

## PFAS – The Coming Storm Major Opportunity for Environmental Professionals (But Not Without Peril)

After stewing for many years at the state and federal levels, it would appear that the regulatory dam is about to burst for the class of highly persistent and mobile organic chemicals known in the industry as “PFAS” (Per- and Polyfluoroalkyl Substances). While PFAS may or may not turn out to be the next asbestos, for the environmental consulting, engineering and remediation industry, it is likely to be the gift that keeps on giving. The high mobility properties, stringent primary drinking water standards, time/cost/remediation technology challenges, and the growing number and variety of sites being identified mean that large sums of money will be spent by industry and government dealing with PFAS. Environmental professionals will garner much of this spending as revenue, but it won't be without risk.

This ***Greyling Brief*** is written for our environmental engineering and consulting clients. Because you are the most current and familiar with the production, use, history, science and regulatory background on PFAS, we will not examine those issues here. In this edition, we'll identify some important risk management considerations for environmental professionals engaging in consulting, engineering and remediation in the evolving PFAS space.

On April 25, 2019, U.S. EPA [issued “Draft Interim Recommendations”](#) for contamination of groundwater that is a current or potential source of drinking water with regard to the two most common and well known PFAS compounds, perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS). The new guidance will be open for public comment for 45 days.

EPA's guidance is a signal of their likely range of primary drinking water screening and maximum contaminant level (mcl) standards. EPA Administrator Andrew Wheeler recently indicated that the agency has already begun a regulatory process for listing PFOA and PFOS as hazardous substances under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, aka “Superfund”). Such a listing, anticipated for several years, has major (and cascading) implications at the municipal, state and federal levels, for government and industry.

[In a June 2018 report to Congress](#), the U.S. Department of Defense (DoD) appeared to advocate for a primary drinking water standard of 380 parts per trillion (ppt). Some estimates have placed the number of DoD installations and facilities impacted at over 400. Most of these relate to the use of Aqueous Film-Forming Foams (AFFFs) containing PFAS for fire suppression training and response activities. According to one senior industry professional, DoD PFAS investigation and remediation obligations at active and closed installations could conceivably reach \$1 trillion.

To date, approximately 94 public drinking water systems across 28 states affecting around 6.5 million Americans have been identified with PFAS contamination. This figure does not include private wells. It seems certain these figures will increase.

Frustrated with the pace of EPA action on PFAS, some states have already passed remediation standards more stringent than the EPA's 2016 Lifetime Health Advisory of 70 ppt and [many more are in the works](#). Last month, a Vermont bill that would set the state's standard at 20 ppt cleared the Legislature.

The governor is expected to sign the bill. A 2019 Senate Bill in Michigan would set that state's standard at 5 ppt<sup>1</sup>. Just prior to publication, the Pennsylvania General Assembly advanced a bill that would set that state's standard at 10 ppt.

PFAS contamination is widely known or anticipated at certain facilities such as military base and municipal fire suppression training facilities as well as industrial plants that manufactured fluorinated chemical compounds. But it is also becoming clear that the substances have impacted a much wider variety of facilities than initially suspected. PFAS compounds have also been detected in soil and groundwater at paper sludge compost facilities, on fields (including agricultural fields) from land application of biosolids from municipal waste water treatment plants, and in landfill leachate. Suffice to say, there will be no shortage of work for our environmental engineering, science, consulting, and contracting clients who are recognized experts in complex groundwater and drinking water contamination.

All of this creates both a significant opportunity and a substantial risk for environmental professionals. Some of these risks are likely to be mitigated to some extent by rapidly evolving regulatory, professional standards, technology, and other developments. But until these issues become clearer, environmental professionals would be wise to carefully consider some of the unique risks posed by this market segment, and take certain precautions when engaging on projects.

The good news is you don't need to make changes to your insurance coverage. Properly written Professional Liability/Contractors Pollution Liability policies do not differentiate between emerging/newly regulated contaminants and those that are well known with established cleanup

standards. But environmental professionals will need to thoughtfully and carefully manage many risks unrelated to your insurance. For example:

**PFAS are outside the scope of the ASTM E1527-13 Phase I Environmental Site Assessment standard.**

Environmental professionals routinely assess environmental conditions that are outside the scope of ASTM's Phase I ESA standard. Asbestos, lead-based paint, and mold are common examples. ASTM E1527-13 is currently undergoing a routine revision. It's probable that PFAS will be incorporated into the upcoming revision. (If/when EPA lists PFAS as a hazardous substance under CERCLA, it becomes part of the ASTM standard by default). In the meantime, environmental professionals are urged to be cautious when considering where and how to incorporate PFAS into Phase I ESAs. At what sites should an environmental professional suspect the presence of PFAS? If there is strong potential for the presence of PFAS, how do you present the finding? What do you recommend in relation to the finding? Absent listing as a CERCLA hazardous substance or being brought into the scope of ASTM's Phase I ESA standard, does your response vary whether your client is DoD, a major industrial corporation, a municipal government, a landfill operator, or a commercial real estate developer? Does it vary whether you represent the buyer vs. the seller in a real estate transaction?

**Remedial design is something of an open question.**

Most traditional remedial technologies that are effective for chlorinated solvents or petroleum hydrocarbons are not effective for PFAS in groundwater. Some remedial technologies like anion exchange resins and granular activated carbon will work but may be extremely expensive and/or take many years. Reverse osmosis may be highly effective but at very high cost. The race to find cost-effective,

<sup>1</sup> PFOS and PFOA, individually or combined

fast-acting remedial solutions for PFAS is on. As the situation evolves, environmental professionals will need to be very cautious about designing remediation systems and treatments for PFAS.

**Contracts will be key, as will client and project selection.** Contract terms and client/project selection are always critical elements in managing risk for environmental engineers and consultants. That's the case even with well understood contaminants with clear regulatory thresholds and multiple proven remediation technologies. For emerging contaminants that do not yet have final, consistent regulatory thresholds, where the sciences of toxicology/epidemiology and assessment and remediation technologies are still evolving, environmental professionals must take extra caution. For example, until ASTM E1527 is updated and includes PFAS, what is the standard of care for an environmental professional engaged in environmental site assessment/investigation work? At what sites would an environmental professional be expected to anticipate and account for PFAS in a Phase I ESA or sample for it in site investigations? What levels would an environmental professional decide require remediation in states where there is no legally-established maximum contaminant level? What remediation methods would be recommended? What is the standard of care for recommending technologies for remediation of PFAS in groundwater? How does that change by context and geography?

Limitations of Liability (LoL's) will be critical, and quite possibly your strongest contractual risk management mechanism. It would be unwise to bet your firm's balance sheet or even your entire Professional Liability limits on a project involving PFAS. On the other hand, as all of us who practice in the real world of environmental commerce know, sophisticated,

large corporations are not likely to accept an LoL restricted to the cost of a Phase I ESA, either.

Environmental professionals should be thoughtful in terms of client and project selection, and scope of services. Expert witness work with an LoL equal to your fees for a municipality or landfill owner facing litigation from hundreds of residents claiming exposure to PFAS from the city's drinking water has one risk profile. A site assessment/characterization/remedial design project for the same municipality or landfill owner involved in litigation and with no LoL in your contract might be an invitation to a lawsuit.

Due to space limitations in the ***Greyling Brief*** format, these examples only scratch the surface of the risks facing environmental professionals pursuing work in the PFAS arena. We will be providing further analysis of and recommendations for these and many other non-insurance risk management issues in a more detailed ***Greyling Report*** in the coming weeks.

Like any other emerging market, where there is risk, there is opportunity. For those firms with the requisite technical expertise and strong client, project selection and contracting controls, PFAS will be an enormous opportunity. Greyling is here to help environmental professionals identify and manage risks in the emerging PFAS market. *Because at Greyling, we know that the highest-level, most effective risk management is about a lot more than just buying good insurance.*

**If you would like to receive the upcoming *Greyling Report* on PFAS, please email our Environmental Practice Leader and author of this *Greyling Brief* Alan Bressler at [Alan.Bressler@greyling.com](mailto:Alan.Bressler@greyling.com).**