than 99 percent), and “reasonable” cost.¹¹⁵

¹⁰⁸ Manchester WWTF, PERMIT APPLICATION SECTION 3: INFORMATION ON EFFLUENT DISCHARGES (Approved Mar. 5, 2019). Though Manchester mentioned its PFAS monitoring program in its industrial pretreatment program reports submitted to EPA, it did not publish results, and it incorrectly stated that it was monitoring for 16 PFAS compounds. *See* 2022–2023 IPP Annual Report at 17.

¹⁰⁹ 40 C.F.R. § 125.3(a).

¹¹⁰ *Id.* §§ 122.44(a)(1), 125.3(c)(2).

¹¹¹ *Nat. Res. Def. Council v. U.S. E.P.A.*, 808 F.3d 556, 563 (2d Cir. 2015).

¹¹² 40 C.F.R. § 125.3(c)(2).

¹¹³ 89 Fed. Reg. 32532, 32622 (April 26, 2024).

¹¹⁴ *Id.*

¹¹⁵ *Id.* at 32575. *See also* ENV’T PROT. AGENCY, BEST AVAILABLE TECHNOLOGIES AND SMALL SYSTEM COMPLIANCE TECHNOLOGIES FOR PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS) IN DRINKING WATER at 33 (2024) (analyzing the removal efficiencies, reliability, operational capacity, and state of the research on GAC, IX, and RO/NF PFAS removal technologies and concluding that all three technologies are “potential BAT.”)

The PFAS removal technologies designated as BATs under the SDWA can be used to remove many PFAS from water to nondetectable levels¹¹⁶—i.e., below the detectable levels measured in the Battelle Study and the Manchester Monitoring data. Given that TBELs are the “minimum” level of control required under the CWA and that the CWA is a technology-forcing statute,¹¹⁷ EPA should consider developing TBELs for all PFAS compounds for which treatment technologies, including but not limited to GAC, IX, or RO/NF, could achieve significant PFAS reductions.

B. EPA must analyze the need for water quality-based effluent limitations and should implement water quality-based effluent limitations in the final permit.

EPA must analyze the need to establish water quality-based effluent limits (“WQBELs”) for PFAS at the Manchester WWTF. A permit may not be issued if its provisions “cannot ensure compliance with the applicable water quality requirements of all affected States.”¹¹⁸ EPA’s regulations require a WQBEL to control pollutants that “are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality.”¹¹⁹ To analyze whether the source has reasonable potential, EPA considers whether the “discharge, alone or in combination with other sources . . . could lead to an excursion above an applicable water quality standard.”¹²⁰

According to EPA’s NPDES Permit Writers’ Manual, “pollutants of concern,” which are “candidates for WQBELs,” consist of “any pollutants identified as present in the effluent through effluent monitoring,” including data from “special studies” or “compliance inspection monitoring.”¹²¹ PFAS are consistently “present in the effluent”¹²² of the Manchester WWTF, as made clear by the WWTF Monitoring Data and the Battelle Study data. Thus, EPA has the responsibility to analyze whether the Manchester WWTF’s PFAS discharges *could contribute* (not just whether they actually cause) the violation of state water quality standards and, if such potential exists, establish a WQBEL to ensure against water quality standard violations.¹²³ Specifically, EPA must analyze whether the City’s discharges “may . . . have the reasonable

¹¹⁶ See 89 Fed. Reg. 32532, 32622 (April 26, 2024).

¹¹⁷ *Nat. Res. Def. Council v. U.S. E.P.A.*, 808 F.3d 556, 563–64 (2d Cir. 2015) (“Congress designed this [technology-based effluent limitation] standard to be technology-forcing, meaning it should force agencies and permit applicants to adopt technologies that achieve the greatest reductions in pollution.”)

¹¹⁸ 40 CFR. § 122.44(a), (d).

¹¹⁹ 40 C.F.R. § 122.44(d)(1)(i).

¹²⁰ ENV’T PROT. AGENCY, OFF. OF WASTEWATER MGMT., NPDES PERMIT WRITERS’ MANUAL (EPA-833-K-10-001) at 6-23 (2010), https://www3.epa.gov/npdes/pubs/pwm_2010.pdf.

¹²¹ *Id.* at 6-15.

¹²² *Id.*

¹²³ *Id.*; 40 C.F.R. § 122.44(d)(1)(i).

potential to cause, or contribute to”¹²⁴ violations of New Hampshire’s narrative standards for toxics, and its standards protecting designated uses.

1. EPA must consider, at a minimum, state water quality standards pertaining to toxics and designated uses.

At least two of New Hampshire’s state water quality standards are directly implicated by the WWTF’s discharges of PFAS and must be considered.

First, New Hampshire’s surface water quality standards include narrative standards for toxic substances. Specifically, Rule Env-Wq 1703.21(a) provides:

(a) Unless naturally occurring or allowed under [a mixing zone regulation], all surface waters shall be free from toxic substances or chemical constituents in concentrations or combinations that:

- (1) Injure or are inimical to plants, animals, humans or aquatic life; or
- (2) Persist in the environment or accumulate in aquatic organisms to levels that result in harmful concentrations in:
 - a. Edible portions of fish, shellfish, other aquatic life, or
 - b. Wildlife that might consume aquatic life.¹²⁵

Second, under Env-Wq 1703.01(b), “[a]ll surface waters shall be restored to meet the water quality criteria for their designated classification including existing and designated uses.”¹²⁶ To protect human health, all surface waters, including the Merrimack River, have “fish consumption” as a designated use.¹²⁷ Protecting a surface water for fish consumption means that the “surface water can support a population of fish free from toxicants and pathogens that could pose a human health risk to consumers[.]”¹²⁸

New Hampshire’s designated uses also protect aquatic life. Pursuant to Env-Wq 1703.01(c), “[a]ll surface waters shall provide, wherever attainable, for the protection and propagation of fish, shellfish and wildlife, and for recreation in and on the surface waters.”¹²⁹ The Merrimack

¹²⁴ 40 C.F.R. § 122.44(d)(1)(i).

¹²⁵ N.H. CODE ADMIN. R. ENV-WQ § 1703.21(a).

¹²⁶ *Id.* § 1703.01(b).

¹²⁷ N.H. DEP’T ENV’T SERVS., SECTION 305(B) AND 303(D) CONSOLIDATED ASSESSMENT AND LISTING METHODOLOGY (R-WD-20-20) at 10 (2022), <https://www.des.nh.gov/sites/g/files/ehbemt341/files/documents/r-wd-20-20.pdf>.

¹²⁸ *Id.*

¹²⁹ N.H. CODE ADMIN. R. ENV-WQ § 1703.01(c).

River is designated as a Class B water, and subject to the statutory requirement that “disposal of sewage or waste [shall not] be inimical to aquatic life or to the maintenance of aquatic life.”¹³⁰

2. EPA must perform a reasonable potential analysis using available PFAS data, which likely require the establishment of WQBELs for PFAS.

Permit writers can use both “effluent and receiving water data and modeling techniques” to conduct a reasonable potential analysis.¹³¹ According to EPA’s Central Tenets of the NPDES Permitting Program, “[w]here valid, reliable, and representative effluent data or instream background data are available they MUST be used in applicable reasonable potential and limits derivation calculations. Data may not be arbitrarily discarded or ignored.”¹³² EPA must therefore use the Manchester Monitoring Data, the Battelle Study data, the NCES leachate PFAS sampling data, the fish sampling data discussed below, and any other available “representative”¹³³ data to consider the WWTF’s reasonable potential to violate New Hampshire’s water quality standards pertaining to toxics and designated uses. EPA may use that data in conjunction with modeling methodologies if necessary.

Both the narrative toxics and the designated use provisions require water quality that is safe for human health¹³⁴ and aquatic life.¹³⁵ The compounds detected in Manchester WWTF’s effluent are toxic, injurious, and inimical to humans and animals.

The Manchester Monitoring Data shows that Manchester’s discharges consistently contain PFOA, PFOS, and PFHxS.¹³⁶ And while the WWTF’s monthly monitoring reports only measure four compounds, the Battelle Study demonstrates that Manchester’s discharges contain at least twelve additional compounds: PFBA; PFPeA; PFHxA; PFHpA; PFNA; PFDA; PFBS; NMeFOSAA; NEtFOSAA; 6:2 FTS; 8:2 FTS; HFPO-DA (GenX).¹³⁷ The WWTF’s discharges

¹³⁰ N.H. REV. STAT. ANN. 485-A:8 (II); Draft Permit Fact Sheet at 16.

¹³¹ ENV’T PROT. AGENCY, OFF. OF WASTEWATER MGMT., NPDES PERMIT WRITERS’ MANUAL (EPA-833-K-10-001) at 6-23 (2010), https://www3.epa.gov/npdes/pubs/pwm_2010.pdf.

¹³² EPA, CENTRAL TENETS OF THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMITTING PROGRAM 3, <https://www3.epa.gov/npdes/pubs/tenets.pdf>.

¹³³ *Id.*

¹³⁴ See N.H. CODE ADMIN. R. ENV-WQ § 1703.21(a) (establishing narrative toxics standard); *id.* § 1703.01(b) (protecting designated uses); N.H. DEP’T ENV’T SERVS., SECTION 305(B) AND 303(D) CONSOLIDATED ASSESSMENT AND LISTING METHODOLOGY (R-WD-20-20) at 10 (2022) (designating “[a]ll surface waters” for fish consumption and potential drinking water supply.)

¹³⁵ See N.H. CODE ADMIN. R. ENV-WQ § 1703.21(a); *id.* § 1703.01(b)-(c) (protecting designated uses and requiring waters to support “protection and propagation of fish”); N.H. DEP’T ENV’T SERVS., SECTION 305(B) AND 303(D) CONSOLIDATED ASSESSMENT AND LISTING METHODOLOGY (R-WD-20-20) at 10 (2022) (designating “[a]ll surface waters” for aquatic life integrity and wildlife.)

¹³⁶ City of Manchester WWTF PFAS Monitoring Reports (2019–23).

¹³⁷ Battelle Study Supporting Information, at tbl. S12.

most likely contain additional PFAS compounds that neither the WWTF monitoring data nor the Battelle Study measured.

In 2024, in proposing to designate nine PFAS compounds as constituents under RCRA, EPA stated that PFOA, PFOS, PFHxS, PFBS, GenX, PFNA, PFDA, PFHxA, and PFBA “have toxic effects on humans or other life forms.”¹³⁸ All nine compounds that EPA labeled toxic in the RCRA proposal have been detected in the WWTF’s discharges to the Merrimack River. Other PFAS and precursors detected in the WWTF’s effluent in the Battelle Study but not addressed in EPA’s proposed rule—PFPeA, PFPPA, 6:2 FTS, and 8:2 FTS—are also associated with toxic health effects and/or break down into PFAS with known toxic effects.¹³⁹

In addition to being toxic, injurious, and inimical to humans and animals on their own, EPA and scientific literature have made clear that many PFAS persist in the environment and bioaccumulate in edible fish tissue. In establishing interim and final health advisories under the SDWA, EPA stated that “[m]any PFAS are environmentally persistent, bioaccumulative, and have long halflives in humans[.]”¹⁴⁰ In designating PFOA and PFOS “hazardous substances” under CERCLA, EPA stated that evidence “indicated that PFOA and PFOS are persistent in the environment and that they bioaccumulate in both humans and wildlife.”¹⁴¹

Evidence suggests that bioaccumulation of PFAS, particularly PFOS, in fish in the Merrimack River, results in “harmful concentrations” of these chemicals in “[e]dible portions of fish,”¹⁴² in violation of the narrative toxics standard, and could “pose a human health risk to consumers,” in violation of the fish consumption designated use.¹⁴³ As noted above, consuming just one serving of freshwater fish with 8.41 parts per billion (ppb) PFOS has the same negative health impacts as drinking water with 48 ppt PFOS (2,400 times higher than EPA’s health advisory level for PFOS) for an entire month.¹⁴⁴ One sampling program, conducted by Harvard researchers for a peer-reviewed study (the Pickard Study), gathered fish samples in 2017 and labeled some as being

¹³⁸ 89 Fed. Reg. 8606, 8615 (Feb. 8, 2024).

¹³⁹ Lisa M. Weatherly et al., *Systemic Toxicity Induced by Topical Application of Perfluoroheptanoic Acid (PFHpA), Perfluorohexanoic Acid (PFHxA), and Perfluoropentanoic Acid (PFPeA) in a Murine Model*, 171 FOOD & CHEM. TOXICOLOGY 113515, 113515 (2023) (documenting “systemic toxicity and immunological disruption” from PFHpA, PFHxA and PFPeA, including impacts to liver, skin, metabolism, tissue damage, and inflammation.); Nan Sheng et al., *Comparative Hepatotoxicity of 6:2 Fluorotelomer Carboxylic Acid and 6:2 Fluorotelomer Sulfonic Acid, Two Fluorinated Alternatives to Long-chain Perfluoroalkyl Acids, on Adult Male Mice*, 91 ARCHIVES OF TOXICOLOGY 2909, 2909 (2017) (finding that 6:2 FTS caused “liver weight increase, inflammation, and necrosis” in mice); Kavitha Dasu et al., *Aerobic soil biodegradation of 8:2 fluorotelomer stearate monoester*, 46 ENV’T SCI. & TECH. 3831, 3831 (2012) (suggesting that 8:2 FTS breaks down into PFOA).

¹⁴⁰ 87 Fed. Reg. 36848, 36849 (June 21, 2022).

¹⁴¹ 89 Fed. Reg. 39,124, 39139 (May 8, 2024).

¹⁴² N.H. CODE ADMIN. R. ENV-WQ § 1703.21(a)(2)(a).

¹⁴³ *Id.* § 1703.01(b); Consolidated Assessment and Listing Methodology, R-WD-20-20 at 10 (2022).

¹⁴⁴ Barbo et al., *supra* note 5, at 6.

from the Merrimack River, in locations downstream from the City’s WWTF.¹⁴⁵ All samples had PFAS in their edible muscle tissue.¹⁴⁶

PFOS in the Pickard Study fish samples described as being from the Merrimack River ranged from .205 ppb (25 compounds, brown bullhead) to 7.914 ppb (37 compounds, largemouth bass).¹⁴⁷ The highest PFOS measurement, 7.914 ppb, closely approaches the 8.41 ppb level at which eating one standard serving of fish is equivalent to drinking water at 48 ppt for an entire month. Total PFAS levels ranged from 1.249 ppb (25 compounds, brown bullhead) to 17.819 ppb (37 compounds, largemouth bass).¹⁴⁸ Given that the WWTF has discharged PFOS and other PFAS chemicals into the Merrimack River since the WWTF monitoring began in 2019 and likely since a much earlier time, the WWTF “may” be contributing to those harmful concentrations,¹⁴⁹ which most likely violate Env-Wq 1703.21(a)(2)(a) and Env-Wq 1703.01(b). Thus, a WQBEL is needed to ensure compliance with water quality standards.

In addition to using PFAS discharge data and fish sampling data, EPA also can use modeling to determine whether the WWTF’s discharges “may” present the “reasonable potential to cause, or contribute to”¹⁵⁰ a violation of New Hampshire’s narrative toxics standard and designated use provisions.¹⁵¹ One peer-reviewed study (the Massarsky Study) established a modeling methodology that uses “two publicly available modeling tools”—the Ecological Structural Activity Relationships program and the Exposure and Fate Assessment Screening Tool—to (1) estimate environmental concentrations of PFAS and (2) assess toxicity.¹⁵² The modeling method can be used “for screening-level assessments of PFAS that have been detected within wastewater but not measured in the environment.”¹⁵³ EPA should supplement the Massarsky Study methodology with the WWTF’s actual PFAS discharge data and use it to conduct a reasonable potential analysis.¹⁵⁴

¹⁴⁵ See Heidi M. Pickard et al., *PFAS and Precursor Bioaccumulation in Freshwater Recreational Fish: Implications for Fish Advisories*, 56 ENV’T SCI. & TECH. 15573 (2022) (attached as Exhibit W); see also HEIDI M. PICKARD ET AL., SUPPORTING INFORMATION FOR PFAS AND PRECURSOR BIOACCUMULATION IN FRESHWATER RECREATIONAL FISH: IMPLICATIONS FOR FISH ADVISORIES S-2–S-3 (2022), https://pubs.acs.org/doi/suppl/10.1021/acs.est.2c03734/suppl_file/es2c03734_si_001.pdf [hereinafter Pickard et al. Supporting Information] (attached as Exhibit X) (Fish Concentrations Table S16 attached as Exhibit Y) (Water Concentrations Table S17 attached as Exhibit Z).

¹⁴⁶ Pickard et al. Supporting Information, at S2-S3, TS16 (Fish Concentrations Table, Locations 5 and 6).

¹⁴⁷ *Id.*

¹⁴⁸ *Id.*

¹⁴⁹ See 40 C.F.R. § 122.44(d)(1)(i).

¹⁵⁰ *Id.*

¹⁵¹ ENV’T PROT. AGENCY, OFF. OF WASTEWATER MGMT., NPDES PERMIT WRITERS’ MANUAL (EPA-833-K-10-001) at 6-23 (2010), https://www3.epa.gov/npdes/pubs/pwm_2010.pdf.

¹⁵² See Andrey Massarsky et al., *Critical Evaluation of ECOSAR and E-FAST Platforms to Predict Ecological Risks of PFAS*, 8 ENV’T ADVANCES 1, 1 (2022) (attached as Exhibit AA).

¹⁵³ *Id.* at 12.

¹⁵⁴ *Id.* (“If monitoring data are available, the data should be used in lieu of [estimated environmental concentrations]”)

By estimating environmental concentrations in surface water and ecotoxicity, the Massarsky Study modeling method would also allow EPA to assess whether the WWTF “may” be contributing to an “excursion” of the narrative toxics standard’s protections for aquatic life and the designated uses for “Aquatic Life Integrity” and “Wildlife.”¹⁵⁵

3. EPA should use “peer-reviewed scientific literature,” “site-specific surveys and data”¹⁵⁶ from the Manchester WWTF and the Merrimack River, and New Hampshire’s prospective surface water quality standards for PFAS to calculate numeric WQBELs for PFAS.

Based on the discussion above, EPA’s analysis will likely find that the WWTF’s PFAS discharges “may . . . have the reasonable potential to cause, or contribute to an excursion above” New Hampshire’s narrative standard for toxics and the provisions protecting designated uses—and thus, that WQBELs for PFAS are required.¹⁵⁷ EPA may develop the WQBELs based on a “calculated numeric criterion for the pollutant[s] which the permitting authority demonstrates will attain and maintain” the narrative water quality criteria in Env-Wq 1703.21(a) and Env-Wq 1703.01(b).¹⁵⁸ In establishing WQBELs for PFAS, EPA may not consider “treatability” or “analytical detection levels,” but rather must focus on limits that will protect water quality.¹⁵⁹

EPA has previously translated narrative water quality criteria for phosphorous into numeric effluent limits for the Manchester WWTF, as detailed in the Draft Permit’s Fact Sheet.¹⁶⁰ In doing so, “EPA looks to a wide range of materials, including nationally recommended criteria and other relevant materials, such as . . . peer-reviewed scientific literature and site-specific surveys and data to determine instream targets that are protective of water quality.”¹⁶¹ In the context of PFAS, EPA has access to site-specific data (the Battelle Study and Manchester Monitoring Report), EPA’s preambles and scientific literature supporting its final and proposed rules for PFAS under CERCLA, SDWA, and RCRA, and numerous other peer-reviewed scientific articles (including those cited in and attached to these comments).

¹⁵⁵ 40 C.F.R. § 122.44(d)(1)(i); *See* N.H. CODE ADMIN. R. ENV-WQ § 1703.21(a); *id.* § 1703.01(b)-(c) (protecting designated uses and requiring waters to support “protection and propagation of fish”); N.H. DEP’T ENV’T SERVS., SECTION 305(B) AND 303(D) CONSOLIDATED ASSESSMENT AND LISTING METHODOLOGY (R-WD-20-20) at 10 (2022) (designating “[a]ll surface waters” for aquatic life integrity and wildlife.)

¹⁵⁶ *See* Draft Permit Fact Sheet at 27.

¹⁵⁷ 40 C.F.R. § 122.44(d)(1)(i).

¹⁵⁸ 40 C.F.R. § 122.44(d)(1)(vi)(A-C).

¹⁵⁹ EPA, CENTRAL TENETS OF THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMITTING PROGRAM 3, <https://www3.epa.gov/npdes/pubs/tenets.pdf>.

¹⁶⁰ Draft Permit Fact Sheet at 27.

¹⁶¹ *Id.* (citing 40 CFR § 122.44(d)(1)(vi)(A), (B)).

EPA’s regulations also specify that the numeric limits calculated to protect water quality “may be derived using a proposed State criterion[.]”¹⁶² Thus, in addition to considering the above, in setting a WQBEL for PFAS for the Manchester WWTF, EPA should account for NH’s draft surface water quality criteria for PFAS, released in 2023 as a draft for stakeholder review.¹⁶³ The prospective surface water quality criteria are: 12 ppt PFOA, 15 ppt PFOS, 18 ppt PFHxS, and 11 ppt PFNA for sources “within 20 miles upstream of any active surface water intake for a public water system.”¹⁶⁴ As the Manchester WWTF is within 20 miles upstream from Pennichuck Water Works,¹⁶⁵ NH’s surface water quality standards for PFAS will apply to the Manchester WWTF when finalized.

If EPA does not include effluent limits for PFAS in the Draft Permit, EPA should at the very least include a reopener provision providing for modification of the permit to include effluent limits either (1) when EPA finalizes federal effluent limitations guidelines or water quality criteria for PFAS,¹⁶⁶ and/or (2) when DES finalizes New Hampshire surface water quality standards for PFAS.¹⁶⁷

C. The permit must include effluent limitations to “minimize” impacts to Essential Fish Habitat.

In addition to establishing effluent limitations for a “minimum level” of control¹⁶⁸ and/or to ensure compliance with narrative water quality criteria,¹⁶⁹ EPA should include effluent limitations for PFAS because monitoring requirements alone do not “minimize” impacts to Essential Fish Habitat (“EFH”).¹⁷⁰ The Draft Permit’s Fact Sheet states that “EPA has determined that actions regulated by the Draft Permit may adversely affect EFH” for Atlantic Salmon.¹⁷¹ The fact sheet states that the permit “has been conditioned” to “minimize any impacts that reduce the

¹⁶² 40 C.F.R. § 122.44(d)(1)(vi)(A).

¹⁶³ See N.H. DEP’T ENV’T SERVICES, CHAPTER ENV-WQ 1700 SURFACE WATER QUALITY REGULATIONS: DRAFT FOR STAKEHOLDER REVIEW at § 1703.22(l), Table 1703-2A (2023), [20230613 Draft IP for Stakeholder Review \(nh.gov\)](https://www.nh.gov/20230613-Draft-IP-for-Stakeholder-Review).

¹⁶⁴ *Id.* § 1703.22(l).

¹⁶⁵ 2015 Permit, Response to Comments, at 14.

¹⁶⁶ See EPA, PFAS STRATEGIC ROADMAP: EPA’S COMMITMENTS TO ACTION 2021–2024 13, 15 (2021), [accessible at https://www.epa.gov/system/files/documents/2021-10/pfas-roadmap_final-508.pdf](https://www.epa.gov/system/files/documents/2021-10/pfas-roadmap_final-508.pdf).

¹⁶⁷ See N.H. DEP’T ENV’T SERVICES, CHAPTER ENV-WQ 1700 SURFACE WATER QUALITY REGULATIONS: DRAFT FOR STAKEHOLDER REVIEW (2023), [20230613 Draft IP for Stakeholder Review \(nh.gov\)](https://www.nh.gov/20230613-Draft-IP-for-Stakeholder-Review). See also ENV’T PROT. AGENCY, OFF. OF WASTEWATER MGMT., NPDES PERMIT WRITERS’ MANUAL (EPA-833-K-10-001) at 6-23 (2010), https://www3.epa.gov/npdes/pubs/pwm_2010.pdf (“Where data are generated as a condition of the permit (for example for a new permittee), it might be appropriate for the permit writer to include a reopener condition in the permit to allow the incorporation of a WQBEL if the monitoring data indicate that a WQBEL is required.”)

¹⁶⁸ See 40 C.F.R. § 125.3(a).

¹⁶⁹ See *id.* § 122.44(d)(1).

¹⁷⁰ Draft Permit, Fact Sheet at 48.

¹⁷¹ *Id.*

quality and/or quantity of EFH for Atlantic salmon.”¹⁷² One of the stated EFH conditions to ensure against adverse impacts is: “monitoring for four Per- and Polyfluoroalkyl Substances (PFAS) in the influent, effluent, and sludge.”¹⁷³

First, we request that EPA update the Fact Sheet’s statement to reflect the requirement that the WWTF monitor for 40 (not four) PFAS under method 1633 as well as AOF under method 1621.¹⁷⁴ Second, monitoring for 40 PFAS and AOF will not “minimize” the impacts of PFAS on Atlantic Salmon’s habitat, and monitoring alone will not reduce the levels of the toxic contaminant in the WWTF’s receiving water. In the context of WQBELs, EPA has stated that permit writers cannot use “data collection efforts” as a “substitute[] for enforceable permit limits,” further supporting the argument that monitoring alone will not improve water quality or protect wildlife habitat.¹⁷⁵ Therefore, we urge EPA to analyze, and ultimately establish, effluent limitations to achieve the EFH impact-minimization requirement.

IV. EPA must strengthen the permit’s PFAS monitoring and control measures under the Industrial Pretreatment Program.

Congress established the National Pretreatment Program under the CWA, which requires EPA to establish rules “to prevent the discharge of any pollutant through” a WWTF, or POTW, that “interferes with, passes through, or otherwise is incompatible with such works.”¹⁷⁶ In finalizing general pretreatment rules in 1978, EPA emphasized the need for “[s]ource control of industrial toxic pollutants through pretreatment” as “a necessary element of ensuring safe drinking water supplies, minimizing public exposure to toxic air pollutants released in incineration of municipal sludges, and encouraging the recovery of concentrated toxics from industrial sludges.”¹⁷⁷

The preamble for EPA’s general pretreatment rules also clarified the meaning of “incompatible” pollutant, specifying that they include, among others, pollutants that (1) “increase the cost to consumers of treating drinking water[,]” (2) “[l]imit the sludge management alternatives available to the POTW and increase the cost to the public of providing adequate sludge management,” or (3) “prevent the attainment of water quality standards[.]”¹⁷⁸ EPA also made

¹⁷² *Id.*

¹⁷³ *Id.*

¹⁷⁴ *Id.* at Part I(A)(1), at 4–5.

¹⁷⁵ EPA, CENTRAL TENETS OF THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMITTING PROGRAM at 3, <https://www3.epa.gov/npdes/pubs/tenets.pdf>.

¹⁷⁶ 33 U.S.C. § 1317(b)(1); *Int’l Union, United Auto. Aerospace & Agr. Implement Workers of Am., AFL-CIO v. Amerace Corp.*, 740 F. Supp. 1072, 1079 (D.N.J. 1990) (citing *id.*)

¹⁷⁷ 43 Fed. Reg. 27736, 27736 (June 26, 1978).

¹⁷⁸ *Id.* at 27737. EPA’s original pretreatment regulations, promulgated at 40 C.F.R. Part 128, defined incompatible and compatible pollutants. *See* 38 Fed. Reg. 30982, 30983 (Nov. 8, 1973). Those regulations defined “Compatible pollutant” as “biochemical oxygen demand, suspended solids, pH and fecal coliform bacteria, plus additional pollutants identified in the NPDES permit if the publicly owned treatment works was designed to treat such pollutants, and in fact does remove such pollutants to a substantial degree.” *Id.* The regulations defined “Incompatible pollutant” as “any pollutant which is not a compatible pollutant.” *Id.* Although EPA replaced the Part

clear that the “ultimate fate of toxic pollutants removed from the wastewater,” not just “mere removal,” is relevant to “determining compatibility or incompatibility of a toxic pollutant[.]”¹⁷⁹ Specifically, “mere removal” of pollutants from wastewater is not “adequate to protect the environment” because “the substance may be discharged into the air or onto the land.”¹⁸⁰ Relevant factors for assessing incompatibility include whether the pollutant, when discharged into a WWTF, “increase[s] human exposure to air pollutants” or “concentrate[s] in the municipal sludge[.]”¹⁸¹

PFAS meet the above criteria for incompatibility; therefore, source control under the IPP is essential. First, PFAS discharges from the WWTF affect downstream drinking water sources and pass the cost of any necessary treatment on to downstream consumers.¹⁸² For example, Pennichuck Water Works sources water for Nashua consumers from the Merrimack River within 20 miles downstream from the Manchester WWTF.¹⁸³ Pennichuck Water Works’ 2024 Consumer Confidence Report (“CCR”) lists PFOA as having a running annual average of 3.20 ppt in 2023 and a range from nondetect to 5.43 ppt.¹⁸⁴ The CCR listed “wastewater treatment” as one of the “Typical Source[s] of Contaminant.”¹⁸⁵ Thus, Nashua consumers will bear the burden of addressing PFAS discharged by the Manchester WWTF. Second, PFAS remain in sludge (or its byproducts) after land application, incineration, or landfilling, which “[l]imits management alternatives” and requires costly treatment to remove or destroy.¹⁸⁶ Third, PFAS discharges in wastewater likely violate water quality standards, as discussed in Detailed Comments, Part III.B

128 regulations with the general pretreatment regulations at Part 403 in 1978, and has since amended the Part 403 regulations, the current statutory and regulatory language still make clear that one goal of the National Pretreatment Program is to “prevent the introduction of pollutants into POTWs which will pass through the treatment works *or otherwise be incompatible with such works.*” 40 C.F.R. § 403.2(b) (emphasis added); *see also* 33 U.S.C. § 1317(b)(1).

¹⁷⁹ 43 Fed. Reg. 27736, 27761 (June 26, 1978).

¹⁸⁰ *Id.*

¹⁸¹ *Id.*

¹⁸² *Best way to meet EPA’s new PFAS drinking water standards is pollution control at the source, says SELC*, SOUTHERN ENV’T L. CTR., (April 10, 2024), <https://www.southernenvironment.org/press-release/best-way-to-meet-epas-new-pfas-drinking-water-standards-is-pollution-control-at-the-source-says-selc/> (“PFAS are not removed by conventional water treatment so keeping them out of drinking water sources is critical to avoid burdening downstream communities. Polluters should have to bear the cost of their pollution not downstream communities.”)

¹⁸³ Draft Permit 2015, Response to comments at 14.

¹⁸⁴ PENNICHUCK, PENNICHUCK 2024 CONSUMER CONFIDENCE REPORT, NASHUA EPA # 1621010 at 3 (2024), <https://pennichuck.com/pdf/CCR-A0.pdf>.

¹⁸⁵ *Id.*

¹⁸⁶ *See* NEIWPCC, NORTHEAST REGIONAL SLUDGE END-USE AND DISPOSAL ESTIMATE at 7 (2022), https://neiwpcc.org/wp-content/uploads/2022/10/NEIWPCC-Sludge-End-Use-Disposal-Estimate-Report_FINAL.pdf (“Currently available sludge disposal options may not adequately address the destruction of the PFAS group of chemicals. With public awareness and outcry driving quick regulatory actions regarding PFAS, the trace amounts detected in wastewater solids have led to several states currently having restrictions (Vermont and New Hampshire) or bans (Maine) on land applications. With pending legislation and legal responsibility uncertainties, many landfills have become risk-averse, either reducing or altogether stopping the acceptance of sludge containing PFAS.”)

above. The “ultimate fate” of PFAS also indicates incompatibility, as PFAS incineration “increase[s] human exposure to air pollutants,”¹⁸⁷ and these chemicals build up to high concentrations in sludge.¹⁸⁸

Federal pretreatment regulations require municipal wastewater treatment plants to “fully and effectively exercise[] and implement[]” their pretreatment authority.¹⁸⁹ At “minimum,”¹⁹⁰ municipal pretreatment authority must include authority to:

- “Deny or condition new or increased contributions of pollutants, or changes in the nature of pollutants, to the POTW by Industrial Users where such contributions do not meet applicable Pretreatment Standards and Requirements or where such contributions would cause the POTW to violate its NPDES permit”¹⁹¹
- “Require compliance with applicable Pretreatment Standards and Requirements by Industrial Users”¹⁹²
- “Control through Permit, order, or similar means, the contribution to the POTW by each Industrial User to ensure compliance with applicable Pretreatment Standards and Requirement”¹⁹³
- “Carry out all inspection, surveillance and monitoring procedures necessary to determine, independent of information supplied by Industrial Users, compliance or noncompliance with applicable Pretreatment Standards and Requirements by Industrial Users”¹⁹⁴
- “[I]mmediately and effectively to halt or prevent any discharge of pollutants to the POTW which reasonably appears to present an imminent endangerment to the health or welfare of persons,”¹⁹⁵ and
- “[H]alt or prevent any discharge to the POTW which presents or may present an endangerment to the environment or which threatens to interfere with the operation of the POTW.”¹⁹⁶

¹⁸⁷ See Seay et al., *supra* note 6, at 1.

¹⁸⁸ Ting Zhou et al., *Occurrence, Fate, and Remediation for Per- and Polyfluoroalkyl Substances (PFAS) in Sewage Sludge: A Comprehensive Review*, 466 J. OF HAZARDOUS MATERIALS 1, 14 (2024) (“The PFAS concentrations in sludge matrices across the world are up to thousands of ng/g [dry weight.]”)

¹⁸⁹ 40 C.F.R. § 403.8(f).

¹⁹⁰ *Id.* § 403.8(f)(1).

¹⁹¹ *Id.* § 403.8(f)(1)(i).

¹⁹² *Id.* § 403.8(f)(1)(ii).

¹⁹³ *Id.* § 403.8(f)(1)(iii).

¹⁹⁴ *Id.* § 403.8(f)(1)(v).

¹⁹⁵ *Id.* § 403.8(f)(1)(vi)(B).

“Pretreatment Standards and Requirements” include a general prohibition that bars any industrial discharger from “introduc[ing] into a POTW any pollutant(s) which cause Pass Through[.]”¹⁹⁷ Pass through is “a Discharge which exits the POTW into waters of the United States in quantities or concentrations which, alone or in conjunction with a discharge or discharges from other sources, is a cause of a violation of any requirement of the POTW’s NPDES permit (including an increase in the magnitude or duration of a violation).”¹⁹⁸ The Manchester WWTF’s current permit, and the Draft Permit, both incorporate the narrative toxics substance provision as a permit requirement,¹⁹⁹ and they also require compliance with water quality standards.²⁰⁰

PFAS-contaminated discharges from the Manchester WWTF to the Merrimack River likely qualify as “pass through” because: (1) the WWTF’s discharges contain PFAS pollution, as documented in the Battelle Study and the Manchester Monitoring Data, (2) the PFAS-contaminated water exits the WWTF into the Merrimack River, a water of the United States, and (3) the PFAS-contaminated discharges likely violate the WWTF’s narrative NPDES permit provisions regulating toxic substances and requiring compliance with state water quality standards, as discussed in Detailed Comments, Part III.B, above.²⁰¹

“Pretreatment Standards” also include the local prohibitions in Manchester’s Sewer Use Ordinance.²⁰² Manchester’s Sewer Use Ordinance prohibits IUs from discharging pollutants into the plant that “constitute a hazard to humans or animals in the receiving waters[.]”²⁰³ PFAS-contaminated discharges from the Manchester WWTF likely “constitute a hazard to humans or animals” in the Merrimack River. EPA’s recent regulation designating PFOA and PFOS as “hazardous substances” under CERCLA describes “hazard” as meaning “potential harm to humans or the environment from exposure to the substance[.]”²⁰⁴ In the final CERCLA rule, EPA determined that PFOA and PFOS “may pose a hazard” sufficient to warrant the “hazardous substances” designation because “[n]umerous health studies support a finding that PFOA and PFOS exposure can lead to adverse human health effects, including cancer (testicular and kidney for PFOA, liver cancer for PFOS), pregnancy-induced hypertension and preeclampsia, and decreased immune response to vaccination” as well as thyroid hormone and endocrine effects, among others.²⁰⁵ The final rule also referenced animal studies linking PFOA and PFOS with “adverse health effects.”²⁰⁶

¹⁹⁶ *Id.*

¹⁹⁷ *Id.* §§ 405(a)(1), 403.3(1).

¹⁹⁸ *Id.* § 403.3(p).

¹⁹⁹ *See* 2015 Permit I(A)(6); Draft Permit I(A)(6).

²⁰⁰ *See* 2015 Permit I(A)(2); Draft Permit I(A)(3).

²⁰¹ *See* 2015 Permit I(A)(2), (6); Draft Permit I(A)(3), (6).

²⁰² 40 C.F.R. §§ 403.3(1), 403.5(d).

²⁰³ MANCHESTER, N.H. CODE ORD. § 52.026(B).

²⁰⁴ 89 Fed. Reg. 39124, 39141 (May 8, 2024).

²⁰⁵ *Id.* at 39143.

²⁰⁶ *Id.*

As discussed above, the WWTF has received PFOA and PFOS, among other PFAS chemicals, in influent and discharged these chemicals into the Merrimack River, and the Pickard Study detected these chemicals in fish gathered from Merrimack River locations.²⁰⁷ More specifically, the WWTF has received landfill leachate that regularly contains PFAS, including leachate with concentrations as high as 58.7 ppt PFOS²⁰⁸ and 92.5 ppt²⁰⁹ PFOA from the Manchester Landfill and leachate with concentrations as high as 281 ppt PFOS and 1,870 ppt PFOA from the NCES landfill in 2024.²¹⁰ The WWTF has routinely recorded the discharge of PFAS in its effluent, with concentrations as high as 30 ppt PFOS²¹¹ and 20.6 ppt PFOA²¹² prior to the acceptance of NCES landfill leachate; thus, effluent concentrations may have been even higher after receiving NCES leachate with higher PFOS and PFOA concentrations. The Pickard Study detected PFOS in edible fish muscle tissue from Merrimack River locations ranging from .205 ppb (25 compounds, brown bullhead) to 7.914 ppb (37 compounds, largemouth bass) and PFOA reaching 0.386 ppb—again, before the WWTF began accepting NCES leachate.²¹³

Given that EPA has recognized that PFOA and PFOS “may pose a hazard,”²¹⁴ and that these substances have been detected in the WWTF’s influent, effluent, and fish in the Merrimack River, the WWTF’s discharges likely “constitute a hazard to humans or animals” under the City’s Sewer Use Ordinance.²¹⁵ Total PFAS levels in the WWTF’s influent and effluent, and fish muscle tissue, are even higher, and PFAS compounds other than PFOA and PFOS have also been linked with adverse health effects, as discussed above.²¹⁶

The City has not “fully and effectively” implemented its pretreatment authorities to control, inspect, halt, and prevent PFAS contributions from IUs²¹⁷ because it has admittedly failed to initiate *any* communications with IUs regarding PFAS.²¹⁸ Because NPDES permits must ensure compliance with the CWA,²¹⁹ the final permit must ensure the City is “fully and effectively” implementing the pretreatment authorities listed above.²²⁰ Thus, in issuing a final permit, EPA must include a broader Industrial User Survey requirement for PFAS and stronger PFAS control

²⁰⁷ See Factual Background & Overview, Parts II & III; Detailed Comments on the Draft Permit, Part III.B.2.

²⁰⁸ City of Manchester WWTF Monitoring Report (2022).

²⁰⁹ City of Manchester WWTF Monitoring Report (2019).

²¹⁰ Email from Christopher Crowley, Manchester EPD, to Frederick McNeill, Manchester EPD, regarding Leachate Disposal PFAS sampling results vs. NHDES Drinking water limits.

²¹¹ City of Manchester WWTF Monitoring Report (2022).

²¹² City of Manchester WWTF Monitoring Report (2021).

²¹³ Pickard et al. Supporting Information, T16 (Fish Concentrations).

²¹⁴ 89 Fed. Reg. 39124, 39143 (May 8, 2024).

²¹⁵ MANCHESTER, N.H. CODE ORD. § 52.026(B).

²¹⁶ See Detailed Comments on the Draft Permit, Part III.B.2.

²¹⁷ 40 C.F.R. § 403.8(f)(1).

²¹⁸ See Email from Adam Dumville, Director, McLane Middleton to Tom Irwin, Vice President, Conservation Law Foundation (Feb. 15, 2024).

²¹⁹ 40 C.F.R. § 122.4(a).

²²⁰ *Id.* § 403.8(f)(1).

and prevention measures. More specifically, EPA should incorporate the following changes to the Draft Permit’s “Industrial Users and Pretreatment Program” section, Part I(E), to ensure compliance with federal, state, and local law.

A. The final permit should require more comprehensive PFAS monitoring measures for Industrial Users, including an Industrial User Survey and an updated Industrial User Inventory.

Draft Permit section I(E)(6) requires annual PFAS sampling of IUs in specific categories using method 1633. It also requires the City to include the PFAS industrial sources and sampling results in a report submitted to EPA, under section I(E)(5). While we appreciate the requirement for Manchester to measure PFAS in industrial-user influent, annual sampling using only EPA method 1633 will not sufficiently characterize each IU’s contribution of PFAS to the WWTF. Moreover, requiring the City to submit results only to EPA does not provide sufficient transparency for the public.²²¹

Federal regulations and EPA recommendations support requiring a broad IU survey. 40 C.F.R. section 403.8(f)(2) requires that WWTFs implement procedures “to identify and locate all possible Industrial Users that might be subject to the pretreatment program” and “identify the character and volume of pollutants contributed to the POTW by the Industrial Users.”²²² Importantly, in 2022, EPA published a memorandum regarding “Addressing PFAS Discharges in NPDES Permits and Through the Pretreatment Program and Monitoring Programs”²²³ recommending that, under section 403.8(f)(2), WWTFs update their inventory of IUs to include those that discharge PFAS.²²⁴ For both WWTFs and IUs, the memorandum also recommends quarterly monitoring and highlights that facilities may use method 1621 for Adsorbable Organic Fluorine (“AOF”) in addition to method 1633 for PFAS.²²⁵ The memorandum also recommends gathering information on industrial wastewater by placing monitoring requirements in IU permits.²²⁶

In May 2024, EPA Region 3 echoed the 2022 PFAS memorandum language when it specifically recommended that a WWTF in Virginia, with similar PFAS effluent levels to that of the Manchester WWTF, “[i]ncorporate in the permit the requirement to conduct a survey to identify and locate all possible IUs that might be subject to the pretreatment program and identify the character and volume of pollutants contributing to the POTW by the IUs” and “revise[]” its IU

²²¹ 2024 NPDES EJ Policy, at 5 (“Consideration should also be given on how best to make compliance monitoring, test results, records, and reports required by the permit publicly available in a meaningful way that is understandable and readily accessible by the community.”)

²²² 40 C.F.R. § 403.8(f)(2)(i), (ii).

²²³ See December 2022 EPA PFAS Memorandum, at 4.

²²⁴ *Id.*

²²⁵ *Id.* at 2, 4.

²²⁶ *Id.* at 4.

inventory accordingly.²²⁷ Moreover, in issuing the Air Force Academy’s NPDES permit (effective 2023), EPA Region 8 required the Academy to “perform and begin implementing a PFAS source identification and reduction plan” no more than 180 days after detecting PFAS in an effluent sample.²²⁸ The PFAS plan required in that permit must determine the “source or suspected source of the PFAS,” include control measures, and form “[a] plan for identifying future sources of PFAS in the influent” and controlling and/or removing those future sources.²²⁹

To ensure that Manchester “fully and effectively” implements its “authorities and procedures”²³⁰ under the pretreatment program to investigate PFAS contributions from IUs, EPA, in finalizing the permit, should supplement provisions contained in Draft Permit section I.E.6 by requiring that: (1) IUs monitor for PFAS on at least a quarterly basis,²³¹ (2) IUs use method 1621 in conjunction with method 1633 to measure both targeted and non-targeted PFAS, (3) the City conduct an IU Survey and update its IU Inventory accordingly, and (4) the City publicly post all IU PFAS monitoring data and its updated IU Inventory for PFAS on its Industrial Pretreatment website.²³²

B. The final permit must require the City to implement PFAS source reduction measures for Industrial Users, including through IU “Permit[s], order[s], or other similar means” and local limits.

The final permit must require that the City reduce or eliminate PFAS contributions from IUs by establishing best management practices (“BMPs”), numeric limits, and/or treatment requirements in IU permits (or through other IU control mechanisms) and by developing local limits for PFAS.

To ensure that the permit prevents incompatible PFAS pollutants from entering and exiting the WWTF,²³³ to ensure that the City “fully and effectively implement[s] and exercis[es]” its pretreatment authorities,²³⁴ and to “provide for compliance” with the CWA,²³⁵ EPA must establish PFAS source reduction measures for IUs in the City’s final permit.

²²⁷ Email from Jennifer Fulton, EPA Region III, to Susan Edwards, Va. Dep’t Env’t Quality, Regarding Danville – Northside WWTP (VA0060593) (May 14, 2024) (attached as Exhibit BB).

²²⁸ EPA REGION 8, AUTH. TO DISCHARGE UNDER THE NAT’L POLLUTANT DISCHARGE ELIMINATION SYSTEM (Permit No.: CO-0020974) at 38-39 (2023), <https://www.epa.gov/system/files/documents/2023-01/co0020974-afa-wwtf-npdes-permit-final-12.20.22.pdf>.

²²⁹ *Id.*

²³⁰ 40 C.F.R. § 403.8(f).

²³¹ See December 2022 EPA PFAS Memorandum, at 4.

²³² See *Industrial Pretreatment*, CITY OF MANCHESTER, <https://www.manchesternh.gov/Departments/Environmental-Protection/Industrial-Pretreatment>.

²³³ 43 Fed. Reg. 27736, 27736–37, 27761 (June 26, 1978).

²³⁴ 40 C.F.R. § 403.8(f).

²³⁵ *Id.* § 122.4 (a).

First, PFAS chemicals are “incompatible” with the Manchester WWTF because the WWTF does not remove them, and as a result they: threaten to increase drinking water costs for downstream consumers; “[l]imit the sludge management alternatives available” and raise “the cost to the public of providing adequate sludge management”; and likely “prevent the attainment of water quality standards[.]”²³⁶ Moreover, incinerating PFAS-containing sludge at the Manchester WWTF “increase[s] human exposure to air pollutants,”²³⁷ and these chemicals build up to high concentrations in sludge,²³⁸ further demonstrating that they are “incompatible” with the Manchester WWTF.²³⁹ To ensure that the pretreatment rules are implemented “[t]o prevent the introduction of pollutants into POTWs which . . . [are] incompatible with such works,”²⁴⁰ EPA should require source reduction measures for PFAS in the Manchester WWTF’s final permit.

Second, the PFAS chemicals detected in Manchester WWTF’s effluent “reasonably appear[] to present an imminent endangerment to the health or welfare of persons” and “an endangerment to the environment” because PFAS are toxic to both humans and aquatic organisms.²⁴¹ Thus, EPA must establish PFAS source reduction requirements in the City’s permit to ensure that the City “fully” implements its authority to:

- “[I]mmediately and effectively . . . *halt or prevent any discharge of pollutants to the POTW* which reasonably appears to present an imminent endangerment to the health or welfare of persons”²⁴² and
- “[*H*]alt or prevent any discharge to the POTW which presents or may present an endangerment to the environment[.]”²⁴³

Third, the PFAS chemicals detected in Manchester WWTF’s effluent likely qualify as “pass through” and likely “constitute a hazard” for humans and animals, in violation of federal and local pretreatment standards.²⁴⁴ Thus, to ensure compliance with the CWA, EPA should establish PFAS source reduction requirements for IUs in the City’s permit to ensure that the City “fully” implements its authority to:

²³⁶ 43 Fed. Reg. 27736, 27736–37, 27761 (June 26, 1978); *see also* Detailed Comments on the Draft Permit, Part IV.

²³⁷ *See* Seay et al., *supra* note 6, at 1.

²³⁸ Ting Zhou et al., *Occurrence, fate, and remediation for per- and polyfluoroalkyl substances (PFAS) in sewage sludge: A comprehensive review*, 466 J. OF HAZARDOUS MATERIALS 1, 14 (2024) (“The PFAS concentrations in sludge matrices across the world are up to thousands of ng/g [dry weight.]”)

²³⁹ *See* 43 Fed. Reg. 27736, 27761 (June 26, 1978).

²⁴⁰ 40 C.F.R. § 403.2(b); *see also* 33 U.S.C. § 1317(b)(1).

²⁴¹ *Id.* § 403.8(f)(1)(vi)(B); *see* Detailed Comments on the Draft Permit, Parts III.B.2 and IV.

²⁴² *Id.* § 403.8(f)(1)(vi)(B) (emphasis added).

²⁴³ *Id.* (emphasis added).

²⁴⁴ *See id.* §§ 405(a)(1), 403.3(1); MANCHESTER, N.H. CODE ORD. § 52.026(B); *see also* Detailed Comments on the Draft Permit, Parts III.B.2 and IV.

- “Control through Permit, order, or similar means, the contribution to the POTW by each Industrial User to ensure compliance with applicable Pretreatment Standards and Requirements[.]”²⁴⁵ and
- “Deny or condition new or increased contributions of pollutants, or changes in the nature of pollutants, to the POTW by Industrial Users where such contributions do not meet applicable Pretreatment Standards and Requirements[.]”²⁴⁶

The final permit should require the City to reduce PFAS from industrial sources by implementing PFAS BMPs, numeric limits, and/or treatment requirements for IUs through “Permit, order, or similar means.”²⁴⁷ Pursuant to EPA’s 2022 memorandum, BMPs can require elimination or substitution of PFAS in products, establish plans for “[a]ccidental discharge minimization,” and mandate “[e]quipment decontamination or replacement.”²⁴⁸ The Air Force Academy’s permit provides an example of requiring source reduction BMPs. That permit provides that if the Air Force Academy detects PFAS in its effluent, it must develop a “PFAS Plan” that contains the following components (among others):

- “Identification and implementation of best management practices (BMPs) to keep PFAS out of the collection system,” including “product substitution, reduction, or elimination for discharges with PFAS;”
- “Accidental discharge minimization[;]”
- “Equipment decontamination or replacement[;]” and
- “[A] mechanism for reduction/elimination of [future] sources and, if removal is possible, treatment that will be implemented to reduce/remove PFAS from the effluent[.]”²⁴⁹

The City’s final permit should also require the City to develop local limits for PFAS.²⁵⁰ New Hampshire pretreatment regulations provide that “[s]pecific numerical limits shall be required on constituents contained in waste if the inclusion of such limits is necessary to meet applicable federal and state law[.]”²⁵¹ New Hampshire’s state pretreatment regulations prohibit discharging

²⁴⁵ *Id.* § 403.8(f)(1)(iii).

²⁴⁶ *Id.* § 403.8(f)(1)(i).

²⁴⁷ *Id.* § 403.8(f)(1)(iii).

²⁴⁸ *See id.* at 3.

²⁴⁹ EPA REGION 8, AUTH. TO DISCHARGE UNDER THE NAT’L POLLUTANT DISCHARGE ELIMINATION SYSTEM (Permit No.: CO-0020974) at 38-39 (2023), <https://www.epa.gov/system/files/documents/2023-01/co0020974-afa-wwtf-npdes-permit-final-12.20.22.pdf>.

²⁵⁰ *See* 40 C.F.R. § 403.5(c)(1) (“Each POTW with an approved pretreatment program shall continue to develop these limits as necessary and effectively enforce such limits.”)

²⁵¹ N.H. CODE ADMIN R. ENV-WQ § 305.04.

“[a]ny pollutant” into a WWTF “at a flow rate or pollutant concentration or quantity that is *likely to . . .* [c]onstitute a hazard to humans or animals” or “cause pass through.”²⁵² As discussed above, the Manchester WWTF’s PFAS discharges are likely to constitute a hazard to humans or animals and likely to cause pass through.²⁵³ Therefore, “the inclusion of [local] limits” to avoid the likely hazard and pass through associated with PFAS “is necessary to meet applicable . . . state law.”²⁵⁴ DES has also stated that its review of industrial discharge requests is “limited” in the absence of local limits.²⁵⁵

C. The permit should prohibit the WWTF from accepting landfill leachate that has not been treated to remove PFAS.

As mentioned above, federal pretreatment regulations provide WWTFs with authority to “deny or condition” industrial discharges to ensure compliance with Pretreatment Standards and Requirements.²⁵⁶ The Manchester WWTF’s acceptance of leachate from landfills contributes PFAS pollutants incompatible with the WWTF’s treatment, and contributes to its likely PFAS-related violations of pretreatment standards. Thus, the final permit should prohibit Manchester from accepting landfill leachate that has not been treated for PFAS.

The Manchester WWTF accepts up to 100,000 gallons of leachate per day from the closed Manchester Municipal Landfill.²⁵⁷ That landfill leachate has contained PFAS concentrations reaching as high as 169.6 ppt for four PFAS compounds.²⁵⁸ The leachate has contained PFOA and PFOS levels reaching as high as 92.5 ppt²⁵⁹ and 58.8 ppt,²⁶⁰ respectively—23,125 times EPA’s interim health advisory level for PFOA and 2,925 times EPA’s interim health advisory level for PFOS. In addition to accepting leachate on a daily basis from the closed Manchester Municipal Landfill, the WWTF has also accepted landfill leachate from the NCES landfill in Bethlehem, New Hampshire, receiving up to 30,000 gallons per day from April to May 2024,²⁶¹ 47,703 gallons total in March 2024,²⁶² and 454,886 gallons total in February 2024²⁶³ under

²⁵² *Id.* § 305.06(c) (emphasis added).

²⁵³ See Detailed Comments on the Draft Permit, Parts III.B.2 and IV.

²⁵⁴ N.H. CODE ADMIN R. ENV-WQ § 305.04.

²⁵⁵ Digital letter from Zachary Lorch, NH Dept’ Env’t Servs. To Jeff Backman, Allenstown Wastewater Treatment Facility (April 19, 2024) (attached as Exhibit CC).

²⁵⁶ 40 C.F.R. § 403.8(f)(1)(i).

²⁵⁷ 2022–2023 IPP Annual Report App’x A; 2019–2020 IPP Annual Report App’x A.

²⁵⁸ City of Manchester WWTF PFAS Monitoring Report (October 2019).

²⁵⁹ City of Manchester WWTF PFAS Monitoring Reports (2019)

²⁶⁰ City of Manchester WWTF PFAS Monitoring Reports (2022)

²⁶¹ City of Manchester Dep’t of Public Works, Class III Wastewater Discharge Permit No. T-3001-4-24 (2024).

²⁶² Letter from Lindsey Menard, North Country Environmental Services, Inc., to Jaime Colby, P.E., New Hampshire Department of Environmental Services, regarding North Country Environmental Services, Inc. Landfill Facility - Bethlehem, NH Permit # - NH DES-SW-SP-03-002 First Quarter Facility Report; 2024 at 21 (April 30, 2024).

²⁶³ *Id.* at 17.

temporary discharge permits.²⁶⁴ In February 2024, the NCES leachate contained individual PFOA and PFOS levels reaching as high as 1,870 ppt and 281 ppt, respectively²⁶⁵—467,500 times EPA’s interim health advisory level for PFOA and 14,050 times EPA’s interim health advisory level for PFOS.

The City accepts landfill leachate despite the incompatibility of PFAS pollutants with the WWTF (i.e., the WWTF’s lack of treatment processes to remove or destroy PFAS chemicals, leading to PFAS discharges into the Merrimack River, contaminated sewage sludge, and PFAS air emissions from the WWTF’s incinerator). Because source reduction measures requiring elimination or substitution of PFAS in operations cannot be employed by these landfills to reduce PFAS (i.e., landfills do not affirmatively use PFAS in their operations), EPA should require that the City “deny or condition” leachate acceptance by prohibiting leachate from entering the WWTF unless it has been treated to eliminate the presence of PFAS.

V. EPA should require monitoring and reporting of PFAS in air emissions from the Sewage Sludge Incinerator.

The City’s sewage sludge incinerator removes only 51 percent of PFAS and creates other PFAS compounds, including GenX, according to the Battelle Study.²⁶⁶ But neither the data from the WWTF nor any other sewage sludge incineration studies have measured the full scope of PFAS products of incomplete combustion pollution.²⁶⁷ PFAS emissions from the City’s incinerator contaminate the ambient air and, through deposition, can contribute to surface water and groundwater pollution. The incinerator’s PFAS emissions thus threaten the health of those living near or downstream of the incinerator by increasing risks of breathing contaminated air, drinking contaminated water, or eating contaminated fish.

The dangers of incinerating PFAS-contaminated sewage sludge underscore the need to implement the source reduction measures in Detailed Comments, Parts III and IV above. Reducing or eliminating PFAS in industrial influent will reduce the PFAS not only in the WWTF’s effluent to the Merrimack River, but also in the sewage sludge that is later incinerated. As EPA underscored in finalizing general pretreatment rules, “[s]ource control of industrial toxic pollutants through pretreatment” is “a necessary element of . . . minimizing public exposure to toxic air pollutants released in incineration of municipal sludges[.]”²⁶⁸

²⁶⁴ CITY OF MANCHESTER, DEP’T OF PUBLIC WORKS, CLASS III WASTEWATER DISCHARGE PERMIT NO. T-3001-2-24 (2024); CITY OF MANCHESTER DEP’T OF PUBLIC WORKS, CLASS III WASTEWATER DISCHARGE PERMIT NO. T-3001-4-24 (2024).

²⁶⁵ Email from Christopher Crowley, Manchester EPD, to Frederick McNeill, Manchester EPD, regarding Leachate Disposal PFAS sampling results vs. NHDES Drinking water limits (April 18, 2024).

²⁶⁶ Seay et al., *supra* note 6, at 6, 8.

²⁶⁷ *Id.* at 9; 2024 EPA Destruction & Disposal Guidance, at 59–60.

²⁶⁸ 43 Fed. Reg. 27736, 27736 (June 26, 1978).

Moreover, Part I(F) of the Draft Permit, subsections 10 through 14, establishes requirements for the WWTF’s sewage sludge incinerator. These requirements include concentration-based emissions limitations, management practices, and monitoring, sampling, recordkeeping, and reporting requirements.²⁶⁹ EPA should require monitoring and public reporting of PFAS in air emissions from the WWTF’s incinerator in the final permit, in part I(F) subsections (10), (12), (13), and (14).

EPA has validated two methods for testing PFAS in stack gas emissions: OTM-45, which measures 50 semivolatile PFAS, and OTM-50, which measures 30 volatile PFAS.²⁷⁰ Other methods, such as Total Fluorine, are available for measuring nontargeted PFAS in air.²⁷¹ Requiring the City to monitor PFAS from the incinerator’s stack using these methods is essential to achieving two important goals adopted by EPA: one pertaining to destruction and disposal of PFAS, the other related to environmental justice.

As to the first of these goals, EPA recently acknowledged in its Interim Guidance on Destruction & Disposal that it lacks an understanding of PFAS (and other byproduct) emissions from sewage sludge incinerators.²⁷² In that guidance and in its PFAS Strategic Roadmap, the agency has committed to gathering data on PFAS emissions to better understand impacts to humans and the environment.²⁷³ Requiring monitoring and public reporting of PFAS emissions at the Manchester WWTF would help EPA achieve its data-collection goal.

²⁶⁹ Part I(F)(h) also establishes that “Sewage sludge shall not be fired in an incinerator if it is likely to adversely affect a threatened or endangered species listed under Section 4 of the Endangered Species Act or its designated critical habitat.” The Draft Permit’s Fact Sheet states that “There are no known threatened or endangered species within the vicinity of the incinerator.” Fact Sheet at 40. But the Fact Sheet later makes a conflicting assertion, that “two listed species, the endangered northern long-eared bat (*Myotis septentrionalis*) and the threatened small whorled pogonia (*Isotria medeoloides*), were identified as potentially occurring in the action area of the Facility’s discharges.” Draft Permit, Fact Sheet at 46. Given that the WWTF’s incinerator and outfall are located on the same site, endangered and threatened species in the vicinity of the discharges are also in the vicinity of the incinerator. CLF requests that EPA address this conflict and, if applicable, assess the impact of PFAS incineration on the endangered and threatened species near the City’s WWTF.

²⁷⁰ *PFAS Analytical Methods Development and Sampling Research*, EPA (Feb. 8. 2024), <https://www.epa.gov/water-research/pfas-analytical-methods-development-and-sampling-research>.

²⁷¹ Seay et al., *supra* note 6, at 2.

²⁷² 2024 EPA PFAS Destruction & Disposal Guidance, at 51, 54 (“The behavior of PFAS and PFAS-related [products of incomplete combustion] in these unit operations is largely unknown . . . Additionally, these control devices produce secondary waste streams in the form of fly ash and scrubber blowdown solutions, and PFAS and PFAS-related [products of incomplete combustion] may be present in these solid and liquid effluents depending on their vapor pressure and solubility.”)

²⁷³ *Id.* at 58, 61; *see also* EPA, PFAS STRATEGIC ROADMAP: EPA’S COMMITMENTS TO ACTION 2021–2024 18–19 (2021), [accessible at https://www.epa.gov/system/files/documents/2021-10/pfas-roadmap_final-508.pdf](https://www.epa.gov/system/files/documents/2021-10/pfas-roadmap_final-508.pdf) (“EPA will prioritize efforts to evaluate conventional thermal treatment of PFAS-containing wastes and air emissions[.]”)

As to the second goal, EPA has emphasized the potential for PFAS in air emissions to disproportionately impact overburdened communities.²⁷⁴ The agency has stated that it will analyze the impact of air emissions on EJ communities and has acknowledged the need to provide transparent information to communities near PFAS-emitting facilities.²⁷⁵ The Manchester WWTF—which is often upwind of at least two EJ communities—has been shown to emit PFAS into ambient air, destroying only 51 percent of the PFAS that enter the incinerator and creating new compounds including GenX.²⁷⁶ Requiring monitoring and reporting of PFAS emissions from the incinerator is essential to enabling EPA and stakeholders to evaluate and address associated EJ concerns.

REQUEST FOR A PUBLIC HEARING

EPA must hold a public hearing for a NPDES permit when the agency determines, “on the basis of requests,” that “a significant degree of public interest in a draft permit[.]” exists.²⁷⁷ EPA may also decide to hold a public hearing if “such a hearing might clarify one or more issues involved in the permit decision[.]”²⁷⁸

EPA should hold a public hearing on the Manchester WWTF’s NPDES permit because there is a “significant degree of public interest” in the Draft Permit and because a hearing would clarify the issues discussed above, related to addressing PFAS pollution in the Manchester WWTF’s water discharges and air emissions.²⁷⁹

As EPA stated in its Destruction & Disposal Guidance for PFAS, “the importance of encouraging appropriate information access for and dialogue with communities—and, in particular, with potentially vulnerable communities—cannot be overemphasized[.]”²⁸⁰ This guidance, along with EPA’s Program Policy on NPDES permitting, repeatedly highlight the need to meaningfully engage with community members who will be impacted by the final permit, including the WWTF’s discharges to the Merrimack River and its air emissions from the incineration of PFAS-contaminated sewage sludge.²⁸¹

²⁷⁴ 2024 EPA Destruction & Disposal Guidance, at 58; EPA, PFAS STRATEGIC ROADMAP: EPA’S COMMITMENTS TO ACTION 2021–2024 18 (2021), *accessible at* https://www.epa.gov/system/files/documents/2021-10/pfas-roadmap_final-508.pdf.

²⁷⁵ EPA, PFAS STRATEGIC ROADMAP: EPA’S COMMITMENTS TO ACTION 2021–2024 18 (2021), *accessible at* https://www.epa.gov/system/files/documents/2021-10/pfas-roadmap_final-508.pdf; 2024 EPA Destruction & Disposal Guidance, at 56.

²⁷⁶ Seay et al. *supra* note 6, at 2, 6, 9.

²⁷⁷ 40 C.F.R. § 124.12(a)(1).

²⁷⁸ *Id.*

²⁷⁹ *Id.*

²⁸⁰ 2024 EPA Destruction & Disposal Guidance, at 56.

²⁸¹ *Id.*; 2024 NPDES EJ Policy 2–6.

CLF requests that EPA hold an in-person public hearing in Manchester at a time and location that facilitates meaningful participation by members of the community.

CONCLUSION

As discussed above, the NPDES permitting process for Manchester’s WWTF involves significant issues related to environmental justice and the increasingly concerning problem of PFAS pollution. In light of the size of the WWTF, the WWTF’s incineration of sewage sludge, data demonstrating significant levels of toxic PFAS chemicals flowing into and out of the WWTF, and the nearby location of communities experiencing disproportionate environmental impacts, it is essential that EPA fully address the concerns raised in these comments and, in finalizing the permit, take the following actions summarized here and set forth more fully in the Detailed Comments, above):

1. Conduct an EJ analysis that complies with EPA policies and guidance;²⁸²
2. Strengthen provisions for measuring and controlling PFAS at the WWTF, including adding a monthly (not quarterly) monitoring requirement for PFAS and AOF;
3. Analyze the need for and implement necessary effluent limitations, including technology-based effluent limitations and water quality-based effluent limitations;
4. Include PFAS measures under the IPP, including but not limited to:
 - a. Comprehensive PFAS monitoring requirements for IUs, including quarterly monitoring by IUs, an IU Survey, an updated IU Inventory, and publication of IU PFAS monitoring data and updated IU inventories on the City’s IPP website;
 - b. PFAS source reduction measures for IUs, including through IU “Permit[s], order[s], or other similar means”²⁸³ and local limits; and
 - c. A prohibition on the WWTF accepting landfill leachate that has not been treated to eliminate PFAS;
5. Include provisions to address PFAS from the incinerator’s air emissions, including:
 - a. All PFAS source reduction measures set forth above, to reduce PFAS in the sludge generated by the WWTF and burned in its incinerator, and

²⁸² See 2024 NPDES EJ Policy.

²⁸³ 40 C.F.R § 403.8(f)(1)(iii).



- b. A requirement to monitor PFAS in the sewage sludge incinerator's emissions.

Respectfully submitted,

A handwritten signature in black ink that reads "Jillian Aicher". The signature is written in a cursive, flowing style.

Jillian Aicher, Equal Justice Works Legal Fellow
Conservation Law Foundation
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A handwritten signature in blue ink that reads "Tom Irwin". The signature is written in a cursive, flowing style.

Tom Irwin
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