Emerging Toxic Tort – PFAS Contamination of Water Supplies
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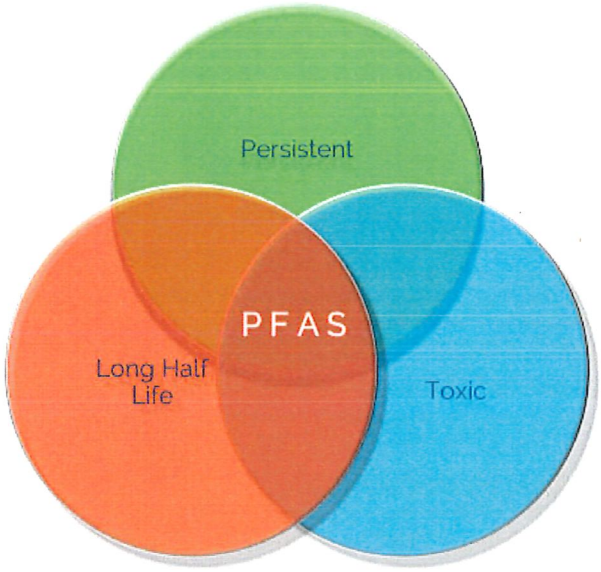
Per and Polyfluoroalkyl substances ("PFAS") are a group of man-made chemicals that have captured the attention of regulators and public health officials around the world. These substances are used far and wide, including in everyday household products, such as Teflon non-stick pans and microwave popcorn bags, and in specialized foams used to extinguish aviation fires. A growing body of toxicological and epidemiological data has linked exposure to these chemicals to a number of diseases, cancers and other adverse health outcomes. Consequently, the manufacturers of these chemicals are facing a tsunami of lawsuits in various jurisdictions in and outside the United States.

This type of litigation, commonly referred to toxic torts, is by no means a new area of law. Litigators have tackled a myriad of chemical invaders in our environment – PCBs, MTBE, dioxin and asbestos to name a few. But PFAS chemicals stand out due to their deadly trifecta of attributes: (1) their persistence in the environment; (2) their exceptionally long half-lives in humans; and (3) their toxicity.



Persistence in the Environment

PFAS chemicals are commonly referred to as 'forever chemicals' due to their ability to persist in nature. Whereas most chemical compounds degrade over time in the environment after exposure to sunlight, microorganisms, water or heat, PFAS chemicals can survive in the environment for centuries. This is because PFAS chemicals have incredibly strong hydrogen-fluorine bonds that render Mother Nature ineffective at naturally decomposing them, and it is this quality that makes them so useful to their chemical industry inventors. As a consequence of this

chemical attribute, virtually every molecule of this class of chemicals is still in existence, somewhere on this planet, working its way through our environment.

Exceptionally Long Half-Life

Next in the PFAS chemicals' deadly trifecta is their exceptionally long half-life. Half-life is a fundamental component of pharmacology, measuring how long it takes for half of a substance to leave the body. Most medicines dispensed at a pharmacy work their way through your body in a matter of hours. "Long-acting" versions of medicines are engineered to stay in the body longer, *i.e.* to have a longer half-life. Environmental toxins are no different. For example, glyphosate, the active ingredient in Roundup weed killer, has a half-life of approximately 10 hours.[i] The environmental toxin mercury has a half-life of one to three weeks.[ii] The half-life of some PFAS chemicals is measured in *years*.[iii] One of the worst PFAS chemicals, known as Perfluorooctanesulfonic acid ("PFOS"), has a half-life of approximately 5 years. This means that after a single exposure the human body will retain appreciable quantities of this chemical for more than 20 years. As a result, to the extent these chemicals are harmful, they have a long time to be able to cause that harm.

Toxic to Humans

Relative to other families of chemicals, public health officials and toxicologists had a late start in assessing PFAS chemicals and their risk of harm to humans. This is likely because the few companies that made and used PFAS chemicals limited access to information about them. For example, until recently, it was nearly impossible to obtain samples of many of these chemicals that would be necessary to conduct routine toxicology testing.

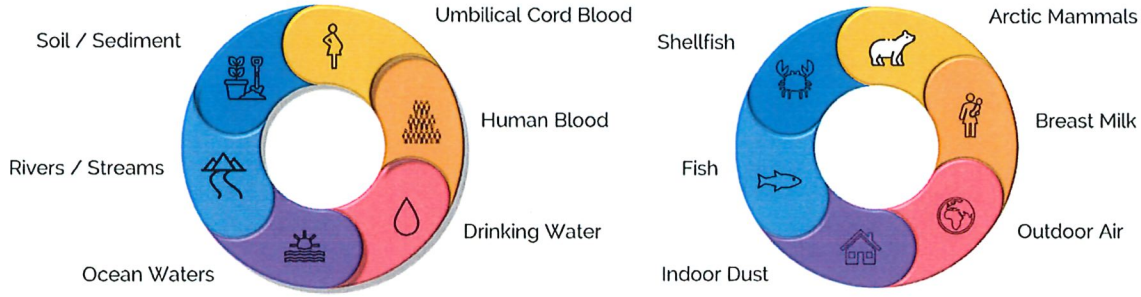
That is no longer the case and a consensus has been reached about their impacts on human health: PFAS chemicals are incredibly toxic. They have been linked to various cancers, including kidney cancer, testicular cancer, breast cancer and prostate cancer. Similarly, PFAS exposure has been associated with liver damage, thyroid disease and preeclampsia in pregnant women. In our current COVID pandemic, perhaps most concerning of all the various adverse effects associated with PFAS exposure is decreased antibody response to vaccines.[iv]

This trifecta of attributes makes PFAS chemicals particularly troublesome. Once released into the environment, they will remain there indefinitely, traveling through the environment until they find their way into humans, where their levels will accumulate and effectuate their toxic effects. Unfortunately, vast amounts of PFAS chemicals have already been released into the environment and as a result have contaminated the entire planet.

Global Contamination

Ever since PFAS burst into the environmental scene in the late 1990s, scientists have been scouring the planet evaluating the scope and degree of PFAS contamination. What they've discovered is startling. Unlike most contaminants, where the scope of contamination is limited in its geographic proximity to the sites of manufacturing or discharge into the environment, PFAS contamination is global.

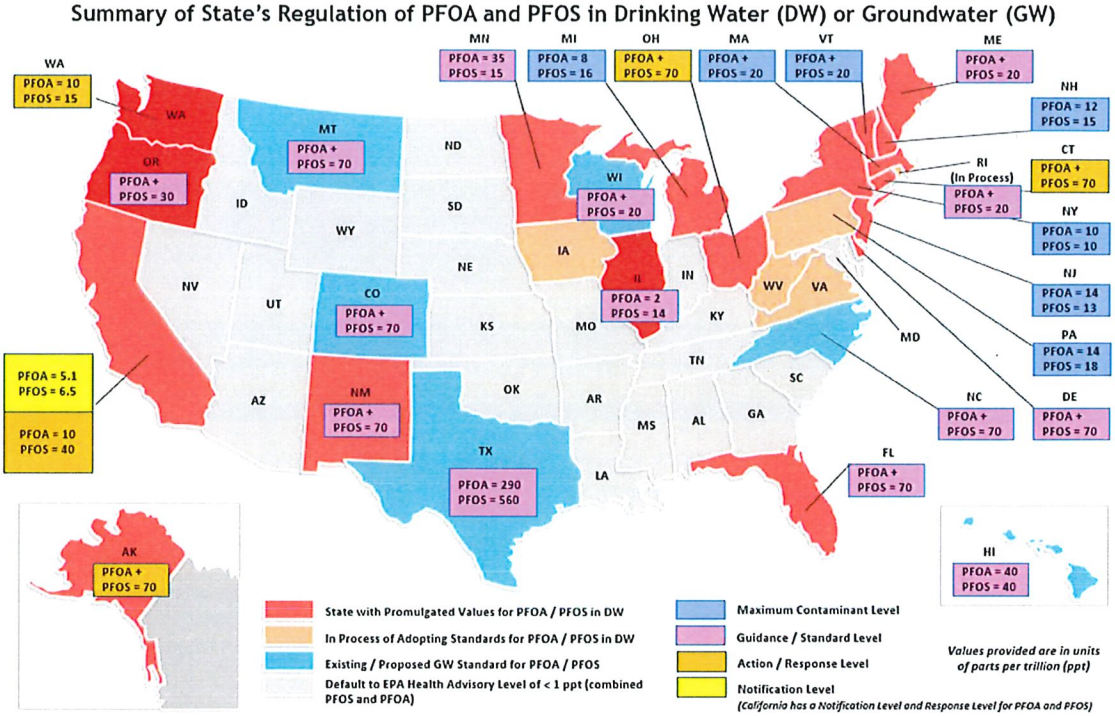
PFAS has been detected in virtually every environmental media around the world ranging from rivers and streams to air samples collected in the middle of the Pacific Ocean. It has been detected in dust samples collected from day care facilities in Europe. It has famously even been detected in the blood of Polar Bears.[v]



However, the most concerning of all the various places PFAS has been detected is in the blood of human beings. According to a 2019 Centers for Disease Control study that evaluated PFAS chemicals in the blood of Americans, more than 90% of Americans had detectable levels of PFAS chemicals in their blood.[vi] In stark contrast to most other emerging contaminants, this finding removes any doubt with respect to whether or not exposure to humans has actually occurred.

Regulatory Response

In response to this growing body of knowledge of the harmful attributes of PFAS chemicals, regulators have finally begun to take meaningful action to minimize or prevent additional future exposures to these chemicals. For instance, in 2002, the United States Environmental Protection Agency ("USEPA") banned the manufacturing and importation of certain PFAS chemicals into the United States.[vii] In 2016, the United States Food and Drug Administration revoked authorization for the use of certain PFAS chemicals in food packing materials. In May 2016, the USEPA established a drinking water health advisory for the combined concentrations of two PFAS chemicals (PFOA and PFOS) of 70 parts per trillion (ppt). Above these levels the USEPA "recommends that drinking water systems take steps to assess contamination, inform consumers and limit exposure." In 2022, the EPA updated the Health Advisory Level to less than 1 ppt. A federally enforceable MCL is expected to be announced in March 2023. Various states have adopted or enacted more stringent regulations then USEPA for PFAS in drinking water as illustrated in the map below.



It is important to note that this is a dynamic situation in that both the actions taken and the states taking those actions are changing constantly – but the trend is clear: more states are enacting stricter and stricter standards for PFAS in drinking water.

Litigation Brought on Behalf of Water Providers

Recently, water providers have begun testing and many are finding PFAS chemicals in their water supply. Because of the changing regulatory landscape, water providers are grappling with how to address the presence of PFAS chemicals. Current regulations may not require any particular action – whereas customer expectations may be quite different. Some customers may not want to consume water tainted with cancer-causing chemicals – notwithstanding the absence of any binding regulations to remove these chemicals from the water. Likewise, customers may not take solace in the fact that there is an "acceptable" amount of these chemicals in their water.

Consequently, public and private water providers have brought lawsuits against the manufacturers and others believed to be responsible for the release of PFAS chemicals into drinking water supplies. These lawsuits seek costs associated with removing PFAS chemicals from the water supply. This cost varies depending on size of water system, treatment technology utilized and the applicable drinking water standard. For example, six small water districts near the Dupont Washington Works Facility serving less than 100,000 residents required an initial $20 million capital investment and annual ongoing $1.7 million for operation and maintenance costs. Due to the persistent nature of these chemicals, these water providers can reasonably expect to incur these costs for decades if not centuries going forward. On a national scale, the estimated cost to remove PFAS from drinking water below applicable standards is staggering. The American Water Works

Association recently estimated clean-up cost at between $23-48 billion in capital cost and $0.46 to 4.8 billion in annual operation and maintenance costs.[viii]

Current State of Litigation

Water provider cases are currently pending in various state and federal courts around the country. Cases where the alleged source of PFAS contamination is from fire fighting foam (Aqueous Film-Forming Foams ("AFFF")), have been centralized in In Re: Aqueous Film-Forming Foams Products Liability Litigation, MDL No. 2873 ("AFFF MDL") before the Honorable Judge Gergel in Charleston, South Carolina. The first bellwether is scheduled to go to trial in June 2023.

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[i] https://www.sciencedirect.com/science/article/pii/S1438463918305972

[ii] https://www.cdc.gov/biomonitoring/Mercury_BiomonitoringSummary.html#:~:text=After%20elemental%20mercury%20is%20absorbed,et%20al.%2C%201998).

[iii] https://www.atsdr.cdc.gov/toxprofiles/tp200.pdf

[iv] https://www.atsdr.cdc.gov/toxprofiles/tp200.pdf

[v] https://www.atsdr.cdc.gov/toxprofiles/tp200.pdf

[vi] https://wwwn.cdc.gov/Nchs/Nhanes/2013-2014/SSPFAC_H.htm

[vii] https://www.epa.gov/pfas

[viii] https://www.awwa.org/Resources-Tools/Resource-Topics/PFAS