Langdon, Robert

From: Langdon, Robert
Sent: Tuesday, January 23, 2018 5:11 PM
To: douglas.cieslak@wisconsin.gov
Cc: Vanessa Wishart (VWishart@staffordlaw.com)
Subject: Arctic Laundry & Cleaners BRRTS Activity 02-30-245843

Doug, as requested, I'm providing a brief update for the Arctic Laundry & Cleaners case. As we discussed earlier this week, the project is in the site investigation stage and we are currently conducting vapor assessment sampling at off-site buildings. We plan to continue with site investigation work following interim action (vapor mitigation) of the source property building.

Our last update was submitted in a letter dated March 24, 2017. Since then, SCS was contracted by Stafford Rosenbaum LLP (Stafford) to perform additional vapor assessment sampling at Pa's Pizzeria (5621 & 5625 22nd Avenue) and Kenosha Midnight Bar & Liquor (5605 22nd Ave), and vapor mitigation assessment at the former Arctic Laundry & Cleaners (5619 22nd Ave).

Stafford has communicated with the various property owners to obtain access for the work. Access agreements for vapor assessment at Pa's Pizzeria and Midnight Bar & Liquor were executed in October and November 2017. SCS subsequently coordinated schedules with the owners and we are conducting the sampling this week (January 23 through 25th).

It is anticipated that the remaining access agreement for vapor mitigation assessment at the former Arctic Laundry & Cleaners building will be finalized by next week, with the assessment performed by late February. SCS will contact you as requested to notify you of a schedule for the assessment.

Let me know if you have any questions/comments regarding this update or proposed schedule.

Thank you,
Rob

Robert Langdon
Senior Hydrogeologist/Project Manager

SCS ENGINEERS
2830 Dairy Drive
Madison, WI 53718
608.224.2830
Direct: 608.216.7329 • Cell: 608.212.3995
www.scsengineers.com

StaffordRosenbaum LLP
Attorneys

Member of Geneva Group International
The Leading Global Alliance of Independent Professional Firms

Vanessa D. Wishart

222 West Washington Avenue, Suite 900
P.O. Box 1784
Madison, WI 53701-1784
vwishart@staffordlaw.com
608.210.6307

October 29, 2018

VIA CERTIFIED MAIL

John Ekornaas
5619 22nd Avenue
Kenosha, WI 53140

RE: Groundwater Sampling Results for Former Arctic Laundry & Cleaners
BRRTS No. 02-30-245843

Dear Mr. Ekornaas:

Included with this letter are the findings of recent groundwater sampling conducted on your property located at 5619 22nd Avenue in Kenosha, Wisconsin, by SCS Engineers. This investigation was conducted as part of continuing site investigation and remediation efforts at 5619 22nd Avenue, the former Arctic Laundry & Cleaners site.

SCS Engineers collected groundwater samples in October 2018. These results were submitted to Test America for laboratory analysis for volatile organic compounds (VOCs) including Tetrachloroethene (PCE) and Trichloroethene (TCE).

There were no VOCs were detected in the MW1 sample. The analysis detected PCE at monitoring well #3 in excess of a Department of Natural Resources NR 140 enforcement standard (ES). This concentration was slightly higher than the concentration detected at the same monitoring well in February 2017. In addition, VOCs 1,2-dichloropropane and dichlorodifluoromethane were detected in the the monitoring well #2 sample at concentrations in excess of the Department of Natural Resources NR 140 preventive action limits (PALs). However, dichlorodifluoromethane was also detected in the laboratory blank, so it is likely a laboratory contaminant and not actually in the groundwater. The source of 1,2-dichloropropane is not known, but it was detected in the previous monitoring well #2 sample.

Please find attached to this letter a notification form, sampling results, a map of sampling locations, and the laboratory analysis.

Madison Office

222 West Washington Avenue
P.O. Box 1784
Madison, Wisconsin
53701-1784

608.256.0226
888.655.4752
Fax 608.259.2600
www.staffordlaw.com

Milwaukee Office

1200 North Mayfair Road
Suite 430
Milwaukee, Wisconsin
53226-3282

414.982.2850
888.655.4752
Fax 414.982.2889
www.staffordlaw.com

If you have any questions regarding these results, please feel free to contact me at (608) 210-6307 or vwishart@staffordlaw.com

Best Regards,

Stafford Rosenbaum LLP

Vanessa D. Wishart

VDW:mai
Enclosures

State of Wisconsin
Department of Natural Resources
PO Box 7921, Madison WI 53707-7921
dnr.wi.gov

Site Investigation Sample Results Notification

Form 4400-249 (R 03/14)

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

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

Notification of Property Owners and Occupants:

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

Site Information

Site Name			DNR ID # (BRRTS #)
Former Arctic Laundry & Cleaners			02-30-245843
Address	**City**	**State**	**ZIP Code**
5619 22nd Avenue	Kenosha	WI	53140

Responsible Party

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

Property Owner

Roy Baietto (Former Owner)

Address	City	State	ZIP Code
1850 19th Avenue	Kenosha	WI	53140

Contact Person	Phone Number (include area code)
Roy Baietto	(262) 551-9239

Person or company that collected samples

SCS Engineers

Sample Results (Results Attached)

Reason for Sampling: ○ Routine ◉ Other (define) NR 716 Site Investigation

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

Contaminant	In Soil? Yes	In Soil? No	In Groundwater? Yes	In Groundwater? No
Gasoline	○	○	○	○
Diesel or Fuel Oil	○	○	○	○
Solvents	○	○	◉	○
Heavy Metals	○	○	○	○
Pesticides	○	○	○	○
Other: _____	○	○	○	○

Contaminants in Vapor	Yes	No
Indoor Air	○	○
Sub-slab	○	○
Exterior Soil Gas	○	○

This sampling event included sampling of a drinking water well.
○ Yes ◉ No

If yes, the sampled drinking water well had detectable contaminants.
○ Yes ○ No

Attached are:

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

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

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

Contact Information

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

Environmental Consultant

Company Name	Contact Person Last Name	First Name
SCS Engineers	Langdon	Robert

Address	City	State	ZIP Code
2830 Dairy Drive	Madison	WI	53718

Phone # (inc. area code)	Email
(608) 216-7329	rlangdon@scsengineers.com

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

State of Wisconsin Department of Natural Resources

Contact Person Last Name	First Name	Phone # (inc. area code)
Cieslak	Doug	(262) 574-2182

Address	City	State	ZIP Code
141 NW Barstow Rm. 180	Waukesha	WI	53188

Email

douglas.cieslak@wisconsin.gov

Table 2. Groundwater Analytical Results Summary
Former Arctic Laundry & Cleaners - 5619 22nd Avenue, Kenosha, Wisconsin / SCS Engineers Project #25216186.00
(Results are in µg/L)

Sample	Date	Lab Notes	PCE	TCE	VC	cis-1,2-DCE	trans-1,2-DCE	Other VOCs
GP-1	8/25/1994	--	**42.0**	*1.0*	<3	<1	<1	Toluene 7.2
GP-2	10/20/1995	--	**13**	<1.0	<3.0	<1.0	<1.0	ND
GP-3	10/20/1995	--	**50**	<1.0	<3.0	<1.0	<1.0	ND
GP-4	10/20/1995	--	**14**	*2.2*	<3.0	6.2	<1.0	ND
GP-5	10/26/1995	--	<1.0	<1.0	<3.0	<1.0	<1.0	ND
GP-6	10/26/1995	--	<1.0	<1.0	<3.0	<1.0	<1.0	ND
GP-7	2/6/2017	--	<0.37	<0.16	<0.20	<0.41	<0.35	ND
GP-8	2/6/2017	--	<0.37	<0.16	<0.20	<0.41	<0.35	ND
GP-9	2/6/2017	--	<0.37	<0.16	<0.20	<0.41	<0.35	ND
GP-10	2/6/2017	--	<0.37	<0.16	<0.20	<0.41	<0.35	ND
GP-11	2/6/2017	--	<0.37	<0.16	<0.20	<0.41	<0.35	ND
MW-1	2/21/2017	--	<0.37	<0.16	<0.20	<0.41	<0.35	ND
	10/3/2018	--	<0.37	<0.16	<0.20	<0.41	<0.35	ND
MW-2	2/21/2017	--	<0.37	<0.16	<0.20	<0.41	<0.35	1,2-Dichloropropane *1.3*
	2/21/2017 (DUP)	--	<0.37	<0.16	<0.20	<0.41	<0.35	1,2-Dichloropropane *1.2*
	10/3/2018	--	0.39 J	<0.16	<0.20	<0.41	<0.35	1,2-Dichloropropane *2.6* Dichlorodifluoromethane *0.85* J,B
MW-3	2/21/2017	--	*1.5*	<0.16	<0.20	<0.41	<0.35	ND
	10/3/2018	--	**41**	<0.16	<0.20	<0.41	<0.35	Dichlorodifluoromethane 0.81 J,B
	10/3/2018 (DUP)	--	**41**	<0.16	<0.20	<0.41	<0.35	ND

Table 2. Groundwater Analytical Results Summary
Former Arctic Laundry & Cleaners - 5619 22nd Avenue, Kenosha, Wisconsin / SCS Engineers Project #25216186.00
(Results are in µg/L)

Sample	Date	Lab Notes	PCE	TCE	VC	cis-1,2-DCE	trans-1,2-DCE	Other VOCs
Trip Blank	2/6/2017	--	<0.37	<0.16	<0.20	<0.41	<0.35	ND
	2/21/2017	--	<0.37	<0.16	<0.20	<0.41	<0.35	ND
	10/3/2018	--	<0.37	<0.16	<0.20	<0.41	<0.35	ND
NR 140 Enforcement Standards (ESs)			5	5	0.2	70	100	Toluene 800 1,2-Dichloropropane 5 Dichlorodifluoromethane 1,000
NR 140 Preventive Action Limits (PALs)			0.5	0.5	0.02	7	20	Toluene 160 1,2-Dichloropropane 0.5 Dichlorodifluoromethane 200

Abbreviations:
µg/L = micrograms per liter or parts per billion (ppb)
VC = Vinyl Chloride
NA = Not Analyzed
DCE = Dichloroethene
TCE = Trichloroethene
ND = Not Detected
PCE = Tetrachloroethene
VOCs = Volatile Organic Compounds
-- = Not Applicable

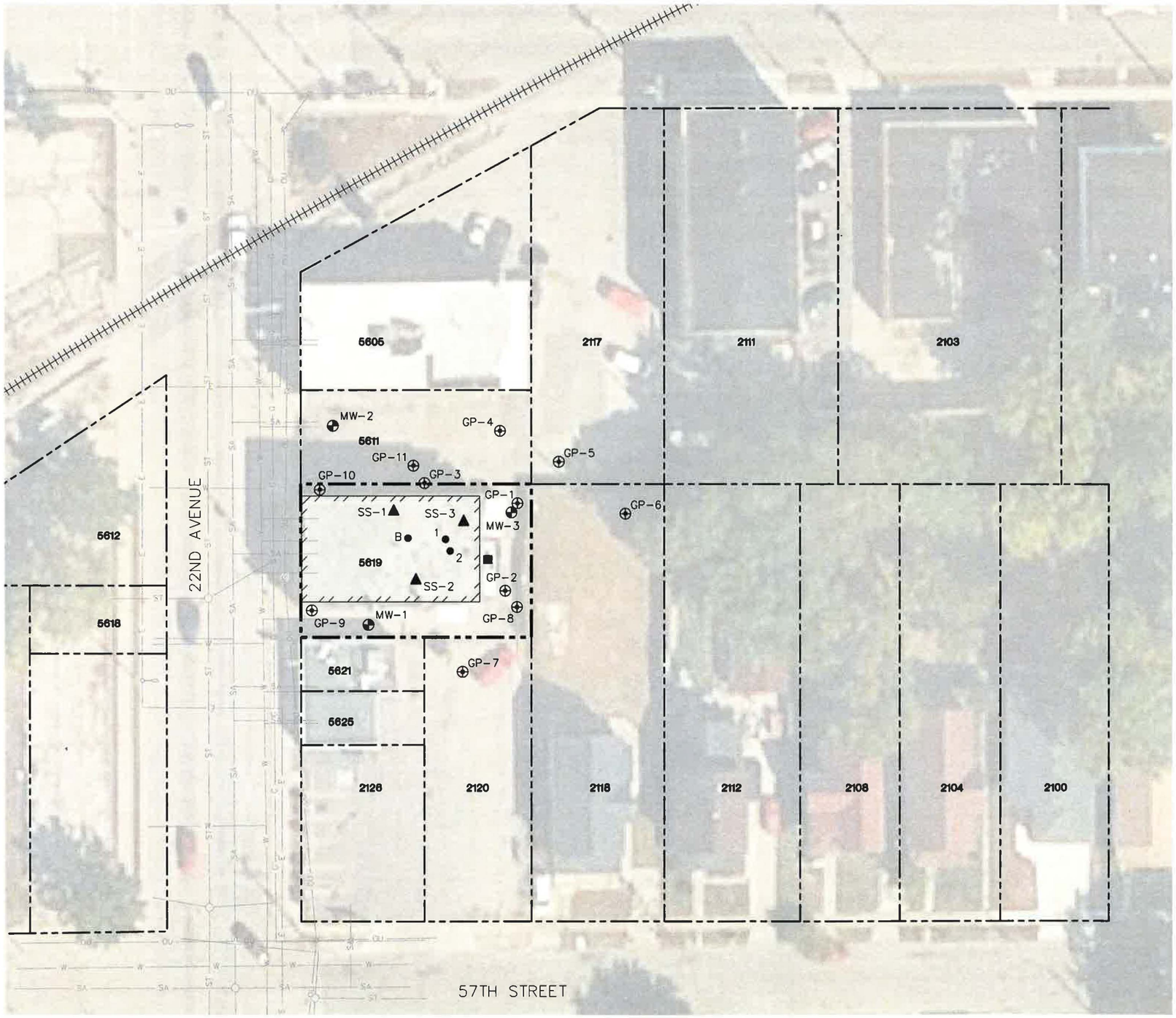
Notes:
NR 140 ESs - Wisconsin Administrative Code (WAC), Chapter NR 140.10 Table 1 - Public Health Groundwater Quality Standards from July 2015.
NR 140 PALs - WAC, Chapter NR 140.10 Table 1 - Public Health Groundwater Quality Standards from July 2015.
Bold+underlined values meet or exceed NR 140 ESs.
Italic+underlined values meet or exceed NR 140 PALs.

8/23/1994, 10/20/1995, and 10/26/1995 samples collected by Sigma Environmental Services, Inc., of Oak Creek, WI
2/6/2017 and 2/21/2017 samples collected by SCS Engineers of Madison, WI

Laboratory Notes/Qualifiers:
J = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B = Compound was found in the blank and sample.

Created by: LMH Date: 2/21/2017
Last revision by: AJR Date: 10/17/2018
Checked by: JSN Date: 10/18/2018

I:\25216186.00\Data and Calculations\Tables\[Groundwater_Drycleaner.xlsx]Drycleaner



N

LEGEND

- APPROXIMATE PROPERTY LINE (5619 22ND AVENUE)
- APPROXIMATE PROPERTY LINE
- 5619 PROPERTY ADDRESS NUMBER
- RAILROAD TRACKS
- E ELECTRIC (BURIED)
- OU ELECTRIC (OVERHEAD)
- G GAS MAIN
- SA SANITARY SEWER
- ST STORM SEWER
- W WATER MAIN
- UTILITY POLE
- STREET LIGHT
- GEOPROBE BORING
- MONITORING WELL
- SUB-SLAB VAPOR SAMPLE
- INDOOR AIR VAPOR SAMPLE [BASEMENT (B), FIRST FLOOR (1), SECOND FLOOR (2)]
- OUTDOOR AIR VAPOR SAMPLE

NOTES:

1. AERIAL PHOTOGRAPH IMPORTED FROM BING MAPS USING AUTOCAD 2016 GEOLOCATION MAP TOOL.
2. UTILITY LOCATIONS ARE APPROXIMATE, BASED ON 22ND AVENUE STORM SEWER AND LIGHTING DRAWING PROVIDED BY THE CITY OF KENOSHA (STATE PROJECT NO. 3994-03-70, SHEET 2.5).
3. SAMPLE LOCATIONS ARE APPROXIMATE.

40 0 40

SCALE: 1" = 40'

SITE FEATURES MAP

ARCTIC LAUNDRY AND CLEANERS
5619 22ND AVENUE
KENOSHA, WISCONSIN

SITE

FIGURE 2

SCS ENGINEERS
2830 DAIRY DRIVE MADISON, WI 53718-6751
PHONE: (608) 224-2830

ENGINEER

DRAWN BY:	KP
CHECKED BY:	JD
APPROVED BY:	REL 02/20/17
PROJECT NO.	25216186.00
DRAWN:	10/20/16
REVISED:	01/25/17

CLIENT

STAFFORD ROSENBAUM, LLP
222 WEST WASHINGTON AVENUE
MADISON, WI 53701

I:\25216186.00\Drawings\Site Plan.dwg, 2/20/2017 10:28:44 AM

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

TestAmerica Job ID: 500-152602-1
Client Project/Site: Arctic Laundry & Cleaners - 25216186

For:
SCS Engineers
2830 Dairy Dr
Madison, Wisconsin 53718

Attn: Mr. Robert Langdon

Sandie Fredrick

Authorized for release by:
10/15/2018 3:37:48 PM

Sandie Fredrick, Project Manager II
(920)261-1660
sandie.fredrick@testamericainc.com

Table of Contents

Case Narrative

Client: SCS Engineers
Project/Site: Arctic Laundry & Cleaners - 25216186

TestAmerica Job ID: 500-152602-1

Job ID: 500-152602-1

Laboratory: TestAmerica Chicago

Narrative

Job Narrative
500-152602-1

Comments
No additional comments.

Receipt
The samples were received on 10/4/2018 9:15 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 5.8° C.

GC/MS VOA
Dichlorodifluoromethane was detected in the method blank associated with the sample. Dichlorodifluoromethane results have been flagged in the associated sample with a "B" flag to denote the presence in the blank and possible lab contamination.

The following samples were collected in properly preserved vials for analysis of volatile organic compounds (VOCs). However, the pH was outside the required criteria when verified by the laboratory, and corrective action was not possible: MW-2 (500-152602-1), MW-3 (500-152602-2), MW-3-Duplicate (500-152602-3) and MW-1 (500-152602-4).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: SCS Engineers
Project/Site: Arctic Laundry & Cleaners - 25216186

TestAmerica Job ID: 500-152602-1

Client Sample ID: MW-2 — Lab Sample ID: 500-152602-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Dichlorodifluoromethane	0.85	J B	2.0	0.67	ug/L	1		8260B	Total/NA
1,2-Dichloropropane	2.6		1.0	0.43	ug/L	1		8260B	Total/NA
Tetrachloroethene	0.39	J	1.0	0.37	ug/L	1		8260B	Total/NA

Client Sample ID: MW-3 — Lab Sample ID: 500-152602-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Dichlorodifluoromethane	0.81	J B	2.0	0.67	ug/L	1		8260B	Total/NA
Tetrachloroethene	41		1.0	0.37	ug/L	1		8260B	Total/NA

Client Sample ID: MW-3-Duplicate — Lab Sample ID: 500-152602-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Tetrachloroethene	41		1.0	0.37	ug/L	1		8260B	Total/NA

Client Sample ID: MW-1 — Lab Sample ID: 500-152602-4

No Detections.

Client Sample ID: Trip Blank — Lab Sample ID: 500-152602-5

No Detections.

This Detection Summary does not include radiochemical test results.

Method Summary

Client: SCS Engineers
Project/Site: Arctic Laundry & Cleaners - 25216186

TestAmerica Job ID: 500-152602-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CHI
5030B	Purge and Trap	SW846	TAL CHI

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Sample Summary

Client: SCS Engineers
Project/Site: Arctic Laundry & Cleaners - 25216186

TestAmerica Job ID: 500-152602-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-152602-1	MW-2	Water	10/03/18 11:20	10/04/18 09:15
500-152602-2	MW-3	Water	10/03/18 11:35	10/04/18 09:15
500-152602-3	MW-3-Duplicate	Water	10/03/18 11:35	10/04/18 09:15
500-152602-4	MW-1	Water	10/03/18 11:55	10/04/18 09:15
500-152602-5	Trip Blank	Water	10/03/18 00:00	10/04/18 09:15

Client Sample ID: MW-2
Date Collected: 10/03/18 11:20
Date Received: 10/04/18 09:15

Lab Sample ID: 500-152602-1
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			10/11/18 13:56	1
Bromobenzene	<0.36		1.0	0.36	ug/L			10/11/18 13:56	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			10/11/18 13:56	1
Bromodichloromethane	<0.37		1.0	0.37	ug/L			10/11/18 13:56	1
Bromoform	<0.48		1.0	0.48	ug/L			10/11/18 13:56	1
Bromomethane	<0.80		2.0	0.80	ug/L			10/11/18 13:56	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			10/11/18 13:56	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			10/11/18 13:56	1
Chloroethane	<0.51		1.0	0.51	ug/L			10/11/18 13:56	1
Chloroform	<0.37		2.0	0.37	ug/L			10/11/18 13:56	1
Chloromethane	<0.32		1.0	0.32	ug/L			10/11/18 13:56	1
2-Chlorotoluene	<0.31		1.0	0.31	ug/L			10/11/18 13:56	1
4-Chlorotoluene	<0.35		1.0	0.35	ug/L			10/11/18 13:56	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			10/11/18 13:56	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			10/11/18 13:56	1
Dibromochloromethane	<0.49		1.0	0.49	ug/L			10/11/18 13:56	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			10/11/18 13:56	1
1,2-Dibromoethane	<0.39		1.0	0.39	ug/L			10/11/18 13:56	1
Dibromomethane	<0.27		1.0	0.27	ug/L			10/11/18 13:56	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			10/11/18 13:56	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			10/11/18 13:56	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			10/11/18 13:56	1
Dichlorodifluoromethane	**0.85**	**J B**	2.0	0.67	ug/L			10/11/18 13:56	1
1,1-Dichloroethane	<0.41		1.0	0.41	ug/L			10/11/18 13:56	1
1,2-Dichloroethane	<0.39		1.0	0.39	ug/L			10/11/18 13:56	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			10/11/18 13:56	1
1,2-Dichloropropane	**2.6**		1.0	0.43	ug/L			10/11/18 13:56	1
1,3-Dichloropropane	<0.36		1.0	0.36	ug/L			10/11/18 13:56	1
2,2-Dichloropropane	<0.44		1.0	0.44	ug/L			10/11/18 13:56	1
1,1-Dichloropropene	<0.30		1.0	0.30	ug/L			10/11/18 13:56	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/11/18 13:56	1
Hexachlorobutadiene	<0.45		1.0	0.45	ug/L			10/11/18 13:56	1
Isopropylbenzene	<0.39		1.0	0.39	ug/L			10/11/18 13:56	1
Isopropyl ether	<0.28		1.0	0.28	ug/L			10/11/18 13:56	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			10/11/18 13:56	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			10/11/18 13:56	1
Naphthalene	<0.34		1.0	0.34	ug/L			10/11/18 13:56	1
n-Butylbenzene	<0.39		1.0	0.39	ug/L			10/11/18 13:56	1
N-Propylbenzene	<0.41		1.0	0.41	ug/L			10/11/18 13:56	1
p-Isopropyltoluene	<0.36		1.0	0.36	ug/L			10/11/18 13:56	1
sec-Butylbenzene	<0.40		1.0	0.40	ug/L			10/11/18 13:56	1
Styrene	<0.39		1.0	0.39	ug/L			10/11/18 13:56	1
tert-Butylbenzene	<0.40		1.0	0.40	ug/L			10/11/18 13:56	1
1,1,1,2-Tetrachloroethane	<0.46		1.0	0.46	ug/L			10/11/18 13:56	1
1,1,2,2-Tetrachloroethane	<0.40		1.0	0.40	ug/L			10/11/18 13:56	1
Tetrachloroethene	**0.39**	**J**	1.0	0.37	ug/L			10/11/18 13:56	1
Toluene	<0.15		0.50	0.15	ug/L			10/11/18 13:56	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			10/11/18 13:56	1
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			10/11/18 13:56	1

Client Sample ID: MW-2

Date Collected: 10/03/18 11:20
Date Received: 10/04/18 09:15

Lab Sample ID: 500-152602-1
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			10/11/18 13:56	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			10/11/18 13:56	1
1,1,1-Trichloroethane	<0.38		1.0	0.38	ug/L			10/11/18 13:56	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			10/11/18 13:56	1
Trichloroethene	<0.16		0.50	0.16	ug/L			10/11/18 13:56	1
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			10/11/18 13:56	1
1,2,3-Trichloropropane	<0.41		1.0	0.41	ug/L			10/11/18 13:56	1
1,2,4-Trimethylbenzene	<0.36		1.0	0.36	ug/L			10/11/18 13:56	1
1,3,5-Trimethylbenzene	<0.25		1.0	0.25	ug/L			10/11/18 13:56	1
Vinyl chloride	<0.20		1.0	0.20	ug/L			10/11/18 13:56	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/11/18 13:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*92*		*72 - 124*		*10/11/18 13:56*	*1*
Dibromofluoromethane	*109*		*75 - 120*		*10/11/18 13:56*	*1*
1,2-Dichloroethane-d4 (Surr)	*93*		*75 - 126*		*10/11/18 13:56*	*1*
Toluene-d8 (Surr)	*97*		*75 - 120*		*10/11/18 13:56*	*1*

Client Sample ID: MW-3

Date Collected: 10/03/18 11:35
Date Received: 10/04/18 09:15

Lab Sample ID: 500-152602-2
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			10/11/18 14:22	1
Bromobenzene	<0.36		1.0	0.36	ug/L			10/11/18 14:22	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			10/11/18 14:22	1
Bromodichloromethane	<0.37		1.0	0.37	ug/L			10/11/18 14:22	1
Bromoform	<0.48		1.0	0.48	ug/L			10/11/18 14:22	1
Bromomethane	<0.80		2.0	0.80	ug/L			10/11/18 14:22	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			10/11/18 14:22	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			10/11/18 14:22	1
Chloroethane	<0.51		1.0	0.51	ug/L			10/11/18 14:22	1
Chloroform	<0.37		2.0	0.37	ug/L			10/11/18 14:22	1
Chloromethane	<0.32		1.0	0.32	ug/L			10/11/18 14:22	1
2-Chlorotoluene	<0.31		1.0	0.31	ug/L			10/11/18 14:22	1
4-Chlorotoluene	<0.35		1.0	0.35	ug/L			10/11/18 14:22	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			10/11/18 14:22	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			10/11/18 14:22	1
Dibromochloromethane	<0.49		1.0	0.49	ug/L			10/11/18 14:22	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			10/11/18 14:22	1
1,2-Dibromoethane	<0.39		1.0	0.39	ug/L			10/11/18 14:22	1
Dibromomethane	<0.27		1.0	0.27	ug/L			10/11/18 14:22	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			10/11/18 14:22	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			10/11/18 14:22	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			10/11/18 14:22	1
Dichlorodifluoromethane	**0.81**	**J B**	2.0	0.67	ug/L			10/11/18 14:22	1
1,1-Dichloroethane	<0.41		1.0	0.41	ug/L			10/11/18 14:22	1
1,2-Dichloroethane	<0.39		1.0	0.39	ug/L			10/11/18 14:22	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			10/11/18 14:22	1

Client Sample ID: MW-3

Date Collected: 10/03/18 11:35
Date Received: 10/04/18 09:15

Lab Sample ID: 500-152602-2
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			10/11/18 14:22	1
1,3-Dichloropropane	<0.36		1.0	0.36	ug/L			10/11/18 14:22	1
2,2-Dichloropropane	<0.44		1.0	0.44	ug/L			10/11/18 14:22	1
1,1-Dichloropropene	<0.30		1.0	0.30	ug/L			10/11/18 14:22	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/11/18 14:22	1
Hexachlorobutadiene	<0.45		1.0	0.45	ug/L			10/11/18 14:22	1
Isopropylbenzene	<0.39		1.0	0.39	ug/L			10/11/18 14:22	1
Isopropyl ether	<0.28		1.0	0.28	ug/L			10/11/18 14:22	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			10/11/18 14:22	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			10/11/18 14:22	1
Naphthalene	<0.34		1.0	0.34	ug/L			10/11/18 14:22	1
n-Butylbenzene	<0.39		1.0	0.39	ug/L			10/11/18 14:22	1
N-Propylbenzene	<0.41		1.0	0.41	ug/L			10/11/18 14:22	1
p-Isopropyltoluene	<0.36		1.0	0.36	ug/L			10/11/18 14:22	1
sec-Butylbenzene	<0.40		1.0	0.40	ug/L			10/11/18 14:22	1
Styrene	<0.39		1.0	0.39	ug/L			10/11/18 14:22	1
tert-Butylbenzene	<0.40		1.0	0.40	ug/L			10/11/18 14:22	1
1,1,1,2-Tetrachloroethane	<0.46		1.0	0.46	ug/L			10/11/18 14:22	1
1,1,2,2-Tetrachloroethane	<0.40		1.0	0.40	ug/L			10/11/18 14:22	1
Tetrachloroethene	**41**		1.0	0.37	ug/L			10/11/18 14:22	1
Toluene	<0.15		0.50	0.15	ug/L			10/11/18 14:22	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			10/11/18 14:22	1
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			10/11/18 14:22	1
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			10/11/18 14:22	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			10/11/18 14:22	1
1,1,1-Trichloroethane	<0.38		1.0	0.38	ug/L			10/11/18 14:22	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			10/11/18 14:22	1
Trichloroethene	<0.16		0.50	0.16	ug/L			10/11/18 14:22	1
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			10/11/18 14:22	1
1,2,3-Trichloropropane	<0.41		1.0	0.41	ug/L			10/11/18 14:22	1
1,2,4-Trimethylbenzene	<0.36		1.0	0.36	ug/L			10/11/18 14:22	1
1,3,5-Trimethylbenzene	<0.25		1.0	0.25	ug/L			10/11/18 14:22	1
Vinyl chloride	<0.20		1.0	0.20	ug/L			10/11/18 14:22	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/11/18 14:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*72 - 124*		*10/11/18 14:22*	*1*
Dibromofluoromethane	*89*		*75 - 120*		*10/11/18 14:22*	*1*
1,2-Dichloroethane-d4 (Surr)	*91*		*75 - 126*		*10/11/18 14:22*	*1*
Toluene-d8 (Surr)	*93*		*75 - 120*		*10/11/18 14:22*	*1*

Client Sample ID: MW-3-Duplicate

Date Collected: 10/03/18 11:35
Date Received: 10/04/18 09:15

Lab Sample ID: 500-152602-3
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			10/11/18 14:48	1
Bromobenzene	<0.36		1.0	0.36	ug/L			10/11/18 14:48	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			10/11/18 14:48	1

Client Sample ID: MW-3-Duplicate
Date Collected: 10/03/18 11:35
Date Received: 10/04/18 09:15

Lab Sample ID: 500-152602-3
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromodichloromethane	<0.37		1.0	0.37	ug/L			10/11/18 14:48	1
Bromoform	<0.48		1.0	0.48	ug/L			10/11/18 14:48	1
Bromomethane	<0.80		2.0	0.80	ug/L			10/11/18 14:48	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			10/11/18 14:48	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			10/11/18 14:48	1
Chloroethane	<0.51		1.0	0.51	ug/L			10/11/18 14:48	1
Chloroform	<0.37		2.0	0.37	ug/L			10/11/18 14:48	1
Chloromethane	<0.32		1.0	0.32	ug/L			10/11/18 14:48	1
2-Chlorotoluene	<0.31		1.0	0.31	ug/L			10/11/18 14:48	1
4-Chlorotoluene	<0.35		1.0	0.35	ug/L			10/11/18 14:48	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			10/11/18 14:48	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			10/11/18 14:48	1
Dibromochloromethane	<0.49		1.0	0.49	ug/L			10/11/18 14:48	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			10/11/18 14:48	1
1,2-Dibromoethane	<0.39		1.0	0.39	ug/L			10/11/18 14:48	1
Dibromomethane	<0.27		1.0	0.27	ug/L			10/11/18 14:48	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			10/11/18 14:48	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			10/11/18 14:48	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			10/11/18 14:48	1
Dichlorodifluoromethane	<0.67		2.0	0.67	ug/L			10/11/18 14:48	1
1,1-Dichloroethane	<0.41		1.0	0.41	ug/L			10/11/18 14:48	1
1,2-Dichloroethane	<0.39		1.0	0.39	ug/L			10/11/18 14:48	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			10/11/18 14:48	1
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			10/11/18 14:48	1
1,3-Dichloropropane	<0.36		1.0	0.36	ug/L			10/11/18 14:48	1
2,2-Dichloropropane	<0.44		1.0	0.44	ug/L			10/11/18 14:48	1
1,1-Dichloropropene	<0.30		1.0	0.30	ug/L			10/11/18 14:48	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/11/18 14:48	1
Hexachlorobutadiene	<0.45		1.0	0.45	ug/L			10/11/18 14:48	1
Isopropylbenzene	<0.39		1.0	0.39	ug/L			10/11/18 14:48	1
Isopropyl ether	<0.28		1.0	0.28	ug/L			10/11/18 14:48	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			10/11/18 14:48	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			10/11/18 14:48	1
Naphthalene	<0.34		1.0	0.34	ug/L			10/11/18 14:48	1
n-Butylbenzene	<0.39		1.0	0.39	ug/L			10/11/18 14:48	1
N-Propylbenzene	<0.41		1.0	0.41	ug/L			10/11/18 14:48	1
p-Isopropyltoluene	<0.36		1.0	0.36	ug/L			10/11/18 14:48	1
sec-Butylbenzene	<0.40		1.0	0.40	ug/L			10/11/18 14:48	1
Styrene	<0.39		1.0	0.39	ug/L			10/11/18 14:48	1
tert-Butylbenzene	<0.40		1.0	0.40	ug/L			10/11/18 14:48	1
1,1,1,2-Tetrachloroethane	<0.46		1.0	0.46	ug/L			10/11/18 14:48	1
1,1,2,2-Tetrachloroethane	<0.40		1.0	0.40	ug/L			10/11/18 14:48	1
Tetrachloroethene	**41**		1.0	0.37	ug/L			10/11/18 14:48	1
Toluene	<0.15		0.50	0.15	ug/L			10/11/18 14:48	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			10/11/18 14:48	1
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			10/11/18 14:48	1
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			10/11/18 14:48	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			10/11/18 14:48	1
1,1,1-Trichloroethane	<0.38		1.0	0.38	ug/L			10/11/18 14:48	1

Client Sample ID: MW-3-Duplicate

Lab Sample ID: 500-152602-3

Date Collected: 10/03/18 11:35
Date Received: 10/04/18 09:15

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			10/11/18 14:48	1
Trichloroethene	<0.16		0.50	0.16	ug/L			10/11/18 14:48	1
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			10/11/18 14:48	1
1,2,3-Trichloropropane	<0.41		1.0	0.41	ug/L			10/11/18 14:48	1
1,2,4-Trimethylbenzene	<0.36		1.0	0.36	ug/L			10/11/18 14:48	1
1,3,5-Trimethylbenzene	<0.25		1.0	0.25	ug/L			10/11/18 14:48	1
Vinyl chloride	<0.20		1.0	0.20	ug/L			10/11/18 14:48	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/11/18 14:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*93*		*72 - 124*		*10/11/18 14:48*	*1*
Dibromofluoromethane	*98*		*75 - 120*		*10/11/18 14:48*	*1*
1,2-Dichloroethane-d4 (Surr)	*98*		*75 - 126*		*10/11/18 14:48*	*1*
Toluene-d8 (Surr)	*92*		*75 - 120*		*10/11/18 14:48*	*1*

Client Sample ID: MW-1

Lab Sample ID: 500-152602-4

Date Collected: 10/03/18 11:55
Date Received: 10/04/18 09:15

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			10/11/18 15:14	1
Bromobenzene	<0.36		1.0	0.36	ug/L			10/11/18 15:14	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			10/11/18 15:14	1
Bromodichloromethane	<0.37		1.0	0.37	ug/L			10/11/18 15:14	1
Bromoform	<0.48		1.0	0.48	ug/L			10/11/18 15:14	1
Bromomethane	<0.80		2.0	0.80	ug/L			10/11/18 15:14	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			10/11/18 15:14	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			10/11/18 15:14	1
Chloroethane	<0.51		1.0	0.51	ug/L			10/11/18 15:14	1
Chloroform	<0.37		2.0	0.37	ug/L			10/11/18 15:14	1
Chloromethane	<0.32		1.0	0.32	ug/L			10/11/18 15:14	1
2-Chlorotoluene	<0.31		1.0	0.31	ug/L			10/11/18 15:14	1
4-Chlorotoluene	<0.35		1.0	0.35	ug/L			10/11/18 15:14	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			10/11/18 15:14	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			10/11/18 15:14	1
Dibromochloromethane	<0.49		1.0	0.49	ug/L			10/11/18 15:14	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			10/11/18 15:14	1
1,2-Dibromoethane	<0.39		1.0	0.39	ug/L			10/11/18 15:14	1
Dibromomethane	<0.27		1.0	0.27	ug/L			10/11/18 15:14	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			10/11/18 15:14	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			10/11/18 15:14	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			10/11/18 15:14	1
Dichlorodifluoromethane	<0.67		2.0	0.67	ug/L			10/11/18 15:14	1
1,1-Dichloroethane	<0.41		1.0	0.41	ug/L			10/11/18 15:14	1
1,2-Dichloroethane	<0.39		1.0	0.39	ug/L			10/11/18 15:14	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			10/11/18 15:14	1
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			10/11/18 15:14	1
1,3-Dichloropropane	<0.36		1.0	0.36	ug/L			10/11/18 15:14	1
2,2-Dichloropropane	<0.44		1.0	0.44	ug/L			10/11/18 15:14	1

Client Sample ID: MW-1
Date Collected: 10/03/18 11:55
Date Received: 10/04/18 09:15

Lab Sample ID: 500-152602-4
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloropropene	<0.30		1.0	0.30	ug/L			10/11/18 15:14	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/11/18 15:14	1
Hexachlorobutadiene	<0.45		1.0	0.45	ug/L			10/11/18 15:14	1
Isopropylbenzene	<0.39		1.0	0.39	ug/L			10/11/18 15:14	1
Isopropyl ether	<0.28		1.0	0.28	ug/L			10/11/18 15:14	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			10/11/18 15:14	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			10/11/18 15:14	1
Naphthalene	<0.34		1.0	0.34	ug/L			10/11/18 15:14	1
n-Butylbenzene	<0.39		1.0	0.39	ug/L			10/11/18 15:14	1
N-Propylbenzene	<0.41		1.0	0.41	ug/L			10/11/18 15:14	1
p-Isopropyltoluene	<0.36		1.0	0.36	ug/L			10/11/18 15:14	1
sec-Butylbenzene	<0.40		1.0	0.40	ug/L			10/11/18 15:14	1
Styrene	<0.39		1.0	0.39	ug/L			10/11/18 15:14	1
tert-Butylbenzene	<0.40		1.0	0.40	ug/L			10/11/18 15:14	1
1,1,1,2-Tetrachloroethane	<0.46		1.0	0.46	ug/L			10/11/18 15:14	1
1,1,2,2-Tetrachloroethane	<0.40		1.0	0.40	ug/L			10/11/18 15:14	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			10/11/18 15:14	1
Toluene	<0.15		0.50	0.15	ug/L			10/11/18 15:14	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			10/11/18 15:14	1
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			10/11/18 15:14	1
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			10/11/18 15:14	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			10/11/18 15:14	1
1,1,1-Trichloroethane	<0.38		1.0	0.38	ug/L			10/11/18 15:14	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			10/11/18 15:14	1
Trichloroethene	<0.16		0.50	0.16	ug/L			10/11/18 15:14	1
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			10/11/18 15:14	1
1,2,3-Trichloropropane	<0.41		1.0	0.41	ug/L			10/11/18 15:14	1
1,2,4-Trimethylbenzene	<0.36		1.0	0.36	ug/L			10/11/18 15:14	1
1,3,5-Trimethylbenzene	<0.25		1.0	0.25	ug/L			10/11/18 15:14	1
Vinyl chloride	<0.20		1.0	0.20	ug/L			10/11/18 15:14	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/11/18 15:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*72 - 124*		*10/11/18 15:14*	*1*
Dibromofluoromethane	*91*		*75 - 120*		*10/11/18 15:14*	*1*
1,2-Dichloroethane-d4 (Surr)	*90*		*75 - 126*		*10/11/18 15:14*	*1*
Toluene-d8 (Surr)	*88*		*75 - 120*		*10/11/18 15:14*	*1*

Client Sample ID: Trip Blank
Date Collected: 10/03/18 00:00
Date Received: 10/04/18 09:15

Lab Sample ID: 500-152602-5
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			10/11/18 15:40	1
Bromobenzene	<0.36		1.0	0.36	ug/L			10/11/18 15:40	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			10/11/18 15:40	1
Bromodichloromethane	<0.37		1.0	0.37	ug/L			10/11/18 15:40	1
Bromoform	<0.48		1.0	0.48	ug/L			10/11/18 15:40	1
Bromomethane	<0.80		2.0	0.80	ug/L			10/11/18 15:40	1

Client: SCS Engineers
Project/Site: Arctic Laundry & Cleaners - 25216186

TestAmerica Job ID: 500-152602-1

Client Sample ID: Trip Blank
Date Collected: 10/03/18 00:00
Date Received: 10/04/18 09:15

Lab Sample ID: 500-152602-5
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			10/11/18 15:40	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			10/11/18 15:40	1
Chloroethane	<0.51		1.0	0.51	ug/L			10/11/18 15:40	1
Chloroform	<0.37		2.0	0.37	ug/L			10/11/18 15:40	1
Chloromethane	<0.32		1.0	0.32	ug/L			10/11/18 15:40	1
2-Chlorotoluene	<0.31		1.0	0.31	ug/L			10/11/18 15:40	1
4-Chlorotoluene	<0.35		1.0	0.35	ug/L			10/11/18 15:40	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			10/11/18 15:40	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			10/11/18 15:40	1
Dibromochloromethane	<0.49		1.0	0.49	ug/L			10/11/18 15:40	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			10/11/18 15:40	1
1,2-Dibromoethane	<0.39		1.0	0.39	ug/L			10/11/18 15:40	1
Dibromomethane	<0.27		1.0	0.27	ug/L			10/11/18 15:40	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			10/11/18 15:40	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			10/11/18 15:40	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			10/11/18 15:40	1
Dichlorodifluoromethane	<0.67		2.0	0.67	ug/L			10/11/18 15:40	1
1,1-Dichloroethane	<0.41		1.0	0.41	ug/L			10/11/18 15:40	1
1,2-Dichloroethane	<0.39		1.0	0.39	ug/L			10/11/18 15:40	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			10/11/18 15:40	1
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			10/11/18 15:40	1
1,3-Dichloropropane	<0.36		1.0	0.36	ug/L			10/11/18 15:40	1
2,2-Dichloropropane	<0.44		1.0	0.44	ug/L			10/11/18 15:40	1
1,1-Dichloropropene	<0.30		1.0	0.30	ug/L			10/11/18 15:40	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/11/18 15:40	1
Hexachlorobutadiene	<0.45		1.0	0.45	ug/L			10/11/18 15:40	1
Isopropylbenzene	<0.39		1.0	0.39	ug/L			10/11/18 15:40	1
Isopropyl ether	<0.28		1.0	0.28	ug/L			10/11/18 15:40	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			10/11/18 15:40	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			10/11/18 15:40	1
Naphthalene	<0.34		1.0	0.34	ug/L			10/11/18 15:40	1
n-Butylbenzene	<0.39		1.0	0.39	ug/L			10/11/18 15:40	1
N-Propylbenzene	<0.41		1.0	0.41	ug/L			10/11/18 15:40	1
p-Isopropyltoluene	<0.36		1.0	0.36	ug/L			10/11/18 15:40	1
sec-Butylbenzene	<0.40		1.0	0.40	ug/L			10/11/18 15:40	1
Styrene	<0.39		1.0	0.39	ug/L			10/11/18 15:40	1
tert-Butylbenzene	<0.40		1.0	0.40	ug/L			10/11/18 15:40	1
1,1,1,2-Tetrachloroethane	<0.46		1.0	0.46	ug/L			10/11/18 15:40	1
1,1,2,2-Tetrachloroethane	<0.40		1.0	0.40	ug/L			10/11/18 15:40	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			10/11/18 15:40	1
Toluene	<0.15		0.50	0.15	ug/L			10/11/18 15:40	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			10/11/18 15:40	1
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			10/11/18 15:40	1
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			10/11/18 15:40	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			10/11/18 15:40	1
1,1,1-Trichloroethane	<0.38		1.0	0.38	ug/L			10/11/18 15:40	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			10/11/18 15:40	1
Trichloroethene	<0.16		0.50	0.16	ug/L			10/11/18 15:40	1
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			10/11/18 15:40	1

Client Sample ID: Trip Blank
Date Collected: 10/03/18 00:00
Date Received: 10/04/18 09:15

Lab Sample ID: 500-152602-5
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	<0.41		1.0	0.41	ug/L			10/11/18 15:40	1
1,2,4-Trimethylbenzene	<0.36		1.0	0.36	ug/L			10/11/18 15:40	1
1,3,5-Trimethylbenzene	<0.25		1.0	0.25	ug/L			10/11/18 15:40	1
Vinyl chloride	<0.20		1.0	0.20	ug/L			10/11/18 15:40	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/11/18 15:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*93*		*72 - 124*		*10/11/18 15:40*	*1*
Dibromofluoromethane	*90*		*75 - 120*		*10/11/18 15:40*	*1*
1,2-Dichloroethane-d4 (Surr)	*93*		*75 - 126*		*10/11/18 15:40*	*1*
Toluene-d8 (Surr)	*104*		*75 - 120*		*10/11/18 15:40*	*1*

Definitions/Glossary

Client: SCS Engineers
Project/Site: Arctic Laundry & Cleaners - 25216186

TestAmerica Job ID: 500-152602-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

QC Association Summary

Client: SCS Engineers
Project/Site: Arctic Laundry & Cleaners - 25216186

TestAmerica Job ID: 500-152602-1

GC/MS VOA

Analysis Batch: 454340

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-152602-1	MW-2	Total/NA	Water	8260B	
500-152602-2	MW-3	Total/NA	Water	8260B	
500-152602-3	MW-3-Duplicate	Total/NA	Water	8260B	
500-152602-4	MW-1	Total/NA	Water	8260B	
500-152602-5	Trip Blank	Total/NA	Water	8260B	
MB 500-454340/6	Method Blank	Total/NA	Water	8260B	
LCS 500-454340/4	Lab Control Sample	Total/NA	Water	8260B	

Surrogate Summary

Client: SCS Engineers
Project/Site: Arctic Laundry & Cleaners - 25216186

TestAmerica Job ID: 500-152602-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		BFB	DBFM	DCA	TOL
Lab Sample ID	Client Sample ID	(72-124)	(75-120)	(75-126)	(75-120)
500-152602-1	MW-2	92	109	93	97
500-152602-2	MW-3	94	89	91	93
500-152602-3	MW-3-Duplicate	93	98	98	92
500-152602-4	MW-1	94	91	90	88
500-152602-5	Trip Blank	93	90	93	104
LCS 500-454340/4	Lab Control Sample	94	87	79	99
MB 500-454340/6	Method Blank	93	92	89	79

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane
DCA = 1,2-Dichloroethane-d4 (Surr)
TOL = Toluene-d8 (Surr)

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 500-454340/6
Matrix: Water
Analysis Batch: 454340

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			10/11/18 10:54	1
Bromobenzene	<0.36		1.0	0.36	ug/L			10/11/18 10:54	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			10/11/18 10:54	1
Bromodichloromethane	<0.37		1.0	0.37	ug/L			10/11/18 10:54	1
Bromoform	<0.48		1.0	0.48	ug/L			10/11/18 10:54	1
Bromomethane	<0.80		2.0	0.80	ug/L			10/11/18 10:54	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			10/11/18 10:54	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			10/11/18 10:54	1
Chloroethane	<0.51		1.0	0.51	ug/L			10/11/18 10:54	1
Chloroform	<0.37		2.0	0.37	ug/L			10/11/18 10:54	1
Chloromethane	<0.32		1.0	0.32	ug/L			10/11/18 10:54	1
2-Chlorotoluene	<0.31		1.0	0.31	ug/L			10/11/18 10:54	1
4-Chlorotoluene	<0.35		1.0	0.35	ug/L			10/11/18 10:54	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			10/11/18 10:54	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			10/11/18 10:54	1
Dibromochloromethane	<0.49		1.0	0.49	ug/L			10/11/18 10:54	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			10/11/18 10:54	1
1,2-Dibromoethane	<0.39		1.0	0.39	ug/L			10/11/18 10:54	1
Dibromomethane	<0.27		1.0	0.27	ug/L			10/11/18 10:54	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			10/11/18 10:54	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			10/11/18 10:54	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			10/11/18 10:54	1
Dichlorodifluoromethane	1.63	J	2.0	0.67	ug/L			10/11/18 10:54	1
1,1-Dichloroethane	<0.41		1.0	0.41	ug/L			10/11/18 10:54	1
1,2-Dichloroethane	<0.39		1.0	0.39	ug/L			10/11/18 10:54	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			10/11/18 10:54	1
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			10/11/18 10:54	1
1,3-Dichloropropane	<0.36		1.0	0.36	ug/L			10/11/18 10:54	1
2,2-Dichloropropane	<0.44		1.0	0.44	ug/L			10/11/18 10:54	1
1,1-Dichloropropene	<0.30		1.0	0.30	ug/L			10/11/18 10:54	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/11/18 10:54	1
Hexachlorobutadiene	<0.45		1.0	0.45	ug/L			10/11/18 10:54	1
Isopropylbenzene	<0.39		1.0	0.39	ug/L			10/11/18 10:54	1
Isopropyl ether	<0.28		1.0	0.28	ug/L			10/11/18 10:54	1
Methylene Chloride	2.42	J	5.0	1.6	ug/L			10/11/18 10:54	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			10/11/18 10:54	1
Naphthalene	<0.34		1.0	0.34	ug/L			10/11/18 10:54	1
n-Butylbenzene	<0.39		1.0	0.39	ug/L			10/11/18 10:54	1
N-Propylbenzene	<0.41		1.0	0.41	ug/L			10/11/18 10:54	1
p-Isopropyltoluene	<0.36		1.0	0.36	ug/L			10/11/18 10:54	1
sec-Butylbenzene	<0.40		1.0	0.40	ug/L			10/11/18 10:54	1
Styrene	<0.39		1.0	0.39	ug/L			10/11/18 10:54	1
tert-Butylbenzene	<0.40		1.0	0.40	ug/L			10/11/18 10:54	1
1,1,1,2-Tetrachloroethane	<0.46		1.0	0.46	ug/L			10/11/18 10:54	1
1,1,2,2-Tetrachloroethane	<0.40		1.0	0.40	ug/L			10/11/18 10:54	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			10/11/18 10:54	1
Toluene	<0.15		0.50	0.15	ug/L			10/11/18 10:54	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			10/11/18 10:54	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 500-454340/6
Matrix: Water
Analysis Batch: 454340

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			10/11/18 10:54	1
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			10/11/18 10:54	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			10/11/18 10:54	1
1,1,1-Trichloroethane	<0.38		1.0	0.38	ug/L			10/11/18 10:54	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			10/11/18 10:54	1
Trichloroethene	<0.16		0.50	0.16	ug/L			10/11/18 10:54	1
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			10/11/18 10:54	1
1,2,3-Trichloropropane	<0.41		1.0	0.41	ug/L			10/11/18 10:54	1
1,2,4-Trimethylbenzene	<0.36		1.0	0.36	ug/L			10/11/18 10:54	1
1,3,5-Trimethylbenzene	<0.25		1.0	0.25	ug/L			10/11/18 10:54	1
Vinyl chloride	<0.20		1.0	0.20	ug/L			10/11/18 10:54	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/11/18 10:54	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*93*		*72 - 124*		*10/11/18 10:54*	*1*
Dibromofluoromethane	*92*		*75 - 120*		*10/11/18 10:54*	*1*
1,2-Dichloroethane-d4 (Surr)	*89*		*75 - 126*		*10/11/18 10:54*	*1*
Toluene-d8 (Surr)	*79*		*75 - 120*		*10/11/18 10:54*	*1*

Lab Sample ID: LCS 500-454340/4
Matrix: Water
Analysis Batch: 454340

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	50.0	46.7		ug/L		93	70 - 120
Bromobenzene	50.0	51.6		ug/L		103	70 - 122
Bromochloromethane	50.0	44.8		ug/L		90	65 - 122
Bromodichloromethane	50.0	50.4		ug/L		101	69 - 120
Bromoform	50.0	44.5		ug/L		89	56 - 132
Bromomethane	50.0	50.6		ug/L		101	40 - 152
Carbon tetrachloride	50.0	48.9		ug/L		98	59 - 133
Chlorobenzene	50.0	50.1		ug/L		100	70 - 120
Chloroethane	50.0	59.6		ug/L		119	48 - 136
Chloroform	50.0	50.8		ug/L		102	70 - 120
Chloromethane	50.0	51.7		ug/L		103	56 - 152
2-Chlorotoluene	50.0	51.4		ug/L		103	70 - 125
4-Chlorotoluene	50.0	51.2		ug/L		102	68 - 124
cis-1,2-Dichloroethene	50.0	52.8		ug/L		106	70 - 125
cis-1,3-Dichloropropene	50.0	48.2		ug/L		96	64 - 127
Dibromochloromethane	50.0	46.2		ug/L		92	68 - 125
1,2-Dibromo-3-Chloropropane	50.0	41.6		ug/L		83	56 - 123
1,2-Dibromoethane	50.0	47.5		ug/L		95	70 - 125
Dibromomethane	50.0	48.2		ug/L		96	70 - 120
1,2-Dichlorobenzene	50.0	49.4		ug/L		99	70 - 125
1,3-Dichlorobenzene	50.0	50.5		ug/L		101	70 - 125
1,4-Dichlorobenzene	50.0	49.7		ug/L		99	70 - 120
Dichlorodifluoromethane	50.0	53.4		ug/L		107	40 - 159
1,1-Dichloroethane	50.0	52.9		ug/L		106	70 - 125

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-454340/4
Matrix: Water
Analysis Batch: 454340

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2-Dichloroethane	50.0	44.6		ug/L		89	68 - 127
1,1-Dichloroethene	50.0	56.8		ug/L		114	67 - 122
1,2-Dichloropropane	50.0	51.8		ug/L		104	67 - 130
1,3-Dichloropropane	50.0	47.6		ug/L		95	62 - 136
2,2-Dichloropropane	50.0	50.2		ug/L		100	58 - 139
1,1-Dichloropropene	50.0	47.4		ug/L		95	70 - 121
Ethylbenzene	50.0	49.9		ug/L		100	70 - 123
Hexachlorobutadiene	50.0	51.3		ug/L		103	51 - 150
Isopropylbenzene	50.0	54.4		ug/L		109	70 - 126
Methylene Chloride	50.0	55.6		ug/L		111	69 - 125
Methyl tert-butyl ether	50.0	36.7		ug/L		73	55 - 123
Naphthalene	50.0	44.7		ug/L		89	53 - 144
n-Butylbenzene	50.0	55.0		ug/L		110	68 - 125
N-Propylbenzene	50.0	54.4		ug/L		109	69 - 127
p-Isopropyltoluene	50.0	53.4		ug/L		107	70 - 125
sec-Butylbenzene	50.0	49.2		ug/L		98	70 - 123
Styrene	50.0	46.6		ug/L		93	70 - 120
tert-Butylbenzene	50.0	52.3		ug/L		105	70 - 121
1,1,1,2-Tetrachloroethane	50.0	50.1		ug/L		100	70 - 125
1,1,2,2-Tetrachloroethane	50.0	47.6		ug/L		95	62 - 140
Tetrachloroethene	50.0	53.2		ug/L		106	70 - 128
Toluene	50.0	50.5		ug/L		101	70 - 125
trans-1,2-Dichloroethene	50.0	55.1		ug/L		110	70 - 125
trans-1,3-Dichloropropene	50.0	45.2		ug/L		90	62 - 128
1,2,3-Trichlorobenzene	50.0	50.5		ug/L		101	51 - 145
1,2,4-Trichlorobenzene	50.0	50.2		ug/L		100	57 - 137
1,1,1-Trichloroethane	50.0	50.2		ug/L		100	70 - 125
1,1,2-Trichloroethane	50.0	46.7		ug/L		93	71 - 130
Trichloroethene	50.0	57.6		ug/L		115	70 - 125
Trichlorofluoromethane	50.0	59.4		ug/L		119	55 - 128
1,2,3-Trichloropropane	50.0	47.8		ug/L		96	50 - 133
1,2,4-Trimethylbenzene	50.0	47.6		ug/L		95	70 - 123
1,3,5-Trimethylbenzene	50.0	52.4		ug/L		105	70 - 123
Vinyl chloride	50.0	57.1		ug/L		114	64 - 126
Xylenes, Total	100	99.6		ug/L		100	70 - 125

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*94*		*72 - 124*
Dibromofluoromethane	*87*		*75 - 120*
1,2-Dichloroethane-d4 (Surr)	*79*		*75 - 126*
Toluene-d8 (Surr)	*99*		*75 - 120*

Lab Chronicle

Client: SCS Engineers
Project/Site: Arctic Laundry & Cleaners - 25216186

TestAmerica Job ID: 500-152602-1

Client Sample ID: MW-2
Lab Sample ID: 500-152602-1
Date Collected: 10/03/18 11:20
Matrix: Water
Date Received: 10/04/18 09:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	454340	10/11/18 13:56	PMF	TAL CHI

Client Sample ID: MW-3
Lab Sample ID: 500-152602-2
Date Collected: 10/03/18 11:35
Matrix: Water
Date Received: 10/04/18 09:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	454340	10/11/18 14:22	PMF	TAL CHI

Client Sample ID: MW-3-Duplicate
Lab Sample ID: 500-152602-3
Date Collected: 10/03/18 11:35
Matrix: Water
Date Received: 10/04/18 09:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	454340	10/11/18 14:48	PMF	TAL CHI

Client Sample ID: MW-1
Lab Sample ID: 500-152602-4
Date Collected: 10/03/18 11:55
Matrix: Water
Date Received: 10/04/18 09:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	454340	10/11/18 15:14	PMF	TAL CHI

Client Sample ID: Trip Blank
Lab Sample ID: 500-152602-5
Date Collected: 10/03/18 00:00
Matrix: Water
Date Received: 10/04/18 09:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	454340	10/11/18 15:40	PMF	TAL CHI

Laboratory References:
TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Accreditation/Certification Summary

Client: SCS Engineers
TestAmerica Job ID: 500-152602-1
Project/Site: Arctic Laundry & Cleaners - 25216186

Laboratory: TestAmerica Chicago

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Wisconsin	State Program	5	999580010	08-31-19

TestAmerica

THE LEADER IN ENVIRONMENTAL

2417 Bond Street, University Park, IL 6046
Phone: 708.534.5200 Fax: 708.534.5

500-152602 COC

Chain of Custody Record

Lab Job #: 500-152602

Chain of Custody Number:

Page 1 of 1

Temperature °C of Cooler: 5.8

Report To (optional)	Bill To (optional)
Contact: Robert Langdon	Contact:
Company: SCS Engineers	Company: SAME
Address: 2830 Dairy Drive	Address:
Address: Madison, WI 53718	Address:
Phone: 608-216-7329	Phone:
Fax:	Fax:
E-Mail: RLangdon@scsengineers.com	PO#/Reference#

Client	Client Project #	Preservative
SCS Engineers	25216186	1
Project Name: Arctic Laundry + Cleaners		Parameter
Project Location/State: Kenosha, WI	Lab Project #	
Sampler: Nate Harms	Lab PM	

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	1									Comments
1		MW-2	10/3/18	1120	3	W	X									
2		MW-3		1135	3	W	X									
3		MW-3-Duplicate		1135	3	W	X									
4		MW-1		1155	3	W	X									
5		Trip Blank	—	—			X									

Preservative Key
1. HCL, Cool to 4°
2. H2SO4, Cool to 4°
3. HNO3, Cool to 4°
4. NaOH, Cool to 4°
5. NaOH/Zn, Cool to 4°
6. NaHSO4
7. Cool to 4°
8. None
9. Other

Turnaround Time Required (Business Days)
___ 1 Day ___ 2 Days ___ 5 Days X 7 Days ___ 10 Days ___ 15 Days _____ Other
Requested Due Date _____

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
Nate Harms	SCS	10/3/18	1545	[illegible]	FedEx-Ctrl	10/4/18	0915
Relinquished By	Company	Date	Time	Received By	Company	Date	Time
Relinquished By	Company	Date	Time	Received By	Company	Date	Time

Lab Courier
Shipped Fed X
Hand Delivered

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
OL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments

Lab Comments:

10/15/2018

Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 500-152602-1

Login Number: 152602
List Number: 1
Creator: Scott, Sherri L

List Source: TestAmerica Chicago

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	5.8
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

John Ekornaas
5619 - 22nd Avenue
Kenosha, WI 53140

9590 9402 3215 7196 5829 68

2. Article Number (Transfer from service label)
7017 2400 0000 6701 0638

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X ☐ Agent ☐ Addressee

B. Received by (Printed Name) | C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
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- ☐ Adult Signature Restricted Delivery
- ☒ Certified Mail®
- ☐ Certified Mail Restricted Delivery
- ☐ Collect on Delivery
- ☐ Collect on Delivery Restricted Delivery
- ☐ Insured Mail
- ☐ Insured Mail Restricted Delivery (over $500)
- ☐ Priority Mail Express®
- ☐ Registered Mail™
- ☐ Registered Mail Restricted Delivery
- ☐ Return Receipt for Merchandise
- ☐ Signature Confirmation™
- ☐ Signature Confirmation Restricted Delivery

PS Form 3811, July 2015 PSN 7530-02-000-9053 — Domestic Return Receipt

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Sent To John Ekornaas Arctic
Street and Apt. No., or PO Box No. 5619 - 22nd Avenue
City, State, ZIP+4® Kenosha, WI 53140

PS Form 3800, April 2015 PSN 7530-02-000-9047 — See Reverse for Instructions

StaffordRosenbaum LLP
Attorneys

Member of Geneva Group International
The Leading Global Alliance of Independent Professional Firms

Vanessa D. Wishart

222 West Washington Avenue, Suite 900
P.O. Box 1784
Madison, WI 53701-1784
vwishart@staffordlaw.com
608.210.6307

March 1, 2018

BY CERTIFIED U.S. MAIL

Mr. John Ekornaas
5605 22nd Avenue
Kenosha, WI 53140

RE: Vapor Sampling Results

Dear Mr. Ekornaas:

As part of the ongoing investigation of environmental contamination at the former Arctic Laundry & Cleaners site, 5619 22nd Avenue, Kenosha, Wisconsin, SCS Engineers conducted vapor sampling at your property in January 2018. These samples were submitted to Test America for laboratory analysis for volatile organic compounds (VOCs) including Tetrachloroethene (PCE) and Trichloroethene (TCE).

The analysis found **no detections** of VOCs in the indoor or outdoor air samples. TCE and/or PCE was detected in the sub-slab samples but at concentrations that did **not** exceed the vapor risk screening levels established by the Wisconsin Department of Natural Resources (DNR) for either commercial or residential buildings.

Based on these results, we do not anticipate further testing at your property at this time. It is possible that may change based on additional communication with the DNR. If that is the case, we will alert you of potential additional testing.

If you have questions about the results or next steps, please contact me.

Best regards,

STAFFORD ROSENBAUM LLP

Vanessa D. Wishart

VDW:mai
Enclosures

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Table 3. Indoor Air Analytical Results Summary
22nd Avenue, Kenosha, Wisconsin / SCS Engineers Project #25216186.00
(Results are in ppbV)

Sample/Location	Date	Lab Notes	Tetrachloroethene (PCE)	Trichloroethene (TCE)	cis-1,2-DCE	trans-1,2-DCE	Vinyl Chloride
5605 Midnight Liquor and Bar							
5605 Basement	1/25/2018	--	<0.064	<0.077	<0.13	<0.11	<0.077
5605 2nd Floor	1/25/2018	--	<0.064	<0.077	<0.13	<0.11	<0.077
5605 Outdoor	1/25/2018	--	<0.059	<0.071	<0.12	<0.1	<0.069
5605 Bar	1/25/2018	--	<0.064	<0.077	<0.13	<0.11	<0.077
5605 Liquor Store	1/25/2018	--	<0.067	<0.079	<0.14	<0.12	<0.077
5619 Former Arctic Laundry & Cleaners							
5619 Basement	2/7/2017	--	5.6	1	5	<0.15	<0.12
5619 1st Floor	2/7/2017	--	1.3	0.31	1.2	<0.15	<0.12
5619 2nd Floor	2/7/2017	--	1.1	0.22	0.84	<0.16	<0.13
5619 Outdoor	2/7/2017	--	1.8	<0.075	<0.092	<0.14	<0.11
5621/5625 Pa's Pizzeria							
5621 Basement	1/24/2018	--	<0.064	<0.075	<0.13	<0.11	<0.073
5621 1st Floor	1/24/2018	--	<0.061	<0.071	<0.12	<0.11	<0.069
5621 Outdoor	1/24/2018	--	<0.062	<0.073	<0.13	<0.11	<0.073
5625 Storage	1/24/2018	--	<0.064	<0.077	<0.13	<0.11	<0.077
Indoor Air Vapor Action Level (Residential Building)			6.2	0.39	NE	NE	0.65
Indoor Air Vapor Action Level (Commercial Building)			27	1.6	NE	NE	11

Table 4. Sub-Slab Vapor Analytical Results Summary
22nd Avenue, Kenosha, Wisconsin / SCS Engineers Project #25216186.00
(Results are in ppbV)

Sample/Location	Date	Lab Notes	Tetrachloroethene (PCE)	Trichloroethene (TCE)	cis-1,2-DCE	trans-1,2-DCE	Vinyl Chloride
5605 Midnight Liquor and Bar							
SS-7	1/25/2018	--	<0.074	<0.088	<0.15	<0.13	<0.089
SS-8	1/25/2018	--	5.2	0.22	<0.15	<0.13	<0.089
SS-9	1/25/2018	--	1.9	<0.099	<0.17	<0.15	<0.096
5619 Former Arctic Laundry & Cleaners							
SS-1	2/7/2017	--	**418,000** A3, E	**1,290** A3	5.7	5.8	<0.14
SS-2	2/7/2017	--	**973**	**66.5**	1.7	11.8	<0.13
SS-3	2/7/2017	--	**26,100** A3	**86.4** A3	1.4	0.5	<0.14
5621/5625 Pa's Pizzeria							
SS-4	1/24/2018	--	<0.074	<0.088	<0.15	<0.13	<0.089
SS-5	1/24/2018	--	0.78	<0.1	<0.17	<0.15	<0.1
SS-6	1/24/2018	--	0.2	<0.092	<0.16	<0.14	<0.092
Vapor Risk Screening Level (Residential Building)			210	13	NE	NE	22
Vapor Risk Screening Level (Small Commercial Building)			900	53	NE	NE	370

Abbreviations:
ppbV = parts per billion by volume
trans-1,2-DCE = trans-1,2-dichloroethylene
cis-1,2-DCE = cis-1,2-dichloroethylene
NE = not established
-- = not applicable

Table 4. Sub-Slab Vapor Analytical Results Summary
22nd Avenue, Kenosha, Wisconsin / SCS Engineers Project #25216186.00

Notes:

1. Samples were collected in 6-liter summa canisters over a 30-minute period and analyzed using the USEPA TO-15 analytical method.
2. Vapor Risk Screening Levels are from Wisconsin Department of Natural Resources' WI Vapor Quick Look-Up Table, which is based on November 2017 USEPA Regional Screening Level Tables.
3. **Bold+underlined** values meet or exceed Vapor Risk Screening Levels.

Lab Notes:

A3 = The sample was analyzed by serial dilution.

E = Analyte concentration exceeded the calibration range. The reported result is estimated.

Created by:	LMH	Date:	2/24/2017
Last revision by:	LMH	Date:	2/13/2018
Checked by:	AJR	Date:	2/14/2018

I:\25216186.00\Data and Calculations\Tables\[Sub-Slab Vapor.xlsx]Sub-Slab Results

Understanding Chemical Vapor Intrusion Testing Results

RR-977 October 2014

From the Lab to You

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

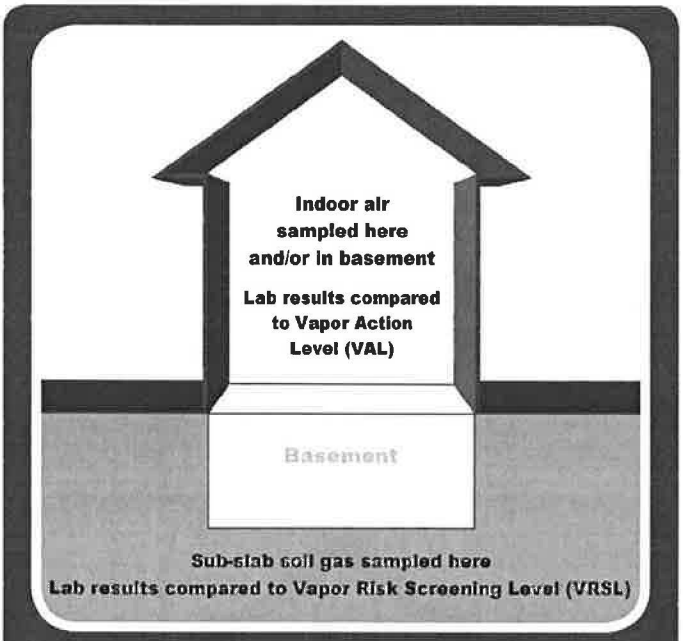
Indoor Air Testing Results

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

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

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

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



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

Sub-slab Soil Gas Testing Results

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

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

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

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

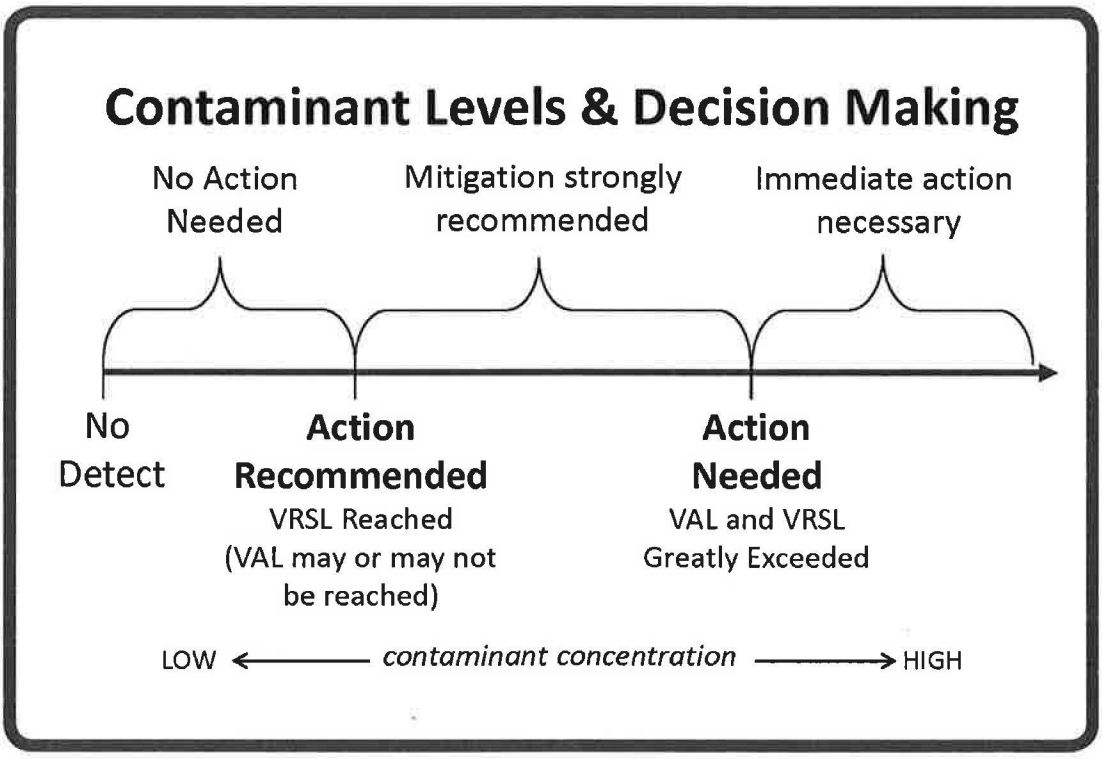
Follow-Up Actions

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

When test results show soil gas chemical concentrations above a VRSL, both DNR and the Wisconsin Department of Health Services recommend that owners take action to reduce potential exposure. This typically involves installing a vapor mitigation system that vents chemical vapors from beneath your home or building to the outdoors, similar to a radon mitigation system.

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

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



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

The concentration of gaseous pollutants in air is typically described in two different ways: 1) as units of mass per volume, where µg/m3 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

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Street and Apt. No., or PO Box No. 5605 - 22nd Avenue

City, State, ZIP+4® Kenosha WI 53140

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

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Mr. John Ekornaas
5605 - 22nd Avenue
Kenosha, WI 53140

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PS Form 3811, July 2015 PSN 7530-02-000-9053 Domestic Return Receipt

StaffordRosenbaum LLP
Attorneys

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Vanessa D. Wishart

222 West Washington Avenue, Suite 900
P.O. Box 1784
Madison, WI 53701-1784
vwishart@staffordlaw.com
608.210.6307

March 1, 2018

BY CERTIFIED U.S. MAIL

Ms. Mary Lynn Dudeck or Current Owner
5621 22nd Avenue
Kenosha, WI 53140

Ms. Mary Lynn Dudeck or Current Owner
5625 22nd Avenue
Kenosha, WI 53140

RE: Vapor Sampling Results

Dear Ms. Dudeck or current property owner:

As part of the ongoing investigation of environmental contamination at the former Arctic Laundry & Cleaners site, 5619 22nd Avenue, Kenosha, Wisconsin, SCS Engineers conducted vapor sampling at your property in January 2018. These samples were submitted to Test America for laboratory analysis for volatile organic compounds (VOCs) including Tetrachloroethene (PCE) and Trichloroethene (TCE).

The analysis found **no detections** of VOCs in the indoor or outdoor air samples. PCE was detected in the sub-slab samples but at concentrations that did **not** exceed the vapor risk screening levels established by the Wisconsin Department of Natural Resources (DNR) for either commercial or residential buildings.

Based on these results, we do not anticipate further testing at your property at this time. It is possible that may change based on additional communication with the DNR. If that is the case, we will alert you of potential additional testing.

If you have questions about the results or next steps, please contact me.

Best regards,

STAFFORD ROSENBAUM LLP

Vanessa D. Wishart

VDW:mai
Enclosures

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Table 3. Indoor Air Analytical Results Summary
22nd Avenue, Kenosha, Wisconsin / SCS Engineers Project #25216186.00
(Results are in ppbV)

Sample/Location	Date	Lab Notes	Tetrachloroethene (PCE)	Trichloroethene (TCE)	cis-1,2-DCE	trans-1,2-DCE	Vinyl Chloride
5605 Midnight Liquor and Bar							
5605 Basement	1/25/2018	--	<0.064	<0.077	<0.13	<0.11	<0.077
5605 2nd Floor	1/25/2018	--	<0.064	<0.077	<0.13	<0.11	<0.077
5605 Outdoor	1/25/2018	--	<0.059	<0.071	<0.12	<0.1	<0.069
5605 Bar	1/25/2018	--	<0.064	<0.077	<0.13	<0.11	<0.077
5605 Liquor Store	1/25/2018	--	<0.067	<0.079	<0.14	<0.12	<0.077
5619 Former Arctic Laundry & Cleaners							
5619 Basement	2/7/2017	--	5.6	1	5	<0.15	<0.12
5619 1st Floor	2/7/2017	--	1.3	0.31	1.2	<0.15	<0.12
5619 2nd Floor	2/7/2017	--	1.1	0.22	0.84	<0.16	<0.13
5619 Outdoor	2/7/2017	--	1.8	<0.075	<0.092	<0.14	<0.11
5621/5625 Pa's Pizzeria							
5621 Basement	1/24/2018	--	<0.064	<0.075	<0.13	<0.11	<0.073
5621 1st Floor	1/24/2018	--	<0.061	<0.071	<0.12	<0.11	<0.069
5621 Outdoor	1/24/2018	--	<0.062	<0.073	<0.13	<0.11	<0.073
5625 Storage	1/24/2018	--	<0.064	<0.077	<0.13	<0.11	<0.077
Indoor Air Vapor Action Level (Residential Building)			6.2	0.39	NE	NE	0.65
Indoor Air Vapor Action Level (Commercial Building)			27	1.6	NE	NE	11

Table 3. Indoor Air Analytical Results Summary
22nd Avenue, Kenosha, Wisconsin / SCS Engineers Project #25216186.00

Abbreviations:
ppbV = parts per billion by volume
trans-1,2-DCE = trans-1,2-dichloroethylene
NE = not established
cis-1,2-DCE = cis-1,2-dichloroethylene

Notes:
1. Samples were collected in 6-liter summa canisters over a 24-hour period and analyzed using the USEPA TO-15 analytical method.
2. Vapor Action Levels are from Wisconsin Department of Natural Resources' WI Vapor Quick Look-Up Table, which is based on November 2017 USEPA Regional Screening Level Tables.
3. **Bold** & **underlined** values exceed Indoor Air Vapor Action Levels.

Lab Notes:
None

Created by:	LMH	Date:	2/24/2017
Last revision by:	LMH	Date:	2/13/2018
Checked by:	AJR	Date:	2/14/2018

I:\25216186.00\Data and Calculations\Tables\[Indoor Air.xlsx]Results

Table 4. Sub-Slab Vapor Analytical Results Summary
22nd Avenue, Kenosha, Wisconsin / SCS Engineers Project #25216186.00
(Results are in ppbV)

Sample/Location	Date	Lab Notes	Tetrachloroethene (PCE)	Trichloroethene (TCE)	cis-1,2-DCE	trans-1,2-DCE	Vinyl Chloride
5605 Midnight Liquor and Bar							
SS-7	1/25/2018	--	<0.074	<0.088	<0.15	<0.13	<0.089
SS-8	1/25/2018	--	5.2	0.22	<0.15	<0.13	<0.089
SS-9	1/25/2018	--	1.9	<0.099	<0.17	<0.15	<0.096
5619 Former Arctic Laundry & Cleaners							
SS-1	2/7/2017	--	**418,000** A3, E	**1,290** A3	5.7	5.8	<0.14
SS-2	2/7/2017	--	**973**	**66.5**	1.7	11.8	<0.13
SS-3	2/7/2017	--	**26,100** A3	**86.4** A3	1.4	0.5	<0.14
5621/5625 Pa's Pizzeria							
SS-4	1/24/2018	--	<0.074	<0.088	<0.15	<0.13	<0.089
SS-5	1/24/2018	--	0.78	<0.1	<0.17	<0.15	<0.1
SS-6	1/24/2018	--	0.2	<0.092	<0.16	<0.14	<0.092
Vapor Risk Screening Level (Residential Building)			210	13	NE	NE	22
Vapor Risk Screening Level (Small Commercial Building)			900	53	NE	NE	370

Abbreviations:
ppbV = parts per billion by volume
trans-1,2-DCE = trans-1,2-dichloroethylene
cis-1,2-DCE = cis-1,2-dichloroethylene
NE = not established
-- = not applicable

Table 4. Sub-Slab Vapor Analytical Results Summary
22nd Avenue, Kenosha, Wisconsin / SCS Engineers Project #25216186.00

Notes:
1. Samples were collected in 6-liter summa canisters over a 30-minute period and analyzed using the USEPA TO-15 analytical method.
2. Vapor Risk Screening Levels are from Wisconsin Department of Natural Resources' WI Vapor Quick Look-Up Table, which is based on November 2017 USEPA Regional Screening Level Tables.
3. **Bold+underlined** values meet or exceed Vapor Risk Screening Levels.

Lab Notes:
A3 = The sample was analyzed by serial dilution.
E = Analyte concentration exceeded the calibration range. The reported result is estimated.

Created by:	LMH	Date:	2/24/2017
Last revision by:	LMH	Date:	2/13/2018
Checked by:	AJR	Date:	2/14/2018

I:\25216186.00\Data and Calculations\Tables\[Sub-Slab Vapor.xlsx]Sub-Slab Results

Understanding Chemical Vapor Intrusion Testing Results

RR-977 October 2014

From the Lab to You

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

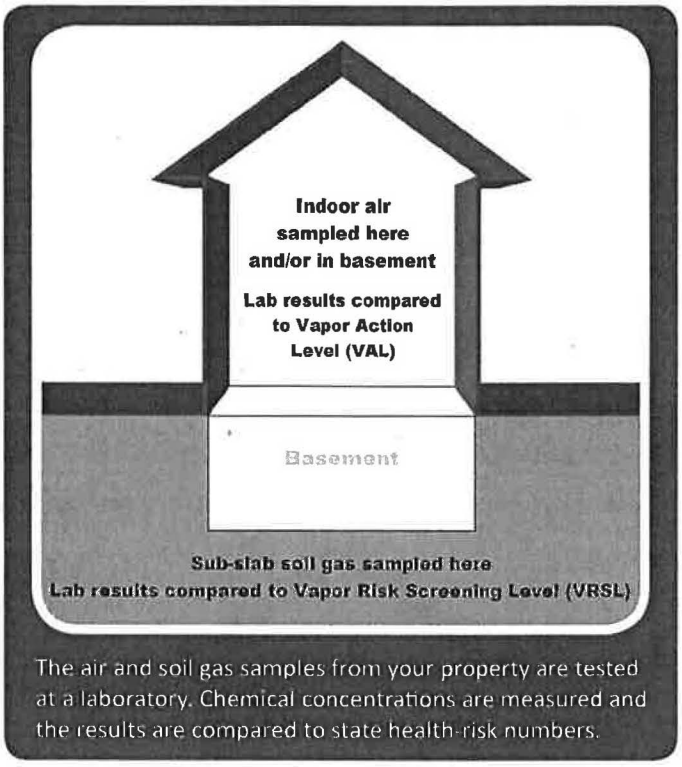
Indoor Air Testing Results

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

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

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

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



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

Sub-slab Soil Gas Testing Results

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

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

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

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

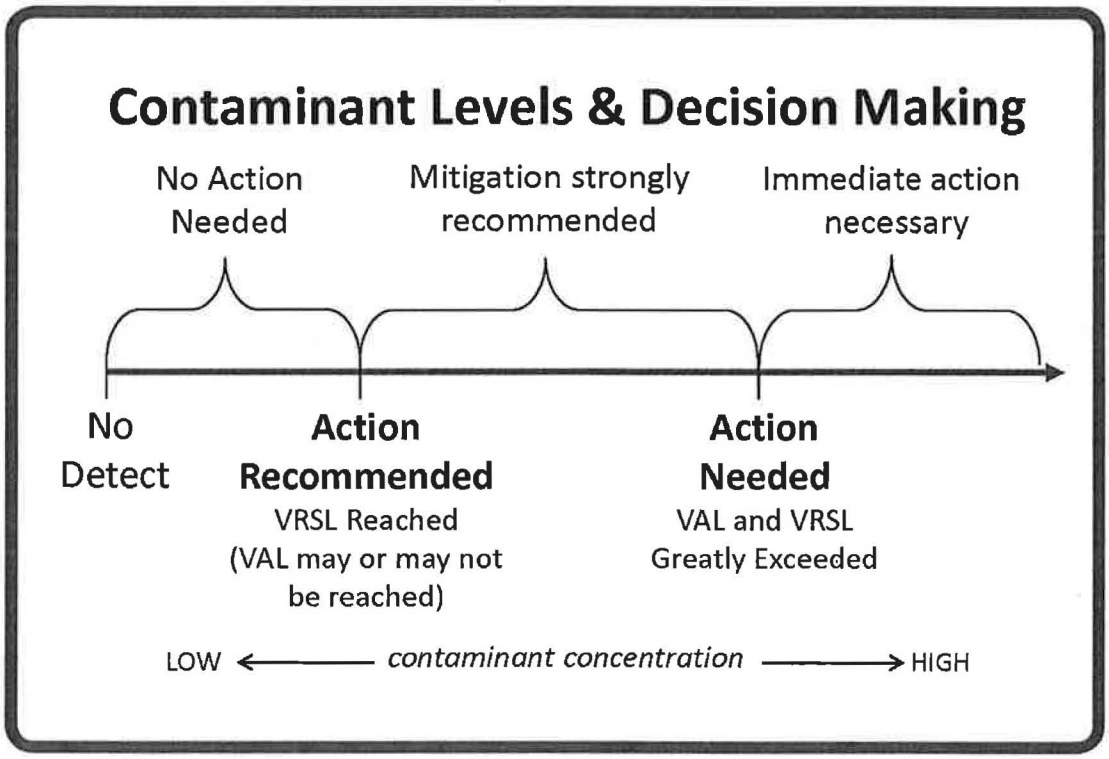
Follow-Up Actions

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

When test results show soil gas chemical concentrations above a VRSL, both DNR and the Wisconsin Department of Health Services recommend that owners take action to reduce potential exposure. This typically involves installing a vapor mitigation system that vents chemical vapors from beneath your home or building to the outdoors, similar to a radon mitigation system.

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

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



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

The concentration of gaseous pollutants in air is typically described in two different ways: 1) as units of mass per volume, where µg/m3 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

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Kenosha, WI 53140

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