

Status Update: Commingled Plume Technical Guidance

Acknowledging that the presence of commingled plumes may have ramifications to remediating parties achieving upcoming timeframes (most notably the statutory timeframe to complete the remedial investigation by May 7, 2016), the New Jersey Department of Environmental Protection (Department) and the Technical Guidance Stakeholder Group is providing a status update. The goals of this update are to (1) highlight the focus and objective of the technical guidance to set an expectation for the assistance it may provide once it is finalized and (2) allow the LSRP or remediating parties (collectively referred to as “Investigators”) to begin the process for evaluating and resolving commingle plume conditions. Discussions provided below are based on the current version of the draft technical guidance. It should be noted that the technical guidance has the potential to change based on Committee deliberations and/or comments received during the draft review/comment period.

Expectations for the Technical Guidance

“Commingled plume condition” is defined as a condition where ground water is contaminated from two or more temporally or spatially discrete releases that have mixed or encroached upon one another to the extent that the remediation performed on one contaminant plume will affect the remediation of the other contaminant plume(s). The document will address commingled ground water contaminant plumes, with case studies provided for dissolved phase petroleum hydrocarbons and chlorinated volatile organic compounds. The technical guidance **will not address** the question of remedial liability or the multifaceted complexities (technical, regulatory, administrative) of every commingled plume scenario. However, the technical guidance will present options to help move the remedial process forward and provide case scenarios for the following common commingled plume conditions:

- Onsite – Similar Contaminants
- Onsite – Different Contaminants
- Offsite – Similar Contaminants
- Offsite – Different Contaminants

Investigators should use this technical guidance in conjunction with other Department technical guidance, particularly the Conceptual Site Model (CSM) and the Off-Site Source Investigation technical guidances. Finally, the technical guidance will clearly state that despite site complexities, protection of public health, safety, and the environment remains the primary concern regardless of uncertainty as to responsibility for a component of a commingled plume (i.e., all regulatory requirements and applicable timeframes must be met).

Commingled Plume Evaluation Process

The document will emphasize the importance of establishing multiple lines of evidence (MLEs) to develop a commingled plume CSM utilizing the following tools and techniques:

- Review site background and history by completing a preliminary assessment to identify possible sources of contamination;

- Utilizing conventional ground water investigation approaches and existing data sets, including the Department's HazSite database, to assess the nature and extent of contamination; and
- Supplemental tools including environmental forensic, fate and transport modeling, and statistical analysis to distinguish the timing of a contaminant release and/or differentiate contaminant sources. The implementation of these techniques may require a level of experience and expertise beyond that of a site's LSRP. If Investigators believe these supplemental tools will assist in the resolution of a commingled plume condition, then appropriate resources to employ these tools should be identified.

Relying on the MLEs and CSM, the technical guidance will include approaches for Investigators to use to evaluate how the commingled plume condition will impact the remedial process (remedial investigation, remedial selection, and remedial actions) and assist in identifying whether impediments to completing required remedial activities are present. The technical guidance will encourage investigators to work cooperatively with other parties whenever possible to resolve commingled plume conditions; however, instances where an Investigator will be working independently and other parties are not cooperative are also discussed. The Department's Technical Consultation process is available to individual or multiple Investigators to assist when a commingled plume condition is confirmed. Anyone requesting a Technical Consultation should be prepared to provide technically sound MLEs and a Commingled Plume CSM utilizing traditional and/or supplemental tools.

The ultimate goal of the Commingled Plume Technical Guidance is to outline the administrative process for Investigators to achieve regulatory milestones, including securing Remedial Action Permits and achieving Response Action Outcomes.