

Review of VI Guidances

- EPA OSWER VI Guidance
- Summary of Some State Policies
- ITRC Guidance
- ASTM VI Standard

OSWER Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils (Subsurface Vapor Intrusion Guidance)

[Federal Register Notice](#) - November 29, 2002

Fact Sheet: Evaluating the Vapor Intrusion into Indoor Air

[Adobe PDF File](#) [17 KB]

Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils (Subsurface Vapor Intrusion Guidance) (Complete Document)

[Adobe PDF File](#) [3019 KB]

- Draft Guidance

[Adobe PDF File](#) [516 KB]

- Tables

[Adobe PDF File](#) [353 KB]

- Appendices A-C

[Adobe PDF File](#) [972 KB]

- Appendices D-F

[Adobe PDF File](#) [722 KB]

- Appendices G-I

[Adobe PDF File](#) [475 KB]

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EPA Draft VI Guidance

Nov. 2002

- Tier 1: **Primary** Screening
 - Q1: VOCs present?
 - Q2: Near buildings?
 - Q3: Immediate concern?
- Tier 2: **Secondary** Screening
 - Q4: Generic screening
 - Q5: Semi-site specific screening (alphas from charts & tables)
- Tier 3: Site-Specific Pathway Assessment
 - Q6: Indoor air (and/or subslab)

Fall 2005

- Tier 1: **Preliminary** Screening
- Q1: VOCs present?
 - Q2: Near buildings?
 - Q3: Immediate concern?
- Tier 2: **Generic** Screening
 - Q4: Generic residential and non-residential screening levels
- Tier 3: **External Site-Specific** Screening
 - Q5: More site-specific parameters (alpha from spreadsheet)
- **Tier 4: Internal** Site-Specific Assessment
 - Q6: Indoor air or subslab or both
 - Multiple lines of evidence

DRAFT Exterior Decision Matrix		Concentration in Groundwater		
		Well above level of concern	Around level of concern	Well below level of concern
Concentration in Soil Gas	Well above level of concern	Interior sampling or mitigation	Possible vadose source; Interior sampling or mitigation	Possible vadose source; Interior sampling or mitigation
	Around level of concern	Interior sampling or mitigation	Interior sampling or mitigation	Possible vadose source; Interior sampling or mitigation
	Well below level of concern	Consider geologic setting ¹ , verification sampling in select locations	Consider geologic setting ¹ , verification sampling in select locations	NFA unless nearby property has unacceptable risks (verification, monitoring)

¹ Review subsurface stratigraphy, depth to water, to determine presence, integrity, effectiveness of geologic barriers to vapor migration.

Summary of State VI Guidance

- Written:
 - NY, NH, MA, CT, PA, SC, LA, CO, OR, ID, NJ, IN, MI, CA, MN, DL, WI
- Working on a Draft:
 - FL, AZ, WA, TN
- Pondering:
 - ITRC survey implies at least 40 states

Data Preference

- Indoor Air: MA, NY, CO (changing)
- Soil Gas: NY, NH, CT, CA, SC, LA, IN, WA, TN, MN
- GW: NJ
- Use of Soil Data: Not Many (PA?)
- Flux Chambers – Unfamiliar Audience

ITRC VI Guidance

- Practical How-to Guide
- Stepwise Approach
- Discussion of Investigatory Tools
- Thorough Discussion of Mitigation
- Scenarios Document
- Classroom Training in 2008

What it Is . . . What It Is Not!

ITRC VI document is . . . ITRC VI document is
NOT . . .

- Guidance
- Flexible
- Informative
- Iterative
- Broad ranging

- Regulation
- Prescriptive
- Restrictive
- Linear
- Limited

ITRC VI Scenario Document

- Gas station in residential neighborhood
- Dry-cleaner in strip mall located adjacent to neighborhood
- Large industrial facility with long plume under several hundred buildings
- Vacant lot with proposed Brownfields development over groundwater plume
- Vacant large commercial building with warehouse space and office space
- Apartment building with parking garage over groundwater plume



Technical and Regulatory Guidance Supplement

Vapor Intrusion Pathway: Investigative Approaches for Typical Scenarios

A Supplement to Vapor Intrusion Pathway: A Practical Guideline



January 2007

Prepared by
The Interstate Technology & Regulatory Council
Vapor Intrusion Team

Regulatory Approach for HC Sites

- Range of Regulatory Approaches:
 - USEPA: 2002 Guidance not recommended for UST sites
 - ASTM – Critical distance reduced from 100' to 30'
 - Some regulatory agencies include a 10X biodegradation factor
 - ITRC: Use vertical profile to demonstrate
- Evidence suggests these approaches are overly conservative for most petroleum release sites

ASTM VI Standard

- Focus on Property Transactions
- Longer Screening Distances
- No RBSLs – Use Local Standards
- No Sampling Info – Refers to ITRC
- Legal Standards
- Extensive Mitigation Treatment
- Released on March 3, 2008

ASTM VI Standard

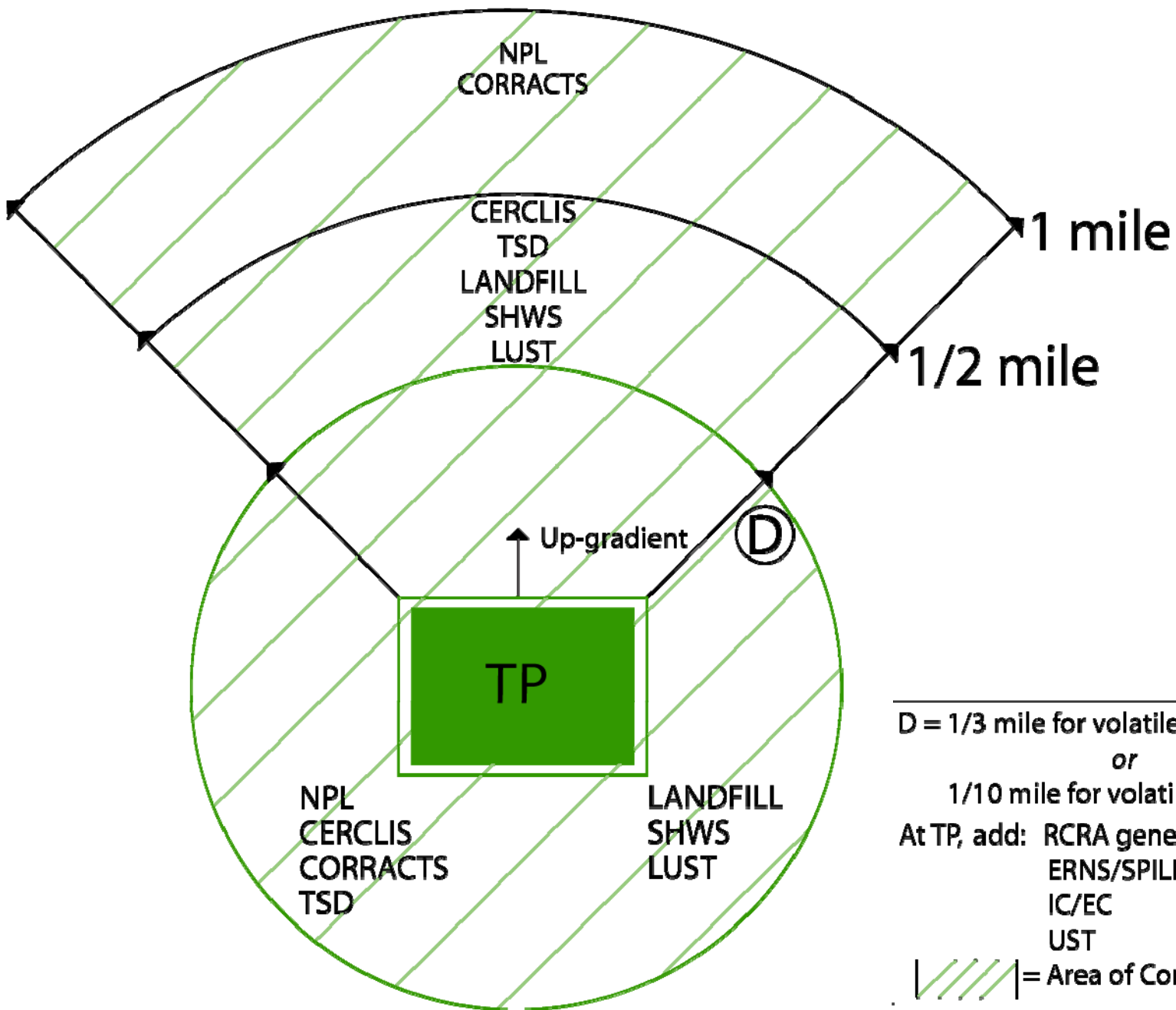
Vapor Intrusion Condition (VIC) is defined as “the presence or likely presence of any volatile chemical of concern in existing or planned structures on a property resulting from an existing release or a past release from contaminated soil or groundwater on the property or within close proximity to the property, **at a concentration that presents or may present a human health risk.**”

ASTM VI Standard

- Tiers 1: Screening (Phase 1)
- Tier 2: Non-invasive Screening (p-VIC)
- Tier 3: Investigation – no details
- Tier 4: Mitigation

Can Jump to Tier 4 at Any time

SEARCH DISTANCE TEST



Liability Concerns

- Phase I Environmental Consultant
- Prospective/Current Property Owner
- Property Lender
- Property Insurer