

March 25, 2024  
File No. 25222269.04

Alex Pezewski, Owner  
P.O. Box 170702  
Milwaukee, WI 53217

Subject: Sample Results Notification  
1426 and 1428 South 96th Street  
WDNR Badger Lease & Auto Sales Case  
BRRTS No. 02-41-305222

Dear Mr. Pezewski:

On behalf of the Wisconsin Department of Natural Resources (WDNR) through the Vapor Intrusion Zone Contract (VIZC), SCS Engineers (SCS) is providing sample results for sub-slab vapor, sump headspace, indoor air, and outdoor air samples which were collected from the above-noted property by SCS in February 2024. The approximate sample locations are shown on the attached map (**Figure 1**).

The samples were submitted for analysis of five specific chlorinated volatile organic compounds (CVOCs), including tetrachloroethene (PCE), trichloroethene (TCE), cis-1,2-dichloroethene, trans 1,2-dichloroethene, and vinyl chloride. The sample laboratory reports are included as **Attachment A**. Analytical results are summarized in **Tables 1** and **2**. The WDNR Publication RR-977 Understanding Chemical Vapor Testing Results with additional information for you is included as **Attachment B**.

Minor concentrations of PCE were detected in a sub-slab sample 05C\_SSV\_02\_20240227 and sump headspace sample 05C\_Sump\_01\_20240227 below the WDNR residential sub-slab vapor risk screening level (VRSL) and indoor air vapor action level (VAL). No other CVOCs were detected in the samples. The sample results indicate there is not an indoor air health risk related to vapor intrusion of CVOCs.

One additional sampling event is planned for the property to evaluate potential variability of concentrations. SCS will contact applicable tenants in advance of this additional event to schedule access.

Once the final sampling event is completed, a final report with these findings will be prepared and submitted to the WDNR and listed on the Bureau for Remediation and Redevelopment Tracking System (BRRTS) on the Web (BOTW).

Please contact Joseph Martinez of WDNR at (414) 218-6042 or [joseph.martinez@wisconsin.gov](mailto:joseph.martinez@wisconsin.gov) or Nathan Kloczko of Wisconsin Department of Health (DHS) at (608) 867-4448 or [Nathan.kloczko@dhs.wisconsin.gov](mailto:Nathan.kloczko@dhs.wisconsin.gov) if you have questions concerning the analytical results.

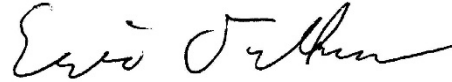


Alex Pezewski  
March 25, 2024  
Page 2

Sincerely,



Robert Langdon  
Senior Project Manager  
SCS Engineers



Eric Oelkers, PG  
Senior Hydrogeologist  
SCS Engineers

REL/AJR/EO

cc: Joseph Martinez, WDNR  
Nathan Kloczko, DHS

Attachments: Table 1 - Sub-Slab Vapor Analytical Results Summary  
Table 2 - Indoor and Outdoor Air Analytical Results Summary  
Figure 1 - Vapor Investigation Map  
Attachment A - Laboratory Reports  
Attachment B - WDNR Publication RR-977

I:\25222269.00\25222269.04 Badger Lease & Auto\\_Deliverables\Results Notification Letters\1426\_1428 S.  
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## Tables

- 1 Sub-Slab Vapor Analytical Results Summary
- 2 Indoor and Outdoor Air Analytical Results Summary

**Table 1. Sub-Slab Vapor Analytical Results Summary**  
**Badger Lease & Auto Sales, West Allis, Wisconsin / SCS Engineers Project #2522269.04**  
 (Results are in  $\mu\text{g}/\text{m}^3$ )

| Location  | Sample              | Sample Start Date | Sample End Date | Lab Notes | Tetrachloroethene (PCE) | Trichloroethene (TCE) | cis-1,2-DCE | trans-1,2-DCE | Vinyl Chloride |
|---|---------------------|-------------------|-----------------|-----------|-------------------------|-----------------------|-------------|---------------|----------------|
| 1426/1428 S. 96th St.   | 05C_SSV_01_20231003 | 9/26/2023         | 10/3/2023       | --        | <2.39                   | <2.97                 | <1.85       | <2.23         | <1.21          |
|   | 05C_SSV_01_20240227 | 2/19/2024         | 2/27/2024       | --        | <2.12                   | <2.63                 | <1.64       | <1.97         | <1.07          |
|   | 05C_SSV_02_20231003 | 9/26/2023         | 10/3/2023       | --        | <b>6.38</b>             | <2.97                 | <1.85       | <2.23         | <1.21          |
|   | 05C_SSV_02_20240227 | 2/19/2024         | 2/27/2024       | --        | <b>6.54</b>             | <2.63                 | <1.64       | <1.98         | <1.07          |
| Vapor Risk Screening Level (Residential Building)                 |                     |                   |                 |           | 1,400                   | 70                    | 1,400       | 1,400         | 56             |
| Vapor Risk Screening Level (Small Commercial Building)            |                     |                   |                 |           | 5,800                   | 290                   | 5,800       | 5,800         | 930            |
| Vapor Risk Screening Level (Large Commercial/Industrial Building) |                     |                   |                 |           | 18,000                  | 880                   | 18,000      | 18,000        | 2,800          |

Abbreviations:

$\mu\text{g}/\text{m}^3$  = micrograms per cubic meter  
 trans-1,2-DCE = trans-1,2-dichloroethene

cis-1,2-DCE = cis-1,2-dichloroethene  
 -- = Not Applicable

Notes:

1. Samples were collected using passive sorbent samplers and analyzed using the USEPA 8260C analytical method.
2. Vapor Risk Screening Levels are from Wisconsin Department of Natural Resources' WI Vapor Quick Look-Up Table, which is based on August 2023 U.S. EPA Regional Screening Level Tables.
3. **Bold+underlined** values meet or exceed Vapor Risk Screening Levels.

Lab Notes:

None

Calculations\Tables\[Table 1\_Sub-Slab Vapor Analytical Results Summary.xlsx]Sub-Slab Vapor

Created by: REL  
 Last revision by: AJR  
 Checked by: JSN  
 Proj Mgr QA/QC: REL

Date: 1/29/2024  
 Date: 3/15/2024  
 Date: 3/18/2024  
 Date: 3/20/2024

**Table 2. Indoor and Outdoor Air Analytical Results Summary**  
**Badger Lease & Auto Sales, West Allis, Wisconsin / SCS Engineers Project #25222269.04**  
 (Results are in µg/m<sup>3</sup>)

| Location   | Sample Type           | Sample               | Sample Start Date | Sample End Date | Lab Notes | Tetrachloroethene (PCE) | Trichloroethene (TCE) | cis-1,2-DCE | trans-1,2-DCE | Vinyl Chloride |
|--|-----------------------|----------------------|-------------------|-----------------|-----------|-------------------------|-----------------------|-------------|---------------|----------------|
| 1426/1428 S. 96th St.  | Indoor Air, Basement  | 05C_IAB_01_20231003  | 9/26/2023         | 10/3/2023       | --        | <1.19                   | <1.48                 | <0.924      | <1.11         | <0.604         |
|  |                       | 05C_IAB_01_20240227  | 2/19/2024         | 2/27/2024       | --        | <1.06                   | <1.32                 | <0.823      | <0.991        | <0.538         |
|  | Indoor Air, 1st Floor | 05C_IA1_02_20231003  | 9/26/2023         | 10/3/2023       | --        | <1.20                   | <1.49                 | <0.925      | <1.11         | <0.605         |
|  |                       | 05C_IA1_02_20240227  | 2/19/2024         | 2/27/2024       | --        | <1.06                   | <1.32                 | <0.822      | <0.991        | <0.538         |
|  | Sump Headspace        | 05C_Sump_01_20231003 | 9/26/2023         | 10/3/2023       | --        | <1.19                   | <1.48                 | <0.923      | <1.11         | <0.604         |
|  |                       | 05C_Sump_01_20240227 | 2/19/2024         | 2/27/2024       | --        | <b>1.70 J</b>           | <1.32                 | <0.822      | <0.990        | <0.538         |
|  | Outdoor Air           | 05C_OA_01_20231003   | 9/26/2023         | 10/3/2023       | --        | <1.22                   | <1.51                 | <0.941      | <1.13         | <0.616         |
|  |                       | 05C_OA_01_20240227   | 2/19/2024         | 2/27/2024       | --        | <1.06                   | <1.32                 | <0.822      | <0.990        | <0.538         |
| Indoor Air Vapor Action Level (Residential Building)           |                       |                      |                   |                 |           | 42                      | 2.1                   | 42          | 42            | 1.7            |
| Indoor Air Vapor Action Level (Commercial/Industrial Building) |                       |                      |                   |                 |           | 180                     | 8.8                   | 180         | 180           | 28             |

Abbreviations:

µg/m<sup>3</sup> = micrograms per cubic meter  
 trans-1,2-DCE = trans-1,2-dichloroethene

cis-1,2-DCE = cis-1,2-dichloroethene  
 -- = Not Applicable

Notes:

1. Samples were collected using passive sorbent samplers analyzed using EPA Method TO-17.
2. Indoor Air Vapor Action Levels are from Wisconsin Department of Natural Resources' WI Vapor Quick Look-Up Table, which is based on August 2023 U.S. EPA Regional Screening Level Tables.
3. **1.70** values meet or exceed Indoor Air Vapor Action Levels.

Lab Notes/Qualifiers:

All non-detected analytes: U = Analyte was not detected and is reported as less than the limit of detection (LOD).  
 The LOD has been adjusted for any dilution or concentration of the sample.  
 J = Value reported below limit of quantitation (LOQ).

|                              |                        |
|------------------------------|------------------------|
| Created by: <u>AJR</u>       | Date: <u>2/2/2024</u>  |
| Last revision by: <u>LMH</u> | Date: <u>3/18/2024</u> |
| Checked by: <u>JSN</u>       | Date: <u>3/18/2024</u> |
| Proj Mgr QA/QC: <u>REL</u>   | Date: <u>3/20/2024</u> |

I:\25222269.00\25222269.04 Badger Lease & Auto\Data and Calculations\Tables\[Table 2\_Indoor and Outdoor Air Analytical Results Summary.xlsx]Indoor Air


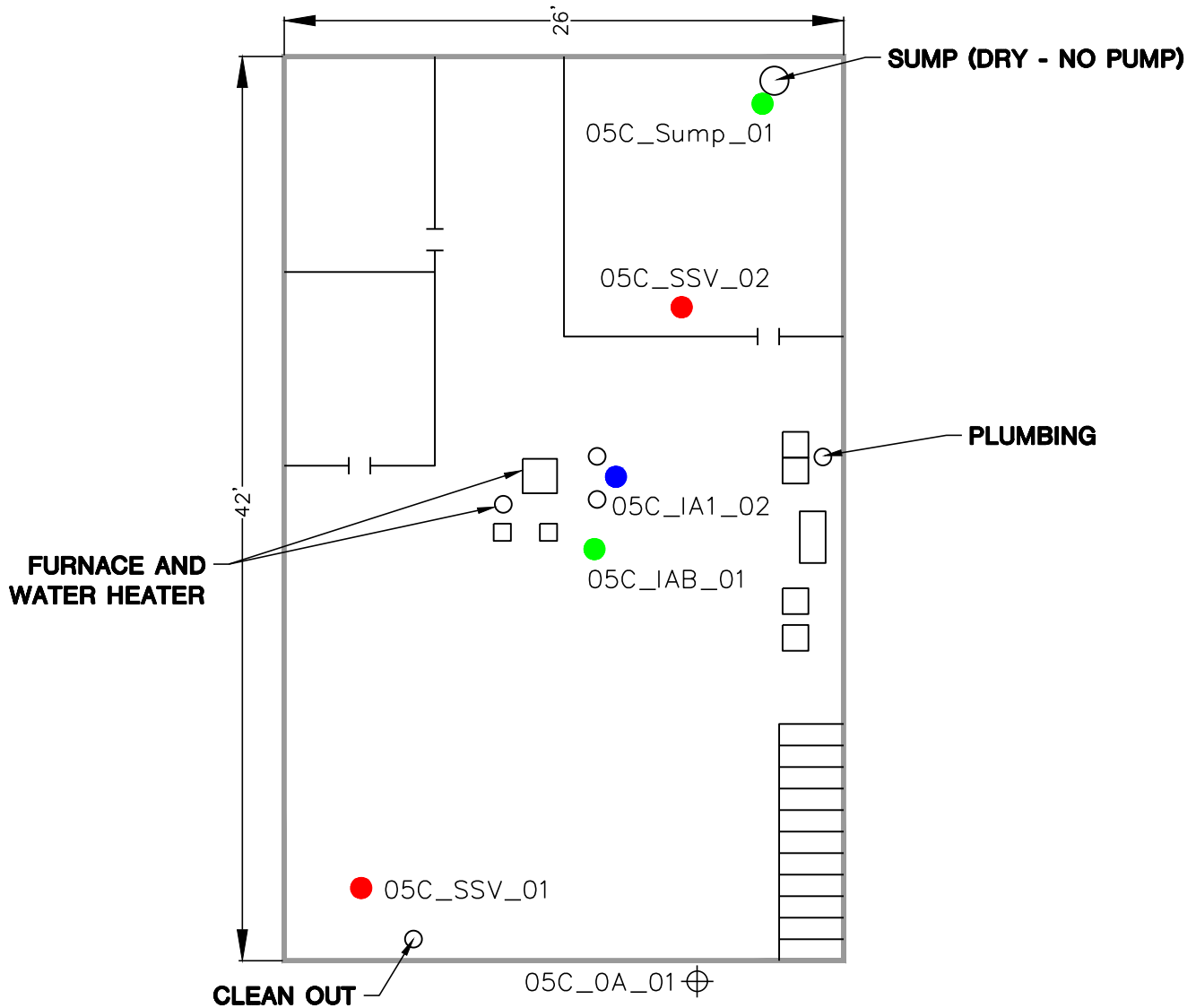


Figure 1  
Vapor Investigation Map

# BASEMENT LEVEL



S 96TH St.



SCALE: 1" = 8'



**LEGEND**

- APPROXIMATE SUB-SLAB SAMPLE LOCATION
- APPROXIMATE BASEMENT INDOOR AIR SAMPLE LOCATION
- APPROXIMATE 1ST FLOOR INDOOR AIR SAMPLE LOCATION
- ⊕ APPROXIMATE OUTDOOR AIR SAMPLE LOCATION

|                    |   |                     |                                   |                 |   |
|--------------------|---|---------------------|-----------------------------------|-----------------|---|
| <b>CLIENT</b>      | WISCONSIN DEPARTMENT OF NATURAL RESOURCES | <b>SITE</b>         | 1426/1428 S 96th STREET RESIDENCE | <b>MAP</b>      | VAPOR INVESTIGATION MAP   |
| <b>PROJECT NO.</b> | 25222269.04                               | <b>DRAWN BY:</b>    | SB                                | <b>ENGINEER</b> | <div style="background-color: #800000; color: white; padding: 2px; font-weight: bold; font-size: 1.2em;">SCS ENGINEERS</div> 2830 DAIRY DRIVE MADISON, WI 53718-6751<br>PHONE: (608) 224-2830 |
| <b>DRAWN:</b>      | 09/12/2023                                | <b>CHECKED BY:</b>  | REL                               | <b>FIGURE</b>   |   |
| <b>REVISED:</b>    | 03/20/2024                                | <b>APPROVED BY:</b> | REL (03/20/2024)                  | 1               |   |

Attachment A  
Laboratory Reports





Beacon Environmental

526 Underwood Lane  
Bel Air, MD 21014 USA  
1.410.838.8780

CERTIFICATE OF ANALYSIS

Beacon Proposal No.: 230920R04

Laboratory Work Order: 0007570

**Project Description:**

Badger Lease and Auto Sales  
West Allis, WI

Client PO No.: 25222269.04-001

Prepared for:

Jacob Krause

**SCS Engineers**

2830 Dairy Drive

Madison, WI 53718-6751

---

Ryan W. Schneider  
Senior Project Manager

March 11, 2024

All data meet requirements as specified in the Beacon Environmental Quality Assurance Project Plan and the results relate only to the samples reported. The work performed was in accordance with ISO/IEC 17025:2017. This report shall not be reproduced, except in full, without written approval of the laboratory. Release of the data contained in this data package has been authorized by the Laboratory Director or his signee, as verified by the following signatures:

---

Steven C. Thornley  
Laboratory Director

---

Peter B. Kelly  
Quality Manager

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SCS Engineers  
 2830 Dairy Drive  
 Madison, WI 53718-6751

**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007570  
**Reported:** 03/11/2024

### Sample Summary

| Lab Sample ID               | Client Sample ID                              | Received   | Analysis  | Matrix   |
|-----------------------------|---|------------|-----------|----------|
| 0007570-01<br>Sampler Type: | 05C_SSV_01_20240227<br>Beacon Passive Sampler | 02/29/2024 | EPA 8260C | Soil Gas |
| 0007570-02<br>Sampler Type: | 05C_SSV_02_20240227<br>Beacon Passive Sampler | 02/29/2024 | EPA 8260C | Soil Gas |

#### Project Completeness

**Samples Received:** 2  
**Samples Analyzed:** 2

SCS Engineers  
2830 Dairy Drive  
Madison, WI 53718-6751

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**Lab Work Order:** 0007570  
**Reported:** 03/11/2024

### *Case Narrative*

#### **U.S. EPA Method 8260C**

All samples were analyzed using thermal desorption-gas chromatography/mass spectrometry (TD-GC/MS) instrumentation following U.S. EPA Method 8260C, with laboratory results provided in nanograms (ng) and micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ). Laboratory QA/QC procedures included internal standards, surrogates, and blanks based on EPA Method 8260C. Analyses and reporting were under BEACON's Quality Assurance Project Plan.

#### **Passive Soil-Gas Survey Notes**

If sample locations are covered with or near the edge of an impervious surface (*e.g.*, asphalt or concrete), the concentrations of compounds in soil gas are higher than if the surfacing was not present. Therefore, the sample location conditions should be considered when comparing results between locations.

Survey findings are exclusive to this project and when the spatial relationships are compared with results of other BEACON Surveys it is necessary to incorporate information from both investigations (*e.g.*, depth to sources, soil types, porosity, soil moisture, presence of impervious surfacing, sample collection times).

#### **Reporting Limits**

The RLs represent a baseline above which results meet laboratory-determined limits of precision and accuracy. All reported results are within the calibration range. The project method quantitation limit (MQL) is the limit of quantitation (LOQ) as noted in the data tables. Beacon determined uptake rates for a suite of compounds with the Beacon sampler for sampling in air. Beacon calculated the uptake rates for the remaining compounds using Graham's Law of Diffusion. The reported data includes LOQ limits.

#### **Project Details**

Samples were received in proper condition and laboratory control parameters were met unless otherwise noted below. The work performed was in accordance with ISO/IEC 17025:2017.

**SCS Engineers**  
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Madison, WI 53718-6751

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**Lab Work Order:** 0007570  
**Reported:** 03/11/2024

## *Analytical Results*

|  |   |  |
|--|---|--|
| <b>SCS Engineers</b><br>2830 Dairy Drive<br>Madison, WI 53718-6751 | <b>Site Name:</b> Badger Lease and Auto Sales<br><b>Site Location:</b> West Allis, WI<br><b>Project Manager:</b> Jacob Krause | <b>Beacon Proposal:</b> 230920R04<br><b>Lab Work Order:</b> 0007570<br><b>Reported:</b> 03/11/2024 |
|--|---|--|

*Summary of Compound Detections- Mass*

|                           |                            |                   |
|---------------------------|----------------------------|-------------------|
| Lab Sample ID: 0007570-02 | <b>05C_SSV_02_20240227</b> | Method: EPA 8260C |
| Soil Gas                  |                            |                   |

| Analyte                  | CAS#     | Result (ng) | Q | RT    | LOQ (ng) | File ID     |
|--------------------------|----------|-------------|---|-------|----------|-------------|
| <b>Tetrachloroethene</b> | 127-18-4 | <b>31</b>   |   | 5.958 | 10       | C24030106.D |

**SCS Engineers**  
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Madison, WI 53718-6751

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**Lab Work Order:** 0007570  
**Reported:** 03/11/2024

*Summary of Compound Detections- Concentration*

|                           |                            |                   |
|---------------------------|----------------------------|-------------------|
| Lab Sample ID: 0007570-02 | <b>05C_SSV_02_20240227</b> | Method: EPA 8260C |
| Soil Gas                  |                            |                   |

| Analyte                  | CAS#     | Result<br>(µg/m³) | Q | RT    | LOQ<br>(µg/m³) | File ID     |
|--------------------------|----------|-------------------|---|-------|----------------|-------------|
| <b>Tetrachloroethene</b> | 127-18-4 | <b>6.54</b>       |   | 5.958 | 2.12           | C24030106.D |

**SCS Engineers**  
2830 Dairy Drive  
Madison, WI 53718-6751**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007570  
**Reported:** 03/11/2024*Data Summary Table- Mass*

| <b>Compound</b>   | <b>Frequency</b> | <b>LOQ<br/>(ng)</b> | <b>Max Value<br/>(ng)</b> |
|-------------------|------------------|---------------------|---------------------------|
| Tetrachloroethene | 1                | 10                  | 31                        |



**SCS Engineers**  
2830 Dairy Drive  
Madison, WI 53718-6751**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007570  
**Reported:** 03/11/2024***Data Summary Table- Concentration***

| <b>Compound</b>   | <b>Frequency</b> | <b>LOQ<br/>(<math>\mu\text{g}/\text{m}^3</math>)</b> | <b>Max Value<br/>(<math>\mu\text{g}/\text{m}^3</math>)</b> |
|-------------------|------------------|--|--|
| Tetrachloroethene | 1                | 2.12   | 6.54   |

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**Lab Work Order:** 0007570  
**Reported:** 03/11/2024

## *Detailed Analytical Results*

SCS Engineers  
2830 Dairy Drive  
Madison, WI 53718-6751

**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

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**Lab Work Order:** 0007570  
**Reported:** 03/11/2024

*Detailed Analytical Results- Mass*

**SCS Engineers**  
 2830 Dairy Drive  
 Madison, WI 53718-6751

**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007570  
**Reported:** 03/11/2024

Lab Sample ID: 0007570-01

**05C\_SSV\_01\_20240227**

Method: EPA 8260C

Soil Gas

| Analyte                       | CAS#       | Result<br>(ng) Q | LOQ<br>(ng)     | Analyzed         | File ID          |             |
|-------------------------------|------------|------------------|-----------------|------------------|------------------|-------------|
| Vinyl Chloride                | 75-01-4    | <10              | 10              | 03/01/2024 14:00 | C24030105.D      |             |
| trans-1,2-Dichloroethene      | 156-60-5   | <10              | 10              | 03/01/2024 14:00 | C24030105.D      |             |
| cis-1,2-Dichloroethene        | 156-59-2   | <10              | 10              | 03/01/2024 14:00 | C24030105.D      |             |
| Trichloroethene               | 79-01-6    | <10              | 10              | 03/01/2024 14:00 | C24030105.D      |             |
| Tetrachloroethene             | 127-18-4   | <10              | 10              | 03/01/2024 14:00 | C24030105.D      |             |
| Analyte                       | CAS#       | % Recovery       | Recovery Limits | Q                | Analyzed         | File ID     |
| Surrogate: 1,2-DCA-d4         | 17060-07-0 | 104%             | 70-130          |                  | 03/01/2024 14:00 | C24030105.D |
| Surrogate: Toluene-d8         | 2037-26-5  | 83.7%            | 70-130          |                  | 03/01/2024 14:00 | C24030105.D |
| Surrogate: Bromofluorobenzene | 460-00-4   | 93.5%            | 70-130          |                  | 03/01/2024 14:00 | C24030105.D |

|  |   |  |
|--|---|--|
| <b>SCS Engineers</b><br>2830 Dairy Drive<br>Madison, WI 53718-6751 | <b>Site Name:</b> Badger Lease and Auto Sales<br><b>Site Location:</b> West Allis, WI<br><b>Project Manager:</b> Jacob Krause | <b>Beacon Proposal:</b> 230920R04<br><b>Lab Work Order:</b> 0007570<br><b>Reported:</b> 03/11/2024 |
|--|---|--|

|                           |                            |                   |
|---------------------------|----------------------------|-------------------|
| Lab Sample ID: 0007570-02 | <b>05C_SSV_02_20240227</b> | Method: EPA 8260C |
| Soil Gas                  |                            |                   |

| Analyte                       | CAS#       | Result<br>(ng) Q | LOQ<br>(ng)     | Analyzed         | File ID          |             |
|-------------------------------|------------|------------------|-----------------|------------------|------------------|-------------|
| Vinyl Chloride                | 75-01-4    | <10              | 10              | 03/01/2024 14:29 | C24030106.D      |             |
| trans-1,2-Dichloroethene      | 156-60-5   | <10              | 10              | 03/01/2024 14:29 | C24030106.D      |             |
| cis-1,2-Dichloroethene        | 156-59-2   | <10              | 10              | 03/01/2024 14:29 | C24030106.D      |             |
| Trichloroethene               | 79-01-6    | <10              | 10              | 03/01/2024 14:29 | C24030106.D      |             |
| <b>Tetrachloroethene</b>      | 127-18-4   | <b>31</b>        | 10              | 03/01/2024 14:29 | C24030106.D      |             |
| Analyte                       | CAS#       | % Recovery       | Recovery Limits | Q                | Analyzed         | File ID     |
| Surrogate: 1,2-DCA-d4         | 17060-07-0 | 97.7%            | 70-130          |                  | 03/01/2024 14:29 | C24030106.D |
| Surrogate: Toluene-d8         | 2037-26-5  | 82.1%            | 70-130          |                  | 03/01/2024 14:29 | C24030106.D |
| Surrogate: Bromofluorobenzene | 460-00-4   | 98.7%            | 70-130          |                  | 03/01/2024 14:29 | C24030106.D |

**SCS Engineers**  
2830 Dairy Drive  
Madison, WI 53718-6751

**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007570  
**Reported:** 03/11/2024

*Detailed Analytical Results- Concentration*

|  |   |  |
|--|---|--|
| <b>SCS Engineers</b><br>2830 Dairy Drive<br>Madison, WI 53718-6751 | <b>Site Name:</b> Badger Lease and Auto Sales<br><b>Site Location:</b> West Allis, WI<br><b>Project Manager:</b> Jacob Krause | <b>Beacon Proposal:</b> 230920R04<br><b>Lab Work Order:</b> 0007570<br><b>Reported:</b> 03/11/2024 |
|--|---|--|

|                           |                            |                   |
|---------------------------|----------------------------|-------------------|
| Lab Sample ID: 0007570-01 | <b>05C_SSV_01_20240227</b> | Method: EPA 8260C |
| Soil Gas                  |                            |                   |

| Analyte                       | CAS#       | Result<br>(µg/m <sup>3</sup> ) | Q               | LOQ<br>(µg/m <sup>3</sup> ) | Analyzed         | File ID     |
|-------------------------------|------------|--------------------------------|-----------------|-----------------------------|------------------|-------------|
| Vinyl Chloride                | 75-01-4    | <1.07                          |                 | 1.07                        | 03/01/2024 14:00 | C24030105.D |
| trans-1,2-Dichloroethene      | 156-60-5   | <1.97                          |                 | 1.97                        | 03/01/2024 14:00 | C24030105.D |
| cis-1,2-Dichloroethene        | 156-59-2   | <1.64                          |                 | 1.64                        | 03/01/2024 14:00 | C24030105.D |
| Trichloroethene               | 79-01-6    | <2.63                          |                 | 2.63                        | 03/01/2024 14:00 | C24030105.D |
| Tetrachloroethene             | 127-18-4   | <2.12                          |                 | 2.12                        | 03/01/2024 14:00 | C24030105.D |
| Analyte                       | CAS#       | % Recovery                     | Recovery Limits | Q                           | Analyzed         | File ID     |
| Surrogate: 1,2-DCA-d4         | 17060-07-0 | 104%                           | 70-130          |                             | 03/01/2024 14:00 | C24030105.D |
| Surrogate: Toluene-d8         | 2037-26-5  | 83.7%                          | 70-130          |                             | 03/01/2024 14:00 | C24030105.D |
| Surrogate: Bromofluorobenzene | 460-00-4   | 93.5%                          | 70-130          |                             | 03/01/2024 14:00 | C24030105.D |

**SCS Engineers**  
 2830 Dairy Drive  
 Madison, WI 53718-6751

**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007570  
**Reported:** 03/11/2024

Lab Sample ID: 0007570-02

**05C\_SSV\_02\_20240227**

Method: EPA 8260C

Soil Gas

| Analyte                       | CAS#       | Result<br>(µg/m <sup>3</sup> ) | Q               | LOQ<br>(µg/m <sup>3</sup> ) | Analyzed         | File ID     |
|-------------------------------|------------|--------------------------------|-----------------|-----------------------------|------------------|-------------|
| Vinyl Chloride                | 75-01-4    | <1.07                          |                 | 1.07                        | 03/01/2024 14:29 | C24030106.D |
| trans-1,2-Dichloroethene      | 156-60-5   | <1.98                          |                 | 1.98                        | 03/01/2024 14:29 | C24030106.D |
| cis-1,2-Dichloroethene        | 156-59-2   | <1.64                          |                 | 1.64                        | 03/01/2024 14:29 | C24030106.D |
| Trichloroethene               | 79-01-6    | <2.63                          |                 | 2.63                        | 03/01/2024 14:29 | C24030106.D |
| <b>Tetrachloroethene</b>      | 127-18-4   | <b>6.54</b>                    |                 | 2.12                        | 03/01/2024 14:29 | C24030106.D |
| Analyte                       | CAS#       | % Recovery                     | Recovery Limits | Q                           | Analyzed         | File ID     |
| Surrogate: 1,2-DCA-d4         | 17060-07-0 | 97.7%                          | 70-130          |                             | 03/01/2024 14:29 | C24030106.D |
| Surrogate: Toluene-d8         | 2037-26-5  | 82.1%                          | 70-130          |                             | 03/01/2024 14:29 | C24030106.D |
| Surrogate: Bromofluorobenzene | 460-00-4   | 98.7%                          | 70-130          |                             | 03/01/2024 14:29 | C24030106.D |



**SCS Engineers**  
2830 Dairy Drive  
Madison, WI 53718-6751

**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007570  
**Reported:** 03/11/2024

## *QC Information/Summary*

**SCS Engineers**  
 2830 Dairy Drive  
 Madison, WI 53718-6751

**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007570  
**Reported:** 03/11/2024

*Soil-Gas Sample Analysis by EPA Method 8260C - Quality Control Summary*
**Sequence: B24B051 - Instrument: C System - File ID: Cb24021520.D**
***B24B051-ICV1 (LCSD/Second Source Verification/CALV)***

| Analyte                              | Result      | LOQ | Units     | Spike Level | Source Result | %REC        | %REC Limits   | RPD | RPD Limit | Notes |
|--------------------------------------|-------------|-----|-----------|-------------|---------------|-------------|---------------|-----|-----------|-------|
| Vinyl Chloride                       | 45.3        | 10  | ng        | 50.0        |               | 90.6        | 70-130        |     |           |       |
| trans-1,2-Dichloroethene             | 51.2        | 10  | ng        | 50.0        |               | 102         | 70-130        |     |           |       |
| cis-1,2-Dichloroethene               | 52.5        | 10  | ng        | 50.0        |               | 105         | 70-130        |     |           |       |
| Trichloroethene                      | 49.9        | 10  | ng        | 50.0        |               | 99.8        | 70-130        |     |           |       |
| Tetrachloroethene                    | 56.1        | 10  | ng        | 50.0        |               | 112         | 70-130        |     |           |       |
| <i>Surrogate: 1,2-DCA-d4</i>         | <i>46.0</i> |     | <i>ng</i> | <i>50.0</i> |               | <i>92.0</i> | <i>70-130</i> |     |           |       |
| <i>Surrogate: Toluene-d8</i>         | <i>47.9</i> |     | <i>ng</i> | <i>50.0</i> |               | <i>95.7</i> | <i>70-130</i> |     |           |       |
| <i>Surrogate: Bromofluorobenzene</i> | <i>48.7</i> |     | <i>ng</i> | <i>50.0</i> |               | <i>97.4</i> | <i>70-130</i> |     |           |       |

|  |   |  |
|--|---|--|
| <b>SCS Engineers</b><br>2830 Dairy Drive<br>Madison, WI 53718-6751 | <b>Site Name:</b> Badger Lease and Auto Sales<br><b>Site Location:</b> West Allis, WI<br><b>Project Manager:</b> Jacob Krause | <b>Beacon Proposal:</b> 230920R04<br><b>Lab Work Order:</b> 0007570<br><b>Reported:</b> 03/11/2024 |
|--|---|--|

*Soil-Gas Sample Analysis by EPA Method 8260C - Quality Control Summary*

**Sequence: B24B051 - Instrument: C System - File ID: Cb24021524.D**

***B24B051-ICB1 (Lab Blank/Initial Calibration Blank)***

| Analyte                              | Result | LOQ | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|--------------------------------------|--------|-----|-------|-------------|---------------|------|-------------|-----|-----------|-------|
| Vinyl Chloride                       | <5     | 10  | ng    |             |               |      |             |     |           | U     |
| trans-1,2-Dichloroethene             | <5     | 10  | ng    |             |               |      |             |     |           | U     |
| cis-1,2-Dichloroethene               | <5     | 10  | ng    |             |               |      |             |     |           | U     |
| Trichloroethene                      | <5     | 10  | ng    |             |               |      |             |     |           | U     |
| Tetrachloroethene                    | <5     | 10  | ng    |             |               |      |             |     |           | U     |
| <i>Surrogate: 1,2-DCA-d4</i>         | 95.5   |     | ng    | 100         |               | 95.5 | 70-130      |     |           |       |
| <i>Surrogate: Toluene-d8</i>         | 92.8   |     | ng    | 100         |               | 92.8 | 70-130      |     |           |       |
| <i>Surrogate: Bromofluorobenzene</i> | 89.6   |     | ng    | 100         |               | 89.6 | 70-130      |     |           |       |

**SCS Engineers**  
 2830 Dairy Drive  
 Madison, WI 53718-6751

**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007570  
**Reported:** 03/11/2024

*Soil-Gas Sample Analysis by EPA Method 8260C - Quality Control Summary*
**Sequence: B24C006 - Batch: 24C0006 - Instrument: C System - File ID: C24030102.D**
*24C0006-BS1 (LCS, Calibration Source Verification)*

| Analyte                              | Result      | LOQ | Units     | Spike Level | Source Result | %REC        | %REC Limits   | RPD | RPD Limit | Notes |
|--------------------------------------|-------------|-----|-----------|-------------|---------------|-------------|---------------|-----|-----------|-------|
| Vinyl Chloride                       | 59.3        | 10  | ng        | 50.0        |               | 119         | 80-120        |     |           |       |
| trans-1,2-Dichloroethene             | 54.8        | 10  | ng        | 50.0        |               | 110         | 80-120        |     |           |       |
| cis-1,2-Dichloroethene               | 50.2        | 10  | ng        | 50.0        |               | 100         | 80-120        |     |           |       |
| Trichloroethene                      | 51.2        | 10  | ng        | 50.0        |               | 102         | 80-120        |     |           |       |
| Tetrachloroethene                    | 49.5        | 10  | ng        | 50.0        |               | 99.0        | 80-120        |     |           |       |
| <i>Surrogate: 1,2-DCA-d4</i>         | <i>51.6</i> |     | <i>ng</i> | <i>50.0</i> |               | <i>103</i>  | <i>70-130</i> |     |           |       |
| <i>Surrogate: Toluene-d8</i>         | <i>45.1</i> |     | <i>ng</i> | <i>50.0</i> |               | <i>90.2</i> | <i>70-130</i> |     |           |       |
| <i>Surrogate: Bromofluorobenzene</i> | <i>48.6</i> |     | <i>ng</i> | <i>50.0</i> |               | <i>97.1</i> | <i>70-130</i> |     |           |       |

**SCS Engineers**  
 2830 Dairy Drive  
 Madison, WI 53718-6751

**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007570  
**Reported:** 03/11/2024

*Soil-Gas Analysis by EPA 8260 - Data in Concentration - Quality Control Summary*
**Sequence: B24C006 - Batch: 24C0006 - Instrument: C System - File ID: C24030103.D**
**24C0006-BLK1 (Lab Blank)**

| Analyte                              | Result      | LOQ  | Units             | Spike Level | Source Result | %REC        | %REC Limits   | RPD | RPD Limit | Notes |
|--------------------------------------|-------------|------|-------------------|-------------|---------------|-------------|---------------|-----|-----------|-------|
| Vinyl Chloride                       | <1.07       | 1.07 | µg/m <sup>3</sup> |             |               |             |               |     |           | U     |
| trans-1,2-Dichloroethene             | <1.97       | 1.97 | µg/m <sup>3</sup> |             |               |             |               |     |           | U     |
| cis-1,2-Dichloroethene               | <1.64       | 1.64 | µg/m <sup>3</sup> |             |               |             |               |     |           | U     |
| Trichloroethene                      | <2.63       | 2.63 | µg/m <sup>3</sup> |             |               |             |               |     |           | U     |
| Tetrachloroethene                    | <2.12       | 2.12 | µg/m <sup>3</sup> |             |               |             |               |     |           | U     |
| <i>Surrogate: 1,2-DCA-d4</i>         | <i>103</i>  |      | <i>ng</i>         | <i>100</i>  |               | <i>103</i>  | <i>70-130</i> |     |           |       |
| <i>Surrogate: Toluene-d8</i>         | <i>90.5</i> |      | <i>ng</i>         | <i>100</i>  |               | <i>90.5</i> | <i>70-130</i> |     |           |       |
| <i>Surrogate: Bromofluorobenzene</i> | <i>88.4</i> |      | <i>ng</i>         | <i>100</i>  |               | <i>88.4</i> | <i>70-130</i> |     |           |       |

**SCS Engineers**  
 2830 Dairy Drive  
 Madison, WI 53718-6751

**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007570  
**Reported:** 03/11/2024

*Soil-Gas Sample Analysis by EPA Method 8260C - Quality Control Summary*
**Sequence: B24C006 - Batch: 24C0006 - Instrument: C System - File ID: C24030103.D**
**24C0006-BLK1 (Lab Blank)**

| Analyte                              | Result      | LOQ | Units     | Spike Level | Source Result | %REC        | %REC Limits   | RPD | RPD Limit | Notes |
|--------------------------------------|-------------|-----|-----------|-------------|---------------|-------------|---------------|-----|-----------|-------|
| Vinyl Chloride                       | <5          | 10  | ng        |             |               |             |               |     |           | U     |
| trans-1,2-Dichloroethene             | <5          | 10  | ng        |             |               |             |               |     |           | U     |
| cis-1,2-Dichloroethene               | <5          | 10  | ng        |             |               |             |               |     |           | U     |
| Trichloroethene                      | <5          | 10  | ng        |             |               |             |               |     |           | U     |
| Tetrachloroethene                    | <5          | 10  | ng        |             |               |             |               |     |           | U     |
| <i>Surrogate: 1,2-DCA-d4</i>         | <i>103</i>  |     | <i>ng</i> | <i>100</i>  |               | <i>103</i>  | <i>70-130</i> |     |           |       |
| <i>Surrogate: Toluene-d8</i>         | <i>90.5</i> |     | <i>ng</i> | <i>100</i>  |               | <i>90.5</i> | <i>70-130</i> |     |           |       |
| <i>Surrogate: Bromofluorobenzene</i> | <i>88.4</i> |     | <i>ng</i> | <i>100</i>  |               | <i>88.4</i> | <i>70-130</i> |     |           |       |

|  |   |  |
|--|---|--|
| <b>SCS Engineers</b><br>2830 Dairy Drive<br>Madison, WI 53718-6751 | <b>Site Name:</b> Badger Lease and Auto Sales<br><b>Site Location:</b> West Allis, WI<br><b>Project Manager:</b> Jacob Krause | <b>Beacon Proposal:</b> 230920R04<br><b>Lab Work Order:</b> 0007570<br><b>Reported:</b> 03/11/2024 |
|--|---|--|

*Soil-Gas Sample Analysis by EPA Method 8260C - Quality Control Summary*

**Sequence: B24C006 - Instrument: C System - File ID: C24030104.D**

*B24C006-ICV1 (LCSD/Second Source Verification/CALV)*

| Analyte                              | Result      | LOQ | Units     | Spike Level | Source Result | %REC        | %REC Limits   | RPD | RPD Limit | Notes |
|--------------------------------------|-------------|-----|-----------|-------------|---------------|-------------|---------------|-----|-----------|-------|
| Vinyl Chloride                       | 63.7        | 10  | ng        | 50.0        |               | 127         | 70-130        |     |           |       |
| trans-1,2-Dichloroethene             | 57.1        | 10  | ng        | 50.0        |               | 114         | 70-130        |     |           |       |
| cis-1,2-Dichloroethene               | 48.4        | 10  | ng        | 50.0        |               | 96.7        | 70-130        |     |           |       |
| Trichloroethene                      | 51.7        | 10  | ng        | 50.0        |               | 103         | 70-130        |     |           |       |
| Tetrachloroethene                    | 50.5        | 10  | ng        | 50.0        |               | 101         | 70-130        |     |           |       |
| <i>Surrogate: 1,2-DCA-d4</i>         | <i>48.4</i> |     | <i>ng</i> | <i>50.0</i> |               | <i>96.8</i> | <i>70-130</i> |     |           |       |
| <i>Surrogate: Toluene-d8</i>         | <i>44.5</i> |     | <i>ng</i> | <i>50.0</i> |               | <i>89.0</i> | <i>70-130</i> |     |           |       |
| <i>Surrogate: Bromofluorobenzene</i> | <i>46.5</i> |     | <i>ng</i> | <i>50.0</i> |               | <i>93.0</i> | <i>70-130</i> |     |           |       |

SCS Engineers  
2830 Dairy Drive  
Madison, WI 53718-6751

**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007570  
**Reported:** 03/11/2024

*Additional QC Information*



|  |   |  |
|--|---|--|
| <b>SCS Engineers</b><br>2830 Dairy Drive<br>Madison, WI 53718-6751 | <b>Site Name:</b> Badger Lease and Auto Sales<br><b>Site Location:</b> West Allis, WI<br><b>Project Manager:</b> Jacob Krause | <b>Beacon Proposal:</b> 230920R04<br><b>Lab Work Order:</b> 0007570<br><b>Reported:</b> 03/11/2024 |
|--|---|--|

**Sample Result Calculation Summary (Concentration)**  
**EPA 8260C**

| Analyte | t<br>Sampling Time<br>minutes | DF<br>Dilution<br>Factor | U<br>Uptake<br>Rate | M<br>Initial Result<br>ng | C<br>Calculated Result<br>µg/m <sup>3</sup> | File ID |
|---------|-------------------------------|--------------------------|---------------------|---------------------------|---|---------|
|---------|-------------------------------|--------------------------|---------------------|---------------------------|---|---------|

|                           |   |
|---------------------------|---|
| <b>Lab ID:</b> 0007570-01 | <b>Sample Name:</b> 05C_SSV_01_20240227 |
|---------------------------|---|

|                          |        |      |       |   |   |             |
|--------------------------|--------|------|-------|---|---|-------------|
| Vinyl Chloride           | 11,517 | 1.00 | 0.810 | U | U | C24030105.D |
| trans-1,2-Dichloroethene | 11,517 | 1.00 | 0.440 | U | U | C24030105.D |
| cis-1,2-Dichloroethene   | 11,517 | 1.00 | 0.530 | U | U | C24030105.D |
| Trichloroethene          | 11,517 | 1.00 | 0.330 | U | U | C24030105.D |
| Tetrachloroethene        | 11,517 | 1.00 | 0.410 | U | U | C24030105.D |

|                           |   |
|---------------------------|---|
| <b>Lab ID:</b> 0007570-02 | <b>Sample Name:</b> 05C_SSV_02_20240227 |
|---------------------------|---|

|                          |        |      |       |       |      |             |
|--------------------------|--------|------|-------|-------|------|-------------|
| Vinyl Chloride           | 11,503 | 1.00 | 0.810 | U     | U    | C24030106.D |
| trans-1,2-Dichloroethene | 11,503 | 1.00 | 0.440 | U     | U    | C24030106.D |
| cis-1,2-Dichloroethene   | 11,503 | 1.00 | 0.530 | U     | U    | C24030106.D |
| Trichloroethene          | 11,503 | 1.00 | 0.330 | U     | U    | C24030106.D |
| Tetrachloroethene        | 11,503 | 1.00 | 0.410 | 30.86 | 6.54 | C24030106.D |

Calculations:

$$C = \frac{1000 \times M \times DF}{U \times t}$$

- where: C = concentration (µg/m<sup>3</sup>)  
 M = mass (ng)  
 DF = dilution factor  
 t = sampling time (minutes)  
 U = compound specific uptake rate

*Reference: Federal Register/Vol. 79, No. 125/June 30, 2014*

**SCS Engineers**  
 2830 Dairy Drive  
 Madison, WI 53718-6751

**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007570  
**Reported:** 03/11/2024

**Method Detection and Reporting Limit Calculations (Concentration)**
**EPA 8260C**

| Analyte | t<br>Sampling Time<br>minutes | DF<br>Dilution<br>Factor | U<br>Uptake<br>Rate | M<br>Initial LOQ<br>ng | C<br>Calculated LOQ<br>µg/m <sup>3</sup> |
|---------|-------------------------------|--------------------------|---------------------|------------------------|--|
|---------|-------------------------------|--------------------------|---------------------|------------------------|--|

**Lab ID:** 0007570-01

**Sample Name:** 05C\_SSV\_01\_20240227

|                          |        |      |       |      |      |
|--------------------------|--------|------|-------|------|------|
| Vinyl Chloride           | 11,517 | 1.00 | 0.810 | 10.0 | 1.07 |
| trans-1,2-Dichloroethene | 11,517 | 1.00 | 0.440 | 10.0 | 1.97 |
| cis-1,2-Dichloroethene   | 11,517 | 1.00 | 0.530 | 10.0 | 1.64 |
| Trichloroethene          | 11,517 | 1.00 | 0.330 | 10.0 | 2.63 |
| Tetrachloroethene        | 11,517 | 1.00 | 0.410 | 10.0 | 2.12 |

**Lab ID:** 0007570-02

**Sample Name:** 05C\_SSV\_02\_20240227

|                          |        |      |       |      |      |
|--------------------------|--------|------|-------|------|------|
| Vinyl Chloride           | 11,503 | 1.00 | 0.810 | 10.0 | 1.07 |
| trans-1,2-Dichloroethene | 11,503 | 1.00 | 0.440 | 10.0 | 1.98 |
| cis-1,2-Dichloroethene   | 11,503 | 1.00 | 0.530 | 10.0 | 1.64 |
| Trichloroethene          | 11,503 | 1.00 | 0.330 | 10.0 | 2.63 |
| Tetrachloroethene        | 11,503 | 1.00 | 0.410 | 10.0 | 2.12 |

SCS Engineers  
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**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007570  
**Reported:** 03/11/2024

### *Laboratory Certification List*

| Certification ID   | Certification No. | Description   | Expires    | Project Required |
|--------------------|-------------------|---|------------|------------------|
| Alaska CS-LAP      | 19-002            | Alaska Department of Environmental Conservation                                 | 12/30/2024 |                  |
| DoD-ELAP           | 72690/L22-563     | United States Department of Defense Environmental Laboratory Accreditation      | 11/30/2024 |                  |
| ISO/IEC 17025:2017 | 72690/L22-563     | General Requirements for the Competence of Testing and Calibration Laboratories | 11/30/2024 |                  |
| NEFAP              | 72690/L22-564     | TNI National Environmental Field Activities Program (NEFAP)                     | 11/30/2024 |                  |
| NY-NELAC           | 12097             | New York Department of Health   | 04/01/2024 |                  |
| Utah-NELAC         | MD010912023-14    | Utah Department of Health   | 12/31/2024 |                  |

SCS Engineers  
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**Site Name:** Badger Lease and Auto Sales  
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**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007570  
**Reported:** 03/11/2024

### Qualifiers/Notes and Definitions

**General Definitions:**

|           |  |
|-----------|--|
| DF        | Dilution Factor  |
| DL        | Detection Limit  |
| LOD       | Limit of Detection   |
| LOQ       | Limit of Quantitation  |
| NA        | Not Applicable   |
| Q         | Qualifier  |
| RPD       | Relative Percent Difference  |
| RT        | Retention Times in Minutes   |
| RRT       | Evaluation of Relative Retention Times in RRT Units (qualified if outside $\pm 0.06$ control limits) |
| $3\sigma$ | Uncertainty  |
| ∉         | Compound not on scope of accreditation   |
| +         | values are outside method/contract required QC limits  |
| ∅         | Compound not on scope of accreditation and analyzed with a one-point calibration                     |

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**Lab Work Order:** 0007570  
**Reported:** 03/11/2024

## *Sample Management Records*





Beacon Environmental

526 Underwood Lane  
Bel Air, MD 21014 USA  
1.410.838.8780

CERTIFICATE OF ANALYSIS

Beacon Proposal No.: 230920R05

Laboratory Work Order: 0007573

**Project Description:**

Badger Lease and Auto Sales  
West Allis, WI

Client PO No.: 25222269.04-002

Prepared for:

Jacob Krause

**SCS Engineers**

2830 Dairy Drive

Madison, WI 53718-6751

---

Ryan W. Schneider  
Senior Project Manager

March 14, 2024

All data meet requirements as specified in the Beacon Environmental Quality Assurance Project Plan and the results relate only to the samples reported. The work performed was in accordance with ISO/IEC 17025:2017. This report shall not be reproduced, except in full, without written approval of the laboratory. Release of the data contained in this data package has been authorized by the Laboratory Director or his signee, as verified by the following signatures:

---

Steven C. Thornley  
Laboratory Director

---

Peter B. Kelly  
Quality Manager

# Table of Contents

|                                   |    |
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SCS Engineers  
 2830 Dairy Drive  
 Madison, WI 53718-6751

**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R05  
**Lab Work Order:** 0007573  
**Reported:** 03/14/2024

### Sample Summary

| Lab Sample ID               | Client Sample ID                               | Received   | Analysis        | Matrix      |
|-----------------------------|--|------------|-----------------|-------------|
| 0007573-01<br>Sampler Type: | 05C_IAB_01_20240227<br>Beacon Passive Sampler  | 02/29/2024 | TO-17 (Passive) | Indoor Air  |
| 0007573-02<br>Sampler Type: | 05C_IA1_02_20240227<br>Beacon Passive Sampler  | 02/29/2024 | TO-17 (Passive) | Indoor Air  |
| 0007573-03<br>Sampler Type: | 05C_Sump_01_20240227<br>Beacon Passive Sampler | 02/29/2024 | TO-17 (Passive) | Indoor Air  |
| 0007573-04<br>Sampler Type: | 05C_OA_01_20240227<br>Beacon Passive Sampler   | 02/29/2024 | TO-17 (Passive) | Ambient Air |

#### Project Completeness

**Samples Received:** 4  
**Samples Analyzed:** 4

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**Lab Work Order:** 0007573  
**Reported:** 03/14/2024

### *Case Narrative*

Beacon Environmental provided thermally conditioned Beacon Samplers for sampling, with analyses following U.S. EPA Method TO-17, with analytical results reported in  $\mu\text{g}/\text{m}^3$ . Beacon calculated concentration results using the exposure period, target analyte mass, and the following procedures detailed in ISO 16017-2, *Indoor, ambient and workplace air-Sampling and analysis of volatile organic compounds by sorbent tube/thermal desorption/capillary gas chromatography-Part 2: Diffusive sampling*.

Beacon reports results and reporting limits to three significant digits.

#### **Reporting Limits (RLs) for EPA Method TO-17**

The RLs represent a baseline above which results meet laboratory-determined limits of precision and accuracy. Beacon performed dilution analysis when results exceeded the upper calibration limit, bringing all reported results within the calibration range. The project method quantitation limit (MQL) is the limit of detection (LOD) as noted in the data tables.

#### **Calibration Verification**

All continuing calibration verification (CCV) values are within  $\pm 30\%$  of the true values as defined by the initial calibration and met the requirements specified in BEACON's Quality Manual.

#### **Internal Standards and Surrogates**

Internal standards and surrogates are spiked on all blanks (ICB, BLK), field samples and laboratory control samples (ICV/CALV, BS, ICV and CCV). Acceptance criteria for internal standards are 60 to 140 percent and surrogate recoveries are 70 to 130 percent; all internal standards and surrogates are within the acceptance criteria unless noted in the **Case Narrative**.

#### **Blank Contamination**

No targeted compounds above the limit of detection (LOD) for each compound were observed in the Laboratory Method Blanks unless noted in the **Case Narrative**.

#### **Laboratory Control Samples**

Acceptance criteria for surrogate and analytes recoveries are 70 to 130 percent; all recoveries are within the acceptance criteria unless noted in the **Case Narrative**.

#### **Discussion**

Samples were received in proper condition and laboratory control parameters were met unless otherwise noted below. The work performed was in accordance with ISO/IEC 17025:2017.

End of Case Narrative

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**Reported:** 03/14/2024

## *Analytical Results*

**SCS Engineers**  
 2830 Dairy Drive  
 Madison, WI 53718-6751

**Site Name:** Badger Lease and Auto Sales  
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**Beacon Proposal:** 230920R05  
**Lab Work Order:** 0007573  
**Reported:** 03/14/2024

*Summary of Compound Detections- Concentration*

|                           |                             |                         |
|---------------------------|-----------------------------|-------------------------|
| Lab Sample ID: 0007573-03 | <b>05C_Sump_01_20240227</b> | Method: TO-17 (Passive) |
|                           | Indoor Air                  |                         |

| Analyte                  | CAS#     | Result<br>(µg/m³) | Q | RT    | LOQ<br>(µg/m³) | LOD<br>(µg/m³) | File ID     |
|--------------------------|----------|-------------------|---|-------|----------------|----------------|-------------|
| <b>Tetrachloroethene</b> | 127-18-4 | <b>1.70</b>       | J | 5.955 | 2.13           | 1.06           | C24030410.D |

**SCS Engineers**  
2830 Dairy Drive  
Madison, WI 53718-6751**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause**Beacon Proposal:** 230920R05  
**Lab Work Order:** 0007573  
**Reported:** 03/14/2024***Data Summary Table- Concentration***

| <b>Compound</b>   | <b>Frequency</b> | <b>LOD<br/>(<math>\mu\text{g}/\text{m}^3</math>)</b> | <b>Max Value<br/>(<math>\mu\text{g}/\text{m}^3</math>)</b> |
|-------------------|------------------|--|--|
| Tetrachloroethene | 1                | 1.06   | 1.70   |

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Madison, WI 53718-6751

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**Lab Work Order:** 0007573  
**Reported:** 03/14/2024

*Detailed Analytical Results*

SCS Engineers  
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 Madison, WI 53718-6751

**Site Name:** Badger Lease and Auto Sales  
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**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R05  
**Lab Work Order:** 0007573  
**Reported:** 03/14/2024

Lab Sample ID: 0007573-01

**05C\_IAB\_01\_20240227**

Method: TO-17 (Passive)

Indoor Air

| Analyte                       | CAS#       | Result<br>(µg/m <sup>3</sup> ) | Q               | LOD<br>(µg/m <sup>3</sup> ) | LOQ<br>(µg/m <sup>3</sup> ) | Analyzed         | File ID     |
|-------------------------------|------------|--------------------------------|-----------------|-----------------------------|-----------------------------|------------------|-------------|
| Vinyl Chloride                | 75-01-4    | <0.538                         | U               | 0.538                       | 1.08                        | 03/04/2024 15:11 | C24030408.D |
| trans-1,2-Dichloroethene      | 156-60-5   | <0.991                         | U               | 0.991                       | 1.98                        | 03/04/2024 15:11 | C24030408.D |
| cis-1,2-Dichloroethene        | 156-59-2   | <0.823                         | U               | 0.823                       | 1.65                        | 03/04/2024 15:11 | C24030408.D |
| Trichloroethene               | 79-01-6    | <1.32                          | U               | 1.32                        | 2.64                        | 03/04/2024 15:11 | C24030408.D |
| Tetrachloroethene             | 127-18-4   | <1.06                          | U               | 1.06                        | 2.13                        | 03/04/2024 15:11 | C24030408.D |
| Analyte                       | CAS#       | % Recovery                     | Recovery Limits | Q                           |                             | Analyzed         | File ID     |
| Surrogate: 1,2-DCA-d4         | 17060-07-0 | 105%                           | 70-130          |                             |                             | 03/04/2024 15:11 | C24030408.D |
| Surrogate: Toluene-d8         | 2037-26-5  | 91.6%                          | 70-130          |                             |                             | 03/04/2024 15:11 | C24030408.D |
| Surrogate: Bromofluorobenzene | 460-00-4   | 89.9%                          | 70-130          |                             |                             | 03/04/2024 15:11 | C24030408.D |

|  |   |  |
|--|---|--|
| <b>SCS Engineers</b><br>2830 Dairy Drive<br>Madison, WI 53718-6751 | <b>Site Name:</b> Badger Lease and Auto Sales<br><b>Site Location:</b> West Allis, WI<br><b>Project Manager:</b> Jacob Krause | <b>Beacon Proposal:</b> 230920R05<br><b>Lab Work Order:</b> 0007573<br><b>Reported:</b> 03/14/2024 |
|--|---|--|

|                           |                            |                         |
|---------------------------|----------------------------|-------------------------|
| Lab Sample ID: 0007573-02 | <b>05C_IA1_02_20240227</b> | Method: TO-17 (Passive) |
| Indoor Air                |                            |                         |

| Analyte                       | CAS#       | Result<br>(µg/m <sup>3</sup> ) | Q               | LOD<br>(µg/m <sup>3</sup> ) | LOQ<br>(µg/m <sup>3</sup> ) | Analyzed         | File ID     |
|-------------------------------|------------|--------------------------------|-----------------|-----------------------------|-----------------------------|------------------|-------------|
| Vinyl Chloride                | 75-01-4    | <0.538                         | U               | 0.538                       | 1.08                        | 03/04/2024 15:40 | C24030409.D |
| trans-1,2-Dichloroethene      | 156-60-5   | <0.991                         | U               | 0.991                       | 1.98                        | 03/04/2024 15:40 | C24030409.D |
| cis-1,2-Dichloroethene        | 156-59-2   | <0.822                         | U               | 0.822                       | 1.64                        | 03/04/2024 15:40 | C24030409.D |
| Trichloroethene               | 79-01-6    | <1.32                          | U               | 1.32                        | 2.64                        | 03/04/2024 15:40 | C24030409.D |
| Tetrachloroethene             | 127-18-4   | <1.06                          | U               | 1.06                        | 2.13                        | 03/04/2024 15:40 | C24030409.D |
| Analyte                       | CAS#       | % Recovery                     | Recovery Limits | Q                           |                             | Analyzed         | File ID     |
| Surrogate: 1,2-DCA-d4         | 17060-07-0 | 101%                           | 70-130          |                             |                             | 03/04/2024 15:40 | C24030409.D |
| Surrogate: Toluene-d8         | 2037-26-5  | 91.7%                          | 70-130          |                             |                             | 03/04/2024 15:40 | C24030409.D |
| Surrogate: Bromofluorobenzene | 460-00-4   | 89.9%                          | 70-130          |                             |                             | 03/04/2024 15:40 | C24030409.D |



|  |   |  |
|--|---|--|
| <b>SCS Engineers</b><br>2830 Dairy Drive<br>Madison, WI 53718-6751 | <b>Site Name:</b> Badger Lease and Auto Sales<br><b>Site Location:</b> West Allis, WI<br><b>Project Manager:</b> Jacob Krause | <b>Beacon Proposal:</b> 230920R05<br><b>Lab Work Order:</b> 0007573<br><b>Reported:</b> 03/14/2024 |
|--|---|--|

|                           |                             |                         |
|---------------------------|-----------------------------|-------------------------|
| Lab Sample ID: 0007573-03 | <b>05C_Sump_01_20240227</b> | Method: TO-17 (Passive) |
| Indoor Air                |                             |                         |

| Analyte                       | CAS#       | Result<br>(µg/m <sup>3</sup> ) | Q               | LOD<br>(µg/m <sup>3</sup> ) | LOQ<br>(µg/m <sup>3</sup> ) | Analyzed         | File ID     |
|-------------------------------|------------|--------------------------------|-----------------|-----------------------------|-----------------------------|------------------|-------------|
| Vinyl Chloride                | 75-01-4    | <0.538                         | U               | 0.538                       | 1.08                        | 03/04/2024 16:10 | C24030410.D |
| trans-1,2-Dichloroethene      | 156-60-5   | <0.990                         | U               | 0.990                       | 1.98                        | 03/04/2024 16:10 | C24030410.D |
| cis-1,2-Dichloroethene        | 156-59-2   | <0.822                         | U               | 0.822                       | 1.64                        | 03/04/2024 16:10 | C24030410.D |
| Trichloroethene               | 79-01-6    | <1.32                          | U               | 1.32                        | 2.64                        | 03/04/2024 16:10 | C24030410.D |
| <b>Tetrachloroethene</b>      | 127-18-4   | <b>1.70</b>                    | J               | 1.06                        | 2.13                        | 03/04/2024 16:10 | C24030410.D |
| Analyte                       | CAS#       | % Recovery                     | Recovery Limits | Q                           |                             | Analyzed         | File ID     |
| Surrogate: 1,2-DCA-d4         | 17060-07-0 | 97.6%                          | 70-130          |                             |                             | 03/04/2024 16:10 | C24030410.D |
| Surrogate: Toluene-d8         | 2037-26-5  | 91.2%                          | 70-130          |                             |                             | 03/04/2024 16:10 | C24030410.D |
| Surrogate: Bromofluorobenzene | 460-00-4   | 90.6%                          | 70-130          |                             |                             | 03/04/2024 16:10 | C24030410.D |

**SCS Engineers**  
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**Beacon Proposal:** 230920R05  
**Lab Work Order:** 0007573  
**Reported:** 03/14/2024

Lab Sample ID: 0007573-04

**05C\_OA\_01\_20240227**

Method: TO-17 (Passive)

Ambient Air

| Analyte                       | CAS#       | Result<br>(µg/m <sup>3</sup> ) | Q               | LOD<br>(µg/m <sup>3</sup> ) | LOQ<br>(µg/m <sup>3</sup> ) | Analyzed         | File ID     |
|-------------------------------|------------|--------------------------------|-----------------|-----------------------------|-----------------------------|------------------|-------------|
| Vinyl Chloride                | 75-01-4    | <0.538                         | U               | 0.538                       | 1.08                        | 03/04/2024 16:40 | C24030411.D |
| trans-1,2-Dichloroethene      | 156-60-5   | <0.990                         | U               | 0.990                       | 1.98                        | 03/04/2024 16:40 | C24030411.D |
| cis-1,2-Dichloroethene        | 156-59-2   | <0.822                         | U               | 0.822                       | 1.64                        | 03/04/2024 16:40 | C24030411.D |
| Trichloroethene               | 79-01-6    | <1.32                          | U               | 1.32                        | 2.64                        | 03/04/2024 16:40 | C24030411.D |
| Tetrachloroethene             | 127-18-4   | <1.06                          | U               | 1.06                        | 2.13                        | 03/04/2024 16:40 | C24030411.D |
| Analyte                       | CAS#       | % Recovery                     | Recovery Limits | Q                           |                             | Analyzed         | File ID     |
| Surrogate: 1,2-DCA-d4         | 17060-07-0 | 101%                           | 70-130          |                             |                             | 03/04/2024 16:40 | C24030411.D |
| Surrogate: Toluene-d8         | 2037-26-5  | 92.7%                          | 70-130          |                             |                             | 03/04/2024 16:40 | C24030411.D |
| Surrogate: Bromofluorobenzene | 460-00-4   | 90.2%                          | 70-130          |                             |                             | 03/04/2024 16:40 | C24030411.D |

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**Beacon Proposal:** 230920R05  
**Lab Work Order:** 0007573  
**Reported:** 03/14/2024

## *QC Information/Summary*

**SCS Engineers**  
 2830 Dairy Drive  
 Madison, WI 53718-6751

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**Beacon Proposal:** 230920R05  
**Lab Work Order:** 0007573  
**Reported:** 03/14/2024

*Organics in Air by EPA TO-17 Using Beacon Sampler - Quality Control Summary*

**Sequence: B24C009 - Batch: 24C0009 - Instrument: C System - File ID: C24030405.D**
**24C0009-BS1 (LCS, Calibration Source Verification)**

| Analyte                              | Result      | LOQ | LOD | Units     | Spike Level | Source Result | %REC        | %REC Limits   | RPD | RPD Limit | Notes |
|--------------------------------------|-------------|-----|-----|-----------|-------------|---------------|-------------|---------------|-----|-----------|-------|
| Vinyl Chloride                       | 55.7        | 10  | 5   | ng        | 50.0        |               | 111         | 70-130        |     |           |       |
| trans-1,2-Dichloroethene             | 56.8        | 10  | 5   | ng        | 50.0        |               | 114         | 70-130        |     |           |       |
| cis-1,2-Dichloroethene               | 51.3        | 10  | 5   | ng        | 50.0        |               | 103         | 70-130        |     |           |       |
| Trichloroethene                      | 52.1        | 10  | 5   | ng        | 50.0        |               | 104         | 70-130        |     |           |       |
| Tetrachloroethene                    | 54.6        | 10  | 5   | ng        | 50.0        |               | 109         | 70-130        |     |           |       |
| <i>Surrogate: 1,2-DCA-d4</i>         | <i>52.0</i> |     |     | <i>ng</i> | <i>50.0</i> |               | <i>104</i>  | <i>70-130</i> |     |           |       |
| <i>Surrogate: Toluene-d8</i>         | <i>50.0</i> |     |     | <i>ng</i> | <i>50.0</i> |               | <i>100</i>  | <i>70-130</i> |     |           |       |
| <i>Surrogate: Bromofluorobenzene</i> | <i>45.0</i> |     |     | <i>ng</i> | <i>50.0</i> |               | <i>90.0</i> | <i>70-130</i> |     |           |       |

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*Organics in Air by EPA TO-17 Using Beacon Sampler - Quality Control Summary*

**Sequence: B24C009 - Batch: 24C0009 - Instrument: C System - File ID: C24030406.D**
**24C0009-BLK1 (Lab Blank)**

| Analyte                              | Result      | LOQ  | LOD   | Units             | Spike Level | Source Result | %REC        | %REC Limits   | RPD | RPD Limit | Notes |
|--------------------------------------|-------------|------|-------|-------------------|-------------|---------------|-------------|---------------|-----|-----------|-------|
| Vinyl Chloride                       | <0.538      | 1.08 | 0.538 | µg/m <sup>3</sup> |             |               |             |               |     |           | U     |
| trans-1,2-Dichloroethene             | <0.990      | 1.98 | 0.990 | µg/m <sup>3</sup> |             |               |             |               |     |           | U     |
| cis-1,2-Dichloroethene               | <0.822      | 1.64 | 0.822 | µg/m <sup>3</sup> |             |               |             |               |     |           | U     |
| Trichloroethene                      | <1.32       | 2.64 | 1.32  | µg/m <sup>3</sup> |             |               |             |               |     |           | U     |
| Tetrachloroethene                    | <1.06       | 2.13 | 1.06  | µg/m <sup>3</sup> |             |               |             |               |     |           | U     |
| <i>Surrogate: 1,2-DCA-d4</i>         | <i>105</i>  |      |       | <i>ng</i>         | <i>100</i>  |               | <i>105</i>  | <i>70-130</i> |     |           |       |
| <i>Surrogate: Toluene-d8</i>         | <i>99.3</i> |      |       | <i>ng</i>         | <i>100</i>  |               | <i>99.3</i> | <i>70-130</i> |     |           |       |
| <i>Surrogate: Bromofluorobenzene</i> | <i>83.5</i> |      |       | <i>ng</i>         | <i>100</i>  |               | <i>83.5</i> | <i>70-130</i> |     |           |       |

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**Lab Work Order:** 0007573  
**Reported:** 03/14/2024

*Organics in Air by EPA TO-17 Using Beacon Sampler - Quality Control Summary*

**Sequence: B24C009 - Instrument: C System - File ID: C24030407.D**
***B24C009-ICV1 (LCSD/Second Source Verification/CALV)***

| Analyte                              | Result      | LOQ | LOD | Units     | Spike Level | Source Result | %REC        | %REC Limits   | RPD | RPD Limit | Notes |
|--------------------------------------|-------------|-----|-----|-----------|-------------|---------------|-------------|---------------|-----|-----------|-------|
| Vinyl Chloride                       | 49.7        | 10  | 5   | ng        | 50.0        |               | 99.4        | 70-130        |     |           |       |
| trans-1,2-Dichloroethene             | 64.0        | 10  | 5   | ng        | 50.0        |               | 128         | 70-130        |     |           |       |
| cis-1,2-Dichloroethene               | 52.8        | 10  | 5   | ng        | 50.0        |               | 106         | 70-130        |     |           |       |
| Trichloroethene                      | 52.8        | 10  | 5   | ng        | 50.0        |               | 106         | 70-130        |     |           |       |
| Tetrachloroethene                    | 60.2        | 10  | 5   | ng        | 50.0        |               | 120         | 70-130        |     |           |       |
| <i>Surrogate: 1,2-DCA-d4</i>         | <i>50.5</i> |     |     | <i>ng</i> | <i>50.0</i> |               | <i>101</i>  | <i>70-130</i> |     |           |       |
| <i>Surrogate: Toluene-d8</i>         | <i>49.7</i> |     |     | <i>ng</i> | <i>50.0</i> |               | <i>99.4</i> | <i>70-130</i> |     |           |       |
| <i>Surrogate: Bromofluorobenzene</i> | <i>44.6</i> |     |     | <i>ng</i> | <i>50.0</i> |               | <i>89.1</i> | <i>70-130</i> |     |           |       |

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**Lab Work Order:** 0007573  
**Reported:** 03/14/2024

*Organics in Air by EPA TO-17 Using Beacon Sampler - Quality Control Summary*

**Sequence: B24C009 - Instrument: C System - File ID: C24030425.D**
***B24C009-CCV1 (LCS, Closing Calibration Verification)***

| Analyte                              | Result      | LOQ | LOD | Units     | Spike Level | Source Result | %REC        | %REC Limits   | RPD | RPD Limit | Notes |
|--------------------------------------|-------------|-----|-----|-----------|-------------|---------------|-------------|---------------|-----|-----------|-------|
| Vinyl Chloride                       | 60.2        | 10  | 5   | ng        | 50.0        |               | 120         | 70-130        |     |           |       |
| trans-1,2-Dichloroethene             | 63.7        | 10  | 5   | ng        | 50.0        |               | 127         | 70-130        |     |           |       |
| cis-1,2-Dichloroethene               | 51.9        | 10  | 5   | ng        | 50.0        |               | 104         | 70-130        |     |           |       |
| Trichloroethene                      | 51.8        | 10  | 5   | ng        | 50.0        |               | 104         | 70-130        |     |           |       |
| Tetrachloroethene                    | 54.7        | 10  | 5   | ng        | 50.0        |               | 109         | 70-130        |     |           |       |
| <i>Surrogate: 1,2-DCA-d4</i>         | <i>51.3</i> |     |     | <i>ng</i> | <i>50.0</i> |               | <i>103</i>  | <i>70-130</i> |     |           |       |
| <i>Surrogate: Toluene-d8</i>         | <i>46.7</i> |     |     | <i>ng</i> | <i>50.0</i> |               | <i>93.4</i> | <i>70-130</i> |     |           |       |
| <i>Surrogate: Bromofluorobenzene</i> | <i>44.6</i> |     |     | <i>ng</i> | <i>50.0</i> |               | <i>89.2</i> | <i>70-130</i> |     |           |       |

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**Lab Work Order:** 0007573  
**Reported:** 03/14/2024

*Organics in Air by EPA TO-17 Using Beacon Sampler - Quality Control Summary*

**Sequence: B24C009 - Instrument: C System - File ID: C24030426.D**
***B24C009-CCB1 (Lab Blank)***

| Analyte                              | Result      | LOQ | LOD | Units     | Spike Level | Source Result | %REC        | %REC Limits   | RPD | RPD Limit | Notes |
|--------------------------------------|-------------|-----|-----|-----------|-------------|---------------|-------------|---------------|-----|-----------|-------|
| Vinyl Chloride                       | <5          | 10  | 5   | ng        |             |               |             |               |     |           | U     |
| trans-1,2-Dichloroethene             | <5          | 10  | 5   | ng        |             |               |             |               |     |           | U     |
| cis-1,2-Dichloroethene               | <5          | 10  | 5   | ng        |             |               |             |               |     |           | U     |
| Trichloroethene                      | <5          | 10  | 5   | ng        |             |               |             |               |     |           | U     |
| Tetrachloroethene                    | <5          | 10  | 5   | ng        |             |               |             |               |     |           | U     |
| <i>Surrogate: 1,2-DCA-d4</i>         | <i>103</i>  |     |     | <i>ng</i> | <i>100</i>  |               | <i>103</i>  | <i>70-130</i> |     |           |       |
| <i>Surrogate: Toluene-d8</i>         | <i>99.7</i> |     |     | <i>ng</i> | <i>100</i>  |               | <i>99.7</i> | <i>70-130</i> |     |           |       |
| <i>Surrogate: Bromofluorobenzene</i> | <i>82.6</i> |     |     | <i>ng</i> | <i>100</i>  |               | <i>82.6</i> | <i>70-130</i> |     |           |       |



**SCS Engineers**  
 2830 Dairy Drive  
 Madison, WI 53718-6751

**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R05  
**Lab Work Order:** 0007573  
**Reported:** 03/14/2024

*TO-17 (Passive) - LCS/LCSD RPD Quality Control Summary*
**LCS: 24C0009-BS1 File ID: C24030405.D**  
**LCSD: B24C009-ICV1 File ID: C24030407.D**

 Analyzed: 3/4/24 14:41  
 Analyzed: 3/4/24 13:53

| Analyte                  | CAS#     | LCS Result<br>(ng) | %REC<br>Q | Spike Level<br>(ng) | LCSD Result<br>(ng) | %REC   | %REC<br>Limits | RPD   | RPD<br>Limit | Q |
|--------------------------|----------|--------------------|-----------|---------------------|---------------------|--------|----------------|-------|--------------|---|
| Vinyl Chloride           | 75-01-4  | 55.67              | 111.34    | 50                  | 49.7                | 99.40  | 70-130         | 11.33 | 30           |   |
| trans-1,2-Dichloroethene | 156-60-5 | 56.76              | 113.52    | 50                  | 63.95               | 128.00 | 70-130         | 11.91 | 30           |   |
| cis-1,2-Dichloroethene   | 156-59-2 | 51.28              | 102.56    | 50                  | 52.8                | 106.00 | 70-130         | 2.92  | 30           |   |
| Trichloroethene          | 79-01-6  | 52.10              | 104.2     | 50                  | 52.81               | 106.00 | 70-130         | 1.35  | 30           |   |
| Tetrachloroethene        | 127-18-4 | 54.55              | 109.1     | 50                  | 60.22               | 120.00 | 70-130         | 9.88  | 30           |   |

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**Reported:** 03/14/2024

*Additional QC Information*

SCS Engineers  
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Site Name: Badger Lease and Auto Sales  
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 Project Manager: Jacob Krause

Beacon Proposal: 230920R05  
 Lab Work Order: 0007573  
 Reported: 03/14/2024

**Sample Result Calculation Summary (Concentration)**  
**TO-17 (Passive)**

| Analyte | t<br>Sampling Time<br>minutes | DF<br>Dilution<br>Factor | Uc<br>Uptake<br>Rate | M<br>Initial Result<br>ng | C<br>Calculated Result<br>µg/m <sup>3</sup> | File ID |
|---------|-------------------------------|--------------------------|----------------------|---------------------------|---|---------|
|---------|-------------------------------|--------------------------|----------------------|---------------------------|---|---------|

**Lab ID:** 0007573-01      **Sample Name:** 05C\_IAB\_01\_20240227      **̄ Temp (°C):** 16.00

|                          |        |      |       |   |   |             |
|--------------------------|--------|------|-------|---|---|-------------|
| Vinyl Chloride           | 11,481 | 1.00 | 0.809 | U | U | C24030408.D |
| trans-1,2-Dichloroethene | 11,481 | 1.00 | 0.440 | U | U | C24030408.D |
| cis-1,2-Dichloroethene   | 11,481 | 1.00 | 0.529 | U | U | C24030408.D |
| Trichloroethene          | 11,481 | 1.00 | 0.330 | U | U | C24030408.D |
| Tetrachloroethene        | 11,481 | 1.00 | 0.410 | U | U | C24030408.D |

**Lab ID:** 0007573-02      **Sample Name:** 05C\_IA1\_02\_20240227      **̄ Temp (°C):** 16.00

|                          |        |      |       |   |   |             |
|--------------------------|--------|------|-------|---|---|-------------|
| Vinyl Chloride           | 11,485 | 1.00 | 0.809 | U | U | C24030409.D |
| trans-1,2-Dichloroethene | 11,485 | 1.00 | 0.440 | U | U | C24030409.D |
| cis-1,2-Dichloroethene   | 11,485 | 1.00 | 0.529 | U | U | C24030409.D |
| Trichloroethene          | 11,485 | 1.00 | 0.330 | U | U | C24030409.D |
| Tetrachloroethene        | 11,485 | 1.00 | 0.410 | U | U | C24030409.D |

**Lab ID:** 0007573-03      **Sample Name:** 05C\_Sump\_01\_20240227      **̄ Temp (°C):** 16.00

|                          |        |      |       |      |      |             |
|--------------------------|--------|------|-------|------|------|-------------|
| Vinyl Chloride           | 11,488 | 1.00 | 0.809 | U    | U    | C24030410.D |
| trans-1,2-Dichloroethene | 11,488 | 1.00 | 0.440 | U    | U    | C24030410.D |
| cis-1,2-Dichloroethene   | 11,488 | 1.00 | 0.529 | U    | U    | C24030410.D |
| Trichloroethene          | 11,488 | 1.00 | 0.330 | U    | U    | C24030410.D |
| Tetrachloroethene        | 11,488 | 1.00 | 0.410 | 8.01 | 1.70 | C24030410.D |

**Lab ID:** 0007573-04      **Sample Name:** 05C\_OA\_01\_20240227      **̄ Temp (°C):** 16.00

|                          |        |      |       |   |   |             |
|--------------------------|--------|------|-------|---|---|-------------|
| Vinyl Chloride           | 11,486 | 1.00 | 0.809 | U | U | C24030411.D |
| trans-1,2-Dichloroethene | 11,486 | 1.00 | 0.440 | U | U | C24030411.D |
| cis-1,2-Dichloroethene   | 11,486 | 1.00 | 0.529 | U | U | C24030411.D |
| Trichloroethene          | 11,486 | 1.00 | 0.330 | U | U | C24030411.D |
| Tetrachloroethene        | 11,486 | 1.00 | 0.410 | U | U | C24030411.D |

SCS Engineers  
2830 Dairy Drive  
Madison, WI 53718-6751

Site Name: Badger Lease and Auto Sales  
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Beacon Proposal: 230920R05  
Lab Work Order: 0007573  
Reported: 03/14/2024

Calculations:

$$C = \frac{1000 \times M \times DF}{U_c \times t}$$

$$U_c = U * \left( \frac{T_s + 273.15}{T_u + 273.15} \right)^{1/2}$$

where: C = concentration ( $\mu\text{g}/\text{m}^3$ )  
M = mass (ng)  
DF = dilution factor  
U<sub>c</sub> = uptake rate (ml/min), corrected  
t = sampling time (minutes)  
U = compound specific uptake rate  
T<sub>u</sub> = uptake rate study temperature  
T<sub>s</sub> = sample average temperature

**Note:** T<sub>u</sub> is 16.65°C

*Reference: Federal Register/Vol. 79, No. 125/June 30, 2014*

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**Lab Work Order:** 0007573  
**Reported:** 03/14/2024

**Method Detection and Reporting Limit Calculations (Concentration)**  
**TO-17 (Passive)**

| Analyte | t<br>Sampling Time<br>minutes | DF<br>Dilution<br>Factor | Uc<br>Uptake<br>Rate | M<br>Initial (ng) |     | C<br>Calculated (µg/m³) |     |
|---------|-------------------------------|--------------------------|----------------------|-------------------|-----|-------------------------|-----|
|         |                               |                          |                      | LOQ               | LOD | LOQ                     | LOD |

| <b>Lab ID:</b> 0007573-01 |        | <b>Sample Name:</b> 05C_IAB_01_20240227 |       |       |      | <b>̄ Temp (°C):</b> 16.00 |       |
|---------------------------|--------|---|-------|-------|------|---------------------------|-------|
| Vinyl Chloride            | 11,481 | 1.00                                    | 0.809 | 10.00 | 5.00 | 1.08                      | 0.538 |
| trans-1,2-Dichloroethene  | 11,481 | 1.00                                    | 0.440 | 10.00 | 5.00 | 1.98                      | 0.991 |
| cis-1,2-Dichloroethene    | 11,481 | 1.00                                    | 0.529 | 10.00 | 5.00 | 1.65                      | 0.823 |
| Trichloroethene           | 11,481 | 1.00                                    | 0.330 | 10.00 | 5.00 | 2.64                      | 1.32  |
| Tetrachloroethene         | 11,481 | 1.00                                    | 0.410 | 10.00 | 5.00 | 2.13                      | 1.06  |

| <b>Lab ID:</b> 0007573-02 |        | <b>Sample Name:</b> 05C_IA1_02_20240227 |       |       |      | <b>̄ Temp (°C):</b> 16.00 |       |
|---------------------------|--------|---|-------|-------|------|---------------------------|-------|
| Vinyl Chloride            | 11,485 | 1.00                                    | 0.809 | 10.00 | 5.00 | 1.08                      | 0.538 |
| trans-1,2-Dichloroethene  | 11,485 | 1.00                                    | 0.440 | 10.00 | 5.00 | 1.98                      | 0.991 |
| cis-1,2-Dichloroethene    | 11,485 | 1.00                                    | 0.529 | 10.00 | 5.00 | 1.64                      | 0.822 |
| Trichloroethene           | 11,485 | 1.00                                    | 0.330 | 10.00 | 5.00 | 2.64                      | 1.32  |
| Tetrachloroethene         | 11,485 | 1.00                                    | 0.410 | 10.00 | 5.00 | 2.13                      | 1.06  |

| <b>Lab ID:</b> 0007573-03 |        | <b>Sample Name:</b> 05C_Sump_01_20240227 |       |       |      | <b>̄ Temp (°C):</b> 16.00 |       |
|---------------------------|--------|--|-------|-------|------|---------------------------|-------|
| Vinyl Chloride            | 11,488 | 1.00                                     | 0.809 | 10.00 | 5.00 | 1.08                      | 0.538 |
| trans-1,2-Dichloroethene  | 11,488 | 1.00                                     | 0.440 | 10.00 | 5.00 | 1.98                      | 0.990 |
| cis-1,2-Dichloroethene    | 11,488 | 1.00                                     | 0.529 | 10.00 | 5.00 | 1.64                      | 0.822 |
| Trichloroethene           | 11,488 | 1.00                                     | 0.330 | 10.00 | 5.00 | 2.64                      | 1.32  |
| Tetrachloroethene         | 11,488 | 1.00                                     | 0.410 | 10.00 | 5.00 | 2.13                      | 1.06  |

| <b>Lab ID:</b> 0007573-04 |        | <b>Sample Name:</b> 05C_OA_01_20240227 |       |       |      | <b>̄ Temp (°C):</b> 16.00 |       |
|---------------------------|--------|--|-------|-------|------|---------------------------|-------|
| Vinyl Chloride            | 11,486 | 1.00                                   | 0.809 | 10.00 | 5.00 | 1.08                      | 0.538 |
| trans-1,2-Dichloroethene  | 11,486 | 1.00                                   | 0.440 | 10.00 | 5.00 | 1.98                      | 0.990 |
| cis-1,2-Dichloroethene    | 11,486 | 1.00                                   | 0.529 | 10.00 | 5.00 | 1.64                      | 0.822 |
| Trichloroethene           | 11,486 | 1.00                                   | 0.330 | 10.00 | 5.00 | 2.64                      | 1.32  |
| Tetrachloroethene         | 11,486 | 1.00                                   | 0.410 | 10.00 | 5.00 | 2.13                      | 1.06  |

SCS Engineers  
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**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R05  
**Lab Work Order:** 0007573  
**Reported:** 03/14/2024

### *Laboratory Certification List*

| Certification ID   | Certification No. | Description   | Expires    | Project Required |
|--------------------|-------------------|---|------------|------------------|
| Alaska CS-LAP      | 19-002            | Alaska Department of Environmental Conservation                                 | 12/30/2024 |                  |
| DoD-ELAP           | 72690/L22-563     | United States Department of Defense Environmental Laboratory Accreditation      | 11/30/2024 |                  |
| ISO/IEC 17025:2017 | 72690/L22-563     | General Requirements for the Competence of Testing and Calibration Laboratories | 11/30/2024 |                  |
| NEFAP              | 72690/L22-564     | TNI National Environmental Field Activities Program (NEFAP)                     | 11/30/2024 |                  |
| NY-NELAC           | 12097             | New York Department of Health   | 04/01/2024 |                  |
| Utah-NELAC         | MD010912023-14    | Utah Department of Health   | 12/31/2024 |                  |

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**Beacon Proposal:** 230920R05  
**Lab Work Order:** 0007573  
**Reported:** 03/14/2024

### Qualifiers/Notes and Definitions

#### General Definitions:

|           |  |
|-----------|--|
| DF        | Dilution Factor  |
| DL        | Detection Limit  |
| LOD       | Limit of Detection   |
| LOQ       | Limit of Quantitation  |
| NA        | Not Applicable   |
| Q         | Qualifier  |
| RPD       | Relative Percent Difference  |
| RT        | Retention Times in Minutes   |
| RRT       | Evaluation of Relative Retention Times in RRT Units (qualified if outside $\pm 0.06$ control limits) |
| $3\sigma$ | Uncertainty  |
| ∉         | Compound not on scope of accreditation   |
| +         | values are outside method/contract required QC limits  |
| ∅         | Compound not on scope of accreditation and analyzed with a one-point calibration                     |

#### Sample/Sample Receipt Qualifiers and Notes:

|   |  |
|---|--|
| J | Value reported below limit of quantitation (LOQ).  |
| U | Analyte was not detected and is reported as less than the limit of detection (LOD). The LOD has been adjusted for any dilution or concentration of the sample. |

**SCS Engineers**  
2830 Dairy Drive  
Madison, WI 53718-6751

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**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R05  
**Lab Work Order:** 0007573  
**Reported:** 03/14/2024

## *Sample Management Records*



| <b>Client Information</b>                          |  | Project Manager: <b>Robert Langdon</b> |   | Client PO: <b>25222269.04</b>  |               | <b>INDOOR AIR</b>                 | <b>AMBIENT AIR</b> | <b>CRAWL SPACE</b> | <b>SEWER GAS</b> |  |  |
|--|--|--|---|--|---------------|-----------------------------------|--------------------|--------------------|------------------|--|--|
| Company: <b>SCS Engineers</b>                      | Project Name: <b>Badger Lease &amp; Auto Sales - VIZC</b>  |  | Turn around time (check one):<br><input checked="" type="checkbox"/> Normal <input type="checkbox"/> Rush (specify) ____ days |  |               |                                   |                    |                    |                  |  |  |
| Address: <b>2830 Dairy Drive</b>                   | Location: <b>1426/1428 S. 96th St. West Allis, WI (5C)</b> |  | Analysis:<br><input checked="" type="checkbox"/> Method TO-17 <input type="checkbox"/> Method 8260C                           |  |               |                                   |                    |                    |                  |  |  |
| City / State / Zip: <b>Madison, WI 53718</b>       | Submitted by: <b>Robert Langdon</b>                        |  | Email: <b>rlangdon@scsengineer.com</b>  |  |               |                                   |                    |                    |                  |  |  |
| Phone: <b>608-212-3995</b>                         | Email: <b>rlangdon@scsengineer.com</b>                     |  |   |  |               |                                   |                    |                    |                  |  |  |
| Location ID  | Start Date   | Start Time                             | Stop Date   | Stop Time  | Aver Temp (C) | Notes                             |                    |                    |                  |  |  |
| ✓ 05C_IAB_01_20240227                              | 2/19/2024  | 744                                    | 2/27/2024   | 0705   | 16            | Basement Indoor Air               |                    | X                  |                  |  |  |
| ✓ 05C_IA1_02_20240227                              | 2/19/2024  | 753                                    | 2/27/2024   | 0718   | 16            | 1st. Floor Indoor Air             |                    | X                  |                  |  |  |
| ✓ 05C_Sump_01_20240227                             | 2/19/2024  | 730                                    | 2/27/2024   | 0658   | 16            | Sump Headspace                    |                    | X                  |                  |  |  |
| ✓ 05C_OA_01_20240227                               | 2/19/2024  | 759                                    | 2/27/2024   | 0725   | 16            | Outdoor Air                       |                    |                    | X                |  |  |
| Special Notes / Instructions                       |  |  |   |  |               |                                   |                    |                    |                  |  |  |
| CVOC Short List                                    |  |  |   |  |               |                                   |                    |                    |                  |  |  |
| Relinquished by (signature): <i>Robert Langdon</i> |  | Date / Time: <i>2/28/2024 1:00</i>     |   | Received by (signature): <i>Michelle Pfeiffer</i>  |               | Date / Time: <i>2/29/24 12:40</i> |                    |                    |                  |  |  |
| Relinquished by (signature):                       |  | Date / Time:                           |   | Received by (signature):   |               | Date / Time:                      |                    |                    |                  |  |  |
| <b>For Lab Use Only</b>                            |  | Beacon Job No: <b>7573</b>             |   | Beacon Proposal: <b>230920R05</b>  |               |                                   |                    |                    |                  |  |  |
| Courier Name: <b>FedEx</b>                         |  | Shipment Condition: <b>Good</b>        |   | Custody Seal Intact:<br><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> n/a |               | Custody Seal No: <b>0047330</b>   |                    |                    |                  |  |  |

Attachment B  
WDNR Publication 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.

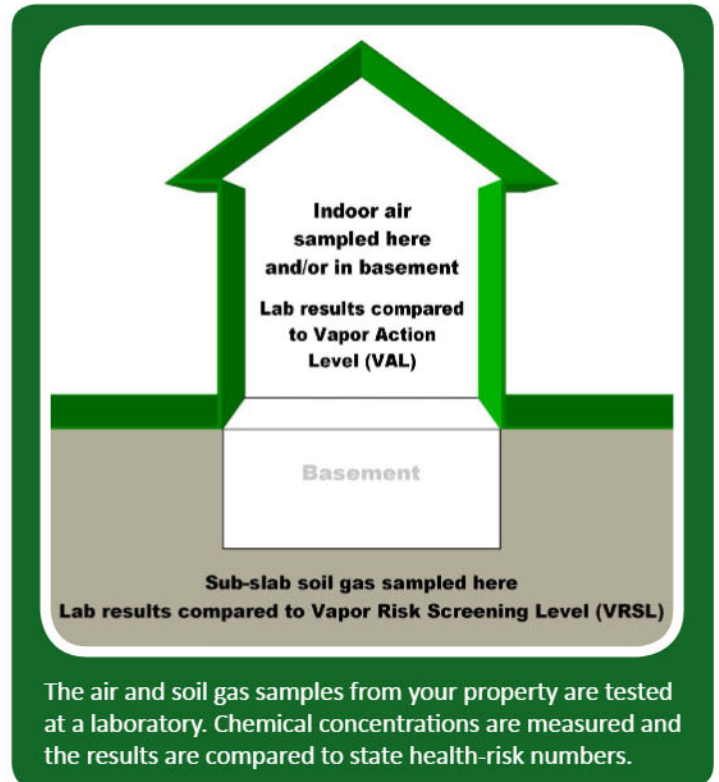
## Indoor Air Testing Results

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.



## 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

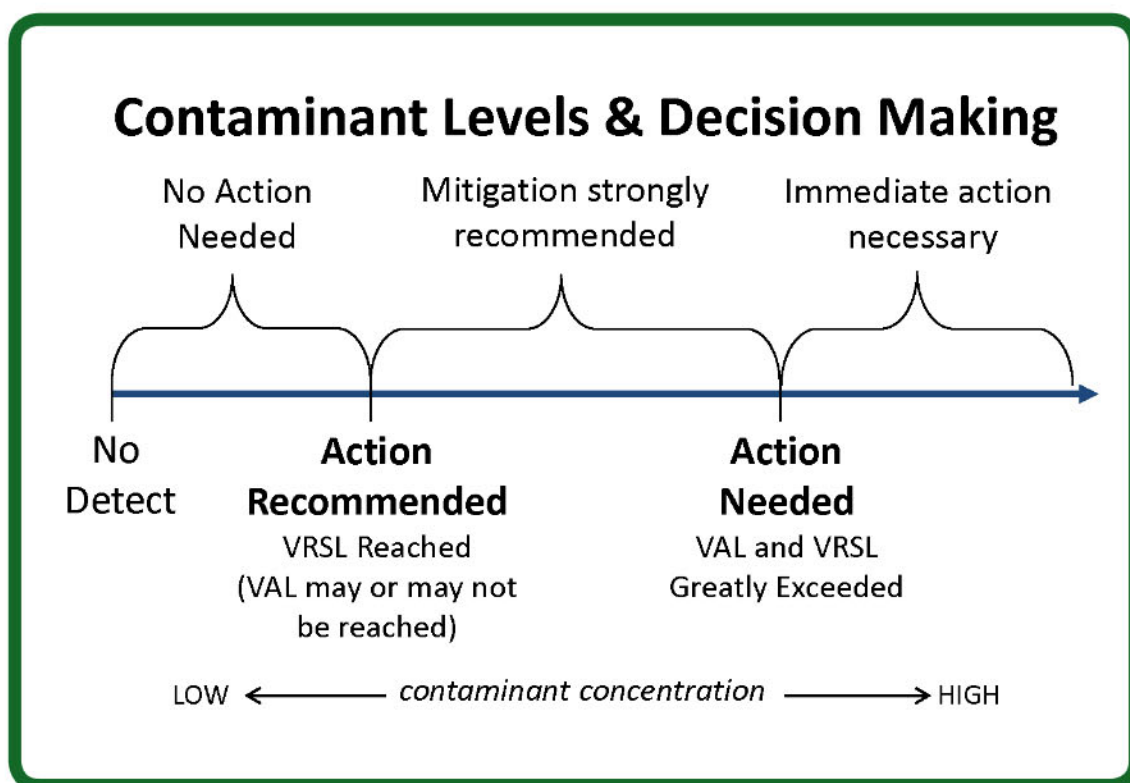
If your test results are less than a VAL for indoor air, or a VRSL for sub-slab soil gas, then the air in the house or building should not present a health concern. Follow-up sampling and testing may be necessary to confirm the results, but no other action is typically suggested.

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](https://dnr.wi.gov/topic/Brownfields/Vapor.html)

March 25, 2024  
File No. 25222269.04

William Cordero, Tenant  
1426 South 96th Street  
West Allis, WI 53214

Subject: Sample Results Notification  
1426 and 1428 South 96th Street  
WDNR Badger Lease & Auto Sales Case  
BRRTS No. 02-41-305222

Dear Mr. Cordero:

On behalf of the Wisconsin Department of Natural Resources (WDNR) through the Vapor Intrusion Zone Contract (VIZC), SCS Engineers (SCS) is providing sample results for sub-slab vapor, sump headspace, indoor air, and outdoor air samples which were collected from the above-noted property by SCS in February 2024. The approximate sample locations are shown on the attached map (**Figure 1**).

The samples were submitted for analysis of five specific chlorinated volatile organic compounds (CVOCs), including tetrachloroethene (PCE), trichloroethene (TCE), cis-1,2-dichloroethene, trans-1,2-dichloroethene, and vinyl chloride. The sample laboratory reports are included as **Attachment A**. Analytical results are summarized in **Tables 1** and **2**. The WDNR Publication RR-977 Understanding Chemical Vapor Testing Results with additional information for you is included as **Attachment B**.

Minor concentrations of PCE were detected in a sub-slab sample 05C\_SSV\_02\_20240227 and sump headspace sample 05C\_Sump\_01\_20240227 below the WDNR residential sub-slab vapor risk screening level (VRSL) and indoor air vapor action level (VAL). No other CVOCs were detected in the samples. The sample results indicate there is not an indoor air health risk related to vapor intrusion of CVOCs.

One additional sampling event is planned for the property to evaluate potential variability of concentrations. SCS will contact you in advance of this additional event to schedule access.

Once the final sampling event is completed, a final report with these findings will be prepared and submitted to the WDNR and listed on the Bureau for Remediation and Redevelopment Tracking System (BRRTS) on the Web (BOTW).

Please contact Joseph Martinez of WDNR at (414) 218-6042 or [joseph.martinez@wisconsin.gov](mailto:joseph.martinez@wisconsin.gov) or Nathan Kloczko of Wisconsin Department of Health (DHS) at (608) 867-4448 or [Nathan.kloczko@dhs.wisconsin.gov](mailto:Nathan.kloczko@dhs.wisconsin.gov) if you have questions concerning the analytical results.



William Cordero

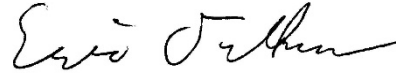
March 25, 2024

Page 2

Sincerely,



Robert Langdon  
Senior Project Manager  
SCS Engineers



Eric Oelkers, PG  
Senior Hydrogeologist  
SCS Engineers

REL/AJR/EO

cc: Joseph Martinez, WDNR  
Nathan Kloczko, DHS

Attachments: Table 1 - Sub-Slab Vapor Analytical Results Summary  
Table 2 - Indoor and Outdoor Air Analytical Results Summary  
Figure 1 - Vapor Investigation Map  
Attachment A - Laboratory Reports  
Attachment B - WDNR Publication RR-977

I:\25222269.00\25222269.04 Badger Lease & Auto\\_Deliverables\Results Notification Letters\1426\_1428 S. 96th\240325\_Cordero\_1426\_1428 S 96th\_Results Notification.docx

## Tables

- 1 Sub-Slab Vapor Analytical Results Summary
- 2 Indoor and Outdoor Air Analytical Results Summary

**Table 1. Sub-Slab Vapor Analytical Results Summary**  
**Badger Lease & Auto Sales, West Allis, Wisconsin / SCS Engineers Project #2522269.04**  
 (Results are in  $\mu\text{g}/\text{m}^3$ )

| Location  | Sample              | Sample Start Date | Sample End Date | Lab Notes | Tetrachloroethene (PCE) | Trichloroethene (TCE) | cis-1,2-DCE | trans-1,2-DCE | Vinyl Chloride |
|---|---------------------|-------------------|-----------------|-----------|-------------------------|-----------------------|-------------|---------------|----------------|
| 1426/1428 S. 96th St.   | 05C_SSV_01_20231003 | 9/26/2023         | 10/3/2023       | --        | <2.39                   | <2.97                 | <1.85       | <2.23         | <1.21          |
|   | 05C_SSV_01_20240227 | 2/19/2024         | 2/27/2024       | --        | <2.12                   | <2.63                 | <1.64       | <1.97         | <1.07          |
|   | 05C_SSV_02_20231003 | 9/26/2023         | 10/3/2023       | --        | <b>6.38</b>             | <2.97                 | <1.85       | <2.23         | <1.21          |
|   | 05C_SSV_02_20240227 | 2/19/2024         | 2/27/2024       | --        | <b>6.54</b>             | <2.63                 | <1.64       | <1.98         | <1.07          |
| Vapor Risk Screening Level (Residential Building)                 |                     |                   |                 |           | 1,400                   | 70                    | 1,400       | 1,400         | 56             |
| Vapor Risk Screening Level (Small Commercial Building)            |                     |                   |                 |           | 5,800                   | 290                   | 5,800       | 5,800         | 930            |
| Vapor Risk Screening Level (Large Commercial/Industrial Building) |                     |                   |                 |           | 18,000                  | 880                   | 18,000      | 18,000        | 2,800          |

Abbreviations:

$\mu\text{g}/\text{m}^3$  = micrograms per cubic meter  
 trans-1,2-DCE = trans-1,2-dichloroethene

cis-1,2-DCE = cis-1,2-dichloroethene  
 -- = Not Applicable

Notes:

1. Samples were collected using passive sorbent samplers and analyzed using the USEPA 8260C analytical method.
2. Vapor Risk Screening Levels are from Wisconsin Department of Natural Resources' WI Vapor Quick Look-Up Table, which is based on August 2023 U.S. EPA Regional Screening Level Tables.
3. **Bold+underlined** values meet or exceed Vapor Risk Screening Levels.

Lab Notes:

None

Calculations\Tables\[Table 1\_Sub-Slab Vapor Analytical Results Summary.xlsx]Sub-Slab Vapor

Created by: REL  
 Last revision by: AJR  
 Checked by: JSN  
 Proj Mgr QA/QC: REL

Date: 1/29/2024  
 Date: 3/15/2024  
 Date: 3/18/2024  
 Date: 3/20/2024



**Table 2. Indoor and Outdoor Air Analytical Results Summary**  
**Badger Lease & Auto Sales, West Allis, Wisconsin / SCS Engineers Project #25222269.04**  
 (Results are in µg/m<sup>3</sup>)

| Location   | Sample Type           | Sample               | Sample Start Date | Sample End Date | Lab Notes | Tetrachloroethene (PCE) | Trichloroethene (TCE) | cis-1,2-DCE | trans-1,2-DCE | Vinyl Chloride |
|--|-----------------------|----------------------|-------------------|-----------------|-----------|-------------------------|-----------------------|-------------|---------------|----------------|
| 1426/1428 S. 96th St.  | Indoor Air, Basement  | 05C_IAB_01_20231003  | 9/26/2023         | 10/3/2023       | --        | <1.19                   | <1.48                 | <0.924      | <1.11         | <0.604         |
|  |                       | 05C_IAB_01_20240227  | 2/19/2024         | 2/27/2024       | --        | <1.06                   | <1.32                 | <0.823      | <0.991        | <0.538         |
|  | Indoor Air, 1st Floor | 05C_IA1_02_20231003  | 9/26/2023         | 10/3/2023       | --        | <1.20                   | <1.49                 | <0.925      | <1.11         | <0.605         |
|  |                       | 05C_IA1_02_20240227  | 2/19/2024         | 2/27/2024       | --        | <1.06                   | <1.32                 | <0.822      | <0.991        | <0.538         |
|  | Sump Headspace        | 05C_Sump_01_20231003 | 9/26/2023         | 10/3/2023       | --        | <1.19                   | <1.48                 | <0.923      | <1.11         | <0.604         |
|  |                       | 05C_Sump_01_20240227 | 2/19/2024         | 2/27/2024       | --        | <b>1.70 J</b>           | <1.32                 | <0.822      | <0.990        | <0.538         |
|  | Outdoor Air           | 05C_OA_01_20231003   | 9/26/2023         | 10/3/2023       | --        | <1.22                   | <1.51                 | <0.941      | <1.13         | <0.616         |
|  |                       | 05C_OA_01_20240227   | 2/19/2024         | 2/27/2024       | --        | <1.06                   | <1.32                 | <0.822      | <0.990        | <0.538         |
| Indoor Air Vapor Action Level (Residential Building)           |                       |                      |                   |                 |           | 42                      | 2.1                   | 42          | 42            | 1.7            |
| Indoor Air Vapor Action Level (Commercial/Industrial Building) |                       |                      |                   |                 |           | 180                     | 8.8                   | 180         | 180           | 28             |

Abbreviations:

µg/m<sup>3</sup> = micrograms per cubic meter  
 trans-1,2-DCE = trans-1,2-dichloroethene

cis-1,2-DCE = cis-1,2-dichloroethene  
 -- = Not Applicable

Notes:

1. Samples were collected using passive sorbent samplers analyzed using EPA Method TO-17.
2. Indoor Air Vapor Action Levels are from Wisconsin Department of Natural Resources' WI Vapor Quick Look-Up Table, which is based on August 2023 U.S. EPA Regional Screening Level Tables.
3. **1.70** values meet or exceed Indoor Air Vapor Action Levels.

Lab Notes/Qualifiers:

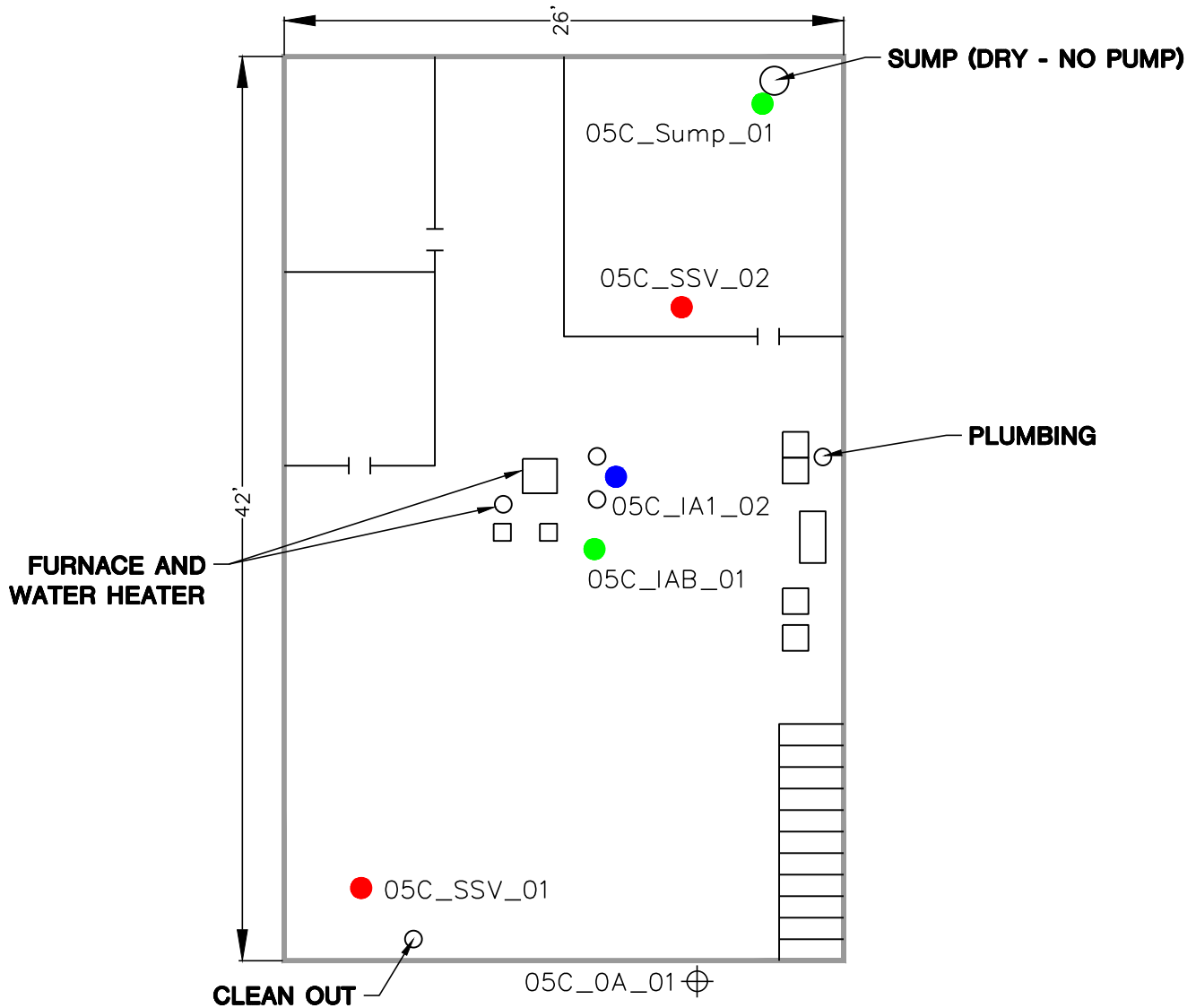
All non-detected analytes: U = Analyte was not detected and is reported as less than the limit of detection (LOD).  
 The LOD has been adjusted for any dilution or concentration of the sample.  
 J = Value reported below limit of quantitation (LOQ).

I:\25222269.00\25222269.04 Badger Lease & Auto\Data and Calculations\Tables\[Table 2\_Indoor and Outdoor Air Analytical Results Summary.xlsx]Indoor Air

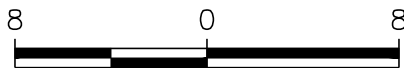
|                              |                        |
|------------------------------|------------------------|
| Created by: <u>AJR</u>       | Date: <u>2/2/2024</u>  |
| Last revision by: <u>LMH</u> | Date: <u>3/18/2024</u> |
| Checked by: <u>JSN</u>       | Date: <u>3/18/2024</u> |
| Proj Mgr QA/QC: <u>REL</u>   | Date: <u>3/20/2024</u> |

Figure 1  
Vapor Investigation Map

# BASEMENT LEVEL



S 96TH St.



SCALE: 1" = 8'



**LEGEND**

- APPROXIMATE SUB-SLAB SAMPLE LOCATION
- APPROXIMATE BASEMENT INDOOR AIR SAMPLE LOCATION
- APPROXIMATE 1ST FLOOR INDOOR AIR SAMPLE LOCATION
- ⊕ APPROXIMATE OUTDOOR AIR SAMPLE LOCATION

|                    |   |                     |                                   |                 |  |
|--------------------|---|---------------------|-----------------------------------|-----------------|--|
| <b>CLIENT</b>      | WISCONSIN DEPARTMENT OF NATURAL RESOURCES | <b>SITE</b>         | 1426/1428 S 96th STREET RESIDENCE | <b>MAP</b>      | VAPOR INVESTIGATION MAP  |
| <b>PROJECT NO.</b> | 25222269.04                               | <b>DRAWN BY:</b>    | SB                                | <b>ENGINEER</b> | <b>SCS ENGINEERS</b><br>2830 DAIRY DRIVE MADISON, WI 53718-6751<br>PHONE: (608) 224-2830 |
| <b>DRAWN:</b>      | 09/12/2023                                | <b>CHECKED BY:</b>  | REL                               | <b>FIGURE</b>   |  |
| <b>REVISED:</b>    | 03/20/2024                                | <b>APPROVED BY:</b> | REL (03/20/2024)                  | 1               |  |

Attachment A  
Laboratory Reports



Beacon Environmental

526 Underwood Lane  
Bel Air, MD 21014 USA  
1.410.838.8780

CERTIFICATE OF ANALYSIS

Beacon Proposal No.: 230920R04

Laboratory Work Order: 0007570

**Project Description:**

Badger Lease and Auto Sales  
West Allis, WI

Client PO No.: 25222269.04-001

Prepared for:

Jacob Krause

**SCS Engineers**

2830 Dairy Drive

Madison, WI 53718-6751

---

Ryan W. Schneider  
Senior Project Manager

March 11, 2024

All data meet requirements as specified in the Beacon Environmental Quality Assurance Project Plan and the results relate only to the samples reported. The work performed was in accordance with ISO/IEC 17025:2017. This report shall not be reproduced, except in full, without written approval of the laboratory. Release of the data contained in this data package has been authorized by the Laboratory Director or his signee, as verified by the following signatures:

---

Steven C. Thornley  
Laboratory Director

---

Peter B. Kelly  
Quality Manager

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SCS Engineers  
 2830 Dairy Drive  
 Madison, WI 53718-6751

**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007570  
**Reported:** 03/11/2024

### Sample Summary

| Lab Sample ID               | Client Sample ID                              | Received   | Analysis  | Matrix   |
|-----------------------------|---|------------|-----------|----------|
| 0007570-01<br>Sampler Type: | 05C_SSV_01_20240227<br>Beacon Passive Sampler | 02/29/2024 | EPA 8260C | Soil Gas |
| 0007570-02<br>Sampler Type: | 05C_SSV_02_20240227<br>Beacon Passive Sampler | 02/29/2024 | EPA 8260C | Soil Gas |

#### Project Completeness

**Samples Received:** 2  
**Samples Analyzed:** 2

SCS Engineers  
2830 Dairy Drive  
Madison, WI 53718-6751

**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007570  
**Reported:** 03/11/2024

### *Case Narrative*

#### **U.S. EPA Method 8260C**

All samples were analyzed using thermal desorption-gas chromatography/mass spectrometry (TD-GC/MS) instrumentation following U.S. EPA Method 8260C, with laboratory results provided in nanograms (ng) and micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ). Laboratory QA/QC procedures included internal standards, surrogates, and blanks based on EPA Method 8260C. Analyses and reporting were under BEACON's Quality Assurance Project Plan.

#### **Passive Soil-Gas Survey Notes**

If sample locations are covered with or near the edge of an impervious surface (*e.g.*, asphalt or concrete), the concentrations of compounds in soil gas are higher than if the surfacing was not present. Therefore, the sample location conditions should be considered when comparing results between locations.

Survey findings are exclusive to this project and when the spatial relationships are compared with results of other BEACON Surveys it is necessary to incorporate information from both investigations (*e.g.*, depth to sources, soil types, porosity, soil moisture, presence of impervious surfacing, sample collection times).

#### **Reporting Limits**

The RLs represent a baseline above which results meet laboratory-determined limits of precision and accuracy. All reported results are within the calibration range. The project method quantitation limit (MQL) is the limit of quantitation (LOQ) as noted in the data tables. Beacon determined uptake rates for a suite of compounds with the Beacon sampler for sampling in air. Beacon calculated the uptake rates for the remaining compounds using Graham's Law of Diffusion. The reported data includes LOQ limits.

#### **Project Details**

Samples were received in proper condition and laboratory control parameters were met unless otherwise noted below. The work performed was in accordance with ISO/IEC 17025:2017.



**SCS Engineers**  
2830 Dairy Drive  
Madison, WI 53718-6751

**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007570  
**Reported:** 03/11/2024

## *Analytical Results*

|  |   |  |
|--|---|--|
| <b>SCS Engineers</b><br>2830 Dairy Drive<br>Madison, WI 53718-6751 | <b>Site Name:</b> Badger Lease and Auto Sales<br><b>Site Location:</b> West Allis, WI<br><b>Project Manager:</b> Jacob Krause | <b>Beacon Proposal:</b> 230920R04<br><b>Lab Work Order:</b> 0007570<br><b>Reported:</b> 03/11/2024 |
|--|---|--|

*Summary of Compound Detections- Mass*

|                           |  |                   |
|---------------------------|--|-------------------|
| Lab Sample ID: 0007570-02 | <b>05C_SSV_02_20240227</b><br>Soil Gas | Method: EPA 8260C |
|---------------------------|--|-------------------|

| Analyte                  | CAS#     | Result<br>(ng) | Q | RT    | LOQ<br>(ng) | File ID     |
|--------------------------|----------|----------------|---|-------|-------------|-------------|
| <b>Tetrachloroethene</b> | 127-18-4 | <b>31</b>      |   | 5.958 | 10          | C24030106.D |

|  |   |  |
|--|---|--|
| <b>SCS Engineers</b><br>2830 Dairy Drive<br>Madison, WI 53718-6751 | <b>Site Name:</b> Badger Lease and Auto Sales<br><b>Site Location:</b> West Allis, WI<br><b>Project Manager:</b> Jacob Krause | <b>Beacon Proposal:</b> 230920R04<br><b>Lab Work Order:</b> 0007570<br><b>Reported:</b> 03/11/2024 |
|--|---|--|

*Summary of Compound Detections- Concentration*

|                           |  |                   |
|---------------------------|--|-------------------|
| Lab Sample ID: 0007570-02 | <b>05C_SSV_02_20240227</b><br>Soil Gas | Method: EPA 8260C |
|---------------------------|--|-------------------|

| Analyte                  | CAS#     | Result<br>(µg/m³) | Q | RT    | LOQ<br>(µg/m³) | File ID     |
|--------------------------|----------|-------------------|---|-------|----------------|-------------|
| <b>Tetrachloroethene</b> | 127-18-4 | <b>6.54</b>       |   | 5.958 | 2.12           | C24030106.D |

**SCS Engineers**  
2830 Dairy Drive  
Madison, WI 53718-6751**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007570  
**Reported:** 03/11/2024*Data Summary Table- Mass*

| <b>Compound</b>   | <b>Frequency</b> | <b>LOQ<br/>(ng)</b> | <b>Max Value<br/>(ng)</b> |
|-------------------|------------------|---------------------|---------------------------|
| Tetrachloroethene | 1                | 10                  | 31                        |

**SCS Engineers**  
2830 Dairy Drive  
Madison, WI 53718-6751**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007570  
**Reported:** 03/11/2024***Data Summary Table- Concentration***

| <b>Compound</b>   | <b>Frequency</b> | <b>LOQ<br/>(<math>\mu\text{g}/\text{m}^3</math>)</b> | <b>Max Value<br/>(<math>\mu\text{g}/\text{m}^3</math>)</b> |
|-------------------|------------------|--|--|
| Tetrachloroethene | 1                | 2.12   | 6.54   |

SCS Engineers  
2830 Dairy Drive  
Madison, WI 53718-6751

**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007570  
**Reported:** 03/11/2024

## *Detailed Analytical Results*

SCS Engineers  
2830 Dairy Drive  
Madison, WI 53718-6751

**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007570  
**Reported:** 03/11/2024

*Detailed Analytical Results- Mass*

**SCS Engineers**  
 2830 Dairy Drive  
 Madison, WI 53718-6751

**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007570  
**Reported:** 03/11/2024

Lab Sample ID: 0007570-01

**05C\_SSV\_01\_20240227**

Method: EPA 8260C

Soil Gas

| Analyte                       | CAS#       | Result<br>(ng) Q | LOQ<br>(ng)     | Analyzed         | File ID          |             |
|-------------------------------|------------|------------------|-----------------|------------------|------------------|-------------|
| Vinyl Chloride                | 75-01-4    | <10              | 10              | 03/01/2024 14:00 | C24030105.D      |             |
| trans-1,2-Dichloroethene      | 156-60-5   | <10              | 10              | 03/01/2024 14:00 | C24030105.D      |             |
| cis-1,2-Dichloroethene        | 156-59-2   | <10              | 10              | 03/01/2024 14:00 | C24030105.D      |             |
| Trichloroethene               | 79-01-6    | <10              | 10              | 03/01/2024 14:00 | C24030105.D      |             |
| Tetrachloroethene             | 127-18-4   | <10              | 10              | 03/01/2024 14:00 | C24030105.D      |             |
| Analyte                       | CAS#       | % Recovery       | Recovery Limits | Q                | Analyzed         | File ID     |
| Surrogate: 1,2-DCA-d4         | 17060-07-0 | 104%             | 70-130          |                  | 03/01/2024 14:00 | C24030105.D |
| Surrogate: Toluene-d8         | 2037-26-5  | 83.7%            | 70-130          |                  | 03/01/2024 14:00 | C24030105.D |
| Surrogate: Bromofluorobenzene | 460-00-4   | 93.5%            | 70-130          |                  | 03/01/2024 14:00 | C24030105.D |



**SCS Engineers**  
 2830 Dairy Drive  
 Madison, WI 53718-6751

**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007570  
**Reported:** 03/11/2024

Lab Sample ID: 0007570-02

**05C\_SSV\_02\_20240227**

Method: EPA 8260C

Soil Gas

| Analyte                       | CAS#       | Result<br>(ng) Q | LOQ<br>(ng)     | Analyzed         | File ID          |             |
|-------------------------------|------------|------------------|-----------------|------------------|------------------|-------------|
| Vinyl Chloride                | 75-01-4    | <10              | 10              | 03/01/2024 14:29 | C24030106.D      |             |
| trans-1,2-Dichloroethene      | 156-60-5   | <10              | 10              | 03/01/2024 14:29 | C24030106.D      |             |
| cis-1,2-Dichloroethene        | 156-59-2   | <10              | 10              | 03/01/2024 14:29 | C24030106.D      |             |
| Trichloroethene               | 79-01-6    | <10              | 10              | 03/01/2024 14:29 | C24030106.D      |             |
| <b>Tetrachloroethene</b>      | 127-18-4   | <b>31</b>        | 10              | 03/01/2024 14:29 | C24030106.D      |             |
| Analyte                       | CAS#       | % Recovery       | Recovery Limits | Q                | Analyzed         | File ID     |
| Surrogate: 1,2-DCA-d4         | 17060-07-0 | 97.7%            | 70-130          |                  | 03/01/2024 14:29 | C24030106.D |
| Surrogate: Toluene-d8         | 2037-26-5  | 82.1%            | 70-130          |                  | 03/01/2024 14:29 | C24030106.D |
| Surrogate: Bromofluorobenzene | 460-00-4   | 98.7%            | 70-130          |                  | 03/01/2024 14:29 | C24030106.D |

**SCS Engineers**  
2830 Dairy Drive  
Madison, WI 53718-6751

**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007570  
**Reported:** 03/11/2024

*Detailed Analytical Results- Concentration*

**SCS Engineers**  
 2830 Dairy Drive  
 Madison, WI 53718-6751

**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007570  
**Reported:** 03/11/2024

Lab Sample ID: 0007570-01

**05C\_SSV\_01\_20240227**

Method: EPA 8260C

Soil Gas

| Analyte                       | CAS#       | Result<br>(µg/m³) Q | LOQ<br>(µg/m³)  | Analyzed         | File ID          |             |
|-------------------------------|------------|---------------------|-----------------|------------------|------------------|-------------|
| Vinyl Chloride                | 75-01-4    | <1.07               | 1.07            | 03/01/2024 14:00 | C24030105.D      |             |
| trans-1,2-Dichloroethene      | 156-60-5   | <1.97               | 1.97            | 03/01/2024 14:00 | C24030105.D      |             |
| cis-1,2-Dichloroethene        | 156-59-2   | <1.64               | 1.64            | 03/01/2024 14:00 | C24030105.D      |             |
| Trichloroethene               | 79-01-6    | <2.63               | 2.63            | 03/01/2024 14:00 | C24030105.D      |             |
| Tetrachloroethene             | 127-18-4   | <2.12               | 2.12            | 03/01/2024 14:00 | C24030105.D      |             |
| Analyte                       | CAS#       | % Recovery          | Recovery Limits | Q                | Analyzed         | File ID     |
| Surrogate: 1,2-DCA-d4         | 17060-07-0 | 104%                | 70-130          |                  | 03/01/2024 14:00 | C24030105.D |
| Surrogate: Toluene-d8         | 2037-26-5  | 83.7%               | 70-130          |                  | 03/01/2024 14:00 | C24030105.D |
| Surrogate: Bromofluorobenzene | 460-00-4   | 93.5%               | 70-130          |                  | 03/01/2024 14:00 | C24030105.D |

SCS Engineers  
 2830 Dairy Drive  
 Madison, WI 53718-6751

**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007570  
**Reported:** 03/11/2024

Lab Sample ID: 0007570-02

**05C\_SSV\_02\_20240227**

Method: EPA 8260C

Soil Gas

| Analyte                       | CAS#       | Result<br>(µg/m <sup>3</sup> ) | Q               | LOQ<br>(µg/m <sup>3</sup> ) | Analyzed         | File ID     |
|-------------------------------|------------|--------------------------------|-----------------|-----------------------------|------------------|-------------|
| Vinyl Chloride                | 75-01-4    | <1.07                          |                 | 1.07                        | 03/01/2024 14:29 | C24030106.D |
| trans-1,2-Dichloroethene      | 156-60-5   | <1.98                          |                 | 1.98                        | 03/01/2024 14:29 | C24030106.D |
| cis-1,2-Dichloroethene        | 156-59-2   | <1.64                          |                 | 1.64                        | 03/01/2024 14:29 | C24030106.D |
| Trichloroethene               | 79-01-6    | <2.63                          |                 | 2.63                        | 03/01/2024 14:29 | C24030106.D |
| <b>Tetrachloroethene</b>      | 127-18-4   | <b>6.54</b>                    |                 | 2.12                        | 03/01/2024 14:29 | C24030106.D |
| Analyte                       | CAS#       | % Recovery                     | Recovery Limits | Q                           | Analyzed         | File ID     |
| Surrogate: 1,2-DCA-d4         | 17060-07-0 | 97.7%                          | 70-130          |                             | 03/01/2024 14:29 | C24030106.D |
| Surrogate: Toluene-d8         | 2037-26-5  | 82.1%                          | 70-130          |                             | 03/01/2024 14:29 | C24030106.D |
| Surrogate: Bromofluorobenzene | 460-00-4   | 98.7%                          | 70-130          |                             | 03/01/2024 14:29 | C24030106.D |

SCS Engineers  
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Madison, WI 53718-6751

**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
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**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007570  
**Reported:** 03/11/2024

## *QC Information/Summary*

**SCS Engineers**  
 2830 Dairy Drive  
 Madison, WI 53718-6751

**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007570  
**Reported:** 03/11/2024

*Soil-Gas Sample Analysis by EPA Method 8260C - Quality Control Summary*
**Sequence: B24B051 - Instrument: C System - File ID: Cb24021520.D**
***B24B051-ICV1 (LCSD/Second Source Verification/CALV)***

| Analyte                              | Result      | LOQ | Units     | Spike Level | Source Result | %REC        | %REC Limits   | RPD | RPD Limit | Notes |
|--------------------------------------|-------------|-----|-----------|-------------|---------------|-------------|---------------|-----|-----------|-------|
| Vinyl Chloride                       | 45.3        | 10  | ng        | 50.0        |               | 90.6        | 70-130        |     |           |       |
| trans-1,2-Dichloroethene             | 51.2        | 10  | ng        | 50.0        |               | 102         | 70-130        |     |           |       |
| cis-1,2-Dichloroethene               | 52.5        | 10  | ng        | 50.0        |               | 105         | 70-130        |     |           |       |
| Trichloroethene                      | 49.9        | 10  | ng        | 50.0        |               | 99.8        | 70-130        |     |           |       |
| Tetrachloroethene                    | 56.1        | 10  | ng        | 50.0        |               | 112         | 70-130        |     |           |       |
| <i>Surrogate: 1,2-DCA-d4</i>         | <i>46.0</i> |     | <i>ng</i> | <i>50.0</i> |               | <i>92.0</i> | <i>70-130</i> |     |           |       |
| <i>Surrogate: Toluene-d8</i>         | <i>47.9</i> |     | <i>ng</i> | <i>50.0</i> |               | <i>95.7</i> | <i>70-130</i> |     |           |       |
| <i>Surrogate: Bromofluorobenzene</i> | <i>48.7</i> |     | <i>ng</i> | <i>50.0</i> |               | <i>97.4</i> | <i>70-130</i> |     |           |       |

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**Site Name:** Badger Lease and Auto Sales  
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**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007570  
**Reported:** 03/11/2024

*Soil-Gas Sample Analysis by EPA Method 8260C - Quality Control Summary*
**Sequence: B24B051 - Instrument: C System - File ID: Cb24021524.D**
***B24B051-ICB1 (Lab Blank/Initial Calibration Blank)***

| Analyte                              | Result | LOQ | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|--------------------------------------|--------|-----|-------|-------------|---------------|------|-------------|-----|-----------|-------|
| Vinyl Chloride                       | <5     | 10  | ng    |             |               |      |             |     |           | U     |
| trans-1,2-Dichloroethene             | <5     | 10  | ng    |             |               |      |             |     |           | U     |
| cis-1,2-Dichloroethene               | <5     | 10  | ng    |             |               |      |             |     |           | U     |
| Trichloroethene                      | <5     | 10  | ng    |             |               |      |             |     |           | U     |
| Tetrachloroethene                    | <5     | 10  | ng    |             |               |      |             |     |           | U     |
| <i>Surrogate: 1,2-DCA-d4</i>         | 95.5   |     | ng    | 100         |               | 95.5 | 70-130      |     |           |       |
| <i>Surrogate: Toluene-d8</i>         | 92.8   |     | ng    | 100         |               | 92.8 | 70-130      |     |           |       |
| <i>Surrogate: Bromofluorobenzene</i> | 89.6   |     | ng    | 100         |               | 89.6 | 70-130      |     |           |       |

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**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007570  
**Reported:** 03/11/2024

*Soil-Gas Sample Analysis by EPA Method 8260C - Quality Control Summary*
**Sequence: B24C006 - Batch: 24C0006 - Instrument: C System - File ID: C24030102.D**
*24C0006-BS1 (LCS, Calibration Source Verification)*

| Analyte                              | Result      | LOQ | Units     | Spike Level | Source Result | %REC        | %REC Limits   | RPD | RPD Limit | Notes |
|--------------------------------------|-------------|-----|-----------|-------------|---------------|-------------|---------------|-----|-----------|-------|
| Vinyl Chloride                       | 59.3        | 10  | ng        | 50.0        |               | 119         | 80-120        |     |           |       |
| trans-1,2-Dichloroethene             | 54.8        | 10  | ng        | 50.0        |               | 110         | 80-120        |     |           |       |
| cis-1,2-Dichloroethene               | 50.2        | 10  | ng        | 50.0        |               | 100         | 80-120        |     |           |       |
| Trichloroethene                      | 51.2        | 10  | ng        | 50.0        |               | 102         | 80-120        |     |           |       |
| Tetrachloroethene                    | 49.5        | 10  | ng        | 50.0        |               | 99.0        | 80-120        |     |           |       |
| <i>Surrogate: 1,2-DCA-d4</i>         | <i>51.6</i> |     | <i>ng</i> | <i>50.0</i> |               | <i>103</i>  | <i>70-130</i> |     |           |       |
| <i>Surrogate: Toluene-d8</i>         | <i>45.1</i> |     | <i>ng</i> | <i>50.0</i> |               | <i>90.2</i> | <i>70-130</i> |     |           |       |
| <i>Surrogate: Bromofluorobenzene</i> | <i>48.6</i> |     | <i>ng</i> | <i>50.0</i> |               | <i>97.1</i> | <i>70-130</i> |     |           |       |



**SCS Engineers**  
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**Site Name:** Badger Lease and Auto Sales  
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**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007570  
**Reported:** 03/11/2024

*Soil-Gas Analysis by EPA 8260 - Data in Concentration - Quality Control Summary*
**Sequence: B24C006 - Batch: 24C0006 - Instrument: C System - File ID: C24030103.D**
**24C0006-BLK1 (Lab Blank)**

| Analyte                              | Result      | LOQ  | Units             | Spike Level | Source Result | %REC        | %REC Limits   | RPD | RPD Limit | Notes |
|--------------------------------------|-------------|------|-------------------|-------------|---------------|-------------|---------------|-----|-----------|-------|
| Vinyl Chloride                       | <1.07       | 1.07 | µg/m <sup>3</sup> |             |               |             |               |     |           | U     |
| trans-1,2-Dichloroethene             | <1.97       | 1.97 | µg/m <sup>3</sup> |             |               |             |               |     |           | U     |
| cis-1,2-Dichloroethene               | <1.64       | 1.64 | µg/m <sup>3</sup> |             |               |             |               |     |           | U     |
| Trichloroethene                      | <2.63       | 2.63 | µg/m <sup>3</sup> |             |               |             |               |     |           | U     |
| Tetrachloroethene                    | <2.12       | 2.12 | µg/m <sup>3</sup> |             |               |             |               |     |           | U     |
| <i>Surrogate: 1,2-DCA-d4</i>         | <i>103</i>  |      | <i>ng</i>         | <i>100</i>  |               | <i>103</i>  | <i>70-130</i> |     |           |       |
| <i>Surrogate: Toluene-d8</i>         | <i>90.5</i> |      | <i>ng</i>         | <i>100</i>  |               | <i>90.5</i> | <i>70-130</i> |     |           |       |
| <i>Surrogate: Bromofluorobenzene</i> | <i>88.4</i> |      | <i>ng</i>         | <i>100</i>  |               | <i>88.4</i> | <i>70-130</i> |     |           |       |

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 Madison, WI 53718-6751

**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007570  
**Reported:** 03/11/2024

*Soil-Gas Sample Analysis by EPA Method 8260C - Quality Control Summary*
**Sequence: B24C006 - Batch: 24C0006 - Instrument: C System - File ID: C24030103.D**
**24C0006-BLK1 (Lab Blank)**

| Analyte                              | Result      | LOQ | Units     | Spike Level | Source Result | %REC        | %REC Limits   | RPD | RPD Limit | Notes |
|--------------------------------------|-------------|-----|-----------|-------------|---------------|-------------|---------------|-----|-----------|-------|
| Vinyl Chloride                       | <5          | 10  | ng        |             |               |             |               |     |           | U     |
| trans-1,2-Dichloroethene             | <5          | 10  | ng        |             |               |             |               |     |           | U     |
| cis-1,2-Dichloroethene               | <5          | 10  | ng        |             |               |             |               |     |           | U     |
| Trichloroethene                      | <5          | 10  | ng        |             |               |             |               |     |           | U     |
| Tetrachloroethene                    | <5          | 10  | ng        |             |               |             |               |     |           | U     |
| <i>Surrogate: 1,2-DCA-d4</i>         | <i>103</i>  |     | <i>ng</i> | <i>100</i>  |               | <i>103</i>  | <i>70-130</i> |     |           |       |
| <i>Surrogate: Toluene-d8</i>         | <i>90.5</i> |     | <i>ng</i> | <i>100</i>  |               | <i>90.5</i> | <i>70-130</i> |     |           |       |
| <i>Surrogate: Bromofluorobenzene</i> | <i>88.4</i> |     | <i>ng</i> | <i>100</i>  |               | <i>88.4</i> | <i>70-130</i> |     |           |       |

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 2830 Dairy Drive  
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**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007570  
**Reported:** 03/11/2024

*Soil-Gas Sample Analysis by EPA Method 8260C - Quality Control Summary*
**Sequence: B24C006 - Instrument: C System - File ID: C24030104.D**
*B24C006-ICV1 (LCSD/Second Source Verification/CALV)*

| Analyte                              | Result      | LOQ | Units     | Spike Level | Source Result | %REC        | %REC Limits   | RPD | RPD Limit | Notes |
|--------------------------------------|-------------|-----|-----------|-------------|---------------|-------------|---------------|-----|-----------|-------|
| Vinyl Chloride                       | 63.7        | 10  | ng        | 50.0        |               | 127         | 70-130        |     |           |       |
| trans-1,2-Dichloroethene             | 57.1        | 10  | ng        | 50.0        |               | 114         | 70-130        |     |           |       |
| cis-1,2-Dichloroethene               | 48.4        | 10  | ng        | 50.0        |               | 96.7        | 70-130        |     |           |       |
| Trichloroethene                      | 51.7        | 10  | ng        | 50.0        |               | 103         | 70-130        |     |           |       |
| Tetrachloroethene                    | 50.5        | 10  | ng        | 50.0        |               | 101         | 70-130        |     |           |       |
| <i>Surrogate: 1,2-DCA-d4</i>         | <i>48.4</i> |     | <i>ng</i> | <i>50.0</i> |               | <i>96.8</i> | <i>70-130</i> |     |           |       |
| <i>Surrogate: Toluene-d8</i>         | <i>44.5</i> |     | <i>ng</i> | <i>50.0</i> |               | <i>89.0</i> | <i>70-130</i> |     |           |       |
| <i>Surrogate: Bromofluorobenzene</i> | <i>46.5</i> |     | <i>ng</i> | <i>50.0</i> |               | <i>93.0</i> | <i>70-130</i> |     |           |       |

SCS Engineers  
2830 Dairy Drive  
Madison, WI 53718-6751

**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007570  
**Reported:** 03/11/2024

*Additional QC Information*

|  |   |  |
|--|---|--|
| <b>SCS Engineers</b><br>2830 Dairy Drive<br>Madison, WI 53718-6751 | <b>Site Name:</b> Badger Lease and Auto Sales<br><b>Site Location:</b> West Allis, WI<br><b>Project Manager:</b> Jacob Krause | <b>Beacon Proposal:</b> 230920R04<br><b>Lab Work Order:</b> 0007570<br><b>Reported:</b> 03/11/2024 |
|--|---|--|

**Sample Result Calculation Summary (Concentration)**  
**EPA 8260C**

| Analyte | t<br>Sampling Time<br>minutes | DF<br>Dilution<br>Factor | U<br>Uptake<br>Rate | M<br>Initial Result<br>ng | C<br>Calculated Result<br>µg/m <sup>3</sup> | File ID |
|---------|-------------------------------|--------------------------|---------------------|---------------------------|---|---------|
|---------|-------------------------------|--------------------------|---------------------|---------------------------|---|---------|

**Lab ID:** 0007570-01      **Sample Name:** 05C\_SSV\_01\_20240227

|                          |        |      |       |   |   |             |
|--------------------------|--------|------|-------|---|---|-------------|
| Vinyl Chloride           | 11,517 | 1.00 | 0.810 | U | U | C24030105.D |
| trans-1,2-Dichloroethene | 11,517 | 1.00 | 0.440 | U | U | C24030105.D |
| cis-1,2-Dichloroethene   | 11,517 | 1.00 | 0.530 | U | U | C24030105.D |
| Trichloroethene          | 11,517 | 1.00 | 0.330 | U | U | C24030105.D |
| Tetrachloroethene        | 11,517 | 1.00 | 0.410 | U | U | C24030105.D |

**Lab ID:** 0007570-02      **Sample Name:** 05C\_SSV\_02\_20240227

|                          |        |      |       |       |      |             |
|--------------------------|--------|------|-------|-------|------|-------------|
| Vinyl Chloride           | 11,503 | 1.00 | 0.810 | U     | U    | C24030106.D |
| trans-1,2-Dichloroethene | 11,503 | 1.00 | 0.440 | U     | U    | C24030106.D |
| cis-1,2-Dichloroethene   | 11,503 | 1.00 | 0.530 | U     | U    | C24030106.D |
| Trichloroethene          | 11,503 | 1.00 | 0.330 | U     | U    | C24030106.D |
| Tetrachloroethene        | 11,503 | 1.00 | 0.410 | 30.86 | 6.54 | C24030106.D |

Calculations:

$$C = \frac{1000 \times M \times DF}{U \times t}$$

- where: C = concentration (µg/m<sup>3</sup>)  
 M = mass (ng)  
 DF = dilution factor  
 t = sampling time (minutes)  
 U = compound specific uptake rate

*Reference: Federal Register/Vol. 79, No. 125/June 30, 2014*

**SCS Engineers**  
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**Lab Work Order:** 0007570  
**Reported:** 03/11/2024

**Method Detection and Reporting Limit Calculations (Concentration)**
**EPA 8260C**

| Analyte | t<br>Sampling Time<br>minutes | DF<br>Dilution<br>Factor | U<br>Uptake<br>Rate | M<br>Initial LOQ<br>ng | C<br>Calculated LOQ<br>µg/m <sup>3</sup> |
|---------|-------------------------------|--------------------------|---------------------|------------------------|--|
|---------|-------------------------------|--------------------------|---------------------|------------------------|--|

**Lab ID:** 0007570-01

**Sample Name:** 05C\_SSV\_01\_20240227

|                          |        |      |       |      |      |
|--------------------------|--------|------|-------|------|------|
| Vinyl Chloride           | 11,517 | 1.00 | 0.810 | 10.0 | 1.07 |
| trans-1,2-Dichloroethene | 11,517 | 1.00 | 0.440 | 10.0 | 1.97 |
| cis-1,2-Dichloroethene   | 11,517 | 1.00 | 0.530 | 10.0 | 1.64 |
| Trichloroethene          | 11,517 | 1.00 | 0.330 | 10.0 | 2.63 |
| Tetrachloroethene        | 11,517 | 1.00 | 0.410 | 10.0 | 2.12 |

**Lab ID:** 0007570-02

**Sample Name:** 05C\_SSV\_02\_20240227

|                          |        |      |       |      |      |
|--------------------------|--------|------|-------|------|------|
| Vinyl Chloride           | 11,503 | 1.00 | 0.810 | 10.0 | 1.07 |
| trans-1,2-Dichloroethene | 11,503 | 1.00 | 0.440 | 10.0 | 1.98 |
| cis-1,2-Dichloroethene   | 11,503 | 1.00 | 0.530 | 10.0 | 1.64 |
| Trichloroethene          | 11,503 | 1.00 | 0.330 | 10.0 | 2.63 |
| Tetrachloroethene        | 11,503 | 1.00 | 0.410 | 10.0 | 2.12 |

SCS Engineers  
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**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007570  
**Reported:** 03/11/2024

### *Laboratory Certification List*

| Certification ID   | Certification No. | Description   | Expires    | Project Required |
|--------------------|-------------------|---|------------|------------------|
| Alaska CS-LAP      | 19-002            | Alaska Department of Environmental Conservation                                 | 12/30/2024 |                  |
| DoD-ELAP           | 72690/L22-563     | United States Department of Defense Environmental Laboratory Accreditation      | 11/30/2024 |                  |
| ISO/IEC 17025:2017 | 72690/L22-563     | General Requirements for the Competence of Testing and Calibration Laboratories | 11/30/2024 |                  |
| NEFAP              | 72690/L22-564     | TNI National Environmental Field Activities Program (NEFAP)                     | 11/30/2024 |                  |
| NY-NELAC           | 12097             | New York Department of Health   | 04/01/2024 |                  |
| Utah-NELAC         | MD010912023-14    | Utah Department of Health   | 12/31/2024 |                  |

**SCS Engineers**  
2830 Dairy Drive  
Madison, WI 53718-6751**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007570  
**Reported:** 03/11/2024

### Qualifiers/Notes and Definitions

**General Definitions:**

|           |  |
|-----------|--|
| DF        | Dilution Factor  |
| DL        | Detection Limit  |
| LOD       | Limit of Detection   |
| LOQ       | Limit of Quantitation  |
| NA        | Not Applicable   |
| Q         | Qualifier  |
| RPD       | Relative Percent Difference  |
| RT        | Retention Times in Minutes   |
| RRT       | Evaluation of Relative Retention Times in RRT Units (qualified if outside $\pm 0.06$ control limits) |
| $3\sigma$ | Uncertainty  |
| ∉         | Compound not on scope of accreditation   |
| +         | values are outside method/contract required QC limits  |
| ∅         | Compound not on scope of accreditation and analyzed with a one-point calibration                     |



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**Lab Work Order:** 0007570  
**Reported:** 03/11/2024

## *Sample Management Records*



526 Underwood Lane  
Bel Air, Maryland 21014 USA  
Need help? Call 1-410-838-8780  
or email help@beacon-usa.com

**PASSIVE SOIL GAS SAMPLES**

**CHAIN-OF-CUSTODY**

| Project Information   | Client Information  |  |
|---|---|--|
| Site Name:<br><b>Badger Lease &amp; Auto Sales - VIZC</b>           | Company Name: <b>SCS Engineers</b>                          | Project Manager: <b>Robert Langdon</b>   |
| Site Location:<br><b>1426/1428 S. 96th St., West Allis, WI (5C)</b> | Office Location: <b>2830 Dairy Drive, Madison, WI 53718</b> | Client PO: <b>25222269.04</b>  |
|   | Submitted by: <b>Robert Langdon</b>                         | Turn around time (check one):<br><input checked="" type="checkbox"/> Normal <input type="checkbox"/> Rush (specify) ___ days |
|   | Email: <b>rclangdon@scsengineers.com</b>                    |  |

| Field Sample ID       | Start Date | Start Time | Stop Date | Stop Time | Sampling Hole Depth<br><input type="checkbox"/> cm <input type="checkbox"/> inches | Surface Type (Soil, Asphalt, Concrete, Gravel) | Optional Information (Location Description, Sample Condition, PID / FID Readings, etc) |
|-----------------------|------------|------------|-----------|-----------|--|--|--|
| ✓ 05C_SSV_01_20240227 | 2/19/2024  | 713        | 2/27/2024 | 0710      | 6 inches   | Concrete                                       | Sub-Slab Vapor   |
| ✓ 05C_SSV_02_20240227 | 2/19/2024  | 703        | 2/27/2024 | 0646      | 6 inches   | Concrete                                       | Sub-Slab Vapor   |
|                       |            |            |           |           |  |  |  |
|                       |            |            |           |           |  |  |  |
|                       |            |            |           |           |  |  |  |
|                       |            |            |           |           |  |  |  |
|                       |            |            |           |           |  |  |  |
|                       |            |            |           |           |  |  |  |
|                       |            |            |           |           |  |  |  |
|                       |            |            |           |           |  |  |  |
|                       |            |            |           |           |  |  |  |
|                       |            |            |           |           |  |  |  |
|                       |            |            |           |           |  |  |  |
|                       |            |            |           |           |  |  |  |
|                       |            |            |           |           |  |  |  |
|                       |            |            |           |           |  |  |  |
|                       |            |            |           |           |  |  |  |
|                       |            |            |           |           |  |  |  |
|                       |            |            |           |           |  |  |  |
|                       |            |            |           |           |  |  |  |
|                       |            |            |           |           |  |  |  |
|                       |            |            |           |           |  |  |  |

|  |                                    |  |                                   |
|--|------------------------------------|--|-----------------------------------|
| Special Instructions: <b>CVOC Short List</b> |                                    |  |                                   |
| Relinquished by (signature):                 | Date / Time: <b>2/20/2024 1500</b> | Received by (signature):   | Date / Time: <b>2/29/24 12:40</b> |
| Relinquished by (signature):                 | Date / Time:                       | Received by (signature):   | Date / Time:                      |
| <b>For Lab Use Only</b>                      | Beacon Job No: <b>7570</b>         | Beacon Proposal: <b>230920R04</b>  | Analytical Method:                |
| Courier Name: <b>FedEx</b>                   | Shipment Condition: <b>Good</b>    | Custody Seal Intact:<br><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> n/a | Custody Seal No: <b>6047330</b>   |



Beacon Environmental

526 Underwood Lane  
Bel Air, MD 21014 USA  
1.410.838.8780

CERTIFICATE OF ANALYSIS

Beacon Proposal No.: 230920R05

Laboratory Work Order: 0007573

**Project Description:**

Badger Lease and Auto Sales  
West Allis, WI

Client PO No.: 25222269.04-002

Prepared for:

Jacob Krause

**SCS Engineers**

2830 Dairy Drive

Madison, WI 53718-6751

---

Ryan W. Schneider  
Senior Project Manager

March 14, 2024

All data meet requirements as specified in the Beacon Environmental Quality Assurance Project Plan and the results relate only to the samples reported. The work performed was in accordance with ISO/IEC 17025:2017. This report shall not be reproduced, except in full, without written approval of the laboratory. Release of the data contained in this data package has been authorized by the Laboratory Director or his signee, as verified by the following signatures:

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Steven C. Thornley  
Laboratory Director

---

Peter B. Kelly  
Quality Manager

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SCS Engineers  
 2830 Dairy Drive  
 Madison, WI 53718-6751

**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R05  
**Lab Work Order:** 0007573  
**Reported:** 03/14/2024

### Sample Summary

| Lab Sample ID               | Client Sample ID                               | Received   | Analysis        | Matrix      |
|-----------------------------|--|------------|-----------------|-------------|
| 0007573-01<br>Sampler Type: | 05C_IAB_01_20240227<br>Beacon Passive Sampler  | 02/29/2024 | TO-17 (Passive) | Indoor Air  |
| 0007573-02<br>Sampler Type: | 05C_IA1_02_20240227<br>Beacon Passive Sampler  | 02/29/2024 | TO-17 (Passive) | Indoor Air  |
| 0007573-03<br>Sampler Type: | 05C_Sump_01_20240227<br>Beacon Passive Sampler | 02/29/2024 | TO-17 (Passive) | Indoor Air  |
| 0007573-04<br>Sampler Type: | 05C_OA_01_20240227<br>Beacon Passive Sampler   | 02/29/2024 | TO-17 (Passive) | Ambient Air |

#### Project Completeness

**Samples Received:** 4  
**Samples Analyzed:** 4

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**Beacon Proposal:** 230920R05  
**Lab Work Order:** 0007573  
**Reported:** 03/14/2024

### *Case Narrative*

Beacon Environmental provided thermally conditioned Beacon Samplers for sampling, with analyses following U.S. EPA Method TO-17, with analytical results reported in  $\mu\text{g}/\text{m}^3$ . Beacon calculated concentration results using the exposure period, target analyte mass, and the following procedures detailed in ISO 16017-2, *Indoor, ambient and workplace air-Sampling and analysis of volatile organic compounds by sorbent tube/thermal desorption/capillary gas chromatography-Part 2: Diffusive sampling*.

Beacon reports results and reporting limits to three significant digits.

#### **Reporting Limits (RLs) for EPA Method TO-17**

The RLs represent a baseline above which results meet laboratory-determined limits of precision and accuracy. Beacon performed dilution analysis when results exceeded the upper calibration limit, bringing all reported results within the calibration range. The project method quantitation limit (MQL) is the limit of detection (LOD) as noted in the data tables.

#### **Calibration Verification**

All continuing calibration verification (CCV) values are within  $\pm 30\%$  of the true values as defined by the initial calibration and met the requirements specified in BEACON's Quality Manual.

#### **Internal Standards and Surrogates**

Internal standards and surrogates are spiked on all blanks (ICB, BLK), field samples and laboratory control samples (ICV/CALV, BS, ICV and CCV). Acceptance criteria for internal standards are 60 to 140 percent and surrogate recoveries are 70 to 130 percent; all internal standards and surrogates are within the acceptance criteria unless noted in the **Case Narrative**.

#### **Blank Contamination**

No targeted compounds above the limit of detection (LOD) for each compound were observed in the Laboratory Method Blanks unless noted in the **Case Narrative**.

#### **Laboratory Control Samples**

Acceptance criteria for surrogate and analytes recoveries are 70 to 130 percent; all recoveries are within the acceptance criteria unless noted in the **Case Narrative**.

#### **Discussion**

Samples were received in proper condition and laboratory control parameters were met unless otherwise noted below. The work performed was in accordance with ISO/IEC 17025:2017.

End of Case Narrative

**SCS Engineers**  
2830 Dairy Drive  
Madison, WI 53718-6751

**Site Name:** Badger Lease and Auto Sales  
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**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R05  
**Lab Work Order:** 0007573  
**Reported:** 03/14/2024

## *Analytical Results*

|  |   |  |
|--|---|--|
| <b>SCS Engineers</b><br>2830 Dairy Drive<br>Madison, WI 53718-6751 | <b>Site Name:</b> Badger Lease and Auto Sales<br><b>Site Location:</b> West Allis, WI<br><b>Project Manager:</b> Jacob Krause | <b>Beacon Proposal:</b> 230920R05<br><b>Lab Work Order:</b> 0007573<br><b>Reported:</b> 03/14/2024 |
|--|---|--|

*Summary of Compound Detections- Concentration*

|                           |   |                         |
|---------------------------|---|-------------------------|
| Lab Sample ID: 0007573-03 | <b>05C_Sump_01_20240227</b><br>Indoor Air | Method: TO-17 (Passive) |
|---------------------------|---|-------------------------|

| Analyte                  | CAS#     | Result<br>(µg/m³) | Q | RT    | LOQ<br>(µg/m³) | LOD<br>(µg/m³) | File ID     |
|--------------------------|----------|-------------------|---|-------|----------------|----------------|-------------|
| <b>Tetrachloroethene</b> | 127-18-4 | <b>1.70</b>       | J | 5.955 | 2.13           | 1.06           | C24030410.D |



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Madison, WI 53718-6751

Site Name: Badger Lease and Auto Sales  
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Project Manager: Jacob Krause

Beacon Proposal: 230920R05  
Lab Work Order: 0007573  
Reported: 03/14/2024

*Data Summary Table- Concentration*

| Compound          | Frequency | LOD<br>( $\mu\text{g}/\text{m}^3$ ) | Max Value<br>( $\mu\text{g}/\text{m}^3$ ) |
|-------------------|-----------|-------------------------------------|---|
| Tetrachloroethene | 1         | 1.06                                | 1.70                                      |

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**Lab Work Order:** 0007573  
**Reported:** 03/14/2024

## *Detailed Analytical Results*

**SCS Engineers**  
 2830 Dairy Drive  
 Madison, WI 53718-6751

**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R05  
**Lab Work Order:** 0007573  
**Reported:** 03/14/2024

Lab Sample ID: 0007573-01

**05C\_IAB\_01\_20240227**

Method: TO-17 (Passive)

Indoor Air

| Analyte                       | CAS#       | Result<br>(µg/m <sup>3</sup> ) | Q               | LOD<br>(µg/m <sup>3</sup> ) | LOQ<br>(µg/m <sup>3</sup> ) | Analyzed         | File ID     |
|-------------------------------|------------|--------------------------------|-----------------|-----------------------------|-----------------------------|------------------|-------------|
| Vinyl Chloride                | 75-01-4    | <0.538                         | U               | 0.538                       | 1.08                        | 03/04/2024 15:11 | C24030408.D |
| trans-1,2-Dichloroethene      | 156-60-5   | <0.991                         | U               | 0.991                       | 1.98                        | 03/04/2024 15:11 | C24030408.D |
| cis-1,2-Dichloroethene        | 156-59-2   | <0.823                         | U               | 0.823                       | 1.65                        | 03/04/2024 15:11 | C24030408.D |
| Trichloroethene               | 79-01-6    | <1.32                          | U               | 1.32                        | 2.64                        | 03/04/2024 15:11 | C24030408.D |
| Tetrachloroethene             | 127-18-4   | <1.06                          | U               | 1.06                        | 2.13                        | 03/04/2024 15:11 | C24030408.D |
| Analyte                       | CAS#       | % Recovery                     | Recovery Limits | Q                           |                             | Analyzed         | File ID     |
| Surrogate: 1,2-DCA-d4         | 17060-07-0 | 105%                           | 70-130          |                             |                             | 03/04/2024 15:11 | C24030408.D |
| Surrogate: Toluene-d8         | 2037-26-5  | 91.6%                          | 70-130          |                             |                             | 03/04/2024 15:11 | C24030408.D |
| Surrogate: Bromofluorobenzene | 460-00-4   | 89.9%                          | 70-130          |                             |                             | 03/04/2024 15:11 | C24030408.D |

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**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R05  
**Lab Work Order:** 0007573  
**Reported:** 03/14/2024

Lab Sample ID: 0007573-02

**05C\_IA1\_02\_20240227**

Method: TO-17 (Passive)

Indoor Air

| Analyte                       | CAS#       | Result<br>(µg/m <sup>3</sup> ) | Q               | LOD<br>(µg/m <sup>3</sup> ) | LOQ<br>(µg/m <sup>3</sup> ) | Analyzed         | File ID     |
|-------------------------------|------------|--------------------------------|-----------------|-----------------------------|-----------------------------|------------------|-------------|
| Vinyl Chloride                | 75-01-4    | <0.538                         | U               | 0.538                       | 1.08                        | 03/04/2024 15:40 | C24030409.D |
| trans-1,2-Dichloroethene      | 156-60-5   | <0.991                         | U               | 0.991                       | 1.98                        | 03/04/2024 15:40 | C24030409.D |
| cis-1,2-Dichloroethene        | 156-59-2   | <0.822                         | U               | 0.822                       | 1.64                        | 03/04/2024 15:40 | C24030409.D |
| Trichloroethene               | 79-01-6    | <1.32                          | U               | 1.32                        | 2.64                        | 03/04/2024 15:40 | C24030409.D |
| Tetrachloroethene             | 127-18-4   | <1.06                          | U               | 1.06                        | 2.13                        | 03/04/2024 15:40 | C24030409.D |
| Analyte                       | CAS#       | % Recovery                     | Recovery Limits | Q                           |                             | Analyzed         | File ID     |
| Surrogate: 1,2-DCA-d4         | 17060-07-0 | 101%                           | 70-130          |                             |                             | 03/04/2024 15:40 | C24030409.D |
| Surrogate: Toluene-d8         | 2037-26-5  | 91.7%                          | 70-130          |                             |                             | 03/04/2024 15:40 | C24030409.D |
| Surrogate: Bromofluorobenzene | 460-00-4   | 89.9%                          | 70-130          |                             |                             | 03/04/2024 15:40 | C24030409.D |

|  |   |  |
|--|---|--|
| <b>SCS Engineers</b><br>2830 Dairy Drive<br>Madison, WI 53718-6751 | <b>Site Name:</b> Badger Lease and Auto Sales<br><b>Site Location:</b> West Allis, WI<br><b>Project Manager:</b> Jacob Krause | <b>Beacon Proposal:</b> 230920R05<br><b>Lab Work Order:</b> 0007573<br><b>Reported:</b> 03/14/2024 |
|--|---|--|

|                           |                             |                         |
|---------------------------|-----------------------------|-------------------------|
| Lab Sample ID: 0007573-03 | <b>05C_Sump_01_20240227</b> | Method: TO-17 (Passive) |
| Indoor Air                |                             |                         |

| Analyte                       | CAS#       | Result<br>(µg/m <sup>3</sup> ) | Q               | LOD<br>(µg/m <sup>3</sup> ) | LOQ<br>(µg/m <sup>3</sup> ) | Analyzed         | File ID     |
|-------------------------------|------------|--------------------------------|-----------------|-----------------------------|-----------------------------|------------------|-------------|
| Vinyl Chloride                | 75-01-4    | <0.538                         | U               | 0.538                       | 1.08                        | 03/04/2024 16:10 | C24030410.D |
| trans-1,2-Dichloroethene      | 156-60-5   | <0.990                         | U               | 0.990                       | 1.98                        | 03/04/2024 16:10 | C24030410.D |
| cis-1,2-Dichloroethene        | 156-59-2   | <0.822                         | U               | 0.822                       | 1.64                        | 03/04/2024 16:10 | C24030410.D |
| Trichloroethene               | 79-01-6    | <1.32                          | U               | 1.32                        | 2.64                        | 03/04/2024 16:10 | C24030410.D |
| <b>Tetrachloroethene</b>      | 127-18-4   | <b>1.70</b>                    | J               | 1.06                        | 2.13                        | 03/04/2024 16:10 | C24030410.D |
| Analyte                       | CAS#       | % Recovery                     | Recovery Limits | Q                           |                             | Analyzed         | File ID     |
| Surrogate: 1,2-DCA-d4         | 17060-07-0 | 97.6%                          | 70-130          |                             |                             | 03/04/2024 16:10 | C24030410.D |
| Surrogate: Toluene-d8         | 2037-26-5  | 91.2%                          | 70-130          |                             |                             | 03/04/2024 16:10 | C24030410.D |
| Surrogate: Bromofluorobenzene | 460-00-4   | 90.6%                          | 70-130          |                             |                             | 03/04/2024 16:10 | C24030410.D |

**SCS Engineers**  
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**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R05  
**Lab Work Order:** 0007573  
**Reported:** 03/14/2024

Lab Sample ID: 0007573-04

**05C\_OA\_01\_20240227**

Method: TO-17 (Passive)

Ambient Air

| Analyte                       | CAS#       | Result<br>(µg/m <sup>3</sup> ) | Q               | LOD<br>(µg/m <sup>3</sup> ) | LOQ<br>(µg/m <sup>3</sup> ) | Analyzed         | File ID     |
|-------------------------------|------------|--------------------------------|-----------------|-----------------------------|-----------------------------|------------------|-------------|
| Vinyl Chloride                | 75-01-4    | <0.538                         | U               | 0.538                       | 1.08                        | 03/04/2024 16:40 | C24030411.D |
| trans-1,2-Dichloroethene      | 156-60-5   | <0.990                         | U               | 0.990                       | 1.98                        | 03/04/2024 16:40 | C24030411.D |
| cis-1,2-Dichloroethene        | 156-59-2   | <0.822                         | U               | 0.822                       | 1.64                        | 03/04/2024 16:40 | C24030411.D |
| Trichloroethene               | 79-01-6    | <1.32                          | U               | 1.32                        | 2.64                        | 03/04/2024 16:40 | C24030411.D |
| Tetrachloroethene             | 127-18-4   | <1.06                          | U               | 1.06                        | 2.13                        | 03/04/2024 16:40 | C24030411.D |
| Analyte                       | CAS#       | % Recovery                     | Recovery Limits | Q                           |                             | Analyzed         | File ID     |
| Surrogate: 1,2-DCA-d4         | 17060-07-0 | 101%                           | 70-130          |                             |                             | 03/04/2024 16:40 | C24030411.D |
| Surrogate: Toluene-d8         | 2037-26-5  | 92.7%                          | 70-130          |                             |                             | 03/04/2024 16:40 | C24030411.D |
| Surrogate: Bromofluorobenzene | 460-00-4   | 90.2%                          | 70-130          |                             |                             | 03/04/2024 16:40 | C24030411.D |

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**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R05  
**Lab Work Order:** 0007573  
**Reported:** 03/14/2024

## *QC Information/Summary*

|  |   |  |
|--|---|--|
| <b>SCS Engineers</b><br>2830 Dairy Drive<br>Madison, WI 53718-6751 | <b>Site Name:</b> Badger Lease and Auto Sales<br><b>Site Location:</b> West Allis, WI<br><b>Project Manager:</b> Jacob Krause | <b>Beacon Proposal:</b> 230920R05<br><b>Lab Work Order:</b> 0007573<br><b>Reported:</b> 03/14/2024 |
|--|---|--|

*Organics in Air by EPA TO-17 Using Beacon Sampler - Quality Control Summary*

**Sequence: B24C009 - Batch: 24C0009 - Instrument: C System - File ID: C24030405.D**

*24C0009-BS1 (LCS, Calibration Source Verification)*

| Analyte                              | Result      | LOQ | LOD | Units     | Spike Level | Source Result | %REC        | %REC Limits   | RPD | RPD Limit | Notes |
|--------------------------------------|-------------|-----|-----|-----------|-------------|---------------|-------------|---------------|-----|-----------|-------|
| Vinyl Chloride                       | 55.7        | 10  | 5   | ng        | 50.0        |               | 111         | 70-130        |     |           |       |
| trans-1,2-Dichloroethene             | 56.8        | 10  | 5   | ng        | 50.0        |               | 114         | 70-130        |     |           |       |
| cis-1,2-Dichloroethene               | 51.3        | 10  | 5   | ng        | 50.0        |               | 103         | 70-130        |     |           |       |
| Trichloroethene                      | 52.1        | 10  | 5   | ng        | 50.0        |               | 104         | 70-130        |     |           |       |
| Tetrachloroethene                    | 54.6        | 10  | 5   | ng        | 50.0        |               | 109         | 70-130        |     |           |       |
| <i>Surrogate: 1,2-DCA-d4</i>         | <i>52.0</i> |     |     | <i>ng</i> | <i>50.0</i> |               | <i>104</i>  | <i>70-130</i> |     |           |       |
| <i>Surrogate: Toluene-d8</i>         | <i>50.0</i> |     |     | <i>ng</i> | <i>50.0</i> |               | <i>100</i>  | <i>70-130</i> |     |           |       |
| <i>Surrogate: Bromofluorobenzene</i> | <i>45.0</i> |     |     | <i>ng</i> | <i>50.0</i> |               | <i>90.0</i> | <i>70-130</i> |     |           |       |



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**Lab Work Order:** 0007573  
**Reported:** 03/14/2024

*Organics in Air by EPA TO-17 Using Beacon Sampler - Quality Control Summary*

**Sequence: B24C009 - Batch: 24C0009 - Instrument: C System - File ID: C24030406.D**
**24C0009-BLK1 (Lab Blank)**

| Analyte                              | Result      | LOQ  | LOD   | Units             | Spike Level | Source Result | %REC        | %REC Limits   | RPD | RPD Limit | Notes |
|--------------------------------------|-------------|------|-------|-------------------|-------------|---------------|-------------|---------------|-----|-----------|-------|
| Vinyl Chloride                       | <0.538      | 1.08 | 0.538 | µg/m <sup>3</sup> |             |               |             |               |     |           | U     |
| trans-1,2-Dichloroethene             | <0.990      | 1.98 | 0.990 | µg/m <sup>3</sup> |             |               |             |               |     |           | U     |
| cis-1,2-Dichloroethene               | <0.822      | 1.64 | 0.822 | µg/m <sup>3</sup> |             |               |             |               |     |           | U     |
| Trichloroethene                      | <1.32       | 2.64 | 1.32  | µg/m <sup>3</sup> |             |               |             |               |     |           | U     |
| Tetrachloroethene                    | <1.06       | 2.13 | 1.06  | µg/m <sup>3</sup> |             |               |             |               |     |           | U     |
| <i>Surrogate: 1,2-DCA-d4</i>         | <i>105</i>  |      |       | <i>ng</i>         | <i>100</i>  |               | <i>105</i>  | <i>70-130</i> |     |           |       |
| <i>Surrogate: Toluene-d8</i>         | <i>99.3</i> |      |       | <i>ng</i>         | <i>100</i>  |               | <i>99.3</i> | <i>70-130</i> |     |           |       |
| <i>Surrogate: Bromofluorobenzene</i> | <i>83.5</i> |      |       | <i>ng</i>         | <i>100</i>  |               | <i>83.5</i> | <i>70-130</i> |     |           |       |

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**Beacon Proposal:** 230920R05  
**Lab Work Order:** 0007573  
**Reported:** 03/14/2024

*Organics in Air by EPA TO-17 Using Beacon Sampler - Quality Control Summary*

**Sequence: B24C009 - Instrument: C System - File ID: C24030407.D**
***B24C009-ICV1 (LCSD/Second Source Verification/CALV)***

| Analyte                              | Result      | LOQ | LOD | Units     | Spike Level | Source Result | %REC        | %REC Limits   | RPD | RPD Limit | Notes |
|--------------------------------------|-------------|-----|-----|-----------|-------------|---------------|-------------|---------------|-----|-----------|-------|
| Vinyl Chloride                       | 49.7        | 10  | 5   | ng        | 50.0        |               | 99.4        | 70-130        |     |           |       |
| trans-1,2-Dichloroethene             | 64.0        | 10  | 5   | ng        | 50.0        |               | 128         | 70-130        |     |           |       |
| cis-1,2-Dichloroethene               | 52.8        | 10  | 5   | ng        | 50.0        |               | 106         | 70-130        |     |           |       |
| Trichloroethene                      | 52.8        | 10  | 5   | ng        | 50.0        |               | 106         | 70-130        |     |           |       |
| Tetrachloroethene                    | 60.2        | 10  | 5   | ng        | 50.0        |               | 120         | 70-130        |     |           |       |
| <i>Surrogate: 1,2-DCA-d4</i>         | <i>50.5</i> |     |     | <i>ng</i> | <i>50.0</i> |               | <i>101</i>  | <i>70-130</i> |     |           |       |
| <i>Surrogate: Toluene-d8</i>         | <i>49.7</i> |     |     | <i>ng</i> | <i>50.0</i> |               | <i>99.4</i> | <i>70-130</i> |     |           |       |
| <i>Surrogate: Bromofluorobenzene</i> | <i>44.6</i> |     |     | <i>ng</i> | <i>50.0</i> |               | <i>89.1</i> | <i>70-130</i> |     |           |       |

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**Lab Work Order:** 0007573  
**Reported:** 03/14/2024

*Organics in Air by EPA TO-17 Using Beacon Sampler - Quality Control Summary*

**Sequence: B24C009 - Instrument: C System - File ID: C24030425.D**
***B24C009-CCV1 (LCS, Closing Calibration Verification)***

| Analyte                              | Result      | LOQ | LOD | Units     | Spike Level | Source Result | %REC        | %REC Limits   | RPD | RPD Limit | Notes |
|--------------------------------------|-------------|-----|-----|-----------|-------------|---------------|-------------|---------------|-----|-----------|-------|
| Vinyl Chloride                       | 60.2        | 10  | 5   | ng        | 50.0        |               | 120         | 70-130        |     |           |       |
| trans-1,2-Dichloroethene             | 63.7        | 10  | 5   | ng        | 50.0        |               | 127         | 70-130        |     |           |       |
| cis-1,2-Dichloroethene               | 51.9        | 10  | 5   | ng        | 50.0        |               | 104         | 70-130        |     |           |       |
| Trichloroethene                      | 51.8        | 10  | 5   | ng        | 50.0        |               | 104         | 70-130        |     |           |       |
| Tetrachloroethene                    | 54.7        | 10  | 5   | ng        | 50.0        |               | 109         | 70-130        |     |           |       |
| <i>Surrogate: 1,2-DCA-d4</i>         | <i>51.3</i> |     |     | <i>ng</i> | <i>50.0</i> |               | <i>103</i>  | <i>70-130</i> |     |           |       |
| <i>Surrogate: Toluene-d8</i>         | <i>46.7</i> |     |     | <i>ng</i> | <i>50.0</i> |               | <i>93.4</i> | <i>70-130</i> |     |           |       |
| <i>Surrogate: Bromofluorobenzene</i> | <i>44.6</i> |     |     | <i>ng</i> | <i>50.0</i> |               | <i>89.2</i> | <i>70-130</i> |     |           |       |

**SCS Engineers**  
 2830 Dairy Drive  
 Madison, WI 53718-6751

**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R05  
**Lab Work Order:** 0007573  
**Reported:** 03/14/2024

*Organics in Air by EPA TO-17 Using Beacon Sampler - Quality Control Summary*

**Sequence: B24C009 - Instrument: C System - File ID: C24030426.D**
***B24C009-CCB1 (Lab Blank)***

| Analyte                              | Result      | LOQ | LOD | Units     | Spike Level | Source Result | %REC        | %REC Limits   | RPD | RPD Limit | Notes |
|--------------------------------------|-------------|-----|-----|-----------|-------------|---------------|-------------|---------------|-----|-----------|-------|
| Vinyl Chloride                       | <5          | 10  | 5   | ng        |             |               |             |               |     |           | U     |
| trans-1,2-Dichloroethene             | <5          | 10  | 5   | ng        |             |               |             |               |     |           | U     |
| cis-1,2-Dichloroethene               | <5          | 10  | 5   | ng        |             |               |             |               |     |           | U     |
| Trichloroethene                      | <5          | 10  | 5   | ng        |             |               |             |               |     |           | U     |
| Tetrachloroethene                    | <5          | 10  | 5   | ng        |             |               |             |               |     |           | U     |
| <i>Surrogate: 1,2-DCA-d4</i>         | <i>103</i>  |     |     | <i>ng</i> | <i>100</i>  |               | <i>103</i>  | <i>70-130</i> |     |           |       |
| <i>Surrogate: Toluene-d8</i>         | <i>99.7</i> |     |     | <i>ng</i> | <i>100</i>  |               | <i>99.7</i> | <i>70-130</i> |     |           |       |
| <i>Surrogate: Bromofluorobenzene</i> | <i>82.6</i> |     |     | <i>ng</i> | <i>100</i>  |               | <i>82.6</i> | <i>70-130</i> |     |           |       |

|  |   |  |
|--|---|--|
| <b>SCS Engineers</b><br>2830 Dairy Drive<br>Madison, WI 53718-6751 | <b>Site Name:</b> Badger Lease and Auto Sales<br><b>Site Location:</b> West Allis, WI<br><b>Project Manager:</b> Jacob Krause | <b>Beacon Proposal:</b> 230920R05<br><b>Lab Work Order:</b> 0007573<br><b>Reported:</b> 03/14/2024 |
|--|---|--|

*TO-17 (Passive) - LCS/LCSD RPD Quality Control Summary*

**LCS: 24C0009-BS1 File ID: C24030405.D**

Analyzed: 3/4/24 14:41

**LCSD: B24C009-ICV1 File ID: C24030407.D**

Analyzed: 3/4/24 13:53

| Analyte                  | CAS#     | LCS Result<br>(ng) | %REC<br>Q | Spike Level<br>(ng) | LCSD Result<br>(ng) | %REC   | %REC<br>Limits | RPD   | RPD<br>Limit | Q |
|--------------------------|----------|--------------------|-----------|---------------------|---------------------|--------|----------------|-------|--------------|---|
| Vinyl Chloride           | 75-01-4  | 55.67              | 111.34    | 50                  | 49.7                | 99.40  | 70-130         | 11.33 | 30           |   |
| trans-1,2-Dichloroethene | 156-60-5 | 56.76              | 113.52    | 50                  | 63.95               | 128.00 | 70-130         | 11.91 | 30           |   |
| cis-1,2-Dichloroethene   | 156-59-2 | 51.28              | 102.56    | 50                  | 52.8                | 106.00 | 70-130         | 2.92  | 30           |   |
| Trichloroethene          | 79-01-6  | 52.10              | 104.2     | 50                  | 52.81               | 106.00 | 70-130         | 1.35  | 30           |   |
| Tetrachloroethene        | 127-18-4 | 54.55              | 109.1     | 50                  | 60.22               | 120.00 | 70-130         | 9.88  | 30           |   |

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**Lab Work Order:** 0007573  
**Reported:** 03/14/2024

*Additional QC Information*

SCS Engineers  
 2830 Dairy Drive  
 Madison, WI 53718-6751

Site Name: Badger Lease and Auto Sales  
 Site Location: West Allis, WI  
 Project Manager: Jacob Krause

Beacon Proposal: 230920R05  
 Lab Work Order: 0007573  
 Reported: 03/14/2024

**Sample Result Calculation Summary (Concentration)**  
**TO-17 (Passive)**

| Analyte | t<br>Sampling Time<br>minutes | DF<br>Dilution<br>Factor | Uc<br>Uptake<br>Rate | M<br>Initial Result<br>ng | C<br>Calculated Result<br>µg/m <sup>3</sup> | File ID |
|---------|-------------------------------|--------------------------|----------------------|---------------------------|---|---------|
|---------|-------------------------------|--------------------------|----------------------|---------------------------|---|---------|

**Lab ID:** 0007573-01      **Sample Name:** 05C\_IAB\_01\_20240227      **̄ Temp (°C):** 16.00

|                          |        |      |       |   |   |             |
|--------------------------|--------|------|-------|---|---|-------------|
| Vinyl Chloride           | 11,481 | 1.00 | 0.809 | U | U | C24030408.D |
| trans-1,2-Dichloroethene | 11,481 | 1.00 | 0.440 | U | U | C24030408.D |
| cis-1,2-Dichloroethene   | 11,481 | 1.00 | 0.529 | U | U | C24030408.D |
| Trichloroethene          | 11,481 | 1.00 | 0.330 | U | U | C24030408.D |
| Tetrachloroethene        | 11,481 | 1.00 | 0.410 | U | U | C24030408.D |

**Lab ID:** 0007573-02      **Sample Name:** 05C\_IA1\_02\_20240227      **̄ Temp (°C):** 16.00

|                          |        |      |       |   |   |             |
|--------------------------|--------|------|-------|---|---|-------------|
| Vinyl Chloride           | 11,485 | 1.00 | 0.809 | U | U | C24030409.D |
| trans-1,2-Dichloroethene | 11,485 | 1.00 | 0.440 | U | U | C24030409.D |
| cis-1,2-Dichloroethene   | 11,485 | 1.00 | 0.529 | U | U | C24030409.D |
| Trichloroethene          | 11,485 | 1.00 | 0.330 | U | U | C24030409.D |
| Tetrachloroethene        | 11,485 | 1.00 | 0.410 | U | U | C24030409.D |

**Lab ID:** 0007573-03      **Sample Name:** 05C\_Sump\_01\_20240227      **̄ Temp (°C):** 16.00

|                          |        |      |       |      |      |             |
|--------------------------|--------|------|-------|------|------|-------------|
| Vinyl Chloride           | 11,488 | 1.00 | 0.809 | U    | U    | C24030410.D |
| trans-1,2-Dichloroethene | 11,488 | 1.00 | 0.440 | U    | U    | C24030410.D |
| cis-1,2-Dichloroethene   | 11,488 | 1.00 | 0.529 | U    | U    | C24030410.D |
| Trichloroethene          | 11,488 | 1.00 | 0.330 | U    | U    | C24030410.D |
| Tetrachloroethene        | 11,488 | 1.00 | 0.410 | 8.01 | 1.70 | C24030410.D |

**Lab ID:** 0007573-04      **Sample Name:** 05C\_OA\_01\_20240227      **̄ Temp (°C):** 16.00

|                          |        |      |       |   |   |             |
|--------------------------|--------|------|-------|---|---|-------------|
| Vinyl Chloride           | 11,486 | 1.00 | 0.809 | U | U | C24030411.D |
| trans-1,2-Dichloroethene | 11,486 | 1.00 | 0.440 | U | U | C24030411.D |
| cis-1,2-Dichloroethene   | 11,486 | 1.00 | 0.529 | U | U | C24030411.D |
| Trichloroethene          | 11,486 | 1.00 | 0.330 | U | U | C24030411.D |
| Tetrachloroethene        | 11,486 | 1.00 | 0.410 | U | U | C24030411.D |

**SCS Engineers**  
2830 Dairy Drive  
Madison, WI 53718-6751**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause**Beacon Proposal:** 230920R05  
**Lab Work Order:** 0007573  
**Reported:** 03/14/2024

Calculations:

$$C = \frac{1000 \times M \times DF}{U_c \times t}$$

$$U_c = U * \left( \frac{T_s + 273.15}{T_u + 273.15} \right)^{1/2}$$

where: C = concentration ( $\mu\text{g}/\text{m}^3$ )  
M = mass (ng)  
DF = dilution factor  
U<sub>c</sub> = uptake rate (ml/min), corrected  
t = sampling time (minutes)  
U = compound specific uptake rate  
T<sub>u</sub> = uptake rate study temperature  
T<sub>s</sub> = sample average temperature

**Note:** T<sub>u</sub> is 16.65°C*Reference: Federal Register/Vol. 79, No. 125/June 30, 2014*



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 Madison, WI 53718-6751

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**Beacon Proposal:** 230920R05  
**Lab Work Order:** 0007573  
**Reported:** 03/14/2024

**Method Detection and Reporting Limit Calculations (Concentration)**  
**TO-17 (Passive)**

| Analyte | t<br>Sampling Time<br>minutes | DF<br>Dilution<br>Factor | Uc<br>Uptake<br>Rate | M<br>Initial (ng) |     | C<br>Calculated (µg/m³) |     |
|---------|-------------------------------|--------------------------|----------------------|-------------------|-----|-------------------------|-----|
|         |                               |                          |                      | LOQ               | LOD | LOQ                     | LOD |

| <b>Lab ID:</b> 0007573-01 |        | <b>Sample Name:</b> 05C_IAB_01_20240227 |       |       |      | <b>̄ Temp (°C):</b> 16.00 |       |
|---------------------------|--------|---|-------|-------|------|---------------------------|-------|
| Vinyl Chloride            | 11,481 | 1.00                                    | 0.809 | 10.00 | 5.00 | 1.08                      | 0.538 |
| trans-1,2-Dichloroethene  | 11,481 | 1.00                                    | 0.440 | 10.00 | 5.00 | 1.98                      | 0.991 |
| cis-1,2-Dichloroethene    | 11,481 | 1.00                                    | 0.529 | 10.00 | 5.00 | 1.65                      | 0.823 |
| Trichloroethene           | 11,481 | 1.00                                    | 0.330 | 10.00 | 5.00 | 2.64                      | 1.32  |
| Tetrachloroethene         | 11,481 | 1.00                                    | 0.410 | 10.00 | 5.00 | 2.13                      | 1.06  |

| <b>Lab ID:</b> 0007573-02 |        | <b>Sample Name:</b> 05C_IA1_02_20240227 |       |       |      | <b>̄ Temp (°C):</b> 16.00 |       |
|---------------------------|--------|---|-------|-------|------|---------------------------|-------|
| Vinyl Chloride            | 11,485 | 1.00                                    | 0.809 | 10.00 | 5.00 | 1.08                      | 0.538 |
| trans-1,2-Dichloroethene  | 11,485 | 1.00                                    | 0.440 | 10.00 | 5.00 | 1.98                      | 0.991 |
| cis-1,2-Dichloroethene    | 11,485 | 1.00                                    | 0.529 | 10.00 | 5.00 | 1.64                      | 0.822 |
| Trichloroethene           | 11,485 | 1.00                                    | 0.330 | 10.00 | 5.00 | 2.64                      | 1.32  |
| Tetrachloroethene         | 11,485 | 1.00                                    | 0.410 | 10.00 | 5.00 | 2.13                      | 1.06  |

| <b>Lab ID:</b> 0007573-03 |        | <b>Sample Name:</b> 05C_Sump_01_20240227 |       |       |      | <b>̄ Temp (°C):</b> 16.00 |       |
|---------------------------|--------|--|-------|-------|------|---------------------------|-------|
| Vinyl Chloride            | 11,488 | 1.00                                     | 0.809 | 10.00 | 5.00 | 1.08                      | 0.538 |
| trans-1,2-Dichloroethene  | 11,488 | 1.00                                     | 0.440 | 10.00 | 5.00 | 1.98                      | 0.990 |
| cis-1,2-Dichloroethene    | 11,488 | 1.00                                     | 0.529 | 10.00 | 5.00 | 1.64                      | 0.822 |
| Trichloroethene           | 11,488 | 1.00                                     | 0.330 | 10.00 | 5.00 | 2.64                      | 1.32  |
| Tetrachloroethene         | 11,488 | 1.00                                     | 0.410 | 10.00 | 5.00 | 2.13                      | 1.06  |

| <b>Lab ID:</b> 0007573-04 |        | <b>Sample Name:</b> 05C_OA_01_20240227 |       |       |      | <b>̄ Temp (°C):</b> 16.00 |       |
|---------------------------|--------|--|-------|-------|------|---------------------------|-------|
| Vinyl Chloride            | 11,486 | 1.00                                   | 0.809 | 10.00 | 5.00 | 1.08                      | 0.538 |
| trans-1,2-Dichloroethene  | 11,486 | 1.00                                   | 0.440 | 10.00 | 5.00 | 1.98                      | 0.990 |
| cis-1,2-Dichloroethene    | 11,486 | 1.00                                   | 0.529 | 10.00 | 5.00 | 1.64                      | 0.822 |
| Trichloroethene           | 11,486 | 1.00                                   | 0.330 | 10.00 | 5.00 | 2.64                      | 1.32  |
| Tetrachloroethene         | 11,486 | 1.00                                   | 0.410 | 10.00 | 5.00 | 2.13                      | 1.06  |

SCS Engineers  
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**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R05  
**Lab Work Order:** 0007573  
**Reported:** 03/14/2024

### *Laboratory Certification List*

| Certification ID   | Certification No. | Description   | Expires    | Project Required |
|--------------------|-------------------|---|------------|------------------|
| Alaska CS-LAP      | 19-002            | Alaska Department of Environmental Conservation                                 | 12/30/2024 |                  |
| DoD-ELAP           | 72690/L22-563     | United States Department of Defense Environmental Laboratory Accreditation      | 11/30/2024 |                  |
| ISO/IEC 17025:2017 | 72690/L22-563     | General Requirements for the Competence of Testing and Calibration Laboratories | 11/30/2024 |                  |
| NEFAP              | 72690/L22-564     | TNI National Environmental Field Activities Program (NEFAP)                     | 11/30/2024 |                  |
| NY-NELAC           | 12097             | New York Department of Health   | 04/01/2024 |                  |
| Utah-NELAC         | MD010912023-14    | Utah Department of Health   | 12/31/2024 |                  |

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**Lab Work Order:** 0007573  
**Reported:** 03/14/2024

### Qualifiers/Notes and Definitions

#### General Definitions:

|           |  |
|-----------|--|
| DF        | Dilution Factor  |
| DL        | Detection Limit  |
| LOD       | Limit of Detection   |
| LOQ       | Limit of Quantitation  |
| NA        | Not Applicable   |
| Q         | Qualifier  |
| RPD       | Relative Percent Difference  |
| RT        | Retention Times in Minutes   |
| RRT       | Evaluation of Relative Retention Times in RRT Units (qualified if outside $\pm 0.06$ control limits) |
| $3\sigma$ | Uncertainty  |
| ∉         | Compound not on scope of accreditation   |
| +         | values are outside method/contract required QC limits  |
| ∅         | Compound not on scope of accreditation and analyzed with a one-point calibration                     |

#### Sample/Sample Receipt Qualifiers and Notes:

|   |  |
|---|--|
| J | Value reported below limit of quantitation (LOQ).  |
| U | Analyte was not detected and is reported as less than the limit of detection (LOD). The LOD has been adjusted for any dilution or concentration of the sample. |

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**Lab Work Order:** 0007573  
**Reported:** 03/14/2024

## *Sample Management Records*

| <b>Client Information</b>                          |  | Project Manager: <b>Robert Langdon</b> |   | Client PO: <b>25222269.04</b>  |               | <b>INDOOR AIR</b>                 | <b>AMBIENT AIR</b> | <b>CRAWL SPACE</b> | <b>SEWER GAS</b> |  |
|--|--|--|---|--|---------------|-----------------------------------|--------------------|--------------------|------------------|--|
| Company: <b>SCS Engineers</b>                      | Project Name: <b>Badger Lease &amp; Auto Sales - VIZC</b>  |  | Turn around time (check one):<br><input checked="" type="checkbox"/> Normal <input type="checkbox"/> Rush (specify) ____ days |  |               |                                   |                    |                    |                  |  |
| Address: <b>2830 Dairy Drive</b>                   | Location: <b>1426/1428 S. 96th St. West Allis, WI (5C)</b> |  | Analysis:<br><input checked="" type="checkbox"/> Method TO-17 <input type="checkbox"/> Method 8260C                           |  |               |                                   |                    |                    |                  |  |
| City / State / Zip: <b>Madison, WI 53718</b>       | Submitted by: <b>Robert Langdon</b>                        |  | Email: <b>rlangdon@scsengineer.com</b>  |  |               |                                   |                    |                    |                  |  |
| Phone: <b>608-212-3995</b>                         | Email: <b>rlangdon@scsengineer.com</b>                     |  |   |  |               |                                   |                    |                    |                  |  |
| Location ID  | Start Date   | Start Time                             | Stop Date   | Stop Time  | Aver Temp (C) | Notes                             |                    |                    |                  |  |
| ✓ 05C_IAB_01_20240227                              | 2/19/2024  | 744                                    | 2/27/2024   | 0705   | 16            | Basement Indoor Air               | X                  |                    |                  |  |
| ✓ 05C_IA1_02_20240227                              | 2/19/2024  | 753                                    | 2/27/2024   | 0718   | 16            | 1st. Floor Indoor Air             | X                  |                    |                  |  |
| ✓ 05C_Sump_01_20240227                             | 2/19/2024  | 730                                    | 2/27/2024   | 0658   | 16            | Sump Headspace                    | X                  |                    |                  |  |
| ✓ 05C_OA_01_20240227                               | 2/19/2024  | 759                                    | 2/27/2024   | 0725   | 16            | Outdoor Air                       |                    | X                  |                  |  |
| Special Notes / Instructions                       |  |  |   |  |               |                                   |                    |                    |                  |  |
| CVOC Short List                                    |  |  |   |  |               |                                   |                    |                    |                  |  |
| Relinquished by (signature): <i>Robert Langdon</i> |  | Date / Time: <i>2/28/2024 1:00</i>     |   | Received by (signature): <i>Michelle Pfeiffer</i>  |               | Date / Time: <i>2/29/24 12:40</i> |                    |                    |                  |  |
| Relinquished by (signature):                       |  | Date / Time:                           |   | Received by (signature):   |               | Date / Time:                      |                    |                    |                  |  |
| <b>For Lab Use Only</b>                            |  | Beacon Job No: <b>7573</b>             |   | Beacon Proposal: <b>230920R05</b>  |               |                                   |                    |                    |                  |  |
| Courier Name: <b>FedEx</b>                         |  | Shipment Condition: <b>Good</b>        |   | Custody Seal Intact:<br><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> n/a |               | Custody Seal No: <b>0047330</b>   |                    |                    |                  |  |

Attachment B  
WDNR Publication 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.

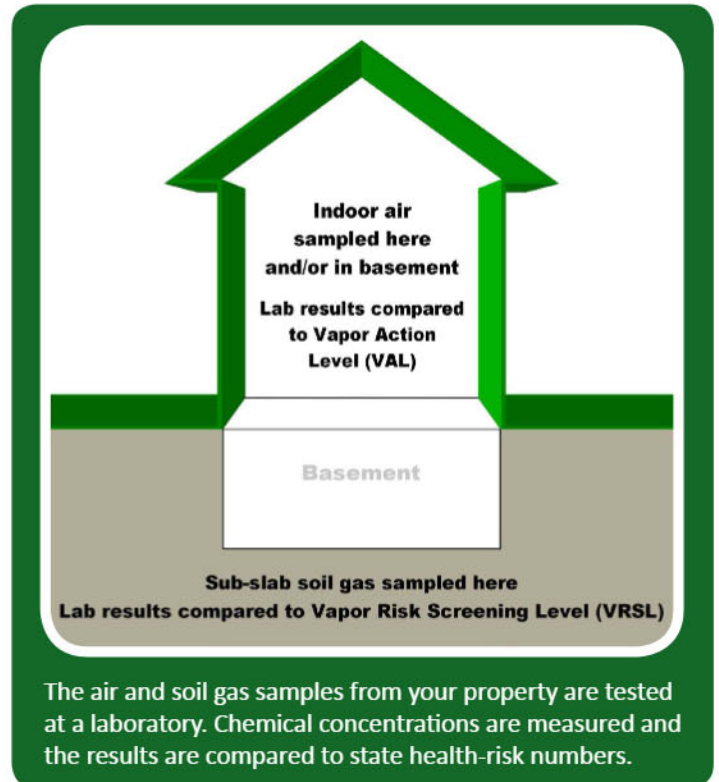
## Indoor Air Testing Results

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.



## 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

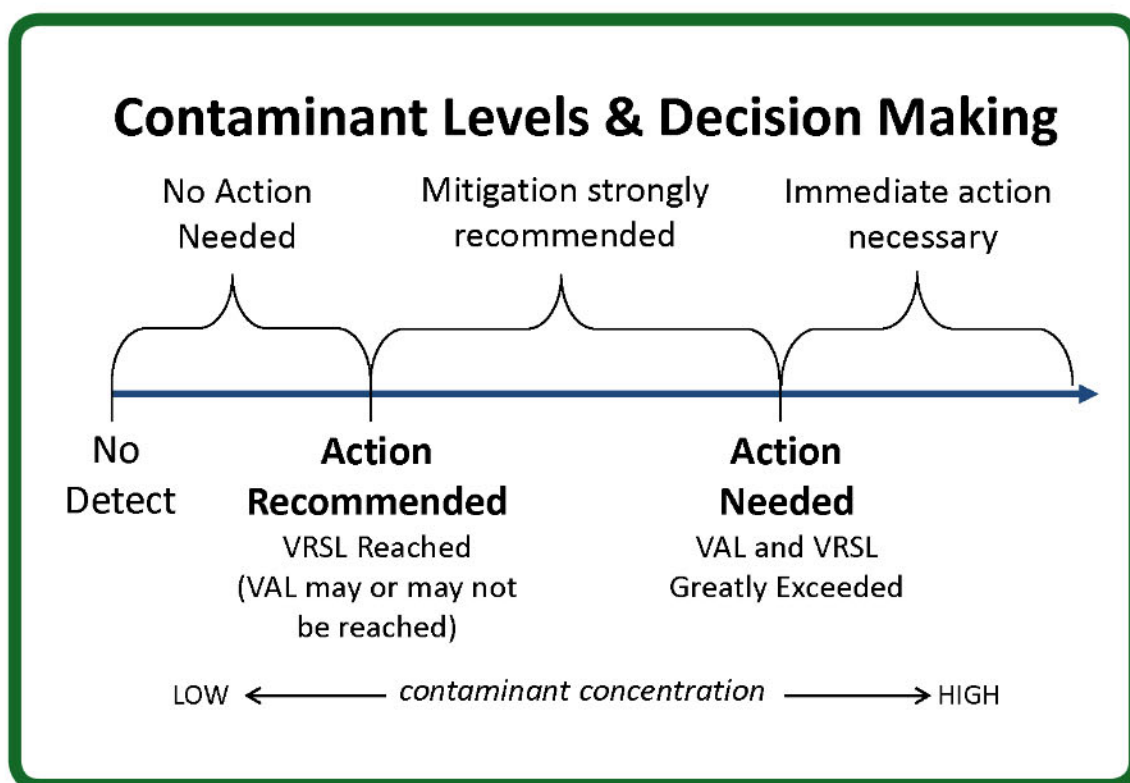
If your test results are less than a VAL for indoor air, or a VRSL for sub-slab soil gas, then the air in the house or building should not present a health concern. Follow-up sampling and testing may be necessary to confirm the results, but no other action is typically suggested.

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](https://dnr.wi.gov/topic/Brownfields/Vapor.html)



March 25, 2024  
File No. 25222269.04

Frank Zoborowski, Tenant  
1428 South 96th Street  
West Allis, WI 53214

Subject: Sample Results Notification  
1426 and 1428 South 96th Street  
WDNR Badger Lease & Auto Sales Case  
BRRTS No. 02-41-305222

Dear Mr. Zoborowski:

On behalf of the Wisconsin Department of Natural Resources (WDNR) through the Vapor Intrusion Zone Contract (VIZC), SCS Engineers (SCS) is providing sample results for sub-slab vapor, sump headspace, indoor air, and outdoor air samples which were collected from the above-noted property by SCS in February 2024. The approximate sample locations are shown on the attached map (**Figure 1**).

The samples were submitted for analysis of five specific chlorinated volatile organic compounds (CVOCs), including tetrachloroethene (PCE), trichloroethene (TCE), cis-1,2-dichloroethene, trans 1,2-dichloroethene, and vinyl chloride. The sample laboratory reports are included as **Attachment A**. Analytical results are summarized in **Tables 1** and **2**. The WDNR Publication RR-977 Understanding Chemical Vapor Testing Results with additional information for you is included as **Attachment B**.

Minor concentrations of PCE were detected in a sub-slab sample O5C\_SSV\_02\_20240227 and sump headspace sample O5C\_Sump\_01\_20240227 below the WDNR residential sub-slab vapor risk screening level (VRSL) and indoor air vapor action level (VAL). No other CVOCs were detected in the samples. The sample results indicate there is not an indoor air health risk related to vapor intrusion of CVOCs.

One additional sampling event is planned for the property to evaluate potential variability of concentrations. SCS will contact you in advance of this additional event as needed to schedule access.

Once the final sampling event is completed, a final report with these findings will be prepared and submitted to the WDNR and listed on the Bureau for Remediation and Redevelopment Tracking System (BRRTS) on the Web (BOTW).

Please contact Joseph Martinez of WDNR at (414) 218-6042 or [joseph.martinez@wisconsin.gov](mailto:joseph.martinez@wisconsin.gov) or Nathan Kloczko of Wisconsin Department of Health (DHS) at (608) 867-4448 or [Nathan.kloczko@dhs.wisconsin.gov](mailto:Nathan.kloczko@dhs.wisconsin.gov) if you have questions concerning the analytical results.

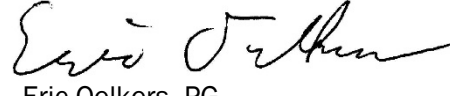


Frank Zoborowski  
March 25, 2024  
Page 2

Sincerely,



Robert Langdon  
Senior Project Manager  
SCS Engineers



Eric Oelkers, PG  
Senior Hydrogeologist  
SCS Engineers

REL/AJR/EO

cc: Joseph Martinez, WDNR  
Nathan Kloczko, DHS

Attachments: Table 1 - Sub-Slab Vapor Analytical Results Summary  
Table 2 - Indoor and Outdoor Air Analytical Results Summary  
Figure 1 - Vapor Investigation Map  
Attachment A - Laboratory Reports  
Attachment B - WDNR Publication RR-977

I:\25222269.00\25222269.04 Badger Lease & Auto\\_Deliverables\Results Notification Letters\1426\_1428 S. 96th\240325\_Zoborowski\_1426\_1428 S 96th\_Results Notification.docx

## Tables

- 1 Sub-Slab Vapor Analytical Results Summary
- 2 Indoor and Outdoor Air Analytical Results Summary

**Table 1. Sub-Slab Vapor Analytical Results Summary**  
**Badger Lease & Auto Sales, West Allis, Wisconsin / SCS Engineers Project #2522269.04**  
 (Results are in  $\mu\text{g}/\text{m}^3$ )

| Location  | Sample              | Sample Start Date | Sample End Date | Lab Notes | Tetrachloroethene (PCE) | Trichloroethene (TCE) | cis-1,2-DCE | trans-1,2-DCE | Vinyl Chloride |
|---|---------------------|-------------------|-----------------|-----------|-------------------------|-----------------------|-------------|---------------|----------------|
| 1426/1428 S. 96th St.   | 05C_SSV_01_20231003 | 9/26/2023         | 10/3/2023       | --        | <2.39                   | <2.97                 | <1.85       | <2.23         | <1.21          |
|   | 05C_SSV_01_20240227 | 2/19/2024         | 2/27/2024       | --        | <2.12                   | <2.63                 | <1.64       | <1.97         | <1.07          |
|   | 05C_SSV_02_20231003 | 9/26/2023         | 10/3/2023       | --        | <b>6.38</b>             | <2.97                 | <1.85       | <2.23         | <1.21          |
|   | 05C_SSV_02_20240227 | 2/19/2024         | 2/27/2024       | --        | <b>6.54</b>             | <2.63                 | <1.64       | <1.98         | <1.07          |
| Vapor Risk Screening Level (Residential Building)                 |                     |                   |                 |           | 1,400                   | 70                    | 1,400       | 1,400         | 56             |
| Vapor Risk Screening Level (Small Commercial Building)            |                     |                   |                 |           | 5,800                   | 290                   | 5,800       | 5,800         | 930            |
| Vapor Risk Screening Level (Large Commercial/Industrial Building) |                     |                   |                 |           | 18,000                  | 880                   | 18,000      | 18,000        | 2,800          |

Abbreviations:

$\mu\text{g}/\text{m}^3$  = micrograms per cubic meter  
 trans-1,2-DCE = trans-1,2-dichloroethene

cis-1,2-DCE = cis-1,2-dichloroethene  
 -- = Not Applicable

Notes:

1. Samples were collected using passive sorbent samplers and analyzed using the USEPA 8260C analytical method.
2. Vapor Risk Screening Levels are from Wisconsin Department of Natural Resources' WI Vapor Quick Look-Up Table, which is based on August 2023 U.S. EPA Regional Screening Level Tables.
3. **Bold+underlined** values meet or exceed Vapor Risk Screening Levels.

Lab Notes:

None

Calculations\Tables\[Table 1\_Sub-Slab Vapor Analytical Results Summary.xlsx]Sub-Slab Vapor

Created by: REL  
 Last revision by: AJR  
 Checked by: JSN  
 Proj Mgr QA/QC: REL

Date: 1/29/2024  
 Date: 3/15/2024  
 Date: 3/18/2024  
 Date: 3/20/2024

**Table 2. Indoor and Outdoor Air Analytical Results Summary**  
**Badger Lease & Auto Sales, West Allis, Wisconsin / SCS Engineers Project #25222269.04**  
 (Results are in µg/m<sup>3</sup>)

| Location   | Sample Type           | Sample               | Sample Start Date | Sample End Date | Lab Notes | Tetrachloroethene (PCE) | Trichloroethene (TCE) | cis-1,2-DCE | trans-1,2-DCE | Vinyl Chloride |
|--|-----------------------|----------------------|-------------------|-----------------|-----------|-------------------------|-----------------------|-------------|---------------|----------------|
| 1426/1428 S. 96th St.  | Indoor Air, Basement  | 05C_IAB_01_20231003  | 9/26/2023         | 10/3/2023       | --        | <1.19                   | <1.48                 | <0.924      | <1.11         | <0.604         |
|  |                       | 05C_IAB_01_20240227  | 2/19/2024         | 2/27/2024       | --        | <1.06                   | <1.32                 | <0.823      | <0.991        | <0.538         |
|  | Indoor Air, 1st Floor | 05C_IA1_02_20231003  | 9/26/2023         | 10/3/2023       | --        | <1.20                   | <1.49                 | <0.925      | <1.11         | <0.605         |
|  |                       | 05C_IA1_02_20240227  | 2/19/2024         | 2/27/2024       | --        | <1.06                   | <1.32                 | <0.822      | <0.991        | <0.538         |
|  | Sump Headspace        | 05C_Sump_01_20231003 | 9/26/2023         | 10/3/2023       | --        | <1.19                   | <1.48                 | <0.923      | <1.11         | <0.604         |
|  |                       | 05C_Sump_01_20240227 | 2/19/2024         | 2/27/2024       | --        | <b>1.70 J</b>           | <1.32                 | <0.822      | <0.990        | <0.538         |
|  | Outdoor Air           | 05C_OA_01_20231003   | 9/26/2023         | 10/3/2023       | --        | <1.22                   | <1.51                 | <0.941      | <1.13         | <0.616         |
|  |                       | 05C_OA_01_20240227   | 2/19/2024         | 2/27/2024       | --        | <1.06                   | <1.32                 | <0.822      | <0.990        | <0.538         |
| Indoor Air Vapor Action Level (Residential Building)           |                       |                      |                   |                 |           | 42                      | 2.1                   | 42          | 42            | 1.7            |
| Indoor Air Vapor Action Level (Commercial/Industrial Building) |                       |                      |                   |                 |           | 180                     | 8.8                   | 180         | 180           | 28             |

Abbreviations:

µg/m<sup>3</sup> = micrograms per cubic meter  
 trans-1,2-DCE = trans-1,2-dichloroethene

cis-1,2-DCE = cis-1,2-dichloroethene  
 -- = Not Applicable

Notes:

1. Samples were collected using passive sorbent samplers analyzed using EPA Method TO-17.
2. Indoor Air Vapor Action Levels are from Wisconsin Department of Natural Resources' WI Vapor Quick Look-Up Table, which is based on August 2023 U.S. EPA Regional Screening Level Tables.
3. **1.70** values meet or exceed Indoor Air Vapor Action Levels.

Lab Notes/Qualifiers:

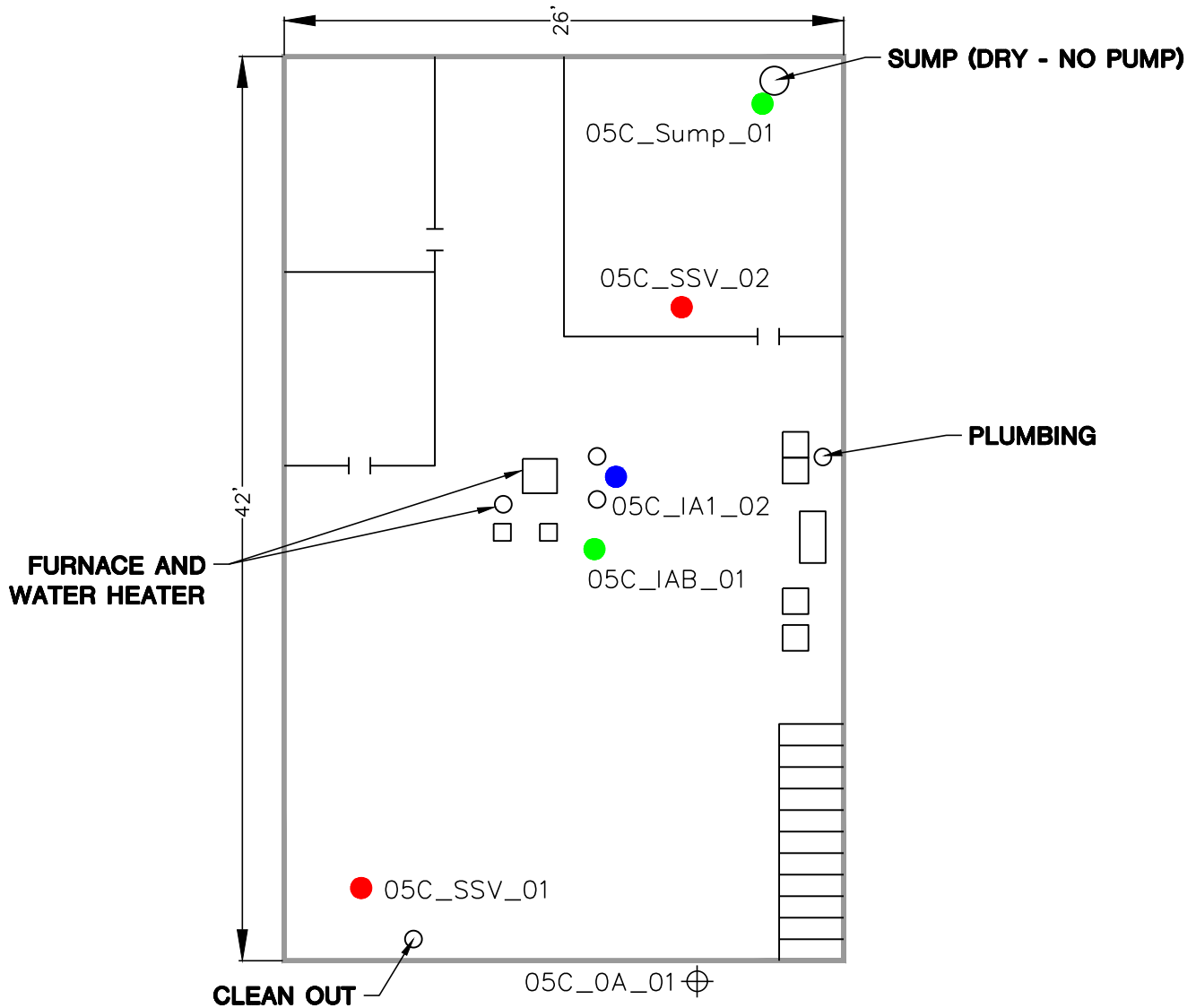
All non-detected analytes: U = Analyte was not detected and is reported as less than the limit of detection (LOD).  
 The LOD has been adjusted for any dilution or concentration of the sample.  
 J = Value reported below limit of quantitation (LOQ).

I:\25222269.00\25222269.04 Badger Lease & Auto\Data and Calculations\Tables\[Table 2\_Indoor and Outdoor Air Analytical Results Summary.xlsx]Indoor Air

|                              |                        |
|------------------------------|------------------------|
| Created by: <u>AJR</u>       | Date: <u>2/2/2024</u>  |
| Last revision by: <u>LMH</u> | Date: <u>3/18/2024</u> |
| Checked by: <u>JSN</u>       | Date: <u>3/18/2024</u> |
| Proj Mgr QA/QC: <u>REL</u>   | Date: <u>3/20/2024</u> |

Figure 1  
Vapor Investigation Map

# BASEMENT LEVEL



S 96TH St.



SCALE: 1" = 8'



**LEGEND**

- APPROXIMATE SUB-SLAB SAMPLE LOCATION
- APPROXIMATE BASEMENT INDOOR AIR SAMPLE LOCATION
- APPROXIMATE 1ST FLOOR INDOOR AIR SAMPLE LOCATION
- ⊕ APPROXIMATE OUTDOOR AIR SAMPLE LOCATION

|                    |   |                     |                                   |                 |   |
|--------------------|---|---------------------|-----------------------------------|-----------------|---|
| <b>CLIENT</b>      | WISCONSIN DEPARTMENT OF NATURAL RESOURCES | <b>SITE</b>         | 1426/1428 S 96th STREET RESIDENCE | <b>MAP</b>      | VAPOR INVESTIGATION MAP   |
| <b>PROJECT NO.</b> | 25222269.04                               | <b>DRAWN BY:</b>    | SB                                | <b>ENGINEER</b> | <div style="background-color: #800000; color: white; padding: 5px; font-weight: bold; font-size: 1.2em;">SCS ENGINEERS</div> 2830 DAIRY DRIVE MADISON, WI 53718-6751<br>PHONE: (608) 224-2830 |
| <b>DRAWN:</b>      | 09/12/2023                                | <b>CHECKED BY:</b>  | REL                               | <b>FIGURE</b>   |   |
| <b>REVISED:</b>    | 03/20/2024                                | <b>APPROVED BY:</b> | REL (03/20/2024)                  | 1               |   |

Attachment A  
Laboratory Reports





Beacon Environmental

526 Underwood Lane  
Bel Air, MD 21014 USA  
1.410.838.8780

CERTIFICATE OF ANALYSIS

Beacon Proposal No.: 230920R04

Laboratory Work Order: 0007570

**Project Description:**

Badger Lease and Auto Sales  
West Allis, WI

Client PO No.: 25222269.04-001

Prepared for:

Jacob Krause

**SCS Engineers**

2830 Dairy Drive

Madison, WI 53718-6751

---

Ryan W. Schneider  
Senior Project Manager

March 11, 2024

All data meet requirements as specified in the Beacon Environmental Quality Assurance Project Plan and the results relate only to the samples reported. The work performed was in accordance with ISO/IEC 17025:2017. This report shall not be reproduced, except in full, without written approval of the laboratory. Release of the data contained in this data package has been authorized by the Laboratory Director or his signee, as verified by the following signatures:

---

Steven C. Thornley  
Laboratory Director

---

Peter B. Kelly  
Quality Manager

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|  |   |  |
|--|---|--|
| <b>SCS Engineers</b><br>2830 Dairy Drive<br>Madison, WI 53718-6751 | <b>Site Name:</b> Badger Lease and Auto Sales<br><b>Site Location:</b> West Allis, WI<br><b>Project Manager:</b> Jacob Krause | <b>Beacon Proposal:</b> 230920R04<br><b>Lab Work Order:</b> 0007570<br><b>Reported:</b> 03/11/2024 |
|--|---|--|

### Sample Summary

| Lab Sample ID               | Client Sample ID                              | Received   | Analysis  | Matrix   |
|-----------------------------|---|------------|-----------|----------|
| 0007570-01<br>Sampler Type: | 05C_SSV_01_20240227<br>Beacon Passive Sampler | 02/29/2024 | EPA 8260C | Soil Gas |
| 0007570-02<br>Sampler Type: | 05C_SSV_02_20240227<br>Beacon Passive Sampler | 02/29/2024 | EPA 8260C | Soil Gas |

#### Project Completeness

**Samples Received:** 2  
**Samples Analyzed:** 2

SCS Engineers  
2830 Dairy Drive  
Madison, WI 53718-6751

**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007570  
**Reported:** 03/11/2024

### *Case Narrative*

#### **U.S. EPA Method 8260C**

All samples were analyzed using thermal desorption-gas chromatography/mass spectrometry (TD-GC/MS) instrumentation following U.S. EPA Method 8260C, with laboratory results provided in nanograms (ng) and micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ). Laboratory QA/QC procedures included internal standards, surrogates, and blanks based on EPA Method 8260C. Analyses and reporting were under BEACON's Quality Assurance Project Plan.

#### **Passive Soil-Gas Survey Notes**

If sample locations are covered with or near the edge of an impervious surface (*e.g.*, asphalt or concrete), the concentrations of compounds in soil gas are higher than if the surfacing was not present. Therefore, the sample location conditions should be considered when comparing results between locations.

Survey findings are exclusive to this project and when the spatial relationships are compared with results of other BEACON Surveys it is necessary to incorporate information from both investigations (*e.g.*, depth to sources, soil types, porosity, soil moisture, presence of impervious surfacing, sample collection times).

#### **Reporting Limits**

The RLs represent a baseline above which results meet laboratory-determined limits of precision and accuracy. All reported results are within the calibration range. The project method quantitation limit (MQL) is the limit of quantitation (LOQ) as noted in the data tables. Beacon determined uptake rates for a suite of compounds with the Beacon sampler for sampling in air. Beacon calculated the uptake rates for the remaining compounds using Graham's Law of Diffusion. The reported data includes LOQ limits.

#### **Project Details**

Samples were received in proper condition and laboratory control parameters were met unless otherwise noted below. The work performed was in accordance with ISO/IEC 17025:2017.

**SCS Engineers**  
2830 Dairy Drive  
Madison, WI 53718-6751

**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007570  
**Reported:** 03/11/2024

## *Analytical Results*

|  |   |  |
|--|---|--|
| <b>SCS Engineers</b><br>2830 Dairy Drive<br>Madison, WI 53718-6751 | <b>Site Name:</b> Badger Lease and Auto Sales<br><b>Site Location:</b> West Allis, WI<br><b>Project Manager:</b> Jacob Krause | <b>Beacon Proposal:</b> 230920R04<br><b>Lab Work Order:</b> 0007570<br><b>Reported:</b> 03/11/2024 |
|--|---|--|

*Summary of Compound Detections- Mass*

|                           |  |                   |
|---------------------------|--|-------------------|
| Lab Sample ID: 0007570-02 | <b>05C_SSV_02_20240227</b><br>Soil Gas | Method: EPA 8260C |
|---------------------------|--|-------------------|

| Analyte                  | CAS#     | Result<br>(ng) | Q | RT    | LOQ<br>(ng) | File ID     |
|--------------------------|----------|----------------|---|-------|-------------|-------------|
| <b>Tetrachloroethene</b> | 127-18-4 | <b>31</b>      |   | 5.958 | 10          | C24030106.D |

**SCS Engineers**  
 2830 Dairy Drive  
 Madison, WI 53718-6751

**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007570  
**Reported:** 03/11/2024

*Summary of Compound Detections- Concentration*

|                           |                            |                   |
|---------------------------|----------------------------|-------------------|
| Lab Sample ID: 0007570-02 | <b>05C_SSV_02_20240227</b> | Method: EPA 8260C |
| Soil Gas                  |                            |                   |

| Analyte                  | CAS#     | Result<br>(µg/m³) | Q | RT    | LOQ<br>(µg/m³) | File ID     |
|--------------------------|----------|-------------------|---|-------|----------------|-------------|
| <b>Tetrachloroethene</b> | 127-18-4 | <b>6.54</b>       |   | 5.958 | 2.12           | C24030106.D |

**SCS Engineers**  
2830 Dairy Drive  
Madison, WI 53718-6751

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**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007570  
**Reported:** 03/11/2024

*Data Summary Table- Mass*

| <b>Compound</b>   | <b>Frequency</b> | <b>LOQ<br/>(ng)</b> | <b>Max Value<br/>(ng)</b> |
|-------------------|------------------|---------------------|---------------------------|
| Tetrachloroethene | 1                | 10                  | 31                        |



**SCS Engineers**  
2830 Dairy Drive  
Madison, WI 53718-6751

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**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007570  
**Reported:** 03/11/2024

*Data Summary Table- Concentration*

| <b>Compound</b>   | <b>Frequency</b> | <b>LOQ<br/>(<math>\mu\text{g}/\text{m}^3</math>)</b> | <b>Max Value<br/>(<math>\mu\text{g}/\text{m}^3</math>)</b> |
|-------------------|------------------|--|--|
| Tetrachloroethene | 1                | 2.12   | 6.54   |

**SCS Engineers**  
2830 Dairy Drive  
Madison, WI 53718-6751

**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007570  
**Reported:** 03/11/2024

## *Detailed Analytical Results*

SCS Engineers  
2830 Dairy Drive  
Madison, WI 53718-6751

**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007570  
**Reported:** 03/11/2024

*Detailed Analytical Results- Mass*

**SCS Engineers**  
 2830 Dairy Drive  
 Madison, WI 53718-6751

**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007570  
**Reported:** 03/11/2024

Lab Sample ID: 0007570-01

**05C\_SSV\_01\_20240227**

Method: EPA 8260C

Soil Gas

| Analyte                       | CAS#       | Result<br>(ng) Q | LOQ<br>(ng)     | Analyzed         | File ID          |             |
|-------------------------------|------------|------------------|-----------------|------------------|------------------|-------------|
| Vinyl Chloride                | 75-01-4    | <10              | 10              | 03/01/2024 14:00 | C24030105.D      |             |
| trans-1,2-Dichloroethene      | 156-60-5   | <10              | 10              | 03/01/2024 14:00 | C24030105.D      |             |
| cis-1,2-Dichloroethene        | 156-59-2   | <10              | 10              | 03/01/2024 14:00 | C24030105.D      |             |
| Trichloroethene               | 79-01-6    | <10              | 10              | 03/01/2024 14:00 | C24030105.D      |             |
| Tetrachloroethene             | 127-18-4   | <10              | 10              | 03/01/2024 14:00 | C24030105.D      |             |
| Analyte                       | CAS#       | % Recovery       | Recovery Limits | Q                | Analyzed         | File ID     |
| Surrogate: 1,2-DCA-d4         | 17060-07-0 | 104%             | 70-130          |                  | 03/01/2024 14:00 | C24030105.D |
| Surrogate: Toluene-d8         | 2037-26-5  | 83.7%            | 70-130          |                  | 03/01/2024 14:00 | C24030105.D |
| Surrogate: Bromofluorobenzene | 460-00-4   | 93.5%            | 70-130          |                  | 03/01/2024 14:00 | C24030105.D |

**SCS Engineers**  
 2830 Dairy Drive  
 Madison, WI 53718-6751

**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007570  
**Reported:** 03/11/2024

Lab Sample ID: 0007570-02

**05C\_SSV\_02\_20240227**

Method: EPA 8260C

Soil Gas

| Analyte                       | CAS#       | Result<br>(ng) Q | LOQ<br>(ng)     | Analyzed         | File ID          |             |
|-------------------------------|------------|------------------|-----------------|------------------|------------------|-------------|
| Vinyl Chloride                | 75-01-4    | <10              | 10              | 03/01/2024 14:29 | C24030106.D      |             |
| trans-1,2-Dichloroethene      | 156-60-5   | <10              | 10              | 03/01/2024 14:29 | C24030106.D      |             |
| cis-1,2-Dichloroethene        | 156-59-2   | <10              | 10              | 03/01/2024 14:29 | C24030106.D      |             |
| Trichloroethene               | 79-01-6    | <10              | 10              | 03/01/2024 14:29 | C24030106.D      |             |
| <b>Tetrachloroethene</b>      | 127-18-4   | <b>31</b>        | 10              | 03/01/2024 14:29 | C24030106.D      |             |
| Analyte                       | CAS#       | % Recovery       | Recovery Limits | Q                | Analyzed         | File ID     |
| Surrogate: 1,2-DCA-d4         | 17060-07-0 | 97.7%            | 70-130          |                  | 03/01/2024 14:29 | C24030106.D |
| Surrogate: Toluene-d8         | 2037-26-5  | 82.1%            | 70-130          |                  | 03/01/2024 14:29 | C24030106.D |
| Surrogate: Bromofluorobenzene | 460-00-4   | 98.7%            | 70-130          |                  | 03/01/2024 14:29 | C24030106.D |

**SCS Engineers**  
2830 Dairy Drive  
Madison, WI 53718-6751

**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007570  
**Reported:** 03/11/2024

*Detailed Analytical Results- Concentration*

**SCS Engineers**  
 2830 Dairy Drive  
 Madison, WI 53718-6751

**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007570  
**Reported:** 03/11/2024

Lab Sample ID: 0007570-01

**05C\_SSV\_01\_20240227**

Method: EPA 8260C

Soil Gas

| Analyte                       | CAS#       | Result<br>(µg/m <sup>3</sup> ) | Q               | LOQ<br>(µg/m <sup>3</sup> ) | Analyzed         | File ID     |
|-------------------------------|------------|--------------------------------|-----------------|-----------------------------|------------------|-------------|
| Vinyl Chloride                | 75-01-4    | <1.07                          |                 | 1.07                        | 03/01/2024 14:00 | C24030105.D |
| trans-1,2-Dichloroethene      | 156-60-5   | <1.97                          |                 | 1.97                        | 03/01/2024 14:00 | C24030105.D |
| cis-1,2-Dichloroethene        | 156-59-2   | <1.64                          |                 | 1.64                        | 03/01/2024 14:00 | C24030105.D |
| Trichloroethene               | 79-01-6    | <2.63                          |                 | 2.63                        | 03/01/2024 14:00 | C24030105.D |
| Tetrachloroethene             | 127-18-4   | <2.12                          |                 | 2.12                        | 03/01/2024 14:00 | C24030105.D |
| Analyte                       | CAS#       | % Recovery                     | Recovery Limits | Q                           | Analyzed         | File ID     |
| Surrogate: 1,2-DCA-d4         | 17060-07-0 | 104%                           | 70-130          |                             | 03/01/2024 14:00 | C24030105.D |
| Surrogate: Toluene-d8         | 2037-26-5  | 83.7%                          | 70-130          |                             | 03/01/2024 14:00 | C24030105.D |
| Surrogate: Bromofluorobenzene | 460-00-4   | 93.5%                          | 70-130          |                             | 03/01/2024 14:00 | C24030105.D |

|  |   |  |
|--|---|--|
| <b>SCS Engineers</b><br>2830 Dairy Drive<br>Madison, WI 53718-6751 | <b>Site Name:</b> Badger Lease and Auto Sales<br><b>Site Location:</b> West Allis, WI<br><b>Project Manager:</b> Jacob Krause | <b>Beacon Proposal:</b> 230920R04<br><b>Lab Work Order:</b> 0007570<br><b>Reported:</b> 03/11/2024 |
|--|---|--|

|                           |                            |                   |
|---------------------------|----------------------------|-------------------|
| Lab Sample ID: 0007570-02 | <b>05C_SSV_02_20240227</b> | Method: EPA 8260C |
| Soil Gas                  |                            |                   |

| Analyte                       | CAS#       | Result<br>(µg/m³) Q | LOQ<br>(µg/m³)  | Analyzed         | File ID          |             |
|-------------------------------|------------|---------------------|-----------------|------------------|------------------|-------------|
| Vinyl Chloride                | 75-01-4    | <1.07               | 1.07            | 03/01/2024 14:29 | C24030106.D      |             |
| trans-1,2-Dichloroethene      | 156-60-5   | <1.98               | 1.98            | 03/01/2024 14:29 | C24030106.D      |             |
| cis-1,2-Dichloroethene        | 156-59-2   | <1.64               | 1.64            | 03/01/2024 14:29 | C24030106.D      |             |
| Trichloroethene               | 79-01-6    | <2.63               | 2.63            | 03/01/2024 14:29 | C24030106.D      |             |
| <b>Tetrachloroethene</b>      | 127-18-4   | <b>6.54</b>         | 2.12            | 03/01/2024 14:29 | C24030106.D      |             |
| Analyte                       | CAS#       | % Recovery          | Recovery Limits | Q                | Analyzed         | File ID     |
| Surrogate: 1,2-DCA-d4         | 17060-07-0 | 97.7%               | 70-130          |                  | 03/01/2024 14:29 | C24030106.D |
| Surrogate: Toluene-d8         | 2037-26-5  | 82.1%               | 70-130          |                  | 03/01/2024 14:29 | C24030106.D |
| Surrogate: Bromofluorobenzene | 460-00-4   | 98.7%               | 70-130          |                  | 03/01/2024 14:29 | C24030106.D |



SCS Engineers  
2830 Dairy Drive  
Madison, WI 53718-6751

**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007570  
**Reported:** 03/11/2024

## *QC Information/Summary*

**SCS Engineers**  
 2830 Dairy Drive  
 Madison, WI 53718-6751

**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007570  
**Reported:** 03/11/2024

*Soil-Gas Sample Analysis by EPA Method 8260C - Quality Control Summary*
**Sequence: B24B051 - Instrument: C System - File ID: Cb24021520.D**
***B24B051-ICV1 (LCSD/Second Source Verification/CALV)***

| Analyte                              | Result      | LOQ | Units     | Spike Level | Source Result | %REC        | %REC Limits   | RPD | RPD Limit | Notes |
|--------------------------------------|-------------|-----|-----------|-------------|---------------|-------------|---------------|-----|-----------|-------|
| Vinyl Chloride                       | 45.3        | 10  | ng        | 50.0        |               | 90.6        | 70-130        |     |           |       |
| trans-1,2-Dichloroethene             | 51.2        | 10  | ng        | 50.0        |               | 102         | 70-130        |     |           |       |
| cis-1,2-Dichloroethene               | 52.5        | 10  | ng        | 50.0        |               | 105         | 70-130        |     |           |       |
| Trichloroethene                      | 49.9        | 10  | ng        | 50.0        |               | 99.8        | 70-130        |     |           |       |
| Tetrachloroethene                    | 56.1        | 10  | ng        | 50.0        |               | 112         | 70-130        |     |           |       |
| <i>Surrogate: 1,2-DCA-d4</i>         | <i>46.0</i> |     | <i>ng</i> | <i>50.0</i> |               | <i>92.0</i> | <i>70-130</i> |     |           |       |
| <i>Surrogate: Toluene-d8</i>         | <i>47.9</i> |     | <i>ng</i> | <i>50.0</i> |               | <i>95.7</i> | <i>70-130</i> |     |           |       |
| <i>Surrogate: Bromofluorobenzene</i> | <i>48.7</i> |     | <i>ng</i> | <i>50.0</i> |               | <i>97.4</i> | <i>70-130</i> |     |           |       |

**SCS Engineers**  
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**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007570  
**Reported:** 03/11/2024

*Soil-Gas Sample Analysis by EPA Method 8260C - Quality Control Summary*
**Sequence: B24B051 - Instrument: C System - File ID: Cb24021524.D**
***B24B051-ICB1 (Lab Blank/Initial Calibration Blank)***

| Analyte                              | Result | LOQ | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|--------------------------------------|--------|-----|-------|-------------|---------------|------|-------------|-----|-----------|-------|
| Vinyl Chloride                       | <5     | 10  | ng    |             |               |      |             |     |           | U     |
| trans-1,2-Dichloroethene             | <5     | 10  | ng    |             |               |      |             |     |           | U     |
| cis-1,2-Dichloroethene               | <5     | 10  | ng    |             |               |      |             |     |           | U     |
| Trichloroethene                      | <5     | 10  | ng    |             |               |      |             |     |           | U     |
| Tetrachloroethene                    | <5     | 10  | ng    |             |               |      |             |     |           | U     |
| <i>Surrogate: 1,2-DCA-d4</i>         | 95.5   |     | ng    | 100         |               | 95.5 | 70-130      |     |           |       |
| <i>Surrogate: Toluene-d8</i>         | 92.8   |     | ng    | 100         |               | 92.8 | 70-130      |     |           |       |
| <i>Surrogate: Bromofluorobenzene</i> | 89.6   |     | ng    | 100         |               | 89.6 | 70-130      |     |           |       |

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 Madison, WI 53718-6751

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**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007570  
**Reported:** 03/11/2024

*Soil-Gas Sample Analysis by EPA Method 8260C - Quality Control Summary*
**Sequence: B24C006 - Batch: 24C0006 - Instrument: C System - File ID: C24030102.D**
*24C0006-BS1 (LCS, Calibration Source Verification)*

| Analyte                              | Result      | LOQ | Units     | Spike Level | Source Result | %REC        | %REC Limits   | RPD | RPD Limit | Notes |
|--------------------------------------|-------------|-----|-----------|-------------|---------------|-------------|---------------|-----|-----------|-------|
| Vinyl Chloride                       | 59.3        | 10  | ng        | 50.0        |               | 119         | 80-120        |     |           |       |
| trans-1,2-Dichloroethene             | 54.8        | 10  | ng        | 50.0        |               | 110         | 80-120        |     |           |       |
| cis-1,2-Dichloroethene               | 50.2        | 10  | ng        | 50.0        |               | 100         | 80-120        |     |           |       |
| Trichloroethene                      | 51.2        | 10  | ng        | 50.0        |               | 102         | 80-120        |     |           |       |
| Tetrachloroethene                    | 49.5        | 10  | ng        | 50.0        |               | 99.0        | 80-120        |     |           |       |
| <i>Surrogate: 1,2-DCA-d4</i>         | <i>51.6</i> |     | <i>ng</i> | <i>50.0</i> |               | <i>103</i>  | <i>70-130</i> |     |           |       |
| <i>Surrogate: Toluene-d8</i>         | <i>45.1</i> |     | <i>ng</i> | <i>50.0</i> |               | <i>90.2</i> | <i>70-130</i> |     |           |       |
| <i>Surrogate: Bromofluorobenzene</i> | <i>48.6</i> |     | <i>ng</i> | <i>50.0</i> |               | <i>97.1</i> | <i>70-130</i> |     |           |       |

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**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007570  
**Reported:** 03/11/2024

*Soil-Gas Analysis by EPA 8260 - Data in Concentration - Quality Control Summary*
**Sequence: B24C006 - Batch: 24C0006 - Instrument: C System - File ID: C24030103.D**
**24C0006-BLK1 (Lab Blank)**

| Analyte                              | Result      | LOQ  | Units             | Spike Level | Source Result | %REC        | %REC Limits   | RPD | RPD Limit | Notes |
|--------------------------------------|-------------|------|-------------------|-------------|---------------|-------------|---------------|-----|-----------|-------|
| Vinyl Chloride                       | <1.07       | 1.07 | µg/m <sup>3</sup> |             |               |             |               |     |           | U     |
| trans-1,2-Dichloroethene             | <1.97       | 1.97 | µg/m <sup>3</sup> |             |               |             |               |     |           | U     |
| cis-1,2-Dichloroethene               | <1.64       | 1.64 | µg/m <sup>3</sup> |             |               |             |               |     |           | U     |
| Trichloroethene                      | <2.63       | 2.63 | µg/m <sup>3</sup> |             |               |             |               |     |           | U     |
| Tetrachloroethene                    | <2.12       | 2.12 | µg/m <sup>3</sup> |             |               |             |               |     |           | U     |
| <i>Surrogate: 1,2-DCA-d4</i>         | <i>103</i>  |      | <i>ng</i>         | <i>100</i>  |               | <i>103</i>  | <i>70-130</i> |     |           |       |
| <i>Surrogate: Toluene-d8</i>         | <i>90.5</i> |      | <i>ng</i>         | <i>100</i>  |               | <i>90.5</i> | <i>70-130</i> |     |           |       |
| <i>Surrogate: Bromofluorobenzene</i> | <i>88.4</i> |      | <i>ng</i>         | <i>100</i>  |               | <i>88.4</i> | <i>70-130</i> |     |           |       |

**SCS Engineers**  
 2830 Dairy Drive  
 Madison, WI 53718-6751

**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007570  
**Reported:** 03/11/2024

*Soil-Gas Sample Analysis by EPA Method 8260C - Quality Control Summary*
**Sequence: B24C006 - Batch: 24C0006 - Instrument: C System - File ID: C24030103.D**
**24C0006-BLK1 (Lab Blank)**

| Analyte                              | Result      | LOQ | Units     | Spike Level | Source Result | %REC        | %REC Limits   | RPD | RPD Limit | Notes |
|--------------------------------------|-------------|-----|-----------|-------------|---------------|-------------|---------------|-----|-----------|-------|
| Vinyl Chloride                       | <5          | 10  | ng        |             |               |             |               |     |           | U     |
| trans-1,2-Dichloroethene             | <5          | 10  | ng        |             |               |             |               |     |           | U     |
| cis-1,2-Dichloroethene               | <5          | 10  | ng        |             |               |             |               |     |           | U     |
| Trichloroethene                      | <5          | 10  | ng        |             |               |             |               |     |           | U     |
| Tetrachloroethene                    | <5          | 10  | ng        |             |               |             |               |     |           | U     |
| <i>Surrogate: 1,2-DCA-d4</i>         | <i>103</i>  |     | <i>ng</i> | <i>100</i>  |               | <i>103</i>  | <i>70-130</i> |     |           |       |
| <i>Surrogate: Toluene-d8</i>         | <i>90.5</i> |     | <i>ng</i> | <i>100</i>  |               | <i>90.5</i> | <i>70-130</i> |     |           |       |
| <i>Surrogate: Bromofluorobenzene</i> | <i>88.4</i> |     | <i>ng</i> | <i>100</i>  |               | <i>88.4</i> | <i>70-130</i> |     |           |       |

**SCS Engineers**  
 2830 Dairy Drive  
 Madison, WI 53718-6751

**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007570  
**Reported:** 03/11/2024

*Soil-Gas Sample Analysis by EPA Method 8260C - Quality Control Summary*
**Sequence: B24C006 - Instrument: C System - File ID: C24030104.D**
*B24C006-ICV1 (LCSD/Second Source Verification/CALV)*

| Analyte                              | Result      | LOQ | Units     | Spike Level | Source Result | %REC        | %REC Limits   | RPD | RPD Limit | Notes |
|--------------------------------------|-------------|-----|-----------|-------------|---------------|-------------|---------------|-----|-----------|-------|
| Vinyl Chloride                       | 63.7        | 10  | ng        | 50.0        |               | 127         | 70-130        |     |           |       |
| trans-1,2-Dichloroethene             | 57.1        | 10  | ng        | 50.0        |               | 114         | 70-130        |     |           |       |
| cis-1,2-Dichloroethene               | 48.4        | 10  | ng        | 50.0        |               | 96.7        | 70-130        |     |           |       |
| Trichloroethene                      | 51.7        | 10  | ng        | 50.0        |               | 103         | 70-130        |     |           |       |
| Tetrachloroethene                    | 50.5        | 10  | ng        | 50.0        |               | 101         | 70-130        |     |           |       |
| <i>Surrogate: 1,2-DCA-d4</i>         | <i>48.4</i> |     | <i>ng</i> | <i>50.0</i> |               | <i>96.8</i> | <i>70-130</i> |     |           |       |
| <i>Surrogate: Toluene-d8</i>         | <i>44.5</i> |     | <i>ng</i> | <i>50.0</i> |               | <i>89.0</i> | <i>70-130</i> |     |           |       |
| <i>Surrogate: Bromofluorobenzene</i> | <i>46.5</i> |     | <i>ng</i> | <i>50.0</i> |               | <i>93.0</i> | <i>70-130</i> |     |           |       |

SCS Engineers  
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**Site Name:** Badger Lease and Auto Sales  
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**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007570  
**Reported:** 03/11/2024

*Additional QC Information*



|  |   |  |
|--|---|--|
| <b>SCS Engineers</b><br>2830 Dairy Drive<br>Madison, WI 53718-6751 | <b>Site Name:</b> Badger Lease and Auto Sales<br><b>Site Location:</b> West Allis, WI<br><b>Project Manager:</b> Jacob Krause | <b>Beacon Proposal:</b> 230920R04<br><b>Lab Work Order:</b> 0007570<br><b>Reported:</b> 03/11/2024 |
|--|---|--|

**Sample Result Calculation Summary (Concentration)**  
**EPA 8260C**

| Analyte | t<br>Sampling Time<br>minutes | DF<br>Dilution<br>Factor | U<br>Uptake<br>Rate | M<br>Initial Result<br>ng | C<br>Calculated Result<br>µg/m <sup>3</sup> | File ID |
|---------|-------------------------------|--------------------------|---------------------|---------------------------|---|---------|
|---------|-------------------------------|--------------------------|---------------------|---------------------------|---|---------|

|                           |   |
|---------------------------|---|
| <b>Lab ID:</b> 0007570-01 | <b>Sample Name:</b> 05C_SSV_01_20240227 |
|---------------------------|---|

|                          |        |      |       |   |   |             |
|--------------------------|--------|------|-------|---|---|-------------|
| Vinyl Chloride           | 11,517 | 1.00 | 0.810 | U | U | C24030105.D |
| trans-1,2-Dichloroethene | 11,517 | 1.00 | 0.440 | U | U | C24030105.D |
| cis-1,2-Dichloroethene   | 11,517 | 1.00 | 0.530 | U | U | C24030105.D |
| Trichloroethene          | 11,517 | 1.00 | 0.330 | U | U | C24030105.D |
| Tetrachloroethene        | 11,517 | 1.00 | 0.410 | U | U | C24030105.D |

|                           |   |
|---------------------------|---|
| <b>Lab ID:</b> 0007570-02 | <b>Sample Name:</b> 05C_SSV_02_20240227 |
|---------------------------|---|

|                          |        |      |       |       |      |             |
|--------------------------|--------|------|-------|-------|------|-------------|
| Vinyl Chloride           | 11,503 | 1.00 | 0.810 | U     | U    | C24030106.D |
| trans-1,2-Dichloroethene | 11,503 | 1.00 | 0.440 | U     | U    | C24030106.D |
| cis-1,2-Dichloroethene   | 11,503 | 1.00 | 0.530 | U     | U    | C24030106.D |
| Trichloroethene          | 11,503 | 1.00 | 0.330 | U     | U    | C24030106.D |
| Tetrachloroethene        | 11,503 | 1.00 | 0.410 | 30.86 | 6.54 | C24030106.D |

Calculations:

$$C = \frac{1000 \times M \times DF}{U \times t}$$

- where: C = concentration (µg/m<sup>3</sup>)  
 M = mass (ng)  
 DF = dilution factor  
 t = sampling time (minutes)  
 U = compound specific uptake rate

*Reference: Federal Register/Vol. 79, No. 125/June 30, 2014*

**SCS Engineers**  
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**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007570  
**Reported:** 03/11/2024

**Method Detection and Reporting Limit Calculations (Concentration)**
**EPA 8260C**

| Analyte | t<br>Sampling Time<br>minutes | DF<br>Dilution<br>Factor | U<br>Uptake<br>Rate | M<br>Initial LOQ<br>ng | C<br>Calculated LOQ<br>µg/m <sup>3</sup> |
|---------|-------------------------------|--------------------------|---------------------|------------------------|--|
|---------|-------------------------------|--------------------------|---------------------|------------------------|--|

**Lab ID:** 0007570-01

**Sample Name:** 05C\_SSV\_01\_20240227

|                          |        |      |       |      |      |
|--------------------------|--------|------|-------|------|------|
| Vinyl Chloride           | 11,517 | 1.00 | 0.810 | 10.0 | 1.07 |
| trans-1,2-Dichloroethene | 11,517 | 1.00 | 0.440 | 10.0 | 1.97 |
| cis-1,2-Dichloroethene   | 11,517 | 1.00 | 0.530 | 10.0 | 1.64 |
| Trichloroethene          | 11,517 | 1.00 | 0.330 | 10.0 | 2.63 |
| Tetrachloroethene        | 11,517 | 1.00 | 0.410 | 10.0 | 2.12 |

**Lab ID:** 0007570-02

**Sample Name:** 05C\_SSV\_02\_20240227

|                          |        |      |       |      |      |
|--------------------------|--------|------|-------|------|------|
| Vinyl Chloride           | 11,503 | 1.00 | 0.810 | 10.0 | 1.07 |
| trans-1,2-Dichloroethene | 11,503 | 1.00 | 0.440 | 10.0 | 1.98 |
| cis-1,2-Dichloroethene   | 11,503 | 1.00 | 0.530 | 10.0 | 1.64 |
| Trichloroethene          | 11,503 | 1.00 | 0.330 | 10.0 | 2.63 |
| Tetrachloroethene        | 11,503 | 1.00 | 0.410 | 10.0 | 2.12 |

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**Site Name:** Badger Lease and Auto Sales  
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**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007570  
**Reported:** 03/11/2024

### *Laboratory Certification List*

| Certification ID   | Certification No. | Description   | Expires    | Project Required |
|--------------------|-------------------|---|------------|------------------|
| Alaska CS-LAP      | 19-002            | Alaska Department of Environmental Conservation                                 | 12/30/2024 |                  |
| DoD-ELAP           | 72690/L22-563     | United States Department of Defense Environmental Laboratory Accreditation      | 11/30/2024 |                  |
| ISO/IEC 17025:2017 | 72690/L22-563     | General Requirements for the Competence of Testing and Calibration Laboratories | 11/30/2024 |                  |
| NEFAP              | 72690/L22-564     | TNI National Environmental Field Activities Program (NEFAP)                     | 11/30/2024 |                  |
| NY-NELAC           | 12097             | New York Department of Health   | 04/01/2024 |                  |
| Utah-NELAC         | MD010912023-14    | Utah Department of Health   | 12/31/2024 |                  |

**SCS Engineers**  
2830 Dairy Drive  
Madison, WI 53718-6751**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007570  
**Reported:** 03/11/2024

### Qualifiers/Notes and Definitions

**General Definitions:**

|           |  |
|-----------|--|
| DF        | Dilution Factor  |
| DL        | Detection Limit  |
| LOD       | Limit of Detection   |
| LOQ       | Limit of Quantitation  |
| NA        | Not Applicable   |
| Q         | Qualifier  |
| RPD       | Relative Percent Difference  |
| RT        | Retention Times in Minutes   |
| RRT       | Evaluation of Relative Retention Times in RRT Units (qualified if outside $\pm 0.06$ control limits) |
| $3\sigma$ | Uncertainty  |
| ∉         | Compound not on scope of accreditation   |
| +         | values are outside method/contract required QC limits  |
| ∅         | Compound not on scope of accreditation and analyzed with a one-point calibration                     |

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**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007570  
**Reported:** 03/11/2024

## *Sample Management Records*





Beacon Environmental

526 Underwood Lane  
Bel Air, MD 21014 USA  
1.410.838.8780

CERTIFICATE OF ANALYSIS

Beacon Proposal No.: 230920R05

Laboratory Work Order: 0007573

**Project Description:**

Badger Lease and Auto Sales  
West Allis, WI

Client PO No.: 25222269.04-002

Prepared for:

Jacob Krause

**SCS Engineers**

2830 Dairy Drive

Madison, WI 53718-6751

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Ryan W. Schneider  
Senior Project Manager

March 14, 2024

All data meet requirements as specified in the Beacon Environmental Quality Assurance Project Plan and the results relate only to the samples reported. The work performed was in accordance with ISO/IEC 17025:2017. This report shall not be reproduced, except in full, without written approval of the laboratory. Release of the data contained in this data package has been authorized by the Laboratory Director or his signee, as verified by the following signatures:

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Steven C. Thornley  
Laboratory Director

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Peter B. Kelly  
Quality Manager

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SCS Engineers  
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 Madison, WI 53718-6751

**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R05  
**Lab Work Order:** 0007573  
**Reported:** 03/14/2024

### Sample Summary

| Lab Sample ID               | Client Sample ID                               | Received   | Analysis        | Matrix      |
|-----------------------------|--|------------|-----------------|-------------|
| 0007573-01<br>Sampler Type: | 05C_IAB_01_20240227<br>Beacon Passive Sampler  | 02/29/2024 | TO-17 (Passive) | Indoor Air  |
| 0007573-02<br>Sampler Type: | 05C_IA1_02_20240227<br>Beacon Passive Sampler  | 02/29/2024 | TO-17 (Passive) | Indoor Air  |
| 0007573-03<br>Sampler Type: | 05C_Sump_01_20240227<br>Beacon Passive Sampler | 02/29/2024 | TO-17 (Passive) | Indoor Air  |
| 0007573-04<br>Sampler Type: | 05C_OA_01_20240227<br>Beacon Passive Sampler   | 02/29/2024 | TO-17 (Passive) | Ambient Air |

#### Project Completeness

**Samples Received:** 4  
**Samples Analyzed:** 4

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### *Case Narrative*

Beacon Environmental provided thermally conditioned Beacon Samplers for sampling, with analyses following U.S. EPA Method TO-17, with analytical results reported in  $\mu\text{g}/\text{m}^3$ . Beacon calculated concentration results using the exposure period, target analyte mass, and the following procedures detailed in ISO 16017-2, *Indoor, ambient and workplace air-Sampling and analysis of volatile organic compounds by sorbent tube/thermal desorption/capillary gas chromatography-Part 2: Diffusive sampling*.

Beacon reports results and reporting limits to three significant digits.

#### **Reporting Limits (RLs) for EPA Method TO-17**

The RLs represent a baseline above which results meet laboratory-determined limits of precision and accuracy. Beacon performed dilution analysis when results exceeded the upper calibration limit, bringing all reported results within the calibration range. The project method quantitation limit (MQL) is the limit of detection (LOD) as noted in the data tables.

#### **Calibration Verification**

All continuing calibration verification (CCV) values are within  $\pm 30\%$  of the true values as defined by the initial calibration and met the requirements specified in BEACON's Quality Manual.

#### **Internal Standards and Surrogates**

Internal standards and surrogates are spiked on all blanks (ICB, BLK), field samples and laboratory control samples (ICV/CALV, BS, ICV and CCV). Acceptance criteria for internal standards are 60 to 140 percent and surrogate recoveries are 70 to 130 percent; all internal standards and surrogates are within the acceptance criteria unless noted in the **Case Narrative**.

#### **Blank Contamination**

No targeted compounds above the limit of detection (LOD) for each compound were observed in the Laboratory Method Blanks unless noted in the **Case Narrative**.

#### **Laboratory Control Samples**

Acceptance criteria for surrogate and analytes recoveries are 70 to 130 percent; all recoveries are within the acceptance criteria unless noted in the **Case Narrative**.

#### **Discussion**

Samples were received in proper condition and laboratory control parameters were met unless otherwise noted below. The work performed was in accordance with ISO/IEC 17025:2017.

End of Case Narrative

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## *Analytical Results*

|  |   |  |
|--|---|--|
| <b>SCS Engineers</b><br>2830 Dairy Drive<br>Madison, WI 53718-6751 | <b>Site Name:</b> Badger Lease and Auto Sales<br><b>Site Location:</b> West Allis, WI<br><b>Project Manager:</b> Jacob Krause | <b>Beacon Proposal:</b> 230920R05<br><b>Lab Work Order:</b> 0007573<br><b>Reported:</b> 03/14/2024 |
|--|---|--|

***Summary of Compound Detections- Concentration***

|                           |   |                         |
|---------------------------|---|-------------------------|
| Lab Sample ID: 0007573-03 | <b>05C_Sump_01_20240227</b><br>Indoor Air | Method: TO-17 (Passive) |
|---------------------------|---|-------------------------|

| Analyte                  | CAS#     | Result<br>(µg/m³) | Q | RT    | LOQ<br>(µg/m³) | LOD<br>(µg/m³) | File ID     |
|--------------------------|----------|-------------------|---|-------|----------------|----------------|-------------|
| <b>Tetrachloroethene</b> | 127-18-4 | <b>1.70</b>       | J | 5.955 | 2.13           | 1.06           | C24030410.D |

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**Lab Work Order:** 0007573  
**Reported:** 03/14/2024

***Data Summary Table- Concentration***

| <b>Compound</b>   | <b>Frequency</b> | <b>LOD<br/>(<math>\mu\text{g}/\text{m}^3</math>)</b> | <b>Max Value<br/>(<math>\mu\text{g}/\text{m}^3</math>)</b> |
|-------------------|------------------|--|--|
| Tetrachloroethene | 1                | 1.06   | 1.70   |

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**Lab Work Order:** 0007573  
**Reported:** 03/14/2024

## *Detailed Analytical Results*

|  |   |  |
|--|---|--|
| <b>SCS Engineers</b><br>2830 Dairy Drive<br>Madison, WI 53718-6751 | <b>Site Name:</b> Badger Lease and Auto Sales<br><b>Site Location:</b> West Allis, WI<br><b>Project Manager:</b> Jacob Krause | <b>Beacon Proposal:</b> 230920R05<br><b>Lab Work Order:</b> 0007573<br><b>Reported:</b> 03/14/2024 |
|--|---|--|

|                           |                            |                         |
|---------------------------|----------------------------|-------------------------|
| Lab Sample ID: 0007573-01 | <b>05C_IAB_01_20240227</b> | Method: TO-17 (Passive) |
| Indoor Air                |                            |                         |

| Analyte                       | CAS#       | Result<br>(µg/m <sup>3</sup> ) | Q               | LOD<br>(µg/m <sup>3</sup> ) | LOQ<br>(µg/m <sup>3</sup> ) | Analyzed         | File ID     |
|-------------------------------|------------|--------------------------------|-----------------|-----------------------------|-----------------------------|------------------|-------------|
| Vinyl Chloride                | 75-01-4    | <0.538                         | U               | 0.538                       | 1.08                        | 03/04/2024 15:11 | C24030408.D |
| trans-1,2-Dichloroethene      | 156-60-5   | <0.991                         | U               | 0.991                       | 1.98                        | 03/04/2024 15:11 | C24030408.D |
| cis-1,2-Dichloroethene        | 156-59-2   | <0.823                         | U               | 0.823                       | 1.65                        | 03/04/2024 15:11 | C24030408.D |
| Trichloroethene               | 79-01-6    | <1.32                          | U               | 1.32                        | 2.64                        | 03/04/2024 15:11 | C24030408.D |
| Tetrachloroethene             | 127-18-4   | <1.06                          | U               | 1.06                        | 2.13                        | 03/04/2024 15:11 | C24030408.D |
| Analyte                       | CAS#       | % Recovery                     | Recovery Limits | Q                           |                             | Analyzed         | File ID     |
| Surrogate: 1,2-DCA-d4         | 17060-07-0 | 105%                           | 70-130          |                             |                             | 03/04/2024 15:11 | C24030408.D |
| Surrogate: Toluene-d8         | 2037-26-5  | 91.6%                          | 70-130          |                             |                             | 03/04/2024 15:11 | C24030408.D |
| Surrogate: Bromofluorobenzene | 460-00-4   | 89.9%                          | 70-130          |                             |                             | 03/04/2024 15:11 | C24030408.D |

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**Beacon Proposal:** 230920R05  
**Lab Work Order:** 0007573  
**Reported:** 03/14/2024

Lab Sample ID: 0007573-02

**05C\_IA1\_02\_20240227**

Method: TO-17 (Passive)

Indoor Air

| Analyte                       | CAS#       | Result<br>(µg/m <sup>3</sup> ) | Q               | LOD<br>(µg/m <sup>3</sup> ) | LOQ<br>(µg/m <sup>3</sup> ) | Analyzed         | File ID     |
|-------------------------------|------------|--------------------------------|-----------------|-----------------------------|-----------------------------|------------------|-------------|
| Vinyl Chloride                | 75-01-4    | <0.538                         | U               | 0.538                       | 1.08                        | 03/04/2024 15:40 | C24030409.D |
| trans-1,2-Dichloroethene      | 156-60-5   | <0.991                         | U               | 0.991                       | 1.98                        | 03/04/2024 15:40 | C24030409.D |
| cis-1,2-Dichloroethene        | 156-59-2   | <0.822                         | U               | 0.822                       | 1.64                        | 03/04/2024 15:40 | C24030409.D |
| Trichloroethene               | 79-01-6    | <1.32                          | U               | 1.32                        | 2.64                        | 03/04/2024 15:40 | C24030409.D |
| Tetrachloroethene             | 127-18-4   | <1.06                          | U               | 1.06                        | 2.13                        | 03/04/2024 15:40 | C24030409.D |
| Analyte                       | CAS#       | % Recovery                     | Recovery Limits | Q                           |                             | Analyzed         | File ID     |
| Surrogate: 1,2-DCA-d4         | 17060-07-0 | 101%                           | 70-130          |                             |                             | 03/04/2024 15:40 | C24030409.D |
| Surrogate: Toluene-d8         | 2037-26-5  | 91.7%                          | 70-130          |                             |                             | 03/04/2024 15:40 | C24030409.D |
| Surrogate: Bromofluorobenzene | 460-00-4   | 89.9%                          | 70-130          |                             |                             | 03/04/2024 15:40 | C24030409.D |



|  |   |  |
|--|---|--|
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|--|---|--|

|                           |                             |                         |
|---------------------------|-----------------------------|-------------------------|
| Lab Sample ID: 0007573-03 | <b>05C_Sump_01_20240227</b> | Method: TO-17 (Passive) |
| Indoor Air                |                             |                         |

| Analyte                       | CAS#       | Result<br>(µg/m <sup>3</sup> ) | Q               | LOD<br>(µg/m <sup>3</sup> ) | LOQ<br>(µg/m <sup>3</sup> ) | Analyzed         | File ID     |
|-------------------------------|------------|--------------------------------|-----------------|-----------------------------|-----------------------------|------------------|-------------|
| Vinyl Chloride                | 75-01-4    | <0.538                         | U               | 0.538                       | 1.08                        | 03/04/2024 16:10 | C24030410.D |
| trans-1,2-Dichloroethene      | 156-60-5   | <0.990                         | U               | 0.990                       | 1.98                        | 03/04/2024 16:10 | C24030410.D |
| cis-1,2-Dichloroethene        | 156-59-2   | <0.822                         | U               | 0.822                       | 1.64                        | 03/04/2024 16:10 | C24030410.D |
| Trichloroethene               | 79-01-6    | <1.32                          | U               | 1.32                        | 2.64                        | 03/04/2024 16:10 | C24030410.D |
| <b>Tetrachloroethene</b>      | 127-18-4   | <b>1.70</b>                    | J               | 1.06                        | 2.13                        | 03/04/2024 16:10 | C24030410.D |
| Analyte                       | CAS#       | % Recovery                     | Recovery Limits | Q                           |                             | Analyzed         | File ID     |
| Surrogate: 1,2-DCA-d4         | 17060-07-0 | 97.6%                          | 70-130          |                             |                             | 03/04/2024 16:10 | C24030410.D |
| Surrogate: Toluene-d8         | 2037-26-5  | 91.2%                          | 70-130          |                             |                             | 03/04/2024 16:10 | C24030410.D |
| Surrogate: Bromofluorobenzene | 460-00-4   | 90.6%                          | 70-130          |                             |                             | 03/04/2024 16:10 | C24030410.D |

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**Lab Work Order:** 0007573  
**Reported:** 03/14/2024

Lab Sample ID: 0007573-04

**05C\_OA\_01\_20240227**

Method: TO-17 (Passive)

Ambient Air

| Analyte                       | CAS#       | Result<br>(µg/m <sup>3</sup> ) | Q               | LOD<br>(µg/m <sup>3</sup> ) | LOQ<br>(µg/m <sup>3</sup> ) | Analyzed         | File ID     |
|-------------------------------|------------|--------------------------------|-----------------|-----------------------------|-----------------------------|------------------|-------------|
| Vinyl Chloride                | 75-01-4    | <0.538                         | U               | 0.538                       | 1.08                        | 03/04/2024 16:40 | C24030411.D |
| trans-1,2-Dichloroethene      | 156-60-5   | <0.990                         | U               | 0.990                       | 1.98                        | 03/04/2024 16:40 | C24030411.D |
| cis-1,2-Dichloroethene        | 156-59-2   | <0.822                         | U               | 0.822                       | 1.64                        | 03/04/2024 16:40 | C24030411.D |
| Trichloroethene               | 79-01-6    | <1.32                          | U               | 1.32                        | 2.64                        | 03/04/2024 16:40 | C24030411.D |
| Tetrachloroethene             | 127-18-4   | <1.06                          | U               | 1.06                        | 2.13                        | 03/04/2024 16:40 | C24030411.D |
| Analyte                       | CAS#       | % Recovery                     | Recovery Limits | Q                           |                             | Analyzed         | File ID     |
| Surrogate: 1,2-DCA-d4         | 17060-07-0 | 101%                           | 70-130          |                             |                             | 03/04/2024 16:40 | C24030411.D |
| Surrogate: Toluene-d8         | 2037-26-5  | 92.7%                          | 70-130          |                             |                             | 03/04/2024 16:40 | C24030411.D |
| Surrogate: Bromofluorobenzene | 460-00-4   | 90.2%                          | 70-130          |                             |                             | 03/04/2024 16:40 | C24030411.D |

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## *QC Information/Summary*

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*Organics in Air by EPA TO-17 Using Beacon Sampler - Quality Control Summary*

**Sequence: B24C009 - Batch: 24C0009 - Instrument: C System - File ID: C24030405.D**
**24C0009-BS1 (LCS, Calibration Source Verification)**

| Analyte                              | Result      | LOQ | LOD | Units     | Spike Level | Source Result | %REC        | %REC Limits   | RPD | RPD Limit | Notes |
|--------------------------------------|-------------|-----|-----|-----------|-------------|---------------|-------------|---------------|-----|-----------|-------|
| Vinyl Chloride                       | 55.7        | 10  | 5   | ng        | 50.0        |               | 111         | 70-130        |     |           |       |
| trans-1,2-Dichloroethene             | 56.8        | 10  | 5   | ng        | 50.0        |               | 114         | 70-130        |     |           |       |
| cis-1,2-Dichloroethene               | 51.3        | 10  | 5   | ng        | 50.0        |               | 103         | 70-130        |     |           |       |
| Trichloroethene                      | 52.1        | 10  | 5   | ng        | 50.0        |               | 104         | 70-130        |     |           |       |
| Tetrachloroethene                    | 54.6        | 10  | 5   | ng        | 50.0        |               | 109         | 70-130        |     |           |       |
| <i>Surrogate: 1,2-DCA-d4</i>         | <i>52.0</i> |     |     | <i>ng</i> | <i>50.0</i> |               | <i>104</i>  | <i>70-130</i> |     |           |       |
| <i>Surrogate: Toluene-d8</i>         | <i>50.0</i> |     |     | <i>ng</i> | <i>50.0</i> |               | <i>100</i>  | <i>70-130</i> |     |           |       |
| <i>Surrogate: Bromofluorobenzene</i> | <i>45.0</i> |     |     | <i>ng</i> | <i>50.0</i> |               | <i>90.0</i> | <i>70-130</i> |     |           |       |

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*Organics in Air by EPA TO-17 Using Beacon Sampler - Quality Control Summary*

**Sequence: B24C009 - Batch: 24C0009 - Instrument: C System - File ID: C24030406.D**
**24C0009-BLK1 (Lab Blank)**

| Analyte                              | Result      | LOQ  | LOD   | Units             | Spike Level | Source Result | %REC        | %REC Limits   | RPD | RPD Limit | Notes |
|--------------------------------------|-------------|------|-------|-------------------|-------------|---------------|-------------|---------------|-----|-----------|-------|
| Vinyl Chloride                       | <0.538      | 1.08 | 0.538 | µg/m <sup>3</sup> |             |               |             |               |     |           | U     |
| trans-1,2-Dichloroethene             | <0.990      | 1.98 | 0.990 | µg/m <sup>3</sup> |             |               |             |               |     |           | U     |
| cis-1,2-Dichloroethene               | <0.822      | 1.64 | 0.822 | µg/m <sup>3</sup> |             |               |             |               |     |           | U     |
| Trichloroethene                      | <1.32       | 2.64 | 1.32  | µg/m <sup>3</sup> |             |               |             |               |     |           | U     |
| Tetrachloroethene                    | <1.06       | 2.13 | 1.06  | µg/m <sup>3</sup> |             |               |             |               |     |           | U     |
| <i>Surrogate: 1,2-DCA-d4</i>         | <i>105</i>  |      |       | <i>ng</i>         | <i>100</i>  |               | <i>105</i>  | <i>70-130</i> |     |           |       |
| <i>Surrogate: Toluene-d8</i>         | <i>99.3</i> |      |       | <i>ng</i>         | <i>100</i>  |               | <i>99.3</i> | <i>70-130</i> |     |           |       |
| <i>Surrogate: Bromofluorobenzene</i> | <i>83.5</i> |      |       | <i>ng</i>         | <i>100</i>  |               | <i>83.5</i> | <i>70-130</i> |     |           |       |

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*Organics in Air by EPA TO-17 Using Beacon Sampler - Quality Control Summary*

**Sequence: B24C009 - Instrument: C System - File ID: C24030407.D**
***B24C009-ICV1 (LCSD/Second Source Verification/CALV)***

| Analyte                              | Result      | LOQ | LOD | Units     | Spike Level | Source Result | %REC        | %REC Limits   | RPD | RPD Limit | Notes |
|--------------------------------------|-------------|-----|-----|-----------|-------------|---------------|-------------|---------------|-----|-----------|-------|
| Vinyl Chloride                       | 49.7        | 10  | 5   | ng        | 50.0        |               | 99.4        | 70-130        |     |           |       |
| trans-1,2-Dichloroethene             | 64.0        | 10  | 5   | ng        | 50.0        |               | 128         | 70-130        |     |           |       |
| cis-1,2-Dichloroethene               | 52.8        | 10  | 5   | ng        | 50.0        |               | 106         | 70-130        |     |           |       |
| Trichloroethene                      | 52.8        | 10  | 5   | ng        | 50.0        |               | 106         | 70-130        |     |           |       |
| Tetrachloroethene                    | 60.2        | 10  | 5   | ng        | 50.0        |               | 120         | 70-130        |     |           |       |
| <i>Surrogate: 1,2-DCA-d4</i>         | <i>50.5</i> |     |     | <i>ng</i> | <i>50.0</i> |               | <i>101</i>  | <i>70-130</i> |     |           |       |
| <i>Surrogate: Toluene-d8</i>         | <i>49.7</i> |     |     | <i>ng</i> | <i>50.0</i> |               | <i>99.4</i> | <i>70-130</i> |     |           |       |
| <i>Surrogate: Bromofluorobenzene</i> | <i>44.6</i> |     |     | <i>ng</i> | <i>50.0</i> |               | <i>89.1</i> | <i>70-130</i> |     |           |       |

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**Reported:** 03/14/2024

*Organics in Air by EPA TO-17 Using Beacon Sampler - Quality Control Summary*

**Sequence: B24C009 - Instrument: C System - File ID: C24030425.D**
***B24C009-CCV1 (LCS, Closing Calibration Verification)***

| Analyte                              | Result      | LOQ | LOD | Units     | Spike Level | Source Result | %REC        | %REC Limits   | RPD | RPD Limit | Notes |
|--------------------------------------|-------------|-----|-----|-----------|-------------|---------------|-------------|---------------|-----|-----------|-------|
| Vinyl Chloride                       | 60.2        | 10  | 5   | ng        | 50.0        |               | 120         | 70-130        |     |           |       |
| trans-1,2-Dichloroethene             | 63.7        | 10  | 5   | ng        | 50.0        |               | 127         | 70-130        |     |           |       |
| cis-1,2-Dichloroethene               | 51.9        | 10  | 5   | ng        | 50.0        |               | 104         | 70-130        |     |           |       |
| Trichloroethene                      | 51.8        | 10  | 5   | ng        | 50.0        |               | 104         | 70-130        |     |           |       |
| Tetrachloroethene                    | 54.7        | 10  | 5   | ng        | 50.0        |               | 109         | 70-130        |     |           |       |
| <i>Surrogate: 1,2-DCA-d4</i>         | <i>51.3</i> |     |     | <i>ng</i> | <i>50.0</i> |               | <i>103</i>  | <i>70-130</i> |     |           |       |
| <i>Surrogate: Toluene-d8</i>         | <i>46.7</i> |     |     | <i>ng</i> | <i>50.0</i> |               | <i>93.4</i> | <i>70-130</i> |     |           |       |
| <i>Surrogate: Bromofluorobenzene</i> | <i>44.6</i> |     |     | <i>ng</i> | <i>50.0</i> |               | <i>89.2</i> | <i>70-130</i> |     |           |       |

**SCS Engineers**  
 2830 Dairy Drive  
 Madison, WI 53718-6751

**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R05  
**Lab Work Order:** 0007573  
**Reported:** 03/14/2024

*Organics in Air by EPA TO-17 Using Beacon Sampler - Quality Control Summary*

**Sequence: B24C009 - Instrument: C System - File ID: C24030426.D**
***B24C009-CCB1 (Lab Blank)***

| Analyte                              | Result      | LOQ | LOD | Units     | Spike Level | Source Result | %REC        | %REC Limits   | RPD | RPD Limit | Notes |
|--------------------------------------|-------------|-----|-----|-----------|-------------|---------------|-------------|---------------|-----|-----------|-------|
| Vinyl Chloride                       | <5          | 10  | 5   | ng        |             |               |             |               |     |           | U     |
| trans-1,2-Dichloroethene             | <5          | 10  | 5   | ng        |             |               |             |               |     |           | U     |
| cis-1,2-Dichloroethene               | <5          | 10  | 5   | ng        |             |               |             |               |     |           | U     |
| Trichloroethene                      | <5          | 10  | 5   | ng        |             |               |             |               |     |           | U     |
| Tetrachloroethene                    | <5          | 10  | 5   | ng        |             |               |             |               |     |           | U     |
| <i>Surrogate: 1,2-DCA-d4</i>         | <i>103</i>  |     |     | <i>ng</i> | <i>100</i>  |               | <i>103</i>  | <i>70-130</i> |     |           |       |
| <i>Surrogate: Toluene-d8</i>         | <i>99.7</i> |     |     | <i>ng</i> | <i>100</i>  |               | <i>99.7</i> | <i>70-130</i> |     |           |       |
| <i>Surrogate: Bromofluorobenzene</i> | <i>82.6</i> |     |     | <i>ng</i> | <i>100</i>  |               | <i>82.6</i> | <i>70-130</i> |     |           |       |



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**Lab Work Order:** 0007573  
**Reported:** 03/14/2024

*TO-17 (Passive) - LCS/LCSD RPD Quality Control Summary*
**LCS: 24C0009-BS1 File ID: C24030405.D**  
**LCSD: B24C009-ICV1 File ID: C24030407.D**

 Analyzed: 3/4/24 14:41  
 Analyzed: 3/4/24 13:53

| Analyte                  | CAS#     | LCS Result<br>(ng) | %REC<br>Q | Spike Level<br>(ng) | LCSD Result<br>(ng) | %REC   | %REC<br>Limits | RPD   | RPD<br>Limit | Q |
|--------------------------|----------|--------------------|-----------|---------------------|---------------------|--------|----------------|-------|--------------|---|
| Vinyl Chloride           | 75-01-4  | 55.67              | 111.34    | 50                  | 49.7                | 99.40  | 70-130         | 11.33 | 30           |   |
| trans-1,2-Dichloroethene | 156-60-5 | 56.76              | 113.52    | 50                  | 63.95               | 128.00 | 70-130         | 11.91 | 30           |   |
| cis-1,2-Dichloroethene   | 156-59-2 | 51.28              | 102.56    | 50                  | 52.8                | 106.00 | 70-130         | 2.92  | 30           |   |
| Trichloroethene          | 79-01-6  | 52.10              | 104.2     | 50                  | 52.81               | 106.00 | 70-130         | 1.35  | 30           |   |
| Tetrachloroethene        | 127-18-4 | 54.55              | 109.1     | 50                  | 60.22               | 120.00 | 70-130         | 9.88  | 30           |   |

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**Lab Work Order:** 0007573  
**Reported:** 03/14/2024

*Additional QC Information*

SCS Engineers  
 2830 Dairy Drive  
 Madison, WI 53718-6751

Site Name: Badger Lease and Auto Sales  
 Site Location: West Allis, WI  
 Project Manager: Jacob Krause

Beacon Proposal: 230920R05  
 Lab Work Order: 0007573  
 Reported: 03/14/2024

**Sample Result Calculation Summary (Concentration)**  
**TO-17 (Passive)**

| Analyte | t<br>Sampling Time<br>minutes | DF<br>Dilution<br>Factor | Uc<br>Uptake<br>Rate | M<br>Initial Result<br>ng | C<br>Calculated Result<br>µg/m <sup>3</sup> | File ID |
|---------|-------------------------------|--------------------------|----------------------|---------------------------|---|---------|
|---------|-------------------------------|--------------------------|----------------------|---------------------------|---|---------|

**Lab ID: 0007573-01**      **Sample Name: 05C\_IAB\_01\_20240227**      **̄ Temp (°C): 16.00**

|                          |        |      |       |   |   |             |
|--------------------------|--------|------|-------|---|---|-------------|
| Vinyl Chloride           | 11,481 | 1.00 | 0.809 | U | U | C24030408.D |
| trans-1,2-Dichloroethene | 11,481 | 1.00 | 0.440 | U | U | C24030408.D |
| cis-1,2-Dichloroethene   | 11,481 | 1.00 | 0.529 | U | U | C24030408.D |
| Trichloroethene          | 11,481 | 1.00 | 0.330 | U | U | C24030408.D |
| Tetrachloroethene        | 11,481 | 1.00 | 0.410 | U | U | C24030408.D |

**Lab ID: 0007573-02**      **Sample Name: 05C\_IA1\_02\_20240227**      **̄ Temp (°C): 16.00**

|                          |        |      |       |   |   |             |
|--------------------------|--------|------|-------|---|---|-------------|
| Vinyl Chloride           | 11,485 | 1.00 | 0.809 | U | U | C24030409.D |
| trans-1,2-Dichloroethene | 11,485 | 1.00 | 0.440 | U | U | C24030409.D |
| cis-1,2-Dichloroethene   | 11,485 | 1.00 | 0.529 | U | U | C24030409.D |
| Trichloroethene          | 11,485 | 1.00 | 0.330 | U | U | C24030409.D |
| Tetrachloroethene        | 11,485 | 1.00 | 0.410 | U | U | C24030409.D |

**Lab ID: 0007573-03**      **Sample Name: 05C\_Sump\_01\_20240227**      **̄ Temp (°C): 16.00**

|                          |        |      |       |      |      |             |
|--------------------------|--------|------|-------|------|------|-------------|
| Vinyl Chloride           | 11,488 | 1.00 | 0.809 | U    | U    | C24030410.D |
| trans-1,2-Dichloroethene | 11,488 | 1.00 | 0.440 | U    | U    | C24030410.D |
| cis-1,2-Dichloroethene   | 11,488 | 1.00 | 0.529 | U    | U    | C24030410.D |
| Trichloroethene          | 11,488 | 1.00 | 0.330 | U    | U    | C24030410.D |
| Tetrachloroethene        | 11,488 | 1.00 | 0.410 | 8.01 | 1.70 | C24030410.D |

**Lab ID: 0007573-04**      **Sample Name: 05C\_OA\_01\_20240227**      **̄ Temp (°C): 16.00**

|                          |        |      |       |   |   |             |
|--------------------------|--------|------|-------|---|---|-------------|
| Vinyl Chloride           | 11,486 | 1.00 | 0.809 | U | U | C24030411.D |
| trans-1,2-Dichloroethene | 11,486 | 1.00 | 0.440 | U | U | C24030411.D |
| cis-1,2-Dichloroethene   | 11,486 | 1.00 | 0.529 | U | U | C24030411.D |
| Trichloroethene          | 11,486 | 1.00 | 0.330 | U | U | C24030411.D |
| Tetrachloroethene        | 11,486 | 1.00 | 0.410 | U | U | C24030411.D |

**SCS Engineers**  
2830 Dairy Drive  
Madison, WI 53718-6751**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause**Beacon Proposal:** 230920R05  
**Lab Work Order:** 0007573  
**Reported:** 03/14/2024

Calculations:

$$C = \frac{1000 \times M \times DF}{U_c \times t}$$

$$U_c = U * \left( \frac{T_s + 273.15}{T_u + 273.15} \right)^{1/2}$$

where: C = concentration ( $\mu\text{g}/\text{m}^3$ )  
M = mass (ng)  
DF = dilution factor  
U<sub>c</sub> = uptake rate (ml/min), corrected  
t = sampling time (minutes)  
U = compound specific uptake rate  
T<sub>u</sub> = uptake rate study temperature  
T<sub>s</sub> = sample average temperature

**Note:** T<sub>u</sub> is 16.65°C*Reference: Federal Register/Vol. 79, No. 125/June 30, 2014*

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**Beacon Proposal:** 230920R05  
**Lab Work Order:** 0007573  
**Reported:** 03/14/2024

**Method Detection and Reporting Limit Calculations (Concentration)**  
**TO-17 (Passive)**

| Analyte | t<br>Sampling Time<br>minutes | DF<br>Dilution<br>Factor | Uc<br>Uptake<br>Rate | M<br>Initial (ng) |     | C<br>Calculated (µg/m³) |     |
|---------|-------------------------------|--------------------------|----------------------|-------------------|-----|-------------------------|-----|
|         |                               |                          |                      | LOQ               | LOD | LOQ                     | LOD |

| <b>Lab ID:</b> 0007573-01 |        | <b>Sample Name:</b> 05C_IAB_01_20240227 |       |       |      | <b>̄ Temp (°C):</b> 16.00 |       |
|---------------------------|--------|---|-------|-------|------|---------------------------|-------|
| Vinyl Chloride            | 11,481 | 1.00                                    | 0.809 | 10.00 | 5.00 | 1.08                      | 0.538 |
| trans-1,2-Dichloroethene  | 11,481 | 1.00                                    | 0.440 | 10.00 | 5.00 | 1.98                      | 0.991 |
| cis-1,2-Dichloroethene    | 11,481 | 1.00                                    | 0.529 | 10.00 | 5.00 | 1.65                      | 0.823 |
| Trichloroethene           | 11,481 | 1.00                                    | 0.330 | 10.00 | 5.00 | 2.64                      | 1.32  |
| Tetrachloroethene         | 11,481 | 1.00                                    | 0.410 | 10.00 | 5.00 | 2.13                      | 1.06  |

| <b>Lab ID:</b> 0007573-02 |        | <b>Sample Name:</b> 05C_IA1_02_20240227 |       |       |      | <b>̄ Temp (°C):</b> 16.00 |       |
|---------------------------|--------|---|-------|-------|------|---------------------------|-------|
| Vinyl Chloride            | 11,485 | 1.00                                    | 0.809 | 10.00 | 5.00 | 1.08                      | 0.538 |
| trans-1,2-Dichloroethene  | 11,485 | 1.00                                    | 0.440 | 10.00 | 5.00 | 1.98                      | 0.991 |
| cis-1,2-Dichloroethene    | 11,485 | 1.00                                    | 0.529 | 10.00 | 5.00 | 1.64                      | 0.822 |
| Trichloroethene           | 11,485 | 1.00                                    | 0.330 | 10.00 | 5.00 | 2.64                      | 1.32  |
| Tetrachloroethene         | 11,485 | 1.00                                    | 0.410 | 10.00 | 5.00 | 2.13                      | 1.06  |

| <b>Lab ID:</b> 0007573-03 |        | <b>Sample Name:</b> 05C_Sump_01_20240227 |       |       |      | <b>̄ Temp (°C):</b> 16.00 |       |
|---------------------------|--------|--|-------|-------|------|---------------------------|-------|
| Vinyl Chloride            | 11,488 | 1.00                                     | 0.809 | 10.00 | 5.00 | 1.08                      | 0.538 |
| trans-1,2-Dichloroethene  | 11,488 | 1.00                                     | 0.440 | 10.00 | 5.00 | 1.98                      | 0.990 |
| cis-1,2-Dichloroethene    | 11,488 | 1.00                                     | 0.529 | 10.00 | 5.00 | 1.64                      | 0.822 |
| Trichloroethene           | 11,488 | 1.00                                     | 0.330 | 10.00 | 5.00 | 2.64                      | 1.32  |
| Tetrachloroethene         | 11,488 | 1.00                                     | 0.410 | 10.00 | 5.00 | 2.13                      | 1.06  |

| <b>Lab ID:</b> 0007573-04 |        | <b>Sample Name:</b> 05C_OA_01_20240227 |       |       |      | <b>̄ Temp (°C):</b> 16.00 |       |
|---------------------------|--------|--|-------|-------|------|---------------------------|-------|
| Vinyl Chloride            | 11,486 | 1.00                                   | 0.809 | 10.00 | 5.00 | 1.08                      | 0.538 |
| trans-1,2-Dichloroethene  | 11,486 | 1.00                                   | 0.440 | 10.00 | 5.00 | 1.98                      | 0.990 |
| cis-1,2-Dichloroethene    | 11,486 | 1.00                                   | 0.529 | 10.00 | 5.00 | 1.64                      | 0.822 |
| Trichloroethene           | 11,486 | 1.00                                   | 0.330 | 10.00 | 5.00 | 2.64                      | 1.32  |
| Tetrachloroethene         | 11,486 | 1.00                                   | 0.410 | 10.00 | 5.00 | 2.13                      | 1.06  |

SCS Engineers  
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 Madison, WI 53718-6751

**Site Name:** Badger Lease and Auto Sales  
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**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R05  
**Lab Work Order:** 0007573  
**Reported:** 03/14/2024

### *Laboratory Certification List*

| Certification ID   | Certification No. | Description   | Expires    | Project Required |
|--------------------|-------------------|---|------------|------------------|
| Alaska CS-LAP      | 19-002            | Alaska Department of Environmental Conservation                                 | 12/30/2024 |                  |
| DoD-ELAP           | 72690/L22-563     | United States Department of Defense Environmental Laboratory Accreditation      | 11/30/2024 |                  |
| ISO/IEC 17025:2017 | 72690/L22-563     | General Requirements for the Competence of Testing and Calibration Laboratories | 11/30/2024 |                  |
| NEFAP              | 72690/L22-564     | TNI National Environmental Field Activities Program (NEFAP)                     | 11/30/2024 |                  |
| NY-NELAC           | 12097             | New York Department of Health   | 04/01/2024 |                  |
| Utah-NELAC         | MD010912023-14    | Utah Department of Health   | 12/31/2024 |                  |

**SCS Engineers**  
2830 Dairy Drive  
Madison, WI 53718-6751**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause**Beacon Proposal:** 230920R05  
**Lab Work Order:** 0007573  
**Reported:** 03/14/2024

### Qualifiers/Notes and Definitions

**General Definitions:**

|           |  |
|-----------|--|
| DF        | Dilution Factor  |
| DL        | Detection Limit  |
| LOD       | Limit of Detection   |
| LOQ       | Limit of Quantitation  |
| NA        | Not Applicable   |
| Q         | Qualifier  |
| RPD       | Relative Percent Difference  |
| RT        | Retention Times in Minutes   |
| RRT       | Evaluation of Relative Retention Times in RRT Units (qualified if outside $\pm 0.06$ control limits) |
| $3\sigma$ | Uncertainty  |
| ∉         | Compound not on scope of accreditation   |
| +         | values are outside method/contract required QC limits  |
| ∅         | Compound not on scope of accreditation and analyzed with a one-point calibration                     |

**Sample/Sample Receipt Qualifiers and Notes:**

|   |  |
|---|--|
| J | Value reported below limit of quantitation (LOQ).  |
| U | Analyte was not detected and is reported as less than the limit of detection (LOD). The LOD has been adjusted for any dilution or concentration of the sample. |

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**Beacon Proposal:** 230920R05  
**Lab Work Order:** 0007573  
**Reported:** 03/14/2024

## *Sample Management Records*



| Client Information                                 |   | Project Manager: Robert Langdon   |                            | Client PO: 25222269.04 |               | INDOOR AIR            | AMBIENT AIR | CRAWL SPACE | SEWER GAS |  |
|--|---|---|----------------------------|------------------------|---------------|-----------------------|-------------|-------------|-----------|--|
| Company: SCS Engineers                             | Project Name: Badger Lease & Auto Sales - VIZC      | Turn around time (check one):<br><input checked="" type="checkbox"/> Normal <input type="checkbox"/> Rush (specify) ____ days |                            |                        |               |                       |             |             |           |  |
| Address: 2830 Dairy Drive                          | Location: 1426/1428 S. 96th St. West Allis, WI (5C) | Analysis:<br><input checked="" type="checkbox"/> Method TO-17 <input type="checkbox"/> Method 8260C                           |                            |                        |               |                       |             |             |           |  |
| City / State / Zip: Madison, WI 53718              | Submitted by: Robert Langdon                        | Email: rlangdon@scsengineer.com   |                            |                        |               |                       |             |             |           |  |
| Phone: 608-212-3995                                |   |   |                            |                        |               |                       |             |             |           |  |
| Location ID  | Start Date  | Start Time  | Stop Date                  | Stop Time              | Aver Temp (C) | Notes                 |             |             |           |  |
| ✓ 05C_IAB_01_20240227                              | 2/19/2024   | 744   | 2/27/2024                  | 0705                   | 16            | Basement Indoor Air   | X           |             |           |  |
| ✓ 05C_IA1_02_20240227                              | 2/19/2024   | 753   | 2/27/2024                  | 0718                   | 16            | 1st. Floor Indoor Air | X           |             |           |  |
| ✓ 05C_Sump_01_20240227                             | 2/19/2024   | 730   | 2/27/2024                  | 0658                   | 16            | Sump Headspace        | X           |             |           |  |
| ✓ 05C_OA_01_20240227                               | 2/19/2024   | 759   | 2/27/2024                  | 0725                   | 16            | Outdoor Air           |             | X           |           |  |
| Special Notes / Instructions                       |   |   |                            |                        |               |                       |             |             |           |  |
| CVOC Short List                                    |   |   |                            |                        |               |                       |             |             |           |  |
| Relinquished by (signature): <i>Robert Langdon</i> | Date / Time: 2/28/2024 1:00                         | Received by (signature): <i>Michelle Pfeiffer</i>   | Date / Time: 2/29/24 12:40 |                        |               |                       |             |             |           |  |
| Relinquished by (signature):                       | Date / Time:  | Received by (signature):  | Date / Time:               |                        |               |                       |             |             |           |  |
| <b>For Lab Use Only</b>                            | Beacon Job No: 7573                                 | Beacon Proposal: 230920R05  |                            |                        |               |                       |             |             |           |  |
| Courier Name: FedEx                                | Shipment Condition: Good                            | Custody Seal Intact:<br><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> n/a      | Custody Seal No: 0047330   |                        |               |                       |             |             |           |  |

Attachment B

WDNR Publication 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.

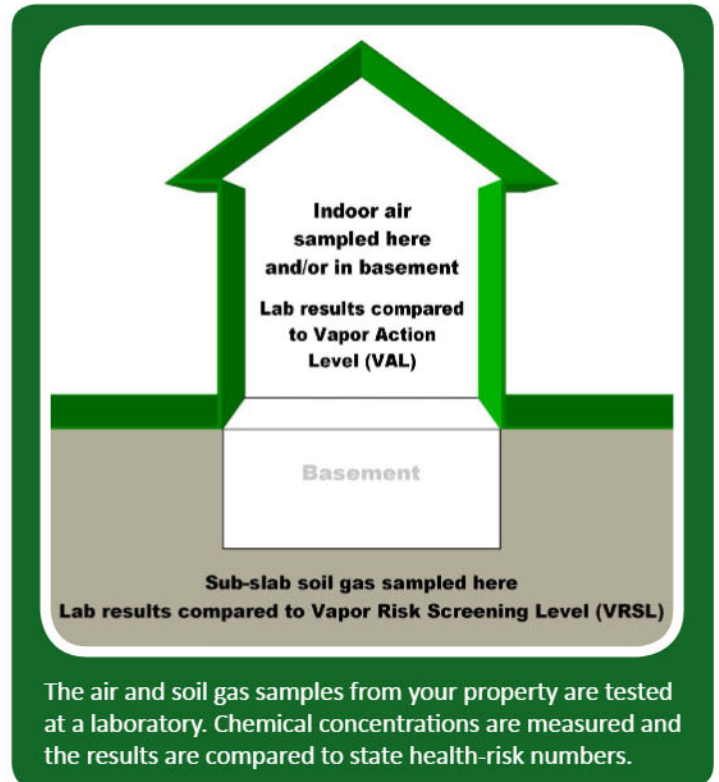
## Indoor Air Testing Results

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.



## 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](http://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

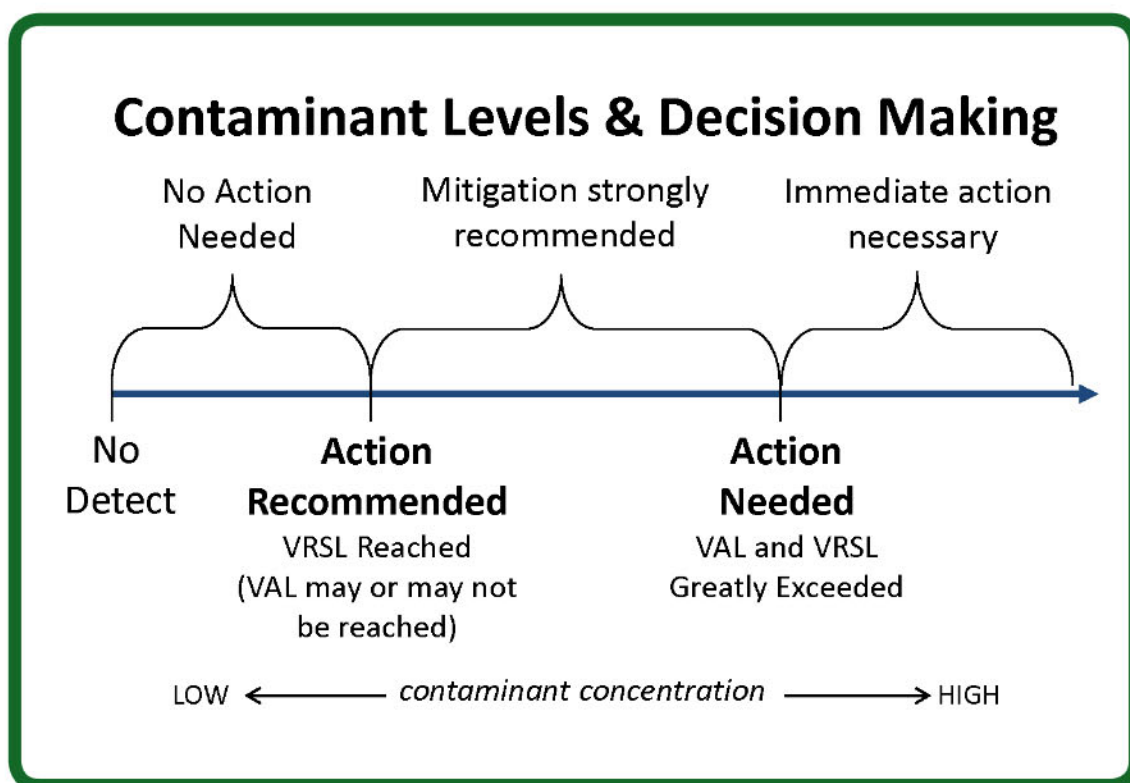
If your test results are less than a VAL for indoor air, or a VRSL for sub-slab soil gas, then the air in the house or building should not present a health concern. Follow-up sampling and testing may be necessary to confirm the results, but no other action is typically suggested.

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](http://dnr.wi.gov/topic/Brownfields/Vapor.html)

March 25, 2024  
File No. 25222269.04

Kevin and Caroline Smith  
1423 South 95th Street  
West Allis, WI 53214

Subject: Sample Results Notification  
1423 South 95th Street  
WDNR Badger Lease & Auto Sales Case  
BRRTS No. 02-41-305222

Dear Kevin and Caroline:

On behalf of the Wisconsin Department of Natural Resources (WDNR) through the Vapor Intrusion Zone Contract (VIZC), SCS Engineers (SCS) is providing sample results for sub-slab vapor, sump headspace, indoor air, and outdoor air samples which were collected from your property by SCS in February 2024. The approximate sample locations are shown on the attached map (**Figure 1**).

The samples were submitted for analysis of five specific chlorinated volatile organic compounds (CVOCs), including tetrachloroethene (PCE), trichloroethene (TCE), cis-1,2-dichloroethene, trans-1,2-dichloroethene, and vinyl chloride. The sample laboratory reports are included as **Attachment A**. Analytical results are summarized in **Tables 1** and **2**. The WDNR Publication RR-977 Understanding Chemical Vapor Testing Results with additional information for you is included as **Attachment B**.

CVOCs were not detected in the samples collected from your property. Sampling to date indicates there is not an indoor air health risk related to vapor intrusion of CVOCs. Based on these findings, no additional sampling is planned. SCS will contact you in advance to arrange access for sealing of the sub-slab penetrations.

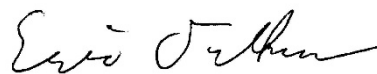
A final report with these findings will be prepared and submitted to the WDNR and listed on the Bureau for Remediation and Redevelopment Tracking System (BRRTS) on the Web (BOTW).

Please contact Joseph Martinez of WDNR at (414) 218-6042 or [joseph.martinez@wisconsin.gov](mailto:joseph.martinez@wisconsin.gov) or Nathan Kloczko of Wisconsin Department of Health (DHS) at (608) 867-4448 or [Nathan.kloczko@dhs.wisconsin.gov](mailto:Nathan.kloczko@dhs.wisconsin.gov) if you have questions concerning the analytical results.

Sincerely,



Robert Langdon  
Senior Project Manager  
SCS Engineers



Eric Oelkers, PG  
Senior Hydrogeologist  
SCS Engineers



Kevin and Caroline Smith

March 25, 2024

Page 2

REL/AJR/EO

cc: Joseph Martinez, WDNR

Nathan Kloczko, DHS

Attachments: Table 1 – Sub-Slab Vapor Analytical Results Summary

Table 2 – Indoor and Outdoor Air Analytical Results Summary

Figure 1 - Vapor Investigation Map

Attachment A - Laboratory Reports

Attachment B - WDNR Publication RR-977

I:\25222269.00\25222269.04 Badger Lease & Auto\\_Deliverables\Results Notification Letters\1423 S.  
95th\240325\_Smith\_1423 S 95th\_Results Notification.docx

## Tables

- 1 Sub-Slab Vapor Analytical Results Summary
- 2 Indoor and Outdoor Air Analytical Results Summary

**Table 1. Sub-Slab Vapor Analytical Results Summary**  
**Badger Lease & Auto Sales, West Allis, Wisconsin / SCS Engineers Project #25222269.04**  
 (Results are in  $\mu\text{g}/\text{m}^3$ )

| Location  | Sample              | Sample Start Date | Sample End Date | Lab Notes | Tetrachloroethene (PCE) | Trichloroethene (TCE) | cis-1,2-DCE | trans-1,2-DCE | Vinyl Chloride |
|---|---------------------|-------------------|-----------------|-----------|-------------------------|-----------------------|-------------|---------------|----------------|
| 1423 S. 95th St.  | 05D_SSV_03_20231003 | 9/26/2023         | 10/3/2023       | --        | <2.42                   | <3.01                 | <1.87       | <2.26         | <1.23          |
|   | 05D_SSV_03_20240227 | 2/19/2024         | 2/27/2024       | --        | <2.14                   | <2.66                 | <1.66       | <1.99         | <1.08          |
|   | 05D_SSV_04_20231003 | 9/26/2023         | 10/3/2023       | --        | <2.43                   | <3.01                 | <1.88       | <2.26         | <1.23          |
|   | 05D_SSV_04_20240227 | 2/19/2024         | 2/27/2024       | --        | <2.14                   | <2.66                 | <1.66       | <2.00         | <1.08          |
| Vapor Risk Screening Level (Residential Building)                 |                     |                   |                 |           | 1,400                   | 70                    | 1,400       | 1,400         | 56             |
| Vapor Risk Screening Level (Small Commercial Building)            |                     |                   |                 |           | 5,800                   | 290                   | 5,800       | 5,800         | 930            |
| Vapor Risk Screening Level (Large Commercial/Industrial Building) |                     |                   |                 |           | 18,000                  | 880                   | 18,000      | 18,000        | 2,800          |

Abbreviations:

$\mu\text{g}/\text{m}^3$  = micrograms per cubic meter  
 trans-1,2-DCE = trans-1,2-dichloroethene

cis-1,2-DCE = cis-1,2-dichloroethene  
 -- = Not Applicable

Notes:

1. Samples were collected using passive sorbent samplers and analyzed using the USEPA 8260C analytical method.
2. Vapor Risk Screening Levels are from Wisconsin Department of Natural Resources' WI Vapor Quick Look-Up Table, which is based on August 2023 U.S. EPA Regional Screening Level Tables.
3. **Bold+underlined** values meet or exceed Vapor Risk Screening Levels.

Lab Notes:

None

Calculations\Tables\[Table 1\_Sub-Slab Vapor Analytical Results Summary.xlsx]Sub-Slab Vapor

Created by: REL  
 Last revision by: AJR  
 Checked by: JSN  
 Proj Mgr QA/QC: REL

Date: 1/29/2024  
 Date: 3/15/2024  
 Date: 3/18/2024  
 Date: 3/20/2024



**Table 2. Indoor and Outdoor Air Analytical Results Summary**  
**Badger Lease & Auto Sales, West Allis, Wisconsin / SCS Engineers Project #25222269.04**  
 (Results are in  $\mu\text{g}/\text{m}^3$ )

| Location   | Sample Type           | Sample               | Sample Start Date | Sample End Date | Lab Notes | Tetrachloroethene (PCE) | Trichloroethene (TCE) | cis-1,2-DCE | trans-1,2-DCE | Vinyl Chloride |
|--|-----------------------|----------------------|-------------------|-----------------|-----------|-------------------------|-----------------------|-------------|---------------|----------------|
| 1423 S. 95th St.   | Indoor Air, Basement  | 05D_IAB_03_20231003  | 9/26/2023         | 10/3/2023       | --        | <1.21                   | <1.51                 | <0.937      | <1.13         | <0.613         |
|  |                       | 05D_IAB_03_20240227  | 2/19/2024         | 2/27/2024       | --        | <1.07                   | <1.33                 | <0.829      | <0.998        | <0.542         |
|  | Indoor Air, 1st Floor | 05D_IA1_04_20231003  | 9/26/2023         | 10/3/2023       | --        | <1.21                   | <1.51                 | <0.939      | <1.13         | <0.614         |
|  |                       | 05D_IA1_04_20240227  | 2/19/2024         | 2/27/2024       | --        | <1.07                   | <1.33                 | <0.829      | <0.999        | <0.543         |
|  | Sump Headspace        | 05D_Sump_02_20231003 | 9/26/2023         | 10/3/2023       | --        | <1.21                   | <1.50                 | <0.934      | <1.13         | <0.611         |
|  |                       | 05D_Sump_02_20240227 | 2/19/2024         | 2/27/2024       | --        | <1.07                   | <1.33                 | <0.826      | <0.995        | <0.541         |
|  | Outdoor Air           | 05D_OA_02_20231003   | 9/26/2023         | 10/3/2023       | --        | <1.21                   | <1.51                 | <0.937      | <1.13         | <0.613         |
|  |                       | 05D_OA_02_20240227   | 2/19/2024         | 2/27/2024       | --        | <1.07                   | <1.33                 | <0.829      | <0.999        | <0.542         |
| Indoor Air Vapor Action Level (Residential Building)           |                       |                      |                   |                 |           | 42                      | 2.1                   | 42          | 42            | 1.7            |
| Indoor Air Vapor Action Level (Commercial/Industrial Building) |                       |                      |                   |                 |           | 180                     | 8.8                   | 180         | 180           | 28             |

Abbreviations:

$\mu\text{g}/\text{m}^3$  = micrograms per cubic meter  
 trans-1,2-DCE = trans-1,2-dichloroethene

cis-1,2-DCE = cis-1,2-dichloroethene  
 -- = Not Applicable

Notes:

1. Samples were collected using passive sorbent samplers analyzed using EPA Method TO-17.
2. Indoor Air Vapor Action Levels are from Wisconsin Department of Natural Resources' WI Vapor Quick Look-Up Table, which is based on August 2023 U.S. EPA Regional Screening Level Tables.
3. **Bold+underlined** values meet or exceed Indoor Air Vapor Action Levels.

Lab Notes/Qualifiers:

All non-detected analytes: U = Analyte was not detected and is reported as less than the limit of detection (LOD).  
 The LOD has been adjusted for any dilution or concentration of the sample.  
 J = Value reported below limit of quantitation (LOQ).

Created by: AJR  
 Last revision by: LMH  
 Checked by: JSN  
 Proj Mgr QA/QC: REL

Date: 2/2/2024  
 Date: 3/18/2024  
 Date: 3/18/2024  
 Date: 3/20/2024

I:\25222269.00\25222269.04 Badger Lease & Auto\Data and Calculations\Tables\[Table 2\_Indoor and Outdoor Air Analytical Results Summary.xlsx]Indoor Air


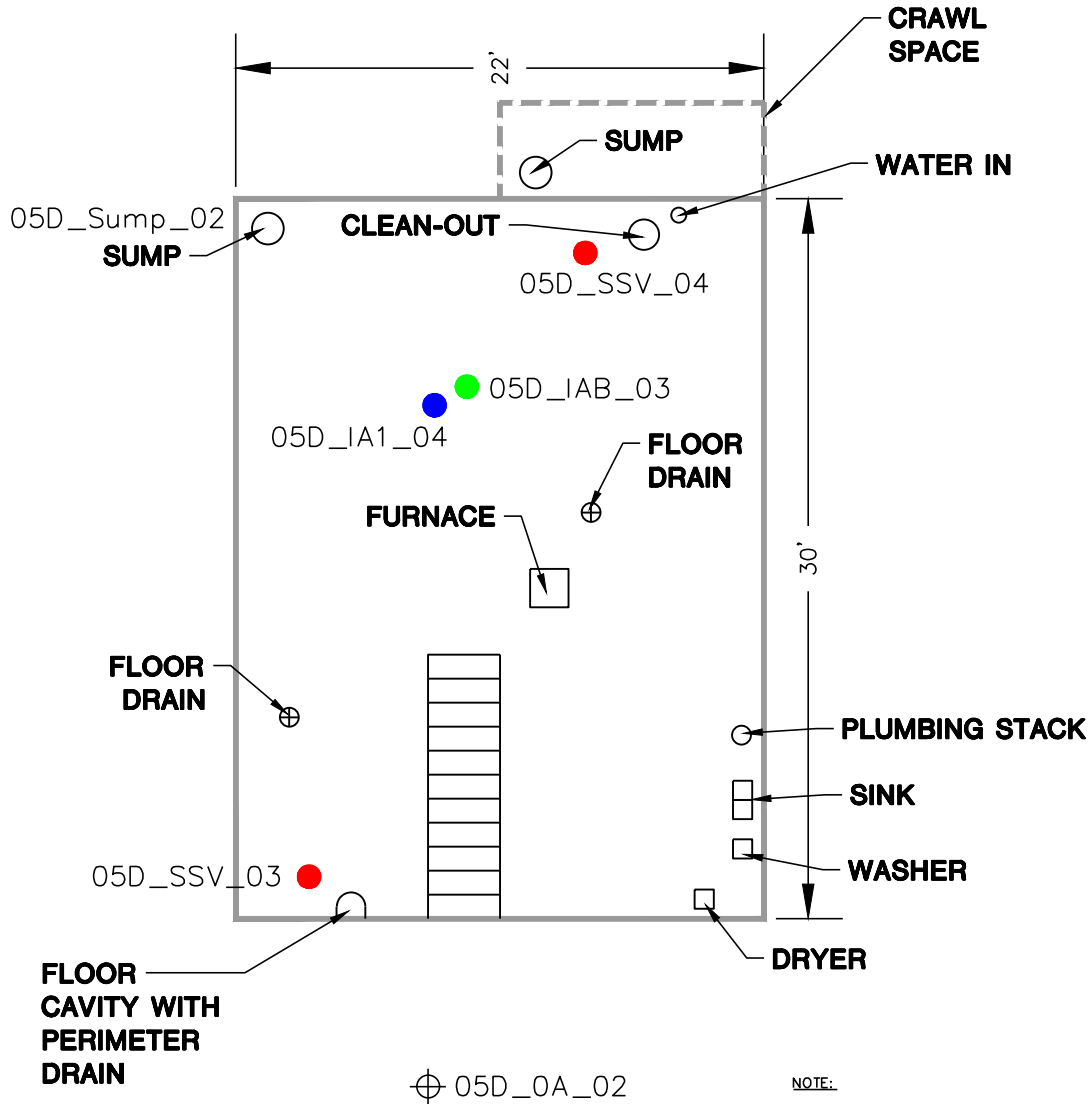


Figure 1  
Vapor Investigation Map

S 95TH St.

### BASEMENT LEVEL

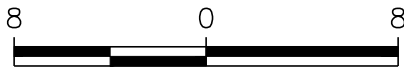


**NOTE:**

SUMP WATER SAMPLES COLLECTED FROM SUMP AT NORTHEAST CORNER OF BASEMENT.

**LEGEND**

- APPROXIMATE SUB-SLAB SAMPLE LOCATION
- APPROXIMATE BASEMENT INDOOR AIR SAMPLE LOCATION
- APPROXIMATE 1ST FLOOR INDOOR AIR SAMPLE LOCATION
- ⊕ APPROXIMATE OUTDOOR AIR SAMPLE LOCATION



SCALE: 1" = 8'



|          |   |              |                  |                              |    |                         |  |
|----------|---|--------------|------------------|------------------------------|----|-------------------------|--|
| CLIENT   | WISCONSIN DEPARTMENT OF NATURAL RESOURCES |              | SITE             | 1423 S 95th STREET RESIDENCE |    | VAPOR INVESTIGATION MAP |  |
|          | PROJECT NO.                               | 25222269.04  |                  | DRAWN BY:                    | SB | <b>ENGINEER</b>         | <b>SCS ENGINEERS</b><br>2830 DAIRY DRIVE MADISON, WI 53718-6751<br>PHONE: (608) 224-2830 |
| DRAWN:   | 09/12/2023                                | CHECKED BY:  | REL              |                              |    |                         |  |
| REVISED: | 03/20/2024                                | APPROVED BY: | REL (03/20/2024) | FIGURE                       | 1  |                         |  |

Attachment A  
Laboratory Reports



Beacon Environmental

526 Underwood Lane  
Bel Air, MD 21014 USA  
1.410.838.8780

CERTIFICATE OF ANALYSIS

Beacon Proposal No.: 230920R04

Laboratory Work Order: 0007571

**Project Description:**

Badger Lease and Auto Sales  
West Allis, WI

Client PO No.: 25222269.04-001

Prepared for:

Jacob Krause

**SCS Engineers**

2830 Dairy Drive

Madison, WI 53718-6751

---

Ryan W. Schneider  
Senior Project Manager

March 11, 2024

All data meet requirements as specified in the Beacon Environmental Quality Assurance Project Plan and the results relate only to the samples reported. The work performed was in accordance with ISO/IEC 17025:2017. This report shall not be reproduced, except in full, without written approval of the laboratory. Release of the data contained in this data package has been authorized by the Laboratory Director or his signee, as verified by the following signatures:

---

Steven C. Thornley  
Laboratory Director

---

Peter B. Kelly  
Quality Manager

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SCS Engineers  
 2830 Dairy Drive  
 Madison, WI 53718-6751

**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007571  
**Reported:** 03/11/2024

### Sample Summary

| Lab Sample ID               | Client Sample ID                              | Received   | Analysis  | Matrix   |
|-----------------------------|---|------------|-----------|----------|
| 0007571-01<br>Sampler Type: | 05D_SSV_03_20240227<br>Beacon Passive Sampler | 02/29/2024 | EPA 8260C | Soil Gas |
| 0007571-02<br>Sampler Type: | 05D_SSV_04_20240227<br>Beacon Passive Sampler | 02/29/2024 | EPA 8260C | Soil Gas |

#### Project Completeness

**Samples Received:** 2  
**Samples Analyzed:** 2

SCS Engineers  
2830 Dairy Drive  
Madison, WI 53718-6751

**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007571  
**Reported:** 03/11/2024

### *Case Narrative*

#### **U.S. EPA Method 8260C**

All samples were analyzed using thermal desorption-gas chromatography/mass spectrometry (TD-GC/MS) instrumentation following U.S. EPA Method 8260C, with laboratory results provided in nanograms (ng) and micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ). Laboratory QA/QC procedures included internal standards, surrogates, and blanks based on EPA Method 8260C. Analyses and reporting were under BEACON's Quality Assurance Project Plan.

#### **Passive Soil-Gas Survey Notes**

If sample locations are covered with or near the edge of an impervious surface (*e.g.*, asphalt or concrete), the concentrations of compounds in soil gas are higher than if the surfacing was not present. Therefore, the sample location conditions should be considered when comparing results between locations.

Survey findings are exclusive to this project and when the spatial relationships are compared with results of other BEACON Surveys it is necessary to incorporate information from both investigations (*e.g.*, depth to sources, soil types, porosity, soil moisture, presence of impervious surfacing, sample collection times).

#### **Reporting Limits**

The RLs represent a baseline above which results meet laboratory-determined limits of precision and accuracy. All reported results are within the calibration range. The project method quantitation limit (MQL) is the limit of quantitation (LOQ) as noted in the data tables. Beacon determined uptake rates for a suite of compounds with the Beacon sampler for sampling in air. Beacon calculated the uptake rates for the remaining compounds using Graham's Law of Diffusion. The reported data includes LOQ limits.

#### **Project Details**

Samples were received in proper condition and laboratory control parameters were met unless otherwise noted below. The work performed was in accordance with ISO/IEC 17025:2017.



**SCS Engineers**  
2830 Dairy Drive  
Madison, WI 53718-6751

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**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007571  
**Reported:** 03/11/2024

## *Analytical Results*

SCS Engineers  
2830 Dairy Drive  
Madison, WI 53718-6751

**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007571  
**Reported:** 03/11/2024

*Detailed Analytical Results*

SCS Engineers  
2830 Dairy Drive  
Madison, WI 53718-6751

**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007571  
**Reported:** 03/11/2024

*Detailed Analytical Results- Mass*

**SCS Engineers**  
 2830 Dairy Drive  
 Madison, WI 53718-6751

**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007571  
**Reported:** 03/11/2024

Lab Sample ID: 0007571-01

**05D\_SSV\_03\_20240227**

Method: EPA 8260C

Soil Gas

| Analyte                       | CAS#       | Result<br>(ng) Q | LOQ<br>(ng)     | Analyzed         | File ID          |             |
|-------------------------------|------------|------------------|-----------------|------------------|------------------|-------------|
| Vinyl Chloride                | 75-01-4    | <10              | 10              | 03/01/2024 15:47 | C24030109.D      |             |
| trans-1,2-Dichloroethene      | 156-60-5   | <10              | 10              | 03/01/2024 15:47 | C24030109.D      |             |
| cis-1,2-Dichloroethene        | 156-59-2   | <10              | 10              | 03/01/2024 15:47 | C24030109.D      |             |
| Trichloroethene               | 79-01-6    | <10              | 10              | 03/01/2024 15:47 | C24030109.D      |             |
| Tetrachloroethene             | 127-18-4   | <10              | 10              | 03/01/2024 15:47 | C24030109.D      |             |
| Analyte                       | CAS#       | % Recovery       | Recovery Limits | Q                | Analyzed         | File ID     |
| Surrogate: 1,2-DCA-d4         | 17060-07-0 | 98.6%            | 70-130          |                  | 03/01/2024 15:47 | C24030109.D |
| Surrogate: Toluene-d8         | 2037-26-5  | 82.8%            | 70-130          |                  | 03/01/2024 15:47 | C24030109.D |
| Surrogate: Bromofluorobenzene | 460-00-4   | 89.2%            | 70-130          |                  | 03/01/2024 15:47 | C24030109.D |

**SCS Engineers**  
 2830 Dairy Drive  
 Madison, WI 53718-6751

**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007571  
**Reported:** 03/11/2024

Lab Sample ID: 0007571-02

**05D\_SSV\_04\_20240227**

Method: EPA 8260C

Soil Gas

| Analyte                       | CAS#       | Result<br>(ng) Q | LOQ<br>(ng)     | Analyzed         | File ID          |             |
|-------------------------------|------------|------------------|-----------------|------------------|------------------|-------------|
| Vinyl Chloride                | 75-01-4    | <10              | 10              | 03/01/2024 16:17 | C24030110.D      |             |
| trans-1,2-Dichloroethene      | 156-60-5   | <10              | 10              | 03/01/2024 16:17 | C24030110.D      |             |
| cis-1,2-Dichloroethene        | 156-59-2   | <10              | 10              | 03/01/2024 16:17 | C24030110.D      |             |
| Trichloroethene               | 79-01-6    | <10              | 10              | 03/01/2024 16:17 | C24030110.D      |             |
| Tetrachloroethene             | 127-18-4   | <10              | 10              | 03/01/2024 16:17 | C24030110.D      |             |
| Analyte                       | CAS#       | % Recovery       | Recovery Limits | Q                | Analyzed         | File ID     |
| Surrogate: 1,2-DCA-d4         | 17060-07-0 | 102%             | 70-130          |                  | 03/01/2024 16:17 | C24030110.D |
| Surrogate: Toluene-d8         | 2037-26-5  | 81.8%            | 70-130          |                  | 03/01/2024 16:17 | C24030110.D |
| Surrogate: Bromofluorobenzene | 460-00-4   | 93.1%            | 70-130          |                  | 03/01/2024 16:17 | C24030110.D |

**SCS Engineers**  
2830 Dairy Drive  
Madison, WI 53718-6751

**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007571  
**Reported:** 03/11/2024

*Detailed Analytical Results- Concentration*

**SCS Engineers**  
 2830 Dairy Drive  
 Madison, WI 53718-6751

**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007571  
**Reported:** 03/11/2024

Lab Sample ID: 0007571-01

**05D\_SSV\_03\_20240227**

Method: EPA 8260C

Soil Gas

| Analyte                       | CAS#       | Result<br>(µg/m <sup>3</sup> ) | Q               | LOQ<br>(µg/m <sup>3</sup> ) | Analyzed         | File ID     |
|-------------------------------|------------|--------------------------------|-----------------|-----------------------------|------------------|-------------|
| Vinyl Chloride                | 75-01-4    | <1.08                          |                 | 1.08                        | 03/01/2024 15:47 | C24030109.D |
| trans-1,2-Dichloroethene      | 156-60-5   | <1.99                          |                 | 1.99                        | 03/01/2024 15:47 | C24030109.D |
| cis-1,2-Dichloroethene        | 156-59-2   | <1.66                          |                 | 1.66                        | 03/01/2024 15:47 | C24030109.D |
| Trichloroethene               | 79-01-6    | <2.66                          |                 | 2.66                        | 03/01/2024 15:47 | C24030109.D |
| Tetrachloroethene             | 127-18-4   | <2.14                          |                 | 2.14                        | 03/01/2024 15:47 | C24030109.D |
| Analyte                       | CAS#       | % Recovery                     | Recovery Limits | Q                           | Analyzed         | File ID     |
| Surrogate: 1,2-DCA-d4         | 17060-07-0 | 98.6%                          | 70-130          |                             | 03/01/2024 15:47 | C24030109.D |
| Surrogate: Toluene-d8         | 2037-26-5  | 82.8%                          | 70-130          |                             | 03/01/2024 15:47 | C24030109.D |
| Surrogate: Bromofluorobenzene | 460-00-4   | 89.2%                          | 70-130          |                             | 03/01/2024 15:47 | C24030109.D |

**SCS Engineers**  
 2830 Dairy Drive  
 Madison, WI 53718-6751

**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007571  
**Reported:** 03/11/2024

Lab Sample ID: 0007571-02

**05D\_SSV\_04\_20240227**

Method: EPA 8260C

Soil Gas

| Analyte                       | CAS#       | Result<br>(µg/m³) Q | LOQ<br>(µg/m³)  | Analyzed         | File ID          |             |
|-------------------------------|------------|---------------------|-----------------|------------------|------------------|-------------|
| Vinyl Chloride                | 75-01-4    | <1.08               | 1.08            | 03/01/2024 16:17 | C24030110.D      |             |
| trans-1,2-Dichloroethene      | 156-60-5   | <2.00               | 2.00            | 03/01/2024 16:17 | C24030110.D      |             |
| cis-1,2-Dichloroethene        | 156-59-2   | <1.66               | 1.66            | 03/01/2024 16:17 | C24030110.D      |             |
| Trichloroethene               | 79-01-6    | <2.66               | 2.66            | 03/01/2024 16:17 | C24030110.D      |             |
| Tetrachloroethene             | 127-18-4   | <2.14               | 2.14            | 03/01/2024 16:17 | C24030110.D      |             |
| Analyte                       | CAS#       | % Recovery          | Recovery Limits | Q                | Analyzed         | File ID     |
| Surrogate: 1,2-DCA-d4         | 17060-07-0 | 102%                | 70-130          |                  | 03/01/2024 16:17 | C24030110.D |
| Surrogate: Toluene-d8         | 2037-26-5  | 81.8%               | 70-130          |                  | 03/01/2024 16:17 | C24030110.D |
| Surrogate: Bromofluorobenzene | 460-00-4   | 93.1%               | 70-130          |                  | 03/01/2024 16:17 | C24030110.D |



**SCS Engineers**  
2830 Dairy Drive  
Madison, WI 53718-6751

**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007571  
**Reported:** 03/11/2024

## *QC Information/Summary*

**SCS Engineers**  
 2830 Dairy Drive  
 Madison, WI 53718-6751

**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007571  
**Reported:** 03/11/2024

*Soil-Gas Sample Analysis by EPA Method 8260C - Quality Control Summary*
**Sequence: B24B051 - Instrument: C System - File ID: Cb24021520.D**
***B24B051-ICV1 (LCSD/Second Source Verification/CALV)***

| Analyte                              | Result      | LOQ | Units     | Spike Level | Source Result | %REC        | %REC Limits   | RPD | RPD Limit | Notes |
|--------------------------------------|-------------|-----|-----------|-------------|---------------|-------------|---------------|-----|-----------|-------|
| Vinyl Chloride                       | 45.3        | 10  | ng        | 50.0        |               | 90.6        | 70-130        |     |           |       |
| trans-1,2-Dichloroethene             | 51.2        | 10  | ng        | 50.0        |               | 102         | 70-130        |     |           |       |
| cis-1,2-Dichloroethene               | 52.5        | 10  | ng        | 50.0        |               | 105         | 70-130        |     |           |       |
| Trichloroethene                      | 49.9        | 10  | ng        | 50.0        |               | 99.8        | 70-130        |     |           |       |
| Tetrachloroethene                    | 56.1        | 10  | ng        | 50.0        |               | 112         | 70-130        |     |           |       |
| <i>Surrogate: 1,2-DCA-d4</i>         | <i>46.0</i> |     | <i>ng</i> | <i>50.0</i> |               | <i>92.0</i> | <i>70-130</i> |     |           |       |
| <i>Surrogate: Toluene-d8</i>         | <i>47.9</i> |     | <i>ng</i> | <i>50.0</i> |               | <i>95.7</i> | <i>70-130</i> |     |           |       |
| <i>Surrogate: Bromofluorobenzene</i> | <i>48.7</i> |     | <i>ng</i> | <i>50.0</i> |               | <i>97.4</i> | <i>70-130</i> |     |           |       |

**SCS Engineers**  
 2830 Dairy Drive  
 Madison, WI 53718-6751

**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007571  
**Reported:** 03/11/2024

*Soil-Gas Sample Analysis by EPA Method 8260C - Quality Control Summary*
**Sequence: B24B051 - Instrument: C System - File ID: Cb24021524.D**
***B24B051-ICB1 (Lab Blank/Initial Calibration Blank)***

| Analyte                              | Result | LOQ | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|--------------------------------------|--------|-----|-------|-------------|---------------|------|-------------|-----|-----------|-------|
| Vinyl Chloride                       | <5     | 10  | ng    |             |               |      |             |     |           | U     |
| trans-1,2-Dichloroethene             | <5     | 10  | ng    |             |               |      |             |     |           | U     |
| cis-1,2-Dichloroethene               | <5     | 10  | ng    |             |               |      |             |     |           | U     |
| Trichloroethene                      | <5     | 10  | ng    |             |               |      |             |     |           | U     |
| Tetrachloroethene                    | <5     | 10  | ng    |             |               |      |             |     |           | U     |
| <i>Surrogate: 1,2-DCA-d4</i>         | 95.5   |     | ng    | 100         |               | 95.5 | 70-130      |     |           |       |
| <i>Surrogate: Toluene-d8</i>         | 92.8   |     | ng    | 100         |               | 92.8 | 70-130      |     |           |       |
| <i>Surrogate: Bromofluorobenzene</i> | 89.6   |     | ng    | 100         |               | 89.6 | 70-130      |     |           |       |

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**Lab Work Order:** 0007571  
**Reported:** 03/11/2024

*Soil-Gas Sample Analysis by EPA Method 8260C - Quality Control Summary*
**Sequence: B24C006 - Batch: 24C0006 - Instrument: C System - File ID: C24030102.D**
*24C0006-BS1 (LCS, Calibration Source Verification)*

| Analyte                              | Result      | LOQ | Units     | Spike Level | Source Result | %REC        | %REC Limits   | RPD | RPD Limit | Notes |
|--------------------------------------|-------------|-----|-----------|-------------|---------------|-------------|---------------|-----|-----------|-------|
| Vinyl Chloride                       | 59.3        | 10  | ng        | 50.0        |               | 119         | 80-120        |     |           |       |
| trans-1,2-Dichloroethene             | 54.8        | 10  | ng        | 50.0        |               | 110         | 80-120        |     |           |       |
| cis-1,2-Dichloroethene               | 50.2        | 10  | ng        | 50.0        |               | 100         | 80-120        |     |           |       |
| Trichloroethene                      | 51.2        | 10  | ng        | 50.0        |               | 102         | 80-120        |     |           |       |
| Tetrachloroethene                    | 49.5        | 10  | ng        | 50.0        |               | 99.0        | 80-120        |     |           |       |
| <i>Surrogate: 1,2-DCA-d4</i>         | <i>51.6</i> |     | <i>ng</i> | <i>50.0</i> |               | <i>103</i>  | <i>70-130</i> |     |           |       |
| <i>Surrogate: Toluene-d8</i>         | <i>45.1</i> |     | <i>ng</i> | <i>50.0</i> |               | <i>90.2</i> | <i>70-130</i> |     |           |       |
| <i>Surrogate: Bromofluorobenzene</i> | <i>48.6</i> |     | <i>ng</i> | <i>50.0</i> |               | <i>97.1</i> | <i>70-130</i> |     |           |       |

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**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007571  
**Reported:** 03/11/2024

*Soil-Gas Analysis by EPA 8260 - Data in Concentration - Quality Control Summary*
**Sequence: B24C006 - Batch: 24C0006 - Instrument: C System - File ID: C24030103.D**
**24C0006-BLK1 (Lab Blank)**

| Analyte                              | Result      | LOQ  | Units             | Spike Level | Source Result | %REC        | %REC Limits   | RPD | RPD Limit | Notes |
|--------------------------------------|-------------|------|-------------------|-------------|---------------|-------------|---------------|-----|-----------|-------|
| Vinyl Chloride                       | <1.08       | 1.08 | µg/m <sup>3</sup> |             |               |             |               |     |           | U     |
| trans-1,2-Dichloroethene             | <1.99       | 1.99 | µg/m <sup>3</sup> |             |               |             |               |     |           | U     |
| cis-1,2-Dichloroethene               | <1.66       | 1.66 | µg/m <sup>3</sup> |             |               |             |               |     |           | U     |
| Trichloroethene                      | <2.66       | 2.66 | µg/m <sup>3</sup> |             |               |             |               |     |           | U     |
| Tetrachloroethene                    | <2.14       | 2.14 | µg/m <sup>3</sup> |             |               |             |               |     |           | U     |
| <i>Surrogate: 1,2-DCA-d4</i>         | <i>103</i>  |      | <i>ng</i>         | <i>100</i>  |               | <i>103</i>  | <i>70-130</i> |     |           |       |
| <i>Surrogate: Toluene-d8</i>         | <i>90.5</i> |      | <i>ng</i>         | <i>100</i>  |               | <i>90.5</i> | <i>70-130</i> |     |           |       |
| <i>Surrogate: Bromofluorobenzene</i> | <i>88.4</i> |      | <i>ng</i>         | <i>100</i>  |               | <i>88.4</i> | <i>70-130</i> |     |           |       |

**SCS Engineers**  
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**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007571  
**Reported:** 03/11/2024

*Soil-Gas Sample Analysis by EPA Method 8260C - Quality Control Summary*
**Sequence: B24C006 - Batch: 24C0006 - Instrument: C System - File ID: C24030103.D**
**24C0006-BLK1 (Lab Blank)**

| Analyte                              | Result      | LOQ | Units     | Spike Level | Source Result | %REC        | %REC Limits   | RPD | RPD Limit | Notes |
|--------------------------------------|-------------|-----|-----------|-------------|---------------|-------------|---------------|-----|-----------|-------|
| Vinyl Chloride                       | <5          | 10  | ng        |             |               |             |               |     |           | U     |
| trans-1,2-Dichloroethene             | <5          | 10  | ng        |             |               |             |               |     |           | U     |
| cis-1,2-Dichloroethene               | <5          | 10  | ng        |             |               |             |               |     |           | U     |
| Trichloroethene                      | <5          | 10  | ng        |             |               |             |               |     |           | U     |
| Tetrachloroethene                    | <5          | 10  | ng        |             |               |             |               |     |           | U     |
| <i>Surrogate: 1,2-DCA-d4</i>         | <i>103</i>  |     | <i>ng</i> | <i>100</i>  |               | <i>103</i>  | <i>70-130</i> |     |           |       |
| <i>Surrogate: Toluene-d8</i>         | <i>90.5</i> |     | <i>ng</i> | <i>100</i>  |               | <i>90.5</i> | <i>70-130</i> |     |           |       |
| <i>Surrogate: Bromofluorobenzene</i> | <i>88.4</i> |     | <i>ng</i> | <i>100</i>  |               | <i>88.4</i> | <i>70-130</i> |     |           |       |

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**Lab Work Order:** 0007571  
**Reported:** 03/11/2024

*Soil-Gas Sample Analysis by EPA Method 8260C - Quality Control Summary*
**Sequence: B24C006 - Instrument: C System - File ID: C24030104.D**
*B24C006-ICV1 (LCSD/Second Source Verification/CALV)*

| Analyte                              | Result      | LOQ | Units     | Spike Level | Source Result | %REC        | %REC Limits   | RPD | RPD Limit | Notes |
|--------------------------------------|-------------|-----|-----------|-------------|---------------|-------------|---------------|-----|-----------|-------|
| Vinyl Chloride                       | 63.7        | 10  | ng        | 50.0        |               | 127         | 70-130        |     |           |       |
| trans-1,2-Dichloroethene             | 57.1        | 10  | ng        | 50.0        |               | 114         | 70-130        |     |           |       |
| cis-1,2-Dichloroethene               | 48.4        | 10  | ng        | 50.0        |               | 96.7        | 70-130        |     |           |       |
| Trichloroethene                      | 51.7        | 10  | ng        | 50.0        |               | 103         | 70-130        |     |           |       |
| Tetrachloroethene                    | 50.5        | 10  | ng        | 50.0        |               | 101         | 70-130        |     |           |       |
| <i>Surrogate: 1,2-DCA-d4</i>         | <i>48.4</i> |     | <i>ng</i> | <i>50.0</i> |               | <i>96.8</i> | <i>70-130</i> |     |           |       |
| <i>Surrogate: Toluene-d8</i>         | <i>44.5</i> |     | <i>ng</i> | <i>50.0</i> |               | <i>89.0</i> | <i>70-130</i> |     |           |       |
| <i>Surrogate: Bromofluorobenzene</i> | <i>46.5</i> |     | <i>ng</i> | <i>50.0</i> |               | <i>93.0</i> | <i>70-130</i> |     |           |       |

SCS Engineers  
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**Site Name:** Badger Lease and Auto Sales  
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**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007571  
**Reported:** 03/11/2024

*Additional QC Information*



|  |   |  |
|--|---|--|
| <b>SCS Engineers</b><br>2830 Dairy Drive<br>Madison, WI 53718-6751 | <b>Site Name:</b> Badger Lease and Auto Sales<br><b>Site Location:</b> West Allis, WI<br><b>Project Manager:</b> Jacob Krause | <b>Beacon Proposal:</b> 230920R04<br><b>Lab Work Order:</b> 0007571<br><b>Reported:</b> 03/11/2024 |
|--|---|--|

**Sample Result Calculation Summary (Concentration)**  
**EPA 8260C**

| Analyte | t<br>Sampling Time<br>minutes | DF<br>Dilution<br>Factor | U<br>Uptake<br>Rate | M<br>Initial Result<br>ng | C<br>Calculated Result<br>µg/m <sup>3</sup> | File ID |
|---------|-------------------------------|--------------------------|---------------------|---------------------------|---|---------|
|---------|-------------------------------|--------------------------|---------------------|---------------------------|---|---------|

**Lab ID:** 0007571-01      **Sample Name:** 05D\_SSV\_03\_20240227

|                          |        |      |       |   |   |             |
|--------------------------|--------|------|-------|---|---|-------------|
| Vinyl Chloride           | 11,395 | 1.00 | 0.810 | U | U | C24030109.D |
| trans-1,2-Dichloroethene | 11,395 | 1.00 | 0.440 | U | U | C24030109.D |
| cis-1,2-Dichloroethene   | 11,395 | 1.00 | 0.530 | U | U | C24030109.D |
| Trichloroethene          | 11,395 | 1.00 | 0.330 | U | U | C24030109.D |
| Tetrachloroethene        | 11,395 | 1.00 | 0.410 | U | U | C24030109.D |

**Lab ID:** 0007571-02      **Sample Name:** 05D\_SSV\_04\_20240227

|                          |        |      |       |   |   |             |
|--------------------------|--------|------|-------|---|---|-------------|
| Vinyl Chloride           | 11,379 | 1.00 | 0.810 | U | U | C24030110.D |
| trans-1,2-Dichloroethene | 11,379 | 1.00 | 0.440 | U | U | C24030110.D |
| cis-1,2-Dichloroethene   | 11,379 | 1.00 | 0.530 | U | U | C24030110.D |
| Trichloroethene          | 11,379 | 1.00 | 0.330 | U | U | C24030110.D |
| Tetrachloroethene        | 11,379 | 1.00 | 0.410 | U | U | C24030110.D |

Calculations:

$$C = \frac{1000 \times M \times DF}{U \times t}$$

where: C = concentration (µg/m<sup>3</sup>)  
M = mass (ng)  
DF = dilution factor  
t = sampling time (minutes)  
U = compound specific uptake rate

*Reference: Federal Register/Vol. 79, No. 125/June 30, 2014*

**SCS Engineers**  
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**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007571  
**Reported:** 03/11/2024

**Method Detection and Reporting Limit Calculations (Concentration)**
**EPA 8260C**

| Analyte | t<br>Sampling Time<br>minutes | DF<br>Dilution<br>Factor | U<br>Uptake<br>Rate | M<br>Initial LOQ<br>ng | C<br>Calculated LOQ<br>µg/m <sup>3</sup> |
|---------|-------------------------------|--------------------------|---------------------|------------------------|--|
|---------|-------------------------------|--------------------------|---------------------|------------------------|--|

**Lab ID:** 0007571-01      **Sample Name:** 05D\_SSV\_03\_20240227

|                          |        |      |       |      |      |
|--------------------------|--------|------|-------|------|------|
| Vinyl Chloride           | 11,395 | 1.00 | 0.810 | 10.0 | 1.08 |
| trans-1,2-Dichloroethene | 11,395 | 1.00 | 0.440 | 10.0 | 1.99 |
| cis-1,2-Dichloroethene   | 11,395 | 1.00 | 0.530 | 10.0 | 1.66 |
| Trichloroethene          | 11,395 | 1.00 | 0.330 | 10.0 | 2.66 |
| Tetrachloroethene        | 11,395 | 1.00 | 0.410 | 10.0 | 2.14 |

**Lab ID:** 0007571-02      **Sample Name:** 05D\_SSV\_04\_20240227

|                          |        |      |       |      |      |
|--------------------------|--------|------|-------|------|------|
| Vinyl Chloride           | 11,379 | 1.00 | 0.810 | 10.0 | 1.08 |
| trans-1,2-Dichloroethene | 11,379 | 1.00 | 0.440 | 10.0 | 2.00 |
| cis-1,2-Dichloroethene   | 11,379 | 1.00 | 0.530 | 10.0 | 1.66 |
| Trichloroethene          | 11,379 | 1.00 | 0.330 | 10.0 | 2.66 |
| Tetrachloroethene        | 11,379 | 1.00 | 0.410 | 10.0 | 2.14 |

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**Lab Work Order:** 0007571  
**Reported:** 03/11/2024

### *Laboratory Certification List*

| Certification ID   | Certification No. | Description   | Expires    | Project Required |
|--------------------|-------------------|---|------------|------------------|
| Alaska CS-LAP      | 19-002            | Alaska Department of Environmental Conservation                                 | 12/30/2024 |                  |
| DoD-ELAP           | 72690/L22-563     | United States Department of Defense Environmental Laboratory Accreditation      | 11/30/2024 |                  |
| ISO/IEC 17025:2017 | 72690/L22-563     | General Requirements for the Competence of Testing and Calibration Laboratories | 11/30/2024 |                  |
| NEFAP              | 72690/L22-564     | TNI National Environmental Field Activities Program (NEFAP)                     | 11/30/2024 |                  |
| NY-NELAC           | 12097             | New York Department of Health   | 04/01/2024 |                  |
| Utah-NELAC         | MD010912023-14    | Utah Department of Health   | 12/31/2024 |                  |

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**Lab Work Order:** 0007571  
**Reported:** 03/11/2024

### Qualifiers/Notes and Definitions

**General Definitions:**

|           |  |
|-----------|--|
| DF        | Dilution Factor  |
| DL        | Detection Limit  |
| LOD       | Limit of Detection   |
| LOQ       | Limit of Quantitation  |
| NA        | Not Applicable   |
| Q         | Qualifier  |
| RPD       | Relative Percent Difference  |
| RT        | Retention Times in Minutes   |
| RRT       | Evaluation of Relative Retention Times in RRT Units (qualified if outside $\pm 0.06$ control limits) |
| $3\sigma$ | Uncertainty  |
| ∉         | Compound not on scope of accreditation   |
| +         | values are outside method/contract required QC limits  |
| ∅         | Compound not on scope of accreditation and analyzed with a one-point calibration                     |

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**Reported:** 03/11/2024

## *Sample Management Records*





Beacon Environmental

526 Underwood Lane  
Bel Air, MD 21014 USA  
1.410.838.8780

CERTIFICATE OF ANALYSIS

Beacon Proposal No.: 230920R05

Laboratory Work Order: 0007574

**Project Description:**

Badger Lease and Auto Sales  
West Allis, WI

Client PO No.: 25222269.04-002

Prepared for:

Jacob Krause

**SCS Engineers**

2830 Dairy Drive

Madison, WI 53718-6751

---

Ryan W. Schneider  
Senior Project Manager

March 14, 2024

All data meet requirements as specified in the Beacon Environmental Quality Assurance Project Plan and the results relate only to the samples reported. The work performed was in accordance with ISO/IEC 17025:2017. This report shall not be reproduced, except in full, without written approval of the laboratory. Release of the data contained in this data package has been authorized by the Laboratory Director or his signee, as verified by the following signatures:

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Steven C. Thornley  
Laboratory Director

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Peter B. Kelly  
Quality Manager

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**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R05  
**Lab Work Order:** 0007574  
**Reported:** 03/14/2024

### Sample Summary

| Lab Sample ID               | Client Sample ID                               | Received   | Analysis        | Matrix      |
|-----------------------------|--|------------|-----------------|-------------|
| 0007574-01<br>Sampler Type: | 05D_IAB_03_20240227<br>Beacon Passive Sampler  | 02/29/2024 | TO-17 (Passive) | Indoor Air  |
| 0007574-02<br>Sampler Type: | 05D_IA1_04_20240227<br>Beacon Passive Sampler  | 02/29/2024 | TO-17 (Passive) | Indoor Air  |
| 0007574-03<br>Sampler Type: | 05D_Sump_02_20240227<br>Beacon Passive Sampler | 02/29/2024 | TO-17 (Passive) | Indoor Air  |
| 0007574-04<br>Sampler Type: | 05D_OA_02_20240227<br>Beacon Passive Sampler   | 02/29/2024 | TO-17 (Passive) | Ambient Air |

#### Project Completeness

**Samples Received:** 4  
**Samples Analyzed:** 4

SCS Engineers  
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**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R05  
**Lab Work Order:** 0007574  
**Reported:** 03/14/2024

### *Case Narrative*

Beacon Environmental provided thermally conditioned Beacon Samplers for sampling, with analyses following U.S. EPA Method TO-17, with analytical results reported in  $\mu\text{g}/\text{m}^3$ . Beacon calculated concentration results using the exposure period, target analyte mass, and the following procedures detailed in ISO 16017-2, *Indoor, ambient and workplace air-Sampling and analysis of volatile organic compounds by sorbent tube/thermal desorption/capillary gas chromatography-Part 2: Diffusive sampling*.

Beacon reports results and reporting limits to three significant digits.

#### **Reporting Limits (RLs) for EPA Method TO-17**

The RLs represent a baseline above which results meet laboratory-determined limits of precision and accuracy. Beacon performed dilution analysis when results exceeded the upper calibration limit, bringing all reported results within the calibration range. The project method quantitation limit (MQL) is the limit of detection (LOD) as noted in the data tables.

#### **Calibration Verification**

All continuing calibration verification (CCV) values are within  $\pm 30\%$  of the true values as defined by the initial calibration and met the requirements specified in BEACON's Quality Manual.

#### **Internal Standards and Surrogates**

Internal standards and surrogates are spiked on all blanks (ICB, BLK), field samples and laboratory control samples (ICV/CALV, BS, ICV and CCV). Acceptance criteria for internal standards are 60 to 140 percent and surrogate recoveries are 70 to 130 percent; all internal standards and surrogates are within the acceptance criteria unless noted in the **Case Narrative**.

#### **Blank Contamination**

No targeted compounds above the limit of detection (LOD) for each compound were observed in the Laboratory Method Blanks unless noted in the **Case Narrative**.

#### **Laboratory Control Samples**

Acceptance criteria for surrogate and analytes recoveries are 70 to 130 percent; all recoveries are within the acceptance criteria unless noted in the **Case Narrative**.

#### **Discussion**

Samples were received in proper condition and laboratory control parameters were met unless otherwise noted below. The work performed was in accordance with ISO/IEC 17025:2017.

End of Case Narrative

**SCS Engineers**  
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**Reported:** 03/14/2024

## *Analytical Results*

SCS Engineers  
2830 Dairy Drive  
Madison, WI 53718-6751

**Site Name:** Badger Lease and Auto Sales  
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**Lab Work Order:** 0007574  
**Reported:** 03/14/2024

*Detailed Analytical Results*

**SCS Engineers**  
 2830 Dairy Drive  
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**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R05  
**Lab Work Order:** 0007574  
**Reported:** 03/14/2024

Lab Sample ID: 0007574-01

**05D\_IAB\_03\_20240227**

Method: TO-17 (Passive)

Indoor Air

| Analyte                       | CAS#       | Result<br>(µg/m <sup>3</sup> ) | Q               | LOD<br>(µg/m <sup>3</sup> ) | LOQ<br>(µg/m <sup>3</sup> ) | Analyzed         | File ID     |
|-------------------------------|------------|--------------------------------|-----------------|-----------------------------|-----------------------------|------------------|-------------|
| Vinyl Chloride                | 75-01-4    | <0.542                         | U               | 0.542                       | 1.08                        | 03/04/2024 17:59 | C24030414.D |
| trans-1,2-Dichloroethene      | 156-60-5   | <0.998                         | U               | 0.998                       | 2.00                        | 03/04/2024 17:59 | C24030414.D |
| cis-1,2-Dichloroethene        | 156-59-2   | <0.829                         | U               | 0.829                       | 1.66                        | 03/04/2024 17:59 | C24030414.D |
| Trichloroethene               | 79-01-6    | <1.33                          | U               | 1.33                        | 2.66                        | 03/04/2024 17:59 | C24030414.D |
| Tetrachloroethene             | 127-18-4   | <1.07                          | U               | 1.07                        | 2.14                        | 03/04/2024 17:59 | C24030414.D |
| Analyte                       | CAS#       | % Recovery                     | Recovery Limits | Q                           |                             | Analyzed         | File ID     |
| Surrogate: 1,2-DCA-d4         | 17060-07-0 | 102%                           | 70-130          |                             |                             | 03/04/2024 17:59 | C24030414.D |
| Surrogate: Toluene-d8         | 2037-26-5  | 90.3%                          | 70-130          |                             |                             | 03/04/2024 17:59 | C24030414.D |
| Surrogate: Bromofluorobenzene | 460-00-4   | 91.8%                          | 70-130          |                             |                             | 03/04/2024 17:59 | C24030414.D |

SCS Engineers  
 2830 Dairy Drive  
 Madison, WI 53718-6751

**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R05  
**Lab Work Order:** 0007574  
**Reported:** 03/14/2024

Lab Sample ID: 0007574-02

**05D\_IA1\_04\_20240227**

Method: TO-17 (Passive)

Indoor Air

| Analyte                       | CAS#       | Result<br>(µg/m <sup>3</sup> ) | Q               | LOD<br>(µg/m <sup>3</sup> ) | LOQ<br>(µg/m <sup>3</sup> ) | Analyzed         | File ID     |
|-------------------------------|------------|--------------------------------|-----------------|-----------------------------|-----------------------------|------------------|-------------|
| Vinyl Chloride                | 75-01-4    | <0.543                         | U               | 0.543                       | 1.09                        | 03/04/2024 18:28 | C24030415.D |
| trans-1,2-Dichloroethene      | 156-60-5   | <0.999                         | U               | 0.999                       | 2.00                        | 03/04/2024 18:28 | C24030415.D |
| cis-1,2-Dichloroethene        | 156-59-2   | <0.829                         | U               | 0.829                       | 1.66                        | 03/04/2024 18:28 | C24030415.D |
| Trichloroethene               | 79-01-6    | <1.33                          | U               | 1.33                        | 2.66                        | 03/04/2024 18:28 | C24030415.D |
| Tetrachloroethene             | 127-18-4   | <1.07                          | U               | 1.07                        | 2.14                        | 03/04/2024 18:28 | C24030415.D |
| Analyte                       | CAS#       | % Recovery                     | Recovery Limits | Q                           |                             | Analyzed         | File ID     |
| Surrogate: 1,2-DCA-d4         | 17060-07-0 | 101%                           | 70-130          |                             |                             | 03/04/2024 18:28 | C24030415.D |
| Surrogate: Toluene-d8         | 2037-26-5  | 89.1%                          | 70-130          |                             |                             | 03/04/2024 18:28 | C24030415.D |
| Surrogate: Bromofluorobenzene | 460-00-4   | 97.4%                          | 70-130          |                             |                             | 03/04/2024 18:28 | C24030415.D |

|  |   |  |
|--|---|--|
| <b>SCS Engineers</b><br>2830 Dairy Drive<br>Madison, WI 53718-6751 | <b>Site Name:</b> Badger Lease and Auto Sales<br><b>Site Location:</b> West Allis, WI<br><b>Project Manager:</b> Jacob Krause | <b>Beacon Proposal:</b> 230920R05<br><b>Lab Work Order:</b> 0007574<br><b>Reported:</b> 03/14/2024 |
|--|---|--|

|                           |                             |                         |
|---------------------------|-----------------------------|-------------------------|
| Lab Sample ID: 0007574-03 | <b>05D_Sump_02_20240227</b> | Method: TO-17 (Passive) |
| Indoor Air                |                             |                         |

| Analyte                       | CAS#       | Result<br>(µg/m <sup>3</sup> ) | Q               | LOD<br>(µg/m <sup>3</sup> ) | LOQ<br>(µg/m <sup>3</sup> ) | Analyzed         | File ID     |
|-------------------------------|------------|--------------------------------|-----------------|-----------------------------|-----------------------------|------------------|-------------|
| Vinyl Chloride                | 75-01-4    | <0.541                         | U               | 0.541                       | 1.08                        | 03/04/2024 18:58 | C24030416.D |
| trans-1,2-Dichloroethene      | 156-60-5   | <0.995                         | U               | 0.995                       | 1.99                        | 03/04/2024 18:58 | C24030416.D |
| cis-1,2-Dichloroethene        | 156-59-2   | <0.826                         | U               | 0.826                       | 1.65                        | 03/04/2024 18:58 | C24030416.D |
| Trichloroethene               | 79-01-6    | <1.33                          | U               | 1.33                        | 2.65                        | 03/04/2024 18:58 | C24030416.D |
| Tetrachloroethene             | 127-18-4   | <1.07                          | U               | 1.07                        | 2.14                        | 03/04/2024 18:58 | C24030416.D |
| Analyte                       | CAS#       | % Recovery                     | Recovery Limits | Q                           |                             | Analyzed         | File ID     |
| Surrogate: 1,2-DCA-d4         | 17060-07-0 | 96.2%                          | 70-130          |                             |                             | 03/04/2024 18:58 | C24030416.D |
| Surrogate: Toluene-d8         | 2037-26-5  | 89.7%                          | 70-130          |                             |                             | 03/04/2024 18:58 | C24030416.D |
| Surrogate: Bromofluorobenzene | 460-00-4   | 88.8%                          | 70-130          |                             |                             | 03/04/2024 18:58 | C24030416.D |

**SCS Engineers**  
 2830 Dairy Drive  
 Madison, WI 53718-6751

**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R05  
**Lab Work Order:** 0007574  
**Reported:** 03/14/2024

Lab Sample ID: 0007574-04

**05D\_OA\_02\_20240227**

Method: TO-17 (Passive)

Ambient Air

| Analyte                       | CAS#       | Result<br>(µg/m <sup>3</sup> ) | Q               | LOD<br>(µg/m <sup>3</sup> ) | LOQ<br>(µg/m <sup>3</sup> ) | Analyzed         | File ID     |
|-------------------------------|------------|--------------------------------|-----------------|-----------------------------|-----------------------------|------------------|-------------|
| Vinyl Chloride                | 75-01-4    | <0.542                         | U               | 0.542                       | 1.08                        | 03/04/2024 19:28 | C24030417.D |
| trans-1,2-Dichloroethene      | 156-60-5   | <0.999                         | U               | 0.999                       | 2.00                        | 03/04/2024 19:28 | C24030417.D |
| cis-1,2-Dichloroethene        | 156-59-2   | <0.829                         | U               | 0.829                       | 1.66                        | 03/04/2024 19:28 | C24030417.D |
| Trichloroethene               | 79-01-6    | <1.33                          | U               | 1.33                        | 2.66                        | 03/04/2024 19:28 | C24030417.D |
| Tetrachloroethene             | 127-18-4   | <1.07                          | U               | 1.07                        | 2.14                        | 03/04/2024 19:28 | C24030417.D |
| Analyte                       | CAS#       | % Recovery                     | Recovery Limits | Q                           |                             | Analyzed         | File ID     |
| Surrogate: 1,2-DCA-d4         | 17060-07-0 | 102%                           | 70-130          |                             |                             | 03/04/2024 19:28 | C24030417.D |
| Surrogate: Toluene-d8         | 2037-26-5  | 90.2%                          | 70-130          |                             |                             | 03/04/2024 19:28 | C24030417.D |
| Surrogate: Bromofluorobenzene | 460-00-4   | 88.4%                          | 70-130          |                             |                             | 03/04/2024 19:28 | C24030417.D |



**SCS Engineers**  
2830 Dairy Drive  
Madison, WI 53718-6751

**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
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**Beacon Proposal:** 230920R05  
**Lab Work Order:** 0007574  
**Reported:** 03/14/2024

***QC Information/Summary***

**SCS Engineers**  
 2830 Dairy Drive  
 Madison, WI 53718-6751

**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R05  
**Lab Work Order:** 0007574  
**Reported:** 03/14/2024

*Organics in Air by EPA TO-17 Using Beacon Sampler - Quality Control Summary*

**Sequence: B24C009 - Batch: 24C0009 - Instrument: C System - File ID: C24030405.D**
**24C0009-BS1 (LCS, Calibration Source Verification)**

| Analyte                              | Result      | LOQ | LOD | Units     | Spike Level | Source Result | %REC        | %REC Limits   | RPD | RPD Limit | Notes |
|--------------------------------------|-------------|-----|-----|-----------|-------------|---------------|-------------|---------------|-----|-----------|-------|
| Vinyl Chloride                       | 55.7        | 10  | 5   | ng        | 50.0        |               | 111         | 70-130        |     |           |       |
| trans-1,2-Dichloroethene             | 56.8        | 10  | 5   | ng        | 50.0        |               | 114         | 70-130        |     |           |       |
| cis-1,2-Dichloroethene               | 51.3        | 10  | 5   | ng        | 50.0        |               | 103         | 70-130        |     |           |       |
| Trichloroethene                      | 52.1        | 10  | 5   | ng        | 50.0        |               | 104         | 70-130        |     |           |       |
| Tetrachloroethene                    | 54.6        | 10  | 5   | ng        | 50.0        |               | 109         | 70-130        |     |           |       |
| <i>Surrogate: 1,2-DCA-d4</i>         | <i>52.0</i> |     |     | <i>ng</i> | <i>50.0</i> |               | <i>104</i>  | <i>70-130</i> |     |           |       |
| <i>Surrogate: Toluene-d8</i>         | <i>50.0</i> |     |     | <i>ng</i> | <i>50.0</i> |               | <i>100</i>  | <i>70-130</i> |     |           |       |
| <i>Surrogate: Bromofluorobenzene</i> | <i>45.0</i> |     |     | <i>ng</i> | <i>50.0</i> |               | <i>90.0</i> | <i>70-130</i> |     |           |       |

**SCS Engineers**  
 2830 Dairy Drive  
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**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R05  
**Lab Work Order:** 0007574  
**Reported:** 03/14/2024

*Organics in Air by EPA TO-17 Using Beacon Sampler - Quality Control Summary*

**Sequence: B24C009 - Batch: 24C0009 - Instrument: C System - File ID: C24030406.D**
**24C0009-BLK1 (Lab Blank)**

| Analyte                              | Result      | LOQ  | LOD   | Units     | Spike Level | Source Result | %REC        | %REC Limits   | RPD | RPD Limit | Notes |
|--------------------------------------|-------------|------|-------|-----------|-------------|---------------|-------------|---------------|-----|-----------|-------|
| Vinyl Chloride                       | <0.541      | 1.08 | 0.541 | µg/m³     |             |               |             |               |     |           | U     |
| trans-1,2-Dichloroethene             | <0.995      | 1.99 | 0.995 | µg/m³     |             |               |             |               |     |           | U     |
| cis-1,2-Dichloroethene               | <0.826      | 1.65 | 0.826 | µg/m³     |             |               |             |               |     |           | U     |
| Trichloroethene                      | <1.33       | 2.65 | 1.33  | µg/m³     |             |               |             |               |     |           | U     |
| Tetrachloroethene                    | <1.07       | 2.14 | 1.07  | µg/m³     |             |               |             |               |     |           | U     |
| <i>Surrogate: 1,2-DCA-d4</i>         | <i>105</i>  |      |       | <i>ng</i> | <i>100</i>  |               | <i>105</i>  | <i>70-130</i> |     |           |       |
| <i>Surrogate: Toluene-d8</i>         | <i>99.3</i> |      |       | <i>ng</i> | <i>100</i>  |               | <i>99.3</i> | <i>70-130</i> |     |           |       |
| <i>Surrogate: Bromofluorobenzene</i> | <i>83.5</i> |      |       | <i>ng</i> | <i>100</i>  |               | <i>83.5</i> | <i>70-130</i> |     |           |       |

**SCS Engineers**  
 2830 Dairy Drive  
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**Site Name:** Badger Lease and Auto Sales  
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**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R05  
**Lab Work Order:** 0007574  
**Reported:** 03/14/2024

*Organics in Air by EPA TO-17 Using Beacon Sampler - Quality Control Summary*

**Sequence: B24C009 - Instrument: C System - File ID: C24030407.D**
***B24C009-ICV1 (LCSD/Second Source Verification/CALV)***

| Analyte                              | Result      | LOQ | LOD | Units     | Spike Level | Source Result | %REC        | %REC Limits   | RPD | RPD Limit | Notes |
|--------------------------------------|-------------|-----|-----|-----------|-------------|---------------|-------------|---------------|-----|-----------|-------|
| Vinyl Chloride                       | 49.7        | 10  | 5   | ng        | 50.0        |               | 99.4        | 70-130        |     |           |       |
| trans-1,2-Dichloroethene             | 64.0        | 10  | 5   | ng        | 50.0        |               | 128         | 70-130        |     |           |       |
| cis-1,2-Dichloroethene               | 52.8        | 10  | 5   | ng        | 50.0        |               | 106         | 70-130        |     |           |       |
| Trichloroethene                      | 52.8        | 10  | 5   | ng        | 50.0        |               | 106         | 70-130        |     |           |       |
| Tetrachloroethene                    | 60.2        | 10  | 5   | ng        | 50.0        |               | 120         | 70-130        |     |           |       |
| <i>Surrogate: 1,2-DCA-d4</i>         | <i>50.5</i> |     |     | <i>ng</i> | <i>50.0</i> |               | <i>101</i>  | <i>70-130</i> |     |           |       |
| <i>Surrogate: Toluene-d8</i>         | <i>49.7</i> |     |     | <i>ng</i> | <i>50.0</i> |               | <i>99.4</i> | <i>70-130</i> |     |           |       |
| <i>Surrogate: Bromofluorobenzene</i> | <i>44.6</i> |     |     | <i>ng</i> | <i>50.0</i> |               | <i>89.1</i> | <i>70-130</i> |     |           |       |

**SCS Engineers**  
 2830 Dairy Drive  
 Madison, WI 53718-6751

**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R05  
**Lab Work Order:** 0007574  
**Reported:** 03/14/2024

*Organics in Air by EPA TO-17 Using Beacon Sampler - Quality Control Summary*

**Sequence: B24C009 - Instrument: C System - File ID: C24030425.D**
***B24C009-CCV1 (LCS, Closing Calibration Verification)***

| Analyte                              | Result      | LOQ | LOD | Units     | Spike Level | Source Result | %REC        | %REC Limits   | RPD | RPD Limit | Notes |
|--------------------------------------|-------------|-----|-----|-----------|-------------|---------------|-------------|---------------|-----|-----------|-------|
| Vinyl Chloride                       | 60.2        | 10  | 5   | ng        | 50.0        |               | 120         | 70-130        |     |           |       |
| trans-1,2-Dichloroethene             | 63.7        | 10  | 5   | ng        | 50.0        |               | 127         | 70-130        |     |           |       |
| cis-1,2-Dichloroethene               | 51.9        | 10  | 5   | ng        | 50.0        |               | 104         | 70-130        |     |           |       |
| Trichloroethene                      | 51.8        | 10  | 5   | ng        | 50.0        |               | 104         | 70-130        |     |           |       |
| Tetrachloroethene                    | 54.7        | 10  | 5   | ng        | 50.0        |               | 109         | 70-130        |     |           |       |
| <i>Surrogate: 1,2-DCA-d4</i>         | <i>51.3</i> |     |     | <i>ng</i> | <i>50.0</i> |               | <i>103</i>  | <i>70-130</i> |     |           |       |
| <i>Surrogate: Toluene-d8</i>         | <i>46.7</i> |     |     | <i>ng</i> | <i>50.0</i> |               | <i>93.4</i> | <i>70-130</i> |     |           |       |
| <i>Surrogate: Bromofluorobenzene</i> | <i>44.6</i> |     |     | <i>ng</i> | <i>50.0</i> |               | <i>89.2</i> | <i>70-130</i> |     |           |       |

**SCS Engineers**  
 2830 Dairy Drive  
 Madison, WI 53718-6751

**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R05  
**Lab Work Order:** 0007574  
**Reported:** 03/14/2024

*Organics in Air by EPA TO-17 Using Beacon Sampler - Quality Control Summary*

**Sequence: B24C009 - Instrument: C System - File ID: C24030426.D**
***B24C009-CCB1 (Lab Blank)***

| Analyte                              | Result      | LOQ | LOD | Units     | Spike Level | Source Result | %REC        | %REC Limits   | RPD | RPD Limit | Notes |
|--------------------------------------|-------------|-----|-----|-----------|-------------|---------------|-------------|---------------|-----|-----------|-------|
| Vinyl Chloride                       | <5          | 10  | 5   | ng        |             |               |             |               |     |           | U     |
| trans-1,2-Dichloroethene             | <5          | 10  | 5   | ng        |             |               |             |               |     |           | U     |
| cis-1,2-Dichloroethene               | <5          | 10  | 5   | ng        |             |               |             |               |     |           | U     |
| Trichloroethene                      | <5          | 10  | 5   | ng        |             |               |             |               |     |           | U     |
| Tetrachloroethene                    | <5          | 10  | 5   | ng        |             |               |             |               |     |           | U     |
| <i>Surrogate: 1,2-DCA-d4</i>         | <i>103</i>  |     |     | <i>ng</i> | <i>100</i>  |               | <i>103</i>  | <i>70-130</i> |     |           |       |
| <i>Surrogate: Toluene-d8</i>         | <i>99.7</i> |     |     | <i>ng</i> | <i>100</i>  |               | <i>99.7</i> | <i>70-130</i> |     |           |       |
| <i>Surrogate: Bromofluorobenzene</i> | <i>82.6</i> |     |     | <i>ng</i> | <i>100</i>  |               | <i>82.6</i> | <i>70-130</i> |     |           |       |

|  |   |  |
|--|---|--|
| <b>SCS Engineers</b><br>2830 Dairy Drive<br>Madison, WI 53718-6751 | <b>Site Name:</b> Badger Lease and Auto Sales<br><b>Site Location:</b> West Allis, WI<br><b>Project Manager:</b> Jacob Krause | <b>Beacon Proposal:</b> 230920R05<br><b>Lab Work Order:</b> 0007574<br><b>Reported:</b> 03/14/2024 |
|--|---|--|

*TO-17 (Passive) - LCS/LCSD RPD Quality Control Summary*

**LCS: 24C0009-BS1 File ID: C24030405.D**

Analyzed: 3/4/24 14:41

**LCSD: B24C009-ICV1 File ID: C24030407.D**

Analyzed: 3/4/24 13:53

| Analyte                  | CAS#     | LCS Result<br>(ng) | %REC<br>Q | Spike Level<br>(ng) | LCSD Result<br>(ng) | %REC   | %REC<br>Limits | RPD   | RPD<br>Limit | Q |
|--------------------------|----------|--------------------|-----------|---------------------|---------------------|--------|----------------|-------|--------------|---|
| Vinyl Chloride           | 75-01-4  | 55.67              | 111.34    | 50                  | 49.7                | 99.40  | 70-130         | 11.33 | 30           |   |
| trans-1,2-Dichloroethene | 156-60-5 | 56.76              | 113.52    | 50                  | 63.95               | 128.00 | 70-130         | 11.91 | 30           |   |
| cis-1,2-Dichloroethene   | 156-59-2 | 51.28              | 102.56    | 50                  | 52.8                | 106.00 | 70-130         | 2.92  | 30           |   |
| Trichloroethene          | 79-01-6  | 52.10              | 104.2     | 50                  | 52.81               | 106.00 | 70-130         | 1.35  | 30           |   |
| Tetrachloroethene        | 127-18-4 | 54.55              | 109.1     | 50                  | 60.22               | 120.00 | 70-130         | 9.88  | 30           |   |

SCS Engineers  
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**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R05  
**Lab Work Order:** 0007574  
**Reported:** 03/14/2024

*Additional QC Information*



SCS Engineers  
 2830 Dairy Drive  
 Madison, WI 53718-6751

Site Name: Badger Lease and Auto Sales  
 Site Location: West Allis, WI  
 Project Manager: Jacob Krause

Beacon Proposal: 230920R05  
 Lab Work Order: 0007574  
 Reported: 03/14/2024

**Sample Result Calculation Summary (Concentration)**  
**TO-17 (Passive)**

| Analyte | t<br>Sampling Time<br>minutes | DF<br>Dilution<br>Factor | Uc<br>Uptake<br>Rate | M<br>Initial Result<br>ng | C<br>Calculated Result<br>µg/m <sup>3</sup> | File ID |
|---------|-------------------------------|--------------------------|----------------------|---------------------------|---|---------|
|---------|-------------------------------|--------------------------|----------------------|---------------------------|---|---------|

**Lab ID:** 0007574-01      **Sample Name:** 05D\_IAB\_03\_20240227      **̄ Temp (°C):** 17.00

|                          |        |      |       |   |   |             |
|--------------------------|--------|------|-------|---|---|-------------|
| Vinyl Chloride           | 11,375 | 1.00 | 0.810 | U | U | C24030414.D |
| trans-1,2-Dichloroethene | 11,375 | 1.00 | 0.440 | U | U | C24030414.D |
| cis-1,2-Dichloroethene   | 11,375 | 1.00 | 0.530 | U | U | C24030414.D |
| Trichloroethene          | 11,375 | 1.00 | 0.330 | U | U | C24030414.D |
| Tetrachloroethene        | 11,375 | 1.00 | 0.410 | U | U | C24030414.D |

**Lab ID:** 0007574-02      **Sample Name:** 05D\_IA1\_04\_20240227      **̄ Temp (°C):** 17.00

|                          |        |      |       |   |   |             |
|--------------------------|--------|------|-------|---|---|-------------|
| Vinyl Chloride           | 11,369 | 1.00 | 0.810 | U | U | C24030415.D |
| trans-1,2-Dichloroethene | 11,369 | 1.00 | 0.440 | U | U | C24030415.D |
| cis-1,2-Dichloroethene   | 11,369 | 1.00 | 0.530 | U | U | C24030415.D |
| Trichloroethene          | 11,369 | 1.00 | 0.330 | U | U | C24030415.D |
| Tetrachloroethene        | 11,369 | 1.00 | 0.410 | U | U | C24030415.D |

**Lab ID:** 0007574-03      **Sample Name:** 05D\_Sump\_02\_20240227      **̄ Temp (°C):** 17.00

|                          |        |      |       |   |   |             |
|--------------------------|--------|------|-------|---|---|-------------|
| Vinyl Chloride           | 11,410 | 1.00 | 0.810 | U | U | C24030416.D |
| trans-1,2-Dichloroethene | 11,410 | 1.00 | 0.440 | U | U | C24030416.D |
| cis-1,2-Dichloroethene   | 11,410 | 1.00 | 0.530 | U | U | C24030416.D |
| Trichloroethene          | 11,410 | 1.00 | 0.330 | U | U | C24030416.D |
| Tetrachloroethene        | 11,410 | 1.00 | 0.410 | U | U | C24030416.D |

**Lab ID:** 0007574-04      **Sample Name:** 05D\_OA\_02\_20240227      **̄ Temp (°C):** 17.00

|                          |        |      |       |   |   |             |
|--------------------------|--------|------|-------|---|---|-------------|
| Vinyl Chloride           | 11,372 | 1.00 | 0.810 | U | U | C24030417.D |
| trans-1,2-Dichloroethene | 11,372 | 1.00 | 0.440 | U | U | C24030417.D |
| cis-1,2-Dichloroethene   | 11,372 | 1.00 | 0.530 | U | U | C24030417.D |
| Trichloroethene          | 11,372 | 1.00 | 0.330 | U | U | C24030417.D |
| Tetrachloroethene        | 11,372 | 1.00 | 0.410 | U | U | C24030417.D |

**SCS Engineers**  
2830 Dairy Drive  
Madison, WI 53718-6751**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause**Beacon Proposal:** 230920R05  
**Lab Work Order:** 0007574  
**Reported:** 03/14/2024

Calculations:

$$C = \frac{1000 \times M \times DF}{U_c \times t}$$

$$U_c = U * \left( \frac{T_s + 273.15}{T_u + 273.15} \right)^{1/2}$$

where: C = concentration ( $\mu\text{g}/\text{m}^3$ )  
M = mass (ng)  
DF = dilution factor  
U<sub>c</sub> = uptake rate (ml/min), corrected  
t = sampling time (minutes)  
U = compound specific uptake rate  
T<sub>u</sub> = uptake rate study temperature  
T<sub>s</sub> = sample average temperature

**Note:** T<sub>u</sub> is 16.65°C*Reference: Federal Register/Vol. 79, No. 125/June 30, 2014*

**SCS Engineers**  
 2830 Dairy Drive  
 Madison, WI 53718-6751

**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R05  
**Lab Work Order:** 0007574  
**Reported:** 03/14/2024

**Method Detection and Reporting Limit Calculations (Concentration)**  
**TO-17 (Passive)**

| Analyte | t<br>Sampling Time<br>minutes | DF<br>Dilution<br>Factor | Uc<br>Uptake<br>Rate | M<br>Initial (ng) |     | C<br>Calculated (µg/m³) |     |
|---------|-------------------------------|--------------------------|----------------------|-------------------|-----|-------------------------|-----|
|         |                               |                          |                      | LOQ               | LOD | LOQ                     | LOD |

| Lab ID: 0007574-01       | Sample Name: 05D_IAB_03_20240227 | X̄ Temp (°C): 17.00 |       |       |      |      |       |
|--------------------------|----------------------------------|---------------------|-------|-------|------|------|-------|
| Vinyl Chloride           | 11,375                           | 1.00                | 0.810 | 10.00 | 5.00 | 1.08 | 0.542 |
| trans-1,2-Dichloroethene | 11,375                           | 1.00                | 0.440 | 10.00 | 5.00 | 2.00 | 0.998 |
| cis-1,2-Dichloroethene   | 11,375                           | 1.00                | 0.530 | 10.00 | 5.00 | 1.66 | 0.829 |
| Trichloroethene          | 11,375                           | 1.00                | 0.330 | 10.00 | 5.00 | 2.66 | 1.33  |
| Tetrachloroethene        | 11,375                           | 1.00                | 0.410 | 10.00 | 5.00 | 2.14 | 1.07  |

| Lab ID: 0007574-02       | Sample Name: 05D_IA1_04_20240227 | X̄ Temp (°C): 17.00 |       |       |      |      |       |
|--------------------------|----------------------------------|---------------------|-------|-------|------|------|-------|
| Vinyl Chloride           | 11,369                           | 1.00                | 0.810 | 10.00 | 5.00 | 1.09 | 0.543 |
| trans-1,2-Dichloroethene | 11,369                           | 1.00                | 0.440 | 10.00 | 5.00 | 2.00 | 0.999 |
| cis-1,2-Dichloroethene   | 11,369                           | 1.00                | 0.530 | 10.00 | 5.00 | 1.66 | 0.829 |
| Trichloroethene          | 11,369                           | 1.00                | 0.330 | 10.00 | 5.00 | 2.66 | 1.33  |
| Tetrachloroethene        | 11,369                           | 1.00                | 0.410 | 10.00 | 5.00 | 2.14 | 1.07  |

| Lab ID: 0007574-03       | Sample Name: 05D_Sump_02_20240227 | X̄ Temp (°C): 17.00 |       |       |      |      |       |
|--------------------------|-----------------------------------|---------------------|-------|-------|------|------|-------|
| Vinyl Chloride           | 11,410                            | 1.00                | 0.810 | 10.00 | 5.00 | 1.08 | 0.541 |
| trans-1,2-Dichloroethene | 11,410                            | 1.00                | 0.440 | 10.00 | 5.00 | 1.99 | 0.995 |
| cis-1,2-Dichloroethene   | 11,410                            | 1.00                | 0.530 | 10.00 | 5.00 | 1.65 | 0.826 |
| Trichloroethene          | 11,410                            | 1.00                | 0.330 | 10.00 | 5.00 | 2.65 | 1.33  |
| Tetrachloroethene        | 11,410                            | 1.00                | 0.410 | 10.00 | 5.00 | 2.14 | 1.07  |

| Lab ID: 0007574-04       | Sample Name: 05D_OA_02_20240227 | X̄ Temp (°C): 17.00 |       |       |      |      |       |
|--------------------------|---------------------------------|---------------------|-------|-------|------|------|-------|
| Vinyl Chloride           | 11,372                          | 1.00                | 0.810 | 10.00 | 5.00 | 1.08 | 0.542 |
| trans-1,2-Dichloroethene | 11,372                          | 1.00                | 0.440 | 10.00 | 5.00 | 2.00 | 0.999 |
| cis-1,2-Dichloroethene   | 11,372                          | 1.00                | 0.530 | 10.00 | 5.00 | 1.66 | 0.829 |
| Trichloroethene          | 11,372                          | 1.00                | 0.330 | 10.00 | 5.00 | 2.66 | 1.33  |
| Tetrachloroethene        | 11,372                          | 1.00                | 0.410 | 10.00 | 5.00 | 2.14 | 1.07  |

SCS Engineers  
 2830 Dairy Drive  
 Madison, WI 53718-6751

**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R05  
**Lab Work Order:** 0007574  
**Reported:** 03/14/2024

### *Laboratory Certification List*

| Certification ID   | Certification No. | Description   | Expires    | Project Required |
|--------------------|-------------------|---|------------|------------------|
| Alaska CS-LAP      | 19-002            | Alaska Department of Environmental Conservation                                 | 12/30/2024 |                  |
| DoD-ELAP           | 72690/L22-563     | United States Department of Defense Environmental Laboratory Accreditation      | 11/30/2024 |                  |
| ISO/IEC 17025:2017 | 72690/L22-563     | General Requirements for the Competence of Testing and Calibration Laboratories | 11/30/2024 |                  |
| NEFAP              | 72690/L22-564     | TNI National Environmental Field Activities Program (NEFAP)                     | 11/30/2024 |                  |
| NY-NELAC           | 12097             | New York Department of Health   | 04/01/2024 |                  |
| Utah-NELAC         | MD010912023-14    | Utah Department of Health   | 12/31/2024 |                  |

SCS Engineers  
2830 Dairy Drive  
Madison, WI 53718-6751

**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R05  
**Lab Work Order:** 0007574  
**Reported:** 03/14/2024

### Qualifiers/Notes and Definitions

#### General Definitions:

|           |  |
|-----------|--|
| DF        | Dilution Factor  |
| DL        | Detection Limit  |
| LOD       | Limit of Detection   |
| LOQ       | Limit of Quantitation  |
| NA        | Not Applicable   |
| Q         | Qualifier  |
| RPD       | Relative Percent Difference  |
| RT        | Retention Times in Minutes   |
| RRT       | Evaluation of Relative Retention Times in RRT Units (qualified if outside $\pm 0.06$ control limits) |
| $3\sigma$ | Uncertainty  |
| ∉         | Compound not on scope of accreditation   |
| +         | values are outside method/contract required QC limits  |
| ∅         | Compound not on scope of accreditation and analyzed with a one-point calibration                     |

#### Sample/Sample Receipt Qualifiers and Notes:

U Analyte was not detected and is reported as less than the limit of detection (LOD). The LOD has been adjusted for any dilution or concentration of the sample.

**SCS Engineers**  
2830 Dairy Drive  
Madison, WI 53718-6751

**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R05  
**Lab Work Order:** 0007574  
**Reported:** 03/14/2024

## *Sample Management Records*



Attachment B  
WDNR Publication 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.

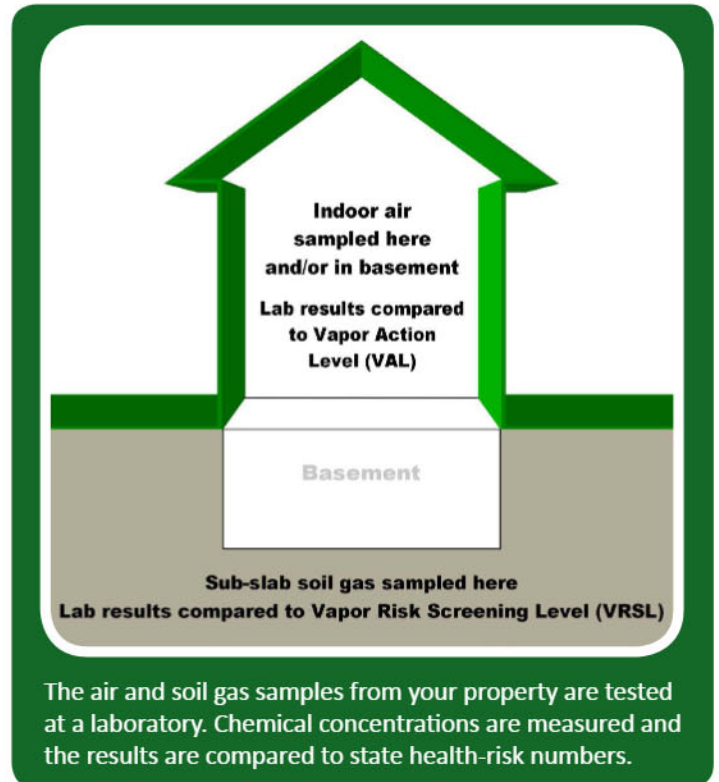
## Indoor Air Testing Results

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.



## 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

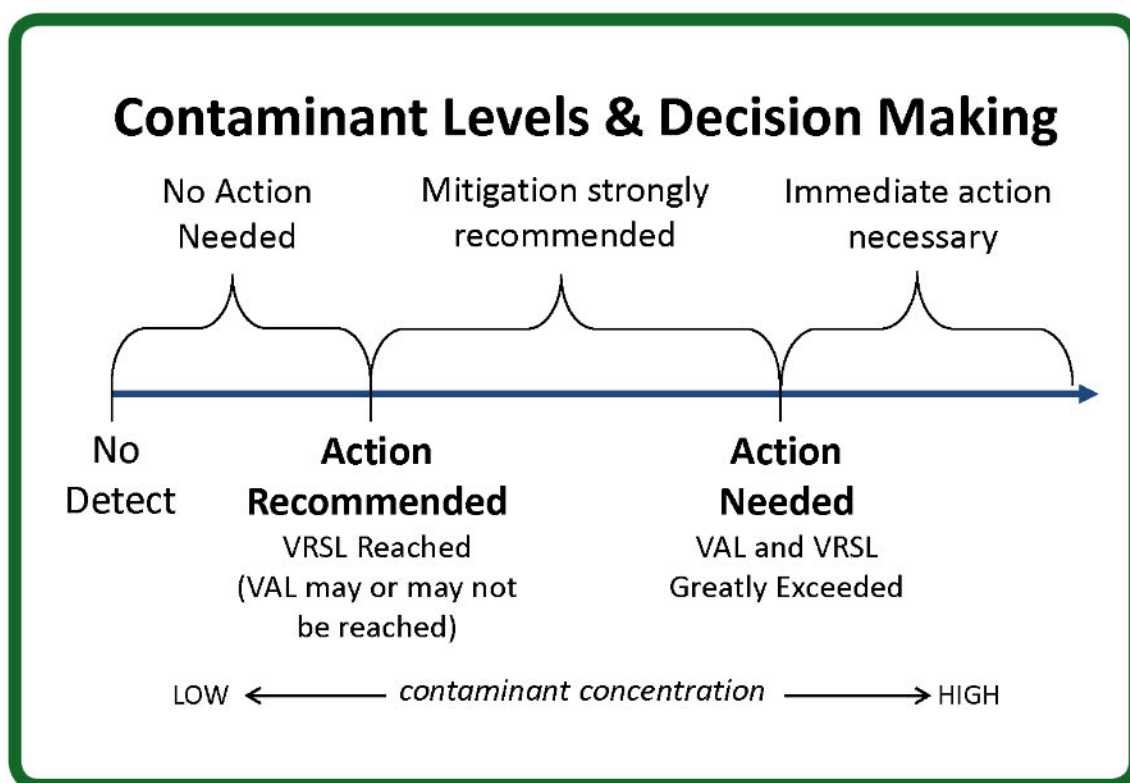
If your test results are less than a VAL for indoor air, or a VRSL for sub-slab soil gas, then the air in the house or building should not present a health concern. Follow-up sampling and testing may be necessary to confirm the results, but no other action is typically suggested.

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](http://dnr.wi.gov/topic/Brownfields/Vapor.html)

March 25, 2024  
File No. 25222269.04

Kimberly Dillenburg  
1427 South 95th Street  
West Allis, WI 53214

Subject: Sample Results Notification  
1427 South 95th Street  
WDNR Badger Lease & Auto Sales Case  
BRRTS No. 02-41-305222

Dear Ms. Dillenburg:

On behalf of the Wisconsin Department of Natural Resources (WDNR) through the Vapor Intrusion Zone Contract (VIZC), SCS Engineers (SCS) is providing sample results for sub-slab vapor and indoor air samples which were collected from your property by SCS in February 2024. The approximate sample locations are shown on the attached map (**Figure 1**).

The samples were submitted for analysis of five specific chlorinated volatile organic compounds (CVOCs), including tetrachloroethene (PCE), trichloroethene (TCE), cis-1,2-dichloroethene, trans-1,2-dichloroethene, and vinyl chloride. The sample laboratory reports are included as **Attachment A**. Analytical results are summarized in **Tables 1** and **2**. The WDNR Publication RR-977 Understanding Chemical Vapor Testing Results with additional information for you is included as **Attachment B**.

CVOCs were not detected in the samples collected from your property. Sampling to date indicates there is not an indoor air health risk related to vapor intrusion of CVOCs. Based on these findings, no additional sampling is planned. SCS will contact you in advance to arrange access for sealing of the sub-slab penetrations.

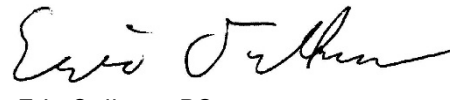
A final report with these findings will be prepared and submitted to the WDNR and listed on the Bureau for Remediation and Redevelopment Tracking System (BRRTS) on the Web (BOTW).

Please contact Joseph Martinez of WDNR at (414) 218-6042 or [joseph.martinez@wisconsin.gov](mailto:joseph.martinez@wisconsin.gov) or Nathan Kloczko of Wisconsin Department of Health (DHS) at (608) 867-4448 or [Nathan.kloczko@dhs.wisconsin.gov](mailto:Nathan.kloczko@dhs.wisconsin.gov) if you have questions concerning the analytical results.

Sincerely,



Robert Langdon  
Senior Project Manager  
SCS Engineers



Eric Oelkers, PG  
Senior Hydrogeologist  
SCS Engineers



Kimberly Dillenburg

March 25, 2024

Page 2

REL/AJR/EO

cc: Joseph Martinez, WDNR

Nathan Kloczko, DHS

Attachments: Table 1 – Sub-Slab Vapor Analytical Results Summary

Table 2 – Indoor Air Analytical Results Summary

Figure 1 - Vapor Investigation Map

Attachment A - Laboratory Reports

Attachment B - WDNR Publication RR-977

I:\25222269.00\25222269.04 Badger Lease & Auto\\_Deliverables\Results Notification Letters\1427 S.  
95th\240325\_Dillenburg\_1427 S 95th\_Results Notification.docx

## Tables

- 1 Sub-Slab Vapor Analytical Results Summary
- 2 Indoor Air Analytical Results Summary

**Table 1. Sub-Slab Vapor Analytical Results Summary**  
**Badger Lease & Auto Sales, West Allis, Wisconsin / SCS Engineers Project #2522269.04**  
 (Results are in  $\mu\text{g}/\text{m}^3$ )

| Location  | Sample              | Sample Start Date | Sample End Date | Lab Notes | Tetrachloroethene (PCE) | Trichloroethene (TCE) | cis-1,2-DCE | trans-1,2-DCE | Vinyl Chloride |
|---|---------------------|-------------------|-----------------|-----------|-------------------------|-----------------------|-------------|---------------|----------------|
| 1427 S. 95th St.  | 05E_SSV_05_20231003 | 9/26/2023         | 10/3/2023       | --        | <2.45                   | <3.05                 | <1.90       | <2.29         | <1.24          |
|   | 05E_SSV_05_20240227 | 2/19/2024         | 2/27/2024       | --        | <2.13                   | <2.64                 | <1.65       | <1.98         | <1.08          |
|   | 05E_SSV_06_20231003 | 9/26/2023         | 10/3/2023       | --        | <2.45                   | <3.05                 | <1.90       | <2.29         | <1.24          |
|   | 05E_SSV_06_20240227 | 2/19/2024         | 2/27/2024       | --        | <2.13                   | <2.65                 | <1.65       | <1.99         | <1.08          |
| Vapor Risk Screening Level (Residential Building)                 |                     |                   |                 |           | 1,400                   | 70                    | 1,400       | 1,400         | 56             |
| Vapor Risk Screening Level (Small Commercial Building)            |                     |                   |                 |           | 5,800                   | 290                   | 5,800       | 5,800         | 930            |
| Vapor Risk Screening Level (Large Commercial/Industrial Building) |                     |                   |                 |           | 18,000                  | 880                   | 18,000      | 18,000        | 2,800          |

Abbreviations:

$\mu\text{g}/\text{m}^3$  = micrograms per cubic meter  
 trans-1,2-DCE = trans-1,2-dichloroethene

cis-1,2-DCE = cis-1,2-dichloroethene  
 -- = Not Applicable

Notes:

1. Samples were collected using passive sorbent samplers and analyzed using the USEPA 8260C analytical method.
2. Vapor Risk Screening Levels are from Wisconsin Department of Natural Resources' WI Vapor Quick Look-Up Table, which is based on August 2023 U.S. EPA Regional Screening Level Tables.
3. **Bold+underlined** values meet or exceed Vapor Risk Screening Levels.

Lab Notes:

None

Calculations\Tables\[Table 1\_Sub-Slab Vapor Analytical Results Summary.xlsx]Sub-Slab Vapor

Created by: REL  
 Last revision by: AJR  
 Checked by: JSN  
 Proj Mgr QA/QC: REL

Date: 1/29/2024  
 Date: 3/15/2024  
 Date: 3/18/2024  
 Date: 3/20/2024

**Table 2. Indoor Air Analytical Results Summary**  
**Badger Lease & Auto Sales, West Allis, Wisconsin / SCS Engineers Project #25222269.04**  
 (Results are in µg/m<sup>3</sup>)

| Location   | Sample Type           | Sample              | Sample Start Date | Sample End Date | Lab Notes | Tetrachloroethene (PCE) | Trichloroethene (TCE) | cis-1,2-DCE | trans-1,2-DCE | Vinyl Chloride |
|--|-----------------------|---------------------|-------------------|-----------------|-----------|-------------------------|-----------------------|-------------|---------------|----------------|
| 1427 S. 95th St.   | Indoor Air, Basement  | 05E_IAB_05_20231003 | 9/26/2023         | 10/3/2023       | --        | <1.23                   | <1.52                 | <0.948      | <1.14         | <0.620         |
|  |                       | 05E_IAB_05_20240227 | 2/19/2024         | 2/27/2024       | --        | <1.07                   | <1.33                 | <0.825      | <0.994        | <0.540         |
|  | Indoor Air, 1st Floor | 05E_IA1_06_20231003 | 9/26/2023         | 10/3/2023       | --        | <1.23                   | <1.53                 | <0.950      | <1.14         | <0.621         |
|  |                       | 05E_IA1_06_20240227 | 2/19/2024         | 2/27/2024       | --        | <1.07                   | <1.33                 | <0.825      | <0.994        | <0.540         |
| Indoor Air Vapor Action Level (Residential Building)           |                       |                     |                   |                 |           | 42                      | 2.1                   | 42          | 42            | 1.7            |
| Indoor Air Vapor Action Level (Commercial/Industrial Building) |                       |                     |                   |                 |           | 180                     | 8.8                   | 180         | 180           | 28             |

Abbreviations:

µg/m<sup>3</sup> = micrograms per cubic meter  
 trans-1,2-DCE = trans-1,2-dichloroethene

cis-1,2-DCE = cis-1,2-dichloroethene  
 -- = Not Applicable

Notes:

1. Samples were collected using passive sorbent samplers analyzed using EPA Method TO-17.
2. Indoor Air Vapor Action Levels are from Wisconsin Department of Natural Resources' WI Vapor Quick Look-Up Table, which is based on August 2023 U.S. EPA Regional Screening Level Tables.
3. **Values** meet or exceed Indoor Air Vapor Action Levels.

Lab Notes/Qualifiers:

All non-detected analytes: U = Analyte was not detected and is reported as less than the limit of detection (LOD).  
 The LOD has been adjusted for any dilution or concentration of the sample.  
 J = Value reported below limit of quantitation (LOQ).

I:\25222269.00\25222269.04 Badger Lease & Auto\Data and Calculations\Tables\[Table 2\_Indoor and Outdoor Air Analytical Results Summary.xlsx]Indoor Air

Created by: AJR  
 Last revision by: LMH  
 Checked by: JSN  
 Proj Mgr QA/QC: REL

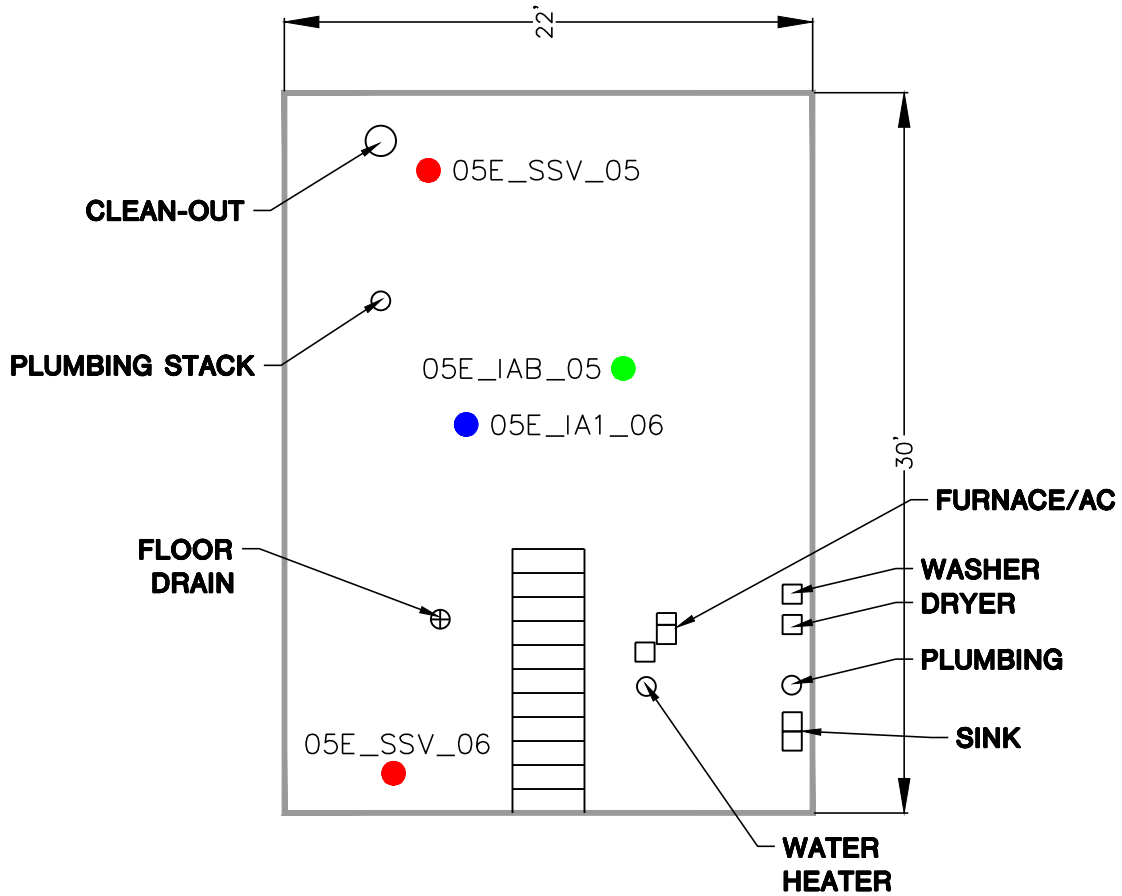
Date: 2/2/2024  
 Date: 3/18/2024  
 Date: 3/18/2024  
 Date: 3/20/2024

Figure 1  
Vapor Investigation Map



S 95TH St.

### BASEMENT LEVEL



SCALE: 1" = 8'



**LEGEND**

- APPROXIMATE SUB-SLAB SAMPLE LOCATION
- APPROXIMATE BASEMENT INDOOR AIR SAMPLE LOCATION
- APPROXIMATE 1ST FLOOR INDOOR AIR SAMPLE LOCATION

|        |   |      |                               |          |  |        |
|--------|---|------|-------------------------------|----------|--|--------|
| CLIENT | WISCONSIN DEPARTMENT OF NATURAL RESOURCES | SITE | 1427 S 95th STREET RESIDENCE  | ENGINEER | <b>SCS ENGINEERS</b><br>2830 DAIRY DRIVE MADISON, WI 53718-6751<br>PHONE: (608) 224-2830 | FIGURE |
|        | PROJECT NO. 25222269.04                   |      | DRAWN BY: SB                  |          |  | 1      |
|        | DRAWN: 09/12/2023                         |      | CHECKED BY: REL               |          |  |        |
|        | REVISED: 03/20/2024                       |      | APPROVED BY: REL (03/20/2024) |          |  |        |

Attachment A  
Laboratory Reports



Beacon Environmental

526 Underwood Lane  
Bel Air, MD 21014 USA  
1.410.838.8780

CERTIFICATE OF ANALYSIS

Beacon Proposal No.: 230920R04

Laboratory Work Order: 0007572

**Project Description:**

Badger Lease and Auto Sales  
West Allis, WI

Client PO No.: 25222269.04-001

Prepared for:

Jacob Krause

**SCS Engineers**

2830 Dairy Drive

Madison, WI 53718-6751

---

Ryan W. Schneider  
Senior Project Manager

March 11, 2024

All data meet requirements as specified in the Beacon Environmental Quality Assurance Project Plan and the results relate only to the samples reported. The work performed was in accordance with ISO/IEC 17025:2017. This report shall not be reproduced, except in full, without written approval of the laboratory. Release of the data contained in this data package has been authorized by the Laboratory Director or his signee, as verified by the following signatures:

---

Steven C. Thornley  
Laboratory Director

---

Peter B. Kelly  
Quality Manager

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SCS Engineers  
 2830 Dairy Drive  
 Madison, WI 53718-6751

**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007572  
**Reported:** 03/11/2024

### Sample Summary

| Lab Sample ID               | Client Sample ID                              | Received   | Analysis  | Matrix   |
|-----------------------------|---|------------|-----------|----------|
| 0007572-01<br>Sampler Type: | 05E_SSV_05_20240227<br>Beacon Passive Sampler | 02/29/2024 | EPA 8260C | Soil Gas |
| 0007572-02<br>Sampler Type: | 05E_SSV_06_20240227<br>Beacon Passive Sampler | 02/29/2024 | EPA 8260C | Soil Gas |

#### Project Completeness

**Samples Received:** 2  
**Samples Analyzed:** 2

SCS Engineers  
2830 Dairy Drive  
Madison, WI 53718-6751

**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007572  
**Reported:** 03/11/2024

### *Case Narrative*

#### **U.S. EPA Method 8260C**

All samples were analyzed using thermal desorption-gas chromatography/mass spectrometry (TD-GC/MS) instrumentation following U.S. EPA Method 8260C, with laboratory results provided in nanograms (ng) and micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ). Laboratory QA/QC procedures included internal standards, surrogates, and blanks based on EPA Method 8260C. Analyses and reporting were under BEACON's Quality Assurance Project Plan.

#### **Passive Soil-Gas Survey Notes**

If sample locations are covered with or near the edge of an impervious surface (*e.g.*, asphalt or concrete), the concentrations of compounds in soil gas are higher than if the surfacing was not present. Therefore, the sample location conditions should be considered when comparing results between locations.

Survey findings are exclusive to this project and when the spatial relationships are compared with results of other BEACON Surveys it is necessary to incorporate information from both investigations (*e.g.*, depth to sources, soil types, porosity, soil moisture, presence of impervious surfacing, sample collection times).

#### **Reporting Limits**

The RLs represent a baseline above which results meet laboratory-determined limits of precision and accuracy. All reported results are within the calibration range. The project method quantitation limit (MQL) is the limit of quantitation (LOQ) as noted in the data tables. Beacon determined uptake rates for a suite of compounds with the Beacon sampler for sampling in air. Beacon calculated the uptake rates for the remaining compounds using Graham's Law of Diffusion. The reported data includes LOQ limits.

#### **Project Details**

Samples were received in proper condition and laboratory control parameters were met unless otherwise noted below. The work performed was in accordance with ISO/IEC 17025:2017.

**SCS Engineers**  
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Madison, WI 53718-6751

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**Lab Work Order:** 0007572  
**Reported:** 03/11/2024

## *Analytical Results*

SCS Engineers  
2830 Dairy Drive  
Madison, WI 53718-6751

**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007572  
**Reported:** 03/11/2024

## *Detailed Analytical Results*



SCS Engineers  
2830 Dairy Drive  
Madison, WI 53718-6751

**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007572  
**Reported:** 03/11/2024

*Detailed Analytical Results- Mass*

**SCS Engineers**  
 2830 Dairy Drive  
 Madison, WI 53718-6751

**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007572  
**Reported:** 03/11/2024

Lab Sample ID: 0007572-01

**05E\_SSV\_05\_20240227**

Method: EPA 8260C

Soil Gas

| Analyte                       | CAS#       | Result<br>(ng) Q | LOQ<br>(ng)     | Analyzed         | File ID          |             |
|-------------------------------|------------|------------------|-----------------|------------------|------------------|-------------|
| Vinyl Chloride                | 75-01-4    | <10              | 10              | 03/01/2024 17:35 | C24030113.D      |             |
| trans-1,2-Dichloroethene      | 156-60-5   | <10              | 10              | 03/01/2024 17:35 | C24030113.D      |             |
| cis-1,2-Dichloroethene        | 156-59-2   | <10              | 10              | 03/01/2024 17:35 | C24030113.D      |             |
| Trichloroethene               | 79-01-6    | <10              | 10              | 03/01/2024 17:35 | C24030113.D      |             |
| Tetrachloroethene             | 127-18-4   | <10              | 10              | 03/01/2024 17:35 | C24030113.D      |             |
| Analyte                       | CAS#       | % Recovery       | Recovery Limits | Q                | Analyzed         | File ID     |
| Surrogate: 1,2-DCA-d4         | 17060-07-0 | 98.8%            | 70-130          |                  | 03/01/2024 17:35 | C24030113.D |
| Surrogate: Toluene-d8         | 2037-26-5  | 83.0%            | 70-130          |                  | 03/01/2024 17:35 | C24030113.D |
| Surrogate: Bromofluorobenzene | 460-00-4   | 89.6%            | 70-130          |                  | 03/01/2024 17:35 | C24030113.D |

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**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007572  
**Reported:** 03/11/2024

Lab Sample ID: 0007572-02

**05E\_SSV\_06\_20240227**

Method: EPA 8260C

Soil Gas

| Analyte                       | CAS#       | Result<br>(ng) Q | LOQ<br>(ng)     | Analyzed         | File ID          |             |
|-------------------------------|------------|------------------|-----------------|------------------|------------------|-------------|
| Vinyl Chloride                | 75-01-4    | <10              | 10              | 03/01/2024 18:04 | C24030114.D      |             |
| trans-1,2-Dichloroethene      | 156-60-5   | <10              | 10              | 03/01/2024 18:04 | C24030114.D      |             |
| cis-1,2-Dichloroethene        | 156-59-2   | <10              | 10              | 03/01/2024 18:04 | C24030114.D      |             |
| Trichloroethene               | 79-01-6    | <10              | 10              | 03/01/2024 18:04 | C24030114.D      |             |
| Tetrachloroethene             | 127-18-4   | <10              | 10              | 03/01/2024 18:04 | C24030114.D      |             |
| Analyte                       | CAS#       | % Recovery       | Recovery Limits | Q                | Analyzed         | File ID     |
| Surrogate: 1,2-DCA-d4         | 17060-07-0 | 97.0%            | 70-130          |                  | 03/01/2024 18:04 | C24030114.D |
| Surrogate: Toluene-d8         | 2037-26-5  | 82.4%            | 70-130          |                  | 03/01/2024 18:04 | C24030114.D |
| Surrogate: Bromofluorobenzene | 460-00-4   | 93.5%            | 70-130          |                  | 03/01/2024 18:04 | C24030114.D |

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**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007572  
**Reported:** 03/11/2024

*Detailed Analytical Results- Concentration*

**SCS Engineers**  
 2830 Dairy Drive  
 Madison, WI 53718-6751

**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007572  
**Reported:** 03/11/2024

Lab Sample ID: 0007572-01

**05E\_SSV\_05\_20240227**

Method: EPA 8260C

Soil Gas

| Analyte                       | CAS#       | Result<br>(µg/m <sup>3</sup> ) | Q               | LOQ<br>(µg/m <sup>3</sup> ) | Analyzed         | File ID     |
|-------------------------------|------------|--------------------------------|-----------------|-----------------------------|------------------|-------------|
| Vinyl Chloride                | 75-01-4    | <1.08                          |                 | 1.08                        | 03/01/2024 17:35 | C24030113.D |
| trans-1,2-Dichloroethene      | 156-60-5   | <1.98                          |                 | 1.98                        | 03/01/2024 17:35 | C24030113.D |
| cis-1,2-Dichloroethene        | 156-59-2   | <1.65                          |                 | 1.65                        | 03/01/2024 17:35 | C24030113.D |
| Trichloroethene               | 79-01-6    | <2.64                          |                 | 2.64                        | 03/01/2024 17:35 | C24030113.D |
| Tetrachloroethene             | 127-18-4   | <2.13                          |                 | 2.13                        | 03/01/2024 17:35 | C24030113.D |
| Analyte                       | CAS#       | % Recovery                     | Recovery Limits | Q                           | Analyzed         | File ID     |
| Surrogate: 1,2-DCA-d4         | 17060-07-0 | 98.8%                          | 70-130          |                             | 03/01/2024 17:35 | C24030113.D |
| Surrogate: Toluene-d8         | 2037-26-5  | 83.0%                          | 70-130          |                             | 03/01/2024 17:35 | C24030113.D |
| Surrogate: Bromofluorobenzene | 460-00-4   | 89.6%                          | 70-130          |                             | 03/01/2024 17:35 | C24030113.D |

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**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007572  
**Reported:** 03/11/2024

Lab Sample ID: 0007572-02

**05E\_SSV\_06\_20240227**

Method: EPA 8260C

Soil Gas

| Analyte                       | CAS#       | Result<br>(µg/m³) Q | LOQ<br>(µg/m³)  | Analyzed         | File ID          |             |
|-------------------------------|------------|---------------------|-----------------|------------------|------------------|-------------|
| Vinyl Chloride                | 75-01-4    | <1.08               | 1.08            | 03/01/2024 18:04 | C24030114.D      |             |
| trans-1,2-Dichloroethene      | 156-60-5   | <1.99               | 1.99            | 03/01/2024 18:04 | C24030114.D      |             |
| cis-1,2-Dichloroethene        | 156-59-2   | <1.65               | 1.65            | 03/01/2024 18:04 | C24030114.D      |             |
| Trichloroethene               | 79-01-6    | <2.65               | 2.65            | 03/01/2024 18:04 | C24030114.D      |             |
| Tetrachloroethene             | 127-18-4   | <2.13               | 2.13            | 03/01/2024 18:04 | C24030114.D      |             |
| Analyte                       | CAS#       | % Recovery          | Recovery Limits | Q                | Analyzed         | File ID     |
| Surrogate: 1,2-DCA-d4         | 17060-07-0 | 97.0%               | 70-130          |                  | 03/01/2024 18:04 | C24030114.D |
| Surrogate: Toluene-d8         | 2037-26-5  | 82.4%               | 70-130          |                  | 03/01/2024 18:04 | C24030114.D |
| Surrogate: Bromofluorobenzene | 460-00-4   | 93.5%               | 70-130          |                  | 03/01/2024 18:04 | C24030114.D |

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**Lab Work Order:** 0007572  
**Reported:** 03/11/2024

## *QC Information/Summary*

**SCS Engineers**  
 2830 Dairy Drive  
 Madison, WI 53718-6751

**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007572  
**Reported:** 03/11/2024

*Soil-Gas Sample Analysis by EPA Method 8260C - Quality Control Summary*
**Sequence: B24B051 - Instrument: C System - File ID: Cb24021520.D**
***B24B051-ICV1 (LCSD/Second Source Verification/CALV)***

| Analyte                              | Result      | LOQ | Units     | Spike Level | Source Result | %REC        | %REC Limits   | RPD | RPD Limit | Notes |
|--------------------------------------|-------------|-----|-----------|-------------|---------------|-------------|---------------|-----|-----------|-------|
| Vinyl Chloride                       | 45.3        | 10  | ng        | 50.0        |               | 90.6        | 70-130        |     |           |       |
| trans-1,2-Dichloroethene             | 51.2        | 10  | ng        | 50.0        |               | 102         | 70-130        |     |           |       |
| cis-1,2-Dichloroethene               | 52.5        | 10  | ng        | 50.0        |               | 105         | 70-130        |     |           |       |
| Trichloroethene                      | 49.9        | 10  | ng        | 50.0        |               | 99.8        | 70-130        |     |           |       |
| Tetrachloroethene                    | 56.1        | 10  | ng        | 50.0        |               | 112         | 70-130        |     |           |       |
| <i>Surrogate: 1,2-DCA-d4</i>         | <i>46.0</i> |     | <i>ng</i> | <i>50.0</i> |               | <i>92.0</i> | <i>70-130</i> |     |           |       |
| <i>Surrogate: Toluene-d8</i>         | <i>47.9</i> |     | <i>ng</i> | <i>50.0</i> |               | <i>95.7</i> | <i>70-130</i> |     |           |       |
| <i>Surrogate: Bromofluorobenzene</i> | <i>48.7</i> |     | <i>ng</i> | <i>50.0</i> |               | <i>97.4</i> | <i>70-130</i> |     |           |       |



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**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007572  
**Reported:** 03/11/2024

*Soil-Gas Sample Analysis by EPA Method 8260C - Quality Control Summary*
**Sequence: B24B051 - Instrument: C System - File ID: Cb24021524.D**
***B24B051-ICB1 (Lab Blank/Initial Calibration Blank)***

| Analyte                              | Result | LOQ | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|--------------------------------------|--------|-----|-------|-------------|---------------|------|-------------|-----|-----------|-------|
| Vinyl Chloride                       | <5     | 10  | ng    |             |               |      |             |     |           | U     |
| trans-1,2-Dichloroethene             | <5     | 10  | ng    |             |               |      |             |     |           | U     |
| cis-1,2-Dichloroethene               | <5     | 10  | ng    |             |               |      |             |     |           | U     |
| Trichloroethene                      | <5     | 10  | ng    |             |               |      |             |     |           | U     |
| Tetrachloroethene                    | <5     | 10  | ng    |             |               |      |             |     |           | U     |
| <i>Surrogate: 1,2-DCA-d4</i>         | 95.5   |     | ng    | 100         |               | 95.5 | 70-130      |     |           |       |
| <i>Surrogate: Toluene-d8</i>         | 92.8   |     | ng    | 100         |               | 92.8 | 70-130      |     |           |       |
| <i>Surrogate: Bromofluorobenzene</i> | 89.6   |     | ng    | 100         |               | 89.6 | 70-130      |     |           |       |

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**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007572  
**Reported:** 03/11/2024

*Soil-Gas Sample Analysis by EPA Method 8260C - Quality Control Summary*
**Sequence: B24C006 - Batch: 24C0006 - Instrument: C System - File ID: C24030102.D**
*24C0006-BS1 (LCS, Calibration Source Verification)*

| Analyte                              | Result      | LOQ | Units     | Spike Level | Source Result | %REC        | %REC Limits   | RPD | RPD Limit | Notes |
|--------------------------------------|-------------|-----|-----------|-------------|---------------|-------------|---------------|-----|-----------|-------|
| Vinyl Chloride                       | 59.3        | 10  | ng        | 50.0        |               | 119         | 80-120        |     |           |       |
| trans-1,2-Dichloroethene             | 54.8        | 10  | ng        | 50.0        |               | 110         | 80-120        |     |           |       |
| cis-1,2-Dichloroethene               | 50.2        | 10  | ng        | 50.0        |               | 100         | 80-120        |     |           |       |
| Trichloroethene                      | 51.2        | 10  | ng        | 50.0        |               | 102         | 80-120        |     |           |       |
| Tetrachloroethene                    | 49.5        | 10  | ng        | 50.0        |               | 99.0        | 80-120        |     |           |       |
| <i>Surrogate: 1,2-DCA-d4</i>         | <i>51.6</i> |     | <i>ng</i> | <i>50.0</i> |               | <i>103</i>  | <i>70-130</i> |     |           |       |
| <i>Surrogate: Toluene-d8</i>         | <i>45.1</i> |     | <i>ng</i> | <i>50.0</i> |               | <i>90.2</i> | <i>70-130</i> |     |           |       |
| <i>Surrogate: Bromofluorobenzene</i> | <i>48.6</i> |     | <i>ng</i> | <i>50.0</i> |               | <i>97.1</i> | <i>70-130</i> |     |           |       |

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**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007572  
**Reported:** 03/11/2024

*Soil-Gas Analysis by EPA 8260 - Data in Concentration - Quality Control Summary*

**Sequence: B24C006 - Batch: 24C0006 - Instrument: C System - File ID: C24030103.D**
**24C0006-BLK1 (Lab Blank)**

| Analyte                              | Result      | LOQ  | Units             | Spike Level | Source Result | %REC        | %REC Limits   | RPD | RPD Limit | Notes |
|--------------------------------------|-------------|------|-------------------|-------------|---------------|-------------|---------------|-----|-----------|-------|
| Vinyl Chloride                       | <1.08       | 1.08 | µg/m <sup>3</sup> |             |               |             |               |     |           | U     |
| trans-1,2-Dichloroethene             | <1.98       | 1.98 | µg/m <sup>3</sup> |             |               |             |               |     |           | U     |
| cis-1,2-Dichloroethene               | <1.65       | 1.65 | µg/m <sup>3</sup> |             |               |             |               |     |           | U     |
| Trichloroethene                      | <2.64       | 2.64 | µg/m <sup>3</sup> |             |               |             |               |     |           | U     |
| Tetrachloroethene                    | <2.13       | 2.13 | µg/m <sup>3</sup> |             |               |             |               |     |           | U     |
| <i>Surrogate: 1,2-DCA-d4</i>         | <i>103</i>  |      | <i>ng</i>         | <i>100</i>  |               | <i>103</i>  | <i>70-130</i> |     |           |       |
| <i>Surrogate: Toluene-d8</i>         | <i>90.5</i> |      | <i>ng</i>         | <i>100</i>  |               | <i>90.5</i> | <i>70-130</i> |     |           |       |
| <i>Surrogate: Bromofluorobenzene</i> | <i>88.4</i> |      | <i>ng</i>         | <i>100</i>  |               | <i>88.4</i> | <i>70-130</i> |     |           |       |

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**Site Name:** Badger Lease and Auto Sales  
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**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007572  
**Reported:** 03/11/2024

*Soil-Gas Sample Analysis by EPA Method 8260C - Quality Control Summary*
**Sequence: B24C006 - Batch: 24C0006 - Instrument: C System - File ID: C24030103.D**
**24C0006-BLK1 (Lab Blank)**

| Analyte                              | Result      | LOQ | Units     | Spike Level | Source Result | %REC        | %REC Limits   | RPD | RPD Limit | Notes |
|--------------------------------------|-------------|-----|-----------|-------------|---------------|-------------|---------------|-----|-----------|-------|
| Vinyl Chloride                       | <5          | 10  | ng        |             |               |             |               |     |           | U     |
| trans-1,2-Dichloroethene             | <5          | 10  | ng        |             |               |             |               |     |           | U     |
| cis-1,2-Dichloroethene               | <5          | 10  | ng        |             |               |             |               |     |           | U     |
| Trichloroethene                      | <5          | 10  | ng        |             |               |             |               |     |           | U     |
| Tetrachloroethene                    | <5          | 10  | ng        |             |               |             |               |     |           | U     |
| <i>Surrogate: 1,2-DCA-d4</i>         | <i>103</i>  |     | <i>ng</i> | <i>100</i>  |               | <i>103</i>  | <i>70-130</i> |     |           |       |
| <i>Surrogate: Toluene-d8</i>         | <i>90.5</i> |     | <i>ng</i> | <i>100</i>  |               | <i>90.5</i> | <i>70-130</i> |     |           |       |
| <i>Surrogate: Bromofluorobenzene</i> | <i>88.4</i> |     | <i>ng</i> | <i>100</i>  |               | <i>88.4</i> | <i>70-130</i> |     |           |       |

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**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007572  
**Reported:** 03/11/2024

*Soil-Gas Sample Analysis by EPA Method 8260C - Quality Control Summary*
**Sequence: B24C006 - Instrument: C System - File ID: C24030104.D**
*B24C006-ICV1 (LCSD/Second Source Verification/CALV)*

| Analyte                              | Result      | LOQ | Units     | Spike Level | Source Result | %REC        | %REC Limits   | RPD | RPD Limit | Notes |
|--------------------------------------|-------------|-----|-----------|-------------|---------------|-------------|---------------|-----|-----------|-------|
| Vinyl Chloride                       | 63.7        | 10  | ng        | 50.0        |               | 127         | 70-130        |     |           |       |
| trans-1,2-Dichloroethene             | 57.1        | 10  | ng        | 50.0        |               | 114         | 70-130        |     |           |       |
| cis-1,2-Dichloroethene               | 48.4        | 10  | ng        | 50.0        |               | 96.7        | 70-130        |     |           |       |
| Trichloroethene                      | 51.7        | 10  | ng        | 50.0        |               | 103         | 70-130        |     |           |       |
| Tetrachloroethene                    | 50.5        | 10  | ng        | 50.0        |               | 101         | 70-130        |     |           |       |
| <i>Surrogate: 1,2-DCA-d4</i>         | <i>48.4</i> |     | <i>ng</i> | <i>50.0</i> |               | <i>96.8</i> | <i>70-130</i> |     |           |       |
| <i>Surrogate: Toluene-d8</i>         | <i>44.5</i> |     | <i>ng</i> | <i>50.0</i> |               | <i>89.0</i> | <i>70-130</i> |     |           |       |
| <i>Surrogate: Bromofluorobenzene</i> | <i>46.5</i> |     | <i>ng</i> | <i>50.0</i> |               | <i>93.0</i> | <i>70-130</i> |     |           |       |

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**Lab Work Order:** 0007572  
**Reported:** 03/11/2024

*Additional QC Information*

**SCS Engineers**  
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Madison, WI 53718-6751

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**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007572  
**Reported:** 03/11/2024

**Sample Result Calculation Summary (Concentration)**  
**EPA 8260C**

| Analyte | t<br>Sampling Time<br>minutes | DF<br>Dilution<br>Factor | U<br>Uptake<br>Rate | M<br>Initial Result<br>ng | C<br>Calculated Result<br>µg/m <sup>3</sup> | File ID |
|---------|-------------------------------|--------------------------|---------------------|---------------------------|---|---------|
|---------|-------------------------------|--------------------------|---------------------|---------------------------|---|---------|

**Lab ID:** 0007572-01      **Sample Name:** 05E\_SSV\_05\_20240227

|                          |        |      |       |   |   |             |
|--------------------------|--------|------|-------|---|---|-------------|
| Vinyl Chloride           | 11,464 | 1.00 | 0.810 | U | U | C24030113.D |
| trans-1,2-Dichloroethene | 11,464 | 1.00 | 0.440 | U | U | C24030113.D |
| cis-1,2-Dichloroethene   | 11,464 | 1.00 | 0.530 | U | U | C24030113.D |
| Trichloroethene          | 11,464 | 1.00 | 0.330 | U | U | C24030113.D |
| Tetrachloroethene        | 11,464 | 1.00 | 0.410 | U | U | C24030113.D |

**Lab ID:** 0007572-02      **Sample Name:** 05E\_SSV\_06\_20240227

|                          |        |      |       |   |   |             |
|--------------------------|--------|------|-------|---|---|-------------|
| Vinyl Chloride           | 11,448 | 1.00 | 0.810 | U | U | C24030114.D |
| trans-1,2-Dichloroethene | 11,448 | 1.00 | 0.440 | U | U | C24030114.D |
| cis-1,2-Dichloroethene   | 11,448 | 1.00 | 0.530 | U | U | C24030114.D |
| Trichloroethene          | 11,448 | 1.00 | 0.330 | U | U | C24030114.D |
| Tetrachloroethene        | 11,448 | 1.00 | 0.410 | U | U | C24030114.D |

Calculations:

$$C = \frac{1000 \times M \times DF}{U \times t}$$

where: C = concentration (µg/m<sup>3</sup>)  
M = mass (ng)  
DF = dilution factor  
t = sampling time (minutes)  
U = compound specific uptake rate

*Reference: Federal Register/Vol. 79, No. 125/June 30, 2014*

|  |   |  |
|--|---|--|
| <b>SCS Engineers</b><br>2830 Dairy Drive<br>Madison, WI 53718-6751 | <b>Site Name:</b> Badger Lease and Auto Sales<br><b>Site Location:</b> West Allis, WI<br><b>Project Manager:</b> Jacob Krause | <b>Beacon Proposal:</b> 230920R04<br><b>Lab Work Order:</b> 0007572<br><b>Reported:</b> 03/11/2024 |
|--|---|--|

**Method Detection and Reporting Limit Calculations (Concentration)**

**EPA 8260C**

| Analyte | t<br>Sampling Time<br>minutes | DF<br>Dilution<br>Factor | U<br>Uptake<br>Rate | M<br>Initial LOQ<br>ng | C<br>Calculated LOQ<br>µg/m <sup>3</sup> |
|---------|-------------------------------|--------------------------|---------------------|------------------------|--|
|---------|-------------------------------|--------------------------|---------------------|------------------------|--|

**Lab ID:** 0007572-01      **Sample Name:** 05E\_SSV\_05\_20240227

|                          |        |      |       |      |      |
|--------------------------|--------|------|-------|------|------|
| Vinyl Chloride           | 11,464 | 1.00 | 0.810 | 10.0 | 1.08 |
| trans-1,2-Dichloroethene | 11,464 | 1.00 | 0.440 | 10.0 | 1.98 |
| cis-1,2-Dichloroethene   | 11,464 | 1.00 | 0.530 | 10.0 | 1.65 |
| Trichloroethene          | 11,464 | 1.00 | 0.330 | 10.0 | 2.64 |
| Tetrachloroethene        | 11,464 | 1.00 | 0.410 | 10.0 | 2.13 |

**Lab ID:** 0007572-02      **Sample Name:** 05E\_SSV\_06\_20240227

|                          |        |      |       |      |      |
|--------------------------|--------|------|-------|------|------|
| Vinyl Chloride           | 11,448 | 1.00 | 0.810 | 10.0 | 1.08 |
| trans-1,2-Dichloroethene | 11,448 | 1.00 | 0.440 | 10.0 | 1.99 |
| cis-1,2-Dichloroethene   | 11,448 | 1.00 | 0.530 | 10.0 | 1.65 |
| Trichloroethene          | 11,448 | 1.00 | 0.330 | 10.0 | 2.65 |
| Tetrachloroethene        | 11,448 | 1.00 | 0.410 | 10.0 | 2.13 |



SCS Engineers  
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 Madison, WI 53718-6751

**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007572  
**Reported:** 03/11/2024

### *Laboratory Certification List*

| Certification ID   | Certification No. | Description   | Expires    | Project Required |
|--------------------|-------------------|---|------------|------------------|
| Alaska CS-LAP      | 19-002            | Alaska Department of Environmental Conservation                                 | 12/30/2024 |                  |
| DoD-ELAP           | 72690/L22-563     | United States Department of Defense Environmental Laboratory Accreditation      | 11/30/2024 |                  |
| ISO/IEC 17025:2017 | 72690/L22-563     | General Requirements for the Competence of Testing and Calibration Laboratories | 11/30/2024 |                  |
| NEFAP              | 72690/L22-564     | TNI National Environmental Field Activities Program (NEFAP)                     | 11/30/2024 |                  |
| NY-NELAC           | 12097             | New York Department of Health   | 04/01/2024 |                  |
| Utah-NELAC         | MD010912023-14    | Utah Department of Health   | 12/31/2024 |                  |

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**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007572  
**Reported:** 03/11/2024

### Qualifiers/Notes and Definitions

**General Definitions:**

|           |  |
|-----------|--|
| DF        | Dilution Factor  |
| DL        | Detection Limit  |
| LOD       | Limit of Detection   |
| LOQ       | Limit of Quantitation  |
| NA        | Not Applicable   |
| Q         | Qualifier  |
| RPD       | Relative Percent Difference  |
| RT        | Retention Times in Minutes   |
| RRT       | Evaluation of Relative Retention Times in RRT Units (qualified if outside $\pm 0.06$ control limits) |
| $3\sigma$ | Uncertainty  |
| ∉         | Compound not on scope of accreditation   |
| +         | values are outside method/contract required QC limits  |
| ∅         | Compound not on scope of accreditation and analyzed with a one-point calibration                     |

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**Beacon Proposal:** 230920R04  
**Lab Work Order:** 0007572  
**Reported:** 03/11/2024

## *Sample Management Records*





Beacon Environmental

526 Underwood Lane  
Bel Air, MD 21014 USA  
1.410.838.8780

CERTIFICATE OF ANALYSIS

Beacon Proposal No.: 230920R05

Laboratory Work Order: 0007575

**Project Description:**

Badger Lease and Auto Sales  
West Allis, WI

Client PO No.: 25222269.04-002

Prepared for:

Jacob Krause

**SCS Engineers**

2830 Dairy Drive

Madison, WI 53718-6751

---

Ryan W. Schneider  
Senior Project Manager

March 14, 2024

All data meet requirements as specified in the Beacon Environmental Quality Assurance Project Plan and the results relate only to the samples reported. The work performed was in accordance with ISO/IEC 17025:2017. This report shall not be reproduced, except in full, without written approval of the laboratory. Release of the data contained in this data package has been authorized by the Laboratory Director or his signee, as verified by the following signatures:

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Steven C. Thornley  
Laboratory Director

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Peter B. Kelly  
Quality Manager

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 2830 Dairy Drive  
 Madison, WI 53718-6751

**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R05  
**Lab Work Order:** 0007575  
**Reported:** 03/14/2024

### Sample Summary

| Lab Sample ID               | Client Sample ID                              | Received   | Analysis        | Matrix     |
|-----------------------------|---|------------|-----------------|------------|
| 0007575-01<br>Sampler Type: | 05E_IAB_05_20240227<br>Beacon Passive Sampler | 02/29/2024 | TO-17 (Passive) | Indoor Air |
| 0007575-02<br>Sampler Type: | 05E_IA1_06_20240227<br>Beacon Passive Sampler | 02/29/2024 | TO-17 (Passive) | Indoor Air |

#### Project Completeness

**Samples Received:** 2  
**Samples Analyzed:** 2

SCS Engineers  
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**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R05  
**Lab Work Order:** 0007575  
**Reported:** 03/14/2024

### *Case Narrative*

Beacon Environmental provided thermally conditioned Beacon Samplers for sampling, with analyses following U.S. EPA Method TO-17, with analytical results reported in  $\mu\text{g}/\text{m}^3$ . Beacon calculated concentration results using the exposure period, target analyte mass, and the following procedures detailed in ISO 16017-2, *Indoor, ambient and workplace air-Sampling and analysis of volatile organic compounds by sorbent tube/thermal desorption/capillary gas chromatography-Part 2: Diffusive sampling*.

Beacon reports results and reporting limits to three significant digits.

#### **Reporting Limits (RLs) for EPA Method TO-17**

The RLs represent a baseline above which results meet laboratory-determined limits of precision and accuracy. Beacon performed dilution analysis when results exceeded the upper calibration limit, bringing all reported results within the calibration range. The project method quantitation limit (MQL) is the limit of detection (LOD) as noted in the data tables.

#### **Calibration Verification**

All continuing calibration verification (CCV) values are within  $\pm 30\%$  of the true values as defined by the initial calibration and met the requirements specified in BEACON's Quality Manual.

#### **Internal Standards and Surrogates**

Internal standards and surrogates are spiked on all blanks (ICB, BLK), field samples and laboratory control samples (ICV/CALV, BS, ICV and CCV). Acceptance criteria for internal standards are 60 to 140 percent and surrogate recoveries are 70 to 130 percent; all internal standards and surrogates are within the acceptance criteria unless noted in the **Case Narrative**.

#### **Blank Contamination**

No targeted compounds above the limit of detection (LOD) for each compound were observed in the Laboratory Method Blanks unless noted in the **Case Narrative**.

#### **Laboratory Control Samples**

Acceptance criteria for surrogate and analytes recoveries are 70 to 130 percent; all recoveries are within the acceptance criteria unless noted in the **Case Narrative**.

#### **Discussion**

Samples were received in proper condition and laboratory control parameters were met unless otherwise noted below. The work performed was in accordance with ISO/IEC 17025:2017.

End of Case Narrative



**SCS Engineers**  
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Madison, WI 53718-6751

**Site Name:** Badger Lease and Auto Sales  
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**Beacon Proposal:** 230920R05  
**Lab Work Order:** 0007575  
**Reported:** 03/14/2024

## *Analytical Results*

**SCS Engineers**  
2830 Dairy Drive  
Madison, WI 53718-6751

**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R05  
**Lab Work Order:** 0007575  
**Reported:** 03/14/2024

## *Detailed Analytical Results*

**SCS Engineers**  
 2830 Dairy Drive  
 Madison, WI 53718-6751

**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R05  
**Lab Work Order:** 0007575  
**Reported:** 03/14/2024

Lab Sample ID: 0007575-01

**05E\_IAB\_05\_20240227**

Method: TO-17 (Passive)

Indoor Air

| Analyte                       | CAS#       | Result<br>(µg/m <sup>3</sup> ) | Q               | LOD<br>(µg/m <sup>3</sup> ) | LOQ<br>(µg/m <sup>3</sup> ) | Analyzed         | File ID     |
|-------------------------------|------------|--------------------------------|-----------------|-----------------------------|-----------------------------|------------------|-------------|
| Vinyl Chloride                | 75-01-4    | <0.540                         | U               | 0.540                       | 1.08                        | 03/04/2024 20:46 | C24030420.D |
| trans-1,2-Dichloroethene      | 156-60-5   | <0.994                         | U               | 0.994                       | 1.99                        | 03/04/2024 20:46 | C24030420.D |
| cis-1,2-Dichloroethene        | 156-59-2   | <0.825                         | U               | 0.825                       | 1.65                        | 03/04/2024 20:46 | C24030420.D |
| Trichloroethene               | 79-01-6    | <1.33                          | U               | 1.33                        | 2.65                        | 03/04/2024 20:46 | C24030420.D |
| Tetrachloroethene             | 127-18-4   | <1.07                          | U               | 1.07                        | 2.13                        | 03/04/2024 20:46 | C24030420.D |
| Analyte                       | CAS#       | % Recovery                     | Recovery Limits | Q                           |                             | Analyzed         | File ID     |
| Surrogate: 1,2-DCA-d4         | 17060-07-0 | 106%                           | 70-130          |                             |                             | 03/04/2024 20:46 | C24030420.D |
| Surrogate: Toluene-d8         | 2037-26-5  | 89.6%                          | 70-130          |                             |                             | 03/04/2024 20:46 | C24030420.D |
| Surrogate: Bromofluorobenzene | 460-00-4   | 90.5%                          | 70-130          |                             |                             | 03/04/2024 20:46 | C24030420.D |

|  |   |  |
|--|---|--|
| <b>SCS Engineers</b><br>2830 Dairy Drive<br>Madison, WI 53718-6751 | <b>Site Name:</b> Badger Lease and Auto Sales<br><b>Site Location:</b> West Allis, WI<br><b>Project Manager:</b> Jacob Krause | <b>Beacon Proposal:</b> 230920R05<br><b>Lab Work Order:</b> 0007575<br><b>Reported:</b> 03/14/2024 |
|--|---|--|

|                           |                            |                         |
|---------------------------|----------------------------|-------------------------|
| Lab Sample ID: 0007575-02 | <b>05E_IA1_06_20240227</b> | Method: TO-17 (Passive) |
| Indoor Air                |                            |                         |

| Analyte                       | CAS#       | Result<br>(µg/m <sup>3</sup> ) | Q               | LOD<br>(µg/m <sup>3</sup> ) | LOQ<br>(µg/m <sup>3</sup> ) | Analyzed         | File ID     |
|-------------------------------|------------|--------------------------------|-----------------|-----------------------------|-----------------------------|------------------|-------------|
| Vinyl Chloride                | 75-01-4    | <0.540                         | U               | 0.540                       | 1.08                        | 03/04/2024 21:15 | C24030421.D |
| trans-1,2-Dichloroethene      | 156-60-5   | <0.994                         | U               | 0.994                       | 1.99                        | 03/04/2024 21:15 | C24030421.D |
| cis-1,2-Dichloroethene        | 156-59-2   | <0.825                         | U               | 0.825                       | 1.65                        | 03/04/2024 21:15 | C24030421.D |
| Trichloroethene               | 79-01-6    | <1.33                          | U               | 1.33                        | 2.65                        | 03/04/2024 21:15 | C24030421.D |
| Tetrachloroethene             | 127-18-4   | <1.07                          | U               | 1.07                        | 2.13                        | 03/04/2024 21:15 | C24030421.D |
| Analyte                       | CAS#       | % Recovery                     | Recovery Limits | Q                           |                             | Analyzed         | File ID     |
| Surrogate: 1,2-DCA-d4         | 17060-07-0 | 107%                           | 70-130          |                             |                             | 03/04/2024 21:15 | C24030421.D |
| Surrogate: Toluene-d8         | 2037-26-5  | 87.9%                          | 70-130          |                             |                             | 03/04/2024 21:15 | C24030421.D |
| Surrogate: Bromofluorobenzene | 460-00-4   | 92.2%                          | 70-130          |                             |                             | 03/04/2024 21:15 | C24030421.D |

**SCS Engineers**  
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**Beacon Proposal:** 230920R05  
**Lab Work Order:** 0007575  
**Reported:** 03/14/2024

## *QC Information/Summary*

**SCS Engineers**  
 2830 Dairy Drive  
 Madison, WI 53718-6751

**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R05  
**Lab Work Order:** 0007575  
**Reported:** 03/14/2024

*Organics in Air by EPA TO-17 Using Beacon Sampler - Quality Control Summary*

**Sequence: B24C009 - Batch: 24C0009 - Instrument: C System - File ID: C24030405.D**
**24C0009-BS1 (LCS, Calibration Source Verification)**

| Analyte                              | Result      | LOQ | LOD | Units     | Spike Level | Source Result | %REC        | %REC Limits   | RPD | RPD Limit | Notes |
|--------------------------------------|-------------|-----|-----|-----------|-------------|---------------|-------------|---------------|-----|-----------|-------|
| Vinyl Chloride                       | 55.7        | 10  | 5   | ng        | 50.0        |               | 111         | 70-130        |     |           |       |
| trans-1,2-Dichloroethene             | 56.8        | 10  | 5   | ng        | 50.0        |               | 114         | 70-130        |     |           |       |
| cis-1,2-Dichloroethene               | 51.3        | 10  | 5   | ng        | 50.0        |               | 103         | 70-130        |     |           |       |
| Trichloroethene                      | 52.1        | 10  | 5   | ng        | 50.0        |               | 104         | 70-130        |     |           |       |
| Tetrachloroethene                    | 54.6        | 10  | 5   | ng        | 50.0        |               | 109         | 70-130        |     |           |       |
| <i>Surrogate: 1,2-DCA-d4</i>         | <i>52.0</i> |     |     | <i>ng</i> | <i>50.0</i> |               | <i>104</i>  | <i>70-130</i> |     |           |       |
| <i>Surrogate: Toluene-d8</i>         | <i>50.0</i> |     |     | <i>ng</i> | <i>50.0</i> |               | <i>100</i>  | <i>70-130</i> |     |           |       |
| <i>Surrogate: Bromofluorobenzene</i> | <i>45.0</i> |     |     | <i>ng</i> | <i>50.0</i> |               | <i>90.0</i> | <i>70-130</i> |     |           |       |

**SCS Engineers**  
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**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R05  
**Lab Work Order:** 0007575  
**Reported:** 03/14/2024

*Organics in Air by EPA TO-17 Using Beacon Sampler - Quality Control Summary*

**Sequence: B24C009 - Batch: 24C0009 - Instrument: C System - File ID: C24030406.D**
**24C0009-BLK1 (Lab Blank)**

| Analyte                              | Result      | LOQ  | LOD   | Units             | Spike Level | Source Result | %REC        | %REC Limits   | RPD | RPD Limit | Notes |
|--------------------------------------|-------------|------|-------|-------------------|-------------|---------------|-------------|---------------|-----|-----------|-------|
| Vinyl Chloride                       | <0.540      | 1.08 | 0.540 | µg/m <sup>3</sup> |             |               |             |               |     |           | U     |
| trans-1,2-Dichloroethene             | <0.994      | 1.99 | 0.994 | µg/m <sup>3</sup> |             |               |             |               |     |           | U     |
| cis-1,2-Dichloroethene               | <0.825      | 1.65 | 0.825 | µg/m <sup>3</sup> |             |               |             |               |     |           | U     |
| Trichloroethene                      | <1.33       | 2.65 | 1.33  | µg/m <sup>3</sup> |             |               |             |               |     |           | U     |
| Tetrachloroethene                    | <1.07       | 2.13 | 1.07  | µg/m <sup>3</sup> |             |               |             |               |     |           | U     |
| <i>Surrogate: 1,2-DCA-d4</i>         | <i>105</i>  |      |       | <i>ng</i>         | <i>100</i>  |               | <i>105</i>  | <i>70-130</i> |     |           |       |
| <i>Surrogate: Toluene-d8</i>         | <i>99.3</i> |      |       | <i>ng</i>         | <i>100</i>  |               | <i>99.3</i> | <i>70-130</i> |     |           |       |
| <i>Surrogate: Bromofluorobenzene</i> | <i>83.5</i> |      |       | <i>ng</i>         | <i>100</i>  |               | <i>83.5</i> | <i>70-130</i> |     |           |       |

**SCS Engineers**  
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**Beacon Proposal:** 230920R05  
**Lab Work Order:** 0007575  
**Reported:** 03/14/2024

*Organics in Air by EPA TO-17 Using Beacon Sampler - Quality Control Summary*

**Sequence: B24C009 - Instrument: C System - File ID: C24030407.D**
***B24C009-ICV1 (LCSD/Second Source Verification/CALV)***

| Analyte                              | Result      | LOQ | LOD | Units     | Spike Level | Source Result | %REC        | %REC Limits   | RPD | RPD Limit | Notes |
|--------------------------------------|-------------|-----|-----|-----------|-------------|---------------|-------------|---------------|-----|-----------|-------|
| Vinyl Chloride                       | 49.7        | 10  | 5   | ng        | 50.0        |               | 99.4        | 70-130        |     |           |       |
| trans-1,2-Dichloroethene             | 64.0        | 10  | 5   | ng        | 50.0        |               | 128         | 70-130        |     |           |       |
| cis-1,2-Dichloroethene               | 52.8        | 10  | 5   | ng        | 50.0        |               | 106         | 70-130        |     |           |       |
| Trichloroethene                      | 52.8        | 10  | 5   | ng        | 50.0        |               | 106         | 70-130        |     |           |       |
| Tetrachloroethene                    | 60.2        | 10  | 5   | ng        | 50.0        |               | 120         | 70-130        |     |           |       |
| <i>Surrogate: 1,2-DCA-d4</i>         | <i>50.5</i> |     |     | <i>ng</i> | <i>50.0</i> |               | <i>101</i>  | <i>70-130</i> |     |           |       |
| <i>Surrogate: Toluene-d8</i>         | <i>49.7</i> |     |     | <i>ng</i> | <i>50.0</i> |               | <i>99.4</i> | <i>70-130</i> |     |           |       |
| <i>Surrogate: Bromofluorobenzene</i> | <i>44.6</i> |     |     | <i>ng</i> | <i>50.0</i> |               | <i>89.1</i> | <i>70-130</i> |     |           |       |



**SCS Engineers**  
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**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R05  
**Lab Work Order:** 0007575  
**Reported:** 03/14/2024

*Organics in Air by EPA TO-17 Using Beacon Sampler - Quality Control Summary*

**Sequence: B24C009 - Instrument: C System - File ID: C24030425.D**
***B24C009-CCV1 (LCS, Closing Calibration Verification)***

| Analyte                              | Result      | LOQ | LOD | Units     | Spike Level | Source Result | %REC        | %REC Limits   | RPD | RPD Limit | Notes |
|--------------------------------------|-------------|-----|-----|-----------|-------------|---------------|-------------|---------------|-----|-----------|-------|
| Vinyl Chloride                       | 60.2        | 10  | 5   | ng        | 50.0        |               | 120         | 70-130        |     |           |       |
| trans-1,2-Dichloroethene             | 63.7        | 10  | 5   | ng        | 50.0        |               | 127         | 70-130        |     |           |       |
| cis-1,2-Dichloroethene               | 51.9        | 10  | 5   | ng        | 50.0        |               | 104         | 70-130        |     |           |       |
| Trichloroethene                      | 51.8        | 10  | 5   | ng        | 50.0        |               | 104         | 70-130        |     |           |       |
| Tetrachloroethene                    | 54.7        | 10  | 5   | ng        | 50.0        |               | 109         | 70-130        |     |           |       |
| <i>Surrogate: 1,2-DCA-d4</i>         | <i>51.3</i> |     |     | <i>ng</i> | <i>50.0</i> |               | <i>103</i>  | <i>70-130</i> |     |           |       |
| <i>Surrogate: Toluene-d8</i>         | <i>46.7</i> |     |     | <i>ng</i> | <i>50.0</i> |               | <i>93.4</i> | <i>70-130</i> |     |           |       |
| <i>Surrogate: Bromofluorobenzene</i> | <i>44.6</i> |     |     | <i>ng</i> | <i>50.0</i> |               | <i>89.2</i> | <i>70-130</i> |     |           |       |

**SCS Engineers**  
 2830 Dairy Drive  
 Madison, WI 53718-6751

**Site Name:** Badger Lease and Auto Sales  
**Site Location:** West Allis, WI  
**Project Manager:** Jacob Krause

**Beacon Proposal:** 230920R05  
**Lab Work Order:** 0007575  
**Reported:** 03/14/2024

*Organics in Air by EPA TO-17 Using Beacon Sampler - Quality Control Summary*

**Sequence: B24C009 - Instrument: C System - File ID: C24030426.D**
***B24C009-CCB1 (Lab Blank)***

| Analyte                              | Result      | LOQ | LOD | Units     | Spike Level | Source Result | %REC        | %REC Limits   | RPD | RPD Limit | Notes |
|--------------------------------------|-------------|-----|-----|-----------|-------------|---------------|-------------|---------------|-----|-----------|-------|
| Vinyl Chloride                       | <5          | 10  | 5   | ng        |             |               |             |               |     |           | U     |
| trans-1,2-Dichloroethene             | <5          | 10  | 5   | ng        |             |               |             |               |     |           | U     |
| cis-1,2-Dichloroethene               | <5          | 10  | 5   | ng        |             |               |             |               |     |           | U     |
| Trichloroethene                      | <5          | 10  | 5   | ng        |             |               |             |               |     |           | U     |
| Tetrachloroethene                    | <5          | 10  | 5   | ng        |             |               |             |               |     |           | U     |
| <i>Surrogate: 1,2-DCA-d4</i>         | <i>103</i>  |     |     | <i>ng</i> | <i>100</i>  |               | <i>103</i>  | <i>70-130</i> |     |           |       |
| <i>Surrogate: Toluene-d8</i>         | <i>99.7</i> |     |     | <i>ng</i> | <i>100</i>  |               | <i>99.7</i> | <i>70-130</i> |     |           |       |
| <i>Surrogate: Bromofluorobenzene</i> | <i>82.6</i> |     |     | <i>ng</i> | <i>100</i>  |               | <i>82.6</i> | <i>70-130</i> |     |           |       |

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*TO-17 (Passive) - LCS/LCSD RPD Quality Control Summary*
**LCS: 24C0009-BS1 File ID: C24030405.D**

Analyzed: 3/4/24 14:41

**LCSD: B24C009-ICV1 File ID: C24030407.D**

Analyzed: 3/4/24 13:53

| Analyte                  | CAS#     | LCS Result<br>(ng) | %REC<br>Q | Spike Level<br>(ng) | LCSD Result<br>(ng) | %REC   | %REC<br>Limits | RPD   | RPD<br>Limit | Q |
|--------------------------|----------|--------------------|-----------|---------------------|---------------------|--------|----------------|-------|--------------|---|
| Vinyl Chloride           | 75-01-4  | 55.67              | 111.34    | 50                  | 49.7                | 99.40  | 70-130         | 11.33 | 30           |   |
| trans-1,2-Dichloroethene | 156-60-5 | 56.76              | 113.52    | 50                  | 63.95               | 128.00 | 70-130         | 11.91 | 30           |   |
| cis-1,2-Dichloroethene   | 156-59-2 | 51.28              | 102.56    | 50                  | 52.8                | 106.00 | 70-130         | 2.92  | 30           |   |
| Trichloroethene          | 79-01-6  | 52.10              | 104.2     | 50                  | 52.81               | 106.00 | 70-130         | 1.35  | 30           |   |
| Tetrachloroethene        | 127-18-4 | 54.55              | 109.1     | 50                  | 60.22               | 120.00 | 70-130         | 9.88  | 30           |   |

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*Additional QC Information*

|  |   |  |
|--|---|--|
| <b>SCS Engineers</b><br>2830 Dairy Drive<br>Madison, WI 53718-6751 | <b>Site Name:</b> Badger Lease and Auto Sales<br><b>Site Location:</b> West Allis, WI<br><b>Project Manager:</b> Jacob Krause | <b>Beacon Proposal:</b> 230920R05<br><b>Lab Work Order:</b> 0007575<br><b>Reported:</b> 03/14/2024 |
|--|---|--|

**Sample Result Calculation Summary (Concentration)**  
**TO-17 (Passive)**

| Analyte | t<br>Sampling Time<br>minutes | DF<br>Dilution<br>Factor | Uc<br>Uptake<br>Rate | M<br>Initial Result<br>ng | C<br>Calculated Result<br>µg/m <sup>3</sup> | File ID |
|---------|-------------------------------|--------------------------|----------------------|---------------------------|---|---------|
|---------|-------------------------------|--------------------------|----------------------|---------------------------|---|---------|

|                           |   |                           |       |   |   |             |
|---------------------------|---|---------------------------|-------|---|---|-------------|
| <b>Lab ID:</b> 0007575-01 | <b>Sample Name:</b> 05E_IAB_05_20240227 | <b>̄ Temp (°C):</b> 16.00 |       |   |   |             |
| Vinyl Chloride            | 11,444                                  | 1.00                      | 0.809 | U | U | C24030420.D |
| trans-1,2-Dichloroethene  | 11,444                                  | 1.00                      | 0.440 | U | U | C24030420.D |
| cis-1,2-Dichloroethene    | 11,444                                  | 1.00                      | 0.529 | U | U | C24030420.D |
| Trichloroethene           | 11,444                                  | 1.00                      | 0.330 | U | U | C24030420.D |
| Tetrachloroethene         | 11,444                                  | 1.00                      | 0.410 | U | U | C24030420.D |

|                           |   |                           |       |   |   |             |
|---------------------------|---|---------------------------|-------|---|---|-------------|
| <b>Lab ID:</b> 0007575-02 | <b>Sample Name:</b> 05E_IA1_06_20240227 | <b>̄ Temp (°C):</b> 16.00 |       |   |   |             |
| Vinyl Chloride            | 11,444                                  | 1.00                      | 0.809 | U | U | C24030421.D |
| trans-1,2-Dichloroethene  | 11,444                                  | 1.00                      | 0.440 | U | U | C24030421.D |
| cis-1,2-Dichloroethene    | 11,444                                  | 1.00                      | 0.529 | U | U | C24030421.D |
| Trichloroethene           | 11,444                                  | 1.00                      | 0.330 | U | U | C24030421.D |
| Tetrachloroethene         | 11,444                                  | 1.00                      | 0.410 | U | U | C24030421.D |

Calculations:

$$C = \frac{1000 \times M \times DF}{U_c \times t}$$

$$U_c = U * \left( \frac{T_s + 273.15}{T_u + 273.15} \right)^{1/2}$$

- where:
- C = concentration (µg/m<sup>3</sup>)
  - M = mass (ng)
  - DF = dilution factor
  - Uc = uptake rate (ml/min), corrected
  - t = sampling time (minutes)
  - U = compound specific uptake rate
  - Tu = uptake rate study temperature
  - Ts = sample average temperature

**Note:** Tu is 16.65°C

*Reference: Federal Register/Vol. 79, No. 125/June 30, 2014*

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**Lab Work Order:** 0007575  
**Reported:** 03/14/2024

**Method Detection and Reporting Limit Calculations (Concentration)**  
**TO-17 (Passive)**

| Analyte | t<br>Sampling Time<br>minutes | DF<br>Dilution<br>Factor | Uc<br>Uptake<br>Rate | M<br>Initial (ng) |     | C<br>Calculated (µg/m³) |     |
|---------|-------------------------------|--------------------------|----------------------|-------------------|-----|-------------------------|-----|
|         |                               |                          |                      | LOQ               | LOD | LOQ                     | LOD |

|                           |   |                           |
|---------------------------|---|---------------------------|
| <b>Lab ID:</b> 0007575-01 | <b>Sample Name:</b> 05E_IAB_05_20240227 | <b>̄ Temp (°C):</b> 16.00 |
|---------------------------|---|---------------------------|

|                          |        |      |       |       |      |      |       |
|--------------------------|--------|------|-------|-------|------|------|-------|
| Vinyl Chloride           | 11,444 | 1.00 | 0.809 | 10.00 | 5.00 | 1.08 | 0.540 |
| trans-1,2-Dichloroethene | 11,444 | 1.00 | 0.440 | 10.00 | 5.00 | 1.99 | 0.994 |
| cis-1,2-Dichloroethene   | 11,444 | 1.00 | 0.529 | 10.00 | 5.00 | 1.65 | 0.825 |
| Trichloroethene          | 11,444 | 1.00 | 0.330 | 10.00 | 5.00 | 2.65 | 1.33  |
| Tetrachloroethene        | 11,444 | 1.00 | 0.410 | 10.00 | 5.00 | 2.13 | 1.07  |

|                           |   |                           |
|---------------------------|---|---------------------------|
| <b>Lab ID:</b> 0007575-02 | <b>Sample Name:</b> 05E_IA1_06_20240227 | <b>̄ Temp (°C):</b> 16.00 |
|---------------------------|---|---------------------------|

|                          |        |      |       |       |      |      |       |
|--------------------------|--------|------|-------|-------|------|------|-------|
| Vinyl Chloride           | 11,444 | 1.00 | 0.809 | 10.00 | 5.00 | 1.08 | 0.540 |
| trans-1,2-Dichloroethene | 11,444 | 1.00 | 0.440 | 10.00 | 5.00 | 1.99 | 0.994 |
| cis-1,2-Dichloroethene   | 11,444 | 1.00 | 0.529 | 10.00 | 5.00 | 1.65 | 0.825 |
| Trichloroethene          | 11,444 | 1.00 | 0.330 | 10.00 | 5.00 | 2.65 | 1.33  |
| Tetrachloroethene        | 11,444 | 1.00 | 0.410 | 10.00 | 5.00 | 2.13 | 1.07  |

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### *Laboratory Certification List*

| Certification ID   | Certification No. | Description   | Expires    | Project Required |
|--------------------|-------------------|---|------------|------------------|
| Alaska CS-LAP      | 19-002            | Alaska Department of Environmental Conservation                                 | 12/30/2024 |                  |
| DoD-ELAP           | 72690/L22-563     | United States Department of Defense Environmental Laboratory Accreditation      | 11/30/2024 |                  |
| ISO/IEC 17025:2017 | 72690/L22-563     | General Requirements for the Competence of Testing and Calibration Laboratories | 11/30/2024 |                  |
| NEFAP              | 72690/L22-564     | TNI National Environmental Field Activities Program (NEFAP)                     | 11/30/2024 |                  |
| NY-NELAC           | 12097             | New York Department of Health   | 04/01/2024 |                  |
| Utah-NELAC         | MD010912023-14    | Utah Department of Health   | 12/31/2024 |                  |

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### Qualifiers/Notes and Definitions

#### General Definitions:

|           |  |
|-----------|--|
| DF        | Dilution Factor  |
| DL        | Detection Limit  |
| LOD       | Limit of Detection   |
| LOQ       | Limit of Quantitation  |
| NA        | Not Applicable   |
| Q         | Qualifier  |
| RPD       | Relative Percent Difference  |
| RT        | Retention Times in Minutes   |
| RRT       | Evaluation of Relative Retention Times in RRT Units (qualified if outside $\pm 0.06$ control limits) |
| $3\sigma$ | Uncertainty  |
| ∉         | Compound not on scope of accreditation   |
| +         | values are outside method/contract required QC limits  |
| ∅         | Compound not on scope of accreditation and analyzed with a one-point calibration                     |

#### Sample/Sample Receipt Qualifiers and Notes:

|   |  |
|---|--|
| U | Analyte was not detected and is reported as less than the limit of detection (LOD). The LOD has been adjusted for any dilution or concentration of the sample. |
|---|--|



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## *Sample Management Records*



Attachment B  
WDNR Publication 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.

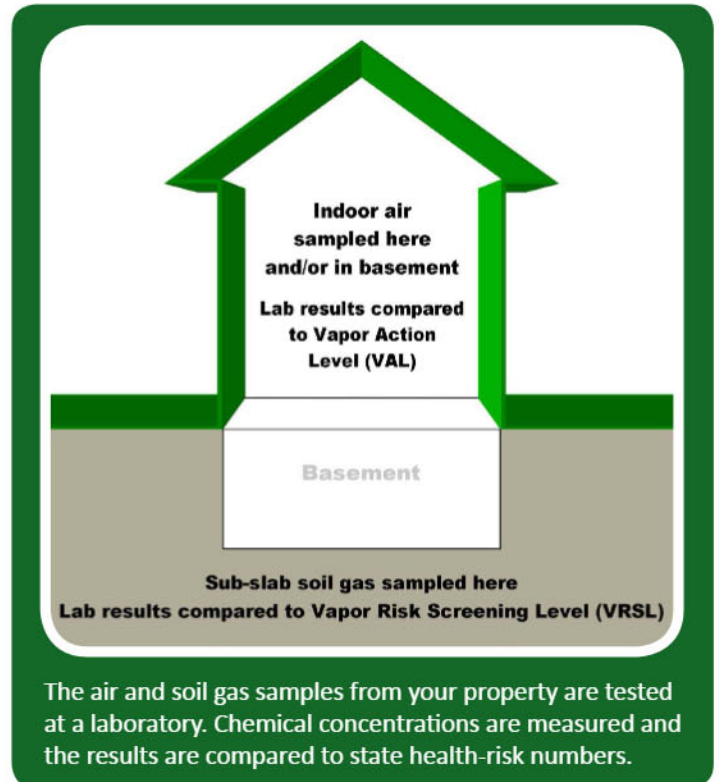
## Indoor Air Testing Results

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.



## 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

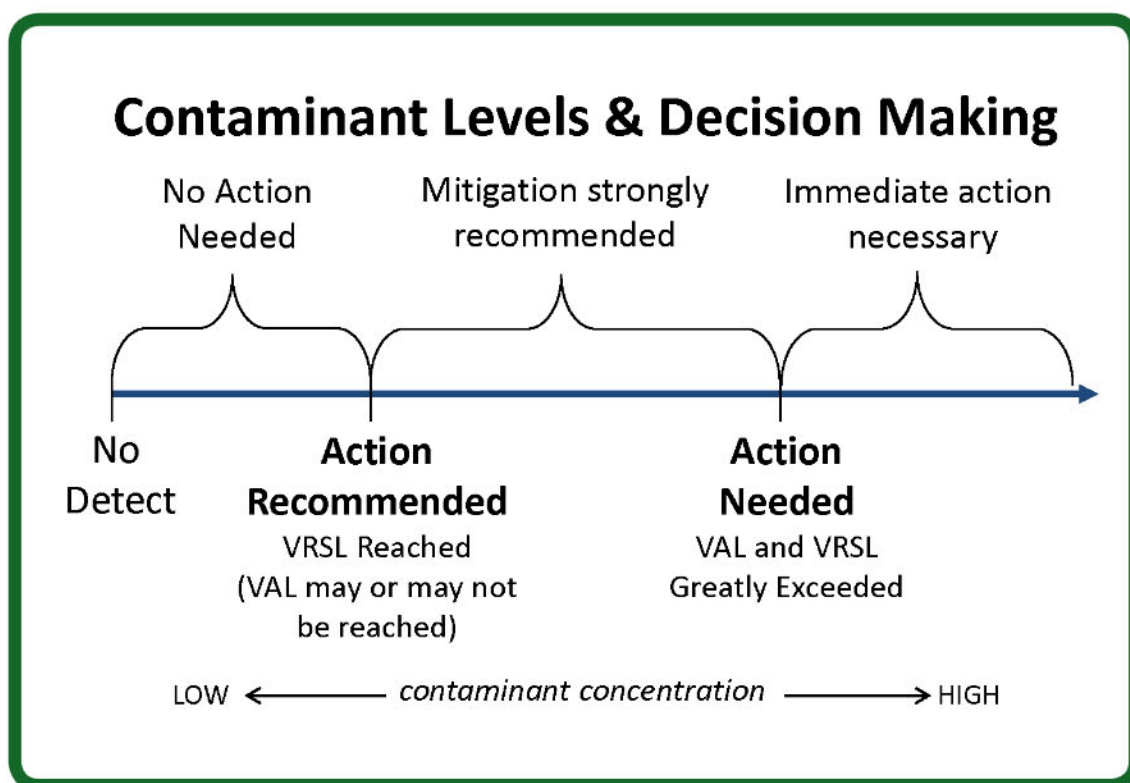
If your test results are less than a VAL for indoor air, or a VRSL for sub-slab soil gas, then the air in the house or building should not present a health concern. Follow-up sampling and testing may be necessary to confirm the results, but no other action is typically suggested.

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](https://dnr.wi.gov/topic/Brownfields/Vapor.html)