

VAPOR INTRUSION (VI)

Frequently Asked Questions (FAQ)

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1. What is an Exposure Pathway?

An exposure pathway is the way a person may come into contact with a contaminant, such as through eating, drinking, breathing, or touching.

An exposure pathway may have:

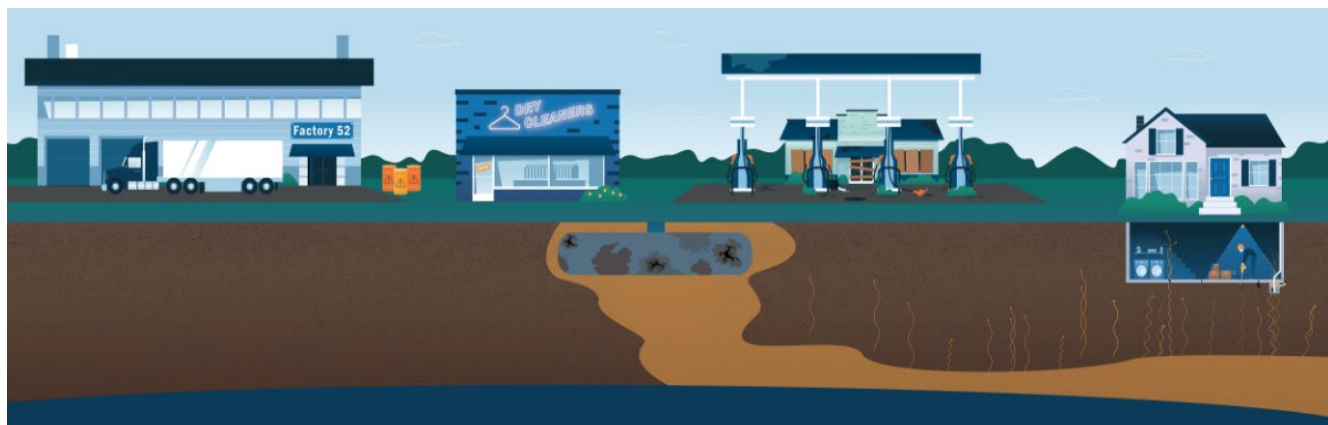
- a source – where the contamination started,
- a way the contaminant moves through the environment (soil, groundwater, soil gas, sediment, surface water, and air), and
- a presence or possible presence of people or animals.



The Michigan Department of Health and Human Services (MDHHS) and the Michigan Department of Environment, Great Lakes, and Energy (EGLE) take specific steps for deciding whether an unacceptable hazard exists. The steps are for the different types of exposure pathways that can occur. If a high amount of a contaminant is found in the soil, groundwater, soil gas, sediment, surface water, or air, steps must be taken to prevent contact between the contaminant and people or animals.

2. What is Vapor Intrusion, also known as the Volatilization to Indoor Air Pathway (VIAP)?

Vapor intrusion sometimes occurs where chemicals were spilled, leaked, or dumped and not cleaned up. For example, properties such as gasoline stations, dry cleaners, or businesses operating degreasers use chemicals like gasoline or solvents that can cause vapor intrusion. If these chemicals are mishandled and get into the ground, they can move through the soil and groundwater. Although the chemicals are often released as liquid, they easily evaporate, becoming a vapor in the air that you often cannot see or smell. At some point, the vapors may come in contact with your home or business – usually around your basement or your floor. When these vapors get into your home through openings such as cracks, or other openings around pipes and sumps, we call it vapor intrusion. Environmental professionals also call it the volatilization to the indoor air pathway. For more information, please see [What is Vapor Intrusion and How is It Investigated](#), available at Michigan.gov/VaporIntrusion.



This illustrates a chemical spill from an underground storage tank that entered the ground, moved through the soil and groundwater to an area where vapors from the spill could enter a nearby home.

3. Who is at risk of harm to their health?

Anyone exposed to chemical vapors can be at risk. As with most chemicals, the risk of health problems depends on how much of the chemical you breathed in, how long you were breathing it, and how your body reacts to it.

Talk with your healthcare provider about your exposure and health concerns. Have annual wellness exams. Follow your healthcare provider's recommendations for medical tests and cancer screenings.

4. Is my health condition a result of VI?

It is generally not possible to tell if a health condition was caused by a VI exposure. Health conditions in people are caused by multiple factors, for example, genetics, lifestyle, and chemical exposure. Also, people may be exposed to chemicals from many different sources in their daily lives. These factors make it difficult to link health effects to a particular exposure. If you have health concerns, speak to your doctor about any medical tests or health screenings that may be appropriate for you.

5. Why should I let you investigate on my property and in my home?

Collecting samples of soil, groundwater, soil gas, and sometimes indoor air on your property is the only way to find and evaluate whether there may be an unacceptable health or environmental risk related to the contaminants that were released and may have reached your property. EGLE will only request to sample your home or property if there is reason to suspect that contamination could have reached your property at levels of concern.

6. What is a soil gas sample?

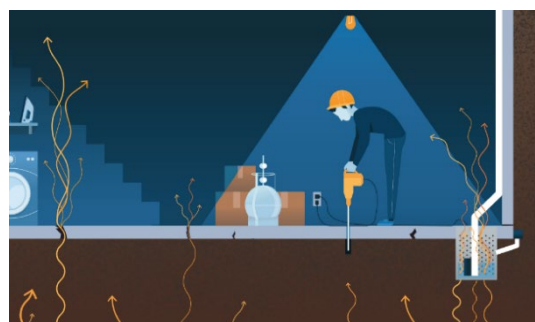
Soil gas, also known as soil vapor, is the air in the soil below the ground. A sample of soil gas can be collected with special equipment and tested at a laboratory. This sample is used to find out whether certain chemicals are present that could be an unacceptable health risk to people who live or work in the building.

7. How long will it take to collect soil gas sample(s)?

Each soil gas sample can take up to 1 hour to collect. However, longer sampling periods may be necessary.

8. What is a subslab soil gas sample?

Similar to a soil gas sample, this sample is collected from the soil vapor in the ground that is beneath your basement or slab floor. The sample is collected by drilling a small hole approximately 1.5 inches in diameter through the floor. A permanent vapor pin that allows for sampling is placed and sealed in the hole, then capped when not being used. By placing a permanent sample pin, it allows for future samples to be collected without having to drill another hole.



A drill is used to install a small sample port called a *vapor pin* to collect soil gas samples beneath your home over time.

9. How long will it take to collect a subslab soil gas sample?

It typically takes 1 to 2 hours to collect each sample and is often done at the same time as an indoor air sample.

10. What is an indoor air sample?

Indoor air is the air within a home or building. A sample of indoor air can be collected with a Summa canister and tested at a laboratory. Indoor air samples are used to find out if there are chemicals in the air that could be an unacceptable health risk to people breathing the indoor air.

11. How long will it take to collect an indoor air sample?

A Summa canister is usually left in a building to slowly collect air for up to 24 hours.

12. What should I expect while subslab soil gas or indoor air samples are being collected?

Sample collection will be scheduled when access to your property will be needed. One or two people will arrive and identify themselves. A pre-sampling visit may also be necessary to identify any items already in the house that may affect sampling results and remove obvious sources of potential indoor air contamination that may be present in the house or building. For example, if there is a can of gasoline or paint remover in the basement, you may be asked to move these items until the sampling has been completed. On the day of the sampling, they will spend up to two hours collecting measurements and a sample(s) to send to the laboratory. If indoor air samples are collected, SUMMA® sample canisters may be left in the property for up to a day, then picked up.

13. How long will it take to get my sample results?

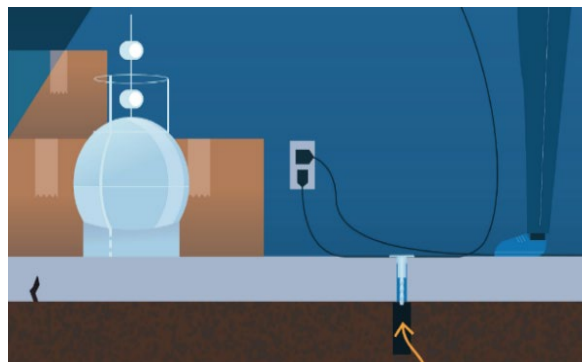
Typically, a lab report will be available within three to five weeks.

14. How many times will samples need to be taken?

This will depend upon how complex the environmental investigation becomes. Samples are commonly collected up to four times in a year. This is to take into account possible seasonal changes. If the soil gas samples near your home or business has contaminant(s) above screening levels, then the frequency of taking samples may increase. If the contaminants are NOT above screening levels, over multiple sampling events, then the sample collection frequency may be reduced.

15. How do I know if there is a risk to my home or business?

The amount(s) of contaminant(s) in the soil gas will be compared to screening levels that have been developed by toxicologists from EGLE and MDHHS. The higher the level of contamination identified above the screening level there is, the greater potential for an unacceptable risk. For sites that EGLE and MDHHS are investigating, we will be available to assist you with understanding your results.



A sample of indoor air is collected with a SUMMA® sample canister. A soil gas sample will typically be collected from the vapor pin at the same time.

16. How will this affect my drinking water?

Where your drinking water comes from depends upon the area and city where you live. People living in a city or town may have their water provided by the municipality. The municipality has regulations to follow to guarantee the drinking water is safe. If you use a residential well for your drinking water and it is in the area of the contamination and the investigation, a water sample will usually be collected from your well to find out if contaminants are in your drinking water well.

17. Do I need a vapor mitigation system installed?

Whether a mitigation system is needed depends upon contaminant amounts in the soil gas near and beneath your home or business. These contaminant amounts in the soil, groundwater, and soil vapor are confirmed during the investigation phase. For sites that EGLE and MDHHS are investigating, we will be available to assist you with understanding whether a mitigation system is needed.

18. Where can I find more information?

Visit Michigan.gov/VaporIntrusion or contact EGLE at 800-662-9278 for technical and general questions about vapor intrusion. Contact the MDHHS at 800-648-6942 for health-related, chemical exposure questions.



A vapor intrusion mitigation system removing soil vapors preventing them from entering the home.

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