September 11, 2023

Submitted via Regulations.gov
Dr. Michal Freedhoff
Assistant Administrator, Environmental Protection Agency
Office of Chemical Safety and Pollution Prevention
1200 Pennsylvania Ave. NW
Washington, DC 20460-0001

Re: Carbon Tetrachloride; Regulation Under the Toxic Substances Control Act ("TSCA"), Docket No. EPA-HQ-OPPT-2020-0592

Dear Assistant Administrator Freedhoff:

The undersigned organizations submit these comments on EPA's proposed risk management rule (the "Proposed Rule") for carbon tetrachloride.[1]

Carbon tetrachloride is a "ubiquitous" and highly toxic solvent, which contaminates the air across the country and causes particular harm in the fenceline communities where it is manufactured, used, and disposed of.[2] EPA has found that, nationwide, background exposures to carbon tetrachloride pose greater cancer risks than any chemical other than formaldehyde.[3] Carbon tetrachloride also depletes the ozone layer, worsens the climate crisis, and presents severe ecological risks. EPA correctly found, based on its 2020 risk evaluation, that carbon tetrachloride—"as a whole chemical"—presents unreasonable risks.[4]

But the Proposed Rule fails to address, much less eliminate, many of those risks, in violation of EPA's mandate to regulate carbon tetrachloride "to the extent necessary so that [it] . . . no longer presents [unreasonable] risk."[5] The rule would allow every existing use of carbon tetrachloride to continue indefinitely, subject to an occupational exposure limit that, according to EPA's own analyses, would not fully address unreasonable risks to workers. EPA proposed no protections for fenceline communities, despite calculating cancer risks that far exceed EPA's unreasonable risk threshold. And the rule would not do anything to address carbon tetrachloride's harm to the ozone layer, the climate, and to wildlife.

EPA attempts to justify the continued use of carbon tetrachloride by claiming that the Proposed Rule "complement[s] the Agency's efforts to address" ozone depletion and climate

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[1] Carbon Tetrachloride (CTC); Regulation Under the Toxic Substances Control Act (TSCA), 88 Fed. Reg. 49,180 (proposed July 28, 2023).
[2] *See* Agency for Toxic Substances & Disease Registry, *Toxicological Profile for Carbon Tetrachloride* 187 (2005), https://www.atsdr.cdc.gov/toxprofiles/tp30.pdf.
[3] EPA, *2019 AirToxScreen National Cancer Risk by Pollutant* ("2019 AirToxScreen"), https://www.epa.gov/system/files/documents/2022-12/2019_National_CancerRisk_by_tract_poll.xlsx (last visited Sept. 6, 2023).
[4] 88 Fed. Reg. at 49,181.
[5] 15 U.S.C. § 2605(a).

change, since carbon tetrachloride is used in the production of hydrofluoroolefins ("HFOs") that are being used to replace ozone-depleting and climate-damaging hydrofluorocarbons ("HFCs").[6] But, despite the narrative advanced by chemical manufacturers, there is no need to leave fenceline communities at risk in order to phase-out HFCs and achieve our climate change goals. EPA acknowledges that "there are routes of [HFO] production with feedstocks that do not use [carbon tetrachloride]."[7] And carbon tetrachloride itself is an ozone-depleting substance and a potent greenhouse gas, causing the same types of environmental harm as the HFCs it is being used to replace. EPA must reject industry's false choice between action on climate change and the regulation of harmful chemicals; it can do both by transitioning from carbon tetrachloride to safer substitutes.

A phase-out of carbon tetrachloride is not only authorized but compelled by TSCA, as it is the only regulation that would ensure the elimination of carbon tetrachloride's unreasonable risks. In the event that a critical use of carbon tetrachloride cannot currently be replaced, EPA can establish compliance schedules that allow for a longer transition period or grant time-limited exemptions to the risk management rule pursuant TSCA section 6(g). This approach is fully supported by EPA's existing risk evaluation and its "whole chemical" unreasonable risk determination, and it is consistent with past regulations that have already banned many consumer and industrial uses of carbon tetrachloride. It can also be implemented without reopening the carbon tetrachloride risk evaluation or delaying the finalization of the Proposed Rule

Every day, workers, fenceline community residents, and others suffer unacceptable risks of cancer, liver disease, and other serious harms because of their exposures to carbon tetrachloride. A strong risk management rule is EPA's best opportunity to protect them. We urge EPA to revise the Proposed Rule as set forth below and to finalize a rule that fully eliminates carbon tetrachloride's unreasonable risks.

I. TSCA'S "OVERARCHING PURPOSE" AND STATUTORY MANDATE IS THE ELIMINATION OF CHEMICALS' UNREASONABLE RISKS

"[T]he overarching purpose of . . . TSCA is to protect the public from chemicals that pose an unreasonable risk to health and the environment."[8] For the first 40 years of its existence, however, TSCA rarely served that purpose. EPA evaluated the risks posed by few existing chemicals like carbon tetrachloride and regulated even fewer. One of the only regulations that EPA did issue—a 1989 ban on asbestos—was overturned by the Fifth Circuit Court of Appeals because EPA had not addressed asbestos' unreasonable risks using the "least burdensome requirements."[9]

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[6] 88 Fed. Reg. at 49,182.
[7] *Id.* at 49,209.
[8] *Food & Water Watch, Inc. v. EPA*, 302 F. Supp. 3d 1058, 1066 (N.D. Cal. 2018); *see also* S. Rep. No. 94-698, at 1 (1976) (expressing intent of TSCA to "prevent unreasonable risks of injury to health or the environment associated with the manufacture, processing, distribution in commerce, use, or disposal of chemical substances").
[9] *Corrosion Proof Fittings v. EPA*, 947 F.2d 1201, 1215 (5th Cir. 1991) (quoting 15 U.S.C. § 2605(a)).

In 2016, after decades of moribund federal toxics regulation, Congress amended TSCA to "enhanc[e] EPA's authority to regulate chemicals."[10] As relevant to the Proposed Rule, the 2016 amendments overhauled the way that EPA evaluates and manages chemicals' risks. First, Congress directed EPA to conduct risk evaluations for existing chemicals, like carbon tetrachloride, that entered commerce without EPA review or approval. Those risk evaluations must "determine whether [the] chemical substance presents an unreasonable risk of injury to health or the environment, without consideration of costs or other nonrisk factors, including an unreasonable risk to a potentially exposed or susceptible subpopulation" that experiences "greater risk than the general population" due to "greater exposure" to a chemical substance or "greater susceptibility" to harm from such exposures[11]

Second, if EPA finds unreasonable risk, TSCA requires EPA to issue a risk management rule that fully eliminates such risk. In the 2016 amendments, Congress eliminated TSCA's mandate to address unreasonable risks using the "least burdensome" requirements, which lawmakers found had "paralyzed EPA and prevented them from regulating some extremely toxic chemicals."[12] In place of the prior requirement to minimize regulatory burdens and costs, Congress directed EPA to regulate chemicals "to the extent necessary so that . . . [they] no longer present[] [unreasonable] risks," using one or more of seven broad risk management tools listed in the statute.[13]

EPA must therefore ensure that any risk management rule issued under TSCA eliminates the chemical's unreasonable risks. Moreover, when multiple options satisfy that statutory mandate, EPA no longer has to select the lowest cost or least burdensome one.[14] Instead, Congress established four criteria that EPA "shall consider" when issuing risk management rules, while granting EPA the discretion to weigh those criteria and to determine how to best address a chemical's unreasonable risks:

> (i) the effects of the chemical substance or mixture on health and the magnitude of the exposure of human beings to the chemical substance or mixture;
> (ii) the effects of the chemical substance or mixture on the environment and the magnitude of the exposure of the environment to such substance or mixture;

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[10] 162 Cong. Rec. 7981 (2016).
[11] 15 U.S.C. § 2602(12) (defining "potentially exposed or susceptible subpopulation"); *id.* § 2605(b)(4)(A).
[12] 162 Cong. Rec. 7498 (2016) (statement of Sen. Markey); *see also* 162 Cong. Rec. 7984 (2016) (explaining that, by "delet[ing] the paralyzing 'least burdensome' requirement in the existing law and instruct[ing] that EPA's rule must ensure that the chemical substance or mixture 'no longer presents' the unreasonable risk," the amended TSCA "clearly rejects the regulatory approach and framework that led to the failed asbestos ban and phase-out rule of 1989").
[13] 15 U.S.C. § 2605(a).
[14] 162 Cong. Rec. 7984 (2016) (explaining how the amended TSCA "do[es] not require EPA to demonstrate benefits outweigh costs, to definitively determine or select the least-cost alternative, or to select an option that is demonstrably cost-effective or is the least burdensome adequately protective option").

(iii) the benefits of the chemical substance or mixture for various uses; and
(iv) the reasonably ascertainable economic consequences of the rule . . . [including] the costs and benefits of the proposed and final regulatory action and of the 1 or more primary alternative regulatory actions considered by the Administrator.[15]

II. EPA FOUND THAT CARBON TETRACHLORIDE PRESENTS UNREASONABLE RISKS BUT FAILED TO EVALUATE THE FULL EXTENT OF THOSE RISKS

As EPA has found, "carbon tetrachloride[,] as a whole chemical substance[,] presents an unreasonable risk of injury to health."[16] Carbon tetrachloride is so strongly associated with liver damage that it is "used as a reference compound to compare the hepatoxicity of other halogenated solvents and as a positive control for liver damage in the study of potential therapeutic effects of other compounds."[17] "In addition to its high [liver toxicity], carbon tetrachloride is also known to affect the [central nervous system] and the kidney."[18] Carbon tetrachloride is also "likely to be carcinogenic to humans,"[19] with a primary association with liver and brain cancer. In addition to its health effects, carbon tetrachloride is "an ozone-depleting substance (ODS) and a potent greenhouse gas,"[20] and it is toxic to aquatic life and other non-human species.[21]

Despite those risks, more than 140 million pounds of carbon tetrachloride are produced in or imported into the United States each year.[22] Carbon tetrachloride is "ubiquitous in ambient air"[23] and is extremely stable in the atmosphere, with an estimated half-life of 30 to 100 years.[24]

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[15] 15 U.S.C. § 2605(c)(2)(A), (B).
[16] EPA, Revised Unreasonable Risk Determination for Carbon Tetrachloride 19 (Dec. 2022) ("Carbon Tetrachloride Risk Determination"), https://www.epa.gov/system/files/documents/2022-12/9948-02_Revised_RD_CTC_12.12.22.for%20RSB.pdf.
[17] EPA, *Risk Evaluation for Carbon Tetrachloride* 135 (Dec. 2020) ("Carbon Tetrachloride Final Risk Evaluation"), https://www.epa.gov/sites/default/files/2020-10/documents/1_ccl4_risk_evaluation_for_carbon_tetrachloride.pdf.
[18] *Id.*
[19] *Id.* at 157.
[20] Lei Hu et al., *Continued Emissions of Carbon Tetrachloride from the United States Nearly Two Decades After Its Phaseout for Dispersive Uses*, 113 Proceedings of the Nat'l Acad. of Scis.' of the U.S 2880, 2880 (2016), https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4801316/.
[21] Carbon Tetrachloride Final Risk Evaluation at 125–26.
[22] *Id.* at 31.
[23] Agency for Toxic Substances & Disease Registry, *Toxicological Profile for Carbon Tetrachloride* 187 (2005) ("ATSDR Tox. Profile"), https://www.atsdr.cdc.gov/toxprofiles/tp30.pdf.
[24] Agency for Toxic Substances & Disease Registry, *Case Studies in Environmental Medicine (CSEM): Carbon Tetrachloride Toxicity*18, https://www.atsdr.cdc.gov/csem/carbon_tetrachloride/docs/Carb_Tet-H.pdf (last visited Sept. 6, 2023).

EPA's national air toxics assessment ("NATA") reported unsafe levels of carbon tetrachloride in background air across the country, concluding "[t]he vast majority of risk from the [total] NATA background concentrations" is associated with carbon tetrachloride.[25] Every year, tens of thousands more pounds of carbon tetrachloride are released by chemical manufacturing plants and other industrial facilities, adding to those already substantial background risks.

In June 2020, EPA finalized a risk evaluation under the amended TSCA that evaluated 15 conditions of use for carbon tetrachloride and found that almost all of them presented unreasonable risks to human health.[26] EPA also found that at least four facilities caused risks to amphibian species exceeding a risk quotient ("RQ") of 1, which "generally indicates that there is risk of injury to the environment that would support a determination of unreasonable risk for the chemical substance."[27] In multiple ways, however, that 2020 risk evaluation disregarded and understated carbon tetrachloride's risks, in violation of TSCA. Those flaws are described in greater detail in environmental organization and labor union comments on the draft risk evaluation, copies of which are appended to these comments and incorporated by reference herein.[28] Among the most significant errors:

- EPA failed to consider releases of carbon tetrachloride to the environment and the corresponding risks to communities who are exposed to the chemical in their air, drinking water, and soil, in violation of TSCA's requirement to evaluate risks to "potentially exposed or susceptible subpopulation[s]" who experience "greater exposure" to a chemical substance than the general public;[29]
- EPA evaluated the risks associated with each individual exposure route (e.g., inhalation and dermal absorption) and exposure pathway (e.g., occupational exposures and environmental exposures) in isolation, in violation of TSCA's mandate to consider all of the circumstances under which a chemical is "intended, known, or reasonably foreseen to be manufactured, processed, distributed in commerce, used, or disposed of," as well as "any combination of such activities;"[30]

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[25] *NATA Frequent Questions*, EPA (Jan. 19, 2017) https://19january2017snapshot.epa.gov/national-air-toxics-assessment/nata-frequent-questions_.html (archived site); *see also AirToxScreen Frequent Questions*, EPA https://www.epa.gov/AirToxScreen/airtoxscreen-frequent-questions (last updated July 27, 2023) ("[A] main contributor to risk from background concentrations is carbon tetrachloride . . . .").
[26] Carbon Tetrachloride Final Risk Evaluation at 27–28.
[27] Carbon Tetrachloride Risk Determination at 10.
[28] Safer Chems. Healthy Fams. et al., Comments on Draft Risk Evaluation for Carbon Tetrachloride ("Env't NGO Comments") (attached as **Exhibit A**); Earthjustice & Occupational Health & Safety L. Project, Comments on Draft Risk Evaluation for Carbon Tetrachloride ("Labor Comments") (attached as **Exhibit B**).
[29] Env't NGO Comments at 4–8; 15 U.S.C. § 2602(12) (defining "potentially exposed or susceptible subpopulation[s]"); *id.* § 2605(b)(4)(A).
[30] Env't NGO Comments at 27–29; 15 U.S.C. § 2602(4) (defining "conditions of use"); *id.* § 2605(a).

- EPA failed to consider background exposures to carbon tetrachloride and thus significantly understated the incremental risks from additional exposures to workers and fenceline communities;[31]
- EPA failed to consider the risks of continued carbon tetrachloride migration and vapor intrusion from contaminated sites, in violation of TSCA's mandate to evaluate such "ongoing" migration and exposure as "independent disposals;"[32]
- EPA failed to consider the risks that carbon tetrachloride releases pose to the ozone layer and the climate, and it understated and dismissed carbon tetrachloride's risks to aquatic and terrestrial species, in violation of TSCA's mandate to evaluate risks to "water, air, and land and the interrelationship which exists among and between water, air, and land and all living things;"[33]
- EPA failed to calculate carbon tetrachloride's risks to "potentially exposed or susceptible subpopulation[s]," including people with preexisting liver disease, alcohol use disorder, and genetic polymorphism that affect carbon tetrachloride metabolism;[34] and
- EPA assumed that workers would be provided and protected by personal protective equipment ("PPE"), contrary to well-established procedures for occupational risk assessment and EPA's own findings concerning the limitations of PPE.[35]

While EPA has since acknowledged some of those flaws, most of them remain unaddressed. In June 2021, half a year after finalizing the carbon tetrachloride chloride risk evaluation, EPA "announced important policy changes surrounding risk evaluations issued under the Toxic Substances Control Act," explaining that the Trump Administration's exclusion of air and water exposures was inconsistent with TSCA's obligation to assess risks to potentially exposed or susceptible subpopulations.[36] "To determine if . . . [carbon tetrachloride] . . . present[s] unreasonable risks to these communities," EPA conducted a screening analysis of carbon tetrachloride exposures and risks in fenceline communities.[37] But that screening analysis understated community risks by unrealistically assuming that community members were only exposed to carbon tetrachloride from a single source, via a single exposure route, without any exposures to other chemicals or non-chemical stressors that increase their susceptibility to harm.[38] EPA's Science Advisory Committee on Chemicals ("SACC") warned that EPA's "screening methodology was not protective because of the lack of consideration for cumulative exposures,

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[31] Env't NGO Comments at 8–17.
[32] *Safer Chems, Healthy Fams. v. EPA*, 943 F.3d 397, 426 (9th Cir. 2019); Env't NGO Comments at 18–20.
[33] Env't NGO Comments at 9–12, 35–36; 15 U.S.C. § 2602(6) (defining "environment"); *id.* § 2605(b)(4)(A).
[34] Env't NGO Comments at 29–30; 15 U.S.C. §§ 2602(12), 2605(b)(4)(A).
[35] Labor Comments at 3–10.
[36] *EPA Announces Path Forward for TSCA Chemical Risk Evaluations*, EPA (June 30, 2021), https://www.epa.gov/newsreleases/epa-announces-path-forward-tsca-chemical-risk-evaluations.
[37] *Id.*
[38] Black Women for Wellness et al., Comments on EPA's Draft TSCA Screening Level Approach for Assessing Ambient Air and Water Exposures to Fenceline Communities Version 1.0, Docket No. EPA-HQ-OPPT-2021-0415-0081 (Mar. 22, 2022) (attached as **Exhibit C**).

multiple source exposures, or additional risk factors such as stress, poverty, and/or diet that may interact to affect exposures."[39]

In December 2022, EPA revised its risk determination for carbon tetrachloride to implement two primary changes. First, EPA affirmed that occupational risks must be calculated without the assumption of PPE use.[40] Rejecting industry arguments that health-protective PPE was already required by the Occupational Safety & Health Administration 's ("OSHA's") carbon tetrachloride standard, EPA found that "unreasonable risk may exist for subpopulations of workers that may be highly exposed because they are not covered by OSHA standards, or their employers are out of compliance with OSHA standards, or because many of OSHA's chemical-specific permissible exposure limits largely adopted in the 1970's are described by OSHA as being 'outdated and inadequate for ensuring protection of worker health,' or because the OSHA [Permissible Exposure Limit] alone may be inadequate to protect worker health."[41] Second, instead of separate risk determinations for each condition of use, EPA issued a single unreasonable risk determination for carbon tetrachloride "as a whole chemical."[42] EPA explained that, because carbon tetrachloride's "chemical-specific health hazards and exposures cut across the conditions of use within the scope of the risk evaluation," "a whole chemical approach will help ensure the public . . . is protected from unreasonable risks from chemicals in a way that is supported by science and the law."[43]

EPA's revised unreasonable risk determination requires EPA to address carbon tetrachloride's risks, as a "whole chemical," in this rule. To eliminate carbon tetrachloride's unreasonable risks, however, EPA must account for the risks that EPA ignored or understated in its risk evaluation. This does not require EPA to reopen the carbon tetrachloride risk evaluation; TSCA directs EPA to independently consider carbon tetrachloride's effects on human health and the environment, and to fully eliminate all unreasonable risks, during the risk management process. As currently drafted, however, the Proposed Rule fails to do so.

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[39] Sci. Advisory Comm. on Chems., EPA, *Meeting Minutes and Final Report: A Set of Scientific Issues Being Considered by the Environmental Protection Agency Regarding Draft TSCA Screening Level Approach for Assessing Ambient Air and Water Exposures to Fenceline Communities Version 1.0,* at 38 (May 16, 2022), https://www.regulations.gov/document/EPA-HQ-OPPT-2021-0415-0095; *see also id.* ("Lack of considerations for these factors may underestimate the adverse effects from environmental exposures in fenceline communities."). EPA's revised its fenceline assessment in the Proposed Rule to incorporate additional data concerning methylene chloride releases, but it has not addressed most of the flaws identified by the SACC.

[40] Carbon Tetrachloride Risk Determination at 2–5.

[41] EPA, *Carbon Tetrachloride; Revision to Toxic Substances Control Act (TSCA) Risk Determination: Response to Public Comments* 22 (Dec. 2022) ("EPA Response to Public Comments") (citation omitted), https://www.epa.gov/system/files/documents/2022-12/9948-02_Working%20Draft_CTC%20RtC_12.12.2022%20for%20RSB.pdf.

[42] Carbon Tetrachloride Risk Determination at 19.

[43] EPA Response to Public Comments at 6.

III. THE PROPOSED RULE FAILS TO ELIMINATE UNREASONABLE RISKS TO FENCELINE COMMUNITIES

A. The Proposed Rule Understates Fenceline Community Risks

EPA admits that the carbon tetrachloride risk evaluation's "exclusion of certain exposure pathways," including air and water releases, "could lead to a failure to identify and protect fenceline communities."[44] To fill that gap, EPA "conducted a screening level analysis to assess potential risks from the air and water pathways to fenceline communities."[45] In multiple ways, however, that fenceline assessment understated real-world exposures and risks.

First, EPA failed to consider the risks to communities who are exposed to carbon tetrachloride from multiple facilities, despite acknowledging that "[carbon tetrachloride] facilities are concentrated . . . near Houston (6) and Baton Rouge (12)."[46] For instance, according to 2021 Toxics Release Inventory ("TRI") data, the two largest emitters of carbon tetrachloride in the nation are both located Geismar, Louisiana.[47] EPA calculated elevated cancer risks from each of those facilities individually (exceeding 1-in-100,000 cancer risks at 100 meters and exceeding 1-in-1,000,000 cancer risks as far out as EPA measured), but EPA never considered the risks to people who were exposed to carbon tetrachloride from both the Occidental Chemical Company and Rubicon facilities, as well as other industrial facilities in Geismar.[48]

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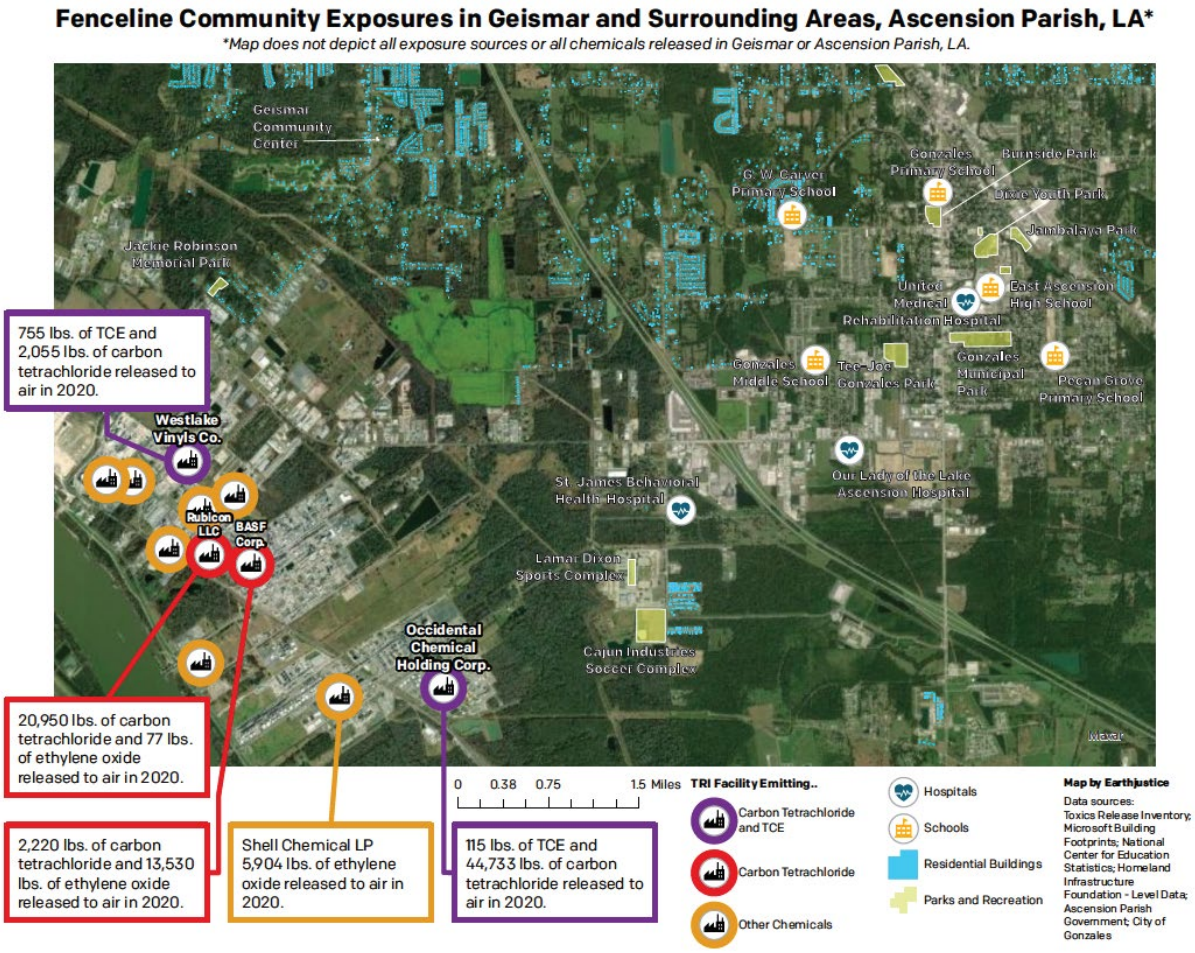
[44] *See* 88 Fed. Reg. at 49,188.
[45] *Id.* at 49,192.
[46] EPA, *Economic Analysis of the Proposed Regulation of Carbon Tetrachloride Under TSCA Section 6(a)* at ES-14 (July 2023) ("Economic Analysis"), https://www.regulations.gov/document/EPA-HQ-OPPT-2020-0592-0121
[47] *TRI Explorer*, EPA, https://enviro.epa.gov/triexplorer/tri_release.chemical (click the tab "Release Reports" and the subtab "Chemical"; then under the drop-down menu click "Select Specific Chemical(s)"; then select "carbon tetrachloride"; and then click "Generate Report") (last visited Sept. 9, 2023).
[48] EPA, *Carbon Tetrachloride: Fenceline Technical Support – Ambient Air Pathway* 13–14 (Oct. 21, 2022) ("Ambient Air Pathway"), https://www.regulations.gov/document/EPA-HQ-OPPT-2020-0592-0050 (Facility TRI ID Nos. 70734VLCNMASHLA and 70734RBCNN9156H)



Nor did EPA consider the total risks to Baton Rouge's Mid-City North neighborhood, which is located in between two industrial facilities—one owned by Formosa and the other by Honeywell—that release carbon tetrachloride.[49] More than 80 percent of the residents most impacted by those facilities' emissions are Black, and according to EPA, the communities surrounding those facilities experience greater cancer risks from the inhalation of air toxics than at least 95 percent of the nation.[50] Yet EPA calculated the risks from each facility in isolation and failed to consider the added risks to residents who are affected by both of facilities' releases of carbon tetrachloride.

[49] *Id.* at 15 (Facility TRI ID Nos. 70805FRMSPGULFS and 70805LLDSGCORNE).
[50] *EJScreen: EPA's Environmental Justice Screening and Mapping Tool (Version 2.2)*, EPA, https://ejscreen.epa.gov/mapper/ (last visited Sept. 11, 2023). EJScreen Community Reports for a one-mile radius around the Formosa and Honeywell Baton Rouge facilities are attached as **Exhibit D** and **Exhibit E**, respectively.

Fenceline Community Exposures to Carbon Tetrachloride in East Baton Rouge

EPA also failed to evaluate cumulative risks to people who are exposed to carbon tetrachloride and other chemicals that cause similar health effects. For instance, in addition to carbon tetrachloride, the Occidental Chemical plant in Geismar also releases approximately 65,000 pounds of methylene chloride and approximately 14,000 pounds of 1,2-diochloroethane, both of which are also carcinogenic.[51] An Olin chemical plant in Freeport, Texas releases carbon tetrachloride, methylene chloride, 1,2-dichloroethane, and other carcinogens. Communities that are exposed to multiple other carcinogens are more susceptible to harm from carbon tetrachloride

[51] *TRI Toxics Tracker*, EPA, https://edap.epa.gov/public/extensions/TRIToxicsTracker/TRIToxicsTracker.html (under "TRI Facility Name or ID," search for "70734VLCNMASHLA"; then under "Years quick selections", select "most recent year"; then click "Search"; and then, on the left hand side of the screen, click "Releases" and "By Chemical") Methylene chloride releases are identified as "dichloromethane".

than communities without those cumulative exposures.[52] The failure to consider those co-exposures violates TSCA's mandate to evaluate risks to groups who "may be at greater risk than the general population" due to "greater susceptibility."[53]

EPA's fenceline risk assessment also "do[es] not account for . . . background concentrations" of carbon tetrachloride, despite EPA's acknowledgment that "[carbon tetrachloride] has notable . . . background concentrations due to its long half-life."[54] The National Academy of Sciences has emphasized the "need for evaluation of background exposures" when conducting risk evaluations, explaining that even low dose exposures "may have a relevant biologic effect" when combined with elevated background levels.[55] That is particularly so with respect to carbon tetrachloride, for which EPA has calculated nationwide, background cancer risks exceeding 2-in-1,000,000.[56] In order to evaluate the risks to residents of fenceline communities and others from carbon tetrachloride releases and exposures, EPA must account for the background levels those communities are already exposed to.

Finally, EPA unrealistically assumes that no one is exposed to carbon tetrachloride in their air or water for more than 33 years,[57] a figure based on the estimate of "residential occupancy period"—the amount of time that people will remain in a given residence—in EPA's *Exposure Factors Handbook*.[58] As described in greater detail in the attached comments on the supplemental risk evaluation for 1,4-dioxane, this assumption significantly understates risks to the potentially exposed or susceptible subpopulations who spend their entire lives in the same community.[59] EPA's 33-year estimate improperly equates the time that someone lives in a given residence with the duration of their environmental exposure to a given chemical, as if everyone who moves within or from a fenceline community ends up in a pristine environment. But nearly two-thirds of all moves occur within the same county,[60] many within the same municipality or

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[52] *See, e.g.,* Sydney Evans & Monica Amarelo, *Chemical Mixtures May Interact and Raise Cancer Risks*, Env't Working Grp., https://www.ewg.org/tapwater/chemical-mixtures-may-interact-and-raise-cancer-risks.php (last visited Sept. 10, 2023).
[53] 15 U.S.C. § 2602(12).
[54] 88 Fed. Reg. at 49,211.
[55] Nat'l Rsch. Council, *Science and Decisions: Advancing Risk Assessment* 130, 132 (2009) (cleaned up), https://www.nap.edu/catalog/12209/science-and-decisions-advancing-risk-assessment.
[56] EPA, 2019 AirToxScreen National Cancer Risk by Pollutant, https://www.epa.gov/system/files/documents/2022-12/2019_National_CancerRisk_by_tract_poll.xlsx (last visited Sept. 6, 2023).
[57] Ambient Air Pathway at 3.
[58] EPA, *Exposure Factors Handbook* 16-8 tbl. 16-5 (2011), https://www.epa.gov/sites/default/files/2015-09/documents/efh-chapter16.pdf.
[59] *See* Earthjustice et al., Comments on Draft Supplement to the Risk Evaluation for 1,4-Dioxane (Sept. 8, 2023) (attached as **Exhibit F**).
[60] *Table A-1: Annual Geographic Mobility Rates by Type of Movement – 1948-2022*, File in *CPS Historical Migration/Geographic Mobility Tables*, U.S. Census Bureau, https://www.census.gov/data/tables/time-series/demo/geographic-mobility/historic.html (last visited Sept. 11, 2023).

neighborhood. Even those who move longer distances will remain exposed to unsafe background levels of carbon tetrachloride, which affect every Census tract in the United States.[61] EPA also ignores the racial, socio-economic, and cultural factors that limit geographic mobility, including familial or cultural ties to a particular community and the impact of environmental contamination on property values, making it harder for many fenceline community residents to sell their homes.[62] And even if many people were able to move out of the communities that present the greatest risks from carbon tetrachloride, TSCA would still require EPA to evaluate and address risks to the "potentially exposed or susceptible population" who experiences "greater exposure" because they do not or cannot leave.[63]

B. Despite Its Underinclusive Fenceline Assessment, EPA Still Calculated Unreasonable Risks to Fenceline Communities

Despite the foregoing flaws in EPA's risk calculations, EPA still found severe risks to fenceline communities, including cancer risks that are orders of magnitude above EPA's own unreasonable risk benchmark. In particular, EPA identified more than 30 facilities where carbon tetrachloride releases would result in a greater than 1-in-1,000,000 cancer risk, EPA's "benchmark value for cancer risk in fenceline communities."[64] In many of those communities, cancer risks exceeded 1-in-100,000, an order of magnitude greater than EPA's stated benchmark.[65] In some, cancer risks exceeded 1-in-10,000.[66] EPA admits that its fenceline assessment "cannot rule out unreasonable risk to fenceline communities."[67] Yet that is precisely what TSCA requires of EPA: to "conduct risk evaluations" that "determine whether a chemical substance presents . . . an unreasonable risk to a potentially exposed or susceptible subpopulation," and then to regulate the chemical "to the extent necessary so that [it] no longer presents such risk."[68]

The risks that EPA failed to address fall disproportionately on communities of color and low-wealth communities. "Within 1 mile of [carbon-tetrachloride--releasing] facilities, 24% of people live below the poverty line, 37% identify as Black, and 17% identify as Hispanic."[69] In particular, such facilities are "concentrated in Texas (13) and Louisiana (14), especially near

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[61] 2019 AirToxScreen.
[62] Dorceta Taylor, *Toxic Communities: Environmental Racism, Industrial Pollution, and Residential Mobility* 82–88 (2014); *id.* at 89 (discussing how property values surrounding hazardous waste sites in Toledo fell "fell by about $12,100 per mile from each waste site"); *id.* at 90 ("Almost 20% of [New Jersey tax assessors] reported that close proximity to hazardous waste sites depressed property values, and the effects were most pronounced within a quarter-mile radius of the sites.")
[63] 15 U.S.C. §§ 2602(12), 2605(b)(4)(A).
[64] 88 Fed. Reg. at 49,210.
[65] *Id.* at 49,211.
[66] *Id.*; Ambient Air Pathway at 11.
[67] 88 Fed. Reg. at 49,210.
[68] 15 U.S.C. § 2605(a), (b)(4)(A).
[69] Economic Analysis at ES-14.

Houston (6) and Baton Rouge (12), in areas with high Air Toxics Cancer Risk."[70] Harris County, Texas—where chemical plants in Baytown, Deer Park, and La Porte release carbon tetrachloride—has a preexisting Air Toxics Cancer Risk of 36 cases per million, which is in the 95th–100th percentile nationally.[71] Jefferson County, Texas—home to a Port Arthur incinerator and waste disposal facility that releases carbon tetrachloride—faces an Air Toxics Cancer Risk of 28 per million, also between the 95th to 100th percentile nationally.[72] And in the Baton Rouge, Louisiana metropolitan area, there are 12 carbon tetrachloride-releasing facilities spanning three counties where the Air Toxics Cancer Risk is between the 90th to100th percentile nationally.[73]

C. The Proposed Rule Violates TSCA's Mandate to Eliminate Unreasonable Risks to Fenceline Communities

All of the foregoing communities have both "greater exposure" to carbon tetrachloride than the general population and "greater susceptibility" due to their cumulative exposures to other chemicals and non-chemical stressors.[74] They are thus among the "potentially exposed or susceptible subpopulation[s]" that EPA is required to consider and protect under TSCA.[75] But the Proposed Rule does nothing to reduce fenceline community risks, much less regulate carbon tetrachloride "to the extent necessary so that the chemical substance or mixture no longer presents [unreasonable] risk."[76]

Unlike prior risk management rules, here EPA has not proposed to prohibit a single, ongoing use of carbon tetrachloride.[77] Nor has EPA proposed emissions limits or other regulations of fenceline community exposures. Instead, the Proposed Rule is entirely focused on the regulation of occupational exposures to carbon tetrachloride. The only reference to fenceline exposures in the Proposed Rule is a requirement that employers self-certify that the "exposure controls selected [to achieve EPA's Existing Chemical Exposure Limit ("ECEL")] do not increase emissions of carbon tetrachloride to ambient air outside of the workplace."[78] EPA has not proposed any stack- or fenceline-monitoring requirements to enforce this provision, leaving no way to measure employers' compliance. Even if they did comply, this provision does not: (1) require any reductions in existing fenceline community exposures and risks, or (2) prevent carbon tetrachloride emissions from increasing for reasons other than ECEL compliance, such as the projected increase in the manufacturing of carbon tetrachloride over the coming years.[79]

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[70] *Id.*
[71] *Id.* at 28–29.
[72] *Id.* at 29.
[73] *Id.*
[74] 15 U.S.C. § 2602(12).
[75] *Id.*
[76] *Id.* § 2605(a).
[77] EPA did propose a prohibition on certain uses that EPA found are not currently ongoing.
[78] 88 Fed. Reg. at 49,225.
[79] *Id.* at 49,213.

It is deeply concerning that, instead of addressing carbon tetrachloride's unreasonable risks to fenceline communities, EPA attempts to move the goalposts and declare all of the foregoing risks to be reasonable. Abandoning its longstanding 1-in-1,000,000 cancer risk benchmark for fenceline communities, EPA now claims that the cutoff for unreasonable risk is some undefined level between 1-in-10,000 and in 1-in-1,000,000.[80] But, according to EPA, the original 1-in-1,000,000 cancer risk benchmark is "consistent with Agency-wide practice" and "an appropriate risk [threshold] for the general population."[81] And in its fenceline assessment methodology under TSCA, which EPA applied when calculating carbon tetrachloride's fenceline risks, EPA identified 1-in-1,000,000 as the sole benchmark for the general population and fenceline communities.[82] EPA has identified no reason to change that widely used threshold, and even if it could switch targets now, EPA calculated fenceline community risks up to 2-in-10,000, double the highest risk permitted under its new, less-protective range of unreasonable risk thresholds.[83]

EPA solicits comment on its "expectation that this proposed action in combination with the emissions standards resulting from existing [National Emission Standards for Hazardous Air Pollutants ("NEHSAP")] requirements would reduce risk sufficiently to the general population and fenceline communities."[84] EPA's own risk calculations belie that expectation. Despite significantly underestimating fenceline community exposures, EPA still calculated risks exceeding all possible unreasonable risk thresholds. Moreover, those risks were calculated using self-reported, industry release data that take existing NESHAP requirements into account. The TRI data used in EPA's fenceline assessments thus already include any emissions controls required by the Clean Air Act. And EPA has not proposed any measures that would reduce fenceline exposures; if anything, the Proposed Rule would allow such exposures and risks to increase. EPA's expectation that the rule—either alone or in conjunction with existing regulations—would somehow eliminate carbon tetrachloride's unreasonable risks to fenceline communities is baseless.

IV. THE PROPOSED RULE FAILS TO ELIMINATE UNREASONABLE RISKS TO WORKERS

A. The Proposed ECEL Leaves Workers Exposed to Unreasonable Risks

To address carbon tetrachloride's occupational risks, EPA proposes reliance on a Workplace Chemical Protection Program ("WCPP"), comprised of (1) an ECEL that would limit occupational exposures to 0.03 parts-per-million ("ppm") over an eight-hour time-weighted

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[80] *Id.* at 49,210.
[81] EPA, *Methodology for Deriving Ambient Water Quality Criteria for the Protection of Human Health* 2-6 (Oct. 2000), https://www.epa.gov/sites/production/files/2018-10/documents/methodology-wqc-protection-hh-2000.pdf.
[82] EPA, *Draft TSCA Screening Level Approach for Assessing Ambient 19 Air and Water Exposures to Fenceline Communities Version 1.0*, at 62, 91 (Jan. 2022), https://www.epa.gov/system/files/documents/2022-01/draft-fenceline-report_sacc.pdf
[83] 88 Fed. Reg. at 49,211.
[84] *Id.* at 49,212.

average, and (2) a prohibition on "direct dermal contact" with carbon tetrachloride.[85] In addition to failing to protect those outside the workplace, the Proposed Rule would not eliminate unreasonable risks to all exposed workers, in violation of TSCA section 6(a).[86]

First, EPA questions whether facilities would even be able to monitor exposures down to the level of the ECEL, much less ensure compliance with that proposed limit. According to EPA, "the regulated community may have difficulty measuring at or below the ECEL consistently over an entire work shift."[87] If industry cannot consistently measure down to the level of the ECEL, then they cannot monitor compliance or ensure that workers are being adequately protected. In prior risk management rules, EPA cited "uncertainty whether the requirements of the WCPP could be implemented successfully" as a basis to prohibit a condition of use.[88] Here, EPA admits that it does not know whether *any* entity can conduct the monitoring required to implement the ECEL, yet it has still allowed all current uses of carbon tetrachloride to continue, leaving workers exposed to potentially unreasonable risk.

Second, to the extent that companies do comply with the ECEL, EPA permits them to do so through the use of personal protective equipment, a disfavored method of control that does not ensure the protection of all exposed workers. EPA claims to require adherence to the "hierarchy of controls," stating "the use of respirators and dermal PPE should only be considered after all other steps have been taken to reduce exposures."[89] But EPA's analysis of the Proposed Rule's economic impacts "assumes that PPE is used"[90] to achieve the ECEL, and industry has claimed that reliance on PPE is a "standard operating procedure" in facilities where carbon tetrachloride is manufactured and used.[91] With the exception of one use, EPA has not found that engineering and administrative controls could eliminate carbon tetrachloride's risks without the use of PPE, and, unlike prior risk management proposals, EPA's alternative to the Proposed Rule is not a requirement of engineering controls but rather a broad PPE mandate.[92] But respiratory PPE presents "problems with adequate facial fit, increased heat stress, reduced vision, increased breathing resistance, speech limitation, limited mobility, and excess weight," all which interfere with its use and effectiveness.[93] Moreover, not all workers are adequately protected by respirators, since "[i]ndividuals with impaired lung function due to asthma, emphysema, or

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[85] *Id.* at 49,181.
[86] *See* 15 U.S.C. § 2605(a).
[87] 88 Fed. Reg. at 49,195.
[88] *See, e.g.,* Methylene Chloride; Regulation Under the Toxic Substances Control Act (TSCA), 88 Fed. Reg. 28,284, 28,310 (proposed May 3, 2023).
[89] 88 Fed. Reg. at 49,186.
[90] Economic Analysis at 3-7 (calculating costs of WCPP compliance and "assum[ing] that PPE is used").
[91] Halogenated Solvents Indus. All., *SOPs for Personal Protection at CTC Manufacturing Sites*, https://www.regulations.gov/document/EPA-HQ-OPPT-2020-0592-0097 (last visited Sept. 6, 2023).
[92] 88 Fed. Reg. at 49,204.
[93] *See ASARCO, Inc. v. OSHA*, 746 F.2d 483, 496 n.27, 497 (9th Cir. 1984); *see* also Methylene Chloride and N-Methylpyrrolidone; Regulation of Certain Uses Under TSCA Section 6(a), 82 Fed. Reg. 7464, 7481 (proposed Jan. 19, 2017).

chronic obstructive pulmonary disease . . . may be physically unable to wear [them]."[94] EPA also allows companies to comply with the Proposed Rule's "direct dermal contact control" through the use of gloves,[95] even though EPA calculated unreasonable risks from dermal contact with carbon tetrachloride, including cancer risks up to 1-in-1,000, *even when the most protective gloves are worn.*[96] Any rule that permits reliance on respirators or gloves to manage occupational exposures will violate TSCA's requirement to eliminate carbon tetrachloride's unreasonable risks.

Third, the ECEL fails to protect workers who are exposed to carbon tetrachloride on and off the job, a fatal flaw when dealing with a chemical, such as carbon tetrachloride, that is "ubiquitous" in ambient air.[97] EPA set its proposed ECEL based on the cancer risk calculations in the carbon tetrachloride risk evaluation, which assumed that workers would be exposed to carbon tetrachloride from a single condition of use, via a single exposure route and pathway.[98] But those are not factually supported or realistic assumptions. Given how widespread carbon tetrachloride is in the environment, many people who are exposed to carbon tetrachloride on the job will also be exposed when they leave their workplace, and people who live close to where they work may face even greater air exposures. EPA's failure to consider those increased exposures violates TSCA's obligation to evaluate and eliminate unreasonable risks to potentially exposed or susceptible subpopulations.

Fourth, unlike other agencies' carbon tetrachloride standards, the ECEL does not protect against short-term exposures to carbon tetrachloride. OSHA's carbon tetrachloride rule establishes duration-specific exposure limits: an eight-hour Permissible Exposure Limit, a five-minute limit for shorter term occupational exposures, and a limit on "peak" exposures to carbon tetrachloride of any duration.[99] OSHA has thus recognized that peak and short-term exposures may harm workers even if a facility complies with the eight-permissible exposure limit. Similarly, the American Conference of Governmental and Industrial Hygienists ("ACGIH") has established separate eight-hour and 15-minute threshold limit values ("TLVs") for carbon tetrachloride.[100] Yet EPA's Proposed Rule only regulates eight-hour exposures, leaving workers exposed to acute harm from spikes in exposure.

Fifth, the ECEL is based on an under-protective cancer risk benchmark, leaving workers exposed to up to 100 times greater cancer risks than any other population. In setting the ECEL, EPA used a cancer risk threshold of 1-in-10,000, as opposed to the 1-in-1,000,000 threshold that EPA typically uses for consumers and the general public. As described in prior comments, this

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[94] 82 Fed. Reg. at 7481.
[95] 88 Fed. Reg. at 49,199.
[96] Carbon Tetrachloride Final Risk Evaluation at 207.
[97] ATSDR Tox. Profile at 187.
[98] EPA, *Existing Chemical Exposure Limit (ECEL) for Occupational Use of Carbon Tetrachloride* 2–3 (Feb. 9, 2021) ("ECEL for Occupational Use"), https://www.regulations.gov/document/EPA-HQ-OPPT-2020-0592-0113..
[99] OSHA, *Carbon Tetrachloride (Tetrachloromethane)*, OSHA: Occupational Chem. Database, https://www.osha.gov/chemicaldata/844 (last visited Sept. 6, 2023).
[100] *Id.*

double standard is arbitrary, capricious, and predicated on a misreading of National Institute for Occupational Safety and Health guidance.[101] The SACC has also questioned EPA's "[d]ecision that assumes the target cancer risk of less than [1-in-10,000] is an acceptable risk for occupational users when other programs threshold risks at [1-in-100,000 or 1-in-1,000,000]."[102] There is no reason to subject workers to cancer risks that are unacceptable for the consumer and the general population.

Finally, the ECEL fails to protect workers who are exposed to carbon tetrachloride as a byproduct.[103] EPA explains this exclusion by stating such exposures were "not evaluated in the 2020 Risk Evaluation for Carbon Tetrachloride" and that "EPA anticipates that any risks presented by the presence of [carbon tetrachloride] generated as byproduct during the manufacture of 1,2-dichloroethane [are] being assessed in the risk evaluation for 1,2-dichloroethane."[104] Neither of those reasons justifies leaving workers exposed to potentially unreasonable risks. EPA's failure to consider byproducts in its carbon tetrachloride risk evaluation was unlawful and contrary to the approach taken in EPA's recent supplement to its 1,4-dioxane risk evaluation.[105] By doubling down on the risk evaluation's flaws in its Proposed Rule, EPA renders its rule under-protective and subject to legal challenge. Moreover, even if EPA does plan to address the formation of carbon tetrachloride as a byproduct in the 1,2-dichloroethane risk evaluation, that would not address the carbon tetrachloride that is created and released during the creation of other chemicals, most of which are not undergoing risk evaluation under TSCA. EPA has not explained if or when the remainder of carbon tetrachloride's byproduct exposures will be addressed.

B. For Any Uses of Carbon Tetrachloride That Are Not Phased Out, EPA Must Resist Industry's Efforts to Weaken the Proposed ECEL

To fully eliminate carbon tetrachloride's unreasonable risks, as TSCA requires, EPA must phase out the use of carbon tetrachloride. For any uses that cannot be eliminated in the near term, however, EPA must resist industry's efforts to weaken the proposed ECEL. The American

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[101] Christine Whittaker et al., NIOSH, *Current Intelligence Bull. 68, NIOSH Chemical Carcinogen Policy* 20 (July 2017), https://www.cdc.gov/niosh/docs/2017-100/pdf/2017-100.pdf ("[F]or most carcinogens, there is no known safe level of exposure. . . . NIOSH will continue to recommend that employers reduce worker exposure to occupational carcinogens as much as possible through the hierarchy of controls, most importantly elimination or substitution of other chemicals that are known to be less hazardous."); Labor Comments at 3.

[102] TSCA Science Advisory Committee on Chemicals, *Meeting Minutes and Final Report No. 2020-02: Peer Review for EPA Draft Risk Evaluation for N-Methylpyrrolidone (NMP)* 91 (Mar. 5, 2020), https://www.regulations.gov/document/EPA-HQ-OPPT-2019-0236-0066.

[103] 88 Fed. Reg. at 49,194 ("EPA is proposing to exclude from WCPP requirements for manufacturers those workplaces that manufacture [carbon tetrachloride] solely as a byproduct.").

[104] *Id.* at 49,190.

[105] EPA, *Draft Supplement to the Risk Evaluation for 1,4-Dioxane* 19 (July 2023), https://www.epa.gov/system/files/documents/2023-07/1.%20Draft%20Supplement%20to%20the%20Risk%20Evaluation%20for%2014-Dioxane%20-%20public%20release%20-%20hero%20-%20July%202023.pdf.

Chemistry Council has complained that EPA's proposed ECEL is significantly "lower that the limit established by the Occupational Safety and Health Administration (OSHA)."[106] That disparity says far more about the shortcomings of OSHA's 50-year-old, admittedly unprotective, ECEL than it does about the Proposed Rule. OSHA found that "occupational exposure to carbon tetrachloride at the former 10-ppm [permissible exposure limit] presents a significant risk of cancer to workers (13.9 cancer deaths per 1,000 workers)."[107] OSHA's own risk calculations support an ECEL that is several orders of magnitude below the existing PEL, as EPA has proposed.

Industry also complains that, instead of using benchmark dose modeling to calculate carbon tetrachloride's risks and the resulting ECEL, EPA "used an additional 10× uncertainty factor for extrapolating from a lowest-observed-adverse-effect-concentration (LOAEC) to a no-observed-adverse-effect-concentration."[108] But the use of a lowest-observed-adverse-effect-level ("LOAEL") to calculate risk when EPA lacks a no-observed-adverse-effect-level ("NOAEL") or a benchmark dose, and the application of a LOAEL-to-NOAEL uncertainty factor, are widely accepted risk evaluation practices.[109] Moreover, EPA often applies a similar uncertainty factor even when using benchmark dose modeling to calculate risks.[110] Finally, there is no evidence that the benchmark dose modeling requested by industry would support a weaker ECEL. Benchmark dose modeling does not merely involve the removal of an uncertainty factor; instead, EPA would need to calculate a new benchmark dose at a level below the LOAEL used in its ECEL calculations. With or without benchmark dose modeling, there is no basis to weaken the proposed ECEL.

V. THE PROPOSED RULE FAILS TO ELIMINATE UNREASONABLE RISKS TO THE ENVIRONMENT

In its risk evaluation, EPA improperly dismissed carbon tetrachloride's risks to the environment by ignoring several sources of environmental risk and understating others. As a result, the Proposed Rule does not regulate carbon tetrachloride's unreasonable risks to the ozone

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[106] Am. Chem. Council, *Carbon Tetrachloride: Critical Building Block*, https://www.americanchemistry.com/content/download/12954/file/Carbon%20Tetrachloride%20Critical%20Building%20Block.pdf (last visited Aug. 27, 2023).
[107] Air Contaminants, 54 Fed. Reg. 2332, 2681 (Jan. 19, 1989).
[108] *EPA Will Propose to Ban Uses of CTC That Have Been Phased Out and Establish WCPP for Uses Not Prohibited*, Bergeson & Campbell PC (July 26, 2023), https://www.lawbc.com/regulatory-developments/entry/epa-will-propose-to-ban-uses-of-ctc-that-have-been-phased-out-and-establish.
[109] EPA, *A Review of the Reference Dose and Reference Concentration Processes* 4–44 (Dec. 2002), https://www.epa.gov/sites/default/files/2014-12/documents/rfd-final.pdf.
[110] *See, e.g.*, EPA, *Toxicological Review of Benzene (Noncancer Effects)*, at xiv (Oct. 2002), https://iris.epa.gov/static/pdfs/0276tr.pdf ("Because the [benchmark concentration] is considered to be an adverse-effect level, an effect-level extrapolation factor analogous to the LOAEL-to-NOAEL UF was used.")

layer, the global climate, and to non-human species. Each of these oversights violates TSCA's requirement to ensure the elimination of carbon tetrachloride's unreasonable risks.

C. The Proposed Rule Does Not Consider or Address the Environmental and Health Risks from Carbon Tetrachloride's Depletion of the Ozone Layer

Carbon tetrachloride "is an ozone-depleting substance,"[111] which is singularly responsible for an estimated 12 percent of the globally averaged chlorine and bromine in the stratosphere.[112] While carbon tetrachloride is regulated under the Montreal Protocol on Substances that Deplete the Ozone Layer and Title VI of the Clean Air Act,[113] it remains a major contributor to ozone depletion.[114] Many carbon tetrachloride emissions are not regulated under the Clean Air Act, including its use in chemical manufacturing and other so-called "non-dispersive" uses.[115]

In its risk evaluation and Proposed Rule, however, EPA "did not evaluate" the risks associated with carbon tetrachloride's ozone depletion, or determine whether such risks are unreasonable risks.[116] This omission violates TSCA, which broadly defines risk to the "environment" to include "water, air, and land and the interrelationship which exists among and between water, air, and land and all living things."[117] Without "determin[ing]" whether carbon tetrachloride "presents an unreasonable risk of injury to health or the environment" due to ozone depletion, EPA cannot comply with TSCA's mandate to fully eliminate such risks.[118]

EPA claims that it did not evaluate carbon tetrachloride's releases to ambient air "because stationary source releases of carbon tetrachloride to ambient air are under the jurisdiction of Section 112 of the CAA."[119] But, just as carbon tetrachloride's regulation under the Clean Air Act does not rule out the possibility of unreasonable risks to fenceline communities, it also does not rule out the possibility of unreasonable risks from ozone depletion.

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[111] 88 Fed. Reg. at 49,212.
[112] Env't NGO Comments at 9.
[113] *Id.*
[114] *See* Energy Investigation Agency, Comments on Draft Risk Evaluation for Carbon Tetrachloride, Docket No. EPA-HQ-OPPT_2019-0499 (Feb. 19, 2020) ("EIA Risk Evaluation Comments"), https://static.us.eia.org/pdfs/EIA-comments-EPA-Gaps-in-Clean-Air-Act.pdf?_gl=1*1ew59k0*_ga*MTY4NjI5ODcwLjE2OTMxMTExNzQ.*_ga_WYHNPNQWXX*MTY5MzExMTE3My4xLjEuMTY5MzExMTE3NC4wLjAuMA.
[115] Q. Liang et al., Stratosphere-Troposphere Processes and Their Role in Climate, *SPARC Report on the Mystery of Carbon Tetrachloride* (July 2016), https://www.wcrp-climate.org/WCRP-publications/2016/SPARC_Report7_2016.pdf.
[116] 88 Fed. Reg. at 49,212.
[117] 15 U.S.C. § 2602(6) (defining "environment").
[118] *Id.* § 2605(a).
[119] EPA, *Summary of External Peer Review and Public Comments and Disposition for Carbon Tetrachloride* 38 (Oct. 2020), https://www.epa.gov/sites/default/files/2020-10/documents/2_ccl4_summary_external_peer_review_public_comments_disposition_for_carbon_tetrachloride.pdf.

Contrary to EPA's claim, section 112 of the Clean Air Act does not regulate ozone depletion at all, and Title VI of the Clean Air Act, which addresses ozone depletion, does not regulate the use of carbon tetrachloride as an industrial feedstock and chemical intermediary.[120] But carbon tetrachloride is widely used as a feedstock or intermediary in the manufacturing of HFCs, HFOs, perchloroethylene ("PCE"), and other chemicals, and those uses continue to impede the recovery of the ozone layer even after the "dispersive" uses of carbon tetrachloride have been largely phased out.[121] To comply with its TSCA obligations, EPA must consider carbon tetrachloride's depletion of the ozone layer and take action to address any associated, unreasonable risks.

D. The Proposed Rule Does Not Consider or Address the Environmental and Health Risks from Carbon Tetrachloride's Contributions to Climate Change

EPA also failed to address carbon tetrachloride's contributions to global climate change, another source of severe environmental harm. Carbon tetrachloride is a "potent greenhouse gas,"[122] with a global warming potential ("GWP") 1,730 times greater than that of carbon dioxide.[123] The Biden Administrative has warned that "[t]here is little time left to avoid setting the world on a dangerous, potentially catastrophic, climate trajectory," an existential threat to human health and the environment.[124] EPA also found that "the impacts of climate change will not be equally distributed across the U.S. population."[125] "Black . .. individuals are 40% more likely than non-Black . . . individuals to currently live in areas with the highest projected increases in mortality rates due to climate-driven changes in extreme temperatures."[126] Similarly, "Latino individuals are 43% more likely than non-Hispanic and non-Latino individuals to currently live in areas with the highest projected labor hour losses in weather-exposed industries due to climate-driven increases in high-temperature days."[127] EPA has acknowledged that it has authority to regulate greenhouse gases under TSCA, as well as its obligation to address any unreasonable risks that such gases pose to human health or the environment.[128] Yet EPA failed to consider climate in its carbon tetrachloride risk evaluation or the Proposed Rule.

Here, too, EPA asserts that the Clean Air Act's "[hazardous air pollutant] provisions

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[120] EIA Risk Evaluation Comments at 2; 40 C.F.R. § 82.3 (defining "production").
[121] Hu et al., *supra* note 20.
[122] *Id.*
[123] 88 Fed. Reg. at 49,212.
[124] Exec. Order 14,008, 86 Fed. Reg. 7619, 7619 (Jan. 27, 2021).
[125] EPA, *Climate Change and Social Vulnerability in the United States* 9 (Sept. 2021), https://www.epa.gov/system/files/documents/2021-09/climate-vulnerability_september-2021_508.pdf.
[126] *Id.* at 6.
[127] *Id.*
[128] *Reponses to Additional Questions for the Record, TSCA and Public Health: Fulfilling the Promise of the Lautenberg Act, Hearing Before H. Subcomm. on Env't & Climate Change* 66–67 (Oct. 27, 2021) (statement of Michal Freedhoff, Adm'r, EPA), https://docs.house.gov/meetings/IF/IF18/20211027/114176/HHRG-117-IF18-Wstate-FreedhoffPhDM-20211027-SD001.pdf.

already account for . . . climate change."[129] But EPA recently denied a petition seeking to address global warming under Section 112, asserting that "Clean Air Act section 112 does not permit the Administrator to list greenhouse gas[es] as a HAP."[130] While carbon tetrachloride is listed as a hazardous air pollutant its emissions standards under the Clean Air Act were: (1) not established with climate change in mind, and (2) set, at least initially, based on available control technology as opposed to the elimination of unreasonable risk.[131] Moreover, even if EPA had considered greenhouse gas emissions when setting those standards, TSCA would still require EPA to determine whether carbon tetrachloride's ongoing contributions to climate change present unreasonable risks to human health or the environment, and, if so, to address such risks in the Proposed Rule.

E. The Proposed Rule Does Not Address Carbon Tetrachloride's Risks to Aquatic and Terrestrial Species

The Proposed Rule does not address carbon tetrachloride's risks to any non-human species. While EPA claims that it "did not identify risks of injury to the environment that would drive the unreasonable risk determination for carbon tetrachloride,"[132] those findings are the product of a flawed risk evaluation that ignored carbon tetrachloride's impacts on many species and dismissed EPA's own calculations of unreasonable risks to others.[133]

First, EPA unlawfully excluded terrestrial species from the risk evaluation, despite acknowledging that "[t]errestrial species populations living near industrial/commercial facilities using carbon tetrachloride may be exposed via multiple routes such as ingestion of surface waters and inhalation of outdoor air."[134] EPA asserts that "other EPA-administered statutes . . . adequately assess and effectively manage"[135] such risks, without identifying those statutes or attempting to calculate the extent of their reductions in risk.

Second, EPA unlawfully excluded sediment-dwelling species from the carbon tetrachloride risk evaluation, claiming that "[c]arbon tetrachloride is not expected to partition to or be retained in sediment and is expected to remain in aqueous phase due to its water solubility . . . and low partitioning to organic matter."[136] But carbon tetrachloride has been detected in

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[129] EPA, *Summary of External Peer Review and Public Comments and Disposition for Carbon Tetrachloride* 38 (Oct. 2020), https://www.epa.gov/sites/default/files/2020-10/documents/2_ccl4_summary_external_peer_review_public_comments_disposition_for_carbon_tetrachloride.pdf.

[130] Letter from EPA, to Kassie Siegel et al., Ctr. for Biological Diversity et al. 15 (Jan. 19, 2021), https://www.biologicaldiversity.org/programs/climate_law_institute/pdfs/21-01-19-GHG-NAAQS-Petition-Denial-2021-01-19.pdf (responding to petition).

[131] *See* Env't NGO Comments at 35.

[132] Carbon Tetrachloride Risk Determination at 11.

[133] *See* Env't NGO Comments at 35–36.

[134] EPA, *Draft Risk Evaluation for Carbon Tetrachloride* 51 (Jan. 2020), https://www.regulations.gov/document/EPA-HQ-OPPT-2019-0499-0014.

[135] *Id.*

[136] *Id.* at 145.

sediment throughout the United States, including at more than 20 federal Superfund sites.[137] Benthic invertebrates and other sediment-dwelling species will be exposed to carbon tetrachloride, yet EPA never considered or addressed the risks associated with those exposures.

For aquatic species, EPA calculated an acute risk quotient ("RQ") above 1.0, indicating unreasonable risks. EPA attributes that risk to an "accidental spill/release of carbon tetrachloride,"[138] but TSCA does not permit EPA to ignore environmental risks merely because they were not intended. Instead, EPA must consider known and reasonably foreseen spills and releases are among of the conditions of use that EPA is required to evaluate and address under TSCA.

Finally, EPA calculated multiple RQs above 1.0 for amphibians, including unreasonable risk to amphibian reproductive and development.[139] EPA even confirmed that, at four facilities, the releases giving rise to those risks "occur during time periods relevant to amphibian development."[140] EPA refused to classify those risks as unreasonable or to address them in the Proposed Rule because "it is not possible to predict with any certainty whether risk will or will not occur during months key to amphibian development in future years."[141] But certainty about the timing of future releases is neither required nor achievable under TSCA; instead, EPA must use "[r]easonably available information" about past releases to evaluate "the circumstances . . . under which a chemical substance is intended, known, or reasonably foreseen to be manufactured, processed, distributed in commerce, used, or disposed of."[142] Here, EPA appropriately used the timing and amount of past carbon tetrachloride releases to calculate unreasonable risks to amphibians, and it has not provided any reason to conclude that such releases are not "reasonably foreseen" to continue.

EPA does not need to reopen the carbon tetrachloride risk evaluation to address the foregoing environmental risks. But EPA must consider those risks as part of its section 6(c)(2) analysis of "the effects of . . . [carbon tetrachloride] on the environment and the magnitude of the exposure of the environment" and take that analysis into account when deciding between risk management options.[143]

VI. THE PROPOSED RULE LEAVES OTHER, POTENTIALLY UNREASONABLE RISKS WHOLLY UNREGULATED

A. The Proposed Rule Incentivizes New and Expanded Uses of Carbon Tetrachloride Without Considering Their Risks

[137] ATSDR Tox. Profile at 189–90.
[138] Carbon Tetrachloride Final Risk Evaluation at 309 tbl. E-2.
[139] *Id.* at 250–51.
[140] *Id.* at 250.
[141] Carbon Tetrachloride Risk Determination at 10.
[142] 15 U.S.C. §§ 2602(4), 2625(k).
[143] *Id.* § 2605(c)(2)(A)(ii).

All of EPA's recently proposed risk management rules before this one share a similar structure: EPA enumerated conditions of use that were permitted to continue (if any) and prohibited all other uses of the chemical.[144] This approach is consistent with EPA's findings that the chemical substances at issue—methylene chloride and perchloroethylene—present unreasonable risk "as a whole chemical," and it prevents the introduction of new uses or resumption of old ones without a regulatory amendment. While EPA made the same "whole chemical" unreasonable risk determination for carbon tetrachloride, it proposed the opposite risk management approach. Instead of banning uses that are not expressly permitted, the Proposed Rule enumerates conditions of use that will be prohibited or regulated using a WCPP and leaves all other uses unregulated.[145]

There is no basis for this change, which invites companies to introduce new uses of carbon tetrachloride that evade regulation under TSCA and to continue uses that have fallen through the cracks of EPA's risk evaluation and Proposed Rule. This is not an idle concern; carbon tetrachloride is part of a class of chlorinated solvents—along with methylene chloride, trichloroethylene, and PCE—that serve similar functions and are often used as substitutes for each other. For instance, the American Fuel & Petrochemical Manufacturers has identified carbon tetrachloride as a potential substitute for the use of PCE as a catalyst regenerator in petroleum refineries,[146] and EPA's own alternatives analysis for PCE identified commercial available catalyst regenerators that "used carbon tetrachloride . . . as their functional ingredient[]."[147] Yet this condition of use was not mentioned in the carbon tetrachloride risk evaluation and is not regulated under the Proposed Rule. If EPA finalizes the PCE and carbon tetrachloride risk management rules as currently drafted, refineries that use PCE to regenerate catalysts will be subject to the PCE ECEL, but if they switch to carbon tetrachloride the use may

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[144] *See* Methylene Chloride; Regulation Under the Toxic Substances Control Act (TSCA), 88 Fed. Reg. 28,284, 28,341 (proposed May 3, 2023) (prohibiting all consumer, commercial and industrial use of methylene chloride "other than the conditions of use addressed" under a WCPP); Perchloroethylene (PCE); Regulation Under the Toxic Substances Control Act (TSCA), 88 Fed. Reg. 39,652, 39,717 (proposed June 16, 2023) (prohibiting "all consumer use" of perchloroethylene and "[a]ll . . . industrial and commercial use, except for" those authorized pursuant to a WCPP).

[145] *Compare* 88 Fed. Reg. at 28,341, *with* 88 Fed. Reg. at 49,223; *compare* 88 Fed Reg. at 39,717, *with* 88 Fed. Reg. at 49,223.

[146] Am. Fuel & Petrochemical Mfrs.' & Am. Petroleum Inst., Comments on Draft Revision to Draft Revision to TSCA Risk Determination for Perchloroethylene, Docket No. EPA-HQ-OPPT-2020-0720-0085, at 3 (Aug. 1, 2022), https://www.regulations.gov/document/EPA-HQ-OPPT-2020-0720-0085.

[147] EPA, *An Alternatives Assessment for Use of Perchloroethylene* 40 (Jan. 2023), https://www.regulations.gov/document/EPA-HQ-OPPT-2020-0720-0104; *see also* EPA, *An Alternatives Assessment for Use of Perchloroethylene App. A: Screening Results of Alternative Products* 131 (Jan. 2023), https://www.regulations.gov/document/EPA-HQ-OPPT-2020-0720-0104 (scroll down to the attachment titled "Appendix A: Screening Results of Alternative Products"; and then click "Download").

not be subject to the carbon tetrachloride ECEL or otherwise regulated under TSCA.[148] Instead of incentivizing this regrettable substitution and other new uses of carbon tetrachloride, EPA should maintain its ordinary approach of prohibiting uses that are not expressly authorized under the Proposed Rule.

B. The Proposed Rule Fails to Consider or Address the Risks Associated with Consumer Exposures to Carbon Tetrachloride

EPA "did not evaluate unreasonable risk to consumers" from carbon tetrachloride, or take any steps to address consumer risks, because "the Consumer Product Safety Commission [("CPSC")] banned the use of carbon tetrachloride in consumer products . . . in 1970."[149] But the CPSC prohibition permits the sale and use of products containing carbon tetrachloride "residues not exceeding 10 ppm," which is far higher than the concentrations that EPA found present unreasonable risks to workers.[150] Moreover, the Safety Data Sheets for cleaning products and adhesives that are available to consumers list carbon tetrachloride as an impurity or ingredient.[151]

EPA admits that "trace amounts of residual carbon tetrachloride could be present in commercially available solvents for cleaning and degreasing, adhesives and sealants or paints and coatings." [152] EPA claims that "industrial, commercial, and consumer use of such products . . . would present only de minimis exposure or otherwise insignificant risk," but it cites nothing in the risk evaluation or the Proposed Rule that supports that conclusory assertion.[153] Unlike the PCE risk management rule, here EPA did not assess the levels of carbon tetrachloride present in consumer or commercial products, and it did not calculate the maximum weight fraction that would avoid unreasonable risk from the use of those products.[154] Nor did EPA evaluate the risks associated with carbon tetrachloride levels that have been detected in indoor air following the use of products like chlorine bleach,[155] which were more than two orders of magnitude higher than the exposure levels that EPA found to present unreasonable risks to workers.[156] Instead, the Proposed Rule leaves consumers and workers exposed to undetermined amounts of carbon tetrachloride, without any consideration of the accompanying risks. EPA's cursory dismissal of

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[148] To the extent that EPA believes that "industrial and commercial use as a processing aid in catalyst regeneration" is covered by any of the conditions of use enumerated in the Proposed Rule, it should state so expressly, as it has in its proposed risk management rule for PCE. 88 Fed. Reg. at 39,665.
[149] Carbon Tetrachloride Final Risk Evaluation at 25, 27.
[150] *Id.* at 27.
[151] Env't NGO Comments at 18–19.
[152] Carbon Tetrachloride Final Risk Evaluation at 12–13, 18.
[153] *Id.*
[154] *Compare id.*, *with* 88 Fed. Reg. at 39,693, 39,698.
[155] Mustafa Odabasi, *Halogenated Volatile Organic Compounds from the Use of Chlorine-Bleach-Containing Household Products*, 42 Env't Sci. & Tech. 1445 (2008), https://pubs.acs.org/doi/10.1021/es702355u (detecting "very high concentrations (up to 101 mg/m3)" of carbon tetrachloride following the use of bleach).
[156] ECEL for Occupational Use at 2.

this known exposure pathway violates TSCA's requirement to ensure the elimination of carbon tetrachloride's unreasonable risks.

VII. EPA'S ECONOMIC ANALYSIS UNDERSTATES THE PROPOSED RULE'S BENEFITS AND IGNORES THE GREATER BENEFITS OF A MORE PROTECTIVE RULE

EPA's *Economic Analysis of the Proposed Regulation of Carbon Tetrachloride Under TSCA Section 6(a)* ("Economic Analysis") concludes that the regulatory costs associated with the Proposed Rule outweigh its quantified public health and environmental benefits.[157] As a threshold matter, this finding does not justify any weakening of the Proposed Rule, since nothing in TSCA requires EPA to select a risk management approach based on its cost effectiveness. Instead, TSCA directs EPA to eliminate carbon tetrachloride's unreasonable risks, with costs identified as just one of several factors that EPA must consider when deciding between approaches that satisfy that statutory mandate.[158] Even if EPA had comprehensively evaluated a proposed rule's costs and benefits and determined that the quantified costs were greater than the quantified benefits, EPA would still be free—and, in many circumstances, required—to select that option anyway.

But here EPA did not comprehensively evaluate the Proposed Rule's benefits, and it never even considered the greater benefits associated with a phase-out of carbon tetrachloride. The only health benefits that EPA quantified in its Economic Analysis were reduced adrenal and liver cancer incidence associated with carbon tetrachloride inhalation. "The risk evaluation identified other potential health effects of [carbon tetrachloride] exposure, including incidence of brain tumors and non-cancer end points such as hepatotoxicity, reproductive, renal, developmental, and central nervous system (CNS) toxicity," but "[t]he benefits for reducing other health risks associated with [carbon tetrachloride] exposure were not estimated."[159] In particular, EPA claims that the risk evaluation "does not provide the continuous dose-response function needed to quantify changes in incidence of non-cancer effects in exposed populations, and therefore . . . these effects cannot be quantitatively included in the benefit-cost analysis."[160] But EPA does not need to evaluate the benefits of its risk management rule using the same methodologies as its risk evaluation. Instead, EPA can use the toxicity and exposure information in the risk evaluation to conduct a probabilistic assessment of carbon tetrachloride's non-cancer effects, giving EPA the information it needs to monetize reductions in those harms. Indeed, a team of researchers recently did just that for PCE,[161] and the University of California San Francisco's Program on Reproductive Health and the Environment conducted a similar analysis for certain of carbon tetrachloride's non-cancer effects. Using that same approach, EPA should quantify and consider the non-cancer benefits of reduced carbon tetrachloride exposure.

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[157] Economic Analysis at ES-12.
[158] 15 U.S.C. § 2605(c)(2)(a), (c).
[159] Economic Analysis at ES-8.
[160] *Id.* at 4-21.
[161] Greylin H. Nielsen et al., *Application of Probabilistic Methods to Address Variability and Uncertainty in Estimating Risks for Non-cancer Health Effects*, 21 Env't Health Art. No. 129 (2023), https://doi.org/10.1186/s12940-022-00918-z.

EPA should also quantify benefits from reduced dermal exposures as well as inhalation. EPA claims that "[b]enefits from endpoints impacted by reduced dermal exposure, including adrenal and liver cancer and short-term liver effects, are not quantified" because "[t]here is not sufficient evidence to quantify the relationship between dermal exposure to [carbon tetrachloride] and these health endpoints."[162] In its carbon tetrachloride risk evaluation, EPA calculated the dermal points of departure and a cancer slope factor by extrapolating from inhalation studies and adjusting to account for the differences between inhalation and dermal exposures.[163] If EPA can use that dermal slope factor (8×10^{-2} per mg/kg-d) to calculate the relationship between dermal exposure to carbon tetrachloride and cancer risk, EPA does not explain why it could not use the same approach to calculate the benefits of reduced dermal exposures.

Finally, EPA's Economic Analysis uses flawed discount rates that understate the Proposed Rule's future benefits. EPA calculates the Proposed Rule's economic impacts using a 7 percent and a 3 percent discount rate without expressing any preference between the two.[164] But the Office of Management and Budget ("OMB") has raised concerns with any discounting of long-term or intergenerational harms,[165] such as carbon tetrachloride's chronic cancer risks. Moreover, even for intra-generational effects, OMB recommends a "default" discount rate of 1.7 percent, far lower than either of the discount rates used in the Economic Analysis.[166] EPA's excessive discounting of future benefits improperly diminishes the Proposed Rule's economic benefits. To the extent EPA does discount the rule's benefits, we urge EPA to use a rate of 1.7 percent or lower, consistent with OMB's latest guidance.

VIII. EPA MUST REVISE THE PROPOSED RULE TO COMPLY WITH TSCA AND ENSURE THE ELIMINATION OF CARBON TETRACHLORIDE'S UNREASONABLE RISKS

For the reasons set forth above, the Proposed Rule violates TSCA's core requirement to regulate carbon tetrachloride "to the extent necessary so that the chemical substance . . . no

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[162] Economic Analysis at ES-8.
[163] Cabon Tetrachloride Final Risk Evaluation at 160–61, 168.
[164] *See* Economic Analysis at ES-10.
[165] OMB, Proposed Circular A-4 on Regulatory Analysis 80–81 (Apr. 6, 2023) ("OMB Proposed Circular A-4"), https://www.whitehouse.gov/wp-content/uploads/2023/04/DraftCircularA-4.pdf ("Special ethical considerations arise when comparing benefits and costs across generations. Although most people demonstrate time preference in their own consumption behavior, which may vary by the good or service at hand, it may not be appropriate for society to demonstrate a similar preference when deciding between the well-being of current and future generations. . . . Some believe that it is ethically impermissible to discount the utility of future generations."); *see also* Frank Ackerman & Lisa Heinzerling, *Pricing the Priceless: Cost-Benefit Analysis of Environmental Protection*, 150 U. Pa. L. Rev. 1553, 1571 (2002), https://scholarship.law.upenn.edu/penn_law_review/vol150/iss5/6 (questioning the use of discounting to address long-term, intergenerational harms).
[166] *See* OMB Proposed Circular A-4 at 76.

longer presents [unreasonable] risks" to fenceline communities, workers, consumers, and the environment.[167] The rule fails to protect the communities who, according to EPA's own assessment, experience unacceptable cancer risks from their exposures to carbon tetrachloride and other carcinogens. It does nothing to address carbon tetrachloride impacts on ozone depletion, climate change, and other unreasonable environmental risks. It ignores the known presence of carbon tetrachloride in consumer products and creates a perverse incentive for the introduction of new carbon tetrachloride uses. And it does not eliminate unreasonable risks to workers, the sole use that EPA attempts to regulate.

TSCA authorizes, and in this case requires, a fundamentally different risk management approach. Instead of permitting all active uses of carbon tetrachloride to continue in perpetuity, without any limits on environmental releases or fenceline community exposures, EPA should phase out as many carbon tetrachloride uses as possible. To the extent there are critical uses that cannot be replaced in the near term, EPA can extend the phase-out period or grant time-limited exceptions pursuant to the TSCA section 6(g). As described below, this approach would result in a more health-protective, equitable, and legally defensible rule.

C. EPA Must Phase Out All Non-Essential Uses of Carbon Tetrachloride

EPA has broad authority to regulate carbon tetrachloride based on its 2020 risk evaluation and 2022 revised risk determination, which found unreasonable risk from carbon tetrachloride as a "whole chemical."[168] Some of the options for addressing the unreasonable risks identified by EPA—such as a broad carbon tetrachloride prohibition subject to limited section 6(g) critical use exemptions—would have the co-benefit of addressing the exposures and risks that EPA excluded from its risk evaluation, rendering the flaws in that evaluation harmless. In contrast, the Proposed Rule would double down on those flaws and leave unreasonable risks unaddressed.

Having found unreasonable risks from carbon tetrachloride as a whole, EPA "shall consider" the factors enumerated in TSCA section 6(c)(2) when deciding how to manage those risks.[169] Those statutory considerations include "the effects of the chemical substance on public health," "the magnitude of the exposure of human beings to the chemical substances," "the likely effect of the rule on . . . public health," and "the costs and benefits of the proposed and final regulatory action and of the 1 or more primary alternative regulatory action[]."[170] TSCA does not permit EPA to exclude any reasonably available information about the magnitude of a chemical's exposures or its effects on human health and the environment from the section 6(c)(2) analysis merely because the information was not quantified in EPA's risk evaluation. To the contrary, EPA has an independent obligation to consider those 6(c)(2) factors during the risk management process, including regulatory costs, benefits, and other "nonrisk factors" that EPA is precluded from considering during the risk evaluation process.[171] Where there is insufficient

[167] 15 U.S.C. § 2605(a).
[168] Carbon Tetrachloride Risk Determination at 19.
[169] *Id.* § 2605(c)(2)(A).
[170] *Id.*
[171] *Id.* § 2605(b)(4)(A)

information to conduct quantitative analyses of those factors, TSCA section 6(c)(2) allows EPA to consider and rely on qualitative assessments as well.[172]

When conducting the required section 6(c)(2) analysis for the Proposed Rule, EPA must consider not only the exposures and effects that it quantified in the carbon tetrachloride risk evaluation but also those that it unlawfully excluded. EPA's analysis of "effects of the chemical substance" and "the magnitude of . . . exposure" must include impacts on fenceline communities and the environment.[173] And EPA's consideration of the "the costs and benefits" of different regulatory options must consider the benefits of carbon tetrachloride reductions for fenceline communities and the environment, in addition to the worker benefits calculated by EPA.[174] Yet, despite OMB's recommendation that agencies analyze "at least one option that achieves additional benefits . . . beyond those realized by the proposed or finalized option,"[175] the sole alternative that EPA considered is even weaker than the Proposed Rule, replacing reliance on the hierarchy of controls with across-the-board PPE mandates. EPA never even considered the benefits of a more stringent rule that would phase out nonessential uses of carbon tetrachloride.

TSCA requires EPA to "factor in" the section 6(c)(2) considerations "to the extent practicable" when "selecting among prohibitions and other restrictions,"[176] but does not specify how EPA must weigh those considerations. Based on its existing unreasonable risk determination, EPA is free to determine that a broad phase-out is the best way of addressing carbon tetrachloride's unreasonable risks. Unlike the Proposed Rule, that approach would eliminate the unreasonable risks that EPA identified in its risk evaluation, while also rendering the gaps and deficiencies in that evaluation harmless.

In addition to satisfying TSCA's obligations, a broader phase-out of carbon tetrachloride is consistent with EPA's longstanding policy objectives. As the Second Circuit Court of Appeals recognized in upholding EPA's 2019 ban of consumer uses of methylene chloride paint strippers, chemical phase-outs promote the development and deployment of safer alternatives by "creat[ing] new business via alternative products and an evolving marketspace."[177] Upstream prohibitions are also "relatively easy to enforce because key requirements are directly placed on a small number of" manufacturers and suppliers, which "minimizes to the greatest extent the potential for [the chemical] to be intentionally or unintentionally misdirected into the prohibited uses."[178] In contrast, EPA's Proposed Rule relies on ECELs that depend on ongoing monitoring and inspections of thousands of workers at more than 70 facilities, without any discussion of

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[172] *Lab. Council for Latin Am. Advancement v. EPA*, 12 F.4th 234, 250 (2d Cir. 2021) (upholding EPA ban on consumer uses of methylene chloride paint strippers based in part on EPA's "qualitative assessments of the costs to retailers, distributors, and commercial end users").
[173] 15 U.S.C. § 2605(c)(2)(A)(i), (ii).
[174] *Id.* § 2605(c)(2)(A)(iv).
[175] OMB Proposed Circular A-4 at 22.
[176] 15 U.S.C. § 2605(c)(2)(B).
[177] *Lab. Council for Latin Am. Advancement*, 12 F.4th at 250–51 (2d Cir. 2021).
[178] *See* Trichloroethylene; Regulation of Certain Uses Under TSCA § 6(a), 81 Fed. Reg. 91,592, 91,607 (proposed Dec.16, 2016).

whether EPA has the resources to effectively enforce those workplace controls.[179] EPA's pollution prevention policies "make[] clear" that source reduction—including the substitution of toxic chemicals with safer alternatives—is EPA's "preferred" strategy for reducing chemical risks.[180] Similarly, the hierarchy of controls that EPA endorses in the Proposed Rule prioritizes "elimination" and "substitution" as the most effective means of addressing occupational risks.[181] In prior risk management rules, EPA has stated that "prohibition is the preferred option . . . when feasible safer alternatives are reasonably available."[182] Here, there are feasible substitutes to carbon tetrachloride, and a broad carbon tetrachloride ban, subject to statutorily authorized section 6(g) exemptions, would incentivize their development and deployment.

Industry has argued that a prohibition is not "necessary" to address uses of chemicals that can be managed through other, less restrictive means and is thus barred by TSCA's requirement to regulate chemicals "to the extent necessary so that . . . [it] no longer presents [unreasonable] risk."[183] This argument misstates the facts and the law. As explained above, a prohibition of carbon tetrachloride would eliminate the chemical's unreasonable risks to human health and the environment, whereas the Proposed Rule would not.[184] If any option is barred by section 6(a), it is the one that leaves unreasonable risks unaddressed.

Moreover, even if there were multiple options that eliminated carbon tetrachloride's unreasonable risks, TSCA does not prescribe how EPA accomplishes that statutory requirement. At its core, industry's characterization of a prohibition as excessive or "unnecessary" is just another way of saying that it may be more burdensome for industry to replace a use of carbon tetrachloride than to comply with an ECEL. But Congress amended TSCA in 2016 precisely to remove the requirement that EPA select the "least burdensome" means of managing unreasonable risks, a restriction that lawmakers regarded as "a major roadblock to successful TSCA implementation" and one of "TSCA's biggest flaws."[185]

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[179] Economic Analysis at ES-4.
[180] Carol M. Browner, *Pollution Prevention Policy Statement*, EPA (June 15, 1993), https://www.epa.gov/p2/pollution-prevention-policy-statement; *see also* 42 U.S.C. § 13101 (establishing a "national policy of the United States that pollution should be prevented or reduced at the source whenever feasible").
[181] 88 Fed. Reg. at 39,659.
[182] *Id.* at 39,691.
[183] *See, e.g.*, *EPA Will Propose to Ban Uses of CTC That Have Been Phased Out and Establish WCPP for Uses Not Prohibited*, Bergeson & Campbell P.C. (July 26, 2023) (quoting 15 U.S.C. § 2605(a)), https://www.lawbc.com/regulatory-developments/entry/epa-will-propose-to-ban-uses-of-ctc-that-have-been-phased-out-and-establish ("As with the other two chlorinated solvents, it is not clear to us that EPA has established the facts to support a broad ban in instances that the WCPP requirements can be met.").
[184] 88 Fed. Reg. at 28,326 (stating that "EPA cannot determine . . . whether the risk to [fenceline] communities would be . . . unreasonable" or whether the proposed rule would eliminate any such unreasonable risks).
[185] S. Rep. No. 114-67, at 18 (2015); 161 Cong. Rec. 10257 (2015) (statement of Rep. Gene Green); *see also* S. Rep. No. 114-67, at 16 (explaining that TSCA "[was] amended so EPA is better able to ban or phase out the substance[s]" that present unreasonable risk.)

In place of that mandate, Congress directed EPA to eliminate chemicals' unreasonable risks and enumerated four considerations for EPA to "factor in" when deciding between permissible risk management options.[186] Interpreting "to the extent necessary" to mandate the least amount of regulation that could address unreasonable risk would override TSCA's newly established decision-making process and resurrect the "least burdensome" means requirement that Congress deliberately eliminated in the 2016 amendments.[187]

Industry's interpretation of TSCA section 6(a) has been rejected by the sole court to consider it. In 2019, the Halogenated Solvents Industry Alliance challenged EPA's risk management rule banning consumer uses of methylene chloride paint strippers, claiming that rule was too broad, and thus in excess of what was necessary to protect consumers, because it swept in some commercial uses for which EPA had not made a finding of unreasonable risk. The Second Circuit upheld EPA's ban, explaining that the relevant inquiry under TSCA section 6(a) was not whether the rule impacted or restricted other uses but rather whether it was "a reasonable means, supported by substantial evidence, to ensure that the unreasonable risks of methylene chloride paint removal products for consumer uses be 'no longer present[ed].'"[188] That is the appropriate standard for a risk management rule, and it is plainly satisfied by a prohibition of non-essential carbon tetrachloride uses.[189]

D. EPA's Justifications for the Proposed Rule Are Not Supported by the Record or Consistent with TSCA

EPA seeks to justify the Proposed Rule by emphasizing carbon tetrachloride's use "in the generation of lower GWP HFOs, which is important to the Agency's efforts to address climate-damaging HFCs."[190] In particular, EPA writes that "by allowing for the continued, controlled use of [carbon tetrachloride] in the production of lower-GWP HFOs, efforts to shift to [refrigerants] with lower GWP," as required by the Montreal Protocol and the American Innovation and Manufacturing ("AIM") Act, "would not be impeded by this rulemaking."[191] These arguments fail for several reasons.

First, the carbon tetrachloride uses that EPA has permitted to continue in perpetuity under the Proposed Rule extend far beyond the manufacturing of HFOs. According to EPA, one of the

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[186] 15 U.S.C. § 2605(c)(2)(B).
[187] *See Stone v. INS*, 514 U.S. 386, 397 (1995) ("When Congress acts to amend a statute, [courts] presume it intends its amendment to have real and substantial effect.").
[188] *Lab. Council for Latin Am. Advancement*, 12 F.4th at 239 (alteration in original) (quoting 15 U.S.C. § 2605(a)).
[189] *See Emhart Indus. v. New England Container Co.*, 274 F. Supp. 3d 30, 58 (D.R.I. 2017) (holding that CERCLA requirement to "assess site conditions . . . *to the extent necessary* to select a remedy" left EPA with "*significant leeway* to develop a remedial investigation and feasibility study process specific to a site" (emphases added) (quoting 40 C.F.R. § 300.430(a)(2)).
[190] 88 Fed. Reg. at 49,206.
[191] *Id.* at 49,207.

largest uses of carbon tetrachloride is the production of HFC-245fa, an ozone-depleting HFC with a GWP of 858.[192] Carbon tetrachloride is also used to produce HFC-365mfc, which has a GWP of 804, and perchloroethylene, a carcinogenic solvent that EPA has found to pose unreasonable risks to human health.[193] Therefore, even if carbon tetrachloride were needed to manufacture HFOs (and, as explained below, it is not), that would not justify the continuation of all active uses of carbon tetrachloride.

Second, as EPA admits, "there are routes of [HFO] production with feedstocks that do not use [carbon tetrachloride]."[194] In other words, carbon tetrachloride is not needed to manufacture HFOs. EPA has proposed allowing the continued use of carbon tetrachloride despite those available alternatives because "industry has explained that these routes are not as cost-effective or efficient as [carbon tetrachloride] and would require replacement or significant modification of existing production technology."[195] But EPA did not independently assess the costs of those replacements or compare them to the public health costs of continued carbon tetrachloride manufacturing, use, and release.[196] And any required "replacement or . . . modification" of existing HFO production processes could be addressed by phasing in a carbon tetrachloride prohibition over a schedule that provides ample time for that transition.

Third, the continued use and release of carbon tetrachloride contributes to both ozone depletion and climate change. As explained above, carbon tetrachloride is an ozone-depleting substance regulated under the Montreal Protocol, and it has a GWP of 1730—higher than many of the HFCs it is being used to replace.[197] Because EPA has not evaluated carbon tetrachloride's climate impacts, it does not know "if the possible increase of [carbon tetrachloride] emissions" permitted under the Proposed Rule "would offset emissions of the HFCs replaced by the lower GWP HFOs."[198] EPA's invocation of the "benefits of [carbon tetrachloride]" for United States climate policy rings hollow when EPA has not evaluated whether carbon tetrachloride is necessary for the production of lower-GHG HFCs and HFOs or whether its use for those purposes is increasing total GHG emissions.[199]

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[192] *Id.* at 49,213; Greenhouse Gas Protocol, Global Warming Potential Values, https://ghgprotocol.org/sites/default/files/ghgp/Global-Warming-Potential-Values%20%28Feb%2016%202016%29_1.pdf (last visited Sept. 8, 2023).
[193] 88 Fed. Reg. at 49,181, 49,213.
[194] *Id.* at 49,209.
[195] *Id.*
[196] Moreover, as described above, TSCA requires EPA to eliminate carbon tetrachloride's unreasonable risks even when doing so may impose greater costs than economic benefits. 15 U.S.C. § 2605(a).
[197] 88 Fed. Reg. at 49,212.
[198] *Id.* at 49,213.
[199] *Id.* at 49,182.

E. If Any Critical Uses of Carbon Tetrachloride Cannot be Phased Out, EPA Can Grant Time-Limited Section 6(g) Exemptions

Even if there were essential uses of carbon tetrachloride that cannot currently be phased out, that would not support the indefinite continuation of all carbon tetrachloride uses. Instead, TSCA section 6(g) allows EPA to grant exemptions from specific requirements of a risk management rule upon a showing that "the specific condition of use is a critical or essential use for which no technically and economically feasible safer alternative is available, taking into consideration hazard and exposure."[200] The section 6(g) exemption process ensures the entity seeking the exemption, and the Agency itself, conduct their due diligence to identify potentially safer substitutes before allowing continued use of a chemical that is known to pose unreasonable risks. EPA must apply the statutory exemption criteria as written, and while we are not taking any position on whether HFO production or any other carbon tetrachloride use would qualify, any continued manufacturing, production, or use of carbon tetrachloride must be limited to the following circumstances provided in section 6(g):

> (A) the specific condition of use is a critical or essential use for which no technically and economically feasible safer alternative is available, taking into consideration hazard and exposure;
> (B) compliance with the requirement, as applied with respect to the specific condition of use, would significantly disrupt the national economy, national security, or critical infrastructure; or
> (C) the specific condition of use of the chemical substance or mixture, as compared to reasonably available alternatives, provides a substantial benefit to health, the environment, or public safety.[201]

Section 6(g) exemptions offer multiple benefits compared to the Proposed Rule's indefinite continuation of all carbon tetrachloride uses pursuant to a WCPP. First, by following the section 6(g) process, EPA may in fact identify safer chemicals—such as other refrigerants that do not deplete the ozone layer or worsen global warming—or alternative production processes that eliminate the need for carbon tetrachloride.

Second, section 6(g) requires exemptions to be time-limited, so any unreasonable risks associated with the use of carbon tetrachloride to produce HFCs, HFOs, and other toxic chemicals will not persist indefinitely. This limitation is particularly important given EPA's acknowledgment that many of the HFCs produced using carbon tetrachloride are subject to the overall phasedown in production and consumption of regulated HFCs under the AIM Act.

Finally, and most critically for the Proposed Rule, section 6(g) exemptions are the *only* relief that TSCA authorizes from the overarching requirement that EPA ensure the elimination of

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[200] 15 U.S.C. § 2605(g).
[201] *Id.* § 2605(g)(1). Section 6(g) exemptions are discretionary, so even where the above conditions are satisfied EPA can determine that the risks associated with a use are so great that an exemption is not warranted. *Id.* (stating that EPA "may" grant an exemption when the statutory criteria are satisfied).

a chemical's unreasonable risks. Because, as described above, EPA cannot ensure that any risk management measures short of a prohibition have fully eliminated unreasonable risk, EPA must use section 6(g) to review and authorize, where applicable, any ongoing uses of carbon tetrachloride.

Applying section 6(g) will go further toward eliminating unreasonable risks posed by carbon tetrachloride, and do substantially more to fulfill EPA's commitment (and legal obligation) to protect fenceline communities and workers, than the Proposed Rule. If the production of HFOs from carbon tetrachloride were the only way of achieving our climate change commitments (and, as described above, it is not), such uses could continue on a time-limited basis under a 6(g) exemption. And if other substances or processes ultimately prove to be suitable substitutes, the law will have succeeded in its core purpose of protecting the public from carbon tetrachloride unreasonable risks. But TSCA neither contemplates nor allows EPA's proposal to indefinitely continue the use of carbon tetrachloride.

F. EPA Must Address the Risks from Ongoing Disposal and Migration of Carbon Tetrachloride in the Environment

In addition to phasing out ongoing uses of carbon tetrachloride, EPA must address the risks associated with carbon tetrachloride disposal, including ongoing exposures from contaminated soil and groundwater. These exposures are widespread; "[c]arbon tetrachloride has been found in water or soil at about 26% of the waste sites investigated under Superfund, at concentrations ranging from less than 50 to over 1,000 ppb."[202] Moreover, once disposed, carbon tetrachloride does not remain stagnant in the environment. A volatile organic compound, it spreads, volatilizes, and migrates into overlying buildings, a process known as "vapor intrusion."[203] At the recently designated Meeker Avenue Superfund Site in Brooklyn, New York, carbon tetrachloride migrated from contaminated soil and groundwater into private homes, resulting in exposures above state action levels.[204] But EPA did not consider such exposures in its risk evaluation or address them in the Proposed Rule.

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[202] ATSDR Tox. Profile at 3.

[203] EPA, *OSWER Technical Guide for Assessing and Mitigating the Vapor Intrusion Pathway from Subsurface Vapor Sources to Indoor Air* 22 (2015), https://www.epa.gov/sites/default/files/2015-09/documents/oswer-vapor-intrusion-technical-guide-final.pdf (identifying carbon tetrachloride as a "chemical[] of concern" for vapor intrusion).

[204] *See* URS Corp, *Site Characterization Soil Vapor Intrusion Data Summary Report February – March 2008*, N.Y. Dep't of Env't Conservation (2008), http://newtowncreekalliance.org/docs/MeekerAvePlume_ResidentialAirSampling_Summary.pdf; *see also* Tonia Burk et al., *Community Exposures to Chemicals Through Vapor Intrusion: A Review of Past Agency for Toxic Substances and Disease Registry Public Health Evaluations*, 75 J. Env't Health 36 (2013), https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4692377/ (describing carbon tetrachloride detections in indoor air above screening values at nine contaminated sites).

This omission violates TSCA's required to evaluate the risks presented by carbon tetrachloride "under the conditions of use,"[205] or "the circumstances . . . under which a chemical substance is intended, known, or reasonably foreseen to be manufactured, processed, distributed in commerce, used, *or disposed of*."[206] Carbon tetrachloride is "known . . . to be . . . disposed of" in contaminated sites across the country, as well as in landfills and other commercial disposal facilities. By focusing only on the latter disposals, EPA unlawfully ignores a significant source of carbon tetrachloride exposures.

The Ninth Circuit Court of Appeals has affirmed TSCA's requirement to evaluate the "ongoing" release of a chemical that "was disposed of previously."[207] The court held that such "spills, leaks, and other uncontrolled discharges" constitute "independent disposals" that fall within TSCA's definition of conditions of use.[208] Because of its mobility and volatility, previously disposed carbon tetrachloride continues to migrate and be released, and EPA must address the risks from that "ongoing" disposal.

TSCA gives EPA express authority to address disposal related risks, including by "prohibiting or otherwise regulating any manner or method of disposal . . . by [the chemical's] manufacturer or processor or by any other person who uses, or disposes of it, for commercial purposes."[209] However, unlike the fenceline community risks from ongoing carbon tetrachloride use, a broader prohibition on carbon tetrachloride manufacturing and use would not address the risks from these ongoing acts of disposal. To determine how to best address disposal related risks, EPA should conduct a supplemental risk evaluation of all previously excluded acts of disposal followed by a supplemental risk management rule.[210]

IX. EPA SHOULD STRENGTHEN THE REPORTING AND ENFORCEMENT PROVISIONS OF THE PROPOSED RULE

In her recent book *Next Generation Compliance,* former EPA Assistant Administrator for the Office of Enforcement and Compliance Director Cynthia Giles writes that "the most important determinant of [environmental] compliance is the structure of the regulation and the

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[205] 15 U.S.C. § 2605(b)(4)(A).
[206] *Id.* § 2602(4) (emphasis added) (defining "conditions of use").
[207] *Safer Chems., Healthy Fams. v. EPA*, 943 F.3d 397, 426 (9th Cir. 2019).
[208] *Id.* (quoting 40 C.F.R. § 761.3) ("If, under the applicable definition of 'disposal,' something is in fact *again* disposed of—even if it was disposed of previously—or when a disposal is *in fact ongoing*, we see no reason why that use is not captured [under TSCA] . . . .").
[209] 15 U.S.C. § 2605(a)(6)(A). TSCA also creates a mechanism for EPA to use "other Federal laws administered in whole or in part by [the EPA] Administrator," such as CERCLA and RCRA, to "eliminate[] or reduce[] to a sufficient extent" the disposal risks identified under TSCA. *Id.* § 2608(b).
[210] EPA's failure to address risks from ongoing disposal and chemical migration is not limited to carbon tetrachloride; it was a common flaw in each of the "first 10" TSCA risk evaluation. Therefore, we recommend that EPA's supplemental risk evaluation cover "ongoing" disposal from all of those chemicals, which would better enable EPA to assess risks that are exposed to combinations of the chemicals (such as PCE and its degradant trichloroethylene).

extent to which it adopts—or ignores—strategies to make compliance the default. The structure of the rule makes all the difference. . . . [E]nforcement alone will never get us there."[211] EPA should craft the carbon tetrachloride rule, and all risk management rules under TSCA, to "make compliance the default" by applying "Next Gen strategies" recommended in that book.[212]

First, EPA should require any exposure control plans submitted pursuant to the Proposed Rule to be automatically submitted to EPA and, apart from statutorily protected confidential business information, to be made public. "Public access to . . . information—aka transparency—is a potentially formidable strategy for better compliance."[213] Exposure control plans are essential to the implementation of a WCPP; they explain how an employer intends to implement the hierarchy of controls to achieve the ECEL and provide information about "any start-up, shutdown, or malfunction of the facility that causes air concentrations to be above the ECEL or any direct dermal contact with [carbon tetrachloride]."[214] We support the proposed requirement that those plans be shared with exposed workers.[215] The plans should also be automatically provided to EPA and, to the greatest extent permitted by law, made available to the public. Access to the plans would promote efforts to ensure that they comply with the Proposed Rule's requirements and will enable EPA to identify substitutes or work practices employed in one workplace that may be applicable to others as well. While the plans are currently available to EPA upon inspection or request, requiring their submission and broadening their distribution would reduce the enforcement burden on EPA.

Similarly, "[r]eporting by regulated facilities to government is the backbone of regulators' knowledge about compliance."[216] The Proposed Rule, however, does not require companies that violate an ECEL to report such exceedances to EPA. While employers must maintain workplace monitoring records for at least five years, there is no regulatory requirement for companies to report non-compliance to EPA, labor representatives, or the public. We urge EPA to add those mandatory reporting obligations to the Proposed Rule, which are expressly authorized by TSCA section 8 and, for any uses authorized via critical use exemptions, by section 6(g).

To enforce the Proposed Rule's requirement that "exposure controls . . . do not increase emissions of carbon tetrachloride to ambient air outside of the workplace," EPA should require stack and fenceline monitoring and make the results of that monitoring accessible to the public.[217] The Proposed Rule currently would require monitoring only of occupational exposures, leaving EPA and the public with no information about the rule's impacts on fenceline community risks. Fenceline monitoring would also provide critical information on any ongoing

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[211] Cynthia Giles, *Next Generation Compliance* 6 (2022) ("Next Gen Compliance"), http://fdslive.oup.com/www.oup.com/academic/pdf/openaccess/9780197656747.pdf.
[212] *Id.*
[213] *Id.* at 143.
[214] 88 Fed. Reg. at 49,226.
[215] *Id.* at 49,224.
[216] Next Gen Compliance at 132.
[217] 88 Fed. Reg. at 49,225.

risks to impacted communities, and the public disclosure of monitoring data would create an additional incentive to reduce carbon tetrachloride emissions and releases.[218]

EPA must also require electronic recordkeeping and reporting under the Proposed Rule. As *Next Generation Compliance* makes clear, "[electronic reporting] is an absolutely must-have element of any effective Next Gen plan. . . . [E]lectronic reporting is faster, more accurate, and lower cost. Time isn't wasted entering paper-reported data into electronic systems or dealing with the errors that transfer introduces."[219] Yet the Proposed Rule does not mandate electronic recordkeeping or reporting; instead, it merely states that records must be maintained for at least five years.[220] In the final rule, EPA should clarify that companies must maintain and submit records in a readily accessible electronic format.

EPA must also require more frequent workplace monitoring. Under the Proposed Rule, if a facility's initial monitoring is below the ECEL action level (0.02 ppm over an eight-hour time-weighted average), or if any two consecutive measurements taken at least seven days apart within a six-month period are below that level, the facility is only required to conduct follow-up monitoring "once every five years."[221] However, as described above, EPA expresses doubt about facilities' abilities to detect carbon tetrachloride at the ECEL over an eight- hour work shift, much less at the lower ECEL action level.[222] Given the uncertainties associated with carbon tetrachloride monitoring and the severe harms associated with low-level exposures, under no circumstance should EPA permit companies to go several years between monitoring events. Instead, EPA must require a minimum of annual workplace monitoring, with increased monitoring frequency following any detections above the ECEL action level.

Finally, EPA must consider the feasibility and effectiveness of enforcement when deciding between risk management options. As the former head of EPA's enforcement and compliance office has acknowledged, "there has never been and will never be enough inspectors to inspect all or even a significant fraction of regulated facilities."[223] The Proposed Rule would increase the burden on EPA enforcement staff by requiring additional monitoring and enforcement of ECELs at dozens of facilities that would continue to use carbon tetrachloride. In contrast, a broader, upstream prohibition would focus EPA's enforcement efforts on a relatively smaller number of carbon tetrachloride manufacturers and any facilities that may be eligible for section 6(g) exemptions. EPA must keep those enforcement burdens in mind when deciding how to eliminate carbon tetrachloride's unreasonable risks.

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[218] *See* Next Gen Compliance at 145 ("Rule writers should consider what information the public wants and what will motivate companies to act and make sure it is included in the rule's monitoring and reporting obligations.").
[219] *Id.* at 140–41.
[220] 88 Fed. Reg. at 49,228.
[221] *Id.* at 49,196.
[222] *See supra* p. 15.
[223] Next Gen Compliance at 51.

CONCLUSION

We support the steps EPA has proposed to protect certain workers from carbon tetrachloride. However, as described above, the Proposed Rule would leave many workers, residents of fenceline communities, and others exposed to unsafe levels of carbon tetrachloride, in violation of TSCA's requirement to fully eliminate the chemical's unreasonable risks. EPA has the authority to strengthen the rule without delaying its finalization, by phasing the use of carbon tetrachloride and promoting the use of safer alternatives. TSCA requires, and impacted communities and populations deserve, no less.

If you have any questions about these comments, please contact Jonathan Kalmuss-Katz at Earthjustice (jkalmusskatz@earthjustice.org).

Respectfully submitted,

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Earthjustice
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Environmental Protection Network
Locust Point Community Garden
Maryland Pesticide Education Network
Natural Resources Defense Council
Rural Coalition
Science Community Action Network (SciCAN.org)
Toxic Free NC
Until Justice Data Partners