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NOTES

ESTABLISHING A STRICT LIABILITY STANDARD FOR RELEASING PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS) INTO THE ENVIRONMENT

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INTRODUCTION

When Rob Bilott took Wilbur Tennant's case, their lawsuit became the first of many on per- and polyfluoroalkyl substances (PFAS), a class of chemicals that has become the "mother of toxic torts."¹ In 1999, Bilott, an environmental lawyer at Taft Stettinius & Hollister, filed a lawsuit on behalf of Tennant, a West Virginia farmer, against DuPont Chemical Company.² Tennant alleged that his cows were dying because of DuPont's chemical discharges near his farm.³ During the lawsuit, Tennant produced videos, photographs, and documents depicting cows with stringy tails, malformed hooves, lesions, and red eyes.⁴ One video showed close-ups of a dead calf with blackened teeth and discoloration in the liver, heart, stomach, kidney, and gall bladder.⁵ As discovery continued, Bilott came across a letter from DuPont to the Environmental Protection Agency (EPA) mentioning a substance called perfluorooctanoic acid (PFOA), a PFAS chemical.⁶ Bilott had not heard of this chemical before nor was it listed as a regulated material.⁷ DuPont started purchasing PFOA from 3M Company in 1951 to manufacture Teflon non-stick pans, and the chemical generated \$1 billion in

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1. Nathaniel Rich, *The Lawyer Who Became DuPont's Worst Nightmare*, N.Y. TIMES (Jan. 6, 2016), <https://www.nytimes.com/2016/01/10/magazine/the-lawyer-who-became-duponts-worst-nightmare.html> [<https://perma.cc/AH67-XVQB>].

2. *Id.*

3. *Id.*

4. *Id.*

5. *Id.*

6. *Id.*

7. *Id.*

annual profit for DuPont.⁸ Bilott suspected that PFOA waste released from DuPont's facility was causing Tennant's cows to die, and Tennant and DuPont soon settled in August 2000.⁹

By bringing national attention to PFAS, Bilott and Tennant's lawsuit has led to a new era of toxic tort litigation, with some experts predicting that PFAS may be the "next asbestos."¹⁰ It is estimated that United States property and casualty insurers have paid \$16.1 billion in asbestos claims.¹¹ By comparison, \$4 billion in PFAS-related settlements have already been paid.¹² This includes a \$617 million settlement between DuPont and plaintiffs from West Virginia and North Carolina, and an \$850 million settlement between 3M and the Minnesota Attorney General.¹³ However, manufacturers are theoretically still facing \$400 billion in liability.¹⁴

This Note argues that states should apply a strict liability standard for the release of PFAS into the environment under the Restatement (Second) of Torts § 520 factors derived from *Rylands v. Fletcher*.¹⁵ Part I of this Note provides a brief history of PFAS and their health effects. Part II summarizes the legal tests used to impose strict liability on an activity. Part III applies the legal tests for strict liability to the discharge of PFAS into the environment. Finally, Part IV discusses the policy implications of applying strict liability to the release of PFAS.

I. A BRIEF HISTORY OF PFAS OR "FOREVER CHEMICALS"

PFAS are a group of thousands of man-made chemicals that have been used since the 1940s in products like nonstick cookware, firefighting foams, and other products that resist grease, water, and oil.¹⁶ Due to their properties, they have been used in numerous household products like Stainmaster, Scotchgard, Teflon,

8. *Id.*

9. *Id.*

10. Jodi Green, *A Roadmap to Insurance Coverage for the Mother of Toxic Torts: PFAS*, JD SUPRA (Sept. 9, 2022), <https://www.jdsupra.com/legalnews/a-roadmap-to-insurance-coverage-for-the-9877551/> [<https://perma.cc/959L-CX49>].

11. Gary Booth, *PFAS—The Mother of All Toxic Torts?*, INSIDER ENGAGE (Aug. 2, 2021), <https://www.insiderengage.com/article/28tq7id3b65wxgwiao4qo/legal-and-regulatory/pfas-the-mother-of-all-toxic-torts> [<https://perma.cc/9MZE-FXP7>].

12. Green, *supra* note 10.

13. John Galvin, Suzanne Galvin & Tim Briscoe, *A Brief Primer on PFAS Litigation: Trends and Future Disputes*, THOMPSON COBURN LLP (Aug. 25, 2022), <https://www.thompsoncoburn.com/insights/publications/item/2022-08-25/a-brief-primer-on-pfas-litigation-trends-and-future-disputes> [<https://perma.cc/M59V-FUWB>].

14. Green, *supra* note 10.

15. L.R. 3 H.L. 330, 338 (1868).

16. *What Are PFAS?*, AGENCY FOR TOXIC SUBSTANCES & DISEASE REGISTRY (Nov. 1, 2022), <https://www.atsdr.cdc.gov/pfas/health-effects/overview.html> [<https://perma.cc/Y72H-6FQ9>] [hereinafter *What are PFAS?*].

Gore-Tex, and Tyvek.¹⁷ PFAS are also known as “forever chemicals” because they break down very slowly with some taking one thousand years to dissipate.¹⁸ PFAS can also migrate into soil, water, and air.¹⁹ For example, in Indiana, harmful PFAS were found in drinking water at ten utilities, mostly in southern and central Indiana.²⁰

Although the most studied PFAS have been phased out of production in the United States, their widespread use and persistence has resulted in PFAS being found in the bloodstreams of ninety-seven percent of Americans.²¹ They are also present in low levels in food products and throughout the environment.²² Scientific studies have linked some PFAS to health problems such as kidney and testicular cancer, liver damage, low birth weight, high blood pressure or pre-eclampsia in pregnant women, and increased cholesterol.²³ While internal documents from 3M indicate that the company conducted studies in the 1970s suggesting the health effects of PFAS, PFAS were not subject to major scrutiny and environmental regulations until recently.²⁴

In June 2022, the EPA issued updated interim drinking water health advisory levels for four PFAS.²⁵

17. Wayne Parry, *New Jersey Orders Cleanup of Clothing, Cookware Chemicals*, AP NEWS (Mar. 25, 2019), <https://apnews.com/article/north-america-science-new-jersey-nj-state-wire-environment-0272fdb144344fea8c281eac3e03bcf0> [https://perma.cc/99F4-QLZS].

18. Galvin, Galvin & Briscoe, *supra* note 13.

19. *What Are PFAS?*, *supra* note 16; see also *About the PFAS Project*, BLOOMBERG L. (June 3, 2020, 6:55 PM), <https://news.bloomberglaw.com/pfas-project/the-pfas-project-about-us> [https://perma.cc/F69J-6AVJ].

20. Rebecca Thiele, *Harmful PFAS Detected in Treated Drinking Water from 10 Indiana Utilities*, IPB NEWS (May 18, 2022), <https://www.wfyi.org/news/articles/harmful-pfas-detected-in-treated-drinking-water-from-10-indiana-utilities> [https://perma.cc/RL5N-PEFF].

21. Green, *supra* note 10.

22. *What Are PFAS?*, *supra* note 16.

23. *What are the Health Effects of PFAS?*, AGENCY FOR TOXIC SUBSTANCES & DISEASE REGISTRY (Nov. 1, 2022), <https://www.atsdr.cdc.gov/pfas/health-effects/index.html> [https://perma.cc/PEY3-98XL].

24. Sharon Lerner, *3M Knew About the Dangers of PFOA and PFOS Decades Ago, Internal Documents Show*, INTERCEPT (July 31, 2018), <https://theintercept.com/2018/07/31/3m-pfas-minnesota-pfoapfos/> [https://perma.cc/S8DG-GZ5W].

25. Health advisory levels indicate the maximum concentrations of chemicals in drinking water that are safe. *Questions and Answers: Drinking Water Health Advisories for PFOA, PFOS, GenX Chemicals and PFBS*, U.S. ENV'T PROT. AGENCY (Mar. 14, 2023), <https://www.epa.gov/sdwa/questions-and-answers-drinking-water-health-advisories-pfoa-pfos-genx-chemicals-and-pfbs> [https://perma.cc/BA5P-HJEU] [hereinafter *Questions and Answers*].

PFAS Chemical	Health Advisory Level in Parts per Trillion (ppt)
Perfluorooctanoic acid (PFOA)	0.004 ppt
Perfluorooctanesulfonic acid (PFOS)	0.02 ppt
Ammonium salt of hexafluoropropylene oxide dimer acid (GenX chemicals)	10 ppt
Perfluorobutane sulfonic acid (PFBS)	2000 ppt

The EPA's updated health advisory levels are a drastic reduction from the 2009 and 2016 health advisory levels.²⁶ In 2009, the provisional health advisory levels were 400 ppt for PFOA and 200 ppt for PFOS.²⁷ In 2016, the updated health advisory levels were 70 ppt for the sum of PFOA and PFOS.²⁸ Furthermore, the 2022 updated interim health advisory levels for PFOA and PFOS are below the level of detection, meaning it is possible for them to be present in drinking water at unsafe levels even if testing indicates the chemicals are not present.²⁹

On March 29, 2023, the EPA proposed national drinking water regulations that would establish near-zero limits for six PFAS.³⁰ The proposed rule establishes legally enforceable Maximum Contaminant Levels (MCL) and health-based non-enforceable Maximum Contaminant Level Goals (MCLG).³¹ For PFOA and PFOS, the MCLG's are zero since no amount of PFOA or PFOS is safe, but the enforceable MCL's are 4 ppt because that level is detectable.³² For the remaining PFAS, the EPA proposed a formula to calculate a "hazard index" that measures any mixture of the covered PFAS.³³ The EPA plans to finalize the health advisory levels by the end of 2023.³⁴

26. *Per- and Polyfluoroalkyl Substances (PFAS)*, ASS'N OF STATE DRINKING WATER ADM'RS, <https://www.asdwa.org/pfas/> (last visited Mar. 9, 2023) [<https://perma.cc/YY99-2KYU>].

27. *Id.*

28. *Id.*

29. *Questions and Answers*, *supra* note 25.

30. PFAS National Primary Drinking Water Regulation Rulemaking, 88 Fed. Reg. 18638 (proposed Mar. 29, 2023) (to be codified at 40 C.F.R. pt. 141, 142).

31. Priscilla E. Hampton et al., *EPA Proposes Stringent National Drinking Water Standards for Six PFAS*, PERKINS COIE (Mar. 16, 2023), <https://www.perkinscoie.com/en/news-insights/epa-proposes-stringent-national-drinking-water-standards-for-six-pfas.html> [<https://perma.cc/M3M4-PVNP>].

32. *Id.*

33. *Id.*

34. *Questions and Answers*, *supra* note 25.

PFAS Chemical	Proposed MCL	Proposed MCLG
PFOA	4 ppt	Zero
PFOS	4 ppt	Zero
PFNA	Hazard Index=1.0	Hazard Index=1.0
PFHxS		
PFBS		
GenX Chemicals		

Because of the danger PFAS present, public and private entities have taken steps to address them.³⁵ In 2021, state legislatures considered at least 196 bills that aimed to eliminate PFAS from food packaging, firefighting foams, textiles, and cosmetics.³⁶ The EPA also proposed rules to designate certain PFAS as hazardous substances under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA or “Superfund”).³⁷ Additionally, private parties can bring claims related to exposure to PFAS such as medical monitoring³⁸ and personal injury, diminution in property value, and claims under consumer protection statutes.³⁹ Common law claims in PFAS litigation include negligence, strict liability, product liability, public and private nuisance, and trespass.⁴⁰

35. Sarah Doll, *2021 Analysis of Upcoming State Legislation on Toxic Chemicals*, SAFER STATES (Feb. 3, 2021), <https://saferstates.org/news/2021-analysis-of-upcoming-state-legislation-on-toxic-chemicals/> [<https://perma.cc/2L8H-K85C>].

36. *Per- and Polyfluoroalkyl Substances (PFAS) | State Legislation and Federal Action*, NAT’L CONF. OF STATE LEGISLATURES (July 25, 2022), <https://www.ncsl.org/research/environment-and-natural-resources/per-and-polyfluoroalkyl-substances-pfas-state-laws.aspx> [<https://perma.cc/PG7L-VAEZ>].

37. Designation of Perfluorooctanoic Acid (PFOA) and Perfluorooctanesulfonic Acid (PFOS) as CERCLA Hazardous Substances, 87 Fed. Reg. 54415 (proposed Sept. 6, 2022) (to be codified at 40 C.F.R. pt. 302); Addressing PFAS in the Environment, 88 Fed. Reg. 22399 (proposed Apr. 13, 2023) (to be codified at 40 C.F.R. pt. 302).

38. Medical monitoring involves periodic testing to identify and treat diseases early. Megan Noonan, *The Doctor Can’t See You Yet: Overcoming the “Injury” Barrier to Medical Monitoring Recovery for PFAS Exposure*, 45 VT. L. REV. 287, 289 (2020).

39. *PFAS: Expected Litigation Trends*, DECHERT LLP (Apr. 6, 2021), <https://www.dechert.com/knowledge/onpoint/2021/4/pfas--expected-litigation-trends.html> [<https://perma.cc/YNF9-7GG5>].

40. Carly Johnson, *How the Safe Drinking Water Act & the Comprehensive Environmental Response, Compensation, and Liability Act Fail Emerging Contaminants: A Per- and Polyfluoroalkyl*

II. IMPOSING STRICT LIABILITY

Applying strict liability on an activity imposes liability “without regard to the defendant’s degree of fault or negligence.”⁴¹ Strict liability eases the plaintiff’s burden of proof in environmental actions because the plaintiff does not need to prove the defendant was at fault by acting intentionally or negligently.⁴² Instead, the plaintiff need only show that the conduct is subject to strict liability and caused the plaintiff’s injuries.⁴³ Strict liability places liability on the defendant even if the defendant took safety precautions.⁴⁴

Courts have applied strict liability where the defendant caused harm by ultrahazardous or abnormally dangerous activities.⁴⁵ The theory of strict liability for ultrahazardous or abnormally dangerous activities arose from the case *Rylands v. Fletcher*.⁴⁶ In *Rylands v. Fletcher*, the defendants constructed a water reservoir on their property, but, unknown to them, the land below contained old mine shafts.⁴⁷ When the reservoir burst, the waters surged into the plaintiff’s working mine, and the defendant was held strictly liable for the damage.⁴⁸ According to the Restatement (Second) of Torts § 520, the following factors should be considered to determine whether an activity is abnormally dangerous:

- (a) Existence of a high degree of risk of some harm to the person, land or chattels of others;
- (b) Likelihood that the harm that results from it will be great;
- (c) Inability to eliminate the risk by the exercise of reasonable care;
- (d) Extent to which the activity is not a matter of common usage;
- (e) Inappropriateness of the activity to the place where it is carried on; and
- (f) Extent to which its value to the community is outweighed by its dangerous attributes.⁴⁹

Courts often use the Restatement factors to inform their decision on whether to apply strict liability to an activity.⁵⁰ States that have explicitly adopted the six factors into their common law include Alabama, California, Florida, Illinois,

Substances (PFAS) Case Study, 42 MITCHELL HAMLINE L.J. PUB. POL’Y & PRAC. 91, 112-19 (2020).

41. Anne M. Payne & Amy Elizabeth Hanigan, *Pollution of Underground Water Sources—Common Law Liability and Private Rights of Action*, 94 AM. JUR. TRIALS 1 (May 2023).

42. Michael Axline, *Bringing a Strict Liability Claim*, 1 TOXIC TORTS GUIDE § 3.07 (2022).

43. *Id.*

44. *Id.*

45. Payne & Hanigan, *supra* note 41.

46. L.R. 3 H.L. 330, 338 (1868).

47. *Id.*

48. *Id.*

49. RESTATEMENT (SECOND) OF TORTS § 520 (1977).

50. Axline, *supra* note 42.

Indiana, Kansas, Kentucky, Montana, New Jersey, New York, Oklahoma, Tennessee, Washington, and West Virginia.⁵¹ Courts may apply strict liability even if all the factors are not met.⁵² Courts often balance the factors to determine if strict liability should apply.⁵³

The Restatement (Third) of Torts § 20 simplified the test as follows:

- (a) A defendant who carries on an abnormally dangerous activity is subject to strict liability for physical harm resulting from the activity.
- (b) An activity is abnormally dangerous if:
 - (1) the activity creates a foreseeable and highly significant risk of physical harm even when reasonable care is exercised by all actors; and
 - (2) the activity is not a matter of common usage.⁵⁴

Although Arkansas courts use a similar test to determine whether an activity is abnormally dangerous, no state has explicitly adopted the test from the Restatement (Third) of Torts into its common law.⁵⁵

Courts also vary in the activities they apply strict liability to. For example, activities for which state courts have previously applied strict liability include aerial application of pesticides, pollution of groundwater by gasoline, transportation by railroad of hazardous substances like asbestos, and operation of natural gas pipelines.⁵⁶ However, state courts have also held that activities that are not abnormally dangerous include releasing vinyl chloride, releasing carbon monoxide gas, transporting and unloading sulfuric acid, and redeveloping contaminated land.⁵⁷

51. *Id.*

52. *Id.*

53. *Id.*

54. *Id.*

55. *Id.*

56. *Id.*; see *Langan v. Valicopters, Inc.*, 567 P.2d 218 (Wash. 1977); *Koch v. Hicks (In re Methyl Tertiary Butyl Ether Prods. Liab. Litig.)*, 457 F. Supp. 2d 298 (S.D.N.Y. 2006); *BNSF Ry. Co. v. Asbestos Cl. Ct.*, 459 P.3d 857 (Mont. 2020); *Brown v. Panhandle Eastern Pipeline Co. L.P.*, No. 16-2428-JAR-TJJ, 2017 U.S. Dist. LEXIS 141749, at *5-*6 (D. Kan. Sept. 1, 2017).

57. *Axline*, *supra* note 42; see *Dickens v. Oxy Vinyls, LP*, 631 F. Supp. 2d 859, 864 (W.D. Ky. 2009); *Fechtman v. U.S. Steel Corp.*, 994 N.E.2d 1243, 1247-50 (Ind. Ct. App. 2013); *Roth v. NorFalco, LLC*, No. 1:06-cv-01452, 2010 U.S. Dist. LEXIS 42032, at *22-*28 (M.D. Pa. Apr. 29, 2010); *SPS L.P. LLLP v. Sparrows Point, LLC*, No. JFM-14-589, 2017 U.S. Dist. LEXIS 144740, at *38 (D. Md. Sept. 6, 2017).

III. ANALYSIS OF IMPOSING STRICT LIABILITY FOR RELEASING PFAS INTO THE ENVIRONMENT

A. Factor 1. PFAS Create a High Degree of Risk of Harm to the Person, Land, or Chattels of Others

Disposal of PFAS into the environment creates a high degree of risk of harm to the person, land, or chattels of others. An activity that is abnormally dangerous involves a threatened harm that “must be major in degree, and sufficiently serious in its possible consequences to justify holding the defendant strictly responsible for subjecting others to an unusual risk.”⁵⁸ Courts may use hazardous substance designation under CERCLA to inform their decision on whether a substance poses a high degree of risk of harm.⁵⁹

1. The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Can Inform Courts when Applying Common Law Strict Liability.—CERCLA was enacted in 1980 to create a federal framework to address the presence of hazardous substances in the environment.⁶⁰ CERCLA was enacted due to growing public awareness and concern about pollution such as in Love Canal, New York.⁶¹ Under CERCLA, anyone found “responsible”⁶² for the release⁶³ of a “hazardous substance”⁶⁴ that results in response costs⁶⁵ will be strictly, jointly, and severally liable for reimbursement costs in an action by the federal or a state government, and can be compelled to conduct cleanups by government entities.⁶⁶ However, CERCLA has limitations on compensating private parties since private parties are limited to recovering “response costs” or costs associated with cleanup.⁶⁷ Therefore, CERCLA does not provide private parties with a mechanism for recovering costs due to personal injury and damaged property.⁶⁸ However, the citizen suit provision, one of CERCLA’s savings clauses, provides that those costs that cannot be recovered under

58. RESTATEMENT (SECOND) OF TORTS § 520 (1977) cmt. g.

59. Alexandra B. Klass, *From Reservoirs to Remediation: The Impact of CERCLA on Common Law Strict Liability Environmental Claims*, 39 WAKE FOREST L. REV. 903, 935 (2004).

60. *Id.* at 920.

61. *Id.* at 930.

62. 42 U.S.C. § 9607(a) (defines the categories of people held liable under CERCLA such as owners of facilities who dispose hazardous substances).

63. *Id.* § 9601(22) (to release includes “spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment”).

64. *Id.* § 9601(14) (the EPA designates substances as “hazardous substances”).

65. *Id.* § 9601(25) (“response costs” are costs associated with removal and remedial actions).

66. *Id.* § 9606(a) (“[W]hen the President determines that there may be an imminent and substantial endangerment to the public health or welfare or the environment because of an actual or threatened release of a hazardous substance from a facility, he may require the Attorney General of the United States to secure such relief as may be necessary to abate such danger or threat.”).

67. *Id.* § 9607(a)(4) (limiting recovery to “response costs”).

68. Klass, *supra* note 59, at 923.

CERCLA could be recovered under common law and other statutes.⁶⁹ Common law claims, such as personal injury, medical monitoring, and diminution in property value, are important in environmental contamination cases to provide plaintiffs with full and complete recovery.⁷⁰

Although CERCLA does not allow plaintiffs to recover for personal injury or property damage, CERCLA impacted how courts apply strict liability in common law claims. While courts generally prefer to apply a negligence standard over strict liability in tort cases, courts may be more likely to impose strict liability for environmental contamination cases because of CERCLA.⁷¹ Courts may apply the Restatement factors for strict liability with an increased awareness of hazardous waste sites due to CERCLA.⁷² In *Department of Environmental Protection v. Ventron Corp.*,⁷³ the state of New Jersey sued various corporations for the cleanup of mercury pollution seeping from a forty-acre tract of land into a creek.⁷⁴ The New Jersey Supreme Court considered CERCLA's designation of mercury as a hazardous substance when evaluating the high degree of risk of harm factor in the strict liability analysis.⁷⁵ The court stated, “[w]e believe it is time to recognize expressly that the law of liability has evolved so that a landowner is strictly liable to others for harm caused by toxic wastes that are stored on his property and flow onto the property of others.”⁷⁶ In *Fletcher v. Tenneco, Inc.*,⁷⁷ the U.S. District Court for the Eastern District of Kentucky applied strict liability where the defendants' polychlorinated biphenyl (PCBs) leaked onto the plaintiffs' property, and the court referenced CERCLA to note how its ruling was consistent with federal policy.⁷⁸ Overall, CERCLA and other regulatory schemes can inform a court's policy decisions on whether a hazardous substance has a high degree of risk of harm and should be subject to common law strict liability.⁷⁹

2. *The EPA's Impending Designation of Certain PFAS as Hazardous Substances under CERCLA Suggests that PFAS Create a High Degree of Risk of Harm to the Person, Land, or Chattels of Others.*—On September 6, 2022, the EPA issued a notice of proposed rulemaking to designate PFOA and PFOS as hazardous substances under CERCLA because these chemicals “present substantial danger to public health or welfare or the environment when released

69. 42 U.S.C. § 9659(h).

70. Klass, *supra* note 59, at 923.

71. *Id.* at 935.

72. *Id.*

73. 468 A.2d 150 (N.J. 1983).

74. *Id.* at 151.

75. *Id.* at 157.

76. *Id.*

77. No. Civ. A. 91-118, 1993 WL 86561 (E.D. Ky., Feb. 22, 1993). The opinion was originally published and found at 816 F. Supp. 1186 but was withdrawn at the request of the court as a result of a settlement between the parties. Klass, *supra* note 59, at 949 n.200.

78. *Fletcher*, 1993 WL 86561 at *9 n.16.

79. Klass, *supra* note 59, at 923.

into the environment.”⁸⁰ If CERCLA designation is finalized, any person in charge of a vessel or facility that releases one pound or more of PFOA and/or PFOS must report the release to the EPA National Response Center and local emergency response commissions within twenty-four hours.⁸¹ The EPA would also be provided with additional tools to enforce and facilitate fast cleanups.⁸² In addition, on April 13, 2023, the EPA issued a notice of proposed rulemaking to designate seven other PFAS other than PFOA and PFOS as hazardous substances under CERCLA.⁸³

The EPA proposed designating certain PFAS as hazardous substances because “exposure can lead to adverse human health effects, including high cholesterol, changes in liver enzymes, decreased immune response to vaccination, thyroid disorders, pregnancy-induced hypertension and preeclampsia, and cancer (testicular and kidney for PFOA, liver and thyroid cancer for PFOS).”⁸⁴ The EPA closed comments for the PFOA/PFOS proposed rule on November 7, 2022, and according to the EPA’s PFAS Strategic Roadmap, the EPA plans to finalize the proposed rule in the summer of 2023.⁸⁵ With the imminent designation of certain PFAS as hazardous substances under CERCLA, courts are more likely to consider PFAS as having a high degree of risk of harm when weighing the Restatement factors for strict liability.

Furthermore, the risk of harm associated with releasing PFAS is great because even undetectable levels of some PFAS are unsafe. No level of PFOA or PFOS is safe in water, but the chemicals can still be present below the level of detection.⁸⁶ Therefore, it is possible for PFOA and PFOS to be present in drinking water at unsafe levels even if testing indicates that they are absent.⁸⁷ In addition, because of their strong carbon-fluorine bond, PFAS are resistant to biodegradation.⁸⁸ As a result, small concentrations of PFAS can accumulate in the

80. Designation of Perfluorooctanoic Acid (PFOA) and Perfluorooctanesulfonic Acid (PFOS) as CERCLA Hazardous Substances, 87 Fed. Reg. 54415 (proposed Sept. 6, 2022) (to be codified at 40 C.F.R. pt. 302) [hereinafter Proposed Rule].

81. *Id.*

82. *Id.*

83. Addressing PFAS in the Environment, 88 Fed. Reg. 22399 (proposed Apr. 13, 2023) (to be codified at 40 C.F.R. pt. 302). The seven additional PFAS proposed for hazardous substance designation under CERCLA are (1) perfluorobutanesulfonic acid (PFBS), (2) perfluorohexanesulfonic acid (PFHxS), (3) perfluorononanoic acid (PFNA), (4) hexafluoropropylene oxide dimer acid (HFPO-DA), (5) perfluorobutanoic acid (PFBA), (6) perfluorohexanoic acid (PFHxA), and (7) perfluorodecanoic acid (PFDA).

84. Proposed Rule, *supra* note 80.

85. *Id.*; U.S. ENV’T PROT. AGENCY, PFAS STRATEGIC ROADMAP: 2021–2024 (2021), at 17 https://www.epa.gov/system/files/documents/2021-10/pfas-roadmap_final-508.pdf [<https://perma.cc/Q9ED-DF2Q>].

86. *Questions and Answers*, *supra* note 25.

87. *Id.*

88. AGENCY FOR TOXIC SUBSTANCES & DISEASE REGISTRY, TOXICOLOGICAL PROFILE FOR PERFLUOROALKYLS ch. 1, at 3 (2021), <https://www.atsdr.cdc.gov/ToxProfiles/tp200-c1.pdf>

body and lead to increased risk of disease.⁸⁹

B. Factor 2: The Likelihood that the Harm Resulting from the Release of PFAS into the Environment Is Great

When determining whether to apply strict liability, courts may consider the “likelihood that the harm that results from [the activity] will be great.”⁹⁰ In *Cornett v. Northrop Grumman Corporation*,⁹¹ the plaintiffs brought an action for negligence and strict liability against the defendant company Northrop Grumman for injuries resulting from the release of hazardous substances like PFAS at their former site in Bethpage, New York.⁹² The plaintiffs’ homes were less than half of a mile from the Grumman site, and while at home, the plaintiffs exclusively used water supplied from contaminated wells.⁹³ The plaintiffs were diagnosed with cancer between 2015 and 2017 including kidney cancer, testicular cancer, and prostate cancer.⁹⁴ The court denied the defendants’ motion to dismiss because the plaintiffs had alleged facts that could lead to liability under either the negligence or the strict liability standard.⁹⁵ Under New York law, courts examine factors under the Restatement (Second) of Torts § 520, and the plaintiffs had at least alleged the “likelihood that the harm that results from [the activity] will be great” by contending that the contaminants caused various types of cancer in the plaintiffs.⁹⁶

PFAS also result in harm to property use and value. PFAS exposure leads to cost, use, and risk issues in the housing market.⁹⁷ Cost issues include the cost of assessment, cleanup, and remedial action plans.⁹⁸ Use issues include loss of access to private water and restrictions on consuming locally sourced food.⁹⁹ Risk issues include the uncertainty of future health risks.¹⁰⁰ Property owners may also need to pay for filtration systems to clean chemical contamination.¹⁰¹ In response

[<https://perma.cc/P6LT-H4RG>] [hereinafter TOXICOLOGICAL PROFILE].

89. *Id.*

90. Restatement (Second) of Torts § 520 (1977).

91. No. 18-CV-06453 (DRH)(AKT), 2020 WL 59794 (E.D.N.Y. Jan. 6, 2020).

92. *Id.* at *1.

93. *Id.* at *4.

94. *Id.*

95. *Id.* at *8.

96. *Id.*

97. Orell Anderson et al., *Emerging Contaminants: Valuation Issues Linked to Perfluorinated Chemicals (PFAS, PFOS, PFOA)*, AM. BAR ASS’N (Feb. 28, 2018), <https://www.americanbar.org/groups/litigation/committees/environmental-energy/articles/2018/winter2018-emerging-contaminants-valuation-issues-linked-to-perfluorinated-chemicals-pfos-pfoa-c8-genx/> [<https://perma.cc/CWW3-99VP>].

98. *Id.*

99. *Id.*

100. *Id.*

101. *Id.*

to a class action lawsuit, Johnson Controls agreed to pay a \$17.5 million settlement for the damages cause by PFAS in its aqueous firefighting foam.¹⁰² The settlement included \$11 million for loss in property value for about 300 homes in the Marinette/Peshtigo area in Wisconsin.¹⁰³ Therefore, the cost of remedying PFAS pollution significantly harms property owners.

C. Factor 3: It Is Difficult to Eliminate the Risk Posed by PFAS with Reasonable Care Once Released into the Environment, but There Are Methods for Disposing of them More Safely

Courts may also consider the “inability to eliminate the risk [of the activity] by the exercise of reasonable care” when applying strict liability.¹⁰⁴ Courts may be reluctant to impose strict liability for discharging PFAS because there are safer ways to dispose of them than releasing them into the environment. The EPA has issued guidance on safe methods for the destruction and disposal of PFAS.¹⁰⁵ This includes technology like thermal treatment, landfilling, and underground injection control.¹⁰⁶

Thermal treatment through incinerators and kilns can be used to break the strong carbon-fluorine bond in PFAS.¹⁰⁷ These thermal tools can reach up to 3,000 degrees Fahrenheit.¹⁰⁸ However, there are only twenty-two available incinerators or kilns in the United States that can destroy PFAS.¹⁰⁹ Furthermore, new PFAS may develop from incomplete destruction or recombination.¹¹⁰ PFAS releases could also still occur in the atmosphere and in incinerator ash.¹¹¹ Next, the EPA recommends disposing of PFAS in landfills specifically designed for hazardous waste.¹¹² These landfills use extensive environmental controls to prevent leakage.¹¹³ However, this method does not destroy PFAS and simply stores them indefinitely.¹¹⁴ Even the best landfills will eventually fail unless they are replaced, which could lead to PFAS traveling out of the landfills and into

102. Campbell v. Tyco Fire Prods., No. 2:19-cv-00422-RMG (D.S.C. Oct. 13, 2021).

103. *Id.*

104. Restatement (Second) of Torts § 520 (1977).

105. U.S. ENV'T PROT. AGENCY, INTERIM GUIDANCE ON THE DESTRUCTION AND DISPOSAL OF PERFLUOROALKYL AND POLYFLUOROALKYL SUBSTANCES AND MATERIALS CONTAINING PERFLUOROALKYL AND POLYFLUOROALKYL SUBSTANCES at 33 (Dec. 18, 2020), https://www.epa.gov/system/files/documents/2021-11/epa-hq-olem-2020-0527-0002_content.pdf [<https://perma.cc/G2KR-89DZ>] [hereinafter INTERIM GUIDANCE ON DISPOSAL OF PFAS].

106. *Id.*

107. *Id.*

108. *Id.* at 35-36.

109. *Id.*

110. *Id.* at 33.

111. *Id.*

112. *Id.* at 56.

113. *Id.* at 55.

114. *Id.*

nearby water sources.¹¹⁵ PFAS may also be released in landfill gas over time.¹¹⁶ Next, the EPA suggests disposing of PFAS waste through underground injection into wells.¹¹⁷ However, this disposal method is limited to liquid waste.¹¹⁸ Furthermore, there are only 823 wells across the country that can be used for PFAS disposal.¹¹⁹ The wells are located in nineteen states, primarily in the Midwest and Great Plains region, leading to issues with waste transportation.¹²⁰ Therefore, the recommended methods for disposing of PFAS waste can still cause harmful releases.

Furthermore, it is difficult to eliminate the risk posed by PFAS once they are released into the environment because they are hard to control and destruct. Because PFAS contain a strong carbon-fluorine bond, they are very stable and are resistant to many forms of degradation like biodegradation, photooxidation, direct photolysis, and hydrolysis.¹²¹ This means that it takes an extremely large amount of energy to break down the carbon-fluorine bond.¹²² Furthermore, once PFAS are released into the environment, they are very difficult to control since they are mobile in the air, soil, and water.¹²³ Some volatile PFAS can enter the atmosphere and then lead to contamination of water and soil in places far away from the initial release.¹²⁴ For example, PFAS have been detected in oceans and in the Arctic, indicating long-range transport.¹²⁵

The EPA currently recommends three treatment processes for PFAS removal: granular activated carbon filters, ion exchange resins, and high-pressure membrane systems.¹²⁶ When water passes through a granular activated carbon filter, PFAS are trapped by the filter's carbon atoms.¹²⁷ These filters are 80-98% effective in removing PFAS.¹²⁸ Similarly, when contaminated water is passed

115. *Id.* at 55, 83.

116. *Id.* at 71.

117. *Id.* at 76.

118. *Id.*

119. *Id.* at 79.

120. *Id.* at 76, 79.

121. TOXICOLOGICAL PROFILE, *supra* note 88, at 3.

122. Benji Jones, *You Probably Have “Forever Chemicals” in Your Body. Here’s What That Means*, VOX (Aug. 25, 2022, 10:21 AM), <https://www.vox.com/2022/8/25/23318667/pfas-forever-chemicals-safety-drinking-water> [<https://perma.cc/U6DF-B5BG>].

123. TOXICOLOGICAL PROFILE, *supra* note 88, at 3.

124. *Id.*

125. *Id.*

126. *PFAS Treatment in Drinking Water and Wastewater—State of the Science*, U.S. ENV'T PROT. AGENCY (Nov. 22, 2022), <https://www.epa.gov/research-states/pfas-treatment-drinking-water-and-wastewater-state-science> [<https://perma.cc/U86M-887D>].

127. MINN. POLLUTION CONTROL AGENCY, *Granulated Activated Carbon Filters* (2009), at 1, <https://www.pca.state.mn.us/sites/default/files/c-s1-05.pdf> [<https://perma.cc/98WV-Q7V5>].

128. Thomas Speth, *Session 3: PFAS Treatment in Drinking Water and Wastewater—State of the Science*, U.S. ENV'T PROT. AGENCY (Sept. 16, 2020), at slide 10, https://www.epa.gov/sites/default/files/2020-09/documents/r1-pfas_webinar_day_1_session_3_speth.pdf

through an ion exchange resin, the PFAS have a strong affinity to the resin while the water passes through.¹²⁹ Ion exchange resins are 90-99% effective in removing PFAS.¹³⁰ Likewise, high pressure membranes allow water to pass but not contaminants.¹³¹ High pressure membranes are 93-99% effective in removing PFAS from water.¹³² Despite new technology that filters PFAS out of water, extremely small amounts of PFAS can have detrimental health effects.¹³³ Specifically, no level of PFOA or PFOS is safe in water.¹³⁴ Therefore, even after filtration, water could still be contaminated with potentially dangerous levels of PFAS.

Overall, it is difficult to reduce the risk posed by PFAS once released into the environment. However, because there are methods for disposing of PFAS more safely, courts may be reluctant to apply a strict liability standard rather than a negligence standard for releasing PFAS into the environment. Nevertheless, in *Department of Environmental Protection v. Ventron Corp.*, the court did not address whether the risk could be eliminated by the exercise of reasonable care when applying strict liability to disposing of mercury waste in a creek.¹³⁵ The court only stated that “no safe way exists to dispose of mercury by simply dumping it onto land or into water.”¹³⁶ In order to take environmental contamination seriously and address it with as many tools as possible, courts may choose not to focus on whether the risk is unable to be eliminated with reasonable care.¹³⁷

D. Factor 4: The Use of PFAS Is a Matter of Common Usage, but PFAS Are Being Phased Out of Production

Next, courts may consider the “extent to which the activity is not a matter of common usage” when applying strict liability.¹³⁸ There are currently at least 475 industries discharging PFAS into the environment.¹³⁹ PFAS are also still widely used in clothes, furniture, carpets, and fast-food wrappers.¹⁴⁰ In addition, many companies are producing new PFAS which have not been studied enough to

[<https://perma.cc/KLJ9-XNGY>].

129. *Ion Exchange (IX)*, DUPONT WATER SOLUTIONS, <https://www.dupont.com/water/technologies/ion-exchange-ix.html> [<https://perma.cc/N2MZ-X2GE>].

130. Speth, *supra* note 128.

131. *Membrane Cleaning Methods*, LENNTECH, <https://www.lenntech.com/membrane-cleaning.htm> [<https://perma.cc/CU6X-Y4Y6>].

132. Speth, *supra* note 128.

133. *Questions and Answers*, *supra* note 25.

134. Hampton, *supra* note 31.

135. 468 A.2d 150, 160 (N.J. 1983).

136. *Id.*

137. Klass, *supra* note 59, at 962.

138. RESTATEMENT (SECOND) OF TORTS § 520 (1977).

139. *What Are PFAS?*, *supra* note 16.

140. *Id.*

know if they are safe.¹⁴¹ Because discharging PFAS into the environment is still common, this factor likely would not support applying a strict liability standard to releasing PFAS.

Nevertheless, a court may consider the declining use of the most studied PFAS when applying strict liability. The production of PFAS items and subsequent disposal of some PFAS waste has become less common as the most studied PFAS have been phased out of production.¹⁴² For example, PFOA and PFOS have been phased out of production in the United States.¹⁴³ As a result, mean serum levels of PFOA and PFOS in the general population have declined by 70% and 84%, respectively, since 2000.¹⁴⁴ State legislatures in Michigan, New Jersey, and Maine have also proposed or enacted legislation to limit PFAS in drinking water, and California requires utilities to test tap water for PFAS.¹⁴⁵ In addition, Washington and Maine have banned PFAS in food packaging.¹⁴⁶ A court may consider regulatory schemes designed to eliminate PFAS as evidence that they are becoming less common.

E. Factor 5: Discharging PFAS Waste Near Water Sources Is Inappropriate

In addition, courts consider the “[i]nappropriateness of the activity to the place where it is carried on” when applying strict liability.¹⁴⁷ Discharging PFAS into the environment is inappropriate because they can contaminate drinking water and expose people to their dangerous health effects. As of June 2022, 2,858 water sites in all fifty states were contaminated with PFAS.¹⁴⁸ Data suggests that up to 110 million Americans could have PFAS-contaminated drinking water.¹⁴⁹

Instead, the EPA has suggested other methods of destruction and disposal of PFAS including thermal treatment, landfilling, and underground injection control.¹⁵⁰ However, the limited availability of incinerators, industrial landfills, and underground injection sites makes disposal of PFAS waste through these methods more difficult.¹⁵¹ Regardless of the challenges presented when disposing of PFAS, courts should find that disposing of PFAS near drinking water sites is inappropriate when considering their health effects and the very low health

141. *Id.*

142. *Id.*

143. *Id.*

144. TOXICOLOGICAL PROFILE, *supra* note 88.

145. *What are PFAS Chemicals?*, ENV’T WORKING GRP., www.ewg.org/what-are-pfas-chemicals [<https://perma.cc/FF5L-N9K7>] (last visited Nov. 24, 2022).

146. *Id.*

147. RESTATEMENT (SECOND) OF TORTS § 520 (1977).

148. *Mapping the PFAS Contamination Crisis: New Data Show 2,858 Sites in 50 States and Two Territories*, ENV’T WORKING GRP., https://www.ewg.org/interactive-maps/pfas_contamination/ (last visited Nov. 24, 2022) [<https://perma.cc/72YH-8ZNX>].

149. *Id.*

150. INTERIM GUIDANCE ON DISPOSAL OF PFAS, *supra* note 105.

151. *Id.* at 33, 55 & 79.

advisory levels for PFAS in drinking water.

F. Factor 6: The Dangerous Attributes of PFAS Outweigh Their Benefits to the Community

When applying strict liability, courts may also consider the “[e]xtent to which [the activity’s] value to the community is outweighed by its dangerous attributes.”¹⁵² PFAS have many useful industrial properties, allowing them to become a \$2 billion per year industry.¹⁵³ Their ability to resist grease, oil, and dirt has led to their use in nonstick cookware, their use as a stain repellent in carpets and furniture, and their use in firefighting foams.¹⁵⁴ In particular, PFAS are useful in military bases and airports to stop fires.¹⁵⁵

Although PFAS have useful properties, they are not always needed. For example, using PFAS to make clothing, carpets, and cosmetics resistant to water and oil is not an essential use.¹⁵⁶ Additionally, there are PFAS-free firefighting foams available and used at airports such as London’s Heathrow Airport.¹⁵⁷

Next, the durability that gives PFAS their useful properties also creates their health risks.¹⁵⁸ Because they do not degrade, PFAS accumulate in the body and lead to increased risk of cancer, changes to liver enzymes, diminished response to vaccines, and more.¹⁵⁹ In a study led by researchers at the Children’s Hospital of Philadelphia, researchers estimated the economic burden of various medical conditions resulting from PFAS exposure such as cancer, obesity, hypothyroidism in women, and damage to immune and reproductive systems.¹⁶⁰ The researchers estimated that treating and monitoring conditions resulting from PFAS exposure could cost the American public \$5.52 billion to \$63.6 billion over the lifetime of

152. RESTATEMENT (SECOND) OF TORTS § 520 (1977).

153. Andrew Wallender, *Companies Face Billions in Damages as PFAS Lawsuits Flood Courts*, BLOOMBERG L. (May 23, 2022, 05:30 AM), https://www.bloomberglaw.com/bloomberglawnews/pfas-project/X1PC8VPK000000?bna_news_filter=pfas-project#jcite [<https://perma.cc/T2WE-D2DJ>].

154. Joseph G. Allen, *These Toxic Chemicals are Everywhere—Even in Your Body. And They Won’t Ever Go Away*, WASH. POST (Jan. 2, 2018, 03:18 PM), https://www.washingtonpost.com/opinions/these-toxic-chemicals-are-everywhere-and-they-wont-ever-go-away/2018/01/02/82e7e48a-e4ee-11e7-a65d-1ac0fd7f097e_story.html [<https://perma.cc/5EMY-324H>].

155. Jones, *supra* note 122.

156. Cheryl Hogue, *How to Say Goodbye to PFAS*, CHEM. & ENG’G NEWS (Nov. 20, 2019), <https://cen.acs.org/environment/persistent-pollutants/say-goodbye-PFAS/97/i46> [<https://perma.cc/LQ9W-2T65>].

157. *Id.*

158. Wallender, *supra* note 153.

159. *Id.*

160. Vladislav Obsekov, Linda G. Kahn & Leonardo Trasande, *Leveraging Systematic Reviews to Explore Disease Burden and Costs*, EXPOSURE & HEALTH (June 26, 2022), <https://doi.org/10.1007/s12403-022-00496-y> [<https://perma.cc/4CAV-8ZPX>].

the current population.¹⁶¹ Additionally, \$4 billion in PFAS-related settlements have already been paid to date, and some experts predict that manufacturers may face \$400 billion in liability.¹⁶² Given the physical and economic burden of diseases caused by PFAS, the impact of PFAS on property values, and the growing prevalence of industry alternatives, the costs of PFAS outweigh their utility.

*G. Applying Strict Liability to the Release of PFAS into the Environment
Would Be Consistent with Existing Caselaw*

Several courts have rejected motions to dismiss strict liability claims for PFAS contamination, concluding that the facts pled by plaintiffs are sufficient to conclude that discharging PFAS is an abnormally dangerous activity.

In *Giordano v. Solvay Specialty Polymers USA, LLC*,¹⁶³ plaintiffs residing in Swedesboro, Logan Township, and Pedricktown, New Jersey sued defendant companies Solvay Special Polymers, Arkema, DuPont, and 3M Company in the District of New Jersey.¹⁶⁴ The plaintiffs sued under multiple theories of liability, including strict liability, for the contamination of their private water source.¹⁶⁵ The contamination was caused by the defendants' manufacturing, disposal, and discharge of PFAS including PFOA, PFOS, GenX, and perfluorononanoic acid (PFNA).¹⁶⁶ The plaintiffs claimed that the high concentrations of PFAS in their water supply led to high levels of PFAS in their blood.¹⁶⁷ The plaintiffs alleged that they were at risk of serious physical injuries and diseases, and their property values had diminished.¹⁶⁸ According to the plaintiffs, because their private wells were contaminated, they had to use bottled water at all times—even for tasks like cooking, watering plants, and brushing their teeth—which caused them annoyance, inconvenience, and distress.¹⁶⁹ The court denied the defendants' motion to dismiss because the plaintiffs had sufficiently pled their claims when considering the extensive chemical discharge over time.¹⁷⁰

In *Bond v. Solvay Specialty Polymers, USA, LLC*,¹⁷¹ the plaintiffs sued defendant companies Solvay Special Polymers, Arkema, DuPont, and the Chemours Company in the District of New Jersey alleging injury from the defendants' disposal of toxic waste.¹⁷² The plaintiffs alleged that 3M supplied the

161. *Id.*

162. Green, *supra* note 10.

163. 522 F. Supp. 3d 26 (D.N.J. 2021).

164. *Id.* at 29.

165. *Id.* at 31.

166. *Id.* at 29.

167. *Id.* at 31.

168. *Id.* at 33.

169. *Id.* at 31.

170. *Id.* at 40.

171. 583 F. Supp. 3d 643 (D.N.J. 2022).

172. *Id.* at 646.

defendants with sodium perfluorooctanoate (NaPFO) and PFOA which were used at two plants.¹⁷³ The PFAS and other toxins were released into the environment as a byproduct of the defendants' activities which involved using heavy metals, paints and dyes, and industrial alcohols and solvents.¹⁷⁴ The plaintiffs claimed they were exposed to PFAS from the defendants' plants by way of soil, water, and air and that the PFAS contaminated their personal water supplies.¹⁷⁵ The plaintiffs alleged multiple counts including negligence and strict liability.¹⁷⁶ The court denied the defendants' motion to dismiss because the plaintiffs had sufficiently pled facts to establish that the defendants' activities caused their injuries.¹⁷⁷

In *Higgins v. Huhtamaki, Inc.*,¹⁷⁸ the plaintiffs alleged that the defendants' disposal of PFAS-contaminated byproducts through their paper mills led to PFAS contaminating their groundwater, wells, land, plants, animals, and bodies.¹⁷⁹ The plaintiffs' well exceeded Maine's recommended limit on PFAS concentration by six times.¹⁸⁰ The plaintiffs had used the contaminated well water for drinking, cooking, bathing, and watering plants and animals.¹⁸¹ As a result, the plaintiffs suffered numerous health effects including obesity, diabetes, COVID-19 infection even after vaccination, influenza even after vaccination, hypertension, borderline preeclampsia, and emotional distress about future health concerns.¹⁸² Their property values had also diminished.¹⁸³ The plaintiffs asserted multiple claims against the defendants, including negligence and strict liability for an abnormally dangerous activity.¹⁸⁴ The court denied the defendants' motion to dismiss the strict liability claim because further factual findings were needed to determine if the disposal of PFAS is an abnormally dangerous activity.¹⁸⁵

In *Sullivan v. Saint-Gobain Performance Plastics Corp.*,¹⁸⁶ the United States District Court for the District of Vermont denied a motion to dismiss common law claims for strict liability, negligence, nuisance, and trespass in a class action lawsuit for PFOA contamination of groundwater.¹⁸⁷ A group of residents in Bennington and North Bennington, Vermont sued defendant company Saint-Gobain for unsafe handling, cleanup, and disposal of PFOA from their facilities

173. *Id.*

174. *Id.*

175. *Id.*

176. *Id.* at 649.

177. *Id.* at 654.

178. No. 1:21-cv-00369-NT, 2022 U.S. Dist. LEXIS 111062 (D. Me. June 23, 2022).

179. *Id.* at *3.

180. *Id.* at *6-7.

181. *Id.* at *7-8.

182. *Id.* at *8.

183. *Id.*

184. *Id.* at *9.

185. *Id.* at *36.

186. 226 F. Supp. 3d 288 (D. Vt. 2016).

187. *Id.* at 290-91, 299.

which then entered the groundwater.¹⁸⁸ Saint-Gobain argued that the case should be dismissed for lack of subject matter jurisdiction because the plaintiffs' case would interfere with Vermont's regulatory scheme for addressing PFOA.¹⁸⁹ The court disagreed and permitted the lawsuit to continue.¹⁹⁰

However, in *Suez Water N.Y., Inc. v. E.I. du Pont de Nemours & Co.*,¹⁹¹ the United States District Court for the Southern District of New York dismissed strict liability claims against defendants who discharged PFAS into the environment.¹⁹² Water utility company Suez Water sued defendant companies DuPont and Corteva for various tort claims related to water contamination in the Southern District of New York.¹⁹³ Suez operates five public water systems in New York, providing water to 505,000 customers.¹⁹⁴ The defendants sold, manufactured, and distributed PFAS products which then contaminated the water sources.¹⁹⁵ The court granted the defendants' motion to dismiss in part and denied the motion in part.¹⁹⁶ The court granted the defendants' motion to dismiss on the plaintiff's strict liability claim because the plaintiff failed to distinguish between PFAS and other lawful but dangerous products like firearms.¹⁹⁷ The defendants could have also taken reasonable steps to avoid harm, and the impossibility of eliminating the risk is a factor to be taken into account in determining if an activity is abnormally dangerous.¹⁹⁸

Overall, courts should apply strict liability for discharging PFAS into the environment because their health risks outweigh their utility. In addition, once released into the environment, PFAS do not degrade, and small amounts of PFAS can cause health problems. Finally, applying strict liability to the release of PFAS is not inconsistent with current case law. These factors weigh in favor of courts applying strict liability to the discharge of PFAS.

III. POLICY BENEFITS AND CHALLENGES WITH APPLYING STRICT LIABILITY FOR RELEASING PFAS INTO THE ENVIRONMENT

A. There Are Policy Benefits to Applying Strict Liability for Releasing PFAS into the Environment

1. Applying a Strict Liability Standard for Discharging PFAS into the Environment Eases the Burden Placed on Plaintiffs Under a Negligence

188. *Id.* at 291.

189. *Id.* at 294.

190. *Id.* at 295.

191. 578 F. Supp. 3d 511, 559 (S.D.N.Y. 2022).

192. *Id.* at 559.

193. *Id.* at 521.

194. *Id.* at 523.

195. *Id.* at 523-24.

196. *Id.* at 521.

197. *Id.* at 559.

198. *Id.*

Standard.—Negligence claims in PFAS lawsuits place a high burden of proof on plaintiffs, making it difficult for them to recover. The elements of negligence are: “(1) a duty of care owed by the defendant to the plaintiff; (2) a breach of that duty; (3) an actual causal connection between defendant’s conduct and the resulting harm; (4) proximate cause . . . and (5) damages resulting from the defendant’s conduct.”¹⁹⁹ To prove a breach of duty, the common standard is the reasonable person standard or the reasonable company standard in the case of PFAS manufacturers.²⁰⁰ Determining what a reasonable company would have known or done is difficult to argue and requires research and analysis.²⁰¹ These claims may require expert testimony, reports, depositions, and trials which are very expensive.²⁰² To prove that a reasonable person or company would not have released PFAS into the environment, plaintiffs must show that the company knew that PFAS were dangerous and that the harm was foreseeable.²⁰³ Furthermore, pollution could have occurred in compliance with permits and regulations, making it harder to prove the pollution was unreasonable.²⁰⁴ Although these burdens may not completely protect a polluter from liability, they increase litigation costs and time for plaintiffs who are often economically disadvantaged.²⁰⁵ Plaintiffs may also agree to lower settlements to receive compensation quickly.²⁰⁶

In *In re: E. I. Du Pont De Nemours & Co. C-8 Personal Injury Litigation*,²⁰⁷ after a month-long trial, a jury awarded \$1.6 million to the plaintiff who developed renal cell carcinoma from ingesting PFAS-contaminated drinking water.²⁰⁸ The defendant company DuPont filed a motion for judgment as a matter of law or, alternatively, for a new trial, arguing that there was insufficient evidence to prove that the plaintiff’s harm was foreseeable.²⁰⁹ In the case, it was undisputed that DuPont dumped tens of thousands of pounds of PFAS into the environment, but DuPont argued that no reasonable company would have known at the time that the exposure levels would cause harm.²¹⁰ The court ultimately denied DuPont’s motion, concluding that DuPont’s knowledge of PFAS’s persistence in the body was sufficient for a jury to conclude it owed the plaintiff

199. Johnson, *supra* note 40, at 112.

200. *Id.*

201. *Id.*

202. Kenneth Rumelt, *Modernizing Legal Remedies for a Toxic World* (Vt. 2018), <https://legislature.vermont.gov/Documents/2018/WorkGroups/Senate%20Judiciary/Bills/S.197> [<https://perma.cc/5ZN5-6LHG>].

203. Johnson, *supra* note 40, at 112.

204. Rumelt, *supra* note 202.

205. *Id.*

206. *Id.*

207. No. 2:13-CV-170, 2016 WL 659112 (S.D. Ohio Feb. 17, 2016).

208. *Id.* at *1, 4.

209. *Id.* at *5, 11.

210. *Id.* at *8-10.

a duty to not release large quantities of PFAS into surface water.²¹¹ Although the court upheld the jury verdict, the case demonstrates the time and cost associated with proving negligence, even though it was undisputed that DuPont dumped PFAS in surface water.²¹²

Furthermore, plaintiffs already face significant challenges in lawsuits, whether they use negligence or strict liability, because they must still identify the source of their injury, prove causation, and prove injury.²¹³ For those exposed to harmful PFAS, it can take many years for health issues to develop.²¹⁴ A significant period of time between the exposure and the emergence of the disease makes it difficult to prove causation due to potential intervening causes of the disease.²¹⁵ Examples of intervening causes include genetics, lifestyle, and exposure to other chemicals which can cause similar health effects.²¹⁶ For instance, with diseases as common as hypertension and high cholesterol, it is difficult to prove the disease was caused by PFAS exposure and not another factor.²¹⁷

Additionally, those exposed to PFAS may require medical monitoring.²¹⁸ Medical monitoring involves periodic diagnostic tests to identify and treat diseases early.²¹⁹ The American Law Institute in its Restatement (Third) of Torts recommends recovery for medical monitoring expenses, but it is a controversial recommendation that upends traditional tort law which requires a physical injury.²²⁰

To overcome the injury barrier, plaintiffs can use theories such as the economic injury theory and the subcellular injury theory.²²¹ In *Friends for All Children v. Lockheed Aircraft Corp.*,²²² the D.C. Circuit had Lockheed set up a fund for diagnostic tests for nervous system disorders in children who were in a plane crash.²²³ The court concluded that the defendant's negligence caused the plaintiffs to suffer an economic harm with periodic monitoring costs.²²⁴ However,

211. *Id.* at *10.

212. Rumelt, *supra* note 202.

213. Noonan, *supra* note 38.

214. *Id.* at 304.

215. *Id.*

216. Juan Carlos Rodriguez, 'Forever Chemical' Litigation is Here to Stay: A Cheat Sheet, LAW360 (Feb. 12, 2020, 7:06 PM), <https://www.law360.com/articles/1242972> [<https://perma.cc/67HP-WQT4>].

217. *Id.*

218. Noonan, *supra* note 38, at 289.

219. *Id.* at 289-90.

220. John Gardella, *PFAS Medical Monitoring Goes to State Supreme Court*, NAT'L L. REV. (Nov. 28, 2022), <https://www.natlawreview.com/article/pfas-medical-monitoring-goes-to-state-supreme-court> [<https://perma.cc/T4AD-HJA2>].

221. Noonan, *supra* note 38, at 302-06.

222. 746 F.2d 816 (D.C. Cir. 1984).

223. *Id.* at 837.

224. *Id.*

the Michigan Supreme Court rejected this economic injury theory because it blurred the distinctions between injury and damages in tort recovery.²²⁵ In the Massachusetts case *Donovan v. Philip Morris USA, Inc.*,²²⁶ the court held that plaintiffs must prove at least subcellular changes that increase their risk of illness in order to overcome the injury barrier for medical monitoring.²²⁷

Currently, Arizona, California, the District of Columbia, Florida, Massachusetts, Missouri, New Jersey, Pennsylvania, Utah, West Virginia, and Vermont allow such lawsuits.²²⁸ However, many states do not permit medical monitoring lawsuits because it is difficult for plaintiffs to prove they are injured if they have not developed a disease yet.²²⁹ Senator Kirsten Gillibrand of New York also introduced the PFAS Accountability Act of 2021, which would create a federal cause of action for medical monitoring costs due to PFAS exposure, but the bill did not pass.²³⁰ Overall, plaintiffs face significant challenges in overcoming the injury requirement of a toxic tort claim. Applying a strict liability standard for releasing PFAS into the environment promotes recovery for plaintiffs because rather than having to prove that the cause of their injury was negligence, they would have to prove the cause was the defendant's conduct, regardless of fault.²³¹

2. *Establishing Strict Liability for Releasing PFAS into the Environment Can Promote Judicial Economy.*—Between July 2005 and March 2022, over 6,400 PFAS lawsuits were filed in federal court.²³² In 2021 alone, over 1,235 PFAS lawsuits were filed with 3M being named in about three lawsuits per day.²³³ Applying a negligence standard has higher administrative costs than a strict liability standard because courts must determine the level of care that would have been used by a reasonable person or company.²³⁴ Furthermore, a strict liability standard could also reduce litigation costs and encourage settlements by making judgments more predictable.²³⁵ Although it is possible that a strict liability standard may increase the number of suits brought by plaintiffs because it eases the burden of proof on them, a strict liability standard could still lead to more

225. *Henry v. Dow Chem. Co.*, 701 N.W.2d 684, 691 (Mich. 2005).

226. 914 N.E.2d 891 (Mass. 2009).

227. *Id.* at 902.

228. Cheryl Hogue, *People Exposed to PFAS Could Sue for Medical Monitoring Costs, Under US Legislation*, CHEM. & ENG'G NEWS (Apr. 23, 2021), <https://cen.acs.org/environment/persistent-pollutants/People-exposed-PFAS-sue-medical/99/web/2021/04> [<https://perma.cc/3DWD-AFFH>].

229. Noonan, *supra* note 38.

230. S. 1334, 117th Cong. (2021).

231. Axline, *supra* note 42.

232. Wallender, *supra* note 153.

233. *Id.*

234. See *Economic Analysis of Alternative Standards of Liability in Accident Law*, HARV. UNIV., <https://cyber.harvard.edu/bridge/LawEconomics/neg-liab.htm> (last visited Nov. 24, 2022) [<https://perma.cc/6A59-TAEE>].

235. See *id.*

efficient resolution of thousands of cases.²³⁶

3. *Applying Strict Liability for Discharging PFAS into the Environment Can Deter Companies from Polluting.*—Applying strict liability for releasing PFAS into the environment can deter polluters from doing so.²³⁷ While other forms of liability, such as negligence, can also deter a polluter from releasing harmful substances, strict liability is more likely to do so because it eases the burden of proof on plaintiffs.²³⁸ With plaintiffs more likely to recover, polluters are incentivized to avoid these activities and instead use alternative materials.²³⁹ Furthermore, imposing strict liability for releasing PFAS will incentivize manufacturers to carefully research manmade substances as they produce them.²⁴⁰ PFAS can serve as an example of the importance of ensuring safety before using a chemical so widely. Finally, because of its deterrent value, strict liability is not uncommon in environmental contexts.²⁴¹ For example, CERCLA makes polluters strictly liable for response costs if they release hazardous substances into the environment.²⁴²

4. *Applying Strict Liability for Discharging PFAS into the Environment Can Promote Environmental Justice.*—Environmental justice is a major social movement designed to address the inequity of environmental protections in primarily poor communities.²⁴³ The implementation of strict liability is “primarily concerned with the underlying considerations of reasonableness, fairness and morality rather than with the formulary labels to be attached to the plaintiffs’ causes of action or the legalistic classifications in which they are to be placed.”²⁴⁴ Therefore, strict liability is a tool that can address the environmental justice concerns associated with PFAS.

PFAS raise significant environmental justice concerns because the communities impacted by PFAS are often made up of low-income people and people of color.²⁴⁵ When developing their proposed rule to designate PFOA and PFOS as hazardous substances, the EPA analyzed communities near facilities that commonly use PFAS.²⁴⁶ These facilities include operating Department of Defense

236. *See id.*

237. Lynda J. Oswald, *Strict Liability of Individuals Under CERCLA: A Normative Analysis*, 20 B.C. ENV’T AFFS. L. REV. 579, 597 (1993).

238. *Id.* at 598.

239. *Id.*

240. *Id.* at 597.

241. *See id.*

242. 42 U.S.C. § 9607.

243. *Environmental Justice*, U.S. ENV’T PROT. AGENCY (Aug. 5, 2022), <https://www.epa.gov/environmentaljustice> [<https://perma.cc/958A-AVRP>].

244. *Dep’t of Env’t Prot. v. Ventron Corp.*, 468 A.2d 150, 159 (N.J. 1983).

245. Olivia Backhaus & Jared Hayes, *Environmental Injustice: Passing on the Costs of ‘Forever Chemicals’ Cleanup*, ENV’T WORKING GRP. (May 26, 2022), <https://www.ewg.org/news-insights/news/2022/05/environmental-injustice-passing-costs-forever-chemicals-cleanup> [<https://perma.cc/RFZ2-J8H5>].

246. Proposed Rule, *supra* note 80.

facilities, operating U.S. airports and airfields, plastics material and resin manufacturing firms identified as having produced PFOA and/or PFOS, and facilities reporting PFOA and PFOS releases to the EPA's Toxic Release Inventory.²⁴⁷ On average, communities surrounding large airports and manufacturing facilities that use PFOA and PFOS are more likely to have minority and low-income populations.²⁴⁸

According to a report from the Union of Concerned Scientists, about 40,000 more low-income households and 300,000 more people of color than expected live in a five-mile radius of a site contaminated with PFAS.²⁴⁹ Furthermore, in a recent study, the Natural Resources Defense Council examined the interaction between PFAS pollution and the socioeconomic status of communities in California.²⁵⁰ The study found that communities with disproportionate pollution and socioeconomic burdens experienced higher potential exposure to PFAS-contaminated water.²⁵¹ Another example of the environmental justice impact of PFAS is in Alabama where 3M discharged PFAS into the Tennessee River.²⁵² This resulted in PFAS contamination in eight water systems, affecting cities like Fort Payne, Alabama and Gadsden, Alabama.²⁵³ The poverty rates in Fort Payne and Gadsden are 22% and 27%, respectively, compared to the national average of 14%.²⁵⁴ Establishing a strict liability standard for releasing PFAS into the environment can promote environmental justice by promoting compensation for disproportionately impacted communities.

B. There Are Challenges to Applying Strict Liability for Discharging PFAS into the Environment

1. The Safety of all PFAS Are Unknown Because PFAS Are a Broad Class of Chemicals.—Applying a strict liability standard for the discharge of PFAS into the environment is challenging because of how broad PFAS are as a group. As a class of substances, PFAS include more than 9,000 chemicals, and research is still being conducted on their health effects.²⁵⁵ The EPA has largely focused its

247. *Id.*

248. *Id.*

249. Antia Desikan et al., *Abandoned Science, Broken Promises*, CTR. FOR SCI. & DEMOCRACY (Oct. 2019), at 13 <https://www.ucsusa.org/sites/default/files/2019-10/abandoned-science-broken-promises-web-final.pdf> [<https://perma.cc/NK3K-AH38>].

250. Susan Lee et al., *Dirty Water: Toxic “Forever” PFAS Chemicals are Prevalent in the Drinking Water of Environmental Justice Communities*, NAT. RES. DEF. COUNCIL, INC., (Aug. 2021), <https://www.nrdc.org/sites/default/files/dirty-water-pfas-ej-communities-report.pdf> [<https://perma.cc/F29T-WY3D>].

251. *Id.* at 10.

252. Backhaus & Hayes, *supra* note 245.

253. *Id.*

254. *Id.*

255. *Per- and Polyfluoroalkyl Substances (PFAS)*, CTRS. FOR DISEASE CONTROL & PREVENTION (Sept. 15, 2022), <https://www.cdc.gov/niosh/topics/pfas/default.html>

regulations on the most studied PFAS like PFOA, PFOS, GenX, and PFBS.²⁵⁶ Courts could apply strict liability to the release of these PFAS instead of all PFAS.

2. Business and Insurance Groups May Oppose a Strict Liability Standard for Releasing PFAS into the Environment.—Next, applying strict liability to the discharge of PFAS will likely face opposition from business groups and industries that have engaged in the activity in the past. For example, the United States Chamber of Commerce opposes CERCLA’s designation of PFOA and PFOS as hazardous substances due to the “economically significant” costs of cleaning contaminated sites and implementing the rule.²⁵⁷ Businesses will likely also oppose applying common law strict liability to discharging PFAS because defendants are more likely to be held liable than they would under a negligence standard.²⁵⁸

Increasing liability for discharging PFAS into the environment can impact insurance premiums. Currently, some insurers have been resisting coverage in PFAS lawsuits. In *Wolverine World Wide v. American Insurance Co.*,²⁵⁹ the insurance company refused to defend Wolverine in numerous environmental cases because Wolverine had engaged in intentional discharges.²⁶⁰ However, the United States District Court for the Western District of Michigan found that the insurers breached their duty to defend Wolverine because their policy covered “sudden and accidental” pollution, and the insurance company had not proven that every claim in each of the lawsuits involved intentional and not accidental discharges.²⁶¹ In contrast, the New York Supreme Court, Appellate Division, held in a similar case that dumping waste over many years was “the opposite of suddenness,” so the “sudden and accidental” pollution provision in the policy did not apply.²⁶²

Next, insurers have resisted defending their insureds in bodily injury cases involving PFAS. In *Colony Insurance Co. v. Buckeye Fire Equipment Co.*,²⁶³ the United States District Court for the Western District of North Carolina held that Colony Insurance Company had a duty to defend a manufacturer of firefighting foam in cases brought by hundreds of firefighters.²⁶⁴ The policy in the case excluded coverage for bodily injury that would not have occurred but for the

[<https://perma.cc/3XFW-949Z>].

256. *Questions and Answers*, *supra* note 25.

257. *U.S. Chamber-led Coalition Opposes CERCLA Designation for PFAS, Encourages Other Solutions*, U.S. CHAMBER OF COM. (Aug. 26, 2022), <https://www.uschamber.com/environment/u-s-chamber-led-coalition-opposes-cercla-designation-for-pfas-encourages-other-solutions> [<https://perma.cc/CC3S-Y4T9>].

258. Axline, *supra* note 42.

259. No. 1:19-cv-10, 2021 WL 4841167 (W.D. Mich. Oct. 18, 2021).

260. *Id.* at *11.

261. *See id.*

262. *Tonoga, Inc. v. New Hampshire Ins.*, 201 A.D.3d 1091, 1097 (N.Y. App. Div. 2022).

263. No. 3:19-cv-00534-FDW-DSC, 2020 WL 6152381 (W.D.N.C. Oct. 20, 2020).

264. *Id.* at *1.

discharge of hazardous materials like pollutants.²⁶⁵ However, the court found that because the injuries were caused by exposure to firefighting foam and not just pollution, the insurer was required to defend the manufacturer.²⁶⁶

Overall, companies facing liability for discharging PFAS into the environment are likely to also face challenges from their insurance providers. Furthermore, if polluters are held strictly liable for discharging PFAS, insurance providers may raise premiums to pay for larger judgments or settlements. Nevertheless, if applying strict liability promotes settlement and decreases litigation costs, then insurance premiums may not increase drastically. Furthermore, insurance interests must be balanced with the interest in promoting environmental justice.

3. *A Recent Vermont Bill Attempting to Apply Strict Liability for Releasing Toxic Substances into the Environment Highlights the Complexities of Such Legislation.*—A recent Vermont bill demonstrates the challenges of enacting a strict liability standard for releasing toxic substances into the environment. In 2018, the Vermont General Assembly introduced bill S.197, “An Act Relating to Liability for Toxic Substance Exposures or Releases” which proposed imposing strict liability for toxic substance releases and providing a cause of action for medical monitoring claims.²⁶⁷ The bill proposed that “any person who releases a toxic substance shall be held strictly, jointly, and severally liable for any harm resulting from the release.”²⁶⁸ Under the bill, a “harm” was defined as “personal injury or property damage.”²⁶⁹ “Toxic substances” were limited to those designated by the EPA under CERCLA and various lists from health agencies like the Occupational Safety and Health Administration and the U.S. Department of Health and Human Services.²⁷⁰ Supporters of the bill argued that under current law, the “victims and taxpayers are liable for the cost of medical care.”²⁷¹ However, critics argued the bill could raise insurance rates and treat corporate citizens with proper permits as “malicious polluter[s].”²⁷²

Ultimately, the bill passed the Senate but was amended by the House to omit the strict liability provision and only permit a cause of action for medical monitoring.²⁷³ The bill was then vetoed by the Governor because he believed it would harm business interests and could cause employers to leave the state.²⁷⁴ Although the Vermont bill proposed strict liability for releasing toxic substances

265. *Id.*

266. *Id.* at *4.

267. Rumelt, *supra* note 202.

268. 2018 Vt. S. J. Res. 197, Vt. 2017-18 Leg. Sess. (vetoed by the Governor May 12, 2018).

269. *Id.*

270. *Id.*

271. Mike Polhamus, *Sears Blames Special Interests for Delay*, BENNINGTON BANNER (Mar. 18, 2018), https://www.benningtonbanner.com/ap/state/sears-blames-special-interests-for-delay/article_6a5a6245-7b6b-59ca-b33b-f325860ae462.html [<https://perma.cc/65SW-AUYX>].

272. *Id.*

273. 2018 Vt. S. J. Res. 197, Vt. 2017-18 Leg. Sess. (vetoed by the Governor May 12, 2018).

274. Polhamus, *supra* note 271.

generally rather than specifically for PFAS, Vermont's failed attempt at legislation demonstrates the challenges of establishing a strict liability standard for discharging chemicals like PFAS.

CONCLUSION

PFAS or “forever chemicals” are “one of the most seminal public health challenges of the coming decades” and have already introduced many legal issues in toxic torts.²⁷⁵ Although many—including physicians—have not heard of PFAS, PFAS are the next major toxic tort that will take up court dockets and impose billions of dollars in liability on manufacturers.²⁷⁶

With the impending CERCLA designation of certain PFAS as hazardous substances, courts are more likely to find the risk of harm caused by PFAS to be great. Additionally, the persistence of PFAS in the environment and the fact that the slightest contamination can lead to detrimental health effects support the conclusion that courts should apply strict liability to the release of PFAS. Furthermore, while the Southern District of New York has declined to apply strict liability to the disposal of PFAS because reasonable precautions could be taken to eliminate the risk, other courts in New York, New Jersey, and Maine have rejected defendants' motions to dismiss strict liability claims. In addition, applying a strict liability standard to the discharge of PFAS has policy benefits and challenges. For example, a strict liability standard can promote judicial economy and settlements, deter pollution, and promote environmental justice, but it is also likely to face opposition from business and insurance groups.

The tort system is a tool designed to adequately compensate plaintiffs who have been injured by the actions of defendants. The tort system can also complement environmental regulatory schemes to ultimately prevent pollution and promote environmental justice. With the hazards that PFAS pose, courts should establish a strict liability standard to better compensate plaintiffs who have been injured in this public health crisis.

275. Christopher Knaus, *Toxic Firefighting Chemicals 'The Most Seminal Public Health Challenge,'* GUARDIAN (Oct. 18, 2017), <https://www.theguardian.com/australia-news/2017/oct/18/toxic-firefighting-chemicals-the-most-seminal-public-health-challenge> [<https://perma.cc/76WS-NDQL>].

276. Booth, *supra* note 11.