



May 29, 2019

Christian Forsmo
900 Schultz Place
Monona, WI 53716

**Subject: May 2019 Air Quality Sampling Results – 245 Tyler Circle
BRRTS#: 02-13-551928**

Dear Mr. Forsmo:

Thank you very much for allowing us to resample the air quality at your property on May 13-14, 2019. This letter provides you the results of that sampling conducted by EnviroForensics, LLC (EnviroForensics) as part of an environmental investigation being performed for the Klinke Cleaners facility located at 4518 Monona Drive in Madison, Wisconsin. This work is all being performed at the direction of the Wisconsin Department of Natural Resources (WDNR). The chemicals being investigated are tetrachloroethene (PCE) and its associated breakdown products, which was a chemical that was formerly used in the dry cleaning process. That chemical is no longer in use by Klinke Cleaners.

One (1) indoor air sample (designated “6404-245 Tyler Circle-IA-B”) was collected from the home’s basement. One (1) sub-slab vapor sample (designated “6404-245 Tyler Circle-SSV-1”) was collected from beneath the basement floor. A sample location sketch is provided on **Figure 1**.

Sample results are summarized and compared to WDNR standards on the attached **Table 1**. We have also included the laboratory report that relates to each sample. As you will see, there were **no detections** of any of the chemicals of concern in the indoor air sample. As for the vapor beneath your basement slab, although PCE and trichloroethene (TCE) were detected in the sample at concentrations of 5.35 parts per billion by volume (ppbv) and 1.69 ppbv, respectively, the results **are well below** the WDNR’s residential vapor risk screening levels of 210 and 13 ppbv, respectively. No other chemicals were detected in the sub-slab vapor sample.

This is good news! These sampling results indicate that the risk of vapor intrusion has been eliminated. You can operate the mitigation system fan at your discretion; however, it is no longer needed for PCE vapor mitigation.

If you have any questions or would like to discuss these results, please contact me at 262-290-4001 or by email at bkappen@enviroforensics.com. The WDNR project manager, Mike Schmoller, can also be reached to discuss at 608-275-3303.

Document: 6404-1737

We greatly appreciate your help and patience with this matter.

Sincerely,
EnviroForensics, LLC

A handwritten signature in blue ink, appearing to read "Brian Kappen".

Brian Kappen, PG
Project Manager

Attachments: Vapor Intrusion Sample Locations
Sample Results Summary Table
Laboratory Analytical Report
RR-977 Understanding Chemical Vapor Intrusion Testing Results

Copy: Mike Schmoller, Wisconsin Department of Natural Resources
Steve Klinke, Klinke Cleaners

FIGURE 1
VAPOR INTRUSION SAMPLE LOCATIONS
245 Tyler Circle, Madison, Wisconsin



Legend

- = Indoor/Outdoor Air Sample
- IA-B = Basement
- SSV-1 = Sub-Slab Vapor
- ★ = Sub-Slab Vapor Sampling Port Location



TABLE 1
VAPOR INTRUSION ASSESSMENT ANALYTICAL RESULTS SUMMARY

Klinke Cleaners
4518 Monona Drive, Madison, Wisconsin

| Sample Address | Sample Identification | Sample Location | Sample Date | Mitigation (pre/post) | Tetrachloroethene | Trichloroethene |
|--|-----------------------------|-----------------|-------------|-----------------------|-------------------|-----------------|
| INDOOR/OUTDOOR AIR | | | | | | |
| Residential Indoor Air Vapor Action Level | | | | | 6.2 | 0.39 |
| 245 Tyler Circle | 6243-245 Tyler-IA-1 | Basement | 5/24/2012 | pre | 5.1 | ND |
| | 6243-245 Tyler-IA-2 | 1st Floor | 5/24/2012 | pre | 0.72 | 0.28 |
| | 6243-245 Tyler-IA-1 | 1st Floor | 2/13/2013 | post | ND | ND |
| | 6243-245 Tyler-IA-2 | Basement | 2/13/2013 | post | ND | ND |
| | 6404-245 Tyler Circle-IA-B | Basement | 3/13/2018 | post | <0.47 | <0.2 |
| | 6404-245 Tyler Circle-IA-B | Basement | 5/14/2019 | post | <0.47 | <0.2 |
| SUB-SLAB VAPOR | | | | | | |
| Residential Vapor Risk Screening Level | | | | | 210 | 13 |
| 245 Tyler Circle | 6243-245 Tyler-SS-1 | Basement | 5/24/2012 | pre | 2,800 | <26 |
| | 6404-245 Tyler Circle-SSV-1 | Basement | 3/13/2018 | post | 19.8 | <0.2 |
| | 6404-245 Tyler Circle-SSV-1 | Basement | 5/14/2019 | post | 5.35 | 1.69 |

Notes:

Units in ppbv = parts per billion by volume

Vapor risk screening levels calculated according to the procedures described in WDNR Publication RR-800 and subsequent guidance.

Bolded values are above detection limits

Bolded and shaded values exceed land use specific screening levels

ND = Compound not detected



EnvisionAir
1441 Sadler Circle West Drive
Indianapolis, IN 46239
Ph: 317-351-0885
Fax: 317-351-0882
www.envision-air.com

Mr. Brian Kappen
Enviroforensics
N16 W. 23390 Stone Ridge Dr
Suite G
Waukesha, WI 53188

May 24, 2019

EnvisionAir Project Number: 2019-320
Client Project Name: 6404 / Klinke Cleaners

Dear Mr. Kappen,

Please find the attached analytical report for the samples received May 17, 2019. All test methods performed were fully compliant with local, state, and federal EPA methods unless otherwise noted. The project was analyzed as requested on the enclosed chain of custody record. Please review the comments section for additional information about your results or Quality Control data.

Feel free to contact me if you have any questions or comments regarding your analytical report or service.

Thank you for your business. EnvisionAir looks forward to working with you on your next project.

Yours Sincerely,

A handwritten signature in black ink that reads "Stanley A. Hunnicutt".

Stanley A Hunnicutt

Project Manager
EnvisionAir, LLC



EnvisionAir
 1441 Sadlier Circle West Drive
 Indianapolis, IN 46239
 Ph: 317-351-0885
 Fax: 317-351-0882
 www.envision-air.com

Client Name: ENVIROFORENSICS
Project ID: 6404 / KLINKE CLEANERS
Client Project Manager: BRIAN KAPPEN
EnvisionAir Project Number: 2019-320

Sample Summary

Canister Pressure / Vacuum

| <u>Laboratory Sample Number:</u> | <u>Sample Description:</u> | <u>Matrix:</u> | <u>START</u> | <u>START</u> | <u>End Date</u> | <u>End Time</u> | <u>Date</u> | <u>Time</u> | <u>Canister Pressure / Vacuum</u> | | <u>Lab</u> |
|----------------------------------|-----------------------------|----------------|-------------------|-------------------|-----------------|-----------------|-------------|-------------|-----------------------------------|-----------------|------------|
| | | | <u>Collected:</u> | <u>Collected:</u> | | | | | <u>(in. Hg)</u> | <u>(in. Hg)</u> | |
| 19-1396 | 6404-245 TYLER CIRCLE-IA-B | A | 5/13/19 | 18:00 | 5/14/19 | 18:00 | 5/17/19 | 11:30 | -29 | -6 | -6 |
| 19-1397 | 6404-245 TYLER CIRCLE-SSV-1 | A | 5/14/19 | 18:25 | | | 5/17/19 | 11:30 | -29 | -3 | -3 |



EnvisionAir
 1441 Sadler Circle West Drive
 Indianapolis, IN 46239
 Ph: 317-351-0885
 Fax: 317-351-0882
 www.envision-air.com

Client Name: ENVIROFORENSICS
Project ID: 6404 / KLINKE CLEANERS
Client Project Manager: BRIAN KAPPEN
EnvisionAir Project Number: 2019-320

Analytical Method: TO-15
Analytical Batch: 052019AIR

Client Sample ID: 6404-245 TYLER
 CIRCLE-IA-B

Sample Collection START Date/Time: 5/13/19 18:00
Sample Collection END Date/Time: 5/14/19 18:00
Sample Received Date/Time: 5/17/19 11:30

Envision Sample Number: 19-1396
Sample Matrix: AIR

| <u>Compounds</u> | <u>Sample Results ppbv</u> | <u>Reporting Limit ppbv</u> | <u>Flag</u> |
|----------------------------------|----------------------------|-----------------------------|-------------|
| cis-1,2-Dichloroethene | < 5 | 5 | |
| Tetrachloroethene | < 0.47 | 0.47 | |
| trans-1,2-Dichloroethene | < 10 | 10 | |
| Trichloroethene | < 0.2 | 0.2 | |
| Vinyl Chloride | < 0.5 | 0.5 | |
| 4-bromofluorobenzene (surrogate) | 83% | | |
| Analysis Date/Time: | 5-20-19/16:05 | | |
| Analyst Initials | tjg | | |



EnvisionAir
1441 Sadler Circle West Drive
Indianapolis, IN 46239
Ph: 317-351-0885
Fax: 317-351-0882
www.envision-air.com

Client Name: ENVIROFORENSICS
Project ID: 6404 / KLINKE CLEANERS
Client Project Manager: BRIAN KAPPEN
EnvisionAir Project Number: 2019-320

Analytical Method: TO-15
Analytical Batch: 052219AIR

Client Sample ID: 6404-245 TYLER
CIRCLE-SSV-1

Sample Collection START Date/Time: 5/14/19 18:25
Sample Collection END Date/Time:
Sample Received Date/Time: 5/17/19 11:30

Envision Sample Number: 19-1397
Sample Matrix: AIR

| <u>Compounds</u> | <u>Sample Results ppbv</u> | <u>Reporting Limit ppbv</u> | <u>Flag</u> |
|----------------------------------|----------------------------|-----------------------------|-------------|
| cis-1,2-Dichloroethene | < 5 | 5 | |
| Tetrachloroethene | 5.35 | 0.47 | |
| trans-1,2-Dichloroethene | < 10 | 10 | |
| Trichloroethene | 1.69 | 0.2 | |
| Vinyl Chloride | < 0.5 | 0.5 | |
| 4-bromofluorobenzene (surrogate) | 108% | | |
| Analysis Date/Time: | 5-22-19/20:19 | | |
| Analyst Initials | tjg | | |

TO-15 Quality Control Data

EnvisionAir Batch Number: 052019AIR

| <u>Method Blank (MB):</u> | <u>MB Results (ppbv)</u> | <u>Reporting Limit (ppbv)</u> | <u>Flags</u> |
|----------------------------------|--------------------------|-------------------------------|--------------|
| cis-1,2-Dichloroethene | < 5 | 5 | |
| Tetrachloroethene | < 0.47 | 0.47 | |
| trans-1,2-Dichloroethene | < 10 | 10 | |
| Trichloroethene | < 0.2 | 0.2 | |
| Vinyl Chloride | < 0.5 | 0.5 | |
| 4-bromofluorobenzene (surrogate) | 89% | | |
| Analysis Date/Time: | 5-20-19/10:59 | | |
| Analyst Initials | tjg | | |

| <u>LCS/LCSD</u> | <u>LCS Results (ppbv)</u> | <u>LCSD Results (ppbv)</u> | <u>LCS/D Conc(ppbv)</u> | <u>LCS Rec.</u> | <u>LCSD Rec.</u> | <u>RPD</u> | <u>Flag</u> |
|----------------------------------|---------------------------|----------------------------|-------------------------|-----------------|------------------|------------|-------------|
| Vinyl Chloride | 10.3 | 10.9 | 10 | 103% | 109% | 5.7% | |
| trans-1,2-Dichloroethene | 10.5 | 9.49 | 10 | 105% | 95% | 10.1% | |
| cis-1,2-Dichloroethene | 11.3 | 10.1 | 10 | 113% | 101% | 11.2% | |
| Trichloroethene | 9.64 | 8.59 | 10 | 96% | 86% | 11.5% | |
| Tetrachloroethene | 10.4 | 9.28 | 10 | 104% | 93% | 11.4% | |
| 4-bromofluorobenzene (surrogate) | 108% | 100% | | | | | |
| Analysis Date/Time: | 5-20-19/09:14 | 5-20-19/09:51 | | | | | |
| Analyst Initials | tjg | tjg | | | | | |



EnvisionAir
 1441 Sadler Circle West Drive
 Indianapolis, IN 46239
 Ph: 317-351-0885
 Fax: 317-351-0882
 www.envision-air.com

Analytical Report

TO-15 Quality Control Data

EnvisionAir Batch Number: 052219AIR

| <u>Method Blank (MB):</u> | <u>MB Results (ppbv)</u> | <u>Reporting Limit (ppbv)</u> | <u>Flags</u> |
|----------------------------------|--------------------------|-------------------------------|--------------|
| cis-1,2-Dichloroethene | < 5 | 5 | |
| Tetrachloroethene | < 0.47 | 0.47 | |
| trans-1,2-Dichloroethene | < 10 | 10 | |
| Trichloroethene | < 0.2 | 0.2 | |
| Vinyl Chloride | < 0.5 | 0.5 | |
| 4-bromofluorobenzene (surrogate) | 93% | | |
| Analysis Date/Time: | 5-22-19/13:55 | | |
| Analyst Initials | tjg | | |

| <u>LCS/LCSD</u> | <u>LCS Results (ppbv)</u> | <u>LCSD Results (ppbv)</u> | <u>LCS/D Conc(ppbv)</u> | <u>LCS Rec.</u> | <u>LCSD Rec.</u> | <u>RPD</u> | <u>Flag</u> |
|----------------------------------|---------------------------|----------------------------|-------------------------|-----------------|------------------|------------|-------------|
| Vinyl Chloride | 11.4 | 10.4 | 10 | 114% | 104% | 9.2% | |
| trans-1,2-Dichloroethene | 9.7 | 10.3 | 10 | 97% | 103% | 6.0% | |
| cis-1,2-Dichloroethene | 10.1 | 10.9 | 10 | 101% | 109% | 7.6% | |
| Trichloroethene | 9.58 | 9.68 | 10 | 96% | 97% | 1.0% | |
| Tetrachloroethene | 9.3 | 9.19 | 10 | 93% | 92% | 1.2% | |
| 4-bromofluorobenzene (surrogate) | 105% | 100% | | | | | |
| Analysis Date/Time: | 5-22-19/12:11 | 5-22-19/12:48 | | | | | |
| Analyst Initials | tjg | tjg | | | | | |



EnvisionAir
1441 Sadler Circle West Drive
Indianapolis, IN 46239
Ph: 317-351-0885
Fax: 317-351-0882
www.envision-air.com

Flag Number

Comments

CHAIN OF CUSTODY RECORD

EnvisionAir | 1441 Sadlier Circle West Drive | Indianapolis, IN 46239 | Phone: (317) 351-0885 | Fax: (317) 351-0882

| | |
|--|---|
| Client: EnviroForensics | P.O. Number: 2019-0463 |
| Report Address: bkappen@envirofor ensics.com | Project Name or Number: 6404 Klinke Cleaners |
| Report To: B. Kappen | Sampled by: B. Kappen |
| Phone: 262-290-4001 | QA/QC Required: (circle if applicable) Level III Level IV |
| Invoice Address: accountspayable @enviroforensics.com | Reporting Units needed: (circle) ug/m³ mg/m³ PPBV PPMV |
| Desired TAT: (Please Circle One) 1 day 2 days 3 days Std (5 bus. days) | Media type: 1LC = 1 Liter Canister 6LC = 6 Liter Canister TB = Tedlar Bag TD = Thermal Desorption Tube |

REQUESTED PARAMETERS

TO-15 Full List

TO-15 Short List (Specify in notes)



Sampling Type:
 Soil-Gas:
 Sub-Slab:
 Indoor-Air:

www.envision-air.com

Canister Pressure / Vacuum

| Air Sample ID | Media Type <small>(see code above)</small> | Coll. Date <small>(Grab/Comp Start)</small> | Coll. Time <small>(Grab/Comp Start)</small> | Coll. Date <small>(Comp. End)</small> | Coll. Time <small>(Comp. End)</small> | | | | Canister Serial # | Flow Controller Serial # | Initial Field (in. Hg) | Final Field (in. Hg) | Lab Received (in. Hg) | EnvisionAir Sample Number |
|---------------------------------|---|--|--|--|--|--|---|--|-------------------|--------------------------|------------------------|----------------------|-----------------------|---------------------------|
| 6404-245 Tyler Circle- IA-B | 6LC | 5/13/19 | 1800 | 5/14/19 | 1800 | | X | | 11077 | 05251 | -29 | -6 | -6 | 19-1396 |
| 6404-245 Tyler Circle- SSV-1 | 1LC | 5/14/19 | 1825 | | | | X | | 83840 | 0105 | -29 | -3 | -3 | 19-1397 |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

Comments:

| Relinquished by: | Date | Time | Received by: | Date | Time |
|-------------------|---------|------|--------------------|---------|-------|
| <i>B. J. Z...</i> | 5/16/19 | 1530 | Fed Ex | 5/16/19 | 1530 |
| | | | <i>[Signature]</i> | 5/17/19 | 11:30 |



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.

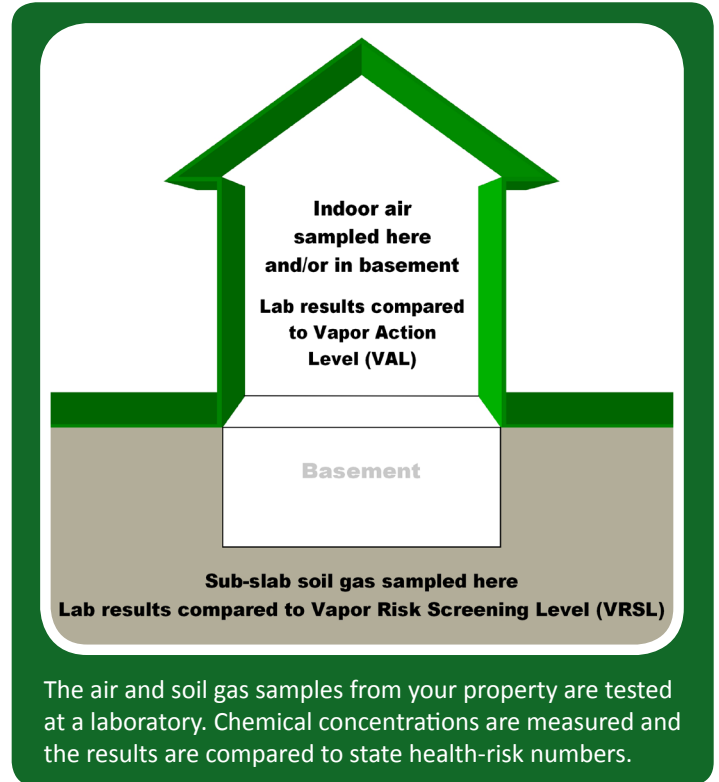
Indoor Air Testing Results

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

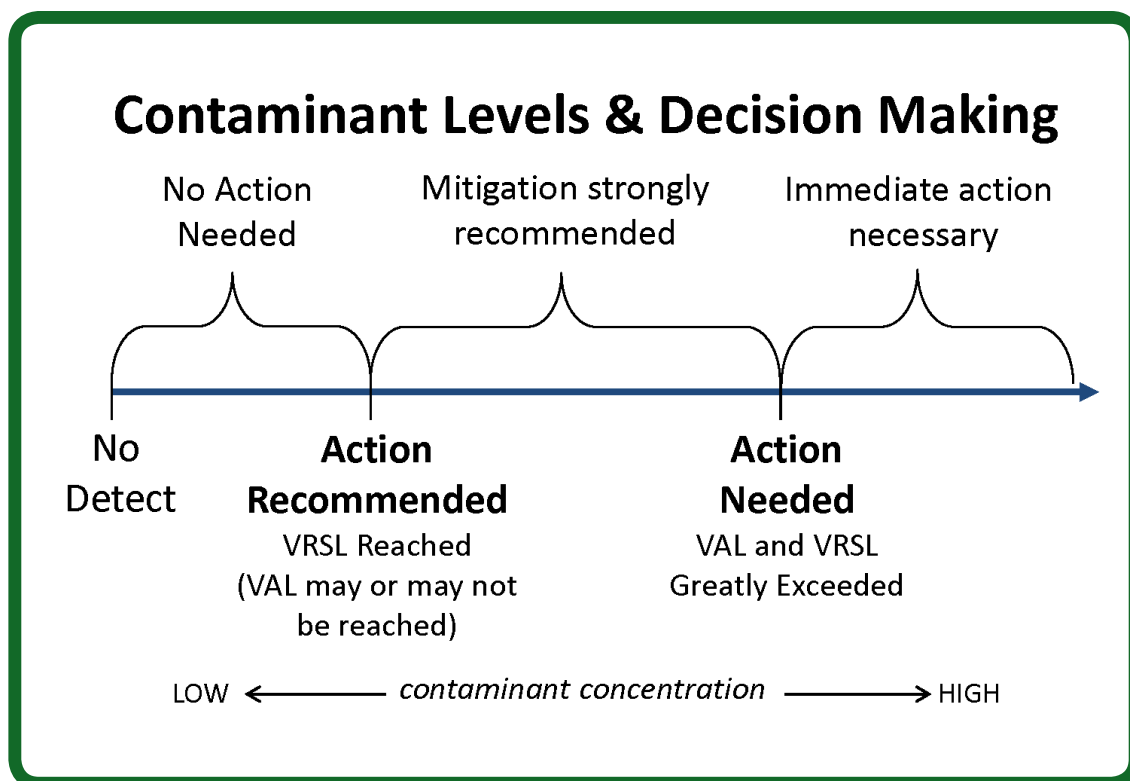
If your test results are less than a VAL for indoor air, or a VRSL for sub-slab soil gas, then the air in the house or building should not present a health concern. Follow-up sampling and testing may be necessary to confirm the results, but no other action is typically suggested.

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