Vapor Intrusion: Pathways to Liability

March 13, 2015

George J. Marek
Lauren R. Grahovac Harpke
Quarles & Brady LLP
Agenda

- Background on Vapor Intrusion
- Regulatory Schemes and Guidance
- Due Diligence
- CERCLA
- RCRA
- Common Law
- State Claims
- Prior Site Closures
- Managing potential liability
What is Vapor Intrusion?

- Vapor intrusion is an indoor air quality condition that occurs when volatizing chemicals migrate from polluted soil and/or groundwater in the form of vapors into overlying buildings.
  - Requirement: Subsurface contamination (soil and/or groundwater)
  - Requirement: Pathway to building/structure (permeable soils, cracks/fractures, utility lines, sumps)
- For purposes of ASTM Standards – not from naturally occurring substances.
- Can create a risk for building occupants
  - Health risks
  - Safety risks
What is Vapor Intrusion?

• Can occur at a variety of properties:
  – Industrial properties
  – Dry cleaners
  – Gas stations
  – Landfills

• Common COCs:
  – Chlorinated solvents: TCE and PCE
  – Petroleum hydrocarbons: benzene, ethylbenzene, toluene and xylene
How does it work?

• Pressure-driven flow
  – **Building underpressurization**
    • Stack Effect
    • Wind loading
    • Ventilation systems
    • Barometric pressure
  – **Diffusion through cracks**
Figure 1. Migration of Soil Vapors to Indoor Air

- Stack effects
- Wind effects
- Vapor intrusion through cracks in foundation slab
- Vapor intrusion through floor-wall cracks
- Soil vapor migration
- Water table
- Groundwater plume of VOCs
- Soil contaminated with VOCs
- Utility line
- Site

Quarles & Brady, LLP
Factors Affecting VI

- Source Characteristics
- Soil or groundwater
- Concentration and location
- Biodegradability
- Soil Characteristics
- Air permeability, moisture content, surface cover
- Building Construction
- Foundation type (basement, slab-on-grade, etc.)
- Foundation openings (crack size)
- HVAC system, air exchange rate
- Depressurization
Why Worry About Vapor Intrusion?

• Considerable amount of time spent indoors
  – Average person drinks 2 liters of water per day
  – BUT, the average person inhales 20,000 liters of air per day!

• Some science suggests that inhalation is a sensitive pathway for human exposure

• No practical alternatives

• Complicated → unknowns → difficulty assessing risk

• Vapors can accumulate in dwellings or occupied buildings to levels that may pose short-term or long-term safety hazards, and/or health effects

• Because of this health concern, VI can pose an economic risk to development projects and long-term liability
Why Worry about Vapor Intrusion?
Potential Impacts

- Suitable property usage
- Abatement costs
- Tort liability
- Property value reductions
- State and federal requirements
Vapor Intrusion Regulations in Flux

- Competing state and federal vapor intrusion rules
  - Over 30 states with individual state-specific vapor intrusion rules
  - Draft/Final EPA guidance for public comment in April 2013
    - *OSWER Final Guidance for Assessing and Mitigating the Vapor Intrusion Pathway from Subsurface Sources to Indoor Air*
    - *Guidance For Addressing Petroleum Vapor Intrusion At Leaking Underground Storage Tank Sites (2013 Petroleum VI Guidance).*
- Science constantly evolving
- Pace of legal regulation is slow
- Complicated subject matter difficult to neatly address in regulations
Vapor Intrusion Regulations in Flux

• Wisconsin
  – Wisconsin DNR has a number of guidance documents on vapor intrusion, including sub-slab vapor sampling procedures. See RR-986 (July, 2014).
  – WDNR case closure requirements under Spill Statute: Case Closure form specifically requires responsible party to assess for vapor migration pathway
  – Depending on vapor intrusion risk, case closure may require a vapor mitigation system or other specific vapor protection.
  – Both the DNR and the Dept. of Health Services/Division of Public Health (DHS/DPH) are responsible for vapor intrusion. DNR’s RR Program oversees investigation and cleanup of all contaminant pathways, including vapor intrusion. DHS/DPS – and local health departments – responsible to protect human health, residential & non-residential sites.
Due Diligence - ASTM E1527-13

- ASTM E1527-13 All Appropriate Inquiries (“AAI”) standard – one component necessary to potential rely on certain defenses to CERCLA liability, including the bona fide purchaser defense.

- Vapor is now a recognized pathway in ASTM E1527-13 – Revised definition of “migrate” refers to movement of hazardous substances or petroleum in any form including “vapor in the subsurface”.

- Consideration of vapor is now explicitly required (use of ASTM E2600-10 is not mandated).

- However, industry has anticipated the change for several years and many consultants were already reviewing vapor intrusion.

- Practical Examples
  - Retail/commercial; schools; residential.
Generally: Environmental liability is strict, joint and several, and runs with the land.

Many people don’t realize that...

- ... a purchaser/lessee/operator of contaminated property can be held liable, even though they are not responsible for contaminating the property at issue.
Types of Environmental Liabilities - CERCLA

• Comprehensive Environmental Response, Compensation and Liability Act (CERCLA or Superfund)
  – Federal statute that applies to any release of hazardous substances at a facility.
  – Liability can be asserted against Potentially Responsible Parties (PRPs):
    • The current owner or operator of a facility;
    • A past owner or operator of a facility at the time the hazardous substances were disposed of;
    • The person who arranged for hazardous substance disposal; and
    • The transporter of hazardous substances to the facility.
Types of Environmental Liabilities - CERCLA

- **CERCLA Goals:**
  - Effectuate timely cleanup
  - Allocate responsibility for clean-up costs
- **Joint and Several liability**
- **Damages – Recover of costs of response**
  - Typically allocated between PRPs
- **Injunctive Relief**
  - Not available for private parties
  - Available to USEPA under Section 106 Order
- **Attorneys’ fees – generally not recoverable**
Types of Environmental Liabilities – CERCLA Citizen Suits

• CERCLA Citizen Suit Elements
  – Site is CERCLA facility
  – Defendant is PRP
  – There was a release that caused plaintiff to incur response costs consistent with NCP

• CERCLA Citizen Suit Damages
  – Response costs and attorneys fees

• Statute of Limitations
  – 3 years (removal actions)
  – 6 years (remedial actions)
Types of Environmental Liabilities - CERCLA

- Statutory Defenses to CERCLA
  - **Innocent Landowner.** Must prove that contamination was caused by 3rd party with whom purchaser has no contractual relationship and “all appropriate inquiry” was performed. (Cannot have prior knowledge.)
  - **Bona Fide Prospective Purchaser.** Avoids CERCLA Liability if all appropriate inquiry performed, disposal onsite took place before date of purchase and appropriate care exercised with respect to any discovered contaminants. (Prior knowledge okay).
  - **Contiguous Property Owner.** Avoids CERCLA liability for neighbors whose property is contaminated by the offending property.
Types of Environmental Liabilities - CERCLA

• Statutory defenses are great...

• **But** consider...
  
  – What happens if you buy some contaminated property and can establish a defense... but the original “polluter” is long gone or is judgment proof...

• **YOU STILL OWN CONTAMINATED PROPERTY!**
The Resource Conservation and Recovery Act (RCRA) – “Cradle to Grave” statute designed to govern the generation, identification, storage and disposal of hazardous waste.

- No private cause of action for a cost recovery claim under the statute, but citizen suits may be asserted against any party for any release of hazardous wastes that currently pose endangerment to health and environment.

Remedies under RCRA:
- Injunctive relief
- Attorneys fees

Jurisdiction – federal court

Citizen suits – Two Options
RCRA Citizen Suit – Ongoing RCRA violations

- RCRA § 7002(a)(1)(A): authorizes citizens suits against
  - Any person (including the U.S.)...
  - Who is alleged to be in violation of any RCRA requirement (permit, standard, regulation, condition, requirement, prohibition or order)

- Current violations only
RCRA Citizen Suit – Endangerment

• RCRA § 7002(a)(1)(B): authorizes citizens suits against
  – Any person...
  – Who has contributed or is contributing to past or present handling, storage, treatment, transportation, or disposal of any solid or hazardous waste ...
  – That may present an imminent and substantial endangerment to health or the environment

• Past or present actions if danger is ongoing
What is “imminent and substantial endangerment”?

– Is subsurface contamination or sub-slab sampling above state screening levels sufficient?
– Or is evidence of migration into a structure at certain levels required?
– Does the use of property matter in this analysis?
– Courts differ on what evidence is required

Examples:


Types of Environmental Liabilities – Common Law

• Common law causes of actions such as public and private nuisance, trespass, strict liability, ultra hazardous activity.
  – Criteria for proving claims are same or less burdensome than criteria for proving CERCLA or RCRA claims and remedies can be more expansive. Often, these are added to CERCLA/RCRA claims in the same complaint.
  – Common law causes of action can sometimes be pre-empted by state or federal law.
Types of Environmental Liabilities – State Claims

• State “baby Superfund” laws

• Other state environmental laws such as the Wisconsin Hazardous Substance Spill Law, Section 292.11, Wis. Stats.
  – Party in “possession or control” of the hazardous substance that has been discharged into the environment is responsible party
  – Owner is in “possession or control” even if didn’t cause contamination
Types of Environmental Liabilities – Prior Site Closures

- Impacted sites were previously closed under standards that did not consider vapor intrusion.
- Risk that sites may be reopened to address vapor intrusion.
- Sites may have No Further Action type closure, but anticipated uses need to consider vapor intrusion risk.
Managing Vapor Intrusion Liability Risks: Step One

- Step One: Due Diligence to find the problem
  - Phase I ESA
  - Vapor Encroachment Assessment
  - Subsurface Investigations
  - Soil gas testing
Managing Vapor Intrusion Liability Risks: Step Two

- **Step Two: Abatement**
  - If due diligence efforts identify vapor intrusion problem, then abate.
  - Options:
    - Source removal
    - Use Restrictions
    - Barriers/venting or other technologies
Sealing openings involves filling in cracks in the floor slab and gaps around pipes and utility lines found in basement walls. Concrete can be poured over unfinished dirt floors.

Installing vapor barriers involves placing sheets of “geomembrane” or strong plastic beneath a building to prevent vapor entry. Vapor barriers are best installed during building construction, but can be installed in existing buildings that have crawl spaces.

Passive venting involves installing a venting layer beneath a building. Wind or the build-up of vapors causes vapors to move through the venting layer toward the sides of the building where it is vented outdoors. A venting layer can be installed prior to building construction as well as within existing buildings. It is usually used with a vapor barrier.
Tier 4 - Mitigation Solutions
LIQUID BOOT® Gas Vapor Barrier System with LIQUID BOOT® GeoVent “Active” Venting

One example of an Airlive Venting System Design

- Structural Slab
- LIQUID BOOT® UltraShield G-1000
- LIQUID BOOT® BaseFabric T-40/T-60
- Header Pipe
- Vent Riser
- Gas Venting Out
- LIQUID BOOT® GeoVent
- 2" Sand/Gravel
- LIQUID BOOT® Geovent End Outlets
Active Vapor Intrusion Mitigation Methods:

- Sub-slab depressurization (SSD) involves connecting a blower (an electric fan) to a small suction pit(s) dug into the slab in order to vent vapors outdoors. (Most common method.)
- Building over-pressurization involves adjusting the building’s heating, ventilation, and air-conditioning system to increase the pressure indoors relative to the sub-slab area. This method is typically used for office buildings and other large structures.

*Note that active systems require ongoing operation and maintenance (O&M) costs.
Managing Vapor Intrusion Liability Risks: Step Three

• Step Two: Allocation of liabilities
  – Contract remedies
    • Indemnities
    • Escrow/holdbacks
    • Pre-closing conditions
  – Environmental insurance for tort claims or future remediation
Thank you!

Questions?

George J. Marek
George.Marek@quarles.com
414.277.5137

Lauren R. Grahovac Harpke
Lauren.Harpke@quarles.com
414.277.5183