DEPARTMENT OF HEALTH

Chemical Vapor Intrusion and Radon

WHAT YOU SHOULD KNOW

Chemical vapor intrusion is when pollution moves from air spaces in soil to indoor air.

Chemicals spilled or dumped on the ground can pollute soil and groundwater. Volatile organic compounds (VOCs) are a classification of chemicals that easily evaporate into the air. VOCs can evaporate from contaminated soil or groundwater and migrate upward through the soil as vapors. These vapors may enter a building as they travel to the surface through cracks in the foundation, around pipes, or through a sump or drain system. The VOCs can then contaminate the indoor air.

Radon is a naturally occurring, colorless, odorless gas that comes from the soil and can also accumulate in indoor air.

	Chemical Vapor Intrusion	**Radon**
Sources	Chemical spills, leaks, and past disposal practices have contaminated soil and groundwater.	Radioactive decay of naturally occurring uranium.
Stability	Chemicals in groundwater and soil vapor vary over time, often seasonally. The distance chemicals travel from the source and degrade depends on conditions in the soil and groundwater.	Minnesota's geology produces an ongoing supply of radon; there is a stable rate of radioactive decay.
Health effects	Health concerns are chemical-specific. Screening values are based on the lower of either a risk of 1 new cancer case in 100,000 people or a safe concentration for other health effects.	Radon gives off radioactive particles that can damage the cells that line the lung. Long term exposure to radon can lead to lung cancer. The recommended action level for radon is 4 picocuries per liter (piC/L), which equates to a lung cancer risk of 7 new cases in 10,000 people.

	Chemical Vapor Intrusion	Radon
Occurrence	The Minnesota Pollution Control Agency (MPCA) has identified hundreds of release sites across the state that may pose a risk from vapor intrusion.	In Minnesota, 2 in 5 homes has radon levels that pose a significant health risk.
Fixing the problem	Installing a mitigation system that captures vapors/soil gas from under and around the foundation and vents it to the outside air.	Installing a mitigation system that captures vapors/soil gas from under and around the foundation and vents it to the outside air.
Who is responsible	The MPCA maintains and administers guidance for investigating contaminated sites that may pose a risk for vapor intrusion. Data is typically collected by MPCA, regulated parties, or property owners. Residential owner-occupied properties are often provided a mitigation system if needed.	Property owners are responsible for testing and mitigating homes for radon.

MDH recommends that every Minnesota home be tested for radon

Radon test kits are inexpensive and available at many local health departments, hardware stores, laboratories, and other vendors. You can also hire a radon measurement professional when an unbiased, third party is needed, such as in a real estate transaction.

More about radon testing and ordering a test kit at Radon Testing health.state.mn.us/communities/environment/air/radon/radontestresults.html.

If contacted by the MPCA, we recommend your home be tested for chemical vapor intrusion.

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