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EPA ENHANCES FOCUS ON VAPOR INTRUSION

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This summer, the U.S. Environmental Protection Agency (EPA) has enhanced its focus on vapor intrusion, which occurs when vapors from underground contamination (soil or groundwater) rise into the indoor air of overlying buildings. First, EPA submitted a draft rule to the White House Office of Management and Budget (OMB) in a renewed effort to add vapor intrusion to the pathways evaluated under the Hazard Ranking Scoring (HRS) System for National Priority List (NPL) Superfund sites. The purpose of the rule is to insure the health risks associated with this pathway are adequately addressed in a Superfund remediation. Importantly, EPA may add sites to the NPL based on contamination in the soils, detected in the soil vapor, even where there may not be contamination exceeding cleanup levels in the groundwater. In addition, EPA recently released final guidance on how best to assess and mitigate vapor intrusion.

Vapor intrusion is a potential human exposure pathway – a way that people may come into contact with hazardous vapors while performing their day-to-day indoor activities. Exposure to vapors from contaminated subsurface sources by building occupants can potentially pose both acute and chronic health risks. Vapor intrusion is a potential human health concern at any building—existing or planned—located near soil or groundwater contaminated with vapor-forming chemicals. In addition to their toxicity threats, methane and certain other vapor-forming chemicals can also pose explosion hazards depending upon site-specific circumstances.

EPA's recent activity on vapor intrusion is noteworthy because it likely will increase environmental remediation obligations at contaminated sites and increase the number of sites added to the NPL. It also may increase lawsuits arising from exposure to vapors from hazardous substances, as well as increased due diligence costs in real estate transactions, where additional vapor intrusion investigation and mitigation may be required.

Draft Rule on Adding Assessment of Vapor Intrusion for NPL Sites

EPA's draft rule to add vapor intrusion to the pathways evaluated under the HRS is EPA's second effort at adding this pathway to the consideration for listing a site on the NPL, after the first version of the rule was withdrawn. The change proposed under the new rule would allow the HRS to directly consider the human exposure to contaminants that enter building structures from the subsurface environment. Many Superfund sites are located near residential communities where soil vapor contamination is a serious health concern.

Potentially responsible parties (PRPs) will see changes in the cleanup standards at these sites incorporating the vapor intrusion cleanup levels, increasing costs and time of completion of the remediation. EPA recommends that risk-based cleanup levels be established at such sites. Such risk-based cleanup levels are usually developed for potential cancer and non-cancer effects and can be calculated for each chemical of concern based on a preliminary human health risk assessment conducted for the particular site. EPA generally uses a cancer risk range of 10^{-6} to 10^{-4} as a "target range" within which to manage human health risk as part of site cleanup and has expressed a preference for cleanups that are at the more protective end of the range. EPA has released an updated Vapor Intrusion Screening Level (VISL) Calculator to assist in identifying chemicals considered to be typically vapor-forming and applicable screening levels for a particular site, which can be used to support cleanup level calculations (see also VISL User Guide). The VISL Calculator and User Guide

can be found at http://www.epa.gov/oswer/vaporintrusion/guidance.html#PVIGuideFinal.

In addition to changes in the cleanup standards, opponents worry that the new rule will lead to more sites being listed on the NPL. If the draft rule receives OMB approval, the rule will be published as a Notice of Proposed Rulemaking in the fall of 2015.

EPA Guidance On Assessing and Mitigating Vapor Intrusion

EPA also has released guidance documents that set forth its recommendations for identifying, evaluating, and managing vapor intrusion. The documents apply to both residential and non-residential locations.

OSWER VI Guidance

The more comprehensive guidance document addresses vapor intrusion for non-petroleum chemical sources of vapor intrusion ("OSWER Technical Guidance for Assessing and Mitigating the Vapor Intrusion Pathway from Subsurface Vapor Sources to Indoor Air," OSWER Publication 9200.2-154, June, 2015) ("OSWER VI Guidance"). This final guidance comes thirteen years after EPA released its initial draft and two years after issuing a draft for public comment.

The OSWER VI Guidance is aimed at CERCLA, RCRA or Brownfield sites being evaluated by EPA, and authorized state RCRA corrective action programs and state-led CERCLA sites. The guidance provides for a detailed and thorough investigation of the potential for vapor intrusion, and includes: (1) a comprehensive guide to vapor intrusion sampling and assessment technologies in inclusion zones, settings with multiple buildings evaluating concurrent indoor and ambient air sources, (2) strategies for risk assessment under different exposure scenarios, and (3) possible mitigation systems in buildings, and subsurface remediation. While the guidance provides more certainty on vapor intrusion assessment, it also may significantly increase remediation costs and impact business transactions.

It is also worth noting that under EPA's prior draft guidance issued in 2002, OSHA, and not EPA, was the lead agency responsible for looking at occupational exposure to vapor intrusion. In the new 2015 guidance, however, EPA states that EPA, and not OSHA standards, should be used in evaluating vapor intrusion risks for workers in non-residential buildings. This likely is in part due to OSHA's acknowledgment on its own website that its permissible exposure limits (PELs) are outdated and inadequate for ensuring protection of worker health. Under the new guidance, EPA notes that Memoranda of Understanding (MOUs) between OSHA and EPA dated November 23, 1990, and February 1991, which govern the Agencies' relative responsibilities, remain in effect. These MOUs, of course, pre-date vapor intrusion as a current focus of concern. For these, and other reasons, EPA does not recommend using OSHA's PELs.

LUST PVI Guidance

EPA also released guidance for assessing petroleum vapor intrusion (PVI) from leaking underground storage tanks ("Technical Guide for Addressing Petroleum Vapor Intrusion at Leaking Underground Storage Tank Sites," EPA 510-R-15-001, June, 2015) ("LUST PVI Guidance"). The LUST PVI Guidance applies to locations that housed leaking USTs or petroleum products and looks at petroleum hydrocarbons (PHCs) in diesel, gasoline, and jet fuel related volatile organic chemicals (VOCs) such as BTEX, which typically occurs near petroleum and natural gas production sites. The LUST PVI Guidance is focused on providing screening criteria based on the distance between PVI sources and potential receptors and allows sites generally to be eliminated from further investigation if certain criteria is met. It should be noted that the new guidance is applicable to "…new and existing releases of PHCs and non-PHC fuel additives from leaking USTs and to previously closed sites where the implementing agency has reason to suspect that there may be a potential for PVI." However, the PVI Guidance acknowledges that it is not legally binding and does not impose any regulatory requirements on implementing agencies or the regulated community. Accordingly, it should not be read as requiring assessments at closed LUST sites.

For more information about vapor intrusion, including technical and policy documents, please visit http://www.epa.gov/oswer/vaporintrusion/