

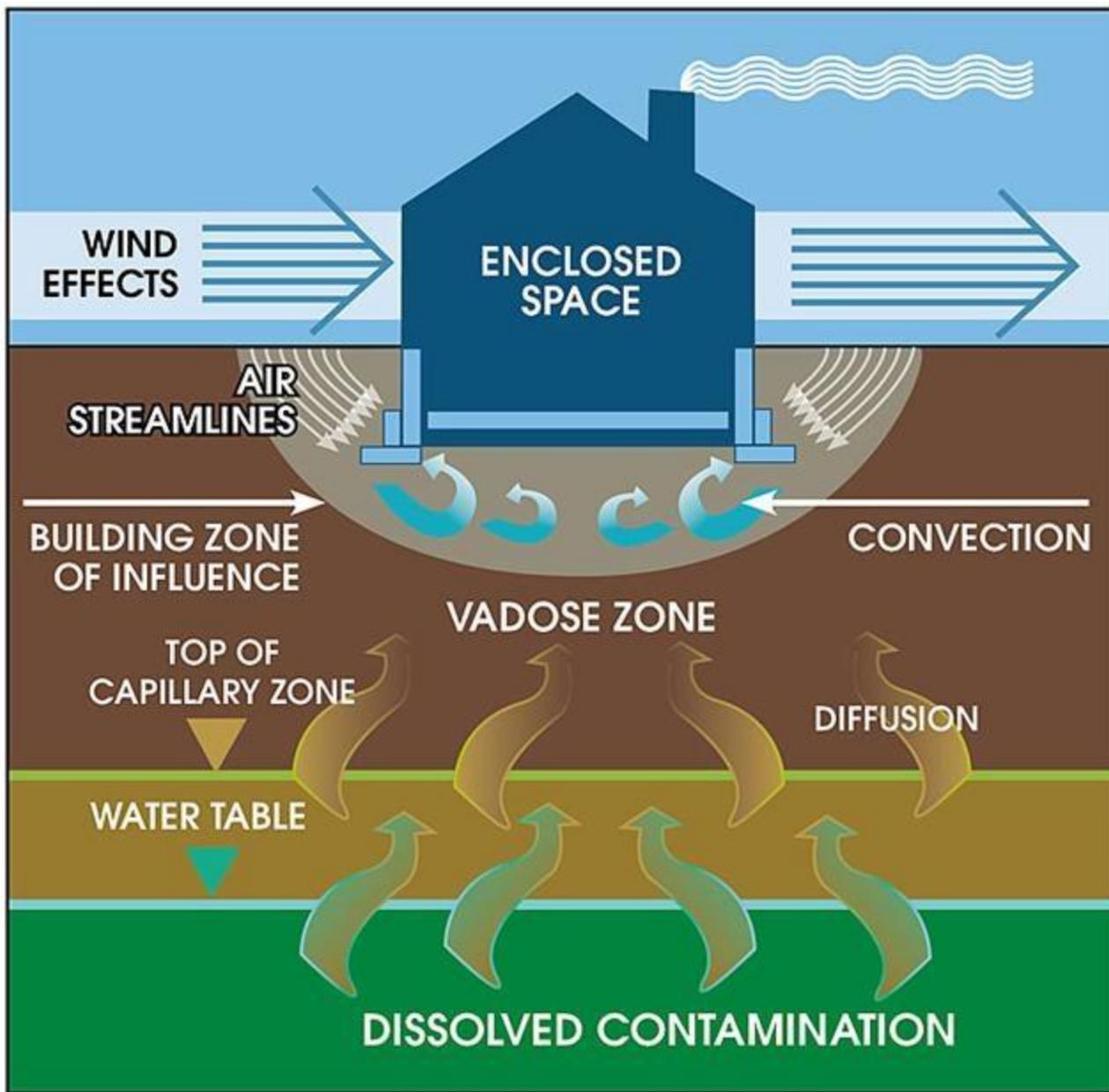


# ASFE Fall 2011 Meeting

“Vapor Intrusion and its Business Impacts”  
A Consultant’s Perspective

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# Vapor Intrusion vs. Vapor Encroachment



# Points of Emphasis

■ This a “REAL” issue

– **Potential for direct human exposure**

- Differing approaches to what is safe (1x 10<sup>-6</sup> or 10<sup>-4</sup>)
- Risk dependent on toxicity of COCs, exposure factors

– **CERCLA basis** (it’s part of the definition of a release) –ties in AAI ESAs and Brownfields

– **Litigation** – “whatever Larry said!”

– **P.E./P.G. responsibility** – Duty to protect the public

– **Not Going Away** – numerous market drivers

# Topics of Discussion

- Evaluating Vapor as part of a Phase I ESA
  - Rationale for why it is already included
  - Rationale for why it is not national industry practice
- Vapor Surprises
  - How are “Vapor Conditions” missed?
  - How are they discovered?
  - How can they be avoided?
- Business Opportunities

# Rationale for why “Vapor” is included

- CERCLA Definition of “release”
- AAI regulation – EP certification language
- EPA guidance since 2002
- 32 states have guidance/regulations
- ASTM 2600-08 (national screening method)
- ASTM 2600-10 (legal appendix)
- EPA is cleaning up Superfund sites due to vapor

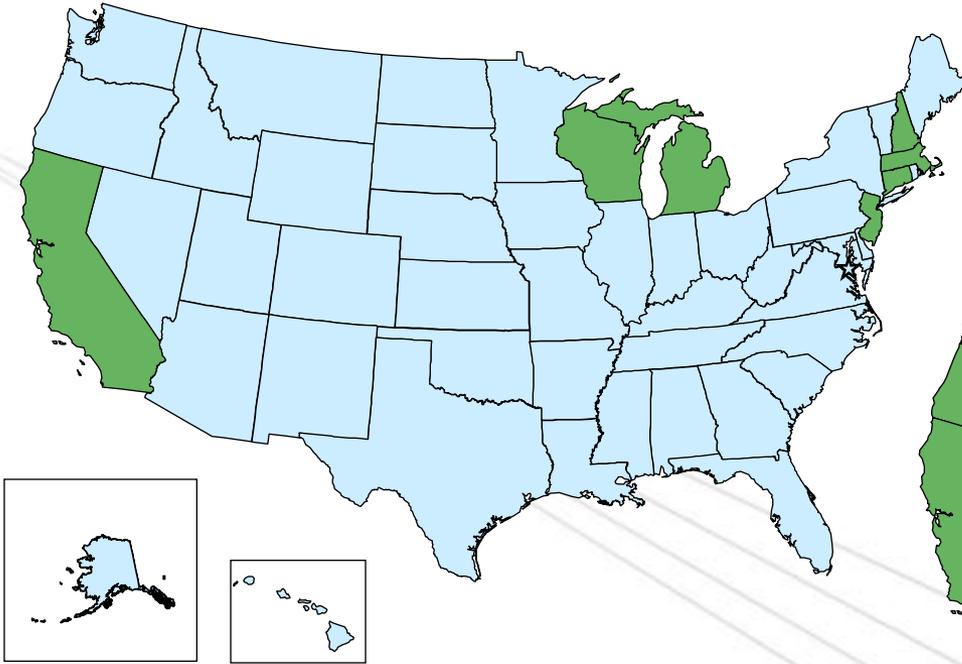
**“It’s been around for a while. Everyone’s doing it. Where have you been?”**

# Is consideration of “Vapor” industry practice for Phase I ESAs?

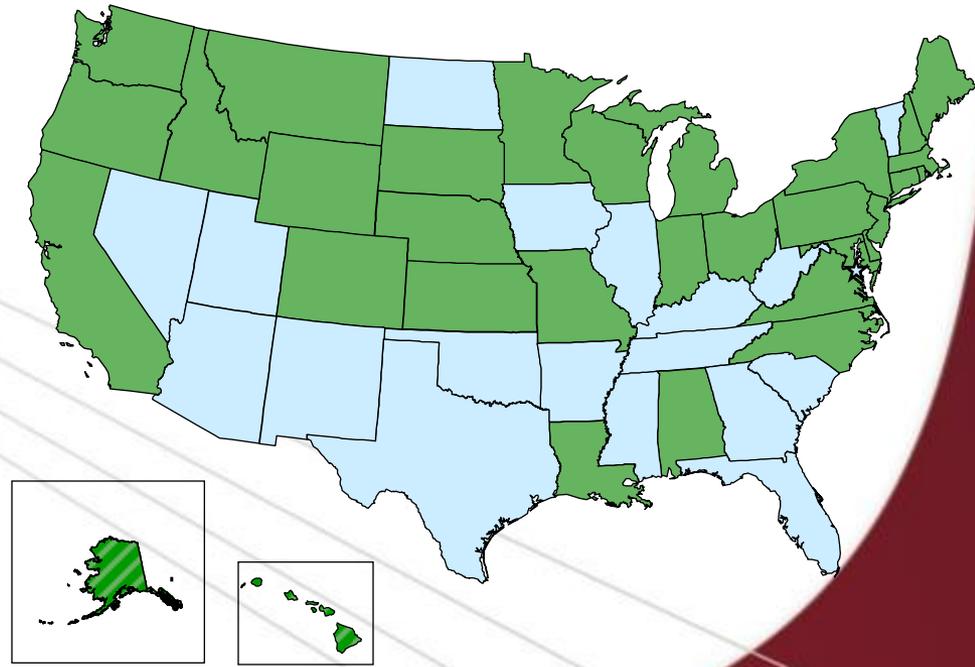
- In my opinion, not industry practice on a national basis
- ...not industry practice within states w/o regulations – **appears to be changing rapidly**
- It may be industry practice in states that have guidance or regulations (especially regs)
  - 32 States including: NY, CA, MA, OH, et al.

# VI Regulatory State Guidance

States with Regulatory VI Guidance in 2004



States with Regulatory Guidance in 2010



# Rationale for why “Vapor” is not industry practice

- 18 states don't have vapor guidance or regs (including many large States: TX, IL, GA, FL)
- EPA's HRS does not include the vapor pathway to assess Superfund sites
- E2600-08: optional – not required
- ASTM 1527-05 does not specifically require it
  - The word “vapor” is not in the standard
  - Exclusion for “indoor air quality”
  - REC definition interpreted to apply to spills, releases to soil and groundwater
  - Revisions considered to clarify

# Rationale Both Ways

- Consultants are being sued more frequently – typically settle out of court
- Silence about “not considering” extremely risky
- Limiting scope is viable:
  - be careful with regard to “standard of care”
  - **not** advisable for residential/sensitive use property
- **The potential for vapor should be discussed with the client on all projects**

# Vapor Surprises

## How are they missed?

### 3 Biggest Reasons:

- Poor judgment on extent and migration of groundwater plumes
- Poor judgment on potential sources
- On site sources closed with residual contamination – groundwater ordinances

### And:

- Preferential pathways not evaluated
- Prior vapor evaluations too liberal

Most vapor conditions are  
“captured” in Phase I RECs by  
being “prudent” on identification of  
RECs

# Vapor Surprises

## How are they discovered?

- New Phase I for buyer
  - Lender driven scope
  - Attorney advice
  - New state regulation
- EPA sampling (MSDs, GW ordinances)
- Third –party sampling (complaints)
- ESA Update by you for refinancing??
  - Lender driven scope

# Vapor Surprises

## How can they be avoided?

- Be “prudent” in evaluating sources, especially off site
- Be “conservative” with regard to GW plume extent and migration (gw gradient)
- Don’t be hesitant to identify RECs – then it becomes an investigation issue

# Vapor Surprises

## How can they be avoided?

- If residual contamination is known (REC, HREC) report language:
  - Potential for vapors
  - Requirement to evaluate if land use is changed
  - Requirement to handle soils and gw properly
  - Requirement to protect workers in the event of future excavation
- For New Phase Is, discuss with the client:
  - In scope (AAI, Brownfields, 2600-10/prof judg)
  - Out of scope (proposal, report, modify EP cert)
    - **Not advised for Residential –Standard of Care**

# Business Opportunities

- **Immediate opportunity:** more RECs on Phase Is due to vapor concerns - avoid future vapor surprises
- **Emerging issue in many states –It's Coming**
  - **Opportunity to educate** – regulatory requirements are imminent in many states
- **Many clients know “little”** – They need to know
  - **Opportunity to consult**
- **Significant Opportunity to Differentiate**
  - This is not a commodity
- **Opportunity for Revenue** – soil/gw investigations, vapor inv, mitigation systems

# Questions/Discussion