2026 Wisconsin Vapor Intrusion Guidance

Updated Recommendations for Vapor Investigation & Mitigation

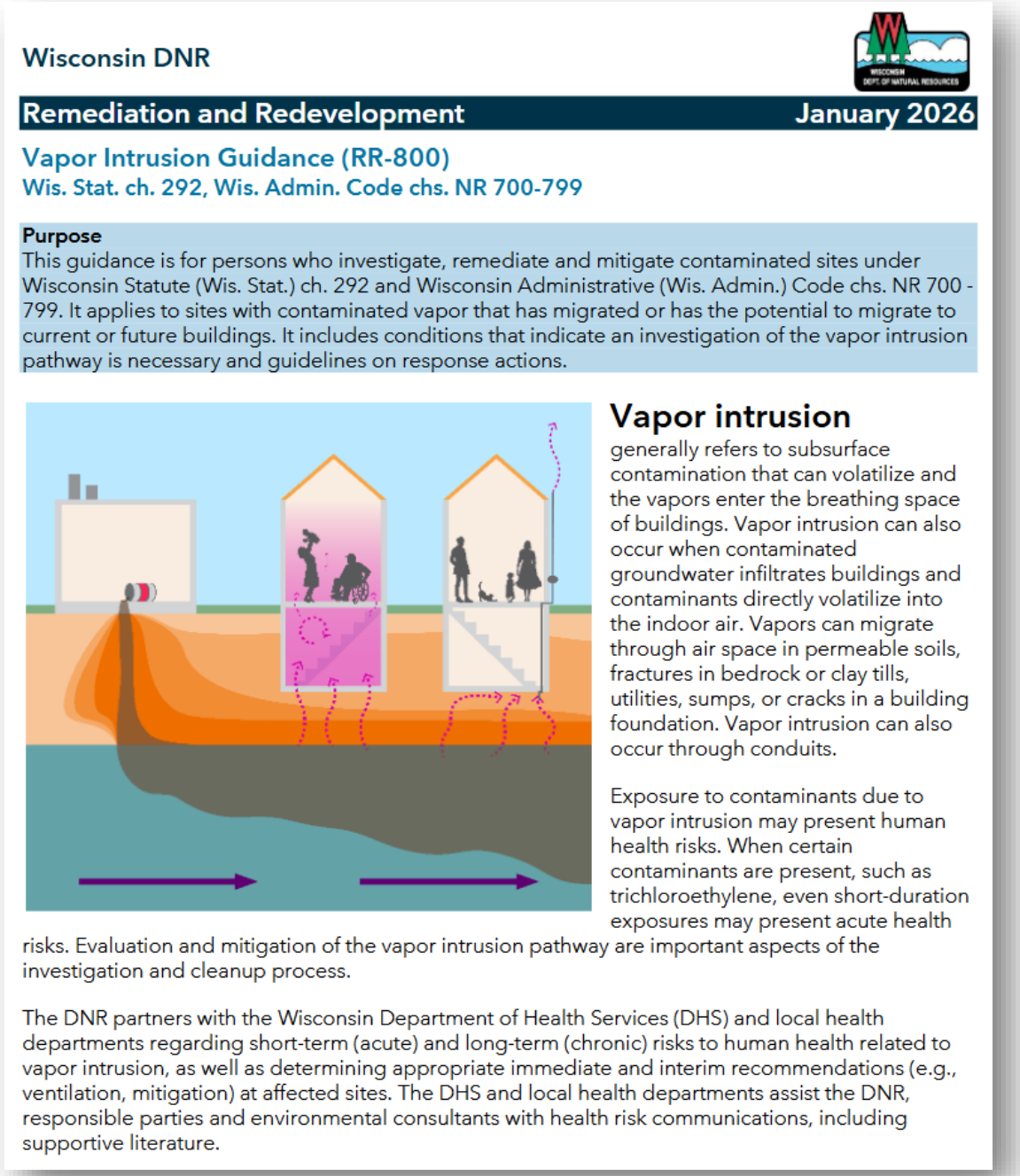
Indoor Environments 2026 - Radon and Vapor Intrusion Symposium
Norfolk, Virginia
October 5, 2026

Jennifer Borski, Vapor Intrusion Team Leader

Vapor Intrusion Guidance (RR-800)

Now Available!

Visit dnr.wi.gov and search "RR-800"



Wisconsin DNR

Remediation and Redevelopment January 2026

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.

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.

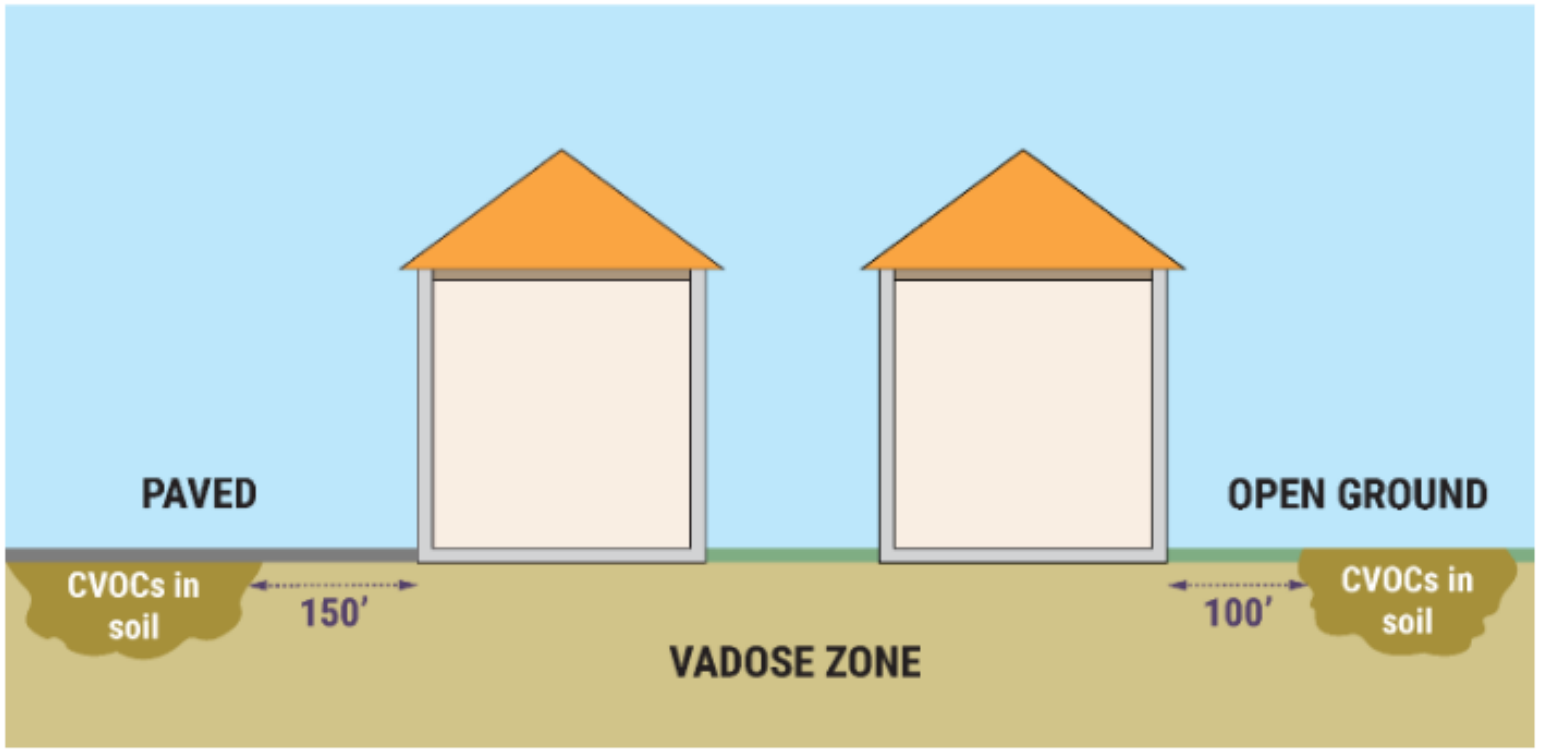
Guidance Includes

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



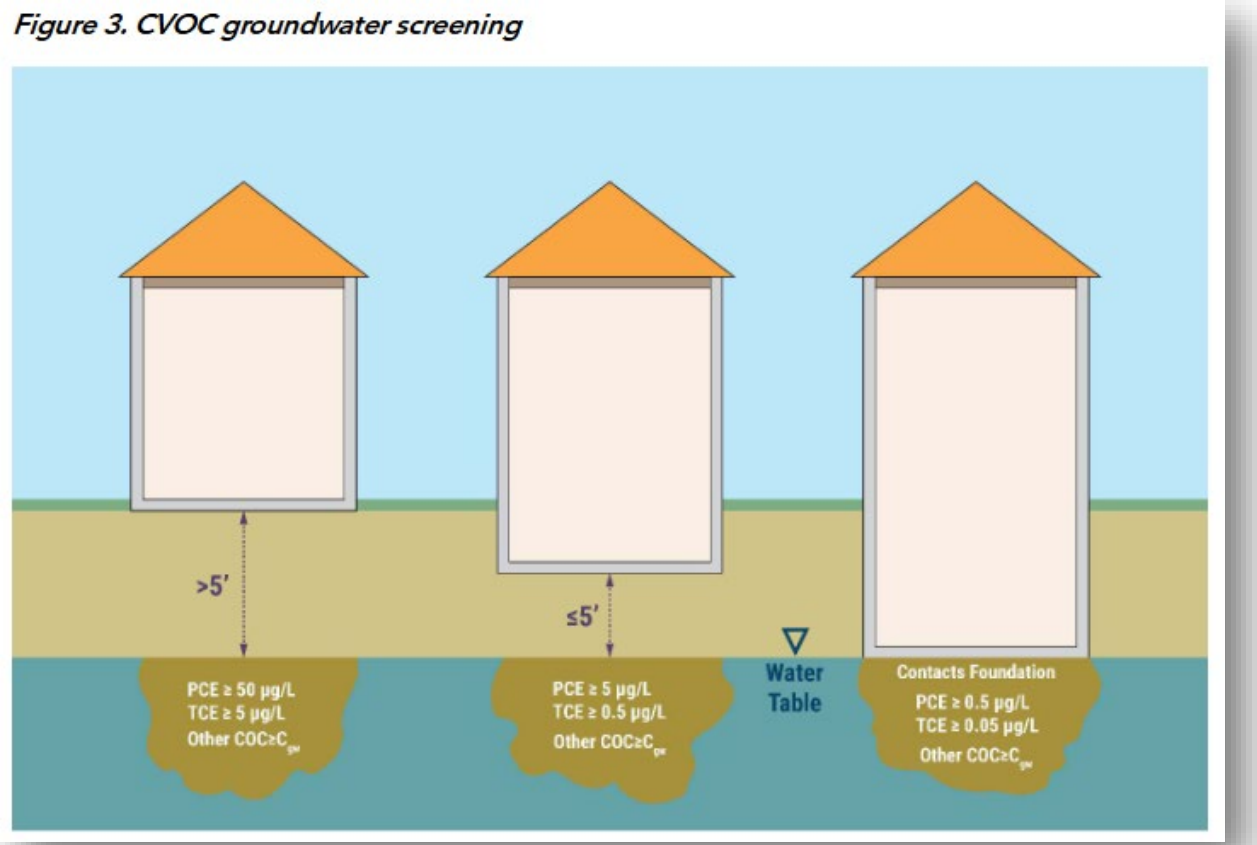
Soil Screening for Chlorinated Volatile Organic Compounds (CVOCs)

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



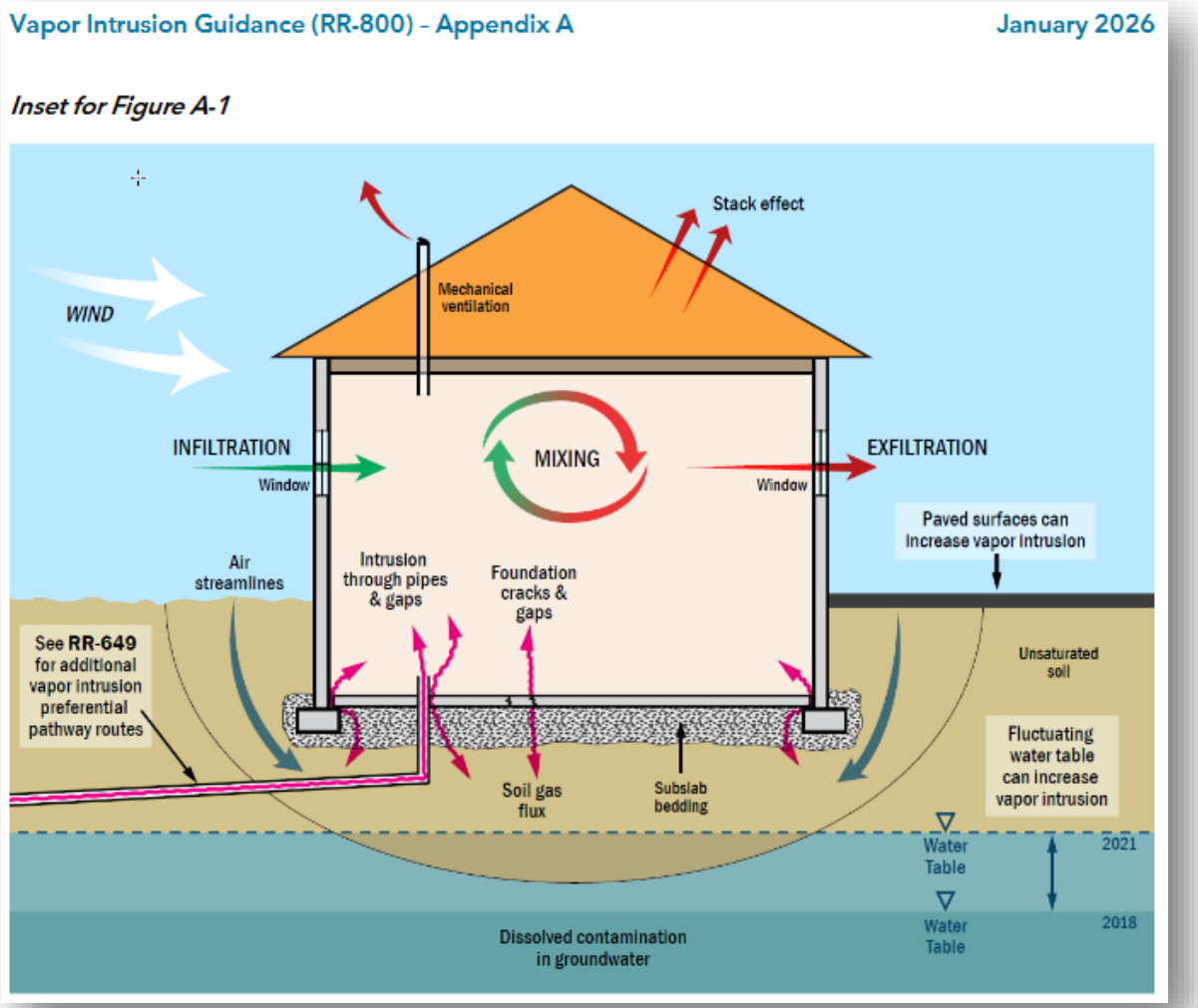
Based on distance from base of building foundation to groundwater water table:

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

From RR-800, Jan. 2026

Value of a Conceptual Site Model (CSM)

- Industry Best Management Practice
- Helps frame complex sites
- Helps evaluate actual or potential health impacts
- Find help in RR-800
  - CSM Boundary
  - Addressing variability
  - Recommended elements



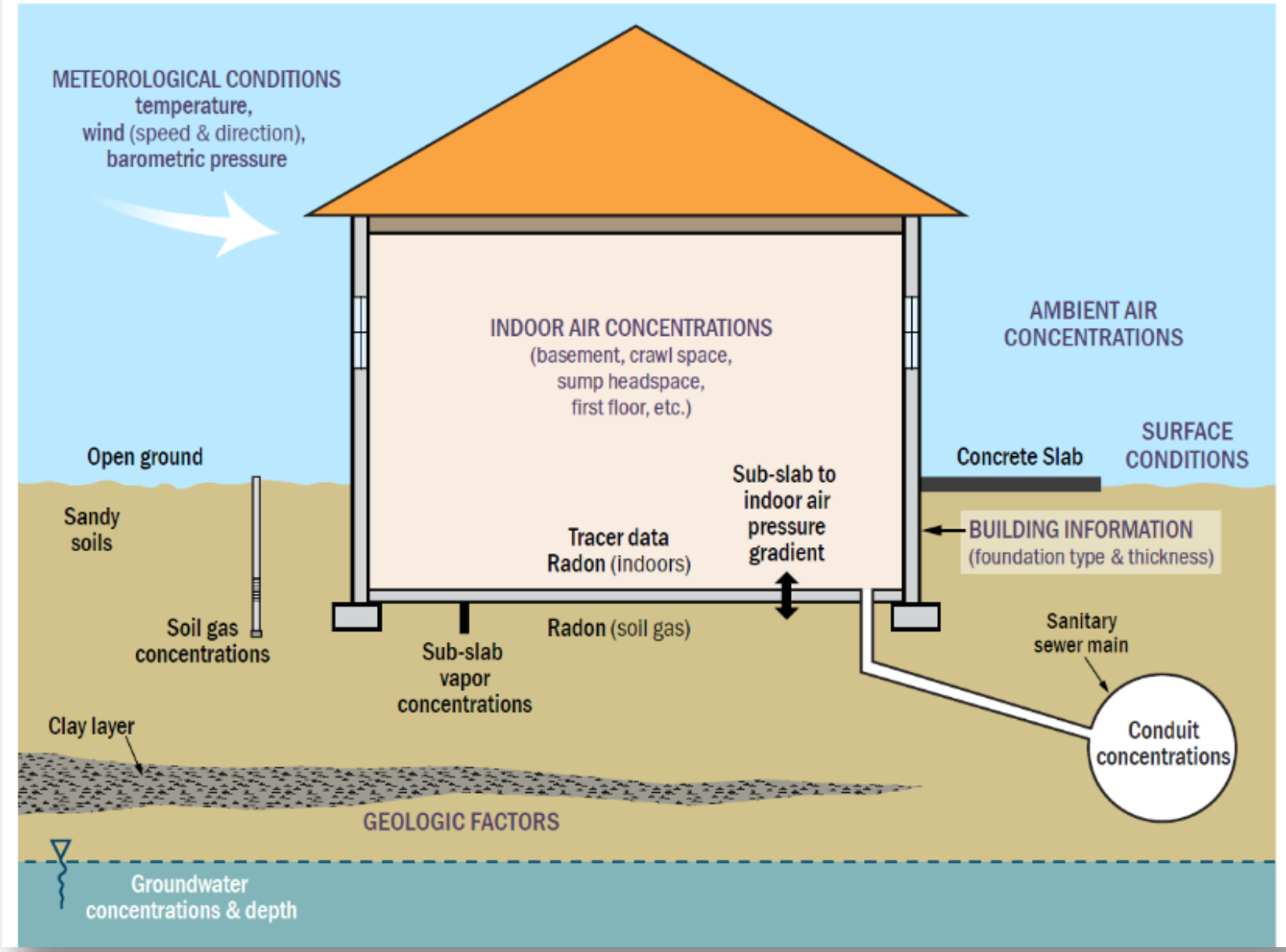
From RR-800, Jan. 2026

Lines of Evidence (LOE)

- Investigation
- Mitigation decisions
- Mitigation design

From RR-800, Jan. 2026

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



Decision Matrix – TCE

TCE = Trichloroethene

Table 7 from RR-800, Jan. 2026

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.	• Identify source of contaminated vapor (e.g., indoor source, preferential pathway) • Involve the DNR • Conduct immediate action • Mitigation may be warranted	• 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	• Sample indoor air with 24-72 hr TAT and reevaluate • Mitigate using indoor air sampling results to inform the timeframe	• Mitigate within 4 to 8 weeks in residential settings (see Section 2.10.6 for other settings) • Continue to monitor indoor air during mitigation	• Involve the DNR • Conduct immediate action • Mitigate within 2 weeks	• Involve the DNR • Emergency action may be warranted • Conduct immediate action • Mitigate within 2 weeks
≥ 3X VRSL	• Involve the DNR • Sample indoor air with 24-72 hr TAT and reevaluate • Mitigate using indoor air sampling results to inform the timeframe	• Involve the DNR • Continue to monitor indoor air during mitigation • Mitigate within 4 to 8 weeks	• Involve the DNR • Conduct immediate action • Mitigate within 2 weeks	• Involve the DNR • Emergency action may be warranted • Conduct immediate action • Mitigate within 2 weeks

Decision Matrix – Other Compounds

Table 8 from RR-800, Jan. 2026

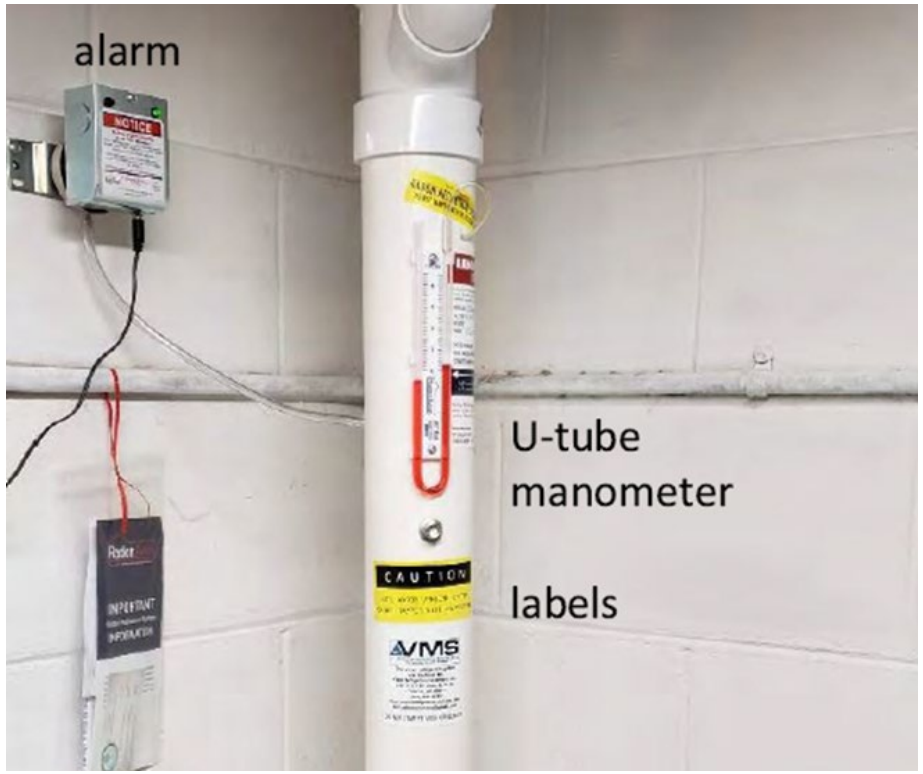
Sub-slab Vapor Concentrations of Substances Other than TCE	No Indoor Air Data Available	Indoor Air Concentration is < VAL	Indoor Air Concentration is ≥ VAL	Indoor Air Concentration is ≥ 3X VAL NC or ≥ 10X VAL C
< VRSL	Perform recommended number of vapor sampling events and evaluate data.	Perform recommended number of vapor sampling events and evaluate data.	• Identify source of contaminated vapor (e.g., indoor source, preferential pathway) • Mitigation may be warranted	• 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	• 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	• Involve the DNR • Emergency action may be warranted • Conduct immediate action • Mitigate within 4 to 8 weeks
≥ 3X VRSL NC or ≥ 10X VRSL C	• Involve the DNR • Sample indoor air with 24-72 hr TAT • Mitigate within 4 to 8 weeks	• Involve the DNR • Mitigate within 4 to 8 weeks	• Involve the DNR • Mitigate within 4 to 8 weeks	• Involve the DNR • Emergency action may be warranted • Conduct immediate action • Mitigate within 4 to 8 weeks

Mitigation

- Active sub-slab depressurization system (SSDS) is preferred where feasible
- Other mitigation options included
- Active notifications
- Coordination recommendations
- Commissioning recommendations
- Operation, monitoring & maintenance (OM&M) plan elements

Hiring Mitigation Contractors

- Recommendation: find 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)

Considerations

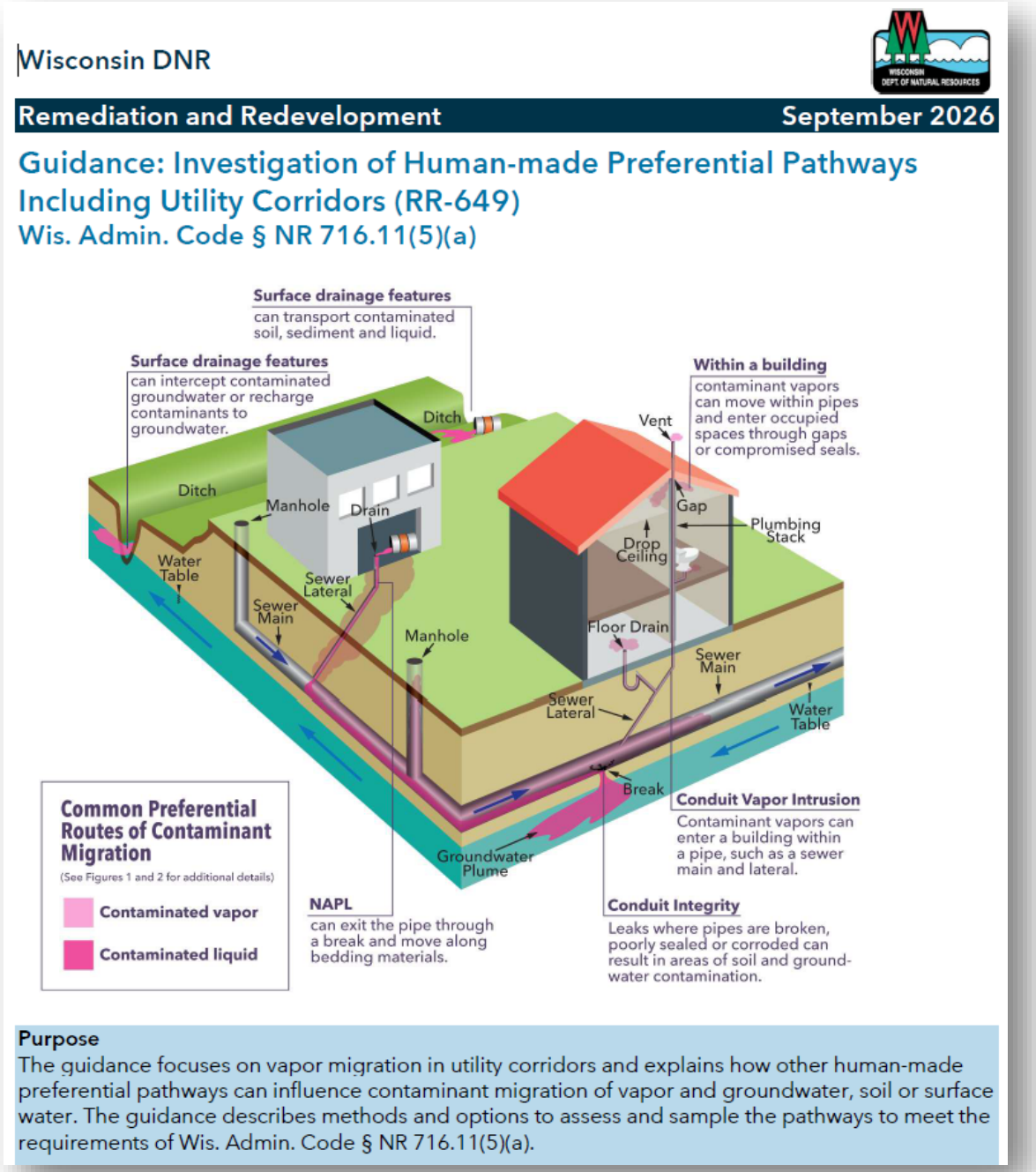
- CSMs may be used to drive the investigation and mitigation design
- Use multiple LOEs for justifying recommendations and decisions
- Evaluate remedial action options to minimize need for long-term OM&M of VMS
- Request technical assistance



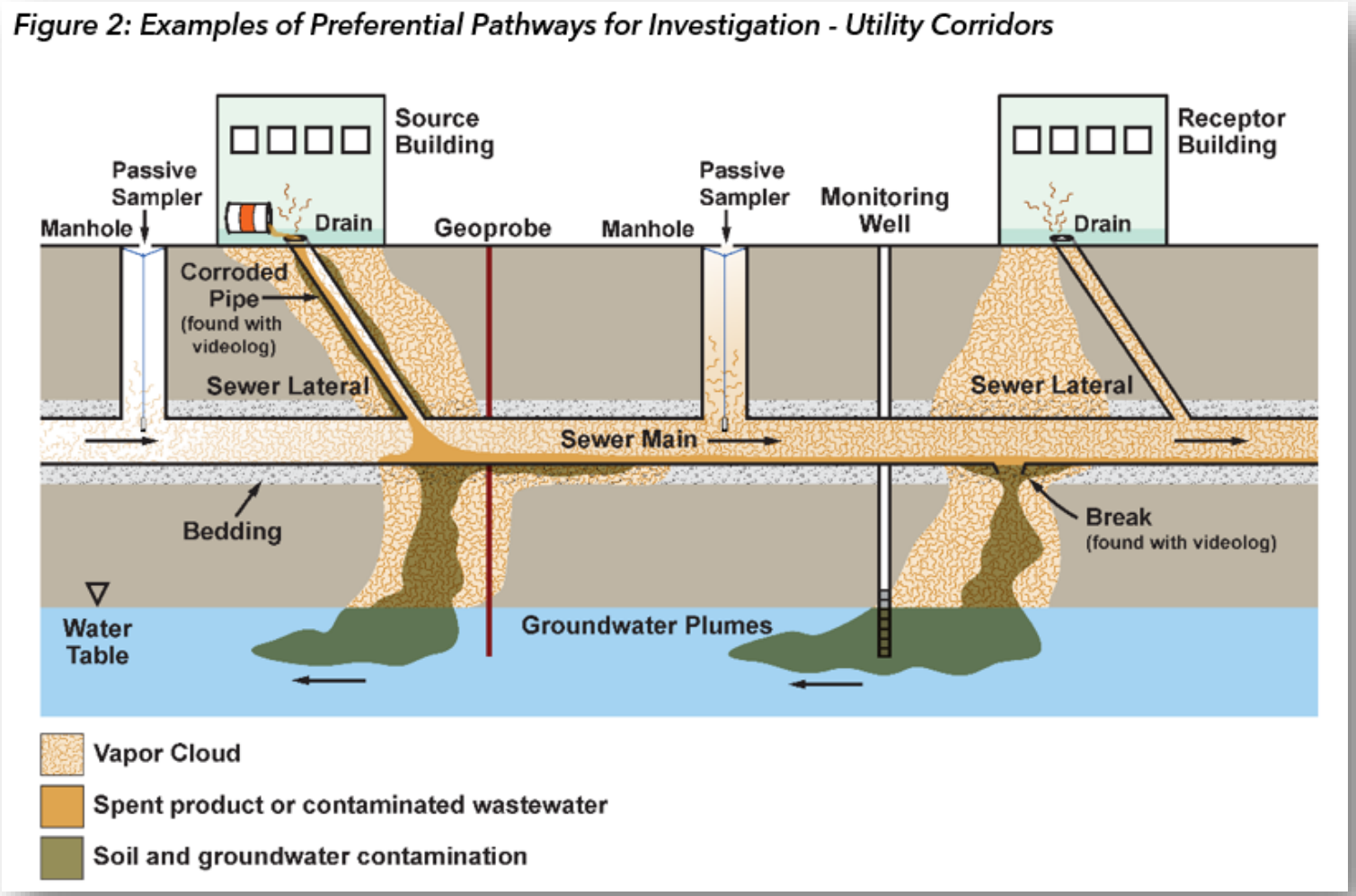
Guidance: Investigation of Human-made Preferential Pathways Including Utility Corridors (RR-649)

Now Available!

Visit dnr.wi.gov and search "RR-649"



New Recommendation: Use Passive Samplers



From RR-649, Sept. 2026

Other Updates to RR-649

References to updated RR-800 (Jan 2026)

References new studies (Loll & Ruegg, 2024; Tay, 2025)

Include lessons from WI conduit data 2021-2026

Recognize DIY / compromised plumbing features prevalent

Accessibility

ISSUES AND TRENDS WEBINARS



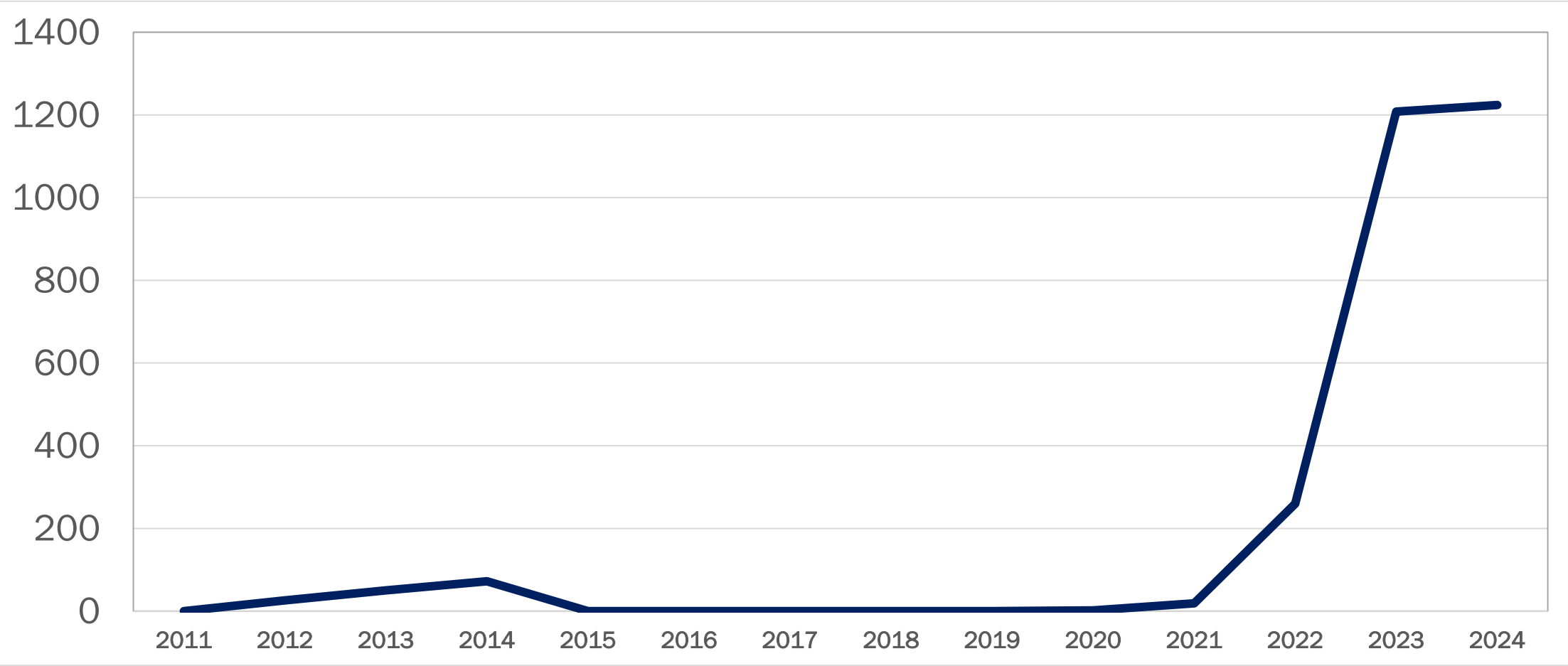
Go to dnr.wi.gov
Search: RR Training Library

Issues & Trends training sessions are hosted by the Remediation and Redevelopment Program (RR Program) and cover a variety of technical and policy issues affecting environmental professionals, local government specialists and others whose work involves assistance or oversight by.

Vapor Intrusion sessions:

- Passive Air Sampling for Vapor Intrusion (Nov. 2022)
- Investigation of Vapor Intrusion Along the Conduit Pathway (Nov. 2024)
- Vapor Intrusion Guidance and Forms (Mar. 2026)
- Deep Dive into Vapor Intrusion: Application of RR-800 (Aug. 2026)
- Conduit Vapor Intrusion: Application of RR-649 and RR-800 (Sept. 2026)

Passive Sampling in Wisconsin

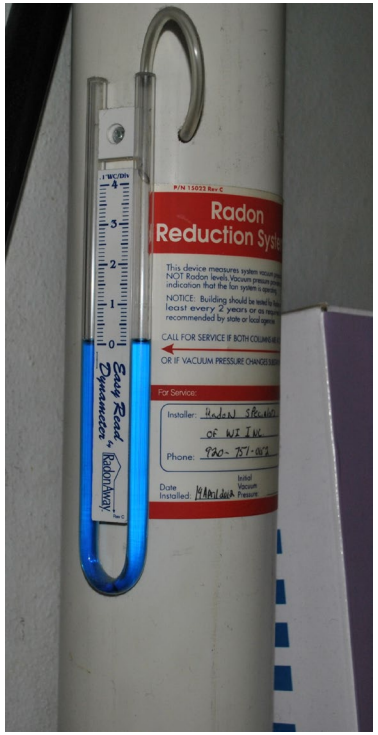


Number of Passive Samples in Wisconsin by Year

Other Vapor-Related Initiatives

Common VMS Issues Identified at Audits







Images: Bureau for Remediation and Redevelopment Tracking System (BRRTS)

Common VMS Issues Identified at Audits

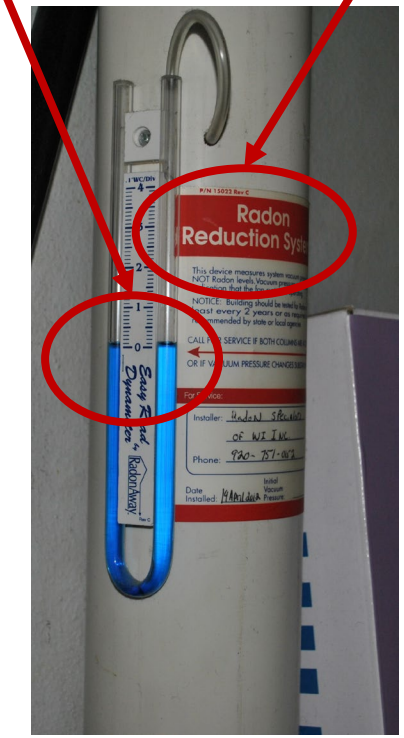
Fan in & below conditioned spaces

No drain for condensate



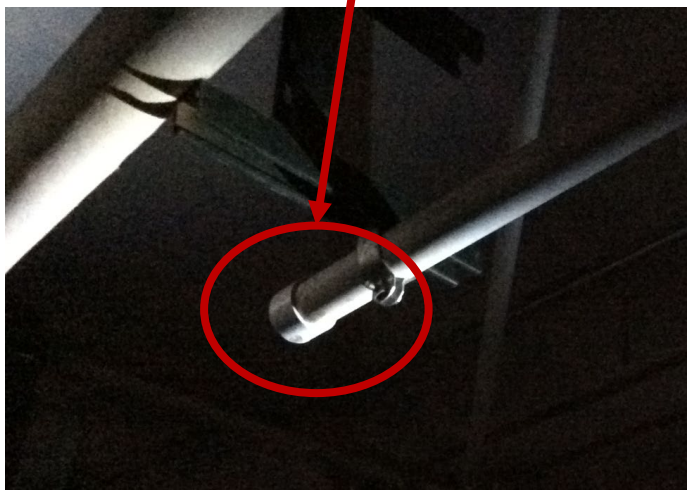
No flow

Labeled as radon system



No active notifications at old systems

VMS pipe cut & capped



Images: Bureau for Remediation and Redevelopment Tracking System (BRRTS)

Mostly Unique VMS Issues





Images: Bureau for Remediation and Redevelopment Tracking System (BRRTS)

Mostly Unique VMS Issues

Manometer in attic, above fan



Fan placed horizontally (also in conditioned space)

Duct tape



Images: Bureau for Remediation and Redevelopment Tracking System (BRRTS)

Exhaust Vent Issues





Images: Bureau for Remediation and Redevelopment Tracking System (BRRTS)

Exhaust Vent Issues

Residences above commercial



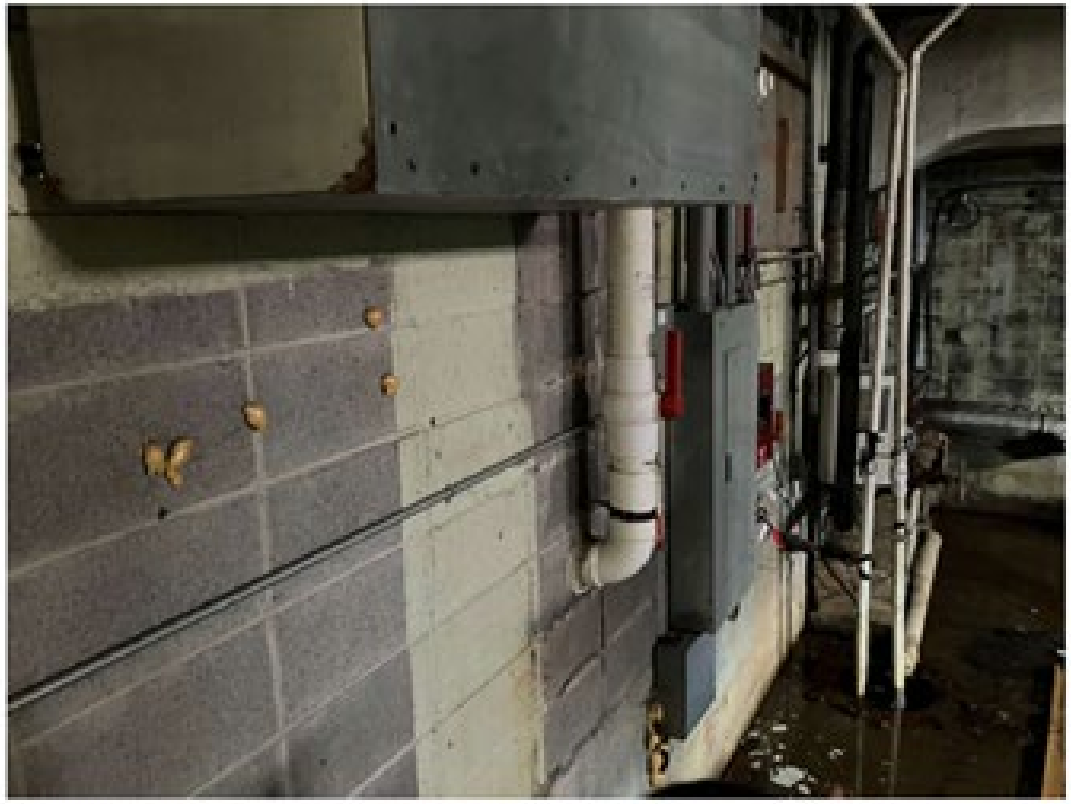


Goosenecks & placement

Images: Bureau for Remediation and Redevelopment Tracking System (BRRTS)

Unique Situation Discovered at Audit

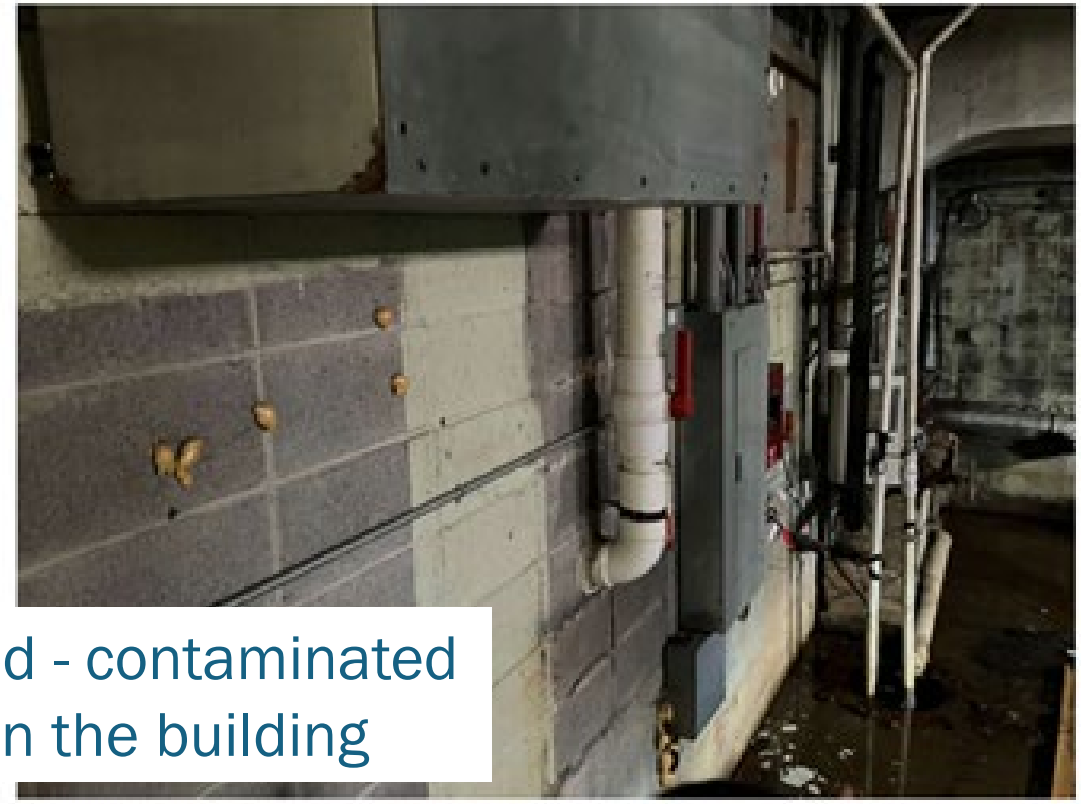




Images: Bureau for Remediation and Redevelopment Tracking System (BRRTS)

Unique Situation Discovered at Audit





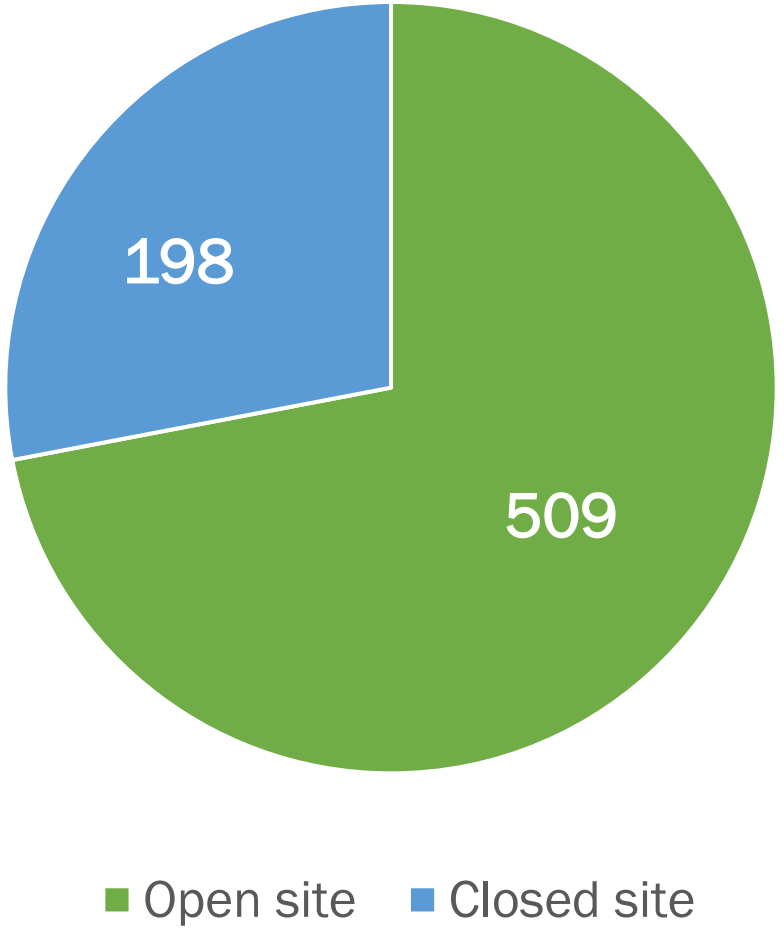
Sump pump failed - contaminated groundwater in the building

Images: Bureau for Remediation and Redevelopment Tracking System (BRRTS)

Tracking Vapor Mitigation Systems (VMS)

Number of Buildings with Vapor Mitigation Systems (VMS)

707 VMSs installed in Wisconsin to address chemical vapor intrusion in buildings as of August 5, 2026



Using Telemetry to Monitor VMS

Case study: Community Within the Corridor (Milwaukee)



Photograph J1-33. "Generator 1" for Blowers 3, 4, and 8, Building 2A Roof (12-SEP-2024)



Photograph J1-9. Blower 2, Building 1B-SE Roof (12-NOV-2024)



Photograph J1-10. Gauge for Blower 2 (30-OCT-2024)

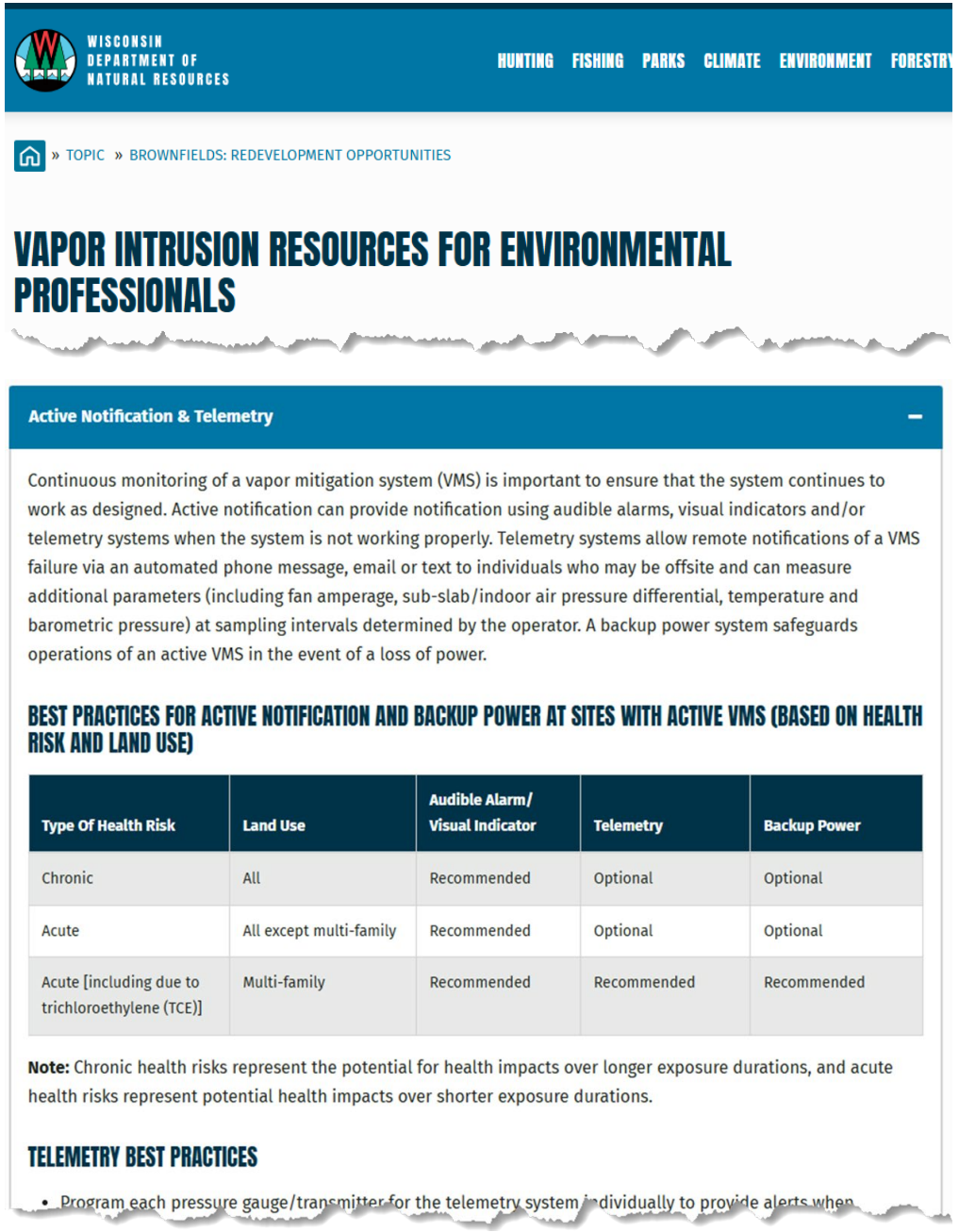
KSingh Engineers Scientists Consultants

Images: Bureau for Remediation and Redevelopment Tracking System (BRRTS)

Telemetry Recommendations on the Web

Visit dnr.wi.gov and search “Telemetry”

Located on *Vapor Intrusion Resources for Environmental Professionals web page*



WISCONSIN DEPARTMENT OF NATURAL RESOURCES

HUNTING FISHING PARKS CLIMATE ENVIRONMENT FORESTRY

» TOPIC » BROWNFIELDS: REDEVELOPMENT OPPORTUNITIES

VAPOR INTRUSION RESOURCES FOR ENVIRONMENTAL PROFESSIONALS

Active Notification & Telemetry

Continuous monitoring of a vapor mitigation system (VMS) is important to ensure that the system continues to work as designed. Active notification can provide notification using audible alarms, visual indicators and/or telemetry systems when the system is not working properly. Telemetry systems allow remote notifications of a VMS failure via an automated phone message, email or text to individuals who may be offsite and can measure additional parameters (including fan amperage, sub-slab/indoor air pressure differential, temperature and barometric pressure) at sampling intervals determined by the operator. A backup power system safeguards operations of an active VMS in the event of a loss of power.

BEST PRACTICES FOR ACTIVE NOTIFICATION AND BACKUP POWER AT SITES WITH ACTIVE VMS (BASED ON HEALTH RISK AND LAND USE)

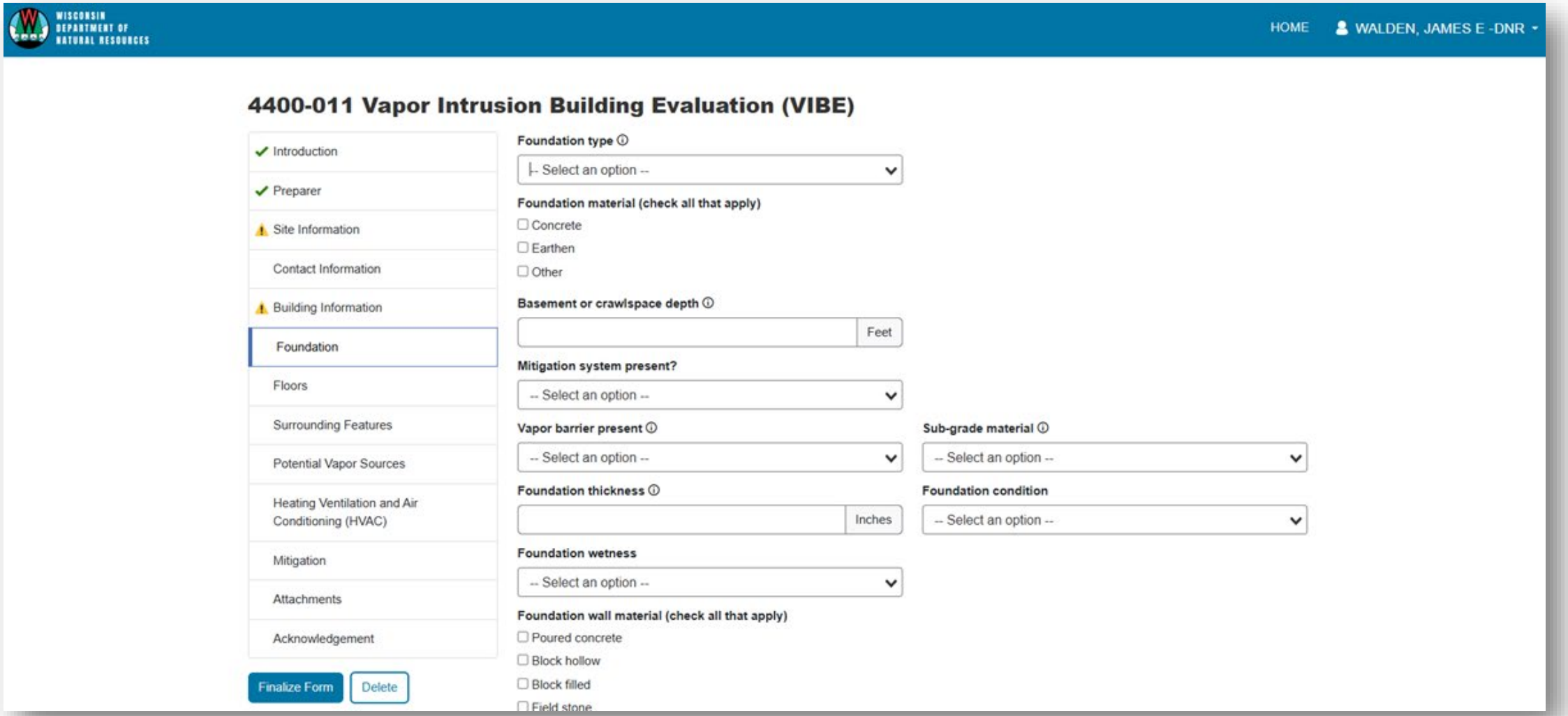
Type Of Health Risk	Land Use	Audible Alarm/ Visual Indicator	Telemetry	Backup Power
Chronic	All	Recommended	Optional	Optional
Acute	All except multi-family	Recommended	Optional	Optional
Acute [including due to trichloroethylene (TCE)]	Multi-family	Recommended	Recommended	Recommended

Note: Chronic health risks represent the potential for health impacts over longer exposure durations, and acute health risks represent potential health impacts over shorter exposure durations.

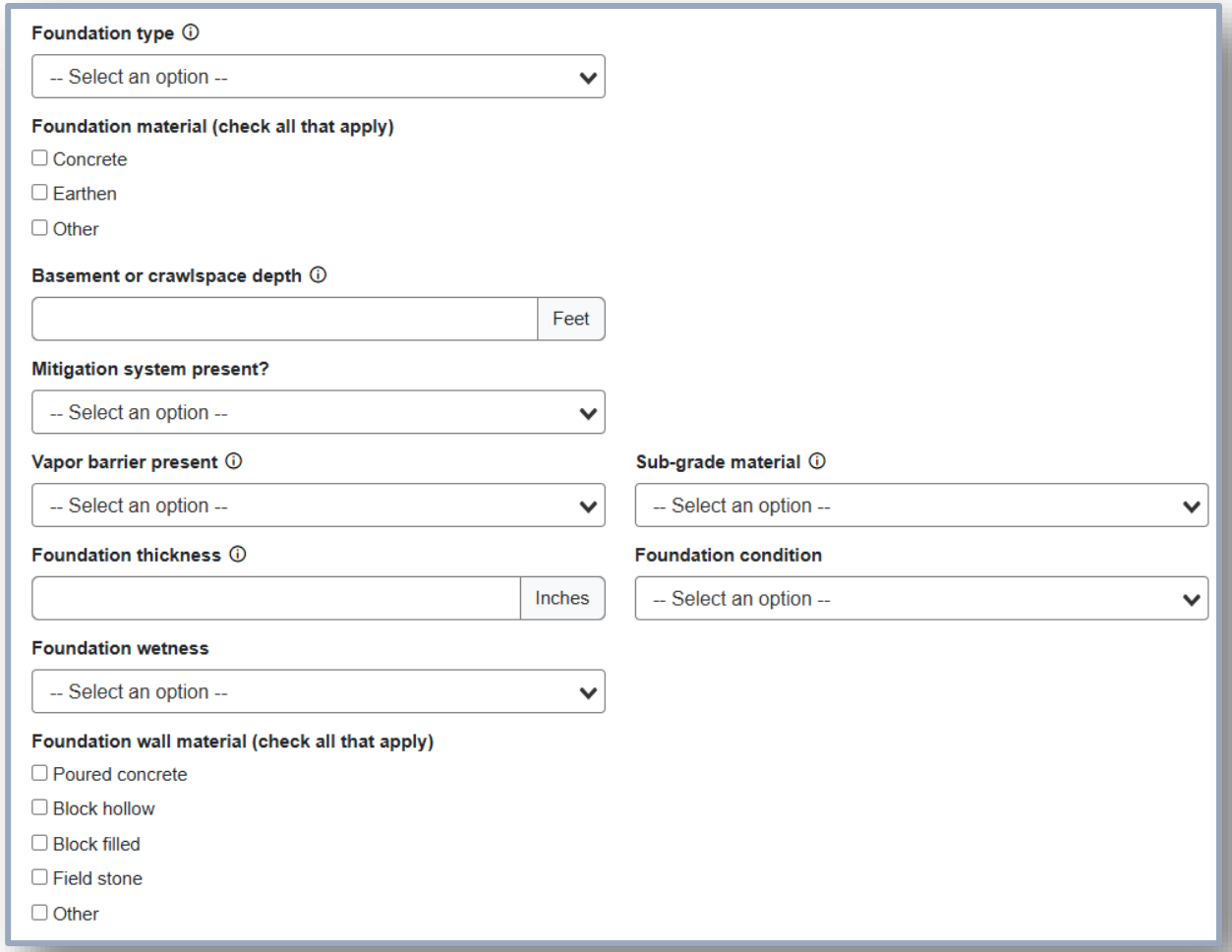
TELEMETRY BEST PRACTICES

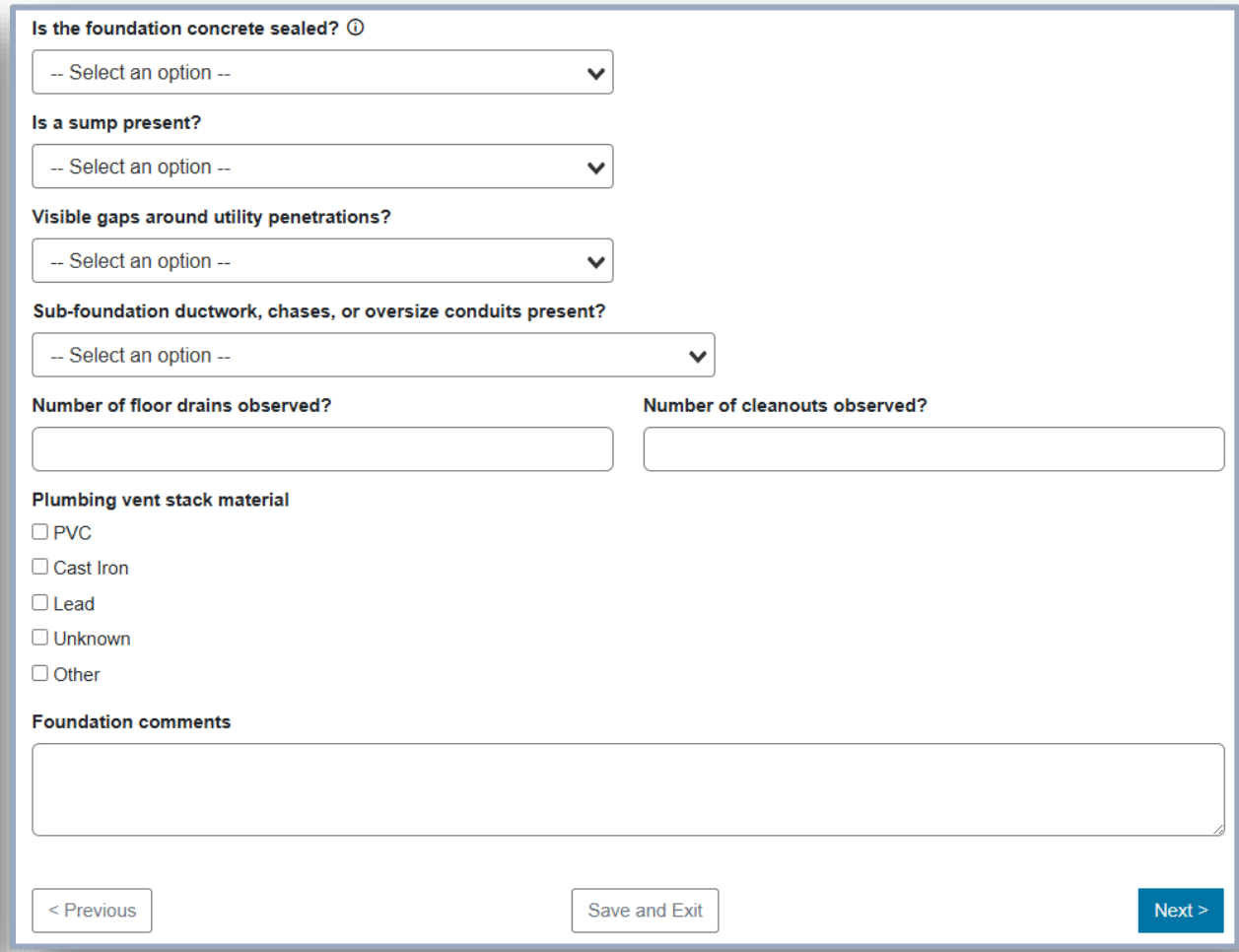
- Program each pressure gauge/transmitter for the telemetry system individually to provide alerts when

New Form: Vapor Intrusion Building Evaluation



Example: Building Foundation Information

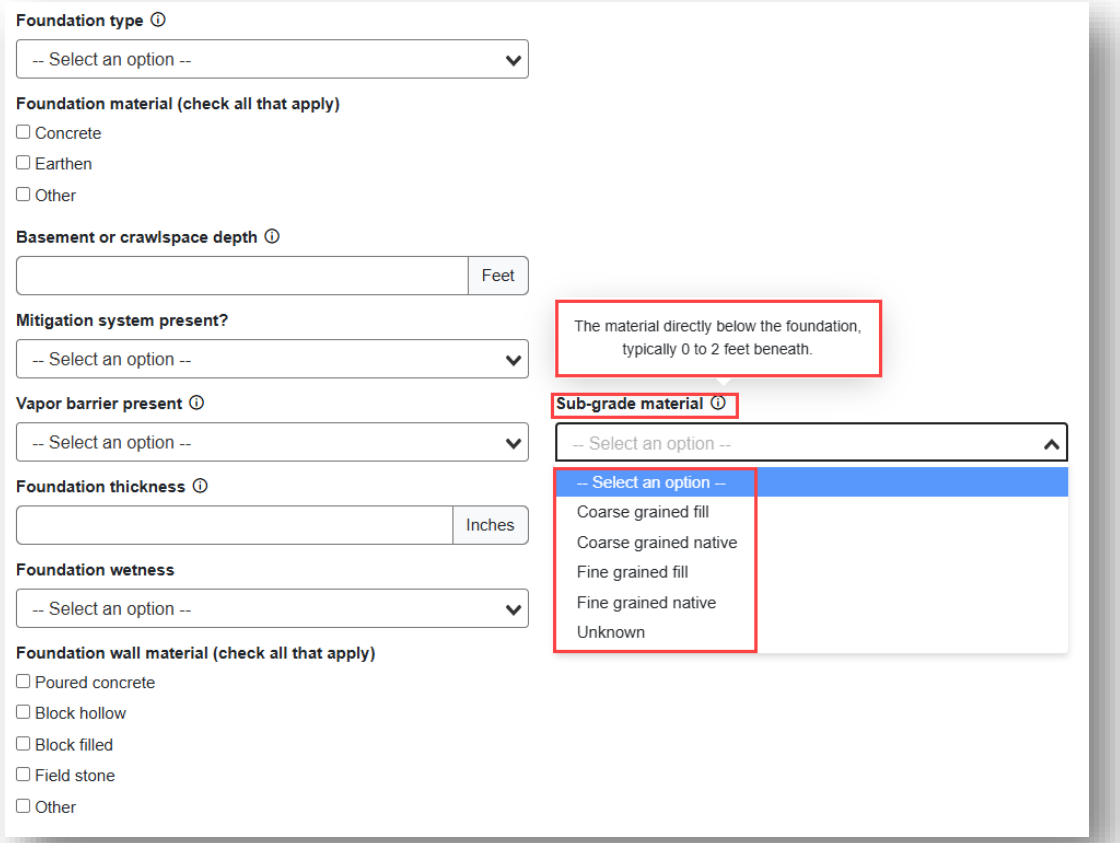




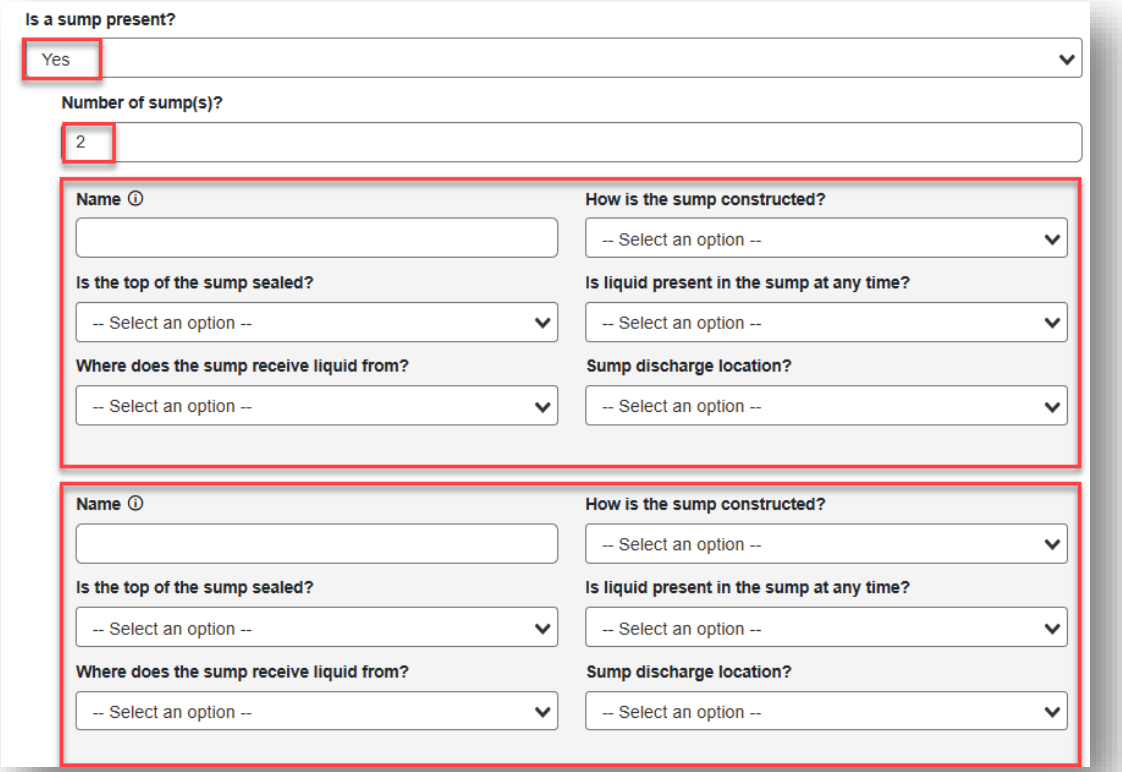
Form 4400-011

Helpful Features Included

Informational Pop-Ups



Secondary Questions

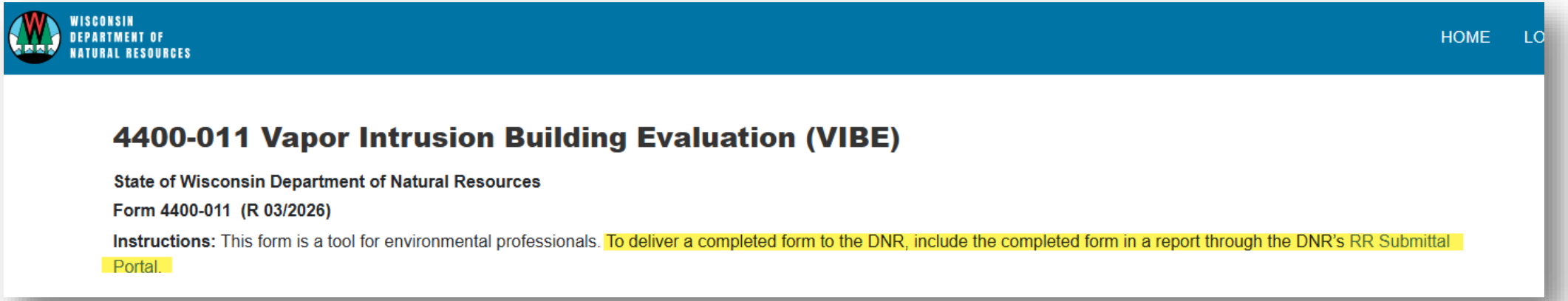


Form 4400-011

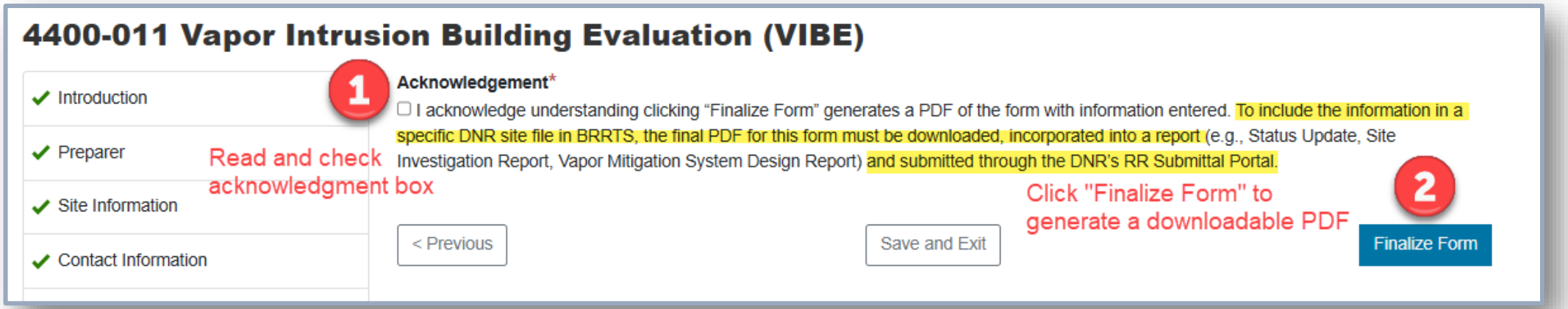
Finalize Form to Generate PDF

Form 4400-011

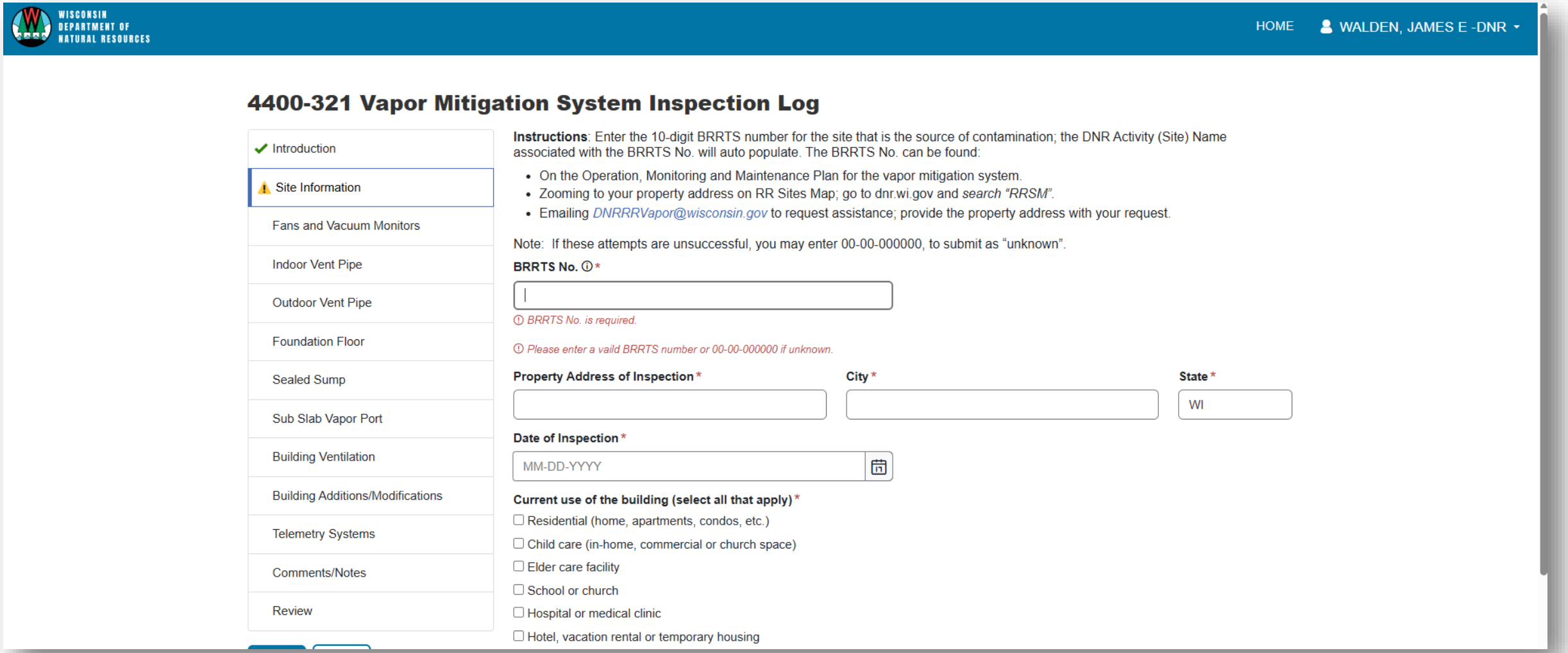
Introduction Page



Acknowledgment Page

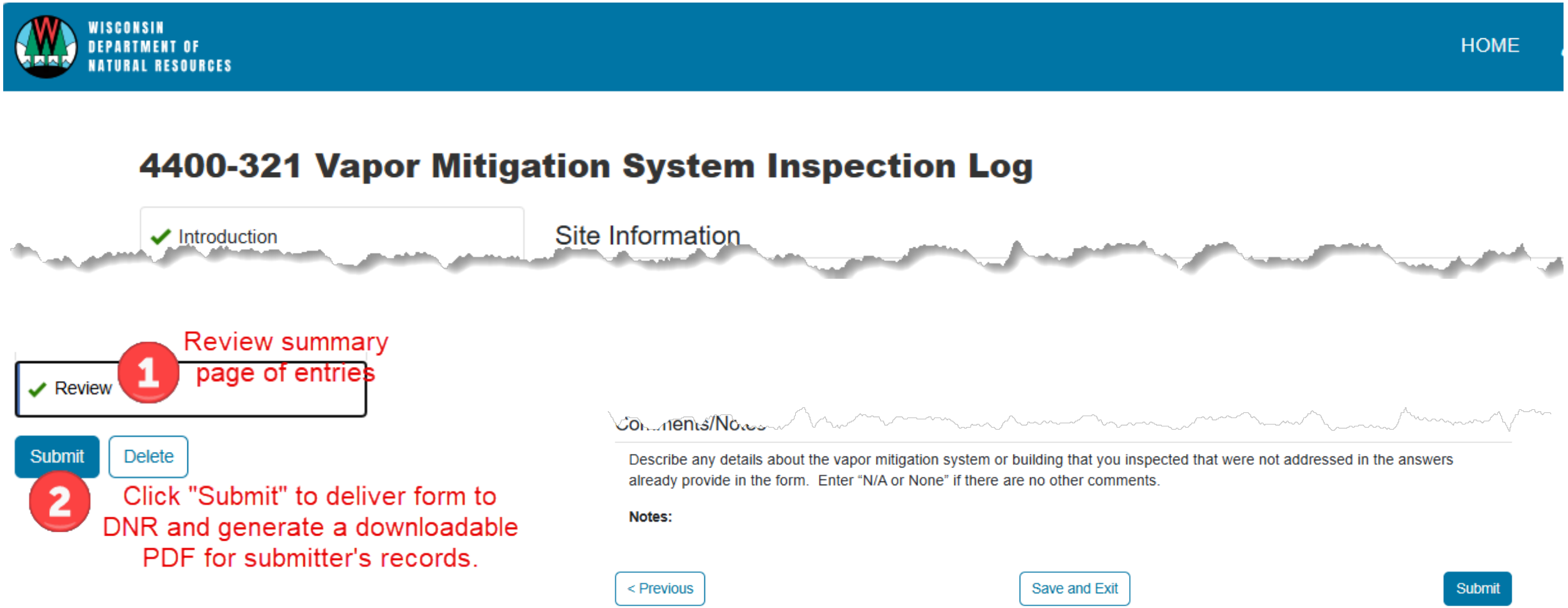


New Form: VMS Inspection Log



“Submit” Form on Review Page

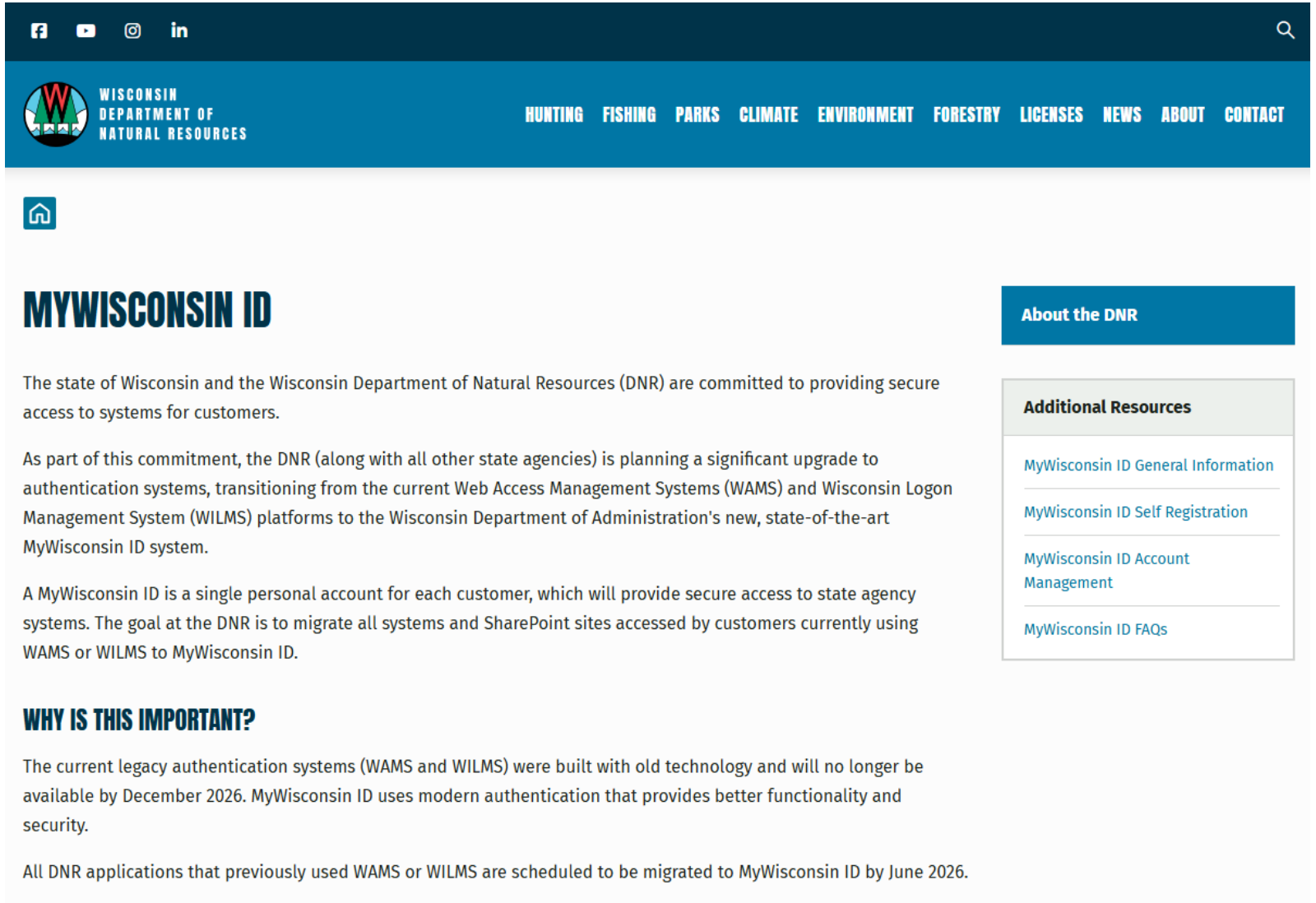
Form 4400-321



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https://dnr.wisconsin.gov/MyWisconsinID

In Summary – Now Available!

- Web-based VMS Inspection Log (Form 4400-321, Dec. 2025)
- Vapor Intrusion Guidance (RR-800, Jan. 2026)
- Web-based Vapor Intrusion Building Evaluation (VIBE) (Form 4400-011, Feb. 2026)
- Preferential Pathway Guidance (RR-649, Sept. 2026)
- Issues & Trends Webinar Training
  - Nov 2022
  - Nov 2024
  - Mar, Aug & Sept 2026

Go to dnr.wi.gov
Search: “RR-” or “4400-”
Search: “RR Training Library”

In Progress or On-Going – Stay Tuned!

- Passive samplers encouraged
- Long-term stewardship enhancements, including telemetry:
  - Previously approved VMS
  - New VMSs
- Continue to update:
  - VI Building Evaluation (VIBE) Form
  - VMS Inspection Form
- Create additional resources



vecteezy.com

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