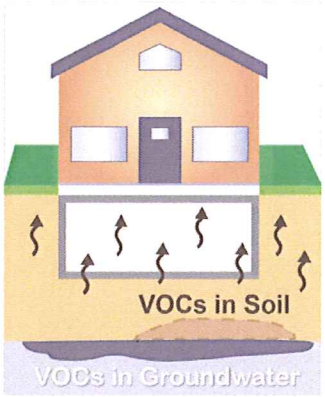
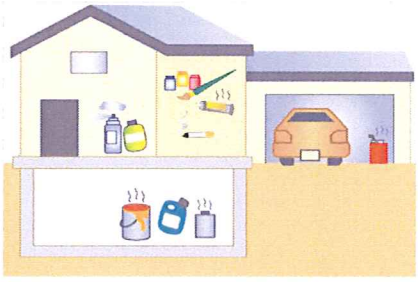
Soil Vapor Intrusion Assessment Fact Sheet



What is soil vapor intrusion?

"Soil vapor intrusion" is a process by which chemical vapors in the soil below a building move up and through the building's foundation and into the indoor air. Soil vapor, or soil gas, is the air found in the space between soil particles. Under certain conditions, soil vapor can enter buildings through cracks in slabs or basement floors and walls, and through openings around sump pumps or where pipes and electrical wires go through the foundation.

Soil vapor can become a concern when chemicals **move** into the soil from a spill or leak and then evaporate and migrate toward the surface. Chemicals that evaporate very easily are called "volatile chemicals." Volatile organic chemicals (VOCs) include some petroleum hydrocarbons and other organic compounds. If soil vapor carrying VOCs enters a building as described above, indoor air quality may be affected.



Is soil vapor the only potential source of volatile chemicals in my indoor air?

No. VOCs, including some of those typically found in petroleum products, are also found in many household products. Examples of products that contain VOCs are paints, paint strippers and thinners, mineral spirits, glues, solvents, cigarette smoke, aerosol sprays, mothballs, air fresheners, new carpeting and furniture, hobby supplies, lubricants, stored fuels, refrigerants, and even recently dry-cleaned clothing. Household or workplace products are often more of a source of VOCs in indoor air than contaminated soil vapor.

Indoor air may also become affected when outdoor air containing VOCs enters your home or workplace. VOCs are present in outdoor air due to their widespread use. On-road and off-road motor vehicles, solvents, and a variety of commercial and industrial facilities are all sources of VOCs in outdoor air.

How is the potential for soil vapor intrusion being evaluated?

With input provided by the Washington State Department of Ecology (Ecology), Chevron is planning to sample some local buildings because petroleum hydrocarbons have been detected in nearby soil and groundwater. This work is being performed to evaluate the potential for hydrocarbon vapors to migrate into the buildings. All necessary testing will be conducted at no cost to property owners or tenants.

The process of investigating soil vapor intrusion requires collecting samples from more than one location. We will be collecting three types of samples: indoor air samples; sub-slab vapor samples; and outdoor air (sometimes referred to as "ambient air") samples.

Indoor air samples will be collected to characterize the nature and extent of hydrocarbons within a building. However, because hydrocarbons are present in virtually all buildings, additional samples are required to determine the source(s) of these hydrocarbons. The results from the indoor air samples will be compared to sub-slab vapor and outdoor air results to help determine the source any hydrocarbon VOCs found.

Sub-slab vapor samples will be collected to characterize the nature and extent of vapor immediately beneath a building. Sub-slab vapor results will be used to determine the presence or absence of hydrocarbons close to the building. In order for vapor intrusion to be a potential source of hydrocarbons in indoor air, the concentration of hydrocarbons in the vapor samples from below the building must be greater than the concentration found in indoor air.

Outdoor air samples will be collected to characterize background air conditions. Outdoor air results are often used to evaluate the extent to which outdoor sources, such as motor vehicles, lawn mowers, commercial/industrial facilities, etc. may be affecting indoor air quality.

What happens if vapor intrusion is identified during investigation of a building?

Depending on the investigation results, additional sampling, monitoring, or mitigation actions may be recommended. Additional sampling may be performed to verify questionable results. Monitoring (sampling on a recurring basis) is typically conducted if there is significant potential for vapor intrusion to occur but no current indoor air concerns are identified. If soil vapor intrusion is confirmed, actions will be taken to eliminate or minimize soil vapor intrusion. Such actions may involve sealing cracks in the building's foundation; adjustments or modifications to the building's heating, ventilation, and air-conditioning system; or installation of a sub-slab ventilation system beneath the building. Any required follow-up actions will be completed at no cost to property owners or tenants.

Where can I get more information regarding the soil vapor intrusion investigation?

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