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PFAS Update: Unregulated (Mostly), Uncertain, and Ubiquitous

By: Oliver Twaddell and George Buermann

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Every week there is more news involving the challenges that communities, municipalities, state and federal environmental regulatory bodies, and the environmental community at large face from the class of chemicals known as per-and polyfluoroalkyl substances (PFAS) and their impact on human health and the environment. In DRI's For The Defense June 2018 publication, an in-depth look was taken into the state of PFAS and what the horizon holds for regulation and litigation. This short article will explore a few of the recent key developments.

New Jersey and PFOS

Back in November 2017, a group of New Jersey scientists urged the state to impose a strict limit of 13 ppt for perfluorooctane sulfonate (PFOS) as the level at which human health would be protected over a lifetime of exposure. A few weeks ago, the New Jersey Department of Environmental Protection's Drinking Water Quality Institute unanimously approved the scientists' recommendation. If adopted, it will be the lowest maximum contaminant level (MCL) for PFOS in the country—and more than 5 times lower than the 70-parts-per-trillion unenforceable health advisory level (HA) that the U.S. Environmental Protection Agency currently believes is safe. If the NJ DEP adopts this proposed MCL, regulators could require public water systems and private well owners to limit the amount of PFOS in drinking water in accordance with the standard. The NJ DEP has already accepted the State Drinking Water Quality Institute's recommended health-based MCL of 14 parts per trillion (ng/L) for perfluorooctanoic acid (PFOA) and an MCL of 13 ng/L for perfluorononanoic acid (PNFA) – two other classes of chemicals in the PFAS family.

Massachusetts

There's other significant news out of Massachusetts. On June 8, 2018, the MA Dep't of Environmental Protection, Office of Research and Standards, issued recommendations on toxicity and drinking water guidance values for a number of lesser-known PFAS substances included in the EPA's Unregulated Chemical Monitoring Rule 3 (UCMR 3): perfluorohexane sulfonate (PFHxS), perfluorononanoic acid (PFNA), and perfluorohepatanoic acid (PFHpA). All of these chemicals have been detected in at least one MA water supply, as well as in groundwater and surface water samples. According to the report, "In light of the structural similarities of these compounds [as compared to PFOA and PFOS]; available data relating to biological half-lives, which are long; and toxicity, which includes developmental endpoints, it is not reasonable or health-protective to treat these compounds as being non-toxic."

The upshot of the MA report is that it: (1) recommends that the U.S. EPA's HAs and reference doses derived for PFOS and PFOA be applied to the three other lesser-known PFAS chemicals; and (2) recommends that an additive toxicity approach be used for the chemicals when they occur together, meaning that if any or all of these five chemicals are detected together, their concentrations should be summed and compared to the U.S. EPA's 70-ppt. MA believes that these recommendations are warranted considering the "similarities in molecular structures, toxicology and serum half-lives" that these PFAS family chemicals have with PFOA and PFOS. And it looks as though the report finds its impetus in the U.S. EPA's lack of guidance on those three UCMR 3 chemicals.

States Leading the Charge

There many other examples than just the few listed above—too many for this short article. It appears that certain states, including Massachusetts, New Jersey, Minnesota, New Hampshire, and Connecticut, have become increasingly frustrated with the federal government's delay in looking closer at the PFAS line of chemicals. That said, the U.S. EPA plans to draft a national management plan for these substances by the end of this year.

ATSDR Report

Significantly, on June 20, 2018, the Agency for Toxic Substances and Diseases Registry (ATSDR) released its 852 page report. The report is entitled "Toxicological Profile of Perfluoroalkyls," and serves as a draft that is open to public comment. The report "characterizes the toxicologic and adverse health effects information" for PFAS. The key point from the report—and the information that has caused a public outcry—is that ATSDR recommends safe exposure levels for PFOS and PFOA to be significantly lower than the 70 ppt, which has been the EPA's recommendation for the previous two years.

A few points from the study:

- The report states that "As a group of compounds, perfluoroalkyls appear to be ubiquitous in human blood based on the widespread detection of these substances in human serum samples," but that "There is a clear trend in decreasing serum levels of both PFOS and PFOA in the general population of the United States since 2000 as these substances were phased out."
- In general terms, the report finds that "epidemiology studies suggest links between perfluoroalkyl exposure and several health outcomes" that include hepatic effects, cardiovascular effects, endocrine effects, immune effects, developmental effects, and reproductive effects.
- Specifically, the report lists the following ailments and diseases as having a "suggest[ed]" association with perfluoroalkyl exposure: pregnancy-induced hypertension/pre-clampsi (PFOA, PFOS); liver damage (PFOA, PFOS, PFHxS); increases in serum lipids, particularly total cholesterol and LDL cholesterol (PFOA, PFOS, PFNA, PFDeA); increased risk of thyroid disease (PFOA, PFOS); decreased antibody response to vaccines (PFOA, PFOS, PFHxS, PFDeA); increased risk of asthma diagnosis (PFOA); increased risk of decreased fertility (PFOA, PFOS); and small decreases in birthweight (PFOA, PFOS).
- The report names two major limitations to establishing dose-response relationships for these effects: (1) accurate identification of environmental exposure levels producing increased risk of adverse effects; and (2) likely co-exposure to mixtures of perfluoroalkyls.
- The report also identifies further data/studies needed and necessary to conduct comprehensive public health assessments, including the need for more toxicity studies for most perfluoroalkyl compounds, studies on prenatal and childhood exposures, intermediate-duration oral studies, and chronic-duration inhalation studies, among others.

Conclusion

The PFAS regulatory landscape is in constant flux. Certain state and local governments—and now the federal government, albeit, at a slower pace—are focused on the potential health effects of PFAS and impact to the environment. As we have seen in the last couple of months, efforts are being made to expand the list of suspect PFAS substances beyond just PFOA and PFOS. The ATSDR study, in particular, is now the focus of review for environmental and medical groups, as well as the plaintiff's and defense bar. Out of all this, we expect that further regulation and more litigation is on the horizon.

Oliver Twaddell
646.292.8751
otwaddell@goldbergsegalla.com

George Buermann
973.681.7101
gbuermann@goldbergsegalla.com

Oliver Twaddell is an associate and George Buermann is a partner at Goldberg Segalla. Oliver handles a range of complex environmental matters, and has experience in both arbitration forums and international litigation. George helps lead the firm's Environmental Practice Group. He advises clients on environmental regulatory and compliance matters and litigates environmental matters across the country.