

GILES ENGINEERING OSSOCIATES, INC.

GEOTECHNICAL, ENVIRONMENTAL & CONSTRUCTION MATERIALS CONSULTANTS

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June 28, 2022

Wisconsin Department of Natural Resources Remediation and Redevelopment 141 NW Barstow Street Waukesha, WI 53188

Attention: Mr. Paul Grittner

Hydrogeologist

Subject: Request for Technical Assistance Meeting

Pershing Plaza Shopping Center

(Former Lakeside Cleaners Lease Space)

7536 Pershing Boulevard Kenosha, Wisconsin

Giles Project No. 1E-1902007 BRRTS No. 02-30-582211

Dear Mr. Grittner:

The following document provides an outline for a Technical Assistance discussion with the Wisconsin Department of Natural Resources (WDNR). The Technical Assistance meeting is being requested to discuss the status of the Site Investigation (SI) and to determine whether the WDNR concurs with Giles' conclusions and recommendations for the next steps for closure of the open Environmental Repair Program (ERP) activity.

Site Description

The former Lakeside Cleaners lease space ("Site") is located in the central portion of the Pershing Plaza strip mall. Jomblee, Inc. (Jomblee) operated Lakeside Cleaners (LSC), which provided dry cleaning services at the Site for at least 15 years and ceased operations in late 2011. The former LSC lease space is currently occupied by Fastsigns, a printing company. The north adjoining lease space is occupied by Paladin Protection Academy, and Julie Nails is located in the lease space to the adjoining south, with a Piggly Wiggly grocery store beyond.

Site Investigation

Ener-Con, the owner of Pershing Plaza, retained The Sigma Group (Sigma) to collect soil samples at the former dry-cleaning facility in March 2018. Chlorinated volatile organic compounds (CVOCs), including tetrachloroethene and trichloroethene (PCE and TCE, respectively) were detected at concentrations exceeding the Wisconsin Administrative Code Natural Resources Chapter (NR) 720 Residual Contaminant Levels (RCLs) for groundwater protection in the three soil samples collected within the building. On September 11, 2018, based on the soil sampling results, attorneys for the Site owner notified the WDNR of a spill or release of dry-cleaning solvent at the Pershing Plaza Shopping Center.



Giles was retained by Jomblee to complete a SI to define the lateral and vertical extent of soil and groundwater impacts at the Site and to evaluate the potential vapor intrusion risk. As part of the investigation, Giles collected soil samples from six soil borings and installed five groundwater monitoring wells. Giles monitored the groundwater condition of the Site by collecting quarterly groundwater samples for two years. Giles also collected sub-slab soil gas samples from five sub-slab Vapor Pins® installed throughout the former LSC lease space and adjoining north and south lease spaces. In addition, an indoor air sample was collected from the former LSC space, and Giles oversaw the installation of a sub-slab depressurization system in the LSC space in 2021. The following is a summary of the findings of the investigation to date.

The sample locations, cross sections, and extents of impacts are shown on the attached Figures 1 through 8. The analytical results are summarized in Tables 1 through 5.

Contamination Sources

- Suspected storage room in northwest corner of the former LSC lease space
 - B-1 soil sample collected within the room contained the highest concentrations of PCE detected in soil (15.9 milligrams per kilogram [mg/kg]).
- Former dry-cleaning machine (DCM)
 - B-4 soil sample collected immediately below the floor slab within the footprint of the former DCM contained the second highest concentration of PCE detected in soil (6.0 mg/kg).
- Housekeeping-related surficial spill
 - Shallow soil contamination immediately below the pavement was identified in MW-1, a monitoring well located west of the building and LSC lease space. Giles theorizes the contamination in this area is due to surficial spills from housekeeping practices, such as allowing filters to air dry on the pavement.

Sub-Surface Material

Interior: Boring logs indicate that fill consisting of reworked native silty clay underlies the building slab/basecourse to two feet below ground surface (bgs), except in boring B-6. Boring B-6 was completed in the hallway south of the former LSC and noted four feet of sand and gravel fill atop the native silty clay. Giles theorizes that the presence of this material is related to the nearby wall dividing the larger Piggly Wiggly building from the rest of the strip mall. It is Giles' interpretation that the dividing wall includes a deeper footing.

Exterior: Boring logs indicate that the surficial asphalt and basecourse is underlain by native silty clay, except for MW-1 (west) and MW-5 (east). MW-1, the nearest well to the building, noted four feet of sand and gravel fill. Aerial photographs show that the strip mall building had at one time extended an additional approximately 160 feet west. Giles interprets the fill material to be associated with former or current building features. MW-5 is located east of the building and noted two feet of fill consisting of reworked native silty clay.



Soil Investigation

PCE soil contamination was identified in six of the thirteen sample locations, four of which were located within the former LSC lease space. As discussed above, the source areas were identified as the suspected former storage room and DCM, both within the west portion of the former LSC lease space, and a surficial spill west of the building. It is Giles' opinion that the lateral and vertical extent of the soil impacts have been defined.

Vertical Delineation:

- CVOC soil contamination is present beneath the building between the floor slab and the water table, which is approximately 6 feet beneath the slab.
- PCE soil contamination was identified in exterior boring MW-1 from the interval immediately beneath the surficial pavement (0 to 2 feet bgs) to a maximum of 6 feet bgs. A soil sample collected from 6 to 8 feet bgs (the water table interface) did not contain CVOCs.

Lateral Delineation:

- North No CVOCs were detected in boring B-5, which was completed in the north adjoining lease space to the LSC space.
- East Boring GP-1, completed outside LSC's east entrance, did not contain CVOC contamination. In addition, interior borings B-2 and B-3 showed a significant decrease in PCE concentrations from contamination identified at the source areas.
 - Boring B-1, completed in the suspected storage room, had a PCE concentration of 15.9 mg/kg. Boring B-3 was completed 30 feet east and had a PCE concentration of 1.01 mg/kg, a 93.65% decrease in concentration.
 - Boring B-4, completed at the former DCM, had a PCE concentration of 6.0 mg/kg.
 Boring B-2 was completed 15 feet east and had a concentration of 2.6 mg/kg, a 56.67% decrease in concentration.
- South Boring B-6 was completed in the hallway, approximately 20 feet south-southwest
 of the former DCM. Additional borings could not be placed south of the source areas due
 to operating businesses in the two adjoining south lease spaces (Julie Nails and Piggly
 Wiggly). B-6 contained PCE at a concentration of 0.64 mg/kg, an 89.33% decrease from
 the PCE concentration at B-4 (6.0 mg/kg, at the former DCM).
- West Exterior borings GP-2, GP-4, and MW-2 did not contain CVOCs in the unsaturated soil samples collected. A saturated sample from GP-2 contained vinyl chloride above the groundwater pathway, however the concentration was low-level and flagged by the lab as an estimated value.

Groundwater Investigation

Groundwater conditions have been monitored since 2019. The depth to groundwater ranged between approximately 3.5 and 10 feet bgs, with the depth to groundwater beneath the building being approximately 6 feet bgs.



PCE was detected above the NR 140 Enforcement Standard (ES) in MW-4, which was installed within the footprint of the former DCM. PCE and TCE were detected above the NR 140 Preventative Action Limit (PAL) in MW-1, installed immediately west of the building. Concentrations have remained generally stable over the course of monitoring; therefore, **it is Giles' opinion that further groundwater monitoring is not necessary**.

Groundwater elevation measurements indicate groundwater is flowing radially towards MW-1. The flow direction is likely influenced by fill material associated with the building foundation design and a former portion of the building that had at one time extended further west. The radial flow towards MW-1 suggests that the groundwater impacts identified in the well will not migrate much beyond MW-1 in the future.

Three per- and polyfluoroalkyl substances (PFAS) compounds were detected in MW-4 above the Wisconsin Department of Health Services (DHS) proposed PAL. The dry-cleaning facility did not perform waterproofing services and did not store or utilizes PFAS-containing chemicals on the property while it was in operation. The PFAS detected in the groundwater is possibly the result of PFAS leaching to the cleaning solvents during the dry-cleaning process. As there are no current standards for PFAS, no remediation methods, and the results did not exceed the proposed enforcement standard, it is Giles's opinion that additional PFAS sampling is not necessary.

Vapor Intrusion Assessment

Sub-slab Vapor Pins were installed in the former LSC lease space and north and south adjoining units to establish the extent of the vapor intrusion risk. The Pins were arranged in the following configuration:

- Former LSC lease space
 - VP-1 former DCM (source)
 - VP-2 east end of lease space
- South of LSC lease space
 - VP-3 South adjoining space, Julie Nails
 - VP-5 Piggly Wiggly, the space south of Julie Nails
- North of LSC lease space
 - VP-4 north adjoining lease space, Paladin Protection Academy

In addition to the sub slab-samples, one indoor air sample (8 hour) was collected from the former dry cleaners (IA-1).

PCE and TCE were detected in VP-1 (DCM) and VP-3 (Julie Nails) above the Vapor Risk Screening Levels (VRSLs) for large commercial buildings. PCE and TCE were also detected in the indoor air sample collected within the LSC lease space, however the concentrations were well below their respective indoor air Vapor Action Level (VAL).

Based on the presence of PCE and TCE in the subsurface and indoor air, Giles recommended installing a sub-slab depressurization system within the former LSC lease space to mitigate the vapor intrusion risk. Giles oversaw the installation of the system on June 29, 2021. The system includes a single slab penetration point near the former DCM. Giles verified the negative pressure



from the system was at least -0.004 Hg" in the source areas within the former dry cleaners and in the south adjoining space (Julie Nails). Given that the depressurization system is drawing vapor from the most-contaminated area beneath the building, it is Giles' opinion that additional subslab soil gas sampling is not necessary.

Utility Corridor Vapor Assessment

Giles has not collected soil gas samples from the sanitary sewer utility connected to the former LSC lease space. Although the soil contamination plume intersects the sanitary sewer line beneath the former LSC lease space, the sub-slab depressurization system installed within the LSC lease space would mitigate the risk for vapor intrusion from contaminated media in the backfill surrounding the sub-slab utilities. The depth to groundwater beneath the building is approximately 6 feet and is therefore not likely to intersect the shallow utility corridors beneath the building slab. The relationship between the soil and groundwater contamination extents and the utility corridors are shown on Cross sections 8A and 8B.

The former LSC lease space had two restrooms, one at the west end of the space and one centrally located. Each restroom had a floor drain, no other floor drains were noted. Given the locations of the floor drains, it is not likely that solvent entered the sanitary utility from standard housekeeping practices. In addition, the dry-cleaning operations ended in 2011, therefore potential contamination due to solvent being introduced to the sanitary sewer is likely no longer present.

Giles obtained a utility map from the City of Kenosha (see enclosed map) that indicated the private sanitary sewer lines for the strip mall joined the sanitary main on the east side of the building, within the Pershing Plaza parking lot. The closest sanitary sewer manhole to the former LSC is located approximately 55 feet northeast of where the private sanitary line exits the LSC space. Beyond this manhole, the next closest sanitary sewer manholes are located approximately 120 feet east and 230 feet north of the LSC space where they connect to other commercial businesses. There are no residential properties east of the Site.

Given the number of years since the dry-cleaning facility operated, the distance to the sanitary main, the commercial nature of the surrounding property usage, the presence of the sub-slab depressurization system, and the locations of the floor drains in relation to the former DCM and suspected storage areas, **Giles does not consider the sanitary sewer utility corridor to be a vapor intrusion or migration concern**.

Remediation

At this time, it is Giles' opinion that active remediation is not practicable at this Site. The contamination is located primarily beneath the existing building, which is a structural impediment to active remediation. The low hydraulic conductivity of the native silty clay beneath the building makes injection ineffective. Given that the soil and groundwater contamination is limited to the immediate vicinity of the former LSC lease space, Giles contends that the building will act as a cap and that the vapor mitigation system is sufficient to protect human health, as long as it functions as designed.



Conclusions

Giles requests that the DNR provide feedback regarding their concurrence with the following statements:

- The extent of soil contamination has been adequately defined
- No additional groundwater monitoring is necessary, including for PFAS
- No additional sub-slab soil gas sampling is necessary
- The collection of soil gas samples from the sanitary sewer utility is not necessary
- Active remediation is not practicable at this time

Closing

Please contact the undersigned with questions regarding this request and to schedule the Technical Assistance meeting.

Sincerely,

GILES ENGINEERING ASSOCIATES, INC.

Kelly M. Hayden Project Manager

Enclosures

Figure 1 – Site Location Map

Figure 2 – Overall Site Map

Figure 3 – Detailed Site Map

Figure 4 – Soil Contamination Map

Figure 5 – Groundwater Isoconcentration Map

Figure 6 – Groundwater Flow Direction Map (4/14/22)

Figure 7 – Vapor Intrusion Map

Figure 8 – Geologic Cross Section Location Map

Figure 8A – Geologic Cross Section A-A'

Figure 8B – Geologic Cross Section B-B'

City of Kenosha Sewer Utility Map

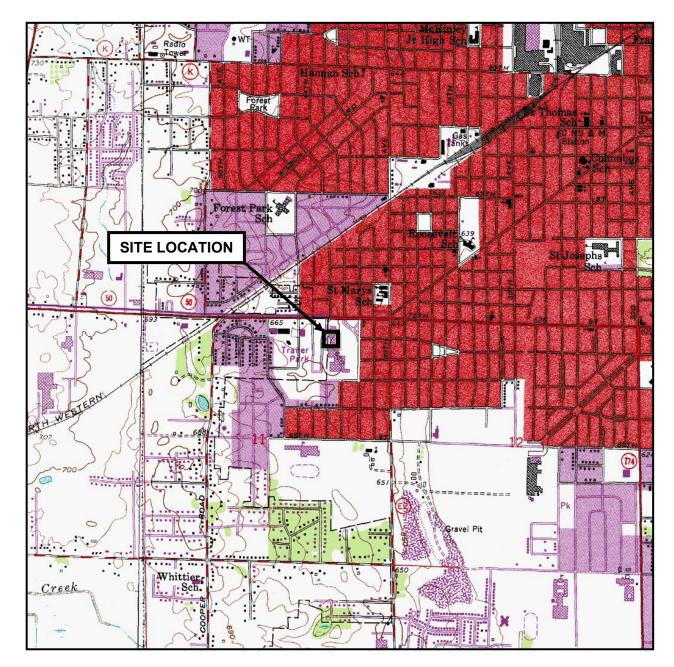
Table 1 – Soil Analytical Results

Table 2 – Groundwater Analytical Results

Table 3 – Groundwater Elevation Data

Table 4 – Sub-Slab Vapor Analytical Results

Table 5 – Indoor Air Analytical Results



Source: USGS *Kenosha, Wisconsin* 7.5-Minute Series (topographic) Quadrangle Map (1958, revised 1971)

Scale: 1:24,000 Contour Interval: 10 Feet

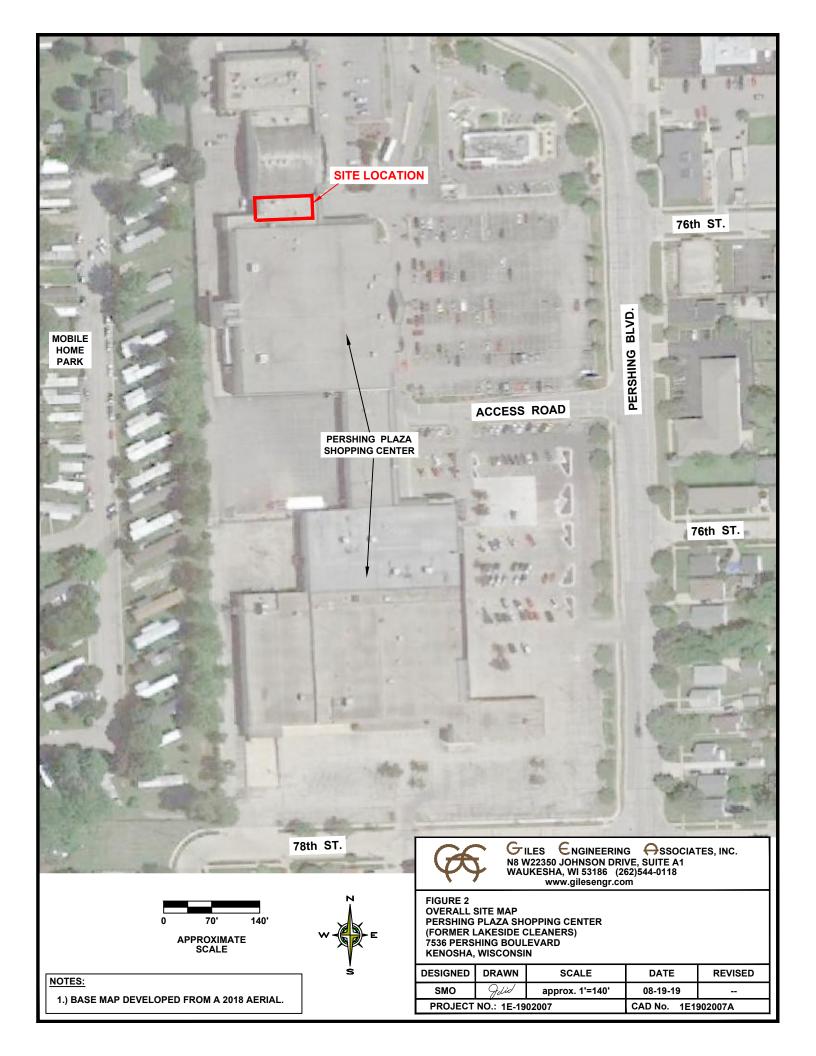
FIGURE 1

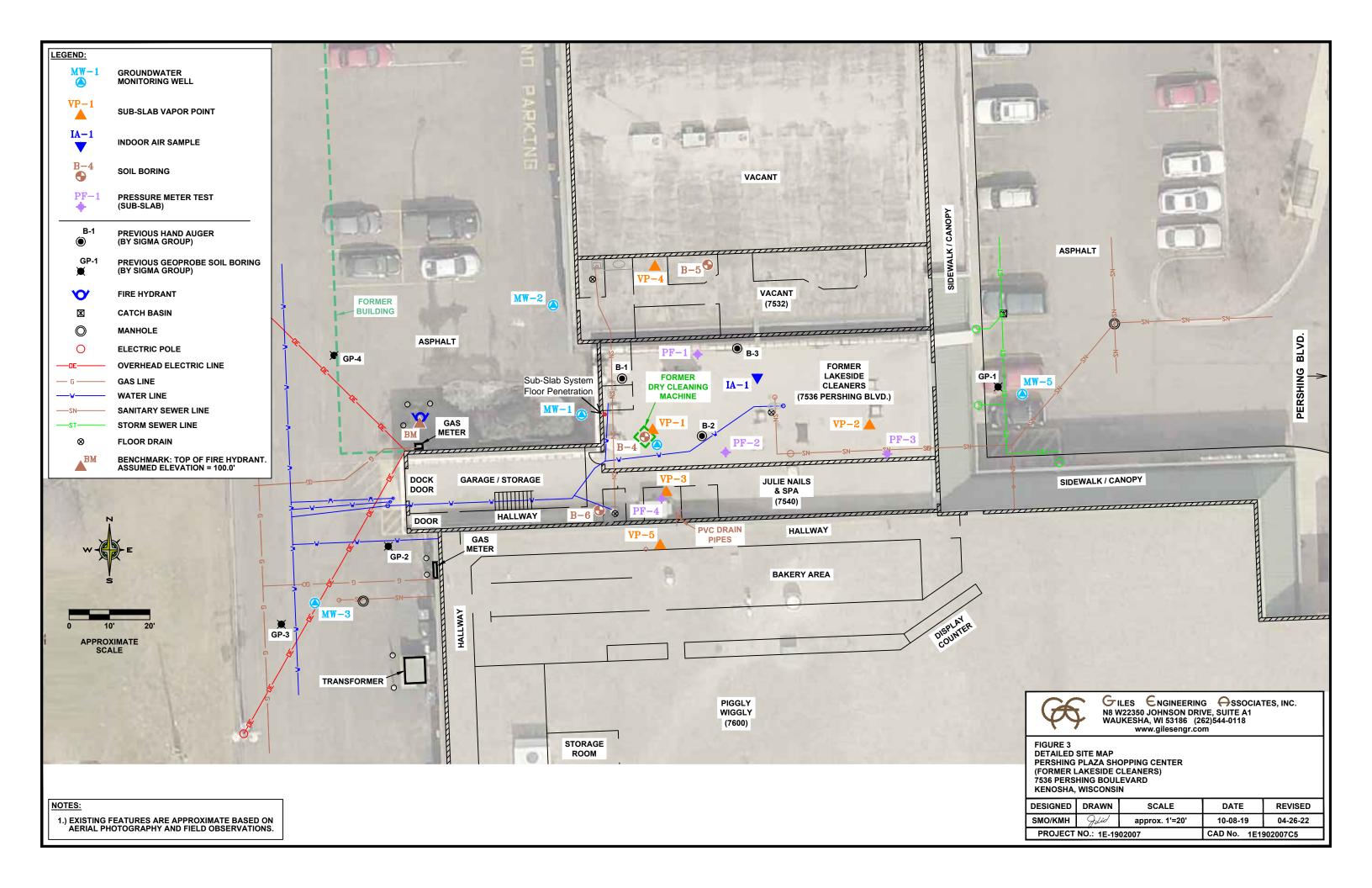
SITE LOCATION MAP

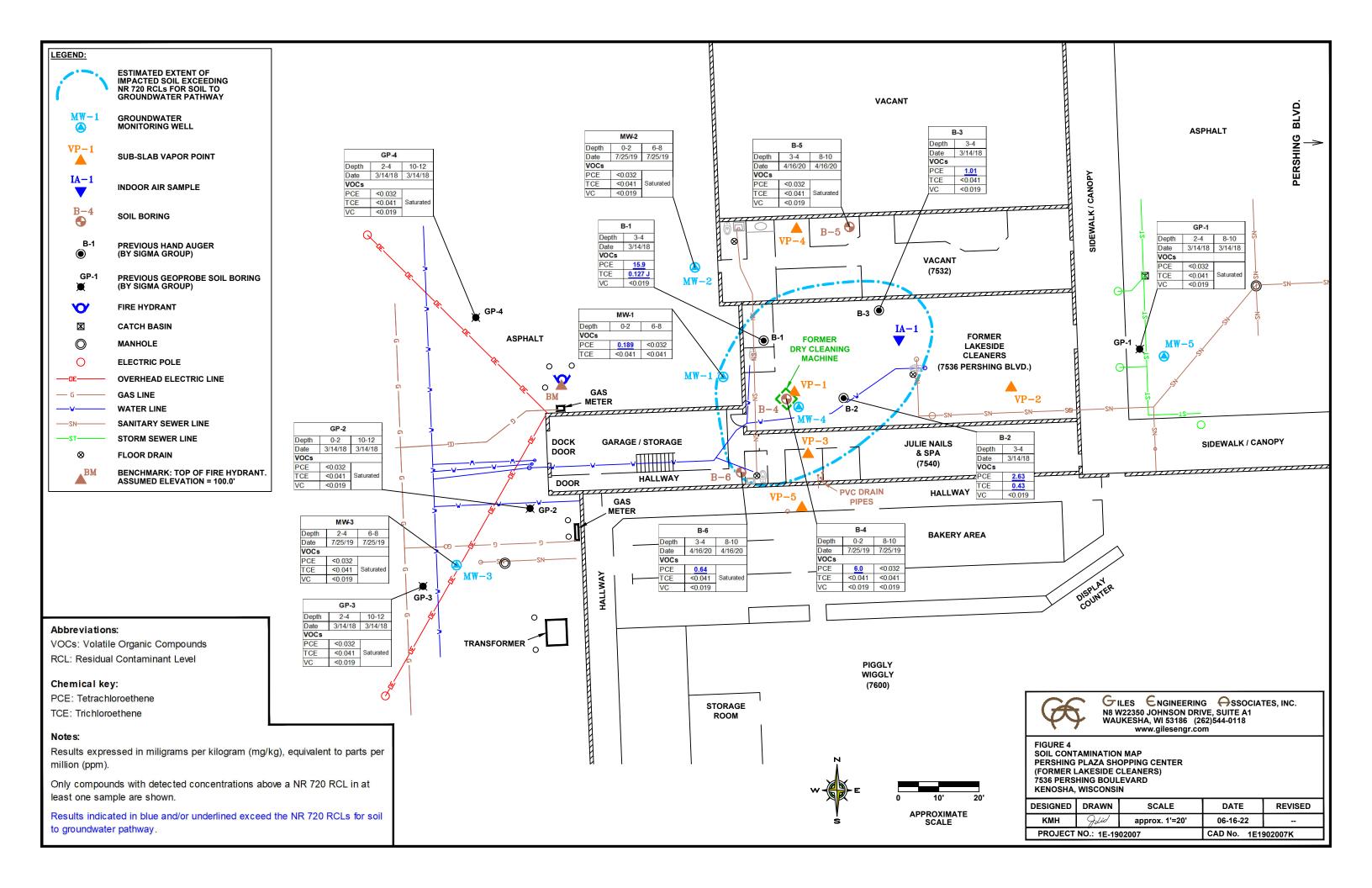
Pershing Plaza Shopping Center Former Lakeside Cleaners 7536 Pershing Boulevard Kenosha, Wisconsin Project No. 1E-1902007

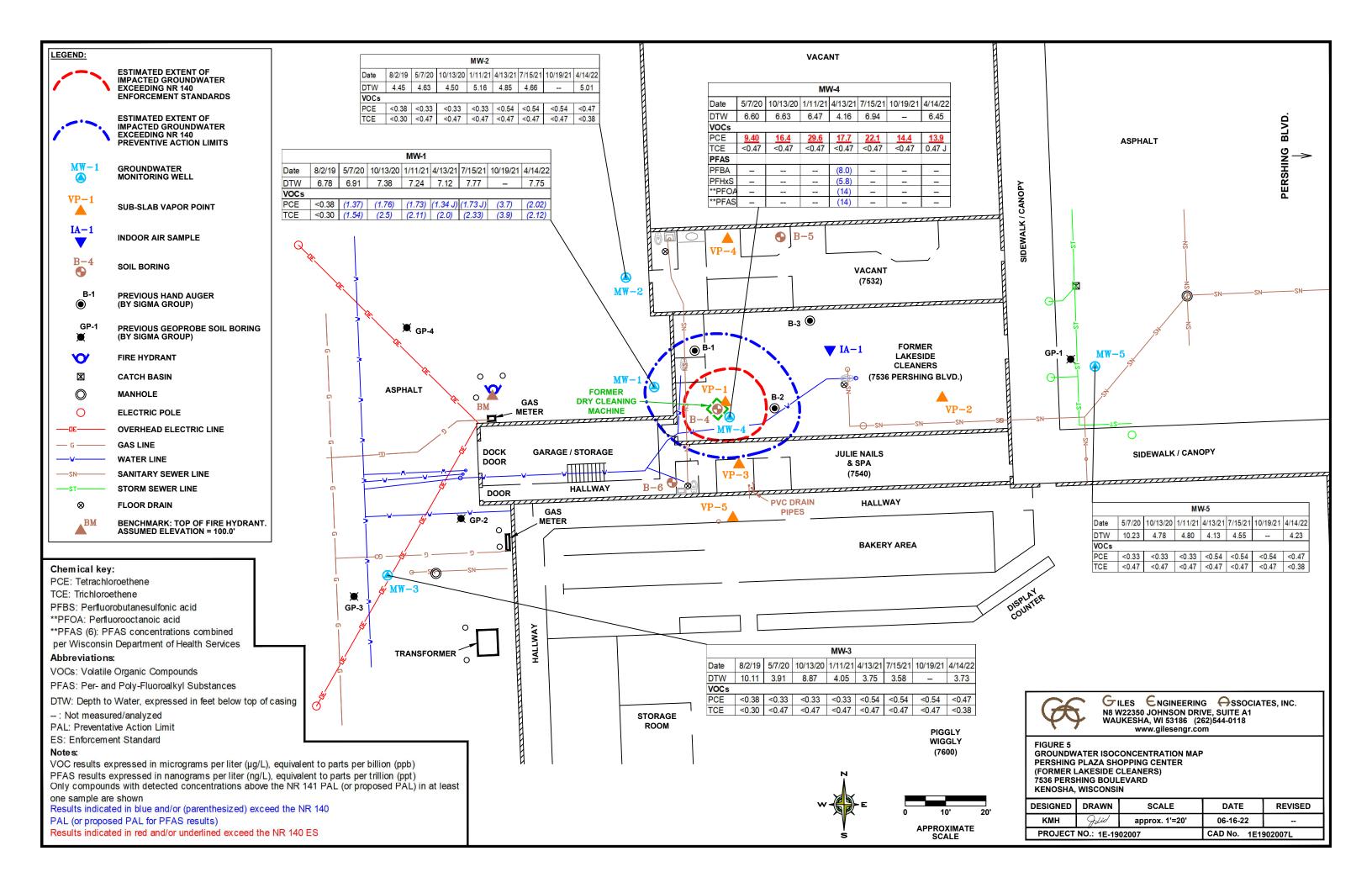


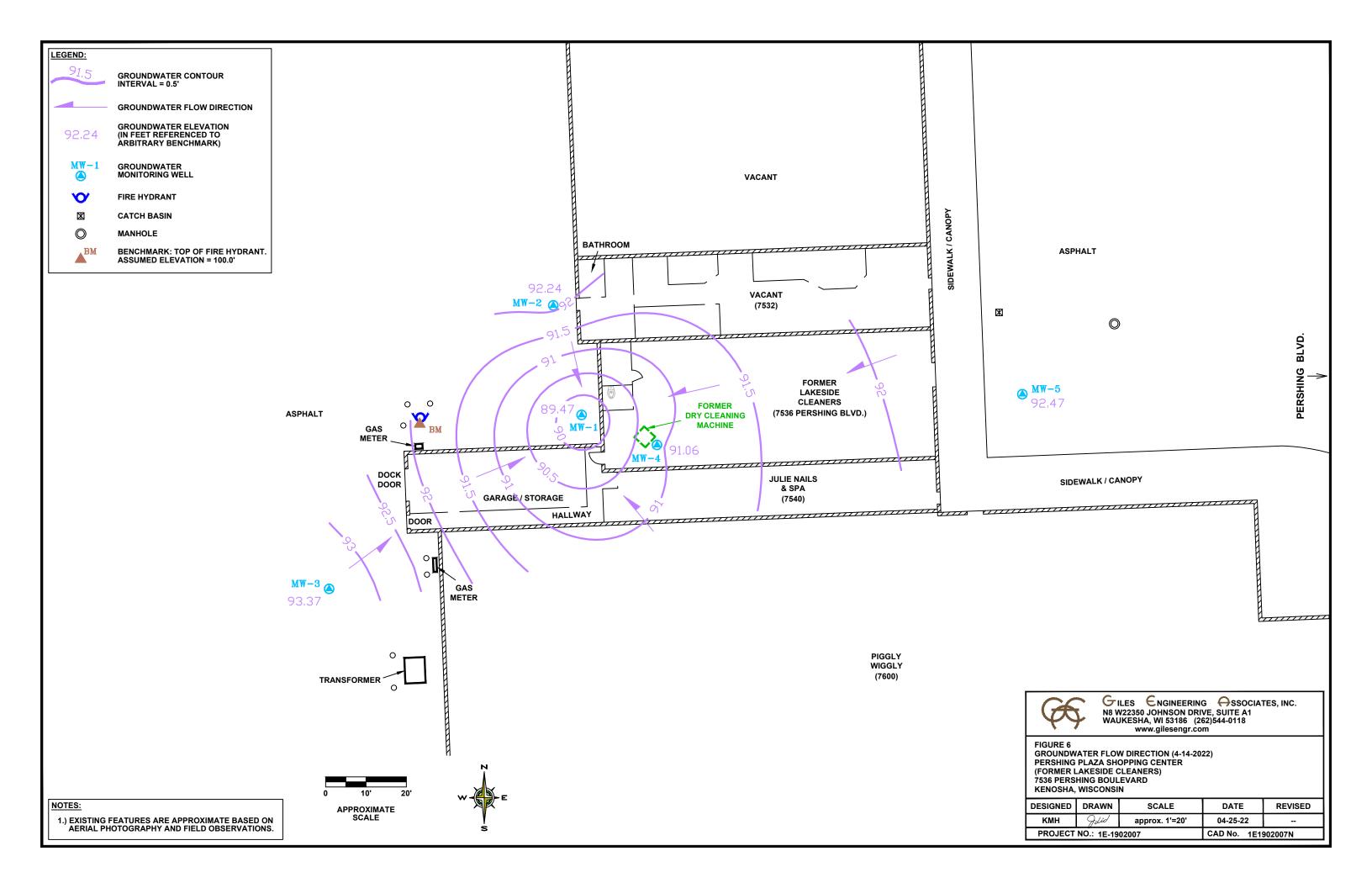


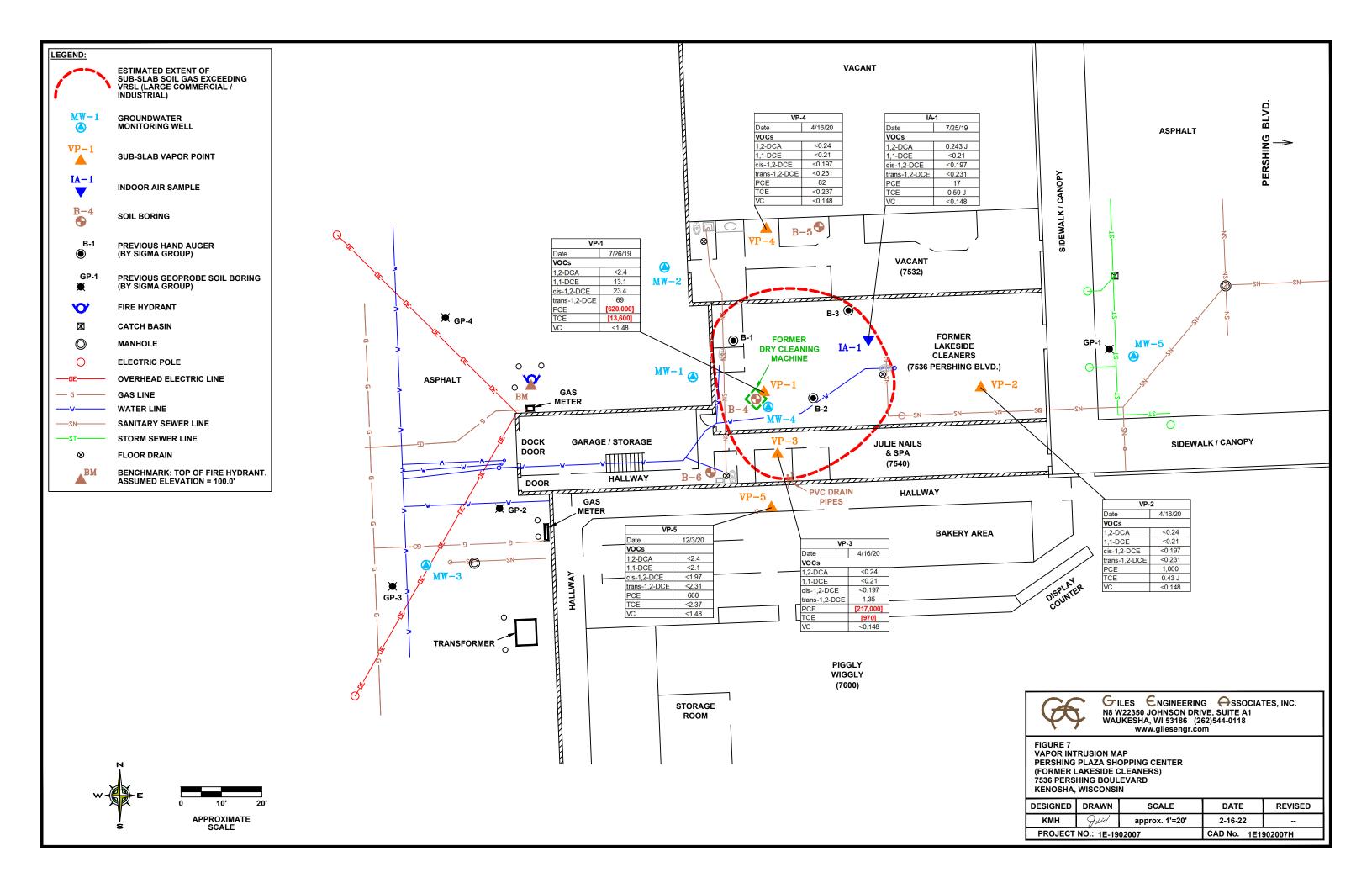


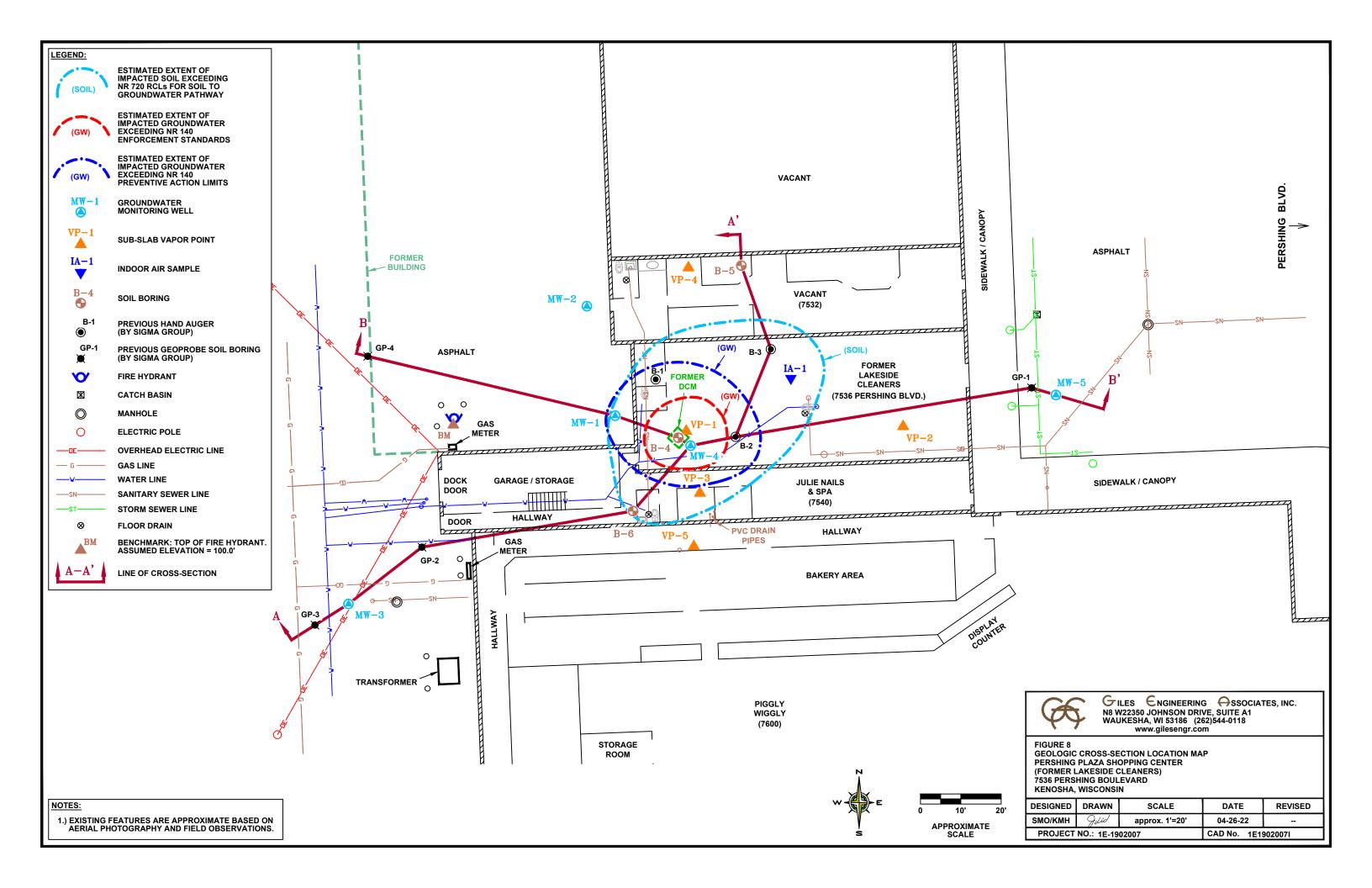


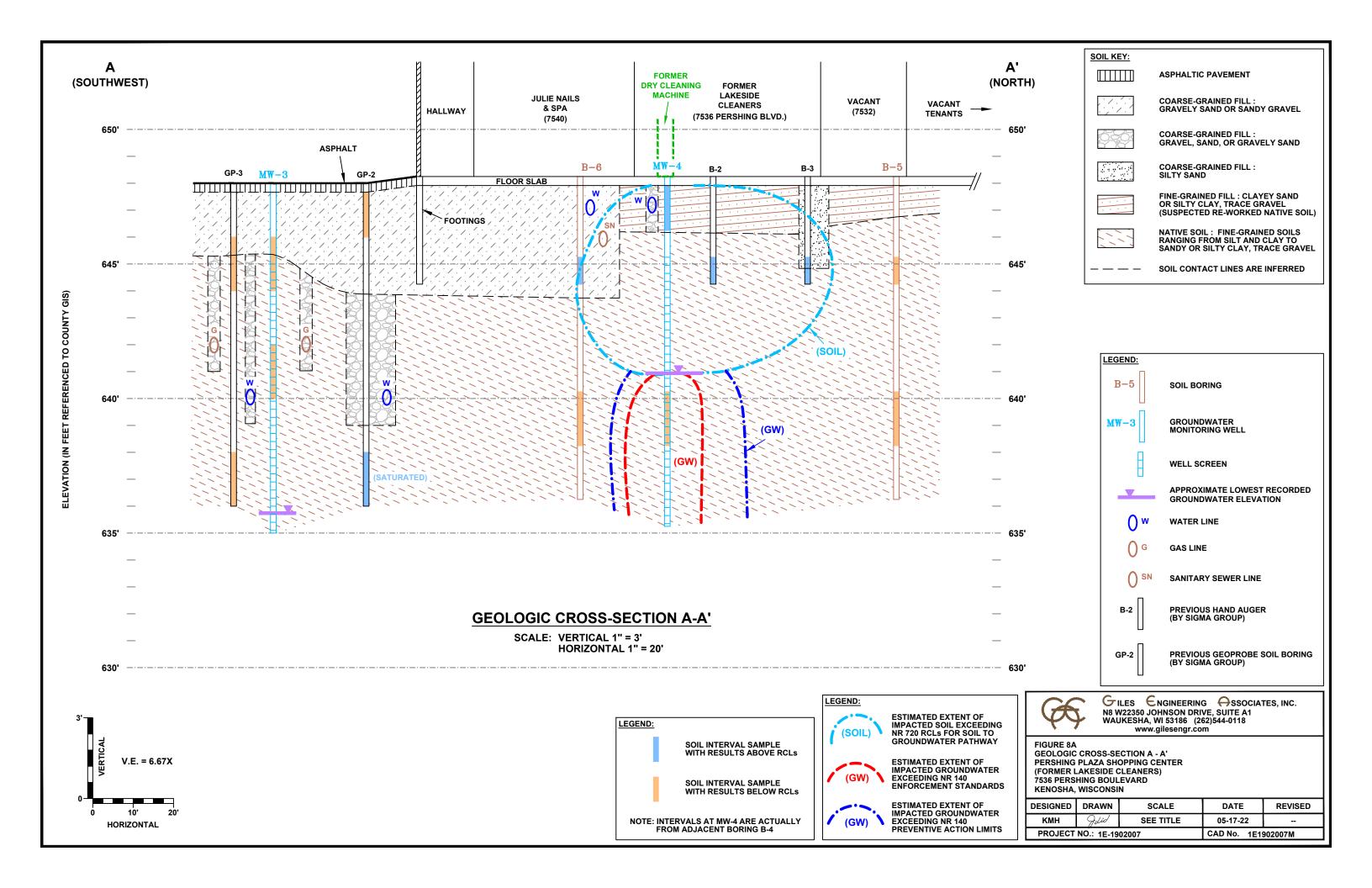


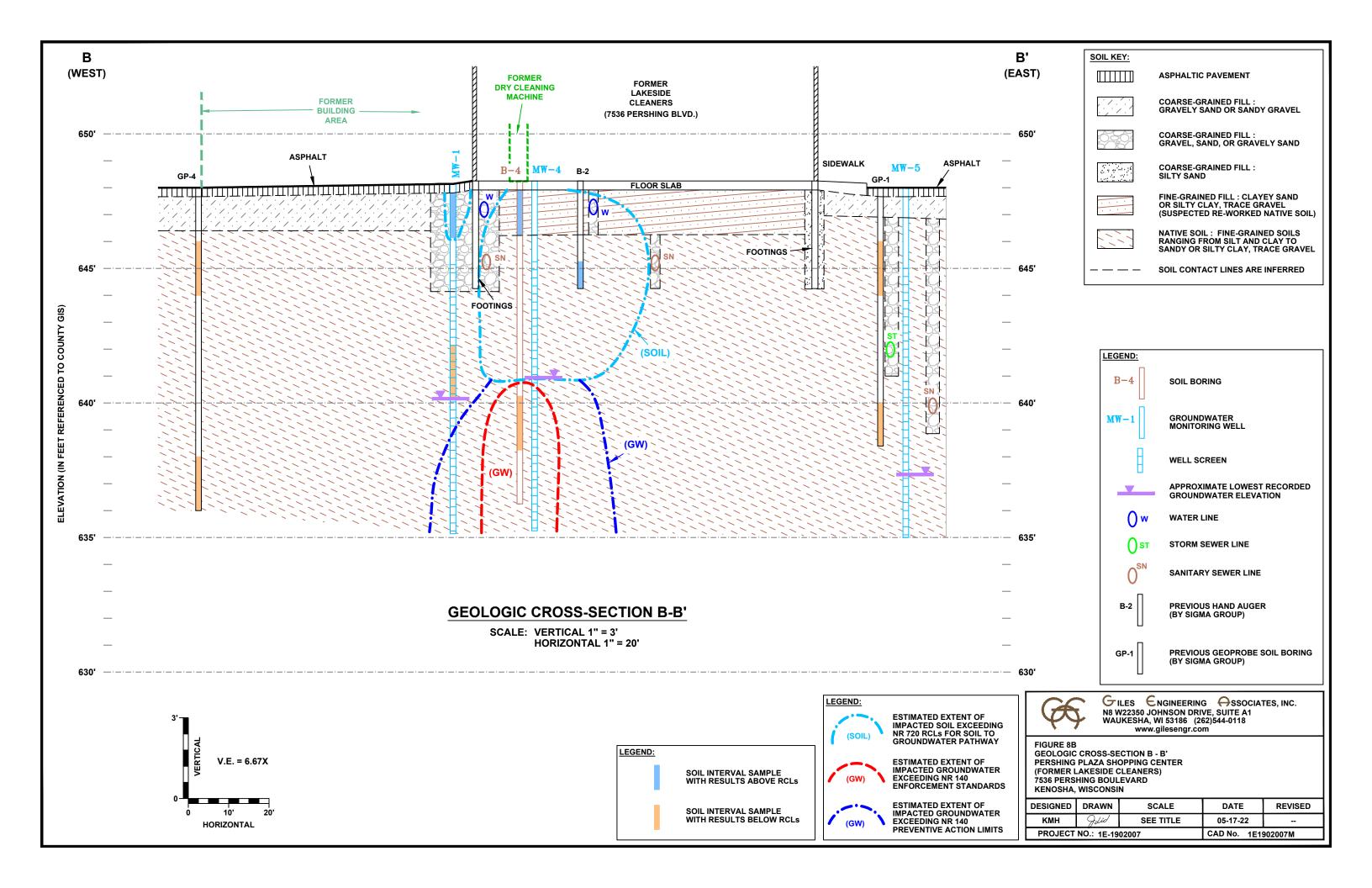












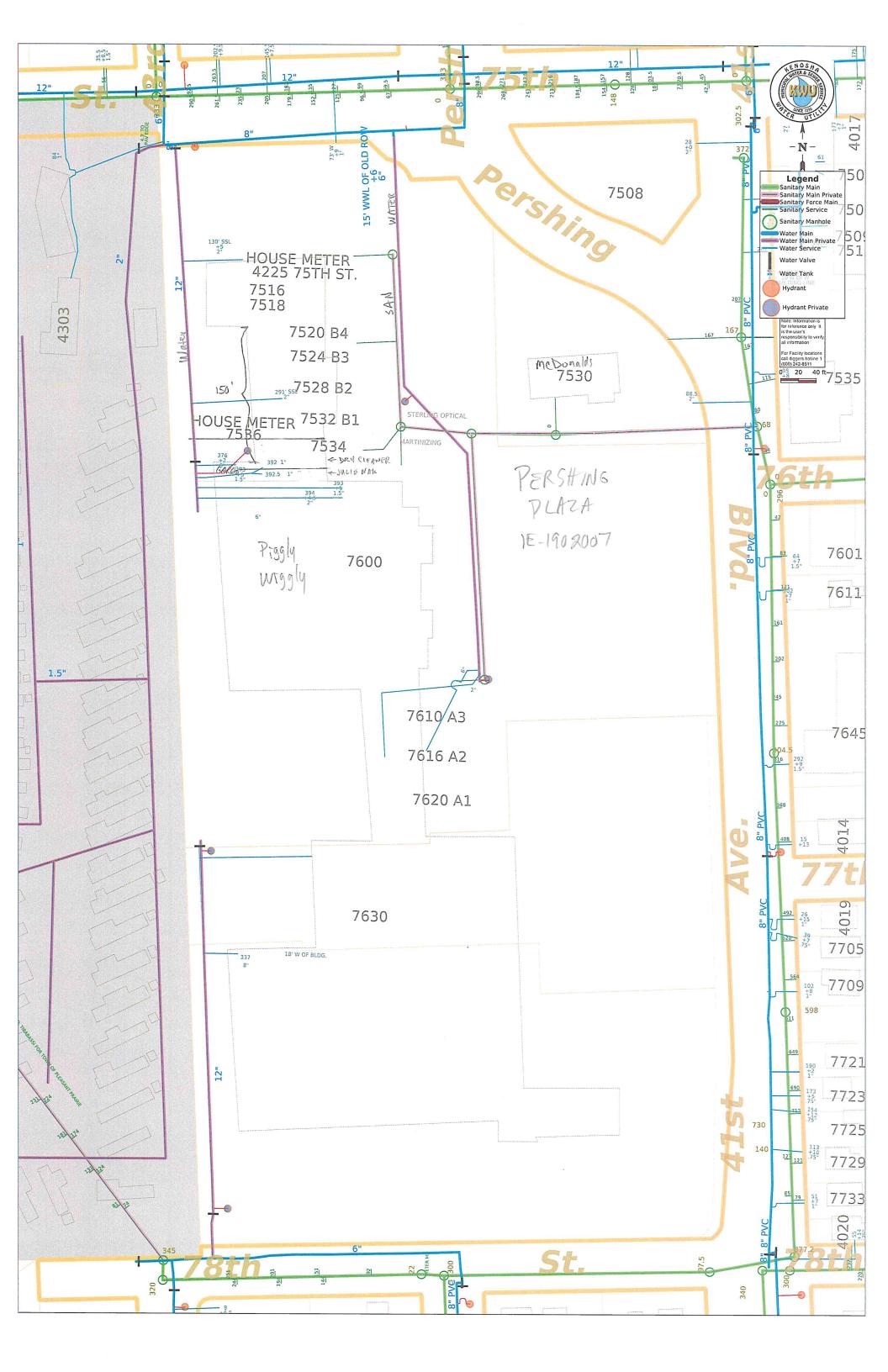


TABLE 1 SOIL ANALYTICAL RESULTS INTERIOR SAMPLE LOCATIONS

Pershing Plaza Shopping Center
(Former Lakeside Cleaners Lease Space)
7536 Pershing Boulevard
Kenosha, Wisconsin
BRRTS # 02-30-582211
Project Number 1E-1902007

Interior Sample Locations		Inside F	ormer Dry (Cleaners		North Adjoining Space		South I	Hallway			
(Feet/Direction to Former DCM)	B-1 * (15' NW)	B-2* (10' E)	B-3* (30' NE)	B At Form	- 4 er DCM	_	-5 NE)	_	-6 SW)	NF	NR 720 RCLs ¹ (mg/kg)	
Sample Depth (feet)	3-4	3-4	3-4	0-2	8-10	3-4	8-10	3-4	8-10		Direct Contact	
Sample Date	3/14/18	3/14/18	3/14/18	7/25/19	7/25/19	4/16/20	4/16/20	4/16/20	4/16/20	Soil to	Soil to roundwater Pathway Non-Industrial Land Use	Industrial Land Use
Saturated/Unsaturated	U	U	U	U	S	U	S	U	S			
PID (instrument units)				244	7.3	0.4	0.4	0.3	0.2			
Detected VOCs (mg/kg)	Detected VOCs (mg/kg)											
Tetrachloroethene (PCE)	<u>15.9</u>	<u>2.63</u>	<u>1.01</u>	<u>6.0</u>	<0.032	<0.032	<0.032	<u>0.64</u>	<0.032	0.0045	33	145
Trichloroethene (TCE)	<u>0.127 J</u>	<u>0.43</u>	<0.041	<0.041	<0.041	<0.041	<0.041	<0.041	<0.041	0.0036	1.26	8.41
Vinyl chloride	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019	0.0001	0.067	2.08

Notes:

¹Wisconsin Administrative Code Natural Resources Chapter (NR) 720 Residual Contaminant Levels were obtained from the Wisconsin Department of Natural Resources (WDNR) spreadsheet, last updated December 2018

*Samples were collected by The Sigma Group

RCL: Residual Contaminant Level PID: Photoionization Detector

DCM: Dry Cleaning Machine (Distance to Former DCM is approximate)

VOCs: Volatile Organic Compounds

mg/kg: Milligrams per kilogram; equivalent to parts per million (ppm)

--: Not Analyzed/Available

J: Result is an estimate value (detected between the laboratory method detection limit and reporting limit)

B: Compound detected in the sample and the laboratory method blank

NS: No Standard Established

<xx.x: Result detected below the method detection limit of x</p>

xx.x: Underlined results exceed the NR 720 RCL for the Soil to Groundwater Pathway

TABLE 1 (CONTINUED) SOIL ANALYTICAL RESULTS EXTERIOR SAMPLE LOCATIONS

Pershing Plaza Shopping Center
(Former Lakeside Cleaners Lease Space)
7536 Pershing Boulevard
Kenosha, Wisconsin
BRRTS # 02-30-582211
Project Number 1E-1902007

Exterior Sample Locations	East of	Building	West of Building														
(Feet/Direction to Former DCM)	GP (85	'-1 * ' E)		?-2 * SW)	GP (100'	-3 * SW)	GP (75'		MV (15'	V-1 'W)	MV (37'	V-2 NW)	MV (85'	V-3 SW)	NR 720 RCLs ¹ (mg/kg)		kg)
Sample Depth (feet)	2-4	8-10	0-2	10-12	2-4	10-12	2-4	10-12	0-2	6-8	0-2	6-8	2-4	6-8	Soil to Groundwater Pathway	Direct C	Contact
Sample Date	3/14/18	3/14/18	3/14/18	3/14/18	3/14/18	3/14/18	3/14/18	3/14/18	7/25/19	7/25/19	7/25/19	7/25/19	7/25/19	7/25/19		No aladada	I Industrial Land Use
Saturated/Unsaturated	U	S	U	S	U	S	U	S	U	U	U	S	U	S		Non-Industrial Land Use	
PID (instrument units)									3.3	2.8	1.7	2.0	1.9	3.5	-		
Detected VOCs (mg/kg)																	
Tetrachloroethene (PCE)	<0.032	<0.032	<0.032	<0.032	<0.032	<0.032	<0.032	<0.032	<u>0.189</u>	<0.032	<0.032	<0.032	<0.032	<0.032	0.0045	33	145
Trichloroethene (TCE)	<0.041	<0.041	<0.041	<0.041	<0.041	<0.041	<0.041	<0.041	<0.041	<0.041	<0.041	<0.041	<0.041	<0.041	0.0036	1.3	8.41
Vinyl chloride	<0.019	<0.019	<0.019	<u>0.0228 J</u>	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019	0.0001	0.067	2.08

Notes:

¹Wisconsin Administrative Code Natural Resources Chapter (NR) 720 Residual Contaminant Levels were obtained from the Wisconsin Department of Natural Resources (WDNR) spreadsheet, last updated December 2018

*Samples were collected by The Sigma Group

RCL: Residual Contaminant Level PID: Photoionization Detector

DCM: Dry Cleaning Machine (Distance to Former DCM is approximate)

VOCs: Volatile Organic Compounds

mg/kg: Milligrams per kilogram; equivalent to parts per million (ppm)

--: Not Analyzed/Available

J: Result is an estimate value (detected between the laboratory method detection limit and reporting limit)

B: Compound detected in the sample and the laboratory method blank

NS: No Standard Established

<xx.x: Result detected below the method detection limit of x</p>

xx.x: Underlined results exceed the NR 720 RCL for the Soil to Groundwater Pathway

TABLE 2 VOC GROUNDWATER ANALYTICAL RESULTS

Pershing Plaza Shopping Center (Former Lakeside Cleaners Lease Space) 7536 Pershing Boulevard Kenosha, Wisconsin Project Number 1E-1902007

	Sample Location	Doto	DTW	D	etected VOCs (µg/L)
(Feet/l	Direction to Former DCM)	Date	(ft TOC)	cis-1,2-DCE	PCE	TCE
		8/2/19	6.78	< 0.37	<0.38	< 0.30
	Ι Γ	5/7/20	6.91	0.44 J	(1.37)	(1.54)
	Ι Γ	10/13/20	7.38	<0.39	(1.76)	(2.50)
	MW-1	1/11/21	7.24	0.39 J	(1.73)	(2.11)
	(15' West)	4/13/21	7.12	<0.39	(1.34 J)	(2.00)
		7/15/21	7.77	0.39 J	(1.73 J)	(2.33)
	I	10/19/21		0.46 J	(3.70)	(3.90)
	I	4/14/22	7.75	0.32 J	(2.02)	(2.12)
		8/2/19	4.45	< 0.37	<0.38	< 0.30
	I	5/7/20	4.63	<0.39	< 0.33	<0.47
est	I	10/13/20	4.50	< 0.39	< 0.33	<0.47
	MW-2	1/11/21	5.16	< 0.39	<0.33	<0.47
Exterior West	(37' Northwest)	4/13/21	4.85	<0.39	<0.54	<0.47
xte	`	7/15/21	4.66	<0.39	<0.54	<0.47
Ш	I	10/19/21	-	<0.39	<0.54	<0.47
	I	4/14/22	5.01	<0.32	<0.47	<0.38
		8/2/19	10.11	< 0.37	<0.38	< 0.30
	I -	5/7/20	3.91	<0.39	<0.33	<0.47
	I -	10/13/20	8.87	<0.39	<0.33	<0.47
	MW-3	1/11/21	4.05	< 0.39	< 0.33	<0.47
	(85' Southwest)	4/13/21	3.75	<0.39	<0.54	<0.47
	1	7/15/21	3.58	< 0.39	<0.54	<0.47
		10/19/21		< 0.39	<0.54	<0.47
	I	4/14/22	3.73	<0.32	<0.47	<0.38
		5/7/20	6.60	0.40 J	9.40	<0.47
	I	10/13/20	6.63	1.29	16.4	<0.47
7	l	1/11/21	6.47	2.11	29.6	<0.47
Interior	MW-4	4/13/21	4.16	1.85	17.7	<0.47
Ξ	(At Former DCM)	7/15/21	6.94	2.15	22.1	<0.47
	F	10/19/21		0.80 J	14.4	<0.47
	F	4/14/22	6.45	1.23 J	13.9	0.47 J
		5/7/20	10.23	<0.39	<0.33	<0.47
, t	F	10/13/20	4.78	<0.39	<0.33	<0.47
Exterior East	<u> </u>	1/11/21	4.80	<0.39	<0.33	<0.47
ior	MW-5	4/13/21	4.13	<0.39	<0.54	<0.47
ter	(90' East)	7/15/21	4.55	<0.39	<0.54	<0.47
ш	[10/19/21		<0.39	<0.54	<0.47
	F	4/14/22	4.23	<0.32	<0.47	<0.38
	NR 1	40 PAL ¹	7	0.5	0.5	
		140 ES ¹		70	5	5

Notes:

¹Wisconsin Administrative Code Natural Resources Chapter (NR) 140 Public Health Groundwater Quality Standards, updated January 2020

TOC: Top of Casing

DCM: Dry Cleaning Machine (Distance to Former DCM is approximate)

VOCs: Volatile Organic Compounds

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

PAL: Preventive Action Limit **ES**: Enforcement Standard

DCE: Dichloroethene **PCE**: Tetrachloroethene **TCE**: Trichloroethene

J: Result is an estimate value (detected between the laboratory method detection limit and reporting limit)

-- : Not measured

<xx.x: Result concentration was detected below the method detection limit of x (xx.x): Italic/parenthesized results exceed the NR 140 Preventive Action Limit xx.x: Bold/underlined results exceed the NR 140 Enforcement Standard

TABLE 2 (CONTINUED) PFAS Groundwater Analytical Results

Pershing Plaza Shopping Center
(Former Lakeside Cleaners Lease Space)
7536 Pershing Boulevard
Kenosha, Wisconsin
Project Number 1E-1902007

Sample Location	MW-4 (At Former DCM)	Proposed NR 140 Standards* (ng/L)		
Sample Date	4/13/21	PAL	ES	
PFAS (ng/L)				
6:2 FTS	6.3 J	NS	NS	
Perfluorobutanesulfonic acid (PFBS)	3.9 J	90	450	
Perfluorobutanoic acid (PFBA)	(8.0)	2	10	
Perfluoroheptanoic acid (PFHpA)	4.0 J	NS	NS	
Perfluorohexanesulfonic acid (PFHxS)	(5.8)	4	40	
Perfluorohexanoic acid (PFHxA)	2.8 J	30	150	
Perfluorooctanoic acid (PFOA)**	(14)	2	20	
Perfluoropentanesulfonic acid (PFPeS)	4.3	NS	NS	
Perfluoropentanoic acid (PFPeA)	2.2 J	NS	NS	
PFAS (6)**	(14)	2**	20**	

Notes:

PFAS: Per- and Poly-fluoroalkyl Substances

ng/L: nanograms per Liter; equivalent to parts per trillion (ppt)

*Wisconsin Department of Health Services (DHS) recommended Groundwater Standards (Cycle 11) dated November 6, 2020

**DHS recommends a combined PAL of 2 ng/L and ES of 20 ng/L for FOSA, NEtFOSE, NEtFOSA, NEtFOSAA, PFOS, and PFOA.

DCM: Former Dry Cleaning Machine

PAL: Preventive Action Limit **ES**: Enforcement Standard

J: Result is an estimate value (detected between the laboratory method detection limit

NS: No Standard Established

<xx.x: Result concentration was detected below the method detection limit of x (xx.x): Parenthesized results exceed the proposed NR 140 Preventive Action Limit

TABLE 3 GROUNDWATER ELEVATION DATA

Pershing Plaza Shopping Center (Former Lakeside Cleaners Lease Space) 7536 Pershing Boulevard Kenosha, Wisconsin Project Number 1E-1902007

W		Well El	evation	Well Con	struction		Groundwater		
(Fee	ell Location et/Direction to rmer DCM)	тос	Ground Surface	Depth to Bottom	Screen Length	Date Groundwater Measured	Depth (TOC)	Calculated Elevation	
						7/26/19	6.58	90.64	
						7/30/19	5.44	91.78	
						8/2/19	6.78	90.44	
						9/26/19	6.57	90.65	
						5/7/20	6.91	90.31	
	MW-1	97.22	97.43	13.00	10	10/13/20	7.38	89.84	
	(15' W)	07.22	07.40	10.00	10	12/3/20	7.65	89.57	
						1/11/21	7.24	89.98	
						4/13/21	7.12	90.10	
						7/15/21	7.77	89.45	
						10/19/21			
						4/14/22	7.75	89.47	
						7/26/19	4.27	92.98	
						7/30/19	4.25	93.00	
						8/2/19	4.45	92.80	
#						9/26/19	4.79	92.46	
Nes				14.00	10	5/7/20	4.63	92.62	
Exterior West	MW-2	97.25	97.46			10/13/20	4.50	92.75	
xter	(37' NW)					12/3/20	5.11	92.14	
ш						1/11/21	5.16	92.09	
						4/13/21 7/15/21	4.85 4.66	92.40	
						10/19/21		92.59	
						4/14/22	5.01	92.24	
						7/26/19	12.08	85.02	
		u / 1/1	97.28	13.00	10	7/30/19	8.27	88.83	
						8/2/19	10.11	86.99	
						9/26/19	3.77	93.33	
						5/7/20	3.91	93.19	
	MW-3					10/13/20	8.87	88.23	
	(85' SW)					12/3/20	6.19	90.91	
	,					1/11/21	4.05	93.05	
						4/13/21	3.75	93.35	
						7/15/21	3.58	93.52	
						10/19/21			
L			<u> </u>			4/14/22	3.73	93.37	
						4/28/20	4.74	92.77	
						5/7/20	6.60	90.91	
						10/13/20	6.63	90.88	
ō	MW-4					12/3/20	7.21	90.30	
Interior	(At Former	97.51	97.61	12.65	10	1/11/21	6.47	91.04	
=	DCM)					4/13/21	4.16	93.35	
						7/15/21	6.94	90.57	
						10/19/21			
						4/14/22	6.45	91.06	
						4/28/20	10.04	86.66	
						5/7/20	10.23	86.47	
ast						10/13/20	4.78	91.92	
Exterior East	MW-5	00.70	07.40	44.07	40	12/3/20	5.78	90.92	
erio	(90' E)	96.70	97.13	11.97	10	1/11/21	4.80	91.90	
EXT						4/13/21	4.13	92.57	
						7/15/21	4.55	92.15	
						10/19/21	4 22		
						4/14/22	4.23	92.47	

Notes:

TOC: Top of casing

All measurements are recorded in feet.

DCM: Dry Cleaning Machine (Distance to Former DCM is approximate)

Elevations of the wells MW-1 through MW-3 were surveyed on 8/2/19. Elevations of the wells MW-4 and MW-5 were surveyed on 4/28/2020. Survey measurements were tied to a local benchmark, the top of the fire hydrant located west of MW-1, which was assigned an elevation of 100 feet.

^{-- :} not measured

TABLE 4 SUB-SLAB VAPOR ANALYTICAL RESULTS

Pershing Plaza Shopping Center (Former Lakeside Cleaners Lease Space) 7536 Pershing Boulevard Kenosha, Wisconsin Project Number 1E-1902007

Sample Locations (Feet/Direction to Former DCM)	Former Dry	Cleaners	Julie Nails North Adjoini		Piggly Wiggly	Sub-Slab Vapor VRSL^ (μg/m³)			
	VP-1	VP-2	VP-3	VP-4	VP-5	Land Use			
(1 cerbirection to 1 office bowl)	(At Former DCM)	(55' E)	(10' S)	(40' N)	(25' S)	Decidential	Small	Large Commercial /	
Sample Date	7/26/19	4/16/20	4/16/20	4/16/20	12/3/20	Residential	Commercial	Industrial	
Select VOCs (µg/m³)									
1,2-Dichloroethane	<2.4	<0.24	<0.24	<0.24	<2.4	37	160	470	
1,1-Dichloroethene	13.1	<0.21	<0.21	<0.21	<2.1	7,000	29,000	88,000	
1,2-Dichloroethene, cis-	23.4	<0.197	<0.197	<0.197	<1.97	NS	NS	NS	
1,2-Dichloroethene, trans-	69	<0.231	1.35	<0.231	<2.31	NS	NS	NS	
Tetrachloroethene (PCE)	[620,000]	1,000	[217,000]	82	660	1,400	6,000	18,000	
Trichloroethene (TCE)	[13,600]	0.43 J	[970]	<0.237	<2.37	70	290	880	
Vinyl Chloride	<1.48	<0.148	<0.148	<0.148	<1.48	57	930	2,800	

Notes:

VRSL: Vapor Risk Screening Level VOCs: Volatile Organic Compounds μg/m³: Micrograms per cubic meter

DCM: Dry Cleaning Machine (Distance to Former DCM is approximate)

J: Concentration reported between the laboratory method detection limit and the reporting limit.

[xx.x]: Result exceeds the sub-slab VRSL for Residential, Small Commercial, and Large Commercial/Industrial land uses

NS: No Established Standard

^VRSLs were obtained/calculated from the Wisconsin Vapor Quick Look-Up Table based on the May 2021 US EPA Regional Screening Levels.

VRSLs are based on a Target Risk for Carcinogens of 1 x 10⁻⁵ and a Target Hazard Quotient for Non-Carcinogens of 1.

TABLE 5 INDOOR AIR ANALYTICAL RESULTS

Pershing Plaza Shopping Center (Former Lakeside Cleaners Lease Space) 7536 Pershing Boulevard Kenosha, Wisconsin Project Number 1E-1902007

Sample Location	Former Dry	Indoor Air VAL^ (μg/m³)								
	Cleaners	Land Use								
Sample Name	IA-1	Desidential	Small	Large Commercial /						
Sample Date	7/25/19	7/25/19 Residential Commercia		Industrial						
Select VOCs (µg/m³)										
1,2-Dichloroethane	0.243 J	1.1	4.7	4.7						
1,1-Dichloroethene	<0.21	210	880	880						
1,2-Dichloroethene, cis-	<0.197	NS	NS	NS						
1,2-Dichloroethene, trans-	<0.231	NS	NS	NS						
Tetrachloroethene (PCE)	17	42	180	180						
Trichloroethene (TCE)	0.59 J	2.1	8.8	8.8						
Vinyl Chloride	<0.148	1.7	28	28						

Notes:

VAL: Vapor Action Level

VOCs: Volatile Organic Compounds μg/m³: Micrograms per cubic meter

J: Concentration reported between the laboratory method detection limit and the reporting limit.

NS: No Established Standard

The indoor air sample was collected over 24 hours beginning at 9 am on 7/25/19

^VALs were obtained/calculated from the Wisconsin Vapor Quick Look-Up Table based on the May 2021 US EPA Regional Screening Levels.