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California Pushes the Environmental Envelope - Sets in Motion Stricter Vapor Intrusion Regime

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California has proposed new statewide vapor intrusion guidance that will make an already aggressive approach to regulation and management even more rigorous. If the guidance in its current form is finalized, it will mean more conservative screening levels, more extensive sampling at sites, and may ultimately lead to more cleanup and mitigation required and at more sites.

Prospective purchasers and lessees of commercial property in California should look closely at vapor intrusion issues early during due diligence. Understanding the potential costs that more aggressive screening and mitigation may add to a project—and devising a smart strategy to minimize those costs—will be key to a project's profitability.

Vapor intrusion occurs when toxic vapors move from contaminated groundwater and soil, intrude into a building, and impact indoor air quality. Vapor finds its way indoors through a variety of pathways, such as cracks in foundations and basements, sewers, drain lines, access vaults, and any other opening in a building envelope. Vapor migration is influenced by climate, building conditions, HVAC operation, and other natural and human-caused factors.

To address increasing concern regarding vapor intrusion, California Environmental Protection Agency, the Department of Toxic Substances Control (DTSC), the State Water Resources Control Board, and the San Francisco Bay Regional Water Quality Control Board issued draft supplemental vapor intrusion guidance—*Draft Supplemental Guidance: Screening and Evaluating Vapor Intrusion*. It is intended to promote state-wide standard practice and consistency for screening buildings for vapor intrusion. This supplements existing information and should be used in tandem with DTSC 2011 Vapor Intrusion Guidance and San Francisco Bay Regional Water Board 2014 Interim Framework.

The draft supplemental guidance provides information and recommendations concerning factors that influence how quickly contamination attenuates over time. It establishes a standardized evaluation process for determining whether vapor intrusion is likely to affect buildings located near a contamination source, and considers sewers located underneath buildings potential pathways for vapor to

intrude into buildings.

- First, the guidance recommends the use of the U.S. Environmental Protection Agency's attenuation factors from the 2015 Office of Solid Waste and Emergency Response (OSWER) vapor intrusion technical guidance for the initial screening of sites in California instead of site-specific attenuation factors derived from mathematical models, such as the Johnson and Ettinger model recommended in the past (see Table 1). The OSWER technical guidance is available [here](#).

Table 1: Medium-Specific Attenuation Factors for Vapor Intrusion to Indoor Air.

Medium	Attenuation Factor
Crawl Space Gas	1
Subslab Soil Gas	0.03
Soil Gas	0.03
Groundwater	0.001

- Second, it outlines a four-step process for determining whether buildings located near known or suspected subsurface vapor-forming chemical contamination are potentially affected by vapor intrusion. It prioritizes buildings closest to the contamination and suggests sampling in different seasons, with and without HVAC, and in multiple areas and mediums to estimate if people are likely to be affected. The guidance requires action based on the hazards to current and future occupants.
- Third, it suggests that sampling sewer air may be an important line of evidence in diagnosing sources of vapor-forming chemicals in indoor air. Sewers are a potential preferential pathway for vapor migration and can be transported directly into buildings. The guidance suggests that soil gas and groundwater sampling alone may not adequately evaluate the risk posed by vapors in sewers.
- Fourth, the guidance requires that data collected during site investigations and reported to GeoTracker be compiled in a California database to support development of California-specific attenuation factors that may be incorporated into a future version of the guidance.

A final revised proposal is expected by late fall or winter. Additional policies or regulations related to the guidance are likely forthcoming but will require separate rulemakings or proceedings.

With this new vapor intrusion guidance, California once again finds itself pushing the envelope on environmental regulation. Property owners and developers will be watching closely to see if other states follow will suit.

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