



## Vapor Migration Assessments

*Why Early Planning Is Critical to Project Timelines*

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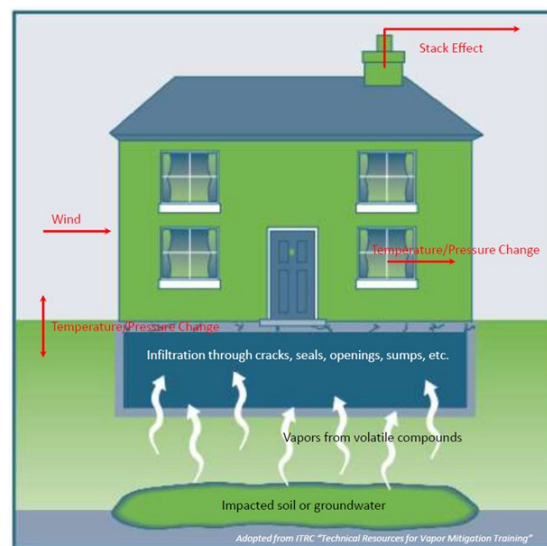
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The due care obligation to test for, and potentially mitigate, vapor intrusion into buildings can be a hidden cost for both new construction and renovation. This environmental obligation has been a part of the due diligence process for purchasing and refinancing since around 2013, and applies to properties where volatile compounds were historically used on or adjacent to the property. Yet a surprising few understand the impact of this issue on development cost, timing, and on-going obligations. It may seem obvious that a standardized solution would be available, however, soil type, groundwater depth, presence of fill material, building conditions, and even the project funding sources, in addition to the intended use, can determine the extent of both the assessment and mitigation. This in turn will determine the impact on the property redevelopment costs and timeline.

Meeting Due Care Obligations are the responsibility of every owner or operator of environmentally impacted property, and preventing adverse impacts to human health and exacerbation are the key components of that responsibility. In cases where there is a documented risk to human health, implementing the proper controls or conducting remediation is essential. However, where risks are estimated or assumed based on soils and groundwater data, implementing controls can be difficult because the definition of acceptable performance can change based on new site data, new research, or new approaches required by EGLE.

The success of any vapor migration assessment is dependent on the adequacy of the

sampling data to determine the nature and extent of the impacts, the transport mechanisms, and the potential effect on indoor air quality. Most Limited Phase II Environmental Site Assessments (designed to address Recognized Environmental Conditions) are inadequate to meet this requirement. Therefore, the first consideration in any due diligence process is whether expanded sampling should be included in the first round of sampling. An expanded assessment process generally requires three steps: 1) soil and groundwater sampling to determine the extent of impacts, 2) soil gas investigation, and 3) a building specific sub-slab pressurization investigation to determine zone of influence.



If the property requires mitigation, there are four basic design approaches (although other options are becoming available): 1) a vapor barrier, 2) a passive gas collection system, 3) an active gas collection system, and 4) removal of all soils that exceed any applicable screening criteria, sometimes in conjunction

with groundwater treatment. There are two options for designing and installing the system: a presumptive remedy and an EGLE approved remedy. They are both designed to identify and implement mitigation requirements but differ in the amount of assessment required and the time required before installation and operation of the mitigation system. Please note that the selected option should not change the design or cost of the system, since design is based on site conditions.

The presumptive remedy option would only apply for a voluntary action program, and you will need to make sure that you maintain sufficient documentation to support the remedy design and operation. That remedy will assume worst case scenario based on a conceptual site model and will design the remedy to address that worst case scenario. This may result in higher construction or operating costs, but it will reduce the overall time required and will reduce the costs of the iterative approach associated with assessment.

EGLE approval will require a Response Activity Plan for each step in the process, and then an EGLE approved Documentation of Due Care Compliance, Certificate of Completion or No Further Action Letter (NFA). This remedy will require more extensive evaluation of the source, a more extensive evaluation of physical site conditions, and consideration of current research on micro-environments. There are multiple reviews and meetings with EGLE and subsequent sampling to fill data gaps or address their most current concerns prior to installation. Since installation is typically completed during construction or renovation, this may delay start dates.

Negotiating sufficient assessment and design with EGLE can take significant time and cost. Once the conceptual site model is acceptable to EGLE, there will be changes to the design. After installation you will continue to have EGLE review of reports and data as you conduct operational monitoring in the first year (with decreasing frequency from weekly to quarterly if results are acceptable), and then annual monitoring. If you are seeking an NFA, there may also be financial assurance requirements and a post closure agreement.

Vapor mitigation assessments can add time and cost to property transactions. We recommend an early assessment of the key site conditions and a determination as to whether EGLE approval is required, and then adjusting construction schedules as necessary. If concentrations exceed screening criteria at any of the steps of the assessment,

you can typically assume that you will need a vapor mitigation system. Assessing and designing a vapor mitigation system can require four to six months for a voluntary action program. If EGLE approval is required, that process can take over a year. Costs for the installation of the vapor mitigation system can be provided early in the process, but costs for incremental assessments or negotiating with EGLE are less obvious. Fortunately there are funding options available for installation of these systems, but that too requires four to six months.

For more information, please contact ASTI Environmental professionals at 810.225.2800 or visit our website to download a copy of our May 2021 Tech-Bits article “Vapor Intrusion & Property Transactions” which provides more background information on this issue.

## UPDATE ON ASTM E1527-21

The Environmental Protection Agency (EPA) has withdrawn its Direct Final Rule that would have recognized the new ASTM E1527-21 Standard. EPA issued a Direct Final Rule indicating that unless it received adverse comments, the new standard would take effect on May 13, 2022. The Direct Final Rule did not rescind the use of the E1527-13 Standard. EPA received adverse comments regarding E15328-21 and withdrew its Direct Final Rule. It is expected that EPA will proceed with a rule-making to finalize adoption of the 2021 Standard and then rescind the 2013 Standard through a separate rule. A timeframe has not been specified. ASTI will continue to perform our Phase I ESA's to meet both the ASTM E1527-13 Standard and the ASTM E1527-21 Standard in anticipation of its eventual passing.



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