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GEOTECHNICAL, ENVIRONMENTAL & CONSTRUCTION MATERIALS CONSULTANTS

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May 15, 2019

Remediation and Redevelopment Program
Wisconsin Department of Natural Resources
3911 Fish Hatchery Road
Fitchburg, WI 53711-5397

Attention: Mr. Trevor Bannister
Hydrogeologist - Senior

Subject: Progress Report
Smoke-Out Cleaners
535 Half Mile Road
Verona, Wisconsin
BRRTS No. 02-13-552179
Giles Project No. 1E-1105024

Dear Mr. Bannister:

Giles Engineering Associates, Inc. (Giles) has prepared this progress report, which summarizes the investigation activities at the Smoke-Out Cleaners, located at 535 Half Mile Road, in the City of Verona, Dane County, Wisconsin (the "Site"), for inclusion with the Dry Cleaner Response Fund (DERF) claim. Smoke-Out Cleaners began operations in 1995, and is located within the multi-tenant Verona Business Centre (VBC), which is comprised of two slab-on-grade single-story buildings. The overall layout of the VBC, neighboring buildings and the sampling locations are depicted on Figure 1. Additional Site features are shown on Figure 2.

INVESTIGATIVE ACTIVITES

A preliminary site assessment (PSA), which consisted of the completion of three soil borings (HP-1, HP-2 and GP-1), was conducted on August 6, 2008. Borings HP-1 and HP-2 were located near the dry cleaning machine and boring GP-1 was located near a former dumpster area on the east side of the building. Six soil samples were submitted for laboratory volatile organic compound (VOC) analysis. Based on the soil analytical results, a release was reported to the Wisconsin Department of Natural Resources (WDNR).

On November 7, 2012, three sub-slab vapor samples were collected at the Site. Samples SS-1 and SS-2 were collected west of and adjacent to the dry cleaning machine, respectively; whereas SS-3 was collected near what was then the south wall of the Smoke-Out space. The sub-slab samples were submitted for analysis of select chlorinated VOCs (CVOCs): tetrachloroethene (PCE), trichloroethene (TCE), cis-1,2-dichloroethene (DCE), trans-1,2-DCE and vinyl chloride. Based on conversations with the WDNR project manager, nine additional sub-slab vapor samples and two indoor air samples were collected on March 17, 2014. Two sub-slab samples were collected in each of two northern off-Site businesses, Atkins Verona Bicycle Shoppe, and Bethke Heating & Air Conditioning. An indoor air sample and two sub-slab

vapor samples were collected in the western building of the VBC (which houses Karate America), and in the southwestern unit of the main VBC building. A single sub-slab sample was collected in a vacant lease space in the southeast part of the VBC. The sub-slab vapor and indoor air samples were submitted for analysis of the same list of select CVOCs as the prior sub-slab samples: PCE, TCE, cis and trans-1,2-DCE and vinyl chloride.

Five monitoring wells (MW-1 through MW-5) were installed on August 26 and 27, 2014, and developed the following week. The initial groundwater sampling event was conducted in September 2014, and three subsequent sampling events were conducted in 2017. The groundwater samples were submitted for laboratory VOC analyses.

ANALYTICAL RESULTS

Review of the soil laboratory analytical data indicates that NR 720 soil to groundwater Residual Contaminant Levels (RCLs) were exceeded in the soil samples from two borings located near the dry cleaning machine (HP-1, HP-2), and from two of the monitoring wells (MW-1 and MW-3). The soil samples from the monitoring well borings were collected just above the apparent water table, and based on subsequent water level measurements, were likely collected within the smear zone. The soil analytical results are presented on Table 1.

The groundwater monitoring well network has been sampled four times. Review of the groundwater laboratory analytical results indicates that one or more CVOCs were detected above NR 140 Enforcement Standards (ESs) in each of the groundwater samples from monitoring wells MW-1, located approximately 25 feet southwest of the dry cleaning machine, and MW-3, located along the north wall of the building. The groundwater samples from the remaining wells (MW-2, MW-4 and MW-5) did not exceed NR 140 ESs. Although, the concentration of PCE exceeded its NR 140 Preventive Action Limit (PAL) in the initial groundwater sample from monitoring well MW-5 (located along the south wall of the building), CVOCs were not detected in the subsequent three samples. Based on the groundwater analytical data, the lateral extents of groundwater impacts to the north and northwest have not been defined. The groundwater analytical results are presented on Table 2.

Review of the sub-slab vapor analytical results indicates that the concentration of PCE exceeded its WDNR sub-slab vapor risk screening level (VRSLs) in the three sub-slab vapor samples nearest the dry cleaning machine (SS-1, SS-2, and SS-3). The sub-slab vapor analytical results are presented on Table 3.

The depth to groundwater, which ranges from approximately 24 to 36 feet below ground surface (bgs), was measured in each well prior to groundwater sampling. The initial set of groundwater elevation data suggests that the groundwater flows toward the northwest (Figure 3).

RECOMMENDATION

Giles recommends that a change order be submitted to the WDNR to request approval to conduct additional investigative activities. Should you have any questions relating to this update, please do not hesitate to call.

Respectfully submitted,

GILES ENGINEERING ASSOCIATES, INC.

Stephen M. Owens, P.G.
Project Hydrogeologist

Enclosures:

	Figure 1	Overall Site Plan
	Figure 2	Detailed Site Plan
	Figure 3	Groundwater Flow Map (9-5-14)
	Table 1	Soil Analytical Results
	Table 2	Groundwater Analytical Results
	Table 3	Sub-Slab Vapor Analytical Results

Distribution: Wisconsin Department of Natural Resources
Attn: Mr. Trevor Bannister (1 via e-mail to TrevorA.Bannister@wisconsin.gov)
Smoke-Out Cleaners, Ltd.
Attn: Mark Woppert (1 via e-mail to mark.woppert@smoke-out.net)

 1E-1105024-ProgressReport/11Env04/smo

Figures

HALF MILE ROAD

GRASS

ATKINS VERONA BICYCLE SHOPPE

ASPHALT

SS-11

BETHKE HEATING & AIR CONDITIONING

SS-8

SS-9

SS-10

GRASS

ASPHALT

ASPHALT

MW-3

SHED

ASPHALT

SMOKE-OUT CLEANERS

SS-1

SS-2

HP-2

HP-1

GP-1

MW-4

DRY CLEANING MACHINE

W

MW-1

MW-2

ST

ASPHALT

SS-7

KARATE AMERICA

SS-3

IA-1

SS-6

SS-5

SS-4

SS-12

AREA NOT PART OF SMOKE-OUT CLEANERS

IA-2

TRASH ENCLOSURE

MW-5

ASPHALT

ASPHALT

BUILDING

N

W

E

S

0 20' 40'

APPROXIMATE SCALE

LEGEND:

- MW-5 — GROUNDWATER MONITORING WELL
- IA-1 — INDOOR AIR SAMPLE
- SS-4 — SUBSLAB VAPOR SAMPLE (LOCATIONS IN GRAY ARE ABANDONED)
- GP-1 — DIRECT-PUSH SOIL BORING
- HP-1 — HAND PROBE SOIL BORING
- PROPERTY LINE
- FENCE
- LIGHT POLE
- FIRE HYDRANT
- MANHOLE
- ST — SEWER LINE

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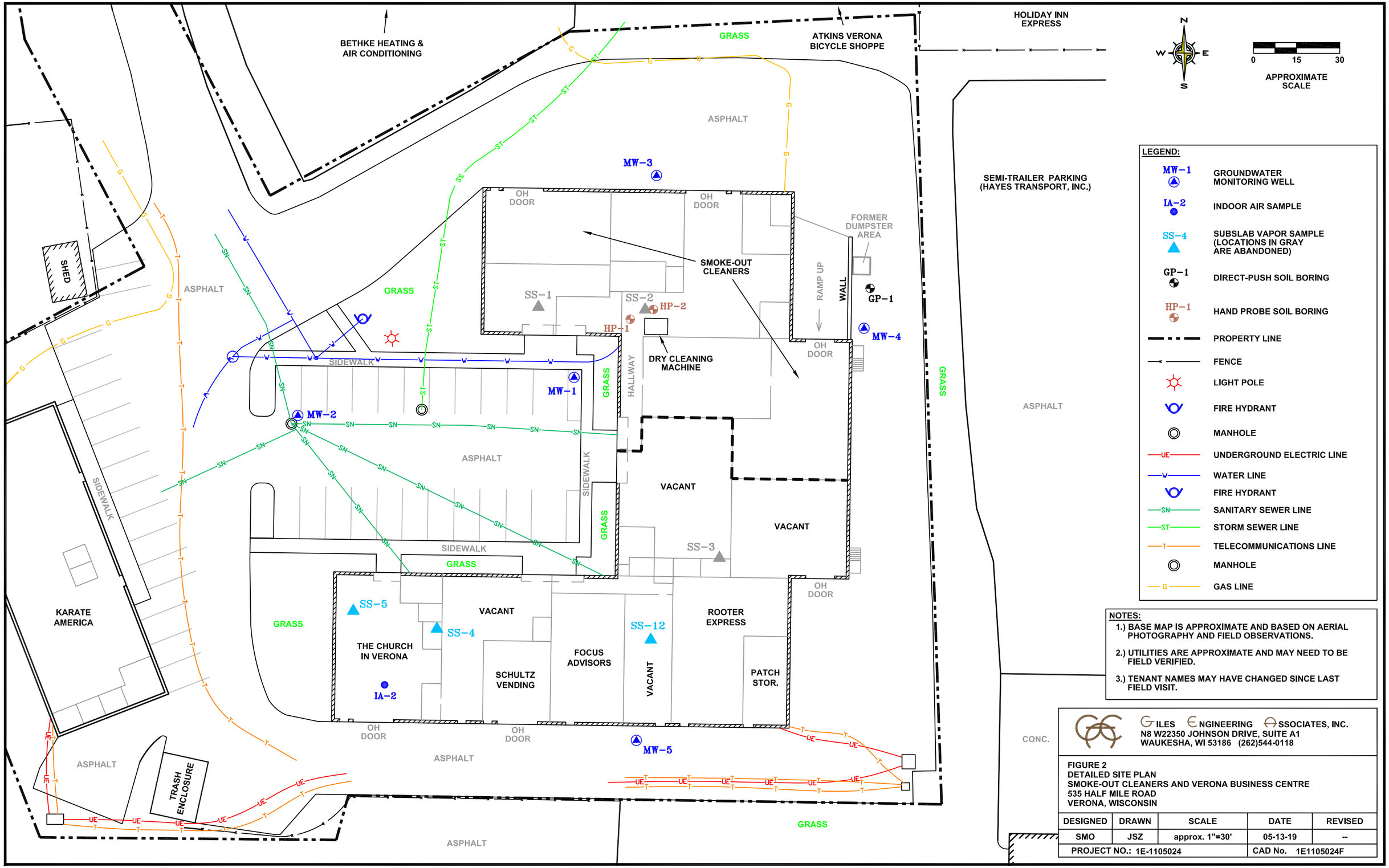
WAUKESHA, WI 53186 (262)544-0118

FIGURE 1
OVERALL SITE PLAN
SMOKE-OUT CLEANERS AND VERONA BUSINESS CENTRE
535 HALF MILE ROAD
VERONA, WISCONSIN

DESIGNED	DRAWN	SCALE	DATE	REVISED
SMO	JSZ	approx. 1"=40'	05-13-19	--
PROJECT NO.: 1E-1105024			CAD No. 1E1105024E	

NOTES:
1.) BASE MAP IS APPROXIMATE AND BASED ON AERIAL PHOTOGRAPHY AND FIELD OBSERVATIONS.
2.) UTILITIES ARE APPROXIMATE AND NEED TO BE FIELD VERIFIED.



LEGEND:

MW-1	GROUNDWATER MONITORING WELL
IA-2	INDOOR AIR SAMPLE
SS-4	SUBSLAB VAPOR SAMPLE (LOCATIONS IN GRAY ARE ABANDONED)
GP-1	DIRECT-PUSH SOIL BORING
HP-1	HAND PROBE SOIL BORING
	PROPERTY LINE
	FENCE
	LIGHT POLE
	FIRE HYDRANT
	MANHOLE
UE	UNDERGROUND ELECTRIC LINE
W	WATER LINE
	FIRE HYDRANT
SN	SANITARY SEWER LINE
ST	STORM SEWER LINE
T	TELECOMMUNICATIONS LINE
	MANHOLE
G	GAS LINE

NOTES:

1.) BASE MAP IS APPROXIMATE AND BASED ON AERIAL PHOTOGRAPHY AND FIELD OBSERVATIONS.

2.) UTILITIES ARE APPROXIMATE AND MAY NEED TO BE FIELD VERIFIED.

3.) TENANT NAMES MAY HAVE CHANGED SINCE LAST FIELD VISIT.

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FIGURE 2
DETAILED SITE PLAN
SMOKE-OUT CLEANERS AND VERONA BUSINESS CENTRE
535 HALF MILE ROAD
VERONA, WISCONSIN

DESIGNED	DRAWN	SCALE	DATE	REVISED
SMO	JSZ	approx. 1"=30'	05-13-19	--
PROJECT NO.: 1E-1105024			CAD No. 1E1105024F	

BETHKE HEATING & AIR CONDITIONING

ATKINS VERONA BICYCLE SHOPPE

HOLIDAY INN EXPRESS

SEMI-TRAILER PARKING (HAYES TRANSPORT, INC.)

N

W E

S

0 15 30

APPROXIMATE SCALE

GRASS

ASPHALT

(64.04) MW-3

OH DOOR

OH DOOR

FORMER DUMPSTER AREA

SMOKE-OUT CLEANERS

RAMP UP

WALL

(64.90) MW-4

OH DOOR

DRY CLEANING MACHINE

HALLWAY

SHED

ASPHALT

GRASS

SIDEWALK

(63.48) MW-2

63.5

(63.86) MW-1

GRASS

GRASS

ASPHALT

64.0

SIDEWALK

VACANT

64.5

VACANT

65.0

SIDEWALK

GRASS

SIDEWALK

GRASS

KARATE AMERICA

GRASS

VACANT

ROOTER EXPRESS

THE CHURCH IN VERONA

SCHULTZ VENDING

FOCUS ADVISORS

VACANT

PATCH STOR.

OH DOOR

OH DOOR

OH DOOR

MW-5 (65.04)

ASPHALT

ASPHALT

TRASH ENCLOSURE

ASPHALT

GRASS

CONC.

ASPHALT

GRASS

LEGEND:

- 64.5 — GROUNDWATER CONTOUR INTERVAL = 0.5'
- GROUNDWATER FLOW DIRECTION
- (64.90) — GROUNDWATER ELEVATION (IN FEET REFERENCED TO ARBITRARY BENCHMARK)
- MW-1 — GROUNDWATER MONITORING WELL
- PROPERTY LINE
- FENCE
- LIGHT POLE
- FIRE HYDRANT
- MANHOLE
- UE — UNDERGROUND ELECTRIC LINE
- W — WATER LINE
- FIRE HYDRANT
- SN — SANITARY SEWER LINE
- ST — STORM SEWER LINE
- T — TELECOMMUNICATIONS LINE
- MANHOLE
- G — GAS LINE

NOTES:

1.) BASE MAP IS APPROXIMATE AND BASED ON AERIAL PHOTOGRAPHY AND FIELD OBSERVATIONS.

2.) UTILITIES ARE APPROXIMATE AND MAY NEED TO BE FIELD VERIFIED.

3.) TENANT NAMES MAY HAVE CHANGED SINCE LAST FIELD VISIT.

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WAUKESHA, WI 53186 (262)544-0118

FIGURE 3
GROUNDWATER FLOW MAP (9-5-14)
SMOKE-OUT CLEANERS AND VERONA BUSINESS CENTRE
535 HALF MILE ROAD
VERONA, WISCONSIN

DESIGNED	DRAWN	SCALE	DATE	REVISED
SMO	JSZ	approx. 1"=30'	05-13-19	--
PROJECT NO.: 1E-1105024			CAD No. 1E1105024G	

Tables

TABLE 1
SOIL ANALYTICAL RESULTS
(DETECTED VOCs)
Smoke-Out Cleaners
535 Half Mile Road
Verona, Wisconsin
1E-1105024

Analyte	Sample Location									NR 720 RCLs[1]		
	GP-1		HP-1		HP-2		MW-1	MW-2	MW-3			
Sample Depth (feet)	2-4	18-20	4-6	12-14	4-6	12-14	32-34	40-42	30-32	**Soil to Goundwater Pathway**	**Direct Contact Pathway[2] (Non-Industrial)**	**Direct Contact Pathway[2] (Non-Industrial)**
Sample Date	8/6/08	8/6/08	8/6/08	8/6/08	8/6/08	8/6/08	8/27/14	8/26/14	8/27/14			
PID	<5	<5	266	40.3	209.5	964	<5	<5	<5			
Detected VOCs (µg/kg)												
cis-1,2-Dichloroethene	<29	<30	**1,400**	**320**	**1,400**	**170**	<7.3	<7.3	<7.3	**41.2**	**156,000**	**2,340,000**
Tetrachloroethene (PCE)	<29	<30	**34,000**	**10,000**	**7,600**	**2,800**	**280**	<9.9	**94**	**4.5**	**33,000**	**145,000**
Trichloroethene (TCE)	<29	<30	<280	**26**	**79**	<27	<11	<25	<11	**3.6**	**1,300**	**8,410**

NOTES:

RCLs: Residual Contaminant Levels

[1] Wisconsin Adminiarative Code Natural Resources Chapter (NR) 720 RCLs from WDNR RCL Spreadsheet (updated December 2018)

[2] Direct Contact Pathway RCLs only apply to soil within 4 feet of ground surface

PID: Photoionization Detector

VOCs: Volatile Organic Compounds

µg/kg: Micrograms per kilogram; equivalent to parts per billion (ppb)

Results shown in blue/underline exceed the RCL for Soil to Groundwater Pathway

TABLE 2
GROUNDWATER ANALYTICAL RESULTS
(DETECTED VOCs)
Smoke-Out Clenaers
535 Half Mile Road
Verona, Wisconsin
Project No. 1E-1105024

Analyte	Sample Location																				NR 140[1] PAL (µg/L)	NR 140[1] ES (µg/L)
	MW-1				MW-2				MW-3				MW-4				MW-5					
Sample Date	9/5/14	1/19/17	6/28/17	9/27/17	9/5/14	1/19/17	6/28/17	9/27/17	9/5/14	1/19/17	6/28/17	9/27/17	9/5/14	1/19/17	6/28/17	9/27/17	9/5/14	1/19/17	6/28/17	9/27/17		
DTW (ft TOC)	33.11	31.88	30.23	29.85	33.14	32.02	30.80	36.20	33.38	32.44	31.15	31.10	28.54	27.25	24.05	25.13	31.82	31.29	28.70	28.51		
Detected VOCs (µg/L)																						
cis-1,2-Dichloroethene	**120**	**220**	**210**	**220**	<0.12	<0.41	<0.41	<0.41	*(57)*	**210**	**200**	**260**	<0.12	<0.41	<0.41	<0.41	<0.12	<0.41	<0.41	<0.41	**7**	**70**
trans-1,2-Dichloroethene	<1.3	<3.5	<3.5	<3.5	<0.25	<0.35	<0.35	<0.35	<0.25	0.57 J	0.60 J	<0.70	<0.25	<0.35	<0.35	<0.35	<0.25	<0.35	<0.35	<0.35	**20**	**100**
Naphthalene	<0.80	<0.34	8.3 J	<3.4	<0.16	<0.34	<0.34	<0.34	<0.16	<0.34	<0.34	<0.67	<0.16	<0.34	<0.34	<0.34	<0.16	<0.34	<0.34	<0.34	**10**	**100**
Toluene	<0.55	3.8 J	<1.5	<1.5	0.25 J	<0.15	<0.15	<0.15	<0.11	<0.15	<0.15	<0.30	<0.11	<0.15	<0.15	<0.15	<0.11	<0.15	<0.15	<0.15	**160**	**800**
Tetrachloroethene (PCE)	**2,800**	**6,700**	**6,900**	**9,300**	<0.17	<0.37	<0.37	<0.37	**56**	**370**	**430**	**680**	<0.17	<0.37	<0.37	<0.37	*(2.5)*	<0.37	<0.37	<0.37	**0.5**	**5**
Trichloroethene (TCE)	**25**	**46**	**44**	**57**	<0.19	<0.16	<0.16	<0.16	*(2.8)*	**11**	**13**	**15**	<0.19	<0.16	<0.16	<0.16	<0.19	<0.16	<0.16	<0.16	**0.5**	**5**

NOTES:

[1] Wisconsin Administrative Code Natural Resources Chapter (NR) 140

ES: Enforcement Standard

PAL: Preventive Action Limit

DTW (ft TOC): Depth to water in feet below top of casing

VOCs: Volatile Organic Compounds

µg/L: Micrograms per Liter; equivalent to parts per billion (ppb)

J: Result is less than the reporting limit but greater than the method detection limit and the concentration is an approximate value

Concentrations expressed in (Italics / Blue / Parentheses) exceed NR 140 Preventive Action Limit

Concentrations expressed in Red / Underine exceed NR 140 Enforcement Standard

TABLE 3
SUB-SLAB VAPOR ANALYTICAL RESULTS
(DETECTED CVOCs)

Smoke-Out Cleaners

535 Half Mile Road

Verona, Wisconsin

Project No. 1E-1105024

Analyte	Sample Location						Sub-Slab Vapor VRSLs* (µg/m^3)		
	SS-1	SS-2	SS-3	SS-4	SS-5	SS-6	Residential	Small Commerical	Large Commerical / Industrial
Sample Date	11/7/12	11/7/12	11/7/12	3/17/14	3/17/14	3/17/14			
Detected CVOCs (µg/m^3)									
trans-1,2-Dichloroethene	<250	<7,900	<200	<0.79	<0.79	<0.79	**NS**	**NS**	**NS**
cis-1,2-Dichloroethene	1,300	500,000	<200	<0.79	<0.79	<0.79	**NS**	**NS**	**NS**
Tetrachloroethene (PCE)	**[81,000]**	**[22,000,000]**	**[55,000]**	35	27	<1.4	**1,400**	**6,000**	**18,000**

Notes:

CVOCs: Chlorinated Volatile Organic Compounds

Samples analyzed for select CVOCs: tetrochloroethene, trichloroethene, cis and trans-1,2-dichloroethene and vinyl chloride

VRSLs: Vapor Risk Screening Levels

µg/m^3: Micrograms per cubic meter

NS: No Established Standard

Results shown in **[red/brackets]** exceed the Large Commercial / Industrial, Small Commercial and Residential VRSLs

* VRSLs obtained from the Wisconsin Department of Natural Resources WI Quick Look-Up Table (updated November 2017)

TABLE 3
SUB-SLAB VAPOR ANALYTICAL RESULTS
(DETECTED CVOCs)

Smoke-Out Cleaners

535 Half Mile Road

Verona, Wisconsin

Project No. 1E-1105024

Analyte	Sample Location						Sub-Slab Vapor VRSLs (µg/m^3)		
	SS-7	SS-8	SS-9	SS-10	SS-11	SS-12	Residential	Small Commerical	Large Commerical / Industrial
Sample Date	3/17/14	3/17/14	3/17/14	3/17/14	3/17/14	3/17/14			
Detected CVOCs (µg/m^3)									
trans-1,2-Dichloroethene	<0.79	1.6	1.0	<0.79	<0.79	<2.0	NS	NS	NS
cis-1,2-Dichloroethene	<0.79	<0.79	<0.79	<0.79	<0.79	<2.0	NS	NS	NS
Tetrachloroethene (PCE)	<1.4	4.5	4.1	<1.4	2.5	550	1,400	6,000	18,000

Notes:

CVOCs: Chlorinated Volatile Organic Compounds

Samples analyzed for select CVOCs: tetrochloroethene, trichloroethene, cis and trans-1,2-dichloroethene and vinyl chloride

VRSLs: Vapor Risk Screening Levels

µg/m^3: Micrograms per cubic meter

NS: No Established Standard

Results shown in **[red/brackets]** exceed the Large Commercial / Industrial, Small Commercial and Residenial VRSLs

* VRSLs obtained from the Wisconsin Department of Natural Resources WI Quick Look-Up Table (updated November 2017)