

TO: Richard Kapuscinski, U.S. EPA (by e-mail)  
FROM: The Undersigned  
SUBJECT: Communities' Letter on EPA's Final Vapor Intrusion Guidance  
DATE: July 26, 2012

We, the undersigned are concerned that pressure from polluters, chemical producers, and property owners may weaken elements of EPA's pending Vapor Intrusion Guidance, and we urge EPA to adopt an investigatory approach that is truly protective of Americans exposed to highly toxic vapors in their homes, schools, workplaces, and other buildings.

On July 6, 2012, *Inside EPA*, reported:

Industry is criticizing EPA's approach to calculating the potential for subsurface contamination to migrate to indoor air, raising concerns over a technical document expected to be a component of the agency's final vapor intrusion guidance and over a Region III proposal to offer government-funded mitigation for vapor intrusion at homes near a Superfund site in Pennsylvania.

Industry argues the so-called attenuation factors in the EPA documents are unnecessarily conservative and flawed because of incorrect assumptions of the rate at which contamination flows into residences.

The determination whether vapor intrusion poses a health threat at any existing building should not be based solely upon models and predictions. Models cannot account for changes in operating conditions, occupancy, building modifications, or structural changes such as adding utility lines that penetrate floors or settling that cracks slabs. One test is worth 1000 expert opinions. Decisions should be based upon *multiple lines of evidence*, including indoor air testing, subslab soil-gas sampling, and outdoor air monitoring.

In particular, we believe that it is imperative to conduct *indoor air testing* in buildings above subsurface chlorinated volatile organic compound contamination in the shallow-most aquifer wherever those concentrations exceed drinking water, groundwater, or soil thresholds. In such cases, it is not protective to determine a building safe simply based upon indirect measurements, and it is not reasonable to expect building occupants to accept inaction based solely on indirect measures.

We recognize the prevalence of *background* sources, including chemicals emitted within buildings or found at levels of concern in outdoor air. This is not a sufficient reason, however, to avoid indoor air sampling. There are numerous methods, including real-time sampling, building pressurization, and building inventories to conclude whether indoor sources are indeed responsible for indoor air contamination. In fact, we support the use of subslab soil-gas testing and outdoor air measurement to help evaluate whether the source of indoor vapors is indeed the subsurface.

Furthermore, we support the use of subslab soil-gas sampling to investigate the *potential* for vapor intrusion. There are many structures above significant subsurface vapor contamination that do not show unacceptable indoor levels of toxic volatile substances. In general, such buildings have intact vapor barriers, elevated indoor air pressures, or high levels of air exchange. Since these protective characteristics are subject to change, it may be necessary to require either additional mitigation, in the form of substructure depressurization systems, or institutional controls (monitoring, operating procedures, etc.) that maintain those protections.

We appreciate the work that EPA has done to collect real-world data on the attenuation of volatile organic compound concentrations from groundwater and soil gas to indoor air. Noting the variability of attenuation factors over both time and space, we urge that wherever the Guidance utilizes attenuation factors that they be set or calculated at protective levels. That is, they should not be set to limit *average* exposures to toxic substances in indoor air. They should protect *everyone*.

EPA's draft Vapor Intrusion Guidance, as well as state Guidance documents, assumes that the subsurface contamination likely to cause vapor intrusion has already been identified. However, much of the nation's population—particularly Environmental Justice communities—lives in cities where groundwater contamination has not been investigated. The Vapor Intrusion Guidance should provide guidance for pro-actively finding "rogue plumes" in such areas so everyone can be protected.

Furthermore, since vapor intrusion is often a potential problem in Environmental Justice communities already experiencing disproportionate threats to public health, we believe it essential that the Vapor Intrusion Guidance provide tools for examining cumulative health impacts from other environmental, social, and psychological stresses in the community along with the vapor intrusion pathway.

Finally, we note that EPA's September 2011 Toxicological Review of TCE found that TCE inhalation is likely to cause birth defects at the low exposure levels typical of vapor intrusion, even when pregnant women are exposed for relatively short periods of time. We believe that future studies of similar chlorinated volatile organic compounds may find similar risks. Consequently, to be protective of the entire population, it is important to shift from periodic discrete sampling protocols, such as air testing with Summa canisters once or twice a year, *to continuous or near-continuous monitoring* designed to measure maximum short-term exposures. EPA's Guidance should recognize the need for such sampling technologies, not only so they can be implemented when available, but for now to encourage the development of practical, affordable equipment. Near-continuous monitoring technologies are available today, and continuous air monitoring equipment, using approaches likely to be cost-effective when mass-produced, have already been demonstrated at the bench scale. When they become more widely available, they should also prove valuable in detecting pathways and background sources within buildings.

We look forward to the issuance of a Vapor Intrusion Guidance, based upon the best, current science, that protects all people from highly toxic vapors that may be intruding into their homes and other buildings.

Sincerely,

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