



EPA Vapor Intrusion Workshop

When, Where, and How You Should Monitor Indoor Radon, Differential Temperature & Pressure During Chlorinated Vapor Intrusion Assessments

Conclusions/Discussion

(Repeating from Previous Presentation)

Conclusions re Radon Based Spatial Screening

- Some evidence of correlation between VOC and radon concentrations in indoor air apparent in four of five cases reviewed
- Given cost advantages (radon is inexpensive to monitor relative to VOCs) and conceptual agreement, this radon application is worthy of further testing.
- Potential limitations associated with radon
 - Radon concentrations in soil gas can be weaker than VOCs very near VOC release points (soil sources)
 - Low level radon in indoor air in some cases (relative to outdoor air) can limit method sensitivity
 - May not be a good indicator for some special cases such as those dominated by diffusion across the slab

(Repeating from Previous Presentation) Can ΔP or ΔT Be Used to Prioritize Spatially?

- EPA 2015 section 6.2.2 states “EPA generally recommends a “worst first” approach to prioritize....Buildings that are continuously occupied may pose a more immediate concern than buildings that are not currently occupied...Nonresidential buildings with bay-style doors that are routinely open may be better ventilated than other types of nonresidential buildings.... Interviews and building surveys during development of the investigation work planalso can provide useful information for prioritizing buildings... Sections 6.3 and 6.4 provide additional examples of survey information that can support planning.....”
- Section 6.3.3 then refers to subslab to indoor pressure differential
- Presumably occupied spaces will generally have the larger winter time temperature differentials.
- Presumably spaces that have high air exchange rates will tend to have lower winter temperatures
- Little testing to date of the predictive value of these concepts.

Discussion of Initial Site Screening

- Does the spatial trend of Rn indoors predict VOC VI reliably enough to be used for sample location prioritization in a single building? multifamily unit? Large building? Across a neighborhood/plume?
- Can the attenuation factor of Rn in soil gas (exterior or sub-slab) be used to accurately estimate the indoor conc. of VOC when Rn & VOC were both simultaneously collected from the same near building soil gas?
- Is subslab to indoor air differential pressure or exterior/interior differential pressure a useful way to prioritize sampling locations ?
- Is differential temperature (i.e. well temperature controlled vs. unheated) a useful way to prioritize sampling locations?