



Technical Assistance Services for Communities

“What is Vapor Intrusion?”

Introduction

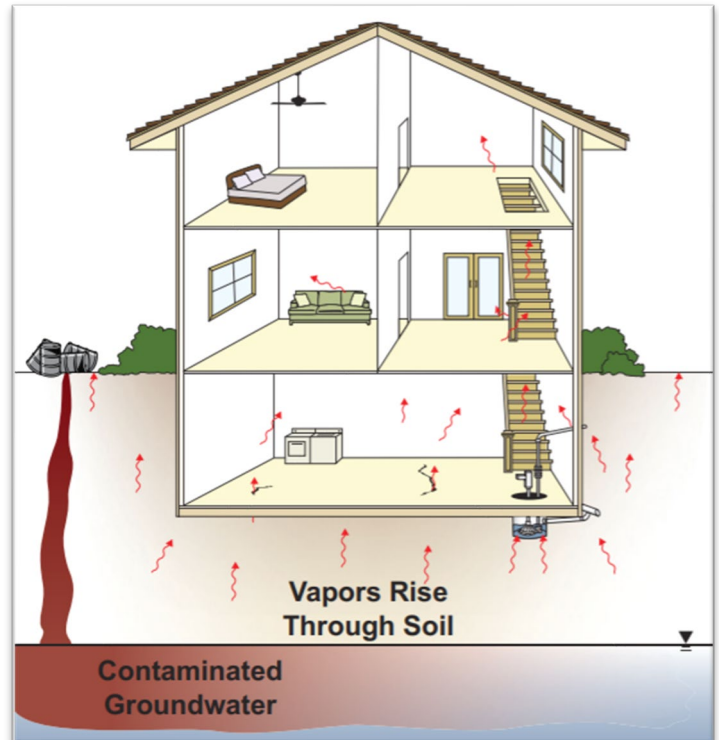
This fact sheet provides an overview of vapor intrusion for residents near the Behr Dayton Thermal System VOC Plume Superfund site. The fact sheet is funded by EPA’s Technical Assistance Services for Communities (TASC) program. Its contents do not necessarily reflect the policies, actions or positions of EPA.

What is Vapor Intrusion?

Vapor intrusion is the movement of chemical vapors from contaminated soil and groundwater into nearby buildings and homes. Vapors primarily enter through openings in the building foundation or basement walls — such as cracks in the concrete slab, gaps around utility lines and sumps. It also is possible for vapors to pass through concrete, which is naturally porous. Once inside the home or workplace, vapors may be inhaled, posing immediate or long-term health risks for the occupants. In rare cases, the buildup of vapors, such as those from gasoline, may cause explosive conditions. Risks will depend on the types of chemical vapors and their concentrations, how much time people spend in the building, and the building’s ventilation. Vapor concentrations will be higher indoors when windows and doors remain closed.

Why Should I Get My Home Tested?

EPA urges property owners, residents and business owners in the Behr Dayton site Area of Potential Concern to provide access to technicians who are sampling for vapor intrusion at no cost to owners.



The potential for dangerous contaminants from the Behr Dayton site to evaporate, enter and accumulate in homes and businesses continues in the McCook Field and Old North Dayton neighborhoods.

Exposure to volatile organic compounds (VOCs) including trichloroethylene (TCE) can cause immediate or long-term health effects. Immediate symptoms may include eye and respiratory tract irritation, headaches, dizziness, visual disorders and memory impairment.

Vapor Intrusion Mitigation

Mitigation methods, which lessen the effects of vapor intrusion, may be needed until contaminated soil or groundwater is cleaned up. Vapor intrusion mitigation removes or decreases the amount of

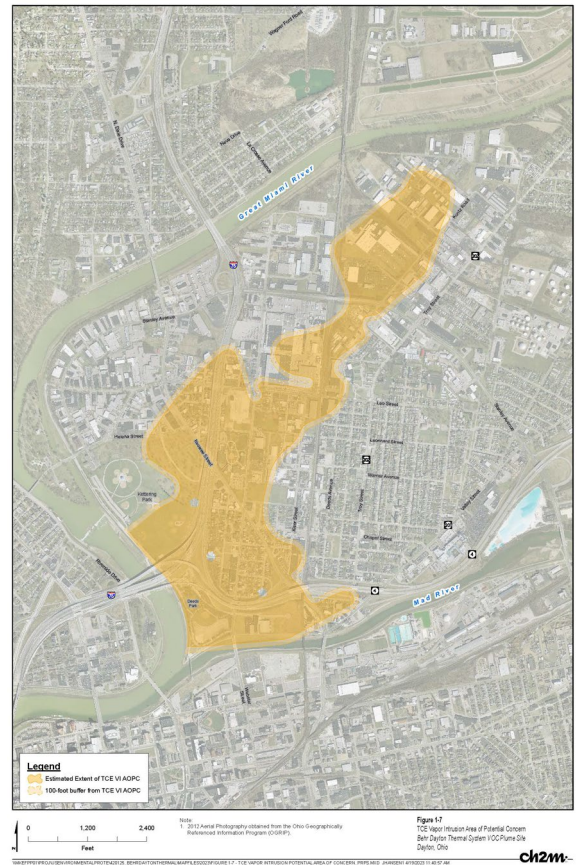
vapor that enters a home. The long-term response to vapor intrusion into buildings is to remove or reduce the underground contamination that is the source of vapors.

Examples of Vapor Intrusion Mitigation Methods:

- **Sub-slab depressurization** is the most common method for dealing with vapor intrusion. It involves connecting a blower (an electric fan) to a small suction pit dug into the slab in order to vent vapors outdoors.
- **Sealing openings** involves filling in cracks in the floor slab and gaps around pipes and utility lines found in basement walls.
- Installing **vapor barriers** involves placing sheets of strong plastic beneath a building to prevent vapor entry.
- **Passive venting** involves installing a venting layer beneath a building. Vapors move through the venting layer toward the sides of the building where they are vented outdoors.
- **Building over-pressurization** involves adjusting the building's heating, ventilation and air-conditioning system to increase the pressure indoors.

What is the Current Status of Vapor Intrusion Testing?

Mailer notices were sent to people who live in the area of potential concern offering free sampling and requesting access. Phone calls will be made within 30 days of the mailing to follow up. The first round of mailings was sent out in February 2023.



Definitions

- **Groundwater:** Water that exists underground in saturated zones beneath the land surface.
- **Groundwater Plume:** An area of groundwater that contains contamination. Often, a plume flows in the same path as the surrounding groundwater.
- **Volatile Organic Compounds (VOCs):** Chemicals that tend to evaporate into the air and can be harmful.
- **Vapor:** A gas-phase material that normally exists as a liquid or solid under a given set of conditions.

FOR MORE INFORMATION, PLEASE CONTACT:

Erik Hardin
U.S. EPA Remedial Project Manager
(312) 886-2402
hardin.erik@epa.gov