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Vapor intrusion evaluation can be complicated: How will it affect your real estate deal?

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Years ago it was radon, but now the 800-pound gorilla in the environmental real estate assessment world is Vapor Intrusion or, "VI." VI is an issue at sites where volatile organic compounds (VOCs) have been released to soil and/or groundwater and the resulting contamination resides beneath an occupied building. The volatile nature of these contaminants facilitates their entry into buildings through foundation cracks, utility conduits and gaps between poured concrete walls and floors, thereby exposing building occupants to potentially harmful vapors. Buildings with dirt basement floors, fieldstone foundations and sump pumps are especially vulnerable. As more is learned about both the toxicological potential of VOCs in indoor air and the means by which VI occurs, environmental regulatory agencies have stepped up their oversight where this "exposure pathway" is a concern. In Massachusetts, for example, the Department of Environmental Protection is taking a second look at some older sites that had been considered "closed" with a Response Action Outcome (RAO) and has signaled that it may reopen sites where the VI exposure pathway was not evaluated properly.

In Connecticut, the Department of Environmental Protection has been attempting to change the current remedial requirements for VOCs in soil, soil gas, and groundwater to more stringent values though proposed guidance and attempted regulation changes. In 2008, the Connecticut Legislation proposed a bill (HB-5874) which would have required residential homeowners who attempted to sell their homes to provide an environmental disclosure to the buyer on the potential for vapor intrusion on properties within 300 ft. of the home. The bill did not pass in its original form.

Evaluating for VI is typically a three-step process: identifying VOCs in soil or groundwater, evaluating soil gas beneath the building, and evaluating indoor air. This evaluation is often necessary at properties that are not owned by the potentially-responsible party. Obtaining access for sampling and collecting samples from other people's property is fraught with potential pitfalls, especially in residential homes.

So, why bother with sampling soil gas beneath a building slab if what one really wants to know is what's in the air within a building, and is it there at concentrations that pose a risk to human health? Why not just measure it directly, inside your building? Well, many of the compounds associated with contaminated sites also have common, everyday applications and are present in a number of sources typically found in homes or business facilities: gasoline, carpets, adhesives, dry-cleaned clothes, etc. It is almost impossible to collect an indoor air sample and detect nothing. Distinguishing between site-related environmental contamination from a release and contamination associated with these other sources can be very challenging, time-consuming and expensive; attributes that are not helpful during a real estate transaction. Sampling soil gas, however, is generally free of these types of interferences and is the recommended approach to determine if a potential VI condition exists at

your facility. In many cases, collection of indoor air samples may still be required. Looming large on the horizon, with respect to indoor air sampling techniques, is the concept of long-term passive sample collection, whereby a sampler(s) is placed within a building for a period of time (30 days has been mentioned) to passively collect an indoor air sample. Although this approach has not yet been required by regulatory agencies, the general feeling is that this sampling approach will better represent the typical concentrations of contaminants to which humans are exposed within a building. Proper, consistent sampling techniques for this approach are still being developed by the agencies and the private sector environmental analysis community. We will be hearing more about this in the future.

VI evaluations can be complicated, time-consuming and expensive. It is in the best interest of all parties involved in a real estate transaction to identify this potential condition as early as possible, and if it is an issue, to understand the time frame and costs involved in dealing with it so that all parties have reasonable expectations.

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