

EPA Issues New Requirements for Evaluation of Indoor Air at Contaminated Sites

By Edward 'Chip' Vitarelli and Peter H. Weiner

The U.S. Environmental Protection Agency ("EPA") recently issued a technical guidance document that may be the most significant change in cleanup assessments and cleanup costs in years. EPA believes that there is far greater risk to human health caused by vapors from contaminated soils and groundwater accumulating in buildings than was previously thought. The guidance outlines a detailed and possibly costly screening procedure for evaluating this vapor intrusion pathway at contaminated sites, including RCRA Corrective Action, CERCLA, and Brownfields development sites. However, EPA has not made it clear when it is appropriate to implement this new guidance, which leaves contaminated property owners unsure if regulators will want to revisit previous remediation decisions to evaluate possible indoor air concerns. It is important that the regulated community demand clarification from EPA concerning the conditions of its use.

What is the guidance?

This draft guidance is EPA's first large-scale attempt at providing a screening tool to evaluate whether harmful vapors from volatile chemicals in the subsurface groundwater and/or soil at a site have migrated upwards and into (intruded) indoor air spaces (buildings).

EPA issued the "Draft Guidance for Evaluating the Vapor Intrusion Pathway from Groundwater and Soils" on November 29, 2002. This guidance is informally known as the "indoor air guidance."

Why did EPA feel this new guidance was necessary?

The vapor intrusion pathway is a rapidly developing field of science. EPA had previously thought, based on a 1991 scientific vapor fate and transport model (The Johnson-Ettinger Model), that vapors migrating upwards from groundwater containing volatile chemicals below drinking water maximum contaminant levels ("MCLs") would not be a risk to human health. However, EPA was proven wrong at the Redfield Site in Colorado in the 1990's, and realized that technical recommendations were needed.

To what types of sites does the guidance apply?

EPA has suggested that the guidance be used at RCRA Corrective Action sites, CERCLA (NPL and Superfund Alternative) sites, and Brownfields redevelopment sites. EPA does not recommend that the guidance be used at RCRA Subtitle I petroleum underground storage tank ("UST") sites.

The guidance is not a regulation

EPA has issued a draft guidance document, and not a regulation, concerning the vapor intrusion pathway. Therefore, it was not subject to the formal notice and comment requirements required for proposed rulemakings. However, EPA chose to solicit comments on the draft guidance in the interest of developing the most accurate and useful guidance. Regardless of public comments, EPA recommends that entities consider using the guidance now if they so

choose, as it has already undergone extensive internal and inter-agency review.

This draft guidance does not impose any requirements or obligations on EPA, states, or the regulated community. EPA's states that their sources of authority and requirements for addressing subsurface vapor intrusion are the relevant statutes and regulations of RCRA, CERCLA, and the National Contingency Plan. There are no implementing regulations for this guidance and we therefore have no clear way of knowing when, and under what circumstances, a regulatory agency may require implementation of the guidance at a site. This uncertainty is a cause for major concern in the regulated community.

Use of the guidance

The guidance is intended to be a screening tool to aid entities in determining whether the vapor intrusion pathway is complete (have harmful vapors from volatile subsurface contaminants entered indoor air spaces?), and if so, whether the completed pathway poses an unacceptable risk to human health. EPA believes that vapors from volatile subsurface contaminants can affect indoor air in buildings with basements, crawl spaces, and slabs-on-grade with no subterranean spaces.

The guidance employs a 3-tiered approach – starting with simple and generally conservative screening approaches and progressing towards a more complex assessment of the vapor intrusion pathway using more

site specific data. Tier 1 (primary screening) helps quickly identify whether or not a potential exists at a specific site for subsurface vapor intrusion by determining if volatile subsurface contamination is “near” (within 100 feet vertically or laterally) inhabited buildings. If this primary screening does not support a conclusion that the vapor intrusion pathway is incomplete, or that immediate action is warranted to mitigate risks from site contamination, EPA recommends that users proceed to the secondary screening. For those sites determined to have an incomplete vapor intrusion pathway after following all 3 tiers of the guidance, EPA feels that further consideration of the current site situation generally should not be needed.

EPA stated that conclusions reached based on the approaches suggested in the guidance are not binding on EPA or the regulated community. If information suggests that the conclusions reached using the approaches recommended in the guidance are inappropriate, EPA may (on its own initiative or at the suggestion of interested parties) choose not to follow the guidance.

Questions and concerns about the guidance

With no regulatory requirements mandating that an entity implement the guidance, it is extremely unclear when entities should begin to implement it. Should they wait until requested to do so by a regulatory agency? There is also the question of how this guidance may affect sites that are in the latter stages of remediation. Will these sites have to be reopened to evaluate the vapor intrusion pathway? These current uncertainties with the guidance allow regu-

latory agency staff broad discretion in whether and how to implement the guidance, and are our major causes for concern with this guidance.

Information for clients with California operations

It is our understanding from speaking with California Department of Toxic Substances Control (“DTSC”) staff, that they plan to use the guidance immediately at sites where they believe there could be possible indoor air contamination issues resulting from subsurface contamination by volatile chemicals. The California DTSC has also stated that they plan to issue their own state-specific guidance on evaluating the vapor intrusion pathway in the next few years. To date, they have already issued technical guidance on how properly sample contaminated soils to gather soil gas data.

How Paul Hastings can help

While we believe that the vapor intrusion pathway is a valid exposure pathway to be considered for human health, this draft guidance is brand new and there are still many scientific uncertainties which exist when evaluating the vapor intrusion pathway. We want to ensure that any regulatory agency which chooses to implement this guidance does so fairly and in a technically sound and cost-effective manner, as well as properly and realistically quantifying any risk to humans at the site from vapor intrusion.

We have had the experience of dealing with sites, both before and after indoor air became a focus of attention, where extremely risk averse state agency staff requested costly subsurface monitoring where there was no contamination warranting such monitoring. Operation and maintenance costs for pathway assessment could

be extraordinary if the discretion exercised by regulatory agencies is not closely monitored.

Building from these experiences, we will be vigilant on a case-by-case basis for our clients where the vapor intrusion pathway may require evaluation. We have attended EPA training on the use of the guidance and continue to develop an in-depth understanding of its use, assumptions, and uncertainties. As the guidance continues to develop with the state-of-the-science, we will keep you informed of new approaches and/or issues. Please contact the Environmental Practice at Paul Hastings if you have any questions or require additional information concerning vapor intrusion and indoor air concerns.

You may view and download the EPA Federal Register notice announcing the release and the indoor air guidance document in its entirety from <http://www.epa.gov/correctiveaction/eis/vapor.htm>.

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