

# Emerging Environmental Concern: VAPOR INTRUSION

*Presented by:*

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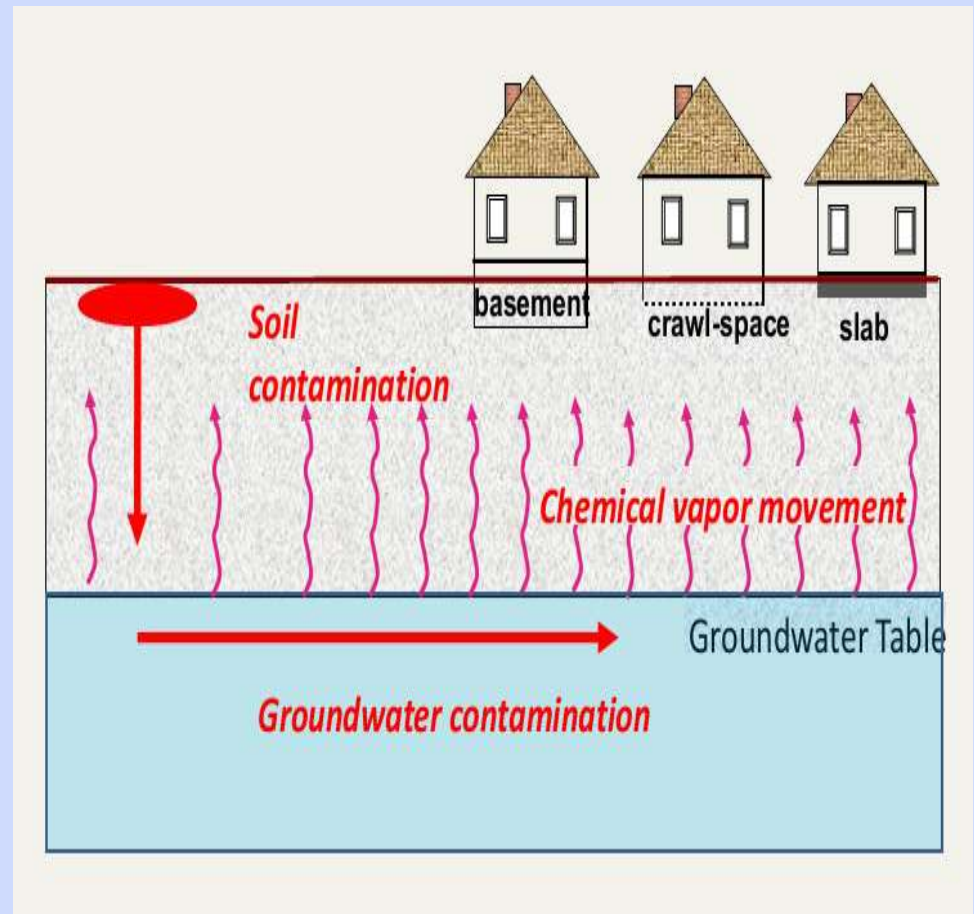
Professional Development  
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# What Is Vapor Intrusion?

- ◆ General Definition: “The Migration of Volatile Chemicals Into Structures”
- ◆ Sources Include: Contaminated Soil and Groundwater
- ◆ Investigations Now Common Place (Gas Stations, Dry Cleaners, Mfg. and Area-wide)
- ◆ Could Involve MPCA, MDH, EPA and/or OSHA



# Where Can I Find Out More Information About Vapor Intrusion?

- ◆ MPCA's Vapor Intrusion Technical Support Document, August 2010
- ◆ MPCA's Petroleum Programs: Vapor Intrusion Assessments Performed During Site Investigations, Guidance Document 4-01a" October 2010
- ◆ MPCA's Non-Petroleum Programs: Risk-Based Guidance for the Vapor Intrusion Pathway, 2008
- ◆ EPA's Vapor Intrusion updates:  
<http://www.epa.gov/oswer/vaporintrusion>

# How Do You Know If There Is A Vapor Intrusion Problem?

- ◆ Tier 1: Preliminary Vapor Screening (Historical Review, Receptor Survey, Source Area Sampling)
- ◆ Tier 2: Subsurface Soil Vapor Sampling
- ◆ Tier 3: Indoor Air Sampling

Need to Compare Results to MPCA Intrusion Screening Values (ISVs)

[Residential and Commercial/Industrial and groundwater]



# What Would a Comparison to ISVs Tell Me?

- ◆ If Concentrations are Less Than 10X ISVs: No Further Work ... if Supported by the Site Conceptual Model
- ◆ If Concentrations are Between 10X ISVs and 100X ISVs: Additional Assessment and/or Mitigation Work Required
- ◆ If Concentrations are Greater Than 100X ISVs: Mitigation Work Required

MPCA's Current Preference: Sub-surface Sampling and Indoor Air Sampling

Potential Indoor Interferences



# What Do You Do If There is A Vapor Intrusion Problem?

## Mitigation Alternatives

- ◆ Source Removal
- ◆ Sealing Points of Entry
- ◆ HVAC Modifications
- ◆ Sub-slab Depressurization Systems
- ◆ Vapor Barrier
- ◆ Venting Systems (Active or Passive)

Possible Long-Term Monitoring,  
O&M, and Institutional Control



# Vapor Intrusion Affects

- ◆ Land Owners
- ◆ Tenants
- ◆ Lenders
- ◆ Neighbors
- ◆ Responsible Parties



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# Phase I Environmental Site Assessment

- ◆ Screening for Vapor Intrusion Risk – Phase II
- ◆ Soil Vapor is Now an Identified Release
- ◆ Reporting Requirements



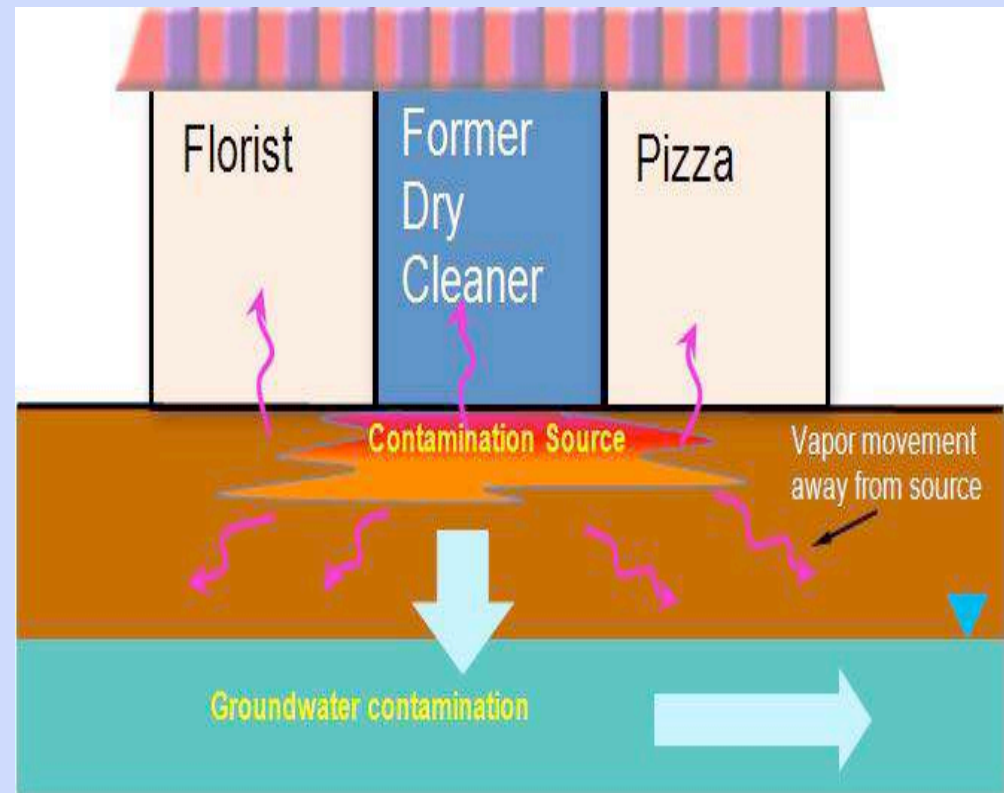


# Impact on Real Estate Deals

- ◆ More Work to Obtain Liability Assurances
- ◆ Past Cleanups May be Reopened
- ◆ Five Year Review of Superfund Sites
- ◆ Case by Case Application of Guidance
- ◆ Delays/Complicates Deals

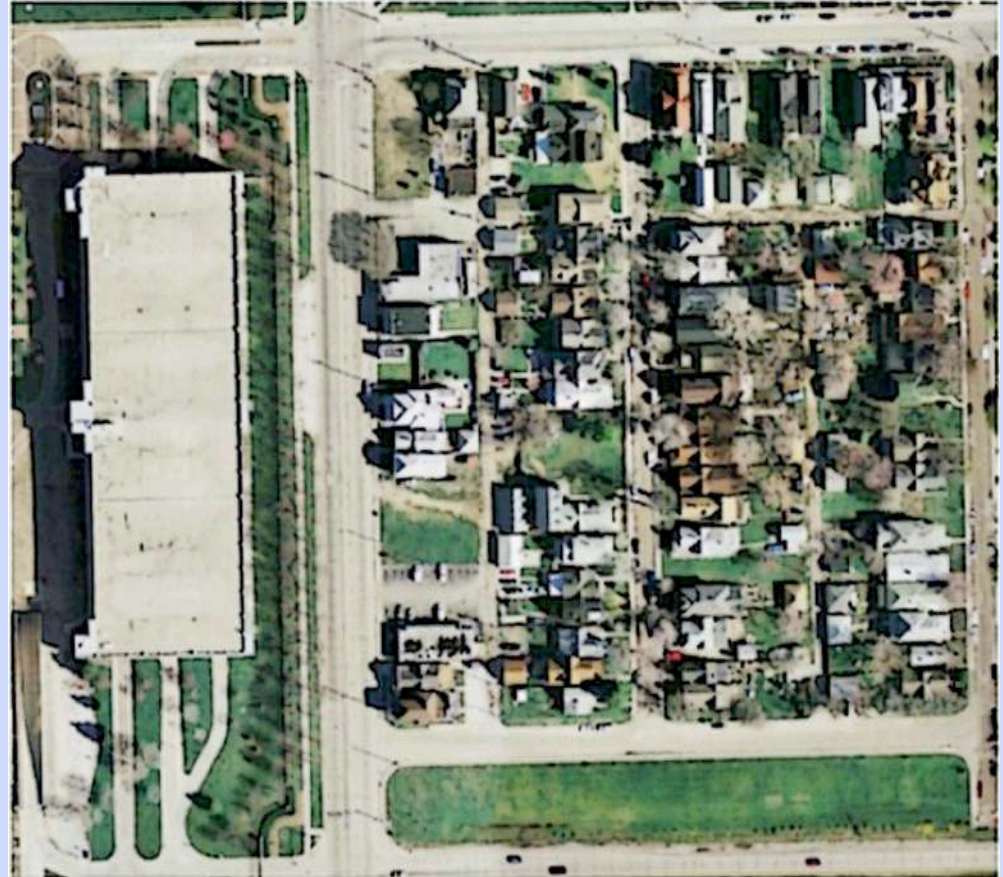
# Legal Issues

- ◆ Access or License Agreement
- ◆ Building Alterations
- ◆ Business Interruption
- ◆ Operations and Maintenance
- ◆ Exposure Concerns
- ◆ Revised Standard of Care



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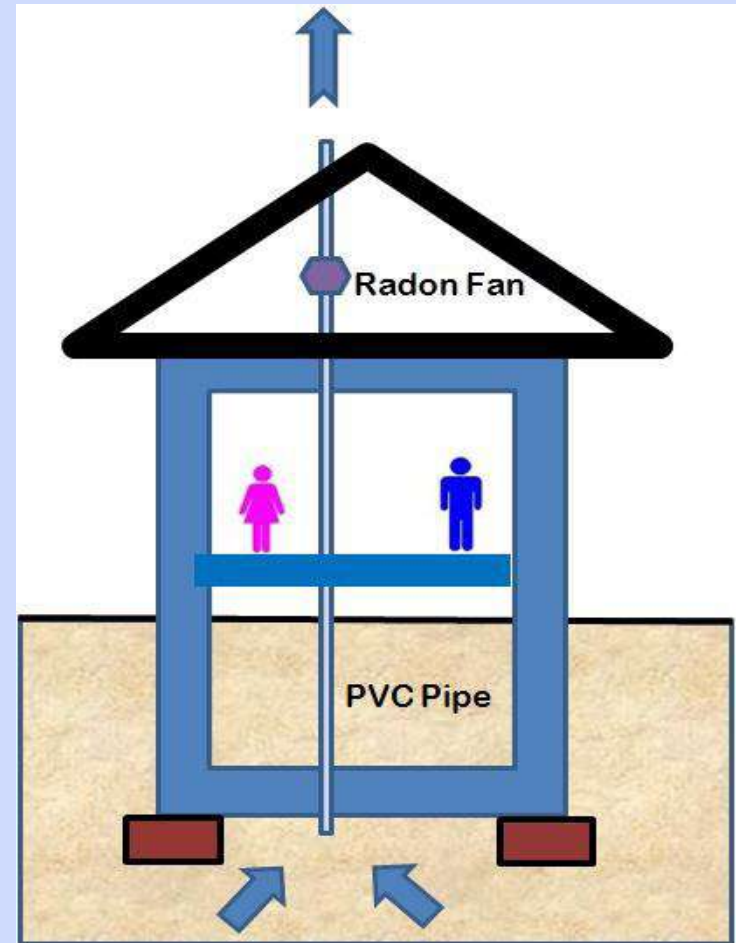
# Claimants and Common Law Claims

## Claimants

- ◆ Government
- ◆ Private Parties

## Common Law Claims

- ◆ Negligence
- ◆ Trespass
- ◆ Nuisance
- ◆ Strict Liability



# Statutory Liability

◆ CERCLA

◆ MERLA

◆ RCRA



◆ Other Statutes



# What Is On the Horizon?



- ◆ MPCA ISVs, including Groundwater ISVs, will be updated this year
- ◆ Updates to Technical Support Document and MERLA programmatic guidance being considered
- ◆ EPA's Final Vapor Intrusion Guidance by November 30, 2012



# Questions? Thanks!

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