



PFAS: Ubiquitous and Persistent Chemicals:
Assessing Liability and Allocating Risk

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Introduction

In May 2018 the EPA opened a new docket, noting its intention to “tak[e] action to identify solutions to address Per- and Polyfluoroalkyl Substances (PFAS) in the environment.” The same month, EPA hosted a Summit to “to aid in identifying solutions to address PFAS challenges in drinking water and at contaminated sites.”¹ On February 13, 2019 the EPA announced its “First-Ever Comprehensive Nationwide Per- and Polyfluoroalkyl Substances (PFAS) Action Plan.”² According to the EPA,

Per- and polyfluoroalkyl substances (PFAS) are a group of synthetic chemicals that have been in use since the 1940s. PFAS are found in a wide array of consumer and industrial products. PFAS manufacturing and processing facilities, facilities using PFAS in production of other products, airports, and military installations are some of the contributors of PFAS releases into the air, soil, and water. Due to their widespread use and persistence in the environment, most people in the United States have been exposed to PFAS. There is evidence that continued exposure above specific levels to certain PFAS may lead to adverse health effects.³

Beyond explaining how the federal government is responding under its authority under the Toxic Substances Control Act (TSCA), the Safe Drinking Water Act (SDWA), and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), EPA’s Action Plan sets priority actions, short-term actions, risk communication and engagement, and long-term actions and each includes “hold[ing] responsible parties accountable for PFAS releases into the environment.” The Action Plan include a process to set an maximum contaminant level (MCL) under the Safe Drinking Water Act (SDWA). EPA expects to propose a regulatory determination by the end of 2019, which is the first step to setting the MCL. EPA intends to continue enforcement actions and expand its focus to monitoring drinking water. In explaining these actions, EPA observed that PFAS is a “category of man-made chemicals that have been widely used to make products because of their stain-resistant, waterproof and/or nonstick properties. These chemicals can be very persistent in the environment and in the human body – meaning they don’t break down quickly and they can accumulate over time. There is evidence suggesting that exposure to PFAS may lead to adverse health outcomes in humans.”⁴

There is a growing focus of regulatory and judicial attention on a ubiquitous substance once generally recognized as safe but now questioned as pernicious. PFAS users and processors, manufacturers, packers and sellers may look to lessons learned (and some currently being forged) from enforcement and tort litigation concerning other chemicals to understand the risk profile of these chemical in this new regulatory and litigation climate. The backdrop to the current regulatory and litigation landscape concerning

¹ <https://www.regulations.gov/docket?D=EPA-HQ-OW-2018-0270>

² <https://www.epa.gov/newsreleases/media-advisory-epa-announce-first-ever-comprehensive-nationwide-pfas-action-plan-0>

³ *Id.* at 1

⁴ *Id.*

PFAS is familiar. Decades ago industry developed a product with important and unquestioned utility (i.e. it is very good at what it does) but over the ensuing decades as human exposure increased and environmental and health associations emerged and began to be questioned, the risk benefit equation began to shift. As the foreground becomes increasingly occupied by federal and state regulatory initiatives and the scientific and medical literature exponentially expands, the mass of enforcement actions and litigation grow.

While the breadth and scope of the litigation and regulatory enforcement action to come are currently unknown, we will look at this controversy through the lens of prior similar industry challenges to apply lessons learned and examine strategies that worked and those that failed. The risk analysis falls into two general categories, ground water contamination and personal injury claims. We will discuss what makes PFAS similar to other chemical contamination and exposure cases, and how prior litigation and enforcement experience can help guide businesses and legal risk management in this emerging area.

PFAS: An Emerging Contaminant

The History of PFA Use

PFAS were developed and initially manufactured by 3M Corporation in the late 1930s.⁵ Several other companies, including DuPont (now known as Chemours), manufactured PFAS, and many other companies used these chemicals in product manufacturing and processing.⁶ PFAS impart oil and water repellency, temperature resistance, and friction reduction to a wide range of products used by consumers and industry.⁷

Initially, two PFAS compounds, perfluorooctanic acid (PFOA) and perfluorooctanesulfonic acid (PFOS), predominated in the market. Related compounds proliferated and now number as many as 3,000 PFAS.⁸ In discussing the scope of exposure, EPA has concluded that PFAS are ubiquitous and can be found in

- Food packaged in PFAS-containing materials, processed with equipment that used PFAS, or grown in PFAS-contaminated soil or water.

⁵ See background information on PFAS available at <https://fluorocouncil.com/>; the Interstate Technology Regulatory Council, PFAS – Per- and Polyfluoroalkyl Substances, available at <https://pfas-1.itrcweb.org/> (Updated March 2018; Last visited January 9, 2019); EPA, Basic Information on PFAS, available at <https://www.epa.gov/pfas/basic-information-pfas>, and EPA, Long-Chain Perfluorinated Chemical (PFC) Plan at 2 (December 30, 2009), available at https://www.epa.gov/sites/production/files/2016-01/documents/pfcs_action_plan1230_09.pdf; and, among others.

⁶ Interstate Regulatory Technology Council, History and Use of Per- and Polyfluoroalkyl Substances (PFAS) at 1 (2017), available at https://pfas-1.itrcweb.org/wp-content/uploads/2017/11/pfas_fact_sheet_history_and_use__11_13_17.pdf.

⁷ Interstate Regulatory Technology Council, History and Use of Per- and Polyfluoroalkyl Substances (PFAS) at 1 (2017), available at https://pfas-1.itrcweb.org/wp-content/uploads/2017/11/pfas_fact_sheet_history_and_use__11_13_17.pdf.

⁸ Interstate Regulatory Technology Council, History and Use of Per- and Polyfluoroalkyl Substances (PFAS) at 1 (2017), available at https://pfas-1.itrcweb.org/wp-content/uploads/2017/11/pfas_fact_sheet_history_and_use__11_13_17.pdf.

- Commercial household products, including stain- and water-repellent fabrics, nonstick products (e.g., Teflon), polishes, waxes, paints, cleaning products, and fire-fighting foams (a major source of groundwater contamination at airports and military bases where firefighting training occurs).
- Workplaces, including production facilities or industries (e.g., chrome plating, electronics manufacturing or oil recovery) that use PFAS.
- Drinking water, typically localized and associated with a specific facility (e.g., manufacturer, landfill, wastewater treatment plant, firefighter training facility).
- Living organisms, including fish, animals and humans, where PFAS have the ability to build up and persist over time.⁹

PFAS are commonly found as a legacy chemical at facilities where they were manufactured or used in production or processing.

a. History of Regulation/Legislation to date

Prior to March 2017, the EPA stated that it had “not yet made a determination as to whether PFOA poses an unreasonable risk to the public” and did not recommend that consumers take action to reduce exposures to PFOA. But in 2017, EPA modified its statement to say that “the information that EPA has available does not indicate that the routine use of consumer products containing PFASs poses a concern.”¹⁰

When in the late 1990s and early 2000s, regulatory concerns were raised about long-chain PFAS, manufacturers voluntarily agreed to eliminate PFOA and related long-chain fluorinated substances, including long-chain fluorotelomer-based products, from facility emissions and product formulation.¹¹ As a result, companies developed alternatives, including short-chain fluorotelomer-based products with benign environmental and health profiles.¹²

The following sets forth a timeline of key events:

- From the 1930s through the early 2000s: Perfluorinated compounds were manufactured for use in production processes to enhance mixing, and in finished products for fire resistance and oil, stain, grease, and water repellency qualities. The scientific consensus was that PFAS were

⁹ <https://www.epa.gov/pfas/basic-information-pfas#health>

¹⁰ EPA, Per- and Poly-fluoroalkyl Substances (PFASs) under TSCA Background, available at <https://www.epa.gov/assessing-and-managing-chemicals-under-tsca/and-polyfluoroalkyl-substances-pfass-under-tsca> (last visited March 2, 2017).

¹¹ FluoroCouncil, Scientific Studies, available at <http://accfc.sachsdigital.com/health-environment/scientific-studies/>.

¹² *Id.*

generally not toxic and regulators did not consider these chemicals to be of regulatory concern.¹³

- 1970s: DuPont learned that PFOA was persistent in the bodies of workers.¹⁴
- 1999- 2000: Detection of PFAS in the blood of the general human population began in the 1990s. 3M provided information to EPA on its studies of PFOS. PFAS became chemicals of potential regulatory concern as studies emerged suggesting the chemicals were resistant to degradation in the environment. In humans and animals and that the chemicals were well absorbed but poorly metabolized through blood circulation and crossing the placental barrier.¹⁵
- 2002: 3M voluntarily phased-out its manufacture of PFAS chemicals in the United States.
- 2002 through 2015: EPA issued Significant New Use Rules (SNURs) involving PFOS and 183 other PFA chemicals in 2007, and another 20 proposed new SNURs for long-chain perfluoroalkyl carboxylates in 2015.¹⁶
- 2005: EPA levied a civil penalty of \$10.25 million required a supplement payment of \$6.25 million in a voluntary settlement of a Toxic Substances Control Act (TSCA) Section 8(e) allegation that DuPont failed to disclose “significant risk” information associated with PFASs, which ultimately led to a cleanup action against the manufacturer.¹⁷ EPA’s action was triggered by information from citizens living near and working at the DuPont plant in West Virginia.
- 2006: DuPont signed a consent order requiring it to offer alternative drinking water or treatment to all public and private water systems that had PFOA levels above 0.50 parts per billion (ppb). Eight major manufacturers agreed to a 95 percent reduction in global emissions and product content of PFOA and related chemicals by 2010, and to work toward eliminating

¹³ “To date, significant adverse effects have not been found in the general human population.” EPA, Long-Chain Perfluorinated Chemical (PFC) Plan at 2 (December 30, 2009), available at https://www.epa.gov/sites/production/files/2016-01/documents/pfcs_action_plan1230_09.pdf.

¹⁴ DuPont Statement on PFOA (2018), available at <http://www.dupont.com/corporate-functions/our-company/insights/articles/position-statements/articles/pfoa.html>.

¹⁵ Citing long-chain PFC’s presence in human blood; persistent, bioaccumulative, and toxic (PBT)3 characteristics; use in consumer products; production volume; and other similar factors. EPA, Long-Chain Perfluorinated Chemical (PFC) Plan at 2 (December 30, 2009), available at https://www.epa.gov/sites/production/files/2016-01/documents/pfcs_action_plan1230_09.pdf.

¹⁶ EPA. Long-Chain Perfluoroalkyl Carboxylate and Perfluoroalkyl Sulfonate Chemical Substances; Significant New Use Rule, 80 Fed. Reg. 2,8850 (January 21, 2015) (Proposed Rule), available at <https://www.govinfo.gov/content/pkg/FR-2015-01-21/pdf/2015-00636.pdf>.

¹⁷ Memorandum from Granta Y. Nakayama, Assistant Administrator to Environmental Appeals Board (December 14, 2005), available at <https://www.epa.gov/sites/production/files/2013-08/documents/eabmemodupontpfoasettlement121405.pdf>.

emissions and product content by 2015.¹⁸ This response was prompted by the presence of PFAS in human blood and animal studies. The EPA took a voluntary phase out approach, as opposed to a ban, because it found no reasonable basis to conclude that manufacturing, processing, distributing, using, or disposing of PFOA “presents,[something missing] presented an unreasonable risk of injury to health or the environment,”¹⁹ the statutory threshold for a ban under TSCA..

- January 8, 2009: EPA issued a PFOA drinking water advisory of 0.40 µg/L,²⁰ which was used to lower allowable limits in the EPA administrative order issued against DuPont.
- December 30, 2009: EPA issued its Long-Chain Perfluorinated Chemicals (PFCs) Action Plan.²¹
- January 2016: Noting that industry had already abandoned the use of these substances, the federal Food and Drug Administration (FDA) amended the food additive regulations to no longer provide for the use of three specific “long-chain” perfluorinated substances as oil and water repellants for paper and paperboard in contact with aqueous and fatty foods in food-contact substances (FCS), based on toxicity data for structurally similar substances, suggesting there is no longer a reasonable certainty of no harm from use of these chemicals in FCSs.²²
- 2016: EPA issued a nonbinding PFOA and PFOS drinking water advisory of 0.07 micrograms per liter (70 parts per trillion).²³
- 2016-2019: Seven states, Health Canada, and Australia issued drinking water standards or advisories for PFOA, ranging from 0.014 to 1.6 µg/L²⁴

¹⁸ EPA, Fact Sheet: 2010/2015 PFOA Stewardship Program, (Last Updated On August 9, 2018; last viewed January 10, 2019), available at <https://www.epa.gov/assessing-and-managing-chemicals-under-tsca/fact-sheet-20102015-pfoa-stewardship-program>.

¹⁹ EPA staff prior to the 2016 amendments expressed concerns that the health data concerning PFAs (even long-chain PFAs) were not sufficient to make the Toxic Substance Control Act Section 6(a) regulatory finding for taking regulatory action that these PFAs “present or will present an unreasonable risk.” As a result, EPA used the PFOA Stewardship program to obtain voluntary cessation of manufacturing followed by the issuance of significant new use rules to prevent return to manufacturing of PFAs without EPA review.

²⁰ EPA, Provisional Health Advisories for Perfluorooctanoic Acid (PFOA) and Perfluorooctane Sulfonate (PFOS) at 4 (January 8, 2009), available at <https://www.epa.gov/sites/production/files/2015-09/documents/pfoa-pfos-provisional.pdf>.

²¹ Long-Chain Perfluorinated Chemicals (PFCs) Action Plan.
https://www.epa.gov/sites/production/files/2016-01/documents/pfcs_action_plan1230_09.pdf.

²² FDA, Indirect Food Additives: Paper and Paperboard Components, 81 Fed. Reg. 5 (January 4, 2016) (final rule), available at <https://www.federalregister.gov/documents/2016/11/22/2016-28116/indirect-food-additives-paper-and-paperboard-components>.

²³ EPA, Fact Sheet, PFOA & PFOS Drinking Water Health Advisories (November 2016), available at https://www.epa.gov/sites/production/files/2016-06/documents/drinkingwaterhealthadvisories_pfoa_pfos_updated_5.31.16.pdf.

²⁴ Maine (0.07 µg/L, guidance, 2016); Michigan (0.42 µg/L, guidance, 2016); Minnesota 0.3 µg/L (chronic limit) (0.035 health-based guidance value, 201); Nevada 0.667 µg/L, guidance, 2017); New

New Hampshire proposed a PFOA drinking water standard of 0.038 µg/L.²⁵ The World Health Organization and the European Union have not established a limit for PFOA in drinking water.²⁶

- November 10, 2017: PFOA and PFOS were listed by California as Proposition 65 chemicals known to cause reproductive toxicity. This listing also applies to products containing PFOA and PFOS imported into the US.
- December 13, 2017: Michigan established a multi-agency team to address PFC contamination.²⁷ April 2018: The Environmental Working Group (EWG) advocated for a 1 ppt drinking water standard.²⁸
- 2018: National Association of Clean Water Agencies (NACWA), which represents sewer authorities and drinking water suppliers, urged EPA to focus its PFA Action Plan on placing liability with those entities that are the source of PFAS²⁹ in drinking water or municipal wastewater and biosolids can act as the pathway through which the original sources of PFAS contaminate the environment. Conventional wastewater treatment plants are not designed to remove these synthetic industrial chemicals, suggesting communities may face operational and technical challenges and costs to test, treat or otherwise address the presence of these substances in wastewater effluent and biosolids.
- 2018-2019: Increasing levels of information, research, and guidance issue from states, ITRC, DOD, DOE, and other groups, along with site

Jersey 0.014 µg/L (limit, 2015, 2017); North Carolina (1-1.6 µg/L (interim guidance, 2012, 2013); Vermont 0.02 µg/L (guidance, 2017). ATSDR, Toxicological Profile for Perfluoroalkyls at Table 7-2. Select State Drinking Water and Daily Intake Levels for Perfluoroalkyls at 646 (June 2018), available at <https://www.atsdr.cdc.gov/toxprofiles/tp200.pdf>). Australia (2017) 0.56 µg/L and Health Canada (2018) Health Canada (2018) 0.2 µg/L tolerable daily intake. Health Canada, Guidelines for Canadian Drinking Water Quality Guideline Technical Document Perfluorooctanoic Acid (PFOA) at 1, 2 (December 7, 2018), available at [/healthy-living/guidelines-canadian-drinking-water-quality-technical-document-perfluorooctanoic-acid/document/PFOA_2018-1130-eng.pdf](https://www.healthcanada.ca/healthy-living/guidelines-canadian-drinking-water-quality-technical-document-perfluorooctanoic-acid/document/PFOA_2018-1130-eng.pdf).

²⁵ New Hampshire Department of Environmental Services, Summary Report On The New Hampshire Department Of Environmental Services Development Of Maximum Contaminant Levels And Ambient Groundwater Quality Standards For Perfluorooctanesulfonic Acid (PFOS), Perfluorooctanoic Acid (PFOA), Perfluorononanoic Acid (PFNA), And Perfluorohexanesulfonic Acid (PFHXS) at 46 (January 4, 2019), available at <https://www.des.nh.gov/organization/commissioner/pip/publications/documents/r-wd-19-01.pdf>.

²⁶ ATSDR, Toxicological Profile for Perfluoroalkyls at Table 7-2. Select State Drinking Water and Daily Intake Levels for Perfluoroalkyls at 646 (June 2018), available at <https://www.atsdr.cdc.gov/toxprofiles/tp200.pdf>.

²⁷ Michigan, PFAS Response Tackling Action, Protecting Michigan (2019), available at <https://www.michigan.gov/pfasresponse/>.

²⁸ Environmental Working Group, Update: Mapping the Expanding PFAS Crisis Known Contamination from Toxic Fluorinated Chemicals Keeps Spreading, With No End in Sight (April 18, 2018), available at <https://www.ewg.org/research/update-mapping-expanding-pfas-crisis>.

²⁹ Letter from NACWA to EPA (July 20, 2018), regarding EPA's Request for Comment on Per- and Polyfluoroalkyl Substances (PFAS), available at <http://www.nacwa.org/docs/default-source/clean-water-current-pdf/nacwa-comment-for-docket-epa.pdf>.

specific information from cleanup efforts.³⁰ These actions focus on remediation of PFAS in drinking water, groundwater, and soil. According to the litigation advocacy group the Environmental Working Group (EWG), the EPA “suggests” that up to 110 million Americans could have PFAS in their water at concentrations of 1 ppt or greater.³¹

These actions and reports received intense media coverage, much of which criticized EPA regulatory action as inadequate. In turn, this heightened attention increased pressure for groundwater and soil remediation actions not only against manufacturers of PFOA and PFOS, but also companies that use PFCs in making their products (e.g., fire-fighting foam, stain proof carpets, furniture, and other textiles). These developments have given rise to personal injury and property damage litigation. At least one series of settlements involving one site are valued at close to \$1 billion.³²

b. Science

Since the early reports of global detection of PFAS in wildlife and human blood, publications on the environmental and toxicological aspects of these chemicals have grown exponentially, now exceeding hundreds of scientific and medical articles per year.³³ While the volume of publications provides no measure of the quality of the underlying data or the conclusions of any reports, the scale and scope of the exposure issues does serve as a barometer for the prospect of increased risk to businesses that have produced or used these chemicals.

Media attention has paralleled this surge in publications, with attention-grabbing headlines often outpacing equivocal, fact-based examinations of established environmental and health risks. As one example, claims abounded more than a decade ago that Teflon cookware was unsafe because it released perfluorinated chemicals when heated to high temperatures. The manufacturer responded aggressively, citing EPA, Food and Drug Administration (FDA) and Consumer Product Safety Commission

³⁰ ITRC, PFAS - Per- and Polyfluoroalkyl Substances, available at <http://pfas-1.itrcweb.org/>. ITRC is public-private coalition (with private and public sector members from all 50 states and the District of Columbia) that produces documents, guidance, and training that can be particularly utilized by States and SERDP/ESTCP, Per- and Polyfluoroalkyl Substances, available at <https://www.serdp-estcp.org/Featured-Initiatives/Per-and-Polyfluoroalkyl-Substances-PFASs>.

³¹ Environmental Working Group, Update: Mapping the Expanding PFAS Crisis Known Contamination from Toxic Fluorinated Chemicals Keeps Spreading, With No End in Sight (April 18, 2018, available at <https://www.ewg.org/research/update-mapping-expanding-pfas-crisis>).

³² Jeff Mordock, DuPont, Chemours to pay \$670 million over PFOA, The Delaware News Journal, (Published 8 online Feb. 13, 2017), available at <https://www.delawareonline.com/story/news/2017/02/13/duPont-and-chemours-pay-670m-settle-pfoa-litigation/97842870/>. In 2005, DuPont agreed to pay at least \$107.6 million and was liable to pay up to another \$235 million for medical monitoring of local residents, depending on the outcome of a new C8 study. Ken Ward, Judge approves DuPont settlement Company agrees to pay at least \$107.6 million over use of chemical C8, Charleston Gazette (West Virginia) March 1, 2005 Judge approves DuPont settlement Company agrees to pay at least \$107.6 million over use of chemical C8. In 2012, the C8 Science Panel of epidemiologists found a probable link between C8 and kidney cancer, testicular cancer, and several other diseases. Thus, the total liability is approximately \$1 billion.

³³ _____.

(CPSC) scientific positions on the safety of Teflon.³⁴ Similarly, the American Cancer Society stated that “[o]ther than the possible risk of flu-like symptoms from breathing in fumes from an overheated Teflon-coated pan, there are no known risks to humans from using Teflon-coated cookware. While PFOA is used in making Teflon it is present in extremely small amounts in Teflon-coated products.”³⁵

Epidemiological Studies

In personal injury litigation brought against DuPont, a science panel convened [year] for settlement purposes found “no probable link” for 18 diseases (including broad categories of diseases).³⁶ The panel’s findings of a “probable link” between exposure to PFOA and high cholesterol, ulcerative colitis, pregnancy-induced hypertension, and kidney cancer were not found to demonstrate causation and the term “probable link,” was based on statistical association, not causation.

Reviews conducted by EPA, Health Canada,³⁷ the European Chemical Agency,³⁸ CDC,³⁹ and the ATSDR,⁴⁰ concluded that epidemiological studies of PFOA and PFOS do not establish causality between exposure and toxicological endpoints. The International Agency for Research on Cancer (IARC), an international regulatory body that classifies substances as to their carcinogenicity, stated that its listing of PFOA as

³⁴ See Chemours, Are cookware products that are coating with Teflon™ nonstick coatings safe?, available at “https://www.chemours.com/Teflon/en_US/products/safety/key_questions.html#q1

³⁵ American Cancer Society, What Causes Cancer: Teflon and Perfluorooctanoic Acid (PFOA) (Last Medical Review: January 5, 2016 ; last view January 10, 2019), available at <https://www.cancer.org/cancer/cancer-causes/teflon-and-perfluorooctanoic-acid-pfoa.html>. See also Green Facts, Hazards and risk associated to Perfluorooctanoic acid (PFOA), its salts and PFOA-related substances (December 2018), available at <https://www.greenfacts.org/en/pfoa-cookware-waterproofing/index.htm>.

³⁶ C8 Science Panel, C8 Probable Link Reports, available at http://www.c8sciencepanel.org/prob_link.html.

³⁷ According to Health Canada the epidemiological studies that have shown statistical associations between exposure to PFOA and multiple non-cancer health outcomes “cannot be used to derive the non-cancer” limit for PFOA “due to limitations in terms of design, bias, confounding, and possibility of chance findings.” “Health Canada, Guidelines for Canadian Drinking Water Quality Guideline Technical Document Perfluorooctanoic Acid (PFOA) at 80 (December 7, 2018) , available at https://healthy-living/guidelines-canadian-drinking-water-quality-technical-document-perfluorooctanoic-acid/document/PFOA_2018-1130-eng.pdf.

³⁸ “Due to unclear adversity and uncertainties in dose-response, RAC is of the opinion that this does not allow for the use of these epidemiology data in a quantitative way for risk characterization.” European Chemical Agency, Committee for Risk Assessment (RAC) Committee for Socio-economic Analysis (SEAC), Opinion on an Annex XV dossier proposing restrictions on Perfluorooctanoic acid (PFOA), its salts and PFOA-related substances, available at <https://echa.europa.eu/documents/10162/3d13de3a-de0d-49ae-bfbd-749aea884966>.

³⁹ “Due to marked intergender differences in the elimination of PFOA in rats and substantial differences in the half-life of PFOA in rats, monkeys, and humans, the potential to estimate risks to humans from animal doses is uncertain.” Centers for Disease Congrol, Biomonitoring, Perfluorochemicals (last updated October 12 2017), available at https://www.cdc.gov/biomonitoring/PFAS_BiomonitoringSummary.html (last viewed January 8, 2019).

⁴⁰ “In general, no consistent associations were found between serum PFOA and HDL cholesterol or triglyceride levels.” ATSDR, Toxicological Profile for Perfluoroalkyls at 10, 186 (June 2018), available at <https://www.atsdr.cdc.gov/toxprofiles/tp200.pdf>.

“possibly carcinogenic to humans” was based on “limited evidence in humans” and “limited evidence in animals.”⁴¹

The most recent review, the December 2018 ATSDR draft Toxicological Profile, concluded that “[a]lthough a large number of epidemiology studies have examined the potential of perfluoroalkyl compounds to induce adverse health effects, most of the studies are cross-sectional in design and do not establish causality. Based on a number of factors... including the consistency of findings across studies, the available epidemiology studies suggest associations between perfluoroalkyl exposure and several health outcomes.”⁴² Thus, the scientific consensus to date is that while there is “suggestive evidence” of carcinogenicity, “there is no conclusive evidence of causation for PFAs.”⁴³

Animal Studies

Animal studies of PFAS have also not reached definitive conclusions. A 1997 Presidential and Congressional Commission on Risk Assessment and Risk Management, EPA, EPA’s Science Advisory Board peer reviewers,⁴⁴ Health Canada, ATSDR (2018),⁴⁵ and other scientific literature have concluded that animal data may not be relevant to humans. Health Canada concluded that the relevance of PFOA-induced liver tumors to humans “is limited,” given differing biological mechanisms of action as between rats and humans.⁴⁶

⁴¹ IARC, Monogram on Perfluorooctanoic Acid at 97-98 (2016), available at <https://monographs.iarc.fr/wp-content/uploads/2018/06/mono110-01.pdf>.

⁴² ATSDR, Toxicological Profile for Perfluoroalkyls at 5 (June 2018), available at <https://www.atsdr.cdc.gov/toxprofiles/tp200.pdf>.

⁴³ ATSDR, Toxicological Profile for Perfluoroalkyls at 5 (June 2018), available at <https://www.atsdr.cdc.gov/toxprofiles/tp200.pdf>.

⁴⁴ “EPA peer reviewers raised concerns that there is no agreed upon mechanism that is relevant in humans” EPA Response to External Peer Review Comments on EPA Draft Documents: Health Effects Support Document for Perfluorooctanoic Acid (PFOA) and Health Effects Support Document for Perfluorooctane Sulfonate (PFOS) at 7, 8, 13-14, 16-17, 38, 43 (May 2016), available at https://www.epa.gov/sites/production/files/2016-05/documents/response_to_pfoa_pfos_peer_review_comments_508.pdf.

⁴⁵ “Available evidence suggests that the increased liver weight, hypertrophy, and serum lipid alterations are likely due to PPAR α initiation and therefore, may not be relevant to humans.” ATSDR, Toxicological Profile for Perfluoroalkyls at 10, 187 (June 2018), available at <https://www.atsdr.cdc.gov/toxprofiles/tp200.pdf>. A number of factors, plus issues related to the mode of action of perfluoroalkyls ... make it somewhat difficult at this time to determine the true relevance of some effects reported in animal studies to human health.” ATSDR, Toxicological Profile for Perfluoroalkyls at 10 (June 2018), available at <https://www.atsdr.cdc.gov/toxprofiles/tp200.pdf>. “Species differences in the response to PPAR α agonists have been found; rats and mice are the most sensitive species and guinea pigs, nonhuman primates, and humans are less responsive. ... humans are less responsive to PPAR α agonists.” ATSDR, Toxicological Profile for Perfluoroalkyls at 10, 187 (June 2018), available at <https://www.atsdr.cdc.gov/toxprofiles/tp200.pdf>.

⁴⁶ Health Canada, Guidelines for Canadian Drinking Water Quality Guideline Technical Document Perfluorooctanoic Acid (PFOA) at 66-67 (December 7, 2018), available at https://healthy-living/guidelines-canadian-drinking-water-quality-technical-document-perfluorooctanoic-acid/document/PFOA_2018-1130-eng.pdf.

Unclear adverse effects and uncertainties in dose-response on decreased birth weights or elevated cholesterol, as well as epidemiology⁴⁷ studies on other endpoints (e.g. immunotoxicity) were also considered not robust enough to be included in a quantitative assessment characterization.⁴⁸ The December 2018 draft ATSDR report noted that many adverse health effects observed in laboratory animals were subject to differing sensitivity among species, limiting the ability to extrapolate results to humans.⁴⁹

PFAs in Blood and Tissue

The CDC biomonitoring program has measured PFAS in the general population since 1999 (during which time the 50th percentile concentration of PFOA decreased from 5.2 to 3.20 micrograms per liter (µg/L) in blood).⁵⁰ While the values may be declining, most Americans have detectable levels of PFAs in their blood or tissue. PFA chemicals have no signature from which a particular source can be determined. In light of these exposure statistics, the CDC has repeatedly stated, “[f]inding a measurable amount of” PFCs or PFOA “in serum does not imply that the levels of PFCs cause an adverse health effect. Biomonitoring studies on levels of PFCs provide physicians and public health officials with reference values so that they can determine whether people have been exposed to higher levels.”⁵¹ The 2018 ATSDR draft report concludes that “for the most part, adverse health effects in studies in animals have been associated with exposure concentrations or doses that resulted in blood levels of perfluoroalkyl compounds that were significantly higher than those reported in perfluoroalkyl workers or in the general population;”⁵² “the human health effects from exposure to low environmental levels of PFOA are unknown;” and “[h]uman health effects from PFCs [which include PFOA] at low environmental doses or at biomonitored levels from low environmental exposures are unknown.”⁵³

⁴⁷ <https://www.greenfacts.org/glossary/def/epidemiology.htm>

⁴⁸ Green Facts, Hazards and risk associated to Perfluorooctanoic acid (PFOA), its salts and PFOA-related substances (December 2018), available at <https://www.greenfacts.org/en/pfoa-cookware-waterproofing/index.htm>.

⁴⁹ Add citation from deleted material.

⁵⁰ CDC, Fourth National Report on Human Exposure to Environmental Chemicals Updated Tables, March 2018, Volume One at 403 (2018), available at https://www.cdc.gov/exposurereport/pdf/FourthReport_UpdatedTables_Volume1_Mar2018.pdf.

⁵¹ CDC, Biomonitoring Summary. Perfluorochemicals, available at https://www.cdc.gov/biomonitoring/PFAS_BiomonitoringSummary.html [The] animal and human serum PFOA levels have been compared: serum levels associated with toxic effects in animals were 66-11,108 times higher than background serum levels in humans (Butenoff et al., 2004; U.S. EPA, 2003). A study of workers chronically exposed to primarily PFOA showed no biochemical evidence of hepatotoxicity or hormonal changes (adrenal, reproductive, thyroidal), and there was no clear evidence of excess all-cause or disease-specific mortality, or increased cancer rates (Alexander et al., 2003; Olsen et al., 1999; U.S. EPA, 2003). ... Serum PFOS levels associated with toxicity in test animals were 310-1550 times higher than 95 percent of the levels found in a study of adults (Olsen et al., 2003a, 2005).”

⁵² ATSDR, Toxicological Profile for Perfluoroalkyls at 10 (June 2018), available at <https://www.atsdr.cdc.gov/toxprofiles/tp200.pdf>.

⁵³ *Id.*

Other Scientific Issues

Shorter Chain PFAs

While the spotlight has focused on PFOA and PFOS, other PFAS compounds have also received scrutiny, in part because of general concern among advocates about all chemicals containing fluorine. For example, a study assessed the PFAS in food contact substances, such as paper and wrapping, by measuring total fluorine in the samples.⁵⁴ Many state regulatory agencies now require an expanded list of perfluoroalkyl substances (short and long chain), and fluorotelomers and polyfluoroalkyl substances are also receiving increased attention.⁵⁵

Many short-chain fluorotelomer-based products have been well-studied by the scientific community, including scientists from academia, industry, and governmental agencies. Data have also been developed and provided to regulators as part of international chemical review processes. Much of the scientific research has focused on the impact of short-chain fluorotelomer-based products on human health and the environment.⁵⁶

EPA has repeatedly acknowledged that short-chain PFAS are likely less toxic than long-chain PFAS. For example, in [year], EPA reported that “PFCA chemicals with fewer than eight carbons, such as perfluorohexanoic acid (PFHxA), and PFAS chemicals with fewer than six carbons, such as perfluorobutane sulfonic acid (PFBS), are generally less toxic and less bioaccumulative in wildlife and human.”⁵⁷ $\mu\text{g/kg-day}$ EPA’s chronic reference levels for PFOA and PFOS differ by a factor of 500 from the higher exposure limits it has set for other PFAS compounds.⁵⁸

Based on scientific reviews, short-chain fluorotelomer-based PFAS do not trigger the criteria for regulation laid out in international treaties and European Union regulations, as well as U.S. criteria.⁵⁹ In addition, the materials used to produce these products (manufacturing intermediates) and the degradation products formed as these materials break down in the environment do not meet these criteria.

⁵⁴ Schaidler, Laurel et al. Fluorinated Compounds in U.S. Fast Food Packaging, *Environ. Sci. Technol. Lett.*, 2017, 4 (3), pp 105–111 (published February 1, 2017), available at <https://pubs.acs.org/doi/10.1021/acs.estlett.6b00435>. The coauthors included members of Silent Spring Institute and the EWG. The study also cites preliminary toxicity testing that “suggests” certain short-chain PFAs have “some of the same adverse effects.”

⁵⁵ ITRC, Interstate Regulatory Technology Council, History and Use of Per- and Polyfluoroalkyl Substances (PFAS) at 3 (2017), available at https://pfas-1.itrcweb.org/wp-content/uploads/2017/11/pfas_fact_sheet_history_and_use__11_13_17.pdf.

⁵⁶ FluoroCouncil, Scientific Studies, available at <http://accfc.sachsdigital.com/health-environment/scientific-studies/>.

⁵⁷ EPA, Risk Management for Per- and Polyfluoroalkyl Substances (PFASs) under TSCA, available at <https://www.epa.gov/assessing-and-managing-chemicals-under-tsca/risk-management-and-polyfluoroalkyl-substances-pfass> (LAST UPDATED ON JULY 20, 2018; last visited January 8, 2019).

⁵⁸ EPA, Fact Sheet: Draft Toxicity Assessments of rGenX Chemicals and PFBS at 3 (November 2018), available at https://www.epa.gov/sites/production/files/2018-11/documents/factsheet_pfbs-genx-toxicity_values_11.14.2018.pdf.

⁵⁹ FluoroCouncil, Scientific Studies, available at <http://accfc.sachsdigital.com/health-environment/scientific-studies/>; see also, https://echa.europa.eu/documents/10162/13643/information_requirements_part_c_en.pdf.

Multiple Persistent Chemicals - Related Strategic Issues

PFAS are chemicals that do not occur naturally in the environment and when released into groundwater, the fate and transport issues for PFAs have common attributes to the gasoline additive methyl tertiary butyl ether (MTBE). The MTBE litigation is currently entering its third decade and provides helpful insight into how PFAS claims may evolve, what defenses may prevail and what steps may have been taken before the litigation mushroomed to mitigate the risk and expense. While MTBE did not result in successful claims concerning adverse health outcomes, PFAS have a greater depth and breadth of scientific and medical evidence suggesting a potential association with possible adverse health outcomes.

The litigation and regulatory initiatives arise from the physical properties of chemically persistent chemicals that allegedly migrate from disposal, spills or run-off into drinking water supplies. As these chemicals are now being detected away from source areas, water treatment utilities are focusing agency efforts for monitoring and treating drinking water to reduce public exposure to these chemicals. Public water utilities serve to quantify the cost as the litigation attempt to frame the liability and causation issues.

Neither courts nor legislatures have defined the universal “cleanup” strategy or financial responsibility for emerging contaminants. Accordingly, an anticipatory response to persistent chemical claims will coordinate resolution of civil damage claims with efforts to ensure that future costs are properly mitigated, and that a significant percentage of responsible parties participate and any responsibility is apportioned equitably. If not addressed early, litigation can be a poor arbiter of liability, causation and damages.

For PFAS, there are no legally binding federal drinking water regulatory limits, merely guidance or advisory levels, but some states have issued legally binding drinking water limits. In the growing number of PFAS groundwater and soil remedial actions, guidance, advisories and other screening levels are relied upon to support claims for further evaluation of potential remedial options. Complicating the damage equation, remediation levels may vary from EPA Region to EPA Region, from state to state, and even from site to site within an EPA Region or State.

The Model from other contaminants: The State as Plaintiff in large-scale environmental litigation

While the products, relevant regulatory scheme and available remedies differ, industry-wide environmental tort litigations share common themes that are of general applicability in cases involving products or ingredients widely produced or distributed in the marketplace and with broad environmental and human exposure. There are many examples of large scale class actions and multi-district litigation (MDL), but few, if any, situations comparable to PFAS, with claims against multiple products said to have caused a single indivisible harm. One litigation with a similar manufacturing history, widespread exposure data and comparable environmental fate and transport attributes is the massive MDL involving the gasoline additive methyl tertiary butyl ether (MTBE). The MTBE cases involve industry-wide litigation in which multiple participants in the vertical distribution chain were alleged to have caused a single indivisible harm for a product that is prevalent, travels in the subsurface and is resistant to bioremediation. An

examination of the MTBE litigation illustrates how this type of litigation is established, how target defendants are selected, how the litigation matures, how damages are modelled and what steps can be taken to mitigate exposure.

It is often surprising that the target defendants are not necessarily those parties that might appear to have the greatest culpability; invariably the target defendants are the parties with the greatest resources, irrespective of and despite intervening or superseding causes under traditional causation approaches. For example, in the opioid litigation, the target defendants are not the parties who prescribed the product or those distributing unapproved illicit products. The target defendants are the highly regulated manufacturers and distributors who are best able to pay a damage award.

MTBE: The Product

As with PFAS, MTBE had a lengthy history of presumed safety and efficacy long before any health, safety or environmental concerns emerged. With MTBE, beginning in the late 1970s, a push began to remove lead from gasoline, and refiners and suppliers sought practical and economical alternatives. By 1979, MTBE was being used by some suppliers to replace lead, but so were other fuel oxygenates such as ethanol, methanol and other blends. As lead was phased out of gasoline in the 1980s, the intricacies of the gasoline distribution system made it difficult to transport both gasoline capable of blending with other oxygenates and gasoline already blended with MTBE in the same distribution system. MTBE was the obvious and most economically viable choice for manufacturers. MTBE is also the least expensive because it was a byproduct of the refining process and readily available in vast quantities in the United States. Thus, throughout the 1980s and 1990s, it became increasingly difficult to use an oxygenate other than MTBE due to availability and price. Regulators were accustomed to overseeing the clean-up of releases from underground storage systems (USTs) when the traditional constituents of gasoline, benzene, toluene and xylene (BTEX), were released from an UST. BTEX behaved predictably in the environment; it biodegrades and is susceptible to clean up. What did not become generally known until the late 1990s was that once in the subsurface, the additive MTBE had a propensity to separate from the BTEX constituents and travel with the ground water (i.e. further and faster than the other gasoline constituents).

Also beginning in the late 1990s, there was a growing consensus that MTBE either would not biodegrade or would persist far longer than the BTEX constituents. With the aid of litigation advocacy groups, such as the EWG, evidence was gleaned and extracted from the tens of millions of pages of documents that were produced in the early litigation suggesting that some manufacturers, industry trade associations and other market participants may have been aware of the potential environmental concerns as early as the early 1980's. Because much of the drinking water supply is beneath the ground and drawn from near where we live and where USTs are located, a potential threat to drinking water emerged.

Similar to PFAS, because of its utility, MTBE was a widely used chemical. The use of oxygenates, most notably MTBE, to replace lead in gasoline significantly increased in

1990 the Clean Air Act (CAA)⁶⁰ aimed to reduce ozone-forming volatile organic compounds (“VOCs”) and emissions of toxic air pollutants.⁶¹ Under the CAA, the EPA mandated that gasoline blended for use in certain metropolitan areas at certain times of the year contain at least 2.0% oxygen by weight.⁶² To meet this requirement oil companies added oxygenates, such as MTBE, to their gasoline. And in 1991, the EPA approved the use of seven compounds to achieve the requirements set forth in its oxygenated fuels program: (1) MTBE, (2) ethanol, (3) methanol, (4) tertiary amyl methyl ether, (5) ethyl tertiary butyl ether, (6) tertiary butyl alcohol, and (7) diisopropyl ether.⁶³ In the MTBE litigation, refiners of gasoline argued that “like Congress, the EPA understood that MTBE would be ‘the most common oxygenating compound’ used by refiners to comply with the CAA’s new air emissions standards.”⁶⁴ The use of MTBE expanded significantly and by 2002, MTBE was added to approximately 87% of the gasoline in the United States.

The Birth of the Litigation

On October 10, 2000, pursuant to 28 U.S.C. § 1407, the Judicial Panel on Multi-District Litigation (JPML) transferred the first MTBE cases to Judge Shira Scheindlin in the Southern District of New York, in *In re: Methyl Tertiary Butyl Ether (“MTBE”) Products Liability Litigation MDL-1358*. The JPML found common questions concerning whether (1) the defendants misrepresented the nature of MTBE and conspired to market MTBE without disclosing its risk to downstream users, the government, or the public and (2) the plaintiffs sustained drinking water contamination as a result of MTBE. At this same time, in *Millett v. Atlantic Richfield*, the Superior Court of Maine denied a class certification on these issues, stating that “[t]here is no doubt that the contamination of Maine’s ground water supplies by MTBE presents a major social problem that needs to be addressed” and “this court finds that the better approach to this litigation is individual trials.”⁶⁵ The MDL court reached a similar conclusion denying class treatment in a case transferred to the MDL.

A few years later, in 2003, individual case filings throughout the country began in earnest. The MDL Court described the properties of MTBE, the alleged risk it presents and the problem of identifying the manufacturers as follows:

MTBE is a chemical compound produced from methanol and isobutylene, a byproduct of the gasoline refining. It is highly soluble in water and does not readily biodegrade. Because of its high solubility, MTBE races through the underground water supply, eventually contaminating wells and

⁶⁰ Section 211(k) of the Clean Air Act (“CAA”) 42 U.S.C. § 7545(k).

⁶¹ See *In re Methyl Tertiary Butyl Ether Prods. Liab. Litig.* (MTBE I), 175 F. Supp. 2d 593, 600 (S.D.N.Y. 2001).

⁶² See *id.*

⁶³ See *In re Methyl Tertiary Butyl Ether Prods. Liab. Litig.*, 342 F. Supp. 2d 147, 151 (S.D.N.Y. 2004) (citing Proposed Guidelines for Oxygenated Gasoline Credit Programs Under Section 211(m) of the Clean Air Act as Amended, 56 Fed. Reg. 31,151, 31,154 (July 9, 1991)).

⁶⁴ *Id.* (quoting Approval and Promulgation of Implementation Plan, 56 Fed. Reg. 5,458, 5,465 (Feb. 11, 1991)).

⁶⁵ 2000 WL 359979, at *22 (Me. Super. Mar. 2, 2000), appeal dismissed, 760 A.2d 250 (Me. 2000).

underground aquifers. MTBE can persist in underground aquifers for many decades, far longer than other components of gasoline. Even in very small quantities, MTBE imparts a foul taste and odor to water and renders it unusable and unfit for human consumption. MTBE is carcinogenic in animals and may be carcinogenic in humans, as well... Once it is released into the environment, MTBE lacks a “chemical signature” that would enable identification of the refinery or company that manufactured that particular batch of gasoline.⁶⁶

The MDL Court summarized the plaintiffs’ allegations against the refiners as follows:

Defendants chose MTBE so as to profit from a gasoline refining waste byproduct.... Defendants were aware that mixing MTBE with gasoline would result in massive groundwater contamination. They knew that there was a national crisis involving gasoline leaking from multiple sources, such as underground storage tanks, and that gasoline enters the soil from gas stations due to consumer and jobber overfills.... Despite knowledge of MTBE’s ill effects, defendants conspired to mislead plaintiffs, the EPA, downstream handlers, and the public about the hazards of adding MTBE to gasoline.... to conceal the risk of MTBE contamination.⁶⁷

Similar to the PFA litigation, a relatively small number of cases predated the MDL, and very few went to trial. One notable pre-MDL MTBE case went to trial and on a special verdict in the first phase of the trial, the jury found for the plaintiff.⁶⁸ Thereafter, a wave of cases were filed in 2003 and removed from state court by Defendants on various grounds.

Defendants moved to dismiss the plaintiffs’ claims on numerous grounds, including federal preemption, political question, primary jurisdiction, lack of standing and lack of cognizable interest, lack of causation, and limitations. In thousands of pages of published opinions, the MDL Court charted a course for individual cases to proceed to trial, deftly denying legal challenges that might have ended the litigation. In refusing to dismiss on preemption grounds, the Court held that “even if state tort law demands that defendants not use MTBE, federal law did not *require* the use of MTBE,” “EPA did not intend to preempt the field of fuel content regulation for all purposes,” and EPA does not “have authority to preempt the field of fuel content for all purposes.”⁶⁹

In rejecting the defendants’ political question challenge, the Court cited U.S. Supreme Court factors for determining whether an action is non-justiciable under the political question doctrine:

[T]he fact that the issues arise in a “politically charged context” does not convert this tort suit into a non-justiciable political question, given that there is no evidence that Congress has decided that it would resolve the

⁶⁶ *In re Methyl Tertiary Butyl Ether Prods. Liab. Litig.*, 379 F. Supp. 2d 348, 364-65 (S.D.N.Y. 2005).

⁶⁷ *Id.* at 365-67.

⁶⁸ *South Lake Tahoe v. Atlantic Richfield*. See No. 99-9128 (Cal. Super. Ct. April 15, 2002).

⁶⁹ *In re Methyl Tertiary Butyl Ether Prods. Liab. Litig.*, 457 F. Supp. 2d 324-43 (SDNY 2006).

issues. While regulation of the national fuel supply is surely not an issue for the judicial branch, these suits seek abatement and damages in addition to a ban on further *contamination*.... Though the political question doctrine has given rise to many difficult cases, this is not one of them.⁷⁰

Primary jurisdiction is a judicially-created “prudential doctrine under which courts may, under appropriate circumstances, determine that the initial decision making responsibility should be performed by the relevant agency rather than the courts.”⁷¹ Applying the Second Circuit’s primary jurisdiction analysis, the MDL Court found that none of the relevant factors favored deference to the state agency: (1) whether the question at issue is within the conventional experience of judges or whether it involves technical or policy considerations within the agency’s particular field of expertise; (2) whether the question at issue is particularly within the agency’s discretion; (3) whether there exists a substantial danger of inconsistent rulings; and (4) whether a prior application to the agency has been made.⁷² As court deference to agency determinations and interpretations is increasingly questioned, it is doubtful that any issue that is not presently under consideration by the agency will enjoy court deferring legal proceeding until agency decision making is completed.

The MDL Court denied Defendants’ motion to dismiss claims based on the MTBE amounts found in the ground water being below the EPA’s established maximum contaminant level (“MCL”) on the grounds of lack of cognizable interest/lack of standing/lack of justiciability. The MDL Court held as follows:

The essence of the dispute here is the extent to which an MCL defines what constitutes a legally cognizable harm...While the MCL may serve as a convenient guidepost in determining that a particular level of contamination has likely caused an injury, the MCL does not define *whether* an injury has occurred. Although linking injury to the MCL would provide a bright-line rule, it would do little else to promote standing principles. Rather, this conclusion comports with the essential principles underlying the standing doctrine: the parties here have adverse interests and the complained of conduct is concrete and specifically impacts plaintiffs’ zone of protected interests. While it may eventually be determined that some levels of contamination below the applicable MCLs do not injure plaintiffs’ protected interests, plaintiffs have presented sufficient evidence for purposes of standing to show that they may have been injured - not as a theoretical matter, but rather as a question that is appropriate for judicial resolution.⁷³

An interesting corollary to the Court’s “cognizable interest” holding arose in the context of accrual, where the Court recognized that knowledge of the presence of MTBE alone was insufficient for the plaintiffs to have discovered their injuries. Instead, a plaintiff’s

⁷⁰ *In re Methyl Tertiary Butyl Ether Prods. Liab. Litig.*, 438 F. Supp. 2d 291, 296-304 (S.D.N.Y. 2006).

⁷¹ See 438 F. Supp. 2d at 295.

⁷² 438 F. Supp. 2d at 297-303.

⁷³ *In re Methyl Tertiary Butyl Ether Prods. Liab. Litig.*, 458 F. Supp. 2d 149, 158 (S.D.N.Y. 2006).

claims accrue when it first knows of both (1) the presence of MTBE at a level sufficient to constitute an injury and (2) the harmful impact of MTBE on drinking water. The Court stated that the mere presence of MTBE in the water does not trigger the statute of limitations, but “there does come a point where the concentration levels are so significant as to warrant discovery of a cognizable injury as a matter of law.” The Court then recognized the MCL as that “level” stating, “Once the MTBE concentrations pass the levels established by the state, the statute of limitations begins to run as a matter of law. As water providers, plaintiffs knew about their duty to comply with this regulatory standard.”⁷⁴ While the bright line for standing and limitations of MTBE above the MCL may seem helpful, most cases involve very low detection levels and the questions of standing and limitations are case-specific requiring lengthy and expensive discovery.

Alternative Liability

Of the numerous issues the MDL Court addressed, none is more contentious and fraught with broad reaching implications than alternative liability. These theories while largely dormant nationwide in mass litigation, are increasingly emerging as a convenient mechanism for avoiding individual proof and aggregating damages. In crafting a novel approach to causation in the MTBE litigation, the Court provided an exhaustive discussion of the history of alternative liability and concluded the following:

MTBE-containing gasoline is a fungible product because all brands are interchangeable, and...[a]s such, it is inherently difficult to identify the refiner that caused plaintiffs’ injuries, and indeed, may be even more difficult than in DES cases because DES pills could be distinguished by appearance (e.g., color, shape, or size of the pills). MTBE-containing gasoline is an indiscrete liquid commodity that mixes with other products during transport, and might not vary in appearance from batch to batch. According to plaintiffs, when it is released into the environment, it lacks even a chemical signature that would enable identification.⁷⁵

While DES applied alternative liability in those circumstances where the individual plaintiffs were not able to identify the specific manufacturer. In the MTBE litigation the court could have defined the “manufacturer” of the fungible product to have been the brand at the station where the gasoline was released in to the environment and required the plaintiff to focus on the case specific causation issues. But that is not what the MDL court did in the MTBE litigation. In the burgeoning PFA litigation it is unclear the extent to which the court will permit the litigation to focus on case specific causation facts and identification of specific individuals allegedly harmed and the concomitant proof of exposure to specific products and manufacturers.

In fashioning an alternative liability scheme in the MTBE litigation, the Court recognized three approaches: (1) concurrent wrongdoing (with joint and several liability), (2) market share (apportioned liability, without punitive damages) and (3) commingled product theory (apportioned liability, with punitive damages). The commingled product theory is

⁷⁴ *In re Methyl Tertiary Butyl Ether Prods. Liab. Litig.*, 591 F. Supp. 2d 259, 267-68 (S.D.N.Y. 2008).

⁷⁵ *In re Methyl Tertiary Butyl Ether Prods. Liab. Litig.*, 379 F. Supp. 2d 348, 376-77 (S.D.N.Y. 2005).

the construct of the MDL Court and is the most controversial. Recognizing that gasoline containing MTBE is fungible, not unlike a bank account where the dollar you put in is not the same dollar you take out, the MDL Court embarked on a lengthy analysis finding that this new theory would be recognized in the various states:

The review of the various theories of collective liability set forth above reveals that from time to time courts have fashioned new approaches in order to permit plaintiffs to pursue a recovery when the facts and circumstances of their actions raised unforeseen barriers to relief.... These MTBE cases suggest the need for one more theory, which can be viewed as a modification of market share liability, incorporating elements of concurrent wrongdoing. To that end, I shall now describe what I call the “commingled product theory” of market share liability. When a plaintiff can prove that certain gaseous or liquid products (e.g., gasoline, liquid propane, alcohol) of many suppliers were present in a completely commingled or blended state at the time and place that the risk of harm occurred, and the commingled product caused a single indivisible injury, then each of the products should be deemed to have caused the harm.... This modification of market share liability is based on two features distinguishable from those instances in which market share liability has been applied. *First*, because the gaseous or liquid blended product is a new commodity created by commingling the products of various suppliers, the product of each supplier is *known* to be present. It is also known that the commingled product caused the harm. What is *not known* is what percentage of each supplier’s goods is present in the blended product that caused the harm.⁷⁶

The Court further elaborated on the commingled product theory, as follows:

In addition, “[a] defendant must be able to exculpate itself by proving that its product was not present at the relevant time or in the relevant place, and therefore could not have been part of the commingled or blended product.”... The commingled product theory lies somewhere between market share and concurrent wrongdoing.⁷⁷

According to the Court, the commingled product theory allows “in for a penny, in for a pound.”⁷⁸ What remained unclear is who bears the burden establishing each defendant’s share of the market or the geographic scope of the market (i.e. national, city or state, gas stations, or “some other market”).⁷⁹

Resolving a Horizontal Market

A large number of MDL cases were settled before trial and in approving the settlement and barring contribution claims by non-settling parties, much detail has been disclosed

⁷⁶ *In re Methyl Tertiary Butyl Ether Prods. Liab. Litig.*, 379 F. Supp. 2d 348, 377-79 (S.D.N.Y. 2005).

⁷⁷ *In re Methyl Tertiary Butyl Ether Prods. Liab. Litig.*, 591 F. Supp. 2d 259, 267-68 (S.D.N.Y. 2008).

⁷⁸ See *In re Methyl Tertiary Butyl Ether Prods. Liab. Litig.*, No. 04-CV-3417 (S.D.N.Y. filed June 6, 2009).

⁷⁹ See *id.*

in the public record regarding how these cases were valued. The MDL Court recognized that in estimating damages, plaintiffs relied on industry data to estimate high, low, and mean costs of treating wells contaminated with MTBE, “[using] a standard linear regression analysis... [and considering MTBE detection levels].” The Court stated the following in discussing apportionment among the settling defendants:

The settling parties justify their use of national refining capacity as a rough estimate of liability in several ways. *First*, the plaintiffs stress that nearly all the claims in each case are premised on defendants’ decision to use MTBE in their gasoline rather than on spilling gasoline or failing to prevent leaks at their gas stations. *Second*, they note that discovery in other cases in the MDL has shown that gasoline from various refiners is generally commingled for transportation, storage, and distribution, with the result that any gasoline released into the environment is generally the product of numerous defendants. In addition, they state that the national refining share is a better measure than [individual states] ...because certain defendants that do not own refineries in a state may still participate in the gasoline market through exchange agreements or otherwise... [and] “the means of allocating liability in these cases remains highly contested.”⁸⁰

The City of New York Case

Most of the cases in the MDL were brought by states, cities, water districts, and water purveyors and involved claims related to multiple drinking water wells and sites. In some cases, hundreds of potential wells or sites were at issue. While most defendants were able to reach a settlement in the City of New York case, a major refiner defendant did not settle, and the *City of New York v. Amerada Hess* was *tried* in 2009. In an attempt to construct a trial plan that balances the defendants’ rights while permitting the Court to try less than the whole case at once, the parties were required to choose a subset of wells or sites (bellwether sites) for dispositive motion practice and trial.

There is no mistaking that the Judge was a major factor in the outcome and while rulings went both ways, favoring plaintiffs in some instances and defendants in others, it was clear that the judge was determined to have the case reach a verdict, and sided with the City on the critical issues. Notably, the *City of New York* case concerned a dilapidated water system fraught with contamination problems that was not in use for drinking water for reasons having nothing to do with MTBE. Indeed, the evidence showed that the City purchased the water system at issue in order to shut it down, not to use it for drinking water. Nonetheless, the Court ruled allowing the trial to proceed in “phases” with partial verdicts or jury interrogatories on issues as the case proceeded.

As the *Tahoe* special verdict demonstrated, trial phasing and, more specifically, which issues go first, is a question of paramount importance and can drive the outcome. For example, one state court MTBE case was tied to a defense verdict, but in that case, damages, not product defect, was tried first.

⁸⁰ *In re Methyl Tertiary Butyl Ether Prods. Liab. Litig.*, 578 F. Supp. 2d 519, 527 (S.D.N.Y. 2008).

The CONY trial resulted in a verdict in the amount of \$105,000,000 and the jury found that the City had a “good faith intent” to both begin construction of a water treatment facility within 15 years and to use the water from the wells within 15 to 20 years as a “backup drinking water source.” Since the verdict in 2009, the City has not begun construction and to suggest that it ever will may have no basis in objective reality.

In Phase II of the trial in the City of New York the question was whether and at what level MTBE would be present when those future wells were operational. Plaintiff’s UST expert, Marcel Moreau, co-author of the 1986 article widely recognized as focusing attention on the issue of MTBE in groundwater, was permitted to testify that “any facility that has been operating for any length of time has had substantial releases on the order of thousands of gallons” on average per station. Permitting this expert to testify on “assumed” releases was akin to concluding from statistics that, on average, all drivers speed, and on this conclusion issuing speeding tickets to all drivers. In the PFA litigation, the human exposure issue is different because the plaintiffs may have greater predictability in estimating exposure without the need to extrapolate causation from volume data.

In the CONY MTBE trial, the Plaintiff’s hydrogeology experts down-played the known alternative cause components and, according to one of the CONY experts, MTBE presented very different concerns and “changed everything” in dealing with releases from UST systems.

What may be among the most instructive issues to come out of the City of New York case was in the causation, design defect, failure to warn, trespass, private nuisance, public nuisance, negligence and damages phase. Despite almost four (4) years of intense focus on alternative theories of liability, most notably the MDL Court’s own alternative “commingled product liability” scheme, the jury’s verdict was mundane in simply finding that the refiner was liable under a traditional “direct spiller” theory and the jury never even got to alternative liability. Nonetheless, the commingled product evidence allowed evidence to get before the jury that would not have been present in a simple, traditional spiller liability case. While the jury found that that gasoline with MTBE was not reasonably safe for its intended purposes or in light of the reasonably foreseeable harms, it did not find that there was a safer alternative design. This was no small victory for the defense, because for over a decade MTBE Plaintiffs had argued that ethanol was a safer alternative bringing into evidence an avalanche of decades old documents and testimony regarding the industry’s choice of oxygenate to replace lead in gasoline.

The refiner did not fare so well in connection with its failure to warn claim, as the jury found “no or insufficient warnings.” The jury also found for the City on its trespass, public nuisance and negligence claims. The City requested damages in the amount of \$250,450,000 and the jury found damages in the amount of \$250,500,000. They reduced the amount by \$70,000,000, the amount the City argued it would cost to treat contaminants other than MTBE. The jury then allocated 42% of the liability to the settling defendants, leaving defendant refiner with 58% and a verdict in the amount of \$105,000,000. It is interesting, if not incongruous, that the jury found direct spiller

liability and, without evidence having been submitted regarding the settling defendants' stations, allocated liability to those defendants; had the jury been applying the Court's commingled product theory, the allocation may have made more sense even though the relative percentages had no bearing to the evidence introduced by either side.

The Second Circuit Affirmance

The Second Circuit held that where the theory of market-share liability is permitted, a defendant may be held liable absent any showing that it caused or contributed to the plaintiff's injury; instead, a defendant may be presumed liable to the extent of its share of the relevant product market.⁸¹ The Second Circuit noted that despite the refiner defendant's complaint that the jury improperly considered Market Share evidence, the jury instruction appropriately applied the state law and did not impose market-share liability upon the refiner defendant. According to the Second Circuit, it "simply permitted the jury to draw upon market-share data as one piece of circumstantial evidence that Exxon caused the City's injury."⁸²

As noted above, despite years of litigating a market-share and a commingled product theory of liability, the City did not rely on either at trial. To the contrary, it identified the "exact defendant whose product injured" it⁸³ and established that the refiner defendant's gasoline found its way into every underground storage tank in Queens during the relevant period. In the end, this was a case in which a defendant faced liability because of evidence linking its product to the plaintiff's purported injury. In PFAS litigation, unless the manufacturers can insist that no theory of alternate liability should apply, defendants should expect a similar protracted and imbalanced outcome.

In proving that the refiner defendant's conduct as a manufacturer, refiner, supplier, or seller of gasoline was a "substantial factor" in bringing about its injury, the City used three approaches. First, the City presented expert testimony that, because gasoline from different manufacturers was commingled before distribution, refiner defendant's gasoline "ended up in each of the retail gas stations in Queens and in their underground storage tanks" between 1985 and 2003.⁸⁴

In the final analysis, the market share data adduced by the City served as proof that the refiner defendant's gasoline was delivered to gas stations in the vicinity "making it more likely than not" that the refiner defendant's gasoline played a substantial role in bringing about the City's injury. The Second Circuit perceived a difference between employing market-share data in this fashion and imposing liability based solely on a defendant's share of the market in the absence of any evidence that the defendant's own product directly caused some of the harm alleged. Both the trial court and the Second Circuit found that the City did not use market share data as a substitute for showing that the refiner defendant's contributed to the contamination. Rather, the City used the market-share data to quantify the scope of that contribution. The lesson learned for PFAS

⁸¹ Citing *Hymowitz v. Eli Lilly & Co.*, 73 N.Y.2d 87, 511-12 (1989).

⁸² *In re Methyl Tertiary Butyl Ether Prods. Liab. Litig. (CONY)*, 725 F.3d 65, 114 (2d Cir. 2013)

⁸³ *Cf. Hymowitz*, 73 N.Y.2d at 504 (allowing recovery notwithstanding plaintiffs' inability to identify the manufacturer of injurious product),

⁸⁴ Tr. at 4103:7-10.

litigation is that the jury needs a construct for apportioning damages and in other industry-wide litigation courts have considered market share as a surrogate for individually evidence.

New Hampshire

In the New Hampshire MTBE trial, the refiner defendant did not fare quite as well. In 2013, a New Hampshire state court jury awarded the state \$235 million against a refiner and that verdict was upheld by the New Hampshire Supreme Court and the U.S. Supreme Court later denied a *certiorari* petition. The arguments raised by the State in New Hampshire were a bit different and concerned the imposition of market share liability based on abstract statistical exercises that obscured complex evidentiary issues of causation and actual injury. In New Hampshire, Plaintiff relied on statistical evidence in lieu of individualized proof. The use of such evidence arguably prejudiced the right of the refiner defendant to present individualized defenses to each element of liability and to refute damages.

In rejecting the refiner defendant's arguments that market share liability is not an acceptable theory of recovery and that the trial court erred in applying market share liability in this case, the New Hampshire Supreme Court stated

requiring the State to allege specifically which defendant caused each injury would create an impossible burden given the allegations of commingling of MTBE and the asserted indivisible injury to the State of New Hampshire's water supplies. To mandate the State to establish more particularized causation would essentially allow the defendants to seek to avoid liability because of lack of individualized proofs where the gravamen of the claim is . . . that all defendants placed gasoline containing MTBE into the stream of commerce, thereby causing [the State's] injury.

To allow such a state of events would be to allow claims for tortious conduct for discrete, identifiable, and perhaps lesser tortious acts, but to deny claims for tortious conduct where the conduct alleged may be part of group activity which is alleged [to] have led to a common, and more deleterious, result.

The New Hampshire Supreme Court further observed that the trial court recognized that "situations exist where a plaintiff may not necessarily be able to identify, specifically, which members of a group, who are engaged in the same activity, caused his or her damages," noted that courts "allow plaintiffs to prove causation through alternative theories of liability," including market share liability and "seemingly specific to the MTBE cases, . . . commingled product theory." The trial court found that the "commingled product theory" does not apply here because that theory "only relieves the Plaintiff of its burden to prove the percentage of a particular Defendant's gasoline found at a particular site," and the court "has already found that a specific site-by-site approach is unfeasible and unnecessary in this case." Accordingly, the trial court concluded that market share liability "is a more reasoned approach to this case."

As the trial court explained, the purpose behind market share liability is that

[i]n our contemporary complex industrialized society, advances in science and technology create fungible goods which may harm consumers and which cannot be traced to any specific producer. The response of the courts can be either to adhere rigidly to prior doctrine, denying recovery to those injured by such products, or to fashion remedies to meet these changing needs. In an era of mass production and complex marketing methods the traditional standard of negligence is insufficient to govern the obligations of manufacturer to consumer, courts should acknowledge that some adaptation of the rules of causation and liability may be appropriate in these recurring circumstances.

In determining whether market share liability applied, the Court relied on the Restatement (Third) of Torts: Products Liability which sets forth six factors that provide a general framework for analysis:

(1) The generic nature of the product; (2) the long latency period of the harm; (3) the inability of plaintiffs to discover which defendant's product caused plaintiff's harm; (4) the clarity of the causal connection between the defective product and the harm suffered by plaintiffs; (5) the absence of other medical or environmental factors that could have caused or materially contributed to the harm; and (6) the availability of sufficient "market share" data to support a reasonable apportionment of liability.⁸⁵

The court found that in this case "these factors weigh heavily in favor of utilizing market share liability."

In the New Hampshire MTBE case, the refiner defendant moved for summary judgment on the issue of causation, asserting that New Hampshire has not adopted the market share liability theory, and that "the theory is contrary to New Hampshire law." The trial court reached the opposite conclusion, however, that New Hampshire recognizes market share liability.⁸⁶ The court reasoned that "[t]he New Hampshire Supreme Court has repeatedly expressed its willingness to provide plaintiffs with a less stringent burden of proof where they face a 'practically impossible burden,'" and that "[g]iven this willingness, the court is confident that existing New Hampshire law supports the application of Market-Share Liability." Dismissing as unfounded Exxon's suggestion that market share liability "is synonymous with absolute liability," the trial court explained that

[e]ven where a plaintiff proceeds under a Market-Share Liability theory, he must prove that the defendants breached a duty to avoid an unreasonable risk of harm from their products The requirement to prove that a defendant breached his duty to avoid harm is a separate and distinct burden. Only after a plaintiff makes such a showing is he entitled to a relaxed standard for proving causation.

⁸⁵ See Restatement (Third) of Torts: Products Liability § 15 comment c at 233 (1998).

⁸⁶ Citing *Buttrick v. Lessard*, 110 N.H. 36 (1969), and *Trull v. Volkswagen of America*, 145 N.H. 259 (2000).

Applying the six Restatement factors, the trial court determined that market share liability should be applied in this case. As to the first factor, the generic nature of the product, the court found that the State had alleged sufficient facts for the court to conclude that MTBE is fungible, i.e., that it is interchangeable with other brands of the same product. As to the second factor, whether the harm caused by the product has a long latency period, the trial court found that the harm caused by MTBE was not latent because it travels faster and further than other chemicals. Thus, the court concluded that this factor weighs in favor of the refiner defendant. As to the third factor, the plaintiff's inability to identify which defendant caused the harm, the trial court concluded this factor weighs in the State's favor because "retailers commingled gasoline in storage tanks at stations, so it would be impossible to determine which of the defendant[s] MTBE gasoline was discharged into the environment."

The trial court found that the fourth factor, the clarity of the causal connection between the defective product and harm suffered by the State, favors the State. The court agreed with the refiner defendant's general proposition that the gasoline market does not alone reflect the risk created and, thus, the court required the State "to introduce market share data as targeted as possible (e.g. market share data specific to RFG and non-RFG counties)." Noting that it is impossible to determine market share with mathematical exactitude, the court concluded that the experts' market data was sufficient.

The trial court found the fifth and sixth factors favor the State. As to the fifth factor, whether other medical or environmental factors could have contributed to the harm, the court noted that the refiner defendant had not asserted that other factors contributed. As to the sixth factor, the sufficiency of the market data, the court found that the State's experts had presented "enough market data to allow the State to proceed" on a market share liability theory.

Following the jury verdict, the refiner defendant's moved for JNOV and the court observed that the court had "rejected, all of these arguments before, and because the refiner defendant's raised no new law or facts to support its motion, the court addressed the defense arguments "only for the purpose of further explanation and clarification."

In addressing the argument that market share did not apply because MTBE gasoline could be traced to a supplier from the refinery, the court stated:

The State's theory of the case, as addressed in pretrial, trial, and directed verdict rulings, was that MTBE gasoline is untraceable once spilled or leaked; once it causes harm to the State. It is wholly irrelevant that gasoline might be traceable to a particular supplier from a wholesale distributor or even the refinery because, as the State alleged, once the gasoline causes harm, it cannot be traced to a supplier, distributor, or refiner. The jury heard evidence to this extent, and could thereby have found that the State met the requisites of relying on market share liability for causation purposes.

As to the defense argument that the jury needed to find first that the State could not prove traditional causation in order to find the State entitled to rely upon market share

liability, the trial court stated that market share liability “did not require the State to prove that it could not establish traditional causation; it required the State to show that it could not identify the tortfeasor responsible for its injury. The ‘last resort’ requirement focuses on the inability of the plaintiff to identify the manufacturer of a product, not the absence of alternative causes of action or theories of recovery.” The court concluded:

During trial, the State presented several witnesses who testified that MTBE gasoline is fungible and commingled at nearly every step in the distribution network, thereby making it virtually impossible if not impossible to trace from a spill or leak back from a contamination site to a retailer or supplier. This testimony tended to fulfill the State’s burden of proving that it was unable to identify the specific tortfeasor responsible for its injury. The jury’s verdict—finding that the State was unable to identify the specific tortfeasor responsible for its injury—was not conclusively against the weight of the evidence.

Based upon the reasoning expressed in New Hampshire cases developing products liability law in New Hampshire, the trial court concluded that it would “not rigidly apply theories of tort law where doing so would either be impractical or unfairly ‘tilt the scales’ in favor of one party or another.” The Supreme Court agreed with the trial court that, based upon the Court’s willingness to construct judicial remedies for plaintiffs who would be left without recourse due to impossible burdens of proof, applying market share liability was justified in the circumstances presented by this case. In addition, the court found that the State had proven all of the elements of its claims, and the jury found:

‘MTBE gasoline is fungible’; the state ‘cannot trace MTBE gasoline found in groundwater and in drinking water back to the company that manufactured or supplied that MTBE gasoline’; and the State ‘has identified a substantial segment of the relevant market for gasoline containing MTBE.’

In shifting the burden to defendant, the jury was instructed:

If the State has been harmed by a product that was manufactured and sold by any number of manufacturers and suppliers, and the State has no reasonable means to prove which manufacturer or supplier supplied the product that caused the injury, then the State may use market share liability to satisfy its burden of proof. Under market share liability, ExxonMobil is responsible for the State’s harm in proportion to ExxonMobil’s share of the market for the defective product during the time that the State’s harm occurred.

Market share liability requires that the State . . . prove all the elements for negligence, or strict liability defect in design, or strict liability based on a failure to warn and that the State suffered harm. In addition, the State must prove the following: (1) it has identified enough MTBE gasoline manufacturers or suppliers in this case so that a substantial share of the relevant market is accounted for; and (2) MTBE gasoline is fungible,

meaning that one manufacturer's or supplier's MTBE gasoline is interchangeable with another's; and (3) the State cannot identify the manufacturer or supplier of the MTBE gasoline that caused the harm.

Finally, the Supreme Court found no error with the trial court's ruling that the jury was entitled to determine that the refiner defendant could be held liable for its percentage of the supply market stating the defendant "had or should have had knowledge of the characteristics of MTBE gasoline from [its] refining role[]," a jury could find Exxon liable for MTBE gasoline it supplied but did not refine. The trial court explained that the jury was entitled to estimates of supplier and refiner market share and that both reflected the refiner defendant's "creation of the risk within the State," and that "[a]ny figure within this spectrum would be an appropriate measure of the State's damages."

Establishing Damages - Trial by Statistics

Prejudice is a recurring problem in state-initiated enforcement actions against industry. Requiring the state to offer actual evidence of specific damages, merely challenges the Court to ensure defendants Due Process rights and the constitutionally guaranteed opportunity to present a defense to the claims -- and to answer for alleged liability based on verifiable facts, not mere statistical extrapolation.⁸⁷ In *Wal-Mart Stores, Inc. v. Dukes*, the Supreme Court disapproved of "Trial by Formula," citing the Rules Enabling Act provision that procedural rules cannot abridge substantive rights. Cases allowing alternative liability theories threaten Defendants' due process rights by permitting trial-by-formula theories of liability that deprive defendants of the right to present individualized defenses to liability. Prejudice is problematic where the State is the plaintiff and the claims are brought as a *parens patriae* actions, which allow the plaintiff to pursue *de facto* aggregated claims.

In *Dukes* the Supreme Court in rejected relying on a small subset to extrapolate proof of liability and damages to an entire class. In *Dukes* the Court of Appeals authorized a procedure under which "[a] sample set of . . . class members" seeking damages for alleged gender discrimination in pay and promotions "would be selected, as to whom liability for sex discrimination and the backpay owing as a result would be determined in depositions supervised by a master."⁸⁸ Once a percentage of claims were determined to be valid, the percentage was applied to the class, and presumptively valid claims were multiplied by the average backpay awards to arrive at recovery for the entire class."⁸⁹ Wal-Mart was limited to presenting individual defenses only in the "randomly selected sample cases."⁹⁰

The Supreme Court in *Dukes*, rejected the Ninth Circuit approach, finding Wal-Mart "entitled to individualized determinations of each employee's eligibility for backpay."⁹¹ The Supreme Court criticized the Ninth Circuit's "novel project" and "Trial by Formula." The Supreme Court held that "a class cannot be certified on the premise that Wal-Mart

⁸⁷ *Wal-Mart Stores, Inc. v. Dukes*, 131 S. Ct. 2541, 2561 (2011).

⁸⁸ 131 S. Ct. at 2561.

⁸⁹ *Id.*

⁹⁰ *Id.* at 2550 (citation omitted).

⁹¹ *Id.* at 2560.

will not be entitled to litigate its statutory defenses to individual claims.”⁹² The Supreme Court held that Due Process Clause requires that a defendant be entitled to present individualized defenses to each claim of injury, stating “the Due Process Clause prohibits a State from punishing an individual without first providing that individual with an opportunity to present every available defense.”⁹³

Other state and federal district courts have recognized that due-process protections extend to presenting individualized defenses during a litigation involving aggregated injury claims. The California Supreme Court, for instance, drew on due-process principles and the decision in *Dukes* to reject the trial court’s “decision to extrapolate class wide liability from a small sample.”⁹⁴ In *Duran*, the trial court barred the defendant from introducing individualized evidence to challenge liability declaring that “[t]he injustice of this result is manifest,” the court explained that “statistical methods” such as representative testimony and sampling “cannot so completely undermine a defendant’s right to present relevant evidence.”⁹⁵ Another federal district court held that “[t]ruly individual issues . . . must be adjudicated individually and not by statistical inference.”⁹⁶ In *Bustillos v. Bd. of Cnty. Comm’rs of Hidalgo Cnty* the court held that “trials by formula” “violate[] the defendant’s right to have (i) each element of (ii) each claim asserted against it by (iii) each class member specifically proven.”⁹⁷

In the MTBE litigation, prejudice from the use of statistical evidence by simply eliminating the State’s burden of proof was evident and the MDL court early on had recognized that discerning the extent of liability and damages is exceedingly complex.⁹⁸ Nonetheless, to overcome the complexity recognized by the MDL court, the New Hampshire Supreme Court allowed the State to overcome this evidentiary showing by relying on statistical extrapolation and, thus, denying the defendant of an opportunity to develop evidence rebutting the State’s claims of broad contamination.

The State of New Hampshire’s claim was an aggregation of separate claims that the refiner defendant contaminated various different wells from different UST sites. An individual lawsuit over a single well would unquestionably require proof that the defendant had contaminated that well specifically. But through the aggregation of claims, the State avoided the burden of proving actual contamination in each well and adducing expert testimony concerning approximately 6,000 wells by extrapolating data from six of them. The State was provided the highly preferential privilege and prejudicial convenience of simply multiplying liability based on the evidence from six wells. As in baseball and as in life, we could simply aggregate team’s statistics from prior games, aggregate hits, errors, RBI’s, and wins and losses of teams at the beginning of the

⁹² *Id.* at 2561.

⁹³ *Philip Morris USA v. Williams*, 549 U.S. 346, 353 (2007) *Lindsey v. Normet*, 405 U.S. 56, 66 (1972).

⁹⁴ *Duran v. U.S. Bank Nat’l Ass’n*, 325 P.3d 916, 935 (Cal. 2014).

⁹⁵ *Id.* at 936.

⁹⁶ *Bustillos v. Bd. of Cnty. Comm’rs of Hidalgo Cnty.*, 310 F.R.D. 631, 660 (D.N.M. 2015).

⁹⁷ *Id.*; see also *id.* at 660 n.9 (noting due-process concerns raised by “trials by statistics”).

⁹⁸ See, e.g., *In re Methyl Tertiary Butyl Ether (“MTBE”) Prods. Liab. Litig.*, 209 F.R.D. 323, 344 (S.D.N.Y. 2002).

season and determine who will win how many games and is entitled to be the World Series Champions before the first game is even played. Trial by statistics is no different.

The constitutional problems were significant in the New Hampshire case where the State proceeded under its *parens patriae* authority in state court seeking to put large amounts of money in the State coffers. Because *parens patriae* actions and jurisdictional rights of state sovereigns present obstacles to federal court removal, the federal system's statutory and judicially created procedural safeguards that govern aggregate litigation did not apply in the State of New Hampshire MTBE litigation. While "the constraints of the Due Process Clause will be the only federal protection"⁹⁹ those protections can be threatened when a state is the plaintiff. *Parens patriae* actions have been questioned for just this reason and the jurisdiction issue is certain to be litigated further.

In the New Hampshire MTBE litigation petitioners were forced to abandon the individualized defenses they could have raised in suits based on individual wells and instead to defend an extrapolation that premised liability for thousands of wells on just six of them. The Supreme Court declined to grant review the "Trial by Formula" produced in New Hampshire or to clarify the Due Process infringement that such action present.

While U.S. Supreme Court decisions have curbed class action abuses by limiting the aggregation of claims, Plaintiffs' attorneys have turned to partnerships with state attorneys general to bring the same types of suits they once brought as private class actions as *parens patriae* actions, an effective end-run around the Supreme Court's class action decisions. Given the monetary incentives involved for private counsel, these proceedings can abandon the pretense of prosecutorial restraint, instead using governmental muscle to strong-arm businesses to pay excessive sums of money irrespective of the merit of the underlying claims. While enriching plaintiff lawyers retained by the state and replenishing state coffers may seem harmless to some observers, the payments frustrate innovation and pass additional costs to U.S. consumers, doing little, if anything, to serve any measurable societal need.

The tendency of states to involve private contingency-fee counsel in *parens patriae* suits contributes to the confusion because contingency-fee counsel seek to maximize the number of alleged violations and the size of the penalty for each, an approach that has led to "massive" verdicts in some cases that have gone to trial. It is common for state courts, such as the New Hampshire courts to refuse to impose procedural limitations on proving aggregated claims of violations of state law, *parens patriae* suits uniquely permit a "slash-and-burn-style of litigation" that threatens to turn courts into "an engine of an industry's unnecessary destruction."¹⁰⁰

Parens Patriae

When a state is suing to protect a public interest that affects a substantial number of citizens, federal courts have recognized the *parens patriae* doctrine to support standing.

⁹⁹ *Scott*, 131 S. Ct. at 4 (Scalia, J.).

¹⁰⁰ *In re Zyprexa Prods. Liab. Litig.*, 671 F. Supp. 2d 397, 463-64 (E.D.N.Y. 2009).

Under this doctrine, recoverable damages under *parens patriae* should be limited to those that are “public” in nature. *Parens patriae* has a long history of viable use in both state and federal courts, particularly in the context of antitrust and environmental litigation. States have used the doctrine to collect monetary or equitable relief from corporations that allegedly harm a substantial number of its residents. In the MBTE litigation, the doctrine has served as a means for states to assert standing for tort and environmental claims.

A State traditionally has standing in various capacities at common law as a safeguard of the people, most notably in criminal law and in parental rights cases. However, the power of the State to serve as a litigant on behalf of its residents has expanded beyond these boundaries in the past century. Today, a State may seek monetary or equitable relief from private parties on the basis that the State is protecting a substantial public interest of its residents.¹⁰¹ This doctrine of standing is known as *parens patriae* (“parent of the nation”).

In 1907, the Supreme Court decided its first environmental *parens patriae* case, where the State of Georgia sued to enjoin mining by a Tennessee company whose work was polluting the air of bordering Georgia counties.¹⁰² Justice Holmes wrote that “it is a fair and reasonable demand on the part of a sovereign that the air over its territory should not be polluted on a great scale” and that the magnitude of the pollution warranted allowing State standing in the suit.¹⁰³

The rights of States to bring suits on behalf of their citizens expanded following *Tennessee Copper Co.* In 1972, the Court allowed the State of Hawaii to sue Standard Oil concerning antitrust claims.¹⁰⁴ In *Hawaii v. Standard Oil* the Court reasoned that the company’s antitrust violations substantially injured the “economy and prosperity of the State,” warranting standing under *parens patriae*.¹⁰⁵

Federal law establishes certain elements for a state to properly maintain *parens patriae* standing. First, the State must articulate a sovereign or quasi-sovereign public interest that it is litigating to protect.¹⁰⁶ While a sovereign interest concerns the authority of the State itself, a “quasi-sovereign” interest can concern the physical or economic well-being of its residents.¹⁰⁷ In the *Snapp* case, for example, Puerto Rico had a quasi-sovereign interest in Virginia farming because the farmers were not adequately participating in a federal migrant-worker employment program; therefore, the farmers’ actions affected the economic well-being of Puerto Rican workers.¹⁰⁸ Second, the State must show that the injury affects a “substantial” portion of the state’s population.¹⁰⁹

¹⁰¹ Alfred L. Snapp & Son v. Puerto Rico, 458 U.S. 592, 607 (1982).

¹⁰² Georgia v. Tennessee Copper Co., 206 U.S. 230 (1907).

¹⁰³ *Id.* at 238.

¹⁰⁴ *Hawaii v. Standard Oil Co.*, 405 U.S. 251 (1972).

¹⁰⁵ *Id.* at 255-56.

¹⁰⁶ Puerto Rico v. Alfred L. Snapp & Sons, Inc., 632 F.2d 365, 369 (4th Cir. 1982).

¹⁰⁷ *Id.*

¹⁰⁸ *Id.* at 369-70. Note that the State need not show a particularized injury *to itself* under the *parens patriae* doctrine. Instead, the injury must be to its residents.

¹⁰⁹ *Id.*

Lastly, the State, as all litigants must, needs to show that the defendant's actions are "fairly traceable" to the particularized injury.¹¹⁰ In *Massachusetts*, the Court, over a strong dissent,¹¹¹ found that pollution to a state's coastline could be fairly traceable to EPA inaction on climate change.¹¹²

Overall, if the State cannot present that (1) its litigation is in protection of a quasi-sovereign public interest, (2) the alleged injury affects a substantial segment of its population, (3) the actions of the defendant are fairly traceable to the injury, then federal standing under *parens patriae* is not appropriate. No court has yet followed the dissent in *Massachusetts v. EPA*. In that case, Massachusetts sought to challenge the EPA in court because it was not doing more to combat climate change.¹¹³

In his dissent in *Massachusetts v. EPA*, Chief Justice Roberts reasoned that Massachusetts' causal link between EPA inaction and the State's coastline damage was too speculative to establish standing.¹¹⁴ The majority disagreed with Roberts, ruling that the state had sufficiently alleged an injury that was fairly traceable to the EPA.¹¹⁵ Massachusetts, which sued under the *parens patriae* doctrine, still had to meet this 'causation' element of standing.¹¹⁶ However, the majority recognized that Massachusetts was a state entity working to protect a quasi-sovereign interest. Because it sued through *parens patriae*, it warranted a "special solicitude in [the] standing analysis."¹¹⁷ This "solicitude" implies a sort of levity that will be afforded to state plaintiffs in *parens patriae* cases.¹¹⁸

The "traceability" analysis is fundamental to Article III standing law, serving as the second element of the *Lujan* test that all plaintiffs must satisfy in order to establish standing.¹¹⁹ The Court in *Lujan* articulated this element as a "causal connection between the injury and the conduct complained of — the injury has to be fairly traceable to the challenged action of the defendant, and not the result of the independent action of some third party not before the court."¹²⁰ States that fail to meet the *Lujan* elements may not proceed under *parens patriae* standing because federal courts lack jurisdiction to

¹¹⁰ *Massachusetts v. EPA*, 549 U.S. 497, 517 (2007).

¹¹¹ "Traceability" and causation are difficult concepts in the context of standing, and a State's pleadings must sufficiently link the defendant to the wrongdoing. In *Massachusetts*, Justice Roberts dissented in the 5-4 case: "Petitioners are never able to trace their alleged injuries back through this complex web to the fractional amount of global emissions that might have been limited with EPA standards. In light of the bit-part domestic new motor vehicle greenhouse gas emissions have played in what petitioners describe as a 150-year global phenomenon, and the myriad additional factors bearing on petitioners' alleged injury--the loss of Massachusetts coastal land--the connection is far too speculative to establish causation." *Massachusetts v. EPA*, 549 U.S. 497, 544-45 (2007) (Roberts, C.J., dissenting).

¹¹² *Id.* at 534-35.

¹¹³ *Massachusetts v. EPA*, 549 U.S. 497 (2007).

¹¹⁴ *Id.* at 544-45. (Roberts, C.J., dissenting).

¹¹⁵ *Id.* at 498.

¹¹⁶ *Id.*

¹¹⁷ *Id.* at 520.

¹¹⁸ See *Wash. Envtl. Council v. Bellon*, 732 F.3d 1131, 1145 (9th Cir. 2013) ("Plaintiffs are private organizations, and therefore cannot avail themselves of the 'special solicitude.'").

¹¹⁹ *Lujan v. Defenders of Wildlife*, 504 U.S. 555, 560-61 (1992).

¹²⁰ *Id.*

hear the suit.¹²¹ In *Colorado v. Gonzales*, “myriad additional contingencies” prevented the State of Colorado from successfully arguing that the Department of Homeland Security’s inaction on illegal immigration could be traceable to an increased risk of terrorist attack within the state.¹²² Such “contingencies” were so dependent upon non-party action (in that case, potential terrorism) that standing to sue was not proper.¹²³

In the context of pollution, the Second and Third Circuits have utilized a three-part test regarding the “fairly traceable” element. In that test, the plaintiff must show that the defendant has (1) discharged some pollutant in concentrations greater than allowed by its permit (2) into a waterway in which the plaintiffs have an interest and that (3) this pollutant contributes to the kinds of injuries alleged by the plaintiffs.¹²⁴ The plaintiff need only state some contribution to the larger pollution on part of the defendant.¹²⁵ The Connecticut court concluded that the exact level of contribution “is an issue best left to the rigors of evidentiary proof at a future stage of the proceedings, rather than dispensed with as a threshold question.”¹²⁶ Nonetheless, for any *parens patriae* case, the threshold question is whether the state has alleged sufficient facts to support standing and discovery needs to be tailored to determine the State’s standing to bring the claims asserted.

In the MTBE MDL defendants challenged standing of States to sue. The MDL Court held that standing is a federal question “which does not depend on the party’s prior standing in state court.”¹²⁷ The district court stated that, to establish Article III standing, the plaintiff must show “(1) it has suffered an injury-in-fact,¹²⁸ (2) the injury is fairly traceable to the challenged action, and (3) it is likely that the injury will be redressed by a favorable decision.”¹²⁹

The MTBE MDL court has not ruled against applicability *parens patriae* as a standing doctrine.¹³⁰ Overall, the MDL precedent views “standing” and “stating a claim” as similar concepts. For example, Puerto Rico sued oil producers in the MTBE MDL under its Environmental Public Policy Act (EPPA), which (1) created a cause of action to collect damages for pollution cleanup and (2) vested the government with the power to sue to recover damages. Although Puerto Rico claimed to have federal standing as the trustee

¹²¹ *Colorado v. Gonzales*, 558 F. Supp.2d 1158, 1162-63 (D. Colo. 2007).

¹²² *Id.* at 1163.

¹²³ *Id.*

¹²⁴ *Connecticut v. Am. Elec. Power Co.*, 582 F.3d 309, 346 (2nd Cir. 2009) (citing *Pub. Interest Research Group of N.J., Inc. v. Powell Duffryn Terminals, Inc.*, 913 F.2d 64, 72 (3rd Cir. 1990).

¹²⁵ *Id.* at 347.

¹²⁶ *Id.*

¹²⁷ *California v. Alt. Richfield Co. (In re Methyl Tertiary Butyl Ether Prods. Liab. Litig.)*, 2005 U.S. Dist. LEXIS 12400 at *18 (S.D.N.Y. June 24, 2005).

¹²⁸ In the *parens patriae* doctrine, this element would be substituted with “a quasi-sovereign interest” being injured.

¹²⁹ *Id.* at 10.

¹³⁰ See *New Jersey Dep’t of Env’tl. Prot. v. Atl. Richfield Co. (In re MTBE Prods. Liab. Litig.)*, 2014 U.S. Dist. LEXIS 28287 at *5 (S.D.N.Y. Mar. 3, 2014) (“Plaintiffs purport to bring their common law claims . . . in their sovereign capacity as *parens patriae*”); *In re MTBE*, 2015 U.S. Dist. LEXIS 26363 at *4 (“In its authority as *parens patriae*, the Commonwealth asserts public nuisance, trespass, and negligence claims . . .”).

of its water resources¹³¹ under *parens patriae*, the district court viewed the issue as “more properly described as whether plaintiffs have stated a cognizable claim.”¹³² In that MTBE case, the defendant corporations failed to establish why Puerto Rico was precluded from suing under *parens patriae*, and the government’s valid causes of action under EPPA did not displace its common law tort claims.¹³³

State courts in the MTBE litigation have articulated some of the limitations of the *parens patriae* standing doctrine. In the State of New Hampshire case, the recovery was limited. While the State may have been the trustee of the groundwater under *parens patriae*, the state’s Supreme Court held that “not all potential damages related to MTBE contamination in New Hampshire waters can properly be recovered by the State in its capacity as *parens patriae*.”¹³⁴ Unrecoverable “private” damages included “diminution in value of private property, lost business expenditures, and other business and economic losses resulting from MTBE contamination.”¹³⁵ However, the New Hampshire Supreme Court did allow the State to recover for the costs of “investigating, monitoring, treating, remediating, replacing, or otherwise restoring” groundwater wells.¹³⁶ The New Hampshire court based its conclusions off of federal cases in the Tenth Circuit which held that plaintiffs in *parens patriae* cases cannot recover for “injuries to private interests.”¹³⁷ While the *parens patriae* plaintiff can recover for damages to the natural resources of the State, it may not recover for damages more properly pursued by private individuals, such as “business and economic damages, including lost revenue or use of the land, harm to private water rights, and response costs associated with private property.”¹³⁸ Distinguishing these cases, the New Hampshire court concluded that the contamination of private wells goes “beyond harm to an individual well owner,” and the State could recover for damage to these wells.¹³⁹ While the holding of the New Hampshire Supreme Court is not determinative of federal *parens patriae* standing, the decision’s reasoning sheds some light on determining the scope of damages.¹⁴⁰

Despite the standing issues having been generally raised in the MTBE litigation, the MTBE MDL has not produced definitive authority for determining the limitations of the *parens patriae* doctrine. Nonetheless, some considerations are worth noting. First,

¹³¹ In re MTBE Prods. Liab. Litig., 2015 U.S. Dist. LEXIS 26363 at *7-8 (S.D.N.Y. Mar. 2, 2015).

¹³² *Id.* at 24 (citing Puerto Rico v. SS Zoe Colocotroni, 628 F.2d 652, 671 (1st Cir. 1980).

¹³³ *Id.* at 25-26.

¹³⁴ State of New Hampshire v. Hess Corp., 20 A.3d 212, 221 (N.H. 2011).

¹³⁵ *Id.*

¹³⁶ *Id.*

¹³⁷ *Satsky v. Paramount Comm’cns*, 7 F.3d 1464, 1470 (10th Cir.). The *Satsky* court further ruled that, although the State has no standing to claim purely private damages, private individuals are not barred from pursuing those private damages in a subsequent suit. *Satsky*, 7 F.3d at 1470. However, private individuals may not recover damages that are public in nature or any damages already recovered by the State. *Id.*

¹³⁸ *Quapaw Tribe of Okla. v. Blue Tee Corp.*, 653 F.Supp.2d 1166 (N.D. Ok. 2009).

¹³⁹ *Hess*, 20 A.3d at 221-222.

¹⁴⁰ The New Hampshire Supreme Court also faced the *parens patriae* issue in the 2015 MTBE case, but it “decline[d] to address it substantively.” *State of New Hampshire v. Exxon Mobil Corp.*, 126 A.3d 266, 306 (N.H. 2015). The case did, however, hold that the State’s standing under *parens patriae* did not warrant the imposition of a trust in the State’s capacity as trustee for the tort damages. *Id.* at 312.

federal law on standing is applied in the federal district court.¹⁴¹ Second, the party seeking Article III standing must seek redress for any injury “fairly traceable” to the Defendant.¹⁴² Third, *parens patriae* standing can be challenged when a State seeks damages that are private in nature, such as loss of property value or other economic losses.¹⁴³ Overall, the standing analysis will be similar to the basic question of pleading: did the plaintiff sufficiently state a claim, and what damages might be at issue.¹⁴⁴

To establish standing, States must allege that a defendant has injured a quasi-sovereign interest of the State and that this injury affects a substantial segment of the population.¹⁴⁵ Basic principles of standing still apply and a defendant must allege (1) some actual or threatened injury to himself, (2) that the injury can be fairly traced to the action of the defendant, and (3) that the injury is likely to be redressed by a favorable decision.¹⁴⁶

Substantial Segment of the Population

A State may not enter litigation against an actor under the doctrine of *parens patriae* as a nominal party in protection of a private interest. Rather, it must express a quasi-sovereign interest in the litigation, and this interest must affect a substantial portion of that State’s population.¹⁴⁷ What exactly makes a segment of the State’s population “substantial,” however, is less than clear. *Snapp* does not provide a formulaic approach, but rather analyzes whether the injury is so substantial or so threatening that state action, such as legislation, would be justified or expected.¹⁴⁸ *Parens patriae* standing is available only when an action has impacted, or threatens to impact, more than a small number of private residents.¹⁴⁹

Cases analyzing *Snapp*’s requirement that an injury affect a substantial portion of residents look at potential injuries as well as concrete ones.¹⁵⁰ In measuring whether an injury affects a substantial portion of residents, courts look to see if the injury is the type that legislation would address. In *Cain*, the district court found it significant that New York had passed a law designed to protect reproductive health facilities when the State’s Attorney General sought to enjoin protestors from blocking entrance to a facility.¹⁵¹ It was unimportant that New York could not identify particular residents

¹⁴¹ *Hollingsworth*, 570 U.S. at 715; *California v. Alt. Richfield Co. (In re Methyl Tertiary Butyl Ether Prods. Liab. Litig.)*, 2005 U.S. Dist. LEXIS 12400 at *18 (S.D.N.Y. June 24, 2005).

¹⁴² *Id.* at *10.

¹⁴³ *See Hess Corp.*, 20 A.3d at 221.

¹⁴⁴ *See In re MTBE*, 2015 U.S. Dist. LEXIS 26363 at *24.

¹⁴⁵ *Alfred L. Snapp & Son v. P.R.*, 458 U.S. 592, 607 (1982).

¹⁴⁶ *Valley Forge Christian College v. Americans United for Separation of Church and State, Inc.*, 454 U.S. 464, 471 (1982); *Lujan v. Defenders of Wildlife*, 504 U.S. 555, 560-61 (1992).

¹⁴⁷ *Snapp*, 458 U.S. at 607.

¹⁴⁸ *See id.* at 607-08 (“One helpful indicium in determining whether an alleged injury to the health and welfare of its citizens suffices to give a state standing to sue as *parens patriae* is whether the injury is one that the state [would] attempt to address through its sovereign law-making powers.”).

¹⁴⁹ *Id.*

¹⁵⁰ *New York v. Cain*, 418 F.Supp.2d 457, 471 (S.D. N.Y. 2006); *Quapaw Tribe of Okla. V. Blue Tee Corp.*, 653 F.Supp.2d 1166, 1179 (N.D. Ok. 2009).

¹⁵¹ *Cain*, 418 F.Supp.2d at 471.

impacted by the defendant's behavior.¹⁵² Because the State could identify legislation that concerned access to reproductive services, the injury was shown to be one of "sufficient magnitude and concern" as to justify *parens patriae* standing.¹⁵³

The *parens patriae* doctrine even allows States to sue in protection of relatively small classes of residents. A district court found that the State of Maryland and the District of Columbia, in their suit against Donald Trump,¹⁵⁴ alleged a substantial injury to their populations, even though the suit only concerned competitors to the Trump Hotel in Washington.¹⁵⁵ The court concluded that the States were "more than nominal parties" because a varied number of residents, from restaurateurs to hotel owners and their employees, were affected by the alleged violations of the emoluments clause.¹⁵⁶ Because these competitors to Trump Hotel constituted a "large segment of commercial residents," State standing was recognized.¹⁵⁷

Parens patriae suits alleging concrete or potential injuries to public health are "classic examples" of valid quasi-sovereign interests affecting wide segments of the population.¹⁵⁸ Water contamination is inherently not a private injury, and water's flow through the waterways of a State could affect any of its residents. The State's inability to specifically identify individuals harmed by the contamination is unimportant so long as it can allege a substantial potential impact on residents.¹⁵⁹ Due to its public nature, water is a heavily regulated entity at the federal, state, and local level. Because water contamination has a great potential impact on public health and is something that legislation would actively regulate, the States may have little difficulty alleging an injury to a "substantial segment" of their population.

Traceability in the Second, Third, and Fourth Circuits

As stated, the Supreme Court in *Lujan* has required that a plaintiff plead (1) a particularized injury (2) that is fairly traceable to the actions of the defendant and (3) will likely be redressed by a favorable decision.¹⁶⁰ While a four-vote dissent in the Supreme Court urged a newer, more stringent take on the traceability analysis, the "fairly traceable" element of standing remains lenient, particularly for *parens patriae* State

¹⁵² *Id.*

¹⁵³ *Id.*

¹⁵⁴ *Trump* is an emoluments suit that addresses profound issues of constitutional law relating to the executive. Importantly, the district court found that the plaintiff States had standing to sue the President. *Trump*, 2018 U.S. Dist. LEXIS 51365 at *5.

¹⁵⁵ *District of Columbia v. Trump*, No. PJM 17-1596, 2018 U.S. Dist. LEXIS 51365 at *5 (D. Md. 2018).

¹⁵⁶ *Id.* at *43-44.

¹⁵⁷ *Id.*

¹⁵⁸ *Connecticut v. Am. Elec. Power Co.*, 582 F.3d 309, 338 (2nd Cir. 2009) ("[The States'] interest in safeguarding the public health and their resources is an interest apart from any interest held by individual private entities. Their quasi-sovereign interests involving their concern for the health and well-being of their residents . . . are classic examples of a state's quasi-sovereign interest.").

¹⁵⁹ See *Cain*, 418 F.Supp.2d at 471.

¹⁶⁰ *Lujan*, 504 U.S. at 560-61.

plaintiffs.¹⁶¹ In the Second and Third Circuits, case law has attempted to better articulate what burden the State has to link an actor to a specific instance of pollution.

In *Powell Duffryn*, the Third Circuit concluded that the “fairly traceable” element need not be established “with absolute scientific rigor.”¹⁶² The traceability test is “not equivalent to a requirement of tort causation.”¹⁶³ However, the plaintiff still must show a “substantial likelihood” that the defendant caused the complained-of harm.¹⁶⁴ Therefore, in water pollution cases, the plaintiff must show some specific harm resulting from pollutants¹⁶⁵ allegedly found in the defendant’s effluent.¹⁶⁶ Affidavits linking the pollutant to a particularized injury, such as run-off grease to an offensive aesthetic injury, may provide a valid “trace” of the defendant to the injury.¹⁶⁷ While the State need not exhaustively prove that the defendant *in fact* polluted, it must sufficiently explain how the pollutant causes the harm.¹⁶⁸

The Second Circuit followed the lead of *Powell Duffryn* in *American Electric*, when it found that eight states had standing to sue power corporations for their pollution’s impact on global warming.¹⁶⁹ The court concluded that the requirement that the plaintiff’s injury be fairly traceable to the defendant “does not mean that plaintiffs must show to a scientific certainty that defendant’s effluent, and defendant’s effluent alone, caused the precise harm.”¹⁷⁰ Rather than “pinpointing the origins of particular molecules,” the plaintiff must merely allege that the defendant “discharges a pollutant that causes or contributes to the kinds of injuries alleged.”¹⁷¹ The States were not required to identify which specific harms were caused by a particular defendant; it sufficed that they alleged that the emissions all contributed to the injury.¹⁷²

The Second and Third Circuit case, notably *Powell Duffryn*, did not “limit” the scope of *Lujan* standing. Instead, they attempt to more clearly articulate how a plaintiff should trace a pollution-related injury to a defendant’s action. As the cases frequently note, this test for standing is not a causation analysis in which the plaintiff must prove that a

¹⁶¹ “Given that procedural right and Massachusetts’ stake in protecting its quasi-sovereign interests, the Commonwealth is entitled to a special solicitude in our standing analysis.” *Massachusetts v. EPA*, 549 U.S. 497, 520 (2007). “Relaxing Article III standing requirements because asserted injuries are pressed by a State, however, has no basis in our jurisprudence, and support for any such “special solicitude” is conspicuously absent from the Court’s opinion.” *Id.* at 536. (Roberts, C.J., dissenting).

¹⁶² *Pub. Interest Research Group of N.J., Inc. v. Powell Duffryn Terminals, Inc.*, 913 F.2d 64, 72 (3rd Cir. 1990).

¹⁶³ *Id.*

¹⁶⁴ *Id.*

¹⁶⁵ “[I]f a plaintiff has alleged some harm, that the waterway is unable to support aquatic life for example, but failed to show that defendant’s effluent contains pollutants that harm aquatic life, then plaintiffs would lack standing.” *Id.* at 72-73.

¹⁶⁶ *Id.*

¹⁶⁷ *See id.* at 73.

¹⁶⁸ *See id.*

¹⁶⁹ *Connecticut v. Am. Elec. Power Co.*, 582 F.3d 309 (2nd Cir. 2009) (rev’d on other grounds).

¹⁷⁰ *Id.* at 346.

¹⁷¹ *Id.* at 347.

¹⁷² *Id.*

defendant in fact polluted a water supply.¹⁷³ Instead, the court focuses on whether the pollutant allegedly spilled is of the kind that would contribute to the plaintiff's alleged injury.¹⁷⁴ For example, the State must allege some particularized injury that reasonably results directly from the alleged pollution; the fact that some defendant leaked a chemical into the groundwater is alone insufficient to show an injury.

The Fourth Circuit has also followed the *Powell Duffryn* case as the standard for determining standing to sue in the environmental context.¹⁷⁵ To meet the traceability requirement, "plaintiffs must merely show that a defendant discharges a pollutant that causes or contributes to the kinds of injuries alleged by the plaintiffs."¹⁷⁶ Plaintiffs need not allege that a particular defendant is the sole cause of their injury; a showing of contribution is sufficient.¹⁷⁷ If a State can demonstrate how a particular defendant's discharge has the potential to create the alleged injury, the State may need not identify a specific harm from a specific polluter.¹⁷⁸

Evidentiary Burdens and the 12(b)(1) Motion

Jurisdictional principles of civil procedure apply to the degree of specificity the plaintiff "merely show" that the defendant is polluting to pre-discovery dismissal.¹⁷⁹ In response to a motion for dismissal on a lack of standing, the burden is on the State to establish specific facts to support allegations by affidavit or other evidence.¹⁸⁰ However, this proof is not required as a threshold matter¹⁸¹ in order to invoke jurisdiction, as uncontested allegations are presumed true.¹⁸²

In Pennsylvania, a district court reversed itself on rehearing when it had initially dismissed the complaint because the plaintiff failed to support its allegations of pollution with evidence.¹⁸³ On rehearing, the court concluded that the plaintiffs "were not obligated to present evidence to support its allegations where, as here, [defendant] did not submit any contrary evidence or place them at issue."¹⁸⁴ If allegations are uncontested, the court should presume them as true.¹⁸⁵ This decision adheres to the rule that a court "must permit the plaintiff to respond with evidence supporting

¹⁷³ *Powell Duffryn*, 913 F.2d at 72.

¹⁷⁴ See *id.*

¹⁷⁵ *Natural Resources Defense Council v. Watkins*, 954 F.2d 974, 980 (4th Cir. 1992).

¹⁷⁶ *Id.* (internal quotations removed).

¹⁷⁷ *Id.*

¹⁷⁸ *Friends of the Earth, Inc. v. Gaston Copper Recycling Corp.*, 204 F.3d 149, 161 (4th Cir. 2000).

¹⁷⁹ FED. R. CIV. P. 12(b)(1) (authorizing dismissal of a complaint on jurisdictional or standing grounds).

¹⁸⁰ *EarthReports, Inc. v. U.S. Army Corps of Eng'rs*, No. 8:10-cv-01834-AW, 2011 U.S. Dist. LEXIS 109184 (D. Md. 2011).

¹⁸¹ Courts may allow for discovery to determine factual issues in regard to standing; a motion for summary judgment for lack of standing is allowed at trial, as it is a motion challenging the subject matter jurisdiction of the court. *Gladstone, Realtors v. Bellwood*, 441 U.S. 91, 115 (1979).

¹⁸² *Id.* at *10.

¹⁸³ *Pennenvironment v. RRI Energy Northeast Mgmt. Co.*, No. 07-475, 2010 U.S. Dist. LEXIS 102220 (W.D. Pa. 2010).

¹⁸⁴ *Id.* at 10.

¹⁸⁵ *Id.*

jurisdiction” before dismissing the complaint under Rule 12(b)(1).¹⁸⁶ The court may then determine jurisdiction by weighing evidence, allowing the suit to proceed to trial if the trial court is satisfied that standing exists.¹⁸⁷ The court should only grant the motion if the plaintiff’s allegations are “wholly insubstantial and frivolous.”¹⁸⁸ The trial court may also defer this determination.¹⁸⁹

The Fourth Circuit follows other circuits in holding that the plaintiff must allege an injury that likely results from the kind of pollution allegedly committed by the defendant.¹⁹⁰ The plaintiff need not support these allegations with further evidence to establish the “fairly traceable” element of standing. However, evidence of a defendant’s polluting activity will be required if the defendant offers a factual attack on the plaintiff’s basis for standing through a 12(b)(1) motion.¹⁹¹

Conclusion

As science develops and evolves identifying more persistent chemicals in the environment, and at lower concentrations than were imaginable decades ago when the products were in distribution, so too has the world in which cases and controversies are litigated. Prior large-scale litigation focused on large, deep pocket, upstream manufacturers and producers, and for good reason. Upstream parties have proven far easier to identify and vilify. On the other hand, downstream processors, distributors and users are not immune from enforcement and litigation and, collectively, will have massive resources. In prior litigation involving market-based allocation schemes, these downstream defendants presented a far more complicated evidentiary challenge on identifying the proper party, and marshaling evidence to establish liability, causation and damages. No prior litigation has presented the scope of exposure, risk and industry liability that PFAS presents. While much is being done industry-wide to mitigate risk, individual downstream processors, distributors and users, sitting idle in response to this looming liability does not guarantee that coming litigation freight train will hit you but taking a few proactive steps may nudge you off the rails.

¹⁸⁶ *Gould Electronics Inc. v. U.S.*, 220 F.3d 169, 177 (3rd Cir. 2000).

¹⁸⁷ *Id.*

¹⁸⁸ *Id.* at 178.

¹⁸⁹ A 12(b)(1) motion to dismiss would, in our case, be a *factual* challenge to jurisdiction. While a *facial* attack on the pleadings would determine if the presumed-true pleadings would merit recovery, a factual attack measures the sufficiency and credibility of the jurisdictional evidence. See *Holt v. U.S.*, 46 F.3d 1000, 1003 (10th Cir. 1995). In a factual attack, the defendant may present evidence outside the pleadings. *Gould*, 220 F.3d at 177. Here, no presumptiveness attaches to the plaintiff’s pleadings, and the plaintiff has the burden of proof that jurisdiction does in fact exist. *Mortensen v. First Fed. Sav. & Loan Ass’n*, 549 F.2d 884, 891-92 (3rd Cir. 1977). The trial court then has discretion to determine if the plaintiff’s evidence sufficiently supports the pleadings or defer the issue until trial. *Id.* at 891.

¹⁹⁰ *Gaston Copper*, 204 F.3d at 161.

¹⁹¹ *Pennenvironment*, 2010 U.S. Dist. LEXIS 102220 at *10.