

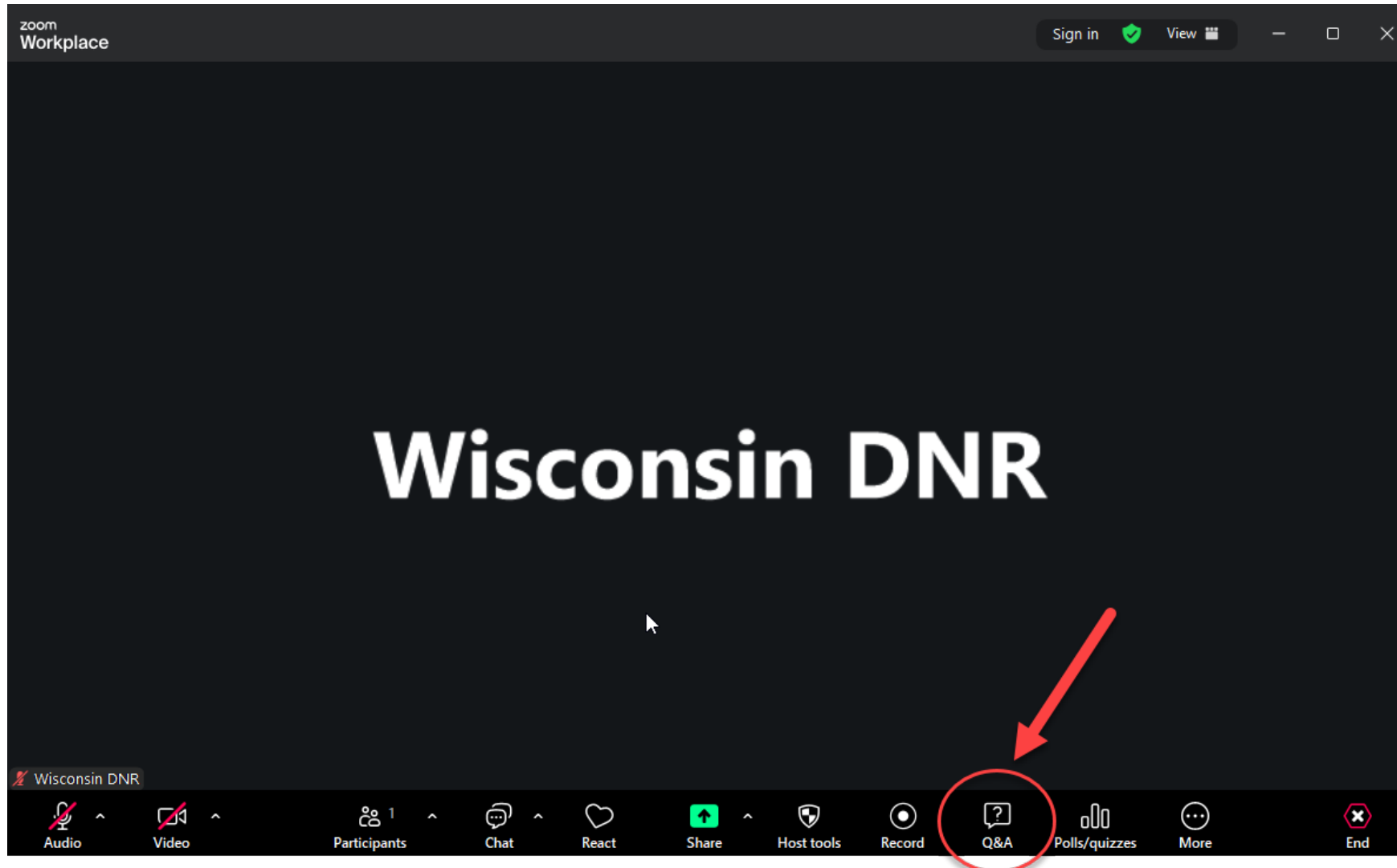
Vapor Intrusion Guidance and Related Forms

Jennifer Borski, Vapor Intrusion Team Leader
Jim Walden, Vapor Intrusion Technical Expert



March 23, 2026

Asking Questions – Use Q & A



DNR Updates



Public Input Opportunities

Comment period open

- ***New*** RR-0152 Soil Cleanup Standards Guidance – through **March 26**.
- ***Updated*** RR-671 Natural Attenuation for Landowners – through **March 31**

Public notices webpage: dnr.wi.gov, search “RR Public Notice”

Sign up to receive notifications: dnr.wi.gov, search “RR Report” and use “Subscribe” button

Other Updates

Updated Guidance

Updated RR-0136 Guidance: Wisconsin Vapor Quick Look-Up Table

Updated RR-0137 Guidance: History of Changes to VALs, VRSLs and AFs for Common VOCs in WI

Accessibility Updates

Changes to existing documents

Content moved to webpages

Upcoming Back to Basics & EAG Meeting

April 21, 2026

Updating Continuing
Obligations After Closure and
Notifying Affected Parties and
the Public

2026 Issues & Trends Schedule



June 24, 2026

- Using Monitored Natural Attenuation in Cleanup of Contamination

July 16, 2026

- Deep Dive into Vapor Intrusion: Application of RR-800

September 17,
2026

- Conduit Vapor Intrusion: Application of RR-649 and RR-800

Recorded sessions available at dnr.wi.gov, search “RR Training Library”

Continuing Education Requirements



Professional Geologists (P.G.s):
24 contact hours per biennium

Professional Hydrologists (P.H.s):
4 contact hours per biennium

Vapor Intrusion Guidance and Related Forms

Jennifer Borski, Vapor Intrusion Team Leader

Jim Walden, Vapor Intrusion Technical Expert



Agenda

Vapor Intrusion Guidance (RR-800)
and Screening

Investigation

Mitigation

Review of Vapor Publications and
Forms

Staying Connected

Now Available!

Vapor Intrusion Guidance (RR-800)

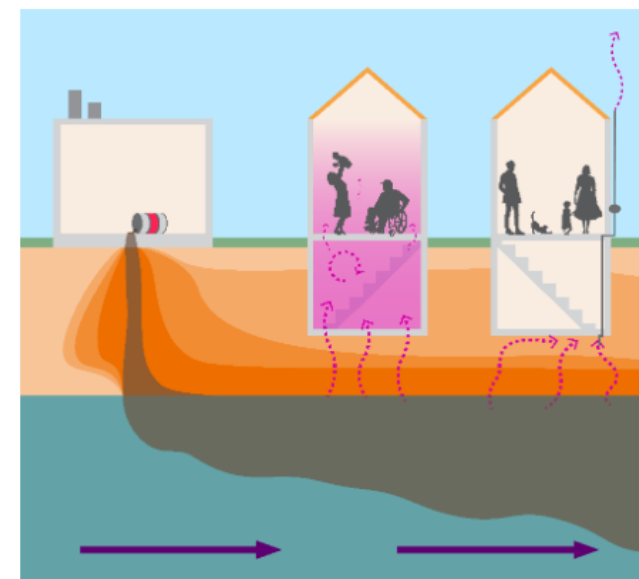
Available at dnr.wi.gov
Search “RR-800”

Vapor Intrusion Guidance (RR-800)

Wis. Stat. ch. 292, Wis. Admin. Code chs. NR 700-799

Purpose

This guidance is for persons who investigate, remediate and mitigate contaminated sites under Wisconsin Statute (Wis. Stat.) ch. 292 and Wisconsin Administrative (Wis. Admin.) Code chs. NR 700-799. It applies to sites with contaminated vapor that has migrated or has the potential to migrate to current or future buildings. It includes conditions that indicate an investigation of the vapor intrusion pathway is necessary and guidelines on response actions.



Vapor intrusion

generally refers to subsurface contamination that can volatilize and the vapors enter the breathing space of buildings. Vapor intrusion can also occur when contaminated groundwater infiltrates buildings and contaminants directly volatilize into the indoor air. Vapors can migrate through air space in permeable soils, fractures in bedrock or clay tills, utilities, sumps, or cracks in a building foundation. Vapor intrusion can also occur through conduits.

Exposure to contaminants due to vapor intrusion may present human health risks. When certain contaminants are present, such as trichloroethylene, even short-duration exposures may present acute health

risks. Evaluation and mitigation of the vapor intrusion pathway are important aspects of the investigation and cleanup process.

The DNR partners with the Wisconsin Department of Health Services (DHS) and local health departments regarding short-term (acute) and long-term (chronic) risks to human health related to vapor intrusion, as well as determining appropriate immediate and interim recommendations (e.g., ventilation, mitigation) at affected sites. The DHS and local health departments assist the DNR, responsible parties and environmental consultants with health risk communications, including supportive literature.

Guidance Includes

- Science-based recommendations
- Descriptive figures
- Updated screening recommendations
- Building decision matrices
- Updated mitigation recommendations



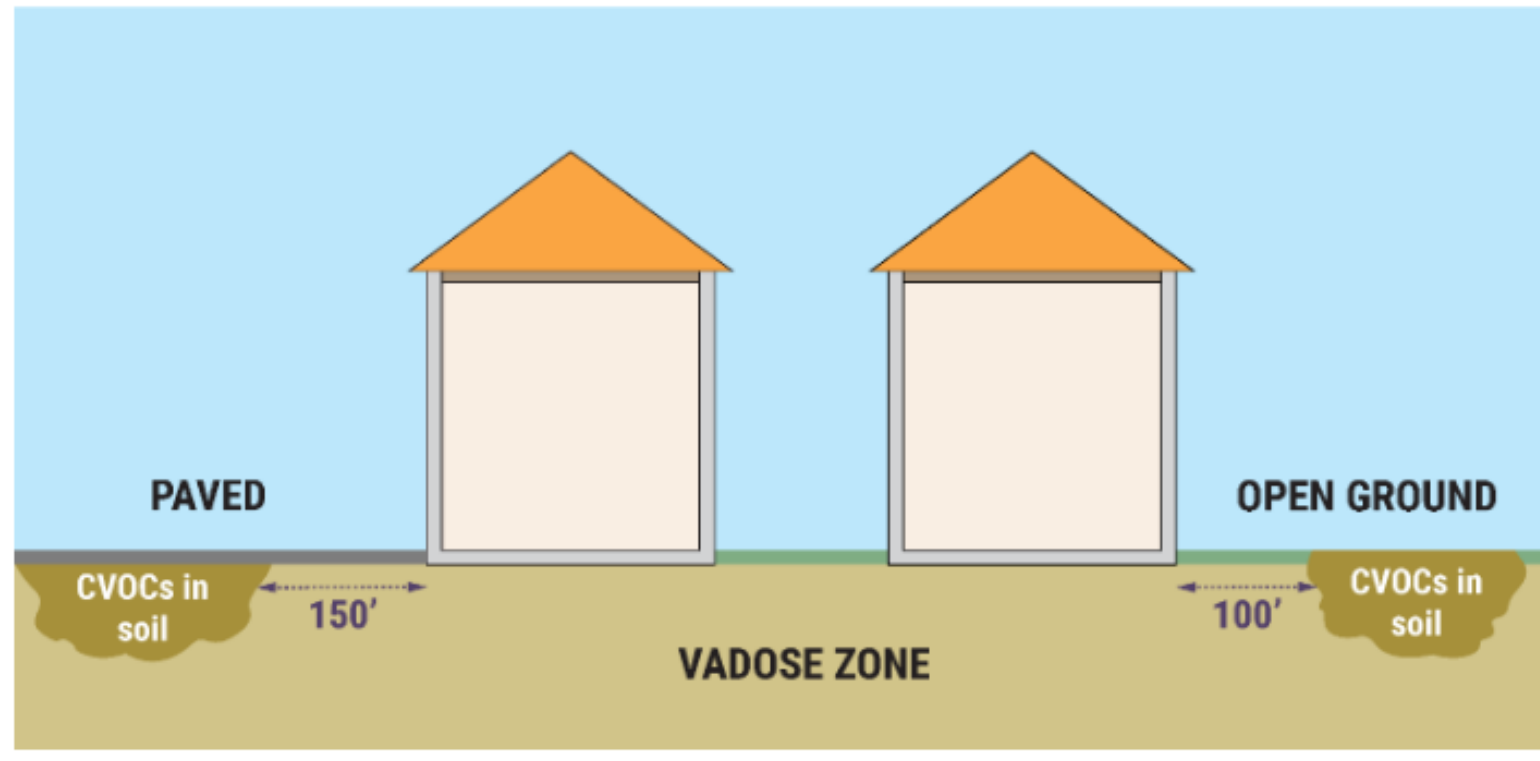
Comprehensive Information

- Variables affecting vapor intrusion (VI)
- Passive sampling techniques
- Real-time analysis and on-site laboratories
- Parking garages and elevators
- General VI conceptual model and lines of evidence
- History of dry cleaners and other chlorinated solvent sources



Soil Screening for Chlorinated Volatile Organic Compounds (CVOCs)

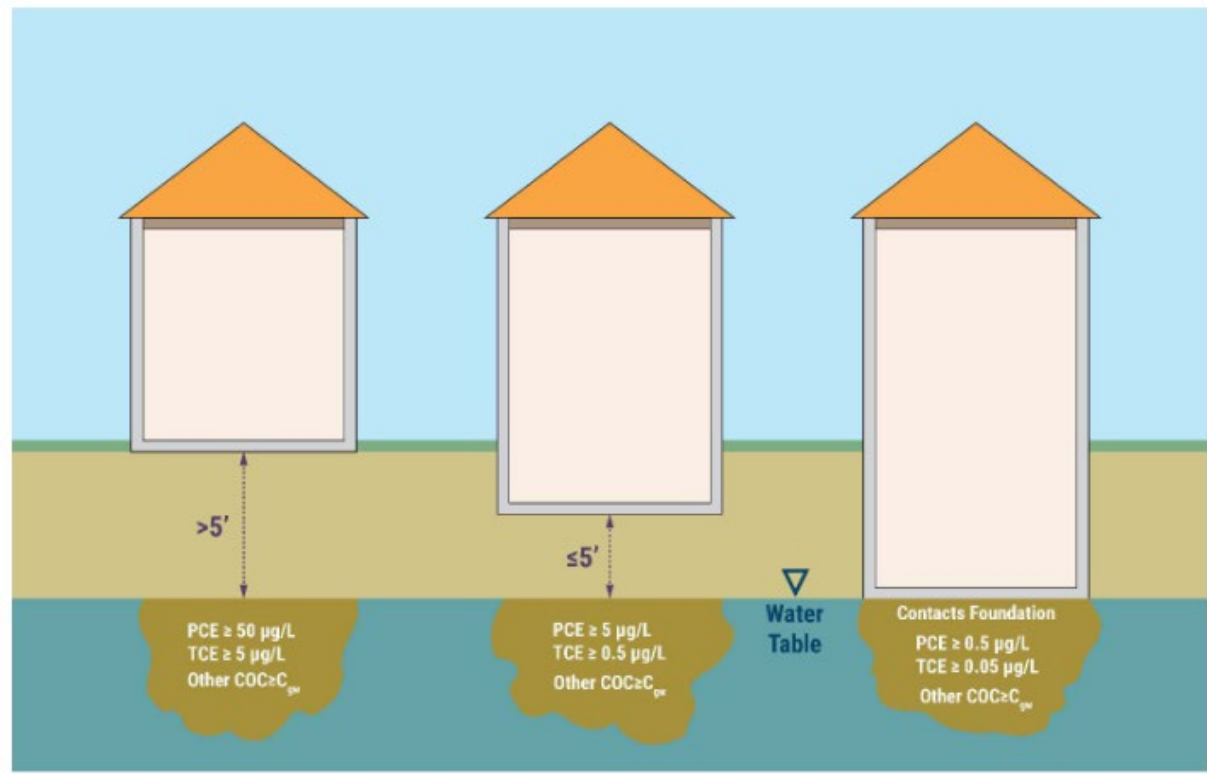
Figure 2. Vadose zone screening: CVOCs present at any concentration above the limit of quantitation



From RR-800, Jan. 2026

Groundwater Screening Categories for CVOCs

Figure 3. CVOC groundwater screening



Based on distance from base of building foundation to groundwater water table:

1. Groundwater > 5 ft from foundation
2. Groundwater ≤ 5 ft from foundation
3. Groundwater in contact with foundation

From RR-800, Jan. 2026

Default Attenuation Factors for Groundwater VRSLs – Contaminants other than PCE & TCE

Figure 3. CVOC groundwater screening

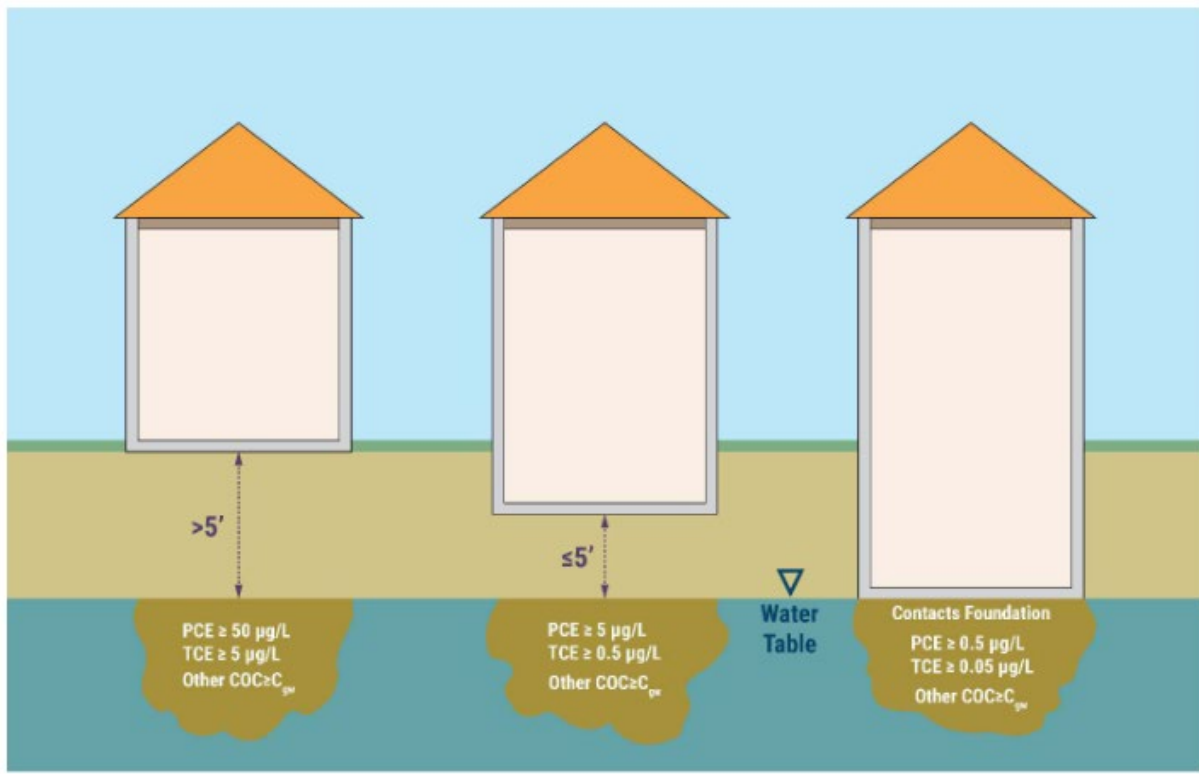


Table 3. Default attenuation factors for groundwater

Vertical Separation from Foundation	Residential and Small Commercial AF _{GW}	Large Commercial and Industrial AF _{GW}
> 5 feet	0.001	0.0003
≤ 5 feet	0.01	0.003
Contact with foundation	0.1	0.03

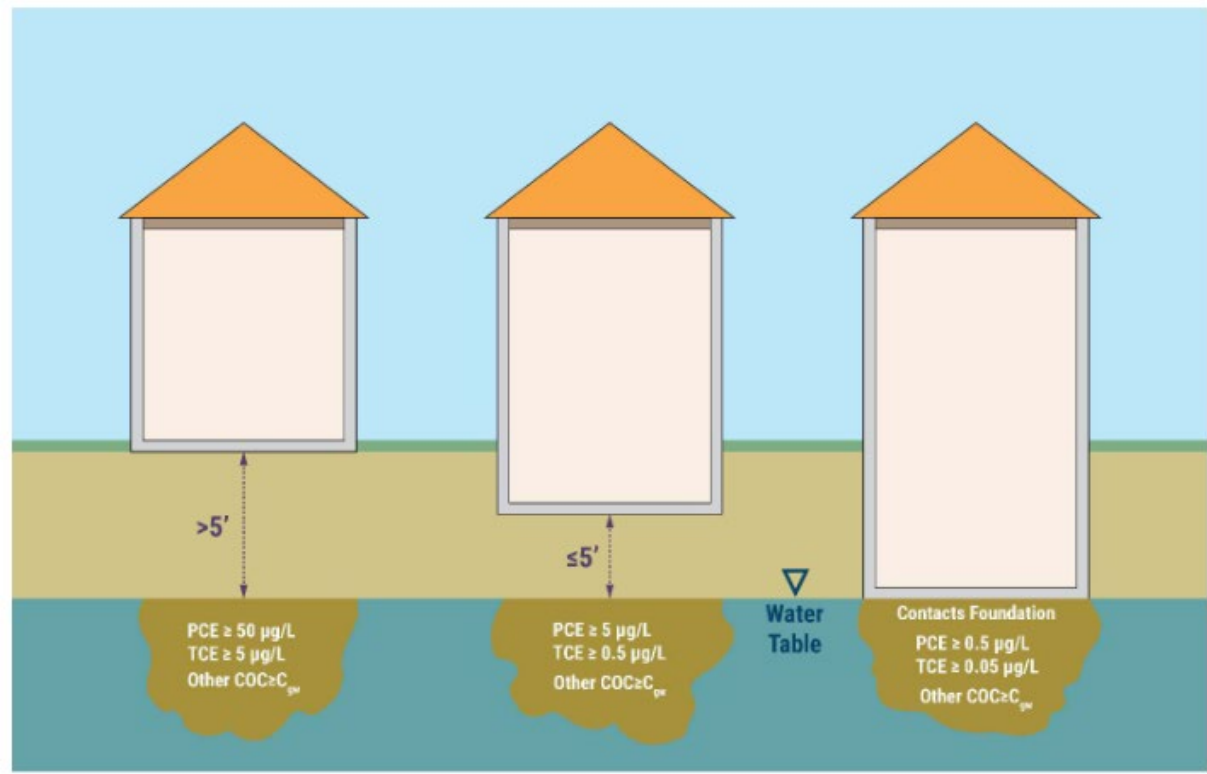
VRSL = Vapor Risk Screening Level

PCE = tetrachloroethylene TCE = trichloroethylene

From RR-800, Jan. 2026

Groundwater Screening for PCE and TCE

Figure 3. CVOC groundwater screening



From RR-800, Jan. 2026

Table 1. Screening TCE in groundwater

Vertical Separation from Foundation	TCE Concentration
> 5 feet	$\geq 5 \mu\text{g/L}$
≤ 5 feet	$\geq 0.5 \mu\text{g/L}$
Contact with foundation	$\geq 0.05 \mu\text{g/L}$

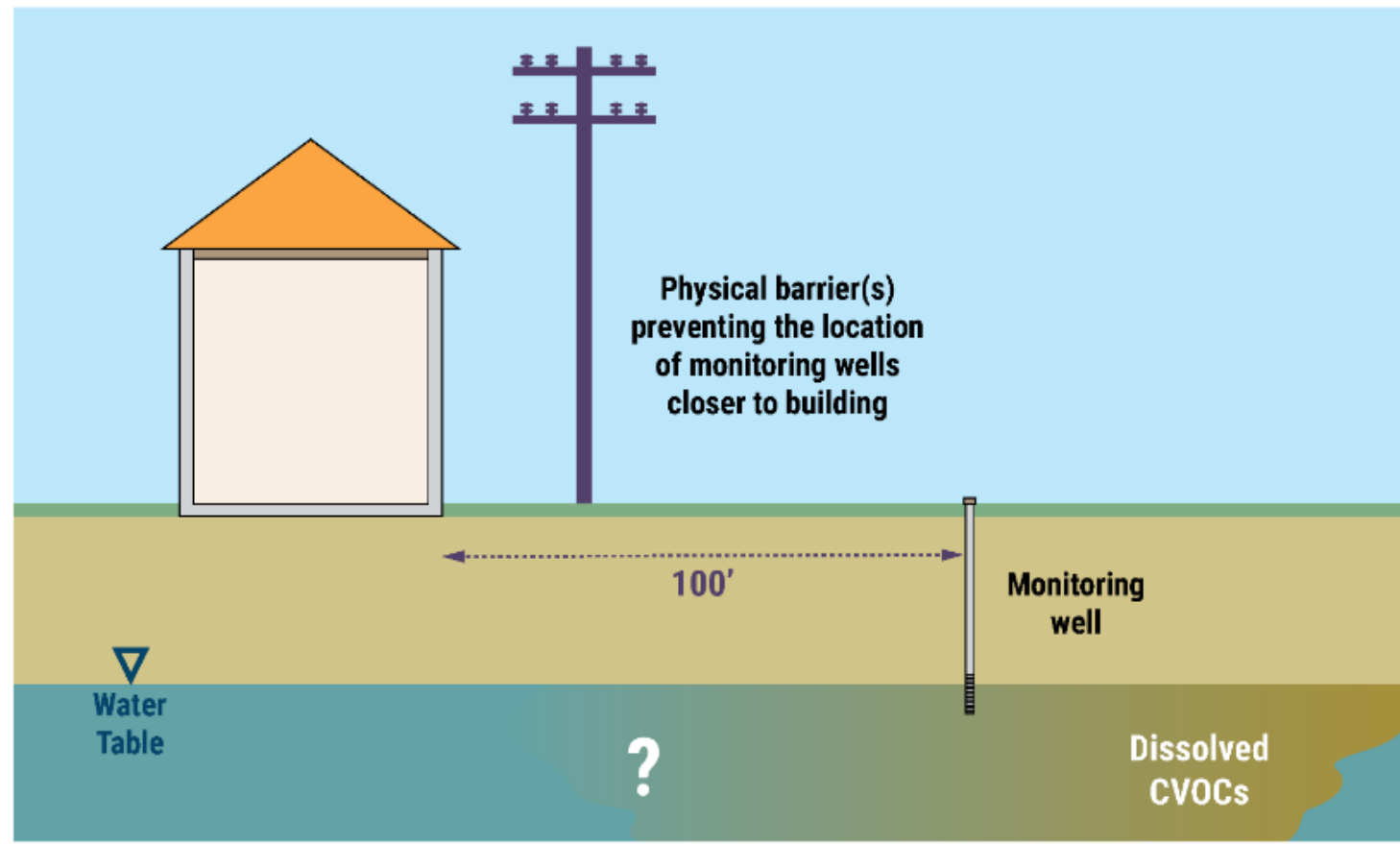
Table 2. Screening PCE in groundwater

Vertical Separation from Foundation	PCE Concentration
> 5 feet	$\geq 50 \mu\text{g/L}$
≤ 5 feet	$\geq 5 \mu\text{g/L}$
Contact with foundation	$\geq 0.5 \mu\text{g/L}$

PCE = tetrachloroethylene TCE = trichloroethylene

Physical Barrier Near Building

Figure 4. Groundwater screening with a physical barrier

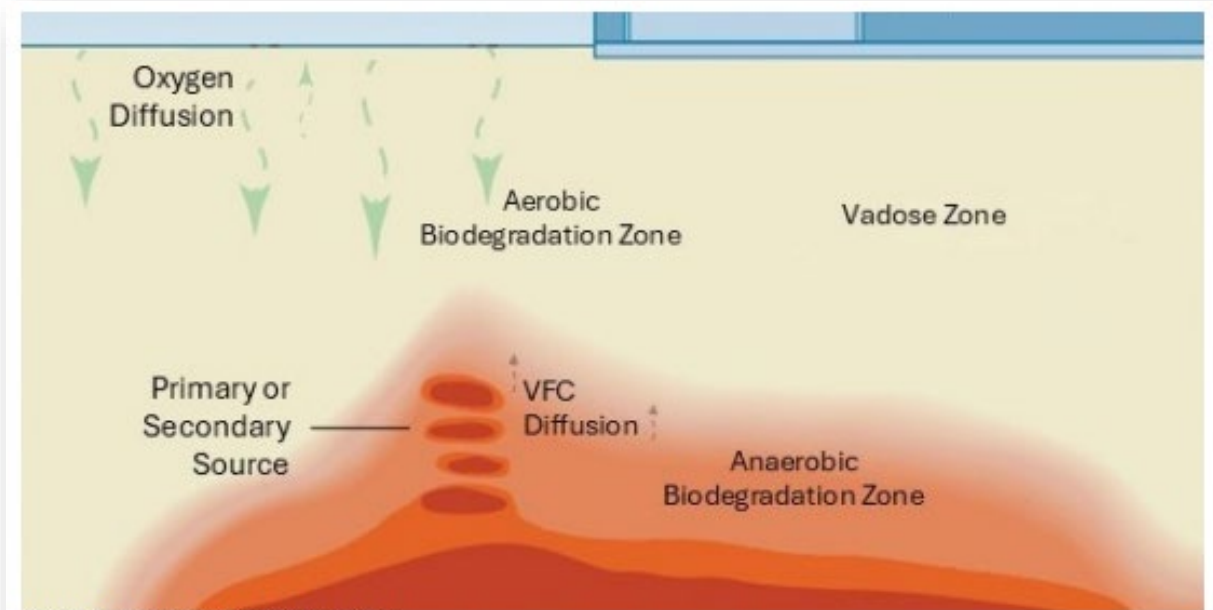


From RR-800, Jan. 2026

Screening for Petroleum VOCs (PVOCs)

Precluding Factors:

- Ongoing release/expanding dissolved plume or migrating non-aqueous phase liquid (NAPL)
- Impervious surfaces
- Excessively dry soil
- High organic matter content soil



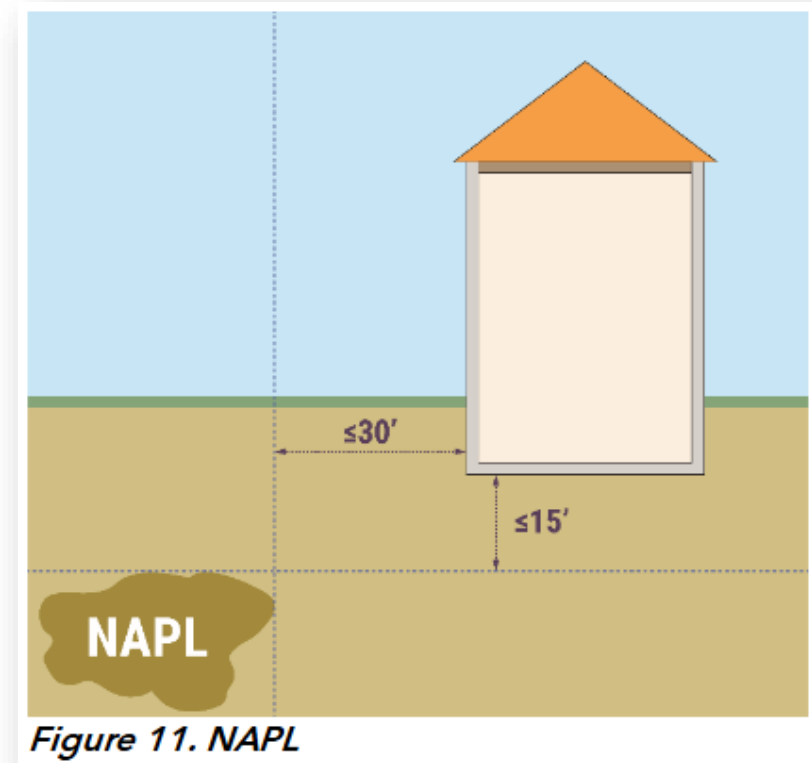
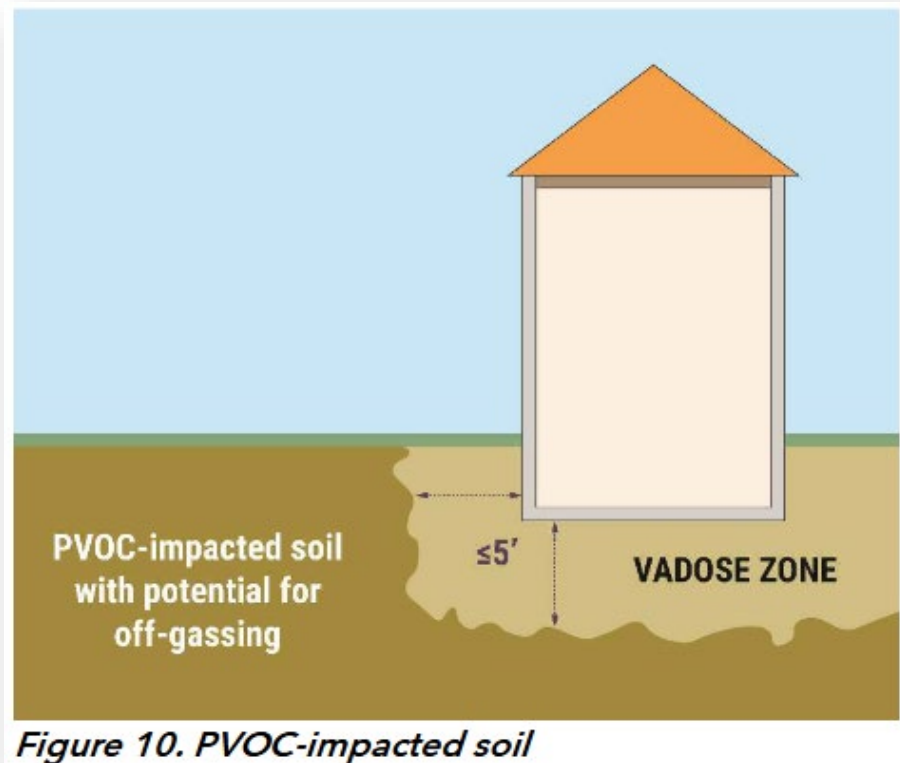
Note: VFC = vapor-forming chemical.

Figure 2-6. Biodegradation.

Reference: ITRC (Interstate Technology & Regulatory Council). January 2026. Vapor Intrusion Toolkit. Washington, D.C.: Interstate Technology & Regulatory Council, Vapor Intrusion Update Team.

<https://itrcweb.org/vapor-intrusion-toolkit/>

Examples: PVOC Screening



From RR-800, Jan. 2026

NAPL = non-aqueous phase liquid

Questions?



Purpose of Vapor Intrusion Investigation

Define the degree and extent in all affected media (Wis. Admin. Code § NR 716.11(3)(a), including:

- Potential pathways for migration (NR 716.11(5)(a))
- Impacts to receptors (NR 716.11(5)(b))
- Sub-slab vapors when soil, soil gas or groundwater indicates vapors may migrate (NR 716.11(5)(g))
- Indoor air to determine impact on an occupied structure (NR 716.11(5)(h))

Criteria for closure:

- Residual contamination is not likely to pose a threat to public health, safety or welfare or the environment (NR 726.05(4)(a))
- Cause a vapor action level (VAL) in indoor air to be attained or exceeded (NR 726.05(4)(e))

Categories when Calculating VALs and VRSLs

$$VRSL = \frac{VAL}{AF}$$

Values	Units	Categories		
Indoor Air (VALs)	µg/m ³	Residential Exposure	Non-Residential (“Composite Worker”) Exposure	
Building Construction (AFs)	unitless	Residential / Small Commercial		Large Commercial / Industrial
Sub-slab Vapor (VRSLs)	µg/m ³	Residential	Small Commercial	Large Commercial / Industrial
Soil Gas (VRSLs)	µg/m ³	Residential	Small Commercial	Large Commercial / Industrial
Groundwater (VRSLs)	µg/L	Residential	Small Commercial	Large Commercial / Industrial

VRSL = Vapor Risk Screening Level
 VAL = Vapor Action Level
 AF = Attenuation Factor

µg/m³ = micrograms per cubic meter
 µg/L = micrograms per liter

When to Use Large Commercial/Industrial AF

Table 14. Features supportive of using a large commercial/industrial AF

Feature	Supportive of a large commercial/industrial AF
Condition of the foundation slab and walls	Thicker, competent foundation slabs and walls in good condition, typically slabs ≥ 6 inches
Volume of the interior space	Larger rooms with higher ceilings that allow for more air mixing, typically $\geq 25,000$ sf footprint and ≥ 10 -foot-high ceilings
HVAC	Well managed systems that provide high AER ≥ 4 per hour and/or positive building pressure
Building openings	Large bay doors routinely utilized during occupied times that allow significant ventilation
Interior space	Space is not divided by interior walls, such as offices, meeting rooms, cubicles, restrooms with active vents where vapors could accumulate

Clarified in RR-800

Value of a Conceptual Site Model

Industry best management practice

May be required (Wis. Admin. Code § NR 716.17(1))

- Complexity of the site
- Severity of actual or potential health impacts

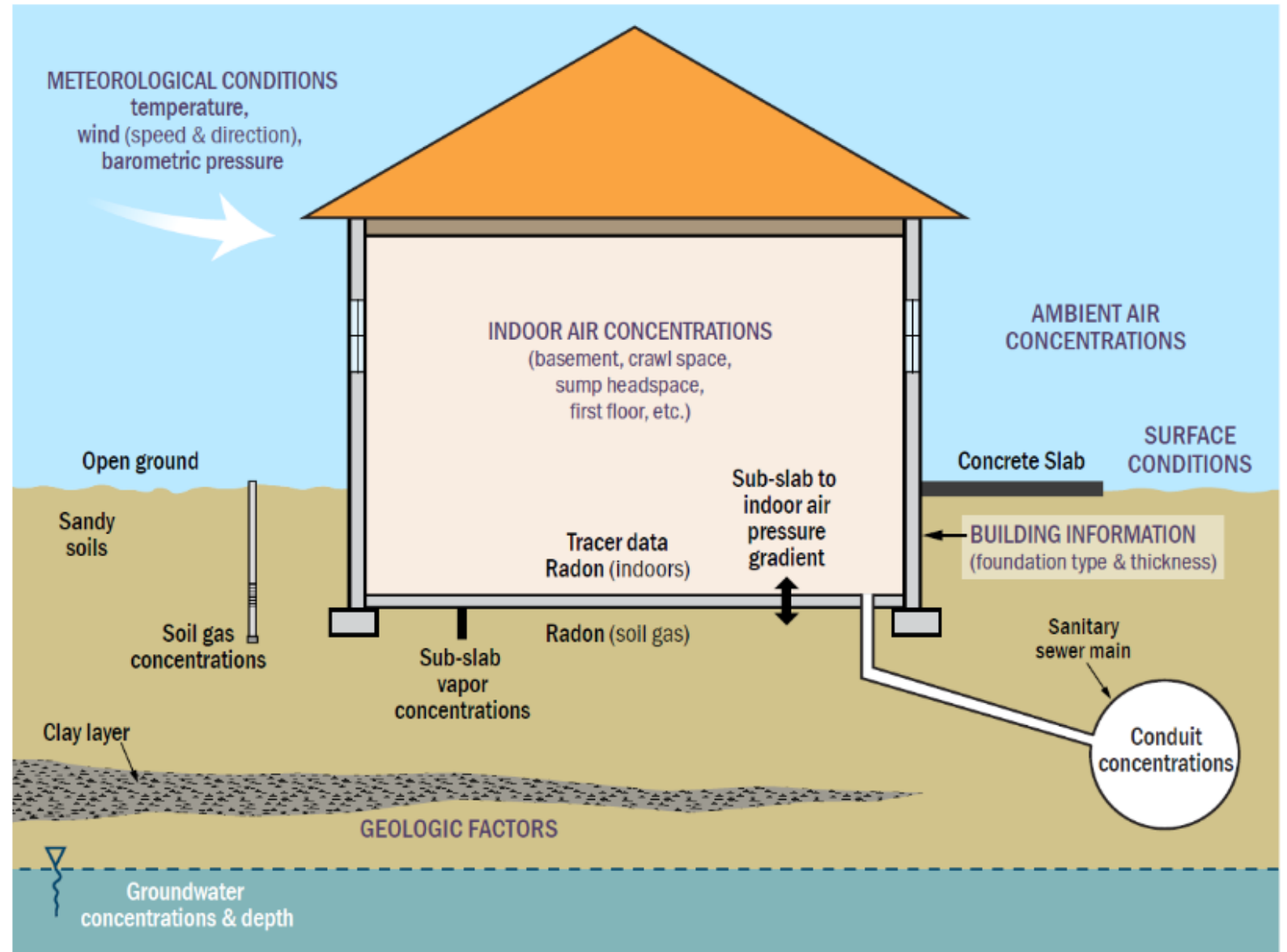
Find help in RR-800

- CSM Boundary
- Addressing variability
- Recommended elements

Lines of Evidence (LOE)

- Investigation
- Mitigation decisions
- Mitigation design

Figure A-4. Common LOE and/or variables for vapor investigation



From RR-800, Jan. 2026

Initial Building Sampling Recommendations

Sub-slab vapor (Table 4):

- Single family – 1 sample per 1,000 sq. ft.
- All other buildings – based on CSM

Indoor air (Table 5):

- Single family – min 2 samples in lowest level (more if preferential pathways a concern)
- All other buildings – based on CSM

Sample duration:

- 8 hr / 24 hr when acute risk concern
- Longer duration (could also be initiated with 8 hr / 24 hr)

Outdoor air:

- Concurrent with indoor air

Winter and Outside Winter Assessments

Winter assessment period

- Nov 1 – Mar 31
- Frost conditions
- Closed doors & windows
- Active heating

Outside winter assessment period

- Water table in contact with foundation
- Periodic/seasonal building operations
- Soil and groundwater at seasonal maximum soil temperature

Table 6. Recommended frequency of follow-up (longer duration) building sampling

Compound	Sampling Events During Winter Assessment Period	Sampling Events Outside of Winter Assessment Period
TCE in residential settings	2	1
TCE in non-residential settings	1	1
All other compounds in any setting	1	1

From RR-800,
Jan. 2026

Follow-up Sampling

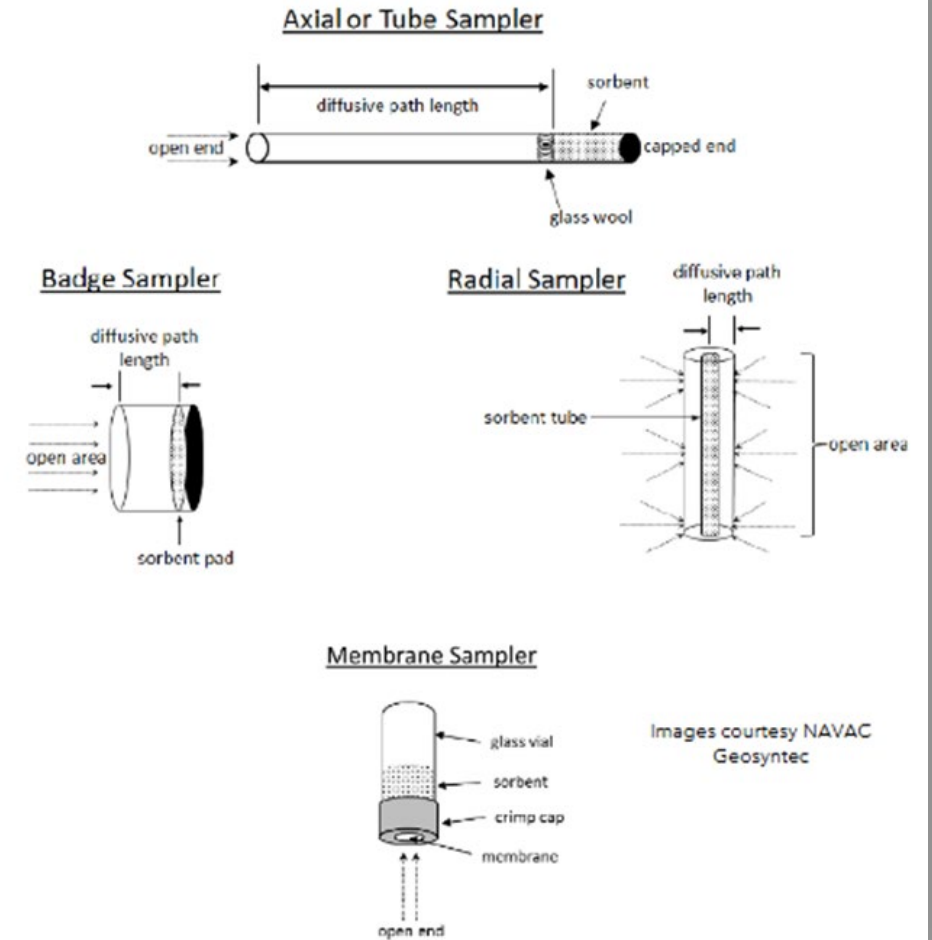
Sample Duration

- 10 days or longer
- Consider up to 28 days

Alternative Approaches

- Real time analysis and/or on-site laboratory
- Building pressure cycling
- DNR technical review recommended

Figure 14. Passive sampler types



From RR-800, Jan. 2026

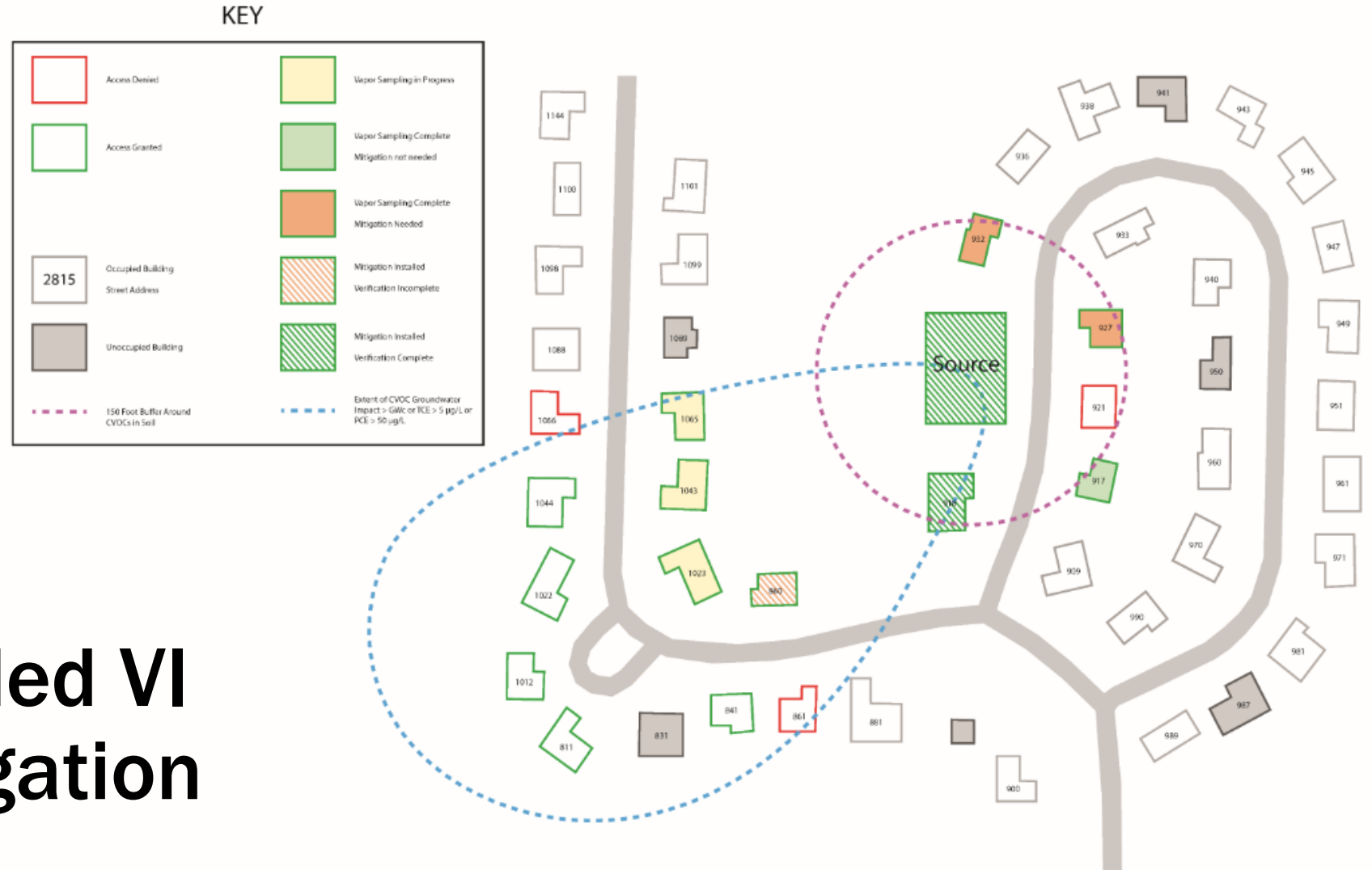
Indoor Air Sampling

Training Available

- “Passive Air Sampling for Vapor Intrusion” (Nov. 16, 2022)
- [Dnr.wi.gov](https://www.dnr.wi.gov) and search “RR Training Library”



Figure 17. Recommended VI field investigation status map



Recommended VI Field Investigation Status Map

From RR-800, Jan. 2026

Decision Matrix - TCE

Table 7. Building decision matrix for TCE

Sub-slab Vapor Concentrations of TCE	No Indoor Air Data Available for TCE	Indoor Air Concentration of TCE is < VAL	Indoor Air Concentration of TCE is ≥ VAL	Indoor Air Concentration of TCE is ≥ 3X VAL
< VRSL	Perform recommended number of vapor sampling events and evaluate data.	Perform recommended number of vapor sampling events and evaluate data.	<ul style="list-style-type: none"> Identify source of contaminated vapor (e.g., indoor source, preferential pathway) Involve the DNR Conduct immediate action Mitigation may be warranted 	<ul style="list-style-type: none"> Identify source of contaminated vapor (e.g., indoor source, preferential pathway) Involve the DNR Emergency action may be warranted Conduct immediate action Mitigation may be warranted
≥ VRSL	<ul style="list-style-type: none"> Sample indoor air with 24-72 hr TAT and reevaluate Mitigate using indoor air sampling results to inform the timeframe 	<ul style="list-style-type: none"> Mitigate within 4 to 8 weeks in residential settings (see Section 2.10.6 for other settings) Continue to monitor indoor air during mitigation 	<ul style="list-style-type: none"> Involve the DNR Conduct immediate action Mitigate within 2 weeks 	<ul style="list-style-type: none"> Involve the DNR Emergency action may be warranted Conduct immediate action Mitigate within 2 weeks
≥ 3X VRSL	<ul style="list-style-type: none"> Involve the DNR Sample indoor air with 24-72 hr TAT and reevaluate Mitigate using indoor air sampling results to inform the timeframe 	<ul style="list-style-type: none"> Involve the DNR Continue to monitor indoor air during mitigation Mitigate within 4 to 8 weeks 	<ul style="list-style-type: none"> Involve the DNR Conduct immediate action Mitigate within 2 weeks 	<ul style="list-style-type: none"> Involve the DNR Emergency action may be warranted Conduct immediate action Mitigate within 2 weeks

From RR-800, Jan. 2026

Table 8. Building decision matrix for compounds other than TCE

Sub-slab Vapor Concentrations of Substances Other than TCE	No Indoor Air Data Available	Indoor Air Concentration is < VAL	Indoor Air Concentration is ≥ VAL	Indoor Air Concentration is ≥ 3X VAL NC or ≥ 10X VAL C
< VRSL	Perform recommended number of vapor sampling events and evaluate data.	Perform recommended number of vapor sampling events and evaluate data.	<ul style="list-style-type: none"> Identify source of contaminated vapor (e.g., indoor source, preferential pathway) Mitigation may be warranted 	<ul style="list-style-type: none"> Identify source of contaminated vapor (e.g., indoor source, preferential pathway) Involve the DNR Emergency action may be warranted Conduct immediate action Mitigation may be warranted
≥ VRSL	<ul style="list-style-type: none"> Sample indoor air. Mitigate within 4 to 8 weeks 	Mitigate within 4 to 8 weeks in residential settings. See Section 2.10.6 for other settings.	Mitigate within 4 to 8 weeks	<ul style="list-style-type: none"> Involve the DNR Emergency action may be warranted Conduct immediate action Mitigate within 4 to 8 weeks
≥ 3X VRSL NC or ≥ 10X VRSL C	<ul style="list-style-type: none"> Involve the DNR Sample indoor air with 24-72 hr TAT Mitigate within 4 to 8 weeks 	<ul style="list-style-type: none"> Involve the DNR Mitigate within 4 to 8 weeks 	<ul style="list-style-type: none"> Involve the DNR Mitigate within 4 to 8 weeks 	<ul style="list-style-type: none"> Involve the DNR Emergency action may be warranted Conduct immediate action Mitigate within 4 to 8 weeks

From RR-800, Jan. 2026

Decision Matrix – Other Compounds

Conduit Sampling

Training Available

- “Investigation of Vapor Intrusion Along the Conduit Pathway” (Nov. 11, 2024)
- [Dnr.wi.gov](https://dnr.wi.gov) and search “RR Training Library”

Updates Planned:

Guidance for Documenting the Investigation of Human-made Preferential Pathways Including Utility Corridors (RR-649)

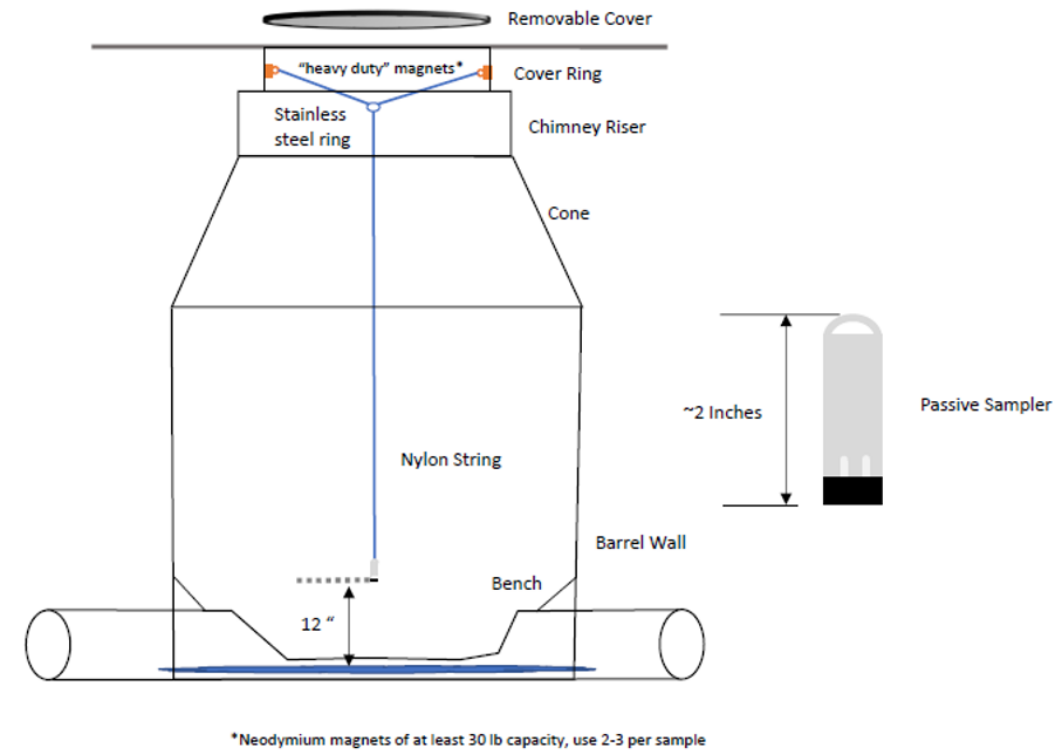


Figure 13: Sewer diagram

From RR-800, Jan. 2026

Recommendations for Redevelopment

Involve DNR early

Incorporate sampling in construction schedule

Use passive soil gas sampling to characterize source

Consider pre-redevelopment remediation

Plan for construction quality assurance (CQA) best practices



During Investigation: Recommendations for Redevelopment

Plan for incremental sampling throughout redevelopment

Assess off-gassing building materials

Consider preferential pathways

Plan for mitigation

Perform comprehensive indoor air sampling before occupancy



Questions?



Mitigation

Active sub-slab depressurization system (SSDS) is preferred where feasible

Other mitigation options included

Active notifications

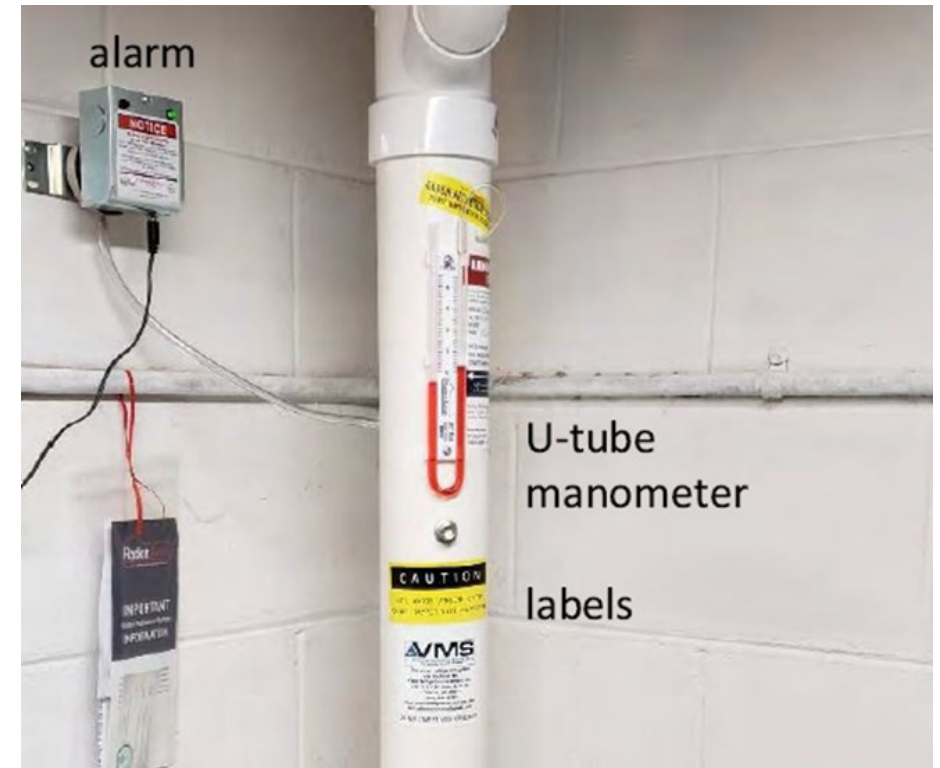
Coordination recommendations

Commissioning recommendations

Operation, maintenance & monitoring (OM&M) plan elements

Hiring Mitigation Contractors

- Recommend qualified mitigation contractors
- Installation of basic system components:
 - Fan oriented vertically
 - Fan placement and pressurized pipe located outside or above occupied space
 - Manometer on negative pressure side of fan



Assignment of Continuing Obligations at Interim Action for Vapor Mitigation Systems

- Maintain vapor mitigation system (VMS)
- Maintain sump/hydraulic control
- Future vapor risk (building modifications)
- Submit inspection logs annually for CVOCs
- Assignment to responsible party and/or property owner
- Process under development

Wis. Stat. § 292.12(2)



Other Topics in RR-800

Elements of a vapor intrusion field investigation

Special concern with TCE

Public outreach, community engagement and property access considerations

Common sources of background indoor air

New construction considerations

Canister sub-slab vapor sampling

Active notification & telemetry

dnr.wi.gov and search “Vapor”

Considerations

- CSMs may be used to drive the investigation and mitigation design
- Multiple lines of evidence for justifying recommendations and decisions
- Evaluate remedial action options (Wis. Admin. Code ch. NR 722) to minimize need for long-term OM&M of VMS
- Mitigation & remedial action required where VRSLs exceeded (Wis. Admin. Code § NR 726.05(8)(b))
- Request DNR technical assistance with review fee (NR 749)



Questions?



Vapor Quick Lookup Tables (RR-0136)

- VALs and sub-slab VRSLs listed for 19 chemicals
- Residential, Small Commercial and Large Commercial/Industrial use categories
- Includes molecular weight and carcinogen vs. non-carcinogen basis
- Includes appropriate attenuation factors
- Instruction for conversion between ppbV and $\mu\text{g}/\text{m}^3$

Wisconsin DNR



Remediation and Redevelopment

March 2026

Guidance: Vapor Quick Lookup Tables (RR-0136) Vapor Action Levels, Vapor Risk Screening Levels and Attenuation Factors

Purpose

The purpose of this guidance is to provide a set of summary tables for indoor air vapor action levels (VALs) and sub-slab, soil gas and groundwater vapor risk screening levels (VRSLs) for chemicals commonly found in Wisconsin, and instructions for determining or calculating VALs or VRSLs for additional contaminants. The values are based on **November 2024** U.S. Environmental Protection Agency (U.S. EPA) Regional Screening Levels (RSLs). The U.S. EPA periodically reviews the values.

Related Guidance

Wisconsin Department of Natural Resources (DNR) publications and forms referenced in this document include a number beginning with "RR-" or "4400-." Locate these publications and forms by visiting dnr.wi.gov and searching for the number.

- *History of Changes to Vapor Quick Lookup Tables (RR-0137)*
- *Guidance for Documenting the Investigation of Human-made Preferential Pathways Including Utility Corridors (RR-649)*
- *Vapor Intrusion Guidance (RR-800)*

Find additional DNR guidance on this topic by visiting dnr.wi.gov and searching "vapor."

Tables

Table 1. Indoor air VALs and sub-slab VRSLs (in $\mu\text{g}/\text{m}^3$)	4
Table 2. Indoor air VALs and sub-slab VRSLs (in ppbV)	5
Table 3. Recommended default attenuation factors	6
Table 4. PCE and TCE groundwater VRSLs regardless of property use (in $\mu\text{g}/\text{L}$).....	9
Table 5. Groundwater VRSLs where groundwater is >5 feet from building foundation (in $\mu\text{g}/\text{L}$).....	12
Table 6. Groundwater VRSLs where groundwater is \leq 5 feet from building foundation (in $\mu\text{g}/\text{L}$).....	13
Table 7. Groundwater VRSLs where groundwater contacts the building foundation (in $\mu\text{g}/\text{L}$).....	14

This document is intended solely as guidance and does not contain any mandatory requirements except where requirements found in statute or administrative rule are referenced. Any regulatory decisions made by the Department of Natural Resources in any matter addressed by this guidance will be made by applying the governing statutes and administrative rules to the relevant facts.

The Wisconsin Department of Natural Resources (DNR) is committed to promoting diversity, fairness, equity and the principles of environmental justice. We ensure that we do not discriminate in employment, programs, decisions, actions or delivery of services. If you have questions or to request information in an alternative format (large print, Braille, audio tape, etc.), please contact us at 888-936-7463 or <https://dnr.wisconsin.gov/About/Nondiscrimination>.

For additional assistance, contact a DNR vapor intrusion specialist; go to dnr.wi.gov and search "Vapor Intrusion Contacts."

Updates

- Split VAL and sub-slab VRSL tables into $\mu\text{g}/\text{m}^3$ & ppbV
- PCE and TCE groundwater screening values
- Groundwater VRSLs calculated for 19 chemicals in:
 - Each use category and
 - All three vertical categories
- Examples
- Accessibility requirements

Groundwater VRSL Quick Lookup Tables

Table 5. Groundwater VRSLs where groundwater is >5 feet from building foundation (in $\mu\text{g}/\text{L}$)

Chemical (in order reported on VISL)	Residential Groundwater VRSL (AF = 0.001)	Small Commercial Groundwater VRSL (AF = 0.001)	Large Commercial / Industrial Groundwater VRSL (AF = 0.0003)
Benzene	16	69	230
Carbon Tetrachloride	4.2	18	60
Chloroform	8.1	36	120
Chloromethane	260	1,100	3,600
Dichlorodifluoromethane (Freon-12)	7.4	31	100
1,1-DCA	76	330	1,100
1,2-DCA	22	98	330
1,1-DCE	3.9	16	54
1,2-DCE, cis-	250	1,100	3,500
1,2-DCE, trans-	110	460	1,500
Ethylbenzene	35	150	510
Methylene Chloride	4,700	20,000	66,000
Naphthalene	46	200	670
PCE	See Table 4	See Table 4	See Table 4
1,1,1-TCA	7,400	31,000	104,000
TCE	See Table 4	See Table 4	See Table 4
Trichlorofluoromethane (Freon-11)	NE	NE	NE
Vinyl Chloride	1.5	25	82
Xylene (mix)	390	1,600	5,400

From RR-0136, March 2026

History of Changes to Vapor Quick Lookup Tables (RR-0137)

Remains the same:

- Historical VALs, sub-slab VRSLs and sub-slab attenuation factors listed for 7 chemicals
- Residential, Small Commercial and Large Commercial/Industrial use categories

Updated:

- Accessibility requirements
- Split tables into $\mu\text{g}/\text{m}^3$ & ppbV



History of Changes to Vapor Quick Lookup Tables (RR-0137) Vapor Action Levels, Vapor Risk Screening Levels and Attenuation Factors

Purpose

The purpose of this guidance is to supplement *Guidance: Vapor Quick Lookup Tables (RR-0136)* and is intended to be used in understanding previous site-specific decisions regarding vapor data. Use *Guidance: Vapor Quick Lookup Table (RR-0136)* to make current site-specific decisions.

Related Guidance

Wisconsin Department of Natural Resources (DNR) publications and forms referenced in this document include a number beginning with "RR-" or "4400-." Locate these publications and forms by visiting dnr.wi.gov and searching for the number.

- *Guidance: Vapor Quick Lookup Tables (RR-0136)*
- *Guidance for Documenting the Investigation of Human-made Preferential Pathways Including Utility Corridors (RR-649)*
- *Vapor Intrusion Guidance (RR-800)*

Find additional DNR guidance on this topic by visiting dnr.wi.gov and searching "vapor." For additional assistance, contact a DNR vapor intrusion specialist; go to dnr.wi.gov and search "Vapor Intrusion Contacts."

Tables

Table 1. Indoor air VALs, sub-slab VRSLs and AFs for PCE (in $\mu\text{g}/\text{m}^3$)	3
Table 2. Indoor air VALs, sub-slab VRSLs and AFs for PCE (in ppbV)	3
Table 3. Indoor air VALs, sub-slab VRSLs and AFs for TCE (in $\mu\text{g}/\text{m}^3$)	3
Table 4. Indoor air VALs, sub-slab VRSLs and AFs for TCE (in ppbV)	4
Table 5. Indoor air VALs, sub-slab VRSLs and AFs for cis-1,2-DCE (in $\mu\text{g}/\text{m}^3$)	4
Table 6. Indoor air VALs, sub-slab VRSLs and AFs for cis-1,2-DCE (in ppbV)	4
Table 7. Indoor air VALs, sub-slab VRSLs and AFs for trans-1,2-DCE (in $\mu\text{g}/\text{m}^3$)	5
Table 8. Indoor air VALs, sub-slab VRSLs and AFs for trans-1,2-DCE (in ppbV)	5
Table 9. Indoor air VALs, sub-slab VRSLs and AFs for vinyl chloride (in $\mu\text{g}/\text{m}^3$)	5
Table 10. Indoor air VALs, sub-slab VRSLs and AFs for vinyl chloride (in ppbV)	6
Table 11. Indoor air VALs, sub-slab VRSLs and AFs for benzene (in $\mu\text{g}/\text{m}^3$)	6
Table 12. Indoor air VALs, sub-slab VRSLs and AFs for benzene (in ppbV)	6
Table 13. Indoor air VALs, sub-slab VRSLs and AFs for naphthalene (in $\mu\text{g}/\text{m}^3$)	7
Table 14. Indoor air VALs, sub-slab VRSLs and AFs for naphthalene (in ppbV)	7

This document is intended solely as guidance and does not contain any mandatory requirements except where requirements found in statute or administrative rule are referenced. Any regulatory decisions made by the Department of Natural Resources in any matter addressed by this guidance will be made by applying the governing statutes and administrative rules to the relevant facts.

The Wisconsin Department of Natural Resources (DNR) is committed to promoting diversity, fairness, equity and the principles of environmental justice. We ensure that we do not discriminate in employment, programs, decisions, actions or delivery of services. If you have questions or to request information in an alternative format (large print, Braille, audio tape, etc.), please contact us at 888-936-7463 or <https://dnr.wisconsin.gov/About/Nondiscrimination>.



MYWISCONSIN ID

The state of Wisconsin and the Wisconsin Department of Natural Resources (DNR) are committed to providing secure access to systems for customers.

As part of this commitment, the DNR (along with all other state agencies) is planning a significant upgrade to authentication systems, transitioning from the current Web Access Management Systems (WAMS) and Wisconsin Logon Management System (WILMS) platforms to the Wisconsin Department of Administration's new, state-of-the-art MyWisconsin ID system.

A MyWisconsin ID is a single personal account for each customer, which will provide secure access to state agency systems. The goal at the DNR is to migrate all systems and SharePoint sites accessed by customers currently using WAMS or WILMS to MyWisconsin ID.

WHY IS THIS IMPORTANT?

The current legacy authentication systems (WAMS and WILMS) were built with old technology and will no longer be available by December 2026. MyWisconsin ID uses modern authentication that provides better functionality and security.

All DNR applications that previously used WAMS or WILMS are scheduled to be migrated to MyWisconsin ID by June 2026.

About the DNR

- Additional Resources**
- [MyWisconsin ID General Information](#)
 - [MyWisconsin ID Self Registration](#)
 - [MyWisconsin ID Account Management](#)
 - [MyWisconsin ID FAQs](#)



MyWisconsin ID

<https://dnr.wisconsin.gov/MyWisconsinID>

ACCESSGOV



Public User

Wisconsin State Employee

NIC Employee

Access.gov

Vapor Intrusion Building Evaluation (4400-011)

Tool for investigation & mitigation

Auto-saves

Allows upload of photos

Provides downloadable PDF

<https://wi.accessgov.com/dnr/Forms/Page/rr-dvit/form4400-011/>

✓ Introduction
✓ Preparer
✓ Site Information
Contact Information
Building Information
Foundation
Floors
Surrounding Features
Potential Vapor Sources
Heating Ventilation and Air Conditioning (HVAC)
Mitigation
Attachments
Acknowledgement

Bureau for Remediation and Redevelopment Tracking System Number (BRRTS No)

4400-011 Vapor Intrusion Building Evaluation (VIBE)

✓ Introduction

✓ Preparer

⚠ Site Information

Contact Information

Building Information

✓ Foundation

Instructions: Enter the 10-digit BRRTS No. for the site that is the source of contamination; the DNR Activity (Site) Name associated with the BRRTS No. will auto-populate. The BRRTS No. can be found by searching BRRTS on the Web (BOTW) or RR Sites Map; go to dnr.wi.gov and search "BOTW" or "RRSM".

Note: If there is no assigned BRRTS No. or it is unknown, you may enter 00-00-000000, to submit as "unknown".

BRRTS No. ⓘ*

ⓘ BRRTS No. is required.

ⓘ Please enter a valid BRRTS number or 00-00-000000 if unknown.

Date inspection initiated ⓘ*

Form 4400-011

Example: Building Foundation Information

Foundation type ⓘ
-- Select an option --

Foundation material (check all that apply)

Concrete

Earthen

Other

Basement or crawlspace depth ⓘ

Feet

Mitigation system present?

-- Select an option --

Vapor barrier present ⓘ

-- Select an option --

Sub-grade material ⓘ

-- Select an option --

Foundation thickness ⓘ

Inches

Foundation condition

-- Select an option --

Foundation wetness

-- Select an option --

Foundation wall material (check all that apply)

Poured concrete

Block hollow

Block filled

Field stone

Other

Is the foundation concrete sealed? ⓘ

-- Select an option --

Is a sump present?

-- Select an option --

Visible gaps around utility penetrations?

-- Select an option --

Sub-foundation ductwork, chases, or oversize conduits present?

-- Select an option --

Number of floor drains observed? **Number of cleanouts observed?**

Plumbing vent stack material

PVC

Cast Iron

Lead

Unknown

Other

Foundation comments

[< Previous](#) [Save and Exit](#) [Next >](#)

Form 4400-011

Helpful Features Included

Informational Pop-Ups

Foundation type ⓘ
-- Select an option --

Foundation material (check all that apply)
 Concrete
 Earthen
 Other

Basement or crawlspace depth ⓘ
 Feet

Mitigation system present?
-- Select an option --

Vapor barrier present ⓘ
-- Select an option --

Foundation thickness ⓘ
 Inches

Foundation wetness
-- Select an option --

Foundation wall material (check all that apply)
 Poured concrete
 Block hollow
 Block filled
 Field stone
 Other

The material directly below the foundation, typically 0 to 2 feet beneath.

Sub-grade material ⓘ
-- Select an option --
Coarse grained fill
Coarse grained native
Fine grained fill
Fine grained native
Unknown

Secondary Questions

Is a sump present?
Yes

Number of sump(s)?
2

Name ⓘ

How is the sump constructed?
-- Select an option --

Is the top of the sump sealed?
-- Select an option --

Is liquid present in the sump at any time?
-- Select an option --

Where does the sump receive liquid from?
-- Select an option --

Sump discharge location?
-- Select an option --

Name ⓘ

How is the sump constructed?
-- Select an option --

Is the top of the sump sealed?
-- Select an option --

Is liquid present in the sump at any time?
-- Select an option --

Where does the sump receive liquid from?
-- Select an option --

Sump discharge location?
-- Select an option --

Form 4400-011

Finalize Form to Generate PDF

Form 4400-011

Introduction Page

The screenshot shows the top navigation bar with the Wisconsin Department of Natural Resources logo and the text "WISCONSIN DEPARTMENT OF NATURAL RESOURCES". On the right side of the bar are the links "HOME" and "LO". Below the bar, the main heading is "4400-011 Vapor Intrusion Building Evaluation (VIBE)". Underneath this heading, it says "State of Wisconsin Department of Natural Resources" and "Form 4400-011 (R 03/2026)". The instructions state: "Instructions: This form is a tool for environmental professionals. To deliver a completed form to the DNR, include the completed form in a report through the DNR's RR Submittal Portal."

Acknowledgment Page

The screenshot shows the Acknowledgment page for Form 4400-011. On the left, there is a progress indicator with four items: "Introduction", "Preparer", "Site Information", and "Contact Information", each with a green checkmark. A red circle with the number "1" is positioned over the "Acknowledgement*" section. The text in this section reads: "Acknowledgement* I acknowledge understanding clicking 'Finalize Form' generates a PDF of the form with information entered. To include the information in a specific DNR site file in BRRTS, the final PDF for this form must be downloaded, incorporated into a report (e.g., Status Update, Site Investigation Report, Vapor Mitigation System Design Report) and submitted through the DNR's RR Submittal Portal." Below this text are three buttons: "< Previous", "Save and Exit", and "Finalize Form". A red circle with the number "2" is positioned over the "Finalize Form" button. A red annotation "Read and check acknowledgment box" points to the acknowledgment text. Another red annotation "Click 'Finalize Form' to generate a downloadable PDF" points to the "Finalize Form" button.

Blank Sample PDF

Use for preparation and training only

Form 4400-011

4400-011 Vapor Intrusion Building Evaluation (VIBE)

3/18/2026 9:27:37AM

Introduction

State of Wisconsin Department of Natural Resources

Form 4400-011 (R 03/2026)

Instructions: This form is a tool for environmental professionals. To deliver a completed form to the DNR, include the completed form in a report through the DNR's [RR Submittal Portal](#).

This form provides a consistent format for collecting building-specific information. This form may be used to collect information relevant to development of a conceptual site model, selecting vapor sampling locations and interpreting results at buildings sampled as part of a vapor intrusion investigation conducted under Wis. Admin. Code § NR 716.11(5). This form is also intended to aid the user in the selection and design of applicable mitigation systems under Wis. Admin. Code § NR 708.11 and ch. NR 724, as applicable. Check information bubbles ^① for additional explanation relating to an item. Explain any clarifications in "General building comments" on the "Building Information" tab.

The form includes a broad range of building characteristics not applicable to every building. Some information may not be available or seem relevant during the initial walk-through. However, since this form is intended to assist with vapor investigations, data interpretation and mitigation system design, the DNR recommends the user collect as much information as possible. The user may save the form in draft to update at a later time, prior to finalizing the form.

The form is designed to list one address per form. DNR recommendations for buildings with multiple units or addresses:

- Uniform foundation (e.g., duplex, mixed use first floor commercial/upper residential, condominiums, slab-on-grade strip mall) – One form for building with first address listed. Add additional unit addresses under "General building information" on the "Building Information" tab.
- Variable foundation or distinct building additions (e.g., strip mall with basement under one unit, slab-on-grade under two units) – Form for unit with basement. Second form for slab-on-grade units with one address listed and additional address added under "General building information" on the "Building Information" tab.

Please direct questions on this form to the DNR Project Manager for a Site, or go to dnr.wi.gov, and search "Vapor Intrusion Contacts".

Preparer

Name: Borski, Jennifer - DNR

Email: Jennifer.Borski@wisconsin.gov

Affiliation: Sample for training purposes-JB

Street: Minimum information entered in required fields and to trigger secondary prompts-JB

Vapor Mitigation System Inspection Log (4400-321)

Form for annual inspection

Auto-saves

Allows upload of photos

Informational pop-ups

Secondary questions

Provides downloadable PDF (with photos in zip file)

“Submit” to DNR without using RR Submittal Portal

<https://wi.accessgov.com/dnr/Forms/Page/rr-dvit/form4400-321/>

Features

Users will...

- Complete online
- Answer the prompts, upload photos
- Click Submit (No RR Submittal Portal)
- Get downloadable PDF of Report

DNR will...

- Review submittals
- Track in BRRTS

4400-321 Vapor Mitigation System Inspection Log

✓ Introduction
⚠ Site Information
⚠ Fans and Vacuum Monitors
Indoor Vent Pipe
Outdoor Vent Pipe
Foundation Floor
Sealed Sump
Sub Slab Vapor Port
Building Ventilation
Building Additions/Modifications
Telemetry Systems
Comments/Notes
Review

Fans and Vacuum Gauges

Vapor mitigation system fans vent contaminated soil gas from below the building and have a measurable vacuum to protect air inside the building. Fans should be replaced with a fan having similar specifications.

All fans should have a manometer or differential pressure gauge. If the manometer is level or gauge reads zero, then the fan is not functioning.

Fans typically operate quietly. If the bearings in fan motor are rattling, this is the cause and repair if needed.

On large buildings, larger exterior blowers (not fans) may be used.



Example of vapor mitigation fan; typically located on the exterior.



Example of vacuum gauge mounted to the interior wall.

How many fans are part of the vapor mitigation system? *

ⓘ Response required

Fans and vacuum photo 1

No file chosen

Additions – Building Use & Modifications

Date of Inspection *

MM-DD-YYYY



Current use of the building (select all that apply)*

- Residential (home, apartments, condos, etc.)
- Child care (in-home, commercial or church space)
- Elder care facility
- School or church
- Hospital or medical clinic
- Hotel, vacation rental or temporary housing
- Offices
- Storage or warehouse
- Vacant
- Other

Building Additions/Modifications

If a building receives a new addition or is otherwise modified, then the DNR should be contacted to document this change and determine what actions, if any, are needed to verify that the vapor mitigation system is able protect the indoor air in the updated building.

Was there an addition or modification to the building foundation since the last inspection? *

-- Select an option --

Response required

Is a building addition or modification planned before the next inspection? *

-- Select an option --

Response required

Building additions/modifications photo 1 ⓘ

Choose File No file chosen

+ Add

Notes

Additions – Telemetry

Telemetry Systems

These are automated systems that collect and remotely record specific measurements for a vapor mitigation system. Telemetry systems are more likely to be used in multi-family housing or to address unique circumstances.

Does the vapor mitigation system include telemetry monitoring? *

Yes

Instructions: Submit a record of the parameters collected by the telemetry system since the last inspection to DNRRRVapor@wisconsin.gov. Include the BRRTS No. and/or property address in the email.

Telemetry systems photo 1 ⓘ

Choose File No file chosen

+ Add

Notes

Blank Sample PDF

Form 4400-321

4400-321 Vapor Mitigation System Inspection Log

3/18/2026 10:42:37AM

Introduction

State of Wisconsin Department of Natural Resources

Form 4400-321 (R 03/2026)

Notice: Personal information collected will be used for administrative purposes and may be provided to requesters to the extent required by Wisconsin's Public Records law [ss. 19.31-19.39, Wis. Stats.].

Directions: Use this form to document the inspection and maintenance of a vapor mitigation system when it is required as a continuing obligation under Wis. Admin. Code § NR 727.05(1)(b)3 or Wis. Stat. § 292.12(2)(c).

Refer to the Operation, Monitoring and Maintenance Plan for the vapor mitigation system and the Department of Natural Resources (DNR) approval letter establishing the continuing obligations for the property for site-specific requirements.

- Paper copies should be available at the property, or at a location specified in the DNR's approval letter.
- PDF copies can be downloaded from [DNR's Bureau of Remediation and Redevelopment System \(BRRTS\) database](#) by searching the BRRTS No. or DNR Activity (Site) Name for the source property. See Instruction under "Site Information" for how locate the BRRTS No. and/or DNR Activity (Site) Name.

Site Information

BRRTS No.: 00-00-000000

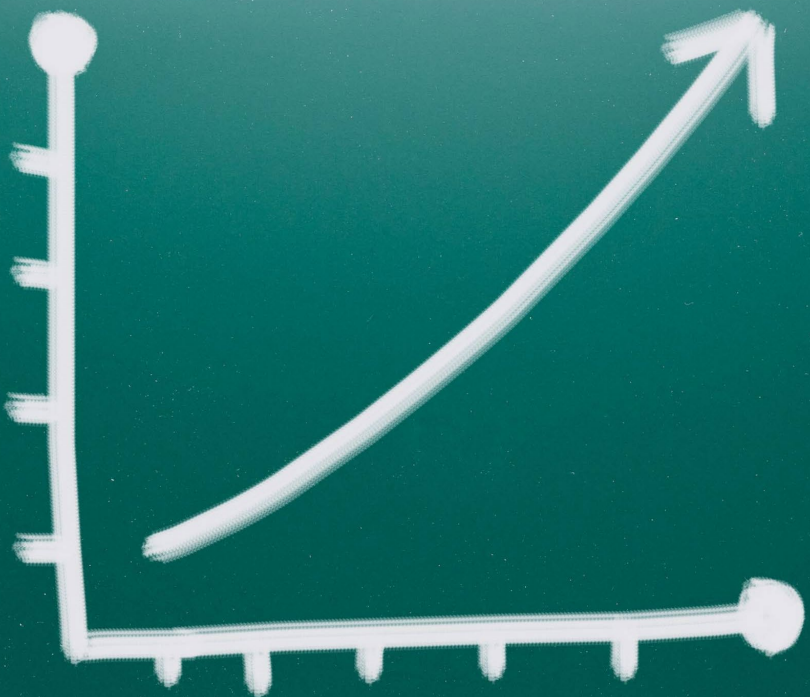
DNR Activity (Site) Name: Unknown

Property Address of Inspection: Sample for training purposes -JB

City: Oshkosh

State: WI

Date of Inspection: 03-18-2026



Learning Curve

Questions?



Dry Cleaner and Vapor Intrusion (DVIT) Team

Statewide

- **Jennifer Borski**
VI Team Leader
- **Jim Walden**
Statewide VI Technical Expert
- **Joe Martinez**
Southeast Region VI Technical Specialist

Leadership

- **Pam Mylotta**
Team Sponsor (Southeast Region Supervisor)
- **Judy Fassbender**
Complex Projects & Technical Resources
Section Manager

Regional Assistance

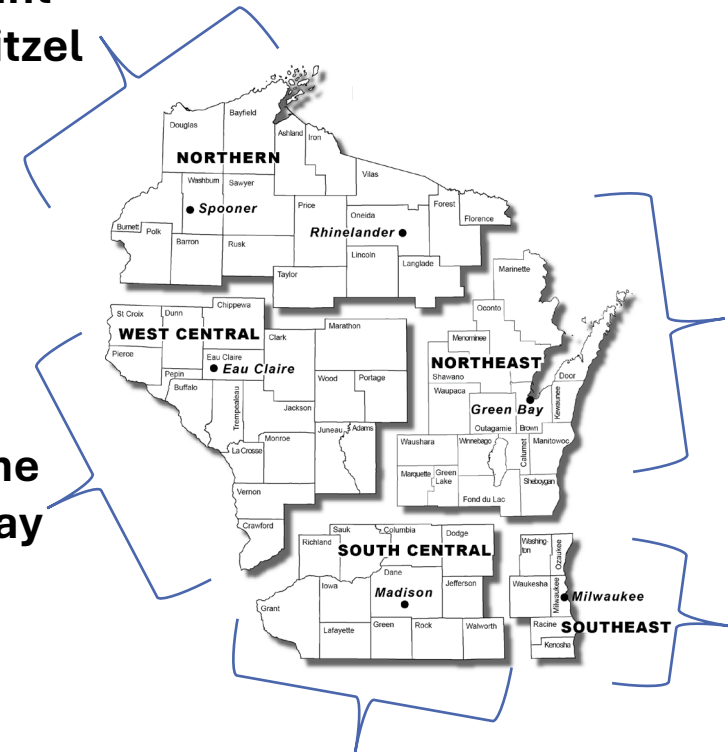
**Grant
Neitzel**

**Jane
Gray**

**Cindy
Koepke**

**Josie
Schultz**

**Connor
Mulcahy &
Zach
Henderson**



Technical Assistance and Fees

- Use Form 4400-237
- Submit appropriate fees (Wis. Admin. Code ch. NR 749)

Section 3. Request for Technical Assistance or Post-Closure Modification

Select the type of technical assistance requested: **[Numbers in brackets are for WI DNR Use]**

- No Further Action Letter (NFA) (Immediate Actions) - NR 708.09, [183] - Include a fee of \$350. Use for a written response to an immediate action after a discharge of a hazardous substance occurs. Generally, these are for a one-time spill event.
- Review of Site Investigation Work Plan - NR 716.09, [135] - **Include a fee of \$700.**
- Review of Site Investigation Report - NR 716.15, [137] - **Include a fee of \$1050.**
- Approval of a Site-Specific Soil Cleanup Standard - NR 720.10 or 12, [67] - **Include a fee of \$1050.**
- Review of a Remedial Action Options Report - NR 722.13, [143] - **Include a fee of \$1050.**
- Review of a Remedial Action Design Report - NR 724.09, [148] - **Include a fee of \$1050.**
- Review of a Remedial Action Documentation Report - NR 724.15, [152] - **Include a fee of \$350**
- Review of a Long-term Monitoring Plan - NR 724.17, [25] - **Include a fee of \$425.**
- Review of an Operation and Maintenance Plan - NR 724.13, [192] - **Include a fee of \$425.**

Other Technical Assistance - s. 292.55, Wis. Stats. [97] (For request to build on an abandoned landfill use Form 4400-226)

- Schedule a Technical Assistance Meeting - **Include a fee of \$700.**
- Hazardous Waste Determination - **Include a fee of \$700.**
- Other Technical Assistance - **Include a fee of \$700.** Explain your request in an attachment.

Training Available

Training Library (Past)

- dnr.wi.gov, search “Training Library”

Issues & Trends (Future)

- dnr.wi.gov, search “Training”
 - July 16, 2026: *Deep Dive into Vapor Intrusion: Application of RR-800*
 - September 17, 2026: *Conduit Vapor Intrusion: Application of RR-649 and RR-800*

Additional Resources

- DNR Vapor Intrusion Resources: dnr.wi.gov, search “Vapor”
- Interstate Technology Regulatory Council (ITRC) Jan 2026 Vapor Intrusion Toolkit: <https://itrcweb.org/vapor-intrusion-toolkit/>
- ITRC free webinar training: <https://itrcweb.org/online-training/>
- Association of Vapor Intrusion Professionals – Best Practices Docs: <https://avip.memberclicks.net/>
- ANSI/AARST Soil Gas Mitigation Standards: <https://standards.aarst.org/>



Stay Up-to-date: Subscribe to the RR Report



dnr.wi.gov, search “RR Report”

CONNECT WITH US

Jennifer Borski

Jennifer.Borski@wisconsin.gov

920-360-0853



@WIDNR



@WI_DNR



/WIDNRTV



"WILD WISCONSIN:
OFF THE RECORD"