

SCS ENGINEERS

May 8, 2017
File No. 25217027.01

Mr. Chue Yee Yang
Wisconsin Department of Natural Resources
2300 North Martin Luther King Drive
Milwaukee, WI 53212

Subject: Site Investigation Work Plan
Highland Plaza, 8530-8600 West Brown Deer Road
WDNR BRRTS #02-41-579065

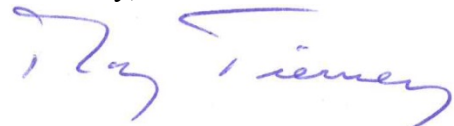
Dear Mr. Yang:

SCS Engineers (SCS) has prepared this Site Investigation Work Plan for the above-noted Highland Plaza case. SCS has been retained by RJR ML, LLC to conduct a site investigation in response to the discovery of chlorinated solvent vapors in the building sub-slab.

The purpose of the investigation is to evaluate the degree and extent of contamination at the site and to evaluate and recommend remedial alternatives, if needed. We anticipate conducting the initial site activities detailed in this Work Plan in May 2017.

If you have any questions regarding this Work Plan, please contact Robert Langdon at (608) 216-7329.

Sincerely,



Ray Tierney, PG
Vice President/Project Director
SCS ENGINEERS



Robert Langdon
Senior Project Manager
SCS ENGINEERS

RT/lmh/REL

cc: Symeon Davis – RJR ML, LLC

Enclosure: Site Investigation Work Plan

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Site Investigation Work Plan

Highland Plaza 8530-8600 West Brown Deer Road Milwaukee, Wisconsin

Prepared for:

RJR ML, LLC

1180 South Beverly Drive, Suite 700
Los Angeles, California 90035-1151
(424) 284-7784

Prepared by:

SCS ENGINEERS

2830 Dairy Drive
Madison, Wisconsin 53718-6751
(608) 224-2830

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Offices Nationwide
www.scsengineers.com

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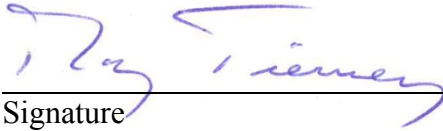
- 1 Site Location Map
- 2 Site Plan

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CERTIFICATIONS

I, Ray Tierney, hereby certify that I am a hydrogeologist as the term is defined in s. NR 712.03(1), Wis. Adm. Code, and that, to the best of my knowledge, all of the information contained in this document is correct and the document was prepared in compliance with all applicable requirements in chs. NR 700 to 726, Wis. Adm. Code.



Signature

Vice President/Project Director

Title

May 8, 2017

Date

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1.0 INTRODUCTION AND BACKGROUND

1.1 PURPOSE

The purpose of this investigation is to evaluate the extent of chlorinated volatile organic compounds (CVOCs) in soil and groundwater, and to assess whether remediation is necessary.

1.2 LOCATION AND PROJECT INFORMATION

1. Site Owner: RJR ML, LLC
1180 South Beverly Drive, Suite 700
Los Angeles, California 90035-11514
(424) 284-7784
2. Site Address: 8530-8600 West Brown Deer Road
Milwaukee, Wisconsin 53224
3. Site Location (**Figure 1**): SE¼, SW¼, Section 4, T8N, R21E
Milwaukee County
4. Environmental Consultant: SCS Engineers
2830 Dairy Drive
Madison, Wisconsin 53718-6751
(608) 224-2830 – phone
(608) 224-2839 – fax
5. Project Manager: Robert Langdon
6. Project Director: Ray Tierney
7. BRRTS #: 02-41-579065
8. WDNR Contact: Binyoti Amungwafor
(414) 263-8607

2.0 SITE BACKGROUND

2.1 SITE HISTORY AND CURRENT STATUS

The Highland Plaza property, Parcel No. 0330015110, is located at 8530-8600 West Brown Deer Road, City of Milwaukee, Milwaukee County, Section 4, Township 8 North, Range 21 East (**Figure 1**). The 7.6-acre property is owned by RJR ML, LLC and occupied by a 95,118-square-foot, one-story multi-unit retail strip mall, which was constructed in approximately 1985. The building is divided into 15 retail and office units (**Figure 2**). Surrounding properties to the east and west are commercial, while the property to the north is residential.

Ogden Cleaners (formerly Dry Clean Discounters) occupies unit 8544 of the Highland Plaza and has been in operation at this location since at least 2009. The dry cleaning operations were identified as a potential environmental concern. Soil, groundwater, and vapor assessment sampling was performed to determine if a release of dry cleaning solvent had occurred. Soil sampling showed no indication of a release, and a temporary monitoring well installed for groundwater sampling did not produce water. Vapor assessment sampling identified the presence of CVOCs in the building sub-slab vapor at concentrations in excess of Wisconsin Department of Natural Resources (WDNR) vapor risk screening levels (VRSLs). However, it appears the elevated sub-slab vapors may be related to indoor air and ongoing dry cleaning operations rather than a release to underlying soil or groundwater.

Soil and vapor sampling results were submitted to the WDNR in a March 2, 2017 letter requesting a No Action Required (NAR) determination. The WDNR denied the NAR and required completion of an NR 716 site investigation.

2.2 SOILS, GEOLOGY, AND HYDROGEOLOGY

The Highland Plaza property is located within the Milwaukee River watershed with surface water drainage to the east. The property elevation ranges from approximately 710 to 730 feet above mean sea level and slopes from west to east.

Shallow soil in the in the area is composed predominantly of low permeability silt and clay till of the Oak Creek Formation. The Oak Creek till is underlain by older, more sandy till of the New Berlin Formation. These unconsolidated soils extend to a depth of approximately 100 feet below ground surface (bgs) to the top of dolomite bedrock (SEWRPC, 2002).

The City of Milwaukee provides potable water from Lake Michigan to the property and surrounding area. Review of the Wisconsin Geological and Natural History Survey (WGNHS) and WDNR well construction databases indicates there are no private wells within 1,200 feet of the site.

Based on a review of WDNR's online database for nearby Bureau for Remediation and Redevelopment Tracking System (BRRTS) cases, it appears groundwater is present within clay soils at depths ranging from approximately 5 to 16 feet bgs and that flow directions are variable.

2.3 PREVIOUS INVESTIGATIONS

Soil and Groundwater Sampling

In February 2014, three soil borings (GP-1, GP-2, and GP-3) were advanced and sampled by Environmental Services, Inc. (ESI) for volatile organic compounds (VOCs) to evaluate for a potential release of dry cleaning solvent from the Ogden Cleaners/Dry Clean Discounters facility.

ESI characterized site soils as gravel fill underlain by clay to a depth of at least 18 feet bgs. The boring locations are shown on **Figure 2**. Soil sample results are summarized in **Table 1**. VOCs were not detected in any of the soil samples. A temporary groundwater monitoring well was installed in boring GP-1; however, groundwater was not encountered.

Vapor Assessment

Vapor assessments were performed in late 2016 by EDI Consultants (EDI) and early 2017 by SCS Engineers (SCS). The 2017 vapor sample results were significantly lower than the 2016 sample results (**Table 2**). Both assessments showed commercial sub-slab vapor risk screening level (VRSL) exceedances for the dry cleaner unit. The 2017 assessment included sub-slab sampling in the dry cleaner unit and the two adjoining vacant units. VOCs were detected in the adjoining unit sub-slab samples; however, the sample concentrations did not exceed commercial VRSLs.

The higher 2016 dry cleaner unit sub-slab sample concentrations appear to be related to indoor air and dry cleaning equipment operation. Probes SG-1, SG-2, and SG-3 were installed by EDI immediately adjacent to dry cleaning equipment. According to the dry cleaner operator, the 2016 sub-slab probes were installed and sampled while the dry cleaning equipment was in operation. The 2017 sub-slab dry cleaner unit probes were installed and sampled while the dry cleaning equipment was off.

3.0 FIELD INVESTIGATION

3.1 PROPOSED INVESTIGATION

The field activities at the site will be conducted consistent with NR 716.11 and NR 716.13. The field investigation will extend as necessary to evaluate the nature, degree, and extent of potential contamination. SCS will prepare a site-specific Health and Safety Plan prior to the beginning of field work.

3.2 METHODS OF INVESTIGATION

Proposed field activities include installation and sampling of soil borings and groundwater monitoring wells. Proposed boring and monitoring well locations are shown on **Figure 2**.

Soil Borings

Three soil borings will be advanced within the dry cleaner unit to a maximum depth of approximately 20 feet bgs using direct-push drilling methods. The borings will be positioned in the vicinity of the dry cleaning equipment or as field observations and conditions dictate. The final number, depth, and location of the soil borings will be determined based on conditions encountered.

Soil samples from each boring will be collected continuously using a direct-push sampler. A portion of each sample will be placed in laboratory sample containers and placed on ice for potential laboratory analysis. A second portion of each sample will be placed in a sealable plastic bag and allowed to equilibrate to ambient temperature for field headspace screening using a photoionization detector. A minimum of two soil samples from each boring location will be submitted to a WDNR-certified laboratory for analysis for VOCs and percent solids. Additional soil samples may be collected based on field screening results and field observations.

Soil samples will be assigned a boring number and sample number, which, when correlated with the boring log, will indicate the sampling depth. The samples will be labeled with the sample number, date, and time of collection. Chain of custody documentation will be prepared using forms provided by the laboratory.

Soil samples will be submitted to a WDNR-certified laboratory for the requested analyses. For quality control, one methanol blank will be submitted along with soil samples and analyzed for VOCs. The laboratory analytical samples will be shipped on ice.

A soil boring log will be prepared for each boring including a geologic description of the soil, soil classification (Unified Soil Classification System [USCS], Visual-Manual Procedure), moisture, odor, and other observations, as well as field headspace readings.

The direct-push borings will be abandoned consistent with NR 141 by backfilling with granular bentonite or other appropriate means, and a borehole abandonment form will be completed for each boring.

Monitoring Wells

Three water table monitoring wells will be installed. If access allows, one well will be installed within the dry cleaner unit near the dry cleaning machines. The remaining two wells are proposed for locations outside to north and northeast of the dry cleaner unit.

The monitoring well borings will be advanced and sampled using the same methods as noted above for the soil borings. A direct-push drilling rig equipped with hollow-stem augers will be used to set standard 2-inch diameter PVC wells. If access allows, the interior well will also be set by hollow-stem auger method. If access is limited, a smaller-diameter well may be constructed within the direct-push casing.

The monitoring wells will be installed to a depth of approximately 20 feet bgs and developed consistent with NR 141. The final well depths, constructions, and locations may be modified in the field based on site conditions.

The 2-inch diameter wells will be constructed with 10 feet of slotted PVC screens and all wells will be protected with flush-mount steel casings and locking well plugs. If necessary, the smaller-diameter interior well would be constructed with 1-inch diameter casing, and 5 to 10 feet of slotted PVC screen. Monitoring well top-of-casings will be surveyed for elevation. Well construction and development forms will be completed for each well.

Water levels will be measured and the wells will be sampled approximately 1 week after development. The groundwater samples will be submitted to a WDNR-certified laboratory for analyses of VOCs. For quality control, one trip blank and one duplicate sample will be submitted for analysis of VOCs. The laboratory analytical samples will be shipped on ice.

4.0 DATA ANALYSIS AND REPORT PREPARATION

Data obtained during the field investigation activities will be documented in a Site Investigation Report consistent with NR 716.15. The report will summarize the results of the investigation and include the following:

- Recommendations based on the site investigation data.
- Laboratory reports and tables summarizing soil and groundwater analytical results.
- Table summarizing groundwater level information.
- Site location map, site plan, groundwater flow map, and geologic cross section.
- WDNR soil boring logs, well construction forms, well development forms, and borehole abandonment forms.

5.0 INVESTIGATION WASTE MANAGEMENT PLAN

Soil cuttings, water used for equipment decontamination, monitoring well development water, and purge water will be contained on site, in U.S. Department of Transportation-approved 55-gallon drums for future disposal as appropriate.

6.0 SCHEDULE

We anticipate conducting the initial site investigation activities outlined in this Work Plan during May 2017. After receiving the analytical results from the initial activities, we will evaluate the need for additional investigation.

7.0 REFERENCES

Southeastern Wisconsin Regional Planning Commission (SEWRPC), 2002, Groundwater Resources of Southeastern Wisconsin, Technical Report Number 37, June 2002

TABLES

- 1 Soil Analytical Results Summary
- 2 Sub-Slab Vapor Analytical Results Summary

Table 1. Soil Analytical Results Summary
8600 Brown Deer Rd., Milwaukee, WI / SCS Engineers Project #25217027.00
 (Results are in µg/kg)

Sample	Date	Depth (feet)	PID (ppm)	Lab Notes	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	VC	Other VOCs
GP-1	2/24/2014	12	1.9	--	<25	<25	<25	<25	<25	ND
	2/24/2014	18	0.1	--	<25	<25	<25	<25	<25	ND
GP-2	2/24/2014	6	2.8	--	<25	<25	<25	<25	<25	ND
GP-3	2/24/2014	8	3.0	--	<25	<25	<25	<25	<25	ND
NR 720 Groundwater Pathway RCLs with a Wisconsin-Default Dilution Factor of 2					4.5	3.6	41.2	62.6	0.1	
NR 720 Non-Industrial Direct Contact RCLs					33,000	1,300	156,000	1,560,000	67	
NR 720 Industrial Direct Contact RCLs					145,000	8,410	2,340,000	1,850,000	2,080	
CAS No.					127-18-4	79-01-6	156-59-2	156-60-5	75-01-4	

Abbreviations:

µg/kg = micrograms per kilogram or parts per billion (ppb)
 ppm = PID measured in ppm as isobutylene
 PCE = Tetrachloroethene
 CAS No. = Chemical Abstracts Service Number

TCE = Trichloroethene
 DCE = Dichloroethene
 VC = Vinyl Chloride

VOCs = Volatile Organic Compounds
 ND = Not Detected
 -- = Not Applicable

Notes:

Bold+underlined values exceed NR 720 Residual Contaminant Levels (RCLs).
 NR 720 values are taken from Wisconsin Department of Natural Resources March 2017 RCL Spreadsheet.

Laboratory Notes/Qualifiers:

None

Created by: AV Date: 2/27/2017
 Last revision by: LMH Date: 5/1/2017
 Checked by: REL Date: 5/1/2017

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Table 2. Sub-Slab Vapor Analytical Results Summary
Highland Plaza, Milwaukee, WI / SCS Engineers Project #25217027.00
 (Results are in ppbV)

Sample	Location	Date	Tetrachloroethylene (PCE)	Trichloroethylene (TCE)	cis-1,2-DCE	trans-1,2-DCE	Vinyl Chloride	Other VOCs
VS-1	8540 Highland Avenue (vacant)	1/19/2017	148	0.59	<0.11	<0.17	<0.13	NA
VS-2	8540 Highland Avenue (vacant)	1/19/2017	545	7	<0.1	<0.16	<0.13	NA
VS-3	8550 Highland Avenue (vacant)	1/19/2017	134	0.84	<0.1	<0.16	<0.13	NA
VS-4	8550 Highland Avenue (vacant)	1/19/2017	656 A3	7.6	<0.1	<0.16	<0.13	NA
VS-5	8544 Highland Avenue (Ogden Cleaners/Dry Clean Discounters)	1/19/2017	41	0.24	<0.11	<0.17	<0.13	NA
VS-6	8544 Highland Avenue (Ogden Cleaners/Dry Clean Discounters)	1/19/2017	21,800 A3	298 A3	0.32 J	<0.17	<0.13	NA
SG-1	8544 Highland Avenue (Ogden Cleaners/Dry Clean Discounters)	10/20/2016	774,610 E	966,660 A3, E	<143	<223	<176	ND
SG-2	8544 Highland Avenue (Ogden Cleaners/Dry Clean Discounters)	10/20/2016	744,150 E	774,430 A3, E	<143	<223	<176	ND
SG-3	8544 Highland Avenue (Ogden Cleaners/Dry Clean Discounters)	10/20/2016	485,940 E	195,900 A3	<143	<223	<176	ND
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
 NA = Not Analyzed

DCE = Dichloroethylene
 NE = Not Established

VOCs = Volatile Organic Compounds

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 Quick Look-Up Table, which is based on May 2016 USEPA Regional Screening Level Tables.
3. **Bold+underlined** values meet or exceed Vapor Risk Screening Levels for Small Commercial Buildings.

Lab Notes:

A3 = The sample was analyzed by serial dilution.
 E = Analyte concentration exceeded the calibration range. The reported result is estimated.
 J = Estimated concentration at or above the limit of detection and below the limit of quantitation.

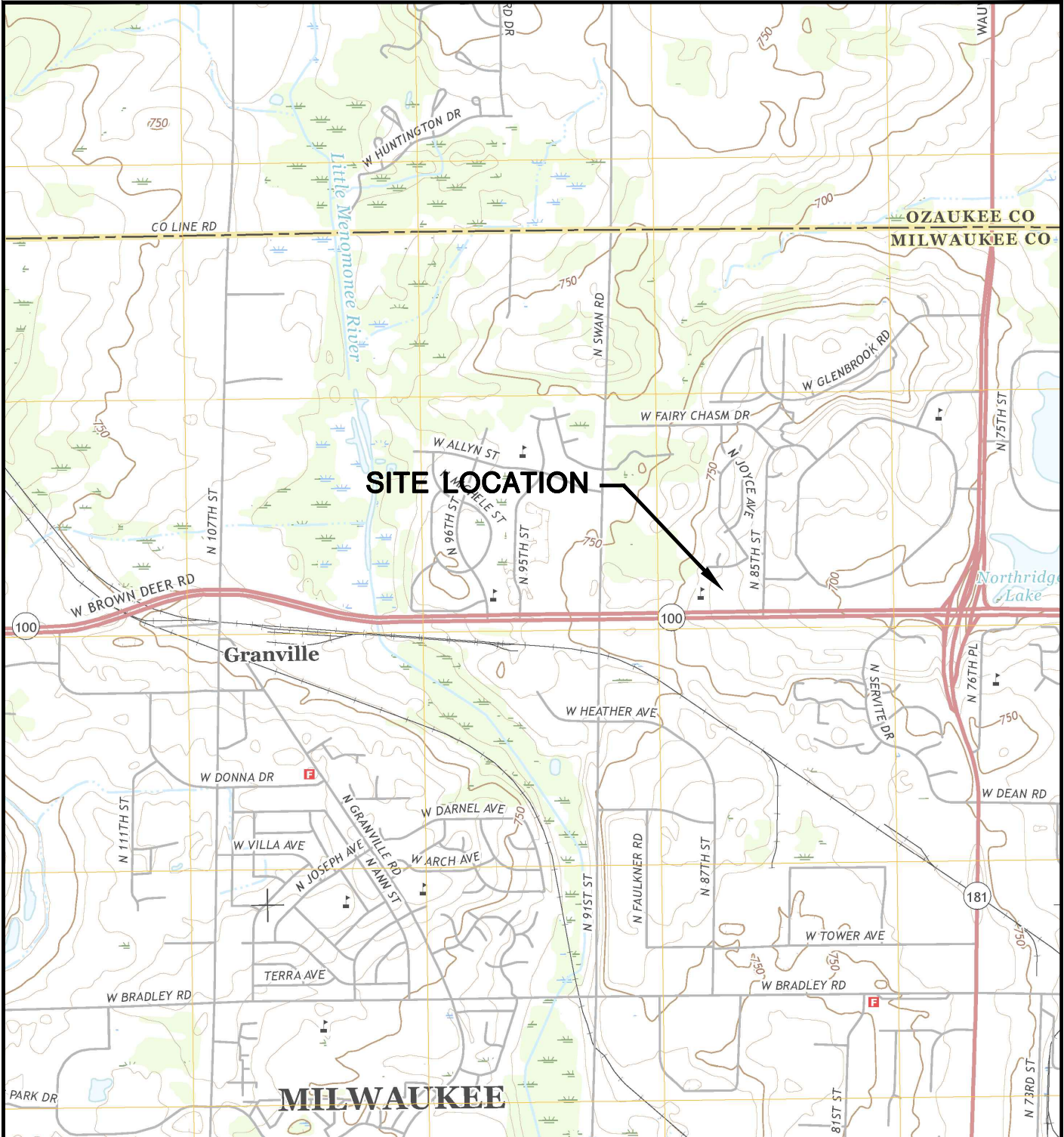
Created by: LMH
 Last revision by: LMH
 Checked by: REL

Date: 2/1/2017
 Date: 2/27/2017
 Date: 2/27/2017

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FIGURES

- 1 Site Location Map
- 2 Site Plan



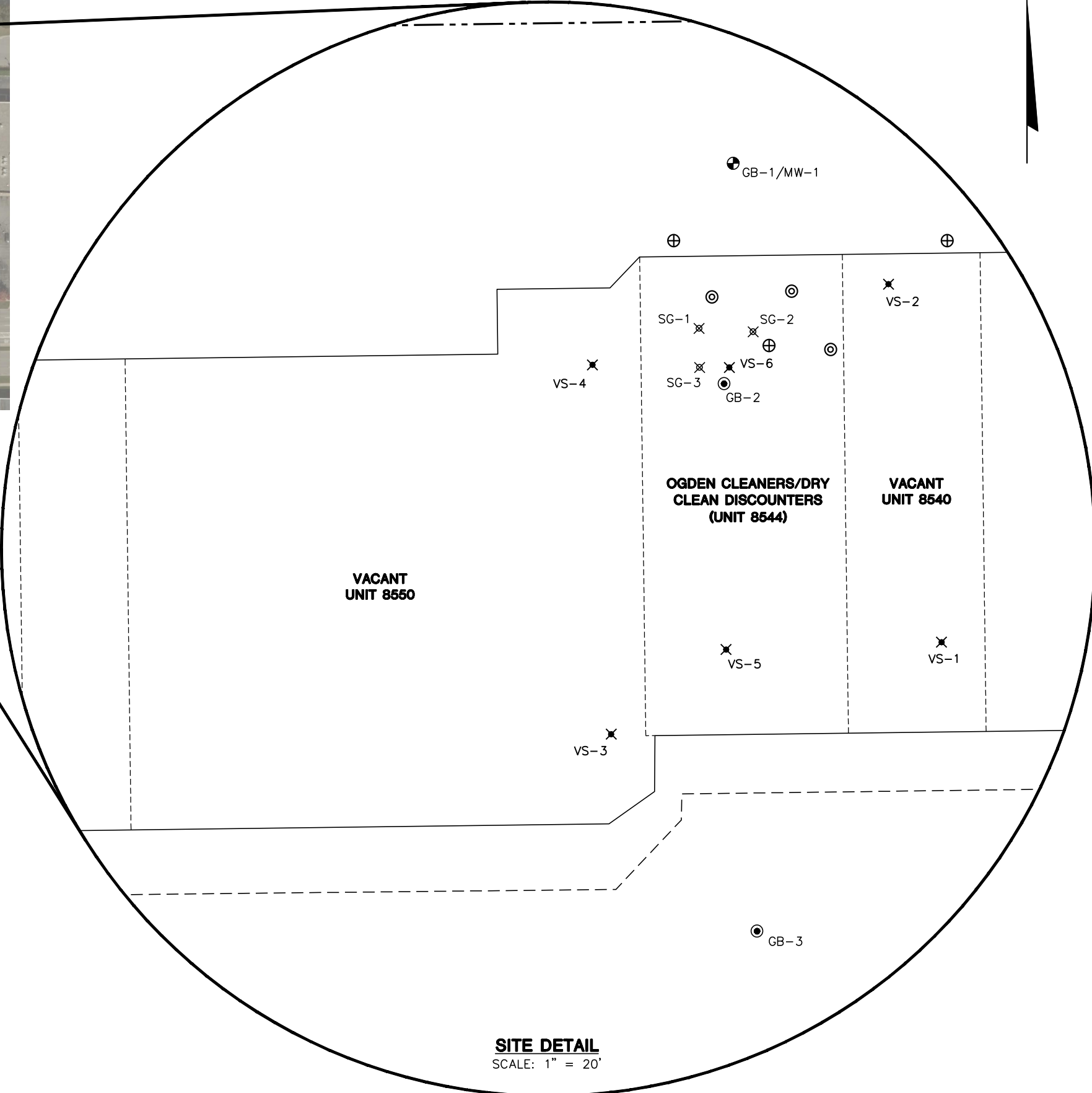
MENOMONEE FALLS QUADRANGLE
 WISCONSIN
 7.5 MINUTE SERIES (TOPOGRAPHIC)
 2015
 SCALE: 1" = 2,000'



CLIENT	RJR ML, LLC. 1180 SOUTH BEVERLY DRIVE, SUITE 700 LOS ANGELES, CA 90035 (424) 284-7784	SITE	HIGHLAND PLAZA 8600 WEST BROWN DEER ROAD MILWAUKEE, WISCONSIN	ENGINEER	SCS ENGINEERS 2830 DAIRY DRIVE MADISON, WI 53718-6751 PHONE: (608) 224-2830	SITE LOCATION MAP	FIGURE 1
	PROJECT NO. 25217027.00		DRAWN BY: AHB				
	DRAWN: 04/27/17		CHECKED BY: REL				
	REVISED: 04/27/17		APPROVED BY: REL 04/28/17				



SITE OVERVIEW
SCALE: 1" = 200'



SITE DETAIL
SCALE: 1" = 20'

LEGEND

- — — — — PROPERTY LINE
- - - - - BUILDING OVERHANG
- - - - - INTERIOR BUILDING UNIT DIVISION
- ✕ SUB-SLAB VAPOR PROBE (INSTALLED BY SCS ENGINEERS, JANUARY 2017)
- ✕ SUB-SLAB VAPOR PROBE (INSTALLED BY EDI CONSULTANTS, OCTOBER 2016)
- ⊙ SOIL BORING
- ⊙ PROPOSED SOIL BORING
- ⊕ MONITORING WELL
- ⊕ PROPOSED MONITORING WELL

NOTES:

1. PROPERTY LINE AND BUILDING LOCATIONS ARE APPROXIMATE, BASED ON ALTA/ACSM LAND TITLE SURVEY BY NATIONAL SURVEY & ENGINEERING, DATED JUNE 5, 2006.
2. INTERIOR BUILDING DIVISIONS ARE APPROXIMATE, BASED ON FIGURE 1, BORING AND MONITORING WELL LOCATION MAP PREPARED BY EPS ENVIRONMENTAL SERVICES, CHICAGO, IL, DATED FEBRUARY 24, 2014.
3. SUB-SLAB VAPOR PROBE LOCATIONS ARE APPROXIMATE.
4. SOIL BORING AND MONITORING WELL LOCATIONS ARE APPROXIMATE, BASED ON BORING AND MONITORING WELL LOCATION MAP PREPARED BY EPS ENVIRONMENTAL SERVICES, INC., FEBRUARY 24, 2014.

I:\25217027\00\Drawings\Site Plan.dwg, 5/5/2017 1:05:48 PM

CLIENT	RJR ML LLC 1180 SOUTH BEVERLY DRIVE, SUITE 700 LOS ANGELES, CA 90035 (424) 284-7784		PROJECT NO. 25217027		ENGINEER
	HIGHLAND PLAZA 8600 WEST BROWN DEER ROAD MILWAUKEE, WISCONSIN		DRAWN BY: KP		ENGINEER
SITE		DRAWN BY: KP		ENGINEER	
DRAWN: 02/09/17		CHECKED BY: REL		ENGINEER	
REVISED: 05/05/17		APPROVED BY: REL		ENGINEER	
SITE PLAN		SCS ENGINEERS		FIGURE	
2830 DAIRY DRIVE MADISON, WI 53718-6751		PHONE: (608) 224-2830		2	