

Investigation and Remedial Activities at PFAS Sites in a Changing Regulatory Environment

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Background/Objectives. As emerging contaminants, the per- and polyfluoroalkyl substance (PFAS) class of compounds is the focus of developing regulatory requirements on all environmental media, particularly soil and groundwater. This evolving regulatory environment presents a challenge to the planning and execution of assessment and remedial activities as it creates a moving target for successful and timely completion of even basic tasks. This process is made even more complicated by the fact that PFAS sites can have a range of contaminant mixtures while the applicable regulatory guidance and action levels can vary and change during the project life cycle.

Approach/Activities. Site investigations were started at several facilities in Texas that historically built, serviced, and tested fire suppression systems containing PFAS, among other compounds. During due diligence at one of the facilities, PFAS were identified in soil and groundwater, as well as in surface water impoundments. At the time, the TCEQ did not have reporting or clean-up criteria for PFAS, but under Texas regulations, investigators were able to develop preliminary screening criteria and subsequently requested concurrence from TCEQ that those values could be used as action levels. As subsequent investigations to delineate impacted groundwater were completed at the site, the state formalized criteria for perfluorooctanesulfonic acid (PFOS) and perfluorooctanoic acid (PFOA). Subsequently, the state revised the criteria for PFOA and PFOS and promulgated criteria for 14 additional PFAS. The continued regulatory changes resulted in iterative attempts to complete site investigation activities, with each new update requiring additional groundwater plume delineation. Also, TCEQ has stated that due to the uncertainty regarding the risk of PFAS compounds, some traditional remedial programs will not be applicable for certain sites. These factors have extended the project life cycle and presented challenges to the client as they try to meet regulatory action and reporting schedules. The continually and rapidly evolving regulatory framework has resulted in project delays from investigation phases to selection of remedies and achieving regulatory closure.

As the PFAS action levels have evolved, so have the requirements for completing the environmental assessments in a manner that is both in compliance with the regulatory requirements, but also within reasonable financial restrictions for the client. To address this cost constraint, alternative strategies have been explored. Due to the recalcitrant nature of PFAS, we have reviewed and developed remedial strategies to be applied that meet current regulatory requirements as well as anticipated future developments in treatment and disposal of impacted environmental and remediation derived media, including those that have not yet had regulatory criteria proposed or established.

Results/Lessons Learned. This presentation will detail the journey to date for these sites and offer lessons learned in managing PFAS in a developing regulatory environment. The discussion will focus on the evolving processes including interaction with regulators concerning the development of and updates to screening criteria, developing investigative strategies to accommodate the expected changes in action levels, and developing potential closure strategies for the sites within a reasonable cost to clients.