



**U.S. EPA “State of VI Science” Workshop  
*Evaluating Alternative Vapor Intrusion Strategies  
Through Simulations Using Data-Rich Case Studies***

**Simulation Site Briefing – Anytown, USA**

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Presentation archived  
at <https://iavi.rti.org/>



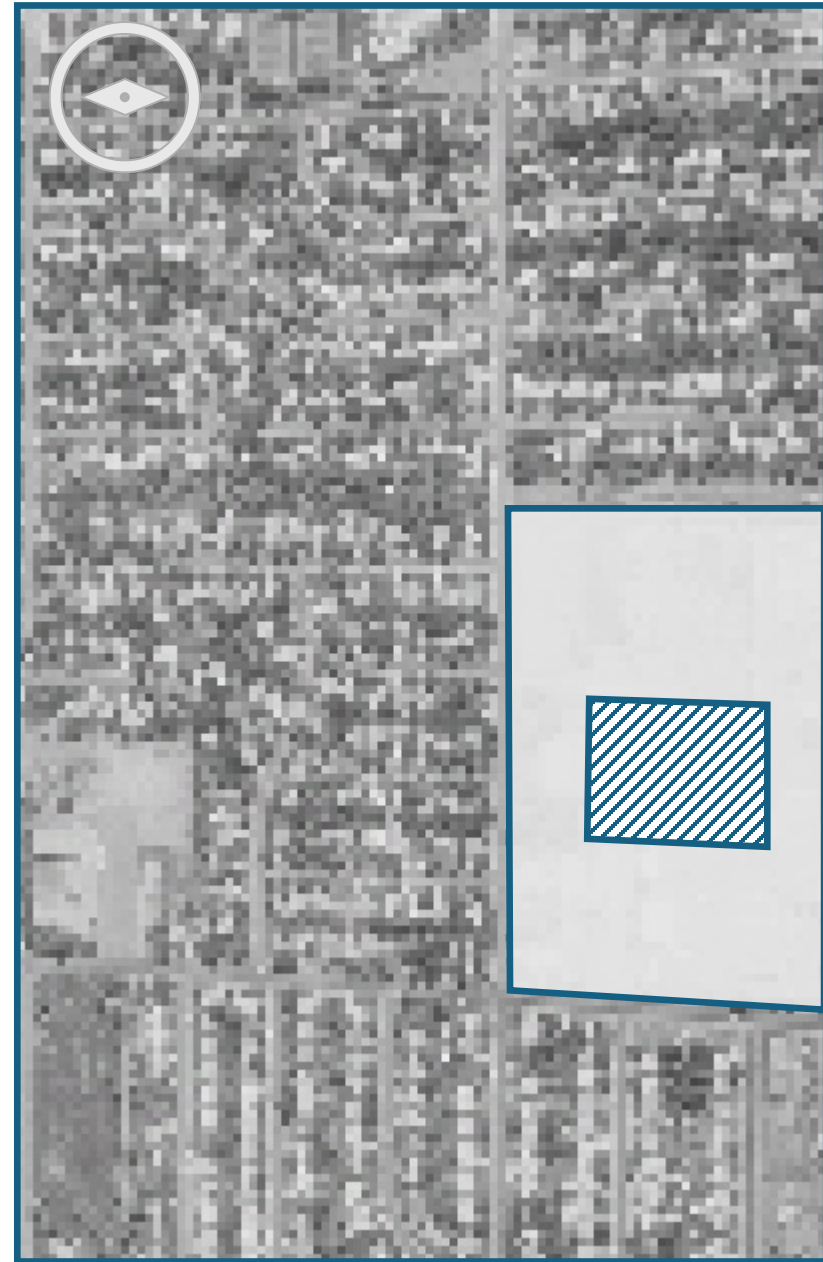
PRAXIS ENVIRONMENTAL TECH. INC

# Disclaimer

*The **Site** discussed in today's workshop is a composite example developed from publicly available data and observations from multiple vapor intrusion sites. Although real site data informed the development of this example to improve authenticity, it does not represent any single, specific site. The information provided is intended solely for educational purposes.*

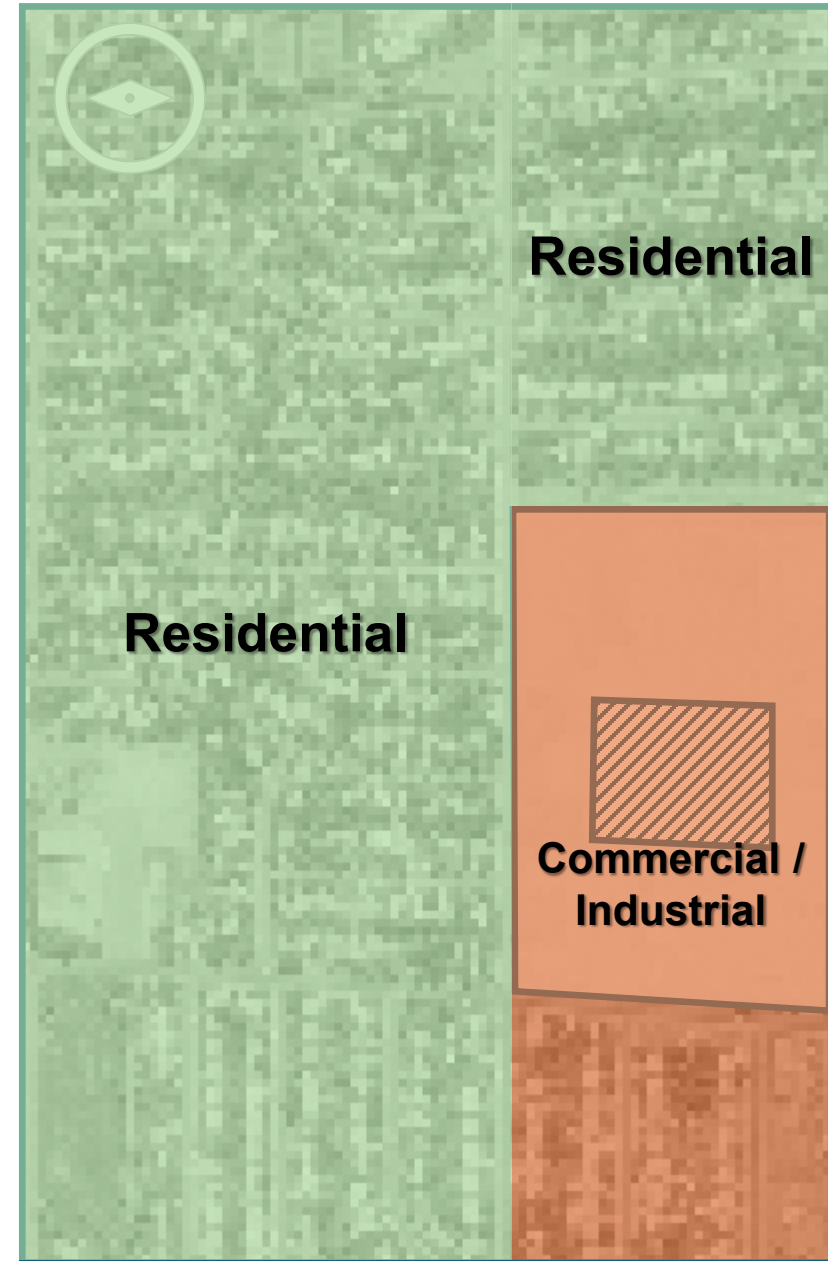
# Site Background

- Site with a history of chlorinated solvent use, manufacturing operations from the 1960s to early 1990s
- Used for storage from 1990s until recent redevelopment interest
- Located adjacent to a residential neighborhood



# Site Background

- Site with a history of chlorinated solvent use, manufacturing operations from the 1950s to early 1990s
- Used sparingly for storage from 1990s until recent redevelopment interest
- Located adjacent to a residential neighborhood



# Site Background

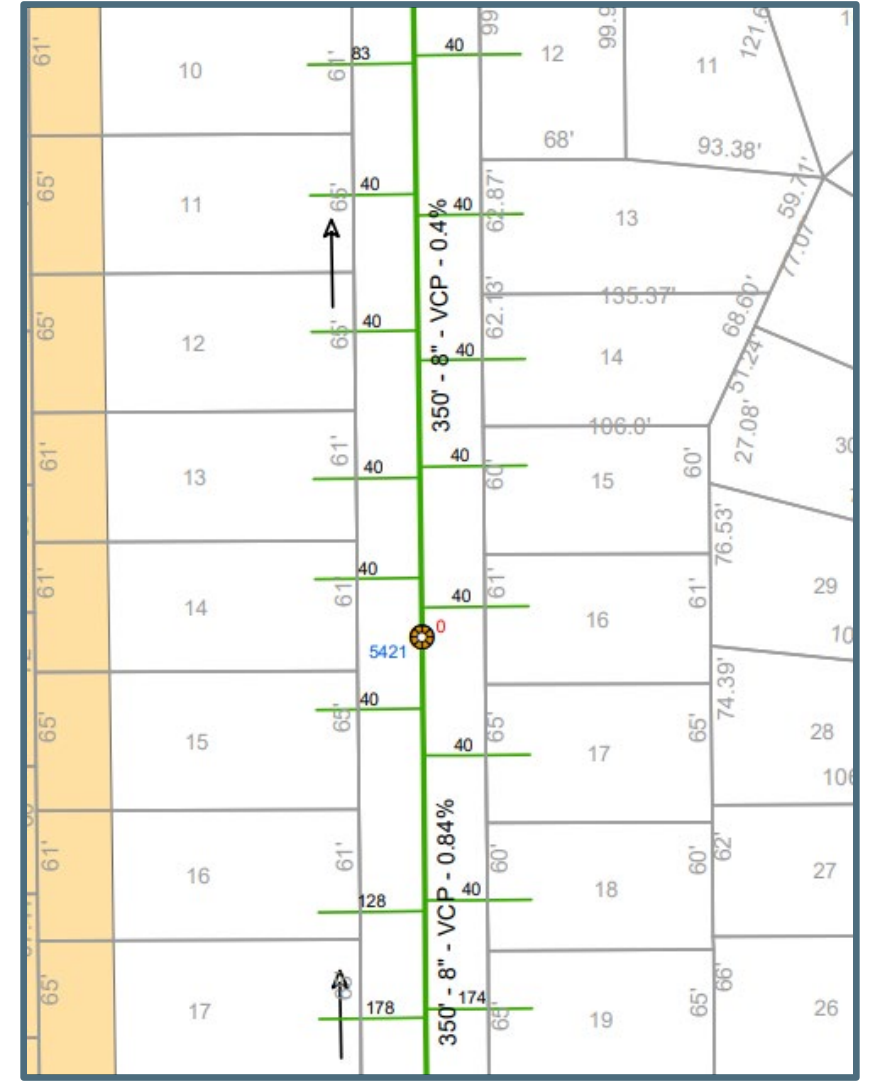
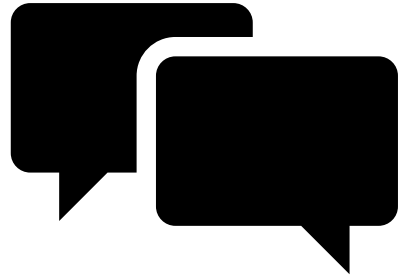
- Variable building construction and characteristics
  - Single-family homes built in 1950s and 1960s including homes with crawlspaces, basements, and/or slab-on-grade construction
  - Multi-family homes built in 1980s with slab-on-grade construction
  - Limited new development
- Small industry and commercial presence in the area, but no other significant subsurface sources nearby



*Example of what single family homes may look like*

# Site Background

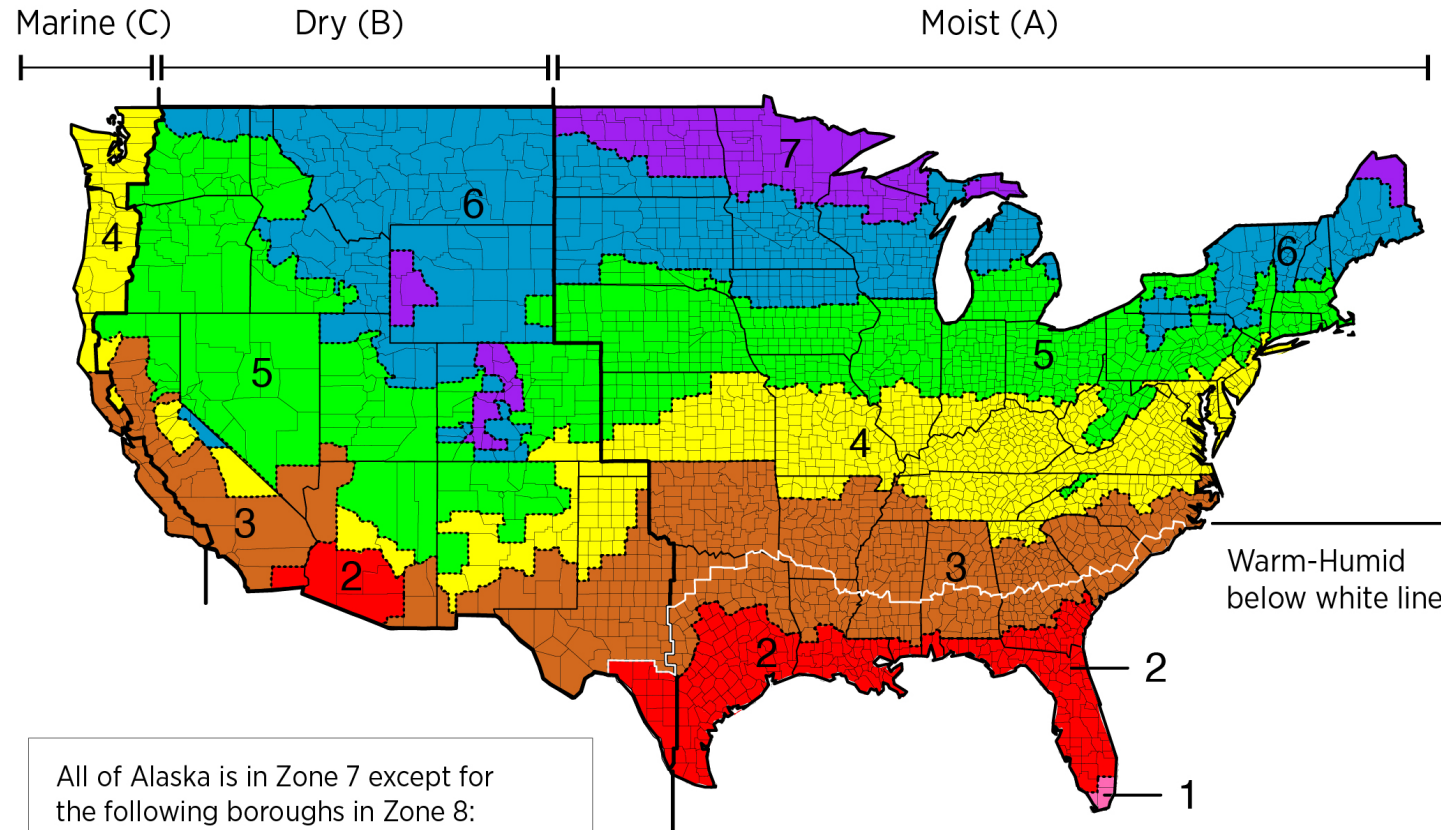
- Public water supply does not rely on groundwater below the site
- Sewers, stormwater drains, and other utilities are modern and well maintained



*Example of what sewer system layout between house may look like*

# Climate: Zone 5

*A Zone 5 climate is generally characterized by cold winters and mild summers*



All of Alaska is in Zone 7 except for the following boroughs in Zone 8:  
Bethel, Northwest Arctic, Dellingham, Southeast Fairbanks, Fairbanks N. Star, Wade Hampton, Nome, Yukon-Koyukuk, North Slope

Zone 1 includes Hawaii, Guam, Puerto Rico, and the Virgin Islands

**Image:**

<https://basc.pnnl.gov/images/iecc-climate-zone-map>

# Initial Site Investigation

- Variable geology, consisting of sand, silt, clay, and weathered bedrock
- Groundwater at 10 to 35 feet below ground surface; flow toward northeast
- 1,1-DCE and TCE detected in groundwater

*Note*



Groundwater monitoring well

1,1-DCE = 1,1-dichloroethylene

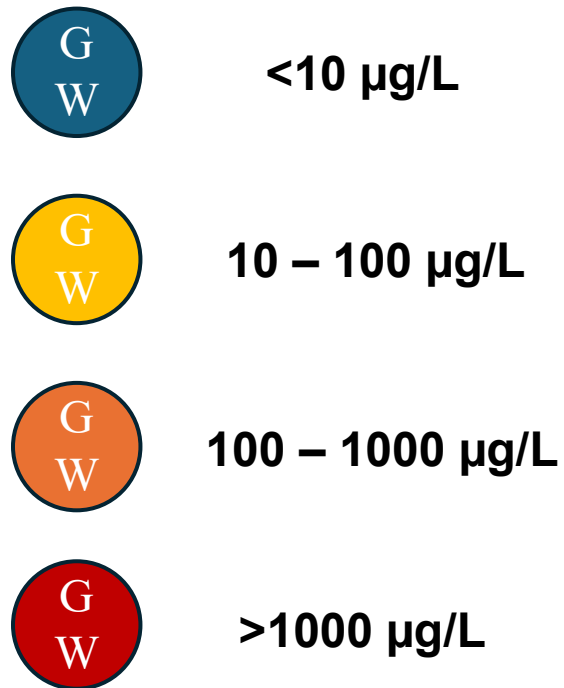
TCE = trichloroethylene





# Initial Site Investigation

## Groundwater concentration 1,1-DCE and TCE



Note  
µg/L = micrograms per liter



# On-Site Remediation

- Limited soil excavation near former chemical storage area
- Groundwater extraction and treatment implemented at Site boundary to prevent further off-site migration
- On-site remediation activities have been effective but off-site impacts are unknown.



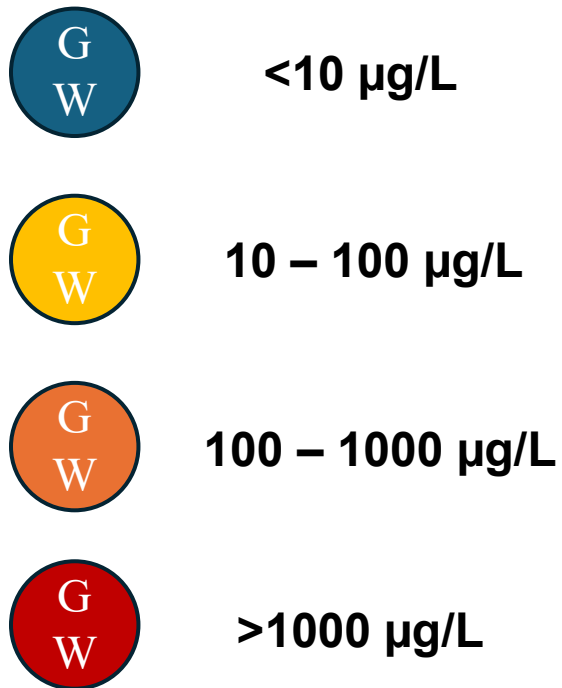
Example soil excavation  
(EPA, 2025; <https://www.epa.gov/hw/hazardous-waste-cleanups>)



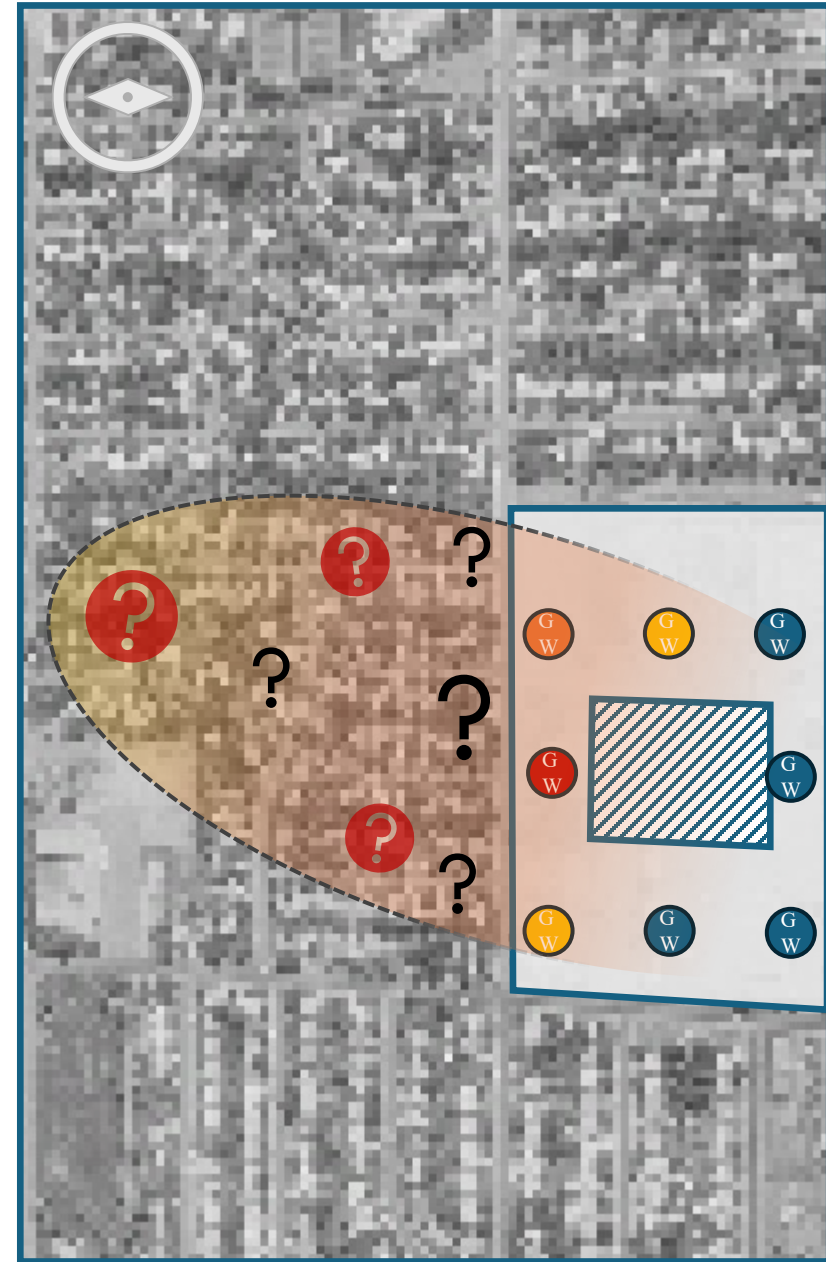
Example pump and treat system  
(EPA, 2012; *A Citizen's Guide to Pump and Treat*)

# What about off-site?

## Groundwater concentration 1,1-DCE and TCE



Note  
 $\mu\text{g/L}$  = micrograms per liter



# Questions?



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