

7021 2720 0001 0451 3812

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Certified Mail Fee

\$

22255

Extra Services & Fees (check box, add fee as appropriate)

Return Receipt (hardcopy) \$

Return Receipt (electronic) \$

Certified Mail Restricted Delivery \$

Adult Signature Required \$

Adult Signature Restricted Delivery \$

Postmark
Here

Corson

Postage

\$ 9.92

5/7/24

Total Postage and Fees

\$

Sent To Dutters-felling Ed Tenn
Street and Apt. No., or PO Box No.

City, State, ZIP+4®

May 7, 2024

Mr. Ed Tonn, Jr.
President
Butters-Fetting Co., Inc.
1906 South 3rd Street
Milwaukee, Wisconsin 53204

RE: Sub-slab Vapor Sampling Results – 1906 South 3rd Street, Milwaukee
Contaminant Detected **Below** WDNR Screening Level

Dear Mr. Tonn, Jr.,

Included are the findings of a recent investigation completed on your property by The Sigma Group, Inc. on behalf of the City of Milwaukee.

As you are aware, this investigation was conducted because of the potential for contaminant vapors from the north adjoining 1818-1836 South 3rd Street properties (Former Plunkett Property) to migrate through soils, accumulate beneath the foundation of your business, and possibly enter your indoor air. The contaminants of concern at the 1818-1836 South 3rd Street properties are volatile organic compounds (VOCs).

Your Test Results

On April 5, 2024, The Sigma Group, Inc. collected two sub-slab vapor samples (SVP-1 and SVP-2) from the vapor points previously installed in the floor of your building and two groundwater samples from the monitoring wells (MW-8 and MW-11) advanced on your property. The vapor samples were submitted to Beacon Environmental Laboratory of Forest Hill, Maryland, where they underwent laboratory analysis for benzene, ethylbenzene, naphthalene, tetrachloroethene (PCE), toluene, trichloroethene (TCE), 1,2,4-trimethylbenzene (1,2,4-TMB), 1,3,5-trimethylbenzene (1,3,5-TMB) and xylenes. The monitoring wells, were purged and subsequently sampled and analyzed for volatile organic compounds (VOCs) by EPA Method 8260 and polynuclear aromatic hydrocarbons (PAHs) by EPA Method 8270. The groundwater water samples were submitted to Pace Analytical Services, Inc. of Green Bay, Wisconsin.

Review of the sub-slab vapor analytical results indicate concentrations of ethylbenzene, PCE, toluene, TCE and xylenes were detected within both sub-slab vapor samples collected from beneath the slab of your building. In addition, concentrations of benzene, naphthalene, 124-TMB and 135-TMB were detected within the sub-slab vapor sample collected from SVP-2. Although there were detections in the sub-slab vapor samples, they did not exceed the Wisconsin Department of Natural Resources (WDNR) Vapor Risk Screening Levels (VRSLs) for Residential, Small Commercial or Large Commercial/Industrial settings. This is called “a detection below screening level” and is explained within the enclosed within factsheet, *Understanding Chemical Vapor Intrusion Test Results* for more information. The attached **Table 1** summarizes the results of the sub-slab vapor samples collected from beneath your floor slab compared to WDNR screening levels. Please see the attached fact sheet, *Understanding Chemical Vapor Intrusion Test Results* for more information.

Mr. Ed Tonn, Jr.
May 7, 2024
Page 2

In addition, review of the groundwater analytical data indicates select VOCs and PAHs were detected within the groundwater samples collected monitoring wells MW-8 and MW-11. These detections are below the appropriate NR 140 Preventative Action Limits (PALs). The groundwater analytical results are summarized in **Table 2**.

Summary of Results

At this time, there does not appear to be a vapor risk of benzene, ethylbenzene, naphthalene, PCE, toluene, TCE, 1,2,4-TMB, 1,3,5-TMB or xylene vapors entering your building from beneath the foundation.

Based on the groundwater analytical results, it does not appear that VOCs or PAHs have migrated to your property at concentrations greater than WDNR clean-up standards.

Please feel free to contact Riley Neumann of the WDNR at 414-750-7030 or Riley.Neumann@wisconsin.gov or myself at the number below if you have any questions about these results.

Sincerely,



Chelsea Corson
Senior Project Manager
The Sigma Group, Inc.
414-643-4137

cc: Mr. Riley Neumann, WDNR – Riley.Neumann@wisconsin.gov
Mr. Mat Reimer, City of Milwaukee – Mathew.Reimer@milwaukee.gov

Enc: Table 1 – Sub-slab Vapor Analytical Data
Table 2 – Groundwater Analytical Data
Fact Sheet: Understanding Chemical Vapor Intrusion Test Results (DNR Pub RR-977)

Notice: This form may be used to comply with the requirements of s. NR 716.14 (2), Wis. Adm. Code; however, use of this form is not required. An alternate format may be used. The rule requires that notification be provided to 1) property owners when someone else is conducting the sampling, 2) to occupants of property belonging to the responsible person, and 3) to owners and occupants of property that does not belong to the responsible person but has been affected by contamination arising on his or her property. Notification is required within 10 business days of receiving the sample results. Personal information collected will be used for program administration and may be provided to requesters to the extent required by Wisconsin's Open Records law [ss. 19.31-19.39, Wis. Stats.].

NOTE: Under s. NR 716.14, Wis. Adm. Code, the responsible party must also submit sample results and other required information to the DNR. We recommend that copies of the sample results notifications be included with that submittal, along with all attachments. Using the same format used for data presentation for a closure request may be helpful to all parties. See s. NR 716.14, Wis. Adm. Code for the full list of information to be submitted to the DNR.

Notification of Property Owners and Occupants:

This notification form has been provided to you in order to provide the results of environmental sampling that has been conducted on property that you own or occupy. Samples were collected in accordance with the methods identified in the site investigation work plan, in accordance with s. NR. 716.09 and 716.13, Wis. Adm. Code. This sampling was conducted as a result of contamination originating at the following location.

Site Information

Site Name		DNR ID # (BRRTS #)	
VACANT PARCEL 1836 S 3RD ST (FORMER PLUNKETT PROPERTY)		03-41-112118	
Address	City	State	ZIP Code
1833-1836 South 3rd Street	Milwaukee	WI	53204

Responsible Party

The person(s) responsible for completing this environmental investigation is:

Property Owner

David Plunkett

Address	City	State	ZIP Code

Contact Person

David Plunkett

Person or company that collected samples

The Sigma Group, Inc.

Sample Results (Results Attached)

Reason for Sampling: Routine Other (define) Site Investigation

The contaminants that have been identified at this time on property that you own or occupy include:

Contaminant	In Soil?		In Groundwater?	
	Yes	No	Yes	No
Gasoline	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Diesel or Fuel Oil	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Solvents	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Heavy Metals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Pesticides	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other: _____	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

This sampling event included sampling of a drinking water well. <input type="radio"/> Yes <input checked="" type="radio"/> No
If yes, the sampled drinking water well had detectable contaminants. <input type="radio"/> Yes <input type="radio"/> No

Contaminants in Vapor

	Yes	No
Indoor Air	<input type="radio"/>	<input type="radio"/>
Sub-slab	<input checked="" type="radio"/>	<input type="radio"/>
Exterior Soil Gas	<input type="radio"/>	<input type="radio"/>

Site Investigation Sample Results Notification

Form 4400-249 (R 03/14)

Page 2 of 2

Attached are:

- A map that shows the locations from which samples were collected. (The map needs to meet the requirements of s. NR 716.15 (4), Wis. Adm. Code.)
- A data table with specific contaminant levels at each sample location and whether or not the sample results exceed state standards.
- A copy of the laboratory results.

You are not identified as the person that is responsible for this contamination. However, your cooperation is important. Property owners may become legally responsible for contamination if they do not allow access to the person that is responsible so that person may complete the environmental investigation and clean up activities.

Option for written exemption: You have the option of requesting a written liability exemption from the DNR for contamination that originated on another property, or on property that you lease. To do this, you must present an adequate environmental assessment of your property and pay a \$700 fee for review of this information. If you are interested in this option, please see DNR publication # RR 589, "When Contamination Crosses a Property Line - Rights and Responsibilities of Property Owners", available at: dnr.wi.gov/files/PDF/pubs/rr/rr589.pdf.

Contact Information

Please address questions regarding this notification, or requests for additional information to the contact person listed above, or to one of the following contacts:

Environmental Consultant





Company Name		Contact Person Last Name		First Name	
The Sigma Group, Inc.		Corson		Chelsea	
Address			City	State	ZIP Code
1300 W. Canal St.			Milwaukee	WI	53233
Phone # (inc. area code)	Email				
(414) 643-4200	ccorson@thesigmagroup.com				

Select which agency: Natural Resources Agriculture, Trade and Consumer Protection

State of Wisconsin Department of Natural Resources

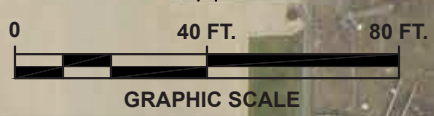
Contact Person Last Name		First Name		Phone # (inc. area code)	
Neuman		Riley			
Address			City	State	ZIP Code
1027 W St Paul Avenue			Milwaukee	WI	
Email					
riley.neumann@wisconsin.gov					

LEGEND

-  APPROXIMATE SITE BOUNDARY
-  SOIL BORING
-  MONITORING WELL
-  VAPOR MONITORING POINT



PROJECT: 22255 | DIRECTORY: CAD-ENV | FILENAME: 22255_Master Map | CREATED BY: NRW | DATE: 1/4/2024



NOTE: AERIAL IMAGERY (2022) AND PARCEL BOUNDARY TAKEN FROM MILWAUKEE COUNTY GIS


 <p>THE SIGMA GROUP Single Source. Sound Solutions.</p>	<p>SAMPLE LOCATION MAP</p> <p>1818 SOUTH 3RD STREET MILWAUKEE, WISCONSIN</p>	<p>FIGURE</p> <p>2</p>
---	--	-------------------------------

Table 1, Table 2

(Sample Results)

Table 1
Subslab Vapor Analytical Data
1906 S. 3rd Street - Milwaukee, WI
Sigma Project No. 22255
Former Plunkett Property - 1818-1836 South 3rd Street, Milwaukee, Wisconsin

Sample Type:		Subslab Vapor Samples				Residential Vapor Risk Screening Level ² (AF=0.03)	Small Commercial Vapor Risk Screening Level ³ (AF = 0.03)	Large Commercial / Industrial Vapor Risk Screening Level ⁴ (AF = 0.01)
Sample Identification:		SVP-1		SVP-2				
Sample Date(s):		12/21/23	4/5/24	12/21/23	4/5/24			
Sampling/Analysis Method:		Passive	Passive	Passive	Passive			
Sample Duration:		7d 3h 29m	7d 4h 12m	7d 3h 17m	7d 11h 55m			
VOCs								
Benzene	µg/m ³	<4.85	<4.68	<4.59	6.49	120	520	1,600
Ethylbenzene	µg/m ³	4.53	11.9	4.80	7.96	370	1,600	4,900
Naphthalene	µg/m ³	<3.04	<1.24	<3.04	1.79	28	120	360
Tetrachloroethene (PCE)	µg/m ³	39.8	178	22.1	81.2	1,400	5,800	18,000
Toluene	µg/m ³	79.1	266	73.7	182	170,000	730,000	2,200,000
Trichloroethene (TCE)	µg/m ³	45.3	63.2	22.2	29	70	290	880
1,2,4-Trimethylbenzene	µg/m ³	<2.93	<2.99	<2.93	48.7	2,100	8,800	26,000
1,3,5-Trimethylbenzene	µg/m ³	<2.93	<2.99	<2.93	27.1	2,100	8,800	26,000
Xylenes, total	µg/m ³	15.42	26.67	17.01	23.37	3,500	15,000	44,000

Notes:

- Analytical units: µg/m³ = micrograms per cubic meter
- Residential Vapor Risk Screening Level = Risk-based concentrations based on VALs for **residential** air which has been adjusted with an **Attenuation Factor of 0.03** for the subslab vapor to ambient air
- Small Commercial Vapor Risk Screening Level = Risk-based concentrations based on VALs for **small commercial** air which has been adjusted with an **Attenuation Factor of 0.03** for the subslab vapor to ambient air pathway in a **small commercial** setting. VALs for small commercial setting indoor air based on WDNR publication PUB-RR-800 "Addressing Vapor Intrusion at Remediation & Redevelopment Sites in Wisconsin" (dated January 2018) which in turn references EPA Region 3 Risk-Based Concentrations for industrial air [Regional Screening Level (RSL) Summary Table (TR=1E-06, HQ=1) May 2023] and small commercial air in August 2023 "Wisconsin Vapor Quick Look-Up Table, Indoor Air Vapor Action Levels And Vapor Risk Screening Levels" publication RR-0136. VAL adjusted to 1-in-100,000 increase in lifetime cancer risk for carcinogens per WDNR publication RR-800; VAL is not adjusted for non-carcinogens (i.e., hazard index = 1).
- Large Commercial / Industrial Vapor Risk Screening Level = Risk-based concentrations based on VALs for **large commercial/industrial** air which has been adjusted with an **Attenuation Factor of 0.01** for the subslab vapor to ambient air pathway in a **large commercial/industrial** setting. VALs for large commercial / industrial indoor air based on WDNR publication PUB-RR-800 "Addressing Vapor Intrusion at Remediation & Redevelopment Sites in Wisconsin" (dated January 2018) which in turn references EPA Region 3 Risk-Based Concentrations for industrial air [Regional Screening Level (RSL) Summary Table (TR=1E-06, HQ=1) May 2023] and large commercial / industrial air in August 2023 "Wisconsin Vapor Quick Look-Up Table, Indoor Air Vapor Action Levels And Vapor Risk Screening Levels" publication RR-0136. VAL adjusted to 1-in-100,000 increase in lifetime cancer risk for carcinogens per WDNR publication RR-800; VAL is not adjusted for non-carcinogens (i.e., hazard index = 1).
- NA = not analyzed
- < = concentration reported less than laboratory limit of detection (LOD)
- Exceedances:
 - BOLD** = concentration greater than residential Vapor Risk Screening Level
 - []** = concentration greater than small commercial Vapor Risk Screening Level
 - { }** = concentration greater than large commercial / industrial Vapor Risk Screening Level

Table 2
Groundwater Analytical Table
1906 S. 3rd Street - Milwaukee, WI
Sigma Project No. 6707 & 18238 & 22255
Former Plunkett Property - 1818-1836 South 3rd Street

Well Location:		MW-8		MW-11		NR 140 ES	NR 140 PAL
Date:		12/28/23	04/05/24	12/28/23	04/05/24		
Water Elevation* (feet MSL):		583.69	585.49	581.34	584.68		
VOCs							
Benzene	µg/L	<0.30	<0.30	0.33 J	<0.30	5	0.5
Bromobenzene	µg/L	<0.36	<0.36	<0.36	<0.36	NS	NS
Bromochloromethane	µg/L	<0.36	<0.36	<0.36	<0.36	NS	NS
Bromodichloromethane	µg/L	<0.42	<0.42	<0.42	<0.42	0.6	0.06
Bromoform	µg/L	<0.43	<0.43	<0.43	<0.43	4.4	0.44
Bromomethane	µg/L	<1.2	<1.2	<1.2	<1.2	10	1
tert-Butylbenzene	µg/L	<0.59	<0.59	<0.59	<0.59	NS	NS
sec-Butylbenzene	µg/L	<0.42	<0.42	<0.42	<0.42	NS	NS
n-Butylbenzene	µg/L	<0.86	<0.86	<0.86	<0.86	NS	NS
Carbon Tetrachloride	µg/L	<0.37	<0.37	<0.37	<0.37	5	0.5
Chlorobenzene	µg/L	<0.86	<0.86	<0.86	<0.86	NS	NS
Chloroethane	µg/L	<1.4	<1.4	<1.4	<1.4	400	80
Chloroform	µg/L	<0.50	<0.50	<0.50	<0.50	6	0.6
Chloromethane	µg/L	<1.6	<1.6	<1.6	<1.6	30	3
2-Chlorotoluene	µg/L	<0.89	<0.89	<0.89	<0.89	NS	NS
4-Chlorotoluene	µg/L	<0.89	<0.89	<0.89	<0.89	NS	NS
1,2-Dibromo-3-Chloropropane	µg/L	<2.4	<2.4	<2.4	<2.4	0.2	0.02
Dibromochloromethane	µg/L	<2.6	<2.6	<2.6	<2.6	60	6
Dibromomethane	µg/L	<0.99	<0.99	<0.99	<0.99	NS	NS
1,4-Dichlorobenzene	µg/L	<0.89	<0.89	<0.89	<0.89	75	15
1,3-Dichlorobenzene	µg/L	<0.35	<0.35	<0.35	<0.35	600	120
1,2-Dichlorobenzene	µg/L	<0.33	<0.33	<0.33	<0.33	600	60
Dichlorodifluoromethane	µg/L	<0.46	<0.46	<0.46	<0.46	1,000	200
1,2-Dichloroethane	µg/L	<0.29	<0.29	<0.29	<0.29	5	0.5
1,1-Dichloroethane	µg/L	<0.30	<0.30	<0.30	<0.30	850	85
1,1-Dichloroethene	µg/L	<0.58	<0.58	<0.58	<0.58	7	0.7
1,1-Dichloropropene	µg/L	<0.41	<0.41	<0.41	<0.41	NS	NS
cis-1,2-Dichloroethene	µg/L	<0.47	<0.47	<0.47	<0.47	70	7
trans-1,2-Dichloroethene	µg/L	<0.53	<0.53	<0.53	<0.53	100	20
1,2-Dichloropropane	µg/L	<0.45	<0.45	<0.45	<0.45	5	0.5
2,2-Dichloropropane	µg/L	<0.42	<0.42	<0.42	<0.42	NS	NS
1,3-Dichloropropane	µg/L	<0.30	<0.30	<0.30	<0.30	NS	NS
trans-1,3-Dichloropropene	µg/L	<0.27	<0.27	<0.27	<0.27	0.40	0.04
cis-1,3-Dichloropropene	µg/L	<0.24	<0.24	<0.24	<0.24	0.40	0.04
Di-isopropyl ether	µg/L	<1.1	<1.1	<1.1	<1.1	NS	NS
EDB (1,2-Dibromoethane)	µg/L	<0.31	<0.31	<0.31	<0.31	0.05	0.005
Ethylbenzene	µg/L	<0.33	<0.33	<0.33	<0.33	700	140
Hexachlorobutadiene	µg/L	<2.7	<2.7	<2.7	<2.7	NS	NS
Isopropylbenzene	µg/L	<1.0	<1.0	<1.0	<1.0	NS	NS
p-Isopropyltoluene	µg/L	<1.0	<1.0	<1.0	<1.0	NS	NS
Methylene Chloride	µg/L	0.58 J**	0.56 J**	<0.32	<0.32	5	0.5
Methyl-tert-butyl-ether	µg/L	<1.1	<1.1	<1.1	<1.1	60	12
Naphthalene	µg/L	<1.9	<1.9	<1.9	<1.9	100	10
n-Propylbenzene	µg/L	<0.35	<0.35	<0.35	<0.35	NS	NS
Styrene	µg/L	<0.36	<0.36	<0.36	<0.36	100	1
1,1,2,2-Tetrachloroethane	µg/L	<0.38	<0.38	<0.38	<0.38	0.2	0.02
1,1,1,2-Tetrachloroethane	µg/L	<0.36	<0.36	<0.36	<0.36	70	7
Tetrachloroethene	µg/L	<0.41	<0.41	<0.41	<0.41	5	0.5
Toluene	µg/L	0.50 J	0.71 J	<0.29	<0.29	800	160
1,2,4-Trichlorobenzene	µg/L	<0.95	<0.95	<0.95	<0.95	70	14
1,2,3-Trichlorobenzene	µg/L	<1.0	<1.0	<1.0	<1.0	NS	NS
1,2,3-Trichloropropane	µg/L	<0.56	<0.56	<0.56	<0.56	NS	NS
1,1,1-Trichloroethane	µg/L	<0.30	<0.30	<0.30	<0.30	200	40
1,1,2-Trichloroethane	µg/L	<0.34	<0.34	<0.34	<0.34	5	0.5
Trichloroethene (TCE)	µg/L	<0.32	<0.32	<0.32	<0.32	5	0.5
Trichlorofluoromethane	µg/L	<0.42	<0.42	<0.42	<0.42	3,490	698
1,2,4-Trimethylbenzene	µg/L	<0.45	<0.45	<0.45	<0.45	NS	NS
1,3,5-Trimethylbenzene	µg/L	<0.36	<0.36	<0.36	<0.36	NS	NS
Total Trimethylbenzene	µg/L	<0.81	<0.81	<0.81	<0.81	480	96
Vinyl Chloride	µg/L	<0.17	<0.17	<0.17	<0.17	0.2	0.02
Xylenes, Total	µg/L	<1.05	<1.05	<1.05	<1.05	2,000	400
PAHs							
Acenaphthene	µg/L	0.99	2.1	0.82	1.0	NS	NS
Acenaphthylene	µg/L	0.061	0.17	0.061	0.1	NS	NS
Anthracene	µg/L	0.049 J	0.1	0.12	0.17	3,000	600
Benzo(a)anthracene	µg/L	<0.015	<0.013	<0.013	0.015 J	NS	NS
Benzo(a)pyrene	µg/L	<0.014	<0.012	<0.012	<0.013	0.2	0.02
Benzo(b)fluoranthene	µg/L	<0.0099	<0.0087	<0.0089	<0.0090	0.2	0.02
Benzo(ghi)perylene	µg/L	<0.025	<0.022	<0.023	<0.023	NS	NS
Benzo(k)fluoranthene	µg/L	<0.024	<0.021	<0.022	<0.022	NS	NS
Chrysene	µg/L	<0.014	<0.012	0.019 J	<0.012	0.2	0.02
Dibenzo(a,h)anthracene	µg/L	<0.019	<0.017	<0.017	<0.018	NS	NS
Fluoranthene	µg/L	0.078	0.093	0.16	0.22	400	80
Fluorene	µg/L	0.034 J	<0.022	0.27	0.38	400	80
Indeno(1,2,3-cd)pyrene	µg/L	<0.017	<0.015	<0.015	<0.015	NS	NS
1-Methylnaphthalene	µg/L	0.1	0.030 J	2.6	4.4	NS	NS
2-Methylnaphthalene	µg/L	0.033 J	0.016 J	0.38	1.6	NS	NS
Naphthalene	µg/L	0.078	0.041 J	0.19	0.84	100	10
Phenanthrene	µg/L	<0.028	<0.024	0.45	0.63	NS	NS
Pyrene	µg/L	0.063	0.069	0.16	0.19	250	50

Notes:

1. NR 140 ES = Wisconsin Administrative Code, Chapter NR 140 Enforcement Standard
2. NR 140 PAL = Wisconsin Administrative Code, Chapter NR 140 Preventive Action Limit
3. NS = no standard
4. µg/L = micrograms per liter (equivalent to parts per billion, ppb)
5. NA = Not Analyzed
6. Laboratory flags:
 "J" = Analyte detected between Limit of Detection and Limit of Quantitation.
 "<" indicates concentration is less than laboratory limit of detection (LOD)

Fact Sheet: Understanding Chemical Vapor Intrusion Test Results

(DNR Pub RR-977)



Understanding Chemical Vapor Intrusion Testing Results

RR-977

October 2014

From the Lab to You

Chemical vapor samples were taken from underneath your house or building and possibly indoors as well. These samples have been tested by a certified laboratory and a report was issued. The Wisconsin Department of Natural Resources (DNR) uses these test results to determine if people in the building are being exposed to chemical vapors coming from nearby contaminated soil or groundwater, and to decide what, if any, action is needed to prevent this exposure.

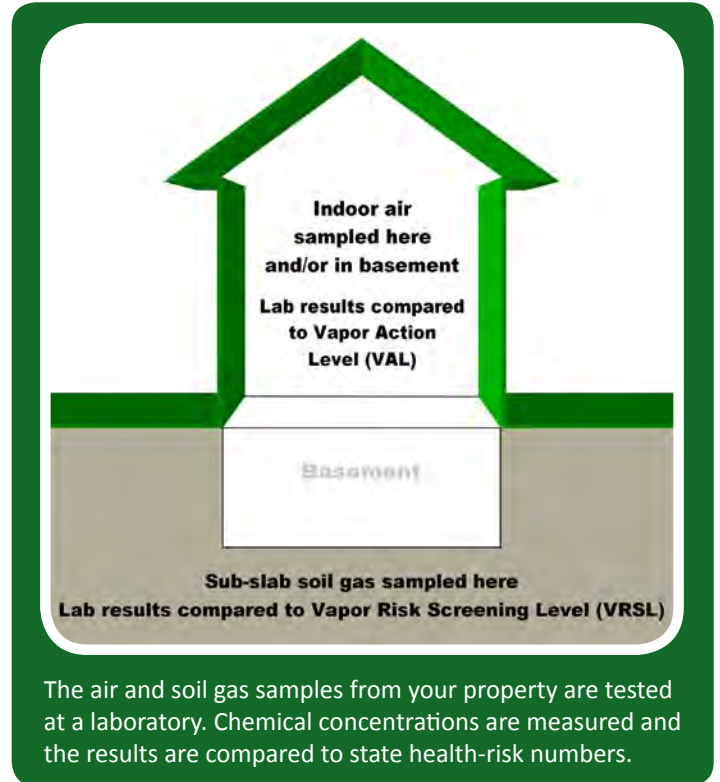
Indoor Air Testing Results

If indoor air samples were collected in your house or building, test results from the lab will be compared to the state Vapor Action Level (VAL) for chemicals of concern. The VAL is a chemical compound's numerical value that represents a health hazard risk to no more than 1 in 100,000 people during a lifetime of exposure. If test results show chemical concentrations in your air below the VAL then adverse health effects are extremely rare, even if you were to breathe the chemical at this concentration for your entire life.

Test results showing chemical concentrations in the air at or above the VAL prompt DNR to recommend that exposure to these chemical vapors be reduced. If test results show concentrations significantly above the VAL, or more than one type of chemical vapor is identified in your indoor air, the risk from exposure increases. If the concentration of any indoor chemical vapor greatly exceeds the VAL, DNR is concerned about even short-term exposure and will typically require immediate action to address the problem.

The VAL for each chemical is set by scientific research. It is protective of all people, including those who are most susceptible to adverse health effects.

If test results identify chemicals in your air that are not present in nearby soil or groundwater contamination, it is likely that these vapors are coming from some product or activity in or near your house or building. Many everyday consumer products (e.g., cleaners, solvents, polish, adhesives, lubricants, aerosols, insect repellants, etc.); combustion processes (e.g., smoking, home heating); fuels in attached garages; dry cleaned clothing or draperies; and occupant activities (e.g., craft hobbies), also release chemical vapors into the air.



The air and soil gas samples from your property are tested at a laboratory. Chemical concentrations are measured and the results are compared to state health-risk numbers.

Sub-slab Soil Gas Testing Results

Soil gas samples were collected from the ground beneath the concrete slab of your building foundation or basement. The lab measured the concentrations of various chemicals in these samples. DNR compares these measurements to the state Vapor Risk Screening Level (VRSL), which identifies the concentration of a chemical in soil gas that scientific research suggests can be a health risk if vapor enters a building. If soil gas measurements exceed the VRSL for a chemical of concern, action to reduce exposure is strongly recommended.

The VRSL is a higher number (higher chemical concentration) than the VAL because it is presumed that concrete building foundations and basement walls will prevent most soil gas from entering a building. Further, any soil gas that does enter a building through cracks, holes, sump pumps, drains, etc., will be diluted to some extent by the indoor air. So, people inside will not be breathing air that includes the full concentration of chemical vapors that exist in the ground.



Wisconsin Department of Natural Resources
P.O. Box 7921, Madison, WI 53707
dnr.wi.gov, search "Brownfields"



DNR generally relies on the test results of the sub-slab soil gas samples when determining what, if any, action should be taken related to chemical vapors coming from nearby soil or groundwater contamination. Indoor air quality is highly variable, and it is difficult to make a definitive decision about vapor intrusion based on indoor air sampling alone.

Follow-Up Actions

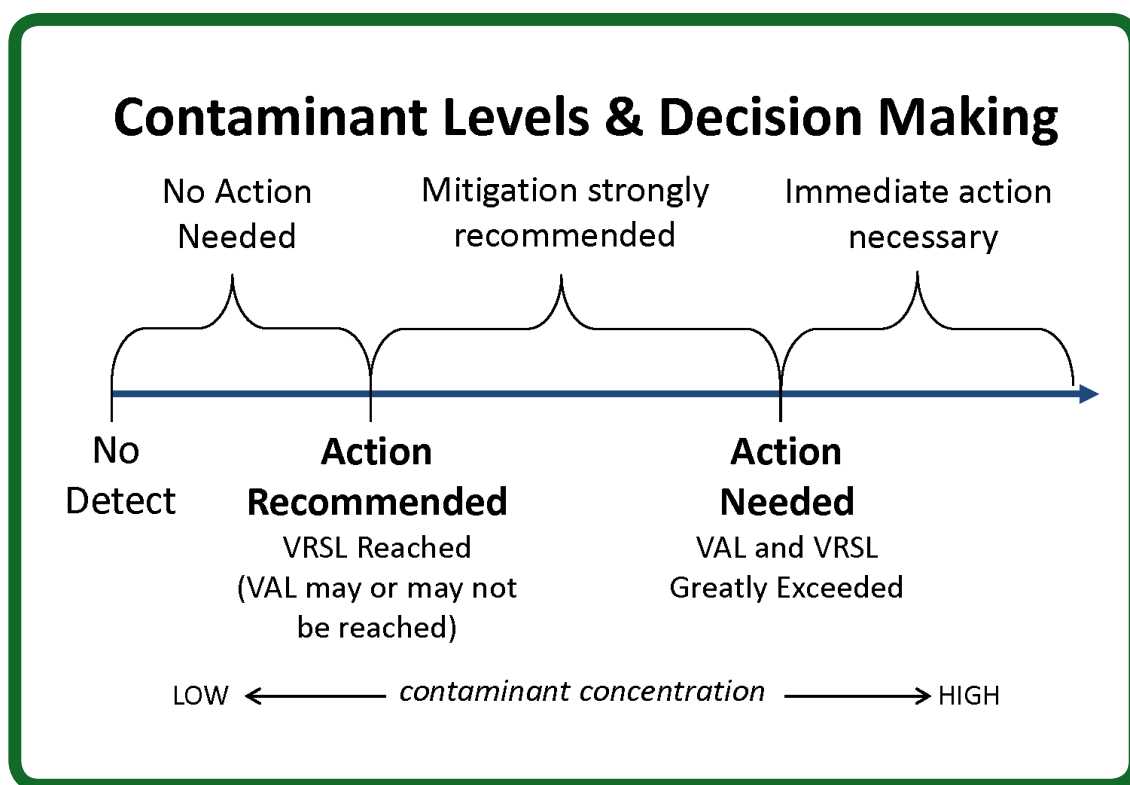
If your test results are less than a VAL for indoor air, or a VRSL for sub-slab soil gas, then the air in the house or building should not present a health concern. Follow-up sampling and testing may be necessary to confirm the results, but no other action is typically suggested.

When test results show soil gas chemical concentrations above a VRSL, both DNR and the Wisconsin Department of

Health Services recommend that owners take action to reduce potential exposure. This typically involves installing a vapor mitigation system that vents chemical vapors from beneath your home or building to the outdoors, similar to a radon mitigation system.

If indoor air concentrations exceed a VAL, but sub-slab concentrations are less than a VRSL, then the chemical vapors are most likely coming from indoor sources. Steps should be taken by the house or building owner to identify the products and practices causing the problem and implement appropriate remedies.

If soil gas mitigation is recommended, a representative of the party who is responsible for the soil or groundwater contamination will contact you to discuss your options.



A Note about Measurement Units: The lab report may include some unfamiliar technical language. The most important point to note is whether or not the test result for a specific chemical exceeds a VAL or VRSL, which are also sometimes referred to, generically, as "screening levels."

The concentration of gaseous pollutants in air is typically described in two different ways: 1) as units of mass per volume, where $\mu\text{g}/\text{m}^3$ represents micrograms of gaseous pollutant per cubic meter of ambient air; and 2) as parts per billion by volume (ppbv), where the volume of a gaseous pollutant is compared to a set volume of ambient air. These are the numbers that are compared to the VAL and VRSL.

For more information, visit dnr.wi.gov/topic/Brownfields/Vapor.html