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January 22, 2020  
Stantec No.: 755624

Mr. Riley Neumann  
Remediation & Redevelopment Program  
Wisconsin Department of Natural Resources  
2300 North Dr. Martin Luther King, Jr. Drive  
Milwaukee, Wisconsin 53212-3128

**Reference: Workplan and Cost Estimate – Vapor Intrusion Assessment  
Capitol Cleaners, 2101 East Capitol Drive, Shorewood, Wisconsin  
WDNR BRRTS #02-41-282945**

Dear Mr. Neumann:

Stantec Consulting Services Inc. (Stantec) prepared this workplan and cost estimate to complete a vapor intrusion assessment of a tetrachloroethene (PCE) release at Capitol Cleaners, 2101 East Capitol Drive, Shorewood, Wisconsin (herein referred to as “the Site”). To ensure the additional investigation is eligible for reimbursement under the Drycleaner Environmental Response Fund, estimated costs are summarized on the attached Wisconsin Department of Natural Resources (WDNR) Form 4400-214D.

## **BACKGROUND INFORMATION**

A single-story building covers the majority of the Site which is served by a public water supply and sewer system. The Site has operated as a dry cleaner since at least the early 1990’s.

PCE was detected in soil and groundwater during a petroleum release investigation of the adjoining property to the east. An off-site exemption request was filed on September 28, 2001, and a potential responsible party (PRP) letter was sent to Capitol Cleaners on November 7, 2001. During August 2008, Northern Environmental Technologies, Incorporated (Northern Environmental) completed four soil boreholes at the Site to assess if drycleaning activities resulted in a PCE release. PCE concentrations as high as 2,590 milligrams per kilogram were detected in subsurface soil samples adjacent to an existing dry cleaner machine. Northern Environmental summarized the findings in an August 29, 2008 report. Northern Environmental also submitted the Dry Cleaner Environmental Response Program Potential Claim Notification Form 4400-210 for the Site to the WDNR during August 2008. On September 3, 2008, the WDNR provided the Site owner a letter that required investigation of the PCE detected at the Site.

Since that time, the Site owner has received Notice of Noncompliance letters (dated September 30, 2011, May 16, 2014, and May 10, 2015) from the WDNR highlighting your responsibility to investigate the degree and extent of contamination at the Site. On August 5, 2019, the WDNR sent the Site owner a “Notice of Intent to Incur Expenses” letter related to the immediate need to complete a vapor intrusion assessment at the Site and adjacent properties. On October 30, 2019, on behalf of the Site owner, Stantec contacted the WDNR and requested guidance regarding the scope of the required vapor intrusion assessment. The vapor intrusion assessment workplan outlined below is based on WDNR site-specific requests.

## **WORKPLAN**

The additional investigation includes outdoor air, indoor air and sub-slab air sample collection at the Site and the following addresses:

- 2107 East Capitol Drive, Shorewood, WI
- 2121 East Capitol Drive, Shorewood, WI
- 3936 North Frederick Avenue, Shorewood, WI
- 3940 North Frederick Avenue, Shorewood, WI

Reference: **Workplan and Cost Estimate – Additional Investigation  
Capitol Cleaners, 2101 East Capitol Drive, Shorewood, Wisconsin**

The additional investigation will be divided into the following four tasks.

- Task 1: Vapor Intrusion Assessment – Residential Properties
- Task 2: Vapor Intrusion Assessment – Commercial Properties
- Task 3: Vapor Intrusion Screening – Atwater Elementary School Property
- Task 4: Prepare Summary Letter Report

### **Task 1: Vapor Intrusion Assessment – Residential Properties**

The vapor intrusion assessment will include collection of indoor air samples and sub-slab vapor samples as described below. Stantec will attempt to schedule collection air samples at residential properties for a single day, but actual sampling schedule will be contingent on landowner availability.

#### **Subtask 1.1 - Obtain Access Agreements**

Stantec will assist Capitol Cleaners in obtaining access agreements to sample inside the residential properties located at 2121 East Capitol Drive, 3936 North Frederick Avenue, and 3940 North Frederick Avenue (2 total homes and 1 apartment building). Access agreements will be drafted for the property owners' review and approval. Stantec anticipates that an in-person meeting with the landowners may be required.

#### **Subtask 1.2 - Indoor Air Sampling**

Stantec will collect indoor air samples from one apartment building and two homes. Stantec will collect two indoor air samples at each location, one located in the basement and one located on the ground floor. Each indoor air sample collection device (6-liter Summa canister with 24-hour flow controller) will be positioned at a height considered to represent the normal breathing zone (approximately 3 to 5 feet above the lowest floor of the house [assumed to be the basement]). Summa canisters may be placed on a desk, table, shelf, cabinet, etc. so that the sampling location is at the correct height. Collection of indoor air samples near windows or sources of outdoor air leakage will be avoided. Stantec will use a placard labeled "Do Not Disturb – Active Air Sampling". Stantec assumes home occupants will not tamper with the Summa canisters during the 24-hour sample collection time, as Stantec personnel will not be continuously monitoring each canister. After approximately 24 hours, the canisters will be sealed and collected for shipment to the project laboratory. The project laboratory will be instructed to analyze the air samples for PCE, trichloroethylene (TCE), cis-1,2-Dichloroethene, trans-1,2-Dichloroethene, and vinyl chloride using EPA Method TO-15.

#### **Subtask 1.3 - Sub-Slab Vapor Sampling**

The vapor assessment will also include the collection of sub-slab soil vapor samples from one apartment building and two homes. The samples will be collected from a sub-slab vapor point constructed using a 5/8-inch diameter VaporPin® kit. A 1.5-inch diameter drill bit will be used to allow placement of a flush mounted cover over the VaporPin® in the upper 4-inches of concrete. A 5/8-inch diameter drill bit is then used to fully penetrate the concrete floor and allow VaporPin® installation. The VaporPin® is fitted with a stainless-steel sealable hose barb to allow for sample collection.

After vapor point construction, leak testing consisting of a "shut-in test" that measures airtightness of the fittings between the sample probe and the sample container and a "helium shroud test" to measure if the vapor point seal leaks will be performed. The helium shroud test consists of using a shroud filled with helium and placed over the vapor point. Air purged from the vapor point is then tested for helium. If helium is detected, the sampling point will be resealed and retested for helium. After successful shut-in and helium shroud tests, the vapor point will be purged of one well volume at a flow rate near or less than 200 milliliters per minute. Following purging, "grab" samples will be collected at a flow rate near or less than 200 milliliters per minute using a laboratory provided 6-liter Summa canister. The project laboratory will be instructed to analyze the sub-slab air samples for PCE, TCE, cis-1,2-Dichloroethene, trans-1,2-Dichloroethene, and vinyl chloride using EPA Method TO-15.

#### **Subtask 1.4 – Outdoor (background) Air Sampling**

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Stantec will also collect an outdoor ambient air sample. The outdoor air sample will be collected at an upwind location from the Site. The sample will be collected using a 6-liter Summa canister with 24-hour flow controller. If possible, the canister will be placed in a concealed location to minimize the chance of tampering. After approximately 24 hours, the canister will be sealed and collected for shipment to the project laboratory. Meteorological data will be obtained from the nearest National Weather Service station. Data will be collected for the time period corresponding to the sampling period. Data collected will include minimum and maximum temperature, barometric pressure, precipitation, and a summary of hourly wind speed and direction.

### **Task 2: Vapor Intrusion Assessment – Commercial Property**

The vapor intrusion assessment will include collection of indoor air samples and sub-slab vapor samples from the commercial business building described below. Stantec will attempt to schedule collection air samples at commercial properties for a single day, but actual sampling schedule will be contingent on landowner availability.

#### **Subtask 2.1 - Obtain Access Agreements**

Stantec will assist Capitol Cleaners in obtain an access agreement to the samples inside the commercial building located adjacent to the east of the Site at 2107 East Capitol Drive. The access agreement will be drafted for the property owner's review and approval.

#### **Subtask 2.2 - Indoor Air Sampling**

Stantec will collect two indoor air samples at the commercial building, one located in the basement and one located on the ground floor. Indoor air sample collection will be conducted using the methods previously described in Subtask 1.2. The project laboratory will be instructed to analyze the indoor air samples for PCE, TCE, cis-1,2-Dichloroethene, trans-1,2-Dichloroethene, and vinyl chloride using EPA Method TO-15.

#### **Subtask 2.3 - Sub-Slab Vapor Sampling**

The vapor assessment will consist of collection of sub-slab soil vapor samples at two locations in the building. The sub-slab vapor point will be constructed and sampled using the methods previously described in Subtask 1.3. The project laboratory will be instructed to analyze the sub-slab air samples for PCE, TCE, cis-1,2-Dichloroethene, trans-1,2-Dichloroethene, and vinyl chloride using EPA Method TO-15.

### **Task 3: Vapor Intrusion Screening – Atwater Elementary School Property**

Atwater Elementary School is located north of East Capitol Drive with the school building approximately 220 feet north of the Site. As requested by the WDNR, Stantec will complete the vapor intrusion screening process outlined in WDNR guidance document RR-800 as an initial vapor intrusion assessment of the school building. This initial screening will not include obtaining access to the Atwater Elementary School property or buildings. The screening results will be included in the report prepared in Task 4 below.

### **Task 4: Prepare Summary Letter Report**

Vapor analysis results will be tabulated, and the site figures will be updated to reflect the additional investigation completed. The results will be summarized in a letter report that will be submitted to the WDNR.

### **PROBABLE SCHEDULE AND COST**

The scope of work outlined above will be completed in phases. Task 1 through 3 will be initiated immediately after approval of this workplan and cost estimate by the WDNR. To the extent possible, air sampling will be conducted concurrently at each property. However, the schedule for collection of air samples inside the homes and business buildings will be dependent upon off-site access approval and owner availability. For budget development, Stantec assumes to pre-sampling site visits since one or more landowners will require an in-person meeting prior to allowing collection of air samples. In addition, Stantec assumes at least two mobilizations to complete the air sampling at the four offsite properties.

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If air samples indicate a health risk to home/building occupants, Task 4 will be delayed and a workplan and cost estimate would be prepared to install a mitigation system in the affected building(s). If indoor air sampling does not indicate a health risk to any homes/buildings Tasks 4 would then be completed.

The cost presented below is based on the quantities listed in the workplan. For budgeting purposes, the proposed work will be divided into cost categories consistent with the WDNR Linking Spreadsheet with off-site access coordination, data tabulation, and reporting incorporated into the various cost categories. A summary of probable costs are included on the enclosed WDNR Form 4400-214D. In addition, a detail of the hours spent on each of the Task/Subtask is provided on enclosed Table 1. The probable costs are presented below.

**WDNR Linking Spreadsheet Cost Category E – Air/Vapor Investigation**

Consulting Services

Associate Geologist	1 hour @ \$191/hr	\$ 191.00
Senior Geologist/Project Manager	17 hours @ \$158/hr	\$ 2,686.00
Registered Geologist	2 hours @ \$127/hr	\$ 254.00
Staff Geologist	56 hours @ \$122/hr	\$ 6,832.00
GIS/CAD Technician	4 hours @ \$115/hr	\$ 460.00
Geologist I	2 hours @ \$111/hr	\$ 222.00
Administrative Aid	6 hours @ \$103/hr	\$ 618.00
	Subtotal	\$11,263.00

Vapor Point Construction Supplies

Vapor Pin	5 each @ \$50/each	\$ 250.00
Helium Detector Rental	2 days @ 100/day	\$ 200.00
Coring Drill Rental	3 days @ \$45/day	\$ 135.00
	Subtotal	\$585.00

**Cost Category E Total \$11,848.00**

**WDNR Linking Spreadsheet Costs Category G - Laboratory Analysis**

<u>Air VOCs</u>	14 samples @ \$190/each	\$ 2,660.00
	Subtotal	\$2,660.00

**Cost Category G Total \$ 2,660.00**

**TOTAL COSTS CATEGORIES E AND G \$14,508.00**



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Please contact us if you have any questions or comments.

Regards,

**STANTEC CONSULTING SERVICES INC.**

Chris Hatfield  
Senior Geologist  
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Chris.Hatfield@stantec.com

Attachments

Client Approval

I, Gene Han, approve the scope and probable costs presented above.

Gene Han (owner)  
Signature – Title

1/28/2020  
Date

Enclosures

c: Gene Han, Capitol Cleaners

Table 1: Consultant Hours Estimate

Site Name: Capitol Cleaners  
 BRRTS #: 02-41-282945  
 Type of Action: Vapor Intrusion Assessment

Staff Classification	Probable Hours									Total Hours	Hourly Rate	Total \$
	1.1 - Obtain Access Agreements	1.2 - Indoor Air Sampling	1.3 - Sub-Slab Vapor Sampling	1.4 - Outdoor Air Sampling	2.1 - Obtain Access Agreements	2.2 - Indoor Air Sampling	2.3 - Sub-Slab Vapor Sampling	3 - Vapor Screening Atwater	4 - Prepare Report			
Associate Geologist	0.25				0.25				0.5	1	\$191	\$191
Senior Geologist/Project Manager	3	1	1		3	1	1	1	6	17	\$158	\$2,686
Registered Geologist									2	2	\$127	\$254
Staff Geologist	4	6	8	2	4	4	8	3	17	56	\$122	\$6,832
GIS/CAD Technician									4	4	\$115	\$460
Geologist I									2	2	\$111	\$222
Administrative Aid	1				1				4	6	\$103	\$618
<b>TOTALS</b>	<b>8.25</b>	<b>7</b>	<b>9</b>	<b>2</b>	<b>8.25</b>	<b>5</b>	<b>9</b>		<b>35.5</b>	<b>88</b>	<b>-</b>	<b>\$11,263</b>

