

## Prevent Vapor Intrusion From Infiltrating Your Company

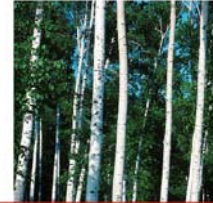
Those involved with Superfund sites around the country know that “vapor intrusion” is almost as popular as American Idol. The recent focus on the potential health and safety risks posed by vapor intrusion is causing the reopening of previously closed contaminated sites by environmental agencies and threatens nationwide efforts to redevelop brownfields sites. Consider some of the risks and uncertainties associated with vapor intrusion:

- Any company that is responsible for soil and groundwater contamination or that simply owns or occupies a building at or in the vicinity of a contaminated site faces liability exposure.
- Potential causes of action against property owners or other “responsible parties” include CERCLA and RCRA citizen suit claims and state statutory claims, as well as personal injury, diminution of property value and other common law claims.
- Employers face liability exposure, including claims of personal injury and negligence brought by employees who are exposed to indoor air contamination caused by vapor intrusion.
- Property owners may have difficulty recouping cleanup costs for vapor intrusion from other liable parties because exposures may appear after the Superfund’s statute of limitations has run.
- There are no uniform regulatory standards.

Traditionally, environmental regulators have viewed the prevention of direct human exposure to contaminants in soil and groundwater via dermal contact or ingestion as their primary objective at contaminated sites. Exposures caused by the inhalation of volatilized contaminants often were an afterthought. In recent years, however, regulators across the nation have begun to expand their focus at contaminated sites to the risks posed by vapor intrusion. The impact this shift in focus will have on the regulated community will be far-reaching.

### WHAT IS VAPOR INTRUSION?

Vapor intrusion is the migration of volatile chemicals from soils and groundwater into overlying buildings. It occurs when chemicals volatilize from impacted soil or groundwater near or beneath a building and diffuse upwards toward areas of lower chemical concentration. The primary chemicals of concern are volatile organic compounds (VOCs), such as benzene, trichloroethylene and perchloroethylene; semi-VOCs, such as naphthalene and polycyclic aromatic hydrocarbons (PAH); and lead and mercury.



Incidents of vapor intrusion can pose safety risks, such as fire or explosion. However, the primary hazards of vapor intrusion are its acute and chronic risks to human health. Americans spend the majority of their time indoors. Consequently, risks to human health are amplified in buildings where vapor intrusion is present. Further complicating matters is the fact that many volatilized chemicals cannot be detected without indoor air sampling because they are odorless.

### **A LACK OF REGULATORY UNIFORMITY LEADS TO CONFUSION**

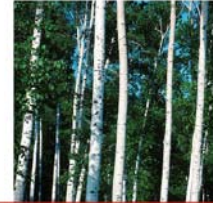
Confirming that vapor intrusion is occurring can easily be accomplished by indoor air sampling; however, determining the actual harm it poses to human health is complicated by the absence of a uniform regulatory standard. At present, there are numerous federal, state and private screening levels, guidelines, targets or (in some states) standards currently in use that identify “harmful” concentrations of chemicals of concern in indoor air, and more are under consideration. Definitions of what constitutes a harmful concentration vary widely. Whereas the screening level employed by one U.S. EPA region identifies a concentration of 0.022 parts per billion of trichloroethylene (TCE) as potentially harmful to human health, Texas has adopted a TCE standard of 14 parts per billion – 640 times higher than what the U.S. EPA considers a harmful concentration. Until a uniform regulatory standard is adopted, what constitutes the applicable exposure limit will depend in large part on which environmental agency has jurisdiction over the contaminated site.

Further complicating vapor intrusion assessments is regulators’ continued reliance on the “Johnson and Ettinger” exposure model. The model uses conservative default inputs, such as assumptions that an infinite source of contamination exists beneath a building and that air mixing in a building is uniform, to estimate chemical concentrations in indoor air. This reliance on conservative assumptions can lead to exaggerated estimated concentrations of chemicals in indoor air, which in turn can lead parties to undertake costly and unnecessary remediation work.

The high level of concern regarding vapor intrusion on the part of government, companies and private citizens is likely to force the adoption of uniform regulatory standards in the near future. Some progress in this area has recently been made, including:

- ASTM has developed a due diligence standard that can be used to screen for potential vapor intrusion issues in connection with real estate transactions. The new standard for vapor intrusion is *not* part of a standard Phase I Environmental Site Assessment, but is a non-scope consideration that can be added to the Phase I, such as screenings for asbestos or lead-based paint.
- The U.S. EPA plans to issue guidance by the end of 2008 that will set vapor intrusion risk and cleanup levels for TCE at military and industrial sites. It is hoped that the anticipated guidance will help parties avoid inconsistent vapor intrusion standards for TCE that have been established at the state and U.S. EPA regional levels.





- The U.S. EPA is developing a new database that consists of data compiled from various vapor intrusion sites. Parties will be able to use the data to better understand the impact of vapor intrusion in settings similar to theirs.

While these developments represent steps in the right direction, the investigation and remediation of vapor intrusion will continue to present uncertainties and inconsistencies until uniform regulatory standards are adopted.

If your company has contributed to groundwater or soil contamination at a site, or simply owns or occupies a building located over contaminated soil or groundwater, the extent of governmental and citizen concerns, combined with the high cost of investigating and remediating sources of vapor intrusion, warrant careful analysis of one's liability exposure and opportunities to preempt vapor intrusion claims. Thompson Hine is well-positioned to assist you. We have an experienced team in place, including environmental consultants and PR firms, to assist clients caught in the vapor intrusion regulatory web.

#### **FOR MORE INFORMATION**

If you would like more information about vapor intrusion, please contact:

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