

## Joslin, Richard R - DNR

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**From:** Wayne Fassbender <WFassbender@enviroforensics.com>  
**Sent:** Friday, November 10, 2017 1:41 PM  
**To:** Joslin, Richard R - DNR  
**Cc:** Brian Kappen  
**Subject:** Work Scoping Document  
**Attachments:** Dutch Cleaners Letter Report and Work Scope.pdf

**Categories:** WORK - Important

Hi Rick:

Attached is a change order request and work scoping document for additional vapor intrusion sampling, SSDS diagnostics, and water sampling at the Dutch Cleaners Site. I will send you a hard copy in the mail. Please let me know of your approval, so we can get started on clearing access. Thanks, Rick.

### Wayne P. Fassbender, PG

Senior Project Manager

EnviroForensics | N16 W23390 Stone Ridge Drive, Suite G | Waukesha, WI 53188  
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November 10, 2017

Richard Joslin  
Wisconsin Department of Natural Resources  
2984 Shawano Avenue  
Green Bay, WI 54313-6727

**Subject: Letter Report and Work Scope for Further Site Investigation Activities  
Former Dutch Cleaners  
403 S. Main Street, Cedar Grove, Wisconsin  
BRRTS# 02-60-271527**

Dear Mr. Joslin:

On behalf of the responsible party (RP), Jere Ebbers, EnviroForensics, LLC (EnviroForensics) provides the following brief report summarizing the results of recent investigative activities at the former Dutch Cleaners property (Site). We have also provided recommendations for installation of a sub-slab depressurization system (SSDS) at the Site building and further investigations focused on determining potential vapor intrusion risks to adjacent buildings. We have enclosed a work scope and cost estimate for this additional work. This will require a change order to previously approved costs. An updated Form 4400-214D (Cost Detail Linking Spreadsheet) is attached for your review.

## **RECENT INVESTIGATIVE RESULTS**

During September 13-14, 2017, EnviroForensics performed the following activities according to the procedures presented in our work scope titled *Revised Work Scope and Change Order Request for Additional Site Investigation Activities* and dated August 16, 2017 (Work Scope):

- Conducted one (1) paired sub-slab/indoor air sampling event. Two (2) indoor air samples were collected; one (1) in the basement, and one (1) on the first floor. In addition, one sample of outside air was collected to determine background concentrations. Upon retrieving the air samples, sub-slab vapor samples were collected within the basement of the building at two (2) locations; and
- One (1) sample of the upper silty clay soil near the location of MW-102 was collected using a hand auger, and submitted to GeoTest of West Allis, Wisconsin for grain size analysis, atterberg limits, and USCS classification.

A copy of the results report was submitted to the Wisconsin Department of Natural Resources (WDNR), dated October 13, 2017 (attached for reference). As can be seen in this report, tetrachloroethene (PCE) was detected in both sub-slab samples at concentrations exceeding the vapor risk screening level (VRSL) for that compound. Although PCE was detected in the indoor air samples, the concentrations were well below current vapor action levels (VALs).

As can be seen in the attached GeoTest laboratory sheets, the upper soil zone (0-14 feet in depth and described as primarily silty clay in the report by Fehr Graham titled *Site Investigation Report* and dated March, 2015) is comprised of fine grained soil having roughly equal amounts of silt and clay representing approximately 75% of the soil composition. Significant concentrations of PCE exist within this unsaturated zone lying above the water table. We conclude from this analysis that a soil vapor extraction system would not be a cost effective remedial approach for treatment of unsaturated soil due to the anticipated low air flow rates achievable withing the silty clay soil.

## **RECOMMENDATIONS**

The WDNR requires that risks of vapor intrusion to building structures be mitigated. Therefore, we recommend that an SSDS be installed in the Site building to mitigate the identified vapor intrusion risks. There is no need for additional vapor intrusion sampling in the heating months (as presented in the Work Scope), since the vapor intrusion risk has already been identified.

According to the guidelines in WDNR publication RR-800, buildings within 100 feet of the contaminant source area should be assessed for the risk of vapor intrusion. We recommend that the following buildings located within 100 feet of the Site impacts be assessed:

- 349 S. Main Street, commercial building to the north of the Site across Wisconsin Street;
- 406 S. Main Street, commercial building to the east of the Site;
- 416, 418, and 420 S. Main Street, residential three-family apartment building southeast of the Site; and
- 11 Wisconsin Avenue, residential home adjacent to the west of the Site.

Based on the results of grain size analysis, we do not believe that soil vapor extraction will be a cost effective solution for treatment of unsaturated soil. We recommend that other options be explored for source area soil treatment, along with groundwater treatment aimed at reducing concentrations of Site contaminants to the extent practical. In order to evaluate appropriate groundwater remedial options, we will need to collect two (2) groundwater samples.

## **WORK SCOPE FOR ADDITIONAL SITE ACTIONS AND INVESTIGATIONS**

### **SSDS Installation at the Site Building**

Advance diagnostics should be performed prior to the design of an SSDS at the Site building. The diagnostics include impressing vacuum at one or more locations within the building and measuring negative pressures at several locations. This is proposed since the Site building has had a few additions over the years. The basement is only partial and there is a significant area of slab on grade section to the west, and a smaller slab on grade section to the south (see attached Fehr Graham figure). Also, the area labeled as boiler room on the figure is about two feet deeper than the larger basement area. This creates a complex sub-slab condition for venting and may require multiple vapor extraction points to adequately protect the building from vapor intrusion.

A proposal and cost estimate for the diagnostics from Vapor Protection Services (VPS) is attached. This proposal details the scope of the diagnostics. Upon completing the diagnostics, the SSDS can be designed and a cost estimate for the installation of the SSDS, along with the costs to commission the system will be provided.

### **Groundwater Sampling**

One (1) groundwater sample will be collected from each of two (2) wells located within the area of greatest groundwater impacts. These samples should be collected from MW-106, MW-107, or temporary well TW-10. During our last Site visit, we were able to locate temporary well TW-10, but are unsure whether wells MW-106 and MW-107 remain intact, or have been previously abandoned. If abandoned, then only one (1) sample will be collected from existing temporary well TW-10.

The samples will be analyzed for in-field parameters to include temperature, pH, electrical conductivity, oxidation-reduction potential, dissolved oxygen, and turbidity using a multimeter probe during low flow sampling. In addition, samples will be analyzed for total volatile organic compounds via EPA Method 8260. The water samples will also be analyzed for total populations of the microbe primarily responsible for degradation of chlorinated solvents (dehalococoides), and the genetic makeup of the microbes will also be determined. The genetic makeup of the microbes can dictate whether they are capable of completing the dehalogenation process through vinyl chloride to harmless ethene, which will help us determine if additional amendments are needed to supplement this potential remedial option.

## **Additional Vapor Intrusion Sampling**

It appears that all of the off-site properties proposed for vapor intrusion assessment have a building footprint less than 5,000 square feet. Therefore, two sub-slab samples will be collected from each building. Indoor air samples will also be collected and paired with the sub-slab sampling. Each building has different characteristics; therefore, the amount and time duration of sample collection is also variable. Indoor air samples will be collected first, so that there is no possibility that vapors from penetrations through the slab during sub-slab sampling will have an effect on the indoor air sample results.

The attached cost estimate includes sampling in the both the heating months and non-heating months. If vapor risks are detected in the first sampling event (heating months), then a second sampling event will not be needed.

Indoor air samples will be collected as follows:

- Commercial building located at 349 S. Main Street: one (1) indoor air sample centrally located on the first floor and collected over eight hours;
- Commercial building located at 406 S. Main Street: one (1) indoor air sample centrally located on the first floor and collected over eight hours;
- Residential building located at 11 Wisconsin Avenue: two (2) indoor air samples with one located in the basement and one located on the first floor. Both samples collected over a 24 hour period; and
- Residential apartment building located at 416, 418, and 420 S. Main Street: one (1) indoor air sample located in the basement and one (1) indoor air sample in each of the three (3) residential units. All samples to be collected over a 24 hour period.

In addition, two (2) samples of outdoor air will be collected during each sampling event and located strategically to be near the properties to be sampled and in a up-gradient direction to the prevailing wind at the time of sampling. Since a combination of residential and commercial buildings will be sampled, the outdoor (background) air samples will be collected over a 24-hour period.

### General Indoor Air Sample Collection Procedures and QA/QC

Prior to sampling, an inspection of the occupied spaces will be conducted to identify and inventory materials that could potentially contribute to indoor air conditions, unrelated to VI

issues. Many common items such as commercially available cleaners and degreasers, small quantities of small engine fuel, furniture polish, cigarette smoke, etc. can affect the quality of indoor air in buildings. Suspect items identified during the inspection will be listed on a pre-sampling inspection form for later reference. A visual inspection will be conducted for cracks or other penetrations of the concrete floor (i.e. floor drains, sumps, etc.) that could be direct conduits for impacted vapors to migrate into the occupied space. The results of all pre-sampling inspection activities will be recorded on the Indoor Air Building Survey Form.

Data will be assessed from the nearest fixed weather station throughout the sampling period to include: temperature, wind speed, wind direction, humidity, barometric pressure, and rainfall. Weather data and its possible affects on the sampling results will be assessed and discussed in the report. Initial and final pressure readings will be collected from the vacuum canisters and recorded on Indoor Air Field Sampling Forms, along with all other required information. The vacuum canisters will be individually-certified by Envision Laboratory of Indianapolis, Indiana (Envision) for QA/QC purposes.

The air cannisters collected during each of the two (2) sampling events will be sent to Envision under appropriate chain of custody documents to be analyzed for the dry cleaner list of chlorinated volatile organic compounds (CVOC's) according to US EPA Method TO-15. Envision is accredited through the National Environmental Accreditation Program (NELAP) for vapor sample analysis.

#### Sub-Slab Vapor Port Installation

A 5/8-inch hole will be drilled through the concrete slab at each sub-slab sample location using an electric hammer drill. The hole will be oversized to 1.25 inches to a depth of approximately one-half inch. The 1.25-inch hole is the correct size for accepting a small flush-mount cover that will complete the permanent installation. A vacuum cleaner will be utilized during drilling to remove concrete dust produced by the process. Vapor Pin® sampling ports, constructed with a silicon sleeve to provide a mechanical seal between the sample port and the slab, will be installed using a dead blow hammer.

#### Sub-Slab Field Quality Control Methods

Sub-slab vapor ports will be purged prior to connecting the sampling canister to ensure that the entire sample is representative of sub-slab vapor conditions. To ensure that the collected sub-slab vapor samples are representative of subsurface vapor conditions, leak testing will be performed at each sample port during purging. Leak testing will be performed using the water dam method.

Immediately prior to sample collection, the integrity of the sample tubing and fittings will be tested by conducting a negative pressure test. The sample canister will be connected to the sampling port with its valve closed. A negative pressure of approximately 10-15 inches of mercury will be induced on the sampling train with a hand pump and held for approximately 60-seconds while the gauge is monitored visually. Drops in pressure during this procedure will indicate leakage within the sampling trains that will require correcting and then re-testing. The results of leak testing and pressure testing will be recorded on field sampling logs.

### Sub-Slab Vapor Sampling

The sub-slab vapor samples will be collected through dedicated Teflon-lined polyethylene tubing connected to the sampling port. In accordance with the U.S. Environmental Protection Agency (EPA) Standard Operating Procedure (SOP), approximately two (2) liters of ambient air will be purged from the tubing prior to initiating sample collection. Following purging, sub-slab vapors at each point will be drawn from the end of the tubing using a low-level photo-ionization detector instrument and the readings will be recorded on the sample forms and laboratory canister labels. Sub-slab vapor will then be drawn into a 6-liter vacuum sample canister fitted with laboratory supplied regulators that allow a flow rate of approximately 200 ml/min.

The sub-slab vapor samples collected during each of the two (2) sampling events will be submitted, under appropriate chain-of-custody procedures, to Envision for analysis of the *Dry Cleaners List* of CVOCs according to US EPA Method TO-15. The sampling ports will be left in place for future sampling and abandoned at a later date.

## **REPORTING**

The vapor sampling results will be reported to building occupants within 10 days of receiving laboratory results as required and copied to the WDNR. The report will consist of a brief letter, a map showing the sampling locations, and a table with a summary of the data and comparisons to vapor risk screening levels (VRSLs).

In addition, the results of the SSDS diagnostics will be reported to the WDNR with design details and will include a cost for the installation and commissioning of the SSDS at the Site building. This report will also include recommendations for vapor mitigation needs identified at any additional off-site buildings.

## **COST AND SCHEDULE**

We have attached detailed cost breakdown sheets for this work. The work has been divided into sub-phases that can be managed through our project tracking system.

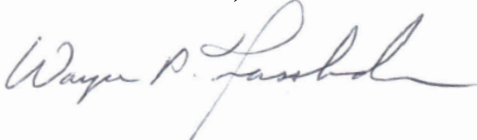
The total anticipated cost of this additional work is estimated at \$34,417. This cost assumes that access can be achieved with a reasonable effort and that the the vapor intrusion sampling can be coordinated between the four (4) off-site properties to occur on the same days. If multiple mobilizations are needed to accommodate the various schedules of off-site property owners, then the cost would increase.

Work will begin to gain access to off-site properties upon approval of this work scope. Upon successful execution of access agreements, work will be scheduled. It is anticipated that the initial vapor intrusion sampling, SSDS diagnostics, and groundwater sampling with results reporting can be completed within six (6) weeks of obtaining access agreements.

If you have any questions or require additional information, please do not hesitate to contact me at (414) 982-3988, or by email at [wfassbender@enviroforensics.com](mailto:wfassbender@enviroforensics.com).

Sincerely,

**EnviroForensics, LLC**

A handwritten signature in black ink that reads "Wayne P. Fassbender".

Wayne Fassbender, PG  
*Senior Project Manager*

Attachments:

Results Report of October 13, 2017  
GeoTest Laboratory Report  
VPS Advanced Diagnostics Proposal  
Form 4400-214D  
EnviroForensics Detailed Cost Breakdown Sheets

Copy: Jere Ebbers  
Tom and Marilyn Berlin





October 13, 2017

Marilyn Berlin  
W2626 Miley Rd.  
Sheboygan Falls, Wisconsin 53085

**Subject: Vapor Intrusion Sampling Results – 403 S. Main St., Cedar Grove,  
Wisconsin  
BRRTS: 02-60-271527**

Dear Ms. Berlin:

In accordance with Wisconsin Department of Natural Resources (WDNR) regulation NR 716.14, EnviroForensics, LLC. (EnviroForensics) is providing the results of environmental samples collected from your property located at 403 South Main Street in Cedar Grove, Wisconsin. The samples were collected on September 13, 2017. The sampling activities are part of an environmental investigation being performed for the former Dutch Cleaners facility at the direction of the WDNR pursuant to the authority granted to it under State and Federal law. The chemicals of concern for the investigation are the dry cleaning solvent tetrachloroethene (PCE) and its associated breakdown products.

The Responsible Party is:

Mr. Jere Ebbers  
Former Dutch Cleaners  
231 S. Main St.  
Cedar Grove, WI 53013

### **Sampling Results**

Two indoor air samples designated 6420-403 S Main St-IA-1 and 6420-403 S Main St-IA-2 were collected from within the first floor and basement, respectively. For quality control purposes a sample of outdoor ambient air designated 6420-403 S Main St-OA-1 was also collected. Additionally, two (2) sub-slab vapor samples designated 6420-403 S Main St-SSV-1 and 6420-403 S Main St-SSV-2 were collected from beneath the basement floor of your building. The sampling locations are depicted on the attached **Figure 1**. The results of the vapor samples are summarized and compared to WDNR standards on the attached **Table 1**. A copy of the laboratory report that relates to the vapor samples is also attached.

*Document: 6420-0096*  
EnviroForensics, LLC  
N16 W23390 Stone Ridge Drive, Suite G  
Waukesha, WI 53188  
Phone: 262-290-4001 • Fax 317.972.7875

*October 13, 2017*



Indoor air samples 6420-403 S Main St-IA-1 and 6420-403 S Main St-IA-2 contained PCE at concentrations of 6.92 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ) and  $7.26 \mu\text{g}/\text{m}^3$ , respectively, which are below the Vapor Action Level of  $180 \mu\text{g}/\text{m}^3$  for PCE detected within small commercial buildings.

Sub-slab vapor samples 6420-403 S Main St-SSV-1 and 6420-403 S Main St-SSV-2 contained PCE at a concentrations of  $14,100 \mu\text{g}/\text{m}^3$  and  $66,300 \mu\text{g}/\text{m}^3$  which exceed the vapor risk screening level (VRSL) of  $6,000 \mu\text{g}/\text{m}^3$  for PCE detected below small commercial buildings. Trichloroethene (TCE) was also detected in each sub-slab vapor sample but, at concentrations below the VRSL for TCE.

Sub-slab vapor samples have exceeded the screening levels set by the WDNR. We are evaluating the options for mitigating the sub-slab vapors. We will contact you to discuss the next steps. If you have any questions or concerns, please contact us at 414-982-3988 or by email at [wfassbender@enviroforensics.com](mailto:wfassbender@enviroforensics.com). The WDNR project manager, Richard Joslin, can be reached at 920-424-7077. We greatly appreciate your help and patience with this matter.

Sincerely,  
**EnviroForensics, LLC**

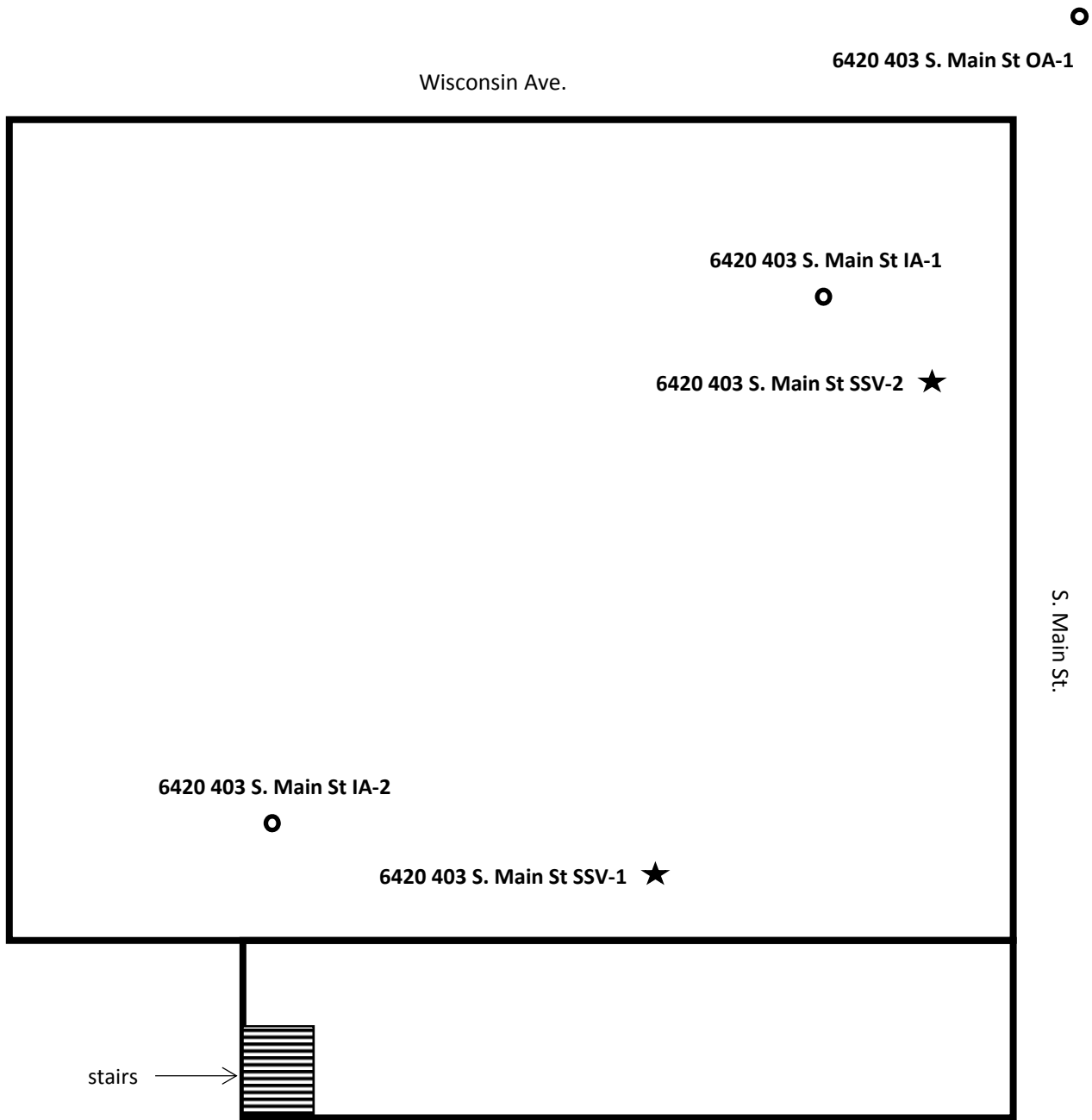
A handwritten signature in black ink that reads "Wayne P. Fassbender".

Wayne Fassbender, PG  
*Senior Project Manager*

Attachments: Figure 1 – Vapor Intrusion Sample Locations  
Table 1 – Vapor Intrusion Analytical Results – 403 S. Main St.  
Laboratory Analytical Report

Copy: Jere Ebbers, Former Dutch Cleaners  
Richard Joslin, Wisconsin Department of Natural Resources

**FIGURE 1**  
**VAPOR INTRUSION SAMPLE LOCATIONS**  
**403 S. Main Street, Cedar Grove Wisconsin**



**Legend**

- = Indoor/Outdoor Air Sample
- IA-B = Basement
- IA-1 = 1<sup>st</sup> Floor
- SSV-1 = Sub-Slab Vapor
- ★ = Sub-Slab Vapor Sampling Port Location



**TABLE 1**  
**VAPOR INTRUSION ANALYTICAL RESULTS - 403 S. MAIN ST.**  
Former Dutch Cleaners  
403 S. Main Street, Cedar Grove, Wisconsin

Sample Address	Sample Identification	Sample Date	Consultant	Mitigation	Tetrachloroethene	Trichloroethene
<b>INDOOR/ OUTDOOR AIR</b>						
<b>Non-Residential Vapor Action Level</b>					<b>180</b>	<b>8.8</b>
403 S. Main St.	6420-403 S Main St-IA-1	09/13/17	EnviroForensics	No	<b>6.92</b>	<1.07
	6420-403 S Main St-IA-2	09/13/17	EnviroForensics	No	<b>7.26</b>	<1.07
	6420-403 S Main St-OA-1	09/13/17	EnviroForensics	No	<3.019	<1.07
<b>SUB-SLAB VAPOR</b>						
<b>Non-Residential Vapor Risk Screening Level</b>					<b>6,000</b>	<b>290</b>
403 S. Main St.	6420-403 S Main St-SSV-1	09/13/17	EnviroForensics	No	<b>14,100</b>	<b>35.3</b>
	6420-403 S Main St-SSV-2	09/13/17	EnviroForensics	No	<b>66,300</b>	<b>16.4</b>

**Notes:**

Results reported in micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ )

Samples analyzed according to EPA Method TO-15

Vapor Risk Screening/Action Levels are calculated in accordance with WDNR Publication RR-800 and subsequent guidance documents

IA = Indoor Air

OA = Outdoor Air

SSV = Sub-slab vapor

**Bolded** values are above detection limits

**Bolded** and Orange shaded concentration exceed the applicable non-residential screening level



**EnvisionAir**  
1441 Sadler Circle West Drive  
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Mr. Wayne Fassbender  
Enviroforensics  
N16 W. 23390 Stone Ridge Dr  
Suite G  
Waukesha, WI 53188

September 28, 2017

EnvisionAir Project Number: 2017-576  
Client Project Name: 6420

Dear Mr. Fassbender,

Please find the attached analytical report for the samples received September 15, 2017. All test methods performed were fully compliant with local, state, and federal EPA methods unless otherwise noted. The project was analyzed as requested on the enclosed chain of custody record. Please review the comments section for additional information about your results or Quality Control data.

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

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

Yours Sincerely,

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

Stanley A Hunnicutt

Project Manager  
EnvisionAir, LLC



**EnvisionAir**  
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**Client Name:** ENVIROFORENSICS  
**Project ID:** 6420  
**Client Project Manager:** WAYNE FASSBENDER  
**EnvisionAir Project Number:** 2017-576

**Sample Summary**

*Canister Pressure / Vacuum*

<u>Laboratory Sample Number:</u>	<u>Sample Description:</u>	<u>Matrix:</u>	<u>START</u>	<u>START</u>	<u>End Date</u>	<u>End Time</u>	<u>Date</u>	<u>Time</u>	<u>Canister Pressure / Vacuum</u>		<u>Lab</u>
			<u>Date</u>	<u>Time</u>					<u>Initial Field</u>	<u>Final Field</u>	
			<u>Collected:</u>	<u>Collected:</u>	<u>Collected:</u>	<u>Collected:</u>	<u>Received:</u>	<u>Received:</u>	<u>(in. Hg)</u>	<u>(in. Hg)</u>	<u>(in. Hg)</u>
17-2255	6420-403 S MAIN ST-IA-1	A	9/13/17	9:28	9/13/17	17:30	9/15/17	11:00	-29	-5	-5
17-2256	6420-403 S MAIN ST-IA-2	A	9/13/17	9:30	9/13/17	17:31	9/15/17	11:00	-29	-6	-6
17-2257	6420-403 S MAIN ST-OA-1	A	9/13/17	9:23	9/13/17	17:33	9/15/17	11:00	-29	-7	-7
17-2258	6420-403 S MAIN ST-SSV-1	A	9/13/17	18:27	9/13/17	18:33	9/15/17	11:00	-27	-5	-5
17-2259	6420-403 S MAIN ST-SSV-2	A	9/13/17	18:14	9/13/17	18:21	9/15/17	11:00	-28	-4	-4



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**Client Name:** ENVIROFORENSICS  
**Project ID:** 6420  
**Client Project Manager:** WAYNE FASSBENDER  
**EnvisionAir Project Number:** 2017-576

**Analytical Method:** TO-15  
**Analytical Batch:** 092117AIR

**Client Sample ID:** 6420-403 S MAIN ST-IA-1  
**Envision Sample Number:** 17-2255  
**Sample Matrix:** AIR

**Sample Collection START Date/Time:** 9/13/17 9:28  
**Sample Collection END Date/Time:** 9/13/17 17:30  
**Sample Received Date/Time:** 9/15/17 11:00

<u>Compounds</u>	<u>Sample Results ug/m<sup>3</sup></u>	<u>Reporting Limit ug/m<sup>3</sup></u>	<u>Flag</u>
cis-1,2-Dichloroethene	< 19.8	19.8	
Tetrachloroethene	<b>6.92</b>	3.19	
trans-1,2-Dichloroethene	< 39.6	39.6	
Trichloroethene	< 1.07	1.07	
Vinyl Chloride	< 1.28	1.28	
4-bromofluorobenzene (surrogate)	110%		
Analysis Date/Time:	9-21-17/18:36		
Analyst Initials	tjg		



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**Client Name:** ENVIROFORENSICS  
**Project ID:** 6420  
**Client Project Manager:** WAYNE FASSBENDER  
**EnvisionAir Project Number:** 2017-576

**Analytical Method:** TO-15  
**Analytical Batch:** 092117AIR

**Client Sample ID:** 6420-403 S MAIN ST-IA-2  
**Envision Sample Number:** 17-2256  
**Sample Matrix:** AIR

**Sample Collection START Date/Time:** 9/13/17 9:30  
**Sample Collection END Date/Time:** 9/13/17 17:31  
**Sample Received Date/Time:** 9/15/17 11:00

<u>Compounds</u>	<u>Sample Results ug/m<sup>3</sup></u>	<u>Reporting Limit ug/m<sup>3</sup></u>	<u>Flag</u>
cis-1,2-Dichloroethene	< 19.8	19.8	
Tetrachloroethene	<b>7.26</b>	3.19	
trans-1,2-Dichloroethene	< 39.6	39.6	
Trichloroethene	< 1.07	1.07	
Vinyl Chloride	< 1.28	1.28	
4-bromofluorobenzene (surrogate)	112%		
Analysis Date/Time:	9-21-17/19:15		
Analyst Initials	tjg		





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**Client Name:** ENVIROFORENSICS  
**Project ID:** 6420  
**Client Project Manager:** WAYNE FASSBENDER  
**EnvisionAir Project Number:** 2017-576

**Analytical Method:** TO-15  
**Analytical Batch:** 092117AIR

**Client Sample ID:** 6420-403 S MAIN ST-OA-1  
**Envision Sample Number:** 17-2257  
**Sample Matrix:** AIR

**Sample Collection START Date/Time:** 9/13/17 9:23  
**Sample Collection END Date/Time:** 9/13/17 17:33  
**Sample Received Date/Time:** 9/15/17 11:00

<u>Compounds</u>	<u>Sample Results ug/m<sup>3</sup></u>	<u>Reporting Limit ug/m<sup>3</sup></u>	<u>Flag</u>
cis-1,2-Dichloroethene	< 19.8	19.8	
Tetrachloroethene	< 3.19	3.19	
trans-1,2-Dichloroethene	< 39.6	39.6	
Trichloroethene	< 1.07	1.07	
Vinyl Chloride	< 1.28	1.28	
4-bromofluorobenzene (surrogate)	103%		
Analysis Date/Time:	9-21-17/16:01		
Analyst Initials	tjg		



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**Client Name:** ENVIROFORENSICS  
**Project ID:** 6420  
**Client Project Manager:** WAYNE FASSBENDER  
**EnvisionAir Project Number:** 2017-576

**Analytical Method:** TO-15  
**Analytical Batch:** 092517AIR

**Client Sample ID:** 6420-403 S MAIN ST-SSV-1  
**Envision Sample Number:** 17-2258  
**Sample Matrix:** AIR

**Sample Collection START Date/Time:** 9/13/17 18:27  
**Sample Collection END Date/Time:** 9/13/17 18:33  
**Sample Received Date/Time:** 9/15/17 11:00

<u>Compounds</u>	<u>Sample Results ug/m<sup>3</sup></u>	<u>Reporting Limit ug/m<sup>3</sup></u>	<u>Flag</u>
cis-1,2-Dichloroethene	< 19.8	19.8	
Tetrachloroethene	<b>14,100</b>	1280	1
trans-1,2-Dichloroethene	< 39.6	39.6	
Trichloroethene	<b>35.3</b>	1.07	
Vinyl Chloride	< 1.28	1.28	
4-bromofluorobenzene (surrogate)	113%		
Analysis Date/Time:	9-26-17/03:54		
Analyst Initials	tjg		



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

**Client Name:** ENVIROFORENSICS  
**Project ID:** 6420  
**Client Project Manager:** WAYNE FASSBENDER  
**EnvisionAir Project Number:** 2017-576

**Analytical Method:** TO-15  
**Analytical Batch:** 092517AIR

**Client Sample ID:** 6420-403 S MAIN ST-SSV-2  
**Envision Sample Number:** 17-2259  
**Sample Matrix:** AIR

**Sample Collection START Date/Time:** 9/13/17 18:14  
**Sample Collection END Date/Time:** 9/13/17 18:21  
**Sample Received Date/Time:** 9/15/17 11:00

<u>Compounds</u>	<u>Sample Results ug/m<sup>3</sup></u>	<u>Reporting Limit ug/m<sup>3</sup></u>	<u>Flag</u>
cis-1,2-Dichloroethene	< 19.8	19.8	
Tetrachloroethene	<b>66,300</b>	5100	2
trans-1,2-Dichloroethene	< 39.6	39.6	
Trichloroethene	<b>16.4</b>	1.07	
Vinyl Chloride	< 1.28	1.28	
4-bromofluorobenzene (surrogate)	105%		
Analysis Date/Time:	9-26-17/04:32		
Analyst Initials	tjg		

**TO-15 Quality Control Data**

**EnvisionAir Batch Number:** 092117AIR

<u>Method Blank (MB):</u>	<u>MB Results (ppbv)</u>	<u>Reporting Limit (ppbv)</u>	<u>Flags</u>
cis-1,2-Dichloroethene	< 5	5	
Tetrachloroethene	< 0.47	0.47	
trans-1,2-Dichloroethene	< 10	10	
Trichloroethene	< 0.2	0.2	
Vinyl Chloride	< 0.5	0.5	
4-bromofluorobenzene (surrogate)	102%		
Analysis Date/Time:	9-21-17/15:25		
Analyst Initials	tjg		

<u>LCS/LCSD</u>	<u>LCS Results (ppbv)</u>	<u>LCSD Results (ppbv)</u>	<u>LCS/D Conc(ppbv)</u>	<u>LCS Rec.</u>	<u>LCSD Rec.</u>	<u>RPD</u>	<u>Flag</u>
Vinyl Chloride	10.3	10.6	10	103%	106%	2.9%	
trans-1,2-Dichloroethene	9.02	9.38	10	90%	94%	3.9%	
cis-1,2-Dichloroethene	9.34	9.8	10	93%	98%	4.8%	
Trichloroethene	11.3	11.2	10	113%	112%	0.9%	
Tetrachloroethene	11	11.5	10	110%	115%	4.4%	
4-bromofluorobenzene (surrogate)	114%	118%					
Analysis Date/Time:	9-21-17/13:25	9-21-17/14:49					
Analyst Initials	tjg	tjg					

**TO-15 Quality Control Data**

**EnvisionAir Batch Number:** 092517AIR

<u>Method Blank (MB):</u>	<u>MB Results (ppbv)</u>	<u>Reporting Limit (ppbv)</u>	<u>Flags</u>
cis-1,2-Dichloroethene	< 5	5	
Tetrachloroethene	< 0.47	0.47	
trans-1,2-Dichloroethene	< 10	10	
Trichloroethene	< 0.2	0.2	
Vinyl Chloride	< 0.5	0.5	
4-bromofluorobenzene (surrogate)	102%		
Analysis Date/Time:	9-25-17/17:36		
Analyst Initials	tjg		

<u>LCS/LCSD</u>	<u>LCS Results (ppbv)</u>	<u>LCSD Results (ppbv)</u>	<u>LCS/D Conc(ppbv)</u>	<u>LCS Rec.</u>	<u>LCSD Rec.</u>	<u>RPD</u>	<u>Flag</u>
Vinyl Chloride	9.37	9.64	10	94%	96%	2.8%	
trans-1,2-Dichloroethene	8.65	8.86	10	87%	89%	2.4%	
cis-1,2-Dichloroethene	9.98	10.3	10	100%	103%	3.2%	
Trichloroethene	10.9	10.5	10	109%	105%	3.7%	
Tetrachloroethene	11.4	11.5	10	114%	115%	0.9%	
4-bromofluorobenzene (surrogate)	118%	120%					
Analysis Date/Time:	9-25-17/15:37	9-25-17/16:19					
Analyst Initials	tjg	tjg					



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<u>Flag Number</u>	<u>Comments</u>
1	Reported value is from a 400x dilution. TJG 9-27-17
2	Reported value is from a 1600x dilution. TJG 9-27-17

# CHAIN OF CUSTODY RECORD

WAF

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



www.envision-air.com

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

Canister Pressure / Vacuum

## REQUESTED PARAMETERS

TO-15 Full List
TO-15 Short List

Client: Env. Forensic, LLC	P.O. Number: 2017-1198
Report Address: 116 V23390 Stone Ridge Dr Site 6	Project Name or Number: 6420
Report To: Wayne Fassbender	Sampled by: Nate Ruda
Phone: 414-982-3988	QA/QC Required: (circle if applicable) Level III <input checked="" type="checkbox"/> Level IV <input type="checkbox"/>
Invoice Address:	Reporting Units needed: (circle) ug/m <sup>3</sup> mg/m <sup>3</sup> PPBV PPMV
Desired TAT: (Please Circle One) 1 day 2 days 3 days Std (5 bus. days)	Media type: 1LC = 1 Liter Canister 6LC = 6 Liter Canister TB = Tedlar Bag TD = Thermal Desorption Tube

Air Sample ID	Media Type (see code above)	Coll. Date (Grab/Comp Start)	Coll. Time (Grab/Comp Start)	Coll. Date (Comp. End)	Coll. Time (Comp. End)	X	Canister Serial #	Flow Controller Serial #	Initial Field (in. Hg)	Final Field (in. Hg)	Lab Received (in. Hg)	EnvisionAir Sample Number
64204035MunSt IA-1	6LC	9-13-17	9:28	9-13-17	17:30	X	10348	05717	-29	-5	-5	17-2255
64204035MunSt IA-2	6LC	9-13-17	9:30	9-13-17	17:31	X	4688	05306	-29	-6	-6	17-2256
64204035MunSt OA-1	6LC	9-13-17	9:23	9-13-17	17:33	X	16018	07309	-29	-7	-7	17-2257
64204035MunSt SSV-1	1LC	9-13-17	18:33	9-13-17	18:33	X	83922 84045	-	-27	-5	-5	17-2258
64204035MunSt SSV-2	1LC	9-13-17	18:14	9-13-17	18:21	X	83922 84045	-	-28	-4	-4	17-2259

Comments: Level IV for 6LCs only. Put purchase order on invoice.

Relinquished by: Nathan Ruda	Date: 9-13-17	Time: 11:00	Received by: Nate Ruda	Date: 9/15/17	Time: 11:00
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REPORT: **Soils Sample Log-In-Sheet**

Work Order: 17-4122

Project: 6420  
 Location:  
 Client: Enviroforensics  
 Acct. No: ENVIROFOREN  
 Client PO: 2017-1297

Report Date: 09/22/2017  
 Date Sampled: 09/14/2017  
 Sampled By: Client  
 By Order Of: Client  
 Order Number:  
 Report No: 17-4122  
 Project No: 5565

**TEST RESULTS**

An soil sample(s) were delivered on this date: 09-13-17

The following tests have been completed or are in process:

17-4122-1	Atterberg Limits	Signed
17-4122-1	Sieve Analysis of Soil Test Report	Signed

Technician: Bautista, Emil

Remarks:

Orig: Enviroforensics (Indianapolis, IN)  
 Attn: Wayne Fassbender (1-ec copy)

Respectfully Submitted,  
 GeoTest, Inc.

Emil G. Bautista, Testing Services Manager





REPORT: Sieve Analysis of Soil Test Report

LAB NO: 17-4122-1  
 Test Method: See Below

Project: 6420  
 Location:  
 Client: Enviroforensics  
 Acct. No: ENVIROFOREN  
 Client PO: 2017-1297

Report Date: 09/22/2017  
 Date Sampled: 09/13/2017  
 Sampled By: Client  
 By Order Of: Client  
 Order Number:  
 Report No: 17-4122-1-1  
 Project No: 5565

**TEST RESULTS**

Thank you for allowing us to work for you. Attached are laboratory test results.

Test Methods (If Applicable): ASTM D1140, D422, D6913 AASHTO T88

Orig: Enviroforensics (Indianapolis, IN)  
 Attn: Wayne Fassbender (1-ec copy)

Respectfully Submitted,  
 GeoTest, Inc.

Emil G. Bautista, Testing Services Manager





REPORT: **Atterberg Limits**

LAB NO: 17-4122-1  
 Test Method: See Below

Project: 6420  
 Location:  
 Client: Enviroforensics  
 Acct. No: ENVIROFOREN  
 Client PO: 2017-1297

Report Date: 09/21/2017  
 Date Sampled: 09/13/2017  
 Sampled By: Client  
 By Order Of: Client  
 Order Number:  
 Report No: 17-4122-1  
 Project No: 5565

**TEST RESULTS**

Description: Brown Lean CLAY and Silt with some Sand and  
 Liquid Limit: 32  
 Plastic Limit: 16  
 Plasticity Index: 16

Date Received: 9/13/2017  
 Date Tested: 9/21/2017

Test Method (As Applicable): ASTM D4318, AASHTO T89 & T90

Orig: Enviroforensics (Indianapolis, IN)  
 Attn: Wayne Fassbender (1-ec copy)

Respectfully Submitted,  
 GeoTest, Inc.

Emil G. Bautista, Testing Services Manager

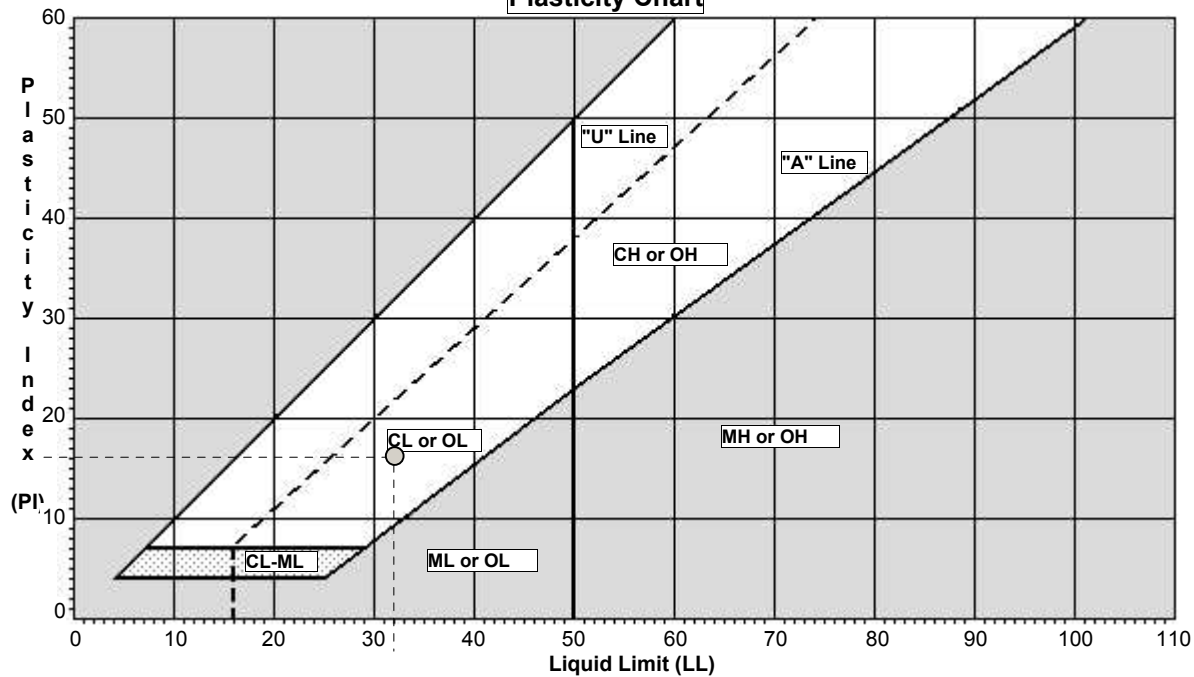
REPORT: **Atterberg Limits**

LAB NO: 17-4122-1  
Test Method: See Below

Project: 6420  
Location:  
Client: Enviroforensics  
Acct. No: ENVIROFOREN  
Client PO: 2017-1297

Report Date: 09/21/2017  
Date Sampled: 09/13/2017  
Sampled By: Client  
By Order Of: Client  
Order Number:  
Report No: 17-4122-1  
Project No: 5565

### TEST RESULTS Plasticity Chart



Orig: Enviroforensics (Indianapolis, IN)  
Attn: Wayne Fassbender (1-ec copy)



VAPOR  
PROTECTION  
SERVICES®

COST ESTIMATE  
ADVANCED DIAGNOSTICS TESTING &  
SITE ASSESSMENT FOR MITIGATION

November 7, 2017

VPS Estimate No. 2017-2041  
Dutch Cleaners  
403 S. Main St.  
Cedar Grove, Wisconsin

Mr. Wayne Fassbender  
N16 W23390 Stone Ridge Dr. Suite G  
Waukesha, WI 53188  
(262) 490-6472

Dear Mr. Fassbender:

Vapor Protection Services (VPS) is pleased to provide services for an Advanced Diagnostics phase for mitigation that ensures effective and reliable mitigation of vapor intrusion concerns at 403 S. Main St. Cedar Grove, Wisconsin (Site). This Advanced Diagnostics phase is recommended by the American Association of Radon Scientists and Technologists for the design of sub-slab depressurization systems (SSDS), sub-membrane depressurization systems (SMDS) for crawl spaces, both systems also referred to as Active Soil Depressurization (ASD), which are effective in the mitigation of radon and vapor intrusion (VI) such as TCE, PCE, vinyl chloride and benzene. A detailed site report is included in this cost-estimate.

Advanced Diagnostics Phase	Cost Estimate
Advanced Diagnostics and System Design	
Admin. Fee for Site Report with Test Results, ROI Schematic, and Cost Estimate for System Installation	
<b>Total</b>	<b>\$3,000.00</b>

**Advanced Diagnostics**

Pressure field extension testing (PFE) includes but is not limited to measurement of indoor air volume and pressure, pilot fan testing with air flow tracking, and thorough site assessment for specific conditions, such as building construction, potential leaks in foundation, and soil composition for desired permeability. All test and measurement results, radius of influence (ROI) schematic, and site conditions in regard to mitigation will be presented in a concise report to help VPS, consultants and shareholders develop mitigation strategies for best overall system design and installation. With the knowledge gained by the diagnostics phase, VPS includes a cost-estimate for installation intended to be fair and accurate.

**Advanced Diagnostics with Pressure Field Testing includes the following work scope:**

- Core drilling of each extraction point will have 3 -6 test points associated with it to establish radius of influence. Number of extraction points is determined by sub-slab substrate, square footage, building construction and performance criteria.

- Test holes of 3/8" drilled at a minimum of (3-6) locations through slab within slab perimeter to determine radius of influence with pilot fan testing.
- Digital micro-manometer measures negative pressure induced by fan to determine soil permeability and identify optimal location(s) for extraction points.
- PFE testing results are then considered reliable for depressurization of the entire slab foundation to a minimum of -0.020 inches of water column (-0.020" WC) per EPA guidelines and/or to meet performance criteria required by consulting company and are documented in site report.
- Measurements and testing will occur during normal business hours, 8 AM to 5 PM unless otherwise specified, with site access the responsibility of consulting company.
- A site condition for mitigation report with schematic of ROI is provided with notes on field/building observation and measurement/test results to help in the communication of mitigation strategies required at Site.
- A complete system design with layout schematic and daily work plan for Site is available upon request at an additional cost which is deductible from installation cost if VPS is awarded Site.
- Testing will occur during normal business hours, 8 AM to 5 PM unless otherwise specified, with site access and electrical service being the responsibility of consulting company.

#### **A System Design Schematic & Workscope is Available Upon Request**

A Mitigation System Design deliverable (not included in this cost estimate) is available post-field testing and is recommended for larger projects or those that need a competitive bid process. Consultants may request *Mitigation System Design* (which includes system layout/schematic drawing with fan selection/specifications, detailed work scope and Guidance checklists). The contracted fee for design (approximately 15% of installation) is deductible from the cost of installation if VPS is awarded site; design deliverable is property of consulting company and may be offered to other contractors for bid purposes.

#### **VPS Certifications**

VPS is certified by the American Association of Scientists and Technologists/National Radon Proficiency Program (AARST-NRPP) and trained by both the Center for Environmental Research and Technology and Midwest Universities Radon Consortium (MURC) in Radon Measurements and Mitigation. U.S. EPA recommends that vapor intrusion mitigation system installers also maintain such certifications. In addition, VPS has received additional training in Advanced Diagnostics for Mitigation, Chemical Vapor Intrusion Mitigation, Design & Installation of Radon Control Systems in New Buildings (NRPP 171), Multi-Family Measurement and Mitigation, and Radon Measurements and Mitigation in Large Buildings and Schools. VPS possesses specific experience in both design and installation of active soil depressurization systems for vapor intrusion and commercial radon sites, as well as, radon measurements for multi-family (HUD) and military bases. A certificate of liability insurance for general contracting, vapor mitigation, radon mitigation, and radon measurements and testing is available upon request. (OSHA 40. Licensed General Contractor).

**Limitations and Conclusion**

This cost estimate is effective for thirty (30) days from date of estimate until December 7, 2017. The costs and services in this estimate do not pertain to or include any testing required by federal, state, or local entities. All activities undertaken during testing and/or installation are performed under current insurance limits of VPS. Vapor Protection Services appreciates the opportunity to submit this cost estimate for services designed to meet your requirements for mitigation.

A representative of consulting company must sign here in acknowledgment of (above) cost estimate, cost and schedule, limitations and conclusion before testing may be scheduled.

Representative Name \_\_\_\_\_ Date \_\_\_\_\_  
Representative Signature \_\_\_\_\_

Sincerely,



Elizabeth L. Cline  
Vapor Protection Services®  
825 N. Capitol Ave  
Indianapolis, IN 46204  
866.888.7911  
[www.vaporprotection.com](http://www.vaporprotection.com)

*This estimate and any files transmitted with it are confidential and intended solely for the use of the individual or entity addressed and is considered proprietary information arising regarding business activities, plans, system designs, system applications, costs, pricing and other business activities not generally known or accessible to the public or competing firms. Your good faith effort not to share this estimate and details contained (within) without our express consent is appreciated.*







**TABLE 1**  
**FURTHER SITE INVESTIGATION COST ESTIMATE**  
**Former Dutch Cleaners**  
**Cedar Grove, WI**

TASK	LABOR COSTS	SUB-CONTRACTOR COSTS	DIRECT COSTS	PHASE COST
<b>Phase 2a</b>				
Work Scope Development	\$3,270	\$0	\$17	<b>\$3,287</b>
<b>Phase 2b</b>				
Access	\$2,355	\$0	\$138	<b>\$2,493</b>
<b>Phase 2c</b>				
Investigative Work	\$6,590	\$11,070	\$3,188	<b>\$20,848</b>
<b>Phase 2d</b>				
Data Evaluation and Reporting	\$4,680	\$0	\$184	<b>\$4,864</b>
<b>Phase 2e</b>				
Project Coordination & Management	\$2,920	\$0	\$5	<b>\$2,925</b>
<b>TOTAL</b>	<b>\$19,815</b>	<b>\$11,070</b>	<b>\$3,533</b>	<b>\$34,417</b>

Project Title:  
 Project Number/Name:  
 Date:

SSDS Testing & Vapor Intrusion Assessments  
 6420 / Former Dutch Cleaners  
 11/10/2017



Phase 2a Work Scope Development						
<b>Labor - Field</b>						
Principal	\$200.00	hr			\$0.00	Task Total
Director	\$175.00	hr			\$0.00	
Sr Project Manager	\$155.00	hr			\$0.00	
Sr Professional	\$155.00	hr			\$0.00	
Project Manager	\$130.00	hr			\$0.00	
Project Professional	\$130.00	hr			\$0.00	
Staff Professional-Office	\$120.00	hr			\$0.00	
Staff Professional-Field	\$120.00	hr			\$0.00	
Field Professional	\$95.00	hr			\$0.00	
Drafting	\$85.00	hr			\$0.00	
Admin	\$65.00	hr			\$0.00	
Compliance Specialist					\$0.00	
Vapor Intrusion Specialist					\$0.00	
Health and Safety Specialist					\$0.00	
					\$0.00	
<b>Labor - Office/Reporting</b>						
Principal	\$200.00	hr			\$0.00	Task Total
Director	\$175.00	hr			\$0.00	
Sr Project Manager	\$155.00	hr			\$0.00	
Sr Professional	\$155.00	hr	18.0		\$2,790.00	
Project Manager	\$130.00	hr			\$0.00	
Project Professional	\$130.00	hr			\$0.00	
Staff Professional-Office	\$120.00	hr	4.0		\$480.00	
Staff Professional-Field	\$120.00	hr			\$0.00	
Field Professional	\$95.00	hr			\$0.00	
Drafting	\$85.00	hr			\$0.00	
Admin	\$65.00	hr			\$0.00	
Compliance Specialist					\$0.00	
Vapor Intrusion Specialist					\$0.00	
Health and Safety Specialist					\$0.00	
		hr			\$0.00	
<b>Contractors/Consultants</b>						
Utility Locate		LS		1.00	\$0.00	Task Total
Driller		LS		1.00	\$0.00	
Surveyor		LS		1.00	\$0.00	
Waste Disposal		LS		1.00	\$0.00	
WDR Review Fee		LS		1.00	\$0.00	
Remediation		LS		1.00	\$0.00	
				1.00	\$0.00	
				1.00	\$0.00	
				1.00	\$0.00	
				1.00	\$0.00	
				1.00	\$0.00	\$0.00
<b>Contractor/Consultant - Laboratory</b>						
Soil VOC 8260 dry wt	\$71.93	ea		1.00	\$0.00	Task Total
Soil VOC 8260 dry wt QA/QC	\$71.93	ea		1.00	\$0.00	
GW VOC 8260	\$71.93	ea		1.00	\$0.00	
GW VOC 8260 QA/QC	\$71.93	ea		1.00	\$0.00	
Air TO-15 -- Soil Gas		ea		1.00	\$0.00	
Air TO-15 -- Sub-Slab	\$40.00	ea		1.00	\$0.00	
Air TO-15 -- Indoor Air	\$110.00	ea		1.00	\$0.00	
Air - Individual Certification	\$50.00	ea		1.00	\$0.00	
Air - Batch Certification	\$35.00	LS		1.00	\$0.00	
Trip Blank VOCs 8260	\$71.93	ea		1.00	\$0.00	
Level IV QA/QC (15%)					\$0.00	
					\$0.00	
<b>Direct Costs - Expenses</b>						
Hotel	\$120.00	day		1.00	\$0.00	Task Total
Meals	\$60.00	LS		1.00	\$0.00	
Misc Materials		LS		1.00	\$0.00	
WDR File Copy		LS		1.00	\$0.00	
					\$0.00	
					\$0.00	
					\$0.00	
					\$0.00	

	Direct Costs - Chargeable Equipment Expense	Rate (hr/unit)	# Hrs/Units	Rate (day/use)	# days/use	Subtotal
Vehicles	Field Vehicle - Full Day	\$ 20.00		\$ 130.00		
	Mileage at Federal IRS Reimbursement Rate (used only for daily use over 230 miles)	\$ 0.56				
Meters	Air Velocity Meter (per use)			\$ 25.00		
	Multi-meter Conductivity/pH/Temp/TDS			\$ 165.00		
	Dissolved Oxygen Meter			\$ 40.00		
	FID Foxboro/Sensidyne (TIP)			\$ 155.00		
	Flow Calibrator			\$ 30.00		
	PID or 580 OVM			\$ 120.00		
	Turbidity Meter			\$ 30.00		
	ppb RAE			\$ 175.00		
Pumps	ORP Meter			\$ 30.00		
	Air Pump - Low Flow (Barcad)			\$ 25.00		
	Development Pump			\$ 130.00		
	Electric Submersible Pump with Control Box (Units)			\$ 130.00		
	Low-Flow Sampling Bladder	\$ 12.00				
	Peristaltic Pump			\$ 105.00		
	Pumping Test Accessory Equipment (Flow Meters/Manifold)	\$ 100.00				
	Portable SVE Unit - 1.5 HP			\$ 155.00		
Other	Intrinsically Safe Vapor Evacuation Blower			\$ 125.00		
	Pneumatic Low-Flow Sampling Kit w/ Flow Cell and Multimeter			\$ 270.00		
	Asbestos Sampling Kit			\$ 250.00		
	Asbestos Investigation Supplies			\$ 130.00		
	Asbestos Sampling Core	\$ 2.50				
	Bailers (Disposable)	\$ 10.00				
	Bailers (Non-Disposable)			\$ 15.00		
	Core Boxes	\$ 10.00				
	Core Sampler			\$ 55.00		
	Data Logger with Transducer			\$ 155.00		
	Well Caps	\$ 30.00				
	Elec. Well Sounder (Probe)			\$ 30.00		
	Metal Detector			\$ 50.00		
	5035 Sample Kit	\$ 16.00				
	Field Book	\$ 11.00				
	Filter - Large	\$ 18.00				
	Filter - Small	\$ 9.00				
	Generator			\$ 105.00		
	Hand Auger			\$ 30.00		
	Helium QA/QC Kit			\$ 265.00		
	Helium QA/QC Accessories	\$ 20.00				
	Oil/Water Interface Probe			\$ 105.00		
	Padlocks	\$ 15.00				
	Steam Cleaner			\$ 130.00		
	Transducer (ea)			\$ 40.00		
	Coring Machine			\$ 200.00		
	Rotary Hammer Drill			\$ 170.00		
	Hand Drill			\$ 75.00		
	Tubing (Bonded) - Polyethylene (Teflon): 1/4" OD X 3/8" O	\$ 1.50				
	Tubing (Bonded) - Polyethylene (Teflon): 1/4" OD X 1/4" O	\$ 1.20				
	Tubing (Bonded) - Polyethylene (Teflon): 1/16" OD X 1/4"	\$ 1.25				
	Tubing (Bonded) - Polyethylene: 1/4" OD X 3/8" OD (per f	\$ 1.10				
	Tubing - Polyethylene: 1/4" OD (per foot)	\$ 0.60				
	Tubing - Polyethylene: 1/2" OD (per foot)	\$ 0.85				
	Tubing - Tygon: 3/8" STD (per foot)	\$ 4.45				
	Tubing - Silicone: 3/8" STD (per foot)	\$ 4.50				
PFA Tubing - 1/2-inch ID	\$ 5.00					
55-Gallon Drum	\$ 55.00					
Temporary Sampling Port	\$ 25.00					
Vapor Pin Sub-Slab Sampling Port	\$ 75.00					
Sub-Slab Cover (Stainless Steel)	\$ 40.00					
Well Cover 8X12"	\$ 105.00					
Measuring Wheel			\$ 15.00			
Camera			\$ 25.00			
1L Tedlar Bag	\$ 20.00					
Radon Sample Kit	\$ 30.00					
HAZMAT Exemption Shipper	\$ 40.00					
Manometers	\$ 105.00					
Westlaw	\$ 105.00					
CAD/drafting/graphics	\$ 90.00					
Safety	Cones, Baracades & Traffic Signs			\$ 10.00		
	Gloves (Chemical Resistant)	\$ 10.00				
	Level "B": Level "C1" plus SCBA			\$ 210.00		
	Level "C1": Level "C2" plus Polycoat Suit			\$ 85.00		
	Level "C2": Level "D" plus Respirator			\$ 40.00		
	Standby SCBA			\$ 130.00		
Routine Field and Safety Equipment			\$ 130.00			
Production	1 Inch Binder	\$ 9.00				
	2 Inch Binder	\$ 12.00				
	3 Inch Binder	\$ 15.00				
	4 Inch Binder	\$ 22.00				
	Binder Tabs (Set of 8)	\$ 5.00				
	Color Copies	\$ 0.40	6			\$ 2.40
	B/W Copies	\$ 0.25				
Document - Format/Sending	\$ 15.00	1			\$ 15.00	
Report CD Copy	\$ 5.00					
						\$17.40
<b>PHASE TOTAL</b>						<b>\$3,287.40</b>

Project Title:  
 Project Number/Name:  
 Date:

SSDS Testing & Vapor Intrusion Assessments  
 6420 / Former Dutch Cleaners  
 11/10/2017



Phase 2b Access						
Labor - Field	Price	Unit	# Units		Subtotal	Task Total
Principal	\$200.00	hr			\$0.00	
Director	\$175.00	hr			\$0.00	
Sr Project Manager	\$155.00	hr	5.0		\$775.00	
Sr Professional	\$155.00	hr			\$0.00	
Project Manager	\$130.00	hr			\$0.00	
Project Professional	\$130.00	hr			\$0.00	
Staff Professional-Office	\$120.00	hr			\$0.00	
Staff Professional-Field	\$120.00	hr			\$0.00	
Field Professional	\$95.00	hr			\$0.00	
Drafting	\$85.00	hr			\$0.00	
Admin	\$65.00	hr			\$0.00	
Compliance Specialist					\$0.00	
Vapor Intrusion Specialist					\$0.00	
Health and Safety Specialist					\$0.00	
		hr			\$0.00	
					\$775.00	\$775.00

Labor - Office/Reporting	Price	Unit	# Units		Subtotal	Task Total
Principal	\$200.00	hr			\$0.00	
Director	\$175.00	hr			\$0.00	
Sr Project Manager	\$155.00	hr	4.0		\$620.00	
Sr Professional	\$155.00	hr			\$0.00	
Project Manager	\$130.00	hr			\$0.00	
Project Professional	\$130.00	hr			\$0.00	
Staff Professional-Office	\$120.00	hr	8.0		\$960.00	
Staff Professional-Field	\$120.00	hr			\$0.00	
Field Professional	\$95.00	hr			\$0.00	
Drafting	\$85.00	hr			\$0.00	
Admin	\$65.00	hr			\$0.00	
Compliance Specialist					\$0.00	
Vapor Intrusion Specialist					\$0.00	
Health and Safety Specialist					\$0.00	
		hr			\$0.00	
					\$1,580.00	\$1,580.00

Contractors/Consultants	Price	Unit	# Units	Markup	Subtotal	Task Total
Utility Locate		LS		1.00	\$0.00	
Driller		LS		1.00	\$0.00	
Surveyor		LS		1.00	\$0.00	
Waste Disposal		LS		1.00	\$0.00	
WDNR Review Fee		LS		1.00	\$0.00	
Remediation		LS		1.00	\$0.00	
				1.00	\$0.00	
				1.00	\$0.00	
				1.00	\$0.00	
					\$0.00	\$0.00

Contractor/Consultant - Laboratory	Price	Unit	# Units	Markup	Subtotal	Task Total
Soil VOC 8260 dry wt	\$71.93	ea		1.00	\$0.00	
Soil VOC 8260 dry wt QA/QC	\$71.93	ea		1.00	\$0.00	
GW VOC 8260	\$71.93	ea		1.00	\$0.00	
GW VOC 8260 QA/QC	\$71.93	ea		1.00	\$0.00	
Air TO-15 -- Soil Gas		ea		1.00	\$0.00	
Air TO-15 -- Sub-Slab	\$180.00	ea		1.00	\$0.00	
Air TO-15 -- Indoor Air	\$180.00	ea		1.00	\$0.00	
Air - Individual Certification	\$50.00	ea		1.00	\$0.00	
Air - Batch Certification	\$50.00	LS		1.00	\$0.00	
Trip Blank VOCs 8260	\$71.93	ea		1.00	\$0.00	
	\$75.00	ea		1.00	\$0.00	
	\$95.00	ea		1.00	\$0.00	
					\$0.00	\$0.00

Direct Costs - Expenses	Price	Unit	# Units	Markup	Subtotal	Task Total
Hotel	\$120.00	day		1.00	\$0.00	
Meals	\$60.00	LS		1.00	\$0.00	
Misc Materials		LS		1.00	\$0.00	
Equipment Rental		LS		1.00	\$0.00	
					\$0.00	
					\$0.00	
					\$0.00	
					\$0.00	
					\$0.00	
					\$0.00	\$0.00

	Direct Costs - Chargeable Equipment Expense	Rate (hr/unit)	# Hrs/Units	Rate (day/use)	# days/use	Subtotal
Vehicles	Field Vehicle - Full Day	\$ 20.00		\$ 130.00	\$ 1.00	\$ 130.00
	Mileage at Federal IRS Reimbursement Rate (used only for daily use over 230 miles)	\$ 0.56				
Meters	Air Velocity Meter (per use)			\$ 25.00		
	Multi-meter Conductivity/pH/Temp/TDS			\$ 165.00		
	Dissolved Oxygen Meter			\$ 40.00		
	FID Foxboro/Sensidyne (TIP)			\$ 155.00		
	Flow Calibrator			\$ 30.00		
	PID or 580 OVM			\$ 120.00		
	Turbidity Meter			\$ 30.00		
	ppb RAE			\$ 175.00		
Pumps	ORP Meter			\$ 30.00		
	Air Pump - Low Flow (Barcad)			\$ 25.00		
	Development Pump			\$ 130.00		
	Electric Submersible Pump with Control Box (Units)			\$ 130.00		
	Low-Flow Sampling Bladder	\$ 12.00				
	Peristaltic Pump			\$ 105.00		
	Pumping Test Accessory Equipment (Flow Meters/Manifold)	\$ 100.00				
	Portable SVE Unit - 1.5 HP			\$ 155.00		
Other	Intrinsically Safe Vapor Evacuation Blower			\$ 125.00		
	Pneumatic Low-Flow Sampling Kit w/ Flow Cell and Multimeter			\$ 270.00		
	Asbestos Sampling Kit			\$ 250.00		
	Asbestos Investigation Supplies			\$ 130.00		
	Asbestos Sampling Core	\$ 2.50				
	Bailers (Disposable)	\$ 10.00				
	Bailers (Non-Disposable)			\$ 15.00		
	Core Boxes	\$ 10.00				
	Core Sampler			\$ 55.00		
	Data Logger with Transducer			\$ 155.00		
	Well Caps	\$ 30.00				
	Elec. Well Sounder (Probe)			\$ 30.00		
	Metal Detector			\$ 50.00		
	5035 Sample Kit	\$ 16.00				
	Field Book	\$ 11.00				
	Filter - Large	\$ 18.00				
	Filter - Small	\$ 9.00				
	Generator			\$ 105.00		
	Hand Auger			\$ 30.00		
	Helium QA/QC Kit			\$ 265.00		
	Helium QA/QC Accessories	\$ 20.00				
	Oil/Water Interface Probe			\$ 105.00		
	Padlocks	\$ 15.00				
	Steam Cleaner			\$ 130.00		
	Transducer (ea)			\$ 40.00		
	Coring Machine			\$ 200.00		
	Rotary Hammer Drill			\$ 170.00		
	Hand Drill			\$ 75.00		
	Tubing (Bonded) - Polyethylene (Teflon): 1/4" OD X 3/8" O	\$ 1.50				
	Tubing (Bonded) - Polyethylene (Teflon): 1/4" OD X 1/4" O	\$ 1.20				
	Tubing (Bonded) - Polyethylene (Teflon): 1/16" OD X 1/4"	\$ 1.25				
	Tubing (Bonded) - Polyethylene: 1/4" OD X 3/8" OD (per f	\$ 1.10				
	Tubing - Polyethylene: 1/4" OD (per foot)	\$ 0.60				
	Tubing - Polyethylene: 1/2" OD (per foot)	\$ 0.85				
	Tubing - Tygon: 3/8" STD (per foot)	\$ 4.45				
	Tubing - Silicone: 3/8" STD (per foot)	\$ 4.50				
	PFA Tubing - 1/2-inch ID	\$ 5.00				
	55-Gallon Drum	\$ 55.00				
	Temporary Sampling Port	\$ 25.00				
	Vapor Pin Sub-Slab Sampling Port	\$ 75.00				
Sub-Slab Cover (Stainless Steel)	\$ 40.00					
Well Cover 8X12"	\$ 105.00					
Measuring Wheel			\$ 15.00			
Camera			\$ 25.00			
1L Tedlar Bag	\$ 20.00					
Radon Sample Kit	\$ 30.00					
HAZMAT Exemption Shipper	\$ 40.00					
Manometers	\$ 105.00					
Westlaw	\$ 105.00					
CAD/drafting/graphics	\$ 90.00					
Safety	Cones, Baracades & Traffic Signs			\$ 10.00		
	Gloves (Chemical Resistant)	\$ 10.00				
	Level "B": Level "C1" plus SCBA			\$ 210.00		
	Level "C1": Level "C2" plus Polycoat Suit			\$ 85.00		
	Level "C2": Level "D" plus Respirator			\$ 40.00		
	Standby SCBA			\$ 130.00		
Routine Field and Safety Equipment			\$ 130.00			
Production	1 Inch Binder	\$ 9.00				
	2 Inch Binder	\$ 12.00				
	3 Inch Binder	\$ 15.00				
	4 Inch Binder	\$ 22.00				
	Binder Tabs (Set of 8)	\$ 5.00				
	Color Copies	\$ 0.40	21			\$ 8.40
	B/W Copies	\$ 0.25				
	Document - Format/Sending	\$ 15.00				
Report CD Copy	\$ 5.00					
						\$138.40
<b>PHASE TOTAL</b>						<b>\$2,493.40</b>

**Project Title:**  
**Project Number/Name:**  
**Date:**

SSDS Testing & Vapor Intrusion Assessments  
 6420 / Former Dutch Cleaners  
 11/10/2017



Phase 2c Investigative Work						
Labor - Field	Price	Unit	# Units		Subtotal	Task Total
Principal	\$200.00	hr			\$0.00	
Director	\$175.00	hr			\$0.00	
Sr Project Manager	\$155.00	hr			\$0.00	
Sr Professional	\$155.00	hr			\$0.00	
Project Manager	\$130.00	hr			\$0.00	
Project Professional	\$130.00	hr			\$0.00	
Staff Professional-Office	\$120.00	hr			\$0.00	
Staff Professional-Field	\$120.00	hr			\$0.00	
Field Professional	\$95.00	hr	44.0		\$4,180.00	
Drafting	\$85.00	hr			\$0.00	
Admin	\$65.00	hr			\$0.00	
Compliance Specialist					\$0.00	
Vapor Intrusion Specialist					\$0.00	
Health and Safety Specialist					\$0.00	
		hr			\$0.00	
					\$4,180.00	\$4,180.00

Labor - Office/Reporting	Price	Unit	# Units		Subtotal	Task Total
Principal	\$200.00	hr			\$0.00	
Director	\$175.00	hr			\$0.00	
Sr Project Manager	\$155.00	hr	6.0		\$930.00	
Sr Professional	\$155.00	hr			\$0.00	
Project Manager	\$130.00	hr			\$0.00	
Project Professional	\$130.00	hr			\$0.00	
Staff Professional-Office	\$120.00	hr	6.0		\$720.00	
Staff Professional-Field	\$120.00	hr			\$0.00	
Field Professional	\$95.00	hr	8.0		\$760.00	
Drafting	\$85.00	hr			\$0.00	
Admin	\$65.00	hr			\$0.00	
Compliance Specialist					\$0.00	
Vapor Intrusion Specialist					\$0.00	
Health and Safety Specialist					\$0.00	
		hr			\$0.00	
					\$2,410.00	\$2,410.00

Contractors/Consultants	Price	Unit	# Units	Markup	Subtotal	Task Total
Utility Locate		LS		1.00	\$0.00	
Driller		LS		1.00	\$0.00	
Surveyor		LS		1.00	\$0.00	
Waste Disposal		LS		1.00	\$0.00	
WDNR Review Fee		LS		1.00	\$0.00	
Remediation		LS		1.00	\$0.00	
VPS Advanced SSDS Diagnostics	\$3,000.00	LS	1.0	1.00	\$3,000.00	
				1.00	\$0.00	
				1.00	\$0.00	
				1.00	\$0.00	
					\$3,000.00	\$3,000.00

Contractor/Consultant - Laboratory	Price	Unit	# Units	Markup	Subtotal	Task Total
Soil VOC 8260 dry wt	\$71.93	ea		1.00	\$0.00	
Soil VOC 8260 dry wt QA/QC	\$71.93	ea		1.00	\$0.00	
GW VOC 8260	\$71.93	ea	3.0	1.00	\$215.79	
GW VOC 8260 QA/QC	\$71.93	ea	1.0	1.00	\$71.93	
Air TO-15 -- Soil Gas		ea		1.00	\$0.00	
Air TO-15 -- Sub-Slab	\$180.00	ea	16.0	1.00	\$2,880.00	
Air TO-15 -- Indoor Air	\$180.00	ea	16.0	1.00	\$2,880.00	
Air - Individual Certification	\$50.00	ea	20.0	1.00	\$1,000.00	
Air - Batch Certification	\$50.00	LS	2.0	1.00	\$100.00	
Trip Blank VOCs 8260	\$71.93	ea	1.0	1.00	\$71.93	
Microbial Analyses	\$425.00	ea	2.0	1.00	\$850.00	
		ea		1.00	\$0.00	
					\$8,069.65	\$8,069.65

Direct Costs - Expenses	Price	Unit	# Units	Markup	Subtotal	Task Total
Hotel	\$120.00	day		1.00	\$0.00	
Meals	\$60.00	LS		1.00	\$0.00	
Misc Materials		LS		1.00	\$0.00	
Equipment Rental		LS		1.00	\$0.00	
					\$0.00	
					\$0.00	
					\$0.00	
					\$0.00	
					\$0.00	
					\$0.00	\$0.00

	Direct Costs - Chargeable Equipment Expense	Rate (hr/unit)	# Hrs/Units	Rate (day/use)	# days/use	Subtotal	
Vehicles	Field Vehicle - Full Day	\$ 20.00		\$ 130.00	4.00	\$ 520.00	
	Mileage at Federal IRS Reimbursement Rate (used only for daily use over 230 miles)	\$ 0.56					
Meters	Air Velocity Meter (per use)			\$ 25.00			
	Multi-meter Conductivity/pH/Temp/TDS			\$ 165.00	1.00	\$ 165.00	
	Dissolved Oxygen Meter			\$ 40.00			
	FID Foxboro/Sensidyne (TIP)			\$ 155.00			
	Flow Calibrator			\$ 30.00			
	PID or 580 OVM			\$ 120.00			
	Turbidity Meter			\$ 30.00			
	ppb RAE			\$ 175.00	2.00	\$ 350.00	
Pumps	ORP Meter			\$ 30.00			
	Air Pump - Low Flow (Barcad)			\$ 25.00			
	Development Pump			\$ 130.00			
	Electric Submersible Pump with Control Box (Units)			\$ 130.00			
	Low-Flow Sampling Bladder	\$ 12.00					
	Peristaltic Pump			\$ 105.00	4.00	\$ 420.00	
	Pumping Test Accessory Equipment (Flow Meters/Manifold)	\$ 100.00					
	Portable SVE Unit - 1.5 HP			\$ 155.00			
	Intrinsically Safe Vapor Evacuation Blower			\$ 125.00			
	Pneumatic Low-Flow Sampling Kit w/ Flow Cell and Multimeter			\$ 270.00			
Other	Asbestos Sampling Kit			\$ 250.00			
	Asbestos Investigation Supplies			\$ 130.00			
	Asbestos Sampling Core	\$ 2.50					
	Bailers (Disposable)	\$ 10.00					
	Bailers (Non-Disposable)			\$ 15.00			
	Core Boxes	\$ 10.00					
	Core Sampler			\$ 55.00			
	Data Logger with Transducer			\$ 155.00			
	Well Caps	\$ 30.00					
	Elec. Well Sounder (Probe)			\$ 30.00	\$ 1.00	\$ 30.00	
	Metal Detector			\$ 50.00			
	5035 Sample Kit	\$ 16.00					
	Field Book	\$ 11.00					
	Filter - Large	\$ 18.00					
	Filter - Small	\$ 9.00					
	Generator			\$ 105.00			
	Hand Auger			\$ 30.00			
	Helium QA/QC Kit			\$ 265.00			
	Helium QA/QC Accessories	\$ 20.00					
	Oil/Water Interface Probe			\$ 105.00			
	Padlocks	\$ 15.00					
	Steam Cleaner			\$ 130.00			
	Transducer (ea)			\$ 40.00			
	Coring Machine			\$ 200.00			
	Rotary Hammer Drill			\$ 170.00	2.00	\$ 340.00	
	Hand Drill			\$ 75.00			
	Tubing (Bonded) - Polyethylene (Teflon): 1/4" OD X 3/8" O	\$ 1.50					
	Tubing (Bonded) - Polyethylene (Teflon): 1/4" OD X 1/4" O	\$ 1.20					
	Tubing (Bonded) - Polyethylene (Teflon): 1/16" OD X 1/4"	\$ 1.25					
	Tubing (Bonded) - Polyethylene: 1/4" OD X 3/8" OD (per f	\$ 1.10					
	Tubing - Polyethylene: 1/4" OD (per foot)	\$ 0.60					
	Tubing - Polyethylene: 1/2" OD (per foot)	\$ 0.85	60.00			\$ 51.00	
	Tubing - Tygon: 3/8" STD (per foot)	\$ 4.45					
	Tubing - Silicone: 3/8" STD (per foot)	\$ 4.50	18.00			\$ 81.00	
	PFA Tubing - 1/2-inch ID	\$ 5.00					
	55-Gallon Drum	\$ 55.00					
	Temporary Sampling Port	\$ 25.00					
	Vapor Pin Sub-Slab Sampling Port	\$ 75.00	8.00			\$ 600.00	
	Sub-Slab Cover (Stainless Steel)	\$ 40.00	8.00			\$ 320.00	
	Well Cover 8X12"	\$ 105.00					
	Measuring Wheel			\$ 15.00	1.00	\$ 15.00	
	Camera			\$ 25.00	\$ 1.00	\$ 25.00	
	1L Tedlar Bag	\$ 20.00					
	Radon Sample Kit	\$ 30.00					
	HAZMAT Exemption Shipper	\$ 40.00					
	Manometers	\$ 105.00					
	Westlaw	\$ 105.00					
	CAD/drafting/graphics	\$ 90.00					
	Safety	Cones, Baracades & Traffic Signs			\$ 10.00		
		Gloves (Chemical Resistant)	\$ 10.00				
Level "B": Level "C1" plus SCBA				\$ 210.00			
Level "C1": Level "C2" plus Polycoat Suit				\$ 85.00			
Level "C2": Level "D" plus Respirator				\$ 40.00			
Standby SCBA				\$ 130.00			
Routine Field and Safety Equipment			\$ 130.00	2.00	\$ 260.00		
Production	1 Inch Binder	\$ 9.00					
	2 Inch Binder	\$ 12.00					
	3 Inch Binder	\$ 15.00					
	4 Inch Binder	\$ 22.00					
	Binder Tabs (Set of 8)	\$ 5.00					
	Color Copies	\$ 0.40	28			\$ 11.20	
	B/W Copies	\$ 0.25					
	Document - Format/Sending	\$ 15.00					
Report CD Copy	\$ 5.00						
						\$3,188.20	
<b>PHASE TOTAL</b>						<b>\$20,847.85</b>	

**Project Title:**  
**Project Number/Name:**  
**Date:**

SSDS Testing & Vapor Intrusion Assessments  
 6420 / Former Dutch Cleaners  
 11/10/2017



Phase 2d Data Evaluation and Reporting						
<b>Labor - Field</b>						
Principal	\$200.00	hr			\$0.00	Task Total
Director	\$175.00	hr			\$0.00	
Sr Project Manager	\$155.00	hr			\$0.00	
Sr Professional	\$155.00	hr			\$0.00	
Project Manager	\$130.00	hr			\$0.00	
Project Professional	\$130.00	hr			\$0.00	
Staff Professional-Office	\$120.00	hr			\$0.00	
Staff Professional-Field	\$120.00	hr			\$0.00	
Field Professional	\$95.00	hr			\$0.00	
Drafting	\$85.00	hr			\$0.00	
Admin	\$65.00	hr			\$0.00	
Compliance Specialist					\$0.00	
Vapor Intrusion Specialist					\$0.00	
Health and Safety Specialist					\$0.00	
		hr			\$0.00	
					\$0.00	<b>\$0.00</b>
<b>Labor - Office/Reporting</b>						
Principal	\$200.00	hr			\$0.00	Task Total
Director	\$175.00	hr			\$0.00	
Sr Project Manager	\$155.00	hr	8.0		\$1,240.00	
Sr Professional	\$155.00	hr			\$0.00	
Project Manager	\$130.00	hr			\$0.00	
Project Professional	\$130.00	hr			\$0.00	
Staff Professional-Office	\$120.00	hr	16.0		\$1,920.00	
Staff Professional-Field	\$120.00	hr			\$0.00	
Field Professional	\$95.00	hr	6.0		\$570.00	
Drafting	\$85.00	hr	6.0		\$510.00	
Admin	\$65.00	hr	2.0		\$130.00	
Compliance Specialist					\$0.00	
Vapor Intrusion Specialist	\$155.00	hr	2.0		\$310.00	
Health and Safety Specialist					\$0.00	
		hr			\$0.00	
					\$4,680.00	<b>\$4,680.00</b>
<b>Contractors/Consultants</b>						
Utility Locate		LS		1.00	\$0.00	Task Total
Driller		LS		1.00	\$0.00	
Surveyor		LS		1.00	\$0.00	
Waste Disposal		LS		1.00	\$0.00	
Historical Database Report		LS		1.00	\$0.00	
Remediation		LS		1.00	\$0.00	
				1.00	\$0.00	
				1.00	\$0.00	
				1.00	\$0.00	
				1.00	\$0.00	
				1.00	\$0.00	
				1.00	\$0.00	<b>\$0.00</b>
<b>Contractor/Consultant - Laboratory</b>						
Soil VOC 8260 dry wt	\$71.93	ea		1.00	\$0.00	Task Total
Soil VOC 8260 dry wt QA/QC	\$71.93	ea		1.00	\$0.00	
GW VOC 8260	\$210.00	ea		1.00	\$0.00	
GW VOC 8260 QA/QC	\$71.93	ea		1.00	\$0.00	
Air TO-15 -- Soil Gas		ea		1.00	\$0.00	
Air TO-15 -- Sub-Slab	\$40.00	ea		1.00	\$0.00	
Air TO-15 -- Indoor Air	\$110.00	ea		1.00	\$0.00	
Air - Individual Certification	\$200.00	ea		1.00	\$0.00	
Air - Batch Certification	\$35.00	LS		1.00	\$0.00	
Trip Blank VOCs 8260	\$50.00	ea		1.00	\$0.00	
Level IV QA/QC (15%)	\$71.93				\$0.00	
					\$0.00	
<b>Direct Costs - Expenses</b>						
Hotel	\$120.00	day		1.00	\$0.00	Task Total
Meals	\$60.00	LS		1.00	\$0.00	
Misc Materials		LS		1.00	\$0.00	
Equipment Rental		LS		1.00	\$0.00	
					\$0.00	
					\$0.00	
					\$0.00	
					\$0.00	
					\$0.00	<b>\$0.00</b>



	Direct Costs - Chargeable Equipment Expense	Rate (hr/unit)	# Hrs/Units	Rate (day/use)	# days/use	Subtotal
Vehicles	Field Vehicle - Full Day	\$ 20.00		\$ 130.00		
	Mileage at Federal IRS Reimbursement Rate (used only for daily use over 230 miles)	\$ 0.560				
Meters	Air Velocity Meter (per use)			\$ 25.00		
	Multi-meter Conductivity/pH/Temp/TDS			\$ 165.00		
	Dissolved Oxygen Meter			\$ 40.00		
	FID Foxboro/Sensidyne (TIP)			\$ 155.00		
	Flow Calibrator			\$ 30.00		
	PID or 580 OVM			\$ 120.00		
	Turbidity Meter			\$ 30.00		
	ppb RAE			\$ 175.00		
Pumps	ORP Meter			\$ 30.00		
	Air Pump - Low Flow (Barcad)			\$ 25.00		
	Development Pump			\$ 130.00		
	Electric Submersible Pump with Control Box (Units)			\$ 130.00		
	Low-Flow Sampling Bladder	\$ 12.00				
	Peristaltic Pump			\$ 105.00		
	Pumping Test Accessory Equipment (Flow Meters/Manifold)	\$ 100.00				
	Portable SVE Unit - 1.5 HP			\$ 155.00		
Other	Intrinsically Safe Vapor Evacuation Blower			\$ 155.00		
	Pneumatic Low-Flow Sampling Kit w/ Flow Cell and Multimeter			\$ 270.00		
	Asbestos Sampling Kit			\$ 250.00		
	Asbestos Investigation Supplies			\$ 130.00		
	Asbestos Sampling Core	\$ 2.50				
	Bailers (Disposable)	\$ 10.00				
	Bailers (Non-Disposable)			\$ 15.00		
	Core Boxes	\$ 10.00				
	Core Sampler			\$ 55.00		
	Data Logger with Transducer			\$ 155.00		
	Well Caps	\$ 30.00				
	Elec. Well Sounder (Probe)			\$ 30.00		
	Metal Detector			\$ 50.00		
	5035 Sample Kit	\$ 16.00				
	Field Book	\$ 11.00				
	Filter - Large	\$ 18.00				
	Filter - Small	\$ 9.00				
	Generator			\$ 105.00		
	Hand Auger			\$ 30.00		
	Helium QA/QC Kit			\$ 265.00		
	Helium QA/QC Accessories	\$ 20.00				
	Oil/Water Interface Probe			\$ 105.00		
	Padlocks	\$ 15.00				
	Steam Cleaner			\$ 130.00		
	Transducer (ea)			\$ 40.00		
	Coring Machine			\$ 200.00		
	Rotary Hammer Drill			\$ 170.00		
	Hand Drill			\$ 75.00		
	Tubing (Bonded) - Polyethylene (Teflon): 1/4" OD X 3/8" O	\$ 1.50				
	Tubing (Bonded) - Polyethylene (Teflon): 1/4" OD X 1/4" O	\$ 1.20				
	Tubing (Bonded) - Polyethylene (Teflon): 1/16" OD X 1/4"	\$ 1.25				
	Tubing (Bonded) - Polyethylene: 1/4" OD X 3/8" OD (per f	\$ 1.10				
	Tubing - Polyethylene: 1/4" OD (per foot)	\$ 0.60				
	Tubing - Polyethylene: 1/2" OD (per foot)	\$ 0.85				
	Tubing - Tygon: 3/8" STD (per foot)	\$ 4.45				
	Tubing - Silicone: 3/8" STD (per foot)	\$ 4.50				
	PFA Tubing - 1/2-inch ID	\$ 5.00				
	55-Gallon Drum	\$ 55.00				
	Temporary Sampling Port	\$ 25.00				
	Soil Gas Sampling Port	\$ 75.00				
	Sub-Slab Cover (Stainless Steel)	\$ 40.00				
	Well Cover 8X12"	\$ 105.00				
Measuring Wheel			\$ 15.00			
Camera			\$ 25.00			
1L Tedlar Bag	\$ 20.00					
Radon Sampling Kit	\$ 30.00					
HAZMAT Exemption Shipper	\$ 40.00					
Manometers	\$ 105.00					
Westlaw	\$ 105.00					
CAD/drafting/graphics	\$ 90.00					
Safety	Cones, Baracades & Traffic Signs			\$ 10.00		
	Gloves (Chemical Resistant)	\$ 10.00				
	Level "B": Level "C1" plus SCBA			\$ 210.00		
	Level "C1": Level "C2" plus Polycoat Suit			\$ 85.00		
	Level "C2": Level "D" plus Respirator			\$ 40.00		
	Standby SCBA			\$ 130.00		
Routine Field and Safety Equipment			\$ 130.00		\$ 130.00	
Production	1 Inch Binder	\$ 9.00				
	2 Inch Binder	\$ 12.00				
	3 Inch Binder	\$ 15.00				
	4 Inch Binder	\$ 22.00				
	Binder Tabs (Set of 8)	\$ 5.00				
	Color Copies	\$ 0.40	60			\$ 24.00
	B/W Copies	\$ 0.25				
	Document - Format/Sending	\$ 15.00	2			\$ 30.00
Report CD Copy	\$ 5.00					
						\$ 184.00
<b>PHASE TOTAL</b>						<b>\$ 4,864.00</b>

**Project Title:**  
**Project Number/Name:**  
**Date:**

SSDS Testing & Vapor Intrusion Assessments  
 6420 / Former Dutch Cleaners  
 11/10/2017



**Phase 2e Project Coordination & Management**

Labor - Field	Price	Unit	# Units		Subtotal	Task Total
Principal	\$200.00	hr			\$0.00	
Director	\$175.00	hr			\$0.00	
Sr Project Manager	\$155.00	hr			\$0.00	
Sr Professional	\$155.00	hr			\$0.00	
Project Manager	\$130.00	hr			\$0.00	
Project Professional	\$130.00	hr			\$0.00	
Staff Professional-Office	\$120.00	hr			\$0.00	
Staff Professional-Field	\$120.00	hr			\$0.00	
Field Professional	\$95.00	hr			\$0.00	
Drafting	\$85.00	hr			\$0.00	
Admin	\$65.00	hr			\$0.00	
Compliance Specialist					\$0.00	
Vapor Intrusion Specialist					\$0.00	
Health and Safety Specialist					\$0.00	
		hr			\$0.00	
					\$0.00	<b>\$0.00</b>

Labor - Office/Reporting	Price	Unit	# Units		Subtotal	Task Total
Principal	\$200.00	hr			\$0.00	
Director	\$175.00	hr	1.0		\$175.00	
Sr Project Manager	\$155.00	hr	8.0		\$1,240.00	
Sr Professional	\$155.00	hr			\$0.00	
Project Manager	\$130.00	hr			\$0.00	
Project Professional	\$130.00	hr			\$0.00	
Staff Professional-Office	\$120.00	hr	12.0		\$1,440.00	
Staff Professional-Field	\$120.00	hr			\$0.00	
Field Professional	\$95.00	hr			\$0.00	
Drafting	\$85.00	hr			\$0.00	
Admin	\$65.00	hr	1.0		\$65.00	
Compliance Specialist					\$0.00	
Vapor Intrusion Specialist					\$0.00	
Health and Safety Specialist					\$0.00	
		hr			\$0.00	
					\$2,920.00	<b>\$2,920.00</b>

Contractors/Consultants	Price	Unit	# Units	Markup	Subtotal	Task Total
Utility Locate		LS		1.00	\$0.00	
Driller		LS		1.00	\$0.00	
Surveyor		LS		1.00	\$0.00	
Waste Disposal		LS		1.00	\$0.00	
Historical Database Report		LS		1.00	\$0.00	
Remediation		LS		1.00	\$0.00	
				1.00	\$0.00	
				1.00	\$0.00	
				1.00	\$0.00	
				1.00	\$0.00	
					\$0.00	<b>\$0.00</b>

Contractor/Consultant - Laboratory	Price	Unit	# Units	Markup	Subtotal	Task Total
Soil VOC 8260 dry wt	\$71.93	ea		1.00	\$0.00	
Soil VOC 8260 dry wt QA/QC	\$71.93	ea		1.00	\$0.00	
GW VOC 8260	\$210.00	ea		1.00	\$0.00	
GW VOC 8260 QA/QC	\$71.93	ea		1.00	\$0.00	
Air TO-15 -- Soil Gas		ea		1.00	\$0.00	
Air TO-15 -- Sub-Slab	\$40.00	ea		1.00	\$0.00	
Air TO-15 -- Indoor Air	\$110.00	ea		1.00	\$0.00	
Air - Individual Certification	\$200.00	ea		1.00	\$0.00	
Air - Batch Certification	\$35.00	LS		1.00	\$0.00	
Trip Blank VOCs 8260	\$50.00	ea		1.00	\$0.00	
Level IV QA/QC (15%)	\$71.93				\$0.00	
					\$0.00	<b>\$0.00</b>

Direct Costs - Expenses	Price	Unit	# Units	Markup	Subtotal	Task Total
Hotel	\$120.00	day		1.00	\$0.00	
Meals	\$60.00	LS		1.00	\$0.00	
Misc Materials		LS		1.00	\$0.00	
Equipment Rental		LS		1.00	\$0.00	
					\$0.00	
					\$0.00	
					\$0.00	
					\$0.00	
					\$0.00	
					\$0.00	<b>\$0.00</b>

	Direct Costs - Chargeable Equipment Expense	Rate (hr/unit)	# Hrs/Units	Rate (day/use)	# days/use	Subtotal
Vehicles	Field Vehicle - Full Day	\$ 20.00		\$ 130.00		
	Mileage at Federal IRS Reimbursement Rate (used only for daily use over 230 miles)	\$ 0.560				
Meters	Air Velocity Meter (per use)			\$ 25.00		
	Multi-meter Conductivity/pH/Temp/TDS			\$ 165.00		
	Dissolved Oxygen Meter			\$ 40.00		
	FID Foxboro/Sensidyne (TIP)			\$ 155.00		
	Flow Calibrator			\$ 30.00		
	PID or 580 OVM			\$ 120.00		
	Turbidity Meter			\$ 30.00		
	ppb RAE			\$ 175.00		
Pumps	ORP Meter			\$ 30.00		
	Air Pump - Low Flow (Barcad)			\$ 25.00		
	Development Pump			\$ 130.00		
	Electric Submersible Pump with Control Box (Units)			\$ 130.00		
	Low-Flow Sampling Bladder	\$ 12.00				
	Peristaltic Pump			\$ 105.00		
	Pumping Test Accessory Equipment (Flow Meters/Manifold)	\$ 100.00				
	Portable SVE Unit - 1.5 HP			\$ 155.00		
Other	Intrinsically Safe Vapor Evacuation Blower			\$ 155.00		
	Pneumatic Low-Flow Sampling Kit w/ Flow Cell and Multimeter			\$ 270.00		
	Asbestos Sampling Kit			\$ 250.00		
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<b>PHASE TOTAL</b>						<b>\$ 2,924.80</b>